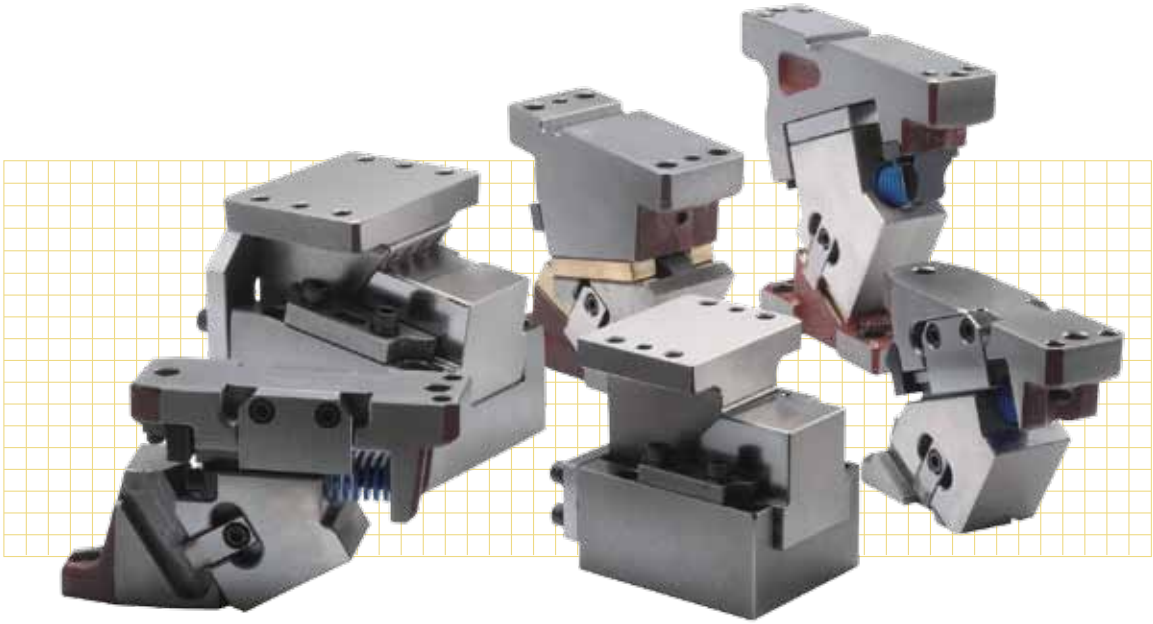
LamCam™®

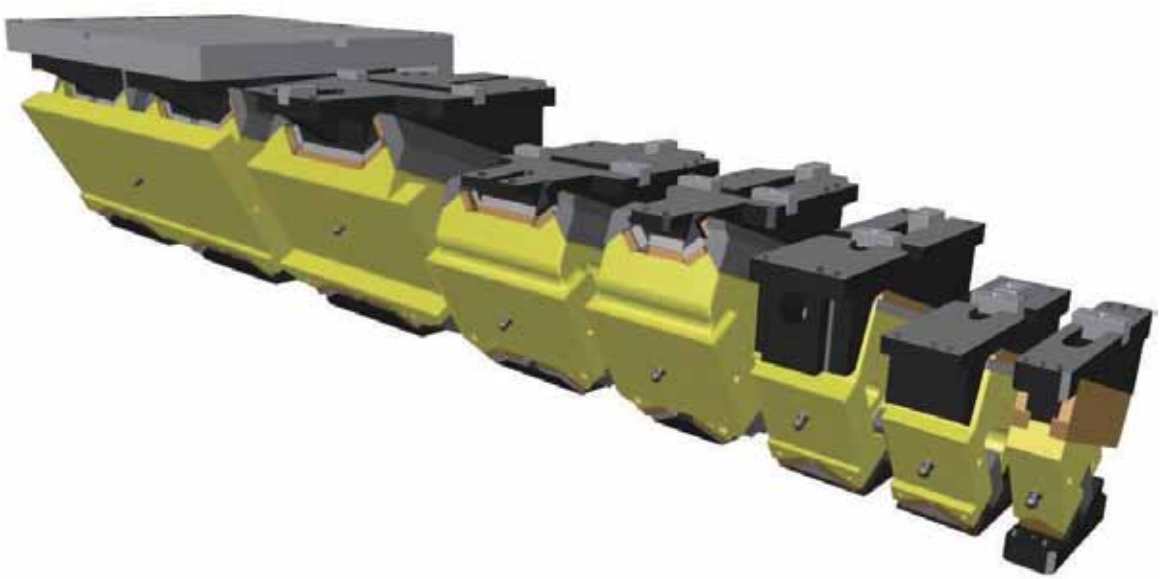


Universal Cams

www.daytonlamina.com

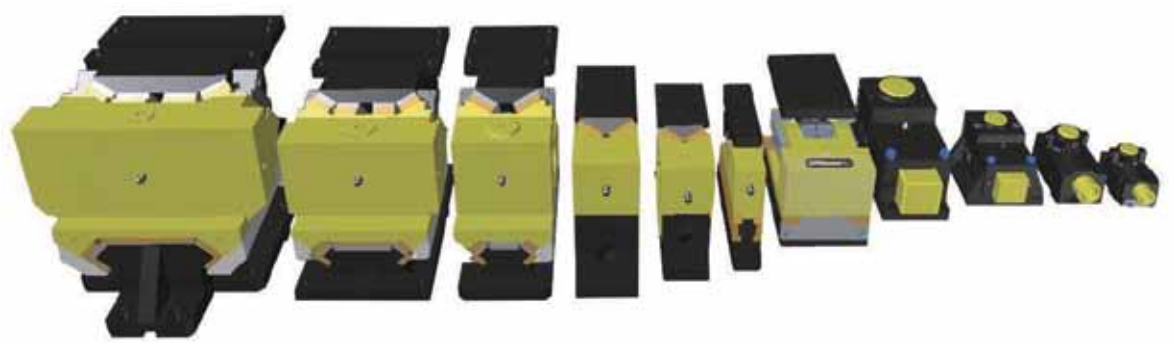
Check our website for the latest technical information.

Lamina



Lamina presents...
an impressive lineup of Aerial and Diemount Cams!

The narrowest is the SlimCam® at 50mm; the widest cam width is 1200mm. Single cam face widths range from 50mm to 1200mm.



For more information visit our website www.daytonlamina.com.

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TABLE OF CONTENTS

HOW TO USE CATALOG

Product Name

Product Series

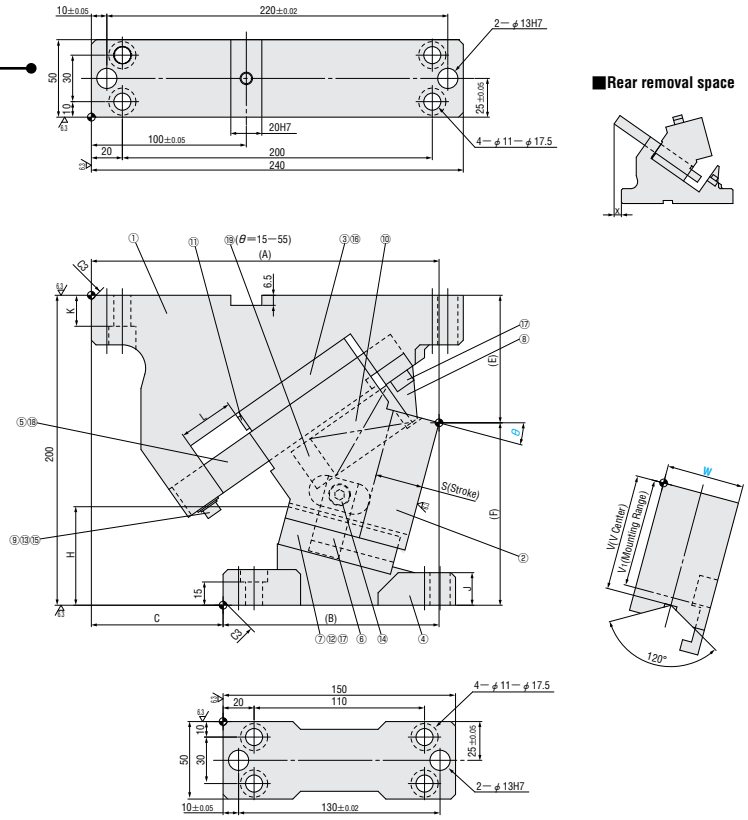
Drawing

List of Components

STANDARD AERIAL CAM UNITS FOR PIERCE
—LGFV—

— With additional slide clearance —

LGFV50 (θ=00-55)



■Components table ☞ P.30

12

CAM DIAGRAM P.24

Specification

W	θ	A	B	C	E	F	H	J	K	L	V	V_1	x
50	00	225	118	107	77.5	122.5	45	23	20	47	75	75	0
	05	226.91	126.91	100	78.33	121.67	51.4			43			
	10	223.72	133.72	90	79.93	120.07	57.6			39			
	15	224.36	139.36	85	82.29	117.71	63.6	21		36			
	20	220.76	150.76	70	85.39	114.61	69.1			33			
	25	215.85	157.85	58	89.22	110.78	74.4			30			
	30	213.58	158.58	55	94.73	105.27	78.2						
	35	204.89	169.89	35	96.9	103.1	85.5						
	40	206.72	176.72	30	102.69	97.31	89.4						
	45	202.01	182.01	20	103.06	96.94	98.7						
	50	195.73	185.73	10	105.94	94.06	105.5					65	
	55	189.83	189.83	0	116.3	83.7	104.8						

Product Type

Stroke S	Acting force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
30.2	19.6 (2.0)	39.2 (4.0)	59(6.0)	827(84.3)	980 (99.9)	12.7	With additional slide clearance LGFV	50	00
30.5			137(14.0)	843(85.9)		12.3			05
30.3			216(22.0)	855(87.1)		11.8			10
30.5			98(10.0)	835(85.2)		11.8			15
30.4			172(17.5)	848(86.4)		11.5			20
30.0			163(16.6)	843(86.0)	979 (99.9)	11.3			25
32.6				854(87.1)		11.1			30
35.4				865(88.2)		10.9			35
38.6				873(89.0)		10.9			40
42.3				884(90.1)		10.6			45
46.7				892(91.0)		10.6			50
52.1				900(91.8)		10.8			55

How to Order

Order

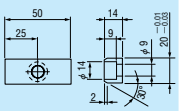
Catalog No.	W	—	θ
LGFV	50	—	40

Alterations

Catalog No.	W	—	θ	—	(N12・K…etc.)
LGFV	50	—	40	—	N12

Alteration

● Select alterations with codes

Alterations	Code	Spec.
	N12	Change dowel hole diameter ϕ13H7 ⇨ ϕ12H7
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 1≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=50 ⇨ W=65

LamCam by Lamina
For quotes email us at sales@lamina.com or visit http://www.daytonlamina.com/contact-lamina

CAM UNITS –GUIDE–

■Aerial cam unit

Page	Type	Mounting surface width mm	working angle	Stamping process			Additional slide clearance	Allowable working force kN (ton)	Return spring force N (kgf)	Shut height mm	Disassembled view page
				Pierce	Trim	Flange					
P.12 - 31	STANDARD AERIAL CAM UNITS FOR PIERCE LGFV (With additional slide clearance)	50	00-70	●			●	39.2 (4.0)	979-980 (99.9-100.0)	200	① P.7
		65							1190-1226 (121.3-125.0)	180-210	② P.7
		80						78.5 (8.0)	1454-1620 (148.2-165.2)	270	
		150						132.4 (13.5)	4611 (470.2)	270	
P.32 – 41	AERIAL CAM UNITS FOR HEAVY LOAD PIERCE LGFVS (With additional slide clearance)	80	00-70	●			●	109.8 (11.2)	3545-3559 (361.5-362.9)	270	② P.7
		150						185.3 (18.9)	10149-10176 (1034.9-1037.7)	270	
P.42 - 65	WIDE AERIAL CAM UNITS FOR PIERCE LGFVW (With additional slide clearance)	200	00-60	●			●	235.4 (24.0)	4903 (500.0)	350	③ P.8
		300						392.3 (40.0)	9806 (1000.0)	350	
		400						490.3 (50.0)	9806 (1000.0)	350	
		500						627.6 (64.0)	14710 (1500.0)	350	
		600						783.6 (79.9)	19613 (1999.9)	350	
P.66 - 71	COMPACT AERIAL CAM UNITS FOR PIERCE LGFVC (With additional slide clearance)	52	00-80	●			●	29.4 (3.0)	980-981 (99.9-100.0)	125	④ P.8
P.72 - 77	COMPACT AERIAL CAM UNITS FOR HEAVY LOAD PIERCE LGFVA (With additional slide clearance)	52	00-60	●			●	58.8 (6.0)	3324-3327 (338.9-339.2)	160	④ P.8
P.78 – 83	AERIAL CAM UNITS FOR HEAVY LOAD PIERCE LGFVH (With additional slide clearance)	65	00-75	●			●	137.3 (14.0)	5258-5989 (536.1-610.7)	230	④ P.8
P.84 – 89	COMPACT LONG STROKE AERIAL CAM UNITS FOR PIERCE LGFVL (With additional slide clearance)	52	00-50	●			●	29.4 (3.0)	902-921 (91.9-93.9)	135	④ P.8
P.90 – 99	AERIAL CAM UNITS FOR TRIM & FLANGE LGFTT (Without additional slide clearance)	65	00-70	●	●	●	×	39.2-58.8 (4.0-6.0)	891-1138 (90.9-116.0)	210	⑤ P.9
		100						88.3-98.1 (9.0-10.0)	2760-3091 (281.4-315.2)	280	
		200						196.1-235.4 (20.0-24.0)	5520-6182 (562.9-630.4)	280	

Page	Type	Mounting surface width mm	working angle	Stamping process			Additional slide clearance	Allowable working force kN (ton)	Return spring force N (kgf)	Shut height mm	Disassembled view page
				Pierce	Trim	Flange					
P.100 - 109	V SHAPE GUIDE AERIAL CAM UNITS FOR TRIM & FLANGE **LGFVT**	65	00-70	●	●	●	×	39.2 (4.0)	891-1138 (90.9-116.0)	210	⑤ P.9
		100						88.3 (9.0)	2576-2835 (262.7-289.1)	280	
		200						186.3 (19.0)	5152-5670 (525.4-578.2)	280	
P.110 - 139	RIGID AERIAL CAM UNITS **KACG**	50	00-65	●	●	●	●	58.8 (6.0)	1098-1167 (111.9-119.0)	180	① P.7
		65	00-60					58.8 (6.0)	810-835 (82.6-85.1)	175	② P.7
		80	00-65					98.1 (10.0)	1842-1914 (187.9-195.2)	270	① P.7
		150						294.2 (30.0)	7022 (716.1)	355	⑥ P.9
		200						294.2 (30.0)	7022 (716.1)	355	
		300						588.4 (60.0)	14045 (1432.2)	355	
P.140 - 163	NAAMS STANDARD AERIAL CAM UNITS **KACNR**	70	00-60	●	●	●	●	98.1 (10.0)	GAS SPRING 2350 (240) COIL SPRING 578-657 (59.0-67.0)	225	⑦ P.10
		80						166.7 (17.0)	GAS SPRING 2350 (240) COIL SPRING 994-1224 (101.3-124.8)	275	
		165						294.2 (30.0)	GAS SPRING 3430 (350) COIL SPRING 2694 (274.7)	300	③ P.8
		200						353.0 (36.0)	GAS SPRING 6125 (625) COIL SPRING 4494 (458.3)	300	
		300						451.1 (46.0)	GAS SPRING 10668 (1088) COIL SPRING 8015-9198 (817.3-937.9)	375	
		400						451.1 (46.0)	GAS SPRING 10668 (1088) COIL SPRING 8015-9198 (817.3-937.9)	375	

■Die mount cam unit

Page	Type	Mounting surface width	Working angle	Slide stroke mm	Stamping process: Pierce	Stamping process: Trim	Stamping process: Flange	Additional slide clearance	Allowable working force kN (ton)	Return spring force N (kgf)	Shut height mm	Disassembled view page
P.164 - 187	STANDARD DIE MOUNT CAM UNITS DRILLED DOWEL HOLES LGDC FINISHED DOWEL HOLES LGDCA	52	00	25-60	●	●	●	×	29.4 (3.0)	594-613 (60.6-62.5)	140	⑧ P.10
		65	00-20	40-70					39.2 (4.0)	743-974 (75.8-99.4)	160-170	
		100		40-80					58.8-78.5 (6.0-8.0)	1109-1306 (113.1-133.2)	200	
		150		40-70					88.3-98.1 (9.0-10.0)	1817-1869 (185.3-190.6)	220-230	
		200	00	40-60					117.7 (12.0)	2765-2803 (281.9-285.8)	240	
		250							147.1 (15.0)	3614-3657 (368.6-372.9)	270	
		300							176.5 (18.0)	3614-3657 (368.6-372.9)	270	
		400		60					205.9 (21.0)	9325 (950.9)	250	⑨ P.11
		500										
		600										
P.188 - 193	COMPACT DIE MOUNTED CAM UNITS LGDCC	52	00-20	55	●			×	39.2 (4.0)	607 (61.9)	215-255	⑩ P.11
		90	00-15						76.5 (7.8)	1213 (123.7)	220-225	

■Relationship of material thickness and bore diameter to pierce force.

Units: KN (tonf)

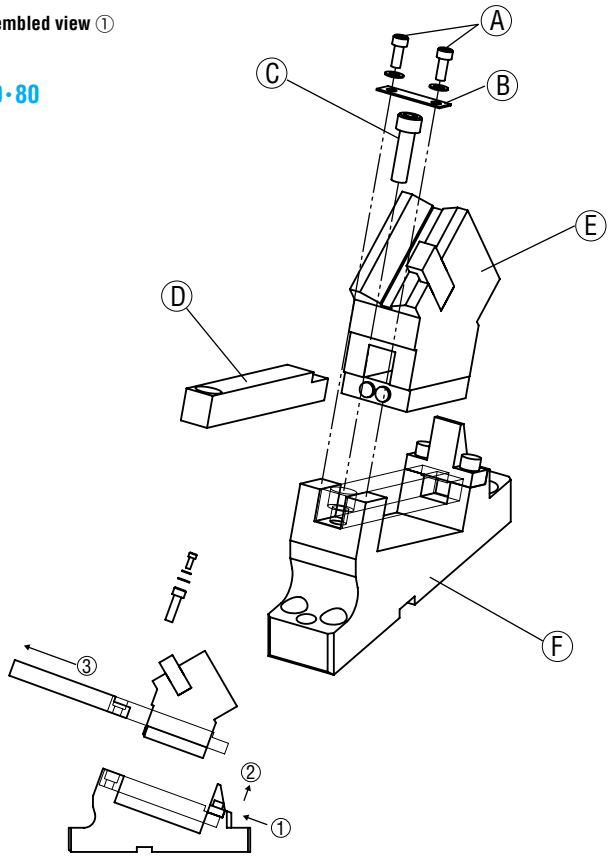
Punch diameter \ Material thickness	0.6 t	0.7 t	0.8 t	1.0 t	1.2 t	1.4 t	1.6 t	1.8 t	2.0 t	2.3 t
φ 3	2.22(0.23)	2.59(0.26)	2.96(0.30)	3.69(0.38)	4.43(0.45)	5.17(0.53)	5.91(0.60)	6.65(0.68)	7.39(0.75)	8.50(0.87)
φ 4	2.96(0.30)	3.45(0.35)	3.94(0.40)	4.93(0.50)	5.91(0.60)	6.90(0.70)	7.88(0.80)	8.87(0.90)	9.85(1.01)	11.33(1.16)
φ 5	3.69(0.38)	4.31(0.44)	4.93(0.50)	6.16(0.63)	7.39(0.75)	8.62(0.88)	9.85(1.01)	11.08(1.13)	12.32(1.26)	14.16(1.45)
φ 6	4.43(0.45)	5.17(0.53)	5.91(0.60)	7.39(0.75)	8.87(0.90)	10.34(1.06)	11.82(1.21)	13.30(1.36)	14.78(1.51)	16.99(1.73)
φ 8	5.91(0.60)	6.90(0.70)	7.88(0.80)	9.85(1.01)	11.82(1.21)	13.79(1.41)	15.76(1.61)	17.73(1.81)	19.70(2.01)	22.66(2.31)
φ 10	7.39(0.75)	8.62(0.88)	9.85(1.01)	12.32(1.26)	14.78(1.51)	17.24(1.76)	19.70(2.01)	22.17(2.26)	24.63(2.51)	28.32(2.89)
φ 13	9.61(0.98)	11.21(1.14)	12.81(1.31)	16.01(1.63)	19.21(1.96)	22.41(2.29)	25.62(2.61)	28.82(2.94)	32.02(3.27)	36.82(3.76)
φ 16	11.82(1.21)	13.79(1.41)	15.76(1.61)	19.70(2.01)	23.64(2.41)	27.59(2.81)	31.53(3.22)	35.47(3.62)	39.41(4.02)	45.32(4.62)
φ 20	14.78(1.51)	17.24(1.76)	19.70(2.01)	24.63(2.51)	29.56(3.02)	34.48(3.52)	39.41(4.02)	44.33(4.52)	49.26(5.03)	56.65(5.78)
φ 25	18.47(1.88)	21.55(2.20)	24.63(2.51)	30.79(3.14)	36.95(3.77)	43.10(4.40)	49.26(5.03)	55.42(5.65)	61.58(6.28)	70.81(7.23)
φ 32	23.64(2.41)	27.59(2.81)	31.53(3.22)	39.41(4.02)	47.29(4.83)	55.17(5.63)	63.05(6.43)	70.93(7.24)	78.82(8.04)	90.64(9.25)
φ 38	28.08(2.87)	32.76(3.34)	37.44(3.82)	46.80(4.78)	56.16(5.73)	65.52(6.69)	74.88(7.64)	84.23(8.60)	93.59(9.55)	107.63(10.98)

●Pierce force{KN(tonf)}＝Punch circumference(mm)×Material thickness(t)×Shear strength{392N/mm^2(40kgf/mm^2)}÷1000

CAM UNITS –DISASSEMBLY FEATURE–

■Disassembled view ①

LGFV50
KACG50・80



How to remove the guide bar

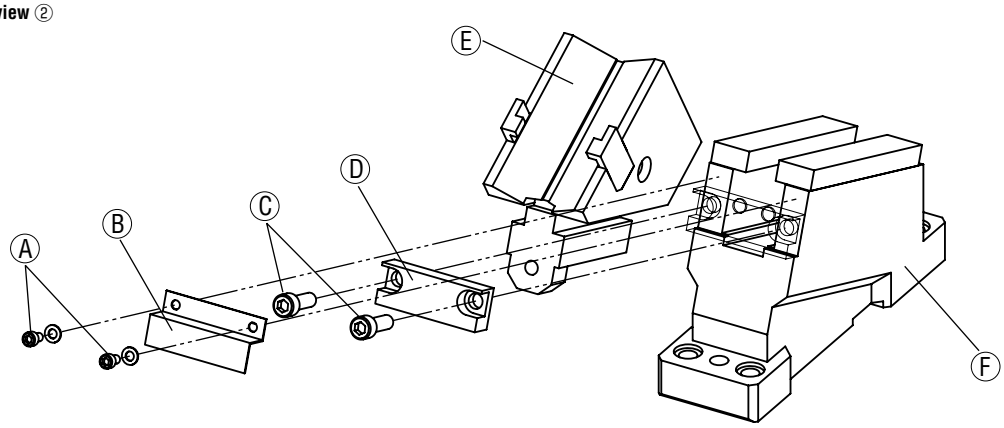
＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove the safety plate Ⓑ.
- Remove the bolt Ⓒ.
- Slide the guide bar Ⓓ backward to remove it from the cam base Ⓕ together with the cam slide Ⓔ.

＜Reassembly procedures＞
- Assemble Ⓓ to Ⓕ with Ⓓ and Ⓔ mated together.
- Tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■Disassembled view ②

LGFV65-150
LGFVS
KACG65



＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove the safety plate Ⓑ.
- Remove bolts Ⓒ, then remove the stop plate Ⓓ.
- Slide the cam slide Ⓔ backward to remove it from the cam base Ⓕ.

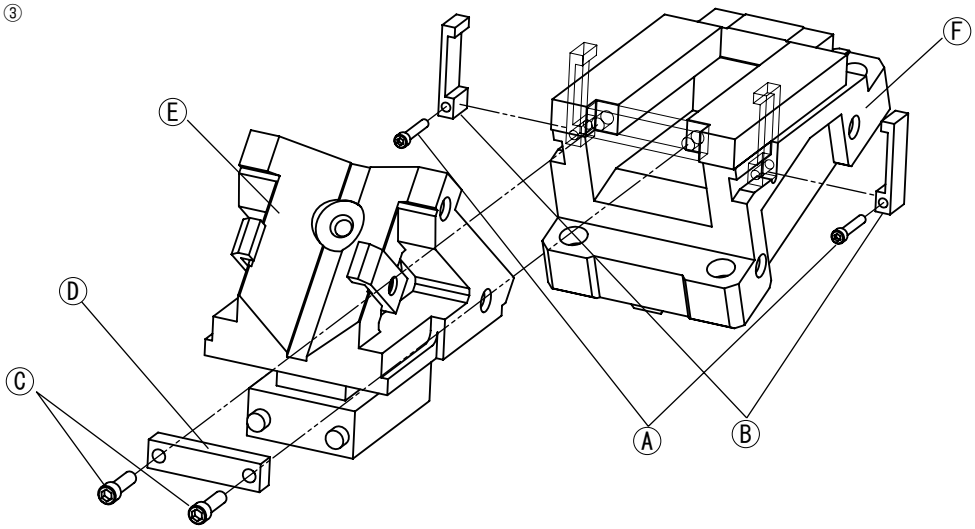
＜Reassembly procedures＞
- Assemble Ⓔ to Ⓕ from the back.
- Assemble Ⓓ and tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

CAM UNITS –DISASSEMBLY FEATURE–

■**Disassembled view ③**

LGFVW
KACNR165-400



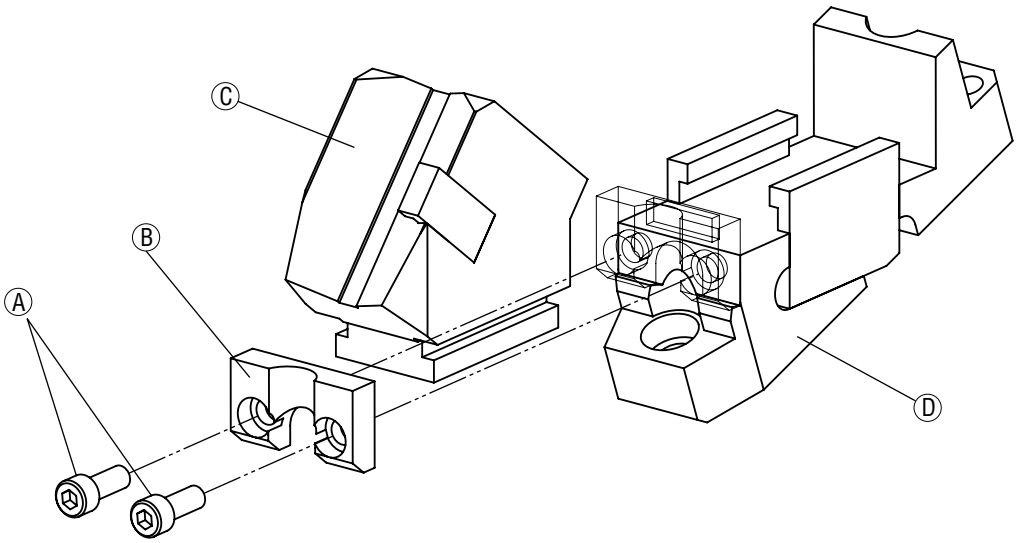
＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove safety plates Ⓑ.
- Remove bolts Ⓒ, then remove the stop plate Ⓓ.
- Slide the cam slide Ⓔ backward to remove it from the cam base Ⓕ.

＜Reassembly procedures＞
- Assemble Ⓔ to Ⓕ.
- Assemble Ⓓ and tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■**Disassembled view ④**

LGFVC
LGFVA
LGFVH
LGFVL



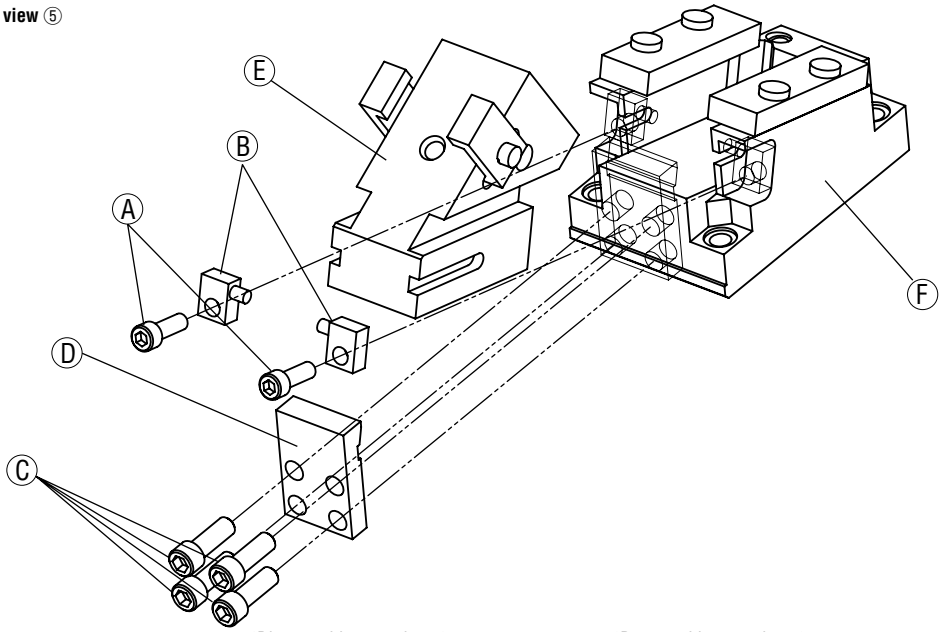
＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove the stopper Ⓑ.
- Slide the cam slide Ⓒ backward to remove it from the cam base Ⓓ.

＜Reassembly procedures＞
- Assemble Ⓒ to Ⓓ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■Disassembled view ⑤

LGFTT
LGFVT



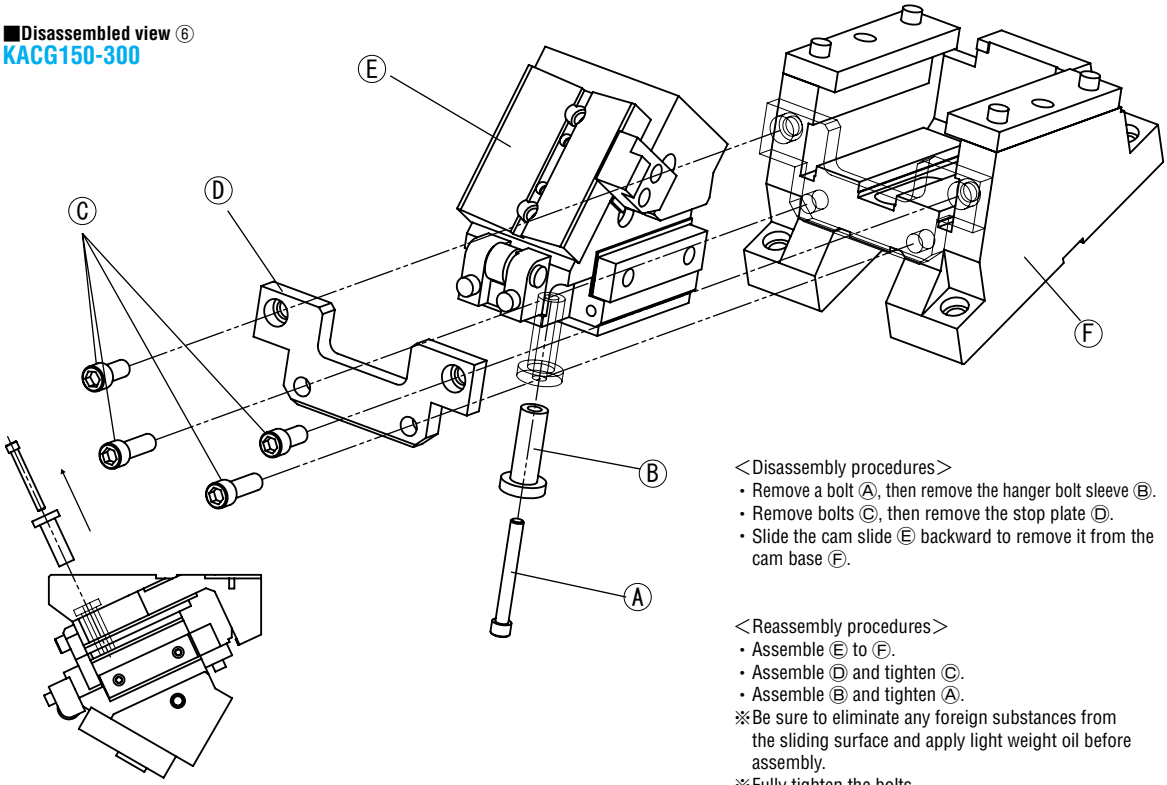
＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove safety plates Ⓑ.
- Remove bolts Ⓒ, then remove the stop plate Ⓓ.
- Slide the cam slide Ⓔ backward to remove it from the cam base Ⓕ.

＜Reassembly procedures＞
- Assemble Ⓔ to Ⓕ.
- Assemble Ⓓ and tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■Disassembled view ⑥

KACG150-300



How to remove the hanger bolt sleeve

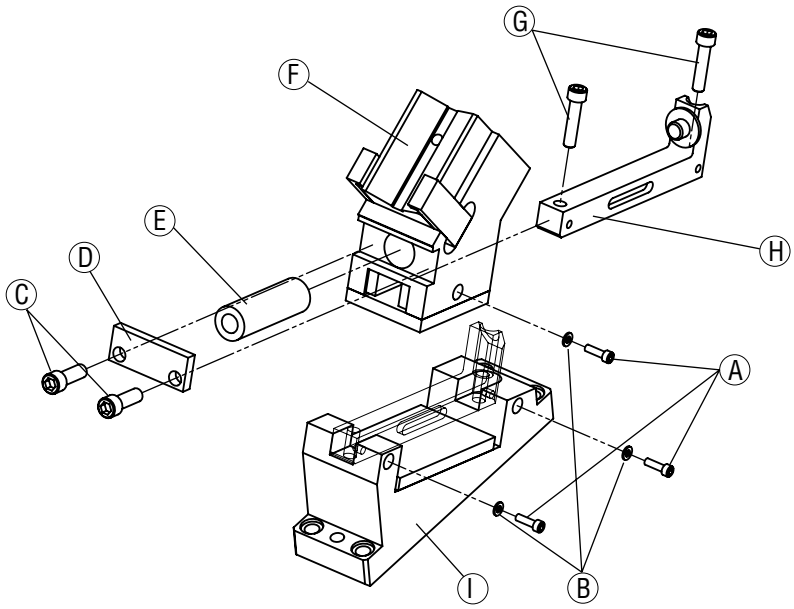
＜Disassembly procedures＞
- Remove a bolt Ⓐ, then remove the hanger bolt sleeve Ⓑ.
- Remove bolts Ⓒ, then remove the stop plate Ⓓ.
- Slide the cam slide Ⓔ backward to remove it from the cam base Ⓕ.

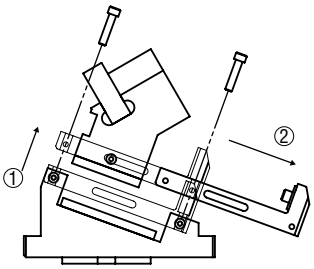
＜Reassembly procedures＞
- Assemble Ⓔ to Ⓕ.
- Assemble Ⓓ and tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■**Disassembled view** ⑦

KACNR70・80





How to remove the guide bar

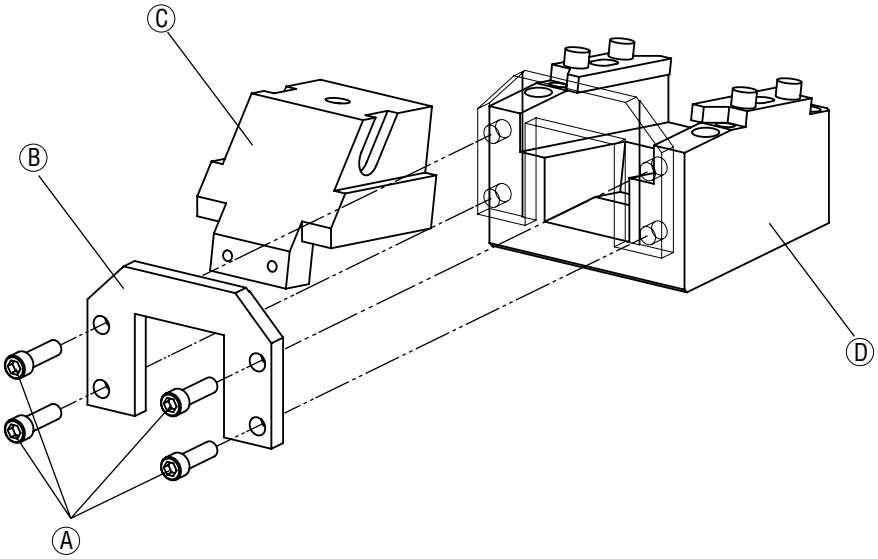
＜Disassembly procedures＞
- Remove bolts Ⓐ and spring washers Ⓑ.
- Remove bolts Ⓒ, then remove the spring retainer plate Ⓓ.
- Pull out the coil spring Ⓔ from the cam slide Ⓕ.
- Remove bolts Ⓖ and then remove Ⓕ from the cam base Ⓘ together with the guide bar Ⓗ.

＜Reassembly procedures＞
- Assemble Ⓕ to Ⓘ with Ⓕ and Ⓗ assembled.
- Tighten Ⓖ.
- Assemble Ⓔ to Ⓕ.
- Assemble Ⓓ and tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■**Disassembled view** ⑧

LGDC52-300
LGDCA52-300



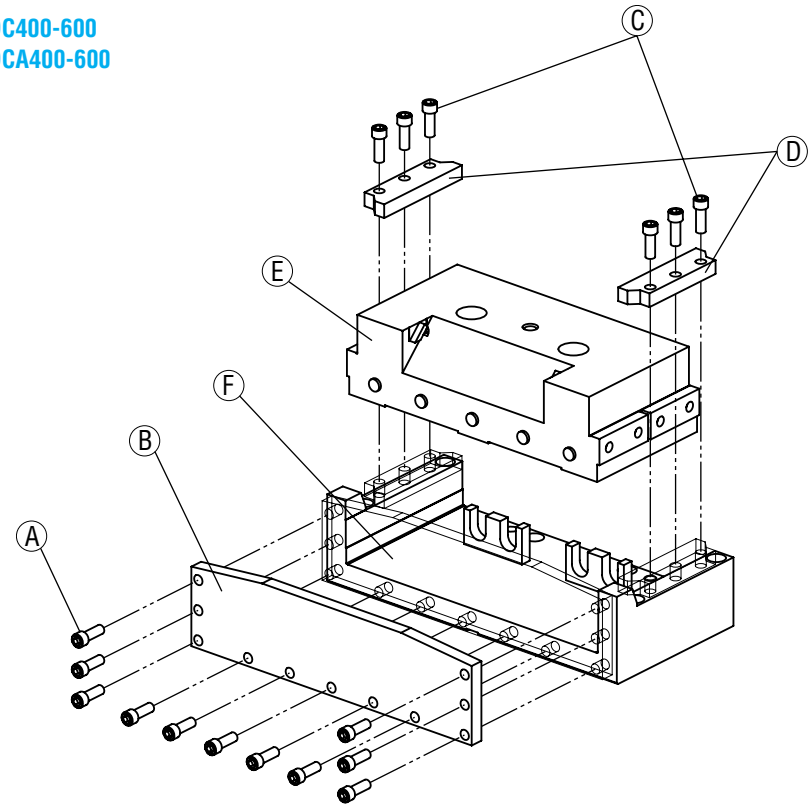
＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove the stop plate (backup plate) Ⓑ.
- Slide the cam slide Ⓒ backward to remove it from the cam base Ⓓ.

＜Reassembly procedures＞
- Assemble Ⓒ to Ⓓ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■Disassembled view ⑨

LGDC400-600
LGDCA400-600



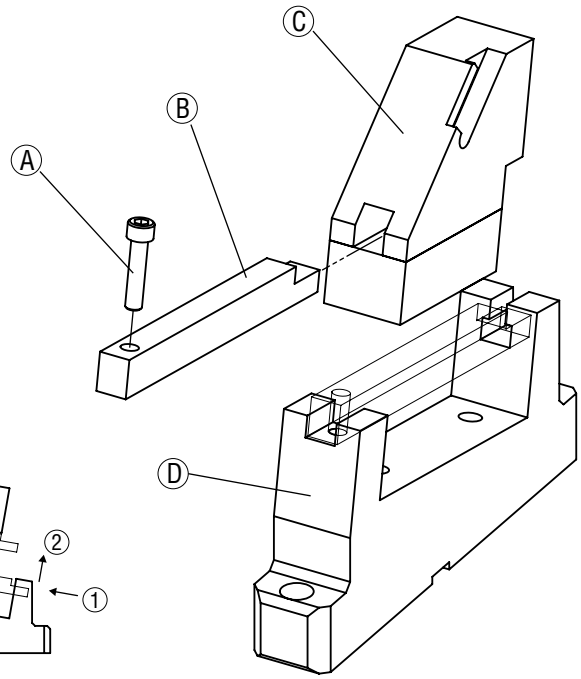
＜Disassembly procedures＞
- Remove bolts Ⓐ, then remove the backup plate Ⓑ.
- Remove bolts Ⓒ, then remove upper plates Ⓓ.
- Slide the slide Ⓔ upward to remove it from the cam base Ⓕ.

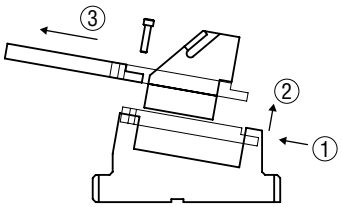
＜Reassembly procedures＞
- Assemble Ⓔ to Ⓕ.
- Assemble Ⓓ and tighten Ⓒ.
- Assemble Ⓑ and tighten Ⓐ.

※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

■Disassembled view ⑩

LGDCC





How to remove the guide bar

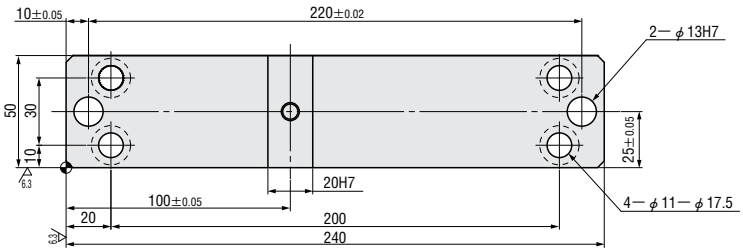
＜Disassembly procedures＞
- Remove the bolt Ⓐ.
- Slide the guide bar Ⓑ backward to remove it from the cam base Ⓓ together with the cam slide Ⓒ.

＜Reassembly procedures＞
- Assemble Ⓑ to Ⓓ with Ⓑ and Ⓒ assembled.
- Tighten Ⓐ.

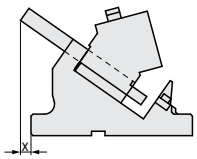
※Be sure to eliminate any foreign substances from the sliding surface and apply light weight oil before assembly.
※Fully tighten the bolts.

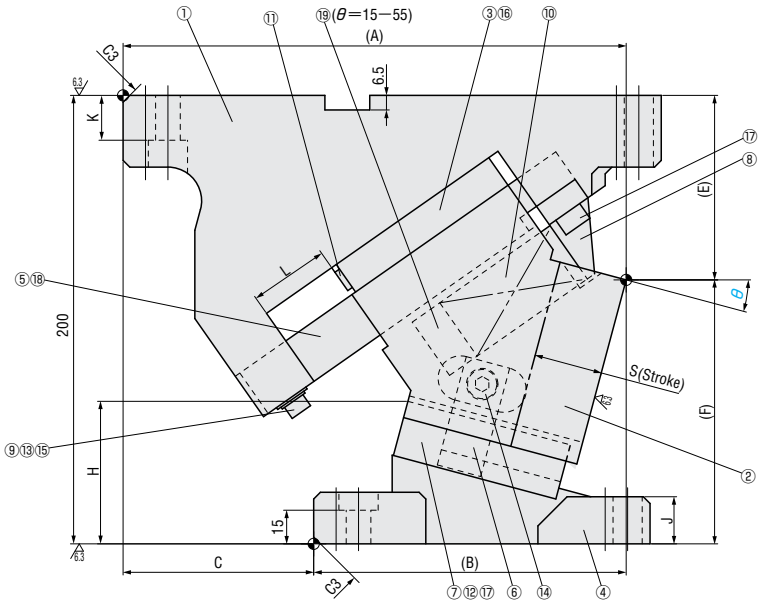
— With additional slide clearance —

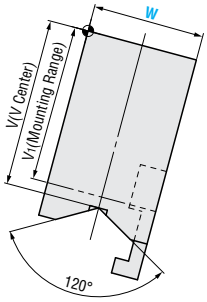
LGFV50 (θ=00-55)

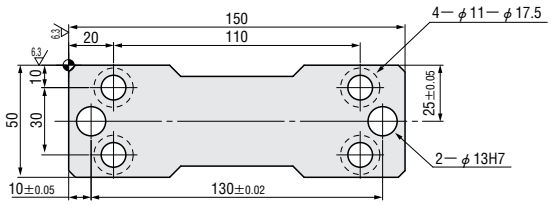


■Rear removal space









■Components table ☞ P.30

W	θ	A	B	C	E	F	H	J	K	L	V	V_1	x
50	00	225	118	107	77.5	122.5	45	23	20	47	75	75	0
	05	226.91	126.91	100	78.33	121.67	51.4			43			
	10	223.72	133.72	90	79.93	120.07	57.6			39			
	15	224.36	139.36	85	82.29	117.71	63.6	21		36			
	20	220.76	150.76	70	85.39	114.61	69.1			33			
	25	215.85	157.85	58	89.22	110.78	74.4			30			
	30	213.58	158.58	55	94.73	105.27	78.2						
	35	204.89	169.89	35	96.9	103.1	85.5						
	40	206.72	176.72	30	102.69	97.31	89.4						
	45	202.01	182.01	20	103.06	96.94	98.7						
	50	195.73	185.73	10	105.94	94.06	105.5						
	55	189.83	189.83	0	116.3	83.7	104.8					65	

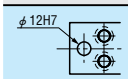
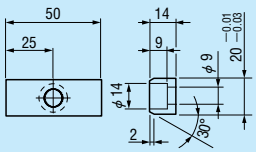
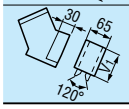
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
30.2	19.6 (2.0)	39.2 (4.0)	59(6.0)	827(84.3)	980 (99.9)	12.7	With additional slide clearance LGFV	50	00
30.5			137(14.0)	843(85.9)		12.3			05
30.3			216(22.0)	855(87.1)		11.8			10
30.5			98(10.0)	835(85.2)		11.8			15
30.4			172(17.5)	848(86.4)		11.5			20
30.0			163(16.6)	843(86.0)	979 (99.9)	11.3			25
32.6				854(87.1)		11.1			30
35.4				865(88.2)		10.9			35
38.6				873(89.0)		10.9			40
42.3				884(90.1)		10.6			45
46.7				892(91.0)		10.6			50
52.1				900(91.8)		10.8			55

Order

Catalog No.	W	—	θ
LGFV	50	—	40

Alterations

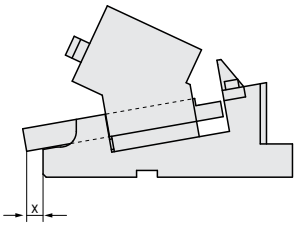
Catalog No.	W	—	θ	—	(N12・K…etc.)
LGFV	50	—	40	—	N12

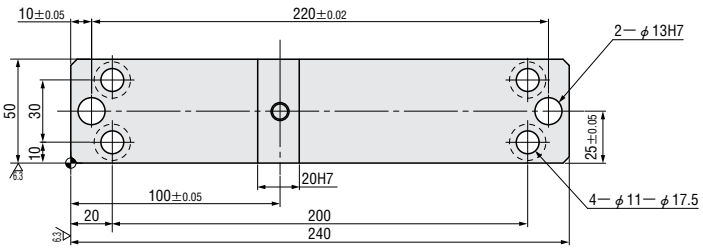
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 1≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=50 ⇨ W=65

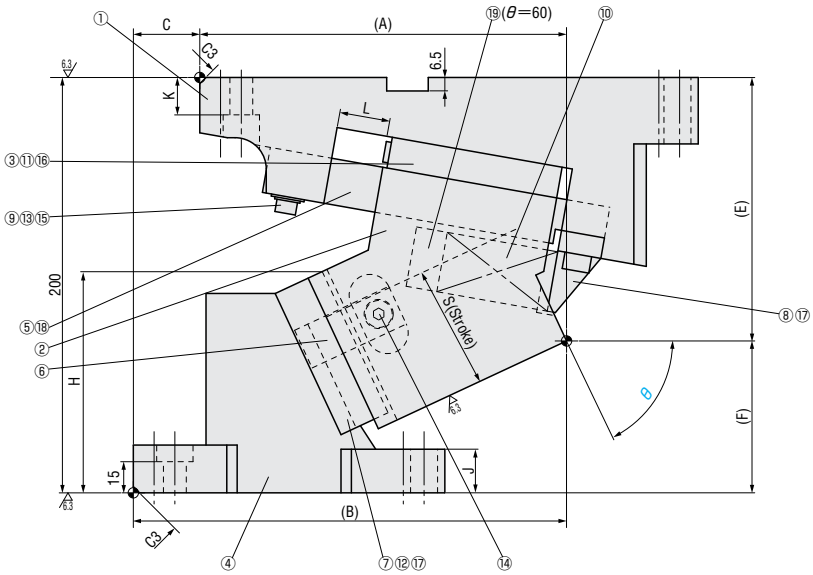
— With additional slide clearance —

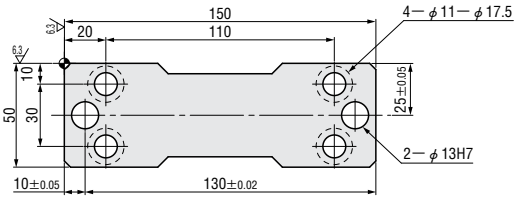
LGFV50 (θ=60-70)

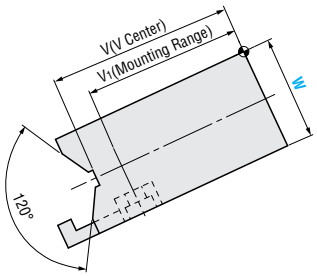
■Rear removal space











■ Components table ☞ P.30

W	θ	A	B	C	E	F	H	J	K	L	V	V_1	x
50	60	179.27	194.27	15	125.08	74.92	105.5	21	18	30	75	65	3
	65	176.6	208.6	32	126.87	73.13	106.5			25	90	75	
	70	177	215	38	135.83	64.17	107.0			20	92		

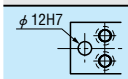
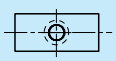
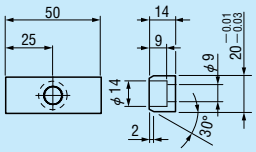
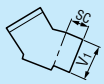
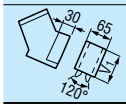
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
59.1	19.6 (2.0)	39.2 (4.0)	163 (16.6)	911 (92.9)	979 (99.9)	11.2	—With additional slide clearance— LGFV	50	60
58.3			299 (30.5)	922 (94.0)		11.6			65
57.6			226 (23.1)	916 (93.4)	980 (100.0)	12.0			70

Order

Catalog No.	W	—	θ
LGFV	50	—	65

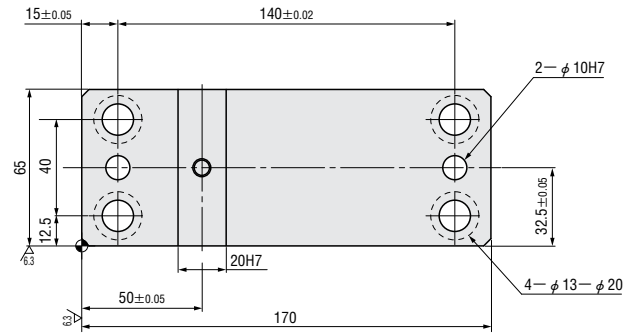
Alterations

Catalog No.	W	—	θ	—	(N12・K…etc.)
LGFV	50	—	65	—	K

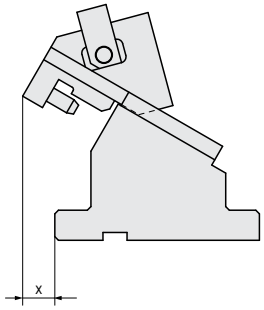
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ 13H7 ⇨ φ 12H7
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 1≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=50 ⇨ W=65

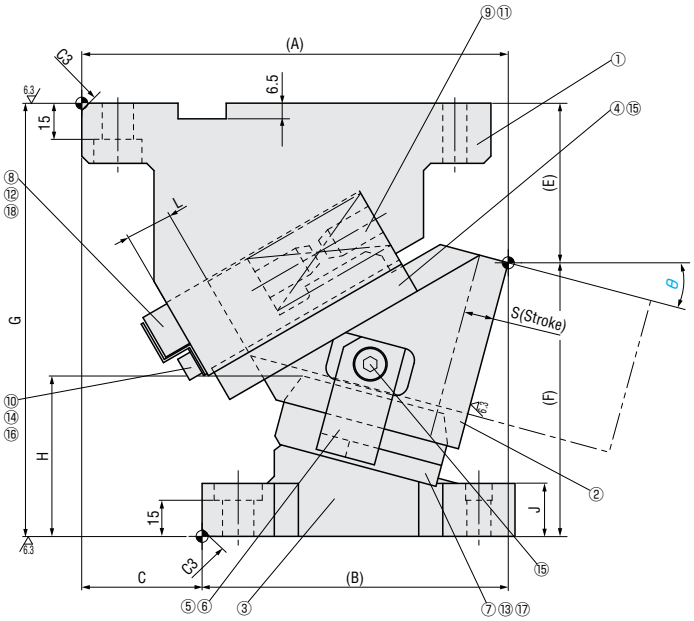
— With additional slide clearance —

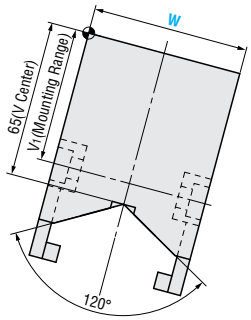
LGFV65 (θ=00-45)

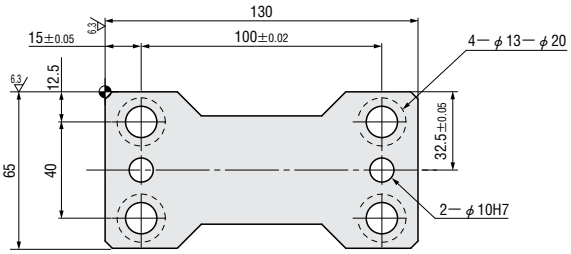


■Rear removal space









■Components table ☞ P.30

W	θ	A	B	C	E	F	G	H	J	L	V_1	x
65	00	170	110	60	53	127	180	59.5	33	21.2	65	7
	05	171.41	116.41	55	60.27	119.73		59.0	25	19.6		13
	10	177.16	122.16		63.06	116.94		63.5		18.3		20
	15	177.2	127.2	50	66.33	113.67		67.9	22	17.3		25
	20	176.51	136.51	40	70.01	109.99		72.2		17.1		30
	25	172.94	137.94	35	75.64	104.36		74.9				
	30	177.78	147.78	30	78.32	101.68		80.7		16.6		31
	35	173.29	153.29	20	83.25	96.75		84.5				
	40	170.78	160.78	10	82.44	97.56		96.0		16.5		35
	45	165.5	163	2.5	86.51	93.49		100.9				

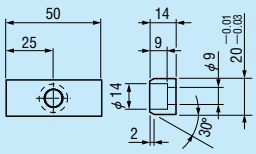
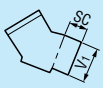
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
15.0	19.6 (2.0)	39.2 (4.0)	289 (29.5)	888(90.6)	1190 (121.3)	9.5	—With additional slide clearance— LGFV	65	00
15.1			357 (36.4)	914(93.2)		9.3			05
15.2			350 (35.7)	939(95.7)	1226 (125.0)	9.0			10
15.5			398 (40.5)	958(97.7)		8.8			15
16.5			407 (41.5)	977(99.6)		8.6			20
17.1				987(100.6)		8.5			25
18.5			431 (44.0)	1011(103.1)		8.3			30
19.6				1025(104.5)		8.3			35
21.5			436 (44.4)	1044(106.5)		8.1			40
23.3				1059(107.9)		8.1			45

Order

Catalog No.	W	—	θ
LGFV	65	—	35

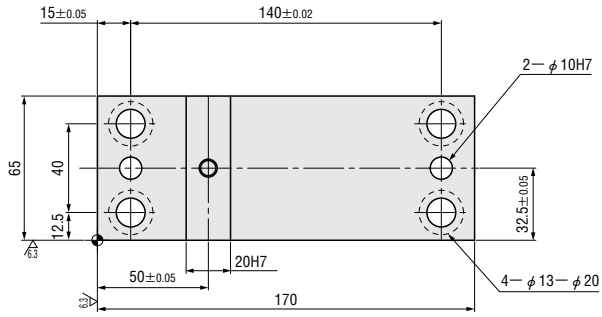
Alterations

Catalog No.	W	—	θ	—	(K・SC)
LGFV	65	—	20	—	SC30

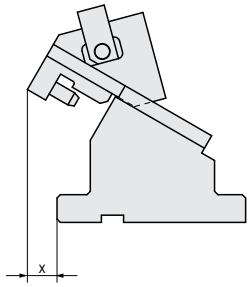
Alterations	Code	Spec.
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 1≦SC≦60 1mm increment

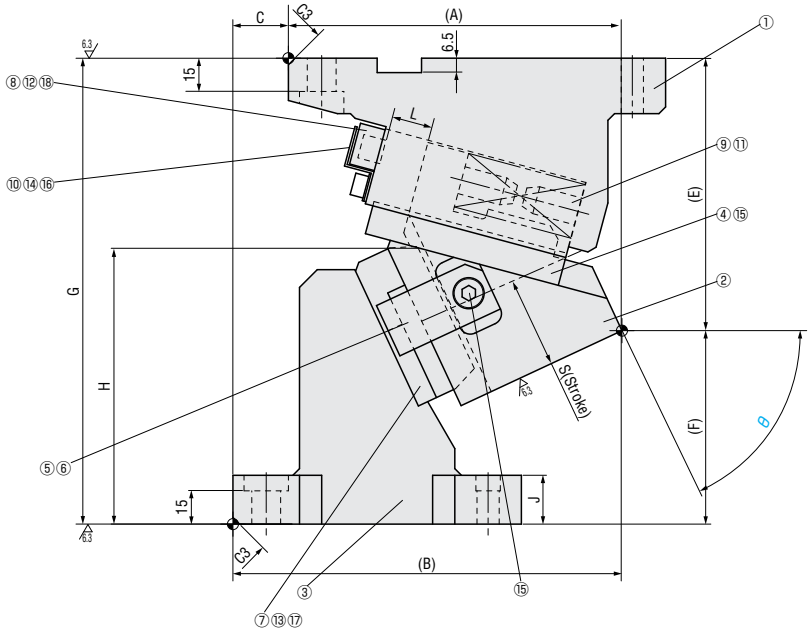
— With additional slide clearance —

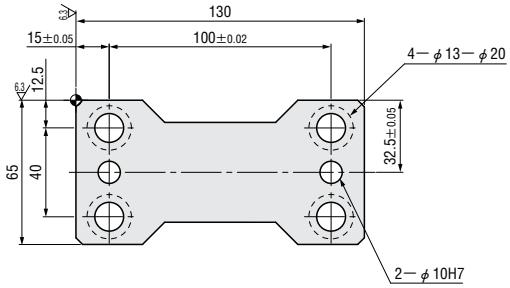
LGFV65 (θ=50-70)

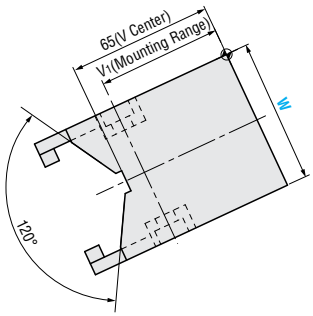


■Rear removal space









■Components table ☞ P.30

W	θ	A	B	C	E	F	G	H	J	L	V_1	x
65	50	165.41	170.41	5	96.79	93.21	190	111.1	22	17.1	65	37
	55	159.51	169.51	10	99.89	90.11		115.3				42
	60	156.68	176.68	20	120.78	89.22	210	129.1		18.1		46
	65	150.33	175.33	25	122.8	87.2		129.4				52
	70	146.45	178.45	32	131.68	78.32		128.5			63	55

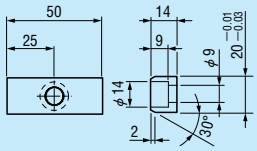
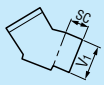
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
26.5	19.6 (2.0)	39.2 (4.0)	407 (41.5)	1073(109.4)	1226 (125.0)	8.4	—With additional slide clearance— LGFV	65	50
29.7				1087(110.9)		8.4			55
35.0			359 (36.6)	1102(112.3)		9.3			60
41.4				1121(114.3)		9.3			65
51.1				1140(116.2)		9.5			70

Order

Catalog No.	W	—	θ
LGFV	65	—	60

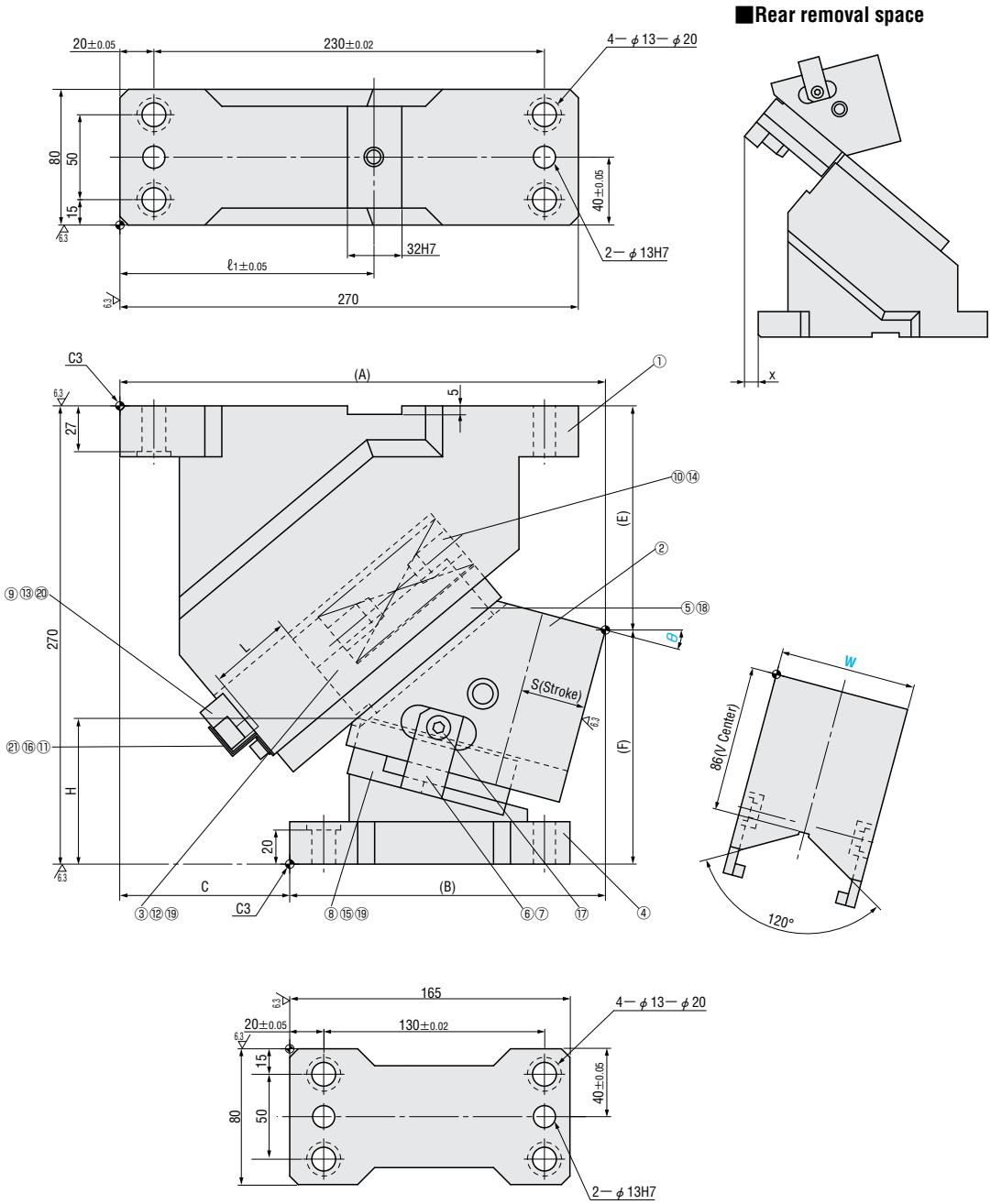
Alterations

Catalog No.	W	—	θ	—	(K・SC)
LGFV	65	—	60	—	K

Alterations	Code	Spec.
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 1≦SC≦60 1mm increment

— With additional slide clearance —

LGFV80 (θ=00-60)



■Components table ☞ P.30

W	θ	A	B	C	E	F	H	L	ℓ1	x
80	00	260	160	100	99	171	83	50	130	12
	05	272.93	172.93		109.39	160.61	83.8		150	17
	10	279.92	179.92		120.43	149.57	84.6			
	15	285.93	185.93		132.04	137.96	85.3			
	20	285.9	195.9	90	129.12	140.88	100.9		170	27
	25	289.8	199.8		141.6	128.4	101.5			
	30	282.59	207.59	75	134.36	135.64	121.9			36
	35	284.27	209.27		147.32	122.68	122.3			
	40	274.8	214.8	60	140.38	129.62	142.6			45
	45	274.2	214.2		153.44	116.56	142.7			
	50	262.46	227.46	35	151.39	118.61	157.8			57
	55	259.6	224.6		164.14	105.86				56
	60	240.64	240.64	0	176.59	93.41	157.7			75

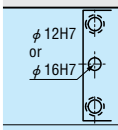
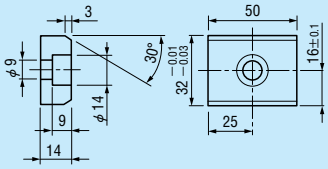
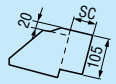
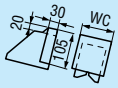
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
32.1	39.2 (4.0)	78.5 (8.0)	270 (27.5)	1409(143.7)	1620 (165.2)	25.9	—With additional slide clearance— LGFV	80	00
38.4				1445(147.3)		26.3			05
38.9				1447(147.6)		26.6			10
39.7				1450(147.8)		25.1			15
46.1				1474(150.3)		25.3			20
47.8				1480(150.9)		25.3			25
54.3				1496(152.5)		23.2			30
57.4				1501(153.1)		23.4			35
64.3				1515(154.5)		22.4			40
69.6				1523(155.3)		22.4			45
77.8				1534(156.4)		21.6			50
87.2				1542(157.2)		21.7			55
98.5				1553(158.3)		23.2			60

Order

Catalog No.	W	—	θ
LGFV	80	—	25

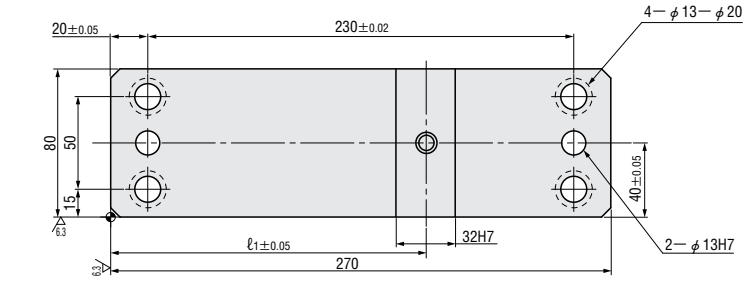
Alterations

Catalog No.	W	—	θ	—	(N12・N16…etc.)
LGFV	80	—	15	—	N12

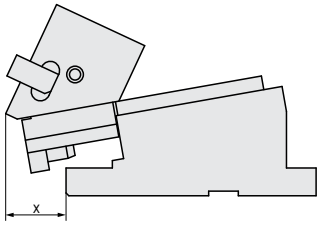
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 0≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=80 ⇨ W=100 or 120 Only 100 or 120 can be specified

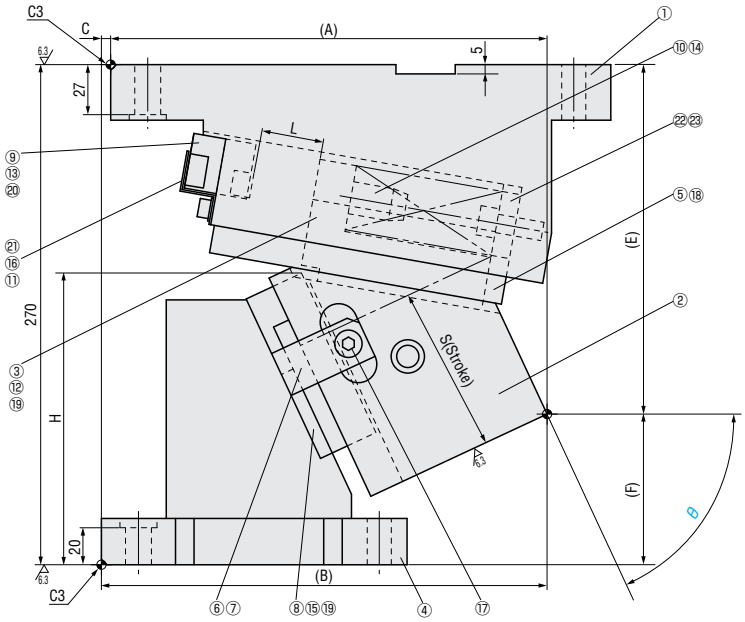
— With additional slide clearance —

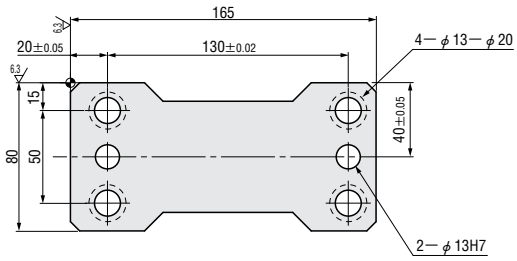
LGFV80 (θ =65-70)

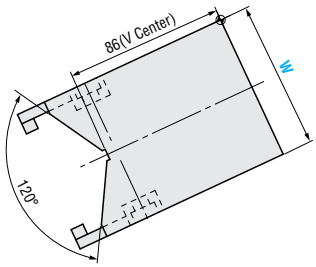


■Rear removal space









■Components table ☞ P.30

W	θ	A	B	C	E	F	H	L	ℓ1	x
80	65	235.61	240.61	5	188.65	81.35	157.4	35	170	74
	70	227.83	237.83	10	195.53	74.47	157.1	30		75

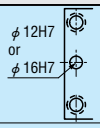
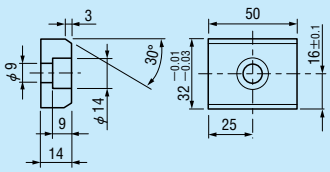
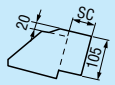
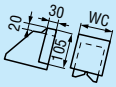
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
81.6	39.2 (4.0)	78.5 (8.0)	323 (32.9)	1386 (141.3)	1454 (148.2)	23.7	—With additional slide clearance— LGFV	80	65
86.4			404 (41.2)	1547 (157.8)	1616 (164.8)	23.9			70

Order

Catalog No.	W	—	θ
LGFV	80	—	70

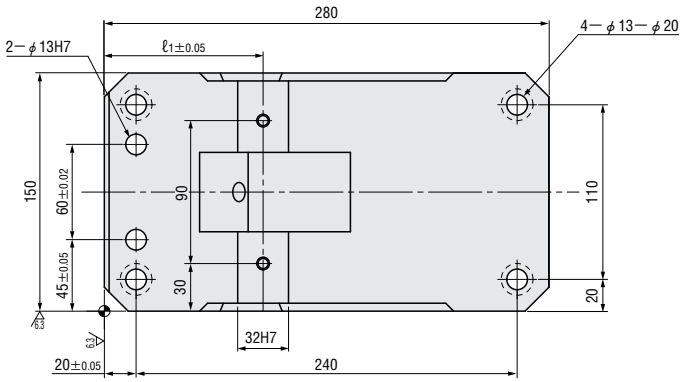
Alterations

Catalog No.	W	—	θ	—	(N12・N16…etc.)
LGFV	80	—	65	—	WC100

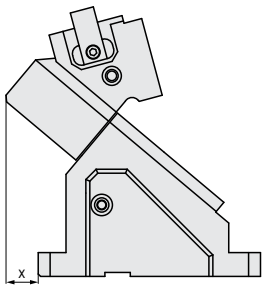
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	K	Add locating key (With 1 hexagon socket head cap screws M8×15) 
	SC	Move forward mounting surface 0≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=80 ⇨ W=100 or 120 Only 100 or 120 can be specified.

