

Type M Plus™ Pressure Control Valve



M-1: Foot Pedal operated for one pressure regulated circuit



M-2: Hand Lever operated for one pressure regulated circuit

FEATURES

Compact Design - Reduced size of the Type M Plus Pressure Control Valve makes it possible to group an increased number of valves in a limited area.

Sensitivity - The output pressure setting can be adjusted in increments of approximately ½ psi (0.03 bar) with movement of the operating mechanism. When set, the outlet pressure will be maintained within plus or minus 1 psi.

Operating Ease - only light operating force is required which increases both the efficiency and output of operating personnel by decreasing operator fatigue and concentration.

Corrosion-Resistant Construction - All seals are oil-resistant synthetic rubber, and all steel parts are plated. Other parts are made of anodized aluminum or bronze - designed for even outdoor applications.

Easy Maintenance - Minimum number of moving parts and simple construction allow for easy repair.

Adjustable Handle Holding Force - Easily accessible nut on "F" suffix valves, allows for simple wrench adjustment to suit operator need.

MODELS

Type M Plus Pressure Control Valves are available in the following models:

M-1: FOOT PEDAL operated for one pressure regulated circuit.

M-2: HAND LEVER operated for one pressure regulated circuit.

MC-2: HAND LEVER operated for two pressure regulated circuits.

ME-2: HAND LEVER operated for one pressure regulated circuit and one non-regulated circuit.

M-5: DIRECT PUSH operated for one pressure regulated circuit.

The M-2, MC-2 and ME-2 Type M Plus Pressure Control Valves are available with the following types of lever return or holding characteristics. These characteristics are indicated by the suffix added to the designation.

NO SUFFIX - self-returning. The lever automatically returns to the "Neutral" or "Off" position when the operating force is removed.

F SUFFIX - self-holding. The lever stays in any position in which it is placed. The holding friction is adjustable.

Type M Plus™ Pressure Control Valve

DESCRIPTION

When an application dictates low cost, medium-flow capacity and accurate control of pressure, the Type M Plus Pressure Control Valve answers the need. The Type M Plus Pressure Control Valve is designed for short-distance (up to 50 feet or 15.2 meters), low-force pressure control applications. Installed with the proper positioner it replaces mechanical linkage, push-pull cable and master slave hydraulic positioning systems. Delivery pressure is controlled by the position of the operating lever or pedal. Any increase or decrease in the system pressure is automatically compensated for by the valve once the desired output pressure is established.

STANDARD SPECIFICATIONS

Operators: Hand lever, foot pedal, and mechanical plunger.

Sensitivity: 2% of range.

Temperature Range: -40° to +160°F (-40° to +71°C)

Maximum Supply Pressure: 150 psi (10.3 bar)

Outlet Pressure: Two controllable output pressure ranges available, either 0-60 psi or 0-100 psi (0-4.2 or 0-6.9 bar)

Materials: Anodized die cast aluminum body and cover, steel handle and shaft, Buna-N-Seals, sintered iron cam shaft.

REPAIR KITS:

R431000679 (P -026784-00000) - NEW Type "M" PLUS™ - includes supply valve spring, O-rings & grease tube.

R431005822 (P-061666-00000 - obsolete Type M Pressure Control - includes supply valve assembly, exhaust valve spring, O-rings & grease tube.

Service Manual SM-800.11 is available online at: www.boschrexroth-us.com/brp

CONTROL OUTPUT COMBINATIONS

The Type M Plus Pressure Control Valve is available in several combinations of graduated pressure output:

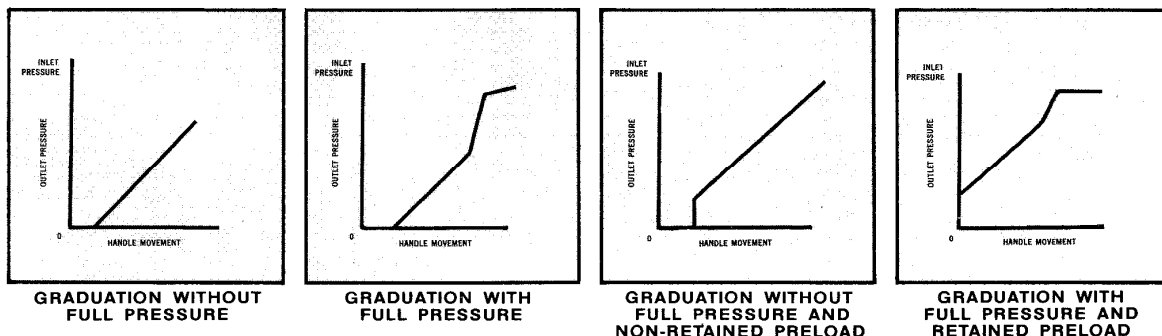
1. **Standard Pressure Graduation** - two different ranges of graduating springs are available to provide a constant rate of pressure buildup as the handle is moved toward the 60 or 100 psi (4.2 or 6.9 bar) maximum pressure position.
2. **Full Pressure Setting** - An adjustable setting can be made available on all graduating valves to provide full inlet pressure to the outlet line at predetermined positions (near the end) of the handle travel.
3. **Non-retained preload** - Graduating valves may have a non-retained preload to give a predetermined pressure in the outlet line at the beginning of handle travel.
4. **Retained preload** - This pressure maintains a predetermined pressure in the outlet line with the handle in the off position.

