

Smooth Return Springs

**IDEAL FOR PART POSITION
CONTROL IN FAST RETURN
STROKE APPLICATIONS**



HYSON
Metal Forming Solutions™

GENUINELY HYSON

Since 1964, HYSON has been dedicated to providing safer and more reliable products with worldwide support and service. We are continually at the forefront of innovative product design, and engineer forward-thinking features into our self-contained springs, which enable our customers to provide safer working environments.

Our nitrogen gas springs, which comply with all major industry standards, are designed to reduce the risk of tool damage and injuries and include at least one of the following safety features:

**Overstroke Protection:**

In the event of an overstroke, the HYSON cylinder is designed to fail-safe and release pressure in a predefined manner with deformation or knockout plug.

**Overpressure Protection:**

Designed to vent excessive gas in the event that the spring becomes overpressured, deformation of the safety lip guide or separation of disc will occur.

**Overload Protection:**

The piston rod is designed for controlled gas venting between the seal and the piston rod with a specially designed guide and fundamental safety stop in the event of an overload caused by a jammed tool, part or rod side-load.



Additionally, the majority of HYSON springs are **PED** (Pressure Equipment Directive) approved to withstand a minimum of 2 million full cycles according to PED (2014/68/EU). Many of our competitors are in compliance of PED, but compliance is unequal to the 2 million cycle test and approval that HYSON gas springs have undergone. This is one more assurance that with HYSON Nitrogen Gas Springs, you receive an added value of reliability and operational excellence.

GENUINELY HYSON SAFETY APP

Created to enable safer working environments and fight against unsafe counterfeit springs in manufacturing facilities around the globe, the Genuinely HYSON Safety App authenticates nitrogen gas springs with HYSON labeling have the design and safety features customers have come to expect with the HYSON brand. The app is available for download at www.HysonSolutions.com.



***IDEAL FOR PART POSITION CONTROL
IN FAST RETURN STROKE APPLICATIONS***

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General Information

HYSON Metal Forming Solutions, headquartered in Brecksville, Ohio, is a world class engineering and manu-facturing company that provides high-quality, safety-engineered force and motion control solutions for a wide range of applications and industries, including automotive, aerospace, appliance, medical and HVAC. HYSON partners with our customers to understand applications and provide the best solutions for each one. We are a full service force and motion control provider for critical machine, vehicle and precision metal processing applications, meaning we supply dependent upon each customer's needs, including: gas springs, cam systems, cushions, manifolds and knockout systems.

Our success lies with our commitment to continually improve ourselves, our processes and our products to ensure we meet or exceed our customers' expectations. Our ISO-9001, AS-9000 and PED certifications attest to our ongoing commitment to the highest standards of quality.

PED – Pressure Equipment Directive



HYSON gas springs are designed to meet customer expectations for reliability, safety and service lifetime. The design, manufacture and testing of HYSON gas springs has been approved according to the European Pressure Equipment Directive (2014/68/EU). The Pressure Equipment Directive (PED) replaces all previous European legislation governing the design, manufacture and testing of pressure vessels.

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Product Value

Ideal for part position control in a fast return stroke application, the SRS Series significantly reduces pad bounce on the return stroke, allowing for repeatable stamping processes. This aids in transfer presses or line dies, where the part must be returned to the same location in each stroke, maintaining position for automation. SRS Series also reduces shock loading inside the die, extending the life of pad keepers and other mechanical stops.

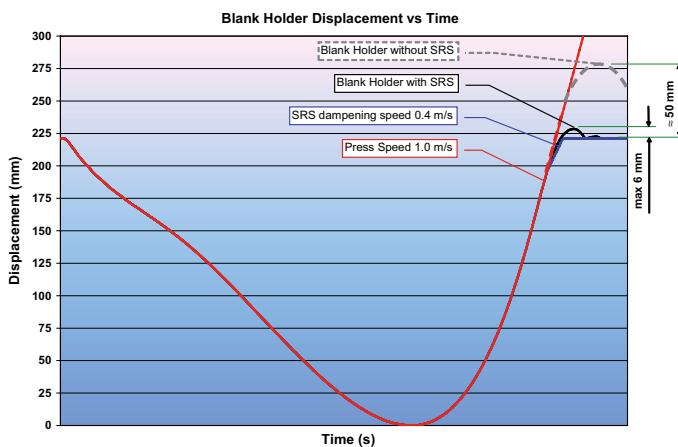
Product Features

- Easily retrofittable with standard mounts
- Upstroke dampening feature reduces pad bounce
- Can be hosed together to equalize force

Product Specifications

Initial Force Range.....	7,400–50,000 N
Pressure Medium	Nitrogen Gas
Max. Charging Pressure	150 bar/2,175 psi
Min. Charging Pressure	25 bar/363 psi
Operating Temperature	0 to 80°C/32 to 176°F
Force Increase by Temperature	±0.3% / °C
Recommended Max. Strokes per Minute	See Performance Chart below
Dampening Speed	0.4 m/s

Function Example



SRS gas springs gave a 90° reduction of blank holder bounce!