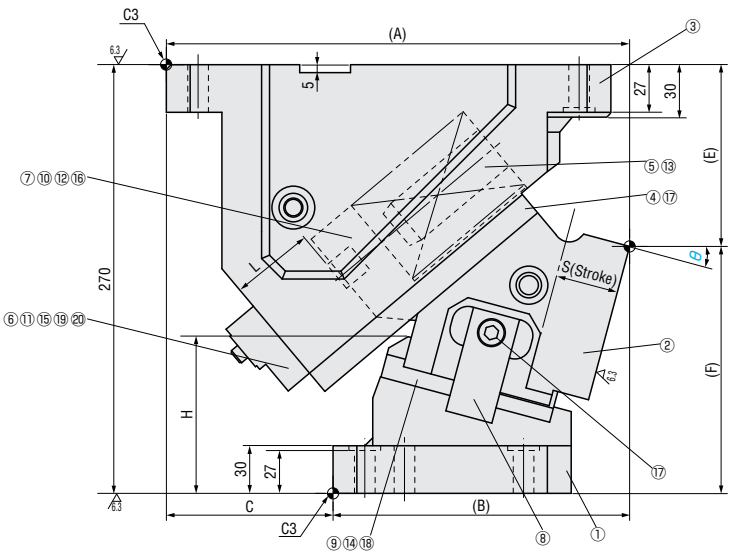
— Without additional slide clearance —

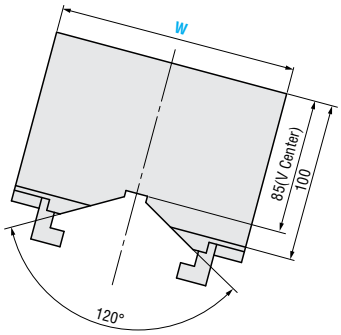
LGFV150 (θ =00-65)

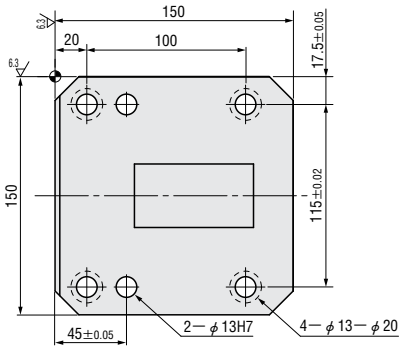


■Rear removal space









■Components table ☞ P.30

W	θ	A	B	C	E	F	H	L	ℓ1	x
150	00	280	160	120	85	185	94.0	50	100	20
	05	288.26	173.26	115	95.84	174.16				
	10	285.54	180.54	105	102.36	167.64	98.9			41
	15	291.79	186.79		114.47	155.53	98.7			
	20	286.97	196.97	90	122.07	147.93	103.5		135	57
	25	291.02	201.02		135.08	134.92	103.2			
	30	283.92	213.92	70	138.4	131.6	112.8			69
	35	285.66	215.66		151.91	118.09	112.4			
	40	276.20	231.20	45	155.53	114.47	121.9		170	75
	45	275.56	230.56		169.14	100.86	121.4			
	50	263.74	238.74	25	167.65	102.35	137.0			
	55	260.74	235.74		180.94	89.06	137.6			77
	60	246.6	246.6	0	193.92	76.08	138.2			100
	65	241.35	241.35		206.49	63.51	138.6	40		104

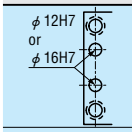
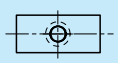
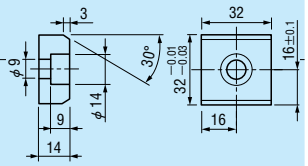
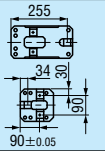
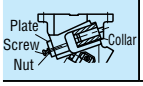
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
32.1	88.3 (9.0)	132.4 (13.5)	636 (64.9)	3991(407.0)	4611 (470.2)	45.4	—Without additional slide clearance— LGFV	150	00
32.3				3999(407.8)		45.9			05
38.9				4102(418.3)		44.4			10
39.7				4110(419.1)		44.9			15
46.1				4182(426.4)		43.2			20
47.8				4198(428.0)		43.7			25
54.3				4245(432.9)		42.2			30
57.4				4261(434.5)		42.7			35
64.3				4301(438.6)		41.0			40
69.6				4325(441.0)		41.4			45
77.8				4357(444.2)		40.5			50
87.2				4380(446.7)		40.9			55
98.5				4412(449.9)		41.5			60
93.2			1431 (145.9)	4444(453.2)		42.2			65

Order

Catalog No.	W	—	θ
LGFV	150	—	25

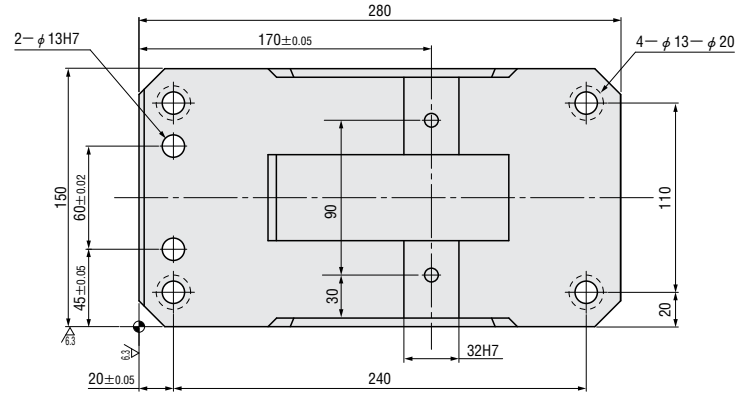
Alterations

Catalog No.	W	—	θ	—	(N12・N16…etc.)
LGFV	150	—	15	—	N12

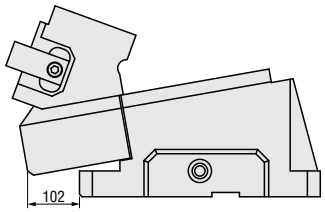
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	K	Add 2 locating keys (With 2 hexagon socket head cap screws M8×15) 
	TK	T-keywaying Add 6 locating keys (With 6 hexagon socket head cap screws M8×15)
	S	With collars, screws and nuts to fix bottom dead center.

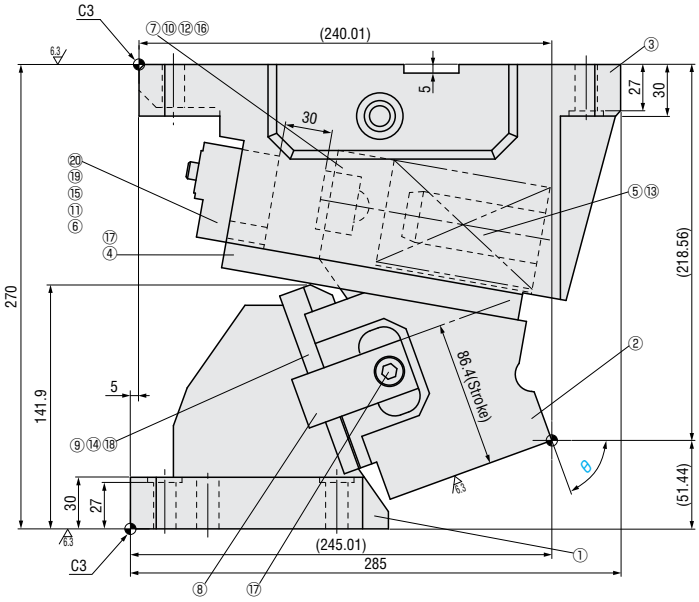
— Without additional slide clearance —

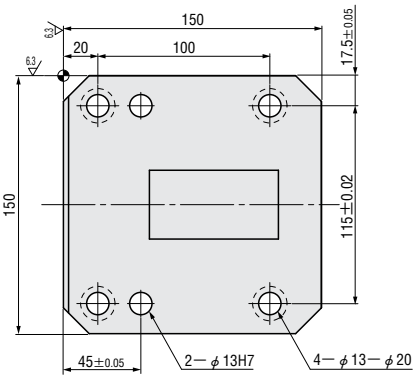
LGFV150-70

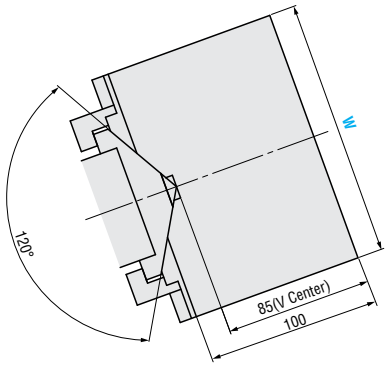


■Rear removal space









■Components table ☞ P.30

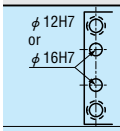
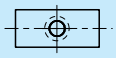
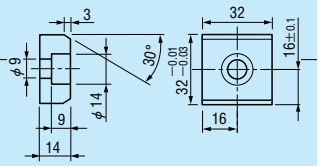
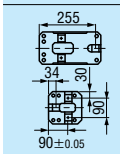
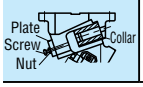
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
86.4	88.3 (9.0)	132.4 (13.5)	2226 (227.0)	4476 (456.4)	4611 (470.2)	43.5	—Without additional slide clearance— LGFV	150	70

Order

Catalog No.	W	—	θ
LGFV	150	—	70

Alterations

Catalog No.	W	—	θ	—	(N12・N16…etc.)
LGFV	150	—	70	—	TK

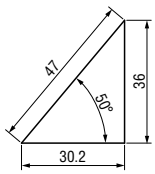
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	K	Add 2 locating keys (With 2 hexagon socket head cap screws M8×15) 
	TK	T-keywaying Add 6 locating keys (With 6 hexagon socket head cap screws M8×15)
	S	With collars, screws and nuts to fix bottom dead center.

STANDARD AERIAL CAM UNITS FOR PIERCE

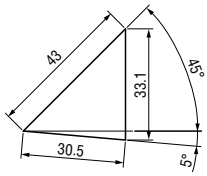
—LGFV— CAM DIAGRAM

■LGFV

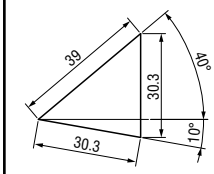
50-00



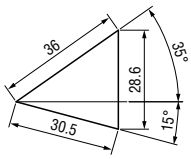
50-05



50-10



50-15



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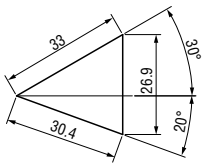

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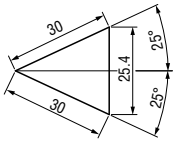
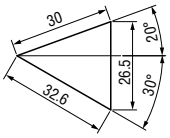


50-30



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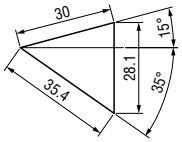
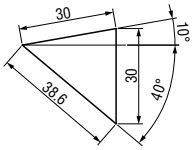


50-40



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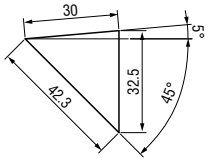

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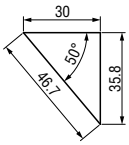

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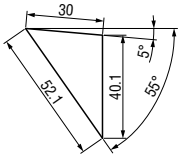

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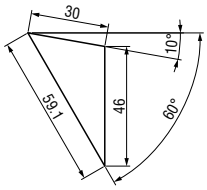

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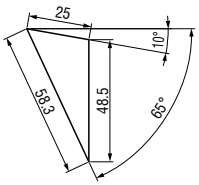

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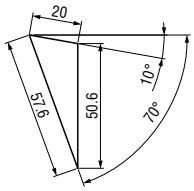

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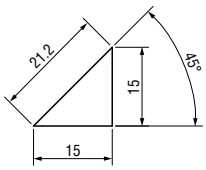

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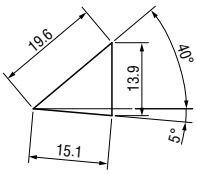

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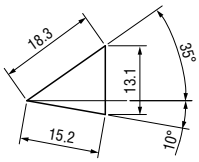

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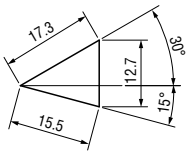

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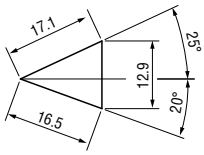

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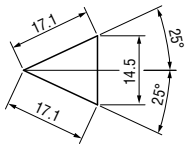

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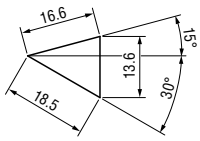

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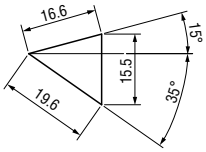

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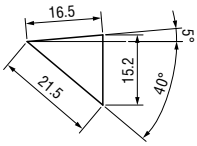

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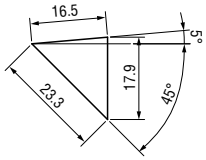

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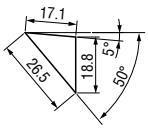

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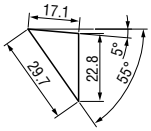

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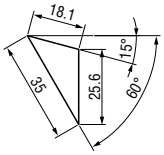

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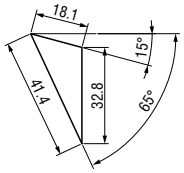

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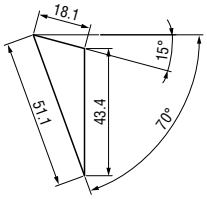

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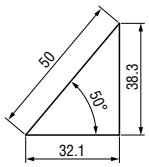

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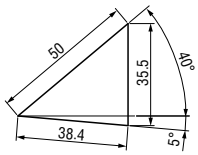

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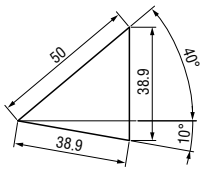

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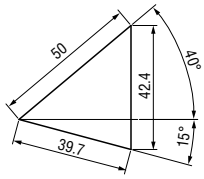

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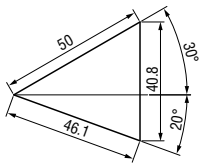

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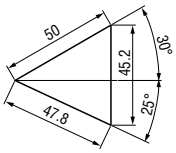

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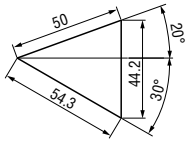

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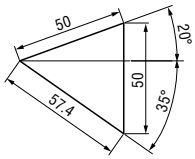

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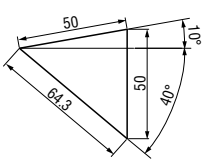

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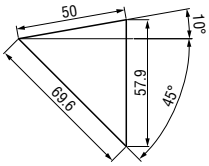

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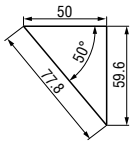

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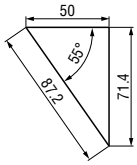

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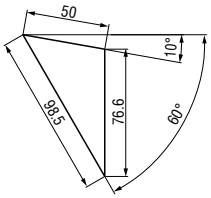

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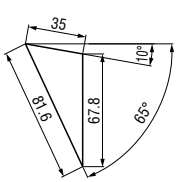

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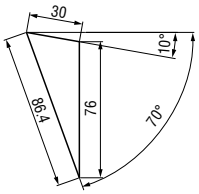

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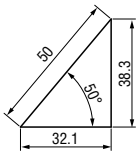

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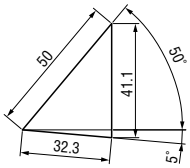

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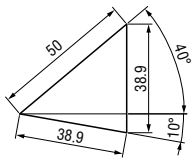

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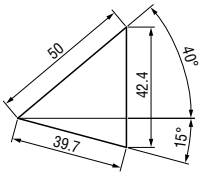

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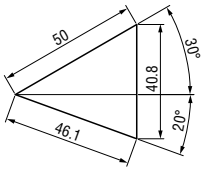

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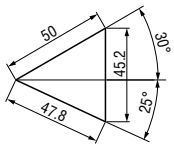

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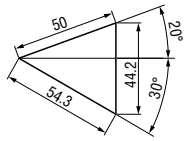

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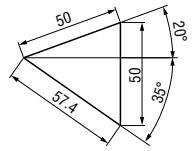

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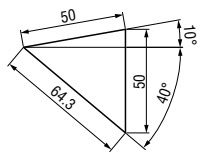

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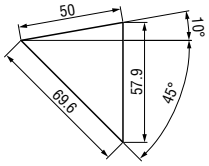

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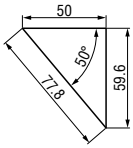

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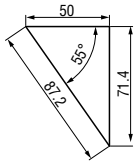

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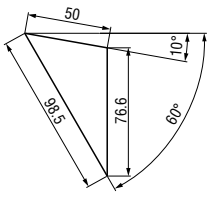

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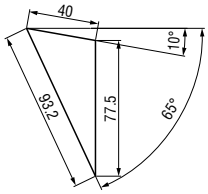
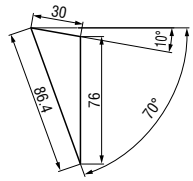


150-70



STANDARD AERIAL CAM UNITS FOR PIERCE

—LGFV— COMPONENTS TABLE

■LGFV50(θ=00-10)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD540	1
②	Cam Slide	FCD540	1
③	Cam Lower Plate	S45C with Special Sintered alloy	1
④	Cam Driver	FC250	1
⑤	Guide Bar	Bronze with Graphite	1
⑥	Positive Return Strap	S45C	1
⑦	V-Block	Bronze with Graphite	1
⑧	Spring Stopper	SS400	1
⑨	Safety Plate	SS400	1
⑩	Coil Spring	φ27×125	1
⑪	Bumper	Urethane	2
⑫	Dowel Pin	φ8×30	4
⑬	Disc Spring	For M6	2
⑭	Cap Screw	M8×15	1
⑮	Cap Screw	M6×10	2
⑯	Cap Screw	M8×20	4
⑰	Cap Screw	M8×25	4
⑱	Cap Screw	M10×35	1

■LGFV50(θ=15-60)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD540	1
②	Cam Slide	FCD540	1
③	Cam Lower Plate	S45C with Special Sintered alloy	1
④	Cam Driver	FC250	1
⑤	Guide Bar	Bronze with Graphite	1
⑥	Positive Return Strap	S45C	1
⑦	V-Block	Bronze with Graphite	1
⑧	Spring Stopper	SS400	1
⑨	Safety Plate	SS400	1
⑩	Coil Spring	φ27×100 (θ=15-20) φ27×90 (θ=25-60)	1
⑪	Bumper	Urethane	2
⑫	Dowel Pin	φ8×30	4
⑬	Disc Spring	For M6	2
⑭	Cap Screw	M8×15	1
⑮	Cap Screw	M6×10	2
⑯	Cap Screw	M8×20	4
⑰	Cap Screw	M8×25	4
⑱	Cap Screw	M10×35	1
⑲	Spacer	SS400	1

■LGFV50(θ=65-70)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD540	1
②	Cam Slide	FCD540	1
③	Cam Lower Plate	S45C with Special Sintered alloy	1
④	Cam Driver	FC250	1
⑤	Guide Bar	Bronze with Graphite	1
⑥	Positive Return Strap	S45C	1
⑦	V-Block	Bronze with Graphite	1
⑧	Spring Stopper	SS400	1
⑨	Safety Plate	SS400	1
⑩	Coil Spring	φ27×90 (θ=65) φ27×65 (θ=70)	1
⑪	Bumper	Urethane	2
⑫	Dowel Pin	φ8×30	4
⑬	Disc Spring	For M6	2
⑭	Cap Screw	M8×15	1
⑮	Cap Screw	M6×10	2
⑯	Cap Screw	M8×20	4
⑰	Cap Screw	M8×25	4
⑱	Cap Screw	M10×35	1

■LGFV65

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD450	1
②	Cam Slide	FC250	1
③	Cam Driver	FC250	1
④	Wear Plate	Bronze with Graphite	2
⑤	Positive Return Strap A	S45C	1
⑥	Positive Return Strap B	S45C	1
⑦	V-Block	Bronze with Graphite	1
⑧	Stop Plate	SS400	1
⑨	Spring Guide Pin	SCM435	2
⑩	Safety Plate	SS400	1
⑪	Coil Spring	φ25×90 (θ=00-05) φ25×80 (θ=10-70)	1
⑫	Bumper	Urethane	2
⑬	Dowel Pin	φ8×30	2
⑭	Disc Spring	For M6	2
⑮	Cap Screw	M8×15	6
⑯	Cap Screw	M6×10	2
⑰	Cap Screw	M10×30	2
⑱	Cap Screw	M8×16	2

■LGFV80(θ=00-60)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD450	1
②	Cam Slide	FC250	1
③	Cam Lower Slide	FCD450 with Graphite	1
④	Cam Driver	FC250	1
⑤	Wear Plate	Bronze with Graphite	2
⑥	Positive Return Strap A	S45C	1
⑦	Positive Return Strap B	S45C	1
⑧	V-Block	Bronze with Graphite	1
⑨	Stop Plate	SS400	1
⑩	Spring Guide Pin	SCM435	2
⑪	Safety Plate	SS400	1
⑫	Key	S45C	1
⑬	Bumper	Urethane	2
⑭	Coil Spring	φ35×150	1
⑮	Dowel Pin	φ10×40	2
⑯	Disc Spring	For M6	2
⑰	Cap Screw	M8×15	2
⑱	Cap Screw	M8×20	6
⑲	Cap Screw	M10×35	4
⑳	Cap Screw	M10×30	2
㉑	Cap Screw	M6×10	2

■LGFV80(θ=65)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD450	1
②	Cam Slide	FC250	1
③	Cam Lower Slide	FCD450 with Graphite	1
④	Cam Driver	FC250	1
⑤	Wear Plate	Bronze with Graphite	2
⑥	Positive Return Strap A	S45C	1
⑦	Positive Return Strap B	S45C	1
⑧	V-Block	Bronze with Graphite	1
⑨	Stop Plate	SS400	1
⑩	Spring Guide Pin	SCM435	1
⑪	Safety Plate	SS400	1
⑫	Key	S45C	1
⑬	Bumper	Urethane	2
⑭	Coil Spring	φ35×125	1
⑮	Dowel Pin	φ10×40	2
⑯	Disc Spring	For M6	2
⑰	Cap Screw	M8×15	2
⑱	Cap Screw	M8×20	6
⑲	Cap Screw	M10×35	4
⑳	Cap Screw	M10×30	2
㉑	Cap Screw	M6×10	2
㉒	Spacer	SS400	1
㉓	Cap Screw	M10×25	1

■LGFV80(θ=70)

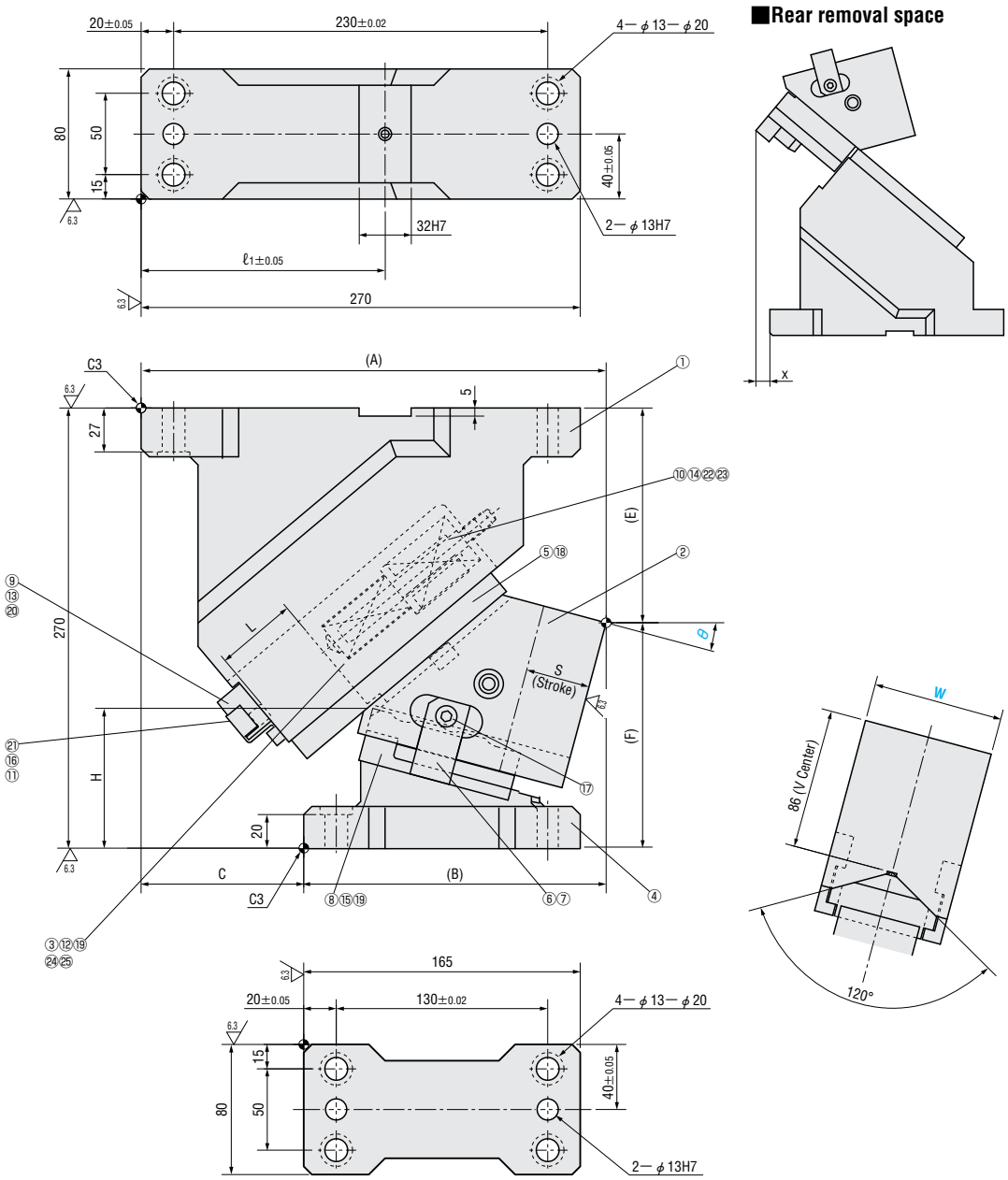
No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD450	1
②	Cam Slide	FC250	1
③	Cam Lower Slide	FCD450 with Graphite	1
④	Cam Driver	FC250	1
⑤	Wear Plate	Bronze with Graphite	2
⑥	Positive Return Strap A	S45C	1
⑦	Positive Return Strap B	S45C	1
⑧	V-Block	Bronze with Graphite	1
⑨	Stop Plate	SS400	1
⑩	Spring Guide Pin	SCM435	1
⑪	Safety Plate	SS400	1
⑫	Key	S45C	1
⑬	Bumper	Urethane	2
⑭	Coil Spring	φ35×100	1
⑮	Dowel Pin	φ10×40	2
⑯	Disc Spring	For M6	2
⑰	Cap Screw	M8×15	2
⑱	Cap Screw	M8×20	6
⑲	Cap Screw	M10×35	4
⑳	Cap Screw	M10×30	2
㉑	Cap Screw	M6×10	2
㉒	Spacer	SS400	1
㉓	Cap Screw	M10×45	1

■LGFV150

No.	Part Name	Material and Remark	Quantity
①	Cam Driver	FC250	1
②	Cam Slide	FC250	1
③	Cam Base	FC250	1
④	Wear Plate	Bronze with Graphite	2
⑤	Spring Guide Pin	SCM435	1
⑥	Stop Plate	SS400	1
⑦	Spring Guide Block	FCD450 with Graphite	1
⑧	Positive Return Strap	S45C	2
⑨	V-Block	Bronze with Graphite	1
⑩	Key	S45C	1
⑪	Safety Plate	SS400	1
⑫	Bumper	Urethane	2
⑬	Coil Spring	φ60×150	1
⑭	Dowel Pin	φ10×40	2
⑮	Disc Spring	For M6	2
⑯	Cap Screw	M12×30	4
⑰	Cap Screw	M10×25	8
⑱	Cap Screw	M10×35	2
⑲	Cap Screw	M16×35	2
⑳	Cap Screw	M6×15	2

— With additional slide clearance —

LGFVS80 (θ =00-60)



■Components table ☞ P.41

W	θ	A	B	C	E	F	H	L	ℓ1	x
80	00	260	160	100	99	171	83	50	130	12
	05	272.93	172.93		109.39	160.61	83.8		150	17
	10	279.92	179.92		120.43	149.57	84.6			
	15	285.93	185.93		132.04	137.96	85.3			
	20	285.9	195.9	90	129.12	140.88	100.9		170	27
	25	289.8	199.8		141.6	128.4	101.5			
	30	282.59	207.59	75	134.36	135.64	121.9			36
	35	284.27	209.27		147.32	122.68	122.3			
	40	274.8	214.8	60	140.38	129.62	142.6			45
	45	274.2	214.2		153.44	116.56	142.7			
	50	262.46	227.46	35	151.39	118.61	157.8			57
	55	259.6	224.6		164.14	105.86				56
	60	240.64	240.64	0	176.59	93.41	157.7			75

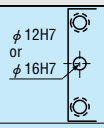
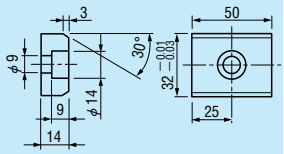
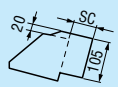
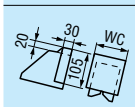
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
32.1	54.9 (5.6)	109.8 (11.2)	123 (12.5)	1300(132.6)	3250 (331.4)	25.9	—With additional slide clearance— LGFVS	80	00
38.4				1625(165.7)		26.3			05
38.9				1650(168.3)		26.6			10
39.7				1675(170.8)		25.1			15
46.1				1900(193.7)		25.3			20
47.8				1950(198.8)		25.3			25
54.3				2100(214.1)		23.2			30
57.4				2150(219.2)		23.4			35
64.3				2275(232.0)		22.4			40
69.6				2350(239.6)		22.4			45
77.8				2450(249.8)		21.6			50
87.2				2525(257.5)		21.7			55
98.5				2625(267.7)		23.2			60

Order

Catalog No.	W	—	θ
LGFVS	80	—	40

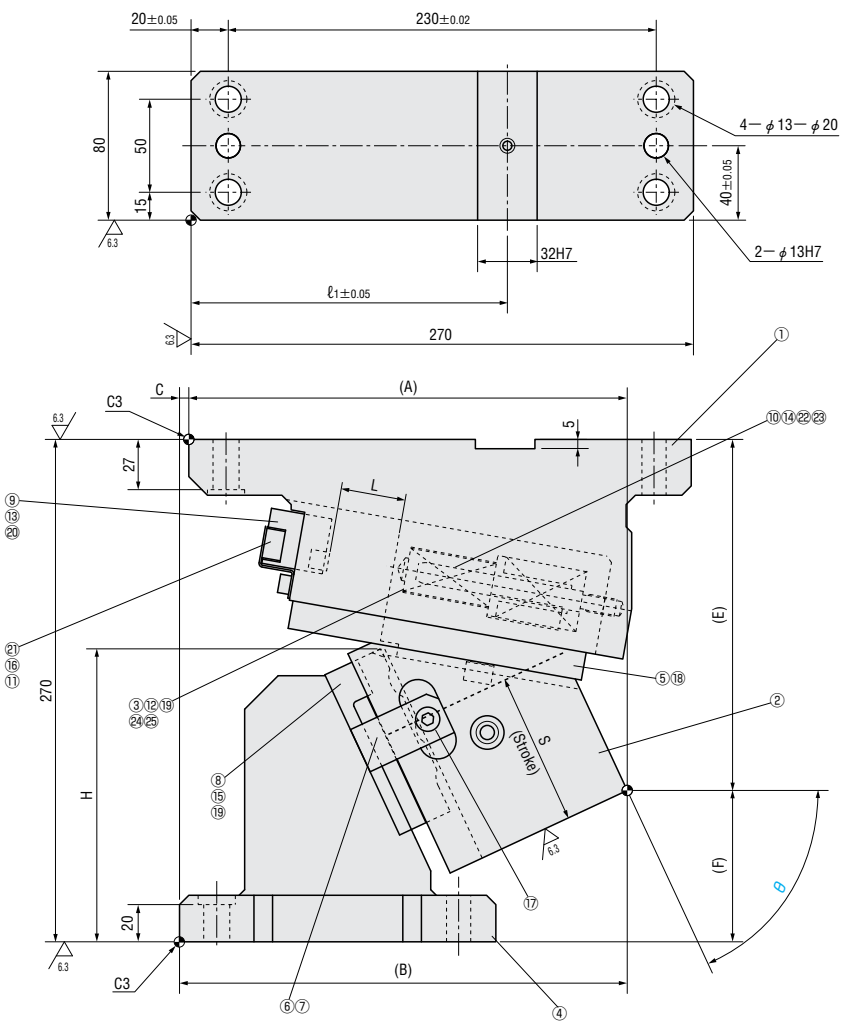
Alterations

Catalog No.	W	—	θ	— (N12・N16…etc.)
LGFVS	80	—	15	— N12

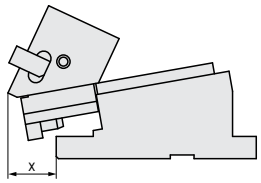
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	SC	Move forward mounting surface 0≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=80 ⇨ W=100 or 120 Only 100 or 120 can be specified.

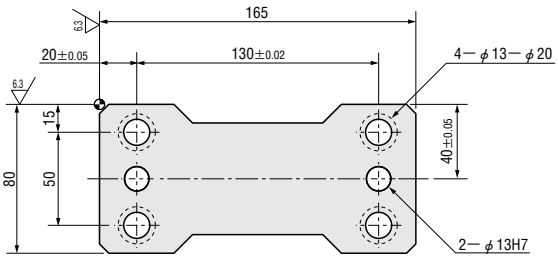
— With additional slide clearance —

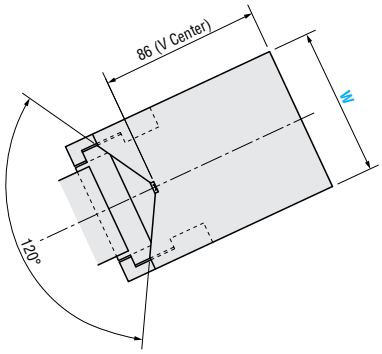
LGFVS80 (θ =65-70)



■Rear removal space







■Components table ☞ P.41

W	θ	A	B	C	E	F	H	L	ℓ1	x
80	65	235.61	240.61	5	188.65	81.35	157.4	35	170	74
	70	227.83	237.83	10	195.53	74.47	157.1	30		75

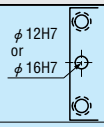
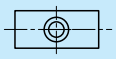
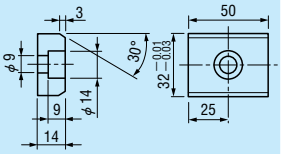
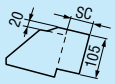
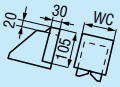
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
81.6	54.9 (5.6)	109.8 (11.2)	94 (9.6)	2725 (277.9)	3250 (331.4)	23.7	—With additional slide clearance— LGFVS	80	65
86.4			152 (15.5)	2825 (288.1)		23.9			70

Order

Catalog No.	W	—	θ
LGFVS	80	—	70

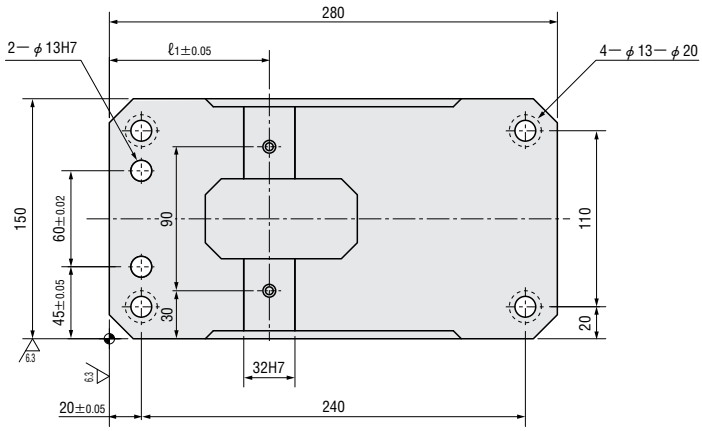
Alterations

Catalog No.	W	—	θ	— (N12・N16…etc.)
LGFVS	80	—	65	— WC100

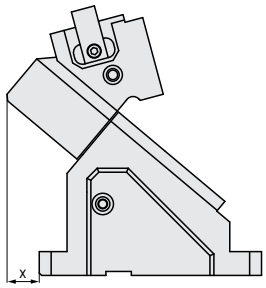
Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	SC	Move forward mounting surface 0≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=80 ⇨ W=100 or 120 Only 100 or 120 can be specified.

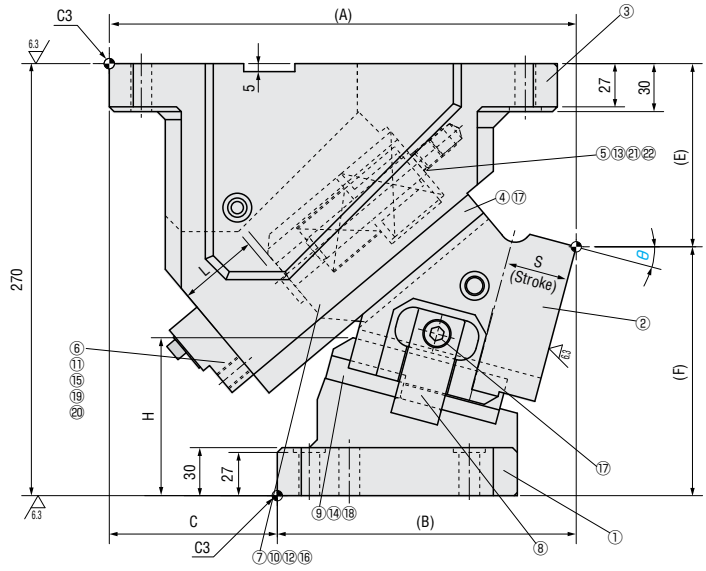
— Without additional slide clearance —

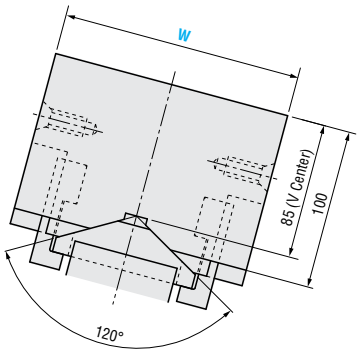
LGFVS150 (θ =00-65)

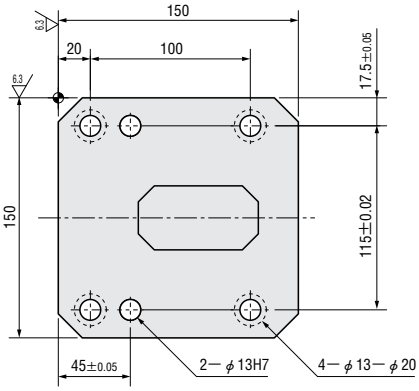


■Rear removal space









■Components table ☞ P.41

W	θ	A	B	C	E	F	H	L	ℓ1	x
150	00	280	160	120	85	185	94	50	100	20
	05	288.26	173.26	115	95.84	174.16	94			
	10	285.54	180.54	105	102.36	167.64	98.9			41
	15	291.79	186.79		114.47	155.53	98.7			
	20	286.97	196.97	90	122.07	147.93	103.5		135	57
	25	291.02	201.02		135.08	134.92	103.2			
	30	283.92	213.92	70	138.4	131.6	112.8			69
	35	285.66	215.66		151.91	118.09	112.4			
	40	276.2	231.2	45	155.53	114.47	121.9		170	75
	45	275.56	230.56		169.14	100.86	121.4			
	50	263.74	238.74	25	167.65	102.35	137			
	55	260.74	235.74		180.94	89.06	137.6			77
	60	246.6	246.6	0	193.92	76.08	138.2			100
	65	241.35	241.35		206.49	63.51	138.6	40		104

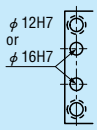
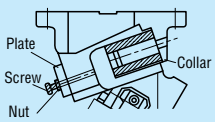
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
32.1	123.6 (12.6)	185.3 (18.9)	215(21.9)	3822(389.7)	9555 (974.3)	45.4	—Without additional slide clearance— LGFVS	150	00
32.3				3896(397.2)		45.9			05
38.9				4851(494.7)		44.4			10
39.7				4925(502.2)		44.9			15
46.1				5586(569.6)		43.2			20
47.8				5733(584.6)		43.7			25
54.3				6174(629.6)		42.2			30
57.4				6321(644.6)		42.7			35
64.3				6689(682.0)		41.0			40
69.6				6909(704.5)		41.4			45
77.8				7203(734.5)		40.5			50
87.2				7424(757.0)		40.9			55
98.5				7718(787.0)		41.5			60
93.2			484(49.3)	8012(816.9)		42.2			65

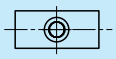
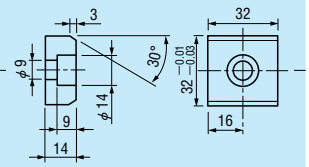
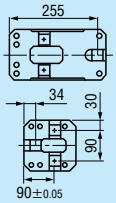
Order

Catalog No.	W	—	θ
LGFVS	150	—	30

Alterations

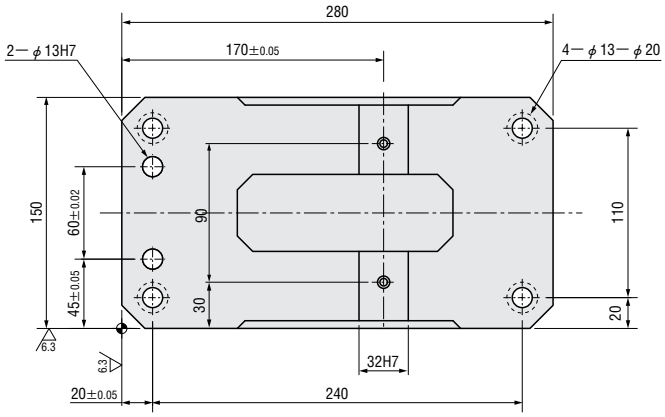
Catalog No.	W	—	θ	—	(N12・N16…etc.)
LGFVS	150	—	15	—	N12

Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	N16	Change dowel hole diameter φ13H7 ⇨ φ16H7
	S	With collars, screws and nuts to fix bottom dead center.

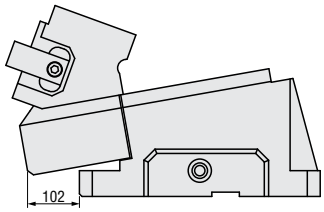
Alterations	Code	Spec.
	K	Add 2 locating keys (With 2 hexagon socket head cap screws M8×15) 
	TK	T-keywaying Add 6 locating keys (With 6 hexagon socket head cap screws M8×15)

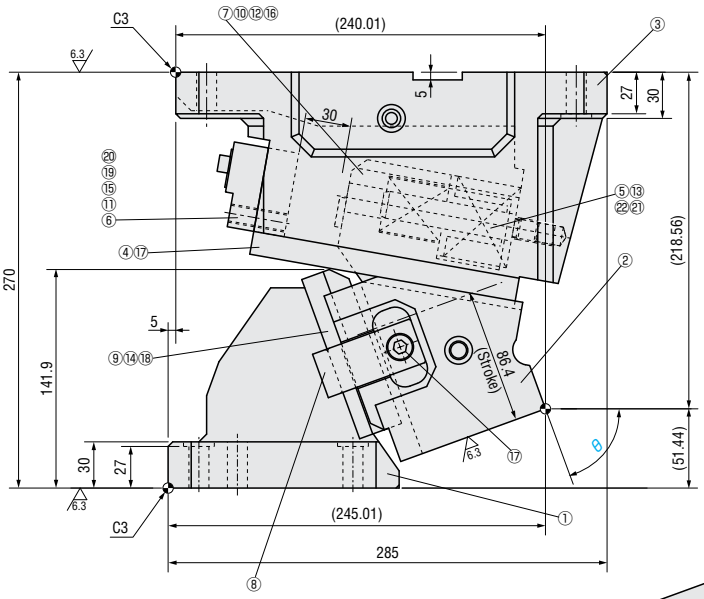
— Without additional slide clearance —

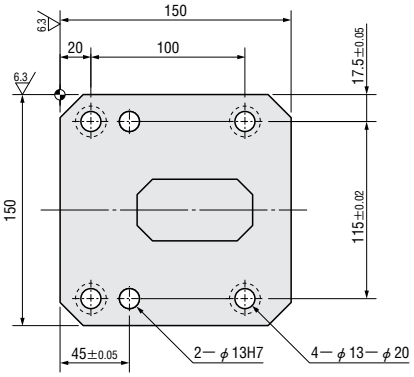
LGFVS150-70

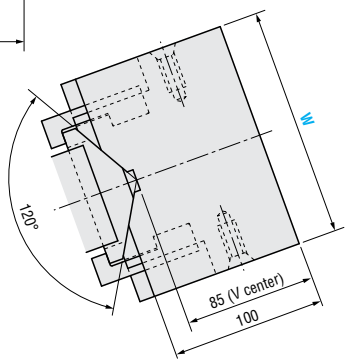


■Rear removal space









■Components table ☞ P.41

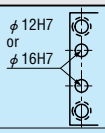
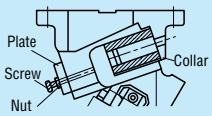
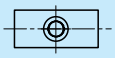
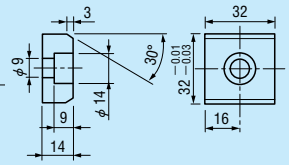
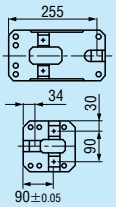
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
86.4	123.6 (12.6)	185.3 (18.9)	753 (76.7)	8306 (846.9)	9555 (974.3)	43.5	—Without additional slide clearance— LGFVS	150	70

Order

Catalog No.	W	—	θ
LGFVS	150	—	70

Alterations

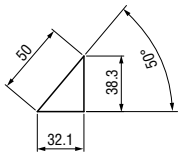
Catalog No.	W	—	θ	—	(N12・N16…etc.)
LGFVS	150	—	70	—	TK

Alterations	Code	Spec.
	N12	Change dowel hole diameter ϕ13H7 ⇨ ϕ12H7
	N16	Change dowel hole diameter ϕ13H7 ⇨ ϕ16H7
	S	With collars, screws and nuts to fix bottom dead center.
	K	Add 2 locating keys (With 2 hexagon socket head cap screws M8×15) 
	TK	T-keywaying Add 6 locating keys (With 6 hexagon socket head cap screws M8×15)

Cam diagram

■LGFVS

80-00



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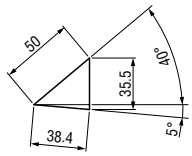

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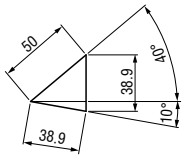

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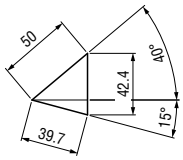

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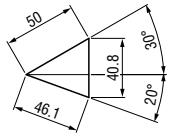

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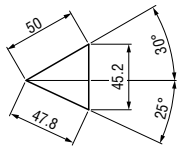

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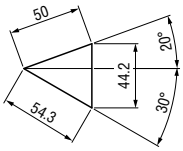

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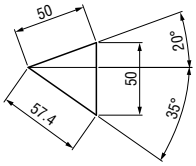

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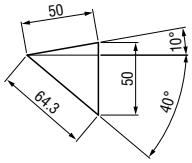

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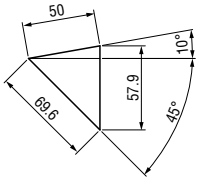

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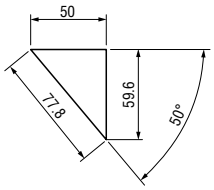

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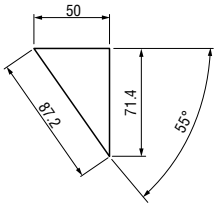

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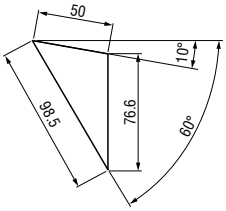

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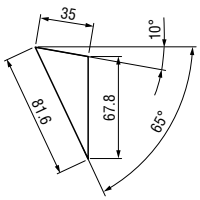

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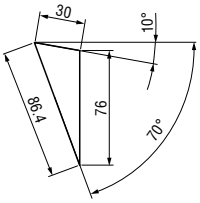

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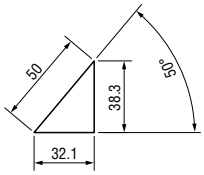

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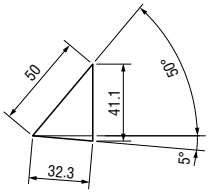

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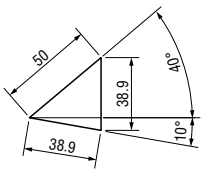

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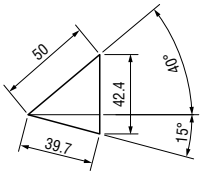

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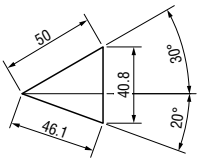

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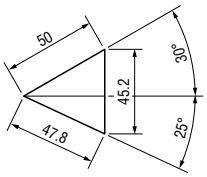

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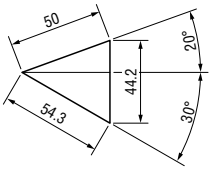

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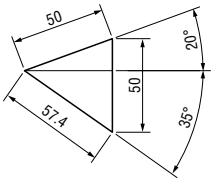

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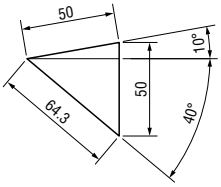

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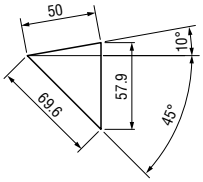

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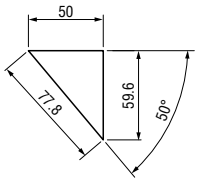

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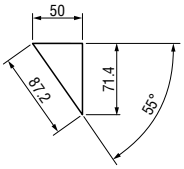

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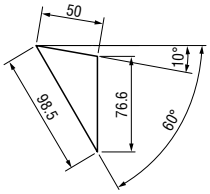

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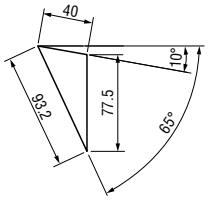

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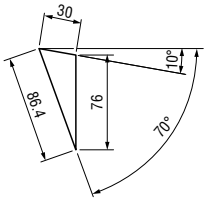


Components table

■LGFVS80(θ=00-60)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD450	1
②	Cam Slide	FC250	1
③	Spring Guide Block	FCD450 with Graphite	1
④	Cam Driver	FC250	1
⑤	Wear Plate	SS400 with Special Sintered Alloy	2
⑥	Positive Return Strap A	S45C	1
⑦	Positive Return Strap B	S45C	1
⑧	V-Block	Bronze with Graphite	1
⑨	Stop Plate	SS400	1
⑩	Spring Guide Pin	S45C	1
⑪	Safety Plate	SS400	1
⑫	Key	S45C	1
⑬	Bumper	Urethane	2
⑭	Coil Spring	φ25×100	1
⑮	Dowel Pin	φ10×40	2
⑯	Disc Spring	For M6	2
⑰	Cap Screw	M8×15	2
⑱	Cap Screw	M8×20	6
⑲	Cap Screw	M10×35	2
⑳	Cap Screw	M10×30	2
㉑	Cap Screw	M6×10	2
㉒	Bushing / (Washer)	Bronze with Graphite	1
㉓	Coil Spring	φ35×60	1
㉔	Cap Screw	M12×35	2
㉕	Spring Washer	For M12	2

■LGFVS80(θ=65-70)

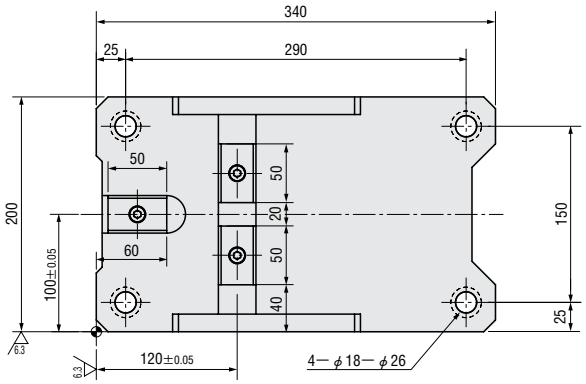
No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD450	1
②	Cam Slide	FC250	1
③	Spring Guide Block	FCD450 with Graphite	1
④	Cam Driver	FC250	1
⑤	Wear Plate	SS400 with Special Sintered Alloy	2
⑥	Positive Return Strap L	S45C	1
⑦	Positive Return Strap R	S45C	1
⑧	V-Block	Bronze with Graphite	1
⑨	Stop Plate	SS400	1
⑩	Spring Guide Pin	S45C	1
⑪	Safety Plate	SS400	1
⑫	Key	S45C	1
⑬	Bumper	Urethane	2
⑭	Coil Spring	φ25×80	1
⑮	Dowel Pin	φ10×40	2
⑯	Disc Spring	For M6	2
⑰	Cap Screw	M8×15	2
⑱	Cap Screw	M8×20	6
⑲	Cap Screw	M10×35	2
⑳	Cap Screw	M10×30	2
㉑	Cap Screw	M6×10	2
㉒	Bushing / (Washer)	Bronze with Graphite	1
㉓	Coil Spring	φ35×60	1
㉔	Cap Screw	M12×35	2
㉕	Spring Washer	For M12	2

■LGFVS150

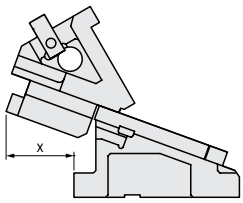
No.	Part Name	Material and Remark	Quantity
①	Cam Driver	FC250	1
②	Cam Slide	FC250	1
③	Cam Base	FC250	1
④	Wear Plate	Bronze with Graphite	2
⑤	Spring Guide Pin	S45C	1
⑥	Stop Plate	SS400	1
⑦	Spring Guide Block	FCD450 with Graphite	1
⑧	Positive Return Strap	S45C	2
⑨	V-Block	Bronze with Graphite	1
⑩	Key	S45C	1
⑪	Safety Plate	SS400	1
⑫	Bumper	Urethane	2
⑬	Coil Spring	φ60×60	1
⑭	Dowel Pin	φ10×40	2
⑮	Disc Spring	For M6	2
⑯	Cap Screw	M12×30	4
⑰	Cap Screw	M10×25	8
⑱	Cap Screw	M10×35	2
⑲	Cap Screw	M16×35	2
⑳	Cap Screw	M6×15	2
㉑	Coil Spring	φ40×90	1
㉒	Bushing / (Washer)	Bronze with Graphite	1

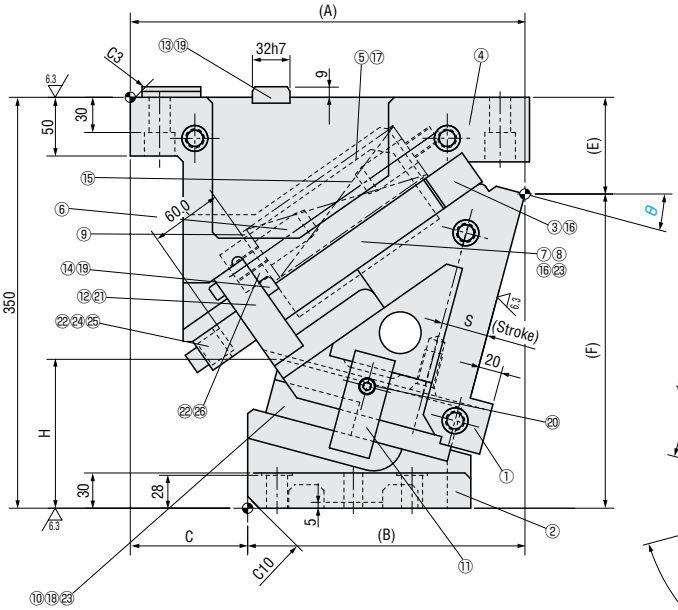
— With additional slide clearance —

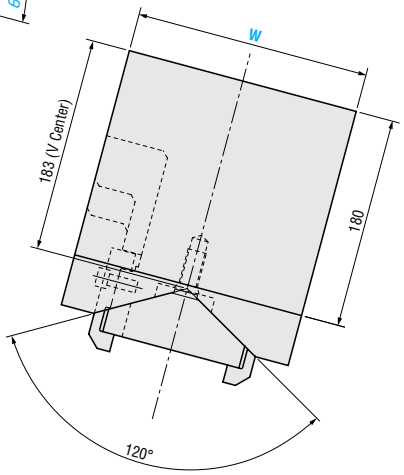
LGFVW200 (θ =00-40)