ADJUSTMENT

The outlet pressure of the Type M Plus Pressure Control Valve can be changed by an external adjustment. Changing the pressure for one position changes the pressure for all positions since the pressure range is fixed by the control spring characteristics.

With the operator in minimum pressure position, the valve is adjusted to vent outlet pressure to the atmosphere. When used with throttles or similar devices the valve is set to provide a preset low pressure (non-retained preload) in the circuit when the operator is moved just out of "off" position. This adjustment gives quicker response at the start of the operator movement.

CONTROL OUTPUTS



Other combinations of the above outputs can also be made available.

M-1 Pressure Control Valve

The M-1 Valve is a pedal-actuated 3 way pressure regulating valve that is designed for installations where the operator is seated. Depressing the pedal increases the outlet pressure; releasing the pedal decreases outlet pressure. The pedal is self-returning. Adjustable stops are provided to control initial pressure and final pressure over the range of pedal travel.

This valve is suitable for throttle, brake or clutch control, or wherever foot operation of pressure control is desired.

PIPE CONNECTIONS

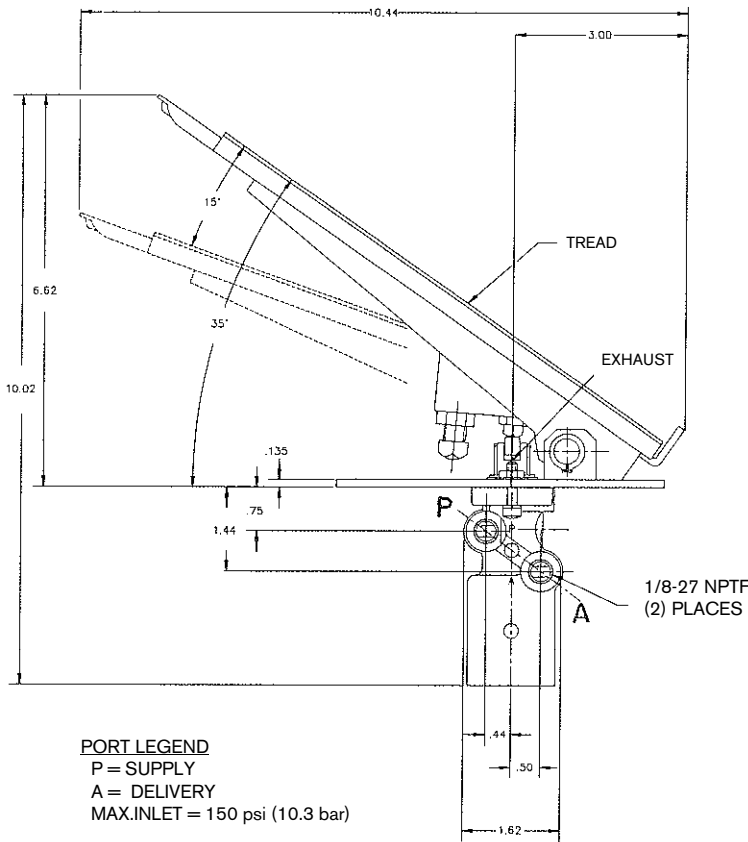
“P” port - supply

“A” port - delivers graduated pressure in direct proportion to pedal depression.

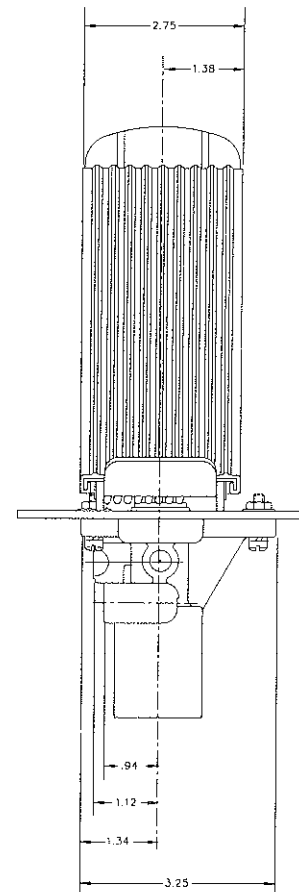
MODELS

0-60 psi (0 to 4.1 bar) with pedal tread part no. R431000662 (P-026716-00001)

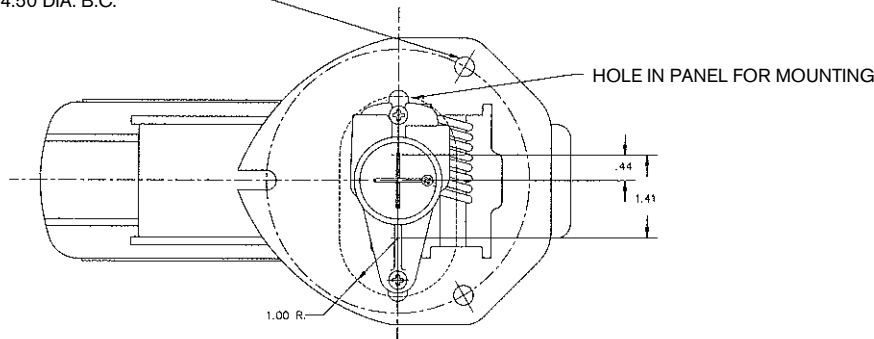
0-100 psi (0 to 6.9 bar) with pedal tread part no. R431000663 (P-026716-00002)



PORT LEGEND
 P = SUPPLY
 A = DELIVERY
 MAX. INLET = 150 psi (10.3 bar)



0.34 DIA. THRU (3) PL'S
 EQUALLY SPACED ON
 A 4.50 DIA. B.C.



M-2 Pressure Control Valve

The M-2 Valve is a lever-operated, 3-way pressure regulating valve. Output pressure is increased, decreased or maintained at the out port according to lever position. Facing the lever side of the valve, clockwise lever movement increases pressure. Outlet pressure is maintained for the position in which the lever remains.

