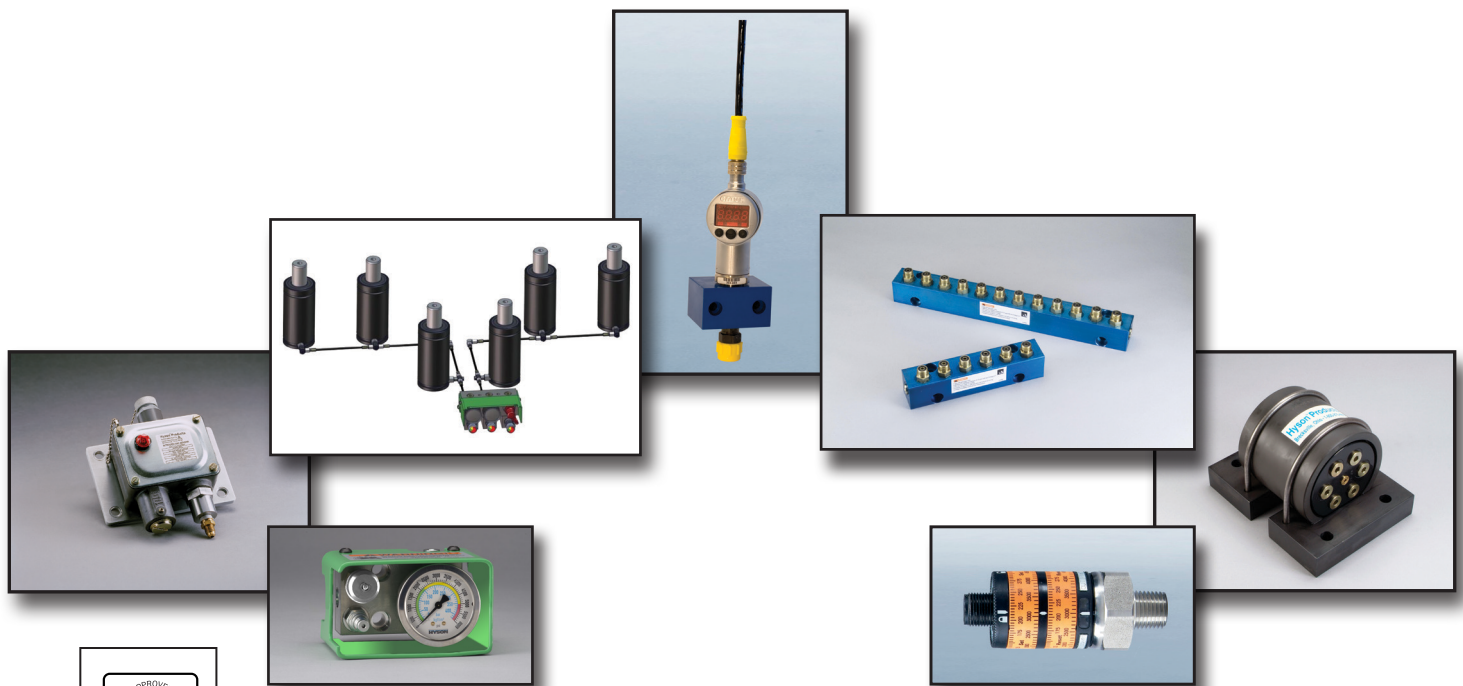


Hose System Accessories

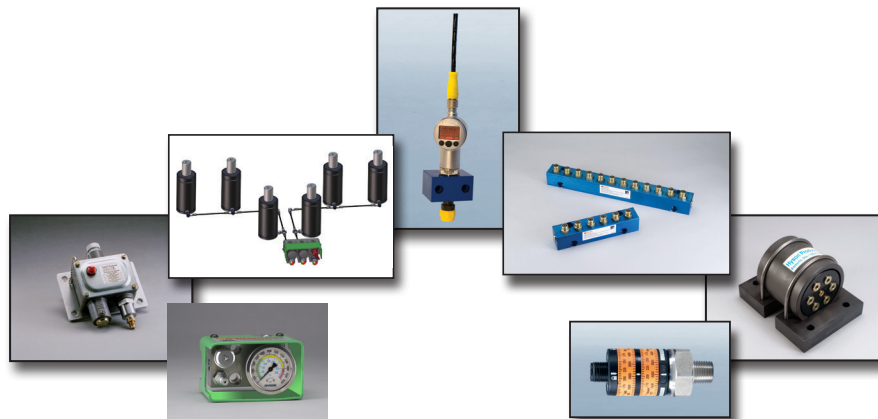
*FEATURING COMPONENTS THAT PROVIDE THE MOST FLEXIBILITY,
RELIABILITY AND CONTROL FOR YOUR GAS SPRING SYSTEM*



