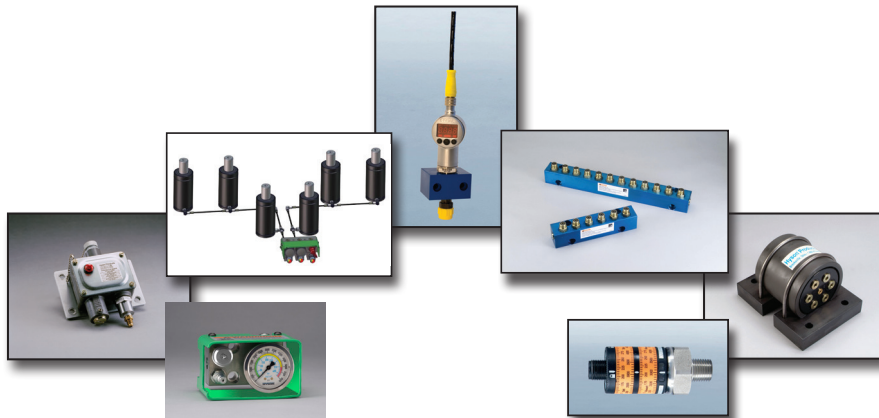


***FEATURING COMPONENTS TO GIVE THE MOST FLEXIBILITY,
RELIABILITY AND CONTROL OF YOUR GAS SPRING SYSTEM***

Table of Contents	Page
Introduction.....	1
Safety Guidelines.....	2
Control Panels	3
Distribution Blocks	6
Pressure Monitors	7
Volume Tanks	9



General Information

HYSON, headquartered in Brecksville, Ohio, is a world class engineering and manufacturing 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 control provider for critical machine, vehicle and precision metal processing applications, meaning we can 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.

Introduction

Customers who operate their gas springs in an interconnected hose system recognize several advantages:

- **Greater force controllability:** Can easily monitor, adjust and control the pressure of the gas springs from outside the die.
- **Enhanced monitoring:** Allows for pressure monitor connections which can detect when the pressure is outside of the min/max point and automatically stop the press.
- **Customized force profile:** Accommodates volume tanks to reduce pressure rise of the gas spring system and thus improve the formability of parts.

HYSON recommends the DualSeal 24™ Hose System as our premier hose system. It is the most robust and durable hose system while being compact and easily routed through dies. In addition, HYSON offers several other hose systems including Micro24™, O-Ring Face, EZ and JIC style systems. Refer to the respective HYSON hose system catalogs to select your specific hose system, fittings and control panels.








For service parts applicable to all hose systems, refer to HYSON's Service and Maintenance Catalog.

Additional accessories found in this catalog are compatible with all HYSON hose systems and can offer further benefits:

- **MODCP:** When applications call for multiple points of control, MODCP panels offer the ability to control pressure of each station uniquely with centralized panel.
- **CP-XM:** A control panel designed specifically for high pressure gas springs TNKS, TNKT, TNKB and T5 Series.
- **COMPRESSION TANKS:** When gas springs are preferred, but pressure rise of the system needs reduced, these tanks can reduce the pressure rise typically to the 20–30% range.
- **TNKMANTM:** Provides an alternative to standard hose routing to reduce fittings including expensive elbows and tees.
- **PRESSURE MONITORS:** For greatest peace of mind, HYSON pressure monitors offer the ability to connect the gas spring system to the press controls such that the operation is stopped should the system pressure fall outside the allowable range.

Safety Guidelines

For safety and optimum performance life:

-  Before connecting gas springs to a hosed system, discharge the nitrogen gas and remove the inlet valve from each spring.
-  Position the control valve in the tool where it will be protected from mechanical damage, and on a higher level than the gas springs to minimize loss of lubrication oil when discharging the gas.
-  Use only nitrogen (N₂) gas. The use of other types of gas can result in personal injury or failure of the gas spring/control panel.
-  Never exceed the maximum charging pressure marked on the gas spring. For most standard gas springs, the maximum charging pressure is 150 bar/2175 psi.
-  All valves on the control panel should be closed during operation.
-  We do not recommend hosing gas springs mounted using FC or FCS flanges as there is a risk that the gas spring will rotate while in operation.
-  Gas springs should be connected in a closed loop to help prevent the pad from tilting during charging.