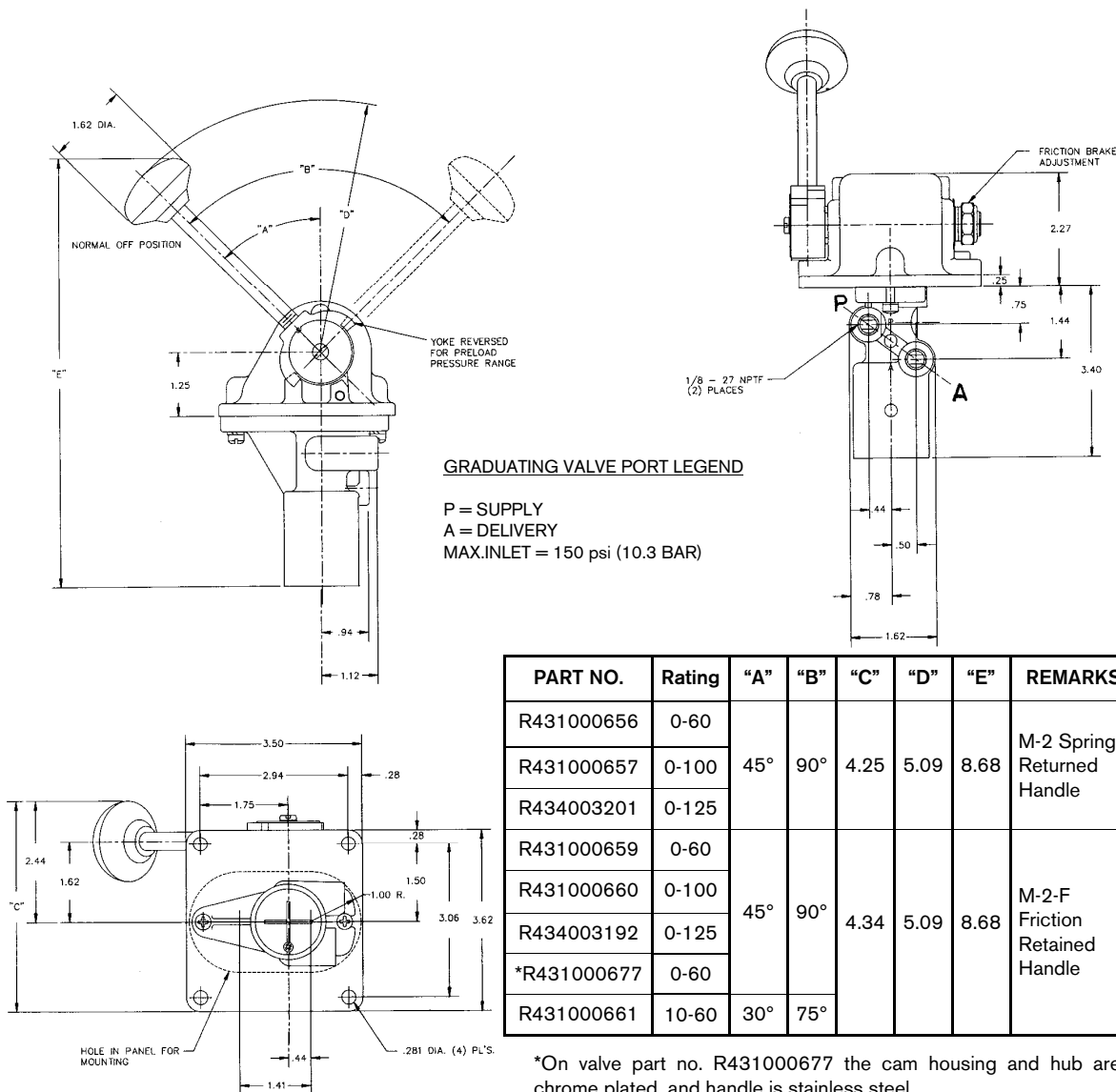
For throttle control applications, the valve is set with a non-retained preload of 10 psi (0.69 bar) and has a 10-60 psi (0.69 to 4.1 bar) delivery pressure range.

PIPE CONNECTIONS 1/8" NPTF

"P" port supply
 "A" port delivers graduated pressure in direct proportion to clockwise lever travel from minimum pressure position (facing lever side of valve).

MODELS

- M-2** Lever returns to minimum pressure position when released
 0-60 psi (0-4.1 bar) part no. R431000656 (P -026714-00001)
 0-100 psi (0-6.9 bar) part no. R431000657 (P -026714-00002)
 0-125 psi (0-8.6 bar) part no. R434003201 (P -026714-00003)
- M-2-F** Lever remains in position where released
 0-60 psi (0-4.1 bar) part no. R431000659 (P -026715-00001)
 0-100 psi (0-6.9 bar) part no. R431000660 (P -026715-00002)
 0-125 psi (0-8.6 bar) part no. R434003192 (P -026715-00003)
 10-60 psi (0.69 - 4.1 bar) p. n. R431000661 (P -026715-00011)



PART NO.	Rating	"A"	"B"	"C"	"D"	"E"	REMARKS
R431000656	0-60						M-2 Spring Returned Handle
R431000657	0-100	45°	90°	4.25	5.09	8.68	
R434003201	0-125						
R431000659	0-60						M-2-F Friction Retained Handle
R431000660	0-100	45°	90°	4.34	5.09	8.68	
R434003192	0-125						
*R431000677	0-60						
R431000661	10-60	30°	75°				

*On valve part no. R431000677 the cam housing and hub are chrome plated, and handle is stainless steel.