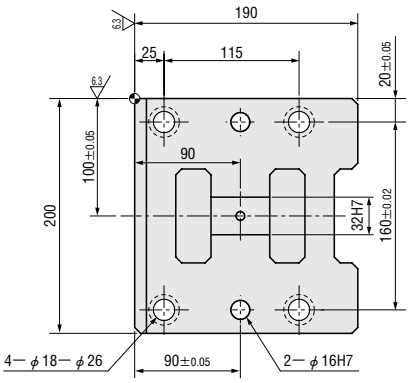


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
200	00	313	175	138	58	292	102	47
	05	320.64	195.64	125	64.34	285.66	110.8	61
	10	331.08	216.08	115	72.47	277.53	119.1	70
	15	336.17	236.17	100	82.37	267.63	126.8	80
	20	340.76	255.76	85	94	256	133.9	88
	30	347.83	292.83	55	112.25	237.75	155.7	103
	40	351.17	326.17	25	136.66	213.34	173.9	116

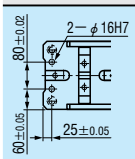
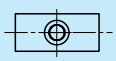
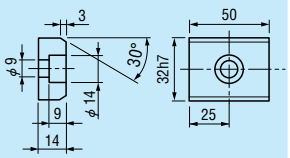
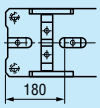
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
38.6	117.7 (12.0)	235.4 (24.0)	817 (83.3)	4372 (445.8)	4903 (500.0)	95.0	—With additional slide clearance— LGFVW	200	00
42.6				4427 (451.4)		94.8			05
46.7				4467 (455.5)		94.6			10
50.9				4501 (459.0)		93.3			15
55.3				4535 (462.5)		92.7			20
65.1				4590 (468.0)		92.7			30
77.1				4638 (472.9)		94.2			40

Order

Catalog No.	W	—	θ
LGFVW	200	—	10

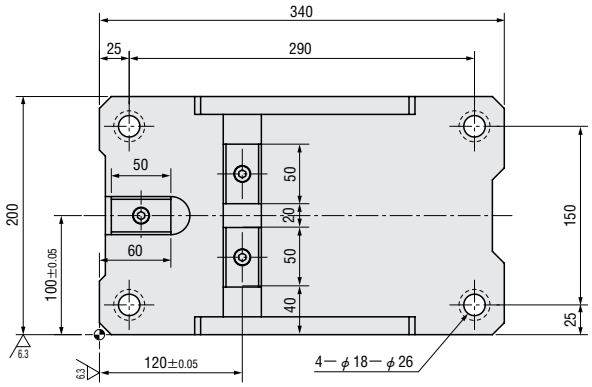
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	200	—	20	—	N

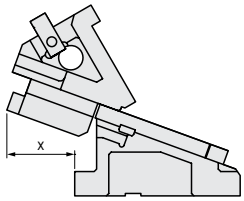
Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

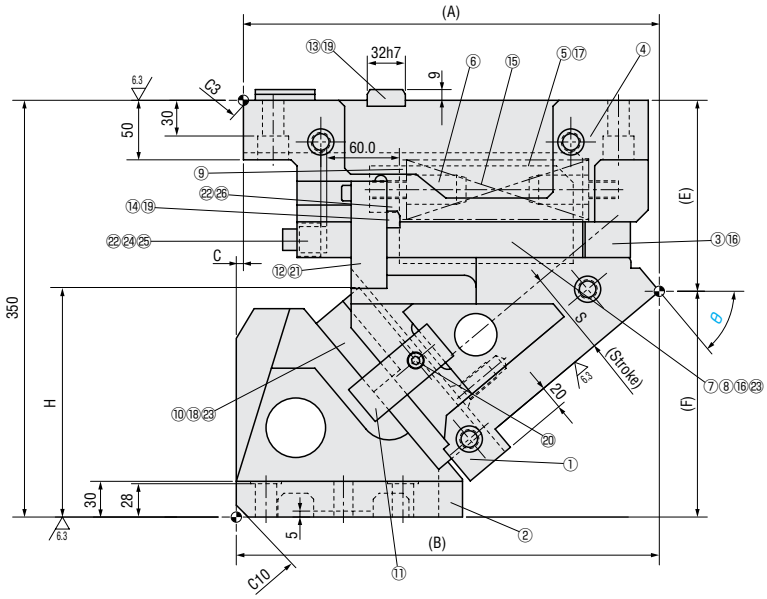
— With additional slide clearance —

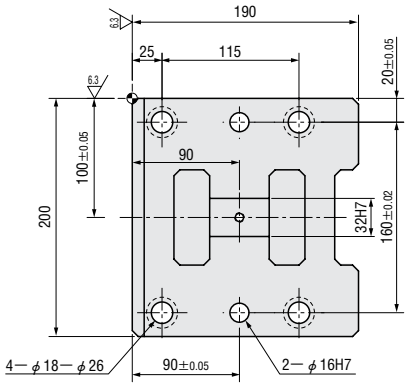
LGFVW200 (θ =50-60)

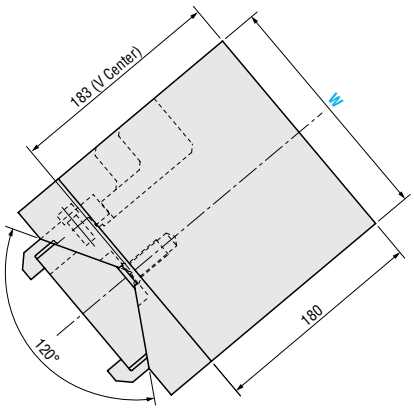


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
200	50	348.77	354.77	6	161.49	188.51	192.8	126
	60	332.75	377.75	45	195.83	154.17	202.1	152

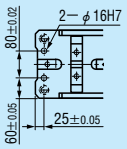
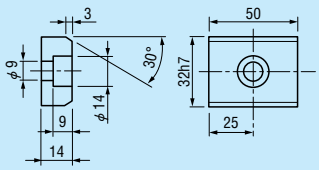
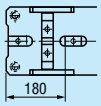
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
93.3	117.7 (12.0)	235.4 (24.0)	817 (83.3)	4685 (477.8)	4903 (500.0)	93.7	—With additional slide clearance— LGFVW	200	50
120.0				4733 (482.6)		97.3			60

Order

Catalog No.	W	—	θ
LGFVW	200	—	50

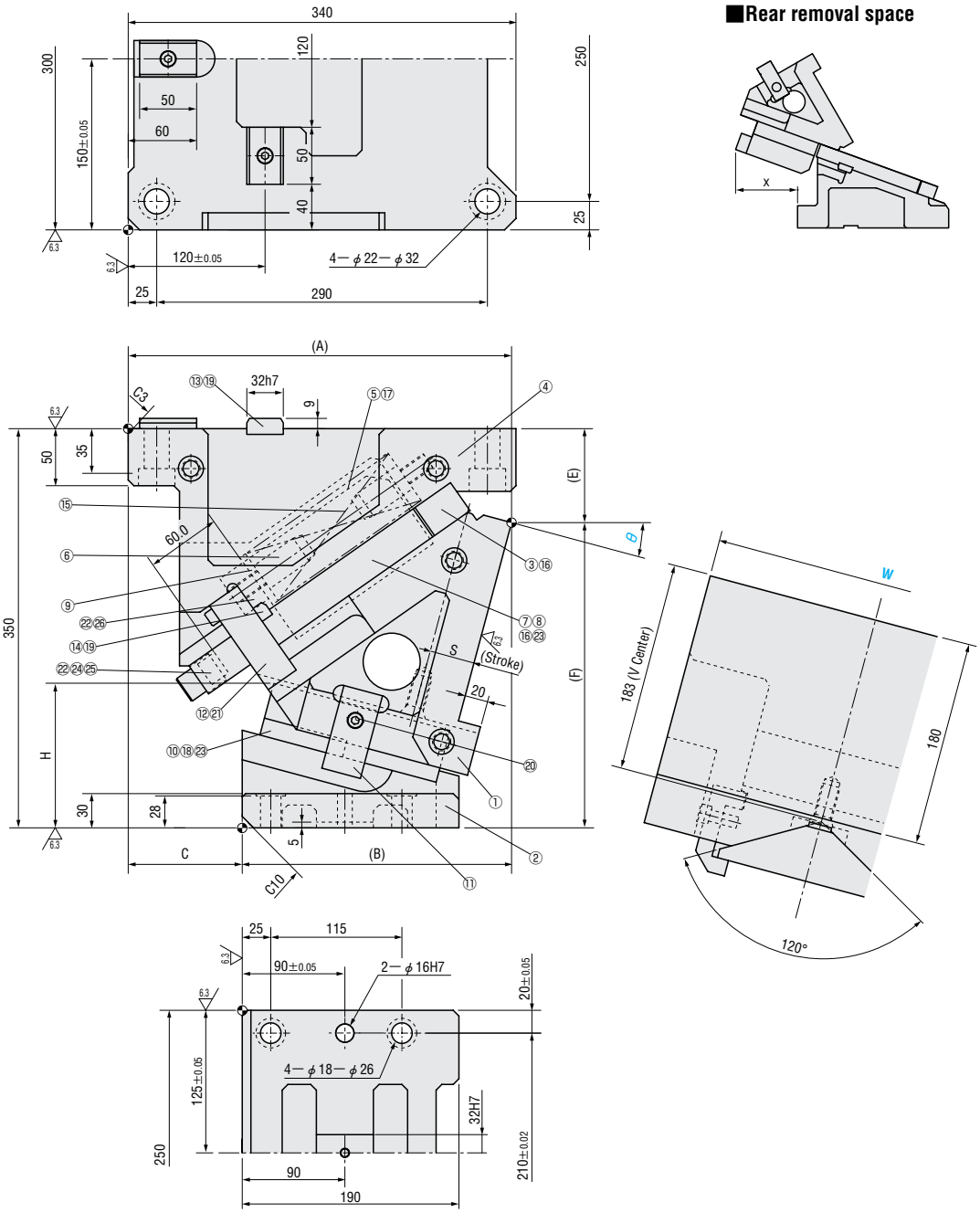
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	200	—	50	—	K

Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

— With additional slide clearance —

LGFVW300 (θ =00-40)



■Rear removal space

■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
300	00	313	175	138	58	292	102	47
	05	320.64	195.64	125	64.34	285.66	110.8	61
	10	331.08	216.08	115	72.47	277.53	119.1	70
	15	336.17	236.17	100	82.37	267.63	126.8	80
	20	340.76	255.76	85	94	256	133.9	88
	30	347.83	292.83	55	112.25	237.75	155.7	103
	40	351.17	326.17	25	136.66	213.34	173.9	116

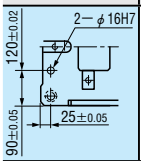
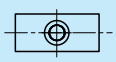
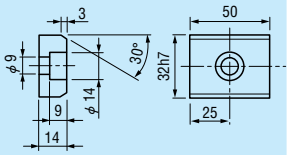
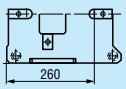
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
38.6	196.1 (20.0)	392.3 (40.0)	1634 (166.7)	8744 (891.6)	9806 (1000.0)	137.2	—With additional slide clearance— LGFVW	300	00
42.6				8853 (902.8)		135.9			05
46.7				8935 (911.1)		135.7			10
50.9				9003 (918.0)		133.0			15
55.3				9071 (925.0)		131.5			20
65.1				9180 (936.1)		131.0			30
77.1				9275 (945.8)		133.3			40

Order

Catalog No.	W	—	θ
LGFVW	300	—	10

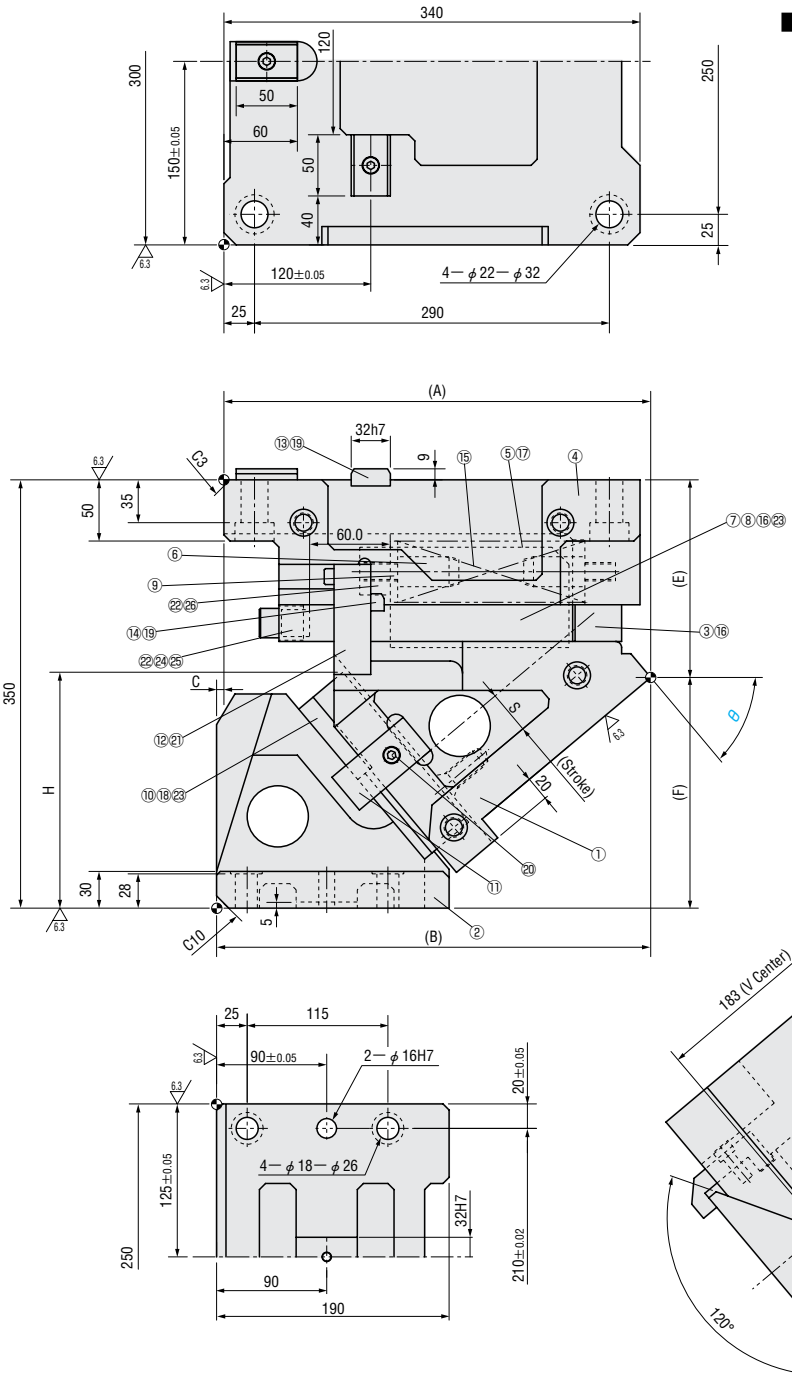
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	300	—	15	—	N

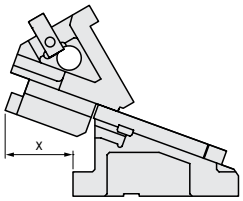
Alterations	Code	Spec.
	N	Add dowel hole Add 2 ϕ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

— With additional slide clearance —

LGFVW300 (θ =50-60)



■Rear removal space



■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
300	50	348.77	354.77	6	161.49	188.51	192.8	126
	60	332.75	377.75	45	195.83	154.17	202.1	152

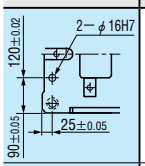
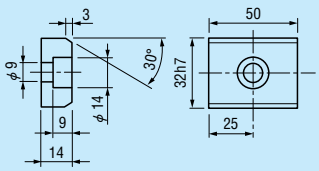
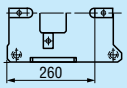
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
93.3	196.1 (20.0)	392.3 (40.0)	1634 (166.7)	9371 (955.5)	9806 (1000.0)	130.9	—With additional slide clearance— LGFVW	300	50
120.0				9466 (965.3)		136.1			60

Order

Catalog No.	W	—	θ
LGFVW	300	—	50

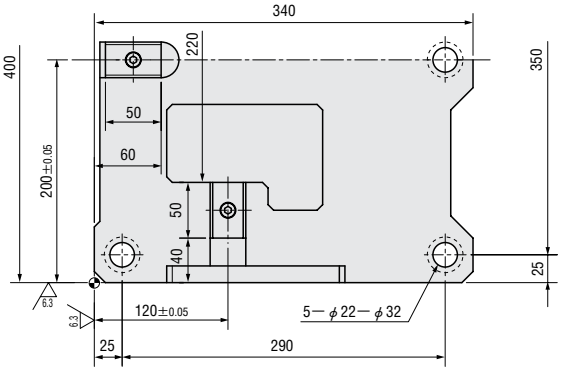
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	300	—	60	—	FK

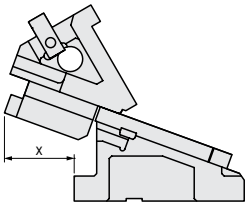
Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

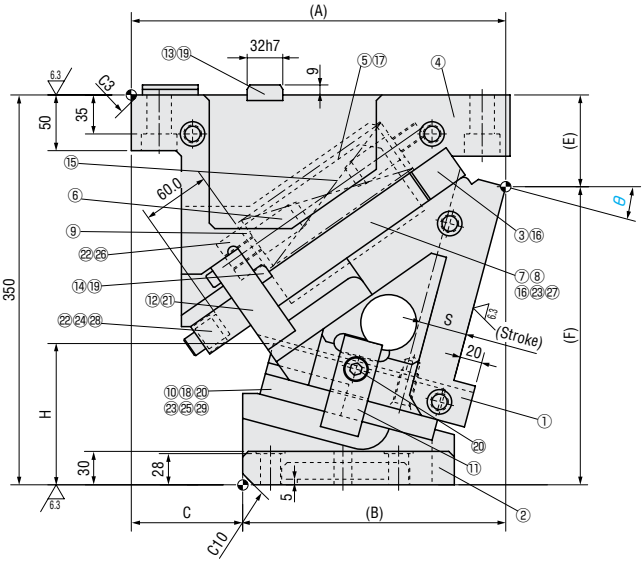
— With additional slide clearance —

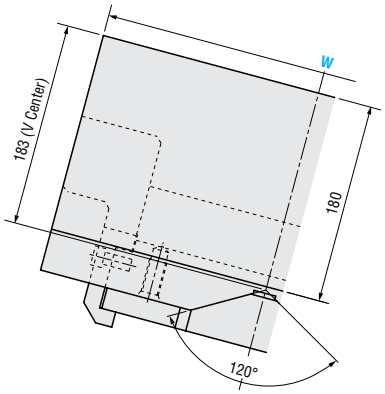
LGFVW400 (θ =00-40)

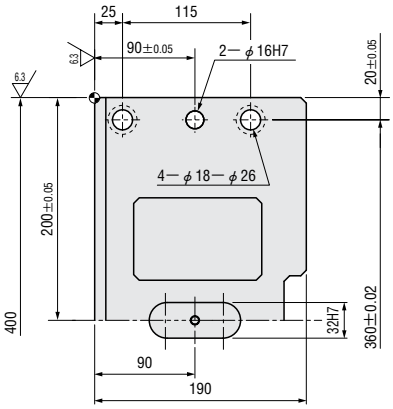


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
400	00	313	175	138	58	292	102	47
	05	320.64	195.64	125	64.34	285.66	110.8	61
	10	331.08	216.08	115	72.47	277.53	119.1	70
	15	336.17	236.17	100	82.37	267.63	126.8	80
	20	340.76	255.76	85	94	256	133.9	88
	30	347.83	292.83	55	112.25	237.75	155.7	103
	40	351.17	326.17	25	136.66	213.34	173.9	116

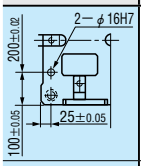
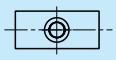
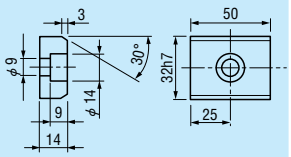
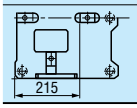
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
38.6	245.2 (25.0)	490.3 (50.0)	1634 (166.7)	8744 (891.6)	9806 (1000.0)	191.1	—With additional slide clearance— LGFVW	400	00
42.6				8853 (902.8)		189.3			05
46.7				8935 (911.1)		188.0			10
50.9				9003 (918.0)		186.1			15
55.3				9071 (925.0)		185.3			20
65.1				9180 (936.1)		185.8			30
77.1				9275 (945.8)		191.9			40

Order

Catalog No.	W	—	θ
LGFVW	400	—	10

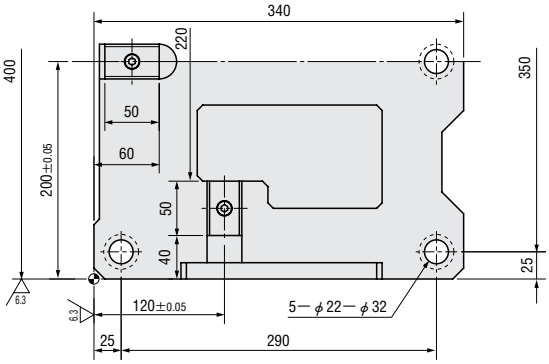
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	400	—	30	—	K

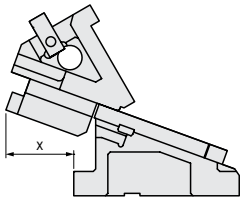
Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

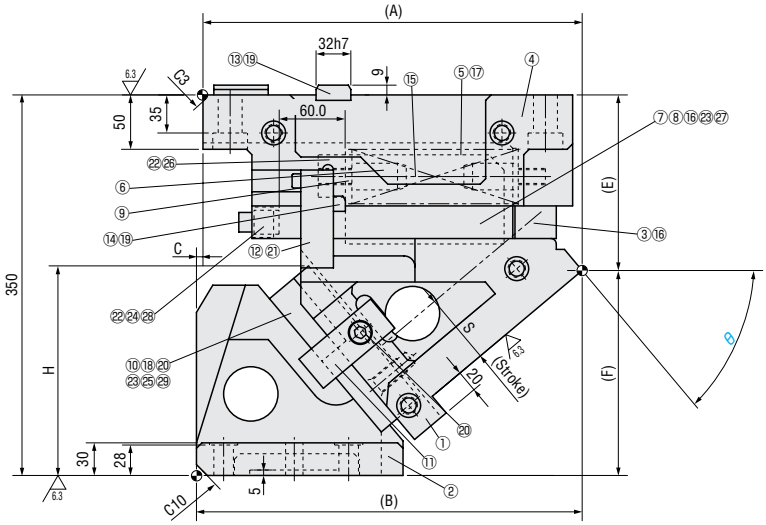
— With additional slide clearance —

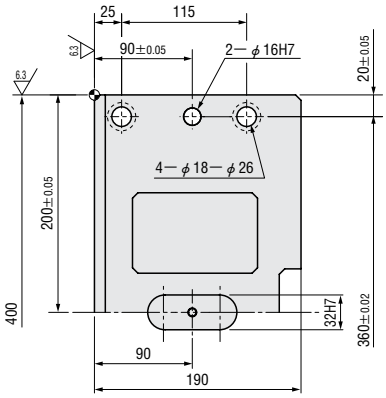
LGFVW400 (θ =50-60)

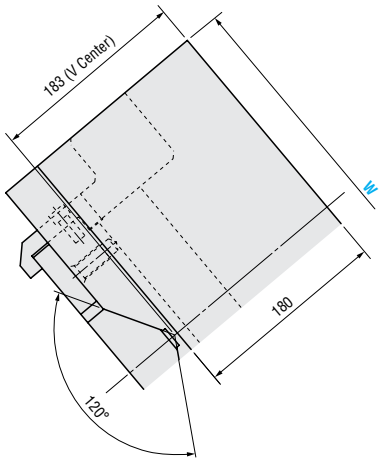


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
400	50	348.77	354.77	6	161.49	188.51	192.8	126
	60	332.75	377.75	45	195.83	154.17	202.1	152

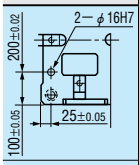
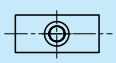
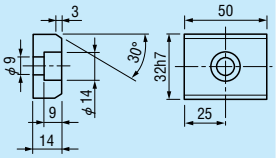
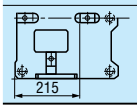
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
93.3	245.2 (25.0)	490.3 (50.0)	1634 (166.7)	9371 (955.5)	9806 (1000.0)	191.8	—With additional slide clearance— LGFVW	400	50
120.0				9466 (965.3)		201.1			60

Order

Catalog No.	W	—	θ
LGFVW	400	—	50

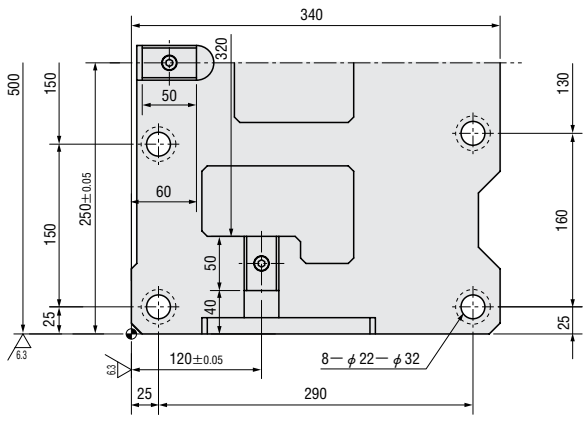
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	400	—	50	—	FK

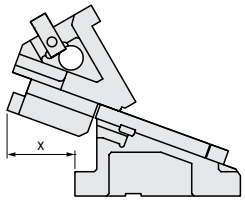
Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

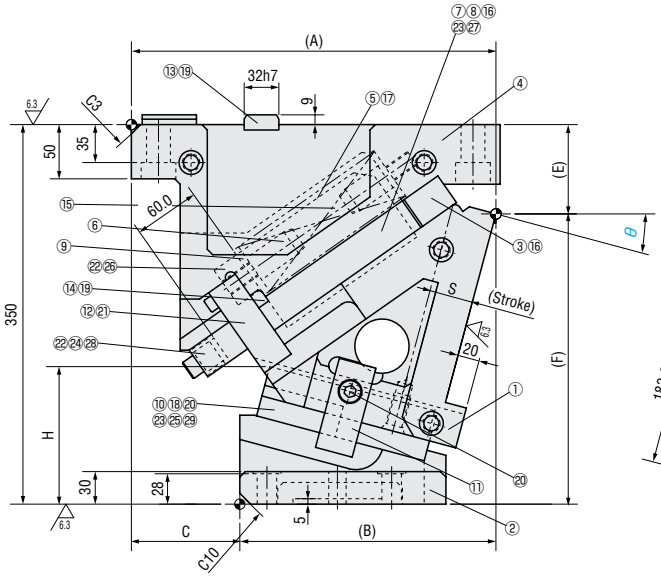
— With additional slide clearance —

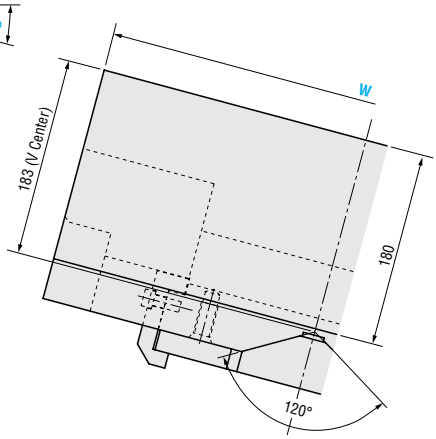
LGFVW500 (θ =00-40)

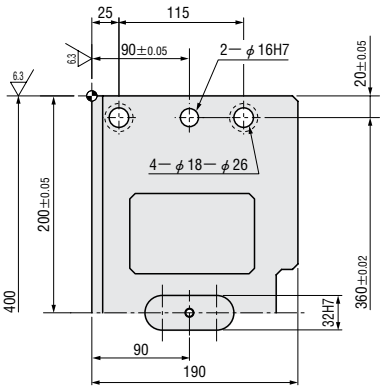


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
500	00	313	175	138	58	292	102	47
	05	320.64	195.64	125	64.34	285.66	110.8	61
	10	331.08	216.08	115	72.47	277.53	119.1	70
	15	336.17	236.17	100	82.37	267.63	126.8	80
	20	340.76	255.76	85	94	256	133.9	88
	30	347.83	292.83	55	112.25	237.75	155.7	103
	40	351.17	326.17	25	136.66	213.34	173.9	116

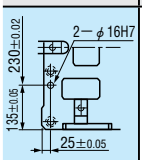
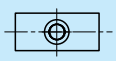
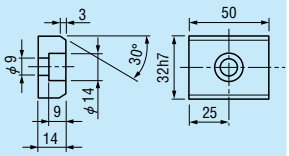
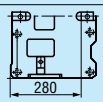
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
38.6	313.8 (32.0)	627.6 (64.0)	2452 (250.0)	13116 (1337.5)	14710 (1500.0)	222.3	—With additional slide clearance— LGFVW	500	00
42.6				13280 (1354.1)		220.4			05
46.7				13402 (1366.6)		218.8			10
50.9				13504 (1377.0)		216.3			15
55.3				13606 (1387.5)		215.1			20
65.1				13770 (1404.1)		216.1			30
77.1				13913 (1418.7)		220.4			40

Order

Catalog No.	W	—	θ
LGFVW	500	—	10

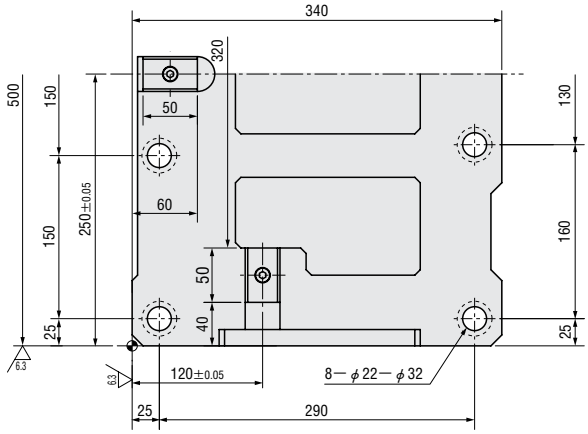
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	500	—	05	—	N

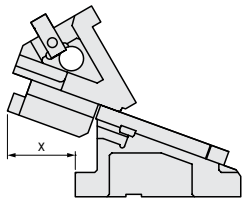
Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

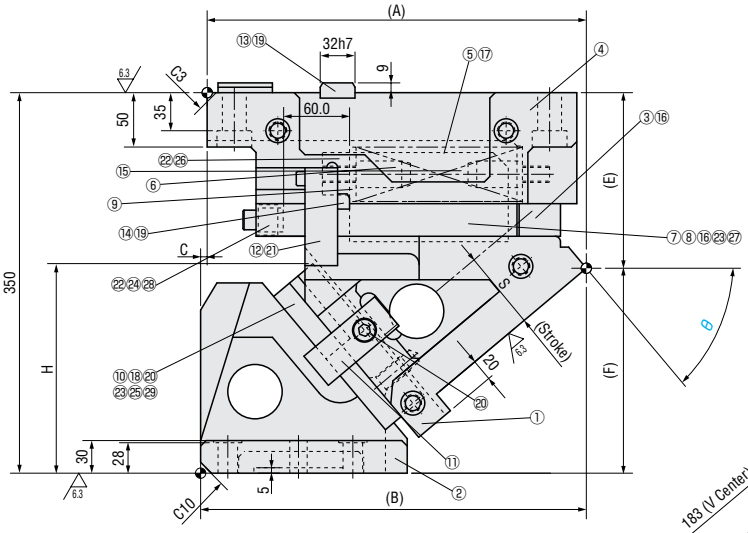
— With additional slide clearance —

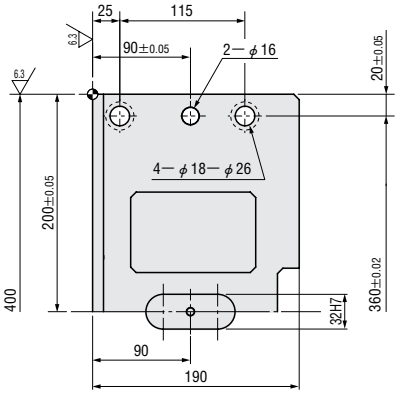
LGFVW500 (θ =50-60)

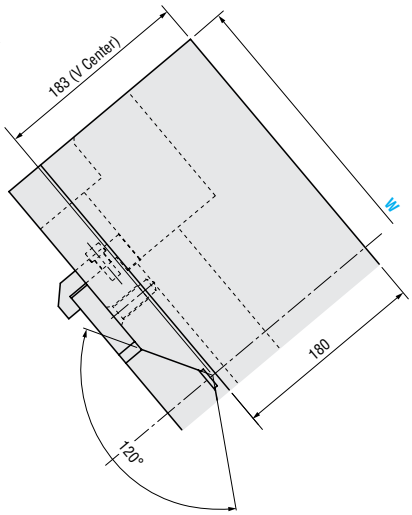


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
500	50	348.77	354.77	6	161.49	188.51	192.8	126
	60	332.75	377.75	45	195.83	154.17	202.1	152

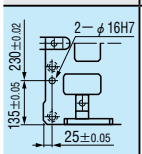
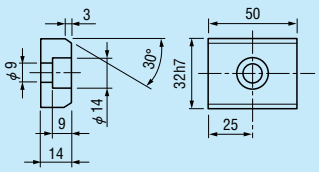
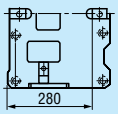
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
93.3	313.8 (32.0)	627.6 (64.0)	2452 (250.0)	14056 (1433.3)	14710 (1500.0)	220.1	—With additional slide clearance— LGFVW	500	50
120.0				14199 (1447.9)		236.5			60

Order

Catalog No.	W	—	θ
LGFVW	500	—	50

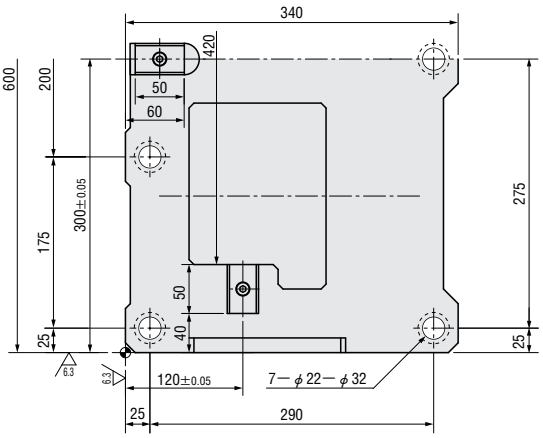
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	500	—	60	—	K

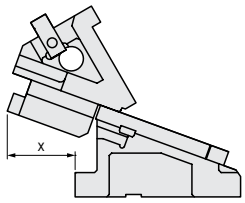
Alterations	Code	Spec.
	N	Add dowel hole Add 2 ϕ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

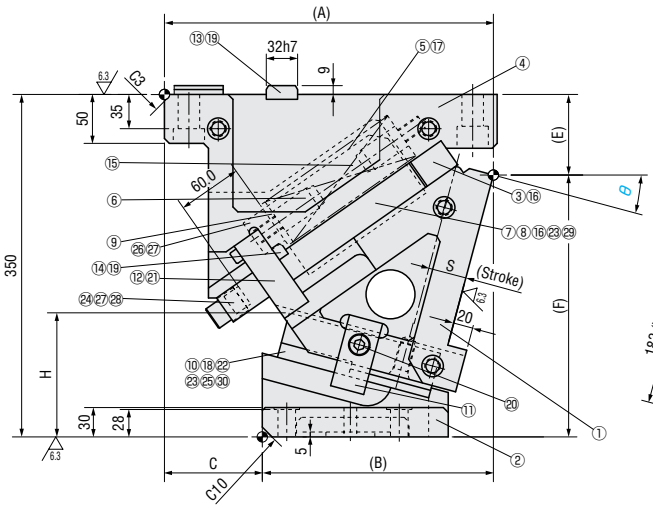
— With additional slide clearance —

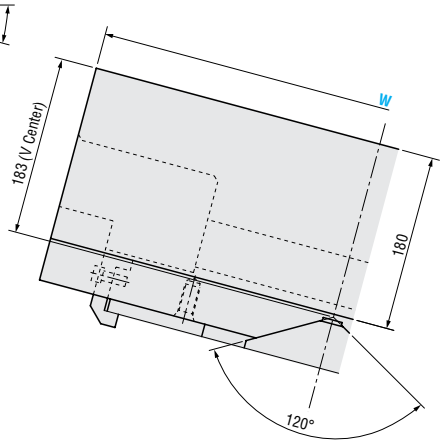
LGFVW600 (θ =00-40)

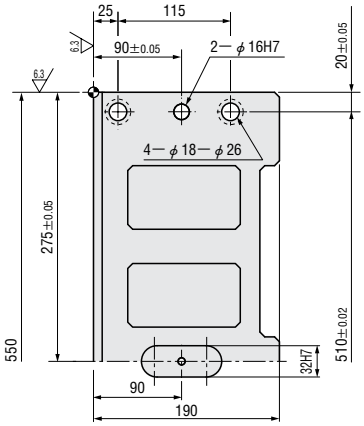


■Rear removal space









■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
600	00	313	175	138	58	292	102	47
	05	320.64	195.64	125	64.34	285.66	110.8	61
	10	331.08	216.08	115	72.47	277.53	119.1	70
	15	336.17	236.17	100	82.37	267.63	126.8	80
	20	340.76	255.76	85	94	256	133.9	88
	30	347.83	292.83	55	112.25	237.75	155.7	103
	40	351.17	326.17	25	136.66	213.34	173.9	116

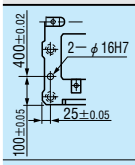
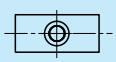
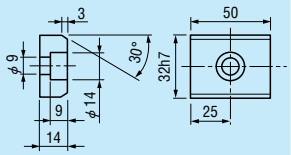
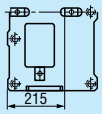
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
38.6	392.3 (40.0)	783.6 (79.9)	3269 (333.3)	17488 (1783.3)	19613 (1999.9)	281.4	—With additional slide clearance— LGFVW	600	00
42.6				17706 (1805.5)		277.9			05
46.7				17869 (1822.2)		274.1			10
50.9				18006 (1836.1)		272.3			15
55.3				18142 (1850.0)		268.8			20
65.1				18360 (1872.2)		276.6			30
77.1				18550 (1891.6)		285.2			40

Order

Catalog No.	W	—	θ
LGFVW	600	—	10

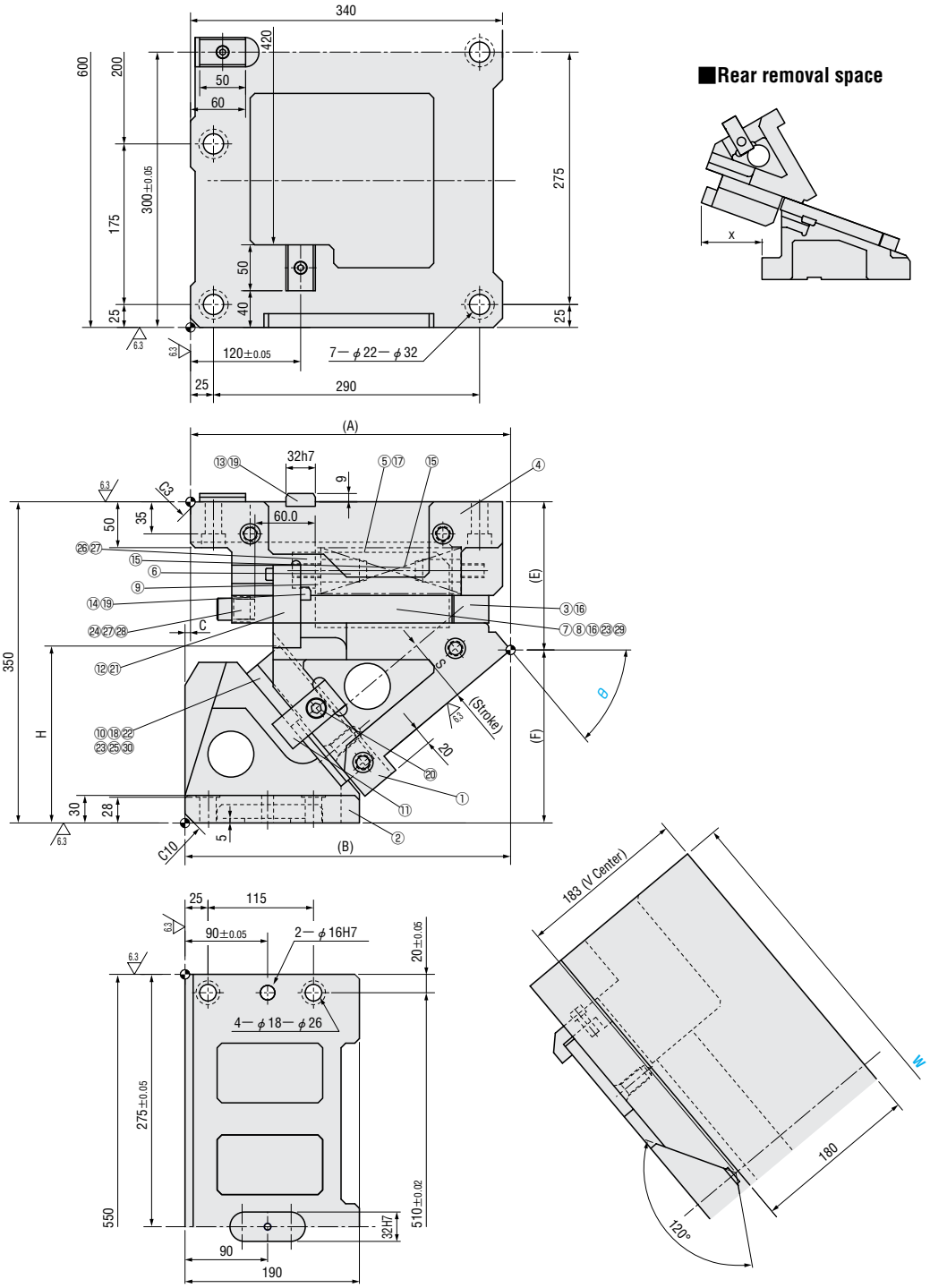
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	600	—	10	—	N

Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel pin holes on cam base.
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

— With additional slide clearance —

LGFVW600 (θ =50-60)



■Components table ☞ P.64

W	θ	A	B	C	E	F	H	x
600	50	348.77	354.77	6	161.49	188.51	192.8	126
	60	332.75	377.75	45	195.83	154.17	202.1	152

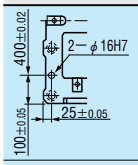
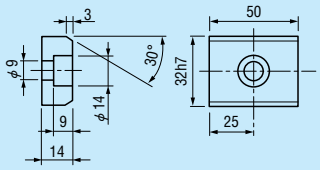
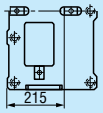
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
93.3	392.3 (40.0)	783.6 (79.9)	3269 (333.3)	18741 (1911.1)	19613 (1999.9)	283.5	—With additional slide clearance— LGFVW	600	50
120.0				18932 (1930.5)		295.6			60

Order

Catalog No.	W	—	θ
LGFVW	600	—	50

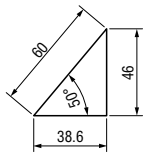
Alterations

Catalog No.	W	—	θ	—	(N・K・FK)
LGFVW	600	—	50	—	K

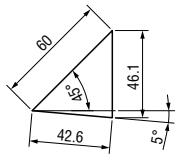
Alterations	Code	Spec.
	N	Add dowel hole Add 2 φ16H7 dowel holes on cam base
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 
	FK	Move key position Move forward the locating key on cam base.

■LGFVW

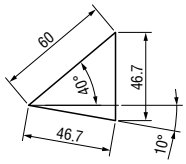
200-00



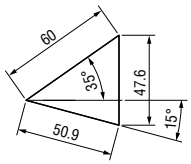
200-05



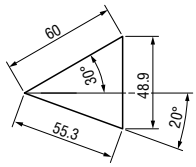
200-10



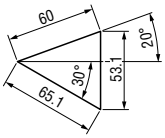
200-15



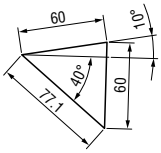
200-20



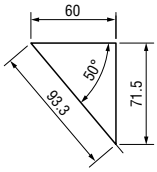
200-30



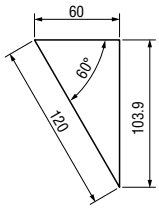
200-40



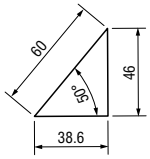
200-50



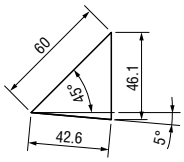
200-60



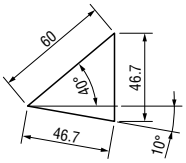
300-00



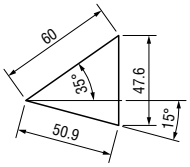
300-05



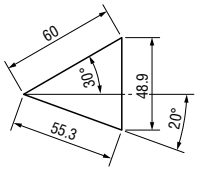
300-10



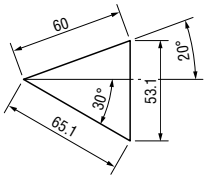
300-15



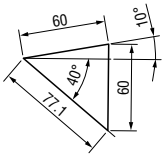
300-20



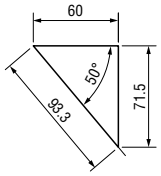
300-30



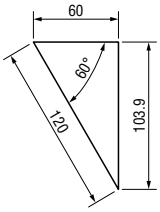
300-40



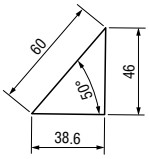
300-50



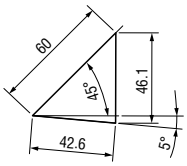
300-60



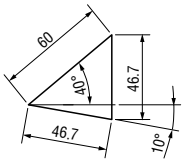
400-00



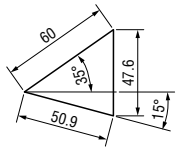
400-05



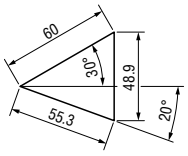
400-10



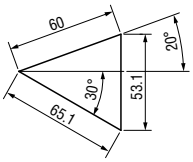
400-15



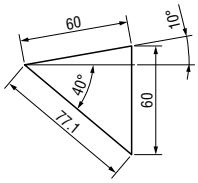
400-20



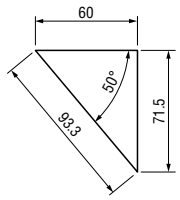
400-30



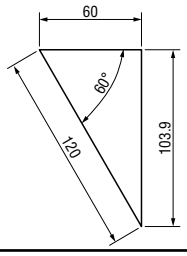
400-40



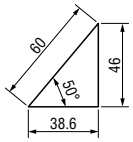
400-50



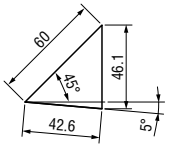
400-60



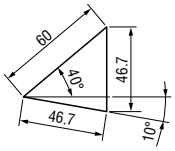
500-00



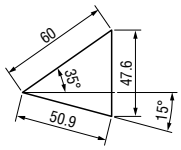
500-05



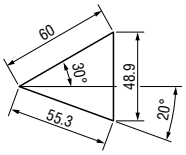
500-10



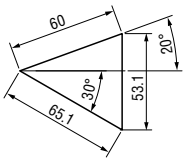
500-15



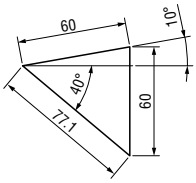
500-20



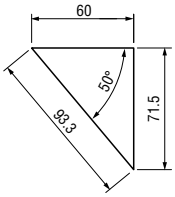
500-30



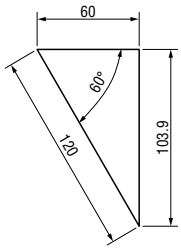
500-40



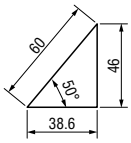
500-50



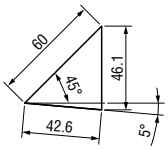
500-60



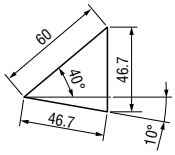
600-00



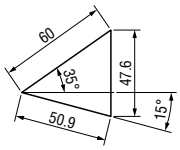
600-05



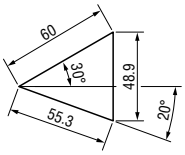
600-10



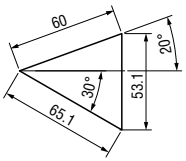
600-15



600-20



600-30



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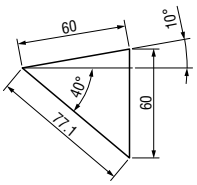
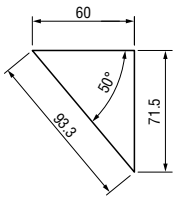
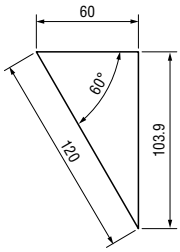


600-50



600-60



WIDE AERIAL CAM UNITS FOR PIERCE

—LGFVW— COMPONENTS TABLE

■LGFVW200

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Driver	FC250	1
③	Base Plate A	Bronze with Graphite	1
④	Cam Base	FC250	1
⑤	Spring Guide Block	Bronze with Graphite	1
⑥	Spring Guide Pin	S45C	2
⑦	Base Plate CR	Bronze with Graphite	1
⑧	Base Plate CL	Bronze with Graphite	1
⑨	Washer	S45C	1
⑩	V-Block	SS400 with Special Sintered Alloy	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	3
⑭	Key B	SS400	2
⑮	Coil Spring	φ50×225	1
⑯	Cap Screw	M16×45	6
⑰	Cap Screw	M20×50	2
⑱	Cap Screw	M12×35	4
⑲	Cap Screw	M8×15	5
⑳	Cap Screw	M10×25	2
㉑	Cap Screw	M8×45	2
㉒	Cap Screw	M12×40	4
㉓	Dowel Pin	φ13×40	6
㉔	Bumper	Urethane	1
㉕	Stop Plate	SS400	1
㉖	Spring Guide Plate	SS400	1

■LGFVW300

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Driver	FC250	1
③	Gib Plate a	Bronze with Graphite	1
④	Cam Base	FC250	1
⑤	Spring Guide Block	Bronze with Graphite	1
⑥	Spring Guide Pin	S45C	4
⑦	Gib Plate r	Bronze with Graphite	1
⑧	Gib Plate ℓ	Bronze with Graphite	1
⑨	Washer	S45C	2
⑩	V-Block	SS400 with Special Sintered Alloy	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	3
⑭	Key B	SS400	2
⑮	Coil Spring	φ50×225	2
⑯	Cap Screw	M16×45	6
⑰	Cap Screw	M20×50	4
⑱	Cap Screw	M12×35	4
⑲	Cap Screw	M8×15	5
⑳	Cap Screw	M10×25	2
㉑	Cap Screw	M8×45	2
㉒	Cap Screw	M16×50	4
㉓	Dowel Pin	φ13×40	6
㉔	Bumper	Urethane	2
㉕	Stop Plate	SS400	1
㉖	Spring Guide Plate	SS400	1

■LGFVW400

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Driver	FC250	1
③	Base Plate A	Bronze with Graphite	2
④	Cam Base	FC250	1
⑤	Spring Guide Block	Bronze with Graphite	2
⑥	Spring Guide Pin	S45C	4
⑦	Base Plate CR	Bronze with Graphite	1
⑧	Base Plate CL	Bronze with Graphite	1
⑨	Washer	S45C	2
⑩	V-Block	SS400 with Special Sintered Alloy	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	3
⑭	Key B	SS400	3
⑮	Coil Spring	φ50×225	2
⑯	Cap Screw	M16×45	11
⑰	Cap Screw	M20×50	4
⑱	Cap Screw	M12×35	4
⑲	Cap Screw	M8×15	6
⑳	Cap Screw	M10×25	8
㉑	Cap Screw	M8×45	2
㉒	Cap Screw	M12×40	8
㉓	Dowel Pin	φ13×40	6
㉔	Bumper	Urethane	2
㉕	Wear Plate R	SS400 with Special Sintered Alloy	1
㉖	Spring Guide Plate	SS400	2
㉗	Base Plate CL	Bronze with Graphite	1
㉘	Stop Plate	SS400	2
㉙	Wear Plate L	SS400 with Special Sintered Alloy	1

■LGFVW500

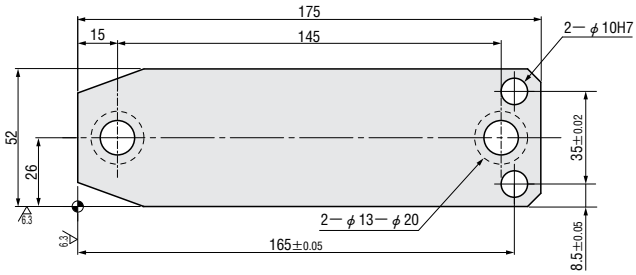
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Driver	FC250	1
③	Base Plate A	Bronze with Graphite	2
④	Cam Base	FC250	1
⑤	Spring Guide Block	Bronze with Graphite	3
⑥	Spring Guide Pin	S45C	6
⑦	Base Plate CR	Bronze with Graphite	1
⑧	Base Plate F	Bronze with Graphite	2
⑨	Washer	S45C	3
⑩	V-Block	SS400 with Special Sintered Alloy	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	3
⑭	Key B	SS400	4
⑮	Coil Spring	φ50×225	3
⑯	Cap Screw	M16×45	14
⑰	Cap Screw	M20×50	6
⑱	Cap Screw	M12×35	4
⑲	Cap Screw	M8×15	7
⑳	Cap Screw	M10×25	8
㉑	Cap Screw	M8×45	2
㉒	Cap Screw	M12×40	12
㉓	Dowel Pin	φ13×40	6
㉔	Bumper	Urethane	3
㉕	Wear Plate R	SS400 with Special Sintered Alloy	1
㉖	Spring Guide Plate	SS400	3
㉗	Base Plate CL	Bronze with Graphite	1
㉘	Stop Plate	SS400	3
㉙	Wear Plate L	SS400 with Special Sintered Alloy	1

■LGFVW600

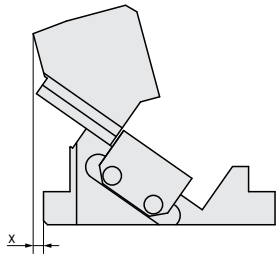
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Driver	FC250	1
③	Base Plate B	Bronze with Graphite	2
④	Cam Base	FC250	1
⑤	Spring Guide Block	Bronze with Graphite	2
⑥	Spring Guide Pin	S45C	8
⑦	Base Plate GR	Bronze with Graphite	1
⑧	Base Plate H	Bronze with Graphite	1
⑨	Washer	S45C	4
⑩	V-Block	SS400 with Special Sintered Alloy	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	3
⑭	Key B	SS400	3
⑮	Coil Spring	φ50×225	4
⑯	Cap Screw	M16×45	11
⑰	Cap Screw	M20×50	8
⑱	Cap Screw	M12×35	4
⑲	Cap Screw	M8×15	6
⑳	Cap Screw	M10×25	2
㉑	Cap Screw	M8×45	2
㉒	Cap Screw	M10×20	8
㉓	Dowel Pin	φ13×40	6
㉔	Bumper	Urethane	4
㉕	Wear Plate R	SS400 with Special Sintered Alloy	1
㉖	Spring Guide Plate	SS400	2
㉗	Cap Screw	M16×50	8
㉘	Stop Plate	SS400	2
㉙	Base Plate GL	Bronze with Graphite	1
㉚	Wear Plate L	SS400 with Special Sintered Alloy	1

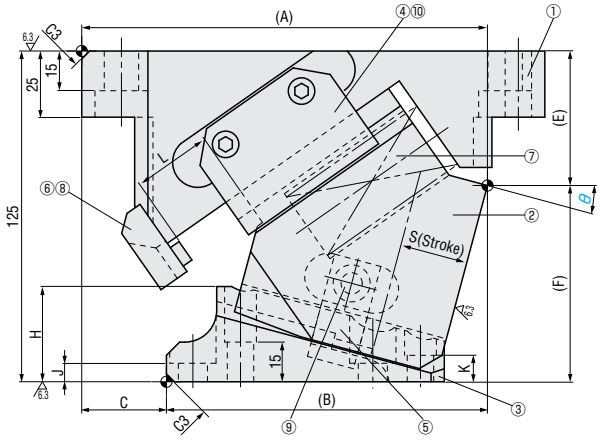
— With additional slide clearance —

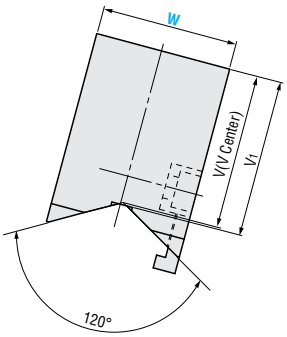
LGFVC52 (θ =00-40)

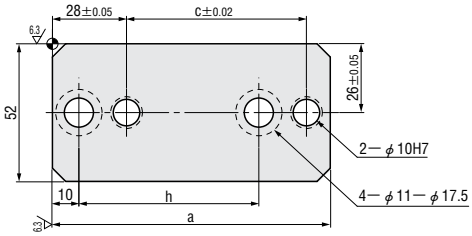


■Rear removal space









■Components table ☞ P.71

W	θ	A	B	C	E	F	H	J	K	L	V	V_1	a	c	h	x
52	00	150	105	45	43	82	21	7	15	30	59	60	105	68	68	0
	05	153.1	111.1	42	45.21	79.79	26									
	10	153.55	116.55	37	47.83	77.17	31		10							
	15	153.32	121.32	32	50.82	74.18	36									8
	20	153.38	126.38	27	55.10	69.90	40									15
	25	154.71	134.71	20	58.62	66.38	45		7							20
	30	153.28	136.28	17	63.31	61.69	49									27
	35	152.09	142.09	10	67.1	57.9	54									31
	40	149.14	145.14	4	71.93	53.07	58									36

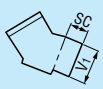
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
19.3	14.7 (1.5)	29.4 (3.0)	245 (25.0)	789 (80.4)	980 (99.9)	5.3	—With additional slide clearance— LGFVC	52	00
21.3				809 (82.4)		5.2			05
23.3				823 (83.9)		5.1			10
25.4				835 (85.2)		5.0			15
27.6				848 (86.4)		5.0			20
30.0				858 (87.4)		5.0			25
32.6				867 (88.4)		5.0			30
35.4				877 (89.4)		4.9			35
38.6				884 (90.2)		5.0			40

Order

Catalog No.	W	—	θ
LGFVC	52	—	15

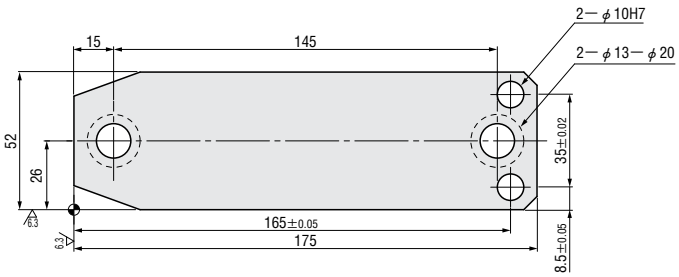
Alterations

Catalog No.	W	—	θ	—	(SC)
LGFVC	52	—	20	—	SC60

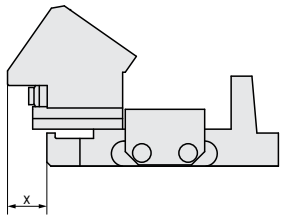
Alteration	Code	Spec.
	SC	Move forward mounting surface 1≦SC≦60 1mm increment

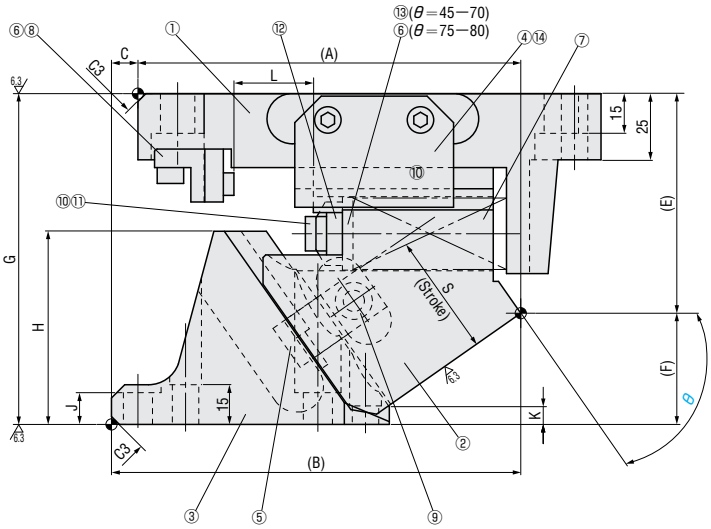
— With additional slide clearance —

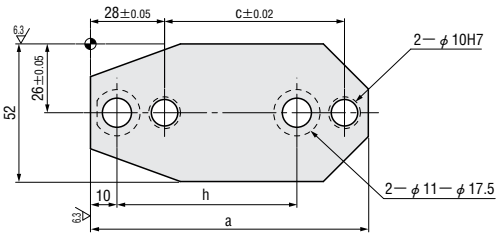
LGFVC52 (θ =45-80)

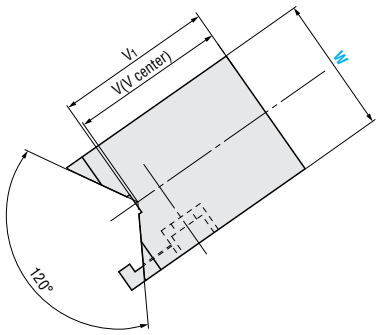


■Rear removal space









■Components table ☞ P.71

W	θ	A	B	C	E	F	G	H	J	K	L	V	V_1	a	c	h	x
52	45	145.41	149.41	4	75.73	49.27	125	63	7	7	30	59	60	105	68	68	31
	50	143.92	152.92	9	79.43	45.57		67	12								32
	55	144.67	154.67	10	82.97	42.03		73									33
	60	150.69	159.69	9	90.28	34.72		74									26
	65	130.16	175.16	45	99.54	25.46		73		15	20						43
	70	133.62	173.62	40	106.97	18.03		72.5									38
	75	148.74	178.74	30	124.59	25.41	150	83			12	70	70	111	55	55	47
	80			30							10			110			

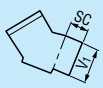
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
42.3	14.7 (1.5)	29.4 (3.0)	245 (25.0)	894 (91.2)	980 (99.9)	5.0	—With additional slide clearance— LGFVC	52	45
46.7				902 (91.9)		5.0			50
52.3				909 (92.7)		5.0			55
60.0				919 (93.7)		5.2			60
47.3			327 (33.3)	912 (93.0)	981 (100.0)	5.9			65
58.5				925 (94.4)		5.9			70
46.3				910 (92.8)		7.8			75
57.5			436 (44.5)	556 (56.7)		7.7			80

Order

Catalog No.	W	—	θ
LGFVC	52	—	50

Alterations

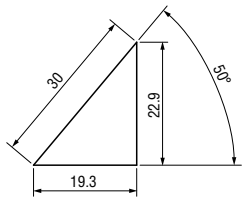
Catalog No.	W	—	θ	—	(SC)
LGFVC	52	—	65	—	SC30

Alteration	Code	Spec.
	SC	Move forward mounting surface 1≦SC≦60 1mm increment

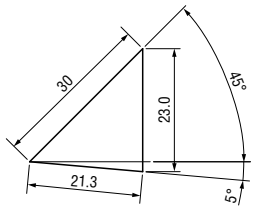
Cam diagram

■LGFVC

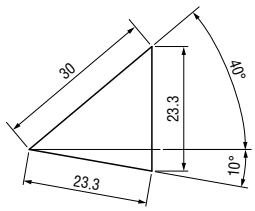
52-00



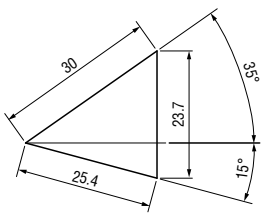
52-05



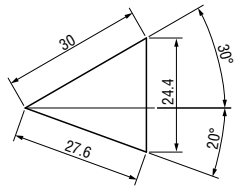
52-10



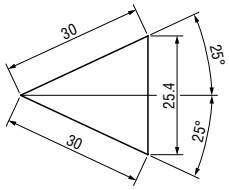
52-15



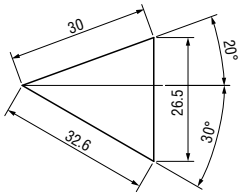
52-20



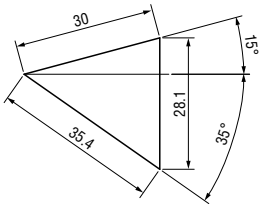
52-25



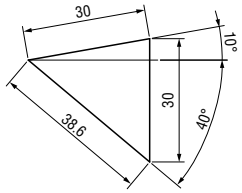
52-30



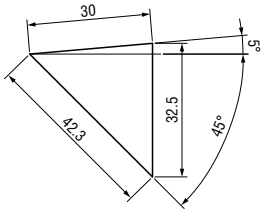
52-35



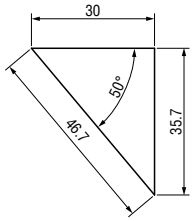
52-40



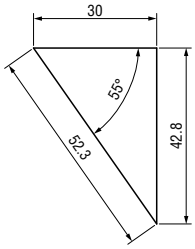
52-45



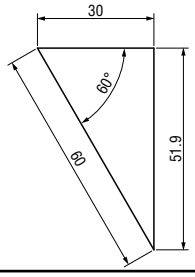
52-50



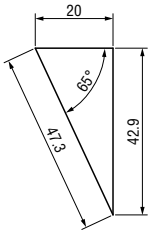
52-55



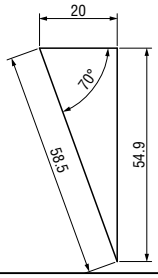
52-60



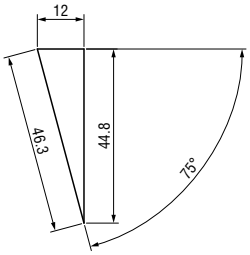
52-65



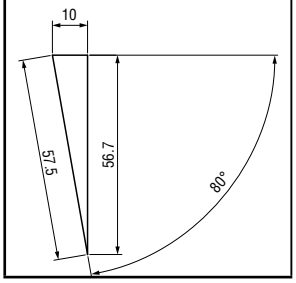
52-70



52-75



52-80



Components table

■LGFVC52(θ=00-40)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FC250	1
②	Cam Slide	FC250 with Graphite	1
③	Cam Driver	FC250	1
④	Slide Retention Plate	S50C with Graphite	2
⑤	Positive Return Strap	S45C	1
⑥	Cap Screw	M8×20	2
⑦	Coil Spring	φ27×100	1
⑧	Stopper	SS400 with Urethane	1
⑨	Cap Screw	M8×15	1
⑩	Cap Screw	M6×16	4

■LGFVC52(θ=45-70)

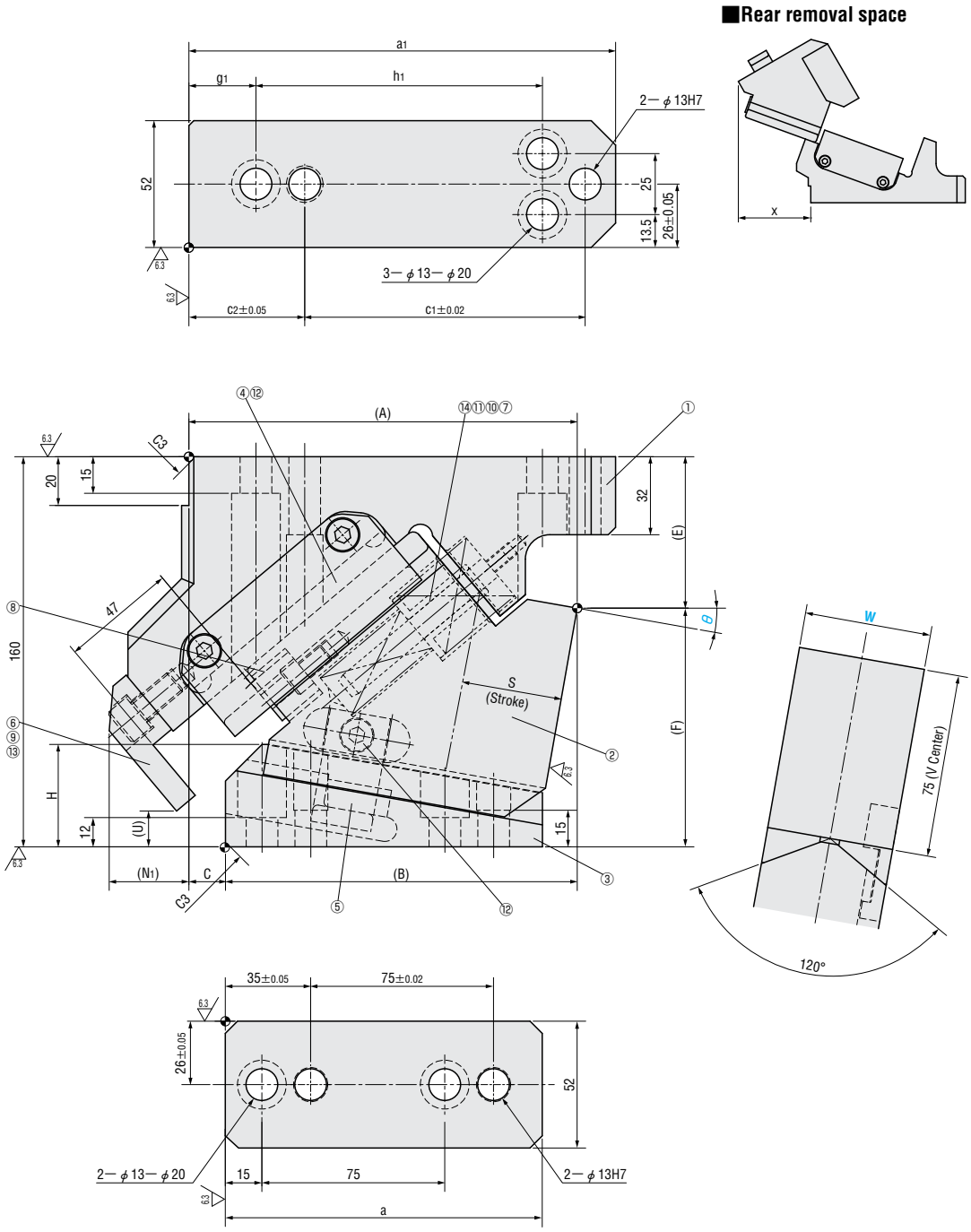
No.	Part Name	Material and Remark	Quantity
①	Cam Base	FC250	1
②	Cam Slide	FC250 with Graphite	1
③	Cam Driver	FC250	1
④	Slide Retention Plate	S50C with Graphite	2
⑤	Positive Return Strap	S45C	1
⑥	Cap Screw	M6×20	2
⑦	Coil Spring	φ27×100 (θ=45-60) φ27×75 (θ=65-70)	1
⑧	Stopper	SS400 with Urethane	1
⑨	Cap Screw	M8×15	1
⑩	Stop Plate	SS400	1
⑪	Cap Screw	M8×25	2
⑫	Spring Plate	SS400	1
⑬	Cap Screw	M6×12	1
⑭	Cap Screw	M6×16	4

■LGFVC52(θ=75-80)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FC250	1
②	Cam Slide	FC250 with Graphite	1
③	Cam Driver	FC250	1
④	Slide Retention Plate	S50C with Graphite	2
⑤	Positive Return Strap	S45C	1
⑥	Cap Screw	M6×20	3
⑦	Coil Spring	φ27×45	1
⑧	Stopper	SS400 with Urethane	1
⑨	Cap Screw	M8×15	1
⑩	Stop Plate	SS400	1
⑪	Cap Screw	M8×25	2
⑫	Spring Plate	SS400	1
⑭	Cap Screw	M6×16	4

— With additional slide clearance —

LGFVA52 (θ =00-20)



■Components table P.77

W	θ	A	B	C	E	F	H	N_1	U	a	a_1	c_1	c_2	g_1	h_1	x
52	00	160	125	35	42	118	41	21.5	10.73	125	175	115	47.5	27.5	117.5	43
	05	161.1	136.1	25	53.31	106.69	40.1	24.35	13.01	130						54
	10	159.28	144.28	15	62.11	97.89	42	31.41	17.9							65
	15	168.99	151.49	17.5	66.32	93.68	49	25.48	25.1		185	120	52.5	32.5	122.5	64
	20	169.72	169.72	0	76.86	83.14	48	27.07	29.7	140						69

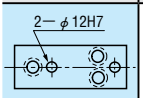
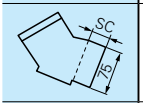
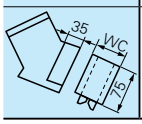
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
30.2	29.4 (3.0)	58.8 (6.0)	30 (3.1)	1378(140.5)	3111 (317.2)	8.8	—With additional slide clearance— LGFVA	52	00
33.4				1555(158.6)		8.6			05
36.6				1689(172.2)		8.7			10
39.9				1800(183.5)		9.0			15
43.3				1911(194.9)		8.9			20

Order

Catalog No.	W	—	θ
LGFVA	52	—	10

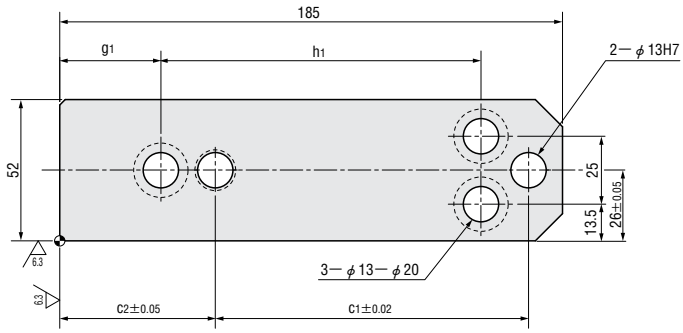
Alterations

Catalog No.	W	—	θ	—	(N12 · SC · WC)
LGFVA	52	—	15	—	SC15

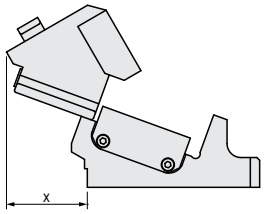
Alterations	Code	Spec.
	N12	Change dowel hole diameter ϕ 13H7 ⇨ ϕ 12H7
	SC	Move forward mounting surface 1≦SC≦50 1mm increment
	WC	Change the width of mounting surface W=52 ⇨ W=80 or 120 Only 80 or 120 can be specified.