Control Panels

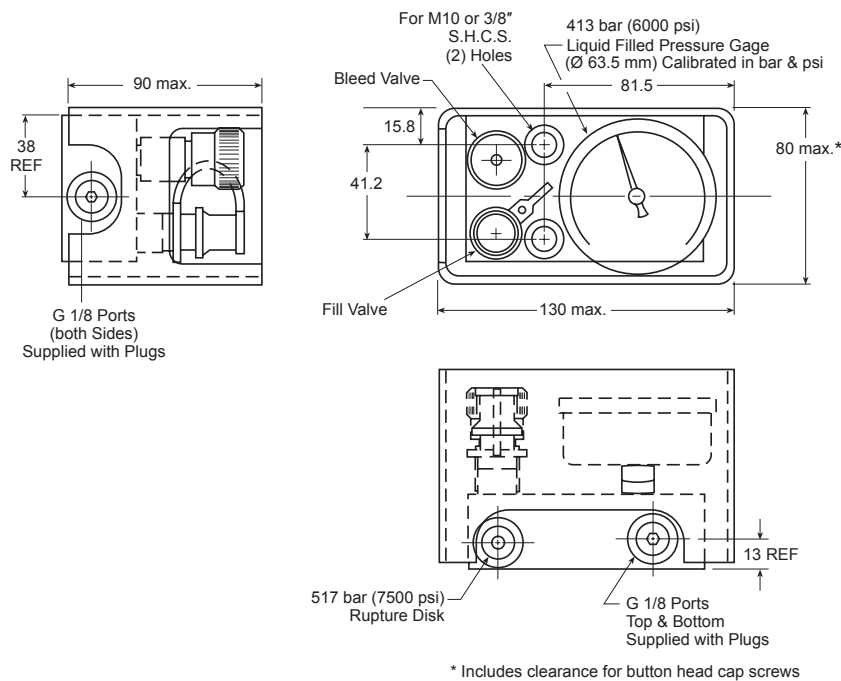
The Control Panel contains bleed and fill valves and a pressure gauge for charging, exhausting and reading pressure in the system. A rupture disk safety feature is also included to ensure all system pressure is exhausted, keeping springs from becoming over-pressurized in the event the pressure exceeds a safe level for the system.

Control Panel

Order Number CP-N2-T

- Straight Adapter and Mounting Screws are sold separately.

 Not to be used with TNKS, TNKT, TNKB and T5 Series.



Mounting Parts		
Order Number	Description	For Product Line
4022058	Straight Adapter	Micro24™
4114973-G1/8	Straight Adapter	EZ Hose (CNOMO)
503593	Straight Adapter	DualSeal 24™
ORF-1000-G1/8	Straight Adapter	O-Ring Face
NF-1000-4-G1/8	Straight Adapter	JIC
CS M10-1.5X30MM	Mounting Screws - Metric	Applicable to all Hyson hose systems
CS 3/8-16X1250	Mounting Screws - English	

Service Parts	
Order Number	Description
4024535	Bleed Valve
11-700-8555	Fill Valve
51-700-9000-LG	Pressure Gauge
RD-XP	Rupture Disk

All dimensions are in millimeters unless otherwise noted.