M-5 Pressure Control Valve

The M-5 Valve is a mechanically operated 3-way pressure regulating valve which can be operated by direct push, or by a cam or similar mechanical device. Total movement is approximately 1/4" (6.35 mm) with the initial 1/16" (1.6 mm) travel used to close its exhaust.

The M-5 Valve can be used as a replacement kit for the other models. Service Manual SM-800.11 is available online at: www.boschrexroth-us.com/brp

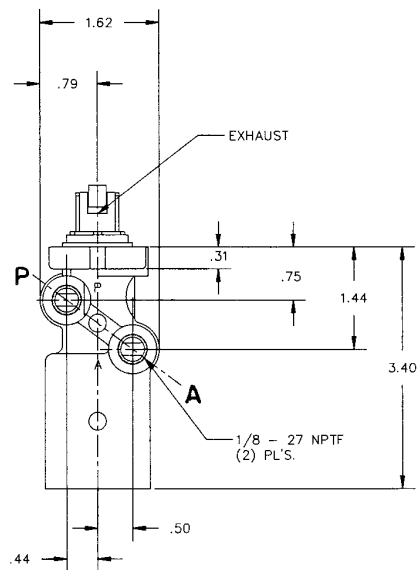
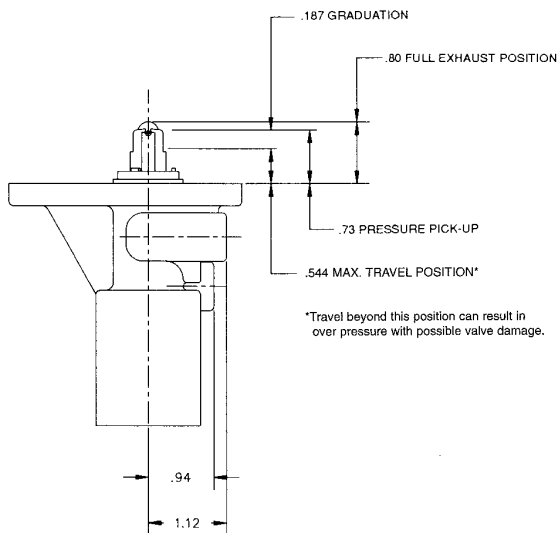
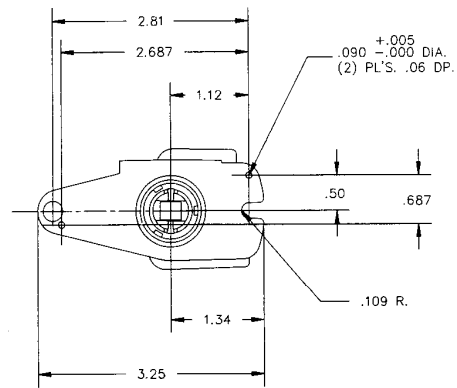
MODELS

0-60 psi (0-4.1 bar) part no. R431000666
(P-026718-00001)

0-100 psi (0-6.9 bar) part no. R431000667
(P-026718-00002)

PORT LEGEND

P = SUPPLY
A = DELIVERY
MAX. INLET = 150 psi (10.3 bar)



MC-2 Pressure Control Valve

The MC-2 Valve is a lever-operated, pressure regulating valve with handle normally in the center and operated toward either extremes. It consists of two 3-way pressure regulating portions. The regulating portions furnish air out of the respective delivery ports. This valve is ideal for use with spring centered positioners. Initial lever movement from "off" position, activates one of the out ports. Further movement in that direction controls the outlet pressure. The opposite out port remains connected to atmosphere.

PIPE CONNECTIONS 1/8" NPTF

- "AR" port out, graduating pressure when lever moved clockwise from "off" (facing lever side of valve)
- "P" port in pressure
- "L" port out, graduating pressure when lever is moved counterclockwise from "off"

MODELS

MC-2 Lever automatically returns to "off" position when released.

0-60 psi (0-4.1 bar) part no. R431000670 (P-026720-00001)

