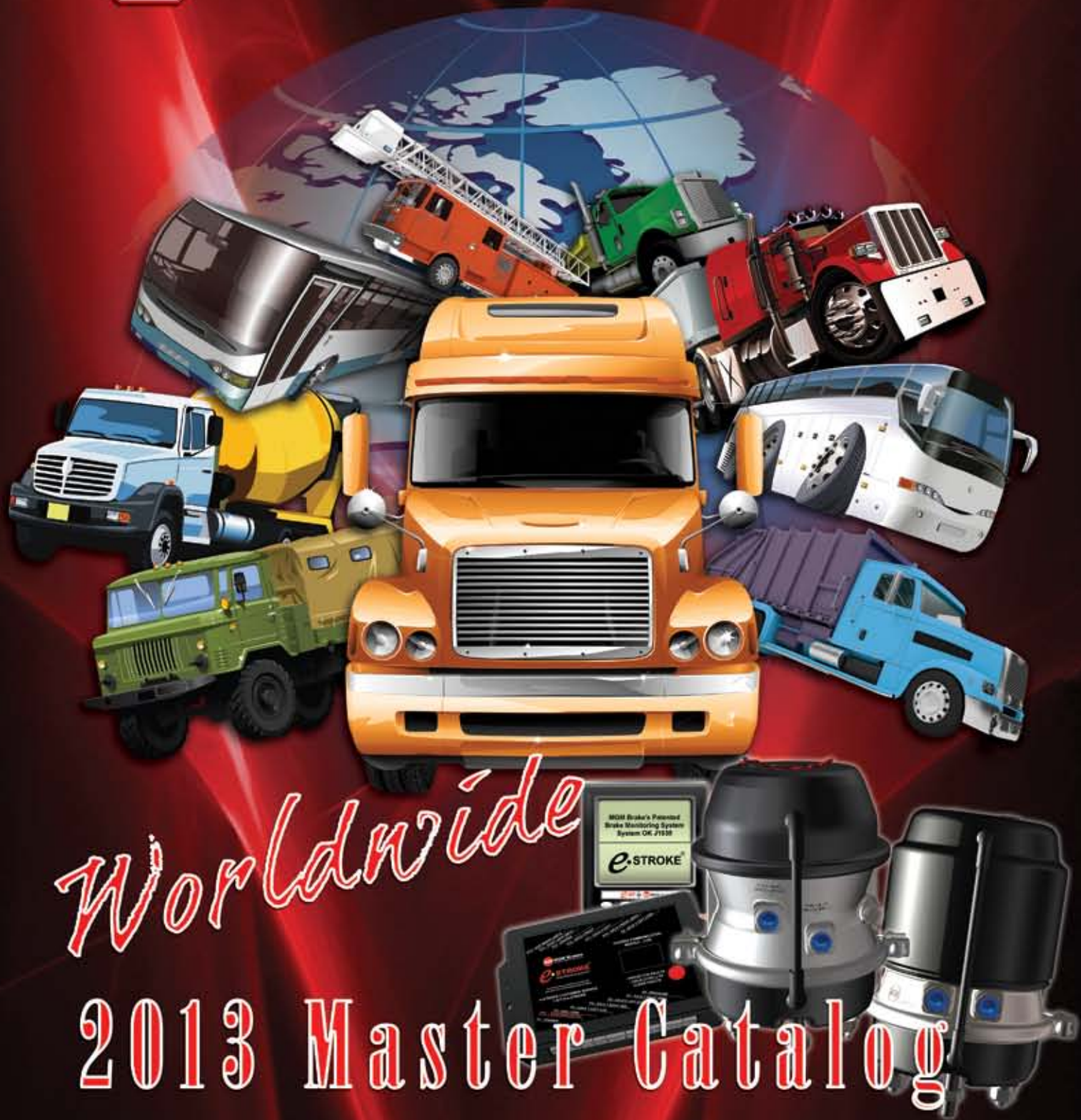




MGM Brakes

A Division of Indian Head Industries, Inc.



Worldwide

2013 Master Catalog

FORM NO. 600SS
Revised 1-2013



ABOUT MGM BRAKES **A Division of Indian Head Industries**



A little bit of history...

Since 1956 when the founders of MGM Brakes invented the spring brake actuator, we have taken our role as a leading world-wide supplier to the commercial vehicle industry very seriously. From our humble beginnings over 50 years ago when MGM Brakes addressed the safety challenge of the logging industry in the Pacific northwest, we have earned the reputation as the industry leader in continuous improvement and innovative, cutting edge actuator products in the commercial vehicle industry. From a simple parking brake in 1956 to Tamper Resistant (TR) spring brakes of the 1980's, we moved into the new millennium with the introduction of MGM Brakes e•STROKE®, electronic brake monitoring system.

The founders of MGM Brakes set a high standard of quality, innovation and safety over fifty years ago - a philosophy that is woven into the fabric of MGM Brakes. As you learn more about the addition of e•STROKE® to our family of brakes, you will see we are keeping our founders' commitment to our customers and the commercial vehicle industry as we embark on another fifty.

Thanks for your continued support for over fifty years. It's been a great ride and we invite you to come along with MGM Brakes for the next fifty years and beyond!

Ron Parker
Chairman, President and CEO

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 ISO 9001:2008

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NOTE: Product information and specifications subject to change without notice.

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TR-LP3TS	Tamper Resistant, Long Stroke, Tube, Severe Service	42-43
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KEY TO MODEL "PREFIXES"	KEY TO MODEL "SUFFIXES"
C = SERVICE CHAMBER	A = 1.75" (44.5 mm) STROKE (MAGNUM PERFORMANCE PLUS)
CS = SERVICE CHAMBER / SEALED	B = 2.00" (50.8 mm) STROKE
CW = SERVICE CHAMBER / WEDGE	C = 2.25" (57.1 mm) STROKE
LTR = INTEGRAL RELEASE BOLT / TAMPER RESISTANT	D = 2.50" (63.5 mm) STROKE
M = MAGNUM	E = 3.00" (76.2 mm) LONG STROKE (MAGNUM PERFORMANCE PLUS)
MJB = MAGNUM PERFORMANCE PLUS / AIR DISC TYPE	ESH = UNIT EQUIPPED WITH E-STROKE
MJS = MAGNUM PERFORMANCE PLUS / S-CAM TYPE	G = G-SERIES
MJW = MAGNUM PERFORMANCE PLUS / WEDGE	H = HYBRID
TR = TAMPER RESISTANT	HD = HEAVY DUTY
W = WEDGE	L = LONG STROKE
	L3 = 3.00" (76.2 mm) LONG STROKE CHAMBER
	LP3 = 3.00" (76.2 mm) LONG STROKE / LOW PROFILE
	S = SEVERE SERVICE
	T = TUBE
	W = WELDED MOUNTING BOLTS

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PART NUMBER / MODEL DESIGNATION

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P/N Series	Model	Stroke inch (mm)	Part Description	Page Number(s)	Obsolete	Replaced By
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SERVICE CHAMBERS

1009	CW9	1.75" (44.5 mm)	Wedge Service	76-77, 80-81		
1012	CW12	1.75" (44.5 mm)	Wedge Service	76-77, 80-81		
1016	CW16	1.75" (44.5 mm)	Wedge Service	76-77, 80-81		
1412	C12	1.75" (44.5 mm)	CAM Service	70-71		
1416	C16	2.25" (57.1 mm)	CAM Service	70-71		
1417	C16L	2.50" (63.5 mm)	CAM Service	•	X	1617
1418	C16L2.5	2.50" (63.5 mm)	CAM Service	72-73		
1420	C20	2.25" (57.1 mm)	CAM Service	70-71		
1421	C20L	2.50" (63.5 mm)	CAM Service	72-73		
1427	C24L	2.50" (63.5 mm)	CAM Service	70-71		
1428	C24L3	3.00" (76.2 mm)	CAM Service	72-73		
1430	C30	2.50" (63.5 mm)	CAM Service	70-71		
1431	C30L3	3.00" (76.2 mm)	CAM Service	72-73		
1436	C36	3.00" (76.2 mm)	CAM Service	70-71		
1617	CS16LH	2.50" (63.5 mm)	CAM Service	74-75		
1621	CS20L	2.50" (63.5 mm)	CAM Service	74-75		
1623	CS20L3	3.00" (76.2 mm)	CAM Service	74-75		
1627	CS24L	2.50" (63.5 mm)	CAM Service	74-75		
1628	CS24L3	3.00" (76.2 mm)	CAM Service	74-75		
1630	CS30	2.50" (63.5 mm)	CAM Service	74-75		
1631	CS30L3	3.00" (76.2 mm)	CAM Service	74-75		
1640	CS24LW	2.50" (63.5 mm)	CAM Service	74-75		

WEDGE BRAKES

1009	CW9	1.75" (44.5 mm)	Wedge Service	76-77, 80-81		
1012	CW12	1.75" (44.5 mm)	Wedge Service	76-77, 80-81		
1016	CW16	1.75" (44.5 mm)	Wedge Service	76-77, 80-81		
2014	WM1216	1.75" (44.5 mm)	Wedge Spring/Service	•	X	MJW1216AT
2017	WM1624LG-T	2.00" (50.8 mm)	Wedge Spring/Service	•	X	MJW1624BT
2212	WL1216	1.75" (44.5 mm)	Wedge Spring/Service	•	X	MJW1216AT
MJW1216AT	MJW1216AT	1.75" (44.5 mm)	Wedge Piston/Spring/Service	82-83		
MJW1616AT	MJW1616AT	1.75" (44.5 mm)	Wedge Piston/Spring/Service	82-83		
MJW1624BT	MJW1624BT	2.00" (50.8 mm)	Wedge Piston/Spring/Service	84-85		

DOUBLE DIAPHRAGM SPRING BRAKES

3220	TR2030LP3H	3.00" (76.2 mm)	CAM Spring/Service	32-33		
3221	TR2030LP3TH	3.00" (76.2 mm)	CAM Spring/Service	36-37		
3224	TR2430LP3	3.00" (76.2 mm)	CAM Spring/Service	32-33		
3225	TR2430LP3T	3.00" (76.2 mm)	CAM Spring/Service	36-37		
3226	TR2430LP3HD	3.00" (76.2 mm)	CAM Spring/Service	34-35		
3227	TR2430LP3THD	3.00" (76.2 mm)	CAM Spring/Service	38-39		
3230	TR3030LP3	3.00" (76.2 mm)	CAM Spring/Service	32-33		
3231	TR3030LP3T	3.00" (76.2 mm)	CAM Spring/Service	36-37		
3232	TR3030LP3HD	3.00" (76.2 mm)	CAM Spring/Service	34-35		
3233	TR3030LP3THD	3.00" (76.2 mm)	CAM Spring/Service	38-39		
3244	TR3030LP3THDW	3.00" (76.2 mm)	CAM Spring/Service	40-41		
3420	TR2024	2.25" (57.1 mm)	CAM Spring/Service	14-15		
3421	TR2024T	2.25" (57.1 mm)	CAM Spring/Service	18-19		

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PART NUMBER / MODEL DESIGNATION



P/N Series	Model	Stroke inch (mm)	Part Description	Page Number(s)	Obsolete	Replaced By
3426	TR2424LT	2.50" (63.5 mm)	CAM Spring/Service	18-19		
3427	TR2424L	2.50" (63.5 mm)	CAM Spring/Service	14-15		
3428	TR2430LT	2.50" (63.5 mm)	CAM Spring/Service	18-19		
3429	TR2430L	2.50" (63.5 mm)	CAM Spring/Service	14-15		
3430	TR3030	2.50" (63.5 mm)	CAM Spring/Service	14-15		
3431	TR3030T	2.50" (63.5 mm)	CAM Spring/Service	18-19		
3432	TR3036T	2.50" (63.5 mm)	CAM Spring/Service	18-19		
3433	TR3036	2.50" (63.5 mm)	CAM Spring/Service	14-15		
3434	TR3024	2.50" (63.5 mm)	CAM Spring/Service	14-15		
3435	TR3024T	2.50" (63.5 mm)	CAM Spring/Service	18-19		
3436	TR3636T	3.00" (76.2 mm)	CAM Spring/Service	18-19		
3331	TR3030L3-T	3.00" (76.2 mm)	CAM Spring/Service	•	X	3231
3437	TR3636	3.00" (76.2 mm)	CAM Spring/Service	14-15		
3444	TR3030THDW	2.50" (63.5 mm)	CAM Spring/Service	22-23		
3523	TR2430LP3TS	3.00" (76.2 mm)	CAM Spring/Service	42-43		
3526	TR2430LTSHD	2.50" (63.5 mm)	CAM Spring/Service	26-27		
3527	TR2430LP3TSHD	3.00" (76.2 mm)	CAM Spring/Service	44-45		
3528	TR2430LTS	2.50" (63.5 mm)	CAM Spring/Service	24-25		
3531	TR3030TS	2.50" (63.5 mm)	CAM Spring/Service	24-25		
3532	TR3036TS	2.50" (63.5 mm)	CAM Spring/Service	24-25		
3533	TR3030TSHD	2.50" (63.5 mm)	CAM Spring/Service	26-27		
3534	TR3030LP3TSHD	3.00" (76.2 mm)	CAM Spring/Service	44-45		
3535	TR3030LP3TS	3.00" (76.2 mm)	CAM Spring/Service	42-43		
3536	TR3636TS	3.00" (76.2 mm)	CAM Spring/Service	24-25		
3538	TR2424LTS	2.50" (63.5 mm)	CAM Spring/Service	24-25		
3544	TR3030TSHDW	2.50" (63.5 mm)	CAM Spring/Service	28-29		
3545	TR3030LP3TSHDW	3.00" (76.2 mm)	CAM Spring/Service	46-47		
3624	TR2430LHD	2.50" (63.5 mm)	CAM Spring/Service	16-17		
3625	TR2430LTHD	2.50" (63.5 mm)	CAM Spring/Service	20-21		
3630	TR3030HD	2.50" (63.5 mm)	CAM Spring/Service	16-17		
3631	TR3030THD	2.50" (63.5 mm)	CAM Spring/Service	20-21		

LONG LIFE DOUBLE DIAPHRAGM SPRING BRAKES

3827	LTR2430LT	2.50" (63.5 mm)	CAM Spring/Service	50-51		
3828	LTR2430L3	3.00" (76.2 mm)	CAM Spring/Service	52-53		
3831	LTR3030T	2.50" (63.5 mm)	CAM Spring/Service	50-51		
3832	LTR3030L3	3.00" (76.2 mm)	CAM Spring/Service	52-53		
3833	LTR3030L3T	3.00" (76.2 mm)	CAM Spring/Service	56-57		
3844	LTR3030L3W	3.00" (76.2 mm)	CAM Spring/Service	54-55		

PISTON BRAKES

4112	M1216G-T	1.75" (44.5 mm)	CAM Piston/Spring/Service	•	X	MJS1216AT
4115	M1620LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS1724ET
4117	M1624LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS1724ET
4119	M2020LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS2024ET
4120	M2024LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS2024ET

Note: For Transit / Special Applications (i.e. rod length, etc.) refer to Section 10.

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P/N Series	Model	Stroke inch (mm)	Description	Page Number(s)	Obsolete	Replaced By
4122	M2420LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS2424ET
4124	M2424LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS2424ET
4128	M2430LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS2430ET
4131	M3027GT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS3028ET
4133	M3024GT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS3024ET
4420	M2030LGT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS2030ET
4430	M3030GT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS3028ET
4431	M3031GT	2.50" (63.5 mm)	CAM Piston/Spring/Service	•	X	MJS3030ET
MJS1216AT	MJS1216AT	1.75" (44.5 mm)	CAM Piston/Spring/Service	60-61		
MJS1722ET	MJS1722ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	62-63		
MJS1724ET	MJS1724ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	62-63		
MJS2022ET	MJS2022ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	62-63		
MJS2024ET	MJS2024ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	62-63		
MJS2030ET	MJS2030ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	62-63		
MJS2422ET	MJS2422ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	64-65		
MJS2424ET	MJS2424ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	64-65		
MJS2430ET	MJS2430ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	64-65		
MJS3022ET	MJS3022ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	64-65		
MJS3024ET	MJS3024ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	64-65		
MJS3028ET	MJS3028ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	66-67		
MJS3030ET	MJS3030ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	66-67		
MJS3628ET	MJS3628ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	66-67		
MJS3630ET	MJS3630ET	3.00" (76.2 mm)	CAM Piston/Spring/Service	66-67		
MJW1216AT	MJW1216AT	1.75" (44.5 mm)	Wedge Piston/Spring/Service	82-83		
MJW1616AT	MJW1616AT	1.75" (44.5 mm)	Wedge Piston/Spring/Service	82-83		
MJW1624BT	MJW1624BT	2.00" (50.8 mm)	Wedge Piston/Spring/Service	84-85		

REMOTE MOUNT CYLINDERS

5004	R4A	4.50" (114.3 mm)	Remote Mount Cylinder	96-97		
5005	R5AHD	4.41" (112.0 mm)	Remote Mount Cylinder	96-97		
5007	R7A	2.75" (69.9 mm)	Spring Applied/Air Released	98-99		
5008	R8H	2.75" (69.9 mm)	Spring Applied/Hydraulic Released	98-99		

AIR DISC BRAKES

1617	CS16LH	2.50" (63.5 mm)	Air Disc Service	92-93		
1621	CS20L	2.50" (63.5 mm)	Air Disc Service	92-93		
1622	CS20L3	3.00" (76.2 mm)	Air Disc Service	92-93		
1427	C24L	2.50" (63.5 mm)	Air Disc Service	92-93		
1429	C27H	2.50" (63.5 mm)	Air Disc Service	92-93		
1430	C30	2.50" (63.5 mm)	Air Disc Service	92-93		
3417	TR1724LTHDH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3419	TR1724LTH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3422	TR2024LTHD	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3423	TR2024LT	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		

Note: For Transit / Special Applications (i.e. rod length, etc.) refer to Section 10.

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P/N Series	Model	Stroke inch (mm)	Description	Page Number(s)	Obsolete	Replaced By
3425	TR2130LTH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3426	TR2424LT	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3428	TR2430LT	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3431	TR3030T	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3432	TR3036T	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3450	TR2730TH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3452	TR2736TH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3623	TR2424LTHD	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3625	TR2430LTHD	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3627	TR2130LTHDH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3631	TR3030THD	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
3650	TR2730THDH	2.50" (63.5 mm)	Air Disc/Spring/Service	88-89		
MJB1722ET	MJB1722ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB1724ET	MJB1724ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2022ET	MJB2022ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2024ET	MJB2024ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2030ET	MJB2030ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2124ET	MJB2124ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2422ET	MJB2422ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2424ET	MJB2424ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2430ET	MJB2430ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB2730ET	MJB2730ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB3022ET	MJB3022ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	90-91		
MJB3030ET	MJB3030ET	3.00" (76.2 mm)	Air Disc/Piston/Spring/Service	86-87		

Note: For Transit / Special Applications (i.e. rod length, etc.,) refer to Section 10.

UNDERSTANDING MGM BRAKES PART NUMBERS

MGM Brakes assigns a 7-digit part number except Magnum Performance Plus (see below) to every assembly and part we manufacture. This number code reveals information about the part.

EXPLANATION OF 7-DIGIT PART NUMBER

- 1st Two Digits - Major models, groups, detail parts, kits, etc.
- 2nd Two Digits - (a) Model size on major groups
(b) Detail parts identification all others
- 3rd Three Digits - Numerical sequence 001-999
 - (a) Spring brake singles – 001 through 050
 - Spring brake tandems – 051 through 999
 - (b) All others 001 through 999

EXAMPLE OF SYSTEM

1000000 – 1999999	Service Chamber
2000000 – 2999999	Wedge Spring Brake
3000000 – 3999999	Double Diaphragm Brake
4000000 – 4999999	Piston Type Brake
5000000 – 5999999	Remote Mount Cylinder
8000000 – 8999999	Parts/Assemblies/Valves
8999999 – 9999999	Kits

MAGNUM PERFORMANCE PLUS NUMBERING SYSTEM

The Magnum "Performance" Plus numbering system is uniquely different from how MGM Brakes identified products in the past. The Magnum Plus part number contains all the information pertaining to the brake, allowing anyone to identify not only the model, but application, stroke, features and serial number as well.

Example: MJS3030ET051

Model Series	Style	Service Side	Spring Side	Max. Stroke	Feature	Serial Number
MJ	S	30	30	E	T	051
Magnum J-Series	S-Cam	Type 30	Type 30	3.00" (76.2 mm)	Breather Tube	Aftermarket Complete Assembly

NOTE: See chart Part Number / Model Designation on page 5 for more key model prefixes and suffixes.

NOTE: Product information and specifications subject to change without notice.

TR SERIES

**CORROSION
FIGHTER™**

TECHNOLOGY

All type 30 Spring Side Brake Models include
"patent pending"
Corrosion Fighter Technology.



**Safe, Reliable,
Tamper-Resistant**



Section 1: Double Diaphragm Spring Brakes 10-29

Corrosion Fighter Technology.....	12
Industry Safety Reminder	13

Standard Stroke Models

TR	Tamper Resistant.....	14-15
TR-HD	Tamper Resistant, Heavy-Duty	16-17
TR-T	Tamper Resistant, Tube.....	18-19
TR-THD	Tamper Resistant, Tube, Heavy-Duty	20-21
TR-THDW	Tamper Resistant, Tube, Heavy-Duty, Welded NPC	22-23
TR-TS	Tamper Resistant, Tube, Severe Service	24-25
TR-TSHD	Tamper Resistant, Tube, Severe Service, Heavy-Duty.....	26-27
TR-TSHDW	Tamper Resistant, Tube, Severe Service, Heavy-Duty, Welded NPC.....	28-29



CORROSION
— FIGHTER™ —
TECHNOLOGY

**All type 30 Spring Side Brake Models include
“patent pending”
Corrosion Fighter Technology.**

NOTE: Product information and specifications subject to change without notice.



You Spoke...
We Listened...



MGM TR Model Brakes - better than ever!

Metal components of commercial vehicles are constantly subjected to harsh corrosive environmental conditions, particularly in the winter months in the northern climates. Until recently, the coatings and materials used in spring brakes were sufficient to effectively resist the corrosive effects of materials found in the environments in which the vehicles operate, including the effects of rock salt used to de-ice the roadways.

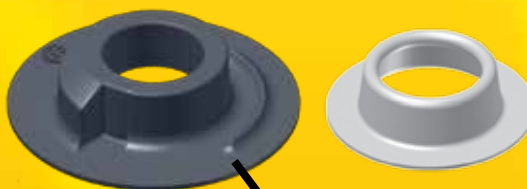
However, with the introduction of more aggressive de-icing solutions, which literally "cling" to the surface, metal components are experiencing much higher levels of corrosion. In warmer weather, after the water has evaporated, the corrosion process can be reactivated on rainy days when moisture comes into contact with the crystallized salt deposits.

A way to reduce the effects of this "corrosive" attack is to break the electrical conductivity between the parts by changing one of the existing components to a non-conductive material. This is what MGM Brakes Engineering has done by designing a spring guide constructed from heavy-duty, non-conductive composite material. The composite guide prevents metal to metal contact between the end coil of the power spring and the head of the brake, effectively "breaking the circuit", therefore slowing the corrosion process and reducing "corrosion" related brake failures.

In addition to constructing the guide from composite material, MGM Engineers made other design changes that significantly improve power spring life by preventing damage to the power spring's protective coating. This was accomplished by enlarging the area into which the power spring is compressed when the parking brake is released. All this was done without increasing the overall size of the brake.

Our spring guide also ensures precise alignment of the power spring inside the brake. Accurate alignment of the head side of the power spring compliments our patented Center-Hole Diaphragm (CHD) design providing longer center seal and power spring life.

MGM Spring Brakes are known for their durability and we are proud that our products already utilize corrosion resistant materials: such as A360 aluminum, epoxy coating and clear trivalent chromate.



Composite guide

*Note: guide is depicted in orange for visual purposes.
Patents Pending.*

Old guide



Composite Guide - A Standard Feature

Constructed from heavy-duty, non-metallic composite material. Available on all TR - type 30 spring side model chambers. Patents Pending.

CORROSION
— FIGHTER™ —
TECHNOLOGY



DOUBLE DIAPHRAGM - STANDARD STROKE

INDUSTRY SAFETY REMINDER:

Before 1989 double diaphragm spring brake actuators were manufactured using two clamp bands; one to seal the service side and one to seal the spring parking side. At one time both sides of these units were considered "serviceable", meaning that if either side failed the clamp band could be removed, the diaphragm or other components could be replaced, and the unit continued in service as repaired.

While removing the clamp band on the service side of a double diaphragm spring brake actuator carries little or no risk, experience showed that all too often technicians did not follow the required safety procedures when removing the clamp band on the spring parking side, resulting in a potential for severe personal injury. If the powerful spring in the spring parking side is not properly "caged" before the clamp band is removed the spring can propel components of the assembly with great force, potentially causing severe personal injury.

In response to this safety problem MGM Brakes pioneered the development in 1987 of the "Tamper Resistant" double diaphragm spring brake actuator with the first "non-serviceable" spring parking side. By the early 1990's the entire domestic industry recognized the enhancement to safety offered by the "Tamper Resistant" design. Today every responsible spring brake manufacturer based in the United States offers only spring brakes utilizing a "Tamper Resistant" technology. As a result of the universal adoption of a "Tamper Resistant" design for the spring parking side of double diaphragm spring brake actuators, instances of injury to workers from improper repair procedures or accidents have steadily declined until today they are virtually nonexistent.

Unfortunately, a disturbing trend is emerging within the aftermarket portion of the heavy duty truck industry - the use of double clamp banded spring brake actuators as replacements for damaged or failed "Tamper Resistant" units. This "reintroduction" of double clamp banded spring brakes into the North American market seriously threatens worker safety in the heavy duty truck industry. Especially at risk are those workers least experienced in the industry. Well over a decade has passed since MGM Brakes' introduction of "Tamper Resistant" spring parking brakes and many in the service and maintenance end of the industry have not seen, let alone serviced, a double clamp banded spring brake. Younger workers are not likely to have been trained in the special safety procedures required to cage the spring before servicing the spring parking side of double clamp banded units.

Therefore, MGM Brakes believes the industry needs to be reminded of the dangers associated with servicing double clamp banded spring brakes.

BE SURE TO PROPERLY "CAGE" THE SPRING IN THE SPRING PARKING SIDE ON ALL DOUBLE DIAPHRAGM SPRING BRAKE ACTUATORS - EVEN "TAMPER RESISTANT" MODELS - BEFORE ATTEMPTING ANY SERVICE ON THEM.

DO NOT ATTEMPT TO REMOVE OR LOOSEN THE SPRING PARKING SIDE CLAMP BAND ON A DOUBLE CLAMP BANDED SPRING BRAKE ACTUATOR UNDER ANY CIRCUMSTANCE.

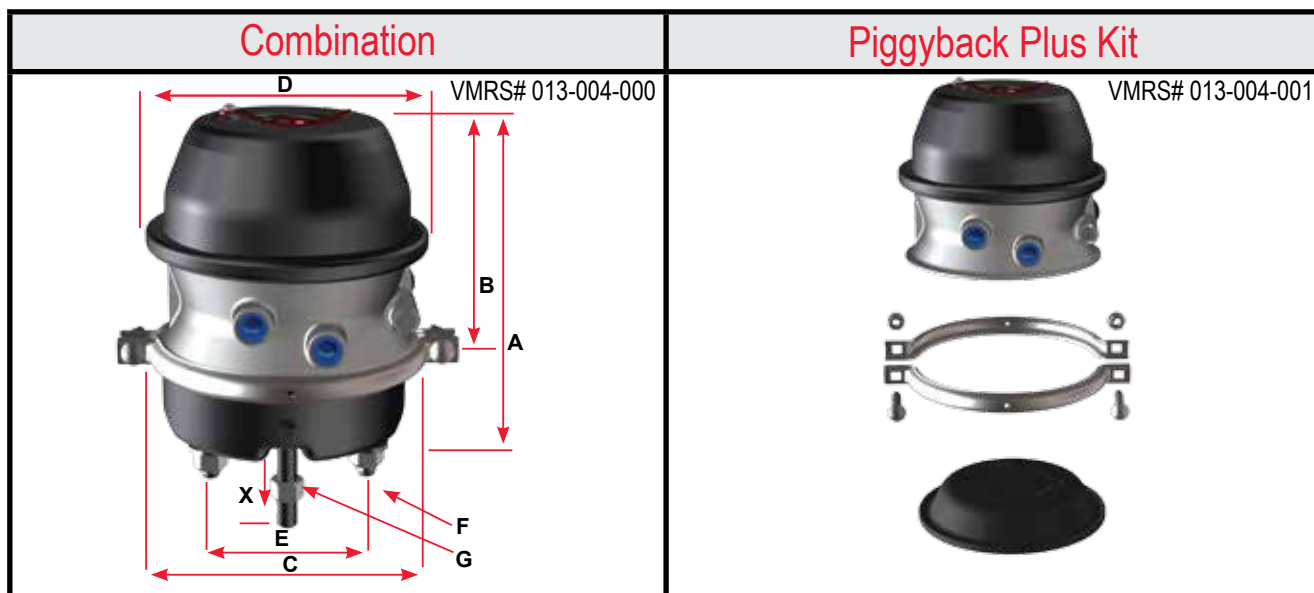
IMPROPER SERVICING OF A DOUBLE CLAMP BANDED SPRING BRAKE ACTUATOR MAY RESULT IN SEVERE PERSONAL INJURY DUE TO AN UNINTENTIONAL SEPARATION OF THE HEAD FROM THE BASE OF THE UNIT.



Information taken from technical bulletin EB 06-003

NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model



TR Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- 360 Aluminum Center Case
- “Long Life” Power Spring
- Epoxy Coated Return Spring
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 & 3036 Aftermarket Models) (6-Gauge Standard on Type 36 Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- **Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only**

P/N Series	3420	3427	3429	3434	3430	3433	3437
Model	TR2024	TR2424L	TR2430L	TR3024	TR3030	TR3036	TR3636
Size	2024	2424	2430	3024	3030	3036	3636
Stroke	2.25" (57.2 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)
P/N Combination SAE	3420051	3427051	3429051	3434051	3430051	3433051	3437051
P/N Neoprene Diaphragm	N/A	3427851	N/A	N/A	3430851	3433851	N/A
P/N Welded Yoke (2.25")	N/A	N/A	N/A	N/A	3430951	3433951	3437951
P/N Piggyback Plus Kit SAE	3420008	3427008	3429008	3434008	3430008	3433008(a)	3437008
P/N Combination METRIC	3420049	3427049	3429049	3434049	3430049	3433049	3437049
Wt. Combination	15.9 lb (7.2 kg)	16.6 lb (7.5 kg)	18.2 lb (8.3 kg)	18.3 lb (8.3 kg)	19.4 lb (8.8 kg)	26.5 lb (12.0 kg)	30.8 lb (14.0 kg)
Wt. Single	9.6 lb (4.4 kg)	9.5 lb (4.3 kg)	11.3 lb (5.1 kg)	9.7 lb (4.4 kg)	11.3 lb (5.1 kg)	18.3 lb (8.3 kg)	20.2 lb (9.2 kg)
A	8.31" (211.1 mm)	8.52" (216.4 mm)	9.04" (229.6 mm)	8.47" (215.1 mm)	9.04" (229.6 mm)	9.86" (250.4 mm)	11.13" (282.7 mm)
B	6.16" (156.5 mm)	6.36" (161.5 mm)	6.91" (175.5 mm)	6.12" (155.4 mm)	6.66" (169.2 mm)	7.52" (191.0 mm)	8.38" (212.9 mm)
C	6.90" (175.3 mm)	7.38" (187.5 mm)	7.38" (187.5 mm)	8.31" (211.1 mm)	8.31" (211.1 mm)	8.31" (211.1 mm)	9.25" (235.0 mm)
D	7.34" (186.4 mm)	7.34" (186.4 mm)	8.21" (208.5 mm)	7.34" (186.4 mm)	8.21" (208.5 mm)	9.18" (233.2 mm)	9.18" (233.2 mm)
E	4.75" (120.7 mm)						
F	5/8" - 11 UNC (M16 x 1.5 - 6g)						
G	5/8" - 18 UNF (M16 x 1.5 - 6g)						
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)						
X - Min. (in the caged position)	8.00" (203.2 mm)						

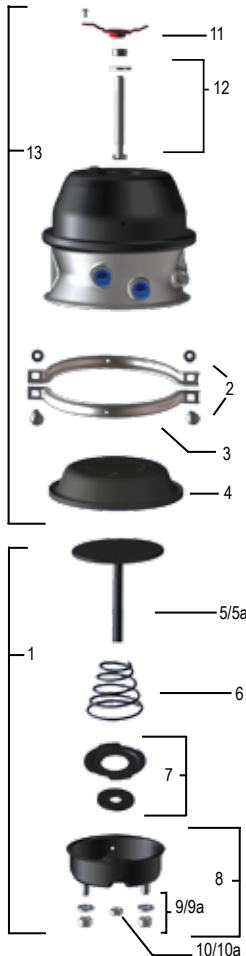
For Transit, Hendrickson Intraax / Vantraax Suspension applications and for units with mixed (SAE-METRIC) specifications, refer to section 10.

(a) This model must be used with MGM Brakes heavy-duty weld reinforced mounting base or 8 - gauge non-pressure housing.

NOTE: Product information and specifications subject to change without notice.

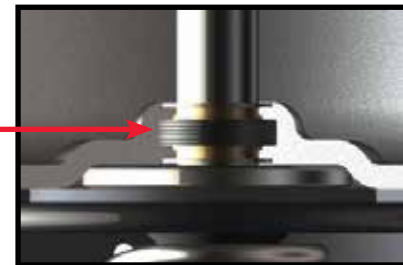
Replacement Parts								
P/N Series		3420	3427	3429	3434	3430	3433	3437
Model		TR2024	TR2424L	TR2430L	TR3024	TR3030	TR3036	TR3636
1	Kit - NP Chamber (a)	9015160	9015047	9015047	9015050	9015050	9015050	9015049
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216020	8216025	8216025	8216045	8216045	8216045	8216036
4	Diaphragm	8017120	8017141	8017141	8017730	8017730	8017730	8017836
5	Kit - Push-Rod Assembly (a) SAE	9064001	9064002	9064002	9064003	9064003	9064003	9064004
5a	Kit - Push-Rod Assembly (a) METRIC	9064015	9064016	9064016	9064035	9064035	9064035	9064009
6	Return Spring	8068002	8068002	8068002	8068002	8068002	8068002	8068012
7	Kit - Center Hole Shield	9065002	9065002	9065002	9065002	9065002	9065002	9065002
8	NP Chamber Assembly (a)	8215169	8215105	8215105	8215501	8215501	9015260	8215036
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016	8130016	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005	9019005	9019005	9019005	9019006	9019006
12	Kit - Release Bolt	9007003	9007003	9007003	9007003	9007003	9007009	9007009
13	Kit - Piggyback Plus SAE	3420008	3427008	3429008	3434008	3430008	3433008(b)	3437008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12								
Yoke Assembly		Refer to Replacement Parts Section 12						
Boot & Retainer		Refer to Replacement Parts Section 12						

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.
 (b) This model must be used with MGM Brakes heavy-duty weld reinforced mounting base or 8 - gauge non-pressure housing.

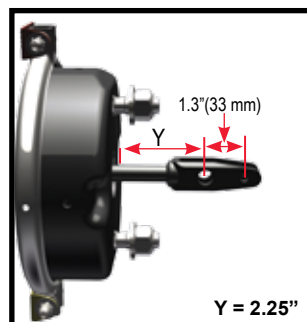


Center Seal (Push-Rod Air Seal)

Multi-lipped, pressure activated seal – an MGM exclusive - molded from specially formulated low-temperature-resistant Nitrile Rubber, providing long-term protection against air leaks. Nylon guides eliminate metal to metal contact and premature failure in this critical area.



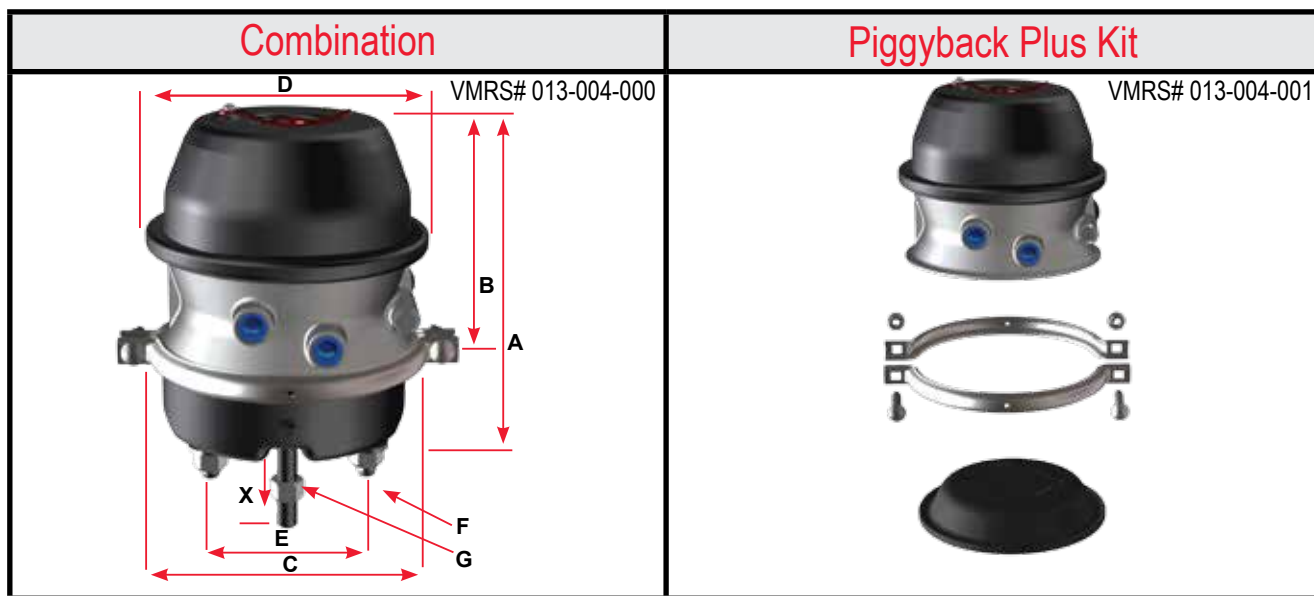
Welded Yoke Chamber



For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model



TR-HD Model Features

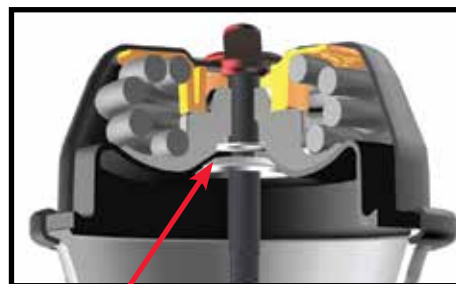
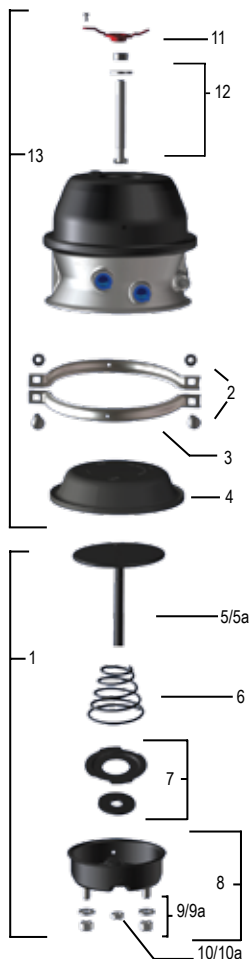
- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 & 3036 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Heavy-Duty Power Spring 160 lb (72.6 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Center Hole Diaphragm (U.S. Patent #5,507,217)
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

P/N Series	3624	3630
Model	TR2430LHD	TR3030HD
Size	2430	3030
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)
P/N Combination SAE	3624051	3630051
P/N Neoprene Diaphragm	N/A	3630851
P/N Welded Yoke (2.25")	3624951	N/A
P/N Piggyback Plus Kit SAE	3624008	3630008
P/N Combination METRIC	3624049	3630049
Wt. Combination	18.6 lb (8.4 kg)	19.9 lb (9.0 kg)
Wt. Single	11.7 lb (5.3 kg)	11.5 lb (5.2 kg)
A	9.04" (229.6 mm)	9.04" (229.6 mm)
B	6.91" (175.5 mm)	6.66" (169.2 mm)
C	7.38" (187.5 mm)	8.31" (211.1 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3624	3630
Model		TR2430LHD	TR3030HD
1	Kit - NP Chamber (a)	9015219	9015050
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017141	8017730
5	Kit - Push-Rod Assembly (a) SAE	9064002	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	9064016	9064035
6	Return Spring	8068002	8068002
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	8215294	8215501
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Piggyback Plus SAE	3624008	3630008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke Assembly		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.