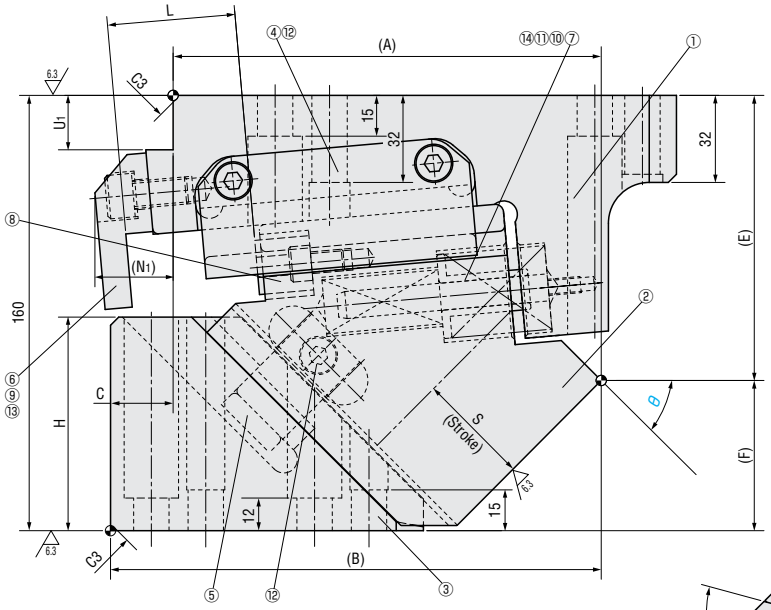
— With additional slide clearance —

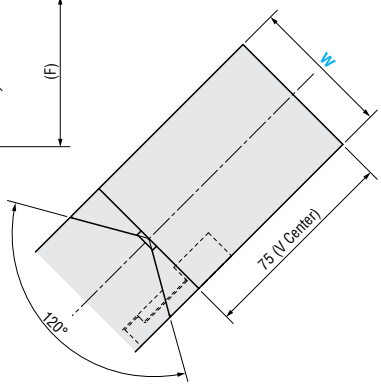
LGFVA52 (θ =25-60)

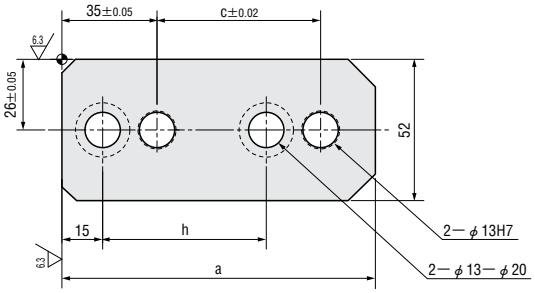


■Rear removal space









■Components table ☞ P.77

W	θ	A	B	C	E	F	H	L	N_1	U_1	a	c	c_1	c_2	g_1	h	h_1	x
52	25	168.92	181.92	13	81.63	78.37	55	47	28.68	20	140	75	120	52.5	32.5	75	122.5	78
	30	166.59	184.09	17.5	85.55	74.45	63		30.31									87
	35	163.72	193.72	30	92.52	67.48	68		30.99									94
	40	163.80	173.80	10	98.47	61.53	70		27.24		115	60	115	57.5	37.5	60	117.5	96
	45	157.35	180.35	23	104.78	55.22	78.5		28.57									103
	50	159.37	174.37	15	103.89	56.11	93	37	20	10			105	67.5	47.5		107.5	99
	55	152.53	182.53	30	111.09	48.91			15									100
	60	142.95	157.95	15	113.10	46.90		27	15		90	40				40		105

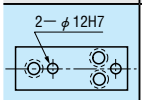
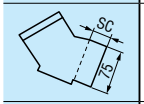
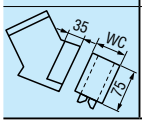
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
47.0	29.4 (3.0)	58.8 (6.0)	30 (3.1)	2000(203.9)	3111 (317.2)	8.8	—With additional slide clearance— LGFVA	52	25
51.0				2089(213.0)		8.6			30
55.4				2178(222.0)		8.8			35
60.4				2244(228.8)		8.9			40
66.2				2333(237.9)		9.1			45
73.1				2400(244.7)		8.8			50
64.5			61(6.2)	2466(251.5)		8.9			55
54.0			92(9.3)	2555(260.6)		8.5			60

Order

Catalog No.	W	—	θ
LGFVA	52	—	55

Alterations

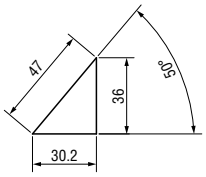
Catalog No.	W	—	θ	—	(N12・SC・WC)
LGFVA	52	—	45	—	WC120

Alterations	Code	Spec.
	N12	Change dowel hole diameter φ 13H7 ⇨ φ 12H7
	SC	Move forward mounting surface 1≦SC≦50 1mm increment
	WC	Change the width of mounting surface W=52 ⇨ W=80 or 120 Only 80 or 120 can be specified.

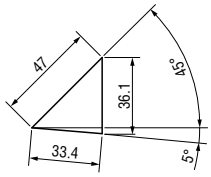
Cam diagram

■LGFVA

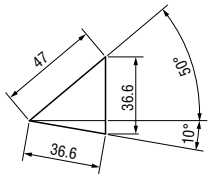
52-00



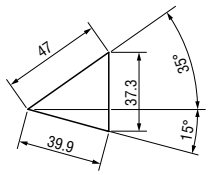
52-05



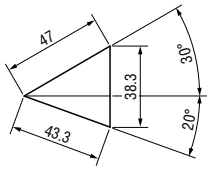
52-10



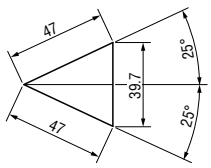
52-15



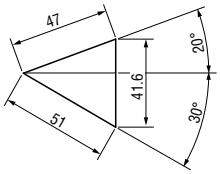
52-20



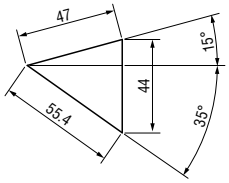
52-25



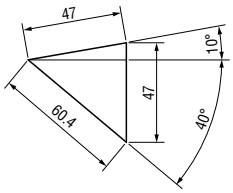
52-30



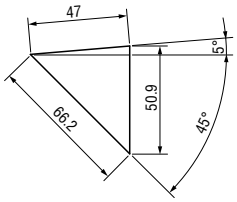
52-35



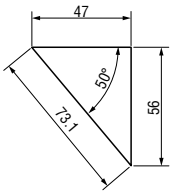
52-40



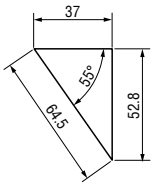
52-45



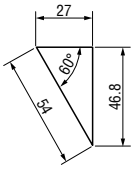
52-50



52-55



52-60



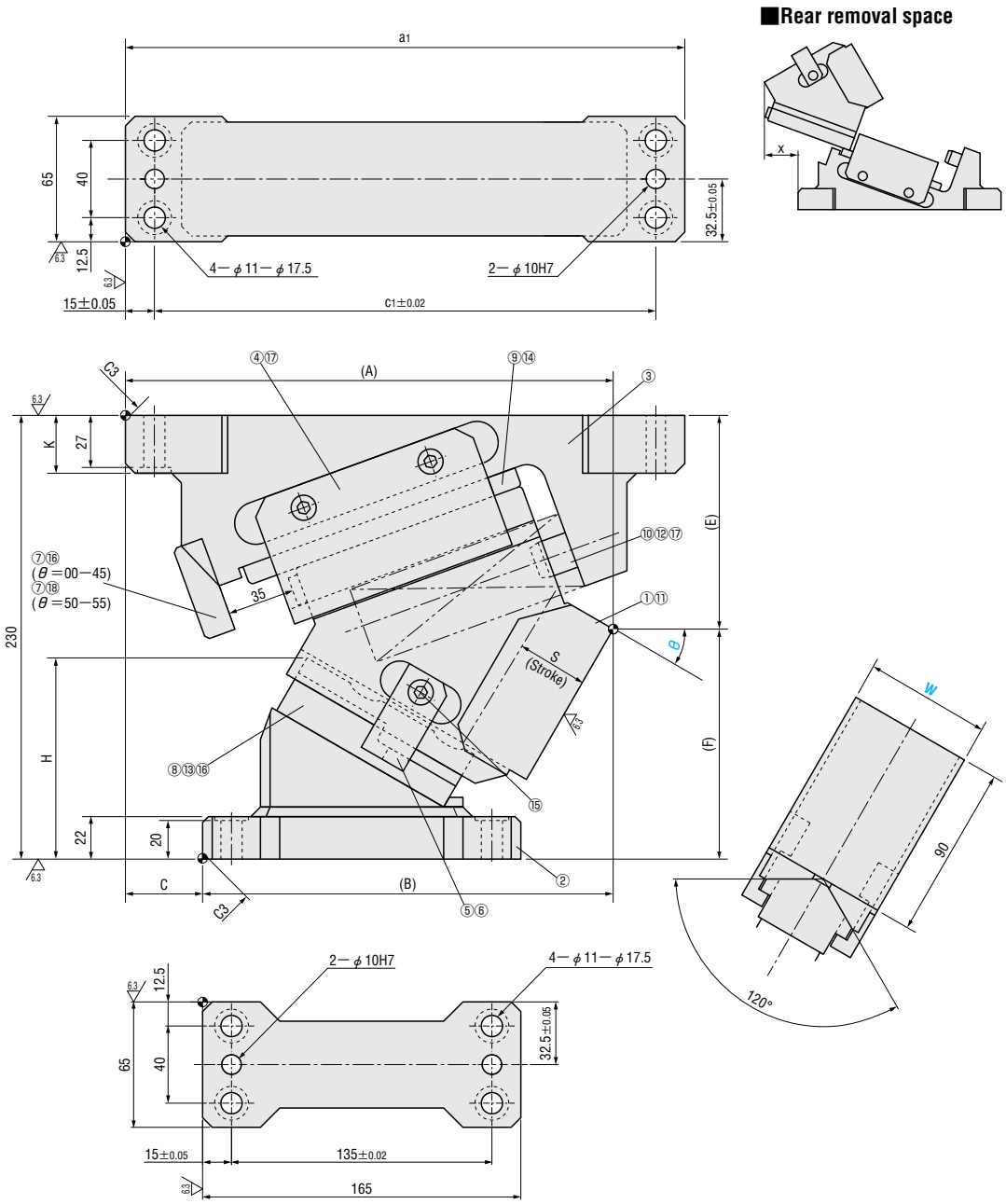
Components table

■LGFVA52

No.	Part Name	Material and Remark	Quantity
①	Cam Base	FCD550	1
②	Cam Slide	FCD550 with Graphite	1
③	Cam Driver	FC250	1
④	Slide Retention Plate	S45C with Graphite	2
⑤	Positive Return Strap	Bronze	1
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	S45C	1
⑧	Bumper	Urethane	1
⑨	Spring Washer	For M10	2
⑩	Coil Spring	ϕ20×80 (θ=00-50) ϕ20×70 (θ=55) ϕ20×45 (θ=60)	1
⑪	Coil Spring	ϕ32×51	1
⑫	Cap Screw	M8×16	5
⑬	Cap Screw	M10×20	2
⑭	Spring Guide Bush	Bronze	1

— With additional slide clearance —

LGFVH65 (θ =00-55)



■Components table ☞ P.83

W	θ	A	B	C	E	F	H	K	a1	c1	x
65	00	255	160	95	79.2	150.8	58.5	30	275	245	0
	05	265.68	170.68		82.29	147.71	67.1				
	10	256.04	181.04	75	86.29	143.71	75.4				19
	15	266.02	191.02		91.18	138.82	83.3				
	20	255.53	195.53	60	96.93	133.07	90.8				36
	25	264.51	204.51		103.48	126.52	97.8				
	30	252.88	212.88	40	110.79	119.21	104.3		290	260	48
	35	260.58	220.58		118.8	111.2	110.2				47
	40	242.56	222.56	20	122.45	107.55	120.4				66
	45	248.75	228.75		131.67	98.33	125				59
	50	236.28	236.28	0	125.98	104.02	148.1	39			71
	55	240.78	240.78		136.14	93.86	153.1				63

Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
22.5	68.6 (7.0)	137.3 (14.0)	0 (0.0)	4654(474.6)	5989 (610.7)	18.4	—With additional slide clearance— LGFVH	65	00
22.6				4671(476.3)		18.6			05
27.2				4893(499.0)		17.4			10
27.8				4911(500.7)		17.5			15
32.3				5065(516.4)		16.6			20
33.4				5099(519.9)		16.8			25
38.0				5201(530.4)		16.9			30
40.2				5236(533.9)		17.0			35
45.0				5321(542.6)		16.4			40
48.7				5373(547.8)		16.6			45
54.5				5441(554.8)		15.9			50
61.0				5492(560.1)		16.1			55

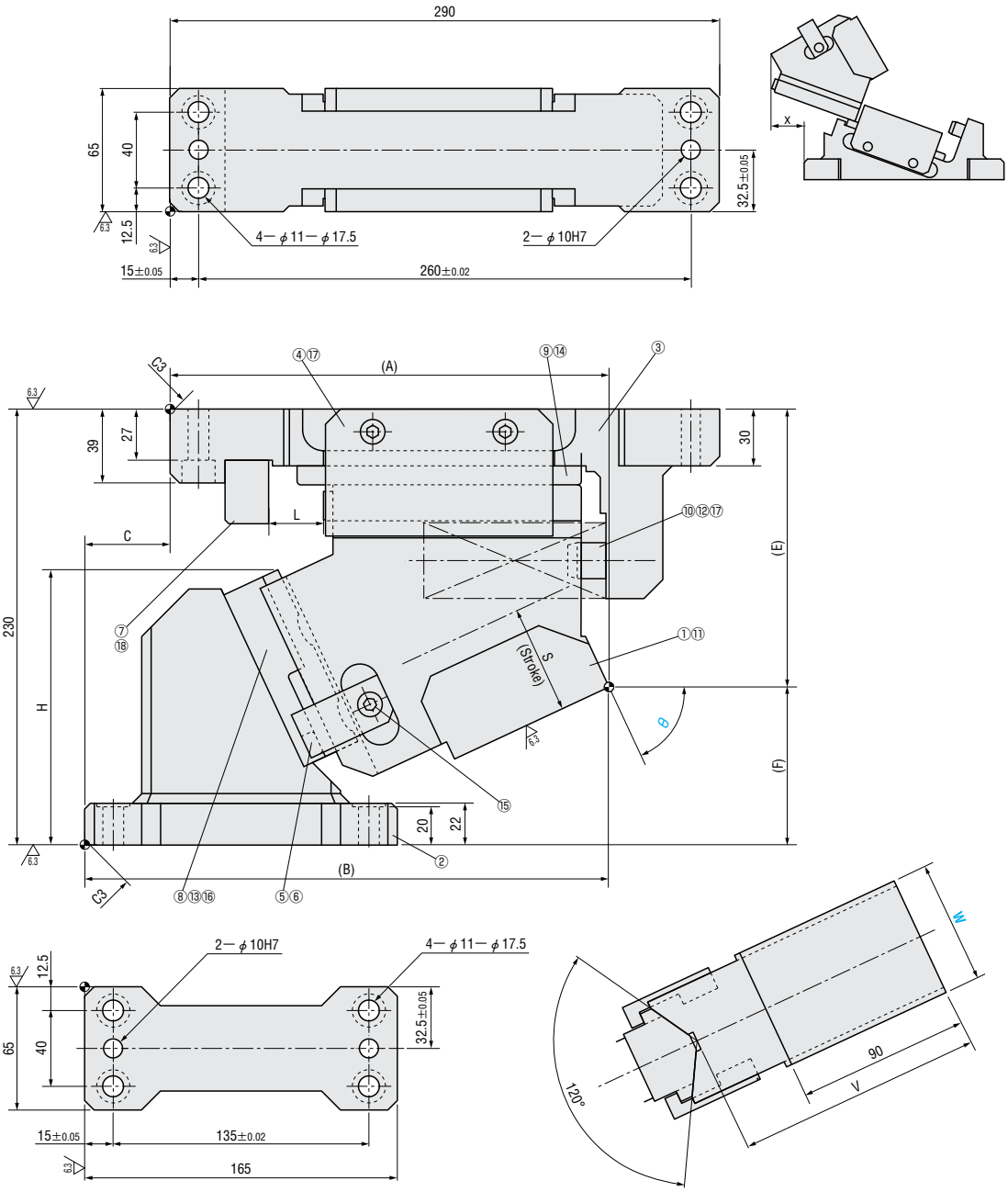
Order

Catalog No.	W	—	θ
LGFVH	65	—	10

— With additional slide clearance —

LGFVH65 (θ =60-75)

■Rear removal space



■Components table P.83

W	θ	A	B	C	E	F	H	L	V	x
65	60	234.5	244.5	10	145.31	84.69	159.8	35	90	64
	65	231.79	276.79	45	146.72	83.28	145.2	29	130	86
	70	228.97	273.97		147.89	82.11	159	23		85
	75	233.82	278.82		167.79	62.21	153.5	18		80

Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
70.0	68.6 (7.0)	137.3 (14.0)	0 (0.0)	5561(567.0)	5989(610.7)	16.4	—With additional slide clearance— LGFVH	65	60
68.5				5506(561.5)	5936(605.3)	18.0			65
67.2				5429(553.6)	5863(597.8)	18.0			70
69.5				4878(497.4)	5258(536.1)	20.0			75

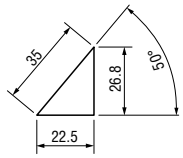
Order

Catalog No.	W	—	θ
LGFVH	65	—	60

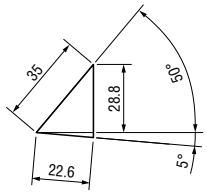
Cam diagram

■LGFVH

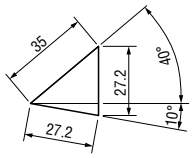
65-00



65-05



65-10



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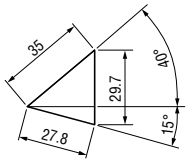
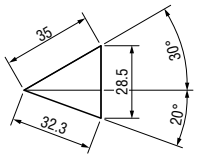


65-20



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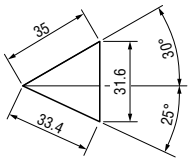
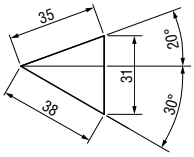
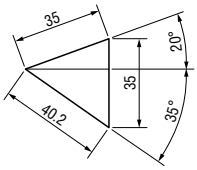


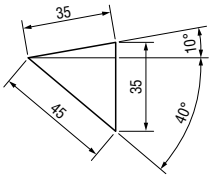
65-30



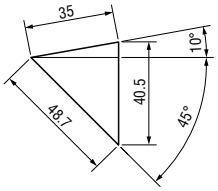
65-35



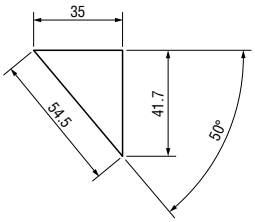
65-40



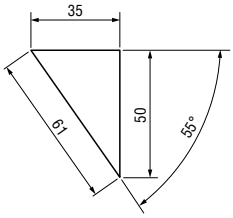
65-45



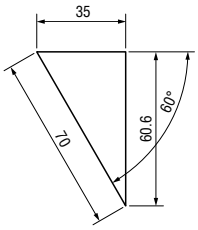
65-50



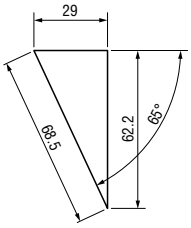
65-55



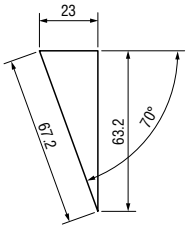
65-60



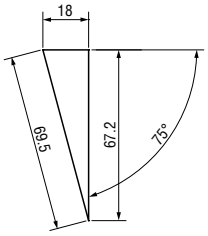
65-65



65-70



65-75



Components table

■LGFVH65(θ=00-45)

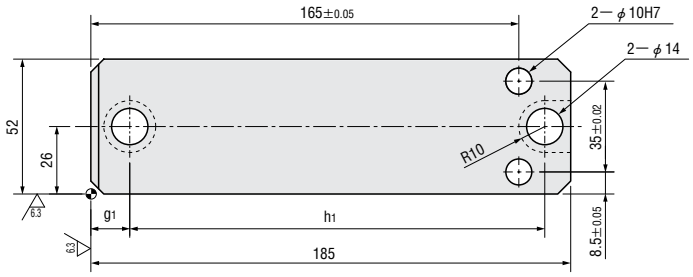
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FCD500 with Graphite	1
②	Cam Driver	FCD500	1
③	Cam Base	FCD500	1
④	Slide Retention Plate	S45C with Graphite	2
⑤	Positive Return Strap L	S45C	1
⑥	Positive Return Strap R	S45C	1
⑦	Stop Plate	SS400	1
⑧	V-Block	Bronze with Graphite	1
⑨	Wear Plate	Bronze with Graphite	1
⑩	Spring Guide Pin	SS400	1
⑪	Bumper	Urethane	2
⑫	Coil Spring	φ40×152	1
⑬	Dowel Pin	φ10×30	2
⑭	Cap Screw	M10×20	2
⑮	Cap Screw	M8×15	2
⑯	Cap Screw	M10×30	4
⑰	Cap Screw	M8×20	5

■LGFVH65(θ=50-75)

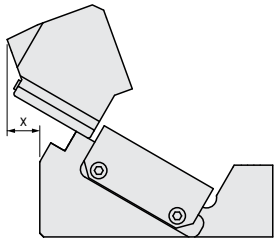
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FCD500 with Graphite	1
②	Cam Driver	FCD500	1
③	Cam Base	FCD500	1
④	Slide Retention Plate	S45C with Graphite	2
⑤	Positive Return Strap L	S45C	1
⑥	Positive Return Strap R	S45C	1
⑦	Stop Plate	SS400	1
⑧	V-Block	Bronze with Graphite	1
⑨	Wear Plate	Bronze with Graphite	1
⑩	Spring Guide Pin	SS400	1
⑪	Bumper	Urethane	2
⑫	Coil Spring	φ40×152 (θ=50-60) φ40×127 (θ=65) φ40×102 (θ=70) φ40×89 (θ=75)	1
⑬	Dowel Pin	φ10×30	2
⑭	Cap Screw	M10×20	2
⑮	Cap Screw	M8×15	2
⑯	Cap Screw	M10×30	2
⑰	Cap Screw	M8×20	5
⑱	Cap Screw	M10×40	2

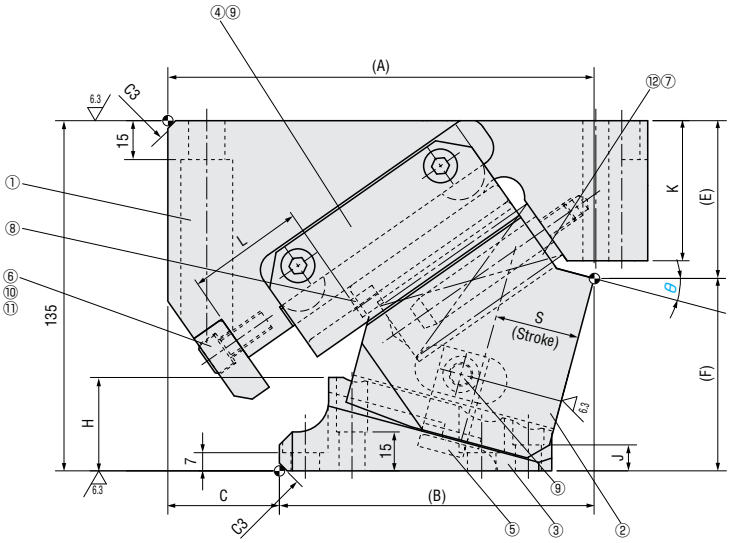
— With additional slide clearance —

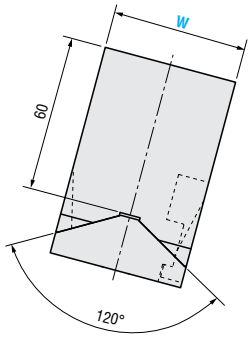
LGFVL52 (θ =00-40)

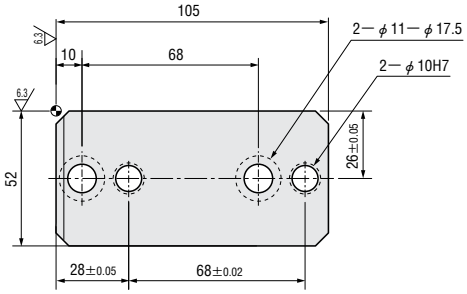


■Rear removal space









■Components table ☞ P.89

W	θ	A	B	C	E	F	H	J	K	L	g1	h1	x
52	00	161	105	56	53	82	21	15	49	47	15	160	7
	05	162.1	111.1	51	55.21	79.79	26		50	45			0
	10	162.55	116.55	46	57.83	77.17	31	10	52				7
	15	164.32	121.32	43	60.82	74.18	36		54				12
	20	164.38	126.38	38	65.1	69.9	40		57				21
	25	162.71	134.71	28	68.62	66.38	45	7	60				30
	30	160.28	136.28	24	73.31	61.69	49		64				38
	35	158.09	142.09	16	77.1	57.9	54		67		35	140	44
	40	153.14	145.14	8	81.93	53.07	58		72				52

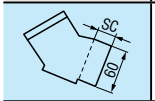
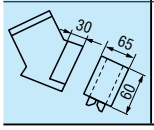
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
30.2	14.7 (1.5)	29.4 (3.0)	0(0.0)	768(78.3)	921(93.9)	6.4	—With additional slide clearance— LGFVL	52	00
31.9			20(2.0)	764(77.9)	902(91.9)	6.1			05
35.0				776(79.1)		6.0			10
38.2				786(80.1)		5.8			15
41.5				796(81.1)		5.7			20
45.0				804(81.9)		5.5			25
48.8				811(82.7)		5.5			30
53.1				819(83.5)		5.4			35
57.9				825(84.1)		5.5			40

Order

Catalog No.	W	—	θ
LGFVL	52	—	25

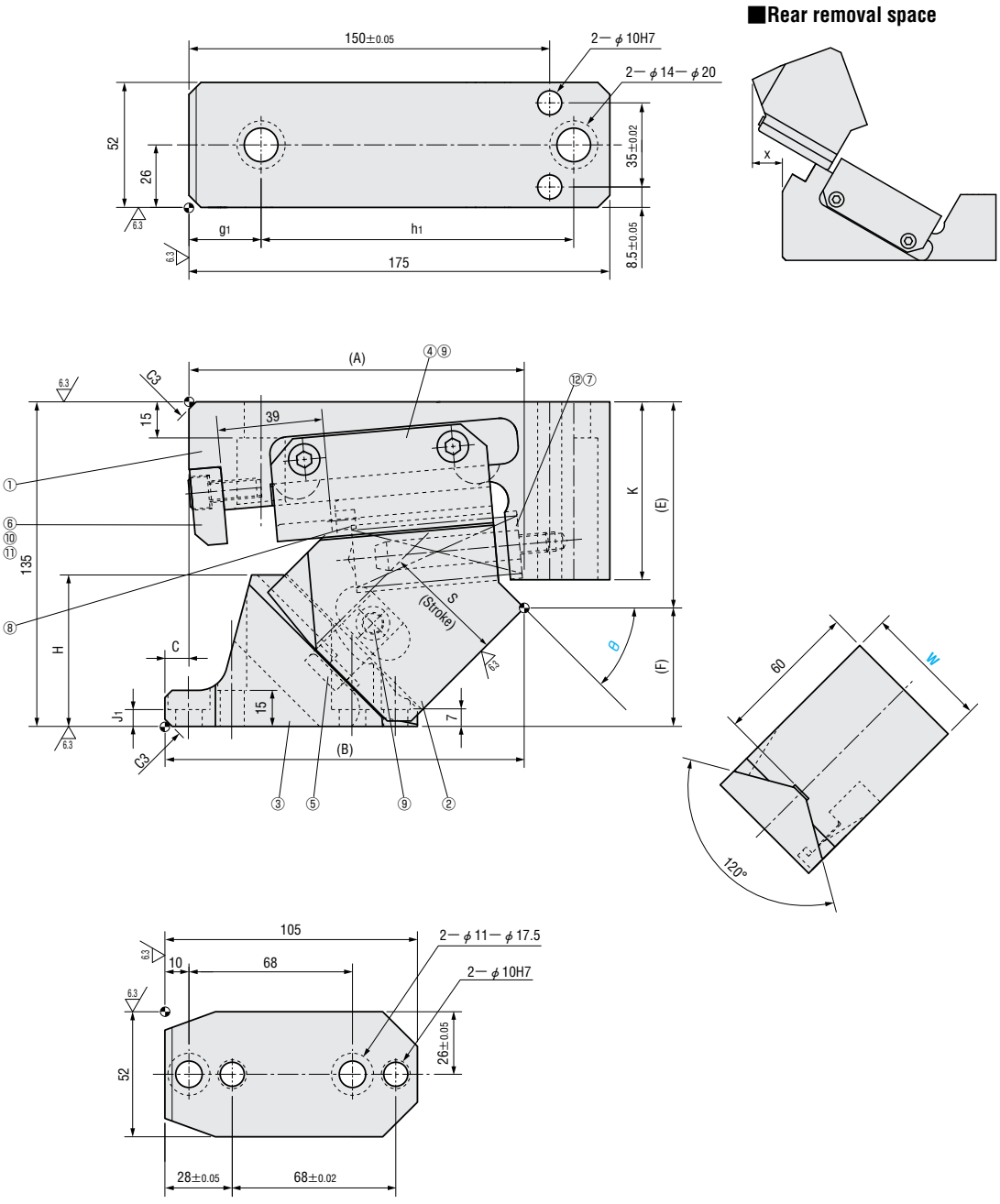
Alterations

Catalog No.	W	—	θ	—	(SC・WC)
LGFVL	52	—	15	—	SC50

Alterations	Code	Spec.
	SC	Move forward mounting surface 1≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=52 ⇨ W=65

— With additional slide clearance —

LGFVL52 (θ =45-50)



■Components table P.89

W	θ	A	B	C	E	F	H	J_1	K	g_1	h_1	x
52	45	139.41	149.41	10	85.73	49.27	63	7	74	27	133	67
	50	135.92	152.92	17	89.43	45.57	68	12	78	30	130	70

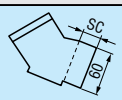
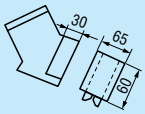
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
54.9	14.7 (1.5)	29.4 (3.0)	137 (14.0)	833(84.9)	902 (91.9)	5.3	—With additional slide clearance— LGFVL	52	45
60.7				839(85.5)		5.4			50

Order

Catalog No.	W	—	θ
LGFVL	52	—	50

Alterations

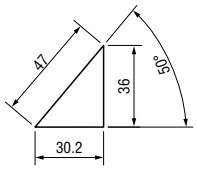
Catalog No.	W	—	θ	—	(SC・WC)
LGFVL	52	—	50	—	WC

Alterations	Code	Spec.
	SC	Move forward mounting surface 1≦SC≦60 1mm increment
	WC	Change the width of mounting surface W=52 ⇨ W=65

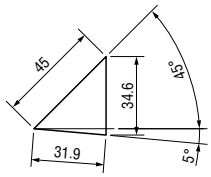
Cam diagram

■LGFVL

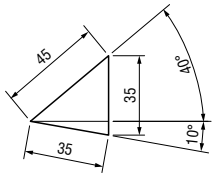
52-00



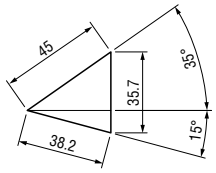
52-05



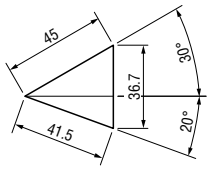
52-10



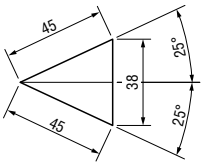
52-15



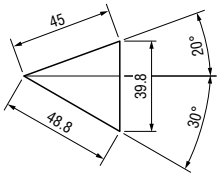
52-20



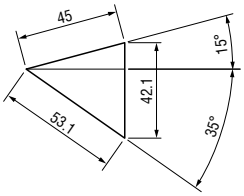
52-25



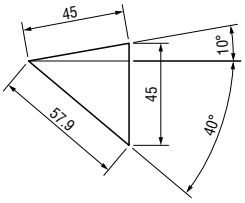
52-30



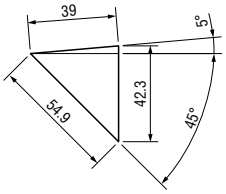
52-35



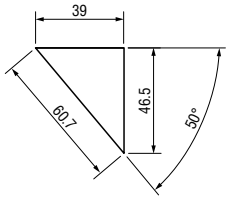
52-40



52-45



52-50

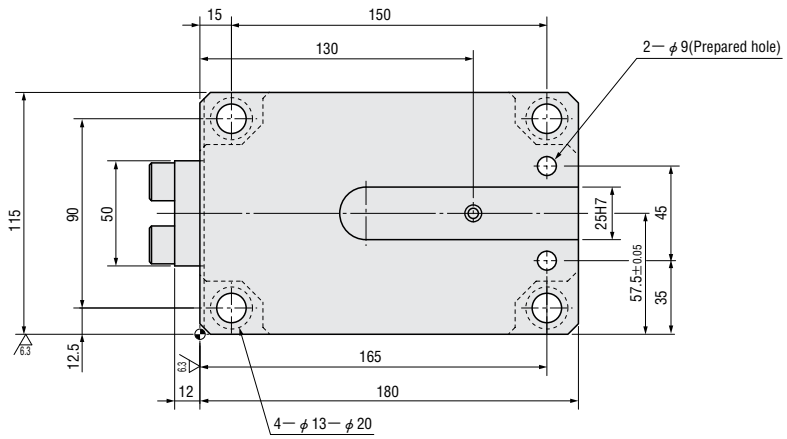


Components table

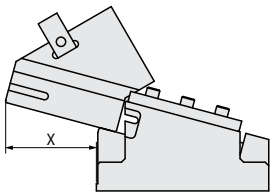
■LGFVL52

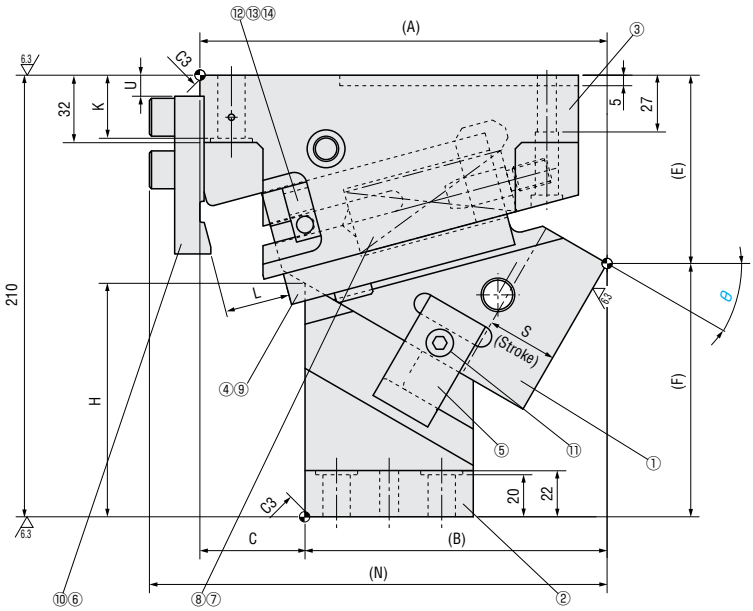
No.	Part Name	Material and Remark	Quantity
①	Cam Base	FC250	1
②	Cam Slide	FC250 with Graphite	1
③	Cam Driver	FC250	1
④	Slide Retention Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	1
⑥	Cap Screw	M8×20	2
⑦	Coil Spring	φ25×115	1
⑧	Bumper	Urethane	2
⑨	Cap Screw	M8×15	5
⑩	Stop Plate	SS400	1
⑪	Spring Washer	For M8	2
⑫	Spring Guide Pin	S45C	1

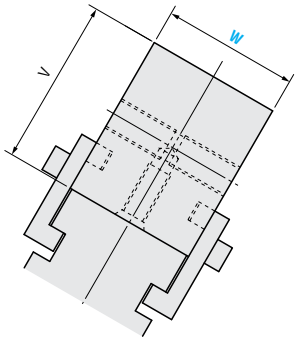
LGFTT65

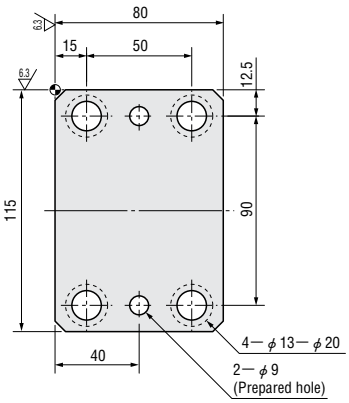


■Rear removal space









■Components table ☞ P.98

W	θ	A	B	C	E	F	H	K	L	N	V	U	X
65	00	185.94	110.94	75	56.57	153.43	73.4	30	38	209.94	80	55	52
	05	193.01	123.01	70			73.9			217.01	90		
	10	196.8	126.8		67.58	142.42	83.5			220.8	80	40	61
	15	203.77	136.77	67	68.81	141.19	84.7			227.77	90		
	20	198.1	138.1	60	74.31	135.69	100.8		35	222.1	80	10	71
	25	204.75	149.75	55	76.73	133.27	103.8			228.75	90		
	30	193.63	143.63	50	89.52	120.48	111		30	217.63	80		79
	35	199.76	154.76	45	93.06	116.94	105			223.76	90		
	40	188.72	148.72	40	99.62	110.38	120	25	33	212.72	80	15	
	45	194.13	160.13	34	104.16	105.84	115			218.13	90		
	50	190	160	30	110	100	130	18	35	214	100	10	77
	55		170	20	115	95			25				87
	60												
	65		190	0	130	80			20		110		92
	70												

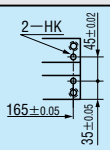
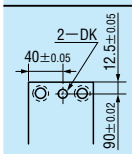
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
26.9	19.6(2.0)	39.2(4.0)	166(16.9)	898(91.6)	1067(108.8)	19.5	LGFTT	65	00
27.0			237(24.2)	972(99.1)	1138(116.0)	19.8			05
31.6				995(101.5)		19.3			10
32.2				998(101.7)		19.6			15
33.8			308(31.4)	1014(103.4)		18.1			20
35.0				1019(103.9)		18.4			25
33.5	23.5(2.4)	47.1(4.8)	427(43.5)	1031(105.1)		17.7			30
35.4				1038(105.9)		18.0			35
42.9			356(36.3)	1048(106.8)		16.9			40
46.5				1055(107.5)		17.1			45
54.5	29.4(3.0)	58.8(6.0)	308(31.4)	1062(108.3)		16.8			50
43.6			297(30.3)	953(97.2)	1040(106.0)	17.8			55
50.0				965(98.4)		17.3			60
47.3				829(84.5)	891(90.9)	18.5			65
58.5				841(85.7)		18.4			70

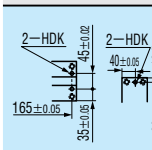
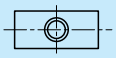
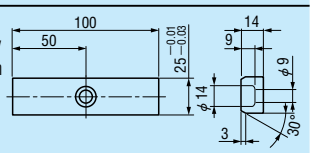
Order

Catalog No.	W	—	θ
LGFTT	65	—	40

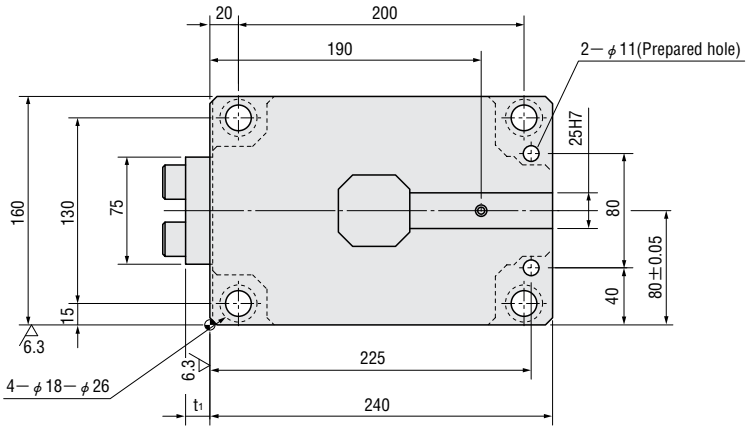
Alterations

Catalog No.	W	—	θ	—	(HK・DK…etc.)
LGFTT	65	—	15	—	HDK10

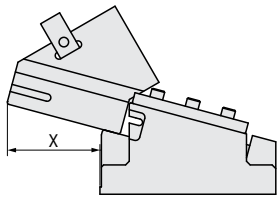
Alterations	Code	Spec.
	HK	Finish dowel hole on holder Only 10, 12 or 13 can be specified φ9(Prepared hole) ⇨ φ10H7, φ12H7 or φ13H7
	DK	Finish dowel hole on driver Only 10, 12 or 13 can be specified φ9(Prepared hole) ⇨ φ10H7, φ12H7 or φ13H7

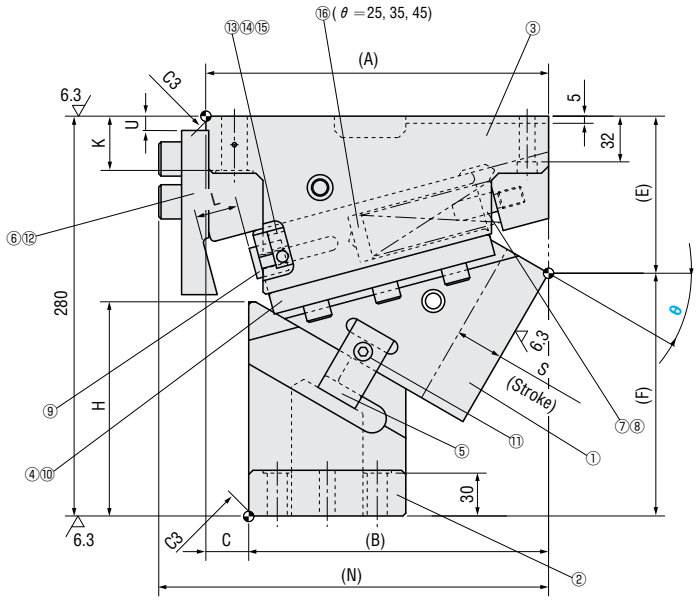
Alterations	Code	Spec.
	HDK	Finish dowl holes on driver & holder Only 10, 12 or 13 can be specified φ9(Prepared hole) ⇨ φ10H7, φ12H7 or φ13H7
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 

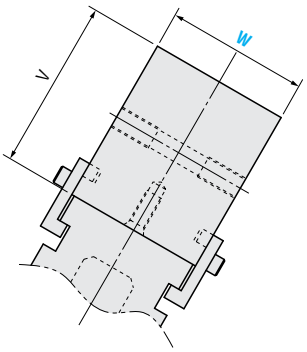
LGFTT100

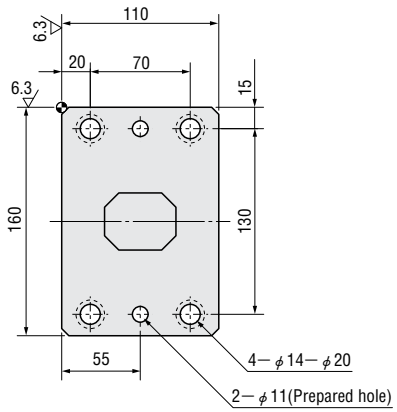


■Rear removal space









■Components table ☞ P.98

W	θ	A	B	C	E	F	H	K	L	N	V	U	t1	X
100	00	240	180	60	85	195	95	38	40	273	100	55	17	83
	05	236.89	176.89		73.82	206.18	81.1			269.89	140			
	10	240	180		90	190	120.2			273	100	35		95
	15	254.35	194.35		81.51	198.49	105.6			287.35	140			
	20	240	190	50	110	170	130		32	274	100	15	18	115
	25	253.26	203.26		102.60	177.40	113			287.26	140			
	30	240	210	30	110	170	150		30	273	120	10	17	126
	35	252.34	222.34		109.69	170.31	140			285.34	140			
	40	240	210		115	165	160	20		273	120			130
	45	247.41	217.41		114.68	165.32	155			280.41	140			
	50	240	230	10	120	160	160			272			16	132
	55		240	0	145	135	170							
	60													
	65						180		20					142
	70													

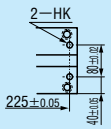
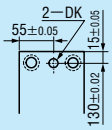
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
28.3	44.1(4.5)	88.3(9.0)	315(32.1)	2388(243.5)	2835(289.1)	47.0	LGFTT	100	00
28.4			147(15.0)	2576(262.7)	3091(315.2)	47.8			05
33.3				2650(270.2)		44.9			10
33.9				2657(270.9)		47.1			15
30.9			176(18.0)	2540(259.0)	2999(305.8)	44.8			20
32.0				2558(260.8)		46.5			25
33.5				2426(247.3)	2822(287.8)	44.1			30
35.4				2452(250.0)		45.4			35
39.0				2487(253.6)		45.4			40
42.3				2514(256.3)		41.7			45
46.7	49.0(5.0)	98.1(10.0)		2540(259.0)		41.2			50
52.3				2567(261.7)		44.0			55
60.0				2602(265.3)		42.5			60
47.3			552(56.3)	2528(257.8)	2760(281.4)	43.0			65
58.5				2572(262.3)		41.8			70

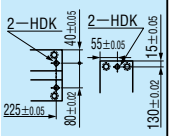
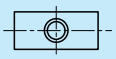
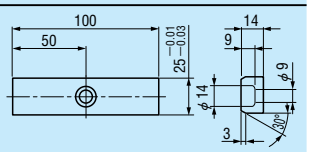
Order

Catalog No.	W	—	θ
LGFTT	100	—	15

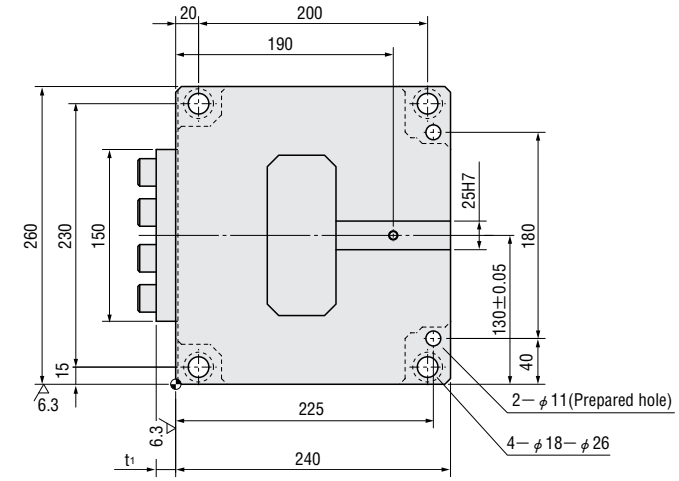
Alterations

Catalog No.	W	—	θ	—	(HK・DK…etc.)
LGFTT	100	—	15	—	HK12

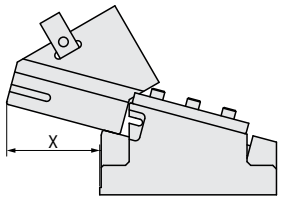
Alterations	Code	Spec.
	HK	Finish dowel hole on holder Only 12 or 13 can be specified φ11(Prepared hole) ⇨ φ12H7 or φ13H7
	DK	Finish dowel hole on driver Only 12 or 13 can be specified φ11(Prepared hole) ⇨ φ12H7 or φ13H7

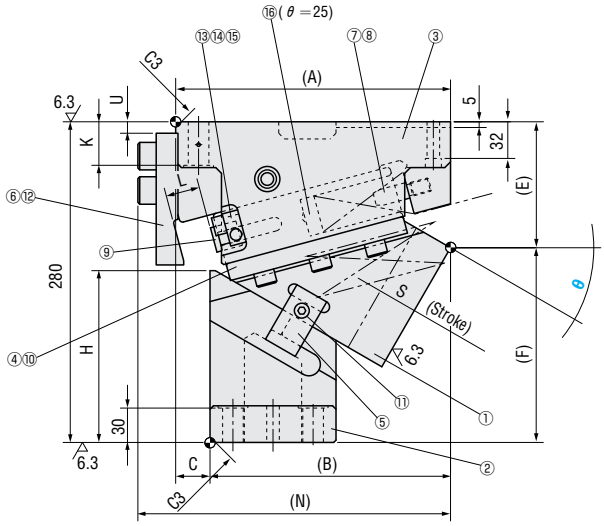
Alterations	Code	Spec.
	HDK	Finish dowl holes on driver & holder Only 12 or 13 can be specified φ11(Prepared hole) ⇨ φ12H7 or φ13H7
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 

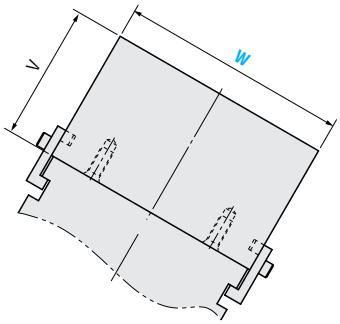
LGFTT200

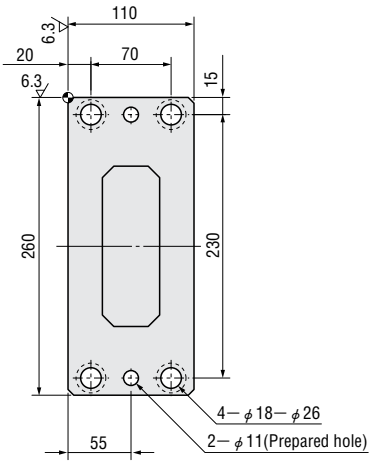


■Rear removal space









■Components table ☞ P.98

W	θ	A	B	C	E	F	H	K	L	N	V	U	t1	X
200	00	240	180	60	90	190	90	38	40	273	100	60	17	83
	05	236.82	176.82		78.84	201.16	86.1			269.82	130			
	10	240	180		90	190	120.2			273	100	35		95
	15	254.35	194.35		81.51	198.49	116			287.35	130			
	20	240	190	50	110	170	130		32	274	100	15	18	115
	25	253.27	203.27		102.6	177.4	125			287.27	130			
	30	240	210	30	110	170	150		30	273	120	10	17	126
	35	252.34	222.34		109.69	170.31				285.34	140			
	40	240	210		115	165	160	20		273	120			130
	45	247.41	217.41		114.68	165.32				280.41	140			
	50	240	230	10	120	160				272			16	132
	55		240	0	145	135	170							
	60													
	65						180		20					
	70													142

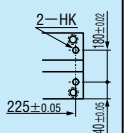
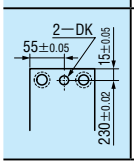
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
28.3	98.1(10.0)	196.1(20.0)	630(64.2)	4775(487.0)	5670(578.2)	81.5	LGFTT	200	00
28.4			294(30.0)	5152(525.4)	6182(630.4)	82.3			05
33.3				5299(540.4)		75.7			10
33.9				5314(541.9)		80.5			15
30.9			353(36.0)	5080(518.0)	5998(611.6)	76.1			20
32.0				5116(521.6)		80.1			25
33.5				4851(494.7)	5645(575.6)	77.0			30
35.4				4904(500.1)		80.9			35
39.0				4974(507.3)		71.4			40
42.3				5027(512.7)		74.7			45
46.7	117.7(12.0)	235.4(24.0)		5080(518.0)		71.6			50
52.3				5133(523.4)		78.6			55
60.0				5204(530.6)		73.9			60
47.3			1104(112.6)	5056(515.6)	5520(562.9)	77.2			65
58.5				5145(524.6)		72.2			70

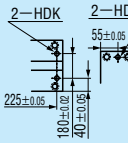
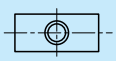
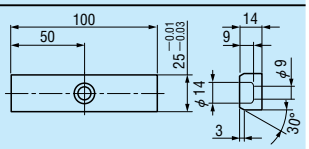
Order

Catalog No.	W	—	θ
LGFTT	200	—	30

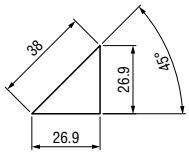
Alterations

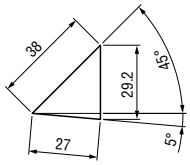
Catalog No.	W	—	θ	—	(HK・DK…etc.)
LGFTT	200	—	15	—	K

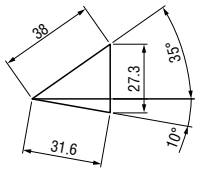
Alterations	Code	Spec.
	HK	Finish dowel hole on holder Only 12, 13 or 16 can be specified φ11(Prepared hole) ⇨ φ12H7, φ13H7 or φ16H7
	DK	Finish dowel hole on driver Only 12, 13 or 16 can be specified φ11(Prepared hole) ⇨ φ12H7, φ13H7 or φ16H7

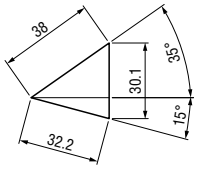
Alterations	Code	Spec.
	HDK	Finish dowl holes on driver & holder Only 12, 13 or 16 can be specified φ11(Prepared hole) ⇨ φ12H7, φ13H7 or φ16H7
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 

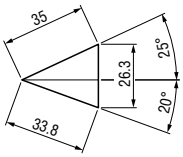
■LGFTT

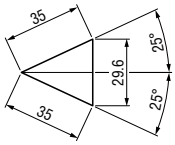
65-00


65-05


65-10


65-15


65-20


65-25


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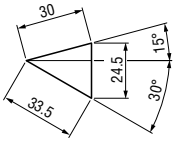

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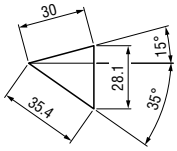

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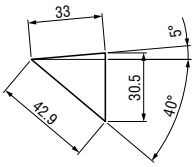

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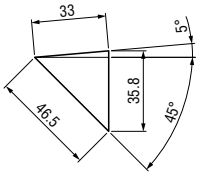

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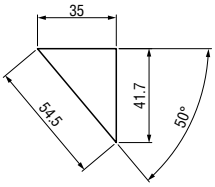

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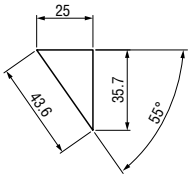

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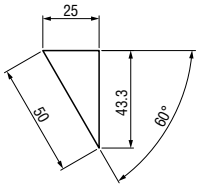

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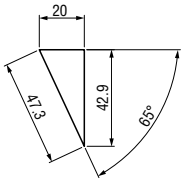

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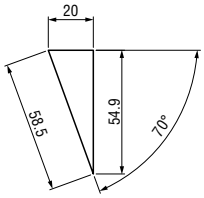

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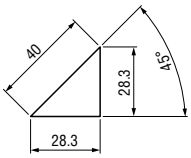

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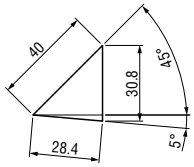

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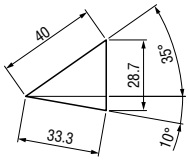

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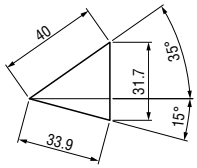

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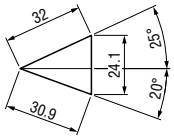

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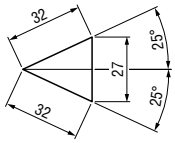

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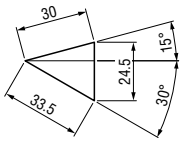

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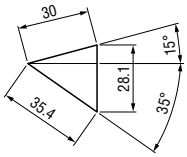

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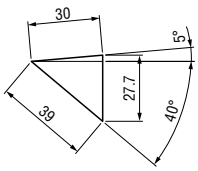

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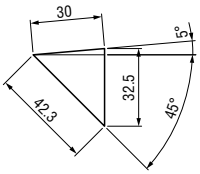

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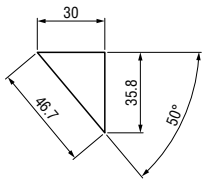

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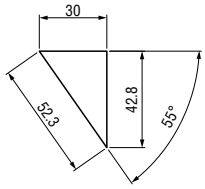

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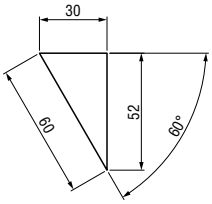

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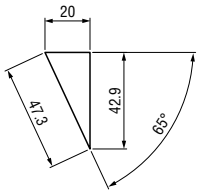

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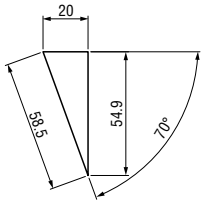

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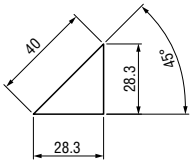

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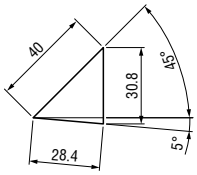

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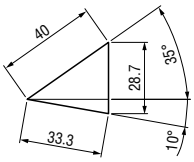

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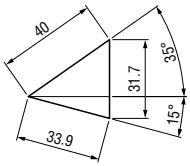

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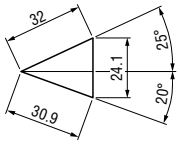

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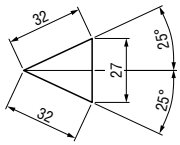

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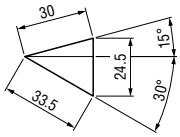

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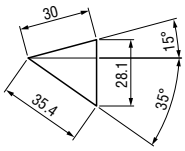

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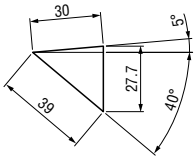

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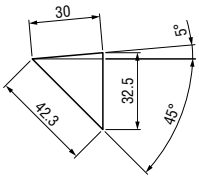

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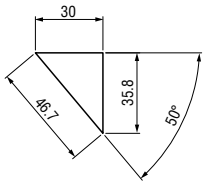

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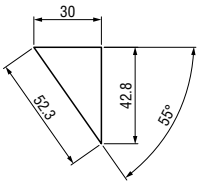

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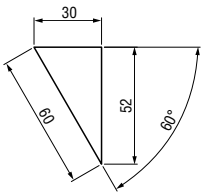

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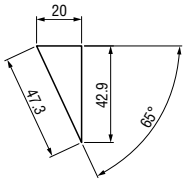
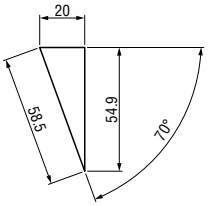


200-70



AERIAL CAM UNITS FOR TRIM & FLANGE

—LGFTT— COMPONENTS TABLE

■LGFTT65(θ=00-35)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	FC250 with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	1
⑧	Coil Spring	φ30×125	1
⑨	Cap Screw	M12×25	4
⑩	Cap Screw	M12×35	4
⑪	Cap Screw	M8×25	2
⑫	Safety Plate	S45C	2
⑬	Dowel Pin	φ8×30	2
⑭	Cap Screw	M10×35	2

■LGFTT65(θ=40-70)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	FC250 with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	1
⑧	Coil Spring	φ30×125 (θ=40-50) φ30×100 (θ=55-70)	1
⑨	Cap Screw	M12×25	4
⑩	Cap Screw	M12×35	2
⑪	Cap Screw	M8×25	2
⑫	Safety Plate	S45C	2
⑬	Dowel Pin	φ8×30	2
⑭	Cap Screw	M10×35	2

■LGFTT100(θ=00-20, 30)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	2
⑧	Coil Spring	φ30×175 (θ=00) φ30×150 (θ=05-15) φ30×125 (θ=20,30)	2
⑨	Bumper	Urethane	2
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	4
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ8×35	2
⑮	Cap Screw	M10×30	2

■LGFTT100(θ=25, 35)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	2
⑧	Coil Spring	φ30×125	2
⑨	Bumper	Urethane	2
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	4
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ8×35	2
⑮	Cap Screw	M10×30	2
⑯	Spacer	SS400	2

■LGFTT100(θ=40, 50-70)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	2
⑧	Coil Spring	φ30×125 (θ=40, 50-60) φ30×100 (θ=65-70)	2
⑨	Bumper	Urethane	2
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	2
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ8×35	2
⑮	Cap Screw	M10×30	2

■LGFTT100(θ=45)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	2
⑧	Coil Spring	φ30×125	2
⑨	Bumper	Urethane	2
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	2
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ8×35	2
⑮	Cap Screw	M10×30	2
⑯	Spacer	SS400	2

■LGFTT200(θ=00-20,30-35)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	4
⑧	Coil Spring	φ30×175 (θ=00) φ30×150 (θ=05-15) φ30×125 (θ=20,30-35)	4
⑨	Bumper	Urethane	4
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	8
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ10×35	2
⑮	Cap Screw	M10×35	2

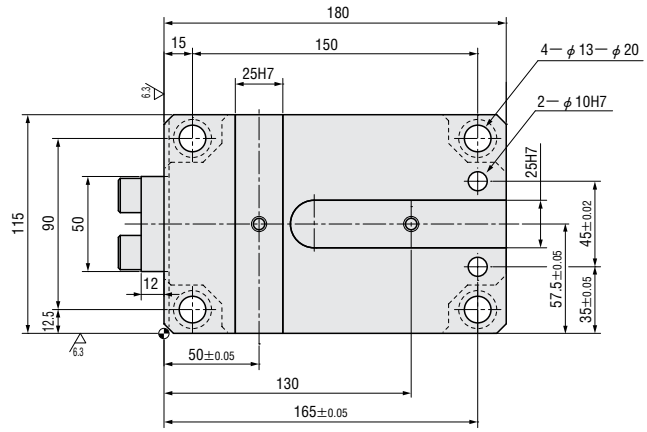
■LGFTT200(θ=40-70)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	4
⑧	Coil Spring	φ30×125 (θ=40-60) φ30×100 (θ=65-70)	4
⑨	Bumper	Urethane	4
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	4
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ10×35	2
⑮	Cap Screw	M10×35	2

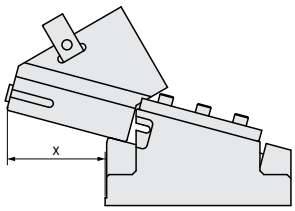
■LGFTT200(θ=25)

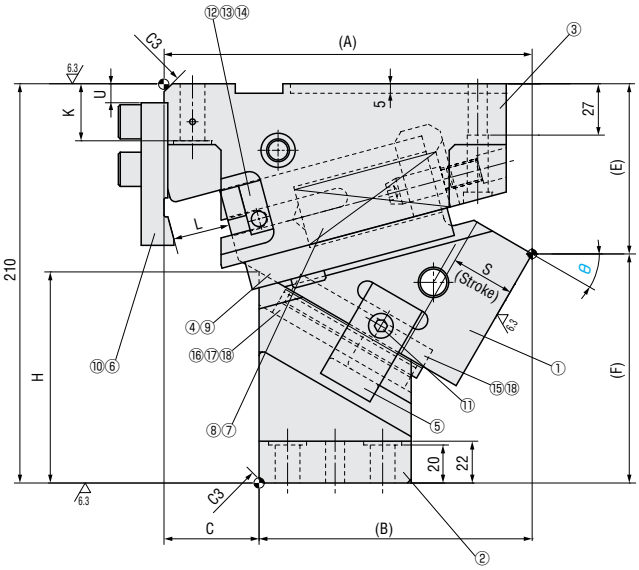
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Wear Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	4
⑧	Coil Spring	φ30×125	4
⑨	Bumper	Urethane	4
⑩	Cap Screw	M12×35	6
⑪	Cap Screw	M8×25	2
⑫	Cap Screw	M16×45	8
⑬	Safety Plate	S45C	2
⑭	Dowel Pin	φ10×35	2
⑮	Cap Screw	M10×35	2
⑯	Spacer	SS400	4

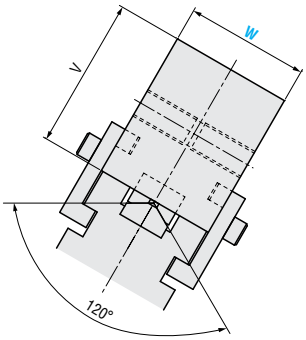
LGFVT65 (θ =00-70)

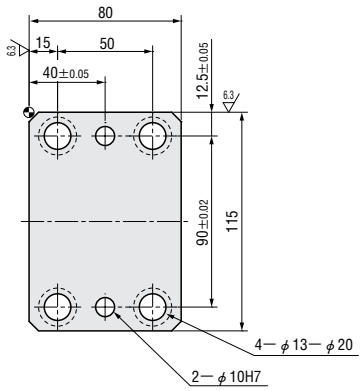


■Rear removal space









■Components table ☞ P.108

W	θ	A	B	C	E	F	H	K	L	U	V	x
65	00	185.94	110.94	75	56.57	153.43	73.4	30	38	55	80	52
	05	193.01	123.01	70			73.9				90	
	10	196.8	126.8		67.58	142.42	83.5			40	80	61
	15	203.77	113.47	67	68.81	141.19	84.7				90	
	20	198.1	138.1	60	74.31	135.69	100.8		35	10	80	71
	25	204.75	149.75	55	76.73	133.27	103.8				90	
	30	193.63	143.63	50	89.52	120.48	111		30		80	79
	35	199.76	154.76	45	93.06	116.94	105				90	
	40	188.72	148.72	40	99.62	110.38	120	25	33	15	80	
	45	194.13	160.13	34	104.16	105.84	115	30			90	
	50	190	160	30	110	100	130	18	35	10		77
	55		170	20	115	95			25		100	87
	60											
	65		190	0	130	80			20		110	92
	70											

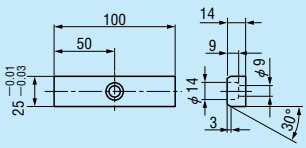
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
26.9	19.6 (2.0)	39.2 (4.0)	166(16.9)	898(91.6)	1067(108.8)	19.5	LGFVT	65	00
27.0			237(24.2)	972(99.1)	1138(116.0)	19.8			05
31.6				995(101.5)		19.3			10
32.2				998(101.7)		19.6			15
33.8			308(31.4)	1014(103.4)		18.1			20
35.0				1019(103.9)		18.4			25
33.5			427(43.5)	1031(105.1)		17.7			30
35.4				1038(105.9)		18.0			35
42.9			356(36.3)	1048(106.8)		16.9			40
46.5				1055(107.5)		17.1			45
54.5			308(31.4)	1062(108.3)		16.8			50
43.6			297(30.3)	953(97.2)	1040(106.0)	17.8			55
50.0				965(98.4)		17.3			60
47.3				829(84.5)	891(90.9)	18.5			65
58.5				841(85.7)		18.4			70

Order

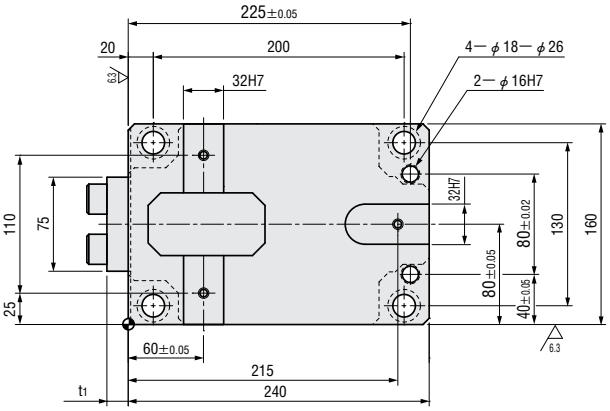
Catalog No.	W	—	θ
LGFVT	65	—	40

Alterations

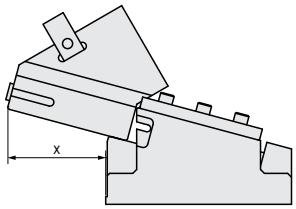
Catalog No.	W	—	θ	—	(K)
LGFVT	65	—	30	—	K

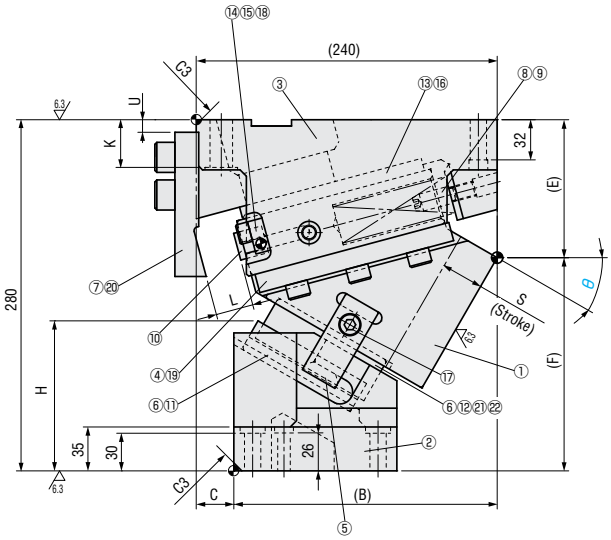
Alteration	Code	Spec.
	K	Add 2 locating keys (With 2 hexagon socket head cap screws M8×15) 

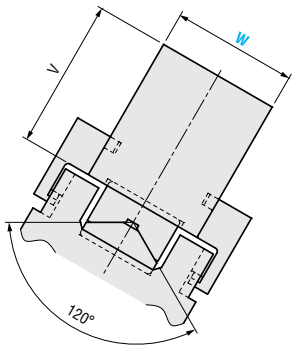
LGFVT100 (θ =00-70)

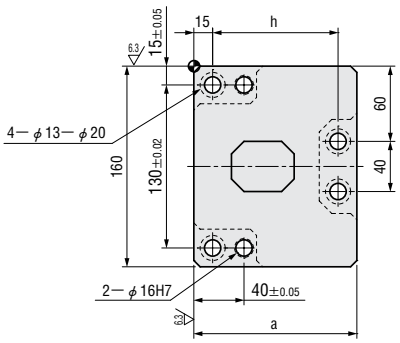


■Rear removal space









■Components table ☞ P.108

W	θ	B	C	E	F	H	K	L	U	V	a	h	t1	x
100	00	160	80	85	195	90	38	40	55	100	140	110	17	83
	10	180	60	90	190	100			35					96
	20	190	50	110	170	109.5		32	15				18	116
	30	210	30			120		30	10	120	130	100	17	127
	40			115	165	145.3					120	90		130
	50	230	10	120	160	153.6	25		0	140			16	132
	60	240	0	145	135	168.1					110	80		142
	70					179.3		20						132

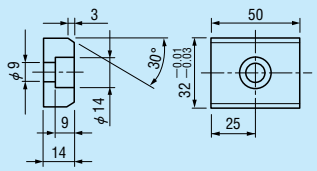
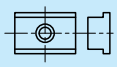
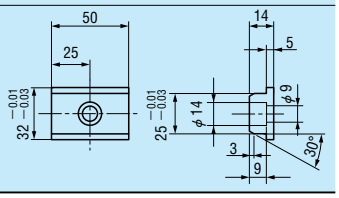
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
28.3	44.1 (4.5)	88.3 (9.0)	315(32.1)	2388(243.5)	2835(289.1)	49.4	LGFVT	100	00
33.3				2457(250.5)		47.3			10
30.9			221(22.5)	2193(223.7)	2576(262.7)	47.2			20
33.5			176(18.0)	2426(247.3)	2822(287.8)	46.5			30
39.0				2487(253.6)		47.8			40
46.7				2540(259.0)		43.6			50
60.0				2602(265.3)		44.9			60
58.5			552(56.3)	2572(262.3)	2760(281.4)	44.2			70

Order

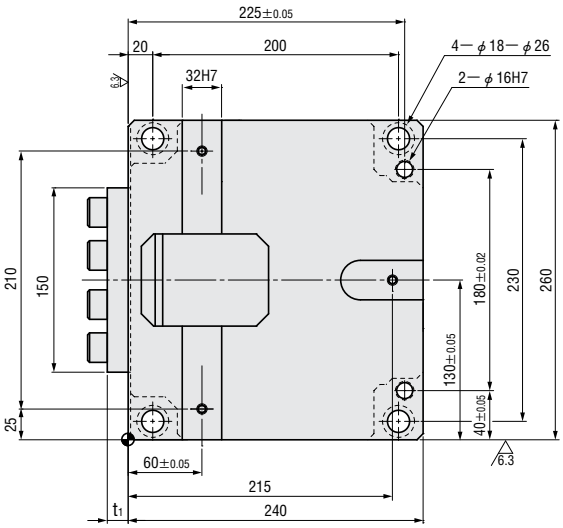
Catalog No.	W	—	θ
LGFVT	100	—	30

Alterations

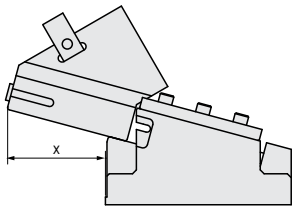
Catalog No.	W	—	θ	—	(K・KA)
LGFVT	100	—	10	—	K

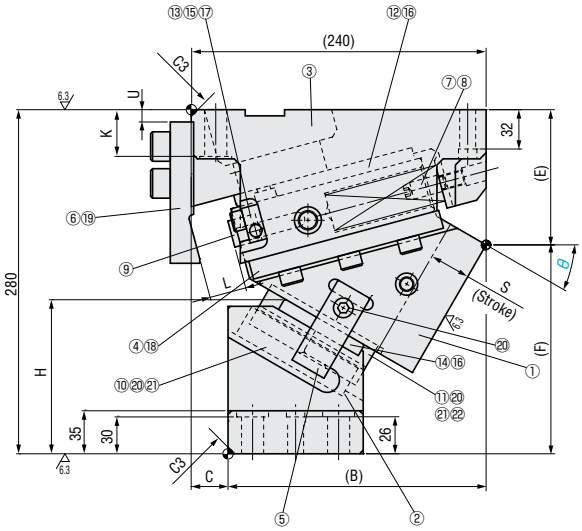
Alterations	Code	Spec.
	K	Add 3 locating keys (With 3 hexagon socket head cap screws M8×15) 
	KA	Add 3 stepped locating keys (With 3 hexagon socket head cap screws M8×15) 

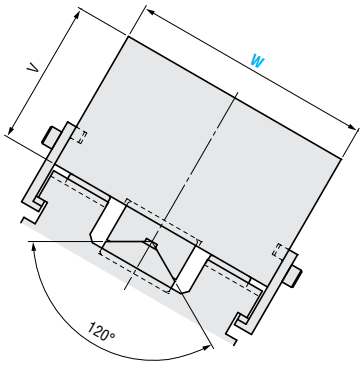
LGFVT200 (θ =00-70)

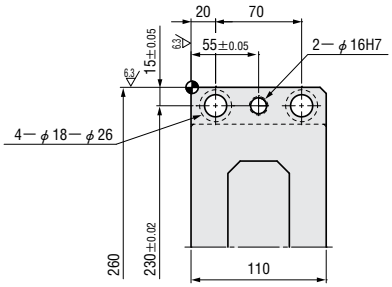


■Rear removal space









■Components table ☞ P.108

W	θ	B	C	E	F	H	K	L	U	V	t1	x
200	00	160	80	85	195	90	38	40	55	100	17	83
	10	180	60	90	190	113.8			35			96
	20	190	50	110	170	118.2		32	15		18	116
	30	210	30			125.4		30	10	120	17	127
	40			115	165	139.8						130
	50	230	10	120	160	149.7	30		0	140	16	132
	60	240	0	145	135	155.1						
	70					179.3		20				142

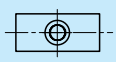
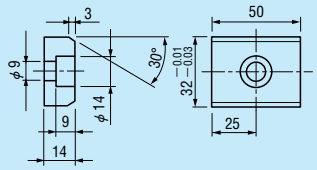
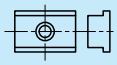
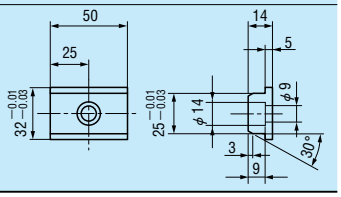
Stroke S	Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure				
28.3	93.2 (9.5)	186.3 (19.0)	630(64.2)	4775(487.0)	5670(578.2)	82.9	LGFVT	200	00
33.3				4914(501.1)		77.1			10
30.9			442(45.0)	4387(447.3)	5152(525.4)	77.5			20
33.5			353(36.0)	4851(494.7)	5645(575.6)	78.4			30
39.0				4974(507.3)		72.8			40
46.7				5080(518.0)		73.0			50
60.0				5204(530.6)		75.3			60
58.5			1104(112.6)	5145(524.6)	5520(562.9)	73.6			70

Order

Catalog No.	W	—	θ
LGFVT	200	—	20

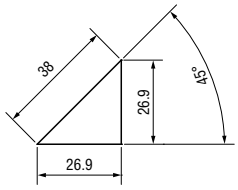
Alterations

Catalog No.	W	—	θ	—	(K・KA)
LGFVT	200	—	30	—	KA

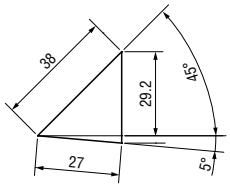
Alterations	Code	Spec.
	K	Add 3 locating keys (With 3 hexagon socket head cap screws M8×15) 
	KA	Add 3 stepped locating keys (With 3 hexagon socket head cap screws M8×15) 

■LGFVT

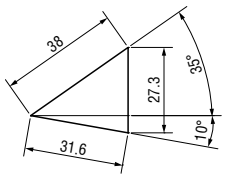
65-00



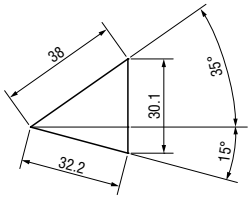
65-05



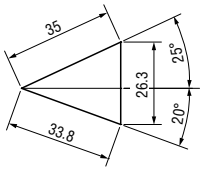
65-10



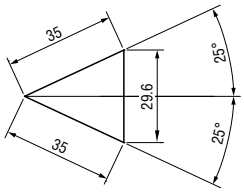
65-15



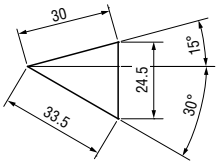
65-20



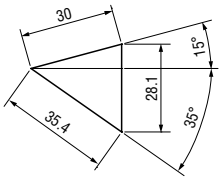
65-25



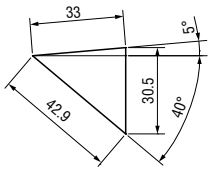
65-30



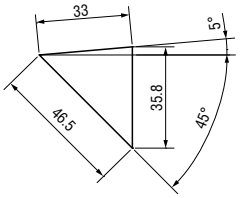
65-35



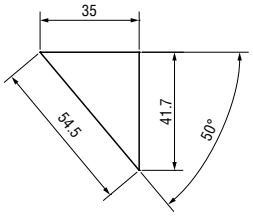
65-40



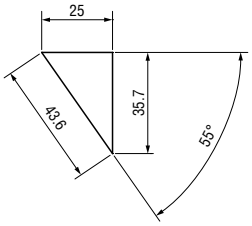
65-45



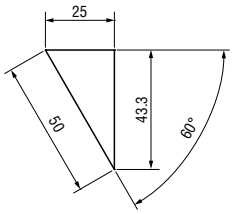
65-50



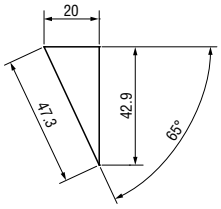
65-55



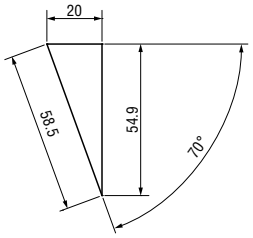
65-60



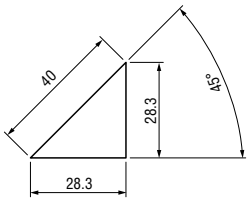
65-65



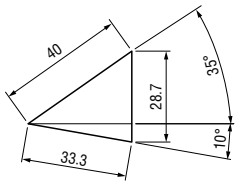
65-70



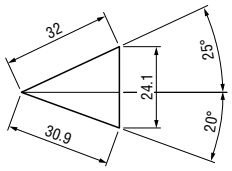
100-00



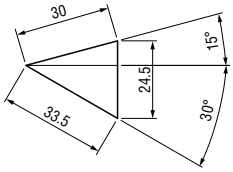
100-10



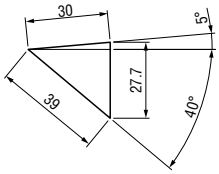
100-20



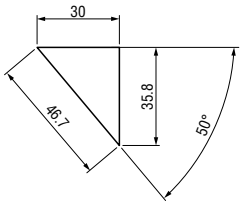
100-30



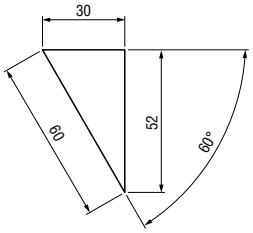
100-40



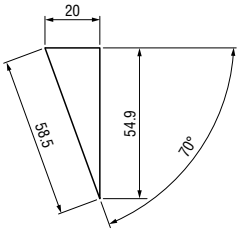
100-50



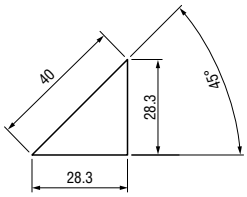
100-60



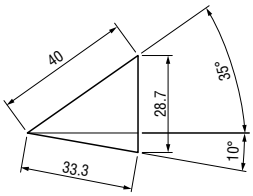
100-70



200-00



200-10



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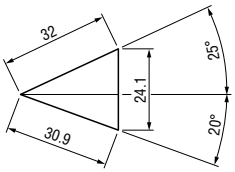
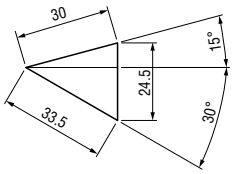
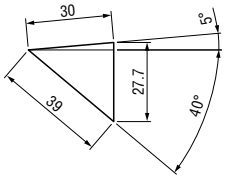


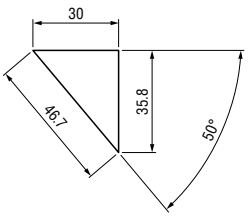
200-30



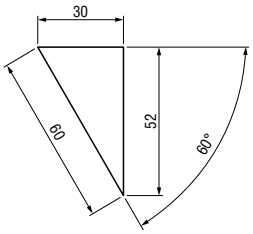
200-40



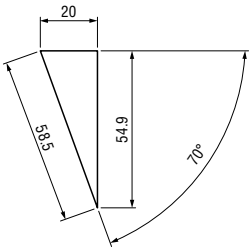
200-50



200-60



200-70



V SHAPE GUIDE AERIAL CAM UNITS FOR TRIM & FLANGE

—LGFVT— COMPONENTS TABLE

■LGFVT65(θ=00-35)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	FC250 with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	1
⑧	Coil Spring	φ30×125	1
⑨	Cap Screw	M12×25	4
⑩	Cap Screw	M12×35	4
⑪	Cap Screw	M8×25	2
⑫	Safety Plate	S45C	2
⑬	Dowel Pin	φ8×30	2
⑭	Cap Screw	M10×30	2
⑮	Cam Bottom Guide Plate	Bronze with Graphite	1
⑯	Cam Bottom Wear Plate	S45C	1
⑰	Dowel Pin	φ6×20	1
⑱	Cap Screw	M6×15	4

■LGFVT65(θ=40-70)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	FC250 with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	1
⑧	Coil Spring	φ30×125 (θ=40-50) φ30×100 (θ=55-70)	1
⑨	Cap Screw	M12×25	4
⑩	Cap Screw	M12×35	2
⑪	Cap Screw	M8×25	2
⑫	Safety Plate	S45C	2
⑬	Dowel Pin	φ8×30	2
⑭	Cap Screw	M10×30	2
⑮	Cam Bottom Guide Plate	Bronze with Graphite	1
⑯	Cam Bottom Wear Plate	S45C	1
⑰	Dowel Pin	φ6×20	1
⑱	Cap Screw	M6×15	4

■LGFVT100(θ=00-30)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Cap Screw	M10×30	4
⑦	Stop Plate	SS400	1
⑧	Spring Guide Pin	S45C	2
⑨	Coil Spring	φ30×175 (θ=00-10) φ30×150 (θ=20) φ30×125 (θ=30)	2
⑩	Bumper	Urethane	2
⑪	Cam Bottom Wear Plate	S45C	1
⑫	Cam Bottom Guide Plate	Bronze with Graphite	1
⑬	Cam Lower Plate	Bronze with Graphite	2
⑭	Safety Plate	SS400	2
⑮	Dowel Pin	φ8×35	2
⑯	Cap Screw	M10×20	4
⑰	Cap Screw	M10×40	2
⑱	Cap Screw	M10×30	2
⑲	Cap Screw	M12×35	6
⑳	Cap Screw	M16×45	4
㉑	Dowel Pin	φ10×25	4
㉒	Screw Plug	M12	2

■LGFVT100(θ=40-70)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Cap Screw	M10×30	4
⑦	Stop Plate	SS400	1
⑧	Spring Guide Pin	S45C	2
⑨	Coil Spring	φ30×125 (θ=40-60) φ30×100 (θ=70)	2
⑩	Bumper	Urethane	2
⑪	Cam Bottom Wear Plate	S45C	1
⑫	Cam Bottom Guide Plate	Bronze with Graphite	1
⑬	Cam Lower Plate	Bronze with Graphite	2
⑭	Safety Plate	SS400	2
⑮	Dowel Pin	φ8×35	2
⑯	Cap Screw	M10×20	4
⑰	Cap Screw	M10×40	2
⑱	Cap Screw	M10×30	2
⑲	Cap Screw	M12×35	6
⑳	Cap Screw	M16×45	2
㉑	Dowel Pin	φ10×25	4
㉒	Screw Plug	M12	2

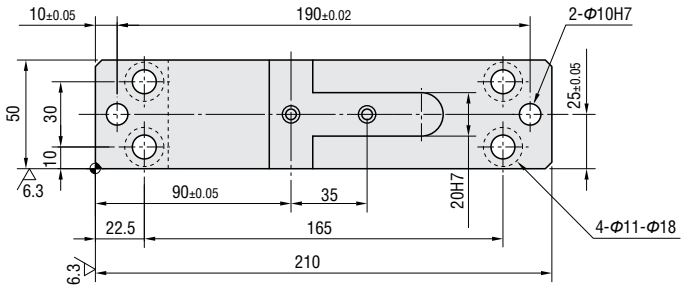
■LGFVT200(θ=00-30)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	4
⑧	Coil Spring	φ30×175 (θ=00-10) φ30×150 (θ=20) φ30×125 (θ=30)	4
⑨	Bumper	Urethane	4
⑩	Cam Bottom Wear Plate	S45C	1
⑪	Cam Bottom Guide Plate	Bronze with Graphite	1
⑫	Cam Lower Plate	Bronze with Graphite	2
⑬	Safety Plate	S45C	2
⑭	Driver Plate	Bronze with Graphite	2
⑮	Dowel Pin	φ10×35	2
⑯	Cap Screw	M10×20	8
⑰	Cap Screw	M10×35	2
⑱	Cap Screw	M12×35	6
⑲	Cap Screw	M16×45	8
⑳	Cap Screw	M10×30	6
㉑	Dowel Pin	φ10×25	4
㉒	Screw Plug	M12	2

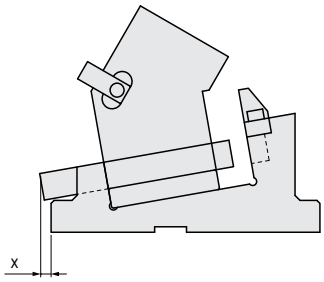
■LGFVT200(θ=40-70)

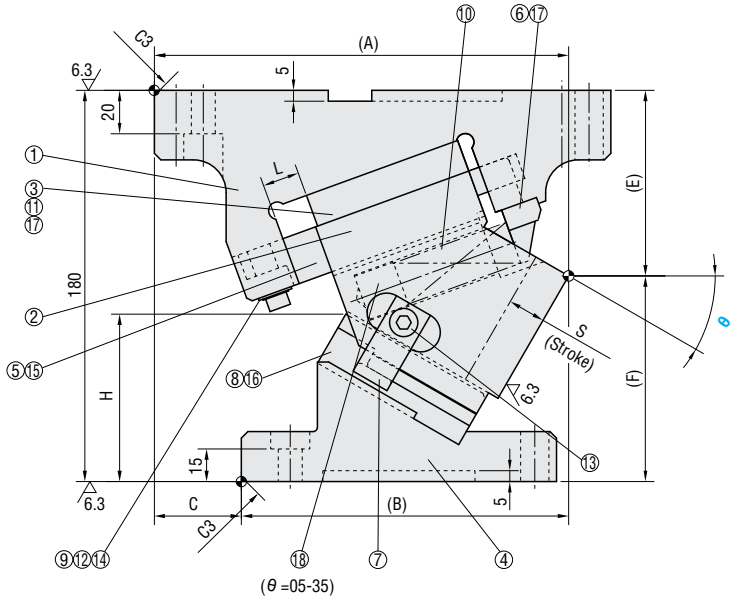
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Positive Return Strap	S45C	2
⑥	Stop Plate	SS400	1
⑦	Spring Guide Pin	SCM435	4
⑧	Coil Spring	φ30×125 (θ=40-60) φ30×100 (θ=70)	4
⑨	Bumper	Urethane	4
⑩	Cam Bottom Wear Plate	S45C	1
⑪	Cam Bottom Guide Plate	Bronze with Graphite	1
⑫	Cam Lower Plate	Bronze with Graphite	2
⑬	Safety Plate	S45C	2
⑭	Driver Plate	Bronze with Graphite	2
⑮	Dowel Pin	φ10×35	2
⑯	Cap Screw	M10×20	8
⑰	Cap Screw	M10×35	2
⑱	Cap Screw	M12×35	6
⑲	Cap Screw	M16×45	4
⑳	Cap Screw	M10×30	6
㉑	Dowel Pin	φ10×25	4
㉒	Screw Plug	M12	2

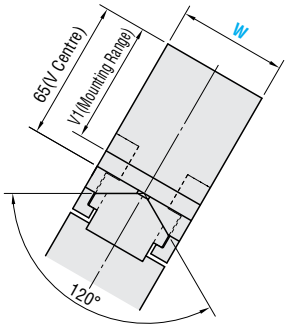
KACG50 (θ=00-50)

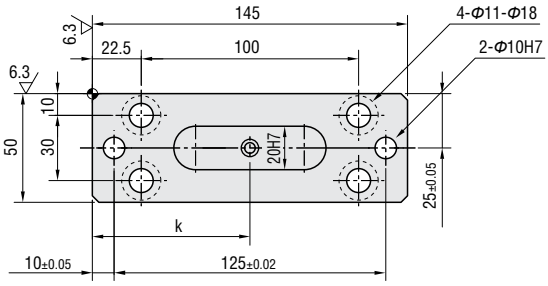


■Rear removal space









■Components table ☞ P.138

W	θ	A	B	C	E	F	H	L	V_1	k	x
50	00	195	115	80	67.5	112.5	46	23.3	65	72.5	0
	05	198.04	123.04	75	68.29	111.71	52.4	22			
	10	195.99	130.99	65	69.77	110.23	58.6	20			
	15	198.77	133.77		71.95	108.05	64.5				
	20	196.34	141.34	55	74.79	105.21	70.1				
	25	191.62	150.62	41	80.28	99.72	73.3	18			
	30	190.58	150.58	40	85.39	94.61	77.0	16		62.5	
	35	187.15	162.15	25	90.1	89.9	81.3			72.5	
	40	183.29	160.79	22.5	95.35	84.65	85.1		55	62.5	
	45	179.94	169.94	10	98.13	81.87	91.4			72.5	
	50	174.07	169.07	5	99.37	80.63	99.2	15			

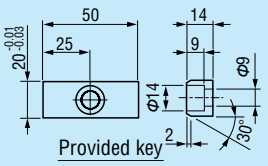
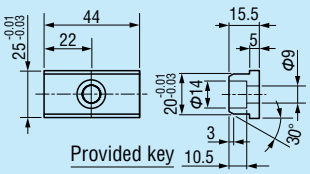
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
15.0	29.4 (3.0)	58.8 (6.0)	184.2(18.8)	1097.6(111.7)	10.6	KACG	50	00
15.6			179.6(18.3)	1167.4 (118.8)	10.3			05
15.6			269.4 (27.4)		9.9			10
17.0					9.7			15
18.4					9.4			20
18.0			359.2(36.6)		9.4			25
17.4			263.0 (26.8)	1104.6 (112.6)	9.2			30
18.9					9.2			35
20.6					9.1			40
22.5					9.1			45
23.3			315.6(32.2)		9.0			50

Order

Catalog No.	W	—	θ
KACG	50	—	35

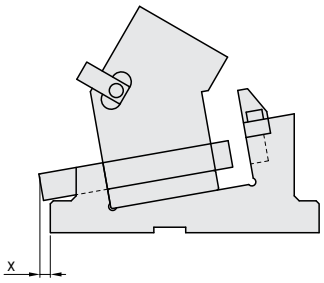
Alteration

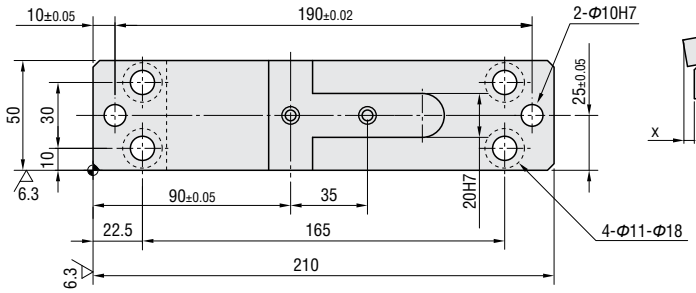
Catalog No.	W	—	θ	—	(N12·N13···etc.)
KACG	50	—	15	—	N12

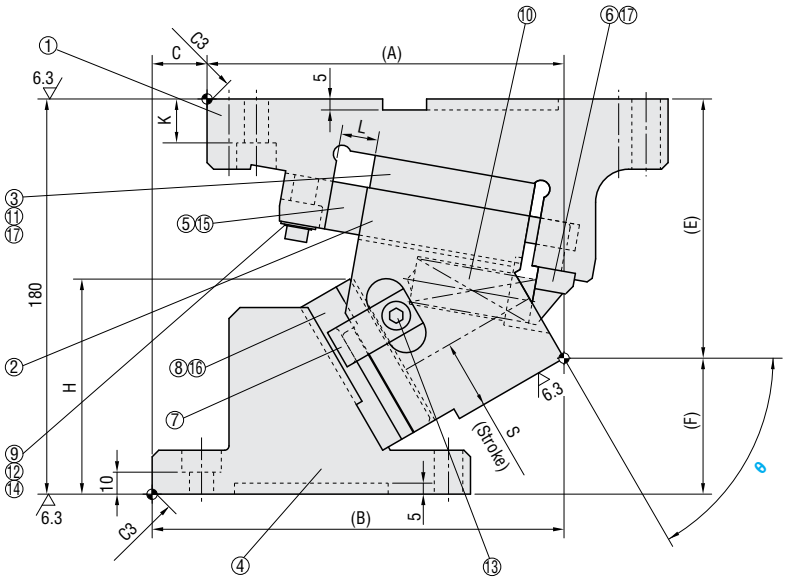
Alterations	Code	Spec.
Φ12H7 or Φ13H7	N12	Dowel hole diameter change Φ10H7 ⇨ Φ12H7
	N13	Dowel hole diameter change Φ10H7 ⇨ Φ13H7
	K	Addition of 3 locating keys (With 3 hexagon socket head cap screws M8-15) 
	KA	Addition of 3 stepped locating keys (With 3 hexagon socket head cap screws M8-15) 

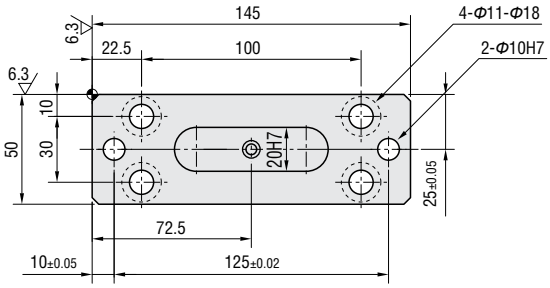
KACG50 (θ=55-65)

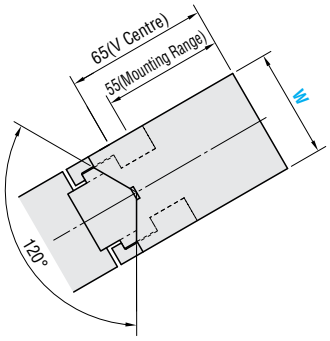
■Rear removal space











■Components table ☞ P.138

W	θ	A	B	C	E	F	H	K	L	x
50	55	168.64	183.64	15	111.04	68.96	96.4	20	15	0
	60	162.61	187.61	25	118.08	61.92	98		16	
	65	155.95	190.95	35	125.44	54.56	99	15		

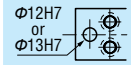
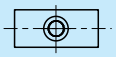
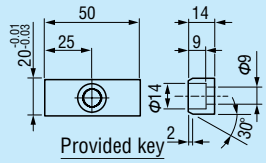
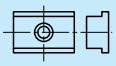
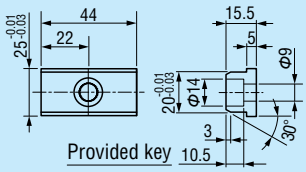
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
26.1	29.4 (3.0)	58.8 (6.0)	315.6 (32.2)	1104.6 (112.6)	9.5	KACG	50	55
31.5			263.0 (26.8)		9.7			60
36.6					10.0			65

Order

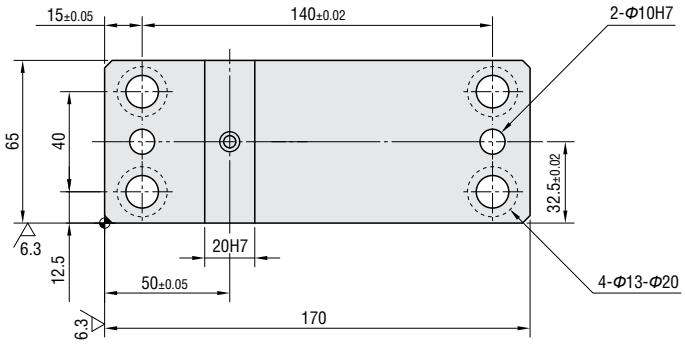
Catalog No.	W	—	θ
KACG	50	—	60

Alteration

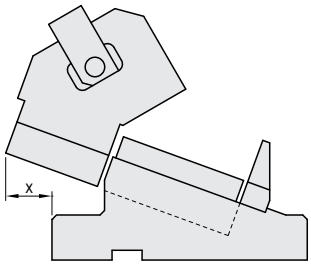
Catalog No.	W	—	θ	—	(N12·N13···etc.)
KACG	50	—	60	—	K

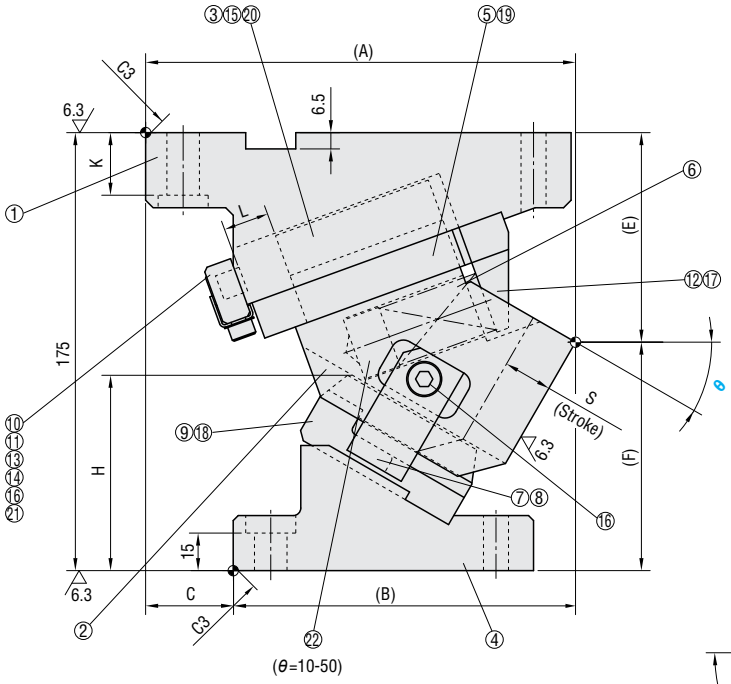
Alterations	Code	Spec.
Φ12H7 or Φ13H7 	N12	Dowel hole diameter change Φ10H7 ⇨ Φ12H7
	N13	Dowel hole diameter change Φ10H7 ⇨ Φ13H7
	K	Addition of 3 locating keys (With 3 hexagon socket head cap screws M8-15) 
	KA	Addition of 3 stepped locating keys (With 3 hexagon socket head cap screws M8-15) 

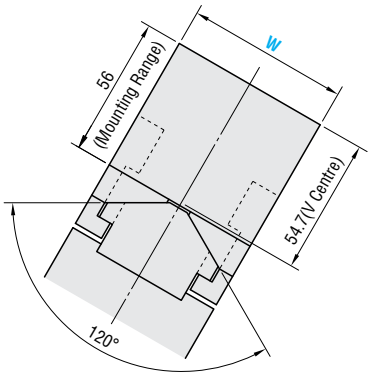
KACG65 (θ=00-50)

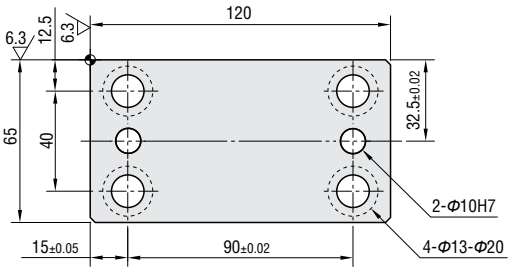


■Rear removal space









■Components table ☞ P.138

W	θ	A	B	C	E	F	H	K	L	x
65	00	170	100	70	60	115	58	25	23.3	15
	05	170.36	105.36	65	67.22	107.78	57.1		22	21
	10	175.07	112.57	62.5	69.88	105.12	61.1		20	
	15	174.09	119.09	55	72.92	102.08	65.3			26
	20	172.4	127.4	45	76.28	98.72	70.2			31
	30	171.78	136.78	35	83.71	91.29	78.1		18	
	40	163.07	143.07	20	91.63	83.37	84.5	15		34
	50	170	151.22	5	104.5	70.5	91.1		16	33

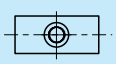
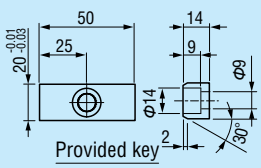
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
15.0	29.4 (3.0)	58.8 (6.0)	245.4 (25.0)	834.9 (85.1)	10.7	KACG	65	00
15.6			278.3 (28.4)		10.4			05
15.6			236.8 (24.1)	828.8 (84.3)	10.2			10
17.0					9.9			15
18.4					9.9			20
19.5			176.0 (18.0)	809.6 (82.6)	9.6			30
23.1					9.5			40
24.9			246.4 (25.1)		9.9			50

Order

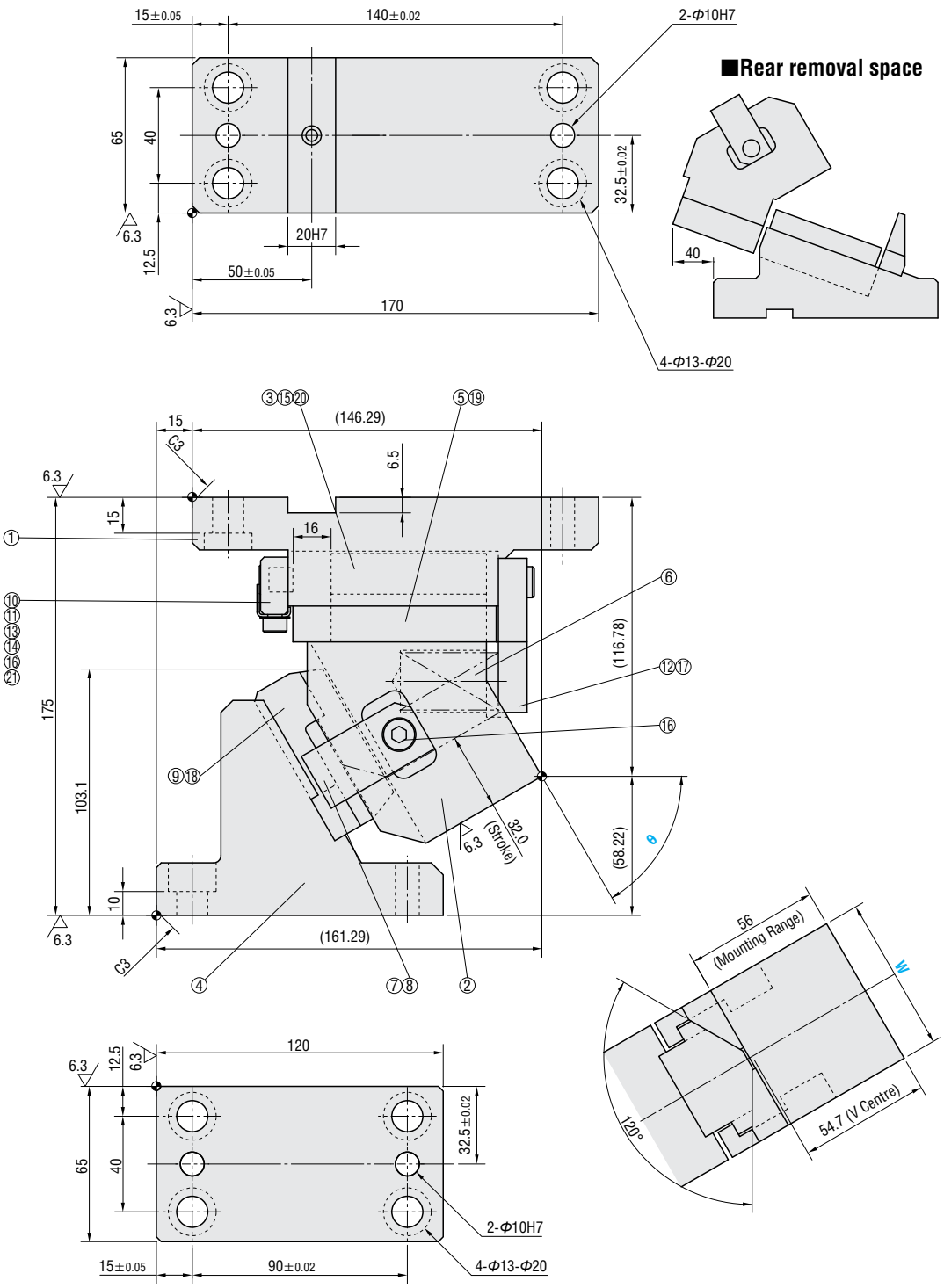
Catalog No.	W	—	θ
KACG	65	—	40

Alteration

Catalog No.	W	—	θ	—	(K)
KACG	65	—	30	—	K

Alterations	Code	Spec.
	K	Addition of locating key (With 1 hexagon socket head cap screw M8-15) 

KACG65-60



■Components table ☞ P.138

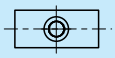
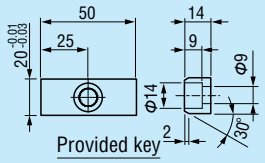
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
32.0	29.4 (3.0)	58.8 (6.0)	246.4 (25.1)	809.6 (82.6)	11.1	KACG	65	60

Order

Catalog No.	W	—	θ
KACG	65	—	60

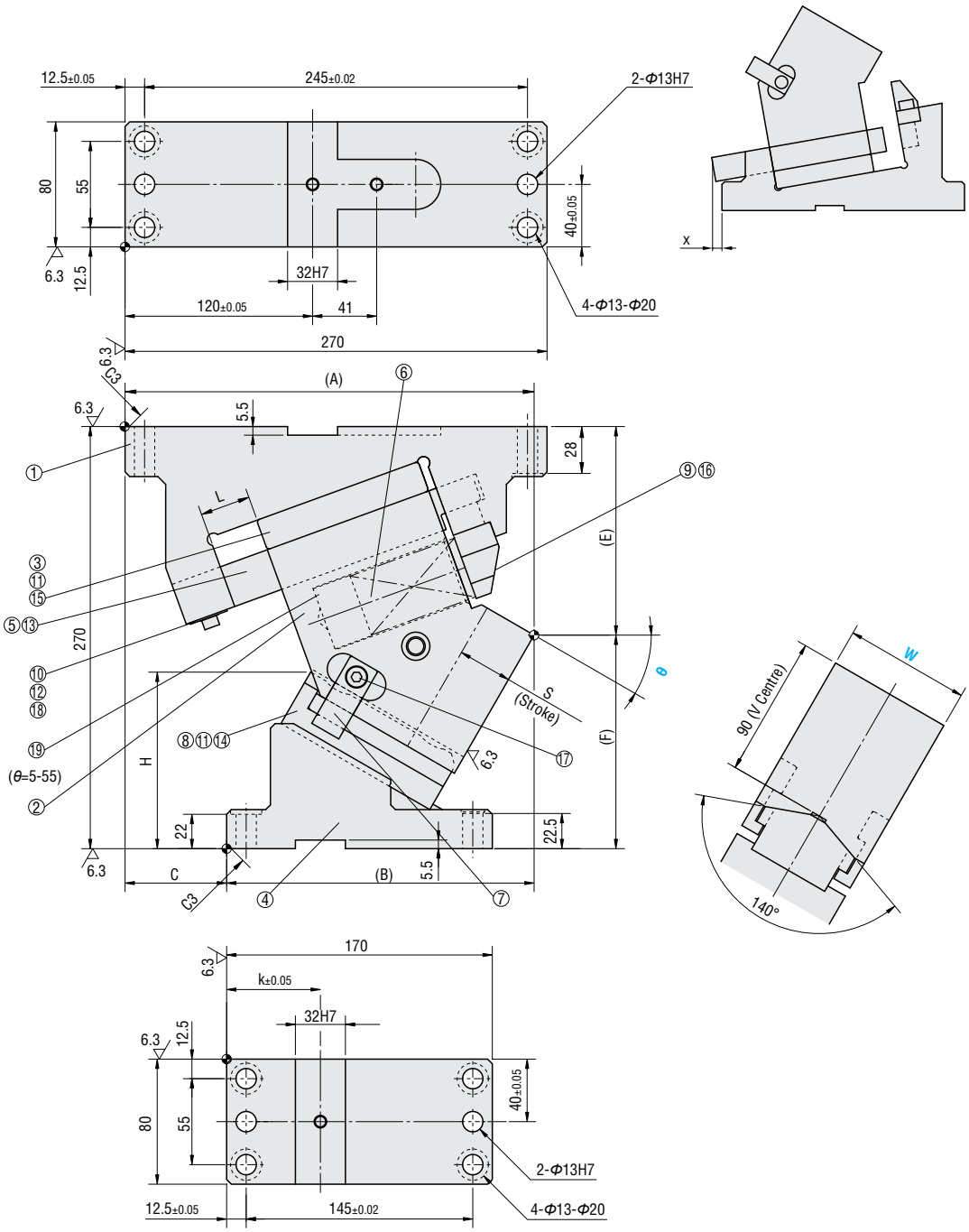
Alteration

Catalog No.	W	—	θ	—	(K)
KACG	65	—	60	—	K

Alterations	Code	Spec.
	K	Addition of locating key (With 1 hexagon socket head cap screw M8-15) 

KACG80 (θ=00-55)

■Rear removal space



■Components table ☞ P.138

W	θ	A	B	C	E	F	H	L	k	x
80	00	277	142	135	110	160	68	47	65	0
	05	278.32	153.32	125	115.67	154.33	72.4	43		
	10	274.54	164.54	110	117.32	152.68	81.5	40		
	15	277.58	172.58	105	119.95	150.05	90.2		55	
	20	273.34	178.34	95	123.52	146.48	98.3	35		
	25	268.75	188.75	80	128.03	141.97	105.9			
	30	261.73	196.73	65	133.42	136.58	112.9	32	60	
	35	258.2	203.2	55	139.66	130.34	119.2			
	40	245.09	210.09	35	146.7	123.3	124.8	31	50	7
	45	245.34	215.34	30	154.49	115.51	129.7			0
	50	225.87	220.87	5	162.97	107.03	133.7	30		10
	55	229.64	229.64	0	172.07	97.93	136.9	31	60	5

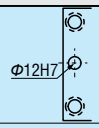
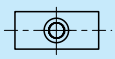
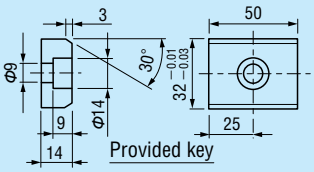
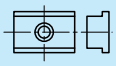
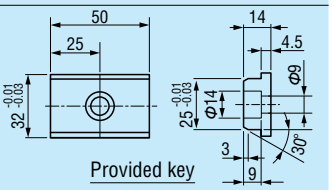
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
30.2	49.0 (5.0)	98.0 (10.0)	296.1(30.2)	1842.4(187.6)	34.0	KACG	80	00
30.5			324.0(33.0)	1872.0 (190.8)	32.0			05
31.1			432.0 (44.0)		32.0			10
33.9					32.0			15
32.3			391.5 (39.9)	1914.0 (194.9)	32.0			20
35.0					30.0			25
34.7			522.0 (53.2)		30.0			30
37.7					30.0			35
39.9			565.5 (57.6)		29.0			40
43.7					29.0			45
46.7			609.0(62.0)		30.0			50
53.8			565.5(57.6)		30.0			55

Order

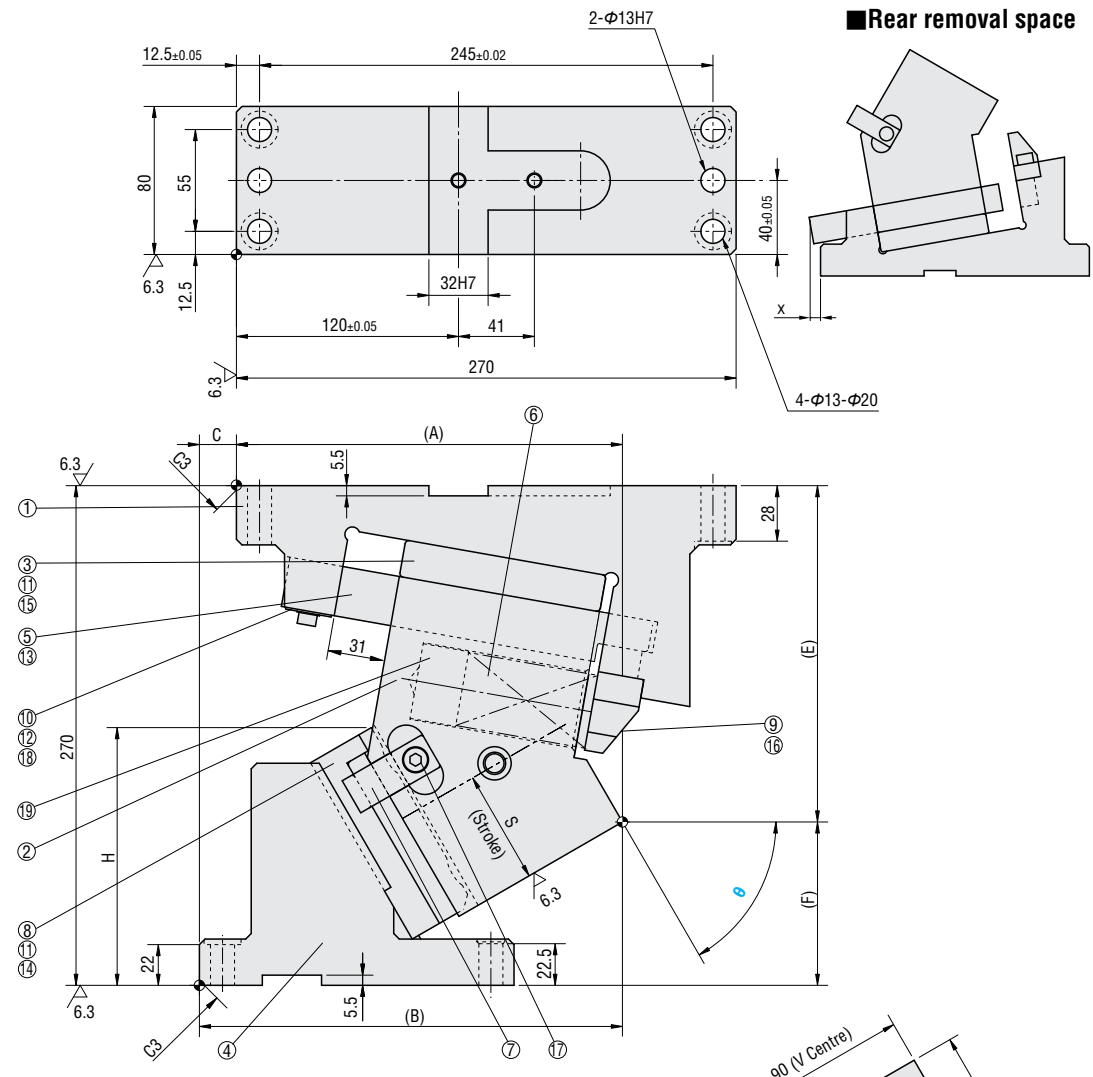
Catalog No.	W	—	θ
KACG	80	—	05

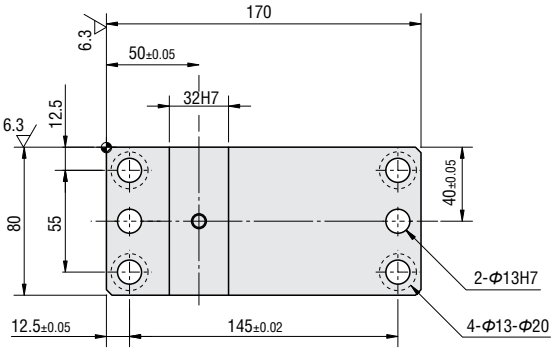
Alteration

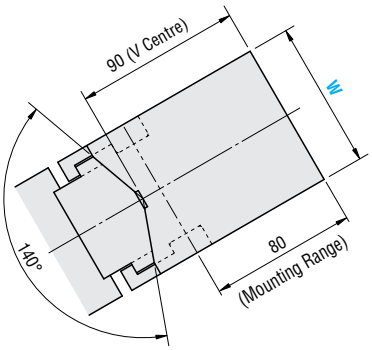
Catalog No.	W	—	θ	—	(N12·K·KA)
KACG	80	—	30	—	N12

Alterations	Code	Spec.
	N12	Dowel hole diameter change Φ13H7 ⇨ Φ12H7
	K	Addition of 3 locating keys (With 3 hexagon socket head cap screws M8-15) 
	KA	Addition of 3 stepped locating keys (With 3 hexagon socket head cap screws M8-15) 

KACG80 (θ=60-65)







■Components table ☞ P.138

W	θ	A	B	C	E	F	H	x
80	60	208.58	228.58	20	181.73	88.27	139.3	23
	65	203.67	233.67	30	191.87	78.13	140.8	

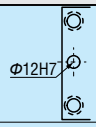
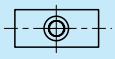
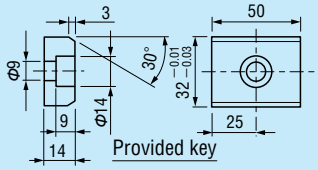
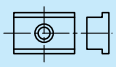
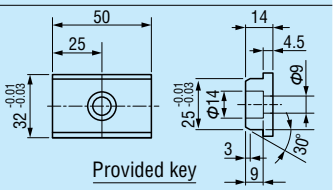
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
61.1	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	31.0	KACG	80	60
70.9					32.0			65

Order

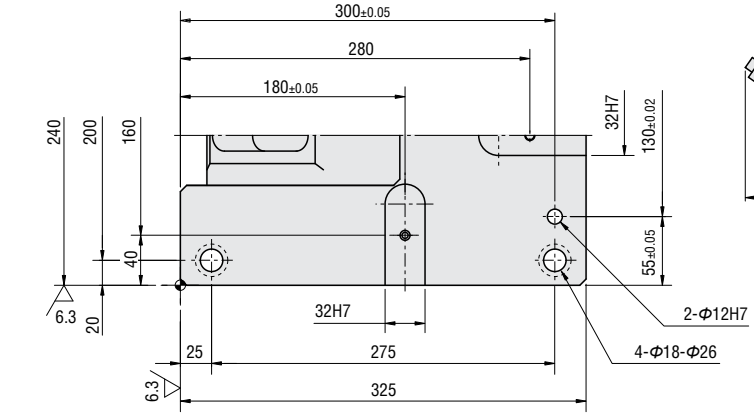
Catalog No.	W	—	θ
KACG	80	—	60

Alteration

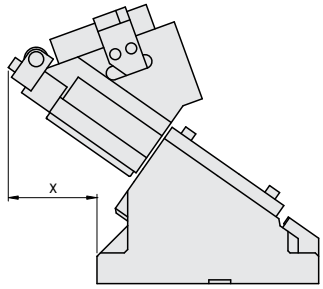
Catalog No.	W	—	θ	—	(N12·K·KA)
KACG	80	—	60	—	K

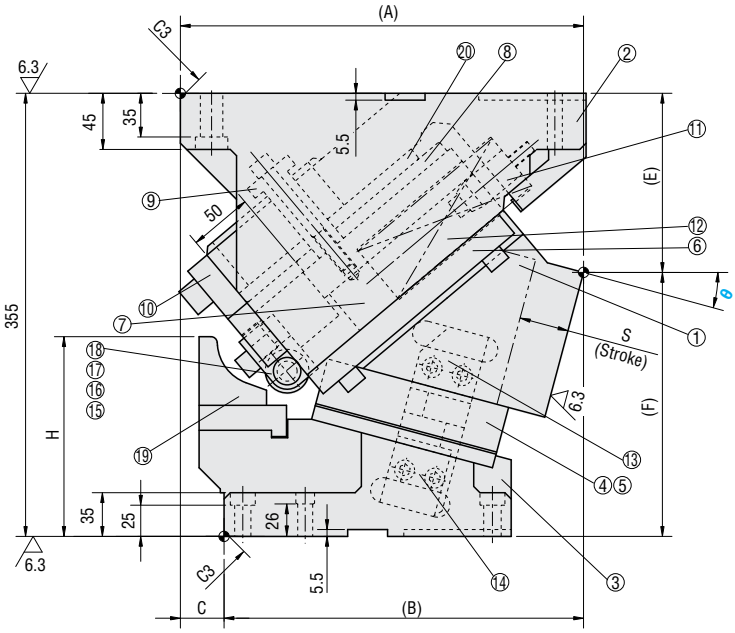
Alterations	Code	Spec.
	N12	Dowel hole diameter change Φ13H7 ⇨ Φ12H7
	K	Addition of 3 locating keys (With 3 hexagon socket head cap screws M8-15) 
	KA	Addition of 3 stepped locating keys (With 3 hexagon socket head cap screws M8-15) 

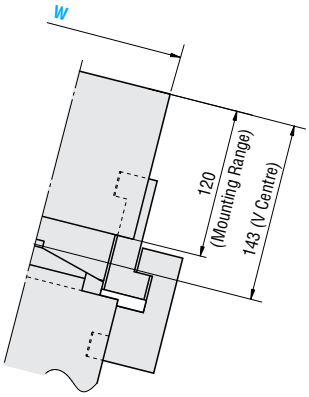
KACG150 (θ=00-30)

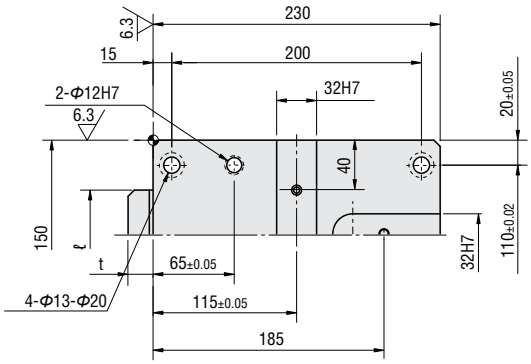


■Rear removal space









■Components table ☞ P.138

W	θ	A	B	C	E	F	H	ℓ	t	x
150	00	325	245	80	130	225	105	70	25	46
	05	319.7	259.7	60	133.26	221.74	125			75
	10	319.06	274.06	45	137.79	217.21	145			99
	15	322.98	287.98	35	143.56	211.44	160		20	114
	20	326.33	301.33	25	150.51	204.49	180		15	127
	25	329.03	314.03	15	158.61	196.39	200		10	137
	30	325.98	325.98	0	167.78	187.22	215	–	–	149

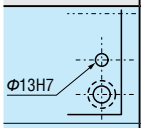
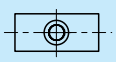
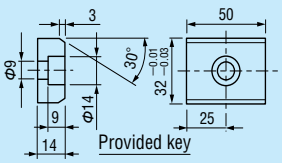
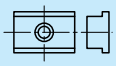
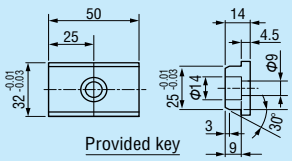
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
28.7	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	117.6	KACG	150	00
32.2					114.0			05
35.9					113.4			10
39.6					111.9			15
43.5					111.3			20
47.7					111.2			25
52.3					110.2			30

Order

Catalog No.	W	–	θ
KACG	150	–	25

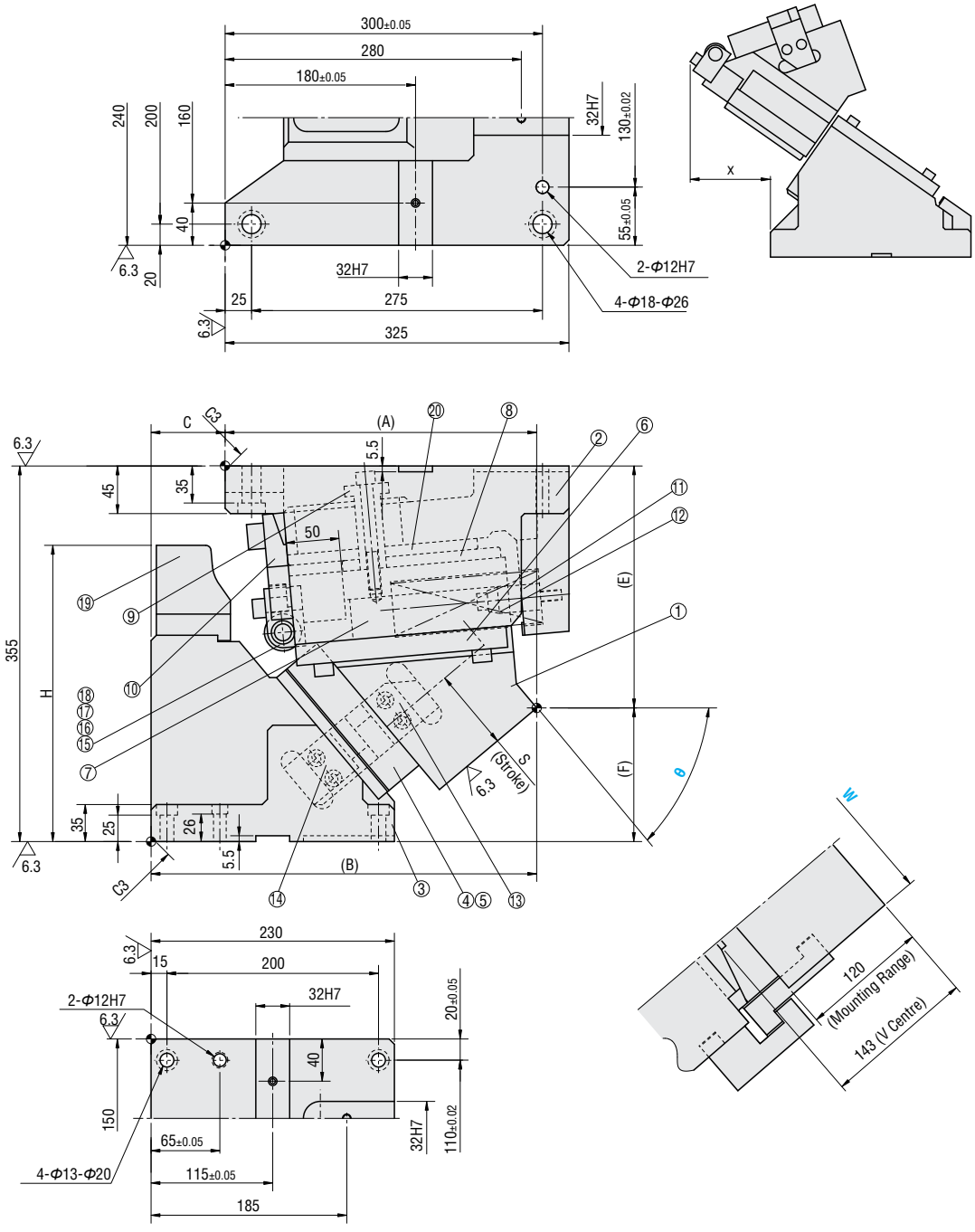
Alteration

Catalog No.	W	–	θ	–	(N13·K·KA)
KACG	150	–	10	–	N13

Alterations	Code	Spec.
	N13	Dowel hole diameter change Φ12 H7 ⇨ Φ13H7
	K	Addition of 6 locating keys (With 6 hexagon socket head cap screws M8-15) 
	KA	Addition of 6 stepped locating keys (With 6 hexagon socket head cap screws M8-15) 

KACG150 (θ=35-65)

■Rear removal space



■Components table ☞ P.138

W	θ	A	B	C	E	F	H	x
150	35	322.08	337.08	15	192.95	162.05	220	159
	40	312.26	347.26	35	204.06	150.94	240	170
	45	306.42	356.42	50	216.01	138.99	260	174
	50	294.51	364.51	70	228.71	126.29	280	181
	55	281.46	371.46	90	242.07	112.93	295	185
	60	272.22	377.22	105	255.98	99.02	315	184
	65	261.75	381.75	120	270.34	84.66	340	182

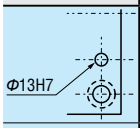
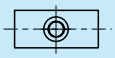
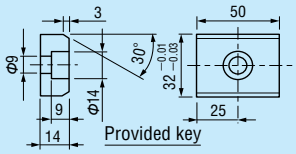
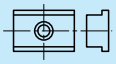
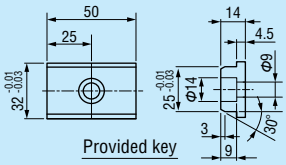
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
57.3	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	113.1	KACG	150	35
63.0					114.7			40
69.6					115.8			45
77.4					117.5			50
87.1					117.5			55
99.6					122.0			60
116.5					126.0			65

Order

Catalog No.	W	—	θ
KACG	150	—	55

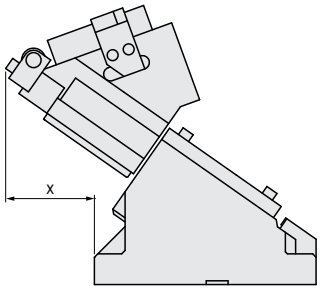
Alteration

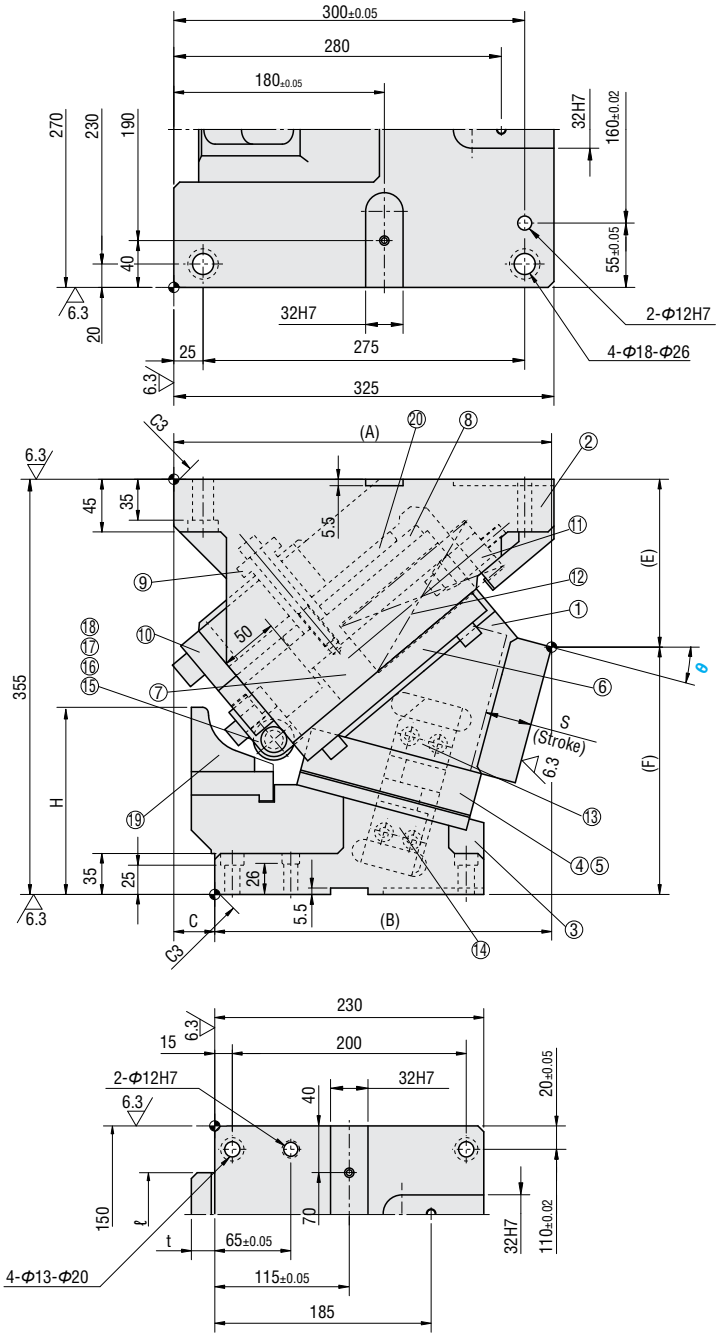
Catalog No.	W	—	θ	—	(N13·K·KA)
KACG	150	—	45	—	KA

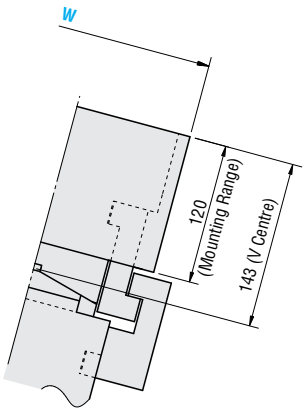
Alterations	Code	Spec.
	N13	Dowel hole diameter change Φ12H7 ⇨ Φ13H7
	K	Addition of 6 locating keys (With 6 hexagon socket head cap screws M8-15) 
	KA	Addition of 6 stepped locating keys (With 6 hexagon socket head cap screws M8-15) 

KACG200 (θ=00-30)

■Rear removal space







■Components table ☞ P.138

W	θ	A	B	C	E	F	H	ℓ	t	x
200	00	325	245	80	130	225	105	70	25	46
	05	319.7	259.7	60	133.26	221.74	125			75
	10	319.06	274.06	45	137.79	217.21	145			99
	15	322.98	288.06	35	143.56	211.44	160		20	114
	20	326.33	301.33	25	150.51	204.49	180		15	127
	25	329.03	314.03	15	158.61	196.39	200		10	137
	30	325.98	325.98	0	167.78	187.22	215	–	–	149

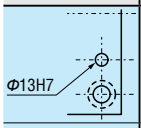
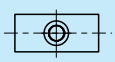
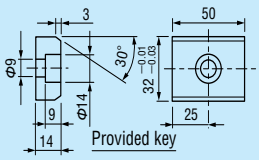
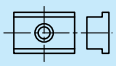
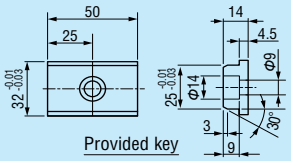
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
28.6	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	129.7	KACG	200	00
32.2					126.6			05
35.9					124.8			10
39.6					127.4			15
43.5					123.2			20
47.7					123.0			25
52.3					121.7			30

Order

Catalog No.	W	–	θ
KACG	200	–	00

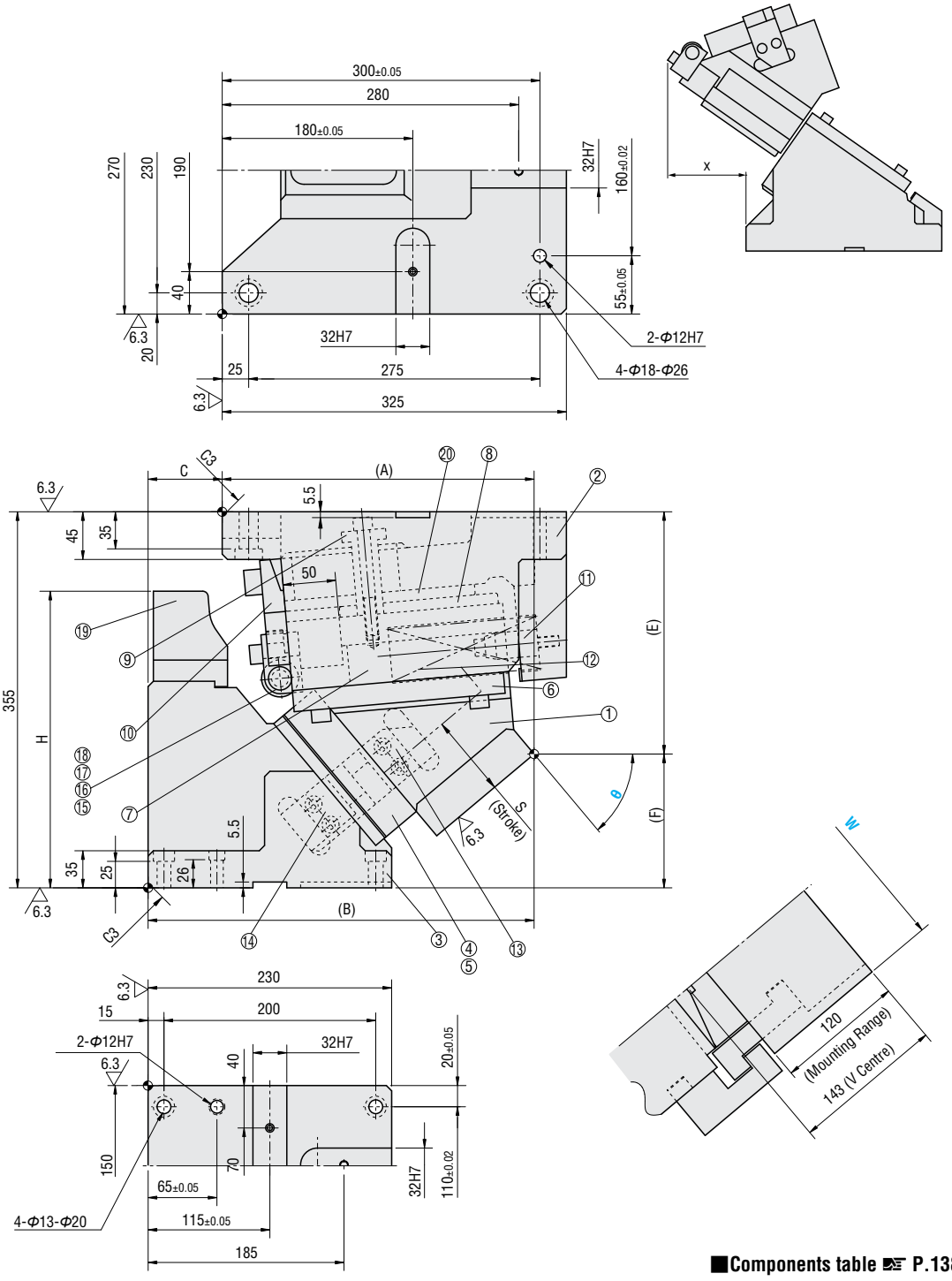
Alteration

Catalog No.	W	–	θ	–	(N13·K·KA)
KACG	200	–	15	–	K

Alterations	Code	Spec.
	N13	Dowel hole diameter change Φ12H7 ⇨ Φ13H7
	K	Addition of 6 locating keys (With 6 hexagon socket head cap screws M8-15) 
	KA	Addition of 6 stepped locating keys (With 6 hexagon socket head cap screws M8-15) 

KACG200 (θ=35-65)

■Rear removal space



■Components table ☞ P.138

W	θ	A	B	C	E	F	H	x
200	35	322.08	337.08	15	192.95	162.05	220	159
	40	312.26	347.26	35	204.06	150.94	240	170
	45	306.42	356.42	50	216.01	138.99	260	174
	50	294.51	364.51	70	228.71	126.29	280	181
	55	281.46	371.46	90	242.07	112.93	295	185
	60	272.22	377.22	105	255.98	99.02	315	184
	65	261.75	381.75	120	270.34	84.66	340	182

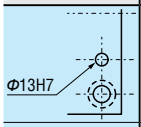
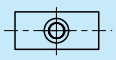
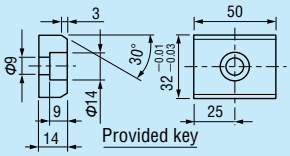
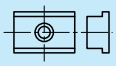
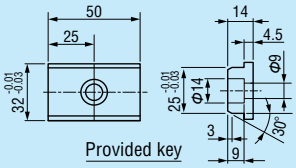
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
57.3	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	125.3	KACG	200	35
63.0					126.8			40
69.6					127.9			45
77.4					129.8			50
87.1					132.6			55
99.6					135.1			60
116.5					138.9			65

Order

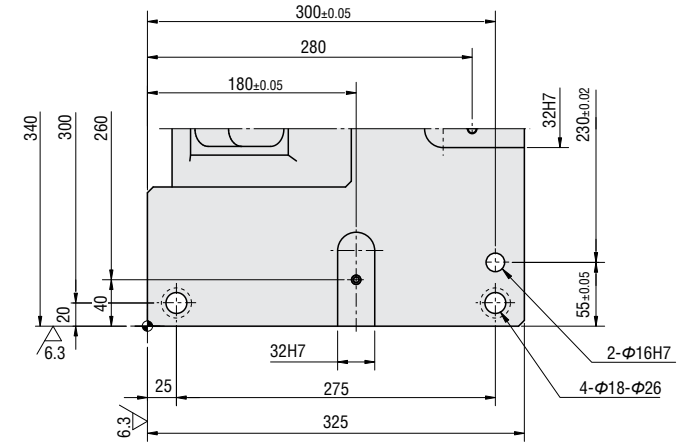
Catalog No.	W	—	θ
KACG	200	—	45

Alteration

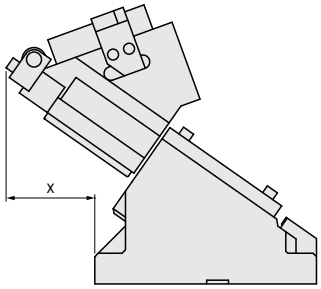
Catalog No.	W	—	θ	—	(N13·K·KA)
KACG	200	—	50	—	N13

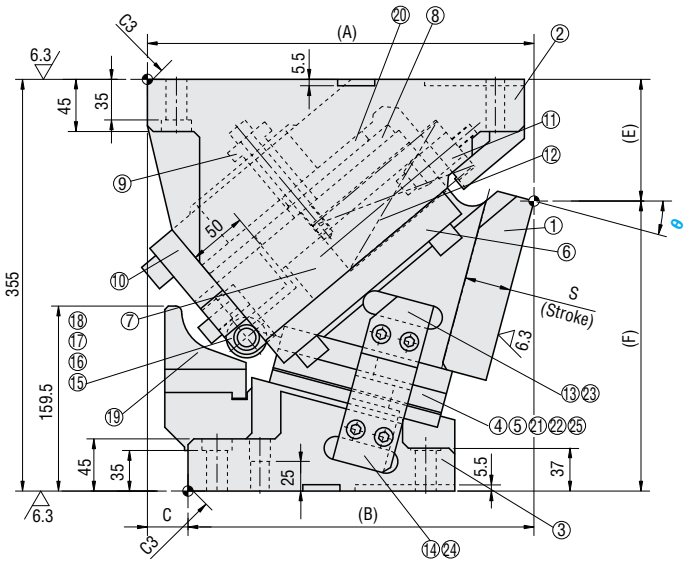
Alterations	Code	Spec.
	N13	Dowel hole diameter change Φ12H7 ⇨ Φ13H7
	K	Addition of 6 locating keys (With 6 hexagon socket head cap screws M8-15) 
	KA	Addition of 6 stepped locating keys (With 6 hexagon socket head cap screws M8-15) 

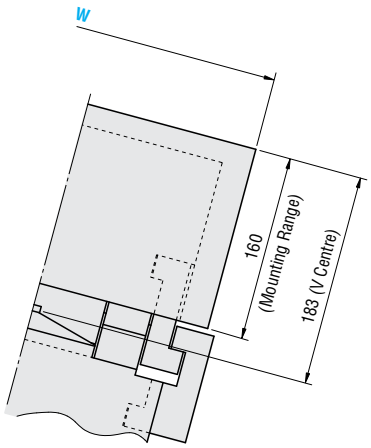
KACG300 (θ=00-30)

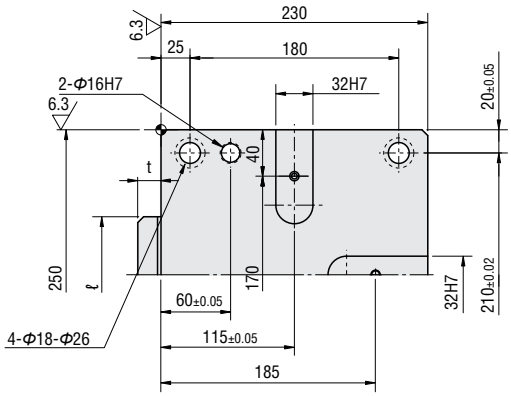


■Rear removal space









■Components table ☞ P.138

W	θ	A	B	C	E	F	ℓ	t	x
300	00	325	245	80	90	265	100	25	46
	05	323.19	263.19	60	93.41	261.59			75
	10	326.01	281.01	45	98.4	256.6			99
	15	333.33	298.33	35	104.92	250.08		20	114
	20	340.02	315.02	25	112.93	242.07		15	127
	25	345.94	330.94	15	122.35	232.65		10	137
	30	345.98	345.98	0	133.13	221.87	–	–	149

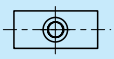
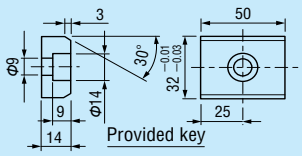
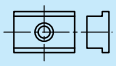
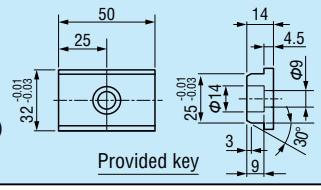
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
28.6	294.0 (30.0)	588.0 (60.0)	1724.8 (175.8)	14044.8 (1431.8)	184.5	KACG	300	00
32.2					181.0			05
35.9					178.7			10
39.6					177.3			15
43.5					176.0			20
47.7					174.9			25
52.3					173.8			30

Order

Catalog No.	W	–	θ
KACG	300	–	25

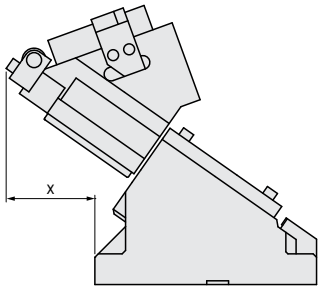
Alteration

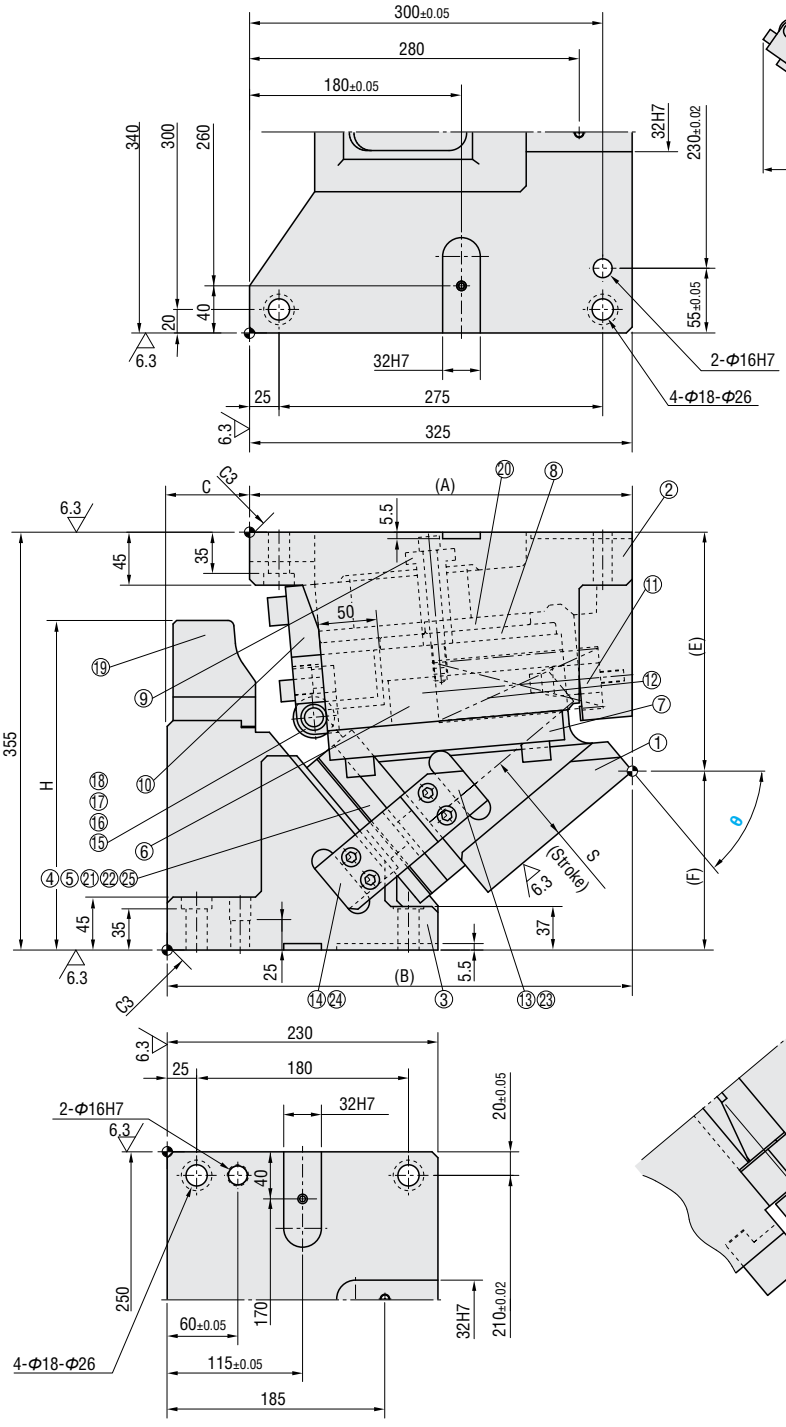
Catalog No.	W	–	θ	–	(K·KA)
KACG	300	–	15	–	K

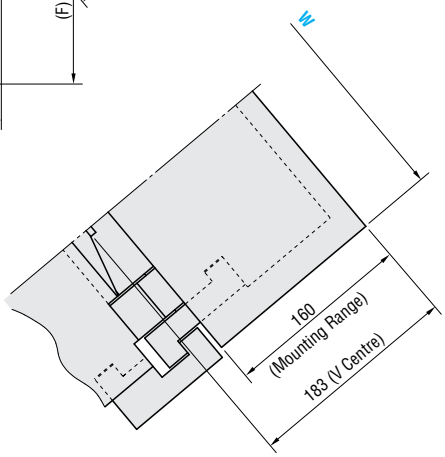
Alterations	Code	Spec.
	K	Addition of 6 locating keys (With 6 hexagon socket head cap screws M8-15) 
	KA	Addition of 6 stepped locating keys (With 6 hexagon socket head cap screws M8-15) 

KACG300 (θ=35-65)

■Rear removal space







■Components table ☞ P.138

W	θ	A	B	C	E	F	H	x
300	35	345.03	360.03	15	160.19	194.81	220	159
	40	337.97	372.97	35	173.41	181.59	240	170
	45	334.71	384.71	50	187.72	167.28	260	174
	50	325.15	395.15	70	203	152	280	181
	55	314.23	404.23	90	219.12	135.88	295	185
	60	306.87	411.87	105	235.98	119.02	315	184
	65	298	418	120	253.44	101.56	340	183

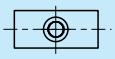
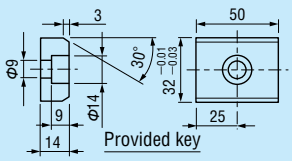
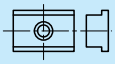
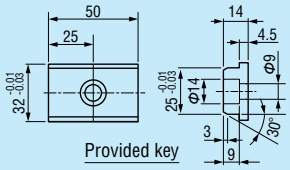
Stroke S	Working force KN (ton)		Spring force N (kgf)		Total weight kg	Catalog No.	W	θ
	Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	Final pressure				
57.3	294.0 (30.0)	588.0 (60.0)	1724.8 (175.8)	14044.8 (1431.8)	178.7	KACG	300	35
63.0					181.6			40
69.6					184.5			45
77.4					188.1			50
87.1					193.4			55
99.6					197.6			60
116.5					202.9			65

Order

Catalog No.	W	—	θ
KACG	300	—	60

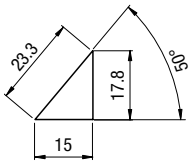
Alteration

Catalog No.	W	—	θ	—	(K·KA)
KACG	300	—	60	—	KA

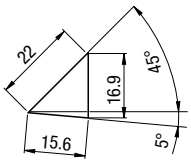
Alterations	Code	Spec.
	K	Addition of 6 locating keys (With 6 hexagon socket head cap screws M8-15) 
	KA	Addition of 6 stepped locating keys (With 6 hexagon socket head cap screws M8-15) 

■KACG

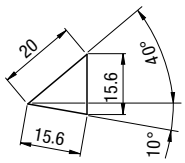
50-00



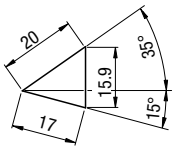
50-05



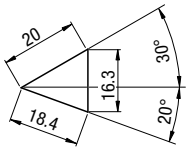
50-10



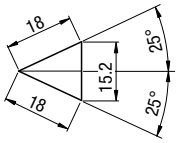
50-15



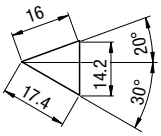
50-20



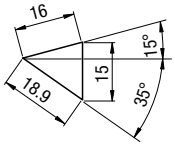
50-25



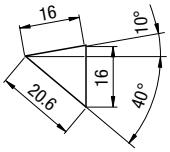
50-30



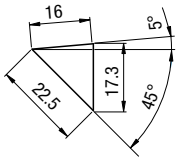
50-35



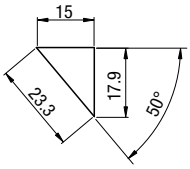
50-40



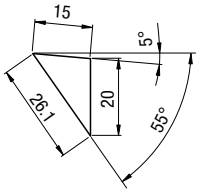
50-45



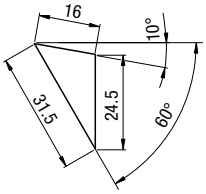
50-50



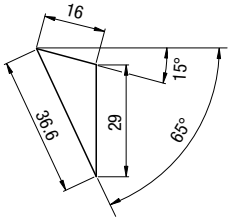
50-55



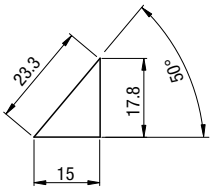
50-60



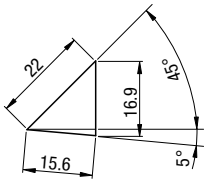
50-65



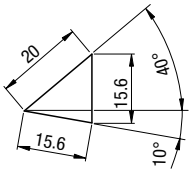
65-00



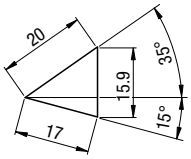
65-05



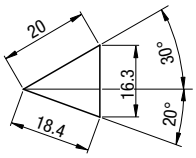
65-10



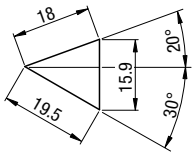
65-15



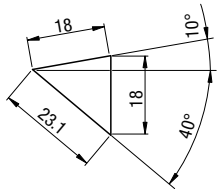
65-20



65-30



65-40



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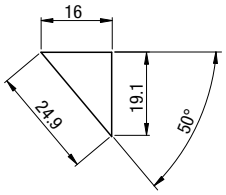

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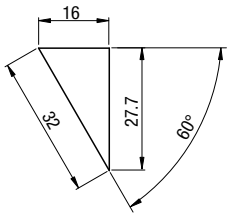

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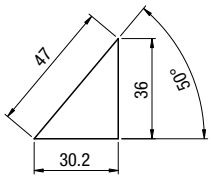

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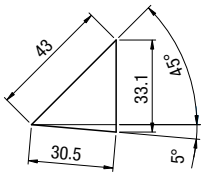

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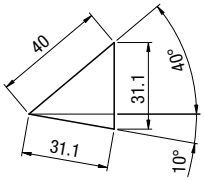

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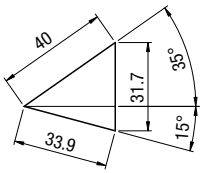

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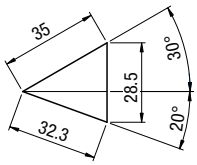

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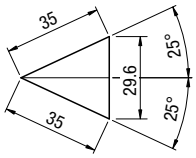

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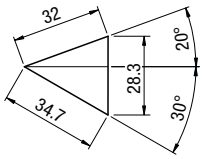

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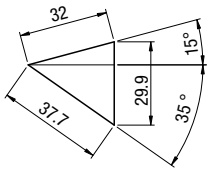

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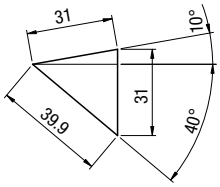

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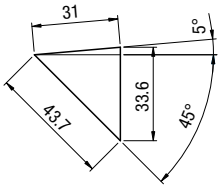

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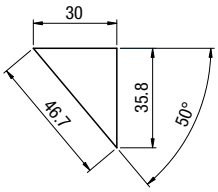

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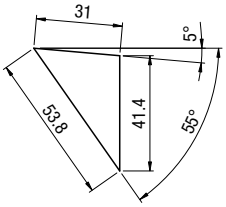

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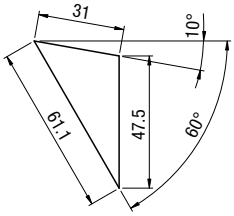

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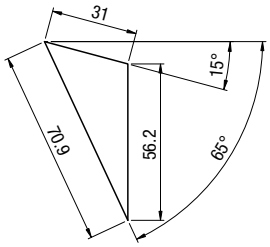

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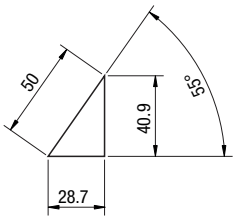

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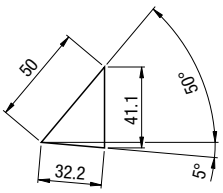

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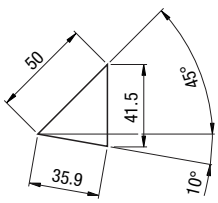

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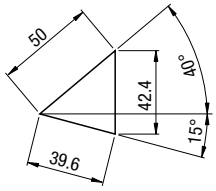

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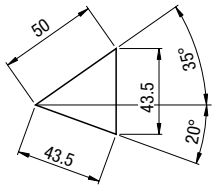

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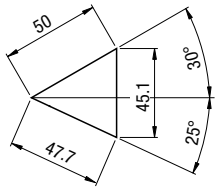

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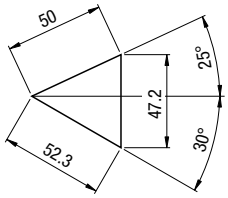

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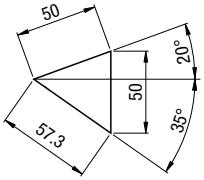

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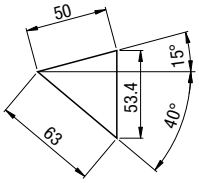

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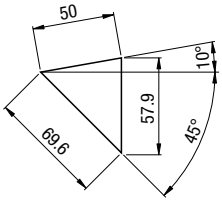

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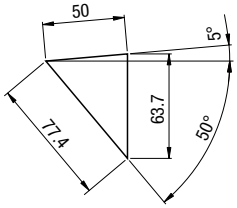

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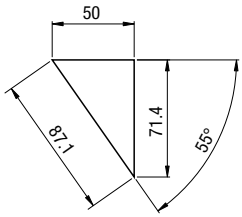

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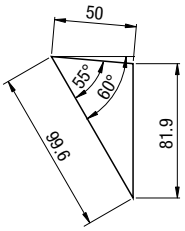

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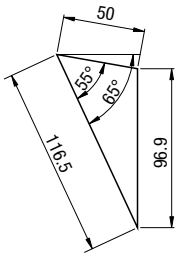

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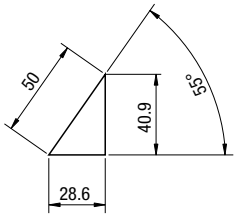

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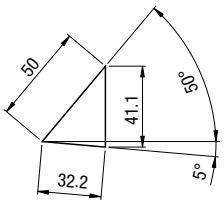

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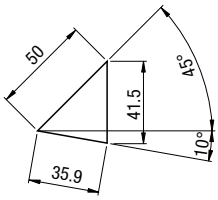

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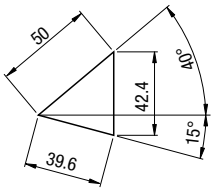

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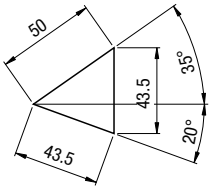

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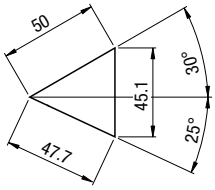

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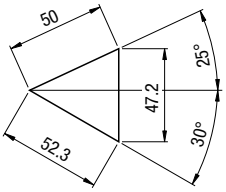

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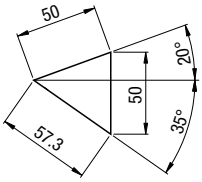

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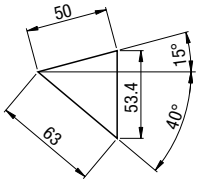

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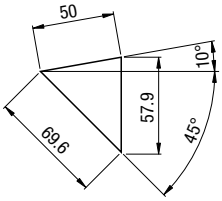

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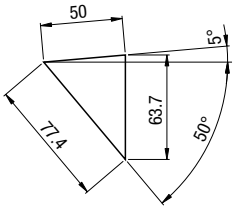

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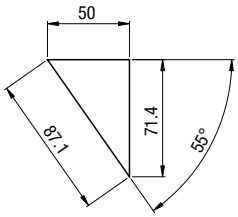

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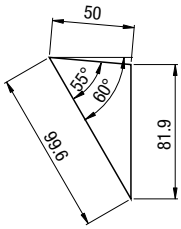

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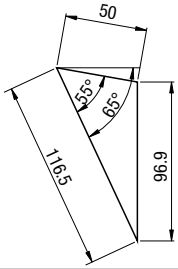

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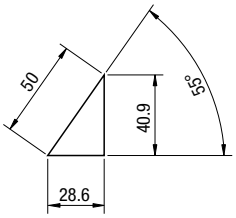

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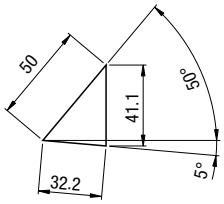

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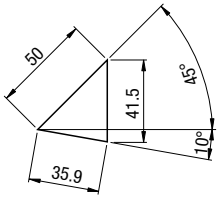

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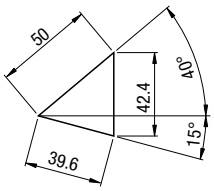

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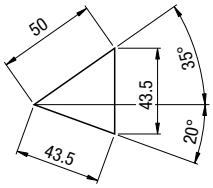

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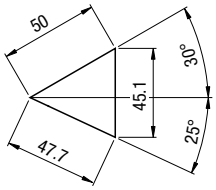

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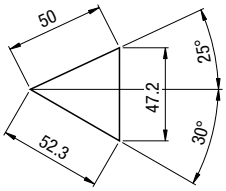

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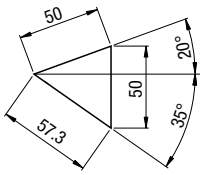

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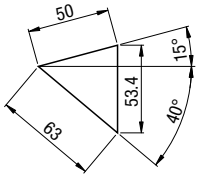

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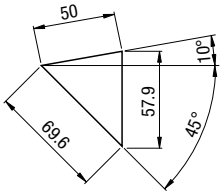

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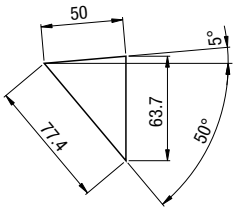

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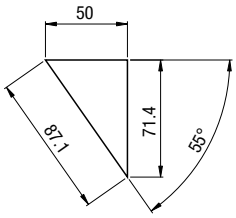

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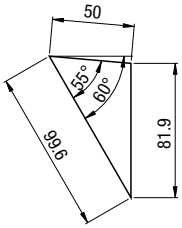

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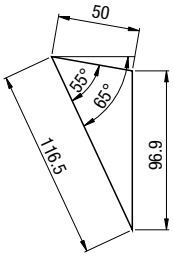


RIGID AERIAL CAM UNITS

—KACG— COMPONENTS TABLE

■KACG50(θ=00,40-65)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Guide Bar	Bronze	1
⑥	Spring Bracket	SS400	1
⑦	Positive Return Strap	S45C	2
⑧	Slide Guide	Bronze with Graphite	1
⑨	Safety Plate	SS400	1
⑩	Coil Spring	Φ20x102 (θ=00) Φ20x76 (θ=40-65)	1
⑪	Dowel Pin	Φ8×30	2
⑫	Disc Spring	For M6	2
⑬	Cap Screw	M8×15	2
⑭	Cap Screw	M6×10	2
⑮	Cap Screw	M10×30	1
⑯	Cap Screw	M10×25	2
⑰	Cap Screw	M8×20	6

■KACG50(θ=05-35)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Guide Bar	Bronze	1
⑥	Spring Bracket	SS400	1
⑦	Positive Return Strap	S45C	2
⑧	Slide Guide	Bronze with Graphite	1
⑨	Safety Plate	SS400	1
⑩	Coil Spring	Φ20x89 (θ=05-25) Φ20x76 (θ=30-35)	1
⑪	Dowel Pin	Φ8×30	2
⑫	Disc Spring	For M6	2
⑬	Cap Screw	M8×15	2
⑭	Cap Screw	M6×10	2
⑮	Cap Screw	M10×30	1
⑯	Cap Screw	M10×25	2
⑰	Cap Screw	M8×20	6
⑱	Spacer	SS400	1

■KACG65(θ=00-05,60)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Keeper Plate	Bronze	2
⑥	Coil Spring	Φ25x89 (θ=00-05) Φ25x64 (θ=60)	1
⑦	Positive Return Strap A	S45C	1
⑧	Positive Return Strap B	S45C	1
⑨	Slide Guide	Copper Alloy with Graphite	1
⑩	Stop Plate	SS400	1
⑪	Saftey Plate	SS400	1
⑫	Spring Bracket	SS400	1
⑬	Bumper	Urethane	2
⑭	Disc Spring	For M6	1
⑮	Dowel Pin	Φ8×30	1
⑯	Cap Screw	M8x15	4
⑰	Cap Screw	M8×20	2
⑱	Cap Screw	M10×30	2
⑲	Cap Screw	M8×16	4
⑳	Cap Screw	M10×20	2
㉑	Cap Screw	M6×10	1

■KACG65(θ=10-50)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Keeper Plate	Bronze	2
⑥	Coil Spring	Φ25x76 (θ=10-20) Φ25x64 (θ=30-50)	1
⑦	Positive Return Strap A	S45C	1
⑧	Positive Return Strap B	S45C	1
⑨	Slide Guide	Bronze with Graphite	1
⑩	Stop Plate	SS400	1
⑪	Saftey Plate	SS400	1
⑫	Spring Bracket	SS400	1
⑬	Bumper	Urethane	2
⑭	Disc Spring	For M6	1
⑮	Dowel Pin	Φ8×30	1
⑯	Cap Screw	M8x15	4
⑰	Cap Screw	M8×20	2
⑱	Cap Screw	M10×30	2
⑲	Cap Screw	M8×16	4
⑳	Cap Screw	M10×20	2
㉑	Cap Screw	M6×10	1
㉒	Spacer	SS400	1

■KACG80(θ=00)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Guide Bar	Bronze	1
⑥	Coil Spring	Φ40x152	1
⑦	Positive Return Strap	S45C	2
⑧	Slide Guide	Bronze with Graphite	1
⑨	Spring Bracket	SS400	1
⑩	Safety Plate	SS400	1
⑪	Dowel Pin	Φ8×30	4
⑫	Disc Spring	For M6	2
⑬	Cap Screw	M12×35	1
⑭	Cap Screw	M12×40	2
⑮	Cap Screw	M10×25	4
⑯	Cap Screw	M10×30	2
⑰	Cap Screw	M8x15	2
⑱	Cap Screw	M6×10	2

■KACG80(θ=05-65)

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Guide Bar	SCM440 with Graphite	1
⑥	Coil Spring	Φ40x139 (θ=05-15) Φ40x115 (θ=20-65)	1
⑦	Positive Return Strap	S45C	2
⑧	Slide Guide	Bronze with Graphite	1
⑨	Spring Bracket	SS400	1
⑩	Safety Plate	SS400	1
⑪	Dowel Pin	Φ8×30	4
⑫	Disc Spring	For M6	2
⑬	Cap Screw	M12×35	1
⑭	Cap Screw	M12×40	2
⑮	Cap Screw	M10×25	4
⑯	Cap Screw	M10×30	2
⑰	Cap Screw	M8x15	2
⑱	Cap Screw	M6×10	2
⑲	Spacer	SS400	1

■KACG150

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Base	HT300	1
③	Cam Driver	HT300	1
④	V-block A	S45C	1
⑤	V-block B	Bronze with Graphite	1
⑥	Cam Upper Plate	42CrMo	2
⑦	Cam Slide Plate	Bronze with Graphite	2
⑧	Wear Plate A	Bronze with Graphite	2
⑨	Hanger Bolt Sleeve	S45C	1
⑩	Stop Plate	SS400	1
⑪	Spring Guide Pin	FC250	1
⑫	Coil Spring	Φ50x203	1
⑬	Driver For Positive Return	Bronze with Graphite	1
⑭	Positive Return Strap	S45C	1
⑮	Roller	S45C	1
⑯	Shaft	S45C	1
⑰	Roller Bracket	S45C	1
⑱	Bushing	Bronze with Graphite	1
⑲	Accelerator Ramp	S45C	1
⑳	Wear Plate B	S45C	4

Assembly bolts and dowel pins are not shown.

■KACG200

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Base	HT300	1
③	Cam Driver	HT300	1
④	V-block A	S45C	1
⑤	V-block B	Bronze with Graphite	1
⑥	Cam Upper Plate	42CrMo	2
⑦	Cam Slide Plate	Bronze with Graphite	2
⑧	Wear Plate A	Bronze with Graphite	2
⑨	Hanger Bolt Sleeve	S45C	1
⑩	Stop Plate	SS400	1
⑪	Spring Guide Pin	FC250	1
⑫	Coil Spring	Φ50x203	1
⑬	Driver For Positive Return	Bronze with Graphite	1
⑭	Positive Return Strap	S45C	1
⑮	Roller	S45C	1
⑯	Shaft	S45C	1
⑰	Roller Bracket	S45C	1
⑱	Bushing	Bronze with Graphite	1
⑲	Accelerator Ramp	S45C	1
⑳	Wear Plate B	S45C	4

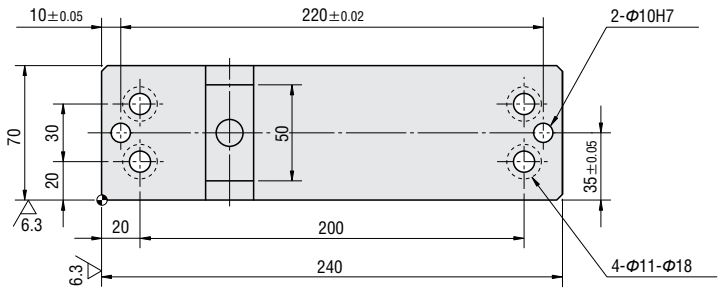
Assembly bolts and dowel pins are not shown.

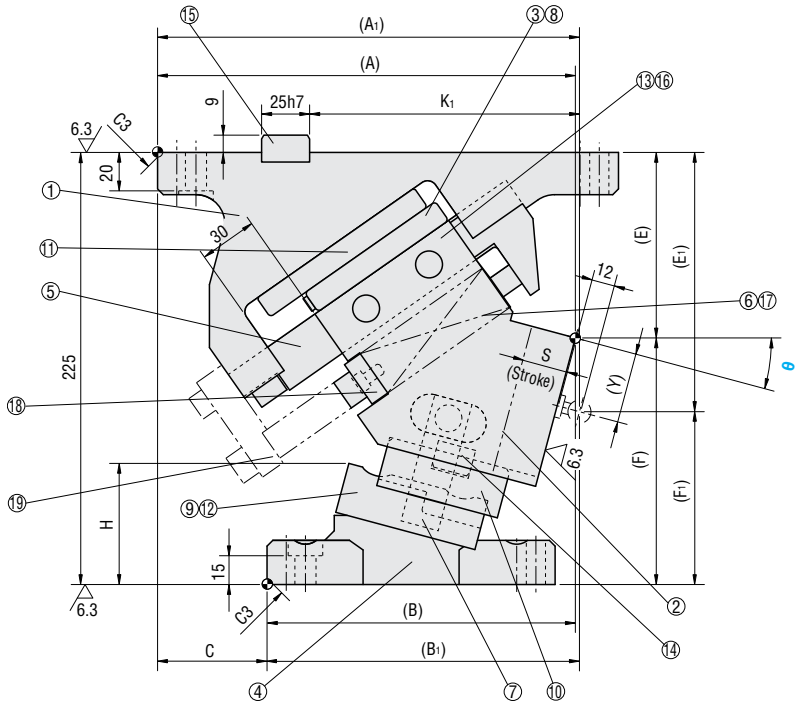
■KACG300

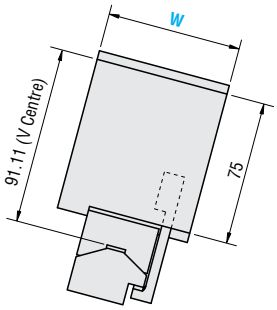
No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Base	HT300	1
③	Cam Driver	HT300	1
④	V-block A	S45C	1
⑤	V-block B	Bronze with Graphite	1
⑥	Cam Upper Plate	42CrMo	2
⑦	Cam Slide Plate	Bronze with Graphite	2
⑧	Wear Plate A	Bronze with Graphite	2
⑨	Hanger Bolt Sleeve	S45C	1
⑩	Stop Plate	SS400	1
⑪	Spring Guide Pin	FC250	2
⑫	Coil Spring	Φ50x203	2
⑬	Driver For Positive Return	Bronze with Graphite	1
⑭	Positive Return Strap A	S45C	1
⑮	Roller	S45C	1
⑯	Shaft	S45C	1
⑰	Roller Bracket	S45C	1
⑱	Bushing	Bronze with Graphite	1
⑲	Accelerator Ramp	S45C	1
⑳	Lower Plate B	S45C	4
㉑	Wear Plate	Bronze with Graphite	2
㉒	Keeper Plate A	S45C	1
㉓	Driver For Positive Return	Bronze with Graphite	1
㉔	Positive Return Strap B	S45C	1
㉕	Wear Plate B	S45C	1

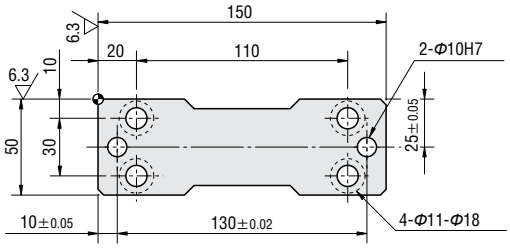
Assembly bolts and dowel pins are not shown.