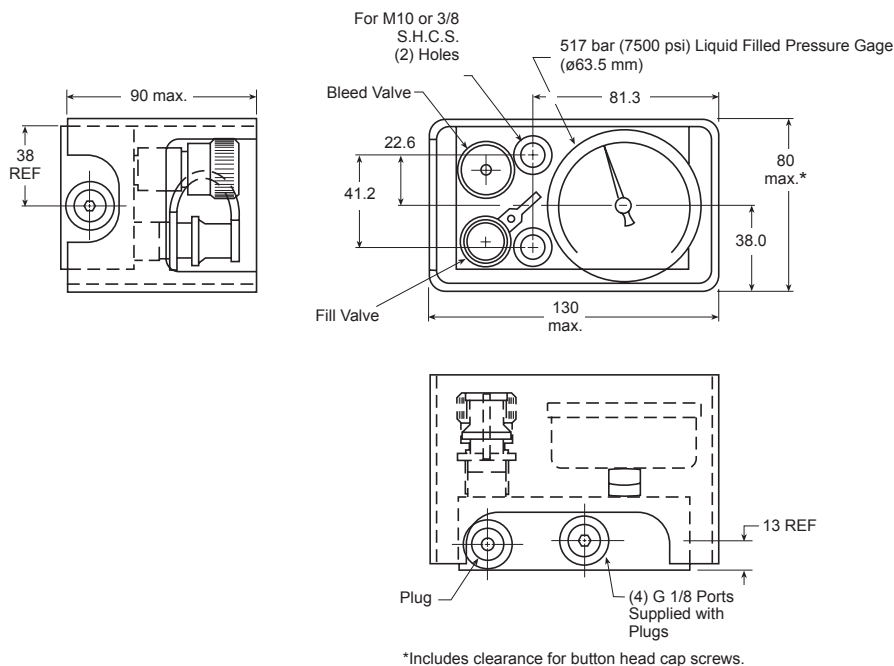
CP-XM

Order Number CP-XM

Order Number CP-XM OR

Designed for use with higher pressure operating gas spring systems including TNKS, TNKT, TNKB and T5 Series.

- Does not include rupture disk.
- Straight fitting and mounting screws are sold separately.



Mounting Parts		
Order Number	Description	For Product Line
4022058	Straight Adapter	Micro24™
4114973-G1/8	Straight Adapter	EZ Hose (CNOMO)
503593	Straight Adapter	DualSeal 24™
ORF-1000-G1/8	Straight Adapter	O-Ring Face
NF-1000-4-G1/8	Straight Adapter	JIC
CS M10-1.5X30MM	Mounting Screws - Metric	Applicable to all Hyson hose systems
CS 3/8-16X1250	Mounting Screws - English	

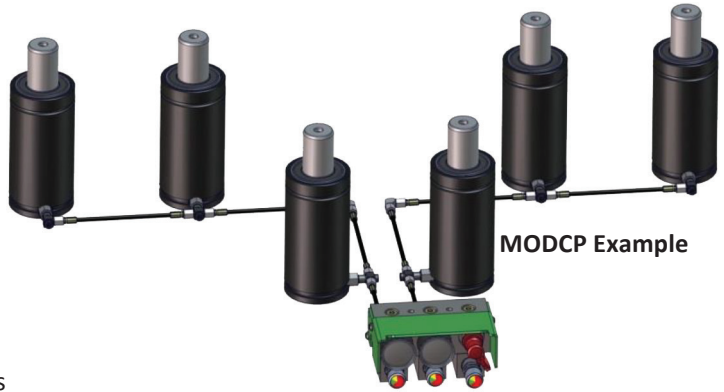
Service Parts	
Order Number	Description
4024535	Bleed Valve
11-700-8555	Fill Valve
51-700-9000-LG	Pressure Gauge

All dimensions are in millimeters unless otherwise noted.

MODCP

Utilizing Hyson’s Modular Control Panels (MODCP’s), users can easily set and verify gas charging pressure on each spring or spring system individually. This feature allows die designers to vary the force in each spring while still having the benefits of a hose system and a central panel to verify and adjust pressures. The updates include:

- More compact design compared to the original MODCP product line.
- Expanded to offer up to 10 individually controlled modules
- Visual guides to easily see which modules are On/Off.
- For additional information, reference Hyson Technical Bulletin 14-06-MODCP.
- Straight adapters and mounting screws are sold separately.