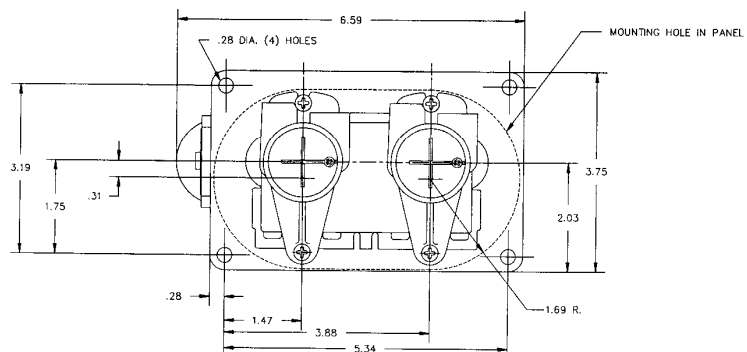
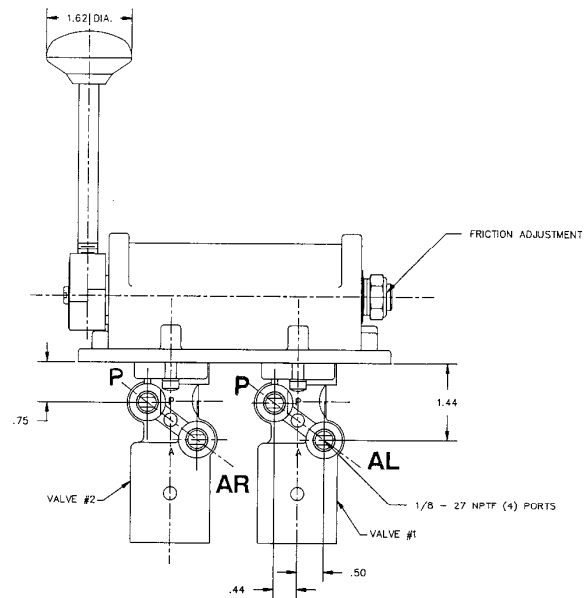
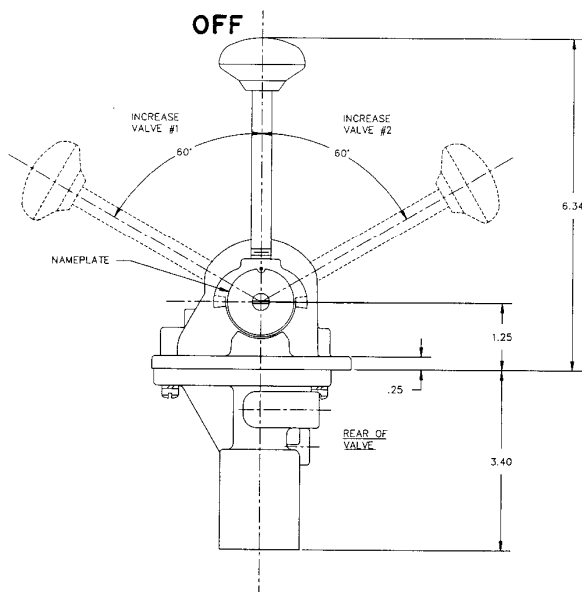
0-100 psi (0-6.9 bar) part no. R431000671 (P-026720-00002)

MC-2-F Lever remains in position where released. Holding friction is adjustable.

0-60 psi (0-4.1 bar) p.n. R431000668 (P-026719-00001)

0-100 psi (0-6.9 bar) p.n. R431000669 (P-026719-00002)

Part No.	Rating	Remarks
R431000670 R431000671	0-60 psi 0-100 psi	MC-2 Spring Returned To Center Handle
R431000668 R431000669	0-60 psi 0-100 psi	MC-2-F Friction Retained Handle



GRADUATING VALVE PORT LEGEND

P = SUPPLY
 A = DELIVERY
 MAX. INLET = 150 psi (10.3 bar)

ME-2 Pressure Control Valve

The ME-2 Valve is a composite lever operated directional valve consisting of a 3-way directional valve and a 3-way pressure regulating valve, each unit having its own out port. The first 45° of lever travel from “off”, opens the directional valve to provide full inlet pressure for its out port. Further travel controls the air pressure delivered by the pressure regulating portion. The graduated pressure varies directly with lever travel. The valves are used for clutch, brake and other similar applications.

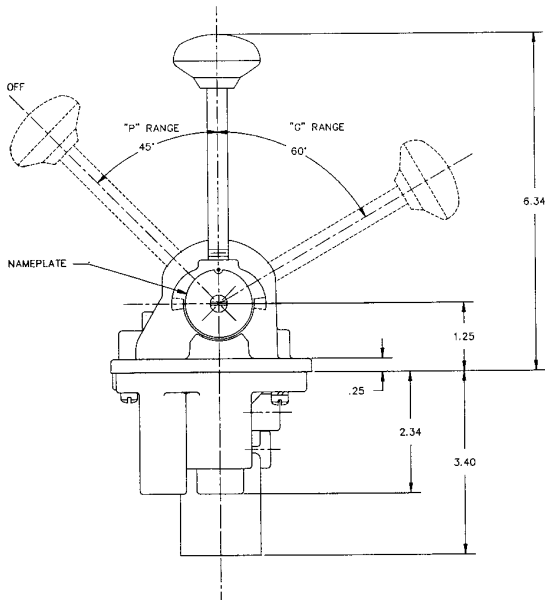
PIPE CONNECTIONS $\frac{1}{8}$ " NPTF graduating valve $\frac{1}{4}$ " NPTF on-off valve

“Out” port #2 (on-off valve) -- full inlet pressure when lever is moved 45° clockwise from “off” (facing lever side of valve).

“In” port (on-off valve) -- in pressure

“P” port (graduating valve) -- in pressure

“A” port (graduating valve) -- out, graduated pressure when lever is moved counter-clockwise from “off”.