Ordering Instructions

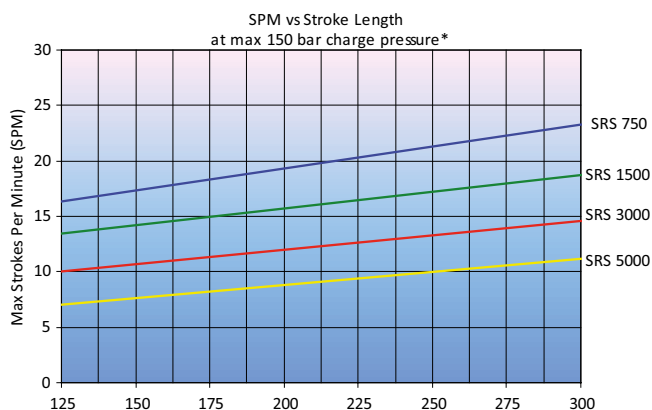
SRS-XXXX	x	XXXX
Model		Stroke Length
SRS-750		See
SRS-1500		Dimensional
SRS-3000		Information
SRS-5000		Charts
All gas springs shipped at maximum charge pressure unless otherwise specified.		

Repair Kits

Post Series	Order Number*
SRS-750	SRSSK-750
SRS-1500	SRSSK-1500
SRS-3000	SRSSK-3000
SRS-5000	SRSSK-5000
*Replacement Gas Spring sold separately.	

Performance:

Allowable Strokes Per Minute

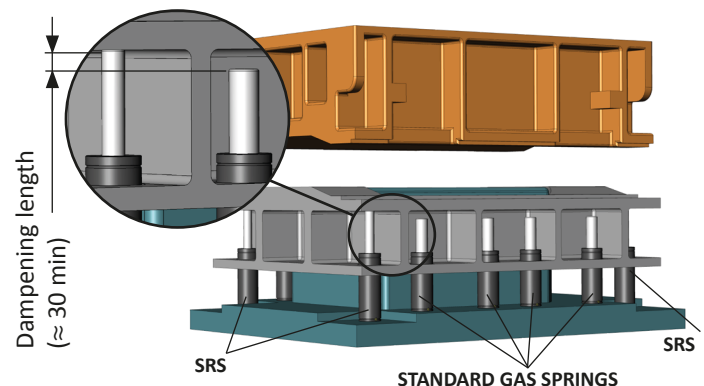


Example: SRS-5000X250 at 150 bar can run at 10 SPM. **Note** that if you reduce the fill pressure to 75 bar, you can double the SPM to 20.

Installation Options

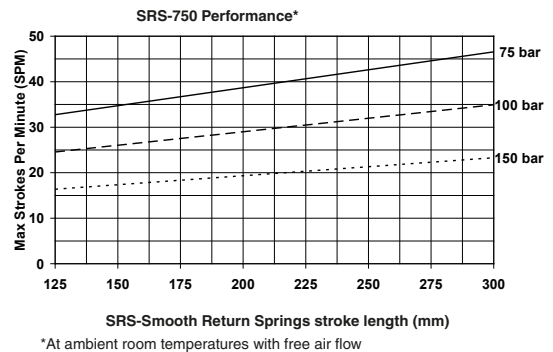
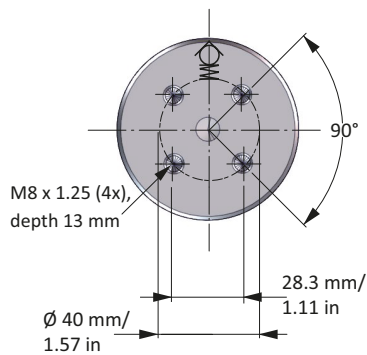
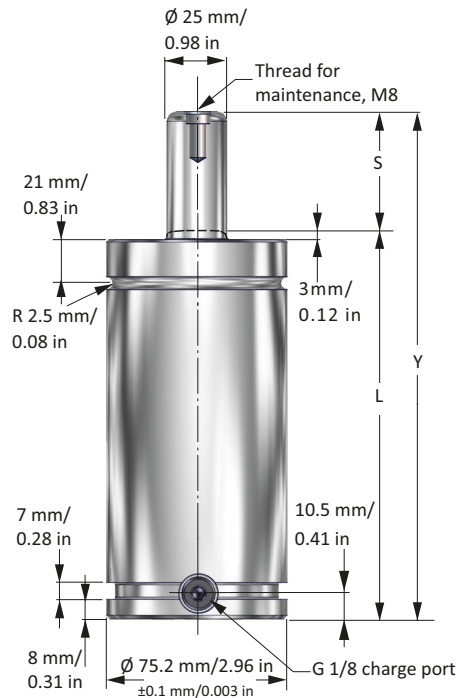
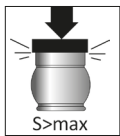
Option 1 - Replace all springs with SRS

Option 2 - Corner Concept - replace standard springs with SRS Series



All dimensions are in millimeters unless otherwise noted.