KACNR70 (θ=00-40)









■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	Y
70	00	237.37	249.37	135.37	147.37	102	85	120	140	105	46.4	155.5	35
	05	234.87	243.53	142.87	151.53	92	86.28	125	138.72	100	53.9	149.5	37.82
	10	232.82	237.74	151.82	156.74	81	88.76	130	136.24	95	60.9	145	39.76
	15	217.54	219.67	160.54	162.67	57	96.59	135	128.41	90	63.1	140.5	36.55
	20	224.52	222.62	172.52	170.62	52	99.67	140	125.33	85	70.5	134.5	38.55
	25	223.46	218.26	181.46	176.26	42	105.45	145	119.55	80	75.7	130	38.04
	30	211.54	204.03	181.54	174.03	30	112.99	150	112.01	75	79.4	125.5	35.81
	35	210.68	198.86	193.68	181.86	17	117.2	155	107.8	70	86.8	119.5	37.74
	40	204.84	191.19	200.84	187.19	4	125.07	160	99.93	65	90.6	115	35.53

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
19.3	98.1 (10.0)	16.1	KACNR	70	00	GK ISO NGK NISO
21.3		15.4			05	
23.3		14.8			10	
25.4		14.1			15	
27.6		14.1			20	
30.0		14.0			25	
32.6		13.8			30	
35.4		13.7			35	
38.6		13.8			40	

Spring Specifications

Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	M150-38.1	–	2350.0 (239.6)	KALLER gas spring
ISO	Φ25x115	68.6 (7.0)	657.0 (67.0)	Coil spring (Constant=19.6N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

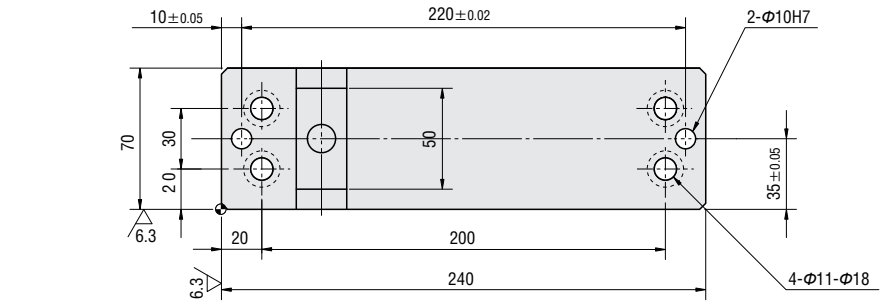
Catalog No.	W	–	θ	–	Spring type
KACNR	70	–	30	–	ISO

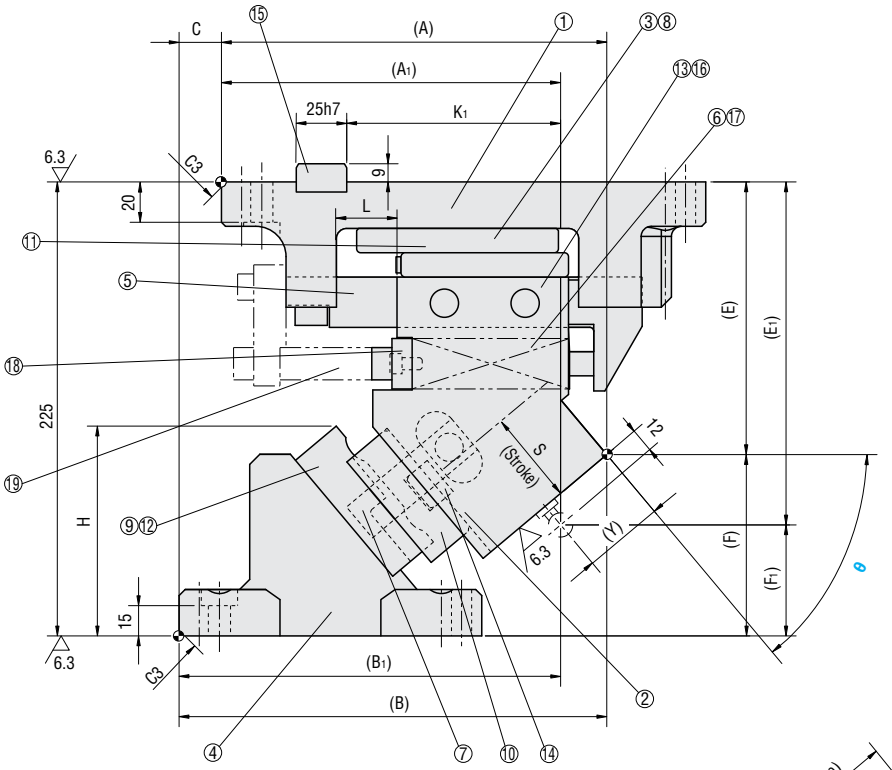
Alteration

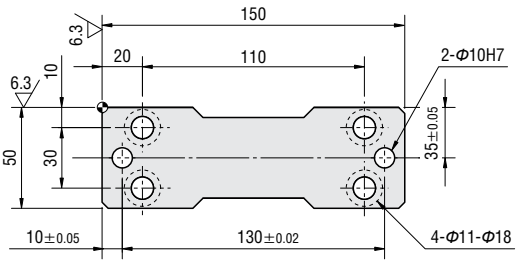
Catalog No.	W	–	θ	–	Spring type	–	(NF)
KACNR	70	–	15	–	GK	–	NF

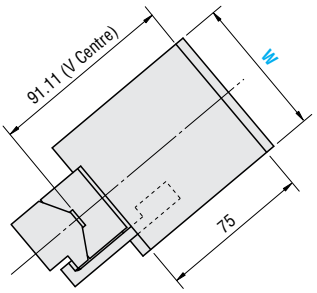
Alterations	Code	Spec.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR70 (θ=45-60)









■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	L	Y
70	45	198.15	181.4	200.15	183.4	2	131.28	165	93.72	60	96.1	110.5	30	35.68
	50	190.95	168.09	211.95	189.09	21	135.15	170	89.85	55	104	106		39.92
	55	190.51	170.02	213.51	193.02	23	146	175	79	50	104.8	101.5	25	33.41
	60	185.81	167.99	220.81	202.99	35	155.86	180	69.14	45	106.3	98.5		27.5

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
42.3	98.1 (10.0)	13.8	KACNR	70	45	GK ISO NGK NISO
46.7		13.9			50	
43.6		14.1			55	
50.0		14.5			60	

Spring Specifications

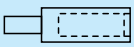
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	M150-38.1	–	2350.0 (239.6)	KALLER gas spring
ISO	Φ25x115	68.6(7.0)(θ=45-50) 88.2(9.0)(θ=55-60)	657.0(67.0)(θ=45-50) 578.2(59.0)(θ=55-60)	Coil spring (Constant=19.6N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

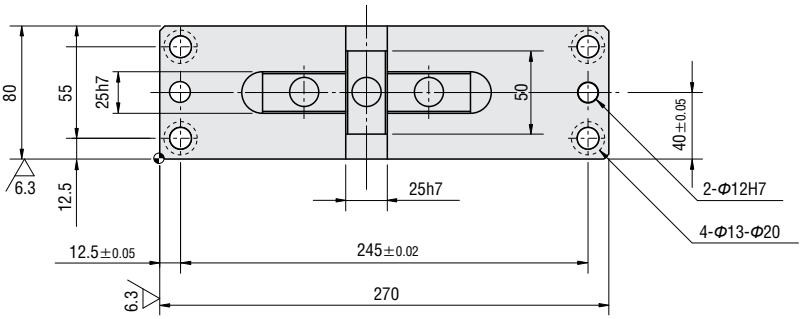
Catalog No.	W	–	θ	–	Spring type
KACNR	70	—	55	—	ISO

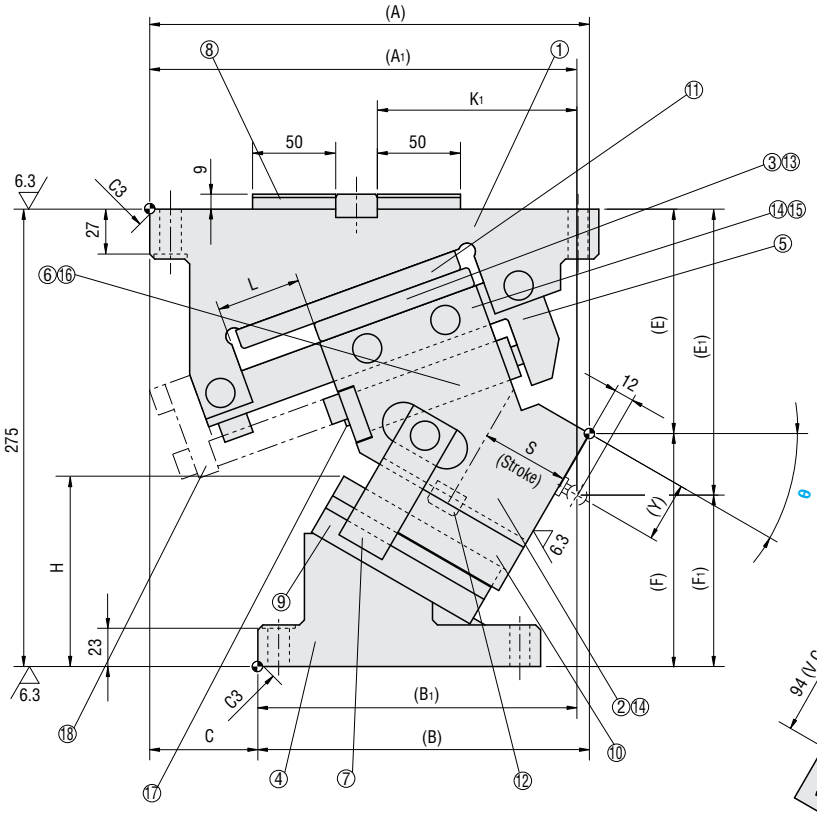
Alteration

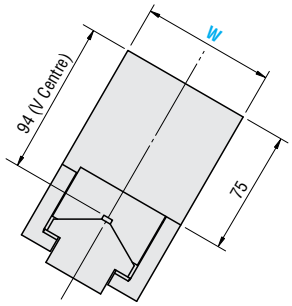
Catalog No.	W	–	θ	–	Spring type	–	(NF)
KACNR	70	—	50	—	GK	—	NF

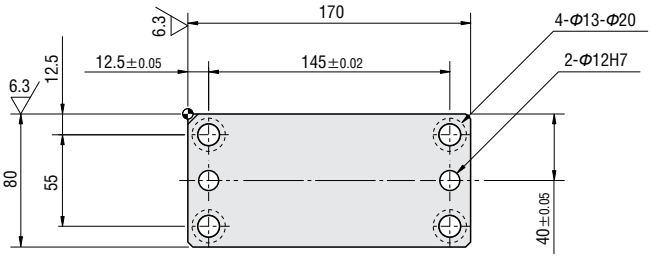
Alterations	Code	Spec.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR80









■Components table ☞ P.162

W	θ	A	A1	B	B1	C	E	E1	F	F1	H	L	K1	Y
80	00	280	292	145	157	135	110	155	165	120	69	50	180	45
	05	281.31	289.5	156.31	164.5	125	115.93	160	159.07	115	73.5		160.5	43.19
	10	277.5	281.37	167.5	171.37	110	117.84	165	157.16	110	82.6		153	45.77
	15	280.48	279.7	175.48	174.7	105	120.72	170	154.28	105	91.3		144	47.8
	20	276.16	270.57	181.16	175.57	95	124.55	175	150.45	100	99.6		136.5	49.32
	25	271.47	261.07	191.47	181.07	80	129.29	180	145.71	95	107.3		127.5	50.35
	30	264.33	249.27	199.33	184.27	65	134.92	185	140.08	90	114.5		120	50.9
	35	260.66	241.26	205.66	186.26	55	141.38	190	133.62	85	120.9		112.5	50.95
	40	252.32	228.34	217.32	193.34	35	147.76	195	127.24	80	126.8		105	51.6
	45	247.46	221.04	217.46	191.04	30	156.61	200	118.39	75	131.8		99	49.36
	50	237.8	209.12	222.8	194.12	15	165.27	205	109.73	70	136.1		93	47.51
	55	231.36	201.62	231.36	201.62	0	174.53	210	100.47	65	139.6	45	72	44.7
	60	233.95	207.53	233.95	207.53		185.89	215	89.11	60	140.7	40	79	37.43

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
32.1	166.7 (17.0)	27.9	KACNR	80	00	GK ISO NGK NISO
35.5		27.5			05	
38.9		26.9			10	
42.4		26.5			15	
46.1		26.0			20	
50.0		25.9			25	
54.3		25.3			30	
59.0		25.0			35	
64.3		24.7			40	
70.4		24.7			45	
77.8		24.9			50	
78.5		25.8			55	
80.0		26.2			60	

Spring Specifications

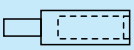
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	M150-50	–	2350.0 (239.6)	KALLER gas spring
ISO	Φ32x152	73.6 (7.5)	1223.6(124.8)(θ=00-50) 1108.6(113.0)(θ=55) 993.6(101.3)(θ=60)	Coil spring (Constant=23.0N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

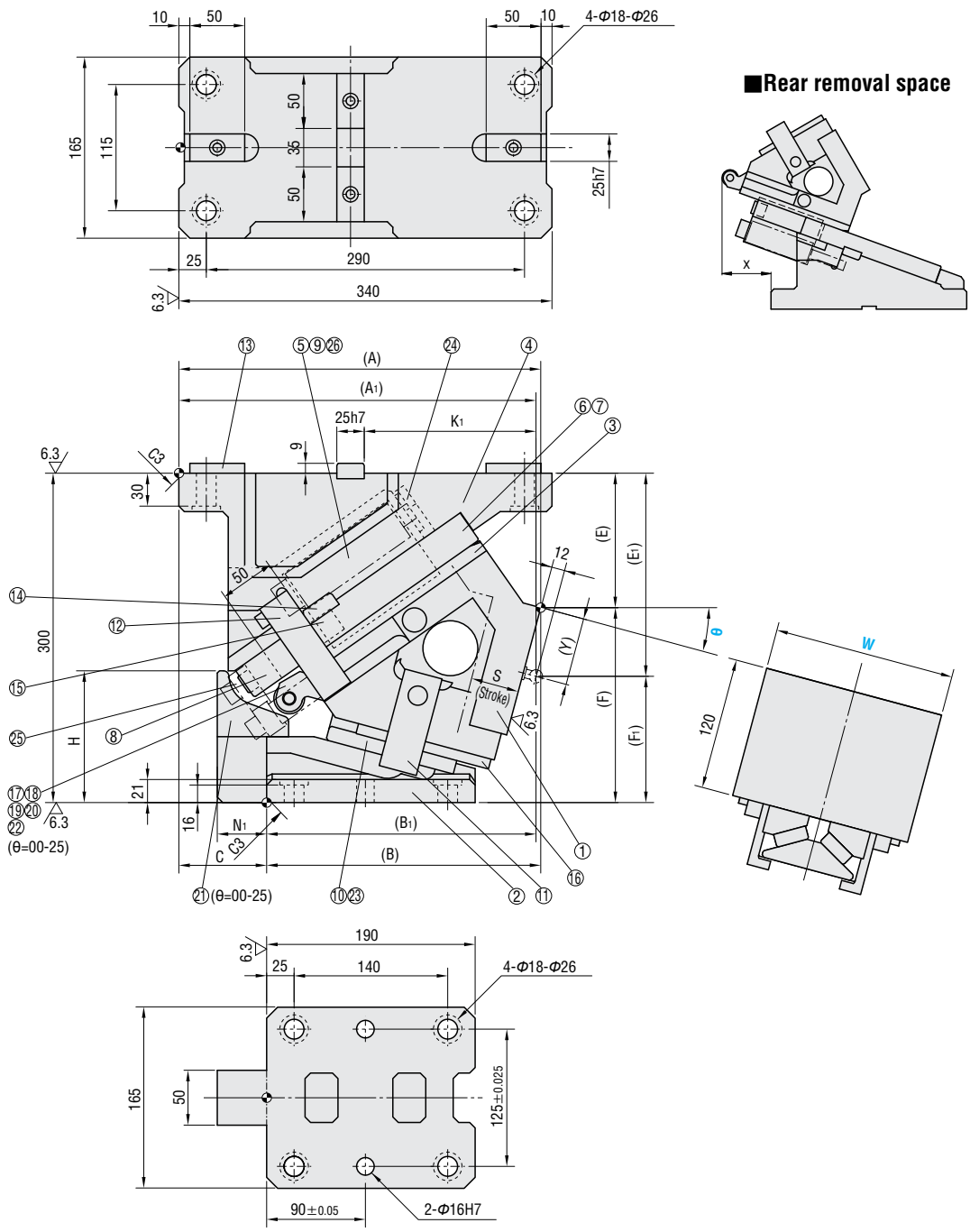
Catalog No.	W	–	θ	–	Spring type
KACNR	80	–	30	–	ISO

Alteration

Catalog No.	W	–	θ	–	Spring type	–	(NF)
KACNR	80	–	05	–	GK	–	NF

Alterations	Code	Spec.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR165 (θ=00-45)



■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	N_1	Y	x
165	00	335.84	347.84	207.84	219.84	128	96.98	170	203.02	130	80	180.5	55	73.02	21
	05	335.25	340.82	222.25	227.82	113	100.91	175	199.09	125	98	173		73.32	37
	10	337.27	337.3	236.27	236.3	101	111.09	180	188.91	120	109	165.5	50	67.86	48
	15	329.78	325.45	249.78	245.45	80	122.46	185	177.54	115	120	156.5	45	61.53	66
	20	332.68	323.61	262.68	253.61	70	129.99	190	170.01	110	137	149	42	59.49	71
	25	332.88	319.83	274.88	261.83	58	138.62	195	161.38	105	154	140	37	56.61	83
	30	334.28	315.39	286.28	267.39	48	148.28	205	151.72	95	125	132.5	30	58.57	90
	35	329.8	305.16	296.8	272.16	33	158.89	215	141.11	85	135	125	25	60.1	100
	40	321.35	291.18	306.35	276.18	15	170.38	225	129.62	75	155	117.5		61.23	111
	45	314.86	279.49	314.86	279.49	0	182.66	235	117.34	65		111.5		62.03	116

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
32.1	294.2 (30.0)	76.1	KACNR	165	00	GK ISO NGK NISO
35.5		74.2			05	
38.9		73.8			10	
42.4		73.1			15	
46.1		72.3			20	
50.0		72.1			25	
54.3		71.9			30	
59.0		72.2			35	
64.3		72.4			40	
70.4		65.5			45	

Spring Specifications

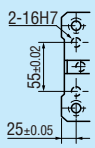
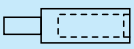
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	TU250-63.5	–	3430.0 (349.8)	KALLER gas spring
ISO	Φ40x178	449.1 (45.8)	2694.0 (274.7)	Coil spring (Constant=44.9N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

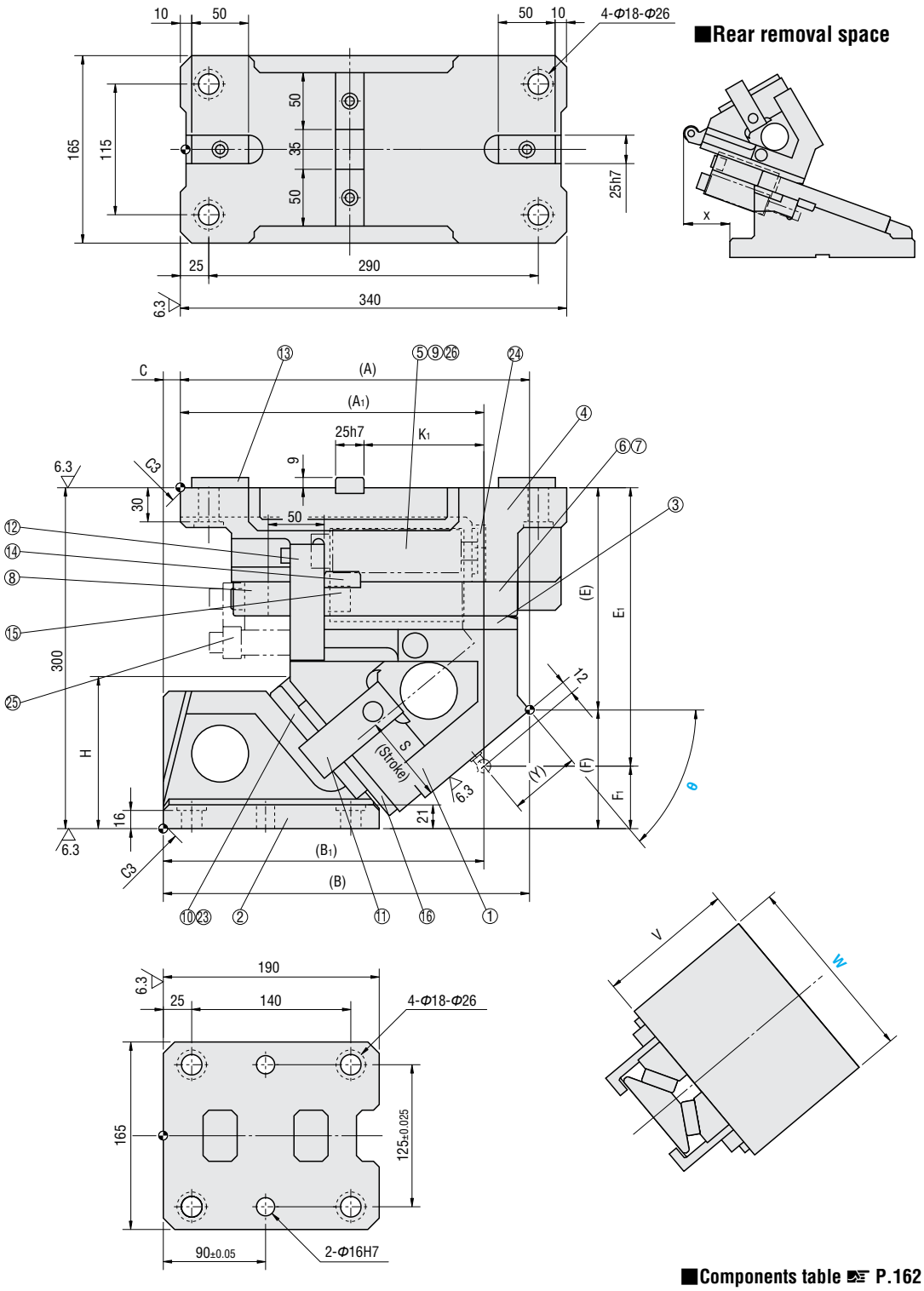
Catalog No.	W	–	θ	–	Spring type
KACNR	165	–	35	–	ISO

Alteration

Catalog No.	W	–	θ	–	Spring type	–	(N·NF)
KACNR	165	–	30	–	ISO	–	N

Alterations	Code	Spec.
	N	Machining of locating dowel holes 2 dowel holes (Φ16H7) are machined on the cam holder.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR (θ=50-60)



■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	V	Y	x
70	50	307.27	267.1	322.27	282.1	15	195.63	245	104.37	55	136.3	105.5	120	62.51	81
	55	296.59	253.67	328.59	285.67	32	210.3	255	89.7	45	139.6	120	125	60.8	88
	60	288.56	238.54	333.56	283.54	45	222.26	265	77.74	35	143.2	113		64.69	95

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
77.8	294.2 (30.0)	64.3	KACNR	165	50	GK ISO NGK NISO
87.2		65.2			55	
100.0		66.6			60	

Spring Specifications

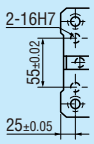
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	TU250-63.5	–	3430.0 (349.8)	KALLER gas spring
ISO	Φ40x178	449.1 (45.8)	2694.0 (274.7)	Coil spring (Constant=44.9N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

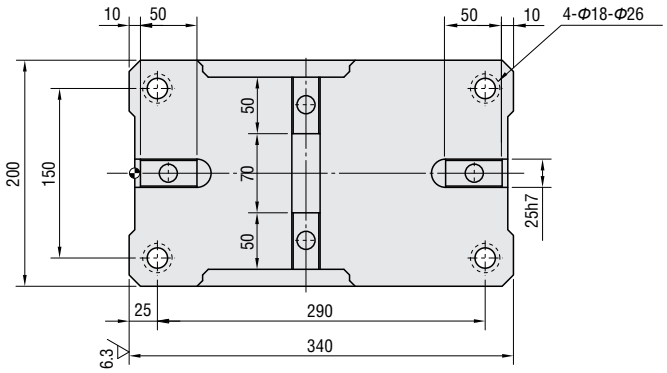
Catalog No.	W	–	θ	–	Spring type
KACNR	165	–	60	–	ISO

Alteration

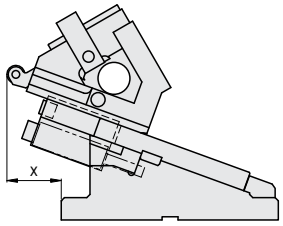
Catalog No.	W	–	θ	–	Spring type	–	(N·NF)
KACNR	165	–	60	–	GK	–	NF

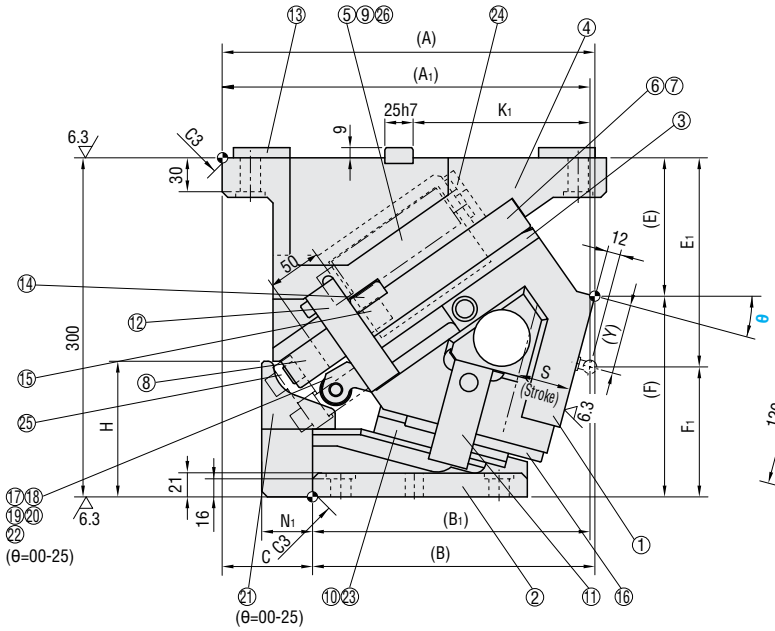
Alterations	Code	Spec.
	N	Machining of locating dowel holes 2 dowel holes (Φ16H7) are machined on the cam holder.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

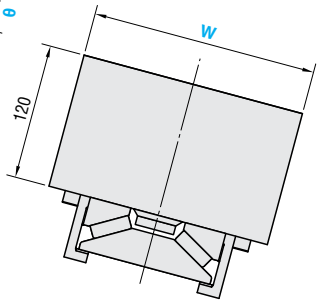
KACNR200 (θ=00-45)

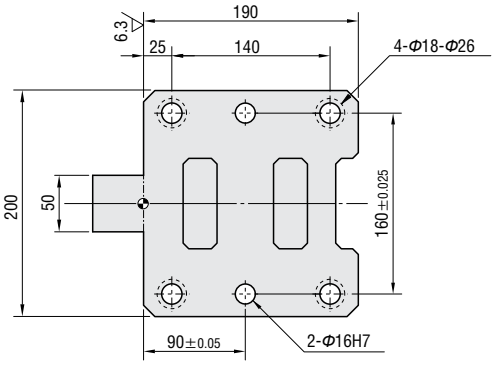


■Rear removal space









■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	N_1	Y	x
200	00	335.84	347.84	207.84	219.84	128	96.98	170	203.02	130	80	180.5	55	73.02	21
	05	335.25	340.82	222.25	227.82	113	100.91	175	199.09	125	98	173		73.32	37
	10	337.27	337.3	236.27	236.3	101	111.09	180	188.91	120	109	165.5	50	67.86	48
	15	329.78	325.45	249.78	245.45	80	122.46	185	177.54	115	120	156.5	45	61.53	66
	20	332.68	323.61	262.68	253.61	70	129.99	190	170.01	110	137	149	42	59.49	71
	25	332.88	319.83	274.88	261.83	58	138.62	195	161.38	105	154	140	37	56.61	83
	30	334.28	315.39	286.28	267.39	48	148.28	205	151.72	95	125	132.5	30	58.57	90
	35	329.8	305.16	296.8	272.16	33	158.89	215	141.11	85	135	125	25	60.1	100
	40	321.35	291.18	306.35	276.18	15	170.38	225	129.62	75	155	117.5		61.23	111
	45	314.86	279.49	314.86	279.49	0	182.66	235	117.34	65		111.5		62.03	116

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
32.1	353.0 (36.0)	90.3	KACNR	200	00	GK ISO NGK NISO
35.5		88.0			05	
38.9		87.5			10	
42.4		87.0			15	
46.1		85.8			20	
50.0		86.2			25	
54.3		85.6			30	
59.0		86.2			35	
64.3		86.6			40	
70.4		88.0			45	

Spring Specifications

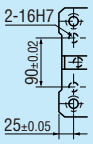
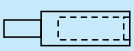
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	K500-63.5	–	6125.0 (624.6)	KALLER gas spring
ISO	Φ50x178	749.2 (76.4)	4494.0 (458.3)	Coil spring (Constant=74.9N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

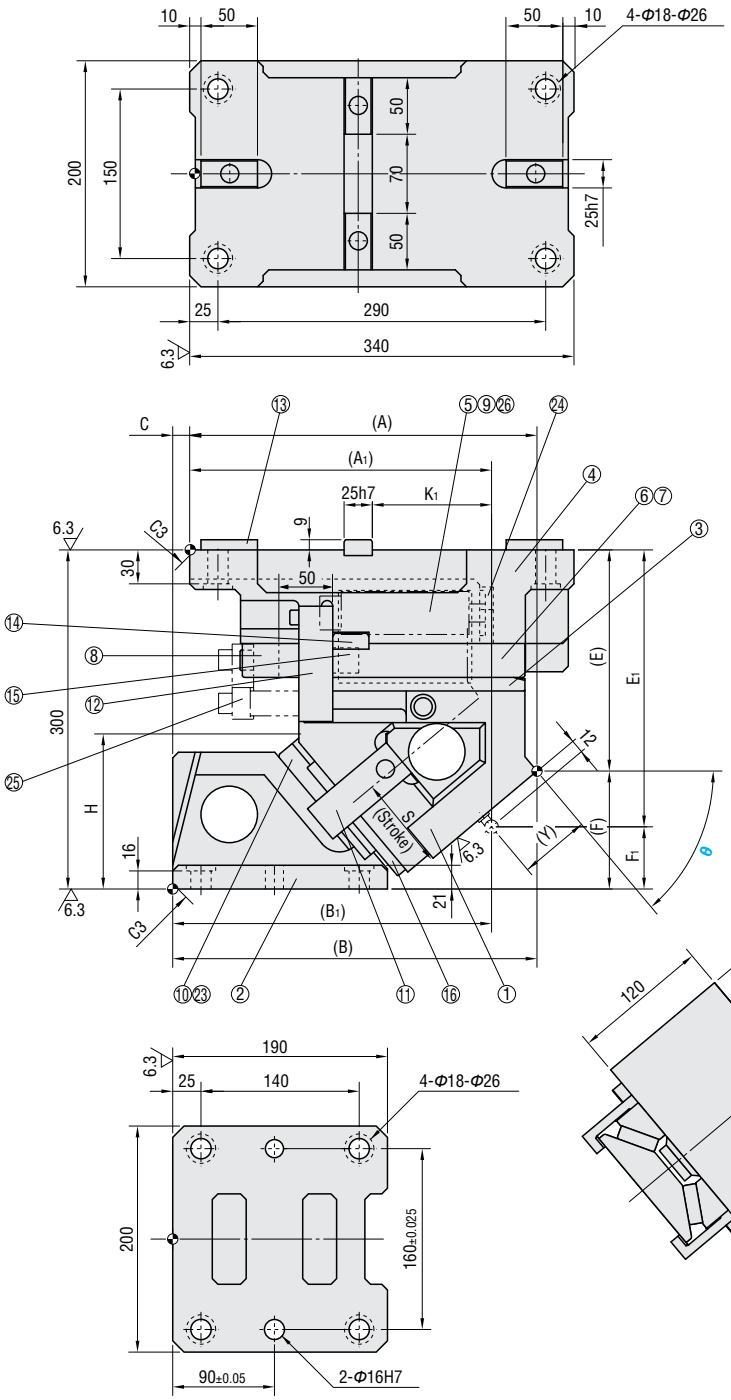
Catalog No.	W	–	θ	–	Spring type
KACNR	200	—	15	—	ISO

Alteration

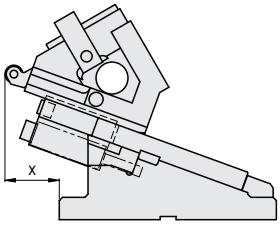
Catalog No.	W	–	θ	–	Spring type	– (N·NF)
KACNR	200	—	05	—	NGK	— N

Alterations	Code	Spec.
	N	Machining of locating dowel holes 2 dowel holes (Φ16H7) are machined on the cam holder.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR200 (θ=50-60)



■Rear removal space



■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	Y	x
200	50	307.27	267.1	322.27	282.1	15	195.63	245	104.37	55	137	105.5	62.51	91
	55	296.59	253.67	328.59	285.67	32	210.3	255	89.7	45	140.3	120	60.8	99
	60	288.56	238.54	333.56	283.54	45	222.26	265	77.74	35	145.7	113	64.69	103

Stroke S	Working force KN (ton)	Total weight kg	Catalog No.	W	θ	Spring type
77.8	353.0 (36.0)	78.2	KACNR	200	50	GK ISO NGK NISO
87.2		80.5			55	
100.0		82.4			60	

Spring Specifications

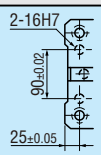
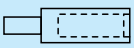
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	K500-63.5	–	6125.0 (624.6)	KALLER gas spring
ISO	Φ50x178	749.2 (76.4)	4494.0 (458.3)	Coil spring (Constant=74.9N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

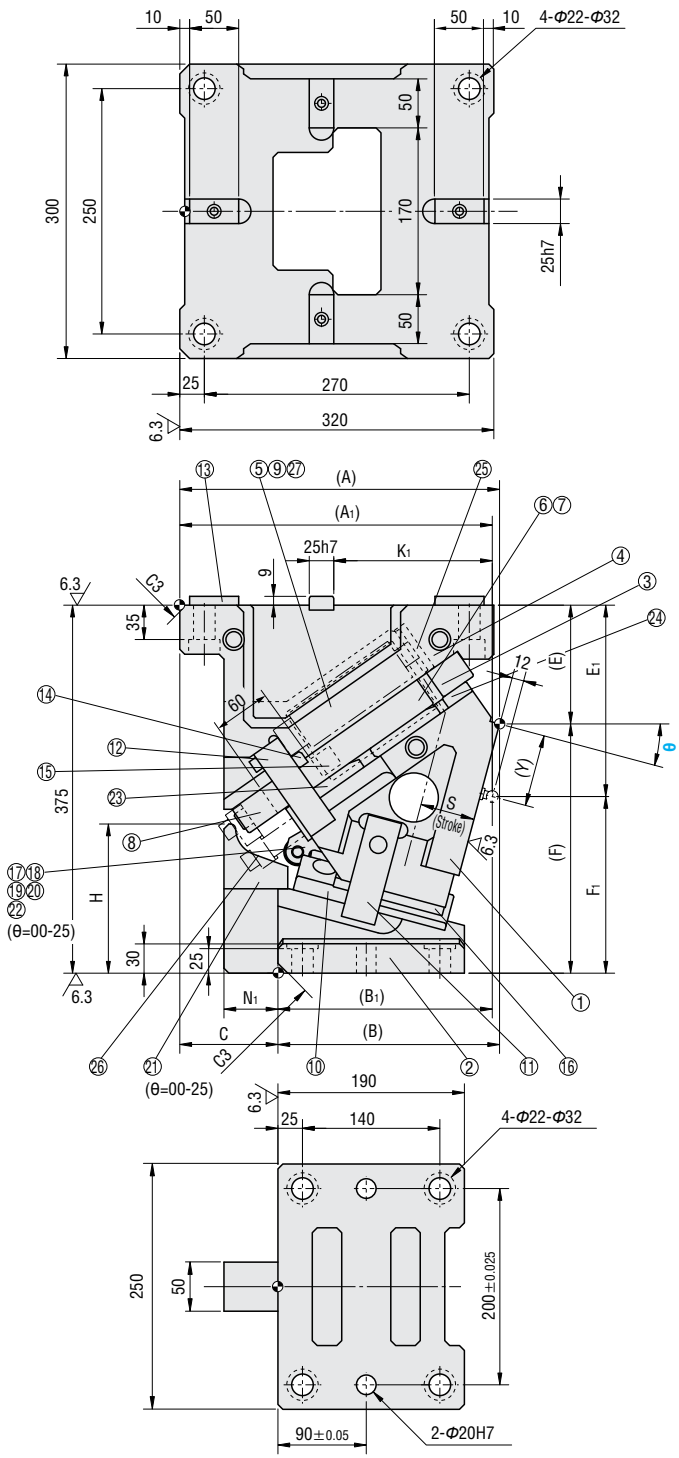
Catalog No.	W	–	θ	–	Spring type
KACNR	200	–	50	–	ISO

Alteration

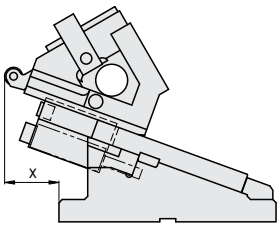
Catalog No.	W	–	θ	–	Spring type	–	(N·NF)
KACNR	200	–	55	–	GK	–	NF

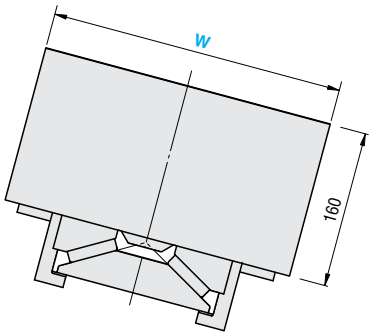
Alterations	Code	Spec.
	N	Machining of locating dowel holes 2 dowel holes (Φ16H7) are machined on the cam holder.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR300/400 (θ=00-45)



■Rear removal space





■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	N_1	Y	x
300 400	00	313	325	175	187	138	98	180	277	195	114	193	55	82	45
	05	317.15	322.13	192.15	197.13	125	104.18	185	270.82	190	127	182.5		80.07	59
	10	324.13	322.54	209.13	207.54	115	111.86	190	263.14	185	139	172		77.23	67
	15	325.82	318.41	225.82	218.41	100	121.01	195	253.99	180	152	161.5		73.39	77
	20	327.08	314.95	242.08	229.95	85	131.59	200	243.41	175	164	151		68.43	85
	25	334.71	317.01	259.71	242.01	75	138.65	205	236.35	170	182	140.5	50	67.61	88
	30	327.83	302.37	272.83	247.37	55	146.89	215	228.11	160	152	130	45	71.72	108
	35	334.51	303.07	289.51	258.07	45	159.17	225	215.83	150	159.7	121	35	71.97	113
	40	325.46	284.32	300.46	259.32	25	167.3	235	207.7	140	167.7	112	30	78.3	129
	45	324.84	276.04	317.84	269.04	7	179.23	245	195.77	130	178.3	103		81.01	134

Stroke S	Working force KN (ton)	Total weight kg		Catalog No.	W	θ	Spring type
		W=300	W=400				
38.6	451.1 (46.0)	153.2	160.2	KACNR	300 400	00	GK ISO NGK NISO
42.6		152.5	159.5			05	
46.7		151.4	158.4			10	
50.9		154.1	161.1			15	
55.3		148.2	155.2			20	
60.0		150.2	157.3			25	
65.1		147.3	154.3			30	
70.8		148.0	155.0			35	
77.1		146.2	153.3			40	
84.5		148.6	155.6			45	

Spring Specifications

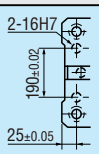
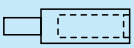
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	K500-80	–	10668.0 (1087.8)	KALLER gas spring
ISO	Φ50x203	1314.1 (134.0)	9198.0 (937.9)	Coil spring (Constant=65.7N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

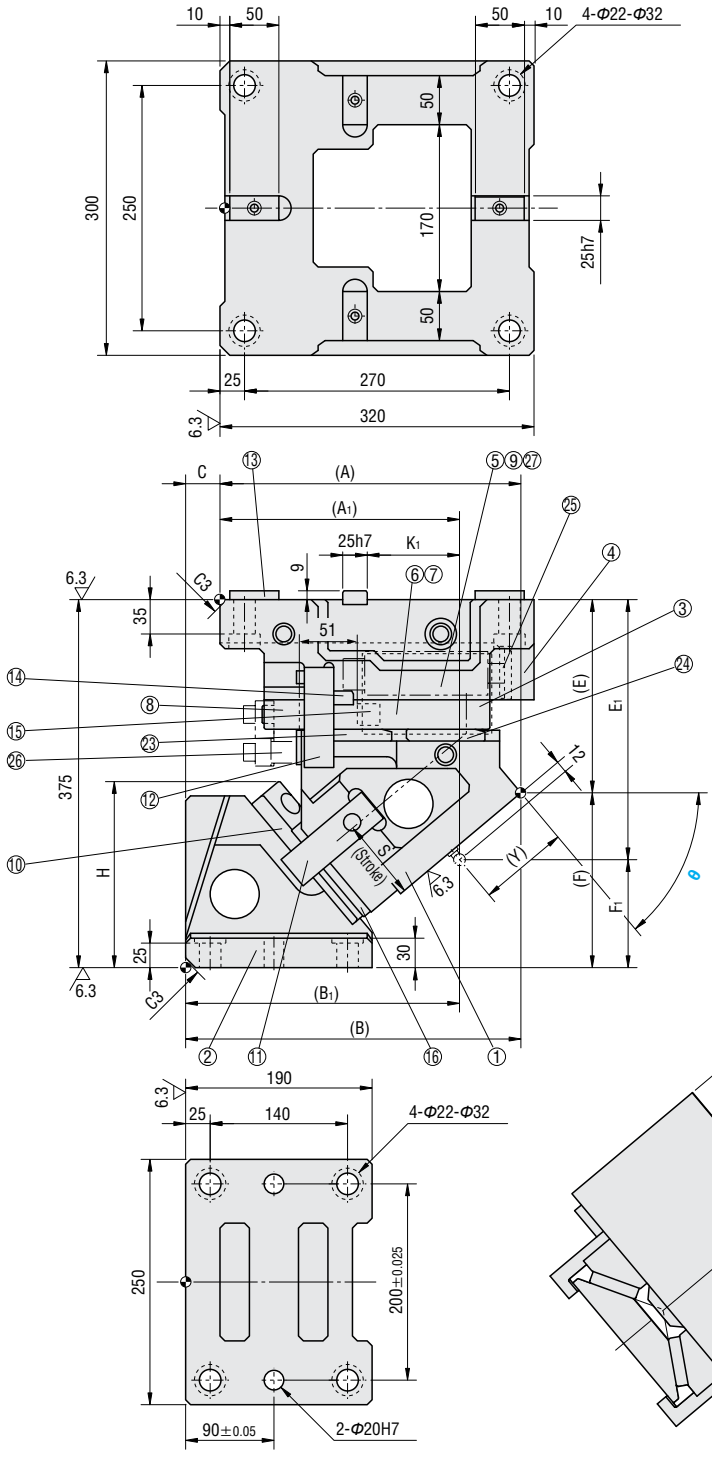
Catalog No.	W	–	θ	–	Spring type
KACNR	300	–	40	–	GK

Alteration

Catalog No.	W	–	θ	–	Spring type	– (N·NF)
KACNR	300	–	15	–	NISO	– N

Alterations	Code	Spec.
	N	Machining of locating dowel holes 2 dowel holes (ϕ 16H7) are machined on the cam holder.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

KACNR300/400 (θ=50-60)



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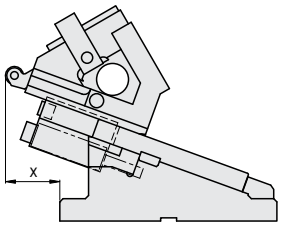


■Components table ☞ P.162

W	θ	A	A_1	B	B_1	C	E	E_1	F	F_1	H	K_1	Y	x
300 400	50	306.63	244.08	341.63	279.08	35	196.84	265	178.16	110	193.1	94	91.73	131
	55	277.93	219.29	362.93	304.29	85	229.29	285	145.71	90	190.7	86.5	79.99	169
	60	286.45	216.29	371.45	301.29		245.64	300	129.36	75	195.6	79	87.94	163

Stroke S	Working force KN (ton)	Total weight kg		Catalog No.	W	θ	Spring type
		W=300	W=400				
79.3	451.1 (46.0)	122.5	127.7	KACNR	300 400	50	GK ISO NGK NISO
88.9		130.9	135.9			55	
102.0		135.3	140.4			60	

Spring Specifications

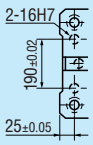
Spring type	Spring catalog No.	Spring force N (kgf)		Remarks
		Initial pressure	Final pressure	
GK	K500-80	–	10668.0 (1087.8)	KALLER gas spring
ISO	Φ50x203	1314.1 (134.0)	8015.4 (817.9)	Coil spring (Constant=65.7N/mm)
NGK	–	–	–	No gas spring
NISO	–	–	–	No coil spring

Order

Catalog No.	W	–	θ	–	Spring type
KACNR	400	–	60	–	ISO

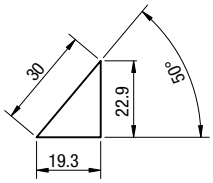
Alteration

Catalog No.	W	–	θ	–	Spring type	–	(N·NF)
KACNR	300	–	50	–	GK	–	NF

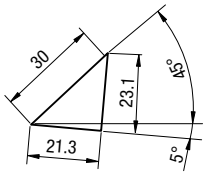
Alterations	Code	Spec.
	N	Machining of locating dowel holes 2 dowel holes (ϕ 16H7) are machined on the cam holder.
	NF	Gas spring without nitrogen gas charging Applicable for spring type GK only.

■KACNR

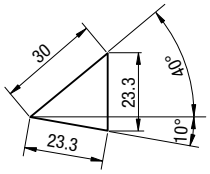
70-00



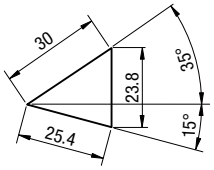
70-05



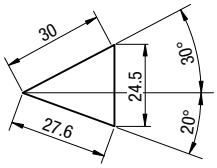
70-10



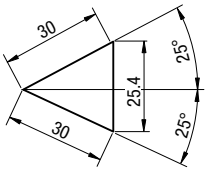
70-15



70-20



70-25



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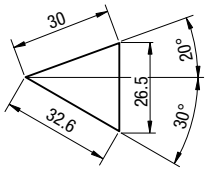

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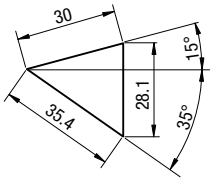

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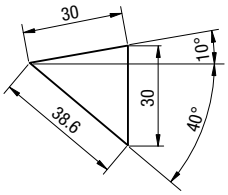

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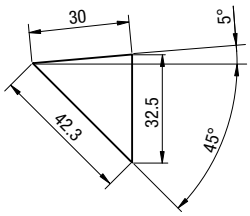

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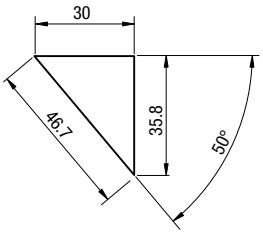

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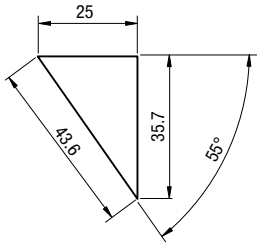

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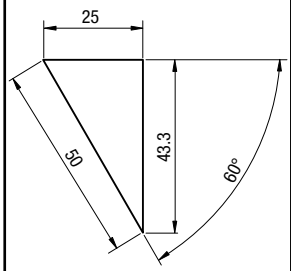

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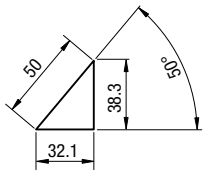

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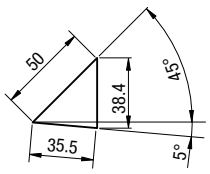

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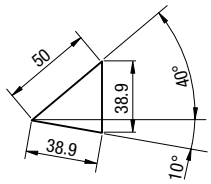

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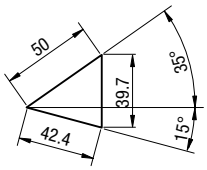

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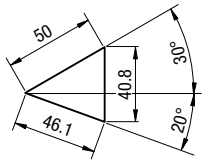

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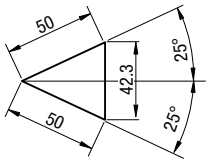

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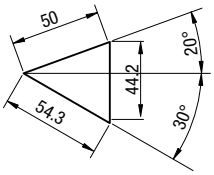

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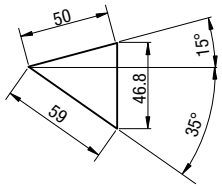

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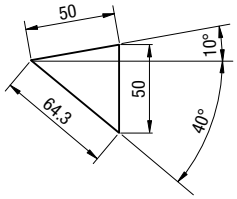

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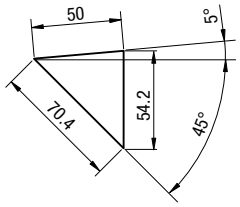

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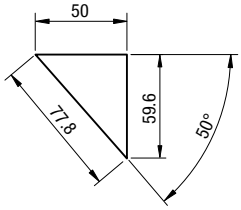

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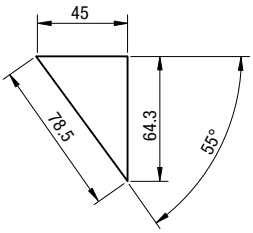

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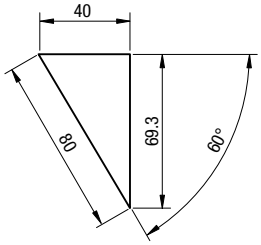

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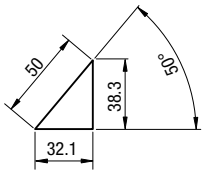

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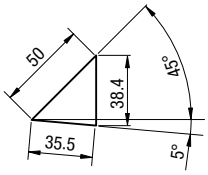

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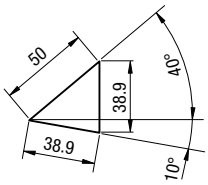

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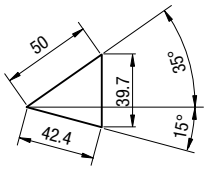

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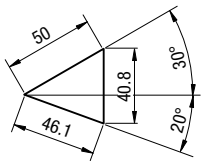

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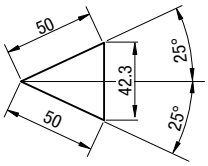

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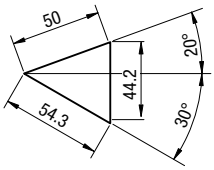

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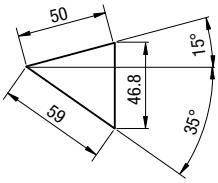

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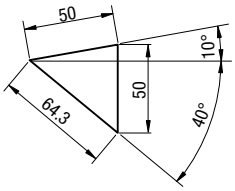

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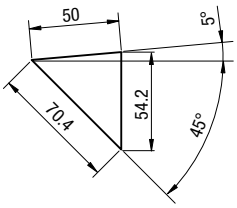

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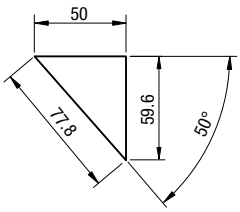

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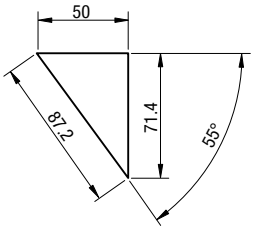

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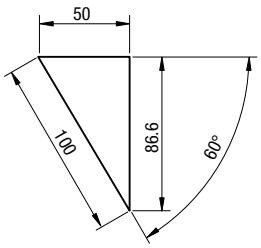

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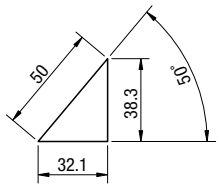

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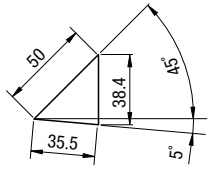

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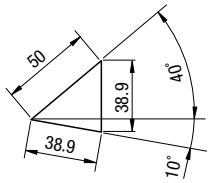

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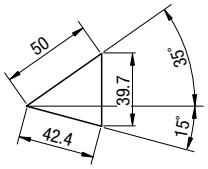

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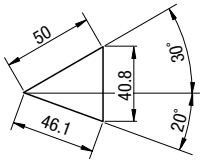

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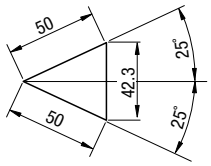

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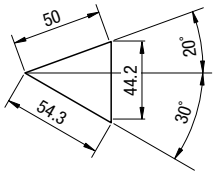

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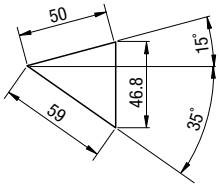

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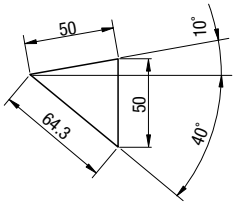

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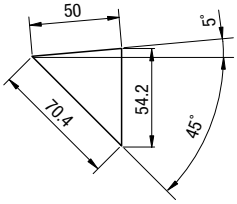

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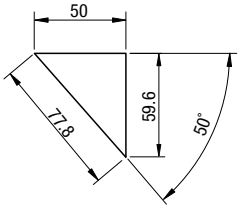

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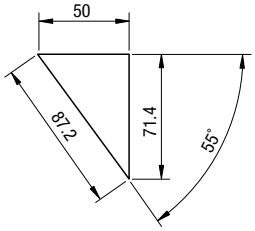

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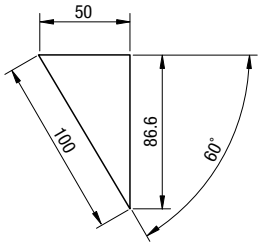

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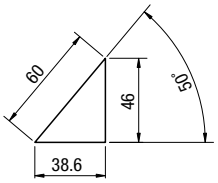

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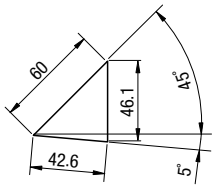

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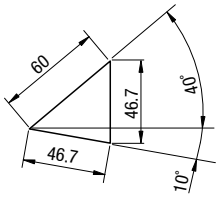

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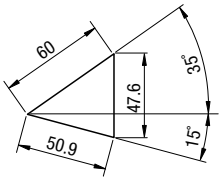

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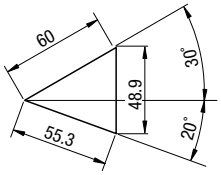

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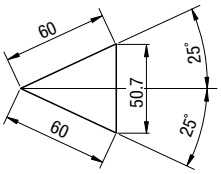

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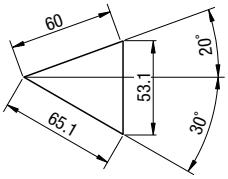

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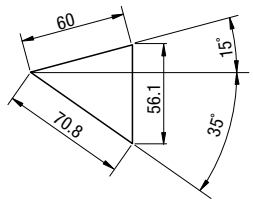

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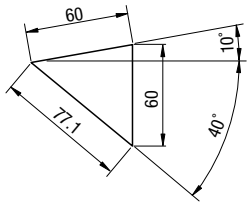

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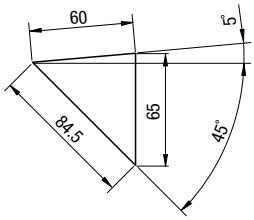

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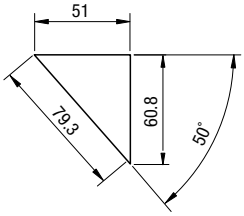

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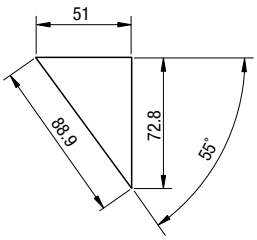

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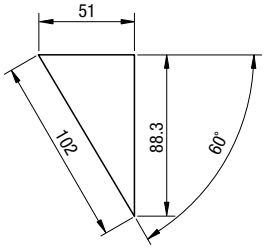

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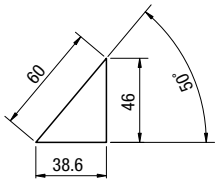
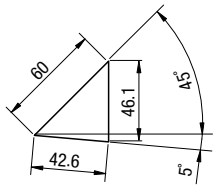
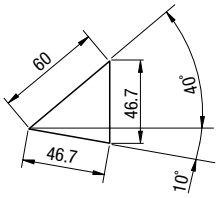


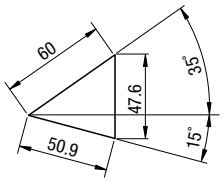
400-05



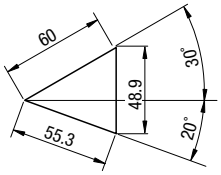
400-10



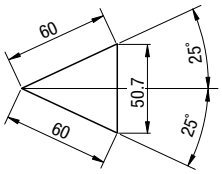
400-15



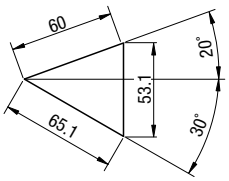
400-20



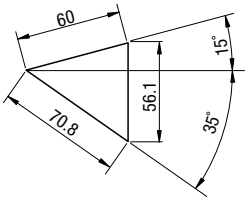
400-25



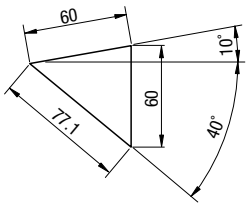
400-30



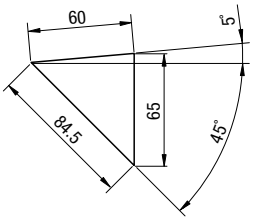
400-35



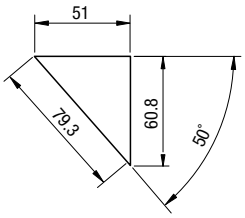
400-40



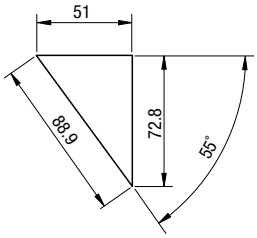
400-45



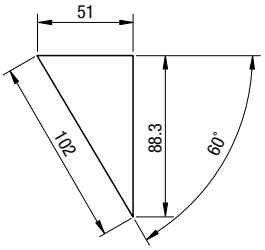
400-50



400-55



400-60



NAAMS STANDARD AERIAL CAM UNITS
—KACNR— COMPONENTS TABLE

■KACNR70

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Guide Bar	S45C	1
⑥	Spring	Refer to Spring Specification Table	1
⑦	Positive Return Strap	S45C	1
⑧	Bumper	Urethane	2
⑨	V-block A	Bronze with Graphite	1
⑩	V-block B	42CrMo	1
⑪	Slide Plate	S45C	1
⑫	Dowel Pin	Φ8×25	1
⑬	Spring Washer	For M6	1
⑭	Key B	SS400	1
⑮	Key A	SS400	1
⑯	Wear Plate	Bronze with Graphite	2
⑰	Spring Guide Pin	S45C (Apply only for ISO and NISO)	1
⑱	Spring Stop Plate	SS400	1
⑲	Slide Lock Plate	SS400	1

Assembly bolts are not shown.

■KACNR80

No.	Part Name	Material and Remark	Quantity
①	Cam Base	QT450	1
②	Cam Slide	QT450	1
③	Wear Plate	Bronze with Graphite	1
④	Cam Driver	QT450	1
⑤	Guide Bar	S45C	1
⑥	Spring	Refer to Spring Specification Table	1
⑦	Positive Return Strap	S45C	2
⑧	Key A	SS400	3
⑨	V-block A	Bronze with Graphite	1
⑩	V-block B	42CrMo	1
⑪	Slide Plate	S45C	1
⑫	Key B	SS400	1
⑬	Dowel Pin	Φ8×25	2
⑭	Spring Washer	For M8	3
⑮	Wear Plate	Bronze with Graphite	2
⑯	Spring Guide Pin	S45C (Apply only for ISO and NISO)	1
⑰	Spring Stop Plate	SS400	1
⑱	Slide Lock Plate	SS400	1

Assembly bolts are not shown.

■KACNR165(θ=00-25)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Driver	HT300	1
③	Wear Plate	Bronze with Graphite	2
④	Cam Base	HT300	1
⑤	Spring Guide	Bronze with Graphite	1
⑥	Base Plate D-R	42CrMo	1
⑦	Base Plate D-L	42CrMo	1
⑧	Stop Plate	SS400	1
⑨	Spring	Refer to Spring Specification Table	1
⑩	V-block	42CrMo	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	4
⑭	Key B	SS400	2
⑮	Bumper	Urethane	1
⑯	Keeper Plate	42CrMo	2
⑰	Roller	S45C	1
⑱	Roller Pin	S45C	1
⑲	Bushing	Bronze with Graphite	1
⑳	Roller Bracket	SS400	1
㉑	Accelerator Ramp	S45C	1
㉒	Snap Ring E type	Φ9	2
㉓	Key C	SS400	1
㉔	Spring Support	SS400	1
㉕	Slide Lock Plate	SS400	1
㉖	Spring Guide Plate	SS400	1

Assembly bolts are not shown.

■KACNR165(θ=30-60)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Driver	HT300	1
③	Wear Plate	Bronze with Graphite	2
④	Cam Base	HT300	1
⑤	Spring Guide	Bronze with Graphite	1
⑥	Base Plate D-R	42CrMo	1
⑦	Base Plate D-L	42CrMo	1
⑧	Stop Plate	SS400	1
⑨	Spring	Refer to Spring Specification Table	1
⑩	V-block	42CrMo	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	4
⑭	Key B	SS400	2
⑮	Bumper	Urethane	1
⑯	Keeper Plate	42CrMo	2
㉓	Key C	SS400	1
㉔	Spring Support	SS400	1
㉕	Slide Lock Plate	SS400	1
㉖	Spring Guide Plate	SS400	1

Assembly bolts are not shown.

■KACNR200(θ=00-25)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Driver	HT300	1
③	Wear Plate	Bronze with Graphite	2
④	Cam Base	HT300	1
⑤	Spring Guide	Bronze with Graphite	1
⑥	Base Plate D-R	42CrMo	1
⑦	Base Plate D-L	42CrMo	1
⑧	Stop Plate	SS400	1
⑨	Spring	Refer to Spring Specification Table	1
⑩	V-block	42CrMo	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	4
⑭	Key B	SS400	2
⑮	Bumper	Urethane	1
⑯	Keeper Plate	42CrMo	2
⑰	Roller	S45C	1
⑱	Roller Pin	S45C	1
⑲	Bushing	Bronze with Graphite	1
⑳	Roller Bracket	SS400	1
㉑	Accelerator Ramp	S45C	1
㉒	Snap Ring E type	Φ9	2
㉓	Key C	SS400	1
㉔	Spring Support	SS400	1
㉕	Slide Lock Plate	SS400	1
㉖	Spring Guide Plate	SS400	1

Assembly bolts are not shown.

■KACNR200(θ=30-60)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Driver	HT300	1
③	Wear Plate	Bronze with Graphite	2
④	Cam Base	HT300	1
⑤	Spring Guide	Bronze with Graphite	1
⑥	Base Plate D-R	42CrMo	1
⑦	Base Plate D-L	42CrMo	1
⑧	Stop Plate	SS400	1
⑨	Spring	Refer to Spring Specification Table	1
⑩	V-block	42CrMo	1
⑪	Positive Return Strap	S45C	2
⑫	Safety Plate	SS400	2
⑬	Key A	SS400	4
⑭	Key B	SS400	2
⑮	Bumper	Urethane	1
⑯	Keeper Plate	42CrMo	2
㉓	Key C	SS400	1
㉔	Spring Support	SS400	1
㉕	Slide Lock Plate	SS400	1
㉖	Spring Guide Plate	SS400	1

Assembly bolts are not shown.

■KACNR300(θ=00-25)
■KACNR400(θ=00-25)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Driver	HT300	1
③	Base Plate C	S45C	1
④	Cam Base	HT300	1
⑤	Spring Guide	Bronze with Graphite	1
⑥	Base Plate F-R	42CrMo	1
⑦	Base Plate F-L	42CrMo	1
⑧	Stop Plate	SS400	1
⑨	Spring	Refer to Spring Specification Table	1
⑩	V-block	42CrMo	1
⑪	Positive Return Strap	S45C	2
⑫	Saftey Plate	SS400	2
⑬	Key A	SS400	4
⑭	Key B	SS400	2
⑮	Bumper	Urethane	3
⑯	Keeper Plate	42CrMo	2
⑰	Roller	S45C	1
⑱	Roller Pin	S45C	1
⑲	Bushing	Bronze with Graphite	1
⑳	Roller Bracket	SS400	1
㉑	Accelerator Ramp	S45C	1
㉒	Snap Ring F type	Φ9	2
㉓	Wear Plate A	Bronze with Graphite	4
㉔	Wear Plate B	Bronze with Graphite	1
㉕	Spring Support	SS400	1
㉖	Slide Lock Plate	SS400	1
㉗	Spring Guide Plate	SS400	1

Assembly bolts are not shown.

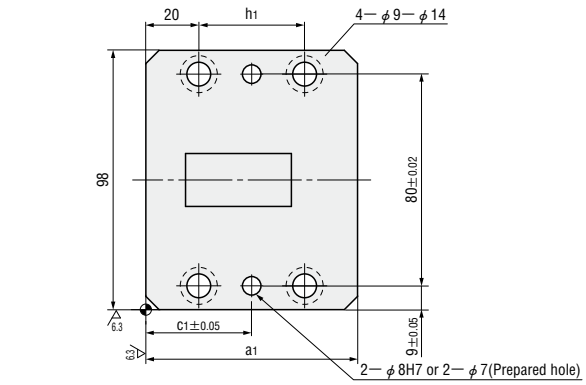
■KACNR300(θ=30-60)
■KACNR400(θ=30-60)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	HT300	1
②	Cam Driver	HT300	1
③	Base Plate C	S45C	1
④	Cam Base	HT300	1
⑤	Spring Guide	Bronze with Graphite	1
⑥	Base Plate F-R	42CrMo	1
⑦	Base Plate F-L	42CrMo	1
⑧	Stop Plate	SS400	1
⑨	Spring	Refer to Spring Specification Table	1
⑩	V-block	42CrMo	1
⑪	Positive Return Strap	S45C	2
⑫	Saftey Plate	SS400	2
⑬	Key A	SS400	4
⑭	Key B	SS400	2
⑮	Bumper	Urethane	3
⑯	Keeper Plate	42CrMo	2
㉓	Wear Plate A	Bronze with Graphite	4
㉔	Wear Plate B	Bronze with Graphite	1
㉕	Spring Support	SS400	1
㉖	Slide Lock Plate	SS400	1
㉗	Spring Guide Plate	SS400	1

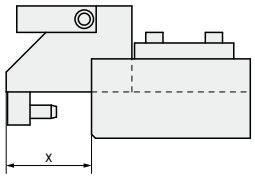
Assembly bolts are not shown.