MODELS

ME-2 Lever automatically return to “off” positions when released

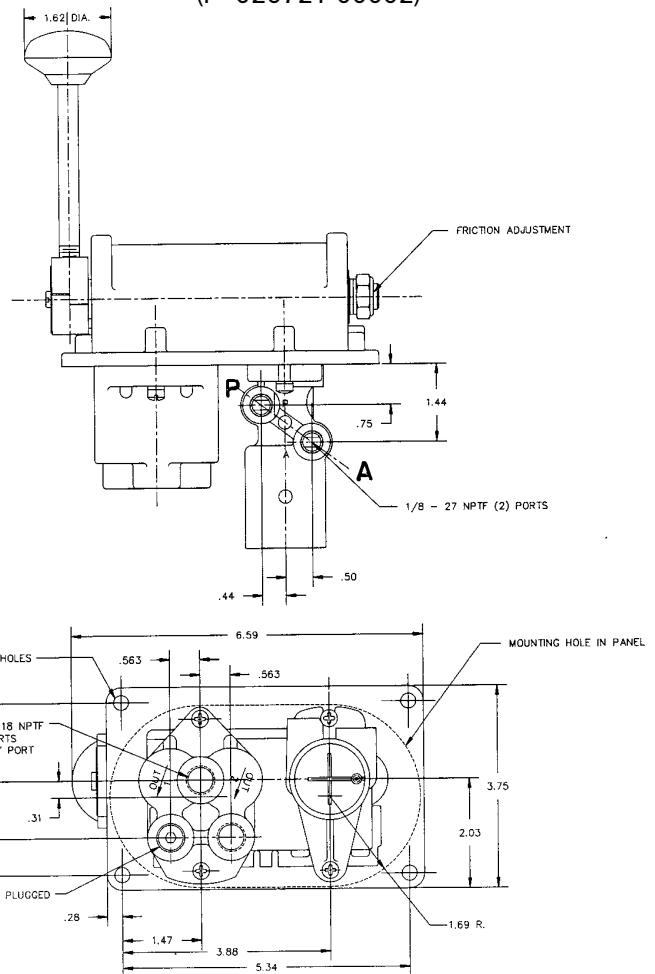
0-60 psi (0-4.1 bar) part no. R431009137 (P -026722-00001)

0-100 psi (0-6.9 bar) part no. R431000674 (P -026722-00002)

ME-2-F Lever remains in the position where released.

Holding friction is adjustable.

0-100 psi (0-6.9 bar) part no. R431000673 (P -026721-00002)



PART NO.	HANDLE POSITION	PORT - OUT 2 ON - OFF VALVE	PORT A GRAD VALVE	REMARKS
R431009137 (P -026722-00001)	“G” Range	Supply	0-60 Grad	ME-2 Spring Returned To OFF Handle
	“P” Range	Supply	Vented	
	OFF	Vented	Vented	
R431000674 (P -026722-00002)	“G” Range	Supply	0-100 Grad	
	“P” Range	Supply	Vented	
	OFF	Vented	Vented	
R431000673 (P -026721-00002)	“G” Range	Supply	0-100 Grad	ME-2-F Friction Retained Handle
	“P” Range	Supply	Vented	
	OFF	Vented	Vented	