**Advanced
Safety Features**



SRS-3000 Dimensional Information

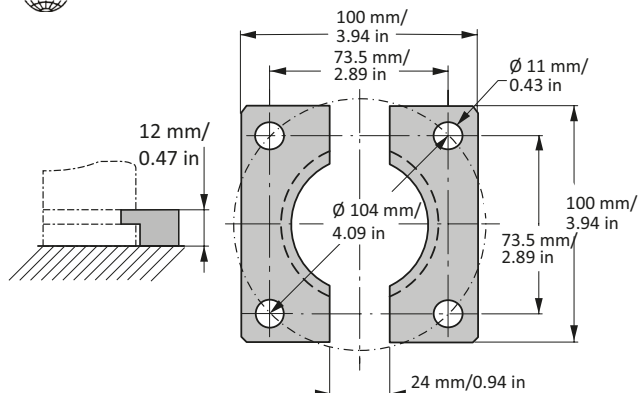
Order Number Model x Stroke	Stroke (S)		Contact Force		Full Stroke Force		Y ± 0.25	Y ± 0.010	L	L	Gas Volume (ℓ)	Weight kg
	mm	in	N	lbf	N	lbf	mm	in	mm	in		
SRS-750X80	80	3.15	7,400	1,665	8,700	1,960	270	10.63	190	7.48	0.30	5.5
SRS-750X100	100	3.94					310	12.20	210	8.27	0.36	5.8
SRS-750X125	125	4.92					360	14.17	235	9.25	0.44	6.10
SRS-750X160	160	6.30					430	16.93	270	10.63	0.55	6.60
SRS-750X200	200	7.87					510	20.08	310	12.20	0.67	7.15
SRS-750X250	250	9.84					610	24.02	360	14.17	0.83	7.85
SRS-750X300	300	11.81					710	27.95	410	16.14	0.98	8.60

Note: All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.

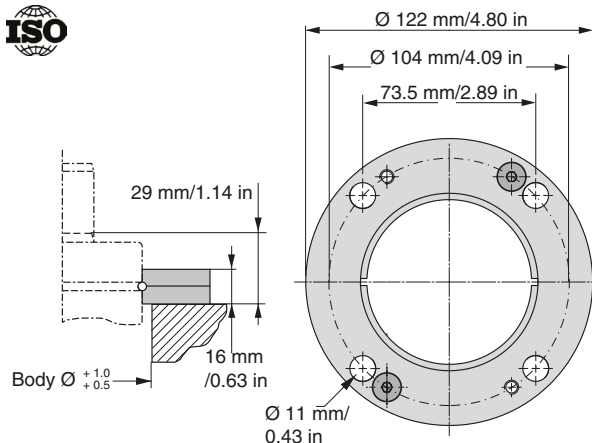
All dimensions are in millimeters unless otherwise noted.

Note: All flanges ordered separately

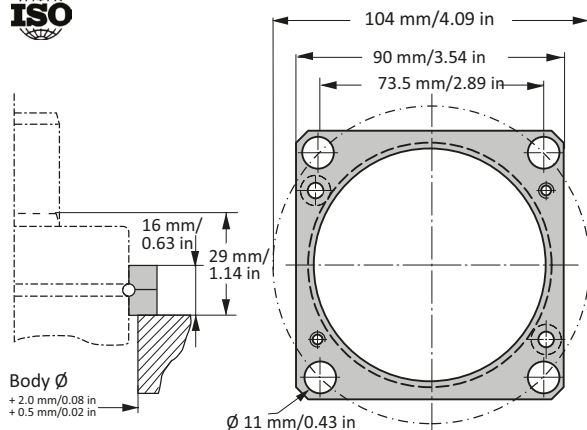
FFC - Lower Square Flange
Order Number FFC-1500



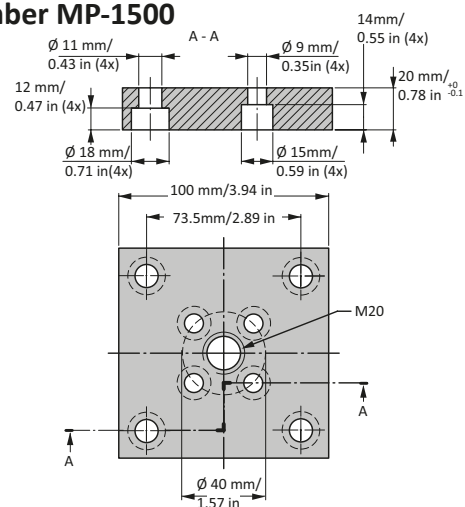
FC - Circular Flange
Order Number FC-1500