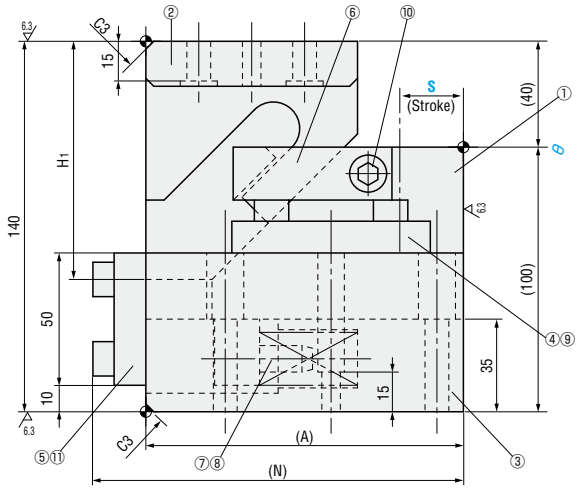
— Drilled dowel holes — — Finished dowel holes —

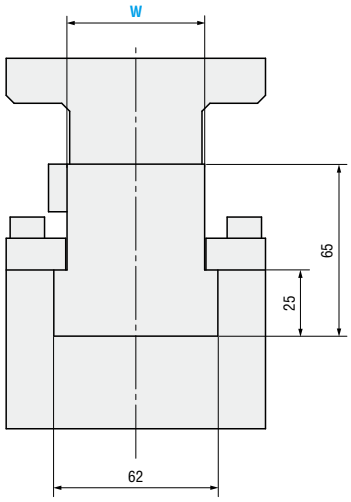
LGDC52 **LGDCA52**

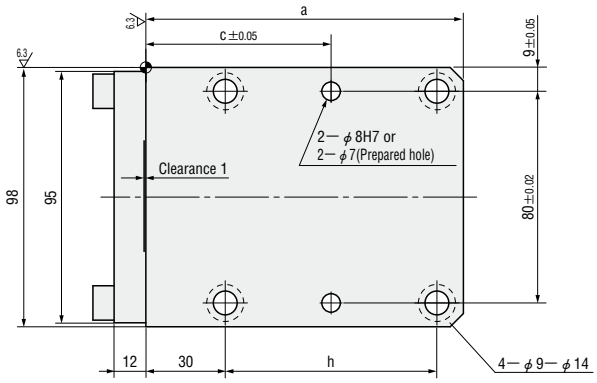


■Rear removal space









■Components table P.186

W	θ	S	A	H_1	N	a	a_1	c	c_1	h	h_1	x
52	00	25	120	90	140	120	80	70	40	80	40	68
		40	135	100	155	135	90	80	45	95	50	58
		60	180	120	200	180	110	55	55	140	70	60

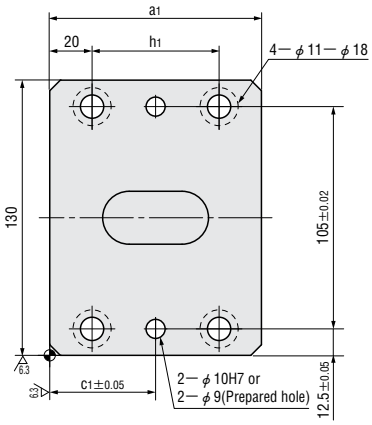
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
14.7 (1.5)	29.4 (3.0)	144 (14.7)	504 (51.4)	594 (60.6)	8.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	52	00	25
		101 (10.3)	542 (55.2)	605 (61.7)	8.0				40
		109 (11.1)	571 (58.2)	613 (62.5)	14.0				60

Order

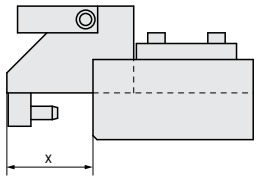
Catalog No.	W	—	θ	—	S
LGDCA	52	—	00	—	40

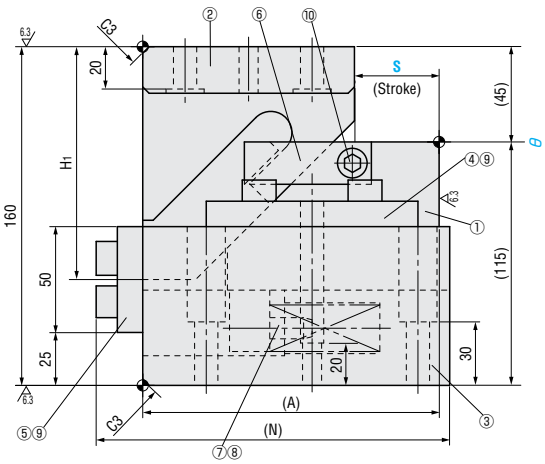
— Drilled dowel holes —
LGDC65 (θ=00)

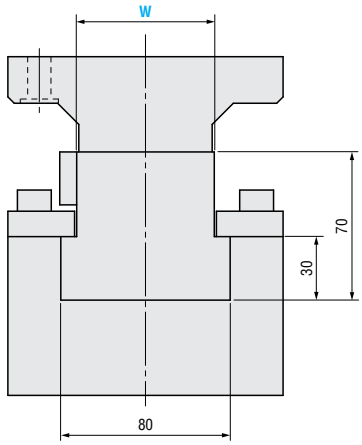
— Finished dowel holes —
LGDCA65 (θ=00)

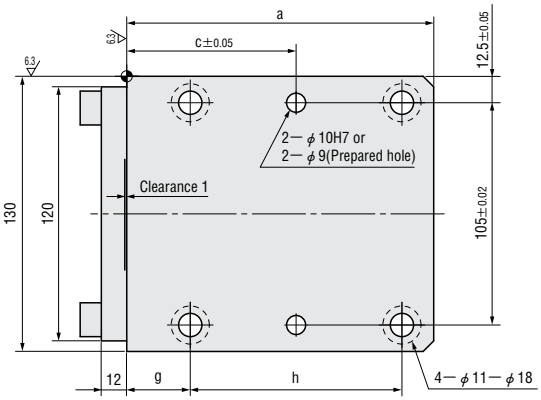


■Rear removal space









■Components table ☞ P.186

W	θ	S	A	H_1	N	a	a_1	c	c_1	g	h	h_1	x
65	00	40	140	110	167	145	100	80	50	30	100	60	75
		60	190	130	212	180	110	105	55	40	125	70	80

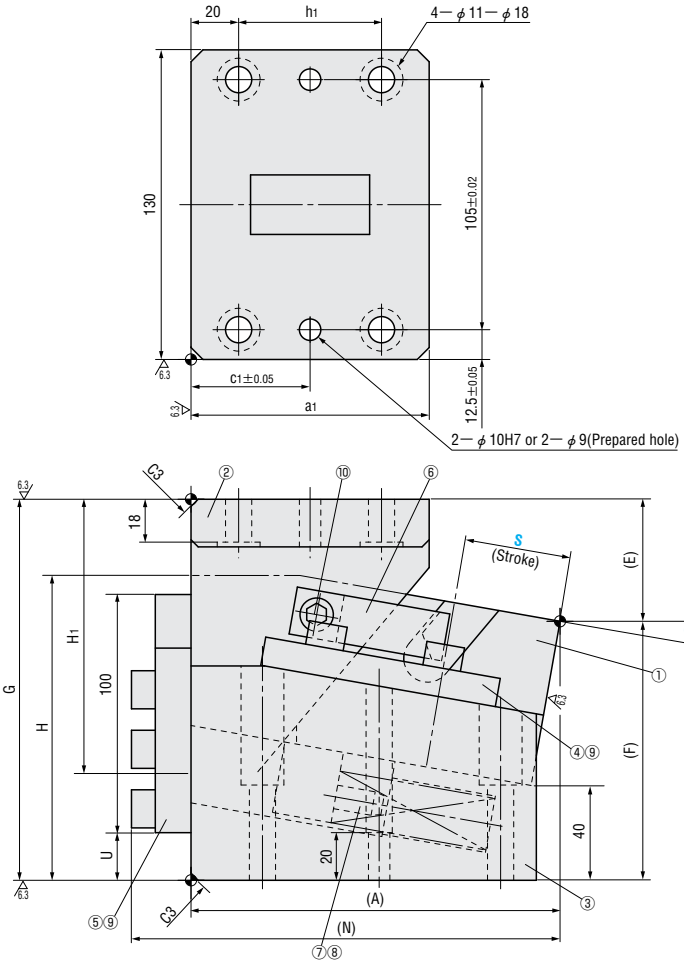
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
19.6 (2.0)	39.2 (4.0)	125 (12.7)	671 (68.4)	749 (76.4)	19.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	65	00	40
		135 (13.8)	707 (72.1)	759 (77.4)	22.0				60

Order

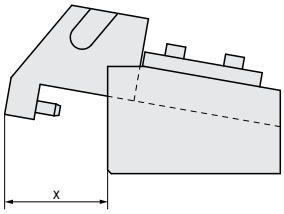
Catalog No.	W	—	θ	—	S
LGDCA	65	—	00	—	40

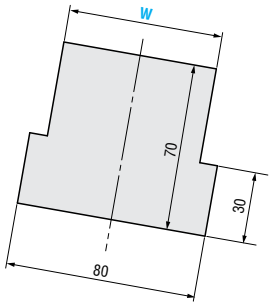
— Drilled dowel holes —
LGDC65 (θ =05-20)

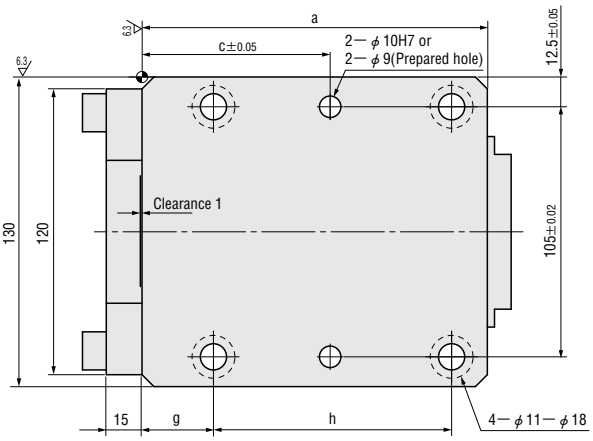
— Finished dowel holes —
LGDCA65 (θ =05-20)



■Rear removal space







■Components table ☞ P.186

W	θ	S	A	E	F	G	H	H_1	U	N	a	a_1	c	c_1	g	h	h_1	x
65	05	45	150.55	47.90	112.1	160	121.7	125	12.5	175.55	145	100	80	50	30	100	60	85
		70	195.38	46.83	123.17	170	158.1	145	25	220.38	180		65		40	125		83
	10	45	154.95	51.24	108.76	160	129.1	115	20	179.95	145		79		30	100		89
		70	199.27	59.06	110.94	170	138.9	145	25	224.27	180		65		40	125		85
	15	45	158.18	64.91	105.09		133.7	115	25	183.18	145		80		30	100		91
		70	201.64	66.56	103.44		161.5	125	40	226.64	180	110	65	55	40	125	70	88
	20	45	160.2	68.81	101.19		138.9	105	30	185.2	145	100	80	50	30	100	60	93
		70	202.48	74.21	95.79		154.6	120	40	227.48	180	110	65	55	40	125	70	87

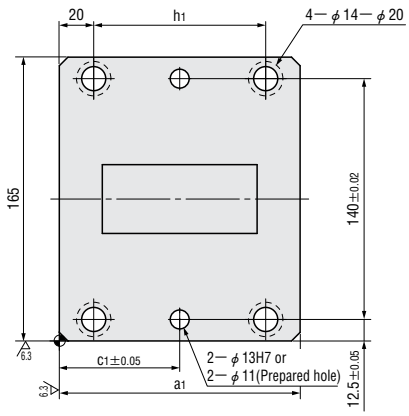
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
19.6 (2.0)	39.2 (4.0)	176 (18.0)	680 (69.4)	743 (75.8)	20.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	65	05	45
		190 (19.4)	918 (93.7)	974 (99.4)	25.0				70
		176 (18.0)	680 (69.4)	743 (75.8)	20.0			10	45
		190 (19.4)	918 (93.7)	974 (99.4)	25.0				70
		176 (18.0)	680 (69.4)	743 (75.8)	21.0			15	45
		190 (19.4)	918 (93.7)	974 (99.4)	25.0				70
		176 (18.0)	680 (69.4)	743 (75.8)	21.0			20	45
		190 (19.4)	918 (93.7)	974 (99.4)	25.0				70

Order

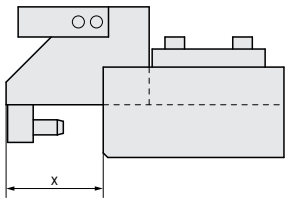
Catalog No.	W	—	θ	—	S
LGDCA	65	—	10	—	45

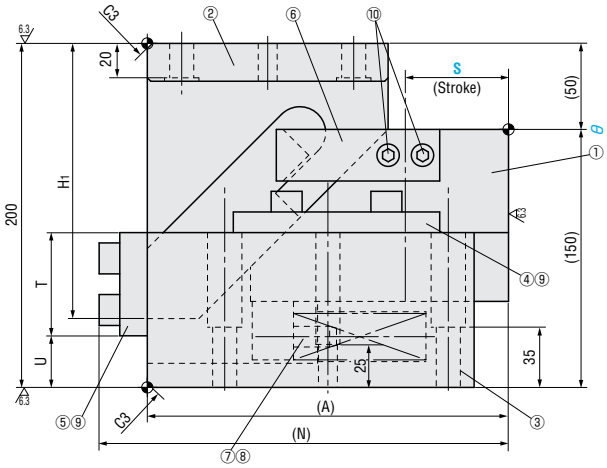
— Drilled dowel holes —
LGDC100 (θ =00)

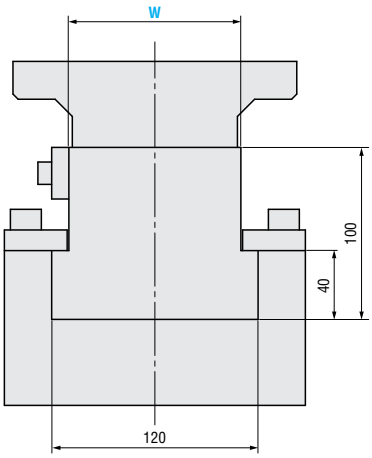
— Finished dowel holes —
LGDCA100 (θ =00)

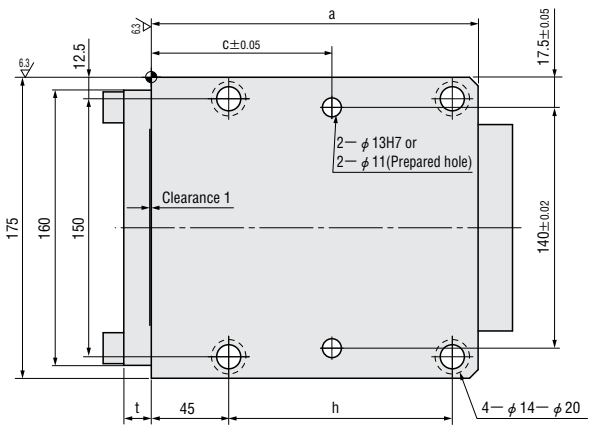


■Rear removal space









■Components table ☞ P.186

W	θ	S	A	H_1	N	T	U	a	a_1	c	c_1	h	h_1	t	x
100	00	40	190	140	218	60	30	190	120	105	60	130	80	16	100
		60	210	160	238				140		70		100		
		80	250	170	277	115	10	220	150	135	75	160	110	15	110

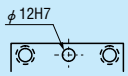
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
29.4 (3.0)	58.8 (6.0)	189 (19.3)	1015 (103.5)	1133 (115.5)	37.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	100	00	40
		203 (20.7)	1061 (108.2)	1139 (116.1)	38.0				60
		170 (17.4)	1235 (126.0)	1306 (133.2)	44.0				80

Order

Catalog No.	W	—	θ	—	S
LGDCA	100	—	00	—	40

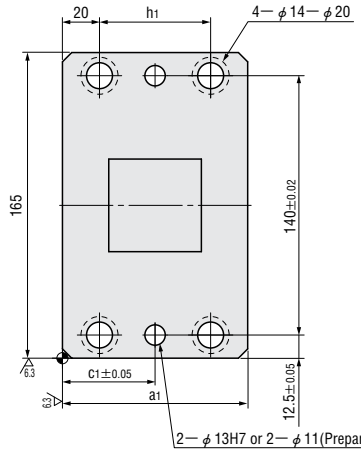
Alterations

Catalog No.	W	—	θ	—	S	—	(N)
LGDCA	100	—	00	—	60	—	N12

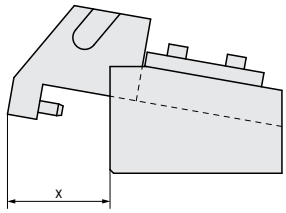
Alteration	Code	Spec.
	N12	Change dowel hole diameter ϕ 13H7 ⇨ ϕ 12H7 ⊗ Not applicable for prepared hole type

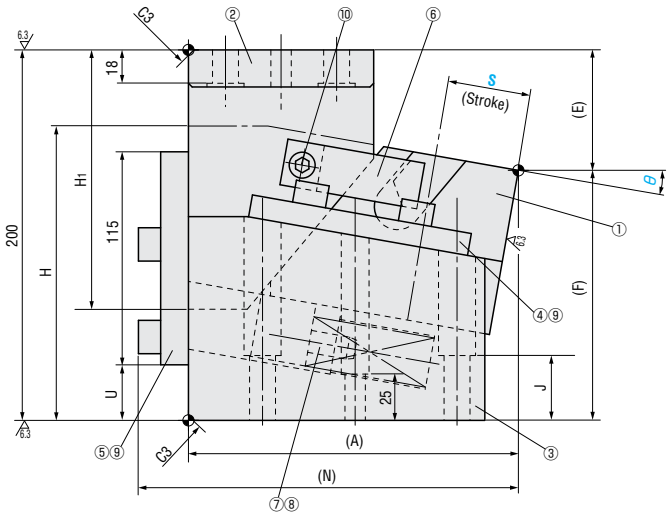
— Drilled dowel holes —
LGDC100 (θ =05-20)

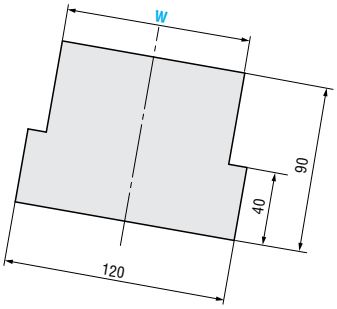
— Finished dowel holes —
LGDCA100 (θ =05-20)

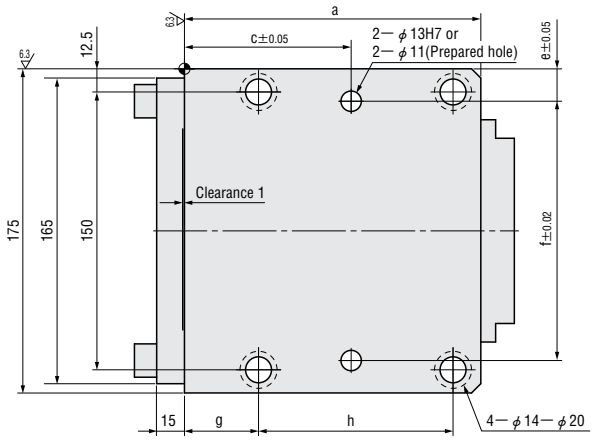


■Rear removal space









■Components table ☞ P.186

W	θ	S	A	E	F	H	H_1	J	N	U	a	a_1	c	c_1	e	f	g	h	h_1	x
100	05	45	172.22	54.72	145.28	155.6	140	35	199.22	27.5	160	100	90	50	17.5	140	40	105	60	98
		70	207.08	52.77	147.23	161.1	160	40	234.08	30	190	120	70	60	12.5	150	45	130	80	90
	10	45	178.12	65.02	134.98	156.8	140	35	205.12		160	100	90	50	17.5	140	40	105	60	103
		70	212.59	66.1	133.9	161.6	160	40	239.59		190	120	70	60	12.5	150	45	130	80	95
	15	45	182.67	70.77	129.23	160	125		209.67	32.5	160	110	90	55	17.5	140	40	105	70	106
		70	216.48	69.83	130.17	171.5	130		243.48	35	190	130	70	65	12.5	150	45	130	90	98
	20	45	185.83	81.86	118.14	161.2	120		212.83		160	110	90	55	17.5	140	40	105	70	109
		70	218.72	78.83	121.17	179.5	130		245.72	45	190	130	70	65	12.5	150	45	130	90	98

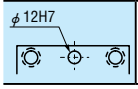
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
39.2 (4.0)	78.5 (8.0)	263 (26.8)	1015 (103.5)	1109 (113.1)	33.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	100	05	45
		194 (19.8)	1065 (108.6)	1132 (115.5)	38.0				70
		263 (26.8)	1015 (103.5)	1109 (113.1)	33.0			10	45
		194 (19.8)	1065 (108.6)	1132 (115.5)	38.0				70
		263 (26.8)	1015 (103.5)	1109 (113.1)	33.0			15	45
		194 (19.8)	1065 (108.6)	1132 (115.5)	38.0				70
		263 (26.8)	1015 (103.5)	1109 (113.1)	32.0			20	45
		194 (19.8)	1065 (108.6)	1132 (115.5)	39.0				70

Order

Catalog No.	W	—	θ	—	S
LGDCA	100	—	15	—	70

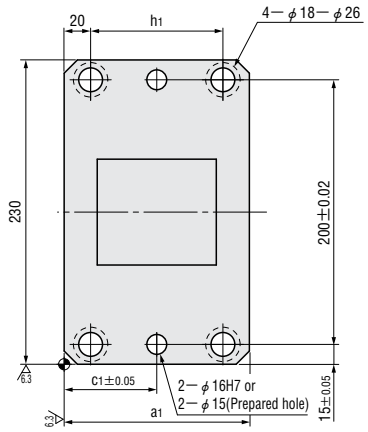
Alterations

Catalog No.	W	—	θ	—	S	—	(N)
LGDCA	100	—	10	—	45	—	N12

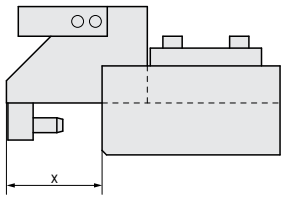
Alteration	Code	Spec.
	N12	Change dowel hole diameter ϕ13H7 ⇨ ϕ12H7 ⊗ Not applicable for prepared hole types

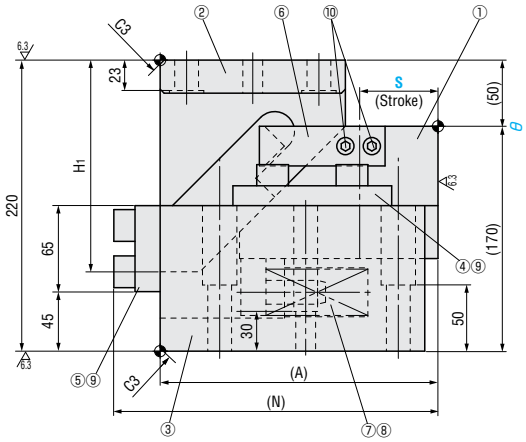
— Drilled dowel holes —
LGDC150 (θ =00)

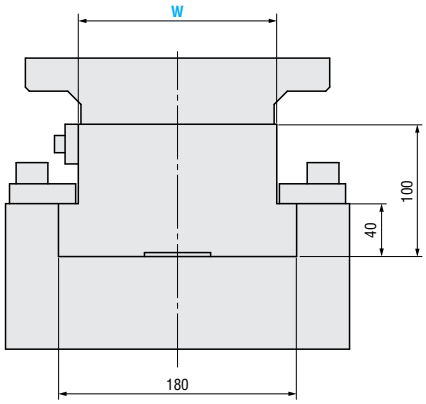
— Finished dowel holes —
LGDCA150 (θ =00)

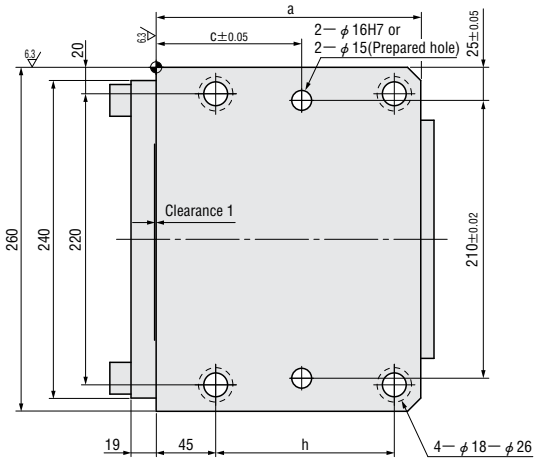


■Rear removal space









■Components table ☞ P.186

W	θ	S	A	H_1	N	a	a_1	c	c_1	h	h_1	x
150	00	40	190	140	225	190	120	105	60	125	80	108
		60	210	160	245	200	140	110	70	135	100	100

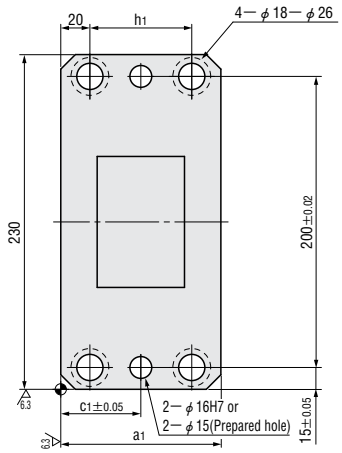
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
58.8 (6.0)	88.3 (9.0)	307 (31.3)	1651 (168.4)	1843 (188.0)	63.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	150	00	40
		333 (33.9)	1741 (177.5)	1869 (190.6)	69.0				60

Order

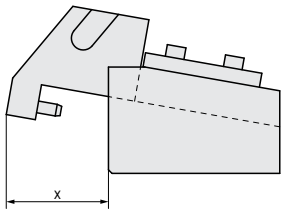
Catalog No.	W	—	θ	—	S
LGDCA	150	—	00	—	60

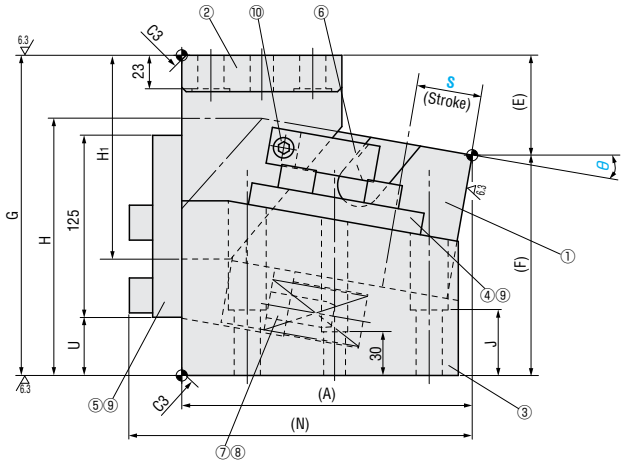
— Drilled dowel holes —
LGDC150 (θ =05-20)

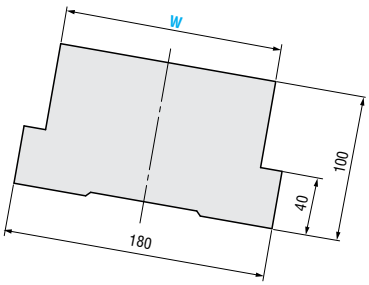
— Finished dowel holes —
LGDCA150 (θ =05-20)

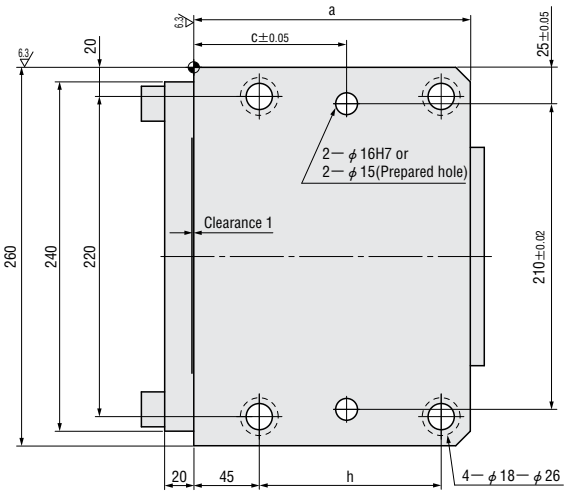


■Rear removal space









■Components table P.186

W	θ	S	A	E	F	G	H	H_1	J	N	U	a	a_1	c	c_1	h	h_1	x
150	05	45	193.01	61.5	158.5	220	170.2	145	35	229.01	30	190	110	105	55	125	70	115
		70	217.92	53.68	166.32		180.6	170	45	253.92	40	200	130	120	65	135	90	103
	10	45	199.55	68.64	151.36		176.7	140		235.55		190	110	105	55	125	70	121
		70	224.17	67.98	152.02		180.5	170		260.17		200	130	120	65	135	90	110
	15	45	204.58	76.29	143.71		179.6	130		240.58		190	120	105	60	125	80	126
		70	228.73	77.76	152.24	230	194.6	155	60	264.73	55	200	140	120	70	135	100	111
	20	45	208.05	84.3	135.7	220	183.2	130	45	244.05	40	190	120	105	60	125	80	113
		70	231.54	92.85	137.15	230	193.2	155	60	267.54	55	200	140	120	70	135	100	

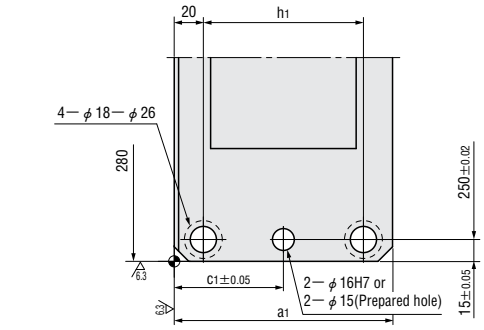
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
64.7 (6.6)	98.1 (10.0)	431 (44.0)	1663 (169.6)	1817 (185.3)	62.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	150	05	45
		308 (31.4)	1738 (177.2)	1848 (188.4)	73.0				70
		431 (44.0)	1663 (169.6)	1817 (185.3)	63.0			10	45
		308 (31.4)	1738 (177.2)	1848 (188.4)	73.0				70
		431 (44.0)	1663 (169.6)	1817 (185.3)	65.0			15	45
		308 (31.4)	1738 (177.2)	1848 (188.4)	77.0				70
		431 (44.0)	1663 (169.6)	1817 (185.3)	66.0			20	45
		308 (31.4)	1738 (177.2)	1848 (188.4)	75.0				70

Order

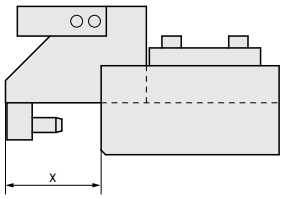
Catalog No.	W	—	θ	—	S
LGDCA	150	—	20	—	45

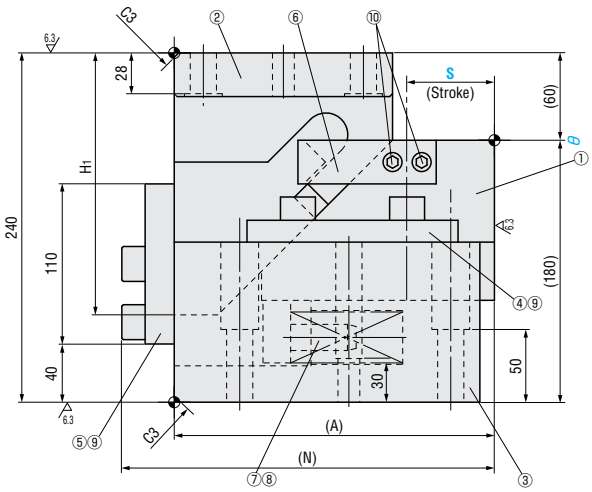
— Drilled dowel holes —
LGDC200

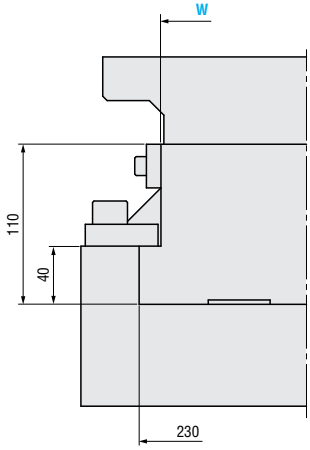
— Finished dowel holes —
LGDCA200

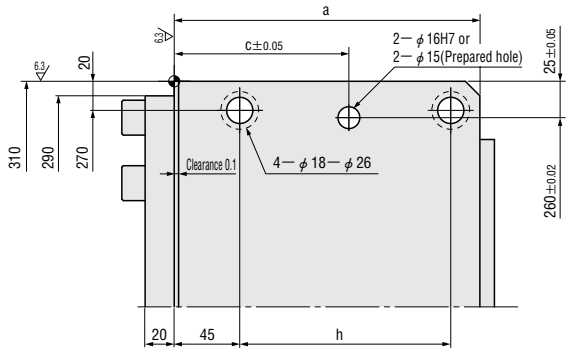


■Rear removal space









■Components table ☞ P.186

W	θ	S	A	H_1	N	a	a_1	c	c_1	h	h_1	x
200	00	40	200	160	236	200	130	110	65	135	90	125
		60	220	180	256	210	150	120	75	145	110	115

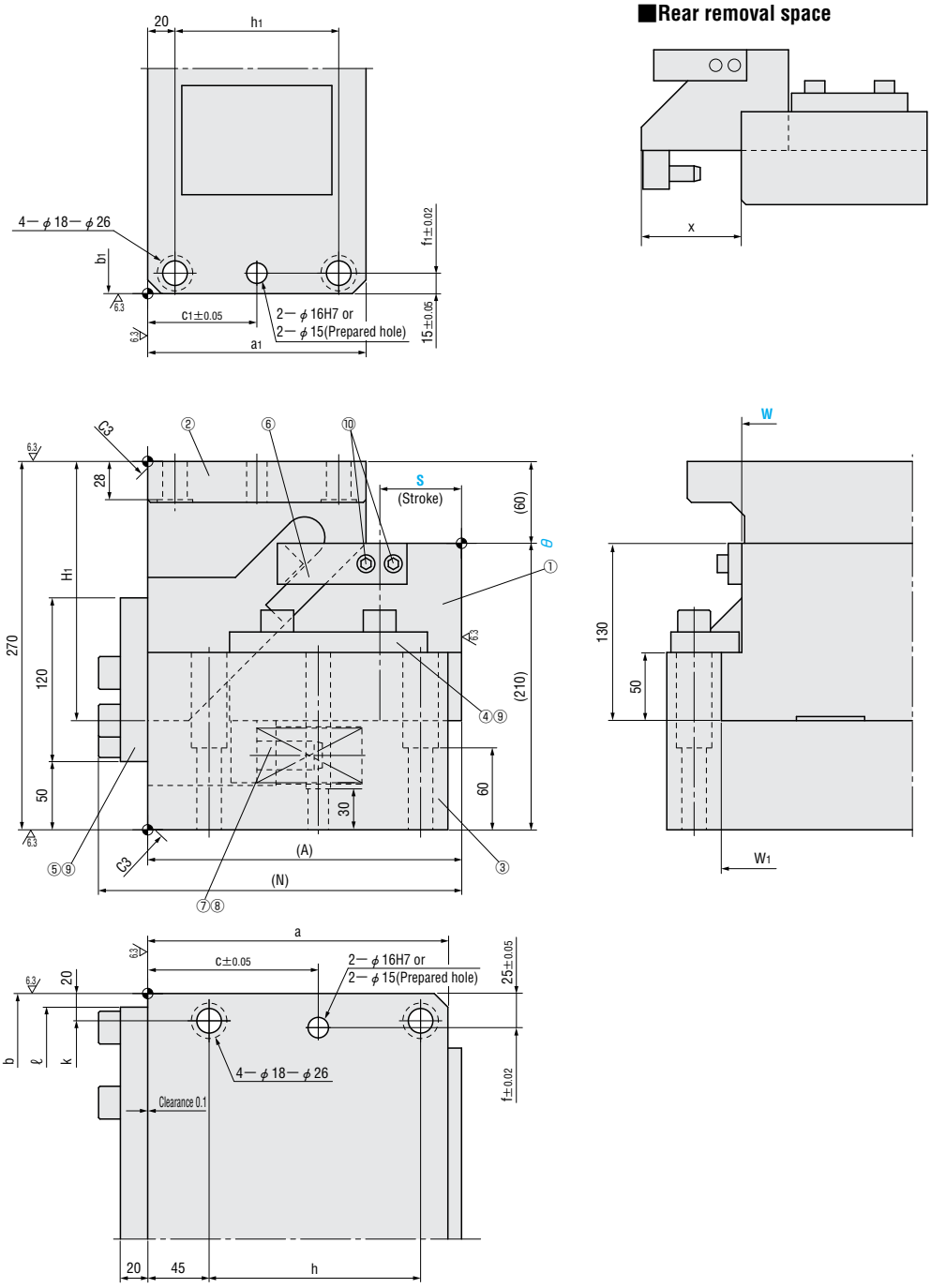
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
78.5 (8.0)	117.7 (12.0)	461 (47.0)	2477 (252.6)	2765 (281.9)	82.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	200	00	40
		499 (50.9)	2611 (266.3)	2803 (285.8)	84.0				60

Order

Catalog No.	W	—	θ	—	S
LGDCA	200	—	00	—	60

— Drilled dowel holes —
LGDC250/300

— Finished dowel holes —
LGDCA250/300



■Components table ☞ P.186

W	θ	S	A	H_1	N	W_1	a	a_1	b	b_1	c	c_1	f	f_1	h	h_1	k	ℓ	x
250	00	40	210	170	246	280	200	140	360	330	105	70	310	300	135	100	320	340	135
		60	230	190	266		220	160			125	80			155	120			115
300		40	210	170	246	330	200	140	410	380	105	70	360	350	135	100	370	390	135
		60	230	190	266		220	160			125	80			155	120			115

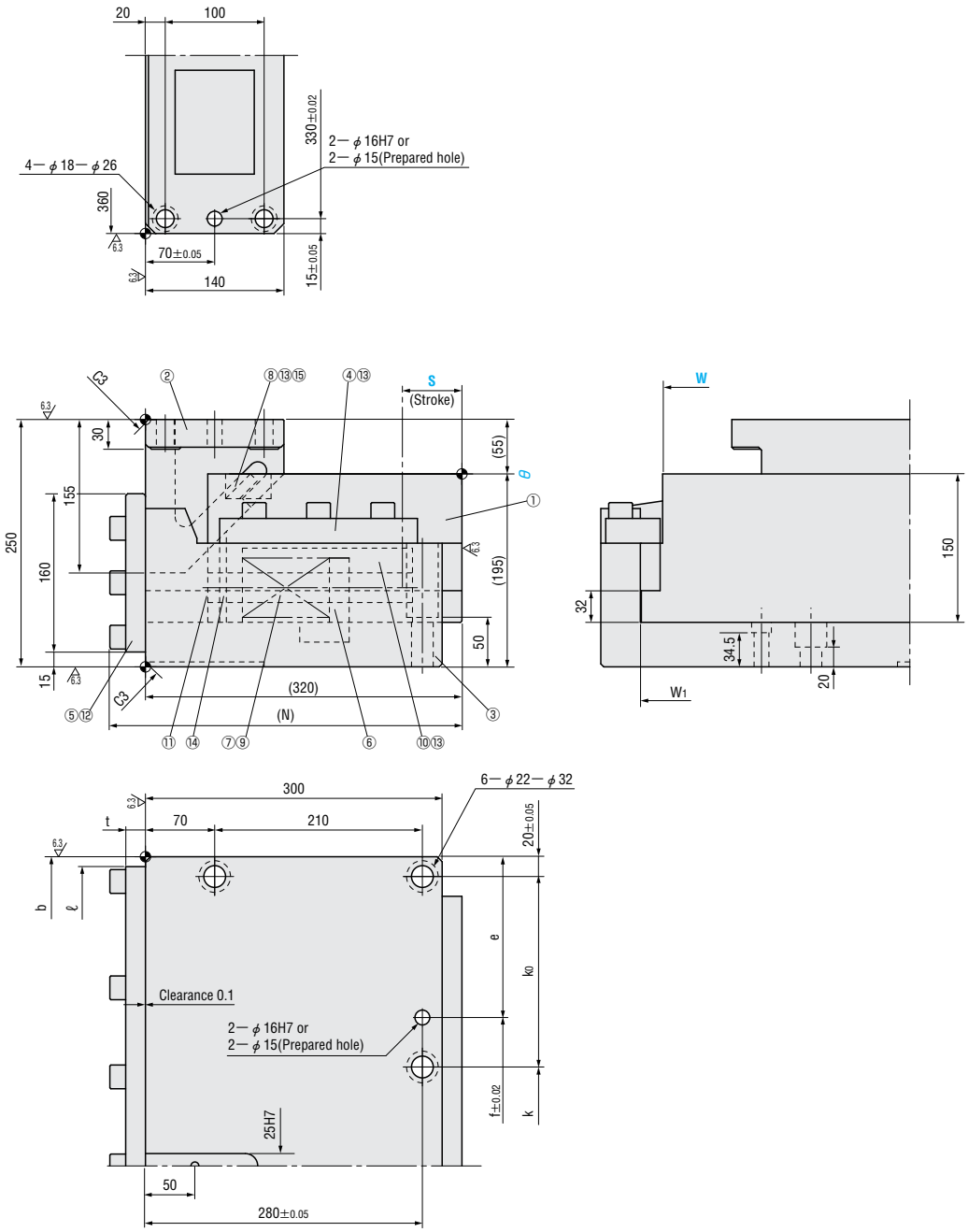
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
98.1 (10.0)	147.1 (15.0)	602 (61.4)	3238 (330.2)	3614 (368.6)	106.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	250	00	40
		651 (66.4)	3407 (347.4)	3657 (372.9)	127.0				60
117.7 (12.0)	176.5 (18.0)	602 (61.4)	3238 (330.2)	3614 (368.6)	106.0		300		40
		651 (66.4)	3407 (347.4)	3657 (372.9)	128.0				60

Order

Catalog No.	W	—	θ	—	S
LGDCA	250	—	00	—	60

— Drilled dowel holes —
LGDC400/500/600

— Finished dowel holes —
LGDCA400/500/600



■Components table ☞ P.186

W	θ	S	N	W_1	b	e	f	k	k_0	ℓ	t
400	00	60	356	435	525	112.5	300	200	142.5	505	20
500			361	535	625	162.5			192.5	605	25
600				635	725		400	300		705	

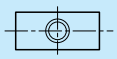
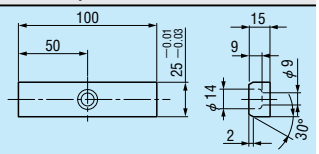
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
137.3 (14.0)	205.9 (21.0)	301 (30.7)	8573 (874.2)	9325 (950.9)	203.0	— Drilled dowel holes — LGDC — Finished dowel holes — LGDCA	400	00	60
					237.0		500		
					279.0		600		

Order

Catalog No.	W	—	θ	—	S
LGDCA	500	—	00	—	60

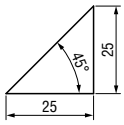
Alterations

Catalog No.	W	—	θ	—	S	—	(K)
LGDCA	600	—	00	—	60	—	K

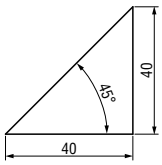
Alteration	Code	Spec.
	K	Add locating key (With 1 hexagon socket head cap screw M8×15) 

■LGDC/LGDCA

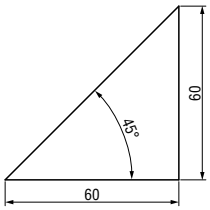
52-00-25



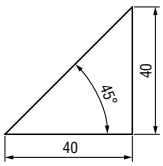
52-00-40



52-00-60



65-00-40



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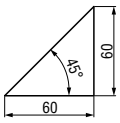
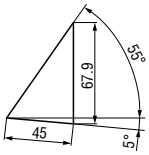
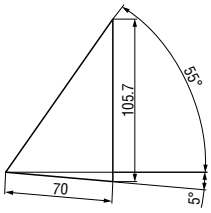


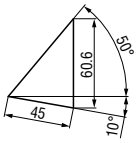
65-05-45



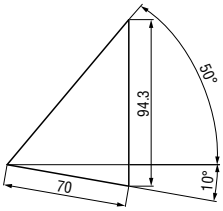
65-05-70



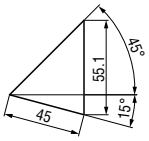
65-10-45



65-10-70



65-15-45



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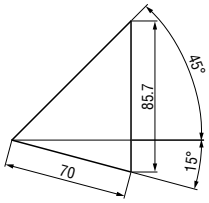

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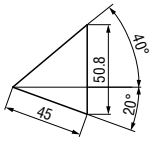
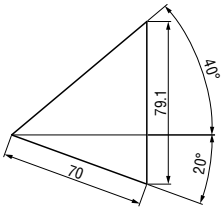
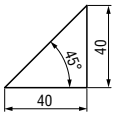


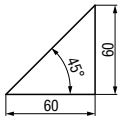
65-20-70



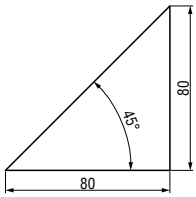
100-00-40



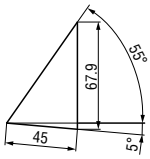
100-00-60



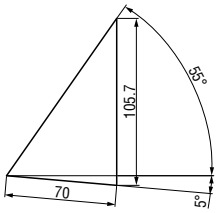
100-00-80



100-05-45



100-05-70



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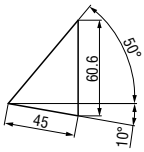
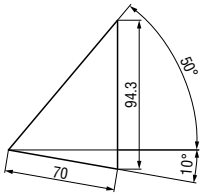


100-10-70



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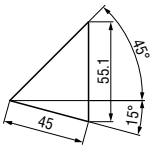

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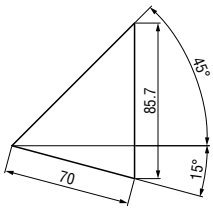

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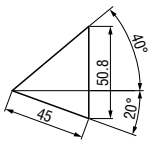
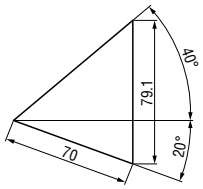
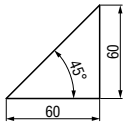


100-20-70



150-00-40

150-00-60



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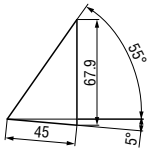
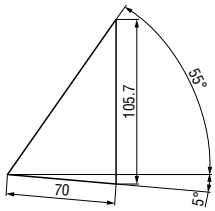


150-05-70



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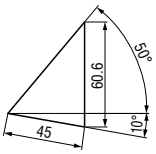
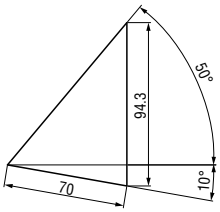


150-10-70



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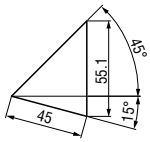

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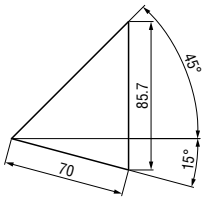
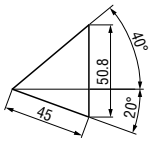
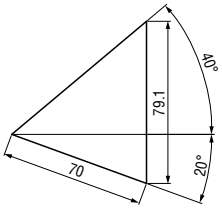


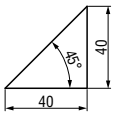
150-20-45



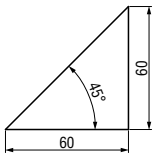
150-20-70



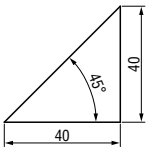
200-00-40



200-00-60



250-00-40



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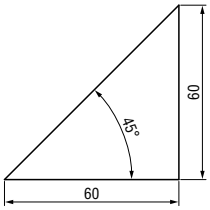
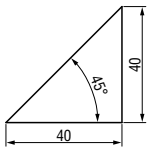
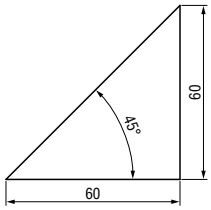


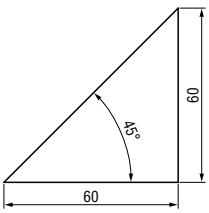
300-00-40



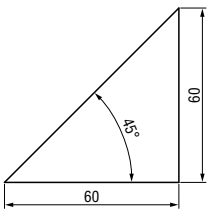
300-00-60



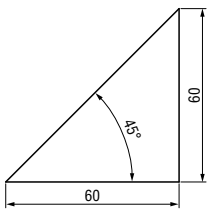
400-00-60



500-00-60



600-00-60



■LGDC/LGDCA52

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	1
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ20×70 (S=25) φ20×100 (S=40) φ20×150 (S=60)	2
⑨	Cap Screw	M8×25	4
⑩	Cap Screw	M8×20	1
⑪	Cap Screw	M8×30	4

■LGDC/LGDCA65(θ=00)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	1
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ22×100 (S=40) φ22×150 (S=60)	2
⑨	Cap Screw	M10×30	8
⑩	Cap Screw	M8×20	1

■LGDC/LGDCA65(θ=05-20)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	1
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ22×125 (S=45) φ25×175 (S=70)	2
⑨	Cap Screw	M10×30	10
⑩	Cap Screw	M8×20	1

■LGDC/LGDCA100 (θ=00)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	1
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ27×100 (S=40) φ27×150 (S=60) φ30×200 (S=80)	2
⑨	Cap Screw	M12×35	8
⑩	Cap Screw	M8×30	2

■LGDC/LGDCA100(θ=05-20)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	2
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ27×125 (S=45) φ27×175 (S=70)	2
⑨	Cap Screw	M12×35	8
⑩	Cap Screw	M8×25	2

■LGDC/LGDCA150(θ=00)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	1
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ35×100 (S=40) φ35×150 (S=60)	2
⑨	Cap Screw	M16×45	8
⑩	Cap Screw	M8×30	2

■LGDC/LGDCA150(θ=05-20)

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	Bronze with Graphite	2
⑤	Stop Plate	SS400	1
⑥	Positive Return Strap	S45C	2
⑦	Spring Guide Pin	S45C	2
⑧	Coil Spring	φ35×125 (S=45) φ35×175 (S=70)	2
⑨	Cap Screw	M16×45	8
⑩	Cap Screw	M8×25	2

■LGDC/LGDCA200

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Stop Plate	S45C	1
⑥	Positive Return Strap	S45C	2
⑦	Spring Guide Pin	S45C	3
⑧	Coil Spring	φ35×100 (S=40) φ35×150 (S=60)	3
⑨	Cap Screw	M16×45	10
⑩	Cap Screw	M8×30	4

■LGDC/LGDCA250

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Stop Plate	S45C	1
⑥	Positive Return Strap	S45C	2
⑦	Spring Guide Pin	S45C	3
⑧	Coil Spring	φ40×100 (S=40) φ40×150 (S=60)	3
⑨	Cap Screw	M16×45	10
⑩	Cap Screw	M8×30	4

■LGDC/LGDCA300

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Stop Plate	S45C	1
⑥	Positive Return Strap	S45C	2
⑦	Spring Guide Pin	S45C	3
⑧	Coil Spring	φ40×100 (S=40) φ40×150 (S=60)	3
⑨	Cap Screw	M16×45	12
⑩	Cap Screw	M8×30	4

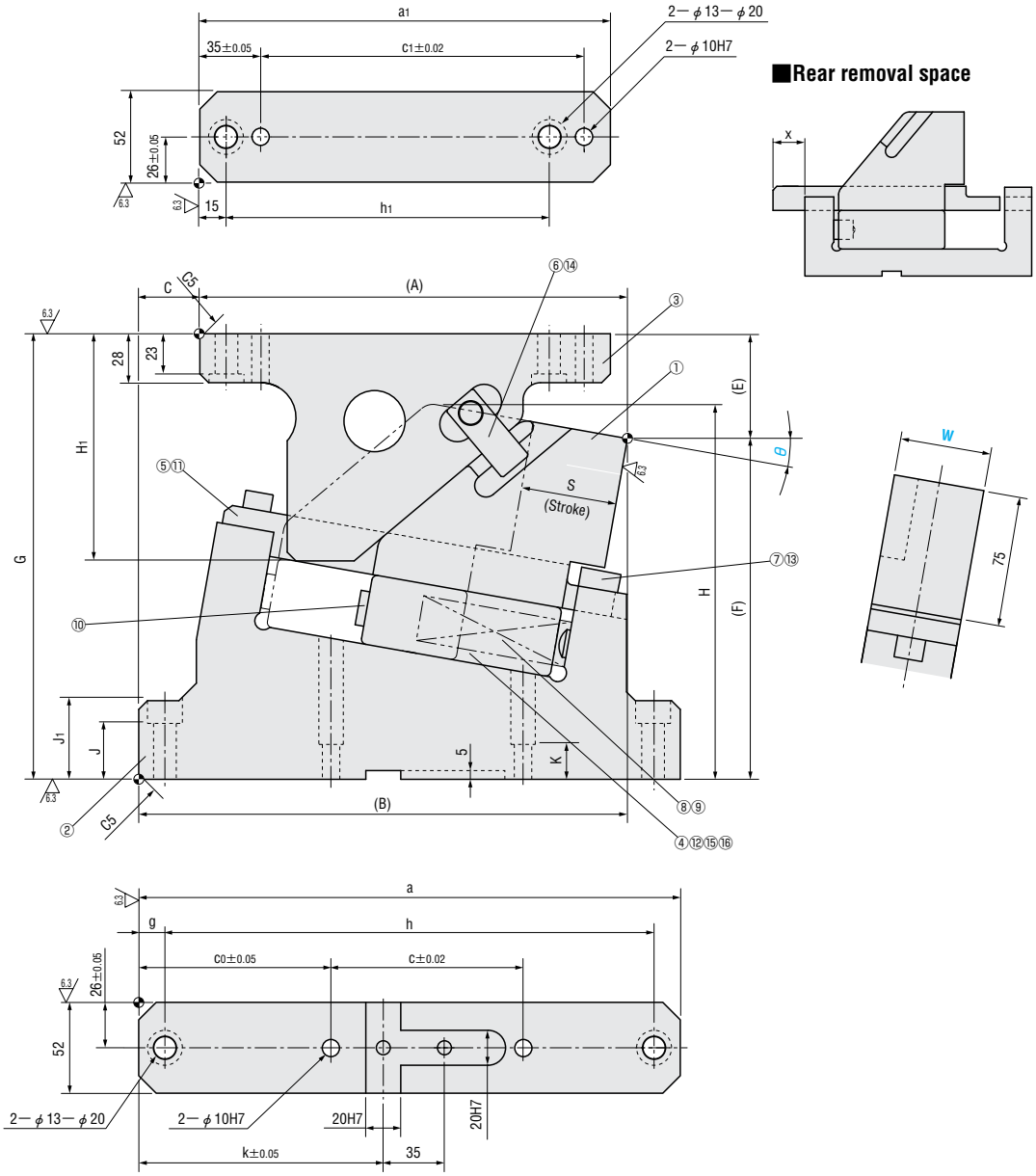
■LGDC/LGDCA400

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Stop Plate	S45C	1
⑥	Spring Stopper	S45C	2
⑦	Spring Guide Pin	S45C	4
⑧	Positive Return Strap	S45C	1
⑨	Coil Spring	φ60×150	4
⑩	Side Wear Plate	MWF48—125	4
⑪	Stopper	Urethane	3
⑫	Cap Screw	M16×55	16
⑬	Cap Screw	M10×30	18
⑭	Dowel Pin	φ10×60	4
⑮	Positive Return Strap	S45C	1

■LGDC/LGDCA500,600

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250 with Graphite	1
②	Cam Driver	FC250 with Graphite	1
③	Cam Base	FC250	1
④	Cam Upper Plate	S45C with Graphite	2
⑤	Stop Plate	S45C	1
⑥	Spring Stopper	S45C	2
⑦	Spring Guide Pin	S45C	4
⑧	Positive Return Strap	S45C	1
⑨	Coil Spring	φ60×150	4
⑩	Side Wear Plate	MWF48—125	4
⑪	Stopper	Urethane	5
⑫	Cap Screw	M16×45 (W=500) M16×55 (W=600)	17
⑬	Cap Screw	M10×30	18
⑭	Dowel Pin	φ10×60	4
⑮	Positive Return Strap	S45C	1

LGDCC52



■Components table ☞ P.193

W	θ	S	A	B	C	E	F	G	H	H1	J	J1	K	a	a1	c	c0	c1	g	h	h1	k	x
52	00	55	220	220	0	45	170	215	170	145	14	—	28	235	210	105	65	160	45	145	160	90	26
	05		234.87	269.87	35	59.34	195.66	255	205.8		32	45	20	310	225	110	110	175	15	280	175	140	0
	10		244.75	279.75		59.98	195.02		215.2	130					235			185			185		
	15		249.51	289.51	40	61.91	193.09		223.2	120					240			190			190		
	20		249.05	304.05	55	80.12	174.88		214.6			35											

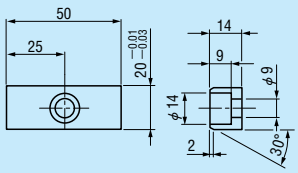
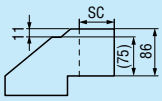
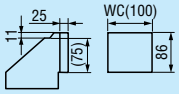
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
19.6 (2.0)	39.2 (4.0)	85 (8.7)	559 (57.0)	607 (61.9)	14.2	LGDCC	52	00	55
					18.5			05	
					19.4			10	
					20.0			15	
					19.5			20	

Order

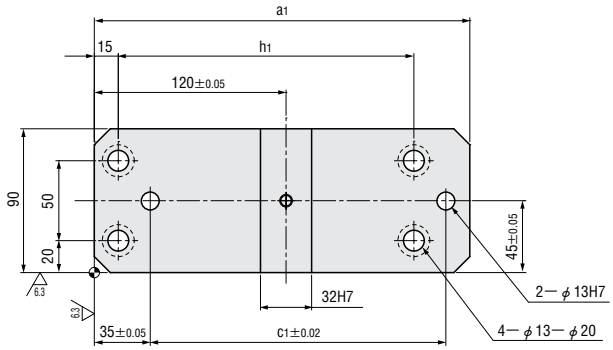
Catalog No.	W	—	θ	—	S
LGDCC	52	—	00	—	55

Alterations

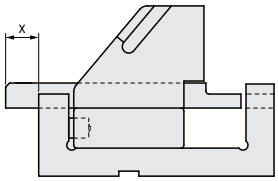
Catalog No.	W	—	θ	—	S	—	(K・SC・WC)
LGDCC	52	—	00	—	55	—	WC

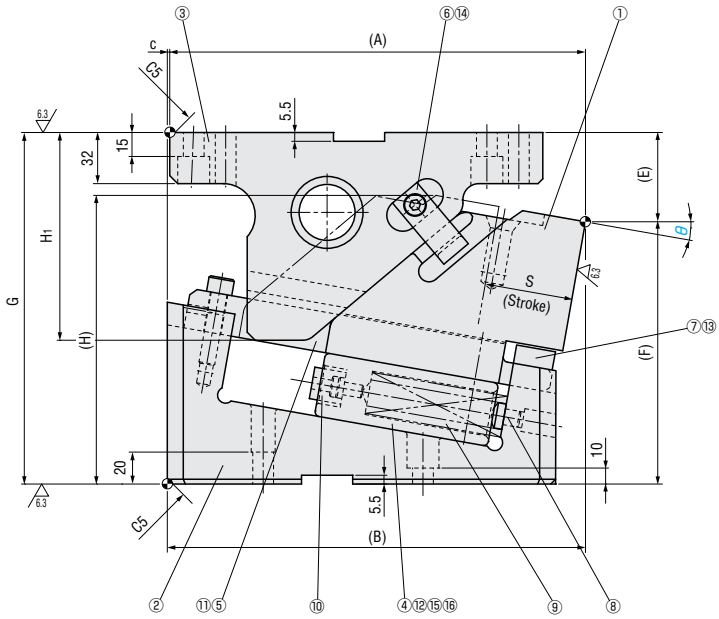
Alterations	Code	Spec.
	K	Add 2 locating keys (With 2 hexagon socket head cap screw M8×15) 
	SC	Move forward mounting surface 0≦SC≦65 1mm increment
	WC	Change the width of mounting surface W=52 ⇨ W=100

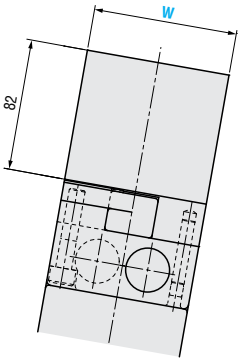
LGDCC90

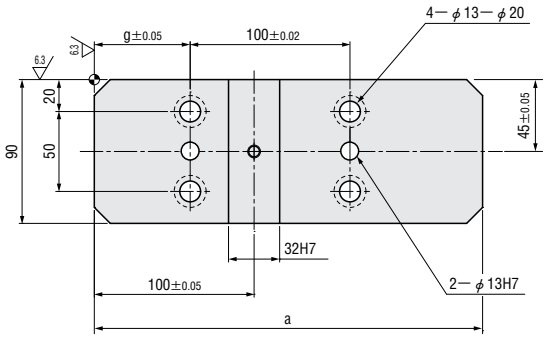


■Rear removal space









■Components table ☞ P.193

W	θ	S	A	B	C	E	F	G	H	H_1	a	a_1	c_1	g	h_1	x
90	00	55	236	236	0	38	182	220	182	145	233	210	160	60	160	30
	05		251.42	251.42		53.76	166.24		174.5		240	225	175		175	23
	10		261.72	261.72		55.86	164.14		180.6	130	243	235	185		185	19
	15		260.82	275.82	15	64.03	160.97	225	188.4	120	248			65		9

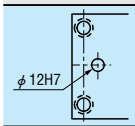
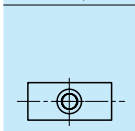
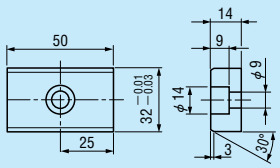
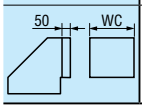
Working force KN (ton)		Spring force N (kgf)			Total weight kg	Catalog No.	W	θ	Stroke S
Standard working force (one million cycles)	Allowable working force (300,000 cycles)	Initial pressure	5mm before bottom dead center	Final pressure					
38.2 (3.9)	76.5 (7.8)	171 (17.4)	1119 (114.1)	1213 (123.7)	24.9	LGDCC	90	00	55
					25.9			05	
					27.3			10	
					29.3			15	

Order

Catalog No.	W	—	θ	—	S
LGDCC	90	—	10	—	55

Alterations

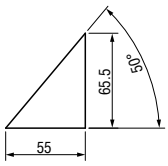
Catalog No.	W	—	θ	—	S	—	(N・K・WC)
LGDCC	90	—	05	—	55	—	WC120

Alterations	Code	Spec.
	N12	Change dowel hole diameter φ13H7 ⇨ φ12H7
	K	Add 2 locating keys (With 2 hexagon socket head cap screws M8×15) 
	WC	Change the width of mounting surface W=90 ⇨ W=120 or 150 Only 120 or 150 can be specified.

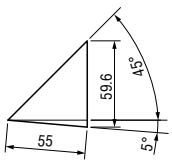
Cam diagram

■LGDCC

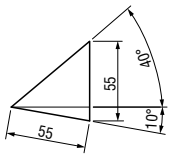
52-00-55



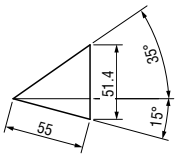
52-05-55



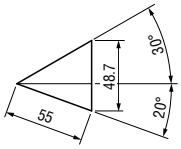
52-10-55



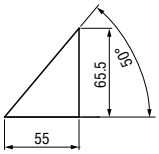
52-15-55



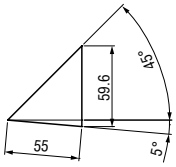
52-20-55



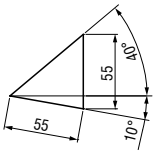
90-00-55



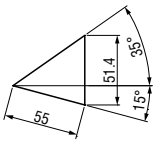
90-05-55



90-10-55



90-15-55



Components table

■LGDCC52

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Base	FC250	1
③	Cam Driver	FC250 with Graphite	1
④	Spring Guide Block	FC250 with Graphite	1
⑤	Guide Bar	SCM440 with Graphite	1
⑥	Positive Return Strap	S45C	1
⑧	Spring Guide Pin	S45C	1
⑨	Coil Spring	φ26×150	1
⑫	Bumper	Urethane	1
⑬	Cap Screw	M10×50	1
⑭	Cap Screw	M8×50	4
⑯	Cap Screw	M8×15	1
⑱	Dowel Pin	φ8×40	2
⑲	Spring Plug	SAE1065 NH8	2

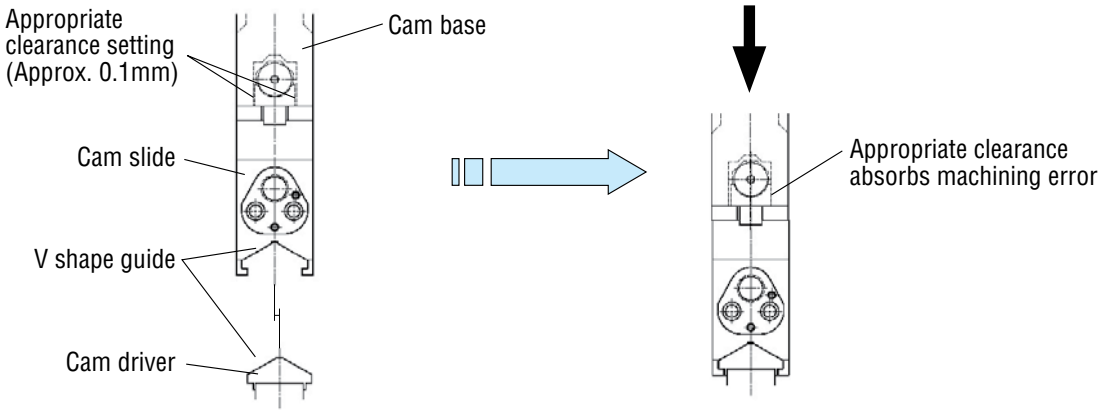
■LGDCC90

No.	Part Name	Material and Remark	Quantity
①	Cam Slide	FC250	1
②	Cam Base	FC250	1
③	Cam Driver	FC250 with Graphite	1
④	Spring Guide Block	FC250 with Graphite	1
⑤	Guide Bar	SCM440 with Graphite	1
⑥	Positive Return Strap	S45C	2
⑧	Spring Guide Pin	S45C	2
⑨	Coil Spring	φ26×150	2
⑩	Bumper	Urethane	2
⑪	Cap Screw	M10×45	1
⑫	Cap Screw	M10×50	4
⑭	Cap Screw	M8×15	2
⑮	Dowel Pin	φ8×40	2
⑰	Spring Plug	SAE1065 NH8	2

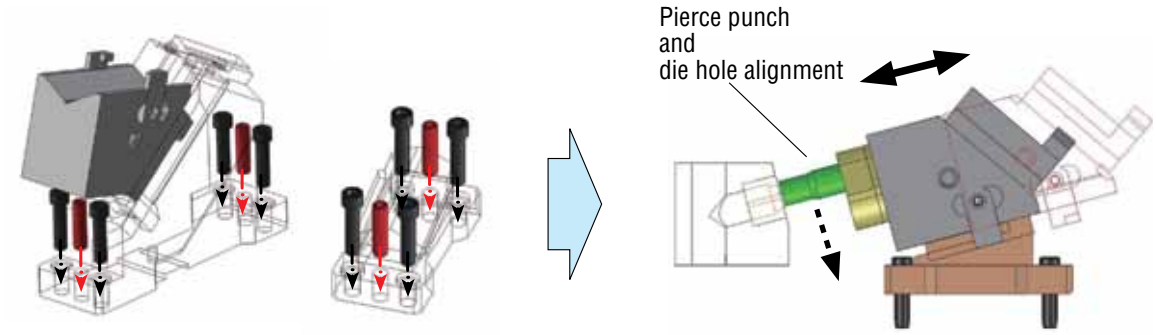
V GUIDANCE MECHANISM & CAM UNIT ASSEMBLY WORK

■ V guidance mechanism

The V guidance mechanism is designed to precisely guide the tool, with a V shape guide for the cam slide and cam driver, and an appropriate guide clearance setting between the cam slide and cam base. Therefore, the cam slide position is determined by the V shape guide of the cam driver, and hence, pierce punch position is always assured.



■ Cam unit assembly procedure when there is additional slide clearance



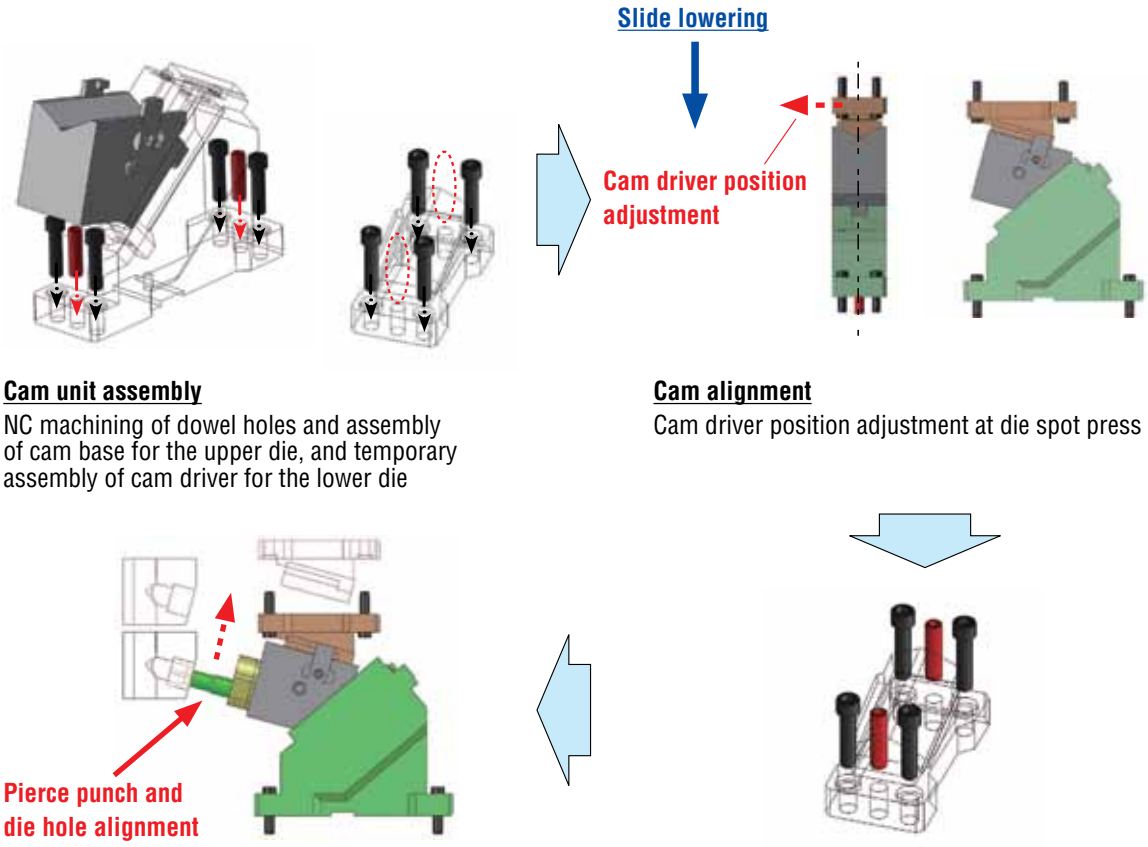
Cam unit assembly

NC machining of dowel holes for both upper and lower dies and assembly of the cam base and cam driver without position adjustment

Pierce punch and die hole alignment

Alignment of the pierce punch and die hole with cam slide assembled into cam driver

■ Cam unit assembly procedure with standard slide clearance



Cam unit assembly

NC machining of dowel holes and assembly of cam base for the upper die, and temporary assembly of cam driver for the lower die

Cam alignment

Cam driver position adjustment at die spot press

Cam driver assembly

Finished by machining of dowel holes on the lower die and cam driver and cam driver assembly

Pierce punch and die hole alignment

Pierce punch and die hole alignment at die spot press

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