TYPE M PLUS™ PRESSURE CONTROL VALVE

Cross Reference/Identity Schedule

DESIGNATION	OBSOLETE "M" VALVES	NEW M PLUS™ VALVES	OLD M PLUS™ VALVES	OBSOLETE "M" VALVE PORTIONS	NEW TYPE M PLUS™ VALVE PORTIONS	OLD TYPE M PLUS™ VALVE PORTIONS	NEW OPERATOR PORTION	OLD OPERATOR PORTION
M-5 (0-65 psi)	P -060403-00001	R431000666	P -026718-00001	P -060394-00001	R431000634	P -026672-00001	---	---
M-5 (0-100 psi)	P -060403-00002		P -026718-00002	P -060394-00002	R431000635	P -026672-00002	---	---
M-5 (10-65 psi)	---	---	P -026718-00011	---	---	---	---	---
M-5 (Special)	---	---	P -029029-00002	---	---	---	---	---
M-1 (0-60 psi)	P -060401-00001	R431000662	P -026716-00001	P -060394-00001	R431000634	P -026672-00001	R431005527	P -060397-00001
M-1 (0-100 psi)	P -060401-00002	R431005820	P -061652-00000	P -060394-00002	R431000635	P -026672-00002	R431005527	P -060397-00001
M-1 (0-60 psi)	P -060402-00001	R431000664	P -026717-00001	P -060394-00001	R431000634	P -026672-00001	R431005526	P -060397-00000
M-1 (10-100 Psi)	P -060402-00002	R431000665	P -026717-00002	P -060394-00002	R431000635	P -026672-00002	R431005526	P -060397-00000
M-1	---	R434001418	P -029028-00001	---	---	---	---	---
M-1	---	R431000678	P -026775-00000	---	R431006026	P -062205-0000	R431005026	P -059346-0000
M-1	P -067530-00000	R431000678	P -026775-00000	P -060394-00001	R431000634	P -026672-00001	---	---
M-2 (0-60 psi)	P -061230-00001	R431000656	P -026714-00001	P -060394-00001	R431000634	P -026672-00001	R431005724	P -061241-00000
M-2 (0-100 psi)	P -061230-00002	R431000657	P -026714-00002	P -060394-00002	R431000635	P -026672-00002	R431005724	P -061241-00000
M-2 (0-125 psi)	---	R434003201	P -026714-00003	---	---	P -026672-00003	R431005724	P -061241-00000
M-2 (10-65 psi)	---	R431000658	P -026714-00011	---	R431000772	P -027222-00001	R431005724	P -061241-00000
M-2 (0-60 psi) chrome housing & hub	---	R431000805	P -027488-00001	---	R431000634	P -026672-00001	R431005726	P -061241-00002
M-2 (0-100 psi) spring return w/latch	---	R434001432	P -028103-00002	---	---	---	---	---
M-2 (0-100 psi) w/SS roller	---	R434001434	P -028817-00002	---	R431000920	P -028822-00002	R431005724	P -061241-0000
M-2 (0-100 psi) hub & handle opposite side	---	R434001855	P -031239-00002	---	R431000634	P -026672-00001	R431005728	P -061241-00004
M-2 (0-60 psi) w/SS roller	---	R434001414	P -028817-00001	---	R434001408	P -028822-00001	R431005724	P -061241-00000
M-2-F (0-60 psi)	P -060400-00001	R431000659	P -026715-00001	P -060394-00001	R431000634	P -026672-00001	R431005514	P -060395-00000
M-2-F (0-100 psi)	P -060400-00002	R431000660	P -026715-00002	P -060394-00002	R431000635	P -026672-00002	R431005514	P -060395-00000
M-2-F (0-125 psi)	---	R434003192	P -026715-00003	---	R431000636	P -026672-00004	R431005514	P -060395-00000
M-2-F (10-60 psi)	P -060400-00011	R431000661	P -026715-00011	P -060394-00001	R431000634	P -026672-00001	R431005515	P -060395-00001
M-2-F (40-90 psi)	---	R434003184	P -026715-00023	---	R431001110	P -030745-00002	R431005515	P -060395-00001
M-2-F (0-100 psi)	P -062142-00002	---	---	P -060394-00002	R431000635	P -026672-00002	---	P -062143-00000
M-2-F (0-100 psi)	P -062147-00002	R431000738	P -027161-00002	P -060394-00002	R431000635	P -026672-00002	R431005516	P -060395-00002
M-2-F (0-60 psi)	P -064905-00001	R431000675	P -026772-00001	P -060394-00001	R431000634	P -026672-00001	R431005517	P -060395-00004
M-2-F (0-100 psi)	P -064905-00002	R431000676	P -026772-00002	P -060394-00002	R431000635	P -026672-00002	R431005517	P -060395-00004
M-2-F (0-60 psi) chrome housing & hub	P -065286-00001	R431000677	P -026773-00001	P -060394-00001	R431000634	P -026672-00001	R431005518	P -060395-00005
M-2 (0-100 psi) chrome housing & hub	---	R434003194	P -026773-00002	---	R431000635	P -026672-00002	R431005518	P -060395-00005
M-2-F (0-60 psi)	---	R431000737	P -027157-00001	---	R431000634	P -026672-00001	R431005519	P -060395-00007
M-2-F (0-100 psi)	---	---	P -027797-00002	---	R431000635	P -026672-00002	R431005520	P -060395-00008
M-2-F (0-100 psi) w/ss roller	---	R434001415	P -028897-00002	---	R431000920	P -028822-00002	R431005514	P -060395-00000
M-2-F (0-60 psi) w/ss short handle	---	R434001878	P -031281-00001	---	R431000634	P -026672-00001	R431005514	P -060395-00000
MC-2 (0-60 psi)	P -061239-00001	R431000670	P -026720-00001	P -060394-00001 (2 req'd)	R431005067	P -059360-00001 (2 req'd)	R431005730	P -061243-00000
MC-2 (0-100 psi)	P -061239-00002	R431000671	P -026720-00002	P -060394-00002 (2 req'd)	R431005059	P -059358-00000 (2 req'd)	R431005730	P -061243-00000
MC-2 10-100 psi)	P -064338-00002	---	---	P -060394-00001 (2 req'd)	R431005060	P -059358-00001 (2 req'd)	R431005731	P -061243-00002
MC-2 (0-60 psi)	---	R434001428	P -027727-00002	---	R431000635	P -026672-00002	R431007480	P -069564-00000
MC-2 (0-100 psi)	---	R434001335	P -030817-00002	---	R431000635	P -026672-00002	R431001119	P -030818-00000
MC-2-F (0-60 psi)	P -061142-00001	R431000668	P -026719-00001	P -060394-00001 (2 req'd)	R431000634	P -026672-00001 (2 req'd)	R431005673	P -061132-00000
MC-2-F (0-100 psi)	P -061142-00002	R431000669	P -026719-00002	P -060394-00002 (2 req'd)	R431000635	P -026672-00002 (2 req'd)	R431005673	P -061132-00000
ME-2 (0-60 psi)	P -061953-00001	R431009137	P -026722-00001	P -060394-00001	R431000634	P -026672-00001	R431005925	P -061954-00000
ME-2 10-100 psi)	P -061953-00002	R431000674	P -026722-00002	P -060394-00002	R431000635	P -026672-00002	R431005925	P -061954-00000
ME-2-F (0-60 psi)	P -06191 0-00001	R431000672	P -026721-00001	P -060394-00001	R431000634	P -026672-00001	R431005910	P -061911-00000
ME-2-F (0-100 psi)	P -06191 0-00002	R431000673	P -026721-00002	P -060394-00002	R431000635	P -026672-00002	R431005910	P -061911-00000
ME-2-F (0-100 psi)	P -060971-00002	---	---	P -060394-00002	R431000634	P -026672-00002	R431005646	P -060972-00000

NOTICES TO PRODUCT USERS

1. WARNING: FLUID MEDIA

Bosch Rexroth pneumatic devices are designed and tested for use with filtered, clean, dry, chemical free air at pressures and temperatures within the specified limits of the device. For use with media other than air or for human life support systems, Bosch Rexroth must be consulted. Hydraulic cylinders are designed for operation with filtered, clean, petroleum based hydraulic fluid; operation using fire-resistant or other special types of fluids may require special packing and seals. Consult the factory.