FCS - Upper Square Flange
Order Number FCS-1500



MP - Bottom Mounting Flange
Order Number MP-1500

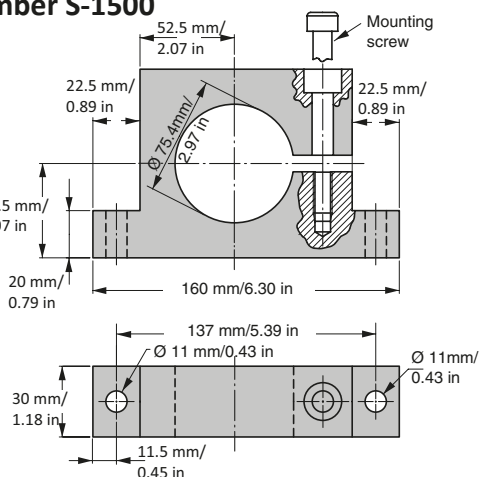


S - Support Mount
Order Number S-1500



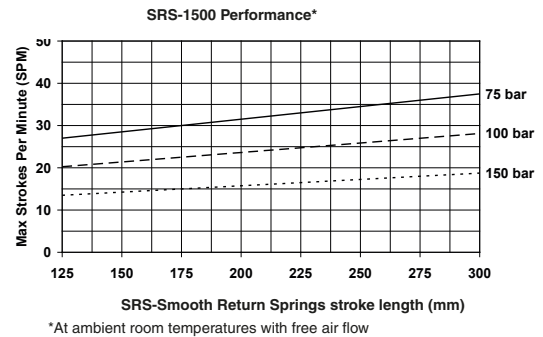
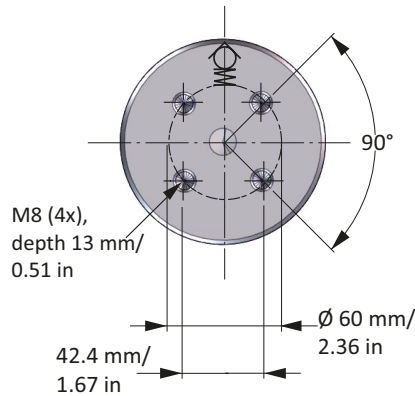
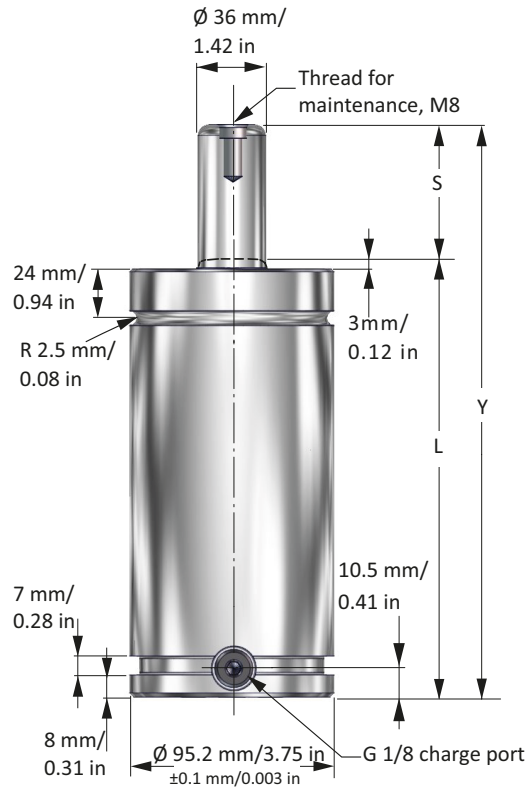
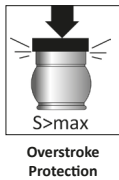
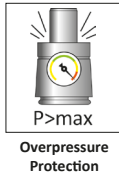
Note! Support S is designed to be used in combination with flanges mounted in the U or C groove or mounting option B.

The mounting screw (M12) should be tightened with torque 52 Nm.



All dimensions are in millimeters unless otherwise noted.

**Advanced
Safety Features**



SRS-1500 Dimensional Information

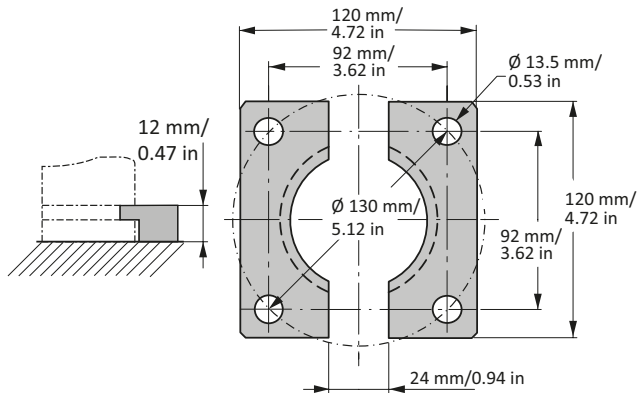
Order Number Model x Stroke	Stroke (S)		Contact Force		Full Stroke Force		Y ± 0.25	Y ± 0.010	L	L	Gas Volume (ℓ)	Weight kg
	mm	in	N	lbf	N	lbf	mm	in	mm	in		
SRS-1500X125	125	4.92	15,000	3,375	19,000	4,275	370	14.57	245	9.65	0.74	7.60
SRS-1500X160	160	6.30					440	17.32	280	11.20	0.91	8.45
SRS-1500X200	200	7.87					520	20.47	320	12.60	1.11	9.43
SRS-1500X250	250	9.84					620	24.41	370	14.57	1.36	10.64
SRS-1500X300	300	11.81					720	28.35	420	16.54	1.62	11.86

Note: All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.