HYSON
Metal Forming Solutions™

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

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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.
- **TNKMAN:** 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

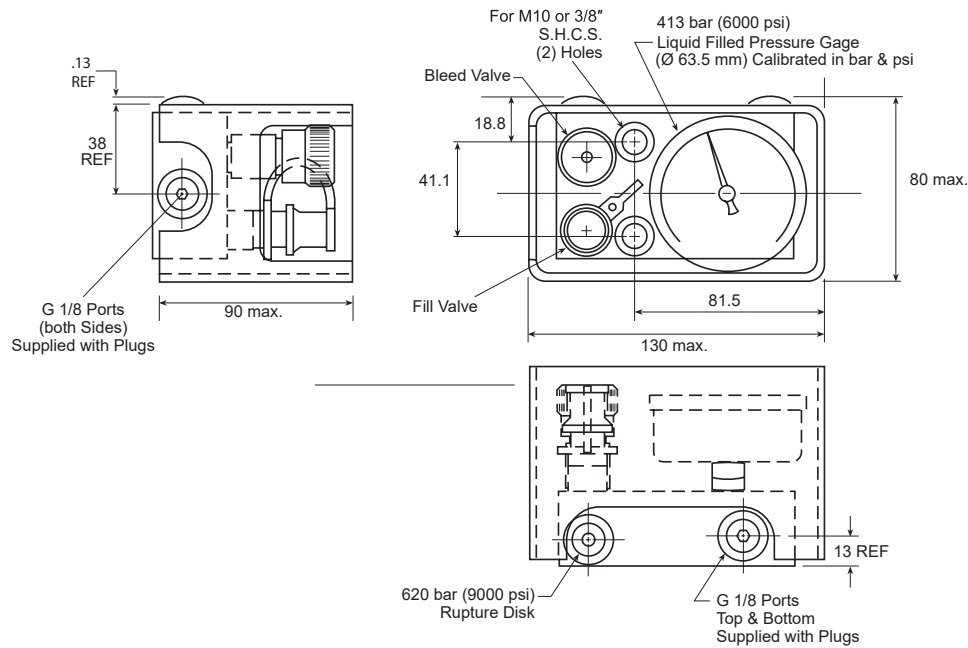
Order Number CP-N2-T

- Available with Soft Seal High Flow Bleed Down Valve.

Order Number: CP-N2-T-HF

- 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 |
| 11-700-8520-HF | High Flow Bleed Valve |

All dimensions are in millimeters unless otherwise noted.