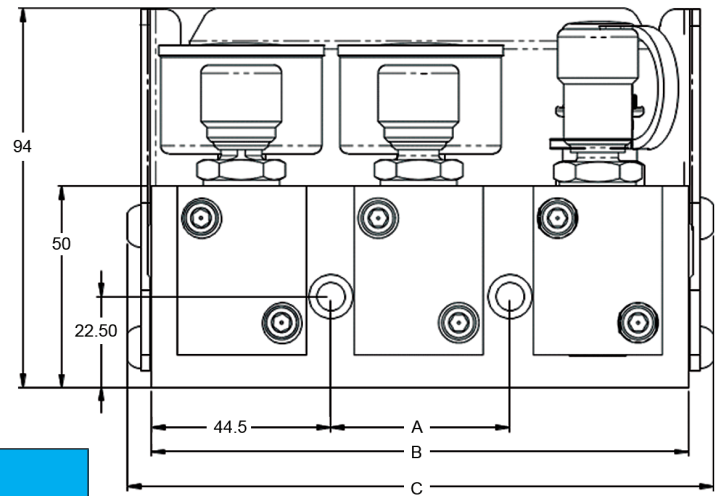
⚠ NOT to be used with TNKS, TNKT, TNKB or T5 gas springs.

Features

- **Simple operation:** each module has a 2-position valve that opens to bleed and closes to isolate the modules.
- **Piping flexibility:** each module has three G 1/8 port locations.
- **Easy monitoring:** each 400 bar/5800 psi gauge is easy to read.
- **Mounting:** flush mount either horizontally or vertically.
- **Bottom guard:** protects modules during use.

MODCP Dimensional Information					
Order Number	No. of Modules	A mm	B mm	C mm	Weight kg
2022677-02	2	44.5	133.5	146.0	4.0
2022677-03	3	89.0	178.0	191.0	5.4
2022677-04	4	133.5	222.5	235.0	6.8
2022677-05	5	178.0	267.0	280.0	8.1
2022677-06	6	222.5	311.5	324.0	9.5
2022677-08	8	311.5	400.5	413.0	12.3
2022677-10	10	400.5	489.5	502.0	15.4

Note: Other sizes available on request.



Mounting Parts		
Order Number	Description	For Product Line
4022058	Straight Adapter	Micro24™
4114973-G1/8	Straight Adapter	EZ Hose (CNOMO)
503593	Straight Adapter	DualSeal 24™
ORF-1000-G1/8	Straight Adapter	O-Ring Face
NF-1000-4-G1/8	Straight Adapter	JIC
CS M6-1.0X60MM	Mounting Screws - Metric	Applicable to all Hyson hose systems
CS 1/4-20X2.5	Mounting Screws - English	

All dimensions are in millimeters unless otherwise noted.

TNKMAN® Distribution Blocks

The TNKMAN® distribution block provides an alternative to hosing self-contained gas springs to each other. It eliminates as many fittings as possible, including all elbow and tee fittings, often sources of leaks.

- Straight adapters and mounting screws are sold separately.

Features

- Gas springs can be connected outside the die.
- Two end ports can be used for additional gas springs or connection of a control panel and/or pressure monitor.
- Complete set of plugs included for ports not in use.



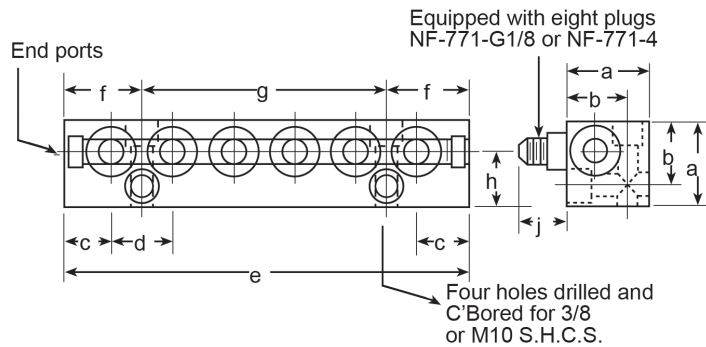
TNKMAN Order and Dimensional Information

Order Number		Port Size	a	b	c	d	e	f	g	h	j
TNKMAN 6	mm	7/16 – 20	38	29	22	29	187	37	114	25	22
TNKMAN 6 G 1/8	mm	G 1/8	38	29	22	29	187	37	114	25	22
TNKMAN 12	mm	7/16 – 20	38	29	22	29	359	37	286	25	22
TNKMAN 12 G 1/8	mm	G 1/8	38	29	22	29	359	37	286	25	22

Mounting Parts

Order Number	Port Size	Hose Type
NF-1000-4	7/16-20	JIC
ORF-1000-4		O-Ring Face
4114973-7/16		EZ/CNOMO
NF-1000-4-G1/8	G 1/8	JIC
ORF-1000-G1/8		O-Ring Face
4114973-G1/8		EZ/CNOMO
503593		DualSeal 24™

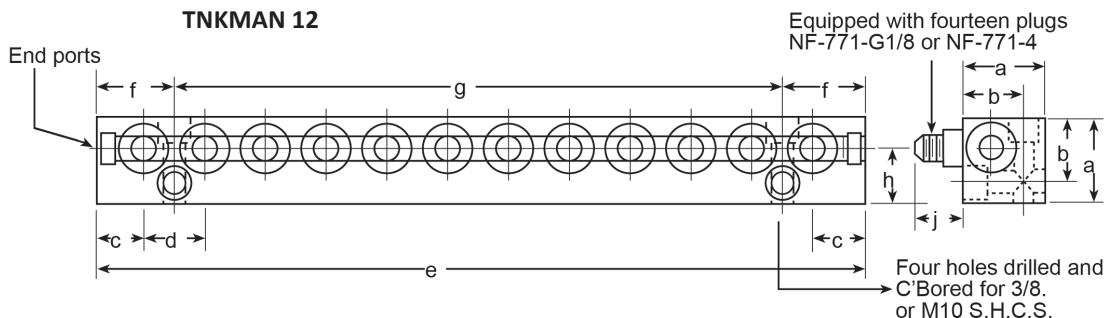
TNKMAN 6



Mounting Screws

Order Number	Description	For Product Line
CS M10-1.5X50	Mounting Screws - Metric	Applicable to all Hyson hose systems
CS 3/8-16X2.000	Mounting Screws - English	

TNKMAN 12



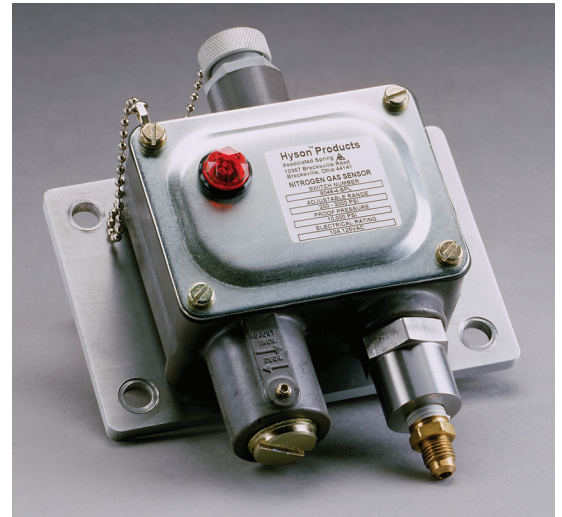
All dimensions are in millimeters unless otherwise noted.

Pressure Monitors

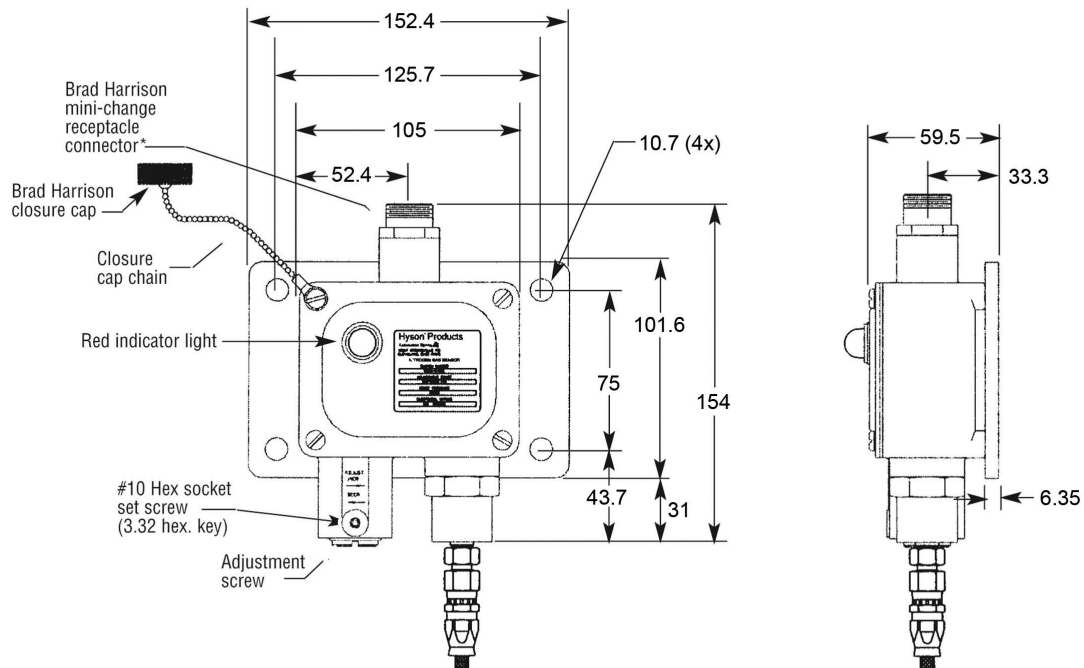
Pressure monitors connect the gas spring system to the press controls. If the pressure rises above or falls below preset points, the operation is interrupted, reducing the probability of damage to a tool and/or machinery.

APM-3000

- Measures 13.8 – 206 bar (200 – 3000 psi).
- Supplied with 4.5 m/15 ft cable and female quick disconnect.
- Brad Harrison mini-charge receptacle connector.
- Easily adjusts for lower limit.



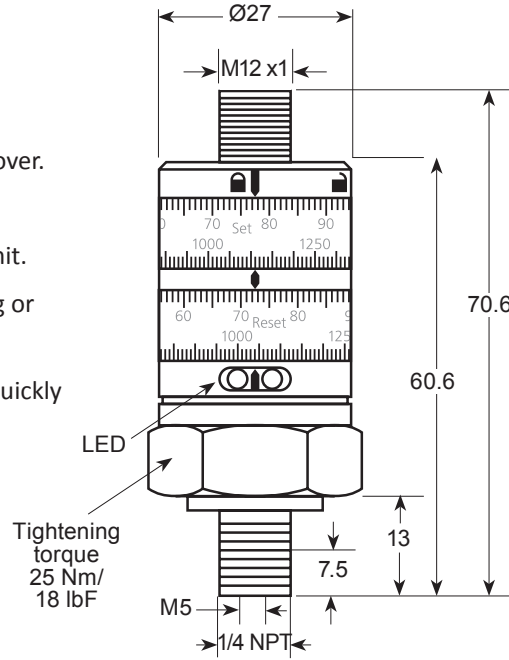
APM-5800



All dimensions are in millimeters unless otherwise noted.

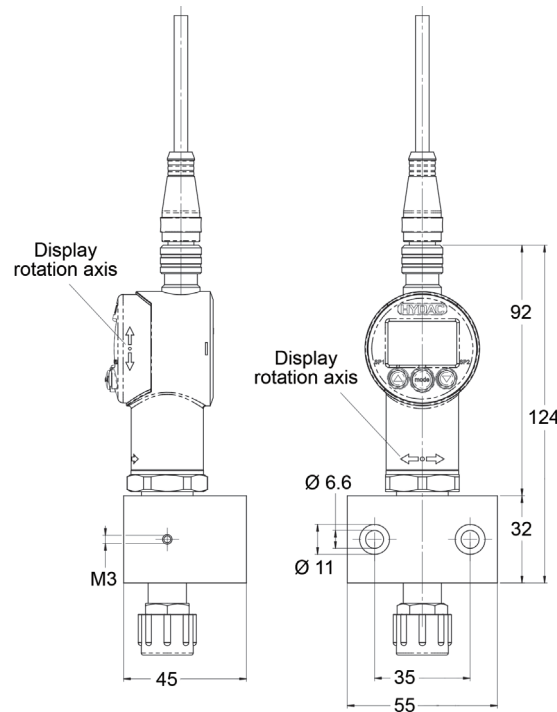
APM-5800

- Measures 0 – 400 bar (0 – 5800 psi).
- Supplied with cable and protective cover.
- 24 VCD Micro connection.
- Easily adjusts for upper and lower limit.
- Yellow screen LED indicates switching or ready for use.
- Simple set-up with dials that rotate quickly to select set point and reset point.



DPM-3000

- Measures 0 – 400 bar (0 – 5800 psi).
- 4-wire connection.
- Supplied with charging block, 4.5m/15 ft cable with a straight connector.
- Easy to read digital display.
- Easily adjusts for upper and lower limit.



DPM-3000 -NC

- Includes charging block.
- Pre-programmed.
- Conforms to GM 90.25.225 standard.
- Does not include cable.

Mounting Parts		
Order Number	Description	For Product Line
4022058	Straight Adapter	Micro24™
4114973-G1/8	Straight Adapter	EZ Hose (CNOMO)
503593	Straight Adapter	DualSeal 24™
ORF-1000-G1/8	Straight Adapter	O-Ring Face
NF-1000-4-G1/8	Straight Adapter	JIC



- 1. + Current feed 9 - 35 VDC Brown
- 2. Set-point 1 White
- 3. - Current feed (0V) Blue
- 4. Set-point 2 Black

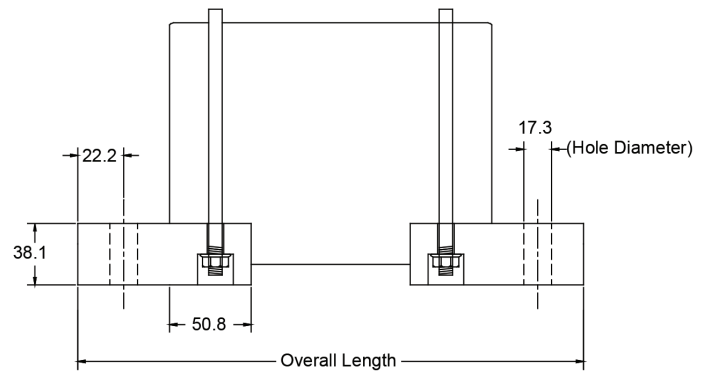
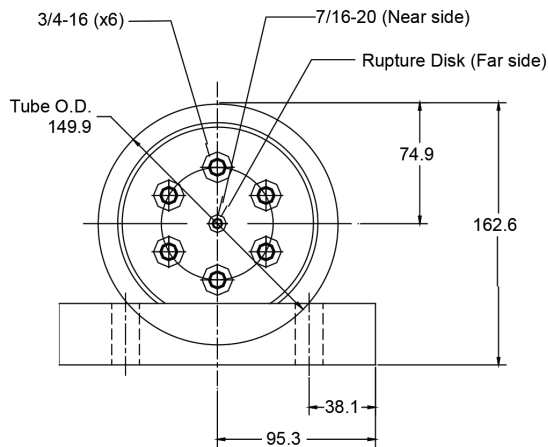
All dimensions are in millimeters unless otherwise noted.

Volume Tanks

The ST Volume Tank is designed to increase the volume and lower the pressure rise in a gas spring system. The compact, modular design makes it less costly than conventional welded tanks.

Features

- Engineered for 150 bar/2175 psi maximum pressure.
- Less heat build-up for long gas spring life.
- Rupture disk plug for added safety.
- Multiple ports on each end for increased flexibility.
- Ideal for JIC or O-Ring Face hose systems.



ST Volume Tank Dimensional Information

Order Number	Standard Volume		Standard Overall Length	Number of Ports on Each Face
	cm ³	in. ³	mm	
ST-50-HP	819	50	244	6 each 3/4-16 1 face 7/16-20 1 face Rupture Disk
ST-100-HP	1639	100	311	
ST-160-HP	2622	160	390	
ST-200-HP	3278	200	443	
ST-320-HP	5244	320	603	
ST-460-HP	7540	460	789	
ST-730-HP	11963	730	1149	

Mounting Parts

Order Number	Description	For Product Line
NF-1000-4	Straight Adapter	JIC
ORF-1000-4	Straight Adapter	O-Ring Face
NF-77-8-4	Port Reducer Adapter	Applies to both JIC & O-Ring Face

All dimensions are in millimeters unless otherwise noted.



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