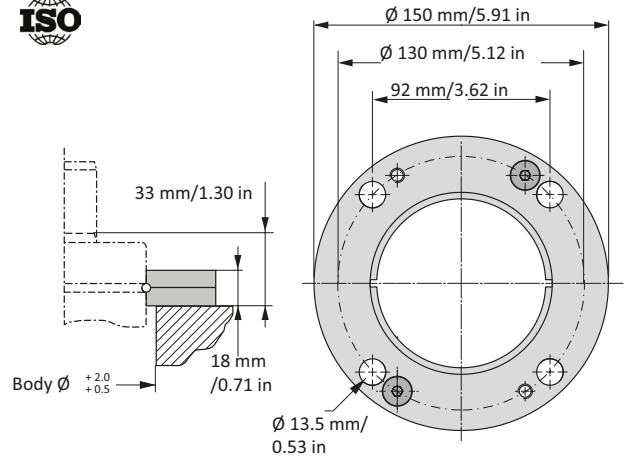
All dimensions are in millimeters unless otherwise noted.

Note: All flanges ordered separately.

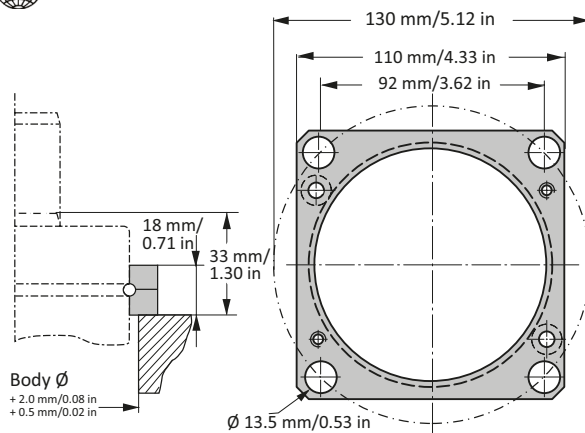
FFC - Lower Square Flange Order Number FFC-3000



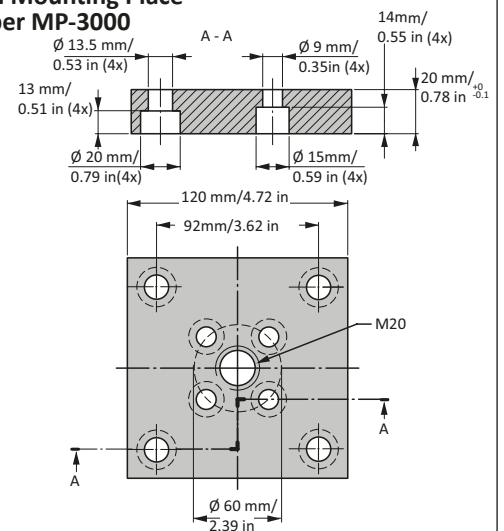
FC - Circular Flange Order Number FC-3000



FCS - Upper Square Flange Order Number FCS-3000



MP - Bottom Mounting Place Order Number MP-3000

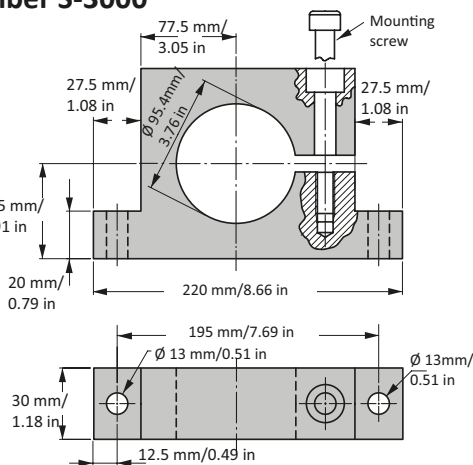


S - Support Mount Order Number S-3000

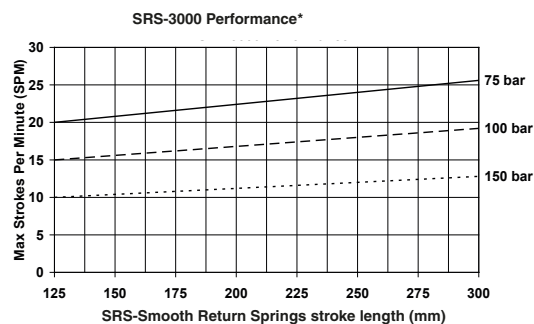
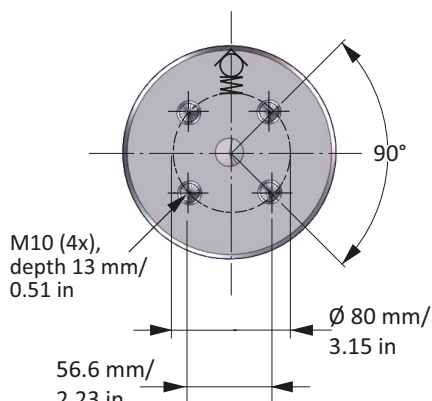
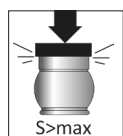


Note! Support S is designed to be used in combination with flanges mounted in the U or C groove or mounting option B.

The mounting screw (M12) should be tightened with torque 91 Nm.



All dimensions are in millimeters unless otherwise noted.

**Advanced
Safety Features**

SRS-3000 Dimensional Information

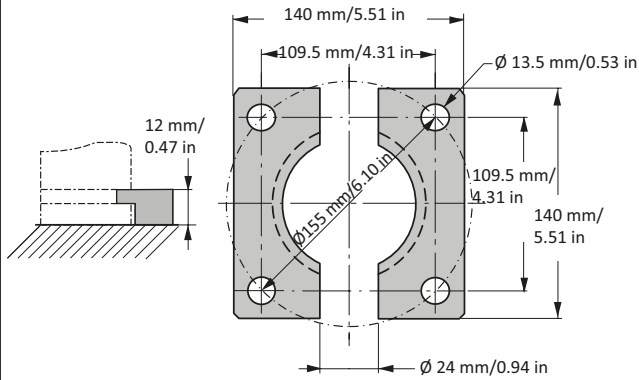
Order Number Model x Stroke	Stroke (S)		Contact Force*		Full Stroke Force		Y ± 0.25	Y ± 0.010	L	L	Gas Volume (ℓ)	Weight kg
	mm	in	N	lbf	N	lbf	mm	in	mm	in		
SRS-3000X125	125	4.92	30,000	6,750	38,000	8,550	390	15.35	265	10.43	1.15	10.64
SRS-3000X160	160	6.30			38,000	8,550	460	18.11	300	11.81	1.43	11.30
SRS-3000X200	200	7.87			38,000	8,550	540	21.26	340	13.39	1.74	12.06
SRS-3000X250	250	9.84			39,000	8,775	640	25.20	390	15.35	2.14	13.00
SRS-3000X300	300	11.81			39,000	8,775	740	29.13	440	17.32	2.53	13.95

Note: All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.

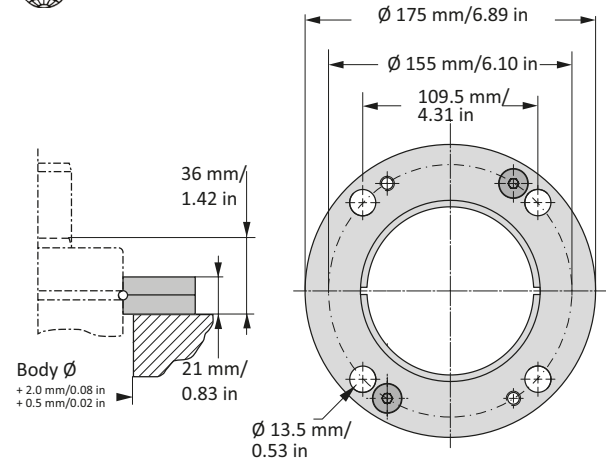
All dimensions are in millimeters unless otherwise noted.

Note: All flanges ordered separately.

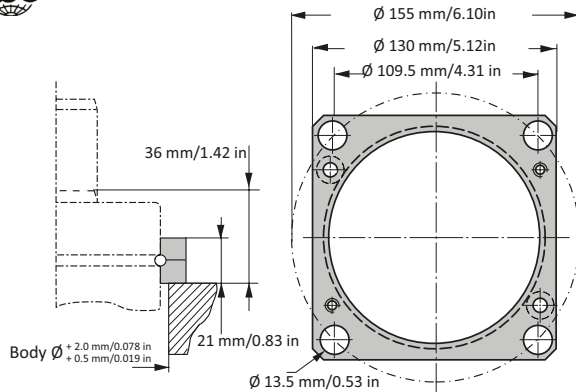
FFC - Lower Square Flange
Order Number FFC-5000



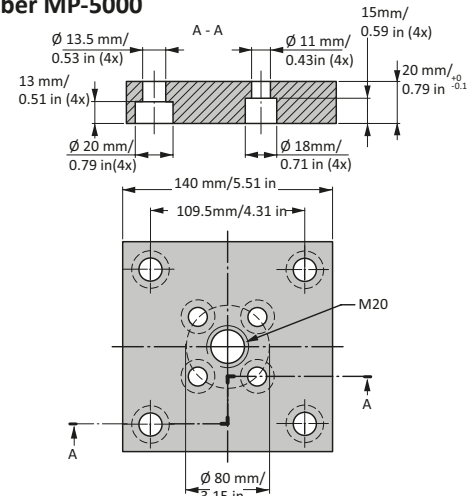
FC - Circular Flange
Order Number FC-5000



FCS - Upper Square Flange
Order Number FCS-5000



MP - Bottom Mounting Plate
Order Number MP-5000

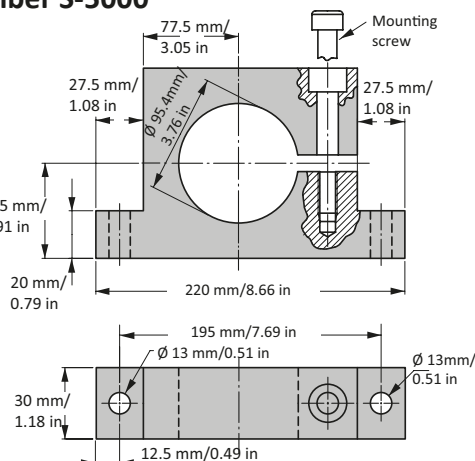


S - Support Mount
Order Number S-5000



Note! Support S is designed to be used in combination with flanges mounted in the U or C groove or mounting option B.

The mounting screw (M12) should be tightened with torque 91 Nm.



All dimensions are in millimeters unless otherwise noted.

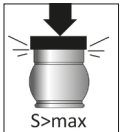
Advanced Safety Features



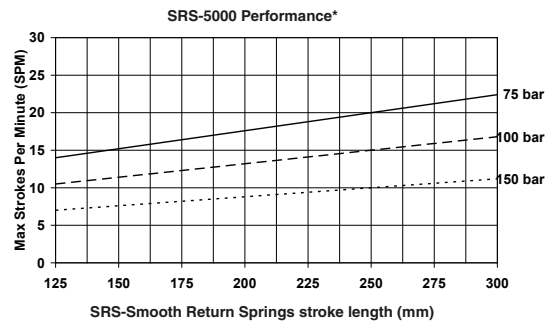
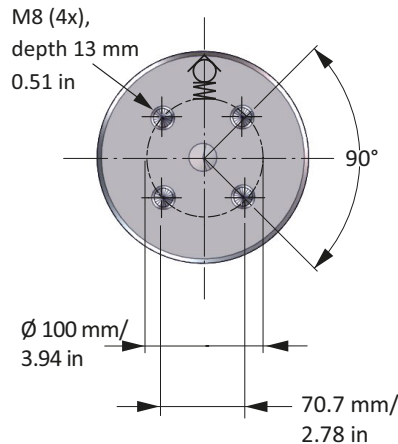
Overload Protection



Overpressure Protection



Overstroke Protection



*At ambient room temperatures with free air flow

SRS-5000 Dimensional Information

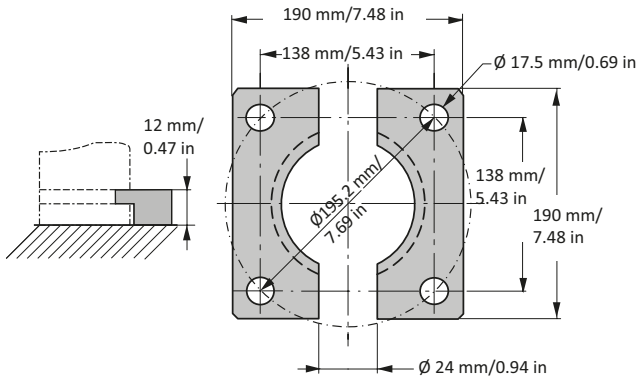
Order Number Model x Stroke	Stroke (S)		Contact Force*		Full Stroke Force		Y ± 0.25	Y ± 0.010	L	L	Gas Volume (ℓ)	Weight kg
	mm	in	N	lbf	N	lbf	mm	in	mm	in		
SRS-5000X125	125	4.92	50,000	11,250	64,000	14,400	405	15.94	280	11.02	1.89	26.35
SRS-5000X160	160	6.30			65,000	14,625	475	18.70	315	12.40	2.33	28.75
SRS-5000X200	200	7.87			66,000	14,850	555	21.85	355	13.98	2.82	31.50
SRS-5000X250	250	9.84			66,000	14,850	655	25.79	405	15.94	3.43	34.93
SRS-5000X300	300	11.81			66,000	14,850	755	29.72	455	17.91	4.05	38.37

Note: All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.

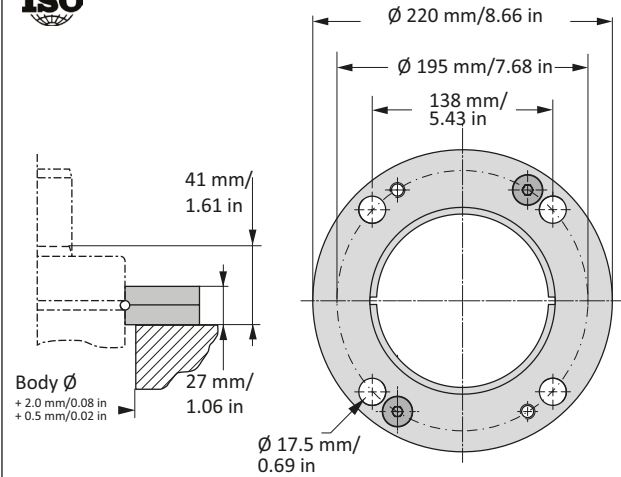
All dimensions are in millimeters unless otherwise noted.

Note: All flanges ordered separately.

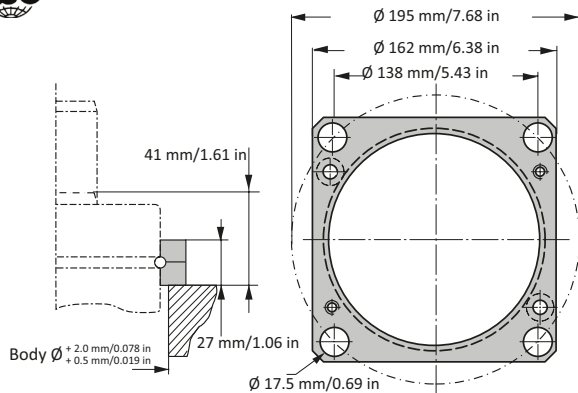
FFC - Lower Square Flange
Order Number FFC-7500



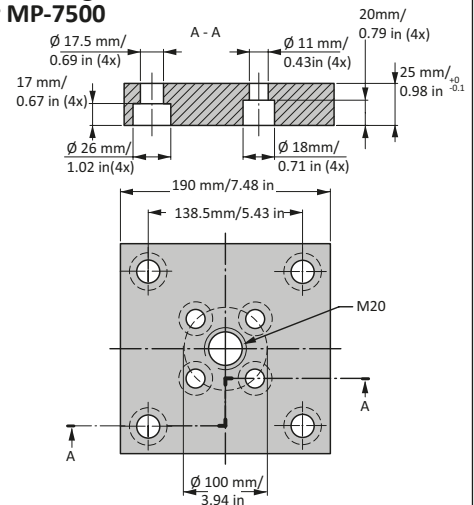
FC - Circular Flange
Order Number FC-7500



FCS - Upper Square Flange
Order Number FCS-7500



MP - Bottom Mounting Plate
Order Number MP-7500

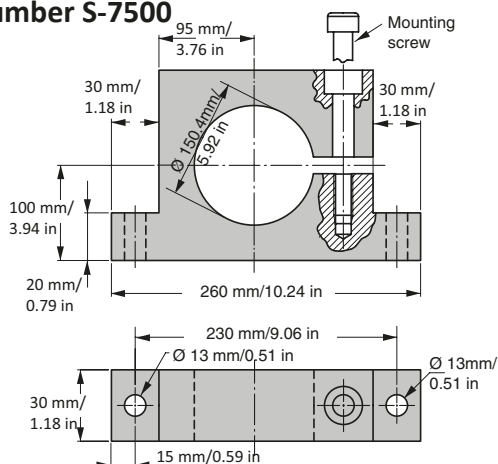


S - Support Mount
Order Number S-7500



Note! Support S is designed to be used in combination with flanges mounted in the U or C groove or mounting option B.

The mounting screw (M12) should be tightened with torque 91 Nm.



All dimensions are in millimeters unless otherwise noted.

		Lbs. force at 150 bar/2175 psi							
Model Number	Stroke (mm)	0	80	100	125	160	200	250	300
SRS-750	80	1,655	1,960	—	—	—	—	—	—
	100	1,655	1,887	1,960	—	—	—	—	—
	125	1,655	1,843	1,887	1,960	—	—	—	—
	160	1,655	1,803	1,843	1,887	1,960	—	—	—
	200	1,655	1,775	1,803	1,843	1,887	1,960	—	—
	250	1,655	1,754	1,781	1,810	1,850	1,895	1,960	—
	300	1,655	1,735	1,754	1,781	1,810	1,850	1,895	1,960
SRS-1500	125	3,372	—	—	4,275	—	—	—	—
	160	3,372	—	—	4,050	4,275	—	—	—
	200	3,372	—	—	3,933	4,065	4,275	—	—
	250	3,372	—	—	3,830	3,945	4,103	4,275	—
	300	3,372	—	—	3,751	3,830	3,945	4,103	4,275
SRS-3000	125	6,750	—	—	8,550	—	—	—	—
	160	6,750	—	—	8,100	8,550	—	—	—
	200	6,750	—	—	7,740	8,100	8,550	—	—
	250	6,750	—	—	7,603	7,870	8,293	8,775	—
	300	6,750	—	—	7,366	7,603	7,870	8,293	8,775
SRS-5000	125	11,250	—	—	14,400	—	—	—	—
	160	11,250	—	—	13,981	14,625	—	—	—
	200	11,250	—	—	13,321	13,981	14,850	—	—
	250	11,250	—	—	12,987	13,417	14,131	14,850	—
	300	11,250	—	—	12,571	12,987	13,417	14,131	14,850

NOTE: To calculate Newtons, multiply Lbs. force by 4.448.



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