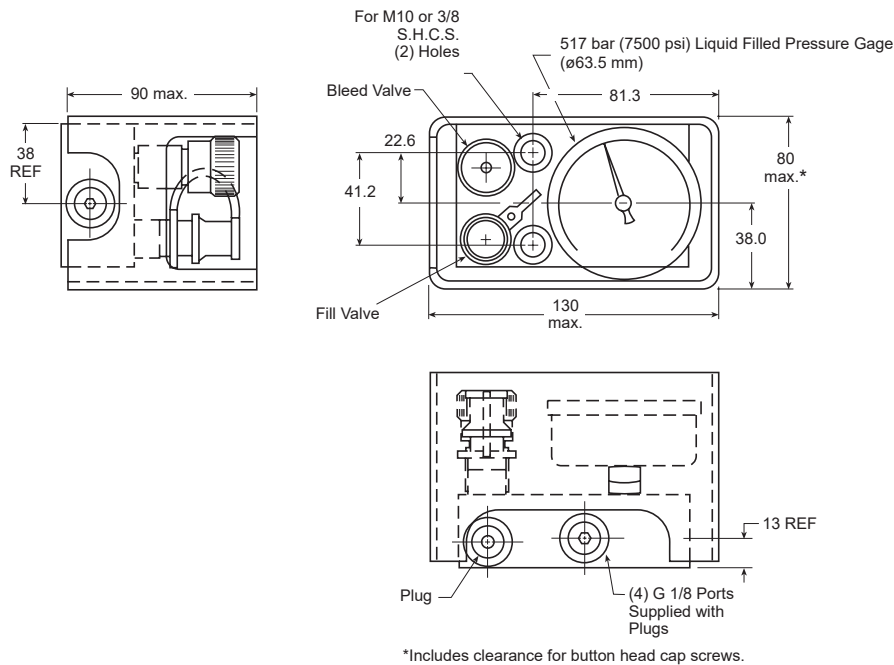
CP-XM

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.



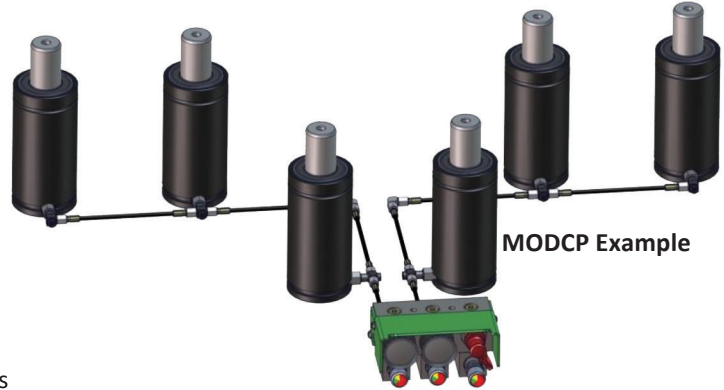
| Mounting Parts | | |
|-----------------|---------------------------|--------------------------------------|
| Order Number | Description | For Product Line |
| 4022058 | Straight Adapter | Micro24™ |
| 4114973-G1/8 | Straight Adapter | EZ Hose (CNOMO) |
| 503593 | Straight Adapter | DualSeal 24™ |
| 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.

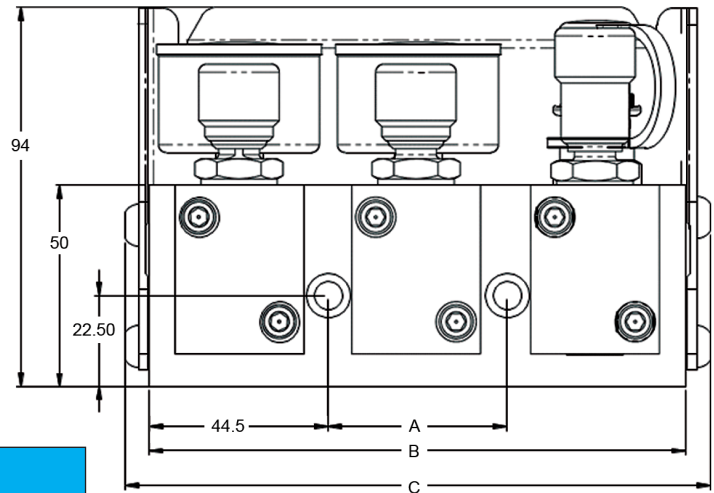
Features

- **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 | B | C | Weight kg |
|--------------|----------------|-------|-------|-------|--------------|
| | | mm | mm | mm | |
| 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.