2. WARNING: MATERIAL COMPATIBILITY

Damage to product seals or other parts caused by the use of non-compatible lubricants, oil additives or synthetic lubricants in the air system compressor or line lubrication devices voids Bosch Rexroth's warranty and can result in product failure or other malfunction. See lubrication recommendations below.

AIR LINE LUBRICANTS! In service higher than 18 cycles per minute or with continuous flow of air through the device, an air line lubricator is recommended. * (Do not use line lubrication with vacuum products.) However, the lubricator must be maintained since the oil will wash out the grease, and lack of lubrication will greatly shorten the life expectancy. The oils used in the lubricator must be compatible with the elastomers in the device. The elastomers are normally BUNA-N, NEOPRENE, VITON, SILICONE and HYTREL. Bosch Rexroth recommends the use of only petroleum-based oils without synthetic additives, and with an aniline point between 180° and 210° F.

COMPRESSOR LUBRICANTS! All compressors (with the exception of special "oil free" units) pass oil mist or vapor from the internal crankcase lubricating system through to the compressed air. Since even small amounts of non-compatible lubricants can cause severe seal deterioration (which could result in component and system failure) special care should be taken in selecting compatible compressor lubricants. It is recommended that users review the National Fluid Power Association "Recommended Guide Lines For Use Of Synthetic Lubricants In Pneumatic Fluid Power Systems" (NFPA T1-1978).

3. WARNING: INSTALLATION AND MOUNTING

The user of these devices must conform to all applicable electrical, mechanical, piping and other codes in the installation, operation or repair of these devices.

INSTALLATION! Do not attempt to install, operate or repair these devices without proper training in the technique of working on pneumatic or hydraulic systems and devices, unless under trained supervision. Compressed air and hydraulic systems contain high levels of stored energy. Do not attempt to connect, disconnect or repair these products when system is under pressure. Always exhaust or drain the pressure from system before performing any service work. Failure to do so can result in serious personal injury.

MOUNTING! Devices should be mounted and positioned in such manner that they cannot be accidentally operated.

4. WARNING: APPLICATION AND USE OF PRODUCTS

The possibility does exist for any device or accessory to fail to operate properly through misuse, wear or malfunction. The user must consider these possibilities and should provide appropriate safe guards in the application or system design to prevent personal injury or property damage in the event of malfunction.

5. WARNING: CONVERSION, MAINTENANCE AND REPAIR

When a device is disassembled for conversion to a different configuration, maintenance or repair, the device must be tested for leakage and proper operation after being reassembled and prior to installation.

MAINTENANCE AND REPAIR! Maintenance periods should be scheduled in accordance with frequency of use and working conditions. All Bosch Rexroth products should provide minimum of 1,000,000 cycles of maintenance free service when used and lubricated as recommended. However, these products should be visually inspected for defects and given an "in system" operating performance and leakage test once a year. Where devices require major repair as result of the one million cycles, one year, or routine inspection, the device must be disassembled, cleaned, inspected, parts replaced as required, rebuilt and tested for leakage and proper operation prior to installation. See individual catalogs for specific cycle life estimates.

6. PRODUCT CHANGES

Product changes including specifications, features, designs and availability are subject to change at any time without notice. For critical dimensions or specifications, contact factory.

*Many Bosch Rexroth pneumatic components can operate with or without air line lubrication; see individual sales catalogs for details.

--Refer to the appropriate service catalog for parts and service information.

LIMITATIONS OF WARRANTIES & REMEDIES

Bosch Rexroth warrants its products sold by it to be free from defects in material and workmanship to the following:

For twelve months after shipment Bosch Rexroth will repair or replace (F.O.B. our works), at its option, any equipment which under normal conditions of use and service proves to be defective in material or workmanship at no charge to the purchaser. No charge will be made for labor with respect to defects covered by this Warranty, provided that the work is done by Bosch Rexroth or any of its authorized service facilities. However, this Warranty does not cover expenses incurred in the removal and reinstallation of any product, nor any downtime incurred, whether or not proved defective.

All repairs and replacement parts provided under this Warranty policy will assume the identity, for warranty purposes, of the part replaced, and the warranty on such replacement parts will expire when the warranty on the original part would have expired. Claims must be submitted within thirty days of the failure or be subject to rejection.

This Warranty is not transferable beyond the first using purchaser. Specifically, excluded from this Warranty are failures caused by misuse, neglect, abuse, improper operation or filtration, extreme temperatures, or unauthorized service or parts. This Warranty also excludes the use of lubricants, fluids or air line additives that are not compatible with seals or diaphragms used in the products. This Warranty sets out the purchaser's exclusive remedies with respect to products covered by it, whether for negligence or otherwise. Neither, Bosch Rexroth nor any of its affiliates will be liable for consequential or incidental damages or other losses or expenses incurred by reason of the use or sale of such products. Our liability (except as to title) arising out of the sale, use or operation of any product or parts, whether on warranty, contract or negligence (including claims for consequential or incidental damage) shall not in any event exceed the cost of replacing the defective products and, upon expiration of the warranted period as herein provided, all such liability is terminated. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE. No attempt to alter, amend or extend this Warranty shall be effective unless authorized in writing by an officer of Bosch Rexroth Corporation.

Bosch Rexroth reserves the right to discontinue manufacture of any product, or change product materials, design or specifications without notice.

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The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging