

Type "M" Plus Pneumatic Pressure Control Valves

(Pages from SC-400 Catalog)

The Drive & Control Company



Pressure Control Valves

"M" Plus™ Pressure Control Valves

Rexroth
Bosch Group

"M" Plus™ Pressure Control Valves

Type	Pressure regulating valve	
Sensitivity	2% of range	
Supply Pressure	150 psi max.	
Outlet Pressure	Controllable ranges: 0-60 or 0-100 psi (for other, see table).	
Temperature Range	-40°F to 160°F	
Media	Air or inert gas	
Port Size	1/4" NPT	
Materials	Anodized aluminum	Body, cover
	Steel	Handle, shaft
	Sintered iron	Cam
	Buna-N	Seals



► Applications

Accurate control with medium flow and short distances, M Plus can be used with the proper positioner instead of mechanical linkage, push-pull cables or master-slave hydraulic systems. Delivery pressure is determined by the position of the operator, either handle or foot-pedal; system pressure is automatically compensated for by the valve itself.

► Part numbers

Model Output Pressure (psi)	M-1 Foot pedal, Spring Return	M-2 Hand lever, Spring Return	M-2-F Hand lever, Friction holding handle	MC-2 Hand lever, Spring Return	MC-2-F Hand lever, Friction holding handle
0-60	P -026716-00001	P -026714-00001	P -026715-00001*	P -026720-00001	P -026719-00001
0-100	P -026716-00002	P -026714-00002	P -026715-00002	P -026720-00002	P -026719-00002
10-60			P -026715-00011 ¹		
Model Output Pressure (psi)	ME-2 Hand lever, Spring Return	ME-2-F Hand lever, Friction holding handle	M-5 Direct push, Spring Return		
0-60	P -026722-00001		P -026718-00001		
0-100	P -026722-00002	P -026721-00002	P -026718-00002		
10-60					

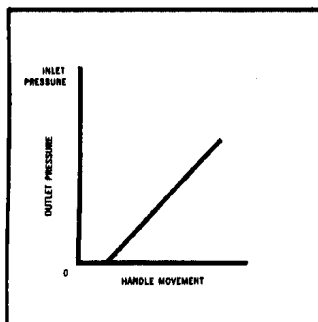
*For chrome plated cam housing and hub, use P -026773-00001.

¹ Yoke reversed for preload pressure range reducing the handle travel to 75° from the standard 90°.

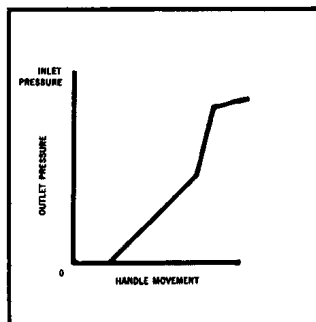
Note: No suffix on the model designation indicates a self-returning valve operator; a -F suffix is a self-holding type, with adjustable friction.

For additional parts, information, mounting dimensions, and service instructions, refer to Service Bulletin SM-800.11.

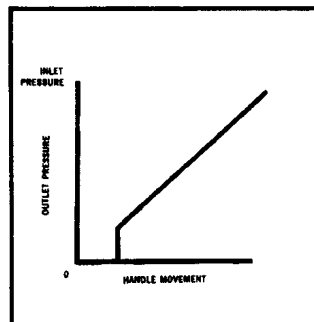
CONTROL OUTPUTS



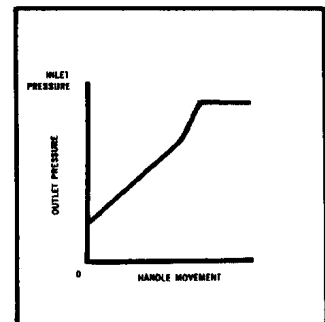
GRADUATION WITHOUT FULL PRESSURE



GRADUATION WITH FULL PRESSURE



GRADUATION WITHOUT FULL PRESSURE AND NON-RETAINED PRELOAD



GRADUATION WITH FULL PRESSURE AND RETAINED PRELOAD

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

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➔ Repair kits

Type	Part number	Description
New Type M Plus™	P -026784-00000	Includes supply valve, roller, exhaust valve spring, o-rings
Type M Pressure (obsolete)	P -061666-00000	Kit, Valve Portion Repair- includes supply valve assembly, roller assembly, exhaust valve spring, O-rings, & grease tube (Old style, "M" Pressure Control.)
M-2	P -061241-K0000	Cam Housing complete (M PLUS & old style "M" Pressure
--	P -028822-00002	Valve portion for P -028897-00000 and P -028817-00000 Series
M-2-F	P -060395-K0000	Cam Housing complete (M PLUS & old style "M" Pressure
M-1	P -029029-00001	Complete valve portion for P -029028-00001
M-1	P -029037-00000	Complete repair kit for P -029028-00001, includes cartridge, boot, piston, o-ring and exhaust valve
M-1	P -029036-K0000	Replacement boot and protector for P -029028-00001

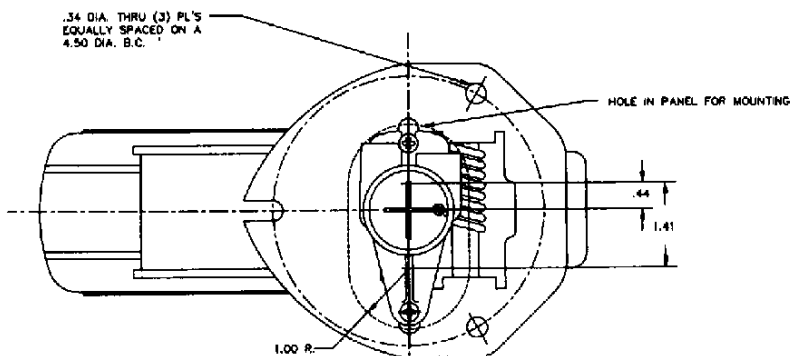
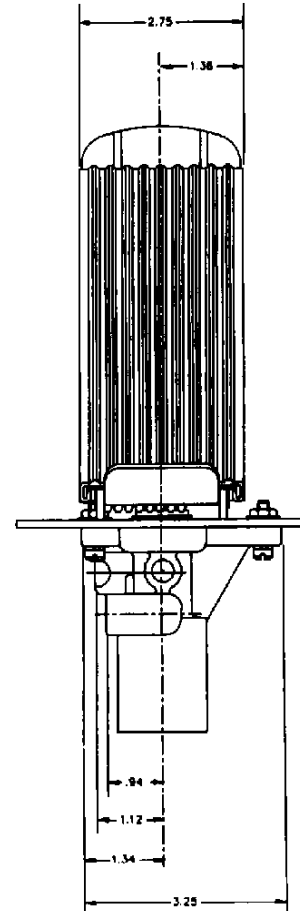
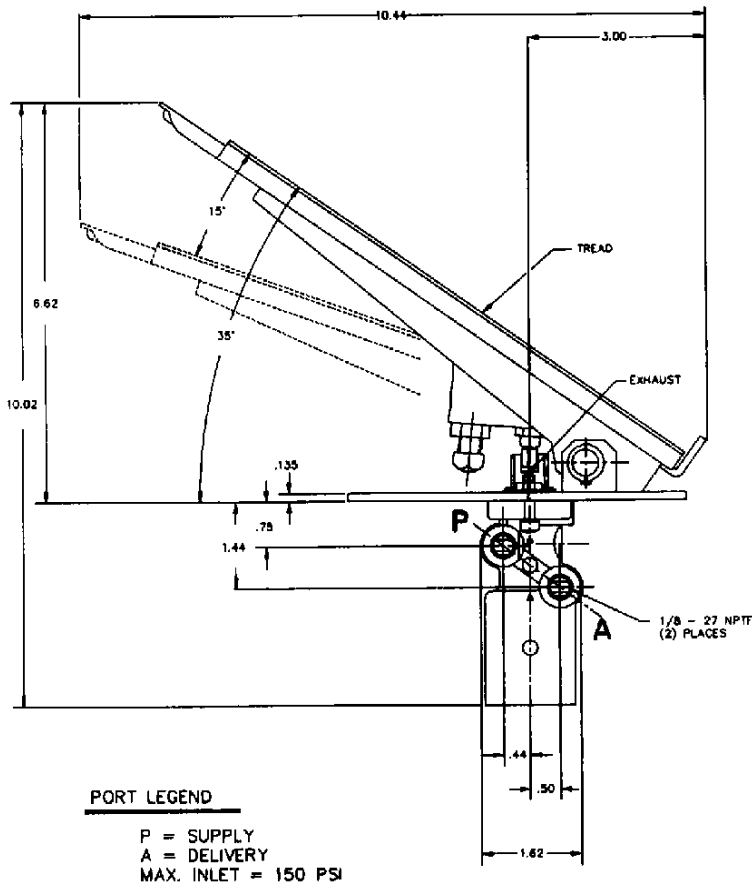
For severely worn or damaged valves, see
Service Bulletin SM-800.11 for parts list.

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M-1 Pedal Actuated



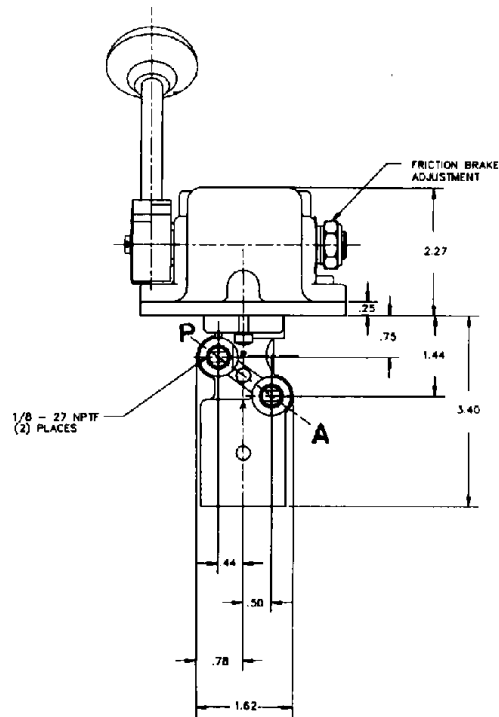
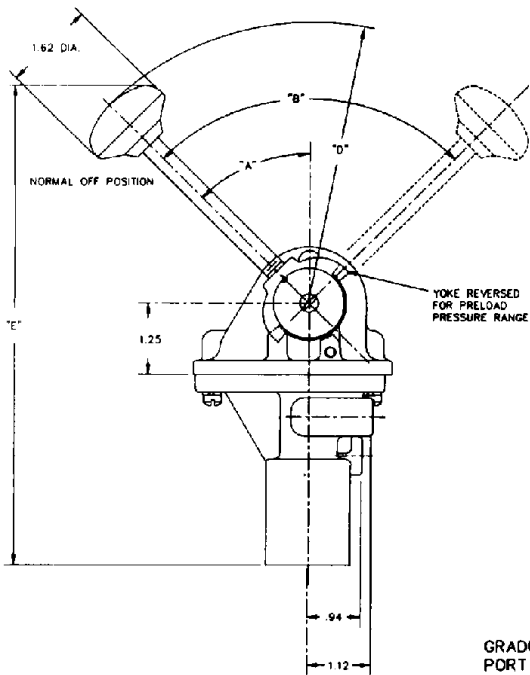
P26716-2	0-100 PSI	W/PEDAL
P26716-1	0-60 PSI	TREAD
PC. NO.	RATING	REMARKS

Pressure Control Valves

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M-2 Lever Operated

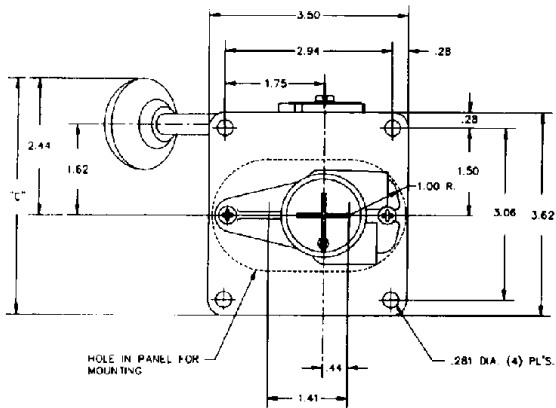


GRADUATING VALVE PORT LEGEND

P = SUPPLY
A = DELIVERY
MAX. INLET = 150 PSI

NOTES:

ON VALVE PC. NO. P26773-1 CAM HOUSING AND HUB IS CHROME PLATED, AND HANDLE IS STAINLESS STEEL.



PC. NO.	RATING	"A"	"B"	"C"	"D"	"E"	REMARKS
P26714-2	0-100 PSI						Spring Returned Handle
P26714-1	0-60 PSI	45°	90°	4.25	5.09	8.68	
P26773-1	0-60 PSI	45°	90°				Friction Retained Handle, See Notes
P26715-11	0-60 PSI	30°	75°	4.34	5.09	8.68	Friction Retained Handle
P26715-2	0-100 PSI	45°	90°				
P26715-1	0-60 PSI						

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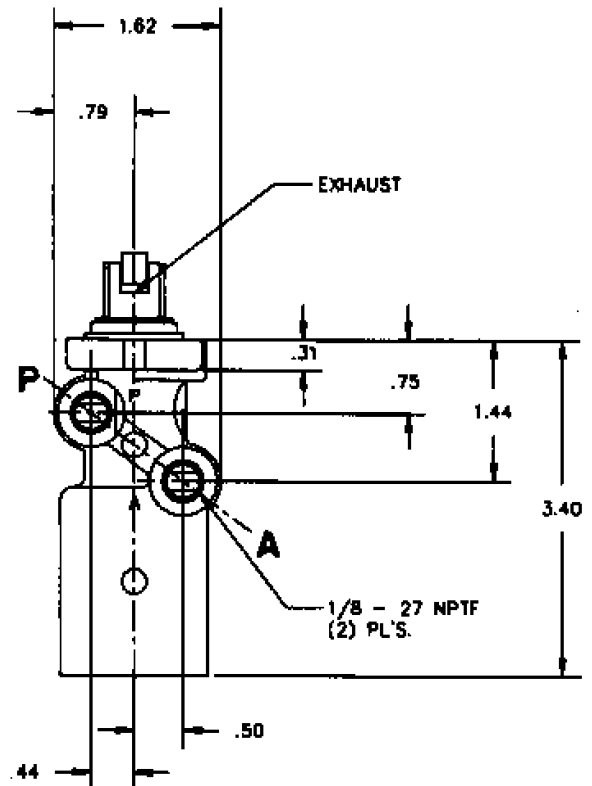
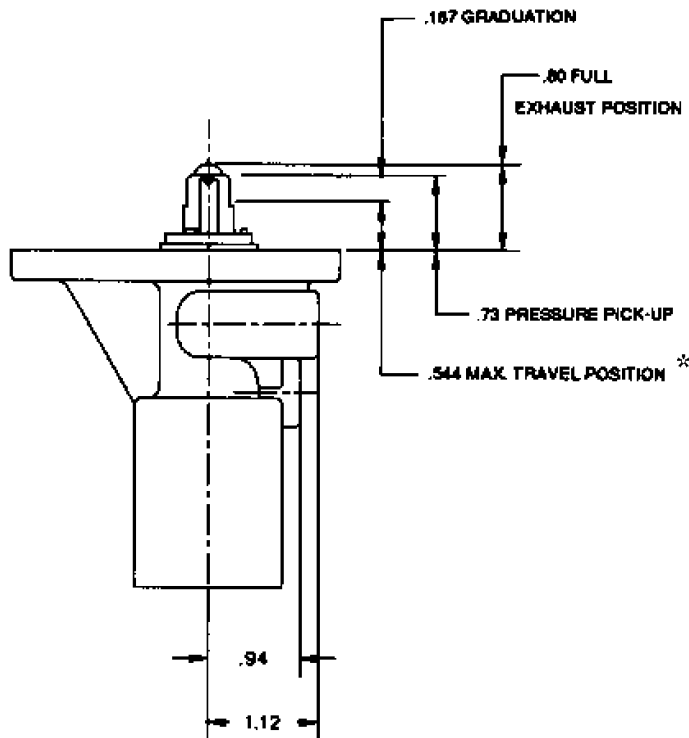
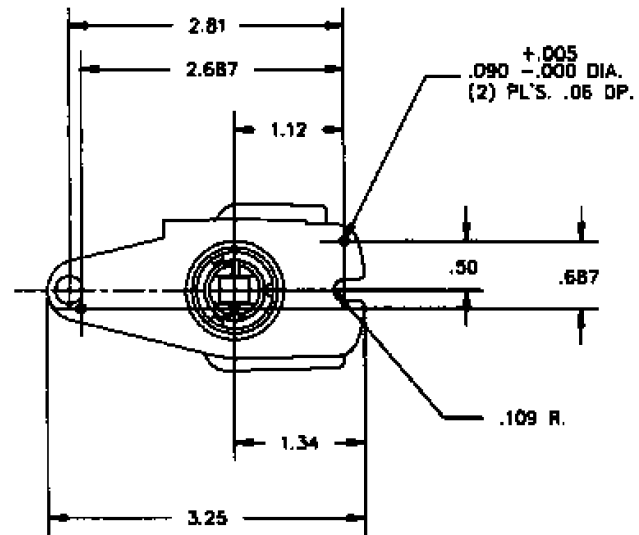
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M-5 Mechanically Operated

P26718-2	0-100 PSI
P26718-1	0-60 PSI
PC. NO.	RATING

PORT LEGEND

P = SUPPLY
A = DELIVERY
MAX. INLET = 150 PSI

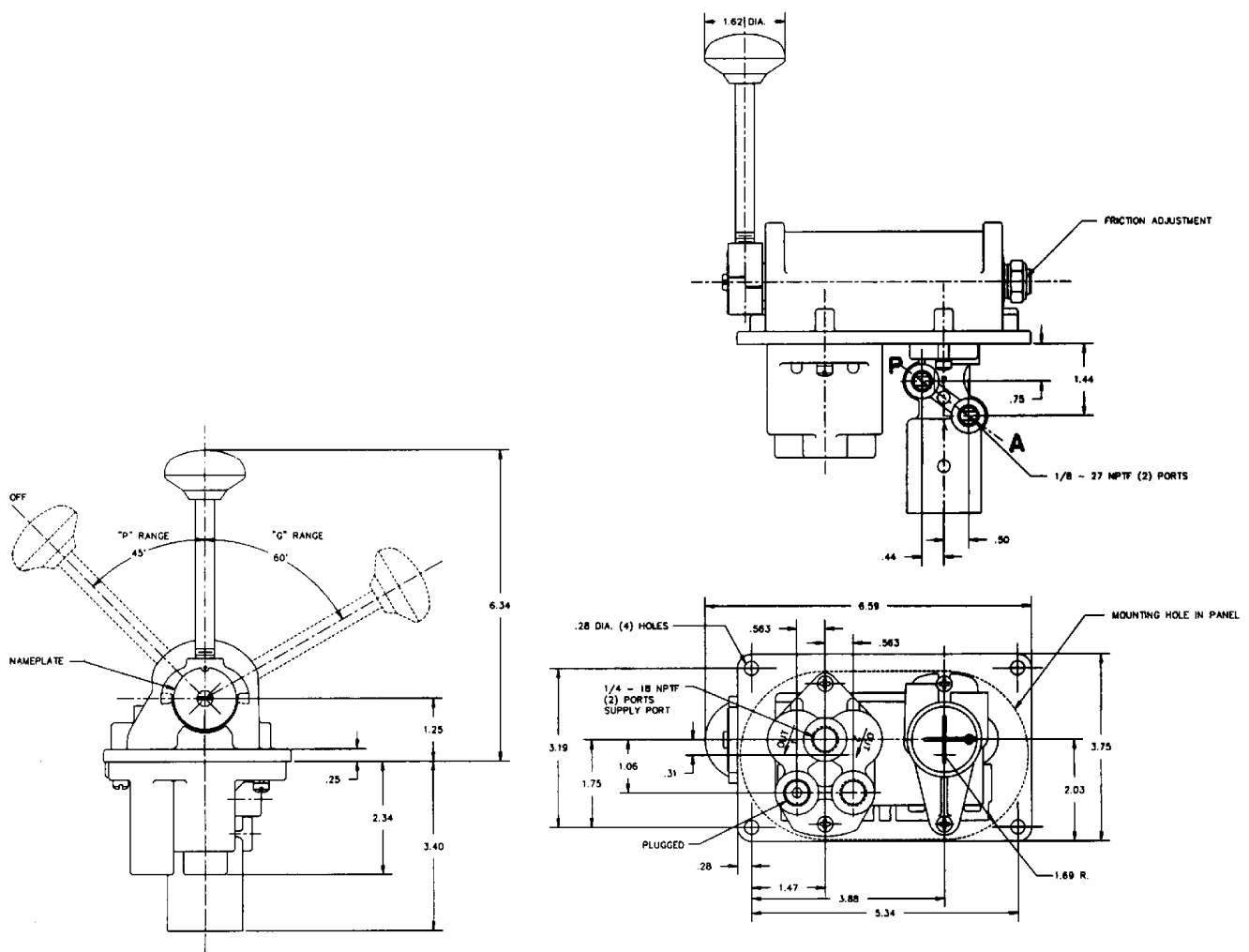


*Travel beyond this position can result in over pressure with possible valve damage.

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ME-2 Lever Operated {Composite Functions}



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➔ M-Plus Cross Reference Identity Schedule

Designation	Obsolete M Valves	New M Plus Valves	Obsolete M Valve Portions	Mew M Plus Valve Portions	Operator Portions
M-5 (0-60 psi)	P -060403-00001	P -026718-00001	P -060394-00001	P -026672-00001	–
M-5 (0-100 psi)	P -060403-00002	P -026718-00002	P -060394-00002	P -026672-00002	–
M-1 (0-60 psi)	P -060401-00001	P -026716-00001	P -060394-00001	P -026672-00001	P -060397-00001
M-1 (0-100 psi)	P -060401-00002	P -026716-00002	P -060394-00002	P -026672-00002	P -060397-00001
M-1 (0-60 psi)	P -060402-00001	P -026717-00001	P -060394-00001	P -026672-00001	P -060397-00000
M-1 (0-100 psi)	P -060402-00002	P -026717-00002	P -060394-00002	P -026672-00002	P -060397-00000
M-2 (0-60 psi)	P -061230-00001	P -026714-00001	P -060394-00001	P -026672-00001	P -061241-00000
M-2 (0-100 psi)	P -061230-00002	P -026714-00002	P -060394-00002	P -026672-00002	P -061241-00000
M-2-F (0-60 psi)	P -060400-00001	P -026715-00001	P -060394-00001	P -026672-00001	P -060395-00000
M-2-F (0-100 psi)	P -060400-00002	P -026715-00002	P -060394-00002	P -026672-00002	P -060395-00000
M-2-F (10-60 psi)	P -060400-00011	P -026715-00011	P -060394-00001	P -026672-00001	P -060395-00001
M-2-F (0-100 psi)	P -062142-00002	–	P -060394-00002	P -026672-00002	P -062143-00000
M-2-F (0-100 psi)	P -062147-00002	P -027161-00002	P -060394-00002	P -026672-00002	P -060395-00002
M-2-F (0-60 psi)	P -064905-00001	P -026772-00001	P -060394-00001	P -026672-00001	P -060395-00004
M-2-F (0-100 psi)	P -064905-00002	P -026772-00002	P -060394-00002	P -026672-00002	P -060395-00004
M-2-F (0-60 psi)	P -065286-00001	P -026773-00001	P -060394-00001	P -026672-00001	P -060395-00005
MC-2 (0-60 psi)	P -061239-00001	P -026720-00001	P -060394-00001 (2 required)	P -026672-00001 (2 required)	P -061243-00000
MC-2 (0-100 psi)	P -061239-00002	P -026720-00002	P -060394-00002 (2 required)	P -026672-00002 (2 required)	P -061243-00000
MC-2 (0-100 psi)	P -064338-00002	–	P -060394-00001 (2 required)	P -026672-00001 (2 required)	P -061243-00002
MC-2-F (0-60 psi)	P -061142-00001	P -026719-00001	P -060394-00001 (2 required)	P -026672-00001 (2 required)	P -061132-00000
MC-2-F (0-100 psi)	P -061142-00002	P -026719-00002	P -060394-00002 (2 required)	P -026672-00002 (2 required)	P -061132-00000
ME-2 (0-60 psi)	P -061953-00001	P -026722-00001	P -060394-00001 & +P -058453-00002	P -026672-00001 & +P -058453-00002	P -061954-00000
ME-2 (0-100 psi)	P -061953-00002	P -026722-00002	P -060394-00002 & +P -058453-00002	P -026672-00002 & +P -058453-00002	P -061954-00000
ME-2-F (0-100 psi)	P -061910-00002	P -026721-00002	P -060394-00002 & +P -058453-00002	P -026672-00002 & +P -058453-00002	P -061911-00000
ME-2-F (0-100 psi)	P -060971-00002	–	P -060394-00002 & +P -058453-00002	P -026672-00002 & +P -058453-00002	P -060972-00000
M-1 Special	P -067530-00000	P -026775-00000	P -060394-00001	P -026672-00001	–

+ On-Off Valve Portion

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

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