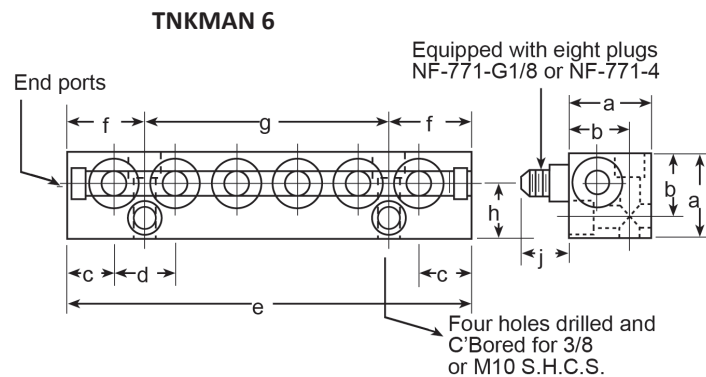
Features

- 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.

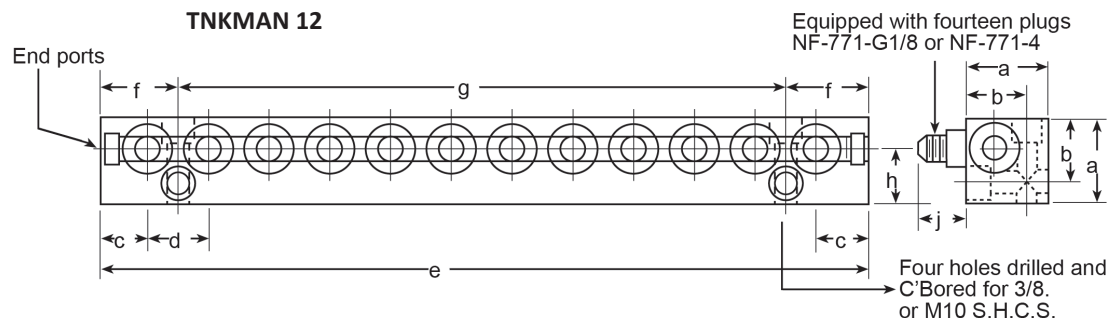


| TNKMAN Order and Dimensional Information | | | | | | | | | | | |
|--|----|-----------|----|----|----|----|-----|----|-----|----|----|
| Order Number | | Port Size | a | b | c | d | e | f | g | h | j |
| TNKMAN 6 | mm | 7/16 – 20 | 38 | 29 | 22 | 29 | 187 | 37 | 114 | 25 | 22 |
| TNKMAN 6 G 1/8 | mm | 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 |
| <hr/> | | |
| NF-1000-4-G1/8 | G 1/8 | JIC |
| ORF-1000-G1/8 | | O-Ring Face |
| 4114973-G1/8 | | EZ/CNOMO |
| 503593 | | DualSeal 24™ |



| 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 | |



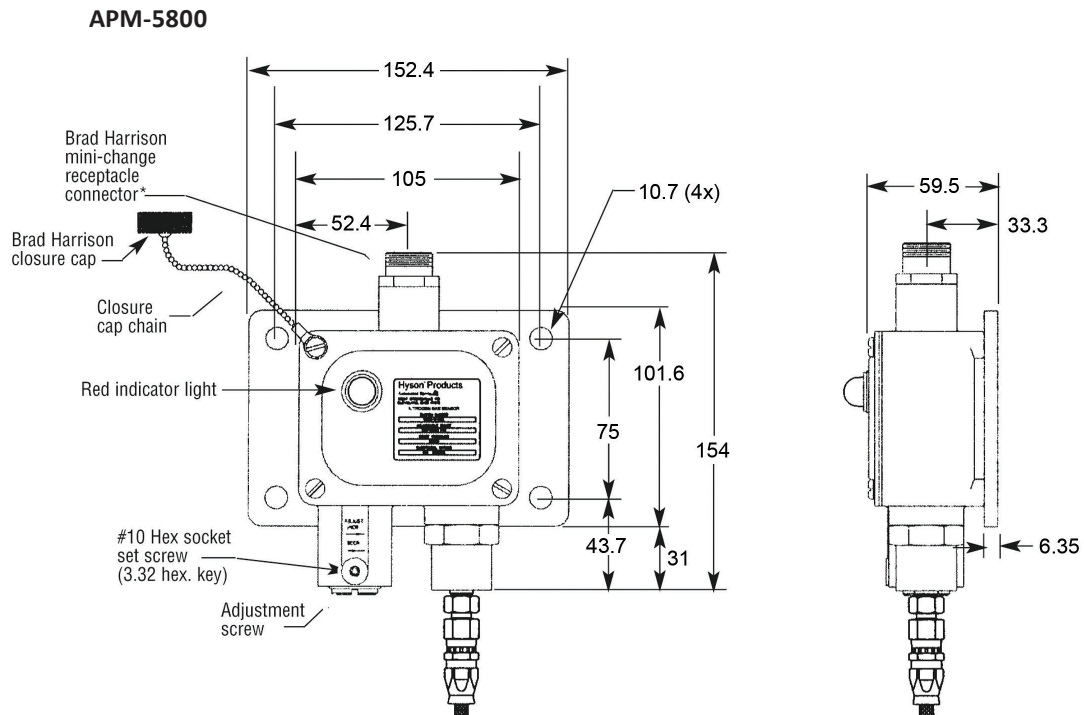
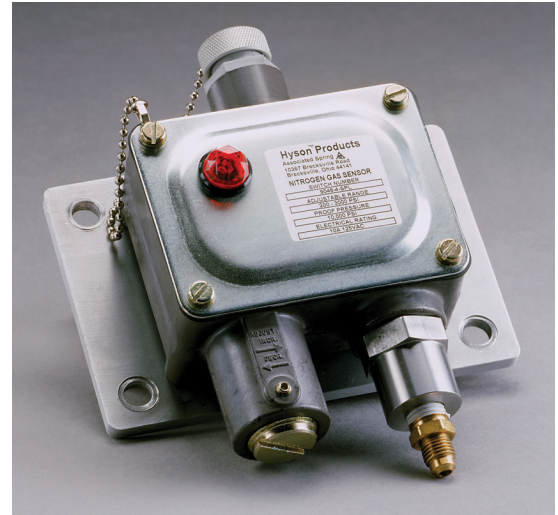
All dimensions are in millimeters unless otherwise noted.

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

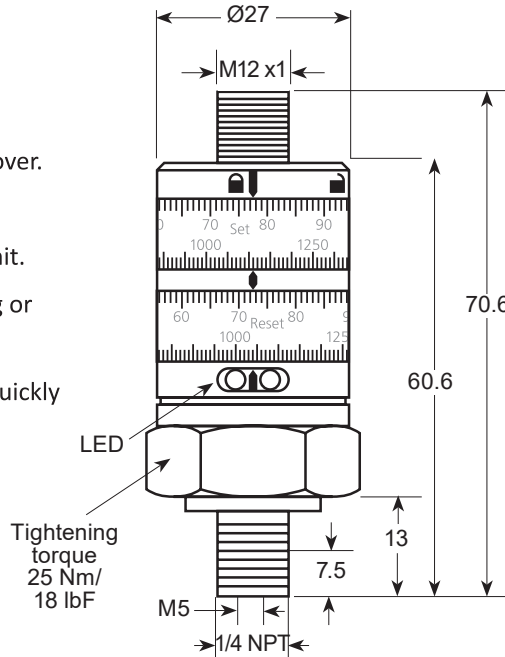
- Measures 13.8 - 206 bar (200 - 3000 psi).
- Supplied with 4.5 m / 15 ft hose assembly and femal quick disconnect.
- Brad Harrison mini-charge receptacle connector.
- Easily adjusts for lower limit.



All dimensions are in millimeters unless otherwise noted.

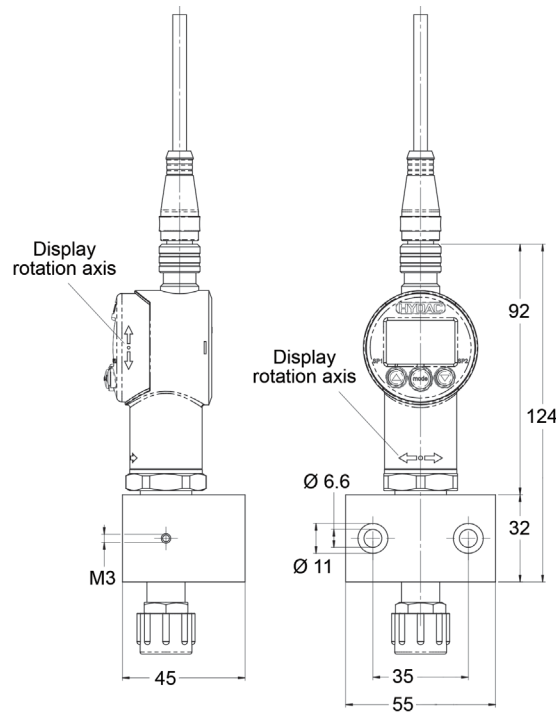
APM-5800

- 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.
- Easy to read digital display.
- Easily adjusts for upper and lower limit.



Mounting Parts

| Order Number | Description | For Product Line |
|----------------|------------------|------------------|
| 4022058 | Straight Adapter | Micro24™ |
| 4114973-G1/8 | Straight Adapter | EZ Hose (CNOMO) |
| 503593-G1/8 | Straight Adapter | DualSeal 24™ |
| ORF-1000-G1/8 | Straight Adapter | O-Ring Face |
| NF-1000-4-G1/8 | Straight Adapter | JIC |
| EVC006 | | All |



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

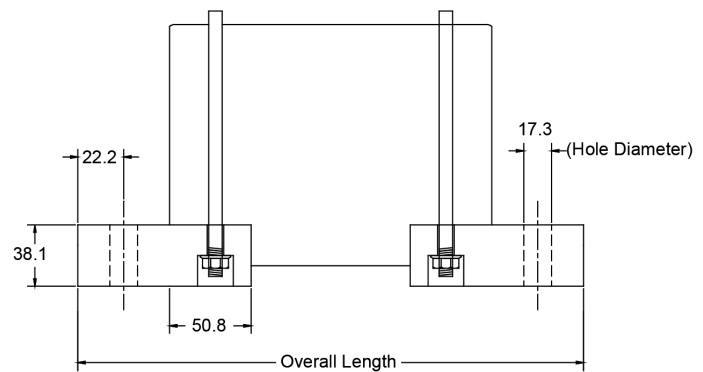
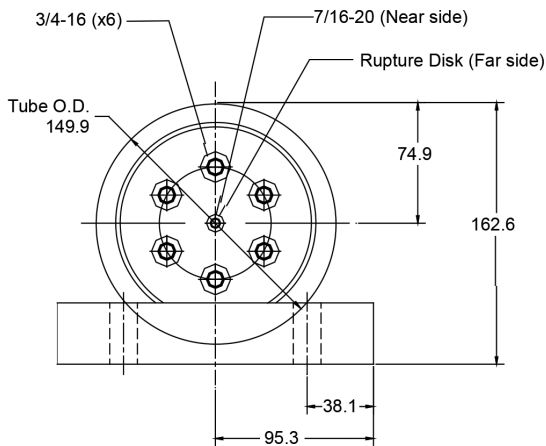
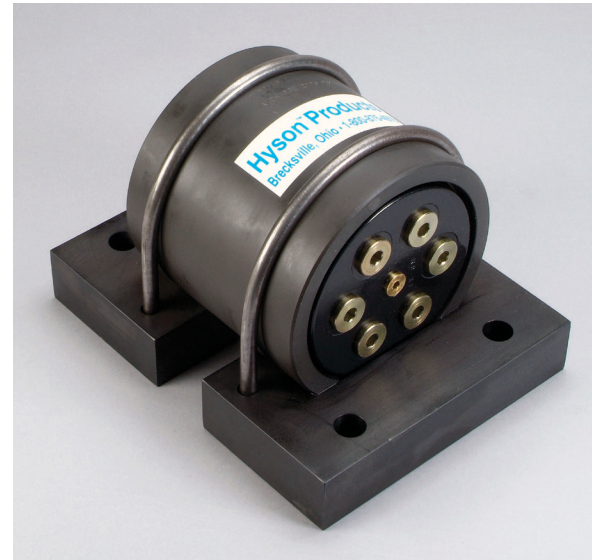
All dimensions are in millimeters unless otherwise noted.

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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