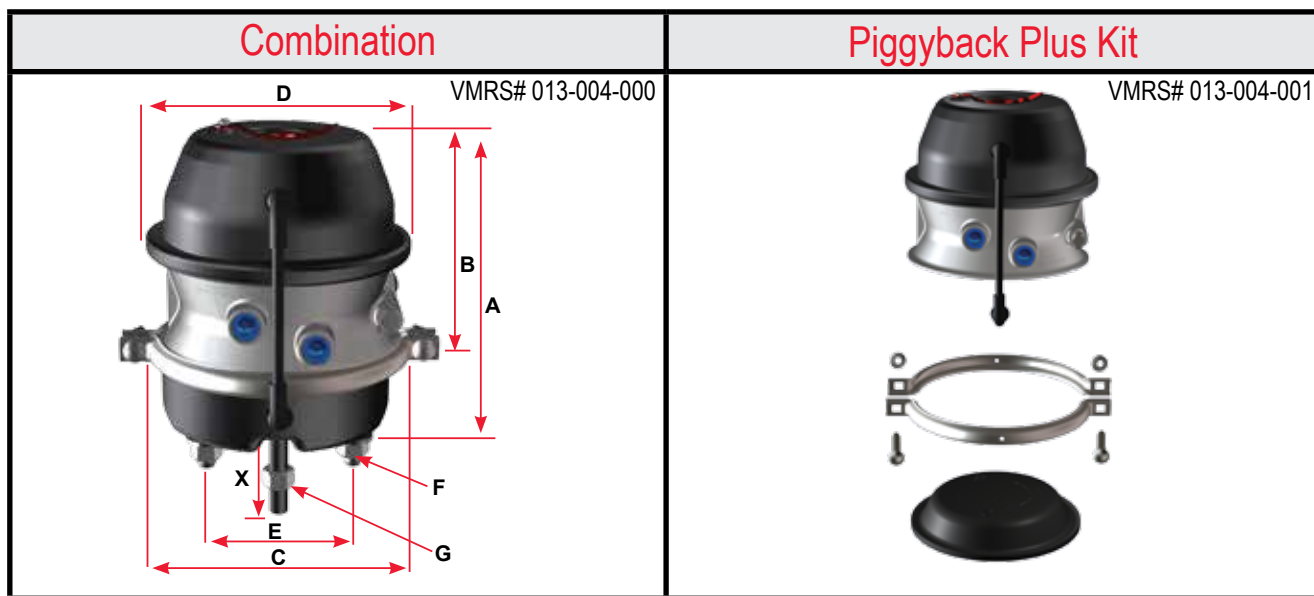


Center Hole Diaphragm (U.S. Patent #5,507,217)

Patented feature that aligns the piston, diaphragm, power spring and internal push-rod providing the following advantages: Maintains component alignment; reduces power spring stress; reduces coil clash; increases center-seal life and eliminates the effects of severe vibration. Corrosion Fighter Guide depicted in orange for visual purposes only.

NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model



TR-T Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- “Long Life” Power Spring
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 & 3036 Aftermarket Models) (6-Gauge Standard on Type 36 Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

P/N Series	3421	3426	3428	3435	3431	3432	3436
Model	TR2024T	TR2424LT	TR2430LT	TR3024T	TR3030T	TR3036T	TR3636T
Size	2024	2424	2430	3024	3030	3036	3636
Stroke	2.25" (57.2 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2mm)
P/N Combination SAE	3421051	3426051	3428051	3435051	3431051	3432051	3436051
P/N Neoprene Diaphragm	N/A	N/A	3428851	3435851	3431851	3432851	3436851
P/N Welded Yoke (2.25")	N/A	N/A	3428951	N/A	3431951	3432951	3436951
P/N Piggyback Plus Kit SAE	N/A	N/A	3428008	3435008	3431008	3432008 (b)	3436008
P/N Combination METRIC	3421049	3426049	3428049	3435049	3431049	3432049	3436049
Wt. Combination	15.9 lb (7.2 kg)	16.6 lb (7.5 kg)	18.2 lb (8.3 kg)	18.3 lb (8.3 kg)	19.4 lb (8.8 kg)	26.5 lb (12.0 kg)	30.8 lb (14.0 kg)
Wt. Single	N/A	N/A	11.3 lb (5.1 kg)	9.70 lb (4.4 kg)	11.3 lb (5.1 kg)	18.3 lb (8.3 kg)	20.2 lb (9.2 kg)
A	8.31" (211.1 mm)	8.52" (216.4 mm)	9.04" (229.6 mm)	8.47" (215.1 mm)	9.04" (229.6 mm)	9.86" (250.4 mm)	11.13" (282.7 mm)
B	6.16" (156.5 mm)	6.36" (161.5 mm)	6.91" (175.5 mm)	6.12" (155.4 mm)	6.66" (169.2 mm)	7.52" (191.0 mm)	8.38" (212.9 mm)
C	6.90" (175.3 mm)	7.38" (187.5 mm)	7.38" (187.5 mm)	8.31" (211.1 mm)	8.31" (211.1 mm)	8.31" (211.1 mm)	9.25" (235.0 mm)
D	7.34" (186.4 mm)	7.34" (186.4 mm)	8.21" (208.5 mm)	7.34" (186.4 mm)	8.21" (208.5 mm)	9.18" (233.2 mm)	9.18" (233.2 mm)
E	4.75" (120.7 mm)						
F	5/8" - 11 UNC (M16 x 1.5 - 6g)						
G	5/8" - 18 UNF (M16 x 1.5 - 6g)						
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)						
X - Min. (in the caged position)	8.00" (203.2 mm)						

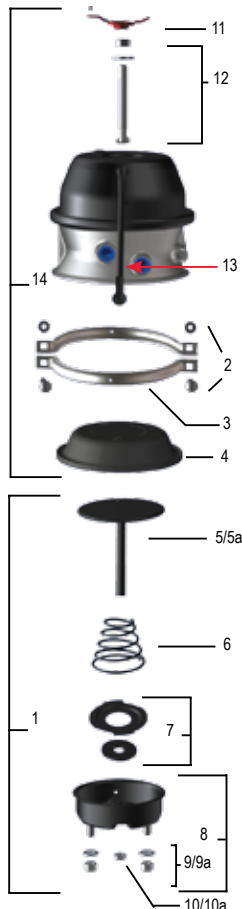
For Transit, Hendrickson Intraax / Vantraax Suspension applications and for units with mixed (SAE-METRIC) specifications and for actuators manufactured with neoprene diaphragms, refer to section 10.

(b) This model must be used with MGM Brakes heavy-duty weld reinforced mounting base or 8 - gauge non-pressure housing.

NOTE: Product information and specifications subject to change without notice.

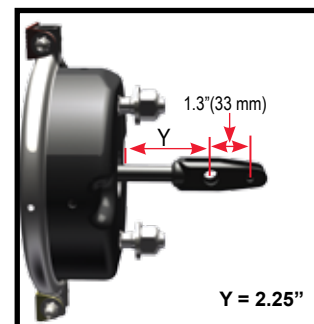
Replacement Parts								
P/N Series	3421	3426	3428	3435	3431	3432	3436	
Model	TR2024T	TR2424LT	TR2430LT	TR3024T	TR3030T	TR3036T	TR3636T	
1	Kit - NP Chamber (a)	9015111	9015152	9015152	9015157	9015157	9015149	9015150
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216020	8216025	8216025	8216045	8216045	8216045	8216036
4	Diaphragm	8017120	8017141	8017141	8017730	8017730	8017730	8017836
5	Kit - Push-Rod Assembly (a) SAE	9064001	9064002	9064002	9064003	9064003	9064003	9064004
5a	Kit - Push-Rod Assembly (a) METRIC	9064015	9064016	9064016	9064035	9064035	9064035	9064009
6	Return Spring	8068002	8068002	8068002	8068002	8068002	8068002	8068012
7	Kit - Center Hole Shield	9065002	9065002	9065002	9065002	9065002	9065002	9065002
8	NP Chamber Assembly (a)	9015110	9015151	9015151	9015122	9015122	9015122	9015108
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016	8130016	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005	9019005	9019005	9019005	9019006	9019006
12	Kit - Release Bolt	9007003	9007003	9007003	9007003	9007003	9007009	9007009
13	Kit - Breather Tube	9081001	9081001	9081001	9081001	9081001	9081001	9081001
14	Kit - Piggyback Plus SAE	N/A	N/A	3428008	3435008	3431008	3432008 (b)	3436008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12								
Yoke Assembly		Refer to Replacement Parts Section 12						
Boot & Retainer		Refer to Replacement Parts Section 12						

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.
 (b) This model must be used with MGM Brakes heavy-duty weld reinforced mounting base or 8 - gauge non-pressure housing.



External Breather-Tube
 Vents air from inside the protected area of the non-pressure chamber to effectively prevent entry of liquid and solid corrosive contaminants that can cause premature failure of the spring brake chamber.

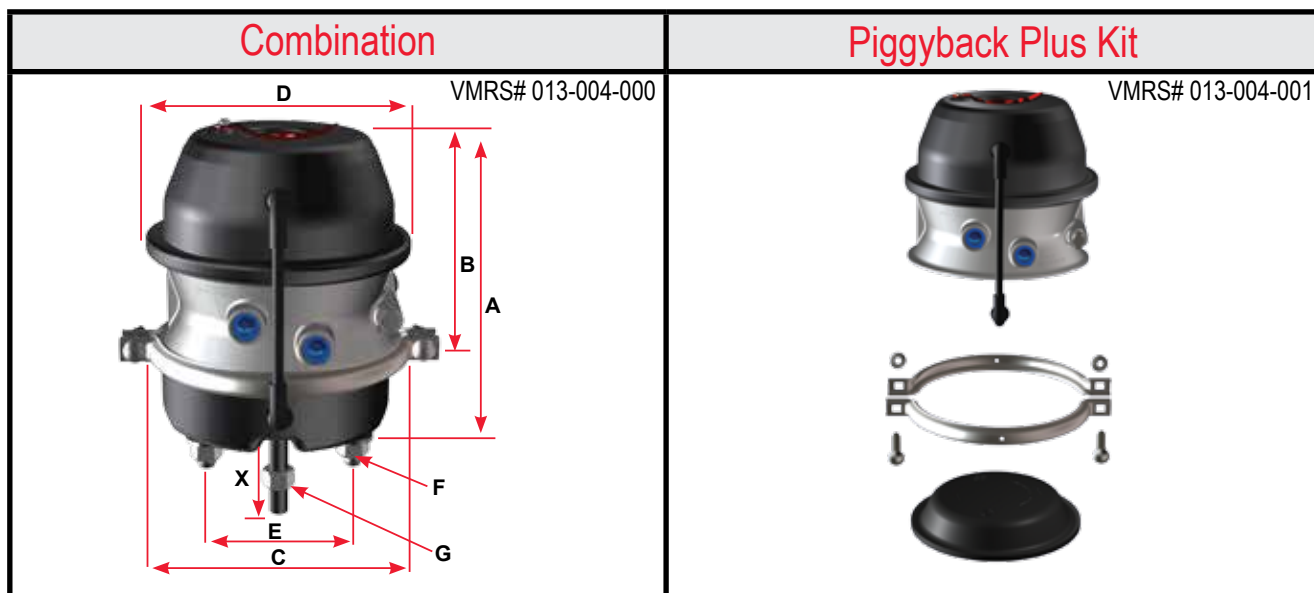
Welded Yoke Chamber



For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model

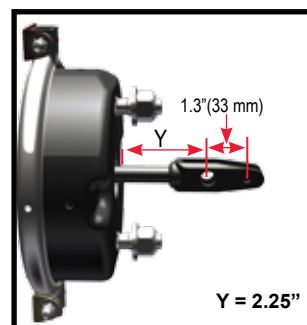


TR-THD Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Heavy-Duty Power Spring 160 lb (72.6 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

P/N Series	3625	3631
Model	TR2430LTHD	TR3030THD
Size	2430	3030
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)
P/N Combination SAE	3625051	3631051
P/N Neoprene Diaphragm	N/A	N/A
P/N Welded Yoke (2.25")	3625951	3631951
P/N Piggyback Plus Kit SAE	3625008	3631008
P/N Combination METRIC	3625049	3631049
Wt. Combination	18.6 lb (8.4 kg)	19.9 lb (9.0 kg)
Wt. Single	11.7 lb (5.3 kg)	11.5 lb (5.2 kg)
A	9.04" (229.6 mm)	9.04" (229.6 mm)
B	6.91" (175.5 mm)	6.66" (169.2 mm)
C	7.38" (187.5 mm)	8.31" (211.1 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

Welded Yoke Chamber

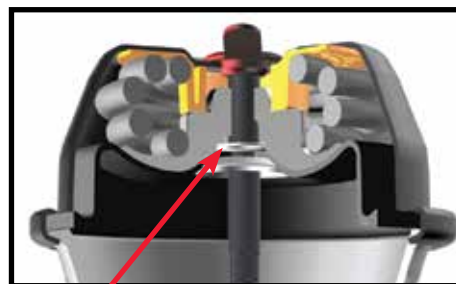
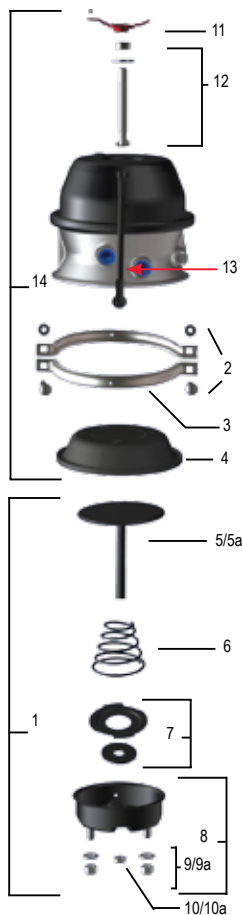


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3625	3631
Model		TR2430LTHD	TR3030THD
1	Kit - NP Chamber (a)	9015152	9015149
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017141	8017730
5	Kit - Push-Rod Assembly (a) SAE	9064002	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	9064016	9064035
6	Return Spring	8068002	8068002
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	9015151	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Breather Tube	9081001	9081001
14	Piggyback Plus Kit SAE	3625008	3631008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke Assembly		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

Note: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



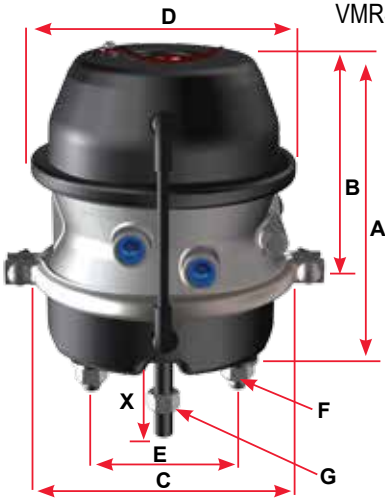
Center Hole Diaphragm (U.S. Patent #5,507,217)

Patented feature that aligns the piston, diaphragm, power spring and internal push-rod providing the following advantages: Maintains component alignment; reduces power spring stress; reduces coil clash; increases center-seal life and eliminates the effects of severe vibration. Corrosion Fighter Guide depicted in orange for visual purposes only.

NOTE: Product information and specifications subject to change without notice.



Standard Stroke Model

Combination	Piggyback Plus Kit
 VMRS# 013-004-000	VMRS# 013-004-001 N/A

TR-THDW Model Features

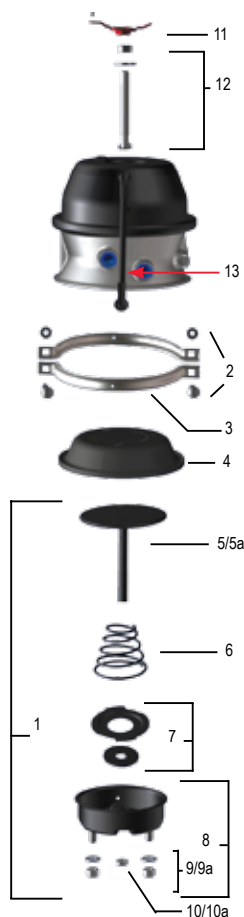
- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Heavy-Duty Power Spring 160 lb (72.6 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Weld Reinforced Non-Pressure Housing with Welded Bolts
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

P/N Series	3444
Model	TR3030THDW
Size	3030
Stroke	2.50" (63.5 mm)
P/N Combination SAE	3444051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	N/A
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	3444049
Wt. Combination	19.9 lb (9.0 kg)
Wt. Single	N/A
A	9.04" (229.6 mm)
B	6.66" (169.2 mm)
C	8.31" (211.1 mm)
D	8.21" (208.5 mm)
E	4.75" (120.7 mm)
F	5/8" - 11 UNC (M16 x 1.5 - 6g)
G	5/8" - 18 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min. (in the caged position)	8.00" (203.2 mm)

NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		3444
Model		TR3030THDW
1	Kit - NP Chamber (a)	9015905
2	Kit - Nuts & Bolts	9003001
3	Clamp Band Assembly	8216045
4	Diaphragm	8017730
5	Kit - Push-Rod Assembly (a) SAE	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	9064035
6	Return Spring	8068002
7	Kit - Center Hole Shield	9065002
8	NP Chamber Assembly (a)	9015259
9	Kit - Nuts & Washers SAE	9002001
9a	Kit - Nuts & Washers METRIC	9002002
10	Hex Nut - Yoke SAE	8130004
10a	Hex Nut - Yoke METRIC	8130016
11	Kit - Weatherseal™ Plug	9019005
12	Kit - Release Bolt	9007003
13	Kit - Breather Tube	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke Assembly		Refer to Replacement Parts Section 12
Boot & Retainer		Refer to Replacement Parts Section 12

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Weld Reinforced Non-Pressure Housing

Heavy-gauge formed steel flat-bottom design, epoxy-coated for total corrosion protection and "weld-reinforced" mounting studs for added support in extreme vibration applications. (bolt actually epoxy coated - depicted here lighter for visual purposes)

- 8-Gauge Standard on Type 3030 Aftermarket Model

NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model

Combination	Piggyback Plus Kit
VMRS# 013-004-000	N/A

TR-TS Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- "Long Life" Power Spring
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 & 3036 Aftermarket Models) (6 Gauge Standard on Type 36 Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Epoxy-Coated Piston & Center Case - Inside & Out
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

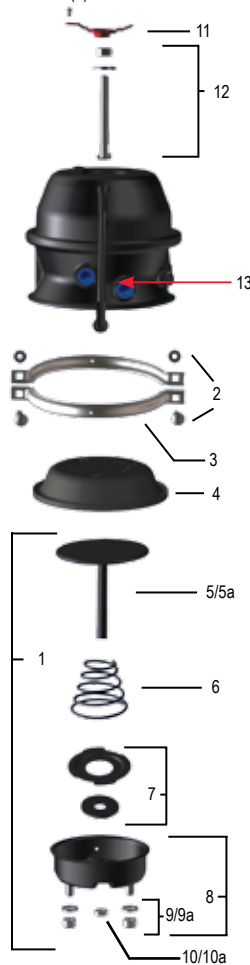
P/N Series	3538	3528	3531	3532	3536
Model	TR2424LTS	TR2430LTS	TR3030TS	TR3036TS	TR3636TS
Size	2424	2430	3030	3036	3636
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)
P/N Combination SAE	3538051	3528051	3531051	3532051	3536051
P/N Neoprene Diaphragm	N/A	N/A	3531851	3532851	N/A
P/N Welded Yoke (2.25")	N/A	N/A	3531951	3532951	N/A
P/N Piggyback Plus Kit SAE	N/A	N/A	N/A	N/A	N/A
P/N Combination METRIC	3538049	3528049	3531049	3532049	3536049
Wt. Combination	16.6 lb (7.5 kg)	18.2 lb (8.3 kg)	19.4 lb (8.8 kg)	26.5 lb (12.0 kg)	30.8 lb (14.0 kg)
Wt. Single	N/A	N/A	N/A	N/A	N/A
A	8.52" (216.4 mm)	9.04" (229.6 mm)	9.04" (229.6 mm)	9.86" (250.4 mm)	11.13" (282.7 mm)
B	6.36" (161.5 mm)	6.91" (175.5 mm)	6.66" (169.2 mm)	7.52" (191.0 mm)	8.38" (212.9 mm)
C	7.38" (187.5 mm)	7.38" (187.5 mm)	8.31" (211.1 mm)	8.31" (211.1 mm)	9.25" (235.0 mm)
D	7.34" (186.4 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)	9.18" (233.2 mm)	9.18" (233.2 mm)
E	4.75" (120.7 mm)				
F	5/8" - 11 UNC (M16 x 1.5 - 6g)				
G	5/8" - 18 UNF (M16 x 1.5 - 6g)				
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)				
X - Min. (in the caged position)	8.00" (203.2 mm)				

For Transit, Hendrickson Intraax / Vantraax Suspension applications and for units with mixed (SAE-METRIC) specifications and for actuators manufactured with neoprene diaphragms, refer to section 10.

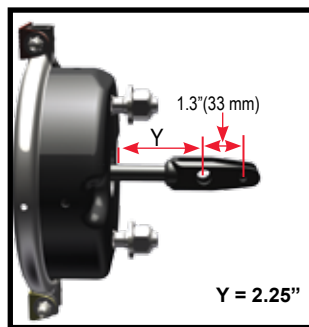
NOTE: Product information and specifications subject to change without notice.

Replacement Parts						
P/N Series	3538	3528	3531	3532	3536	
Model	TR2424LTS	TR2430LTS	TR3030TS	TR3036TS	TR3636TS	
1	Kit - NP Chamber (a)	9015152	9015152	9015149	9015149	9015150
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216025	8216025	8216045	8216045	8216036
4	Diaphragm	8017141	8017141	8017730	8017730	8017836
5	Kit - Push-Rod Assembly (a) SAE	9064002	9064002	9064003	9064003	9064004
5a	Kit - Push-Rod Assembly (a) METRIC	9064016	9064016	9064035	9064035	9064009
6	Return Spring	8068012	8068012	8068012	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002	9065002	9065002	9065002
8	NP Chamber Assembly (a)	9015151	9015151	9015122	9015122	9015108
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005	9019005	9019006	9019006
12	Kit - Release Bolt	9007003	9007003	9007003	9007009	9007009
13	Kit - Breather Tube	9081001	9081001	9081001	9081001	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12						
Yoke Assembly		Refer to Replacement Parts Section 12				
Boot & Retainer		Refer to Replacement Parts Section 12				

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Welded Yoke Chamber



For more welded yoke choices, see page 104.



Epoxy Coated Components

The flange case and upper piston are epoxy coated for extra added protection, which, along with our patents pending "corrosion fighter" technology, make MGM "Severe Service" Chambers the best choice for severe operating environments: such as acids, salt, liquid corrosives and concrete.

Includes composite guide with Corrosion Fighter Technology:

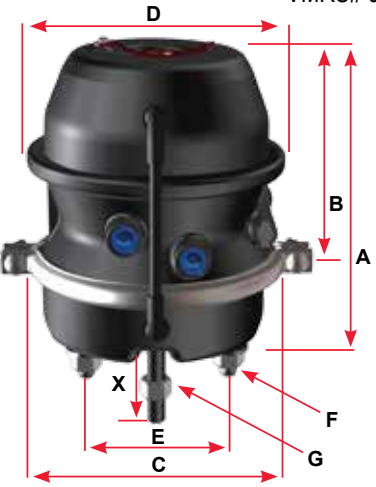


NOTE: Product information and specifications subject to change without notice.



Standard Stroke Model

DOUBLE DIAPHRAGM - STANDARD STROKE

Combination	Piggyback Plus Kit
 VMRS# 013-004-000	N/A

TR-TSHD Model Features

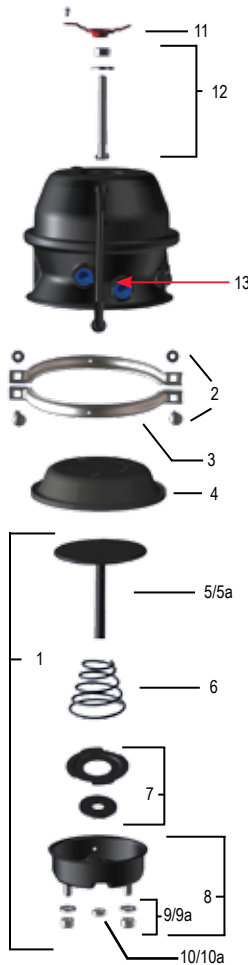
- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 Aftermarket HD Model)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Epoxy-Coated Piston and Center Case - Inside & Out
- Heavy-Duty Power Spring 160 lb (72.6 kg) additional parking brake force @1.25 inches (31.8 mm) of stroke
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

P/N Series	3526	3533
Model	TR2430LTSHD	TR3030TSHD
Size	2430	3030
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)
P/N Combination SAE	3526051	3533051
P/N Neoprene Diaphragm	N/A	3533851
P/N Welded Yoke (2.25")	N/A	N/A
P/N Piggyback Plus Kit SAE	N/A	N/A
P/N Combination METRIC	3526049	3533049
Wt. Combination	18.6 lb (8.4 kg)	19.9 lb (9.0 kg)
Wt. Single	N/A	N/A
A	9.04" (229.6 mm)	9.04" (229.6 mm)
B	6.91" (175.5 mm)	6.66" (169.2 mm)
C	7.38" (187.5 mm)	8.31" (211.1 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3526	3533
Model		TR2430LTSHD	TR3030TSHD
1	Kit - NP Chamber (a)	9015152	9015149
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017141	8017730
5	Kit - Push-Rod Assembly (a) SAE	9064002	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	9064016	9064035
6	Return Spring	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	9015151	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Breather Tube	9081001	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke Assembly		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



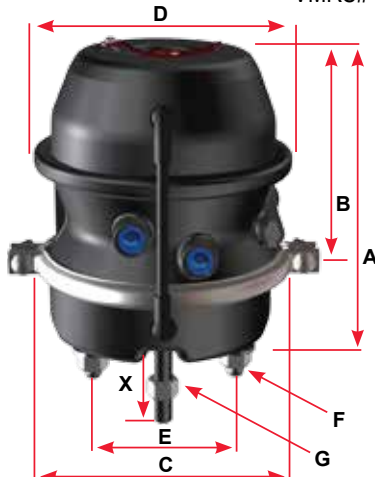
Center Hole Shield

Permits visual inspection of stroke alert but prevents entry of contaminants.

NOTE: Product information and specifications subject to change without notice.



Standard Stroke Model

Combination	Piggyback Plus Kit
	N/A

TR-TSHDW Model Features

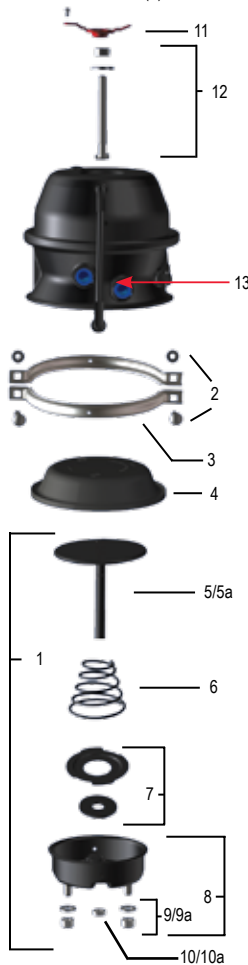
- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- 360 Aluminum Center Case
- Weatherseal™ Plug
- Heavy-Duty Steel Non-Pressure Chamber
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Epoxy-Coated Piston, Guide & Center Case - Inside & Out
- Heavy-Duty Power Spring 160 lb (72.6 kg) additional parking brake force @1.25 inches (31.8 mm) of stroke
- Weld Reinforced Non-Pressure Housing with Welded Bolts
- Composite Guide - Corrosion Fighter Technology (patent pending), type 30 spring side models only

P/N Series	3544
Model	TR3030TSHDW
Size	3030
Stroke	2.50" (63.5 mm)
P/N Combination SAE	3544051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	N/A
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	3544049
Wt. Combination	19.9 lb (9.0 kg)
Wt. Single	N/A
A	9.04" (229.6 mm)
B	6.66" (169.2 mm)
C	8.31" (211.1 mm)
D	8.21" (208.5 mm)
E	4.75" (120.7 mm)
F	5/8" - 11 UNC (M16 x 1.5 - 6g)
G	5/8" - 18 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min. (in the caged position)	8.00" (203.2 mm)

NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		3544
Model		TR3030TSHDW
1	Kit - NP Chamber (a)	9015149
2	Kit - Nuts & Bolts	9003001
3	Clamp Band Assembly	8216045
4	Diaphragm	8017730
5	Kit - Push-Rod Assembly (a) SAE	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	9064035
6	Return Spring	8068012
7	Kit - Center Hole Shield	9065002
8	NP Chamber Assembly (a)	9015259
9	Kit - Nuts & Washers SAE	9002001
9a	Kit - Nuts & Washers METRIC	9002002
10	Hex Nut - Yoke SAE	8130004
10a	Hex Nut - Yoke METRIC	8130016
11	Kit - Weatherseal™ Plug	9019005
12	Kit - Release Bolt	9007003
13	Kit - Breather Tube	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke Assembly		Refer to Replacement Parts Section 12
Boot & Retainer		Refer to Replacement Parts Section 12

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Weld Reinforced Non-Pressure Housing

Heavy-gauge formed steel flat-bottom design, epoxy-coated for total corrosion protection and "weld-reinforced" mounting studs for added support in extreme vibration applications. (bolt actually epoxy coated - depicted here lighter for visual purposes)

- 8-Gauge Standard on Type 3030 Aftermarket Model

NOTE: Product information and specifications subject to change without notice.

TR LONG STROKE BRAKES



**CORROSION
FIGHTER™**

TECHNOLOGY

"patent pending"
Corrosion Fighter Technology.



Section 2: Double Diaphragm Spring Brakes 30-47

Long Stroke Models

TR-LP3	Tamper Resistant, Long Stroke.....	32-33
TR-LP3HD	Tamper Resistant, Long Stroke, Heavy-Duty.....	34-35
TR-LP3T	Tamper Resistant, Long Stroke, Tube.....	36-37
TR-LP3THD	Tamper Resistant, Long Stroke, Tube, Heavy-Duty.....	38-39
TR-LP3THDW	Tamper Resistant, Long Stroke, Tube, Heavy-Duty, Welded NPC	40-41
TR-LP3TS	Tamper Resistant, Long Stroke, Tube, Severe Service	42-43
TR-LP3TSHD	Tamper Resistant, Long Stroke, Tube, Severe Service, Heavy-Duty.....	44-45
TR-LP3TSHDW	Tamper Resistant, Long Stroke, Tube, Severe Service, Heavy-Duty, Welded NPC.....	46-47



CORROSION
—FIGHTER™—
TECHNOLOGY

“patent pending”
Corrosion Fighter Technology.

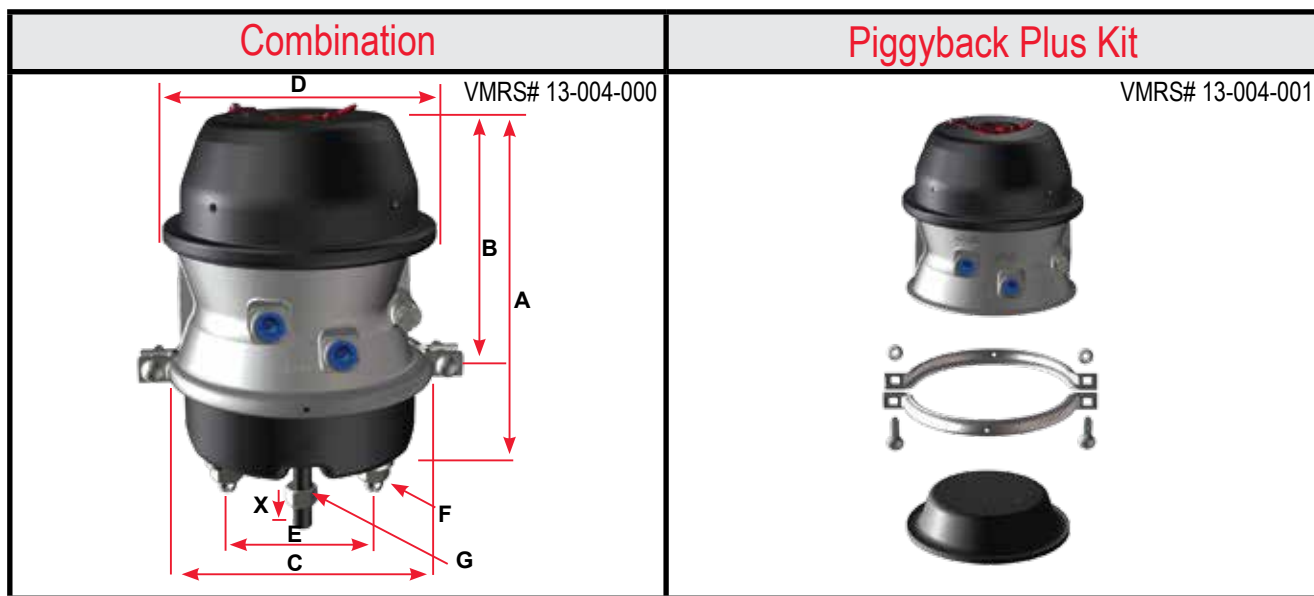
NOTE: Product information and specifications subject to change without notice.



TR-LP3

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE



TR-LP3 Model Features

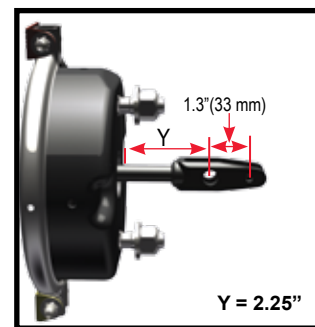
- Tamper Resistant Design
- Long Life Power Spring
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber (Type 3030 Models) - (9 gauge on all other sizes)
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3220	3224	3230
Model	TR2030LP3H	TR2430LP3	TR3030LP3
Size	2030	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3220051	3224051	3230051
P/N Neoprene Diaphragm	N/A	3224851	3230851
P/N Welded Yoke (2.25")	3220951	3224951	3230951
P/N Piggyback Plus Kit SAE	3220008	3224008	3230008
P/N Combination METRIC	3220049	3224049	3230049
Wt. Combination	19.1 lb (8.7 kg)	19.3 lb (8.8 kg)	20.1 lb (9.1 kg)
Wt. Single	11.5 lb (5.2 kg)	11.5 lb (5.2 kg)	11.5 lb (5.2 kg)
A	10.19" (258.8 mm)	10.19" (258.8 mm)	9.99" (253.7 mm)
B	7.81" (198.4 mm)	7.81" (198.4 mm)	7.61" (193.3 mm)
C	7.38" (187.5 mm)	7.38" (187.5 mm)	8.32" (211.3 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)		
F	5/8" - 11 UNC (M16 x 1.5 - 6g)		
G	5/8" - 18 UNF (M16 x 1.5 - 6g)		
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)		
X - Min. (in the caged position)	8.00" (203.2 mm)		

For Transit, Hendrickson Intraax / Vantraax Suspension applications and for units with mixed (SAE-METRIC) specifications refer to section 10.

NOTE: Product information and specifications subject to change without notice.

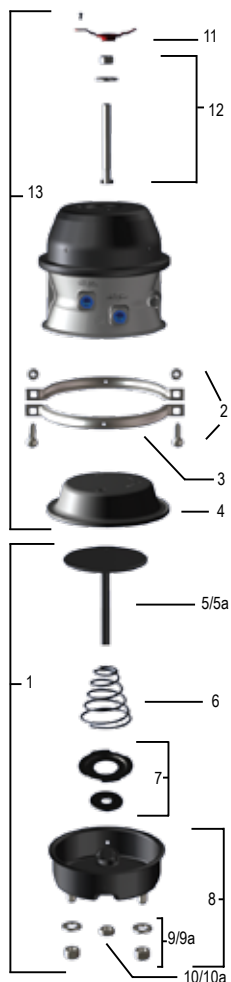
Welded Yoke Chamber



For more welded yoke choices, see page 104.

Replacement Parts				
P/N Series		3220	3224	3230
Model		TR2030LP3H	TR2430LP3	TR3030LP3
1	Kit - NP Chamber (a)	9015231	9015210	9015212
2	Kit - Nuts & Bolts	9003001	9003001	9003001
3	Clamp Band Assembly	8216027	8216025	8216045
4	Diaphragm	8017226	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064026	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064036	9064027	9064028
6	Return Spring	8068012	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002	9065002
8	NP Chamber Assembly (a)	8215200	8215200	8215501
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005	9019005
12	Kit - Release Bolt	9007003	9007003	9007003
13	Kit - Piggyback Plus SAE	3220008	3224008	3230008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12				
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12		
Boot & Retainer		Refer to Replacement Parts Section 12		

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



**CORROSION
— FIGHTER™ —
TECHNOLOGY**

"New" Composite Guide - A Standard Feature
Constructed from heavy-duty, non-metallic composite material. Available on all TR - Long Stroke model chambers. Patent Pending.

Note: guide is depicted in orange for visual purposes.
Patents Pending.



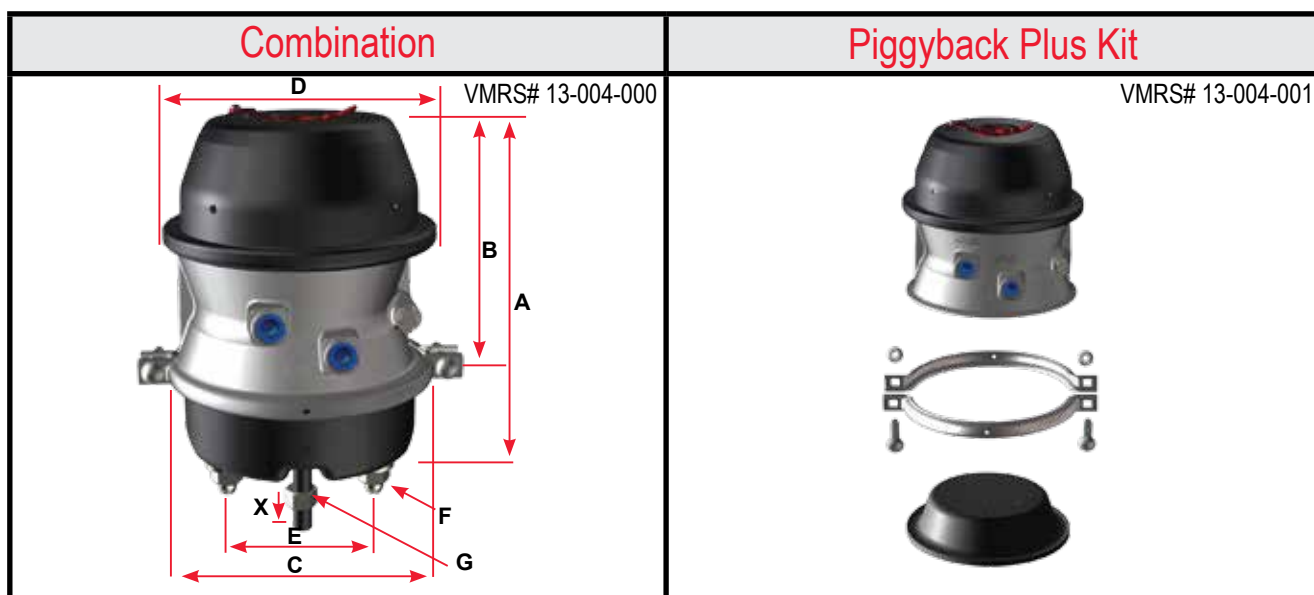
NOTE: Product information and specifications subject to change without notice.



TR-LP3HD

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

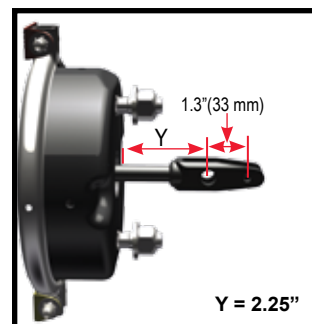


TR-LP3HD Model Features

- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber (Type 3030 Models) - (9 gauge on all other sizes)
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- Heavy-Duty Power Spring 145 lb (65.8 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3226	3232
Model	TR2430LP3HD	TR3030LP3HD
Size	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3226051	3232051
P/N Neoprene Diaphragm	3226851	3232851
P/N Welded Yoke (2.25")	3226951	3232951
P/N Piggyback Plus Kit SAE	3226008	3232008
P/N Combination METRIC	3226049	3232049
Wt. Combination	19.5 lb (8.8 kg)	20.4 lb (9.3 kg)
Wt. Single	11.7 lb (5.3 kg)	11.7 lb (5.3 kg)
A	10.19" (258.8mm)	9.99" (253.7 mm)
B	7.81" (198.4 mm)	7.61" (193.3 mm)
C	7.38" (187.5 mm)	8.32" (211.3 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

Welded Yoke Chamber

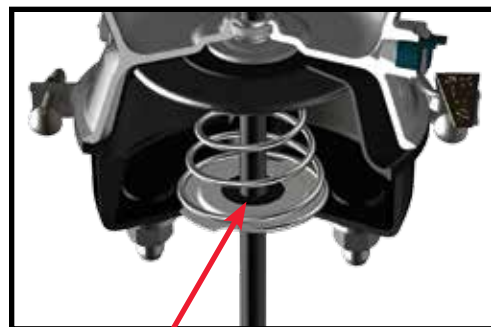
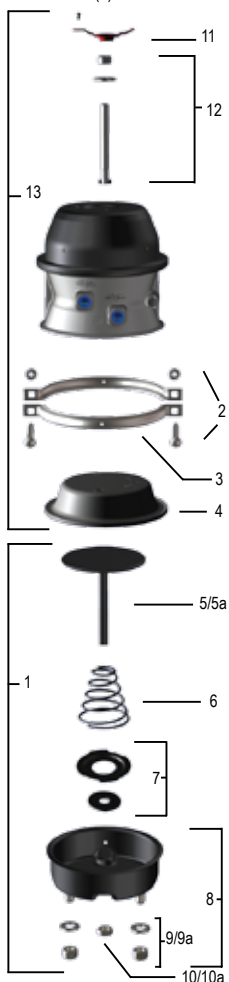


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3226	3232
Model		TR2430LP3HD	TR3030LP3HD
1	Kit - NP Chamber (a)	9015210	9015212
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064027	9064028
6	Return Spring	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	8215200	8215501
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Piggyback Plus SAE	3226008	3232008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Center Hole Shield

Permits visual inspection of stroke alert but prevents entry of contaminants.

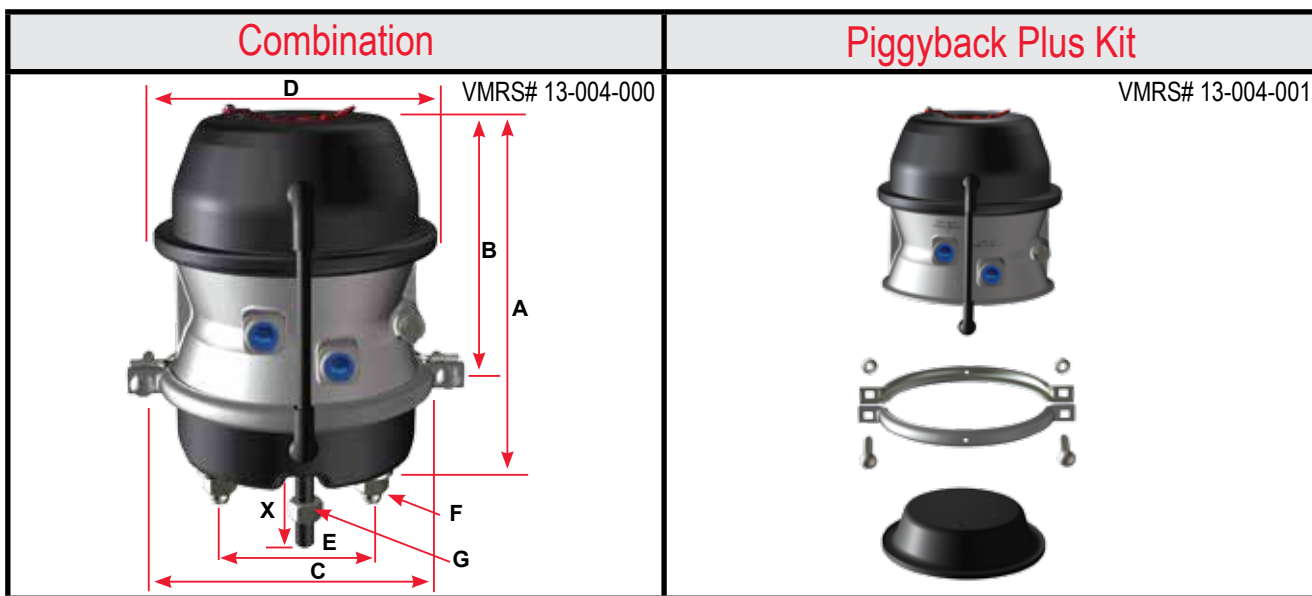
NOTE: Product information and specifications subject to change without notice.



TR-LP3T

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

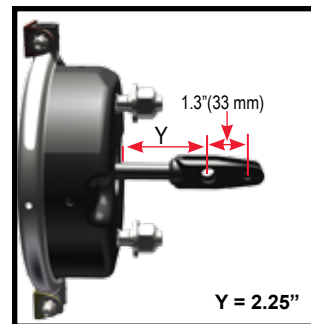


TR-LP3T Model Features

- Tamper Resistant Design
- Long Life Power Spring
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber (Type 3030 Models) - (9 gauge on all other sizes)
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- External Breather Tube
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3221	3225	3231
Model	TR2030LP3TH	TR2430LP3T	TR3030LP3T
Size	2030	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3221051	3225051	3231051
P/N Neoprene Diaphragm	N/A	3225851	3231851
P/N Welded Yoke (2.25")	N/A	3225951	3231951
P/N Piggyback Plus Kit SAE	3221008	3225008	3231008
P/N Combination METRIC	3221049	3225049	3231049
Wt. Combination	19.1 lb (8.7 kg)	19.3 lb (8.8 kg)	20.1 lb (9.1 kg)
Wt. Single	11.5 lb (5.2 kg)	11.5 lb (5.2 kg)	11.5 lb (5.2 kg)
A	10.19" (258.8 mm)	10.19" (258.8 mm)	9.99" (253.7 mm)
B	7.81" (198.4 mm)	7.81" (198.4 mm)	7.61" (193.3 mm)
C	7.38" (187.5 mm)	7.38" (187.5 mm)	8.32" (211.3 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)		
F	5/8" - 11 UNC (M16 x 1.5 - 6g)		
G	5/8" - 18 UNF (M16 x 1.5 - 6g)		
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)		
X - Min. (in the caged position)	8.00" (203.2 mm)		

Welded Yoke Chamber

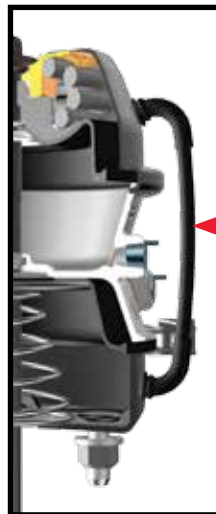
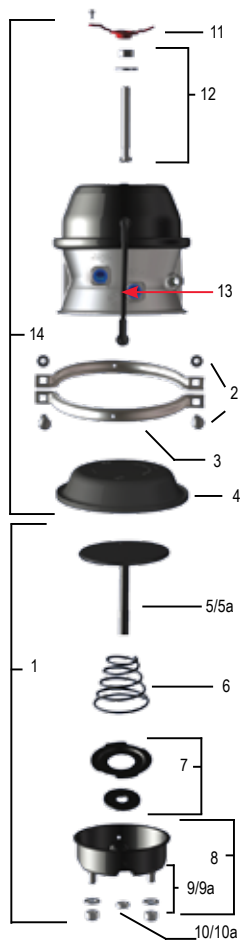


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts				
P/N Series		3221	3225	3231
Model		TR2030LP3TH	TR2430LP3T	TR3030LP3T
1	Kit - NP Chamber (a)	9015232	9015215	9015218
2	Kit - Nuts & Bolts	9003001	9003001	9003001
3	Clamp Band Assembly	8216027	8216025	8216045
4	Diaphragm	8017226	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064026	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064036	9064027	9064028
6	Return Spring	8068012	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002	9065002
8	NP Chamber Assembly (a)	9015213	9015213	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005	9019005
12	Kit - Release Bolt	9007003	9007003	9007003
13	Kit - Breather Tube	9081001	9081001	9081001
14	Kit - Piggyback Plus SAE	3221008	3225008	3231008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12				
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12		
Boot & Retainer		Refer to Replacement Parts Section 12		

Note: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



External Breather-Tube

Vents air from inside the protected area of the non-pressure chamber to effectively prevent entry of liquid and solid corrosive contaminants that can cause premature failure of the spring brake chamber.

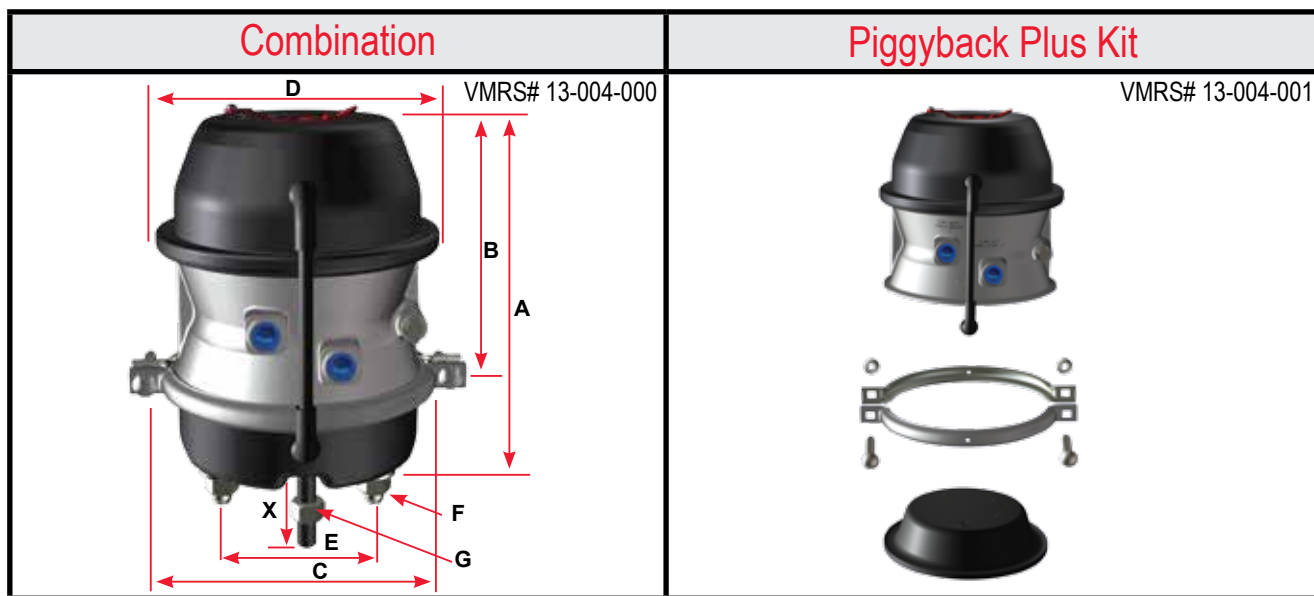
NOTE: Product information and specifications subject to change without notice.



TR-LP3THD

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

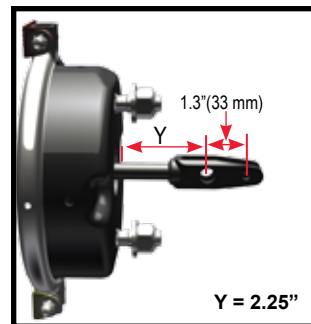


TR-LP3THD Model Features

- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber (Type 3030 Models) - (9 gauge on all other sizes)
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- External Breather Tube
- Heavy-Duty Power Spring 145 lb (65.8 kg) of additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3227	3233
Model	TR2430LP3THD	TR3030LP3THD
Size	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3227051	3233051
P/N Neoprene Diaphragm	3227851	N/A
P/N Welded Yoke (2.25")	3227951	3233951
P/N Piggyback Plus Kit SAE	3227008	3233008
P/N Combination METRIC	3227049	3233049
Wt. Combination	19.5 lb (8.8 kg)	20.4 lb (9.3 kg)
Wt. Single	11.7 lb (5.3 kg)	11.7 lb (5.3 kg)
A	10.19" (258.8 mm)	9.99" (253.7 mm)
B	7.81" (198.4 mm)	7.61" (193.3 mm)
C	7.38" (187.5 mm)	8.32" (211.3 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

Welded Yoke Chamber

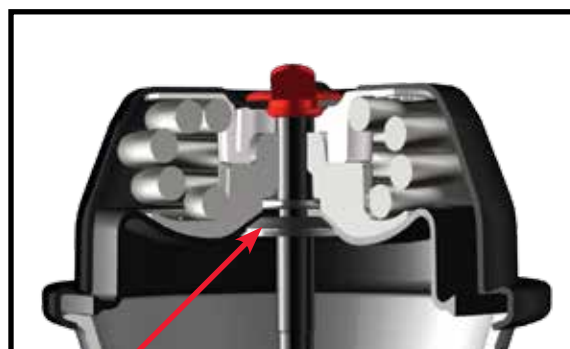
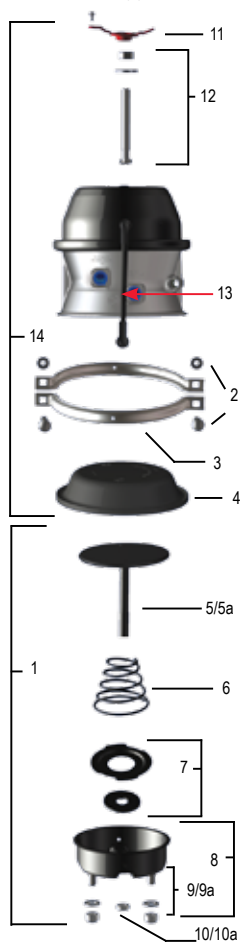


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3227	3233
Model		TR2430LP3THD	TR3030LP3THD
1	Kit - NP Chamber (a)	9015215	9015218
2	Kit - Bolts & Nuts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064027	9064028
6	Return Spring	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	9015213	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Breather Tube	9081001	9081001
14	Kit - Piggyback Plus	3227008	3233008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Center Hole Diaphragm (U.S. Patent #5,507,217)

Patented feature that aligns the piston, diaphragm, power spring and internal push-rod providing the following advantages: Maintains component alignment; reduces power spring stress; reduces coil clash; increases center-seal life and eliminates the effects of severe vibration.

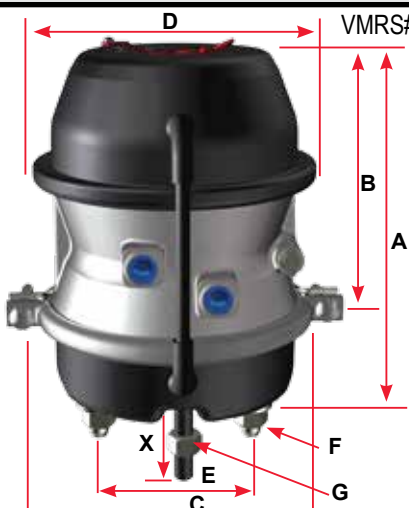
NOTE: Product information and specifications subject to change without notice.



TR-LP3THDW

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

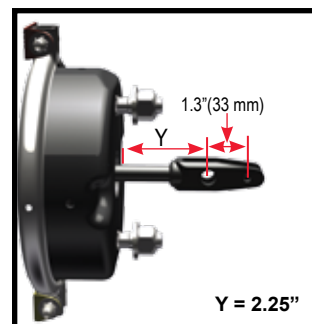
Combination	Piggyback Plus Kit
	N/A

TR-LP3THDW Model Features

- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- External Breather Tube
- Heavy-Duty Power Spring 145 lb (65.8 kg) of additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Weld Reinforced Non-Pressure Housing with Welded Bolts
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3244
Model	TR3030LP3THDW
Size	3030
Stroke	3.00" (76.2 mm)
P/N Combination SAE	3244051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	3244951
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	3244049
Wt. Combination	20.4 lb (9.3 kg)
Wt. Single	N/A
A	9.99" (253.7 mm)
B	7.61" (193.3 mm)
C	8.32" (211.3 mm)
D	8.21" (208.5 mm)
E	4.75" (120.7 mm)
F	5/8" - 11 UNC (M16 x 1.5 - 6g)
G	5/8" - 18 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min. (in the caged position)	8.00" (203.2 mm)

Welded Yoke Chamber

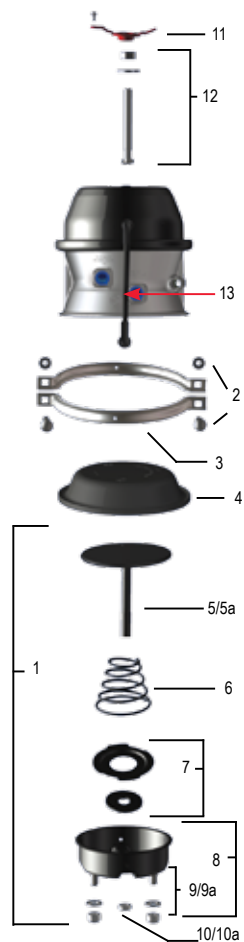


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		3244
Model		TR3030LP3THDW
1	Kit - NP Chamber (a)	9015905
2	Kit - Bolts & Nuts	9003001
3	Clamp Band Assembly	8216045
4	Diaphragm	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064028
6	Return Spring	8068012
7	Kit - Center Hole Shield	9065002
8	NP Chamber Assembly (a)	9015259
9	Kit - Nuts & Washers SAE	9002001
9a	Kit - Nuts & Washers METRIC	9002002
10	Hex Nut - Yoke SAE	8130004
10a	Hex Nut - Yoke METRIC	8130016
11	Kit - Weatherseal™ Plug	9019005
12	Kit - Release Bolt	9007003
13	Kit - Breather Tube	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12
Boot & Retainer		Refer to Replacement Parts Section 12

Note: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Weld Reinforced Non-Pressure Housing

Heavy-gauge formed steel flat-bottom design, epoxy-coated for total corrosion protection and "weld-reinforced" mounting studs for added support in extreme vibration applications. (bolt actually epoxy coated - depicted here lighter for visual purposes)

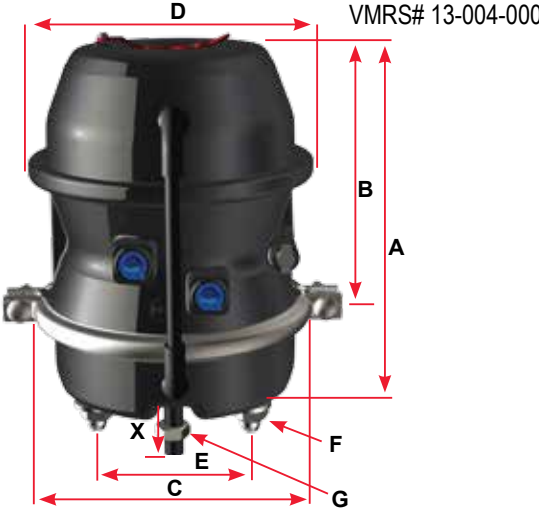
NOTE: Product information and specifications subject to change without notice.



TR-LP3TS

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

Combination	Piggyback Plus Kit
	N/A

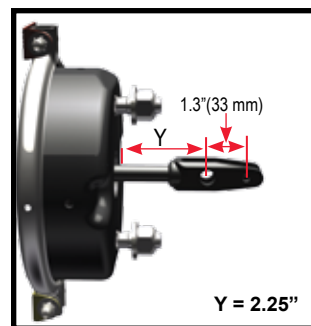
TR-LP3TS Model Features

- Tamper Resistant Design
- Long Life Power Spring
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber (Type 3030 Models) - (9 gauge on all other sizes)
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- External Breather Tube
- Epoxy-Coated Piston & Center Case - Inside & Out
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3523	3535
Model	TR2430LP3TS	TR3030LP3TS
Size	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3523051	3535051
P/N Neoprene Diaphragm	N/A	3535851
P/N Welded Yoke (2.25")	3523951	3535951
P/N Piggyback Plus Kit SAE	N/A	N/A
P/N Combination METRIC	3523049	3535049
Wt. Combination	19.3 lb (8.8 kg)	20.1 lb (9.1 kg)
Wt. Single	N/A	N/A
A	10.19" (258.8mm)	9.99" (253.7 mm)
B	7.81" (198.4 mm)	7.61" (193.3 mm)
C	7.38" (187.5 mm)	8.32" (211.3 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

NOTE: Product information and specifications subject to change without notice.

Welded Yoke Chamber



For more welded yoke choices, see page 104.

Replacement Parts			
P/N Series		3523	3535
Model		TR2430LP3TS	TR3030LP3TS
1	Kit - NP Chamber (a)	9015215	9015218
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064027	9064028
6	Return Spring	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	9015213	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Breather Tube	9081001	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

Note: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Epoxy Coated Components

The flange case and upper piston are epoxy coated for extra added protection, which, along with our patents pending "corrosion fighter" technology, make MGM "Severe Service" Chambers the best choice for severe operating environments: such as acids, salt, liquid corrosives and concrete.

*Includes composite guide with
Corrosion Fighter Technology:*



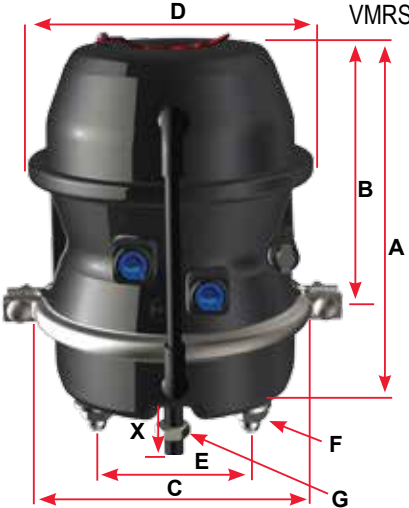
NOTE: Product information and specifications subject to change without notice.



TR-LP3TSHD

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

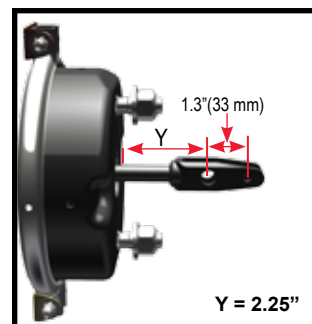
Combination	Piggyback Plus Kit
 VMRS# 13-004-000	N/A

TR-LP3TSHD Model Features

- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber (Type 3030 Models) - (9 gauge on all other sizes)
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- External Breather Tube
- Epoxy-Coated Piston & Center Case - Inside & Out
- Heavy-Duty Power Spring 145 lb (65.8 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- Composite Guide - Corrosion Fighter Technology (patent pending)

P/N Series	3527	3534
Model	TR2430LP3TSHD	TR3030LP3TSHD
Size	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3527051	3534051
P/N Neoprene Diaphragm	3527851	N/A
P/N Welded Yoke (2.25")	3527951	3534951
P/N Piggyback Plus Kit SAE	N/A	N/A
P/N Combination METRIC	3527049	3534049
Wt. Combination	19.5 lb (8.8 kg)	20.4 lb (9.3 kg)
Wt. Single	N/A	N/A
A	10.19" (258.8mm)	9.99" (253.7 mm)
B	7.81" (198.4 mm)	7.61" (193.3 mm)
C	7.38" (187.5 mm)	8.32" (211.3 mm)
D	8.21" (208.5 mm)	8.21" (208.5 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

Welded Yoke Chamber

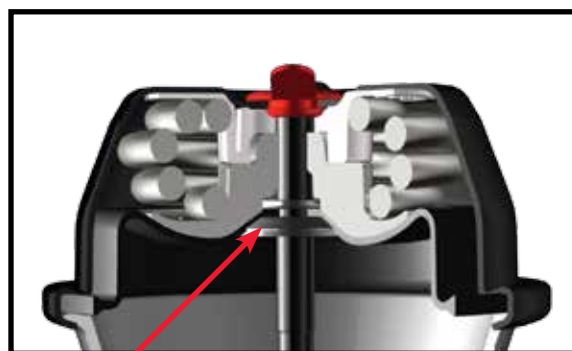


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3527	3534
Model		TR2430LP3TSHD	TR3030LP3TSHD
1	Kit - NP Chamber (a)	9015215	9015218
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064027	9064028
6	Return Spring	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	9015213	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016
11	Kit - Weatherseal™ Plug	9019005	9019005
12	Kit - Release Bolt	9007003	9007003
13	Kit - Breather Tube	9081001	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Center Hole Diaphragm (U.S. Patent #5,507,217)

Patented feature that aligns the piston, diaphragm, power spring and internal push-rod providing the following advantages: Maintains component alignment; reduces power spring stress; reduces coil clash; increases center-seal life and eliminates the effects of severe vibration.

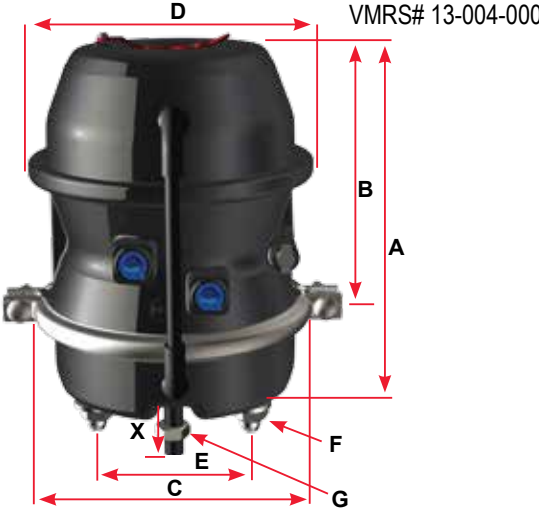
NOTE: Product information and specifications subject to change without notice.



TR-LP3TSHDW

Long Stroke Model

DOUBLE DIAPHRAGM - 3" LONG STROKE

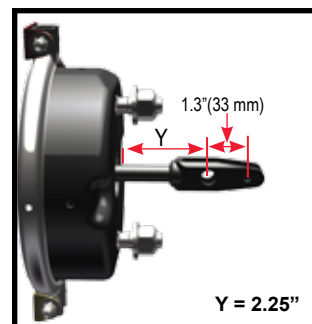
Combination	Piggyback Plus Kit
	N/A

TR-LP3TSHDW Model Features

- Tamper Resistant Design
- Center Hole Diaphragm (U.S. Patent No. 5,507,217)
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- Epoxy Coated Return Spring
- Center Hole Shield
- Square Port Bosses (Long Stroke Identification)
- Weatherseal™ Plug
- Heavy-Duty 8-Gauge Steel Non-Pressure Chamber
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Stroke Alert
- Externally Stored Release Bolt
- 3" (76.2 mm) Long Stroke
- Molded Nitrile Rubber Air Seal
- External Breather Tube
- Epoxy-Coated Piston & Center Case - Inside & Out
- Heavy-Duty Power Spring 145 lb (65.8 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke
- **Weld Reinforced Non-Pressure Housing with Welded Bolts**
- **Composite Guide - Corrosion Fighter Technology (patent pending)**

P/N Series	3545
Model	TR3030LP3TSHDW
Size	3030
Stroke	3.00" (76.2 mm)
P/N Combination SAE	3545051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	3545951
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	3545049
Wt. Combination	20.4 lb (9.3 kg)
Wt. Single	N/A
A	9.99" (253.7 mm)
B	7.61" (193.3 mm)
C	8.32" (211.3 mm)
D	8.21" (208.5 mm)
E	4.75" (120.7 mm)
F	5/8" - 11 UNC (M16 x 1.5 - 6g)
G	5/8" - 18 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min. (in the caged position)	8.00" (203.2 mm)

Welded Yoke Chamber

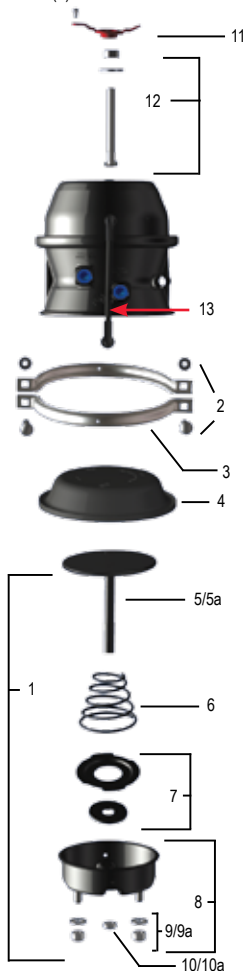


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		3545
Model		TR3030LP3TSHDW
1	Kit - NP Chamber (a)	9015905
2	Kit - Nuts & Bolts	9003001
3	Clamp Band Assembly	8216045
4	Diaphragm	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064028
6	Return Spring	8068012
7	Kit - Center Hole Shield	9065002
8	NP Chamber Assembly (a)	9015259
9	Kit - Nuts & Washers SAE	9002001
9a	Kit - Nuts & Washers METRIC	9002002
10	Hex Nut - Yoke SAE	8130004
10a	Hex Nut - Yoke METRIC	8130016
11	Kit - Weatherseal™ Plug	9019005
12	Kit - Release Bolt	9007003
13	Kit - Breather Tube	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke & Welded Yoke Assemblies		Refer to Replacement Parts Section 12
Boot & Retainer		Refer to Replacement Parts Section 12

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Weld Reinforced Non-Pressure Housing

Heavy-gauge formed steel flat-bottom design, epoxy-coated for total corrosion protection and "weld-reinforced" mounting studs for added support in extreme vibration applications. (bolt actually epoxy coated - depicted here lighter for visual purposes)

NOTE: Product information and specifications subject to change without notice.

LTR SERIES



**Innovative Design,
Quality Craftsmanship-
The Long-Life Benchmark**



Section 3: Long Life Double Diaphragm Spring Brakes 48-57

Standard Stroke Model

LTR-T Integral Release Bolt, Tamper Resistant, Tube 50-51

Long Stroke Model

LTR-L3 Integral Release Bolt, Tamper Resistant, Long Stroke..... 52-53

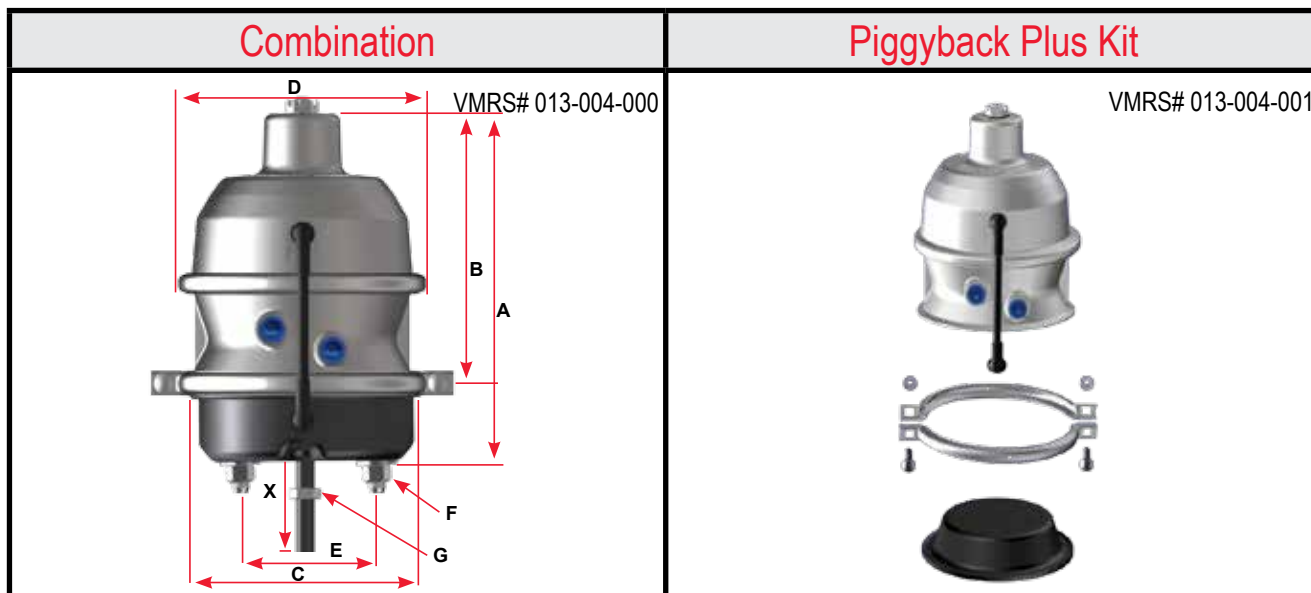
LTR-L3W Integral Release Bolt, Tamper Resistant, Long Stroke, Welded NPC 54-55

LTR-L3T Integral Release Bolt, Tamper Resistant, Long Stroke, Tube..... 56-57



NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model



LTR-T Model Features

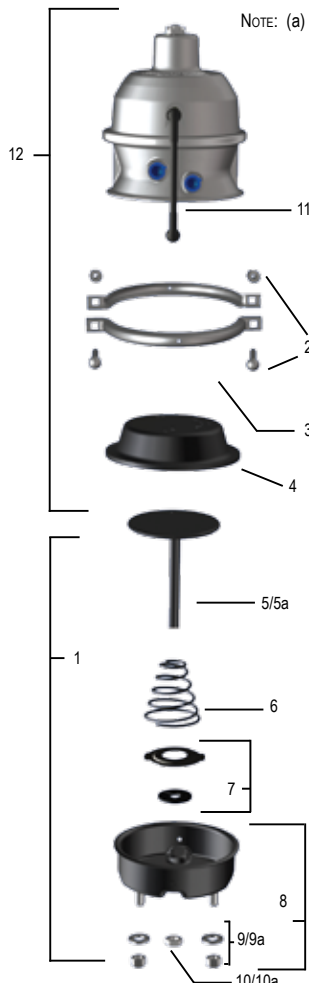
- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Six (6) Year Limited Warranty
- Integral Release Bolt
- 360 Aluminum Alloy
- Low Friction Piston & Guide
- Epoxy Coated Return Spring
- Heavy-Duty "Long Life" Power Spring 100 lb (45.4 kg) additional parking brake force @ 1.25" (31.8 mm) of stroke
- Heavy-Duty Steel Non-Pressure Chamber (8 Gauge Standard on Type 3030 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube

P/N Series	3827	3831
Model	LTR2430LT	LTR3030T
Size	2430	3030
Stroke	2.50" (63.5 mm)	2.50" (63.5mm)
P/N Combination SAE	3827051	3831051
P/N Neoprene Diaphragm	3827851	N/A
P/N Welded Yoke (2.25")	N/A	N/A
P/N Piggyback Plus Kit SAE	3827008	3831008
P/N Combination METRIC	***	***
Wt. Combination	18.5 lb (8.4 kg)	19.9 lb (9.0 kg)
Wt. Single	11.4 lb (5.2 kg)	11.7 lb (5.3 kg)
A	11.8" (299.7 mm)	11.86" (301.2 mm)
B	9.68" (245.9 mm)	9.46" (240.3 mm)
C	7.38" (187.5 mm)	8.27" (210.1 mm)
D	8.18" (207.8 mm)	8.18" (207.8 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm)	

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 Note: Product information and specifications subject to change without notice.

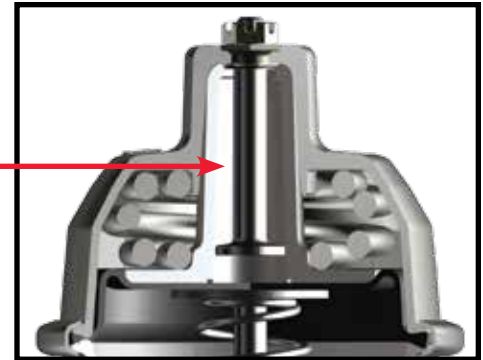
Replacement Parts			
P/N Series		3827	3831
Model		LTR2430LT	LTR3030T
1	Kit - NP Chamber (a)	9015152	9015157
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017141	8017730
5	Kit - Push-Rod Assembly (a) SAE	9064002	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	***	***
6	Return Spring	8068002	8068002
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	9015151	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	***	***
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	***	***
11	Kit - Breather Tube	9081001	9081001
12	Piggyback Plus Kit SAE	3827008	3831008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke Assembly		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert indicator positioning, these kits must be used only in the designated MGM Brakes units.



Integral Manual Release Bolt

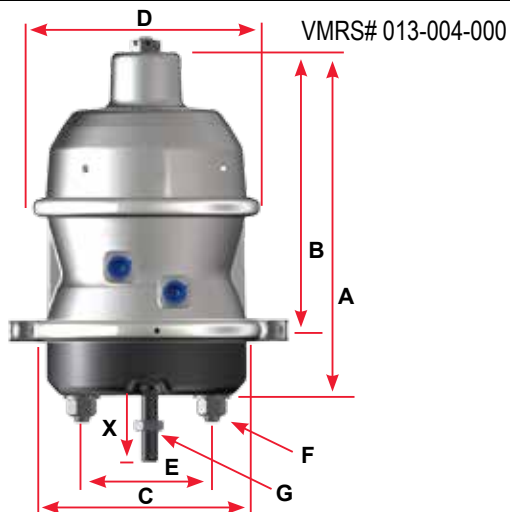
Permanently installed, can't get lost. Permits safe, easy release to reline brakes or move vehicle in absence of air pressure.



*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 NOTE: Product information and specifications subject to change without notice.

Long Stroke Model

Combination



Piggyback Plus Kit

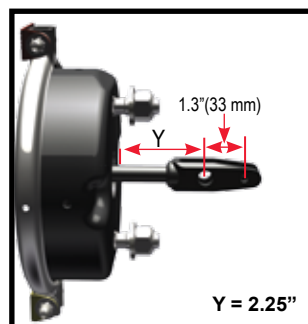


LTR-L3 Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Six (6) Year Limited Warranty
- Integral Release Bolt
- 360 Aluminum Alloy
- Low Friction Piston & Guide
- Epoxy Coated Return Spring
- Square Port Bosses (Long Stroke Identification)
- Heavy-Duty "Long Life" Power Spring 100 lb (45.4 kg) additional parking brake force @ 1.25" (31.8 mm) of stroke
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)

P/N Series	3828	3832
Model	LTR2430L3	LTR3030L3
Size	2430	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	3828051	3832051
P/N Neoprene Diaphragm	N/A	N/A
P/N Welded Yoke (2.25")	3828951	3832951
P/N Piggyback Plus Kit SAE	3828008	3832008
P/N Combination METRIC	***	***
Wt. Combination	19.3 lb (8.8 kg)	20.5 lb (9.3 kg)
Wt. Single	12.3 lb (5.6 kg)	12.6 lb (5.7 kg)
A	13.0" (330.2 mm)	13.0" (330.2 mm)
B	10.63" (270.0 mm)	10.63" (270.0 mm)
C	7.38" (187.5 mm)	8.27" (210.1 mm)
D	8.18" (207.8 mm)	8.18" (207.8 mm)
E	4.75" (120.7 mm)	
F	5/8" - 11 UNC (M16 x 1.5 - 6g)	
G	5/8" - 18 UNF (M16 x 1.5 - 6g)	
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)	
X - Min. (in the caged position)	8.00" (203.2 mm) (a)	

Welded Yoke Chamber



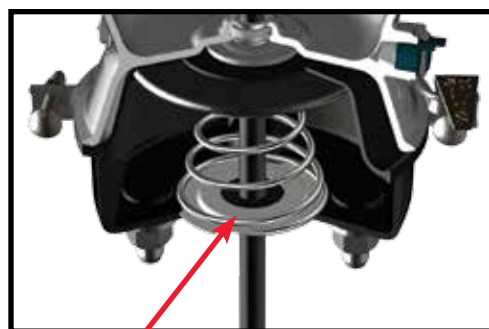
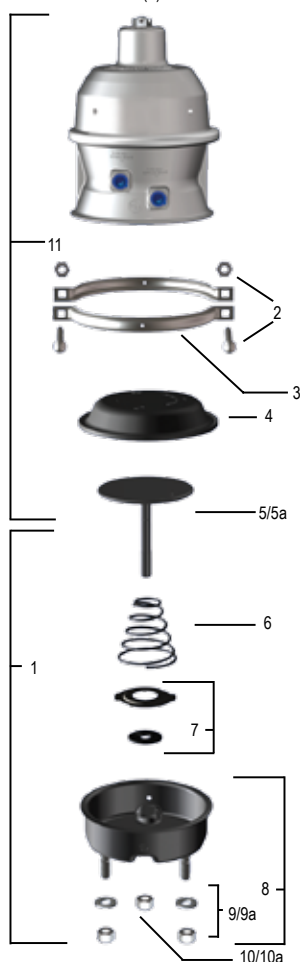
For more welded yoke choices, see page 104.

Note: (a) For Transit, Hendrickson Intraax / Vantraax Suspension applications and for units with mixed (SAE-METRIC) specifications and for actuators manufactured with neoprene diaphragms, refer to section 10.

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 Note: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series		3828	3832
Model		LTR2430L3	LTR3030L3
1	Kit - NP Chamber (a)	9015210	9015212
2	Kit - Nuts & Bolts	9003001	9003001
3	Clamp Band Assembly	8216025	8216045
4	Diaphragm	8017424	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	***	***
6	Return Spring	8068012	8068012
7	Kit - Center Hole Shield	9065002	9065002
8	NP Chamber Assembly (a)	8215200	8215501
9	Kit - Nuts & Washers SAE	9002001	9002001
9a	Kit - Nuts & Washers METRIC	***	***
10	Hex Nut - Yoke SAE	8130004	8130004
10a	Hex Nut - Yoke METRIC	***	***
11	Kit - Piggyback Plus SAE	3828008	3832008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12			
Yoke Assembly		Refer to Replacement Parts Section 12	
Boot & Retainer		Refer to Replacement Parts Section 12	

NOTE: (a) To ensure correct stroke alert indicator positioning, these kits must be used only in the designated MGM Brakes units.



Center Hole Shield

Permits visual inspection of stroke alert but prevents entry of contaminants.

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 NOTE: Product information and specifications subject to change without notice.

Long Stroke Model

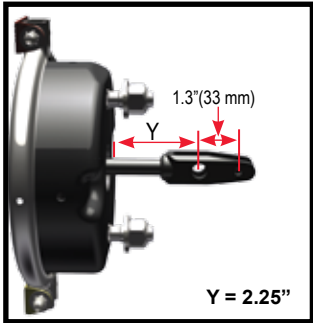
Combination	Piggyback Plus Kit
	N/A

LTR-L3W Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Six (6) Year Limited Warranty
- Integral Release Bolt
- 360 Aluminum Alloy
- Low Friction Piston & Guide
- Epoxy Coated Return Spring
- Square Port Bosses (Long Stroke Identification)
- Heavy-Duty “Long Life” Power Spring 100 lb (45.4 kg) additional parking brake force @ 1.25” (31.8 mm) of stroke
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- Weld Reinforced Non-Pressure Housing with Welded Bolts.

P/N Series	3844
Model	LTR3030L3W
Size	3030
Stroke	3.00" (76.2 mm)
P/N Combination SAE	3844051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	3844951
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	***
Wt. Combination	20.5 lb (9.3 kg)
Wt. Single	N/A
A	13.0" (330.2 mm)
B	10.63" (270.0mm)
C	8.27" (210.1 mm)
D	8.18" (207.8 mm)
E	4.75" (120.7 mm)
F	5/8" - 11 UNC (M16 x 1.5 - 6g)
G	5/8" - 18 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min. (in the caged position)	8.00" (203.2 mm) (a)

Welded Yoke Chamber



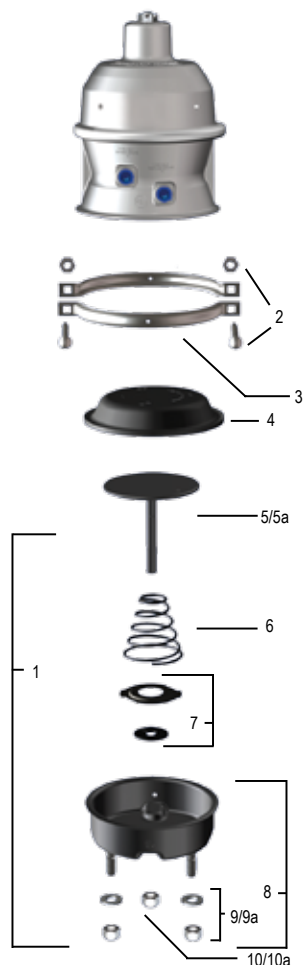
For more welded yoke choices, see page 104.

Note: (a) For Transit, Hendrickson Intraax / Vantraax Suspension applications and for units with mixed (SAE-METRIC) specifications and for actuators manufactured with neoprene diaphragms, refer to section 10.

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		3844
Model		LTR3030L3W
1	Kit - NP Chamber (a)	N/A
2	Kit - Nuts & Bolts	9003001
3	Clamp Band Assembly	8216045
4	Diaphragm	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	***
6	Return Spring	8068012
7	Kit - Center Hole Shield	9065002
8	NP Chamber Assembly (a)	9015260
9	Kit - Nuts & Washers SAE	9002001
9a	Kit - Nuts & Washers METRIC	***
10	Hex Nut - Yoke SAE	8130004
10a	Hex Nut - Yoke METRIC	***
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke Assembly		Refer to Replacement Parts Section 12
Boot & Retainer		Refer to Replacement Parts Section 12

NOTE: (a) To ensure correct stroke alert indicator positioning, these kits must be used only in the designated MGM Brakes units.



Weld Reinforced Non-Pressure Housing

Heavy-gauge formed steel flat-bottom design, epoxy-coated for total corrosion protection and "weld-reinforced" mounting studs for added support in extreme vibration applications. (bolt actually epoxy coated - depicted here lighter for visual purposes)

- 8-Gauge Standard on Type 3030 Aftermarket Models

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 NOTE: Product information and specifications subject to change without notice.

Long Stroke Model

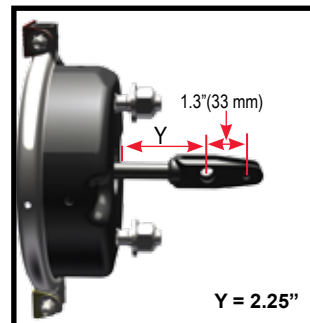
Combination	Piggyback Plus Kit
VMRS# 013-004-000	VMRS# 013-004-001 N/A

LTR-L3T Model Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Center Hole Shield
- Six (6) Year Limited Warranty
- Integral Release Bolt
- 360 Aluminum Alloy
- Low Friction Piston & Guide
- Epoxy Coated Return Spring
- Square Port Bosses (Long Stroke Identification)
- Heavy-Duty “Long Life” Power Spring 100 lb (45.4 kg) additional parking brake force @ 1.25” (31.8 mm) of stroke
- Heavy-Duty Steel Non-Pressure Chamber (8-Gauge Standard on Type 3030 Aftermarket Models)
- Stroke Alert
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube

P/N Series	3833
Model	LTR3030L3T
Size	3030
Stroke	3.00" (76.2 mm)
P/N Combination SAE	3833051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	3833951
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	***
Wt. Combination	20.5 lb (9.3 kg)
Wt. Single	N/A
A	13.0" (330.2 mm)
B	10.63" (270.0mm)
C	8.27" (210.1 mm)
D	8.18" (207.8 mm)
E	4.75" (120.7 mm)
F	5/8" - 11 UNC (M16 x 1.5 - 6g)
G	5/8" - 18 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min. (in the caged position)	8.00" (203.2 mm)

Welded Yoke Chamber

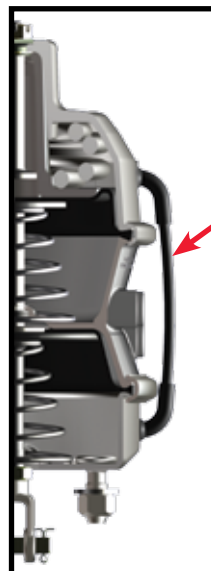
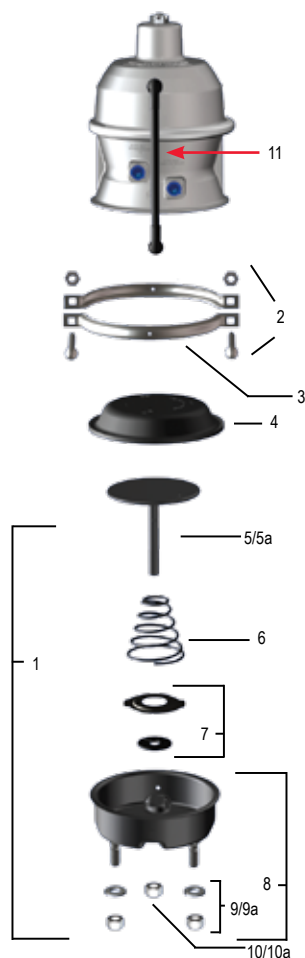


For more welded yoke choices, see page 104.

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 Note: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		3833
Model		LTR3030L3T
1	Kit - NP Chamber (a)	N/A
2	Kit - Nuts & Bolts	9003001
3	Clamp Band Assembly	8216045
4	Diaphragm	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064003
5a	Kit - Push-Rod Assembly (a) METRIC	***
6	Return Spring	8068012
7	Kit - Center Hole Shield	9065002
8	NP Chamber Assembly (a)	9015122
9	Kit - Nuts & Washers SAE	9002001
9a	Kit - Nuts & Washers METRIC	***
10	Hex Nut - Yoke SAE	8130004
10a	Hex Nut - Yoke METRIC	***
11	External Breather Tube	9081001
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke Assembly		Refer to Replacement Parts Section 12
Boot & Retainer		Refer to Replacement Parts Section 12

NOTE: (a) To ensure correct stroke alert indicator positioning, these kits must be used only in the designated MGM Brakes units.



External Breather-Tube

Vents air from inside the protected area of the non-pressure chamber to effectively prevent entry of liquid and solid corrosive contaminants that can cause premature failure of the spring brake chamber.

*** For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), or for International email: mail@mgmbrakes.com
 NOTE: Product information and specifications subject to change without notice.

MAGNUM

Performance Plus

SERIES



**Piston Performance For
Demanding Applications -
When Only The Best Will Do**



Section 4: Piston Spring Brakes 58-67

Standard Stroke Model

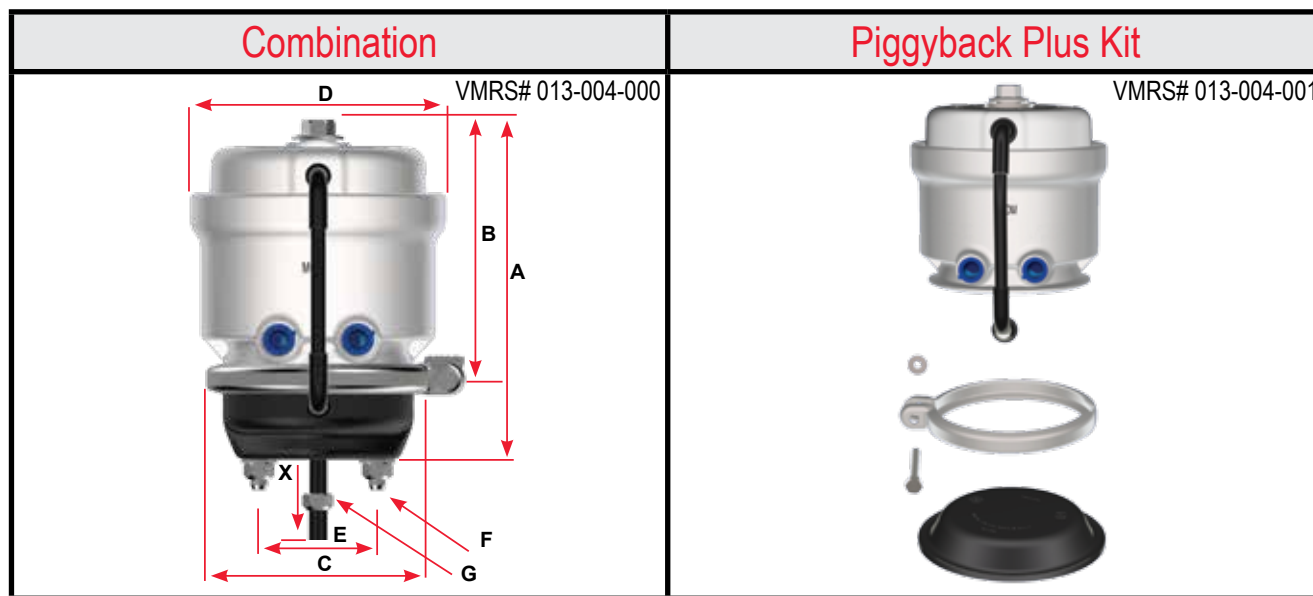
MJS Magnum, J-Series, 1.75" (44.5 mm) Stroke, Tube 60-61

Long Stroke Model

MJS Magnum, J-Series, 3.00" (76.2 mm) Stroke, Tube 62-67



NOTE: Product information and specifications subject to change without notice.



MJS 1.75" (44.5 mm) Model Features

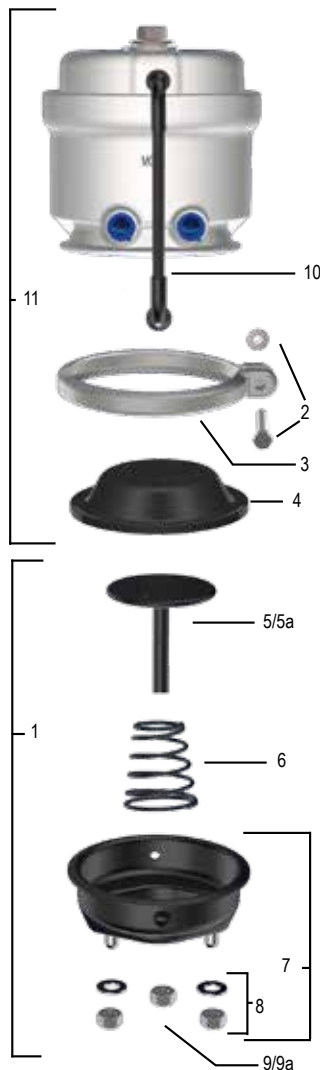
- Lightweight, Rugged Aluminum Housing and Head
- Epoxy-Coated Power Spring
- External Breather Tube
- Integral Release Bolt
- Epoxy Coated Return Spring
- Polymer Push-Rod Guides
- Molded Nitrile Rubber Push-Rod Air Seal
- Low Friction Piston and Guide
- Heavy-Duty Nylon Reinforced Diaphragms

P/N Series	MJS1216AT
Model	MJS1216AT
Size	1216
Stroke	1.75" (44.5 mm)
P/N Combination SAE	MJS1216AT051
P/N Neoprene Diaphragm	N/A
P/N Welded Yoke (2.25")	N/A
P/N Piggyback Plus Kit SAE	MJS1216AT008
P/N Combination METRIC	MJS1216AT049
Wt. Combination	12.5 lb (5.7 kg)
Wt. Single	8.70 lb (3.9 kg)
A	8.62" (218.9 mm)
B	5.84" (148.3 mm)
C	5.70" (144.8 mm)
D	6.44" (163.6 mm)
E	3.00" (76.2 mm)
F	7/16" - 14 UNC
G	1/2" - 20 UNF (M16 x 1.5 - 6g)
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)
X - Min (in the caged position)	8.00" (203.2 mm)

NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series	MJS1216AT	
Model	MJS1216AT	
1	Kit - NP Chamber (a)	9015242
2	Kit - Nuts & Bolts	9003002
3	Clamp Band Assembly	8216012
4	Diaphragm	8017312
5	Kit - Push-Rod Assembly (a) SAE	9064010
5a	Kit - Push-Rod Assembly (a) METRIC	9064034
6	Return Spring	8068007
7	NP Chamber Assembly (a)	8215198
8	Kit - Nuts & Washers SAE	9002003
9	Hex Nut - Yoke SAE	8130011
9a	Hex Nut - Yoke METRIC	8130016
10	Kit - Breather Tube	9081001
11	Kit - Piggyback Plus SAE	MJS1216AT008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12		
Yoke Assembly		Refer to Replacement Parts Section 12

NOTE: (a) To ensure correct stroke alert indicator positioning, these kits must be used only in the designated MGM Brakes units.

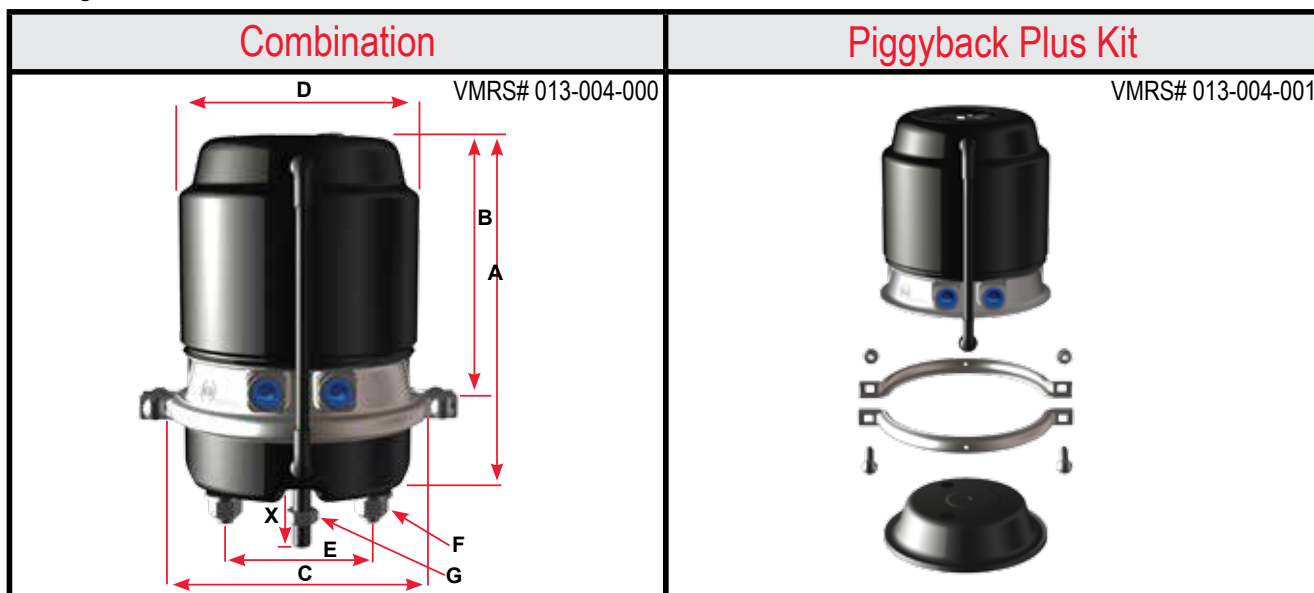


Release Bolt

Patented "Dual Thread Release Bolt" design, an MGM Brakes exclusive, provides minimal bolt protrusion at maximum release. (Approx. 1.00 inch (25.4 mm) protrusion when manually released)



NOTE: Product information and specifications subject to change without notice.



MJS 3.00" (76.2 mm) Model Features

- Tamper Resistant Design
- Lighter Weight
- 3 Inch (76.2mm) Long Stroke
- Compact Size
- Patented Integral Release Bolt Mechanism - Minimal Bolt Protrusion - Approx. 1.25 inch (31.8 mm) protrusion on "Long Stroke" models when manually released
- Lower Hold-Off Pressure (Less Air Consumption)
- Epoxy Coated Return Spring
- Non-Coil Clash Power Spring
- Increased Corrosion Resistance - Steel Head, Epoxy Coated
- Available with 1,749 lb (793.3 kg) - 2,450 lb (1111.3 kg) of Push-Rod Braking Force @ 1.25 inch (31.8 mm) Stroke/Service Brake Sizes 17-36
- Center Hole Shield

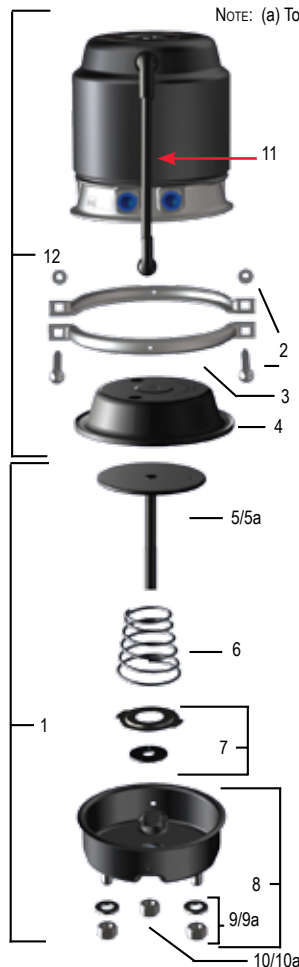
P/N Series	MJS1722ET	MJS1724ET	MJS2022ET	MJS2024ET	MJS2030ET
Model	MJS1722ET	MJS1724ET	MJS2022ET	MJS2024ET	MJS2030ET
Size	1722	1724	2022	2024	2030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	MJS1722ET051	MJS1724ET051	MJS2022ET051	MJS2024ET051	MJS2030ET051
P/N Neoprene Diaphragm	N/A	N/A	N/A	N/A	N/A
P/N Welded Yoke (2.25")	N/A	N/A	N/A	N/A	N/A
P/N Piggyback Plus Kit SAE	MJS1722ET008	MJS1724ET008	MJS2022ET008	MJS2024ET008	MJS2030ET008
P/N Combination METRIC	MJS1722ET049	MJS1724ET049	MJS2022ET049	MJS2024ET049	MJS2030ET049
Wt. Combination	20.32 lb (9.2 kg)	20.32 lb (9.2 kg)	20.32 lb (9.2 kg)	20.32 lb (9.2 kg)	22.70 lb (10.3 kg)
Wt. Single	13.50 lb (6.1 kg)	13.50 lb (6.1 kg)	13.50 lb (6.1 kg)	13.50 lb (6.1 kg)	14.90 lb (6.8 kg)
A	10.61" (269.5 mm)	10.61" (269.5 mm)	10.61" (269.5 mm)	10.61" (269.5 mm)	10.99" (279.1 mm)
B	7.94" (201.7 mm)	7.94" (201.7 mm)	7.94" (201.7 mm)	7.94" (201.7 mm)	8.43" (214.1 mm)
C	6.85" (174.0 mm)	6.85" (174.0 mm)	6.85" (174.0 mm)	6.85" (174.0 mm)	6.85" (174.0 mm)
D	6.76" (171.7 mm)	6.76" (171.7 mm)	6.76" (171.7 mm)	6.76" (171.7 mm)	7.50" (190.5 mm)
E	4.75" (120.7 mm)				
F	5/8" - 11 UNC (M16 x 1.5 - 6g)				
G	5/8" - 18 UNF (M16 x 1.5 - 6g)				
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)				
X - Min. (in the caged position)	8.00" (203.2 mm)				

Additional sizes on page 64-65.

NOTE: Product information and specifications subject to change without notice.

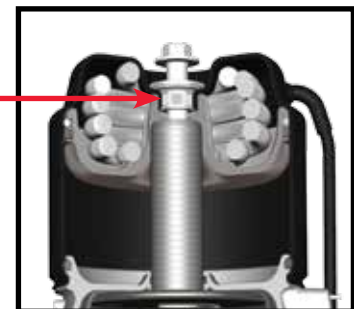
Replacement Parts					
P/N Series	MJS1722ET	MJS1724ET	MJS2022ET	MJS2024ET	MJS2030ET
Model	MJS1722ET	MJS1724ET	MJS2022ET	MJS2024ET	MJS2030ET
1	Kit - NP Chamber (a)	9015240	9015240	9015239	9015239
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216020	8216020	8216020	8216020
4	Diaphragm	8017215	8017215	8017820	8017820
5	Kit - Push-Rod Assembly (a) SAE	8264532	8264532	8264039	8264039
5a	Kit - Push-Rod Assembly (a) METRIC	9064031	9064031	9064030	9064030
6	Return Spring	8068021	8068021	8068021	8068021
7	Kit - Center Hole Shield	9065002	9065002	9065002	9065002
8	NP Chamber Assembly (a)	9015238	9015238	9015238	8215238
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016
11	Kit - Breather Tube	9081001	9081001	9081001	9081001
12	Kit - Piggyback Plus SAE	MJS1722ET008	MJS1724ET008	MJS2022ET008	MJS2030ET008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12					
Yoke Assembly		Refer to Replacement Parts Section 12			
Boot & Retainer		Refer to Replacement Parts Section 12			

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.

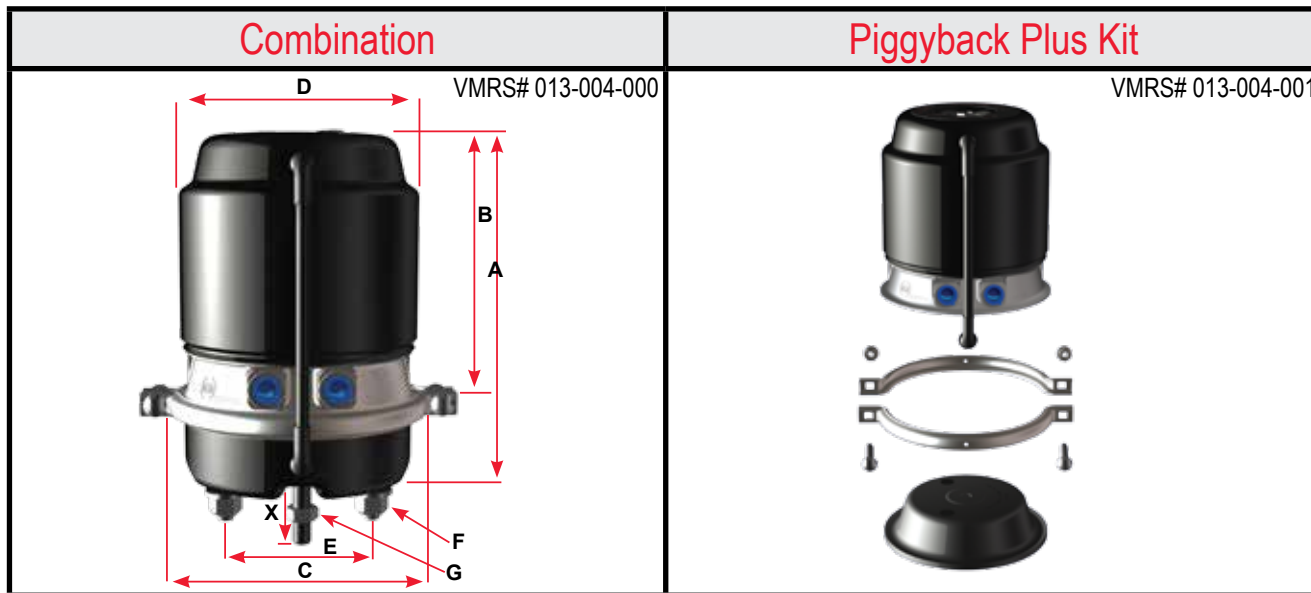


Release Bolt

Patented "Dual Thread Release Bolt" design, an MGM Brakes exclusive, provides minimal bolt protrusion at maximum release. (Approx. 1.00 inch (25.4 mm) protrusion when manually released)



NOTE: Product information and specifications subject to change without notice.



MJS 3.00" (76.2 mm) Model Features

- Tamper Resistant Design
- Lighter Weight
- 3 Inch (76.2 mm) Long Stroke
- Compact Size
- Patented Integral Release Bolt Mechanism - Minimal Bolt Protrusion - Approx. 1.25 inch (31.8 mm) protrusion on "Long Stroke" models when manually released
- Lower Hold-Off Pressure (Less Air Consumption)
- Epoxy Coated Return Spring
- Non-Coil Clash Power Spring
- Increased Corrosion Resistance - Steel Head, Epoxy Coated
- Available with 1,749 lb (793.3 kg) - 2,450 lb (1111.3 kg) of Push-Rod Braking Force @ 1.25 inch (31.8 mm) Stroke/Service Brake Sizes 17-36
- Center Hole Shield

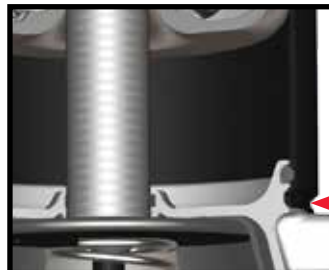
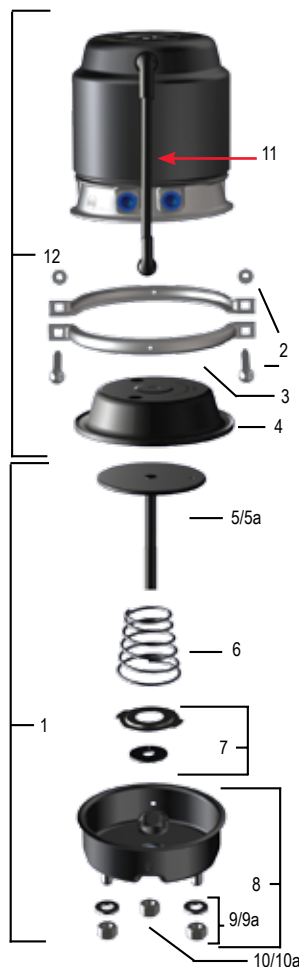
P/N Series	MJS2422ET	MJS2424ET	MJS2430ET	MJS3022ET	MJS3024ET
Model	MJS2422ET	MJS2424ET	MJS2430ET	MJS3022ET	MJS3024ET
Size	2422	2424	2430	3022	3024
Stroke (in/mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	MJS2422ET051	MJS2424ET051	MJS2430ET051	MJS3022ET051	MJS3024ET051
P/N Neoprene Diaphragm	N/A	N/A	N/A	N/A	MJS3024ET851
P/N Welded Yoke (2.25")	N/A	MJS2424ET951	N/A	N/A	MJS3024ET951
P/N Piggyback Plus Kit SAE	MJS2422ET008	MJS2424ET008	MJS2430ET008	MJS3022ET008	MJS3024ET008
P/N Combination METRIC	MJS2422ET049	MJS2424ET049	MJS2430ET049	MJS3022ET049	MJS3024ET049
Wt. Combination	20.40 lb (9.3 kg)	20.40 lb (9.3 kg)	23.70 lb (10.8 kg)	22.40 lb (10.3 kg)	22.40 lb (10.2 kg)
Wt. Single	13.50 lb (6.1 kg)	13.50 lb (6.1 kg)	16.26 lb (7.4 kg)	14.60 lb (6.6 kg)	14.60 lb (6.6 kg)
A	10.31" (261.9 mm)	10.31" (261.9 mm)	10.70" (271.8 mm)	10.33" (262.4 mm)	10.33" (262.4 mm)
B	7.94" (201.7 mm)	7.94" (201.7 mm)	8.43" (214.1 mm)	7.94" (201.7 mm)	7.94" (201.7 mm)
C	7.50" (190.5 mm)	7.50" (190.5 mm)	7.50" (190.5 mm)	8.32" (211.3 mm)	8.32" (211.3 mm)
D	6.76" (171.7 mm)	6.76" (171.7 mm)	7.50" (190.5 mm)	6.76" (171.7 mm)	6.76" (171.7 mm)
E	4.75" (120.7 mm)				
F	5/8" - 11 UNC (M16 x 1.5 - 6g)				
G	5/8" - 18 UNF (M16 x 1.5 - 6g)				
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)				
X - Min. (in the caged position)	8.00" (203.2 mm)				

Additional sizes on page 66-67

NOTE: Product information and specifications subject to change without notice.

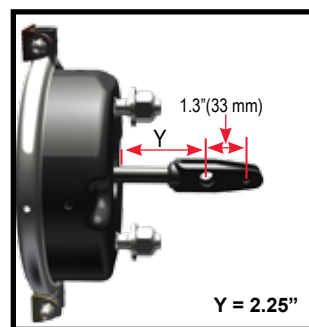
Replacement Parts						
P/N Series	MJS2422ET	MJS2424ET	MJS2430ET	MJS3022ET	MJS3024ET	
Model	MJS2422ET	MJS2424ET	MJS2430ET	MJS3022ET	MJS3024ET	
1	Kit - NP Chamber (a)	9015215	9015215	9015215	9015218	9015218
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216025	8216025	8216025	8216045	8216045
4	Diaphragm	8017424	8017424	8017424	8017830	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064006	9064006	9064006	9064008	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	9064027	9064027	9064027	9064028	9064028
6	Return Spring	8068022	8068022	8068022	8068022	8068022
7	Kit - Center Hole Shield	9065002	9065002	9065002	9065002	9065002
8	NP Chamber Assembly (a)	9015213	9015213	9015213	9015122	9015122
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016	8130016
11	Kit - Breather Tube	9081001	9081001	9081001	9081001	9081001
12	Kit - Piggyback Plus SAE	MJS2422ET008	MJS2424ET008	MJS2430ET008	MJS3022ET008	MJS3024ET008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12						
Yoke Assembly		Refer to Replacement Parts Section 12				
Boot & Retainer		Refer to Replacement Parts Section 12				

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



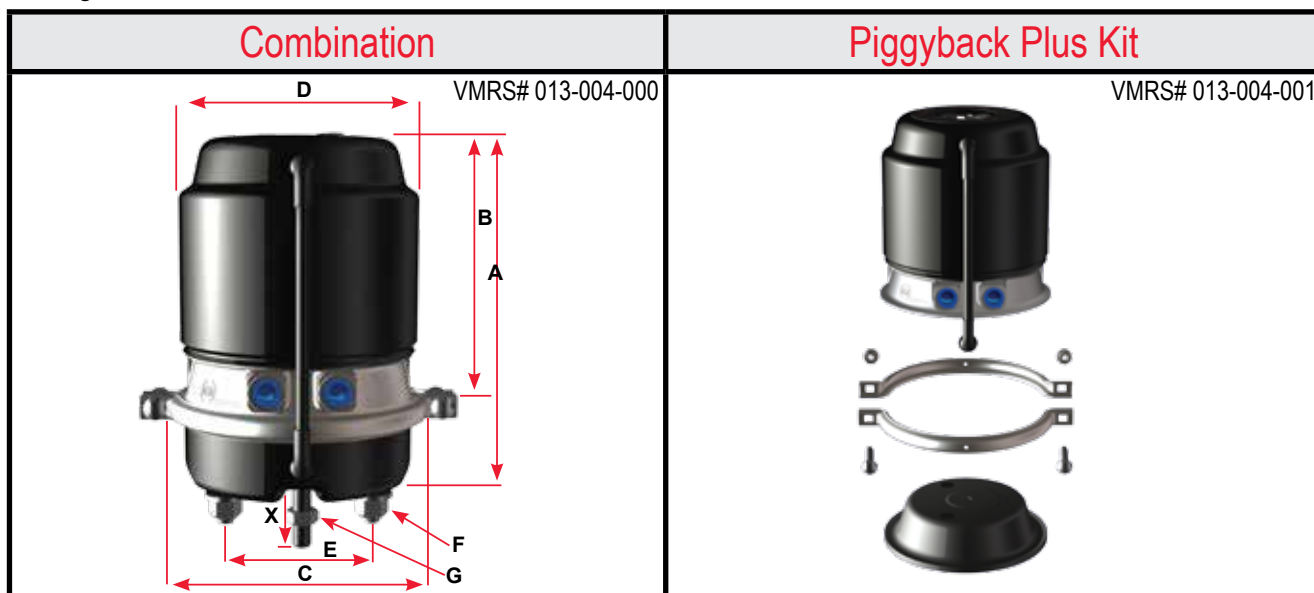
“Roll-In” Tamper Resistant Design
Patented design permanently locks heavy-gauge steel head to the rugged, non-corrosive alloy 360 aluminum center case preventing inadvertent disassembly of the power spring housing.

Welded Yoke Chamber



For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.



MJS 3.00" (76.2 mm) Model Features

- Tamper Resistant Design
- Lighter Weight
- 3 Inch (76.2 mm) Long Stroke
- Compact Size
- Patented Integral Release Bolt Mechanism - Minimal Bolt Protrusion - Approx. 1.25 inch (31.8 mm) protrusion on "Long Stroke" models when manually released
- Lower Hold-Off Pressure (Less Air Consumption)
- Epoxy Coated Return Spring
- Non-Coil Clash Power Spring
- Increased Corrosion Resistance - Steel Head, Epoxy Coated
- Available with 1,749 lb (793.3 kg) - 2,450 lb (1111.3 kg) of Push-Rod Braking Force @ 1.25 inch (31.8 mm) Stroke/Service Brake Sizes 17-36
- Center Hole Shield

P/N Series	MJS3028ET	MJS3030ET	MJS3628ET	MJS3630ET**
Model	MJS3028ET	MJS3030ET	MJS3628ET	MJS3630ET**
Size	3028	3030	3628	3630
Stroke (in/mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N Combination SAE	MJS3028ET051	MJS3030ET051	MJS3628ET051	MJS3630ET051
P/N Neoprene Diaphragm	N/A	MJS3030ET851	MJS3628ET851	N/A
P/N Welded Yoke (2.25")	MJS3028ET951	MJS3030ET951	N/A	MJS3630ET951
P/N Piggyback Plus Kit SAE	MJS3028ET008	MJS3030ET008	MJS3628ET008	MJS3630ET008
P/N Combination METRIC	MJS3028ET049	MJS3030ET049	MJS3628ET049	MJS3630ET049
Wt. Combination	23.10 lb (10.5 kg)	23.10 lb (10.5 kg)	25.20 lb (11.4 kg)	25.20 lb (11.4 kg)
Wt. Single	14.92 lb (6.8 kg)	14.92 lb (6.8 kg)	14.50 lb (6.6 kg)	14.50 lb (6.6 kg)
A	10.73" (272.5 mm)	10.73" (272.5 mm)	11.06" (280.9 mm)	11.06" (280.9 mm)
B	8.43" (214.1 mm)	8.43" (214.1 mm)	8.43" (214.1 mm)	8.43" (214.1 mm)
C	8.32" (211.3 mm)	8.32" (211.3 mm)	9.40" (238.8 mm)	9.40" (238.8 mm)
D	7.50" (190.5 mm)	7.50" (190.5 mm)	7.50" (190.5 mm)	7.50" (190.5 mm)
E	4.75" (120.7 mm)			
F	5/8" - 11 UNC (M16 x 1.5 - 6g)			
G	5/8" - 18 UNF (M16 x 1.5 - 6g)			
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)			
X - Min. (in the caged position)	8.00" (203.2 mm)			

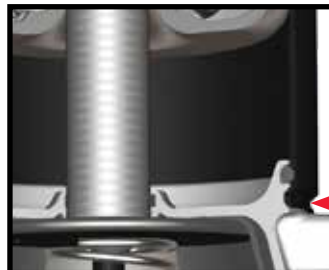
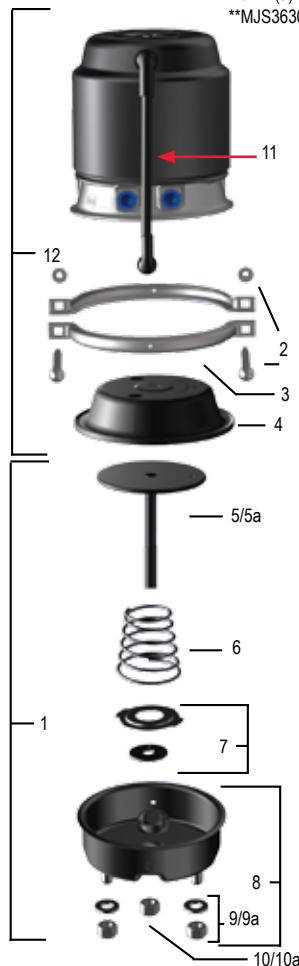
* For actuators manufactured with neoprene diaphragms, refer to section 10 .

** MJS3630ET not "3-inch long stroke" unit, readjustment limit 2.25".

NOTE: Product information and specifications subject to change without notice.

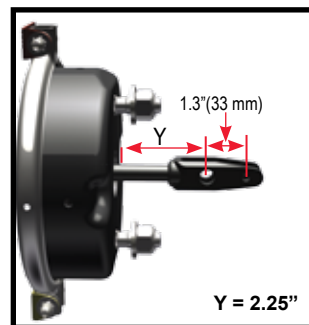
Replacement Parts					
P/N Series		MJS3028ET	MJS3030ET	MJS3628ET	MJS3630ET**
Model		MJS3028ET	MJS3030ET	MJS3628ET	MJS3630ET**
1	Kit - NP Chamber (a)	9015218	9015218	9015109	9015109
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216045	8216045	8216036	8216036
4	Diaphragm	8017838	8017838	8017840	8017840
5	Kit - Push-Rod Assembly (a) SAE	9064008	9064008	9064004	9064004
5a	Kit - Push-Rod Assembly (a) METRIC	9064028	9064028	9064009	9064009
6	Return Spring	8068022	8068022	8068022	8068022
7	Kit - Center Hole Shield	9065002	9065002	9065002	9065002
8	NP Chamber Assembly (a)	9015122	9015216	9015108	9015108
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016
11	Kit - Breather Tube	9081001	9081001	9081001	9081001
12	Kit - Piggyback Plus SAE	MJS3028ET008	MJS3030ET008	MJS3628ET008	MJS3630ET008
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12					
Yoke Assembly		Refer to Replacement Parts Section 12			
Boot & Retainer		Refer to Replacement Parts Section 12			

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.
 **MJS3630ET not "3-inch long stroke" unit, readjustment limit 2.25".



"Roll-In" Tamper Resistant Design
 Patented design permanently locks heavy-gauge steel head to the rugged, non-corrosive alloy 360 aluminum center case preventing inadvertent disassembly of the power spring housing.

Welded Yoke Chamber



For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

“C” SERIES SERVICE CHAMBERS



**Tough, Cost-Effective:
A Stopping Force
Within The Industry**



Section 5: Service Chambers68-77

Standard Stroke Model

C	Service Chambers.....	70-71
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Long Stroke Models

CL	Service Chambers, Long Stroke	72-73
CS	Service Chambers, Long Stroke, Sealed	74-75

Wedge Model

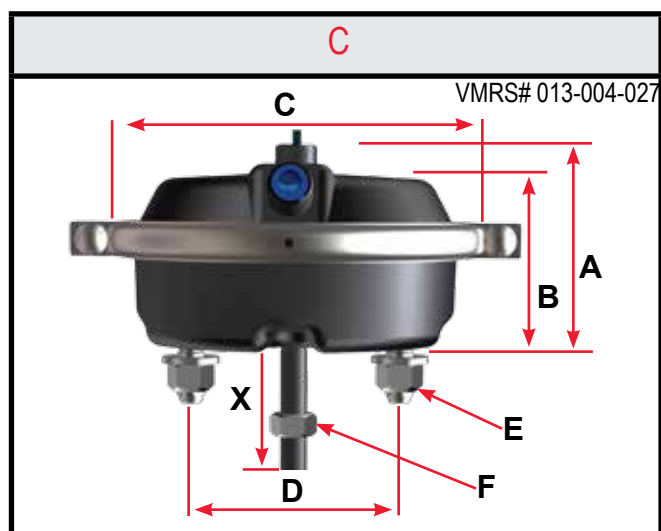
CW	Service Chambers, Wedge	76-77
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• For air disc applications, refer to section 7.

NOTE: Product information and specifications subject to change without notice.

Standard Stroke Model



C Model Features

- Formed Steel Pressure Cap - Epoxy-Coated
- Formed Steel Non-Pressure Chamber - Epoxy-Coated
- Heavy-Duty Nylon Reinforced Diaphragms
- Top and Side Air Ports - 3/8" NPTF
- Center Hole Shield (Except type 12 and type 16)

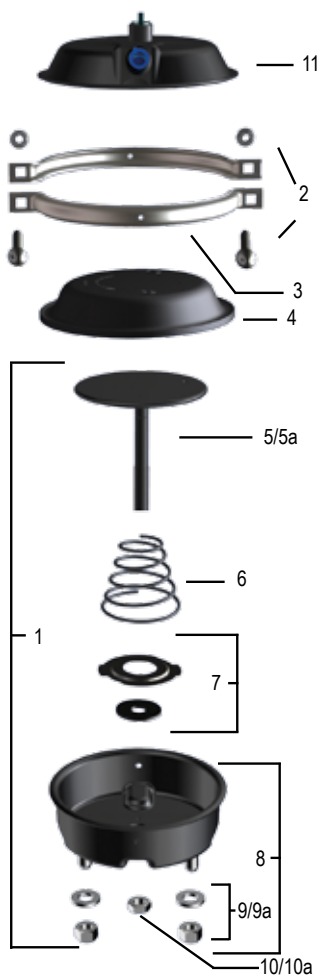
P/N Series	1412	1416	1420	1427	1430	1436
Model	C12	C16	C20	C24L	C30	C36
Size	12	16	20	24	30	36
Stroke	1.75" (44.5 mm)	2.25" (57.2 mm)	2.25" (57.2 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)
P/N SAE	1412001	1416001	1420001	1427001	1430001	1436001
P/N Neoprene Diaphragm	N/A	N/A	1420801	1427801	1430801	1436801
P/N Welded Yoke (2.25")	N/A	N/A	N/A	1427901	1430901	N/A
P/N METRIC	N/A	N/A	1420202	1427202	1430202	1436202
Wt. lb (kg)	3.80 lb (1.7 kg)	5.90 lb (2.7 kg)	8.02 lb (3.6 kg)	9.00 lb (4.1 kg)	10.70 lb (4.9 kg)	15.88 lb (7.2 kg)
A	3.84" (97.5 mm)	4.43" (112.5 mm)	4.16" (105.7 mm)	4.42" (112.3 mm)	4.43" (112.5 mm)	5.12" (130.0 mm)
B	3.13" (79.5 mm)	3.64" (161.0 mm)	3.41" (86.6 mm)	3.67" (93.2 mm)	3.69" (93.7 mm)	4.52" (114.8 mm)
C	5.69" (144.5 mm)	6.66" (169.0 mm)	6.92" (175.8 mm)	7.34" (186.4 mm)	8.27" (210.0 mm)	9.44" (240.0 mm)
D	3.00" (76.2 mm)	3.00" (76.2 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)
E	7/16" - 14 UNC		5/8" - 11 UNC (M16 x 1.5 - 6g)			
F	1/2" - 20 UNF		5/8" - 18 UNF (M16 x 1.5 - 6g)			
Inlets	3/8" - 18 NPTF		3/8" - 18 NPTF (M16 x 1.5 - 6H)			
X - Min.	4.00" (101.6 mm)		8.00" (203.2 mm)			

NOTE: Product information and specifications subject to change without notice.

Replacement Parts						
P/N Series	1412	1416	1420	1427	1430	1436
Model	C12	C16	C20	C24L	C30	C36
1 Kit - NP Chamber (b)	9015207	9015136	9015046	9015117	9015050	9015049
2 Kit - Nuts & Bolts	9003002	9003001	9003001	9003001	9003001	9003001
3 Clamp Band Assembly	8216012	8216018	8216020	8216025	8216045	8216036
4 Diaphragm	8017112	8017116	8017120	8017141	8017730	8017836
5 Kit - Push-Rod Assembly (b) SAE	9064018	9064019	9064001	9064002	9064003	9064004
5a Kit - Push-Rod Assembly (b) METRIC	N/A	N/A	9064015	9064016	9064035	9064009
6 Return Spring	8068007	8068008	8068002	8068002	8068002	8068012
7 Kit - Center Hole Shield	N/A	N/A	9065002	9065002	9065002	9065002
8 NP Chamber Assembly (b)	8215142	8215023	8215169	8215105	8215501	8215036
9 Kit - Nuts & Washers SAE	9002003	9002003	9002001	9002001	9002001	9002001
9a Kit - Nuts & Washers METRIC	N/A	N/A	9002002	9002002	9002002	9002002
10 Hex Nut - Yoke SAE	8130011	8130011	8130004	8130004	8130004	8130004
10a Hex Nut - Yoke METRIC	N/A	N/A	8130016	8130016	8130016	8130016
11 Pressure Cap (2-inlets/steel)	8010066(a)	8210013	8210010	8210002	8210003	8010009
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12						
Yoke Assembly	Refer to Replacement Parts Section 12					
Boot & Retainer	Refer to Replacement Parts Section 12					

NOTE: (a) Type 12 pressure cap is cast aluminum.

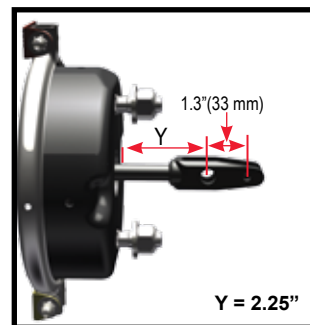
(b) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units.



Center Hole Shield

Permits visual inspection of stroke alert but prevents entry of contaminants.

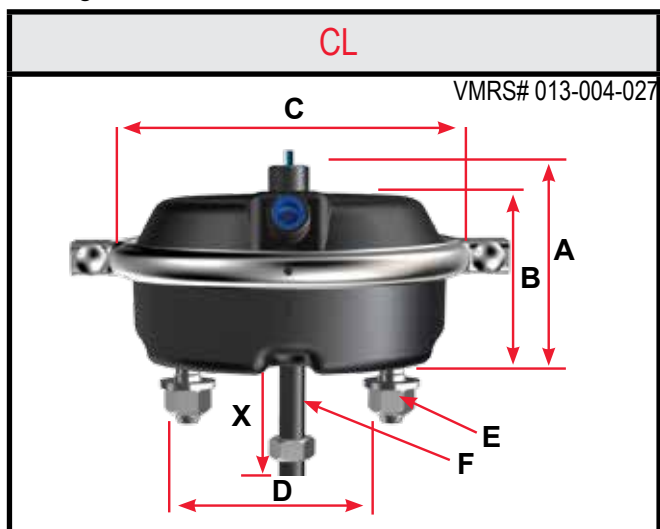
Welded Yoke Chamber



For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Long Stroke Models



CL Model Features

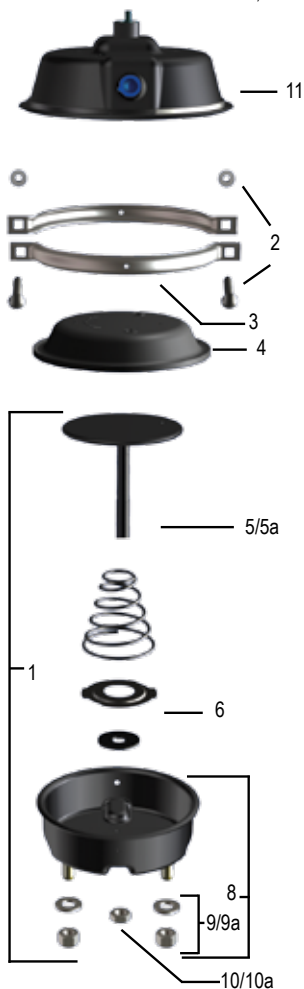
- Formed Steel Pressure Cap - Epoxy-Coated
- Formed Steel Non-Pressure Chamber - Epoxy-Coated
- Heavy-Duty Nylon Reinforced Diaphragms
- Top and Side Air Ports - 3/8" NPTF
- Center Hole Shield (except C16L 2.5)

P/N Series	1418	1421	1428	1431
Model	C16L2.5	C20L	C24L3	C30L3
Size	16	20	24	30
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
P/N SAE	1418001	1421001	1428001	1431001
P/N Neoprene Diaphragm	N/A	N/A	1428801	N/A
P/N Welded Yoke (2.25")	N/A	N/A	1428901	1431901
P/N METRIC	N/A	1421202	1428202	1431202
Wt. lb (kg)	6.42 lb (2.9 kg)	8.20 lb (3.7 kg)	9.72 lb (4.8 kg)	11.15 lb (5.1 kg)
A	4.60" (117.0 mm)	4.40" (111.8 mm)	5.30" (134.6 mm)	5.31" (134.9 mm)
B	3.87" (93.0 mm)	3.67" (93.2 mm)	4.22" (107.0 mm)	4.36" (111.0 mm)
C	6.66" (169.0 mm)	6.85" (174.0 mm)	7.37" (187.2 mm)	8.24" (209.3 mm)
D	3.00" (76.2 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)
E	7/16" - 14 UNC	5/8" - 11 UNC (M16 x 1.5 - 6g)		
F	1/2" - 20 UNF	5/8" - 18 UNF (M16 x 1.5 - 6g)		
Inlets	3/8" - NPTF	3/8" - 18 NPTF (M16 x 1.5 - 6H)		
X - Min.	4.00" (101.6 mm)	8.00" (203.2 mm)		

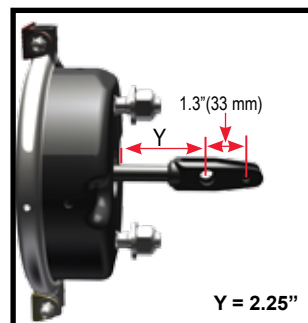
NOTE: Product information and specifications subject to change without notice.

Replacement Parts					
P/N Series		1418	1421	1428	1431
Model		C16L	C20L	C24L3	C30L3
1	Kit - NP Chamber (a)	9015205	9015233	9015200	9015201
2	Kit - Nuts & Bolts	9003001	9003001	9003001	9003001
3	Clamp Band Assembly	8216018	8216020	8216025	8216045
4	Diaphragm	8017216	8017220	8017924	8017830
5	Kit - Push-Rod Assembly (a) SAE	9064022	9064020	9064006	9064008
5a	Kit - Push-Rod Assembly (a) METRIC	N/A	9064015	9064027	9064028
6	Return Spring	8068008	8068002	8068012	8068012
7	Kit - Center Hole Shield	N/A	9065002	9065002	9065002
8	NP Chamber Assembly (a)	8215023	8215169	8215200	8215501
9	Kit - Nuts & Washers SAE	9002003	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	N/A	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130011	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	N/A	8130016	8130016	8130016
11	Pressure Cap (2-inlet/steel)	8210020	8210022	8210026	8210024
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12					
Yoke Assembly		Refer to Replacement Parts Section 12			
Boot & Retainer		Refer to Replacement Parts Section 12			

NOTE: (a) To ensure correct stroke alert positioning, these kits must be used only on the designated MGM Brake units. All CS models are sealed assemblies, non-serviceable, therefore kits are not available.



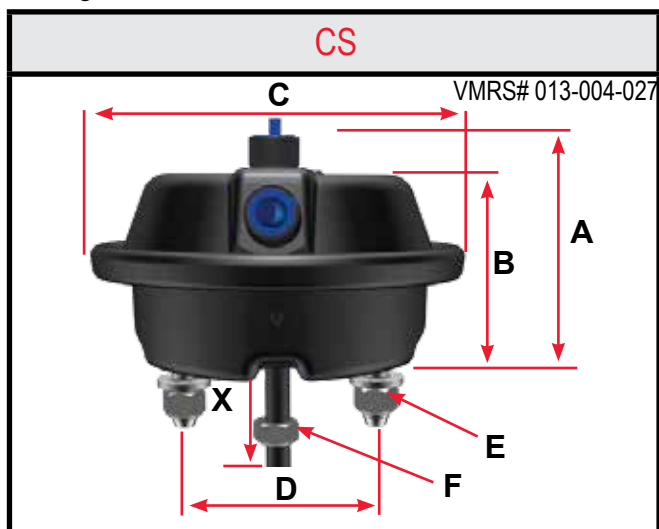
Welded Yoke Chamber



For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

Long Stroke Models



CS Model Features

- Formed Steel Pressure Cap - Epoxy-Coated (CS20 Models have Zinc Iron Chromate Coating)
- Formed Steel Non-Pressure Chamber - Epoxy-Coated
- Heavy-Duty Nylon Reinforced Diaphragms
- Top and Side Air Ports - 3/8" NPTF
- Center Hole Shield

P/N Series	1617	1621	1623	1627
Model	CS16LH	CS20L	CS20L3	CS24L
Size	16	20	20	24
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)	2.50" (63.5 mm)
P/N SAE	1617001	1621001	1623001	1627001
P/N Neoprene Diaphragm	N/A	N/A	N/A	N/A
P/N Welded Yoke (2.25")	1617901	1621901	N/A	N/A
P/N METRIC	1617002	1621002	1623002	1627202
Wt. lb (kg)	6.62 lb (3.0 kg)	6.80 lb (3.1 kg)	8.78 lb (4.0 kg)	8.40 lb (3.8 kg)
A	4.37" (111.0 mm)	4.37" (111.0 mm)	5.14" (130.6 mm)	4.37" (111.0 mm)
B	3.65" (93.0 mm)	3.63" (92.0 mm)	4.41" (112.0 mm)	3.63" (92.3 mm)
C	7.00" (177.8 mm)	7.00" (177.8 mm)	7.02" (178.3 mm)	7.31" (185.7 mm)
D	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7mm)
E	5/8" - 11 UNC (M16 x 1.5 - 6g)			
F	5/8" - 18 UNF (M16 x 1.5 - 6g)			
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)			
X - Min.	8.00" (203.2 mm)			

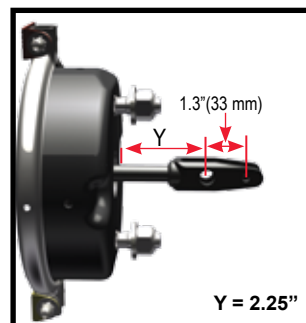
P/N Series	1628	1630	1631	1640
Model	CS24L3	CS30	CS30L3	CS24LW
Size	24	30	30	24
Stroke	3.00" (76.2 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)	2.50" (63.5 mm)
P/N SAE	1628001	1630001	1631001	1640001
P/N Neoprene Diaphragm	N/A	N/A	N/A	N/A
P/N Welded Yoke (2.25")	1628901	1630901	1631901	N/A
P/N METRIC	1628202	1630202	1631202	1640202
Wt. lb (kg)	9.10 lb (4.1 kg)	10.12 lb (4.6 kg)	10.55 lb (4.8 kg)	8.66 lb (3.9 kg)
A	5.30" (134.6 mm)	4.39" (111.5 m)	5.31" (134.9 mm)	4.37" (111.0 mm)
B	4.16" (105.6 mm)	3.67" (93.2 mm)	4.17" (106.0 mm)	3.63" (92.3 mm)
C	7.31" (185.7 mm)	8.18" (207.8 mm)	8.18" (207.8 mm)	7.31" (185.7 mm)
D	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7 mm)	4.75" (120.7mm)
E	5/8" - 11 UNC (M16 x 1.5 - 6g)			
F	5/8" - 18 UNF (M16 x 1.5 - 6g)			
Inlets	3/8" - 18 NPTF (M16 x 1.5 - 6H)			
X - Min.	8.00" (203.2 mm)			

NOTE: Product information and specifications subject to change without notice.

Replacement Parts									
P/N Series		1617	1621	1623	1627	1628	1630	1631	1640
Model		CS16LH	CS20L	CS20L3	CS24L	CS24L3	CS30	CS30L3	CS24LW
1	Kit - NP Chamber (a)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Kit - Nuts & Bolts	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Clamp Band Assembly	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Diaphragm	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Kit - Push-Rod Assembly (a) SAE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5a	Kit - Push-Rod Assembly (a) METRIC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Return Spring	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Kit - Center Hole Shield	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	NP Chamber Assembly (a)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Kit - Nuts & Washers SAE	9002001	9002001	9002001	9002001	9002001	9002001	9002001	9002001
9a	Kit - Nuts & Washers METRIC	9002002	9002002	9002002	9002002	9002002	9002002	9002002	9002002
10	Hex Nut - Yoke SAE	8130004	8130004	8130004	8130004	8130004	8130004	8130004	8130004
10a	Hex Nut - Yoke METRIC	8130016	8130016	8130016	8130016	8130016	8130016	8130016	8130016
11	Pressure Cap (2-inlet/steel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OPTIONAL ITEMS - For additional replacement parts, refer to Section 12									
Yoke Assembly		Refer to Replacement Parts Section 12							
Boot & Retainer		Refer to Replacement Parts Section 12							

• All CS models are sealed assemblies, non-serviceable, therefore replacement kits are not available.

Welded Yoke Chamber

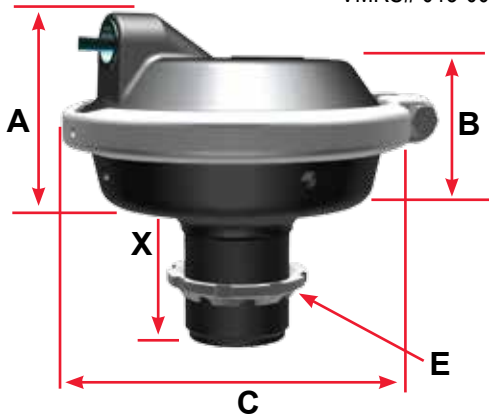


For more welded yoke choices, see page 104.

NOTE: Product information and specifications subject to change without notice.

CW (shown with single port)

VMRS# 013-004-027



NOTE: X - Dimension of mounting tube is measured from bottom flat on non-pressure chamber to tube end.

CW Model Features

- Formed Steel Non-Pressure Chamber - Epoxy-Coated
- Heavy-Duty Nylon Reinforced Diaphragms
- Top and Side Air Ports - 3/8" NPTF

Wedge Piston Assembly
Meritor Bendix



Ordering: Determine if foundation brake is Meritor or Bendix type by comparison to piston assembly photos above.

P/N Series	1009	1012	1016
Model	CW9	CW12	CW16
Size	9	12	16
Stroke	1.75" (44.5 mm)	1.75" (44.5 mm)	1.75" (44.5 mm)
Wt. (lb/kg)*	3.53 lb (1.6 kg)	3.81 lb (1.7 kg)	4.90 lb. (2.2 kg)
A	2.97" (75.4 mm)	3.10" (78.7 mm)	2.85" (72.4 mm)
B	2.42" (61.5 mm)	2.39" (60.7 mm)	2.62" (66.5 mm)
C	5.25" (133.4 mm)	5.69" (144.5 mm)	6.59" (167.4 mm)
E	1 3/4" - 12 UN-2A	1 3/4" - 12 UN-2A	1 3/4" - 12 UN-2A
Inlets	3/8" - 18 NPTF	3/8" - 18 NPTF	3/8" - 18 NPTF

NOTE: * Weight will vary in relation to tube length.

CW Service Brake Chamber

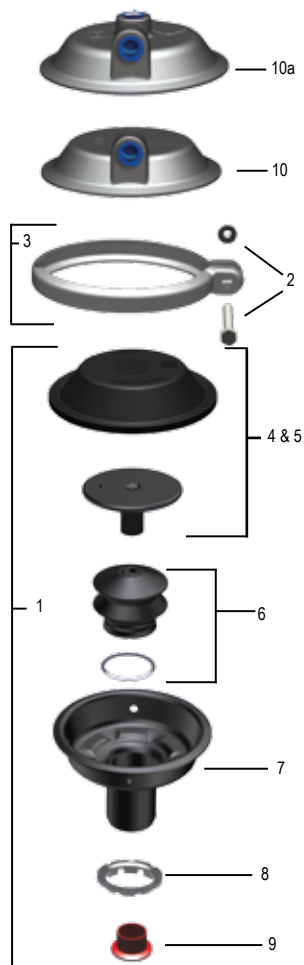
Size	Type 9		Type 12		Type 16	
Stroke	1.75" (44.5 mm)		1.75" (44.5 mm)		1.75" (44.5 mm)	
"X" DIM	Meritor	Bendix	Meritor	Bendix	Meritor	Bendix
2.25" (57.2 mm)	1009018	1009012	1012008	1012009	1016004	1016001
2.85" (72.4 mm)	1009023	1009020	1012001	1012004	1016003	1016005
3.75" (95.3 mm)	*	*	*	1012097	*	1016019
4.10" (104.1 mm)	1009032	1009021	1012002	1012048	1016006	*
4.56" (115.8 mm)	*	*	1012066	*	*	*
6.10" (154.9 mm)	1009053	1009022	1012057	1012049	1016017	*
7.56" (192.0 mm)	*	*	1012058	*	*	*
8.75" (222.3 mm)	1009049	*	1012007	*	*	*
10.19" (258.8 mm)	*	*	1012003	1012006	1016020	*
12.00" (304.8 mm)	*	*	1012096	*	1016011	*
14.00" (355.6mm)	*	*	1012056	1012052	*	*

NOTE: (*) This chamber version is not available

NOTE: Product information and specifications subject to change without notice.

CW Chamber Service Kits						
Size	Type 9		Type 12		Type 16	
Stroke	1.75" (44.5 mm)		1.75" (44.5 mm)		1.75" (44.5 mm)	
"X" DIM	Meritor	Bendix	Meritor	Bendix	Meritor	Bendix
2.25" (57.2 mm)	9015040	9015001	9015003	9015002	9015042	9015041
2.85" (72.4 mm)	9015005	9015004	9015007	9015006	9015044	9015043
3.75" (95.3 mm)	*	*	*	9015134	*	9015095
4.10" (104.1 mm)	9015009	9015008	9015011	9015010	9015059	*
4.56" (115.8 mm)	*	*	9015013	*	*	*
6.10" (154.9 mm)	9015067	9015017	9015019	9015018	9015096	*
7.56" (192.0 mm)	*	*	9015045	*	*	*
8.75" (222.3 mm)	9015063	*	9015022	*	*	*
10.19" (258.8 mm)	*	*	9015026	9015025	9015140	*
12.00" (304.8 mm)	*	*	9015102	*	9015094	*
14.00" (355.6mm)	*	*	9015031	9015030	*	*

NOTE: (*) This version is not available.



Replacement Parts				
P/N Series		1009	1012	1016
Model		CW9	CW12	CW16
1	Kit - NP Chamber	Refer to wedge chamber service kits above		
2	Kit - Nuts & Bolts	9003002	9003002	9003001
3	Clamp Band Assembly	8216009	8216012	8216018
4	Diaphragm	(a)	(a)	(a)
5	Kit - Push-Rod Assembly	(a)	(a)	(a)
6	Kit- Wedge Boot	9004005	9004005	9004005
7	NP Chamber Assembly	(a)	(a)	(a)
8	Spanner Nut	8034001	8034001	8034001
9	Wedge Guide - Meritor	8024006	8024006	8024006
10	Pressure Cap (1 Inlet)	N/A	8010040	8210001
10a	Pressure Cap (2 Inlets)	8010028	8010066	8210013

NOTE: (a) Diaphragm is glued to push-rod plate, therefore diaphragm and push-rod assembly are available only as part of item 1 kit.

• For additional replacement parts, refer to Section 12

WEDGE BRAKES



**New Design,
Better Performance,
Same Reliability and Quality**



Section 6: Wedge Spring Brakes..... 78-85

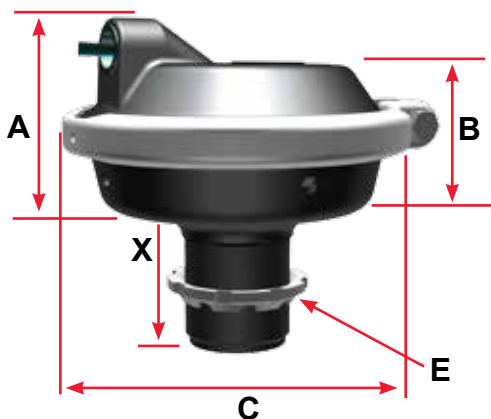
Standard Stroke Models

CW	Service Chambers, Wedge	80-81
MJW1216	Magnum Performance Plus, Wedge	82-83
MJW1616	Magnum Performance Plus, Wedge	82-83
MJW1624	Magnum Performance Plus, Wedge	84-85



CW (shown with single port)

VMRS# 013-004-027



NOTE: X - Dimension of mounting tube is measured from bottom flat on non-pressure chamber to tube end.

CW Model Features

- Formed Steel Non-Pressure Chamber - Epoxy-Coated
- Heavy-Duty Nylon Reinforced Diaphragms
- Top and Side Air Ports - 3/8" NPTF

Wedge Piston Assembly
Meritor Bendix



Ordering: Determine if foundation brake is Meritor or Bendix type by comparison to piston assembly photos above.

P/N Series	1009	1012	1016
Model	CW9	CW12	CW16
Size	9	12	16
Stroke	1.75" (44.5 mm)	1.75" (44.5 mm)	1.75" (44.5 mm)
Wt. (lb/kg)*	3.53 lb (1.6 kg)	3.81 lb (1.7 kg)	4.90 lb. (2.2 kg)
A	2.97" (75.4 mm)	3.10" (78.7 mm)	2.85" (72.4 mm)
B	2.42" (61.5 mm)	2.39" (60.7 mm)	2.62" (66.5 mm)
C	5.25" (133.4 mm)	5.69" (144.5 mm)	6.59" (167.4 mm)
E	1 3/4" - 12 UN-2A	1 3/4" - 12 UN-2A	1 3/4" - 12 UN-2A
Inlets	3/8" - 18 NPTF	3/8" - 18 NPTF	3/8" - 18 NPTF

NOTE: * Weight will vary in relation to tube length.

CW Service Brake Chamber

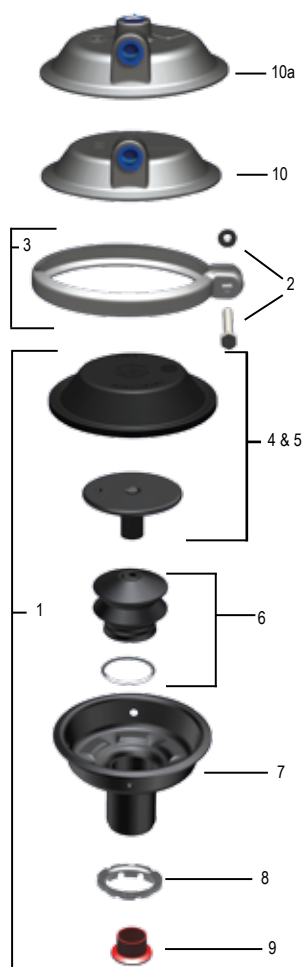
Size	Type 9		Type 12		Type 16	
Stroke	1.75" (44.5 mm)		1.75" (44.5 mm)		1.75" (44.5 mm)	
"X" DIM	Meritor	Bendix	Meritor	Bendix	Meritor	Bendix
2.25" (57.2 mm)	1009018	1009012	1012008	1012009	1016004	1016001
2.875" (73.0 mm)	1009023	1009020	1012001	1012004	1016003	1016005
3.75" (95.3 mm)	*	*	*	1012097	*	1016019
4.10" (104.1 mm)	1009032	1009021	1012002	1012048	1016006	*
4.56" (115.8 mm)	*	*	1012066	*	*	*
6.10" (154.9 mm)	1009053	1009022	1012057	1012049	1016017	*
7.56" (192.0 mm)	*	*	1012058	*	*	*
8.75" (222.3 mm)	1009049	*	1012007	*	*	*
10.19" (258.8 mm)	*	*	1012003	1012006	1016020	*
12.00" (304.8 mm)	*	*	1012096	*	1016011	*
14.00" (355.6mm)	*	*	1012056	1012052	*	*

NOTE: (*) This chamber version is not available

NOTE: Product information and specifications subject to change without notice.

CW Chamber Service Kits						
Size	Type 9		Type 12		Type 16	
Stroke	1.75" (44.5 mm)		1.75" (44.5 mm)		1.75" (44.5 mm)	
"X" DIM	Meritor	Bendix	Meritor	Bendix	Meritor	Bendix
2.25" (57.2 mm)	9015040	9015001	9015003	9015002	9015042	9015041
2.875" (72.473.0 mm)	9015005	9015004	9015007	9015006	9015044	9015043
3.75" (95.3 mm)	*	*	*	9015134	*	9015095
4.10" (104.1 mm)	9015009	9015008	9015011	9015010	9015059	*
4.56" (115.8 mm)	*	*	9015013	*	*	*
6.10" (154.9 mm)	9015067	9015017	9015019	9015018	9015096	*
7.56" (192.0 mm)	*	*	9015045	*	*	*
8.75" (222.3 mm)	9015063	*	9015022	*	*	*
10.19" (258.8 mm)	*	*	9015026	9015025	9015140	*
12.00" (304.8 mm)	*	*	9015102	*	9015094	*
14.00" (355.6mm)	*	*	9015031	9015030	*	*

NOTE: (*) This version is not available.



Replacement Parts				
P/N Series		1009	1012	1016
Model		CW9	CW12	CW16
1	Kit - NP Chamber	Refer to wedge chamber service kits above		
2	Kit - Nuts & Bolts	9003002	9003002	9003001
3	Clamp Band Assembly	8216009	8216012	8216018
4	Diaphragm	(a)	(a)	(a)
5	Kit - Push-Rod Assembly	(a)	(a)	(a)
6	Kit- Wedge Boot	9004005	9004005	9004005
7	NP Chamber Assembly	(a)	(a)	(a)
8	Spanner Nut	8034001	8034001	8034001
9	Wedge Guide - Meritor	8024006	8024006	8024006
10	Pressure Cap (1 Inlet)	N/A	8010040	8210001
10a	Pressure Cap (2 Inlets)	8010028	8010066	8210013

NOTE: (a) Diaphragm is glued to push-rod plate, therefore diaphragm and push-rod assembly are available only as part of item 1 kit.

• For additional replacement parts, refer to Section 12

1.75" (44.5 mm) Stroke Model

Combination	Piggyback Plus Kit
	N/A

MJW Model Features

- Wide Choice Tube Lengths
- Lightweight, Rugged Aluminum Housing
- Epoxy-Coated Power Spring
- External Breather Tube
- Integral Release Bolt
- Polymer Push-Rod Guides
- Molded Nitrile Rubber Push-Rod Air Seal
- Low Friction Piston and Guide
- Heavy-Duty Nylon Reinforced Diaphragms

P/N Series	MJW1216AT	MJW1616AT
Model	MJW1216AT	MJW1616AT
Size	1216	1616
Stroke	1.75" (44.5 mm)	1.75" (44.5 mm)
Push-Rod	Meritor / Bendix	Meritor / Bendix
P/N Combination SAE	(a)	(a)
P/N Piggyback Plus Kit SAE	N/A	N/A
P/N Combination METRIC	***	***
Wt. Combination	12.50 lb (5.7 kg)*	12.16 lb (5.5 kg)*
Wt. Single	N/A	N/A
A	7.89" (200.4 mm)	7.15" (181.6 mm)
B	5.83" (148.1 mm)	5.98" (151.9 mm)
C	5.70" (144.8 mm)	6.59" (167.4 mm)
D	6.44" (163.6 mm)	6.47" (164.2 mm)
E	1 3/4" - 12 UNC	1 3/4" - 12 UNC
Inlets	3/8" - 18 NPTF	3/8" - 18 NPTF
X (a)	SEE CHART	SEE CHART

Standard Assembly Part Numbers		
Model	MJW1216AT	
Size	MJW1216	
X Dimension	Meritor	Bendix
2.25" (57.2 mm)	MJW1216AT052	MJW1216AT059
2.85" (72.4mm)	MJW1216AT053	MJW1216AT060
4.10" (104.1 mm)	MJW1216AT054	MJW1216AT061
6.10" (154.9 mm)	MJW1216AT055	MJW1216AT062
Model	MJW1616AT	
Size	MJW1616	
X Dimension	Meritor	Bendix
2.25" (57.2 mm)	N/A	N/A
2.85" (72.4mm)	MJW1616AT051	MJW1616AT056
4.10" (104.1 mm)	N/A	N/A
6.10" (154.9 mm)	N/A	N/A

NOTE: (a) Refer to "Standard Assembly Part Numbers Chart" for mounting tube length variations.

NOTE: (*) Unit weighed with 5" (127.0 mm) tube (x dimension). Weight will vary in relation to tube length.

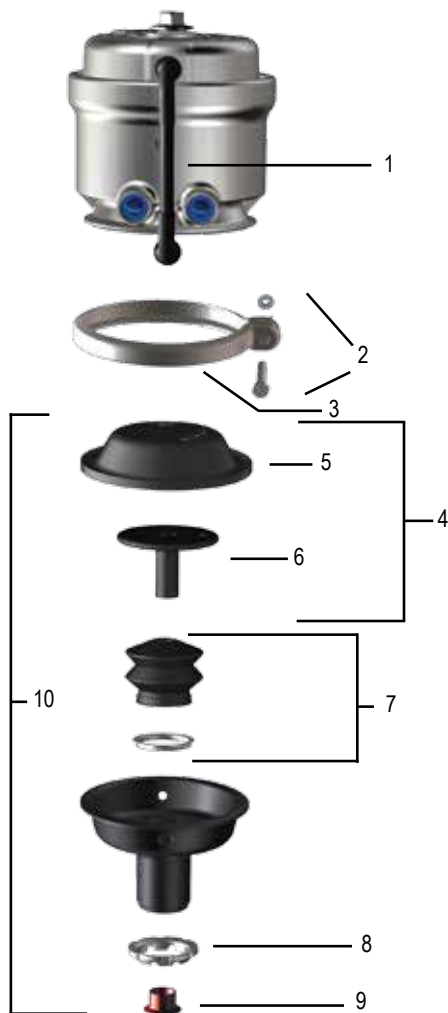
NOTE: (***) For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. and Canada), or for International email: mail@mgmbrakes.com

NOTE: Product information and specifications subject to change without notice.

Replacement Parts			
P/N Series	MJW1216AT		MJW1616AT
Model	MJW1216AT		MJW1616AT
Part Description	MGM P/N		MGM P/N
1 Kit - Breather Tube	9081001		***
2 Kit - Nuts & Bolts	9003002		9003001
3 Clamp Band Assembly	8216012		8216018
4 Kit - Diaphragm/Push Rod	(a)		(a)
5 Diaphragm	(a)		(a)
6 Push Rod	(a)		(a)
7 Kit - Wedge Boot	9004005		9004005
8 Spanner Nut	8034001		8034001
9 Wedge Guide (Meritor)	8024006		8024006
10 Kit - NP Chamber	Refer to Wedge Chamber service kits below (a)		***

NOTE: (a) Diaphragm is glued to push-rod plate, therefore diaphragm and push-rod assembly are available only as part of item 10 kit.

NOTE: (***) For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. and Canada), or for International email: mail@mgmbrakes.com
For additional replacement parts, refer to Replacement Parts Section 12



Standard Service Kits		
Type MJW1216AT		
Stroke 1.75" (44.5 mm)		
X Dimension	Meritor	Bendix
2.25" (57.2 mm)	9015247	9015254
2.85" (72.4mm)	9015248	9015255
4.10" (104.1 mm)	9015249	9015256
6.10" (154.9 mm)	9015250	9015257

Wedge Piston Assembly
Meritor Bendix



Ordering: Determine if foundation brake is Meritor or Bendix type by comparison to piston assembly photos above.

Combination	Piggyback Plus Kit
	N/A

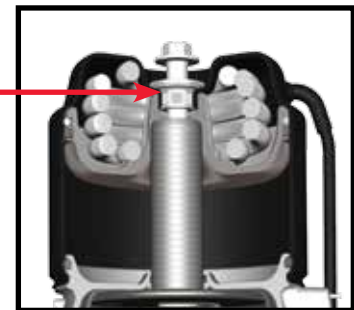
MJW Model Features

- Tamper Resistant Design
- Lighter Weight
- Compact Size
- External Breather Tube
- Lower Hold-Off Pressure (Less Air Consumption)
- Patented Integral Release Bolt Mechanism for Minimal Bolt Protrusion when manually released.
- Non-Coil Clash Power Spring
- Increased Corrosion Resistance - Steel Head and Epoxy Coated

P/N Series	MJW1624BT
Model	MJW1624BT
Size	1624
Stroke	2.00" (50.8 mm)
P/N Combination SAE	MJW1624BT156
P/N Piggyback Plus Kit SAE	N/A
P/N Combination METRIC	***
Wt. Combination	17.06 lb (7.7 kg)
Wt. Single	N/A
A	8.30" (210.8 mm)
B	7.16" (181.9 mm)
C	6.53" (165.9 mm)
D	6.76" (171.7 mm)
E	1 3/4" - 12 UNC
Inlets	3/8" - 18 NPTF
X	4.50" (114.3 mm)

Release Bolt

Patented "Dual Thread Release Bolt" design, an MGM Brakes exclusive, provides minimal bolt protrusion at maximum release. (Approx. 1.00 inch (25.4 mm) protrusion when manually released)



NOTE: (***) For information on availability, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. and Canada), or for International email: mail@mgmbrakes.com



CAUTION: MGM Brakes recommends this chamber be supported. The vehicle manufacturer will need to determine if a support is necessary based on the vehicle operating environment.

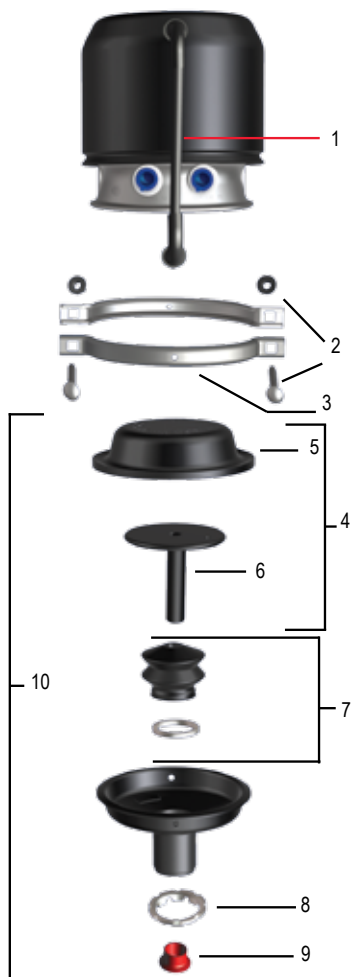
P/N MJW1624BT156 is for transit applications only. For other applications contact MGM Brakes Customer Service.

NOTE: Product information and specifications subject to change without notice.

Replacement Parts		
P/N Series		MJW1624BT
Model		MJW1624BT
Part Description		MGM P/N
1	Kit - Breather Tube	9081007
2	Kit - Nuts & Bolts	9003001
3	Clamp Band Assembly	8216018
4	Kit - Diaphragm/Push Rod	(a)
5	Diaphragm	(a)
6	Push Rod	(a)
7	Kit - Wedge Boot	9004005
8	Collet Nut	8034005
9	Wedge Guide	8024006
10	Kit - NP Chamber	9015196

NOTE: (a) Diaphragm is glued to push-rod plate, therefore diaphragm and push-rod assembly are available only as part of item 10 kit.

For additional replacement parts, refer to Replacement Parts Section 12



CAUTION: MGM Brakes recommends this chamber be supported. The vehicle manufacturer will need to determine if a support is necessary based on the vehicle operating environment.

P/N MJW1624BT156 is for transit applications only. For other applications contact MGM Brakes Customer Service.

NOTE: Product information and specifications subject to change without notice.

AIR DISC



**Unparalleled Variety of Models
Reliable and Longer-Life
Braking Performance**



Section 7: Air Disc Brakes86-93

TR Series - Standard Stroke Model

TR-T Tamper Resistant, Tube.....88-89

TR-THD Tamper Resistant, Tube, Heavy-Duty.....88-89

MJB Series - Long Stroke Model

MJB Magnum, J-Series, 3.00" (76.2 mm) Stroke, Tube90-91

Service Chambers

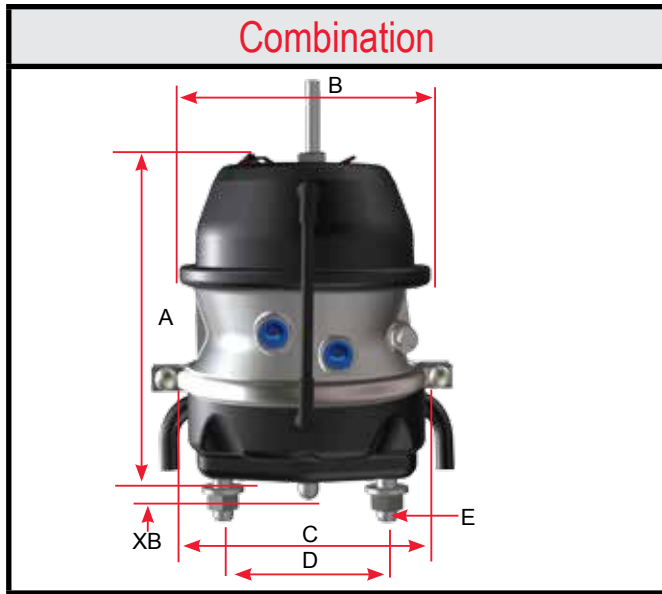
C Service Chambers92-93

CS Service Chambers, Sealed.....92-93



NOTE: Product information and specifications subject to change without notice.

Air Disc Model



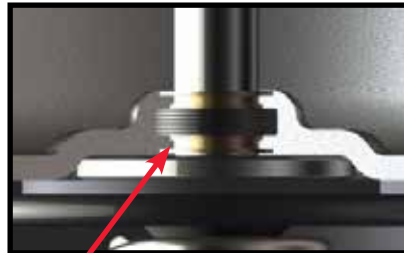
Double Diaphragm Air Disc Brake Features

- Tamper Resistant Design
- Molded Nitrile Rubber Push-Rod Air Seal
- Externally Stored Release Bolt
- Epoxy-Coated Head, Non-Pressure Chamber and Lower Push-Rod Assembly
- 360 Aluminum Center Case
- Weatherseal™ Plug
- Heavy-Duty 8 Gauge Steel Non-Pressure Chamber
- Polymer Push-Rod Guides
- Heavy-Duty Nylon Reinforced Diaphragms
- Heavy-Duty Nylon Reinforced Neoprene Diaphragms (Optional)
- External Breather Tube
- Heavy-Duty Power Spring 160 lb (72.6 kg) additional parking brake force @ 1.25 inches (31.8 mm) of stroke - **HD MODELS**
- Center Hole Diaphragm (U.S. Patent No. 5,507,217) - **Type 30 Models**



Center Hole Diaphragm
(U.S. Patent #5,507,217)

Patented feature that aligns the piston, diaphragm, power spring and internal push-rod providing the following advantages: Maintains component alignment; reduces power spring stress; reduces coil clash; increases center-seal life and eliminates the effects of severe vibration.



Center Seal (Push-Rod Air Seal)

Multi-lipped, pressure activated seal – an MGM exclusive - molded from specially formulated low-temperature-resistant Nitrile Rubber, providing long-term protection against air leaks. Nylon guides eliminate metal to metal contact and premature failure in this critical area.



External Breather-Tube

Vents air from inside the protected area of the non-pressure chamber to effectively prevent entry of liquid and solid corrosive contaminants that can cause premature failure of the spring brake chamber.

NOTE: Product information and specifications subject to change without notice.

DOUBLE DIAPHRAGM AIR DISC BRAKES

P/N Series	3417	3419	3422	3423	3425	3432	3450	3650
Model	TR1724LTHDH	TR1724LTH	TR2024LTHD	TR2024LT	TR2130LTH	TR3036T	TR2730TH	TR2730THDH
Size	1724	1724	2024	2024	2130	3036	2730	2730
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)
Part Number SAE & METRIC	For replacement part numbers, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), International email: mail@mgmbrakes.com							
Wt. (lb/kg)	15.41 lb (7.0 kg)	15.81 lb (7.2 kg)	15.51 lb (7.0 kg)	15.95 lb (7.2 kg)	17.88 lb (8.1 kg)	25.87 lb (11.7 kg)	19.10 lb (8.7 kg)	18.64 lb (8.5 kg)
A	8.86" (225.0 mm)	8.86" (225.0 mm)	8.86" (225.0 mm)	8.86" (225.0 mm)	9.45" (240.0 mm)	10.39" (263.9 mm)	9.40" (238.8 mm)	9.40" (238.8 mm)
B	7.34" (186.4 mm)	7.34" (186.4 mm)	7.34" (186.4 mm)	7.34" (186.4 mm)	8.21" (208.5 mm)	9.18" (233.2 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)
C	6.72" (170.7 mm)	6.72" (170.7 mm)	6.72" (170.7 mm)	6.72" (170.7 mm)	7.19" (182.6 mm)	8.14" (206.8 mm)	8.14" (206.8 mm)	8.14" (206.8 mm)
D	4.75" (120.7 mm)							
E	M16 X 1.5 - 6g							
Inlets	3/8" -18 NPTF (M16 x 1.5 - 6H)							
XB	15 mm							

NOTE: All chart measurements are in both inches and metric.

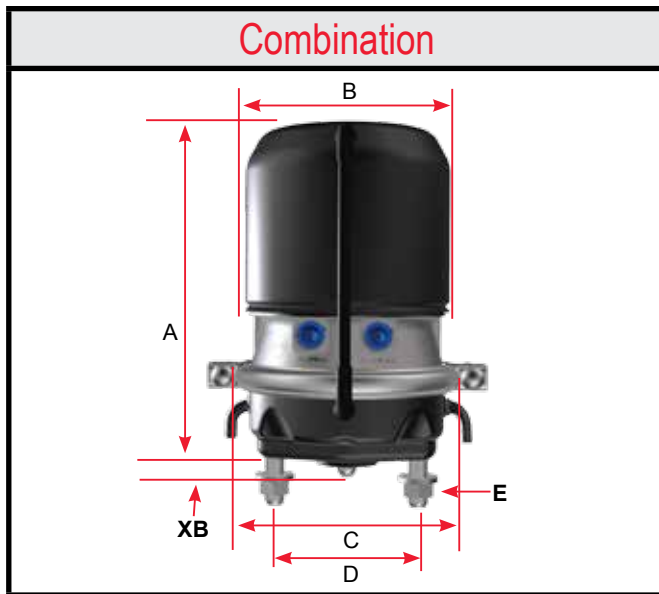
DOUBLE DIAPHRAGM AIR DISC BRAKES

P/N Series	3452	3431	3631	3627	3426	3623	3428	3625
Model	TR2736TH	TR3030T	TR3030THD	TR2130LTHDH	TR2424LT	TR2424LTHD	TR2430LT	TR2430LTHD
Size	2736	3030	3030	2130	2424	2424	2430	2430
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)
Part Number SAE & METRIC	For replacement part numbers, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), International email: mail@mgmbrakes.com							
Wt. (lb/kg)	25.39 lb (11.5 kg)	19.68 lb (8.9 kg)	18.94 lb (8.6 kg)	17.30 lb (7.8 kg)	16.20 lb (7.3 kg)	16.20 lb (7.3 kg)	18.70 lb (8.5 kg)	17.68 lb (8.0 kg)
A	10.39" (263.9 mm)	9.40" (238.8 mm)	9.40" (238.8 mm)	9.45" (240.0 mm)	9.02" (229.1 mm)	9.02" (229.1 mm)	9.45" (240.0 mm)	9.45" (240.0 mm)
B	9.18" (233.2 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)	7.34" (186.4 mm)	7.34" (186.4 mm)	8.21" (208.5 mm)	8.21" (208.5 mm)
C	8.14" (206.8 mm)	8.14" (206.8 mm)	8.14" (206.8 mm)	7.19" (182.6 mm)	7.19" (182.6 mm)	7.19" (182.6 mm)	7.19" (182.6 mm)	7.19" (182.6 mm)
D	4.75" (120.7 mm)							
E	M16 X 1.5 - 6g							
Inlets	3/8" -18 NPTF (M16 x 1.5 - 6H)							
XB	15 mm							

NOTE: All chart measurements are in both inches and metric.

NOTE: Product information and specifications subject to change without notice.

Air Disc Model



Magnum Performance Plus Model Features

- Tamper Resistant Design
- Lighter Weight
- 3 Inch (76.2 mm) Long Stroke
- Compact Size
- New Patented Integral Release Bolt Mechanism - Minimal Bolt Protrusion (Approx. 1.25 inch (31.8 mm) protrusion on "Long Stroke" models when manually released)
- Non-Coil Clash Power Spring
- Increased Corrosion Resistance - Steel Head, Epoxy Coated
- Available with 1,922 - 2,450 Lbs. (871.8 kg - 1111.3 kg) of Push-Rod Braking Force @ 1.25 inch (31.8 mm) Stroke/Service Brake Sizes 16-30
- Heavy Duty 8-Guage NPC Standard

Dual-Thread Release Bolt
MJB Models

"Dual-Thread" manual release bolt: an MGM Brakes patented design feature; provides minimal bolt protrusion at maximum release, allowing for installation in tight areas.

NOTE: Product information and specifications subject to change without notice.

PISTON DIAPHRAGM AIR DISC BRAKES

P/N Series	MJB1722ET	MJB1724ET	MJB2022ET	MJB2024ET	MJB2030ET	MJB2124ET
Model	MJB1722ET	MJB1724ET	MJB2022ET	MJB2024ET	MJB2030ET	MJB2124ET
Size	1722	1724	2022	2024	2030	2124
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
Part Number SAE & METRIC	For replacement part numbers, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), International email: mail@mgmbrakes.com					
Wt. (lb/kg)	20.4 lb (9.3 kg)	19.50 lb (8.8 kg)	20.32 lb (9.2 kg)	20.10 lb (9.1 kg)	22.71 lb (10.3 kg)	20.40 lb (9.3 kg)
A	10.31" (261.9 mm)	10.61" (269.5 mm)	10.61" (269.5 mm)	10.61" (269.5 mm)	10.99" (279.1 mm)	10.31" (261.9 mm)
B	7.94" (201.7 mm)	6.76" (171.7 mm)	7.94" (201.7 mm)	6.76" (171.7 mm)	7.50" (190.5 mm)	7.94" (201.7 mm)
C	7.50" (190.5 mm)	6.90" (175.3 mm)	6.85" (171.7 mm)	6.90" (175.3 mm)	6.90" (175.3 mm)	7.50" (190.5 mm)
D	4.75" (120.7 mm)					
E	M16 X 1.5 - 6g					
Inlets	3/8" -18 NPTF (M16 x 1.5 - 6H)					
XB	15 mm					

NOTE: All chart measurements are in both inches and metric.

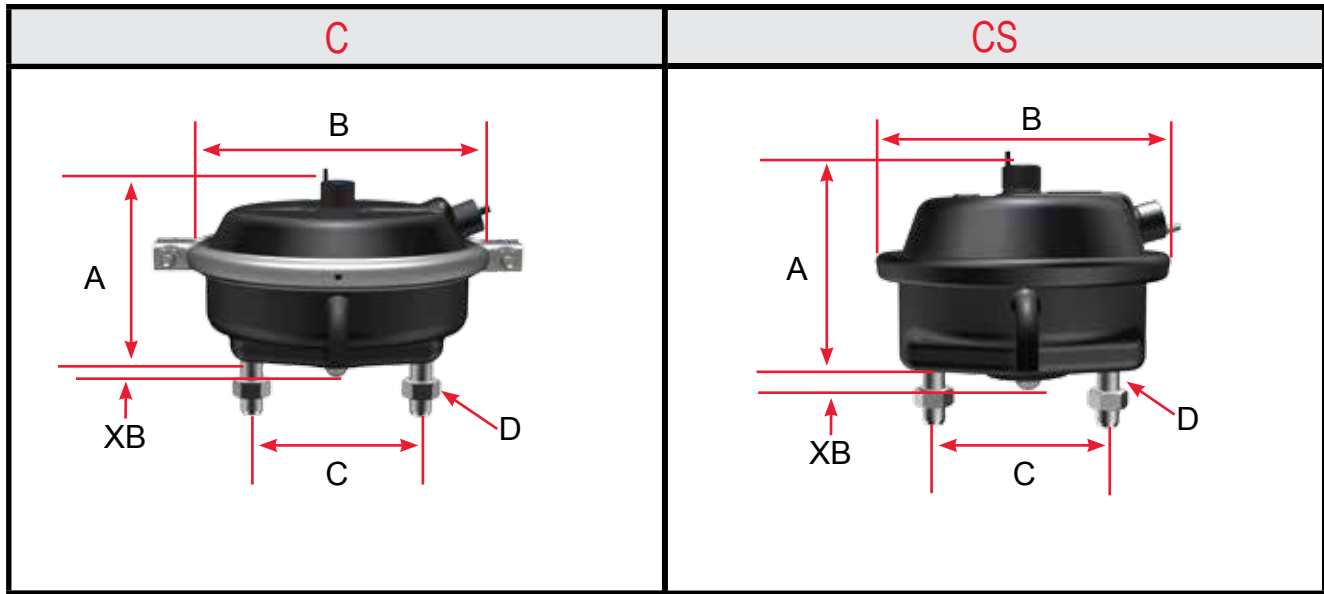
PISTON DIAPHRAGM AIR DISC BRAKES

P/N Series	MJB2422ET	MJB2424ET	MJB2430ET	MJB2730ET	MJB3022ET	MJB3030ET
Model	MJB2422ET	MJB2424ET	MJB2430ET	MJB2730ET	MJB3022ET	MJB3030ET
Size	2422	2424	2430	2730	3022	3030
Stroke	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)	3.00" (76.2 mm)
Part Number SAE & METRIC	For replacement part numbers, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), International email: mail@mgmbrakes.com					
Wt. (lb/kg)	20.40 lb (9.3 kg)	20.40 lb (9.3 kg)	23.70 lb (10.8 kg)	24.56 lb (11.1 kg)	22.80 lb (10.3 kg)	24.56 lb (11.1 kg)
A	10.31" (261.9 mm)	10.59" (269.0 mm)	10.99" (279.1 mm)	11.14" (283.0 mm)	10.33" (262.4 mm)	11.14" (283.0 mm)
B	7.94" (201.7 mm)	6.76" (171.7 mm)	7.50" (190.5 mm)	7.50" (190.5 mm)	7.94" (201.7 mm)	7.50" (190.5 mm)
C	7.50" (190.5 mm)	7.38" (187.5 mm)	7.38" (187.5 mm)	8.32" (211.3 mm)	8.32" (211.3 mm)	8.32" (211.3 mm)
D	4.75" (120.7 mm)					
E	M16 X 1.5 - 6g					
Inlets	3/8" -18 NPTF (M16 x 1.5 - 6H)					
XB	15 mm					

NOTE: All chart measurements are in both inches and metric.

NOTE: Product information and specifications subject to change without notice.

Air Disc Model



C & CS Model Features

- Formed Steel Pressure Cap - Epoxy-Coated (CS20 Models have Zinc Iron Chromate Coating)
- Formed Steel Non-Pressure Chamber - Epoxy-Coated
- Heavy-Duty Nylon Reinforced Diaphragms
- Top and Side Air Ports - 3/8" NPTF

NOTE: Product information and specifications subject to change without notice.

AIR DISC SERVICE CHAMBERS

P/N Series	1617	1621	1622	1427	1429	1430
Model	CS16LH	CS20L	CS20L3	C24L	C27H	C30
Size	16	20	20	24	27	30
Stroke	2.50" (63.5 mm)	2.50" (63.5 mm)	3.00" (76.2 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)	2.50" (63.5 mm)
Part Number SAE & METRIC	For replacement part numbers, contact MGM Brakes Customer Service, 1-800-527-1534 x750 (U.S. & Canada), International email: mail@mgmbrakes.com					
Wt. (lb/kg)	6.20 lb (2.8 kg)	6.70 lb (3.0 kg)	7.65 lb (3.5 kg)	8.66 lb (3.9 kg)	9.57 lb (4.3 kg)	9.88 lb (4.5 kg)
A	4.76" (120.9 mm)	4.76" (120.9 mm)	4.50" (114.3 mm)	4.88" (124.0 mm)	4.85" (123.2 mm)	4.85" (123.2 mm)
B	6.99" (177.5 mm)	6.99" (177.5 mm)	7.02" (178.3 mm)	7.33" (186.2 mm)	8.27" (210.1 mm)	8.27" (210.1 mm)
C	4.75" (120.7 mm)					
D	M16 X 1.5-6g					
Inlets	3/8" -18 NPTF (M16 x 1.5-6H)					
XB	15 mm					

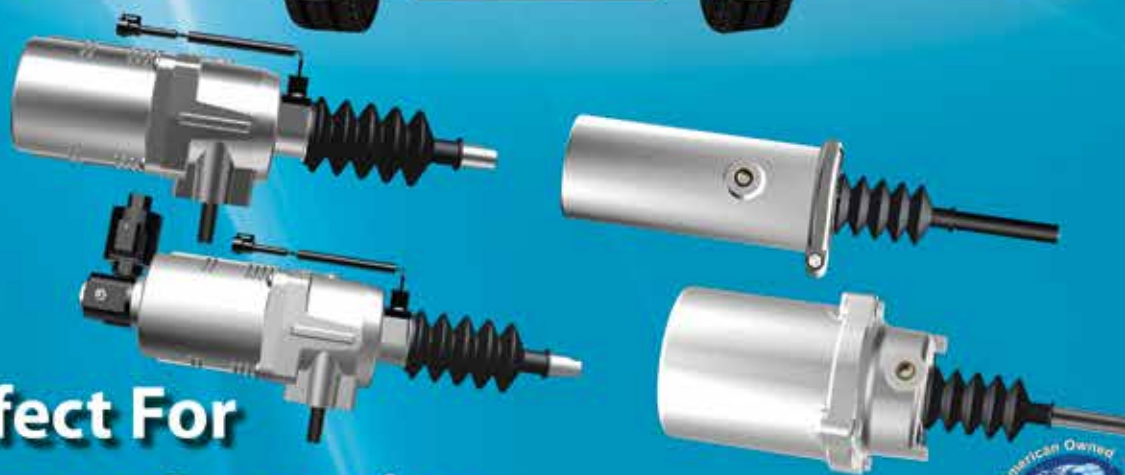
NOTE: All chart measurements are in both inches and metric.

NOTE: Product information and specifications subject to change without notice.

REMOTE MOUNT CYLINDERS



**Perfect For
Remote Operation
Of Trailer Tailgates**



Section 8: Remote Mount Cylinders94-99

R4A	Remote Cylinder.....	96-97
R5AHD	Remote Cylinder, Heavy-Duty	96-97
R7A (SAAR)	Remote Cylinder, Spring Applied, Air Released	98-99
R8H (SAHR)	Remote Cylinder, Spring Applied, Hydraulic Released	98-99

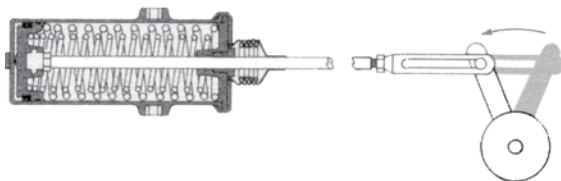


MGM Brakes R4A & R5AHD Remote Mount Cylinders...are the original spring brake invented in the rugged logging country of Northern California. These cylinders were introduced by MGM Brakes in 1956 as the world's first spring-actuated parking and emergency brake actuators for commercial vehicles. These "pull-to-actuate" cylinders were designed for axle-mount using various weld-on and bolt-on mounting brackets and linkage arms.

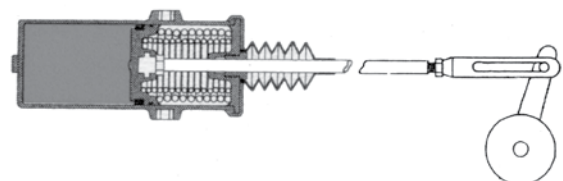
R7A (SAAR) and R8H (SAHR) drive-line brakes are developed as replacements for manually operated lever applied "drive-line" brakes. Mounted to the frame rail, the actuator utilizes a cable to apply parking force to a drum mounted on the drive-line. An optional electronic "travel" sensor provides the operator with information pertaining to the position of the push rod - "applied" or "released".

Today, these high-quality air-actuated cylinders have been adapted to such diverse non-automotive usage as dump truck end-gate actuators, emergency brake actuators on massive logging and commercial fishing winches and numerous other special applications.

How Remote Mount Cylinders Operate



When the end-gate is closed, spring pressure within the cylinders moves the latches into the latched position, reducing the risk the end-gate may inadvertently swing open.

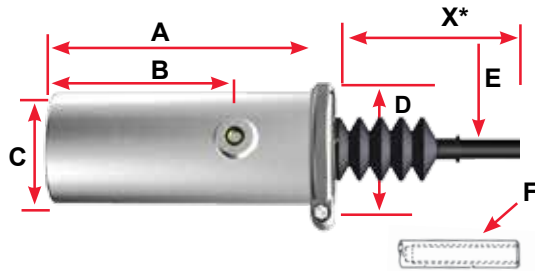


To unlatch the end-gate, the operator applies air to the cylinder through a valve located in the cab of the vehicle. As air pressure builds within the cylinder it forces the piston to move, compressing the spring(s) and extending the push-rod which moves the end-gate latches into the open position.

NOTE: Product information and specifications subject to change without notice.

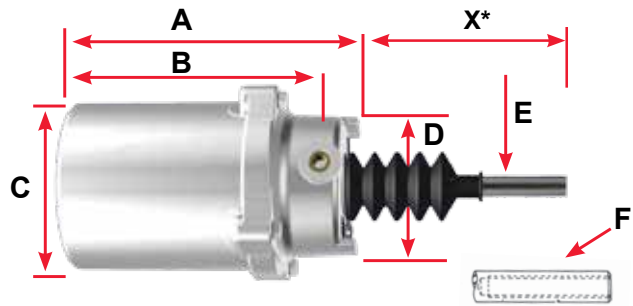
Remote R4A

VMRS# 013-004-027



Remote R5AHD

VMRS# 013-004-027



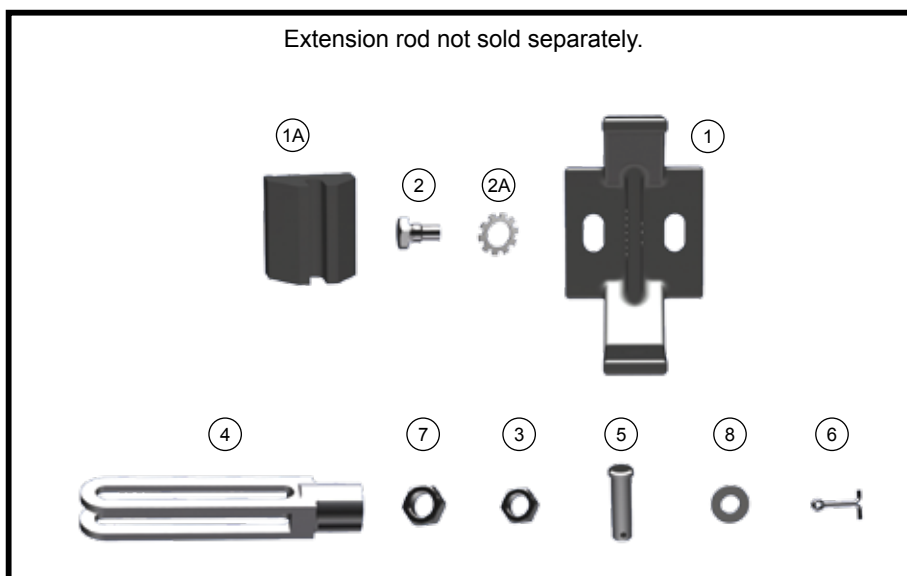
* NOTE: X-dimension (7.00", 15.00" etc.) is measured from lockpin hole in piston rod outward to rod end. Note that the lockpin hole appears from within the cylinder only after the cylinder is charged with minimum 85 psi air pressure. Boot needs to be removed to see lockpin hole.

P/N Series	5004	5005
Model	R4A	R5AHD
Size	4	5
Stroke	4.50" (114.3 mm)	4.20" (106.7 mm)
P/N External 20" (508.0 mm) Rod	5004010	N/A
P/N External 15" (381.0 mm) Rod	5004013	5005012
P/N Internal 7" (177.8 mm) Rod	5004014	5005014
Wt.Combination (lb/kg)*	13.5 lb (6.1 kg)*	19.6 lb (8.9 kg)*
A	11.12" (282.4 mm)	10.50" (266.7 mm)
B	7.50" (190.5 mm)	9.38" (238.3 mm)
C	4.38" (111.3 mm)	6.12" (155.4 mm)
D	5.69" (144.5 mm)	5.12" (130.0 mm)
E (External Thread)	3/4" - 16 UNF x 10.75" (273.1 mm) long	
F (Internal Thread)	1/2" - 20 UNF x 3.00" (76.2 mm) DEEP	
Inlet	3/8" - NPTF	

NOTE: * Weight varies with external rod size.

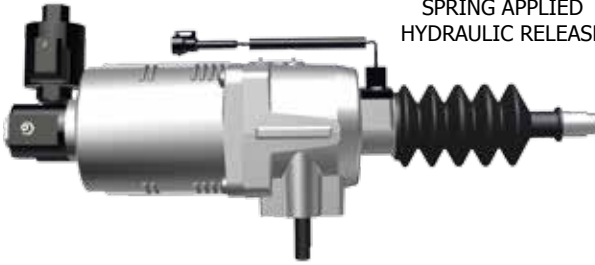
Standard Assembly Part Numbers & Service Parts

Part Number	Description Of Parts
9004003	Kit - Boot & Clamp - Remote
9008001	Kit - Side Bushings R4A/R5AHD (for Trunnion Bolt Mount)



Assemblies				Kit P/N and Quantities			
Model	P/N	Rod Specifications	Thread Length	9050019	9050027	9050028	9050035
R4A	5004010	External Thread 20.00" (508.0 mm) Rod	3.00" (76 mm)	2			
R4A	5004013	External Thread 15.00" (381.0 mm) Rod	10.62" (269.75 mm)		1		
R4A	5004014	Internal Thread 7.00" (177.8 mm) Rod	3.00" (76 mm)				1
R5AHD	5005012	External Thread 15.00" (381.0 mm) Rod	10.75" (273.05 mm)			1	
R5AHD	5005014	Internal Thread 7.00" (177.8 mm) Rod	3.00" (76 mm)				
Key	P/N	Part Description					
1	8005001	Gimbal Bracket - R4A		2	1		1
1	8005013	Gimbal Bracket - R5AHD				1	
1A	8062001	Shock Pad - R4A		2	1		1
1A	8062002	Shock Pad - R5AHD					
2	8003003	Trunnion Bolt		4	2	2	2
2A	8141002	Star Lock Washer		4	2	2	2
3	8130011	Hex Nut 1/2" - 20 UNF					
4	8092006	Sliding Clevis 1/2" - UNF					
4A	8092010	Sliding Clevis 3/4" - UNF					
5	8038001	Yoke Pin 1/2" (12.7 mm)					
6	8151001	Cotter Pin					
7	8130002	Hex Nut 3/4" - 16 UNC		4			
8	8140002	Lockpin Washer 3/4" (19.1 mm) (inside diameter)		2			
9	8055017	Extension Rod 1/2" UNF x 24"					

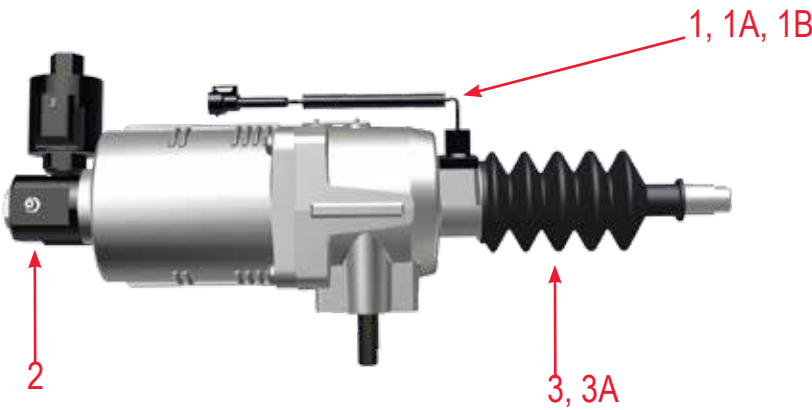
NOTE: Product information and specifications subject to change without notice.

Remote R7A	Remote R8H
VMRS# 013-004-027 R7A (SAAR) MODEL SPRING APPLIED AIR RELEASE 	VMRS# 013-004-027 R8H (SAHR) MODEL SPRING APPLIED HYDRAULIC RELEASE 

R7A (SAAR) & R8H (SAHR) Model Features

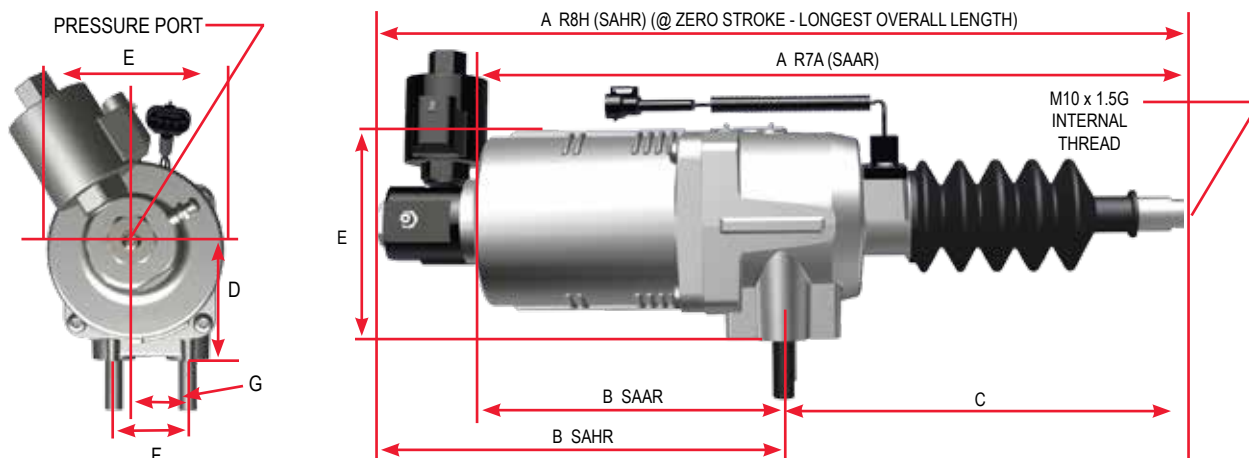
- Compact Design
- Light Weight Aluminum
- Electronic Stroke Sensor

Service Kits & Replacement Parts		
1	9051001	Sensor Kit - R7A (SAAR) & R8H (SAHR) with 3 pin connector
1A	9051004	Sensor Kit - Blue Diamond R7A (SAAR) with 5 pin connector
1B	9051005	Sensor Kit - Blue Diamond R8H (SAHR) with 6 pin connector
2	9041005	Cartridge - R8H (SAHR) Hydraulic Unit
3	8004002	Boot - R7A (SAAR)
3A	8004010	Boot - R8H (SAHR)



NOTE: Product information and specifications subject to change without notice.

R7A (SAAR) and R8H (SAHR) Drive-line Brakes were developed as replacements for manually operated lever applied “drive-line” brakes on class 6 and 7 vehicles. Mounted to the frame rail, the actuator utilizes a cable to apply parking force to a drum mounted on the drive-line. An optional electronic “travel” sensor provides the operator with information pertaining to the position of the push rod – “applied” or “released”.



Model	SAAR	SAHR
Series	R7A	R8H
Part Number	5007001	5008001
Stroke of Unit	2.75" (69.8 mm)	2.75" (69.8 mm)
Medium	Air	DOT3 & DOT4 Brake Fluid
Inlet	3/8" NPTF	7/16-24 UNS 2B Inverted Flair Seat
Operating Pressure	130 PSI (9.0 Bar)	2320 PSI (160.0 Bar)
Temperature Range	-40°F/+190° F (-40° C/+ 88° C)	-40° F/+190° F (-40° C/+ 88° C)
Weight – estimated	6.91 lb (3.1 kg)	8.7 lb (3.9 kg)
A	15.46" (392.7 mm)	18.05" (458.5 mm)
B	6.51" (165.4 mm)	9.10" (231.1 mm)
C	8.95" (227.3 mm)	
D	2.50" (63.5 mm)	
E	4.50" (114.3 mm)	
F	1.93" (49.0 mm)	
G	1.20" (30.5 mm)	

NOTE: Product information and specifications subject to change without notice.

VOCATIONAL APPLICATIONS



**Your rugged vehicles
deserve tough brakes.
Great for Ready-Mix, Refuse, Construction
and other vocational vehicles.**





Section 9: Vocational Application..... 100-105

Model Application Chart 102

Actuators Manufactured with Neoprene Diaphragms..... 103

Truck Specific - Welded Yoke Guide 104

SHIFT Magazine Ad 105

NOTE: Product information and specifications subject to change without notice.



MODEL APPLICATION CHART

MGM Brakes manufactures a wide variety of spring brakes, many designed specifically for niche applications. While all MGM models are engineered for the longest life and most reliable service, choosing the right spring brake for a particular application is crucial to ensuring maximum value.

APPLICATION																				
MGM Brakes Spring Brake Application Matrix: This matrix is intended for use as a general information guide only. If you have any questions concerning the application of any particular MGM Brakes model, contact your local MGM Brakes representative for assistance.	TR	TR-HD	TR-T	TR-THD	TR-THDW	TR-TS	TR-TSHD	TR-TSHDW	TR-LP3	TR-LP3HD	TR-LP3T	TR-LP3THD	TR-LP3THDW	TR-LP3TS	TR-LP3TSHD	TR-LP3TSHDW	LTR-T	LTR-L3	LTR-L3T	MJ-ET
ACIDS / LIQUID CORROSIVES																				
DRY BULK CHEMICALS																				
DUMP TRUCK																				
FERTILIZER																				
FIRE & EMERGENCY																				
LINE HAUL																				
LIVESTOCK / POULTRY																				
LOGGING																				
PETROLEUM PRODUCTS																				
READY-MIX CONCRETE																				
REFUSE																				
SALT TRUCK																				
SCHOOL BUS																				
TOXIC WASTE																				
TRANSIT																				

 Indicates Model

NOTE: Product information and specifications subject to change without notice.

MGM Brakes manufactures service chambers and spring brakes with “Neoprene” diaphragms for severe service applications where petroleum saturated contaminants may enter the air system and come into contact with the diaphragms.

While “Natural Rubber” diaphragms may resist the negative effects of oil and oil saturated contaminants for a period of time, “Neoprene” diaphragms have proven to be more durable. Manufactured from a combination of materials that insure superior strength, flexibility and resistance to degradation due to contact with oil and other chemicals, “Neoprene” diaphragms are a great option when the air system is prone to contamination from oil.

The following is a list of MGM replacement service chambers and spring brakes that are equipped with “Neoprene” diaphragms:

PART #	MODEL	DESCRIPTION
1420801	C20	Service Chamber
1427801	C24L	Service Chamber
1427902	C24L	Service Chamber, welded yoke
1428801	C24L3	Service Chamber
1428902	C24L3	Service Chamber, welded yoke
1430801	C30	Service Chamber
1430902	C30	Service Chamber, welded yoke
1436801	C36	Service Chamber
1628902	CS24L3	Service Chamber, welded yoke
3230851	TR3030LP3	Combination
3230851X	TR3030LP3	Combination, (Bulk) 20 pcs./box
3231851	TR3030LP3T	Combination
3231851X	TR3030LP3T	Combination - (Bulk) 20 pcs./box
3231953	TR3030LP3T	Combination, welded yoke
3231955	TR3030LP3T	Combination, welded yoke
3231955X	TR3030LP3T	Combination - (Bulk) 20 pcs./box
3232808	TR3030LP3HD	Piggyback Plus Kit
3232851	TR3030LP3HD	Combination
3232851X	TR3030LP3HD	Combination - (Bulk) 20 pcs./box
3232952	TR3030LP3HD	Combination, welded yoke
3232952X	TR3030LP3HD	Combination - (Bulk) 20 pcs./box
3233952	TR3030LP3THD	Combination, welded yoke
3233952X	TR3030LP3THD	Combination - (Bulk) 20 pcs./box
3233953	TR3030LP3THD	Combination, welded yoke
3233953X	TR3030LP3THD	Combination - (Bulk) 20 pcs./box
3427851	TR2424L	Combination
3430808	TR3030	Piggyback Plus Kit
3430808X	TR3030	Piggyback Plus Kit - (Bulk) 20 pcs./box
3430851	TR3030	Combination
3430851X	TR3030	Combination - (Bulk) 20 pcs./box
3431808	TR3030T	Piggyback Plus Kit
3431851	TR3030T	Combination

PART #	MODEL	DESCRIPTION
3431851X	TR3030T	Combination - (Bulk) 20 pcs./box
3431953	TR3030T	Combination, welded yoke
3431953X	TR3030T	Combination - (Bulk) 20 pcs./box
3431954	TR3030T	Combination, welded yoke
3431954X	TR3030T	Combination - (Bulk) 20 pcs./box
3431955	TR3030T	Combination, welded yoke
3431955X	TR3030T	Combination - (Bulk) 20 pcs./box
3432851	TR3036T	Combination
3432952	TR3036T	Combination, welded yoke
3433808	TR3036	Piggyback Plus Kit
3433851	TR3036	Combination
3433851X	TR3036	Combination - (Bulk) 12 pcs./box
3435851	TR3024T	Combination
3436851	TR3636T	Combination
3436952	TR3036T	Combination, welded yoke
3531851	TR3030TS	Combination
3531851X	TR3030TS	Combination - (Bulk) 20 pcs./box
3532851	TR3036TS	Combination
3532851X	TR3036TS	Combination - (Bulk) 12 pcs./box
3532953	TR3036TS	Combination, welded yoke
3532953X	TR3036TS	Combination - (Bulk) 12 pcs./box
3532954	TR3036TS	Combination, welded yoke
3532954X	TR3036TS	Combination - (Bulk) 12 pcs./box
3533851	TR3030TSHD	Combination
3535851	TR3030LP3TS	Combination
3535851X	TR3030LP3TS	Combination - (Bulk) 20 pcs./box
3535952	TR3030LP3TS	Combination, welded yoke
3832062	LTR3030L3	Combination, welded yoke
3832062B	LTR3030L3	Combination - (Bulk) 60 pcs./box

NOTE: If other sizes are required, contact your local sales representative for availability.

NOTE: Product information and specifications subject to change without notice.

MGM Vocational Chamber Breakdown Sheet

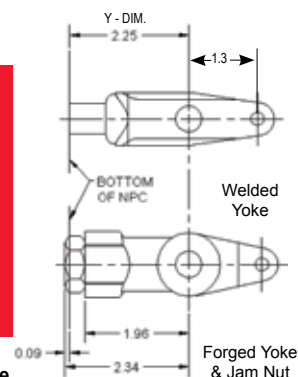
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
All Mack, International, Freightliner, Sterling 2005 and older & all CCC, Autocar, Kenworth, Peterbilt	1427801	3430851	3430851	Threaded-Rod Chambers with Neoprene Diaphragms
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
2006+ Freightliner, Sterling, Western Star, International with Long-Stroke brake chambers	1427902 Type 24L 1621901 Type 20L	3232952	3232952	Make sure long-stroke and standard-stroke is not mixed on the same axle
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
2006+ Mack Camelback Suspension (All) and Hendrickson with 3030 chambers (standard stroke)	1427801 Threaded 1427902 Welded	3431953 3431953	3431954 3431954	Replace Threaded-Rod Steer with another threaded-rod if it was OEM
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
2005-2006 Mack with Hendrickson Haulmaxx Suspension using 3036 chambers on rear axles (threaded-rod only)	1427801 Threaded 1427902 Welded (2.5") 1428902 Welded (3.0")	3532851	3532851	Do not replace 3036 with 3030 if original spec was 3036
Application:	Steer Axle Left	Steer Axle Right	Rear Axle	Comments
2010+ Autocar with Meritor Air-Disc Brakes	1427717	1427716	MJB2424ET752	New. Rear Chambers are Piston-type brake chambers
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
2006+ Mack with Hendrickson Spring Suspension using welded-yoke chambers	1427902 (2.5") 1428902 (3.0")	3532954 3532954	3532953 3532953	On steer axle, make sure to match the correct stroke
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
2006+ Mack Camelback Suspension with optional long-stroke brake chambers	1427902 (2.5") 1428902 (3.0")	3233952 3233952	3233953 3233953	Make sure long-stroke and standard-stroke is not mixed on the same axle
Application:	Steer Axle	Front/Rear	Rear/Rear	Comments
2005+ Autocar and Peterbilt with S-Cam Brakes	1427904 Type 24 1430904 Type 30	3431955	3431955	New Welded-Yoke Chambers
Application:	Steer Axle	Rear Axle		Comments
2007+ Mack with Type 3636 on single-axle	1427902 (2.5") 1428902 (3.0")	3436952 3436952		On steer axle, make sure to change the correct stroke
Application:	Steer Axle	Front Rear	Rear/Rear	Comments
2010+ Mack with Primaxx Air-Suspension	1428902 (3.0")	3532954	3532954	One chamber for both rear axles-welded yoke

NOTE: The listing above is based on known specifications of various manufacturers; however, certain applications may differ than shown. MGM suggests contacting the truck's manufacturer to verify the proper chamber and rod length to assure proper chamber replacement.



WARNING: Every day, more and more vehicles are being manufactured with spring brakes and service chambers with the yoke welded to the service push rod.

Units manufactured with a welded yoke have a preset "Y" dimension, measured from the bottom of the NPC to the center-line of the yoke pin. There are many different preset "Y" dimensions depending on the application. It is very important that you obtain this "Y" measurement from your current chamber in order to replace "like for like" to continue proper operation.



NOTE: Product information and specifications subject to change without notice.

W E L D E D Y O K E S

THE ONLY WAY TO RUN YOUR VEHICLE!

Why?

TIME

- Reduce chamber replacement time
- No push-rod cutting required, made for easy install
- Maintain exact OEM chamber to slack adjuster factory set-up
- Will fit single and most dual pin slack adjusters
- Reduce road call time with a few of the most popular parts
- Common part numbers for a variety of make and model of trucks and tractors

SAFETY

- Maintain OEM engineered safety
(incorrect rod cutting can affect proper brake adjustment)



MGM Brakes

A Division of Indian Head Industries, Inc.

WWW.MGMBRAKES.COM

VOCATIONAL APPLICATIONS

SPECIAL APPLICATION BRAKES



**Satisfying Special
Application Requirements ...
Especially in the Transit Industry**





Section 10: Special Application 106-113

TR, TR-T, TR-TS, LTR-L3, and MJS Transit Bus Brakes and Other Special Applications 108

Actuators Manufactured with Neoprene Diaphragms..... 109

Welded Yoke Application Guide..... 110-111

SAE/METRIC Mixed Parts List..... 112

Special Transit Length Push-Rods

VMRS # 13-004-000

Available aftermarket options & part numbers for assemblies requiring "X" dimensions longer than standard 8.00" (203.2 mm) fully threaded push-rod.						
All Models	Type 24		Type 30		Type 36	
"X" Dimension	12.00" (304.8 mm)	18.00" (457.2 mm)	12.00" (304.8 mm)	18.00" (457.2 mm)	12.00" (304.8 mm)	18.00" (457.2 mm)
Push-Rod Diameter	5/8" (15.9 mm)	3/4" (19.1 mm)	5/8" (15.9 mm)	3/4" (19.1 mm)	5/8" (15.9 mm)	3/4" (19.1 mm)
Threaded Length	5.00" (127.0 mm)	7.00" (177.8 mm)	5.00" (127.0 mm)	7.00" (177.8 mm)	3.00" (76.2 mm)	9.00" (228.6 mm)
Part Number Designator	xxxx551	xxxx651	xxxx551	xxxx651	xxxx551	xxxx651
Kit - Push-Rod Assembly	9064553	9064653	9064551	9064651	9064552	9064652

NOTE: Generic replacement parts for Hendrickson Intraax / Vantraax Suspension ends in 551 suffix.

NOTE: We offer some direct OEM replacement part numbers for transit applications. Contact MGM Brakes customer service for details.

NOTE: xxxx represents: P/N series for model groups.



TR-T Model

TR-LP3T Model

LTR-L3T Model

MJS Model

NOTE: For yoke pin and mounting hardware replacement parts refer to Section 12.

For custom replacement assemblies, contact MGM Brakes Sales.

NOTE: Product information and specifications subject to change without notice.

Actuators Manufactured with Neoprene Diaphragms

MGM Brakes manufactures service chambers and spring brakes with "Neoprene" diaphragms for severe service applications where petroleum saturated contaminants may enter the air system and come into contact with the diaphragms.

While "Natural Rubber" diaphragms may resist the negative effects of oil and oil saturated contaminants for a period of time, "Neoprene" diaphragms have proven to be more durable. Manufactured from a combination of materials that insure superior strength, flexibility and resistance to degradation due to contact with oil and other chemicals, "Neoprene" diaphragms are a great option when the air system is prone to contamination from oil.

The following is a list of MGM replacement service chambers and spring brakes that are equipped with "Neoprene" diaphragms:

PART #	MODEL	DESCRIPTION
1420801	C20	Service Chamber
1427801	C24L	Service Chamber
1427902	C24L	Service Chamber, welded yoke
1428801	C24L3	Service Chamber
1428902	C24L3	Service Chamber, welded yoke
1430801	C30	Service Chamber
1430902	C30	Service Chamber, welded yoke
1436801	C36	Service Chamber
1628902	CS24L3	Service Chamber, welded yoke
3230851	TR3030LP3	Combination
3230851X	TR3030LP3	Combination, (Bulk) 20 pcs./box
3231851	TR3030LP3T	Combination
3231851X	TR3030LP3T	Combination - (Bulk) 20 pcs./box
3231953	TR3030LP3T	Combination, welded yoke
3231955	TR3030LP3T	Combination, welded yoke
3231955X	TR3030LP3T	Combination - (Bulk) 20 pcs./box
3232808	TR3030LP3HD	Piggyback Plus Kit
3232851	TR3030LP3HD	Combination
3232851X	TR3030LP3HD	Combination - (Bulk) 20 pcs./box
3232952	TR3030LP3HD	Combination, welded yoke
3232952X	TR3030LP3HD	Combination - (Bulk) 20 pcs./box
3233952	TR3030LP3THD	Combination, welded yoke
3233952X	TR3030LP3THD	Combination - (Bulk) 20 pcs./box
3233953	TR3030LP3THD	Combination, welded yoke
3233953X	TR3030LP3THD	Combination - (Bulk) 20 pcs./box
3427851	TR2424L	Combination
3430808	TR3030	Piggyback Plus Kit
3430808X	TR3030	Piggyback Plus Kit - (Bulk) 20 pcs./box
3430851	TR3030	Combination
3430851X	TR3030	Combination - (Bulk) 20 pcs./box
3431808	TR3030T	Piggyback Plus Kit
3431851	TR3030T	Combination

PART #	MODEL	DESCRIPTION
3431851X	TR3030T	Combination - (Bulk) 20 pcs./box
3431953	TR3030T	Combination, welded yoke
3431953X	TR3030T	Combination - (Bulk) 20 pcs./box
3431954	TR3030T	Combination, welded yoke
3431954X	TR3030T	Combination - (Bulk) 20 pcs./box
3431955	TR3030T	Combination, welded yoke
3431955X	TR3030T	Combination - (Bulk) 20 pcs./box
3432851	TR3036T	Combination
3432952	TR3036T	Combination, welded yoke
3433808	TR3036	Piggyback Plus Kit
3433851	TR3036	Combination
3433851X	TR3036	Combination - (Bulk) 12 pcs./box
3435851	TR3024T	Combination
3436851	TR3636T	Combination
3436952	TR3036T	Combination, welded yoke
3531851	TR3030TS	Combination
3531851X	TR3030TS	Combination - (Bulk) 20 pcs./box
3532851	TR3036TS	Combination
3532851X	TR3036TS	Combination - (Bulk) 12 pcs./box
3532953	TR3036TS	Combination, welded yoke
3532953X	TR3036TS	Combination - (Bulk) 12 pcs./box
3532954	TR3036TS	Combination, welded yoke
3532954X	TR3036TS	Combination - (Bulk) 12 pcs./box
3533851	TR3030TSHD	Combination
3535851	TR3030LP3TS	Combination
3535851X	TR3030LP3TS	Combination - (Bulk) 20 pcs./box
3535952	TR3030LP3TS	Combination, welded yoke
3832062	LTR3030L3	Combination, welded yoke
3832062B	LTR3030L3	Combination - (Bulk) 60 pcs./box
MJS3024ET851	MJS3024ET	Combination
MJS3030ET851	MJS3030ET	Combination
MJS3628ET851	MJS3628ET	Combination

NOTE: If other sizes are required, contact your local sales representative for availability.

NOTE: Product information and specifications subject to change without notice.

Welded Yokes Application Guide

Non Type 30				
Stroke	Model	Part #	Y-Dim	Application
2.5"	C24L	1427901	2.25"	
2.5"	C24L	1427902*	2.25"	
3.0"	C24L3	1428901	2.25"	
3.0"	C24L3	1428902 *	2.25"	
2.5"	CS16LH	1617901	2.25"	
2.5"	CS20L	1621901	2.25"	
3.0"	CS24L3	1628901	2.25"	
3.0"	TR2030LP3H	3220951	2.25"	
3.0"	TR2430LP3	3224951	2.25"	
3.0"	TR2430LP3T	3225951	2.25"	
3.0"	TR2430LP3HD	3226951	2.25"	
3.0"	TR2430LP3THD	3227951	2.25"	
2.5"	TR3036T	3432951	2.25"	
2.5"	TR3036	3433951	2.25"	
3.0"	TR3636T	3436951	2.25"	
3.0"	TR3636	3437951	2.25"	
3.0"	TR2430LP3TS	3523951	2.25"	
3.0"	TR2430LP3TSHD	3527951	2.25"	
2.5"	TR3036TS	3532951	2.25"	
2.5"	TR3036TS	3532952	4.20"	Mack
2.5"	TR3036TS	3532953 *	4.20"	Mack
2.5"	TR3036TS	3532954 *	2.25"	
2.5"	TR2430LHD	3624951	2.25"	
2.5"	TR2430LTHD	3625951	2.25"	
3.0"	LTR2430L3	3828951	2.25"	
3.0"	MJS3024	MJS3024ET951	2.25"	
3.0"	MJS3028	MJS3028ET951	2.25"	
3.0"	MJS3030	MJS3030ET951	2.25"	
3.0"	MJS3630	MJS3630ET951	2.25"	
* Includes Neoprene Diaphragm (Ideal for Refuse Trucks)				

NOTE: Applies to charts on page 110 and 111.

• Replace "like" for "like" (Do not use a welded yoke in place of a threaded rod. Do not use a threaded rod in place of a welded yoke.)

• Welded yokes are sometimes used on 2005 and newer International Truck and Bus, Freightliner, Mack, Volvo, Western Star, Sterling, Thomas Bus and others.

• Y-Dimension measured with brake released (power spring caged) from mounting base to center-line of large yoke pin. 1.3" between center line of yoke pins.

• Stainless steel yoke pins available for both welded and threaded yokes: Welded Yoke Kit Part Number 9092012P

Model Key:

TR = Tamper Resistant, LP3 and L3 = 3 Inch Long Stroke, LTR = Long Life (Limited six year warranty for on-highway vehicles)

MJS = Piston Brake, C = Steelhead Service Chamber, CS = Sealed Service Chamber, T = Breather Tube, HD = Heavy Duty

TS = Severe Service (epoxy coated inside and out with breather tube), W = Weld Reinforced Mounting Bolts

NOTE: Product information and specifications subject to change without notice.

Welded Yokes Application Guide

Type 30 and 3030				
Stroke	Model	Part #	Y-Dim	Application
2.5"	C30	1430901	2.25"	
2.5"	C30	1430902 *	2.25"	
3.0"	C30L3	1431901	2.25"	
2.5"	CS30	1630901	2.25"	
3.0"	CS30L3	1631901	2.25"	
3.0"	TR3030LP3	3230951	2.25"	
3.0"	TR3030LP3	3230955	3.063"	Thomas Bus
3.0"	TR3030LP3T	3231951	2.25"	
3.0"	TR3030LP3T	3231953 *	2.25"	
3.0"	TR3030LP3T	3231954	2.87"	Autocar, Paccar
3.0"	TR3030LP3T	3231955 *	2.87"	Autocar, Paccar
3.0"	TR3030LP3HD	3232951	2.25"	
3.0"	TR3030LP3HD	3232952 *	2.25"	
3.0"	TR3030LP3THD	3233951	2.25"	
3.0"	TR3030LP3THD	3233952 *	2.25"	
3.0"	TR3030LP3THD	3233953 *	4.20"	Mack
3.0"	TR3030LP3THDW	3244951	2.25"	
2.5"	TR3030	3430951	2.25"	
2.5"	TR3030	3430952	4.20"	Mack
2.5"	TR3030	3430955	3.063"	Thomas Bus
2.5"	TR3030T	3431951	2.25"	
2.5"	TR3030T	3431952	4.20"	Mack
2.5"	TR3030T	3431953 *	2.25"	
2.5"	TR3030T	3431954 *	4.20"	Mack
2.5"	TR3030T	3431955 *	2.87"	Autocar, Paccar
2.5"	TR3030T	3431956	2.87"	Autocar, Paccar
2.5"	TR3030TS	3531951	2.25"	
2.5"	TR3030TS	3531952	4.20"	Mack
3.0"	TR3030LP3TSHD	3534951	2.25"	
3.0"	TR3030LP3TS	3535951	2.25"	
3.0"	TR3030LP3TSHDW	3545951	2.25"	
2.5"	TR3030THD	3631951	2.25"	
3.0"	LTR3030L3	3832951	2.25"	
3.0"	LTR3030L3T	3833951	2.25"	
3.0"	LTR3030L3W	3844951	2.25"	

NOTE: Product information and specifications subject to change without notice.



MGM - Mixed Thread Part Numbers				
Truck & Bus Europe				
OE Ref. #	MGM OEM ref.	MGM AM ref.	Replaced by	Information and Comments
1190406	Obsolete, see 3013229		MJS3028ET209	
1197020	Obsolete, see 3013299		MJS3028ET209	
1588610	Obsolete, see 1608006		MJS3028ET200	
1608006	4130057	4131200	MJS3028ET200	Direct equivalent to OE part
3013299	4130058	4131209	MJS3028ET209	Direct equivalent to OE part
3035900	1430223	1430390	Current	Direct equivalent to OE part
3090932	4124155		MJS2424ET074	Need to adjust air inlet port position
3090933	4124156		MJS2424ET074	Direct equivalent to OE part
5002292	4130060	4131200	MJS3028ET200	Direct equivalent to OE part
5002293	4130061	4131209	MJS3028ET209	Direct equivalent to OE part

Note: All above units have M16 x1.5 mm air inlet ports

Mounting studs and push rod threads are all 5/8"



FINALLY

THE ANSWER TO THE
AGE OLD QUESTION,
WHAT CAN A

"WELDED YOKE"

DO FOR YOU?

- Reduce chamber replacement time
- No push-rod cutting required, made for easy install
- Maintain exact MACK OEM chamber to slack adjuster factory set-up
- Maintain OEM engineered safety (incorrect rod cutting can affect proper brake adjustment)
- Will fit single and most dual pin slack adjusters
- Reduce road call time with a few of the most popular parts



SPECIAL APPLICATIONS

e-STROKE®

Brake Monitoring System



e-DT™



**Monitor Brake Stroke—
Increase Safety, Reduce Costs**



Section 11: e•STROKE® – Brake Monitoring System 114-127

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e•STROKE® System Features	
	Promotes SAFETY
	Check Brake Stroke Status & Pinpoint Brake Problems
	Wheel & Problem-Specific Monitoring in Real Time
	Diagnostic Tools
	Chassis Communications Module (CCM) with fault history storage
	Chamber stroke sensing components are factory installed and calibrated to insure optimal in service performance.
	Sensors are field replaceable.
	Durable Cables Made with Double Insulated High Strength Jacketing & Industry Standard Water-Proof Connectors
	Highly Accurate, *Patented Design
	Operating Temperature: -40°F to +176°F (-40°C to +80°C)

*U.S. Patent Nos. 5,450,930, 5,825,287 and 6,255,941, and other U.S. and Foreign Patents Pending.

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

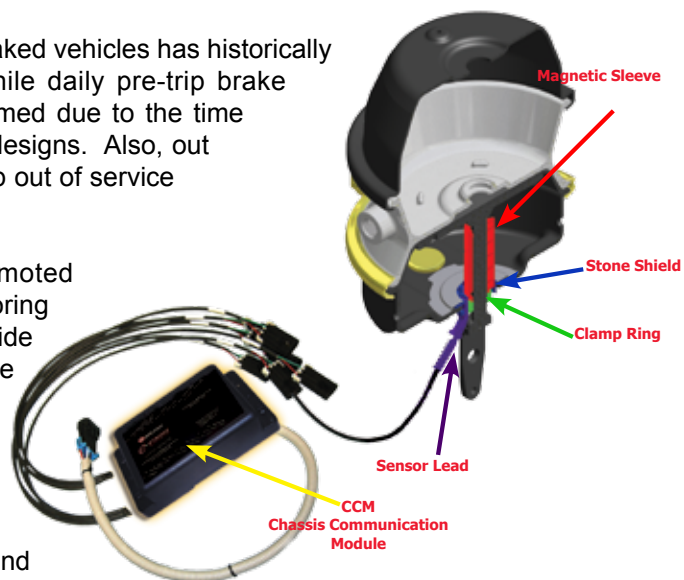
e•STROKE® – Brake Monitoring System

Verifying proper brake setup on commercial air-braked vehicles has historically been a significant problem in our industry. While daily pre-trip brake inspections are required, they are seldom performed due to the time and difficulty required with current brake system designs. Also, out of adjustment brakes continue to be one of the top out of service violations noted at road-side inspections.

Based on this need, MGM developed and promoted e•STROKE® in 1996, an electronic brake monitoring system. e•STROKE® utilizes sensors mounted inside the brake chamber to measure actual brake stroke and convey this information to an electronic control unit for analysis. The system can be utilized to verify brake inspection results, as well as provide continuous brake monitoring.

MGM first promoted our GEN 1 system in 1996 and officially launched e•STROKE® in 2000 for exposed push-rod brake systems. This system used a CCM (otherwise known as a Chassis Communication Module) that displayed real-time brake status via LED's on the front of the CCM. The product then evolved into our GEN 2 system in 2005 which incorporated some additional features such as brake pressure sensing, vehicle speed monitoring, and J1708 / J1587 support.

The product then evolved into the third generation system - e•S3™, which added new features such as fault code storage, brake application pressure monitoring/ transmission, configurable wheel end support, lining wear monitoring, J-1939 support, and advanced diagnostics.



e•STROKE® fault warnings can diagnose problems associated with:

- Soft or broken return spring in the foundation brake or actuator
- Worn bushings (cam tube or spider brake)
- Poor automatic slack operation/maintenance
- Improper parking brake release by operator
- Brake drum expansion by overheating
- Drum warpage or out-of-round condition
- Excessive mechanical deflection
- Defective or worn spring brake
- Broken parking brake power spring
- Improper brake set-up/adjustment
- Low voltage system
- Faulty slack adjusters
- Air leaks, or improper operating air system
- Worn foundation components
- Defective air valves
- Notice to replace brake lining (only with lining wear option on e•S3™ systems)

To find out how e•STROKE® can help reduce your fleet operating costs, whether truck, trailer or bus, contact MGM Brakes Customer Service at: (800) 527-1534 or mail@mgmbrakes.com

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

The next generation of MGM Brakes e•STROKE® System technology is e•S3™. This third generation system includes memory capabilities for collecting and utilizing the brake status information, and monitoring brake lining wear. e•S3™ technology provides the same quick, accurate brake stroke status readings for any air-braked vehicle with exposed push rod brake chambers as did the earlier systems.

Earlier systems utilize LED blink codes on the Chassis Communications Module (CCM) to display brake related faults (i.e. non-functioning, over-stroking and dragging brake) to the operator or service technician. While these “blink codes” provided the information needed to pinpoint the problem, that information was not always readily available to the driver, or technician. The CCM was usually mounted outside the cab or out of the view of the driver, making it difficult for the user to view the fault codes from the driver’s position during brake applications and trouble shooting. The e•S3™ CCM does not include any LEDs to view so it can be mounted in a convenient out of the way location.

As with previous systems, an optional dash mounted “warning light” notifies the operator that a fault has occurred, but unlike those previous systems additional warning lights are available for lining wear and trailer faults if applicable. This allows the operator or technician to identify the problem area faster than ever before.

Now, because e•S3™ monitors brake application pressure with every actuation, over-stroke faults can be analyzed in terms of brake pressure applied; an intermittent dragging brake can be identified and addressed before it becomes a more serious and costly problem: and, because e•S3™ is compatible with most lining wear sensors, lining wear issues can be identified, thus reducing component wear while prolonging the intervals between relines.

The e•S3™ System is capable of monitoring brake status and lining wear for up to 4 axles recording brake fault history up to 126 incidences of each fault, per wheel.

e•S3™ FEATURES

- ☒ Electronic module is configurable for any combination of brake stroke measurement and lining wear detection.
- ☒ Brake stroke measurement and/or lining wear measurement on up to 4 axles (8 wheel ends).
- ☒ SAE J-1708 and J-1939 compliant. System fully supports both vehicle network configurations.
- ☒ System records and stores fault history for retrieval/analysis.
- ☒ System monitors and transmits driver brake application pressure.
- ☒ Enhanced diagnostic capability. Optional e•DT™ J1939 hand held diagnostic tool and laptop diagnostic tool kits available.



e•DT™ monitor shown above

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.



MGM Announces e•STROKE® e•S3D Electronic Brake Monitoring for Air Disc Brake Applications
Building upon the success of MGM's patented e•S3 e•STROKE® electronic brake monitoring system for exposed push-rod brakes, MGM is pleased to announce the release of e•STROKE® electronic brake monitoring for air disc brake applications.

This new technology utilizes proven e•S3 electronics, cabling, and diagnostic software, and now adds a new optical sensing technology to monitor air disc push-rod stroke and caliper lever arm movement. The e•S3D system utilizes Infrared Optical Sensing to monitor the position of the chamber push-rod, while the new spring loaded chamber ball end design, monitors proper contact and movement of the caliper lever arm during each brake apply and release. (patent pending)

The e•S3D system monitors your vehicle braking system in real-time and can detect:

- Non-Functioning Brakes (caused by broken air hoses, faulty valves, faulty brake chambers)
- Dragging Brakes (caused by faulty valves, faulty parking chambers, caliper adjuster failures)
- Over Stroke Brakes (caused by caliper adjuster mechanism failure, or other mechanical failure)

Air Disc brakes are almost impossible to visually inspect since all moving components are hidden from view. The e•STROKE® GEN-3D e•S3D system continuously monitors every brake apply and release and notifies the fleet manager of braking problems via:

- Dash warning light alerting the driver to a potential braking problem
- J-1939 real-time transmission of any fault condition which can be relayed via on board data recording and reporting systems (Clever Devices, Siemens etc.)
- Optional integration of the e•S3D detection of dragging brakes to automatically intervene and de-rate the vehicle speed (OEM option)

The benefits of MGM's e•STROKE® system are:

- Reduces maintenance costs by helping the technician quickly and accurately diagnose brake problems, and by detecting brake problems early before they become more costly
- Reduces operating costs by keeping your vehicles in-service and on the road
- Provides peace of mind by knowing the status of your brake system at all times (liability concerns).
- Provides peace of mind when releasing new vehicles (and new brake systems) into your fleet.

If you feel MGM's e•STROKE® e•S3D has benefit to you and your fleet, please contact our corporate office at the number below for additional information about this exciting new technology.

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.



MGM Brakes Introduces

e•STROKE®
Brake Monitoring System

BRAKE MONITORING FOR AIR DISC



e•STROKE® – BRAKE MONITORING SYSTEM

Brake fault history as well as brake lining status recorded by the e•S3™ System can now be displayed in three convenient methods: the e•DT™ hand held diagnostic tool / display, a computer based diagnostic program, and by warning light blink codes.

e•DT™, an e•Stroke handheld diagnostic tool may be used to view the system status for any e•Stroke system connected to J1939 circuits. In addition the e•DT™ can view and clear fault history as well as display vehicle speed and brake application pressure in real time. Using the e•DT™ as a hand held diagnostic tool is as simple as plugging into the vehicle "OBD" (9 pin diagnostic port) with the supplied harness. Once plugged in, the display will automatically link up to the e•S3™ CCM and show the current brake status. A series of intuitive menus can be navigated using a few buttons to access all of the brake information available in the CCM. The e•DT™ can also be permanently mounted in the cab where the operator can see the brake status clearly displayed in real time.

A computer based diagnostic tool kit is also available for the e•S3™ system. The kit includes the diagnostic software on CD and appropriate harnesses for connection from the computers RS-232 plug or USB port to the CCM (kits for connection direct to CCM or to vehicle J1939, 9-pin diagnostic port are also available). This diagnostic software can be easily loaded on a laptop and connected to the e•S3™ system. Brake status and history (as well as lining wear status) can be viewed and saved as a text record. In addition the system configuration and serial numbers can be viewed. These kits allow the operator or technician to analyze this information in detail, enhancing the system's usefulness as a prognostic and/or diagnostic tool.

The dash mounted warning lights can be prompted to display blink codes indicating stored brake faults simply by pressing a button on the CCM. After the stored faults are viewed they can be erased from the CCM by pressing the button again for 5 seconds.

Where available with OEM installations, the e•S3™ System can also be monitored via SAE J1939 transmissions to the vehicle's onboard computer system, data logger or instrument cluster.



e•DT™: The newest addition to the e•STROKE® system, a diagnostic tool for buses and trucks which displays faults stored in the ccm via J-1939, such as:

- Non-Functioning Brake
- Over Stroke
- Dragging Brake
- Brake Lining Wear Warning

Data stored in the CCM can be viewed several ways: via the e•DT™ by connecting to the vehicle's diagnostic port, on a laptop computer connected directly to the CCM or thru blink codes on the e•STROKE® warning light mounted in the instrument cluster.



Computer can be used by directly hooking up to the CCM.

Vehicle instrument cluster:



NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

e•STROKE® e•S3™ System Specifications

Operating Temperature	-40°F - 176°F (-40C to 80C)
Power Requirement	9.5V DC to 30V DC Ignition Switched
Maximum Current Draw	1.5 amps
System Fuse	5 amps
Environmental Protection	SAE J1455 Compliant
Electrical Protection	SAE J1455 and SAE J1113 Compliant
Applications	e-Stroke® GEN 3 available for Tractor, Truck, Bus (Contact MGM for trailer compatibility)
Brake Types	Air Drum and Air Disc

System Component Specifications:

Chassis Control Module (CCM)

- STR750 Flash Micro Controller
- FSK (PLC), JTAG, RS-232, J1708, J1939 interface support
- Internal 10 bit A/D, external 12 bit A/D
- Extended I/O support (Digital & Analog)
- Configurative from 2 to 8 wheel ends
- Truck, Tractor, Bus configurations available
- Diagnostic interface: RS-232, J1708, J1939
- Approved for interior mounted applications only

Pressure Transducer

- 110psi Brake Application Pressure Sensing Capability
- Burst Pressure Rating – 1000 psi (68.9 bar)
- Pneumatic Connection – 1/4" NPT Male
- Material – Stainless Steel

Actuator Sensor - Drum

- One piece environmentally sealed Hall Effect sensor
- Packard Metri-Pac 150 sealed type 3-pin connector
- 60 inch standard harness length

Actuator Sensor - Disc

- Hardcoat Aluminum Housing
- Sealed Potted Assembly
- Packard Metri-Pac 150 sealed type 3-pin connector
- 60 inch standard harness length

Wire Harnesses

- Power Harness – Standard 12' (3.7 meter) Cut to Length Harness
- Pressure Transducer Harness – 5' (1.5 meter) to 20' (6.1 meter)
- Sensor Harness – 10' (3.0 meter) to 50' (15.2 meter)
- All exterior cables double insulated with high strength jacket

In-Cab System Warning Device

- Tractor / Truck / Bus Brake Stroke Warning Lamp output
- Tractor / Truck / Bus Lining Wear Warning Lamp output
- Trailer Brake Stroke Warning Lamp output
- Trailer Lining Wear Warning Lamp output
- Fault Code Transmission via J1708 & J1939

Brake Actuators

- External Piston Rod and Disc Brake Actuators are available for a wide range of vehicle applications. It is necessary to select the appropriate actuators for the vehicle application.

**Consult MGM Brakes Sales (800) 527-1534 (US or Canada),
International: mail@mgmbrakes.com**

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

e•STROKE® e•S3™ Tractor / Truck / Bus Parts List

e•S3™ Tractor / Truck / Bus CCMs - External Push-Rod					
Description	Part #	System Type	Vehicle Type	Axle No	Axle Configuration
CCM	8291100	e-S3	Truck / Bus	2-Axle	e-Stroke Drum & Lining Wear
CCM	8291101	e-S3	Truck / Bus	2-Axle	e-Stroke Drum Only
CCM	8291102	e-S3	Truck / Bus	3-Axle	e-Stroke Drum Only
CCM	8291103	e-S3	Truck / Bus	3-Axle	e-Stroke Drum & Lining Wear
CCM	8291108	e-S3	Truck / Bus	4-Axle	e-Stroke Drum Only
CCM	8291109	e-S3	Truck / Bus	4-Axle	e-Stroke Drum & Lining Wear
CCM	8291104	e-S3	Tractor	2-Axle	e-Stroke Drum Only
CCM	8291105	e-S3	Tractor	2-Axle	e-Stroke Drum & Lining Wear
CCM	8291106	e-S3	Tractor	3-Axle	e-Stroke Drum Only
CCM	8291107	e-S3	Tractor	3-Axle	e-Stroke Drum & Lining Wear
CCM	8291110	e-S3	Tractor	4-Axle	e-Stroke Drum Only
CCM	8291111	e-S3	Tractor	4-Axle	e-Stroke Drum & Lining Wear

e-S3 Tractor / Truck / Bus CCMs - Disc					
Description	Part #	System Type	Vehicle Type	Axle No	Axle Configuration
CCM	8291117	e-S3	Truck / Bus	2-Axle	e-Stroke Disc Only
CCM	8291118	e-S3	Truck / Bus	2-Axle	e-Stroke Disc & Lining Wear
CCM	8291119	e-S3	Truck / Bus	3-Axle	e-Stroke Disc Only
CCM	8291120	e-S3	Truck / Bus	3-Axle	e-Stroke Disc & Lining Wear

Contact MGM Brakes for additional configurations.

Tractor / Truck / Bus Power & Auxiliary Cables			
Description	Part #	Length ft (meters)	Function
e•S3™ Power Harness	8290233	12' (3.7 meters)	Connects e•S3 CCM to Power, J1708, Alarm 1 & 2
SAE J1939 Drop Leg Harness, Receptacle	8290218	1.5' (0.5 meters)	1.5' (0.5 meters) Drop Leg Harness, Deutsch Receptacle-A-DT04-3P-E008 Connector, Wedge-A-W3P
SAE J1939 Drop Leg Harness, Plug	8290257	3' (0.9 meters)	3' (0.9 meters) Drop Leg Harness, Deutsch Plug-A-DT06-3S-E008 Connector, Wedge-A-W3S
SAE J1708 Harness	8290189	12' (3.7 meters)	Blunt Cut SAE J1708 Connection Harness
Warning Light Harness Kit	9090105	6' (1.8 meters)	6' (1.8 meters) Warning Light Harness & Label Kit, Amber
Warning Light Harness Kit	9090106	12' (3.7 meters)	12' (3.7 meters) Warning Light Harness & Label Kit, Amber
Warning Light Adapter Harness	8290235	2' (0.6 meters)	Allows for Alarm 3 Connection to CCM, Tractor Applications Only



CCM – Truck / Tractor / Bus



CCM Power Connect Lead
Truck / Tractor / Bus



Power Cables
Truck / Tractor / Bus



Pressure Transducer Harness
Truck / Tractor / Bus



Pressure Transducer
Truck / Tractor / Bus

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

e•STROKE e•S3 Tractor / Truck / Bus Parts List

Pressure Transducer & Harnesses			
Description	Part #	Length ft (meters)	Function
Pressure Transducer, 100 psi (6.9 bar)	8090550	.2' (.1 meters)	Signals brake pedal application to e•S3™ CCM
e•S3™ Pressure Transducer Harness	8290243	5' (1.5 meters)	Connects Pressure Transducer to e•S3™ CCM
e•S3™ Pressure Transducer Harness	8290244	10' (3.0 meters)	Connects Pressure Transducer to e•S3™ CCM
e•S3™ Pressure Transducer Harness	8290245	15' (4.6 meters)	Connects Pressure Transducer to e•S3™ CCM
e•S3™ Pressure Transducer Harness	8290246	20' (6.1 meters)	Connects Pressure Transducer to e•S3™ CCM
e•S3™ Pressure Transducer Harness	8290310	25' (7.6 meters)	Connects Pressure Transducer to e•S3™ CCM

Actuator Sensors & Harnesses			
Description	Part #	Length ft (meters)	Function
Actuator Sensor (Drum/External Push-Rod)	8290120	5' (1.5 meters)	Outputs actuator stroke to CCM
e•S3™ Sensor Harness	8290260	10' (3.0 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290261	15' (4.6 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290262	20' (6.1 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290263	25' (7.6 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290264	30' (9.1 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290265	35' (10.7 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290266	40' (12.2 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290267	45' (13.7 meters)	Connects Actuator Sensor to e•S3™ CCM
e•S3™ Sensor Harness	8290311	50' (15.2 meters)	Connects Actuator Sensor to e•S3™ CCM
Actuator Sensor (Disc)	8290350	5' (1.5 meters)	Available as part of Actuator Assembly Only

Lining Sensor Harnesses			
Description	Part #	Length ft (meters)	Function
Lining Wear Sensor*	NA	NA	Available through Brake Lining Manufacturer
Contact MGM Brakes Customer Service for lining sensor harness availability - US/Canada 1-800-527-1534 x750, international - mail@mgmbrakes.com.			

* Lining Wear Sensors should be purchased with Brake Linings from Lining Manufacturer or approved distributor.

e•STROKE® Diagnostic Tool Kits		
Description	Part #	Function
e•STROKE® RS-232 Laptop Diagnostic Tool Kit	9090109	Provides e-Stroke diagnostic capabilities with laptop computer (RS-232)
e•DT™ Hand Held Diagnostic Tool Kit (J-1939)	9090110	Plug & play diagnostic display for use with e-Stroke systems
e•STROKE® J1939 Laptop Diagnostic Tool Kit	9090111	Provides e-Stroke diagnostic capabilities with laptop computer (J-1939)



NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

e•STROKE® e•S3™ Tractor / Truck / Bus Parts List

e•STROKE® e•S3™ Tractor/Truck/Bus System Bill of Material

Typical e•STROKE® e•S3™ System must contain the following components to be complete:

- (1) - e•S3™ CCM for appropriate vehicle configuration
- (1) - e•S3™ CCM Power Harness P/N 8290233
- (1) - J1939 or J1708 Harness
- (1) - Warning Light for Truck / Bus Applications, (2) - Tractor Applications
- (1) - Pressure Transducer P/N 8090550
- (1) - e•S3™ Pressure Transducer Harness of appropriate Length
- (1) per Wheel - Actuator Sensor for each wheel on the vehicle
- (1) per Wheel - e•S3™ Actuator Sensor Harness of appropriate length for each brake actuator on the vehicle
- (1) per Wheel - MGM e•STROKE Brake Actuators per wheel appropriately sized for the vehicle application

e•STROKE® Trailer Parts List

Trailer CCMs

Description	Part #	Axle	Function
CCM, GEN 1, 1 Axle, Trailer	8290034*	1	Use with Trailer 1 Axle Applications
CCM, GEN 1, 2 Axle, Trailer	8290035*	2	Use with Trailer 2 Axle Applications
CCM, GEN 1, 3 Axle, Trailer	8290036*	3	Use with Trailer 3 Axle Applications

*Discontinued (Call for availability)

Trailer Power Cables

Description	Part #	Length ft (meters)	Function
Trailer ABS "T" Power Breakout Adapter	8290178	8" (203.2 mm)	Allows CCM to be powered from existing Trailer ABS System wiring by plugging "T" connector in-line with ABS wiring.
Trailer ABS Power Cable	8290123	5' (1.5 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM
Trailer ABS Power Cable	8290124	10' (3.0 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM
Trailer ABS Power Cable	8290125	15' (4.6 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM
Trailer ABS Power Cable	8290122	20' (6.1 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM
Trailer ABS Power Cable	8290121	25' (7.6 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM
Trailer ABS Power Cable	8290126	30' (9.1 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM
Trailer ABS Power Cable	8290127	35' (10.7 meters)	Connects Trailer ABS "T" Power Breakout Adapter to CCM

Note: To connect Trailer CCM power without using ABS system wiring use appropriate length Trailer ABS Power Cable and cut off one connector to allow for direct wire hook-up to power source.



CCM - Trailer
(Discontinued)



ABS "T" Power Breakout
Adapter - Trailer



Power Cables - Trailer

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

e•STROKE® Trailer Parts List

Actuator Sensors & Harnesses			
Description	Part #	Length ft (meters)	Function
Actuator Sensor (Drum/External Push-Rod)	8290120	5' (1.5 meters)	Outputs actuator stroke to CCM
Sensor Harness	8290077	10' (3.0 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290079	15' (4.6 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290081	20' (6.1 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290083	25' (7.6 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290085	30' (9.1 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290087	35' (10.7 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290089	40' (12.2 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290091	45' (13.7 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290097	60' (18.3 meters)	Connects Actuator Sensor to CCM

Optional Trailer System Parts			
Description	Part #	Length ft (meters)	Function
CCM Mounting Bracket	8090021	NA	Optional, Mounts to Frame Rail of Trailer providing mounting surface for CCM.

Trailer e•STROKE® System Bill of Material	
e•STROKE® Trailer System must contain the following components to be complete:	
(1) - CCM for appropriate trailer configuration	
(1) - Trailer ABS "T" Power Breakout Adapter P/N 8290178	
(1) - Trailer ABS Power Cable of appropriate length	
(1) per Wheel - Actuator Sensor for each wheel on the Trailer	
(1)* per Wheel - Actuator Sensor Harness of appropriate length for each brake actuator on the Trailer	
(1) per Wheel - MGM ESH Brake Actuators per wheel appropriately sized for the vehicle application	



CCM Mounting Bracket

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.



e•STROKE® CCM - Tractor / Truck / Bus Service Parts List

Gen 3 Replacement Kits for Gen 1 and Gen 2 CCM's				
Description	Part #	Replaces Part #	Axle	Function
CCM, GEN 1, 2-Axle, Truck / Bus, Kit	9090116	8290106 9090114	2	Use with GEN 1, 2-Axle Truck / Bus Applications. Optional GEN 3 upgrade for 8290110
CCM, GEN 2, 2-Axle, Truck / Bus, Kit	9090117	8290110	2	Use with GEN 2, 2-Axle Bus Applications
CCM, GEN 1 & 2, 3-Axle, Tractor / Truck / Bus, Kit	9090120	8290103 8290105 8290113 9090115	3	Use with GEN 1 or 2, 3-Axle Tractor / Truck / Bus Applications. Tractor applications have exterior mounted CCMs which may require extension harnesses.
CCM, GEN 1, 1-Axle, Truck / Bus, Kit	9090121	8290114	1	Limited Production System

NOTE: GEN 3 CCM Service Kits contain CCM, Adapter Harnesses and printed installation instructions. Contact MGM Brakes Technical Support for installation assistance at (800) 527-1534.

Tractor / Truck / Bus Power Cables			
Description	Part #	Length ft (meters)	Function
CCM Power Connect Lead	8290051	3' (0.9 meters)	Blunt power leads with fuse allows for direct connection to power
CCM Power Cable	8290175	5' (1.5 meters)	Connects CCM Power Lead to GEN 1 & 2 CCM
CCM Power Cable	8290176	10' (3.0 meters)	Connects CCM Power Lead to GEN 1 & 2 CCM
CCM Power Cable	8290098	15' (4.6 meters)	Connects CCM Power Lead to GEN 1 & 2 CCM
CCM Power Cable	8290099	30' (9.1 meters)	Connects CCM Power Lead to GEN 1 & 2 CCM
Warning Light Harness Kit	9090106	12' (3.7 meters)	12' (3.7 meters) Warning Light Harness & Label Kit
SAE J1708 Harness	8290189	12' (3.7 meters)	Blunt Cut SAE J1708 Connection Harness
Power Adapter Harness for e•S3™ CCM	8290232	2' (0.6 meters)	Adapts e•S3 CCM to GEN 1 & 2 type power harnesses. Required for retrofitting an e•S3 CCM to an existing GEN 1 or 2 system.

Pressure Transducer & Harnesses (GEN 2 Only)			
Description	Part #	Length ft (meters)	Function
Pressure Transducer, 50 psi (3.4 bar)	8090075	.2' (.1 meters)	Signals brake pedal application to CCM
Pressure Transducer Harness	8290170	5' (1.5 meters)	Connects Pressure Transducer to CCM
Pressure Transducer Harness	8290171	10' (3.0 meters)	Connects Pressure Transducer to CCM
Pressure Transducer Harness	8290172	15' (4.6 meters)	Connects Pressure Transducer to CCM
Pressure Transducer Harness	8290173	20' (6.1 meters)	Connects Pressure Transducer to CCM
Pressure Transducer Adapter Harness	8290223	2' (0.6 meters)	Required for applications where a e•S3 CCM is retrofitted to an existing GEN 2 System and Pressure Transducer Harnesses.

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

e•STROKE® e•S3™ Tractor / Truck / Bus Service Parts List

Actuator Sensors & Harnesses (Gen 1, Gen 2, Trailer)			
Description	Part #	Length ft (meters)	Function
Actuator Sensor (Drum/External Push-Rod)	8290120	5' (1.5 meters)	Outputs actuator stroke to CCM. Acceptable replacement for 8290116 2.5' (0.8 meters) Sensor.
Actuator Sensor	8290116	30" (762 mm)	Service Part only
Sensor Harness	8290077	10' (3.0 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290079	15' (4.6 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290081	20' (6.1 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290083	25' (7.6 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290085	30' (9.1 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290087	35' (10.7 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290089	40' (12.2 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290091	45' (13.7 meters)	Connects Actuator Sensor to CCM
Sensor Harness	8290097	60' (18.3 meters)	Connects Actuator Sensor to CCM
GEN 3 Sensor Adapter Harness	8290222	2' (0.6 meters)	Adapts e•S3™ CCM to GEN 1 & 2 Sensor Harness. 1 per wheel required for retrofitting an e•S3™ CCM to an existing GEN 1 or 2 system.

e•STROKE® Miscellaneous Parts List

e•STROKE® Display, Hand Held Diagnostic Tool			
Description	Part #	Length ft (meters)	Function
e•DT™, e•STROKE® Display Diagnostic Tool	8290240	NA	Plug & Play Diagnostic Display for use with e•STROKE® Systems
e•DT™, e•STROKE® Display Diagnostic Harness	8290224	3' (0.9 meters)	1 meter Display Diagnostic Harness
New Flyer Display Adapter (Model Year 2009 On)	8290239	NA	Converts standard 9-PIN OBD Connector to New Flyer J1939 Chassis Pin-Out

e•STROKE® e•S3™ Computer Diagnostic Tool			
Description	Part #	Length ft (meters)	Function
e•STROKE® RS-232 Diagnostic CD	8090091	NA	CD Includes RS-232 Diagnostic Software and e•STROKE® Technical Manual
RS-232 Diagnostic Harness	8290220	10' (3.0 meters)	10' (3.0 meters) RS-232 Diagnostic Harness
RS-232 to USB Adapter Cable, Kit	8090090	NA	RS-232 to USB Adapter Cable, Kit
J-1939 to USB Adapter	8090097	NA	USB to J1939 Adapter Kit
J1939 Diagnostic Harness	8290304	10' (3.0 meters)	J1939 Diagnostic Harness

Miscellaneous Parts			
Description	Part #	Length ft (meters)	Function
Cable Tie, Black, 5" (one pc.)	8090040	NA	Used to secure harness during installation, Typically 200 pcs per system
Wire Label (24 per bag)	8090058	NA	Self Laminating, Write On, Used for marking cables during installation, Typically 24 pcs per system, 40 pcs with lining wear
Fitting, 1/4" NPT Brass Hex Nipple	8160038	NA	Connects Pressure Transducer to Vehicle Air-System
Fitting, 1/4" NPT Brass Tee	8160040	NA	Connects Pressure Transducer to Vehicle Air-System

NOTE: If replacement of the piggyback on an e•STROKE® equipped chamber is required, it is imperative that an MGM piggyback of like size and model be used in order to maintain proper calibration of the e•STROKE® components. Should replacement of the complete chamber be required, be sure to replace with a unit with the exact same part number. Spring brake chambers equipped with MGM e•STROKE® can be identified by the ESH suffix at the end of the part number.

NOTE: Product information and specifications subject to change without notice.

REPLACEMENT PARTS



**Original-Equipment Quality -
Satisfaction Guaranteed**



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NOTE: All parts except push-rod assemblies and non-pressure housings are packaged (on a card) or bulk packed in a box. Packaged parts are designated with a "P" suffix and bulk parts are designated with an "X" suffix. See price list for quantity details.

Breather Cap, End Caps & Weatherseal™ Plug Kits

②



VMRS 013-004-040

③



VMRS 013-004-040

Key	P/N	Description	Used on MGM Models/Sizes
2	9019005	Kit - Weatherseal™ Plug	ALL TR, TR-T, TR-TS sizes except 3036 & 3636
2	9019006	Kit - Weatherseal™ Plug	TR, TR-T, TR-TS sizes, 3036, 3636
3	8206008	End Cap & Retainer	All L-T, MB-T and MG-T. 7/8" H, soft rubber



Diaphragms

VMRS 013-004-007



Type	Stroke	P/N	Material	Outside Diameter
9	1.75" (44.5 mm)	8017109	R	5.00" (127.0 mm)
12	1.75" (44.5 mm)	8017112	R	5.50" (139.7 mm)
12	1.75" (44.5 mm)	8017312*	R	5.50" (139.7 mm)
16	2.25" (57.2 mm)	8017116	R	6.00" (152.4 mm)
20	2.25" (57.2 mm)	8017120	R	6.50" (165.1 mm)
20	2.25" (57.2 mm)	8017145	N	6.50" (165.1 mm)
30	2.50" (63.5 mm)	8017730**	R	8.00" (203.2 mm)
30	2.50" (63.5 mm)	8017731**	N	8.00" (203.2 mm)
36	3.00" (76.2 mm)	8017836**	R	9.00" (228.6 mm)
36	3.00" (76.2 mm)	8017840*	R	9.00" (228.6 mm)
16L	2.50" (63.5 mm)	8017216	R	6.00" (152.4 mm)
16LH	2.50" (63.5 mm)	8017215*	R	6.50" (165.1 mm)
20HL3	3.00" (76.2 mm)	8017226	R	7.00" (177.8 mm)
20L	2.50" (63.5 mm)	8017220	R	6.50" (165.1 mm)
20L3	3.00" (76.2 mm)	8017820*	R	6.50" (165.1 mm)
24L	2.50" (63.5 mm)	8017141	R	7.00" (177.8 mm)
24L	2.50" (63.5 mm)	8017224	N	7.00" (177.8 mm)
24L3	3.00" (76.2 mm)	8017425	N	7.00" (177.8 mm)
24L3	3.00" (76.2 mm)	8017924	R	7.00" (177.8 mm)
24L3	3.00" (76.2 mm)	8017926*	R	7.00" (177.8 mm)
30L3	3.00" (76.2 mm)	8017830**	R	8.00" (203.2 mm)
30L3	3.00" (76.2 mm)	8017831**	N	8.00" (203.2 mm)
30L3	3.00" (76.2 mm)	8017839*	N	8.00" (203.2 mm)
30L3	3.00" (76.2 mm)	8017838*	R	8.00" (203.2 mm)

NOTE: (1) Material "R" is natural rubber blend with nylon fabric reinforcement.
 Use only "R" type diaphragms in extreme cold weather climates. Good to -40° F (-40° C).
 (2) Material "N" is neoprene blend with nylon fabric reinforcement.
 (*) For use in J - Series models only.
 (**) Easy Fit Design

Kit - Release Bolt VMRS 013-004-006



P/N	Services MGM Brakes Model Sizes
9007003	All TR Models except 3036, 3636 - 4 7/8"
9007009	TR3036, TR3636 - 6 1/2"

Clamp Bands



VMRS 013-004-029

Type	P/N (1 Piece)	P/N (2 Piece)
9	8216009	N/A
12	8216012	N/A
16	8216016	8216018
20	8216022	8216020
24	9016024	8216025
30	9016030	8216045
36	N/A	8216036

NOTE: All clamps furnished with nuts and bolts.

NOTE: Product information and specifications subject to change without notice.

S-Cam Protective Boots			VMRS 013-004-031
Key	P/N	Description	
1	9004001	Boot & Retainer S-Cam	
2	9004002	Boot & Retainer S-Cam	
3	8004009	Boot - 1.625" (41.3 mm) Center-Hole	

- NOTE: (1) MGM P/N 9004001 Kit can only be used with non-pressure chambers (mounting housings) having an embossed bottom essentially shaped like the retaining plate for the boot.
- (2) MGM P/N 9004002 Kit can only be used with MGM Brakes Type 20, 24 & 30 non-pressure chambers (mounting housings) with flat bottoms having 3 equally spaced installation holes for the plastic boot retainer.
- (3) MGM P/N 8004009 is suitable for MGM Brakes type 20, 24, 30 & 36 non-pressure chambers with 1.625" (41.3 mm) center hole and 5/8" (15.9 mm) rod only.



NOTE: MGM P/N 9065002 Kit is suitable only for MGM Brakes Type 20, 24, 30 & 36 non-pressure chambers. Field installation requires complete disassembly of the service brake chamber.



Breather Tube & Elbow Kit VMRS 013-004-044		
Key	P/N	Service MGM Brakes Model
1	9081001	All MGM Brakes model sizes fitted with breather tube.
2	9081007	MJW1624BT
2	9081005	Breather Tube Extension Kit

Kit - Nuts & Washers (NPC Mounting)	
VMRS 013-004-006	
P/N 9002001	Type 20, 24, 30 & 36
P/N 9002002	M16 - Type 20, 24, 30 & 36
P/N 9002003	Type 12 and 16

Kit - Nuts & Washers (NPC Mounting)	
VMRS 013-004-030	
Type	P/N SAE
12	8215198
20	9015110
20L3H	9015213
20L3	9015238
24L*	9015151
24L3	9015213
30	9015122
30**	9015259
36	9015108

Non-Pressure Chamber (Without Breather Elbow)	
VMRS 013-004-030	
Type	P/N SAE
12	8215142
16	8215023
16L 2.5	8215023
20	8215169
20L3H	8215053
24L*	8215105
24L3	8215200
30	8215501
30**	9015260
36	8215036



NOTE: Do not plug more than 3 holes in the service chamber (NPC) and never plug any hole facing the road surface or positioned at the lowest point.

NOTE: (applies to NPC Chambers w/breather elbow and w/o breather elbow)
 (*) These chamber sizes are heavy-duty weld-reinforced.
 (**) 8-Gauge, weld reinforced.

NOTE: Product information and specifications subject to change without notice.

Welded Yoke Assemblies				VMRS 013-004-018
CAUTION: WELDED YOKE PISTON RODS SHOULD ONLY BE USED IN CONJUNCTION WITH MGM NON-PRESSURE CHAMBER.				
		Pins Not Shown		
P/N	Y - Dim	Kit - NP Chamber	Kit - Push-Rod/Welded Yoke	Kit - Chamber Assembly
1427901	2.25" (57.2 mm)	9015907	9075003	8215853
1427902	2.25" (57.2 mm)	9015907	9075003	8215853
1428901	2.25" (57.2 mm)	9015903	9075002	8215250
1428902	2.25" (57.2 mm)	9015903	9075002	8215250
1430901	2.25" (57.2 mm)	9015908	9075004	8215501
1430902	2.25" (57.2 mm)	9015908	9075004	8215501
1431901	2.25" (57.2 mm)	9015904	9075001	8215501
3220951	2.25" (57.2 mm)	9015909	9075005	8215250
3224951	2.25" (57.2 mm)	9015903	9075002	8215250
3225951	2.25" (57.2 mm)	9015901	9075002	9015213
3226951	2.25" (57.2 mm)	9015903	9075002	8215250
3227951	2.25" (57.2 mm)	9015901	9075002	9015213
3230951	2.25" (57.2 mm)	9015904	9075001	8215501
3230955	3.0625" (77.8 mm)	9015919	9075011	8215501
3231951	2.25" (57.2 mm)	9015902	9075001	9015216
3231953	2.25" (57.2 mm)	9015902	9075001	9015216
3231954	2.87" (72.9 mm)	9015269	9075012	9015216
3231955	2.87" (72.9 mm)	9015269	9075012	9015216
3232951	2.25" (57.2 mm)	9015904	9075001	8215501
3232952	2.25" (57.2 mm)	9015904	9075001	8215501
3233951	2.25" (57.2 mm)	9015902	9075001	9015216
3233952	2.25" (57.2 mm)	9015902	9075001	9015216
3233953	4.20" (106.7 mm)	9015268	9075013	9015216
3244951	2.25" (57.2 mm)	9015905	9075001	9015259
3430951	2.25" (57.2 mm)	9015908	9075004	8215501
3430952	4.20" (106.7 mm)	9015916	9075009	8215501
3430955	3.0625" (77.8 mm)	9015918	9075010	8215501
3431951	2.25" (57.2 mm)	9015911	9075004	9015216
3431952	4.20" (106.7 mm)	9015917	9075009	9015216
3431953	2.25" (57.2 mm)	9015911	9075004	9015216
3431954	4.20" (106.7 mm)	9015917	9075009	9015216
3431955	2.87" (72.9 mm)	9015266	9075014	9015216
3431956	2.87" (106.7 mm)	9015267	9075015	9015216
3432951	2.25" (57.2 mm)	9015911	9075004	9015216
3433951	2.25" (57.2 mm)	9015908	9075004	9015501
3436951	2.25" (57.2 mm)	9015914	9075007	9015262
3437951	2.25" (57.2 mm)	9015915	9075007	9015263
3523951	2.25" (57.2 mm)	9015901	9075002	9015213
3527951	2.25" (57.2 mm)	9015901	9075002	9015213

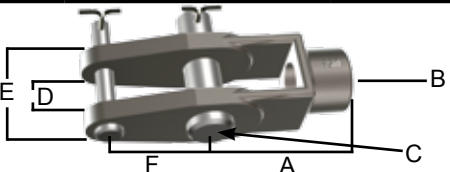
NOTE: Product information and specifications subject to change without notice.

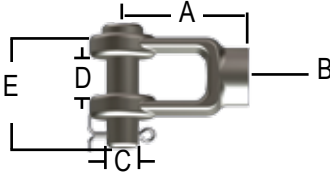
Welded Yoke Assemblies				VMRS 013-004-018
CAUTION: WELDED YOKE PISTON RODS SHOULD ONLY BE USED IN CONJUNCTION WITH MGM NON-PRESSURE CHAMBER.				
		Pins Not Shown		
P/N	Y - Dim	Kit - NP Chamber	Kit - Push-Rod/Welded Yoke	Kit - Chamber Assembly
3531951	2.25" (57.2 mm)	9015911	9075004	9015216
3531952	4.20" (106.7 mm)	9015917	9075009	9015216
3532951	2.25" (57.2 mm)	9015911	9075004	9015216
3532952	4.20" (106.7 mm)	9015917	9075009	9015216
3532953	4.20" (106.7 mm)	9015917	9075009	9015216
3532954	2.25" (57.2 mm)	9015911	9075004	9015216
3534951	2.25" (57.2 mm)	9015902	9075001	9015216
3535951	2.25" (57.2 mm)	9015902	9075001	9015216
3545951	2.25" (57.2 mm)	9015270	9075006	9015259
3624951	2.25" (57.2 mm)	9015265	9075016	9015264
3625951	2.25" (57.2 mm)	9015912	9075003	9015261
3631951	2.25" (57.2 mm)	9015911	9075004	9015216
3828951	2.25" (57.2 mm)	9015903	9075002	8215250
3631951	2.25" (57.2 mm)	9015911	9075004	9015216
3828951	2.25" (57.2 mm)	9015903	9075002	8215250
3832951	2.25" (57.2 mm)	9015904	9075001	8215501
3833951	2.25" (57.2 mm)	9015902	9075001	9015216
3844951	2.25" (57.2 mm)	9015906	9075001	9015260
MJS3024ET951	2.25" (57.2 mm)	9015910	9075006	9015216
MJS3028ET951	2.25" (57.2 mm)	9015902	9075001	9015216
MJS3030ET951	2.25" (57.2 mm)	9015902	9075001	9015216
MJS3630ET951	2.25" (57.2 mm)	9015913	9075008	9015262

Yoke Pins (Stainless Steel) VMRS 013-004-026		
P/N	Diameter	Application
8038007	1/2" (12.7 mm)	Forged Yoke
8038008	5/8" (15.9 mm)	Forged Yoke
8038012	1/2" (12.7 mm)	Welded Yoke
8038014	14mm	Forged Yoke
8038016	1/4" (6.4 mm)	Welded Yoke
8038017	1/2" (12.7 mm)	Forged Yoke
8038019	1/4" (6.4 mm)	Forged Yoke



NOTE: Product information and specifications subject to change without notice.

Yoke Assemblies - 2 Pin				VMRS 013-004-026		
						
P/N	A	B	C	D	E	F
8292031	1.96" (49.8 mm)	5/8" x 18 UNF	1/2" (12.7 mm)	.59" (15.0 mm)	1 1/10" (27.9 mm)	1.30" (33.0 mm)

Yoke Assemblies				VMRS 013-004-026	
					
P/N	A	B	C	D	E
8292001	2.00" (50.8 mm)	5/8" - 18 UNF	1/2" (12.7 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292002	2.00" (50.8 mm)	5/8" - 18 UNF	5/8" (15.9 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292003	2.00" (50.8 mm)	1/2" - 20 UNF	1/2" (12.7 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292007	2.31" (58.7 mm)	3/4" - 16 UNF	1/2" (12.7 mm)	11/16" (17.5 mm)	1 13/16" (46.0 mm)
8292008	2.31" (58.7 mm)	3/4" - 16 UNF	5/8" (15.9 mm)	11/16" (17.5 mm)	1 13/16" (46.0 mm)
8292009*	2.00" (50.8 mm)	5/8" - 18 UNF	1/2" (12.7 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292010	1.88" (47.8 mm)	1/2" - 20 UNF	5/8" (15.9 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292011*	2.00" (50.8 mm)	5/8" - 18 UNF	5/8" (15.9 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292012	1.88" (47.8 mm)	M16 x 1.5-6h	14 mm	14 mm	1 11/16" (42.9 mm)
8292014	2.31" (58.7 mm)	3/4" - 16 UNF	14mm	11/16" (17.5 mm)	1 11/16" (42.9 mm)
8292016	1.88" (47.8 mm)	M16 x 1.5-6h	1/2" (12.7 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292017	2.83" (71.9 mm)	5/8" - 18 UNF	1/2" (12.7 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292018	2.83" (71.9 mm)	5/8" - 18 UNF	5/8" (15.9 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292019	2.83" (71.9 mm)	M16 x 1.5 - 6h	14mm	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292020	1.88" (47.8 mm)	5/8" - 18 UNF	14 mm	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292022	2.20" (55.9 mm)	M16 x 1.5 - 6h	14 mm	37/64" (14.7 mm)	1 11/16" (42.9 mm)
8292023*	1.88" (47.8 mm)	5/8" - 18 UNF	14 mm	9/16" (14.3 mm)	1 3/4" (44.5 mm)
8292026	2.28" (57.9 mm)	5/8" - 18 UNF	5/8" (15.9 mm)	13/16" (20.6 mm)	1 3/4" (44.5 mm)
8292028	1.88" (47.8 mm)	M10 x 1.0-6h	1/2" (12.7 mm)	9/16" (14.3 mm)	1 11/16" (42.9 mm)
8292029	1.88" (47.8 mm)	1/2" x 20 UNF	14 mm	9/16" (14.3 mm)	1 19/64" (32.9 mm)
8292030	1.88" (47.8 mm)	5/8" - 18 UNF	14 mm	9/16" (14.3 mm)	1 19/64" (32.9 mm)

NOTE: Product information and specifications subject to change without notice.

Push-Rod Assembly & Nut Kits			
VMRS 013-004-013	Type	P/N SAE	P/N METRIC
	12*	9064018	N/A
	12*	9064010	N/A
	16	9064019	N/A
	20	9064001	9064015
	20L3	9064026	9064036
	24L	9064002	9064016
	24L3	9064006**	9064027
	30	9064003	9064035
	30L3	9064008**	9064028
	36	9064004	9064009

NOTE: (*) Type 12 (p/n 9064018) has a 4" threaded rod, type 12 (p/n 9064010) has an 8" threaded rod.

NOTE: Type 12 and 16 push-rods will provide an approx. 4.00" (101.6 mm) X- dimension when installed with 4.00" (101.6 mm) of 1/2"- 20 UNF threads.

NOTE: Type 20 through 36 push-rods will provide an approx. 8.00" (203.2 mm) X-dimension when installed with 8.00" (203.2 mm) of 5/8"- 18 UNF threads.

NOTE: These assemblies have MGM Brakes "Stroke Alert" markings and must be used only on the designated MGM Brakes units.

NOTE: (**) These assemblies to be used in conjunction with MGM 3-inch (76.2 mm) long stroke units only.

NOTE: Product information and specifications subject to change without notice.

TECHNICAL INFORMATION



**Important Procedures
& Detailed Tech Information**



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This bulletin is to notify customers of the availability of “reinforced” diaphragms for use in MJS Model Chambers with spring brake parking force-output (pounds-force) in excess of 2300 lbs. at 1¼-inches of stroke: i.e. MJSxx28 and xx30.

Due to the high force output provided by the power spring in MJSxx28 and xx30 Model Chambers, the surface of the service diaphragm, where the “center-case” push rod and diaphragm make contact, may chafe or wear affecting the long-term serviceability of the diaphragm. In an effort to address this potential problem, MGM Engineering developed type 20L3, 24L3, 30L3, and 36 “reinforced diaphragms with an extra layer of fabric covering an area in the center of the diaphragm, approximately 1¾ -inches in diameter, where the center push rod makes contact with the diaphragm.



MGM recommends using only MGM “reinforced” diaphragms for replacement in these models. All diaphragms are available through the MGM Brakes PDC in both single-piece packaged and 30-piece box bulk packs.

1.0 PURPOSE:

To notify customers of coating conversion from current Yellow Zinc Dichromate (hexavalent chromium) to clear trivalent chromate.

2.0 BACKGROUND:

Hexavalent chromium is used in surface coatings for corrosion protection in many vehicle components. On February 28, 2006, the U.S. Department of Labor, Occupational Health and Safety Administration (OSHA) issued final rule concerning Hexavalent chromium. The OSHA directive stated that Hexavalent chromium was a carcinogen and set new limits for exposure to this hazardous material. The European Union's directive 2000/53/EC [1] known as the End of Life Vehicle Directive (ELVD) governs permissible use, reuse, recycling, and recovery of end-of-life vehicles and their components. The objective of the ELVD is to encourage vehicle manufacturers to limit the use of hazardous materials in their products. Hexavalent chromium is one of the materials controlled by the ELVD, which calls for a total phasing out of hexavalent chromium coatings by July 2007.

3.0 SCOPE:

Hexavalent chromium is a key component of the yellow zinc dichromate plating used for corrosion protection on clamp bands, clamp band bolts, continuous rings, and other hardware. MGM Brakes will be replacing the yellow zinc dichromate coating on all components with a trivalent zinc chromate.

4.0 TIMELINE:

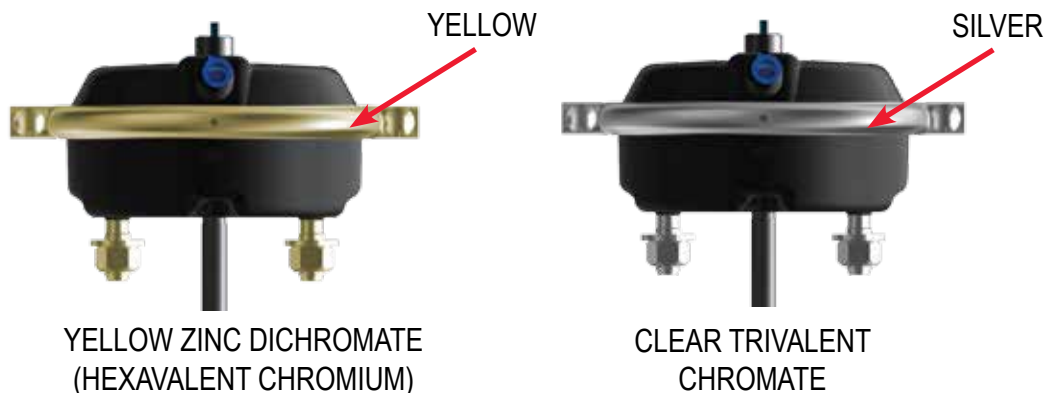
The new trivalent zinc chromate coating will be phased into production beginning in early 2007.

5.0 APPEARENCE:

The new coating will be clear or clear with a blue tint.

6.0 CORROSION PROTECTION:

The new coating will offer equal or greater salt spray protection when compared to yellow zinc dichromate.

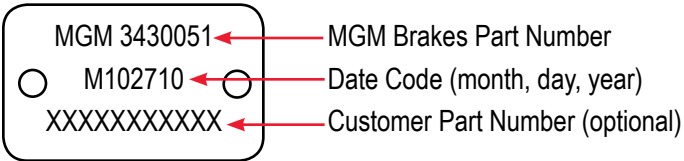




PRODUCT IDENTIFICATION PLATE

All MGM brake actuators made after October 1987 have an aluminum identification plate attached to the actuator which contains the MGM Brakes part number, date code, and often a customer part number.

On all TR, LTR and MJ (Magnum Performance Plus) models the I.D. plate is attached to the center section aluminum casting. On all C, CS and CW models the I.D. plate is attached to the pressure cap or to the clamp band. See the illustrations below for I.D. plate locations.



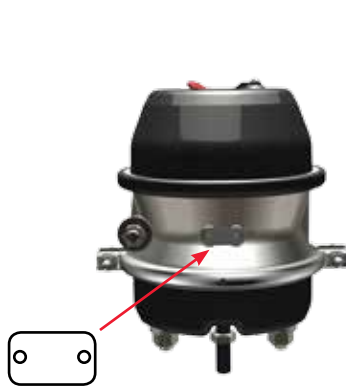
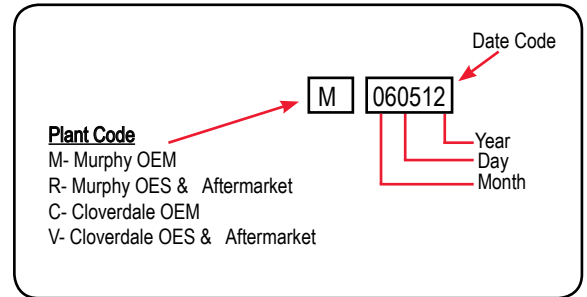
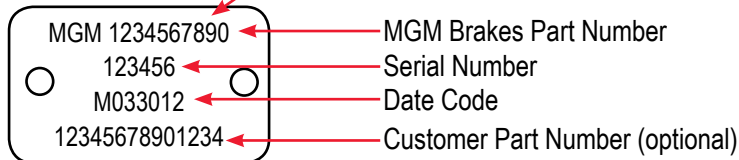
TECHNICAL

Introduction of Unit Serial Numbers

Starting March 2012, MGM Brakes introduced the serialization of brake chambers for improved identification and traceability. This number is a randomly generated seven digit numeric number that is unique to each MGM Brake model.

The serial number is located with the product identification (see illustration) that is either stamped directly on the unit, or stamped on a tag that is affixed to the unit.

ALL CHARACTERS STAMPED
.120 X .005-.010 DEEP
CENTERED HORIZONTALLY
AND VERTICALLY ON PAD



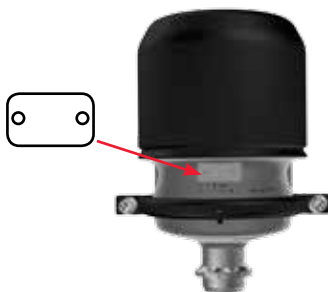
Double Diaphragm
TR Model



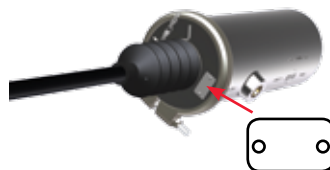
Long Life
Double Diaphragm
LTR Model



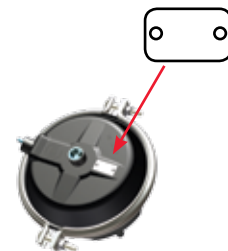
Piston
Magnum Performance Plus Model
MJS Model



Wedge
MJW Model



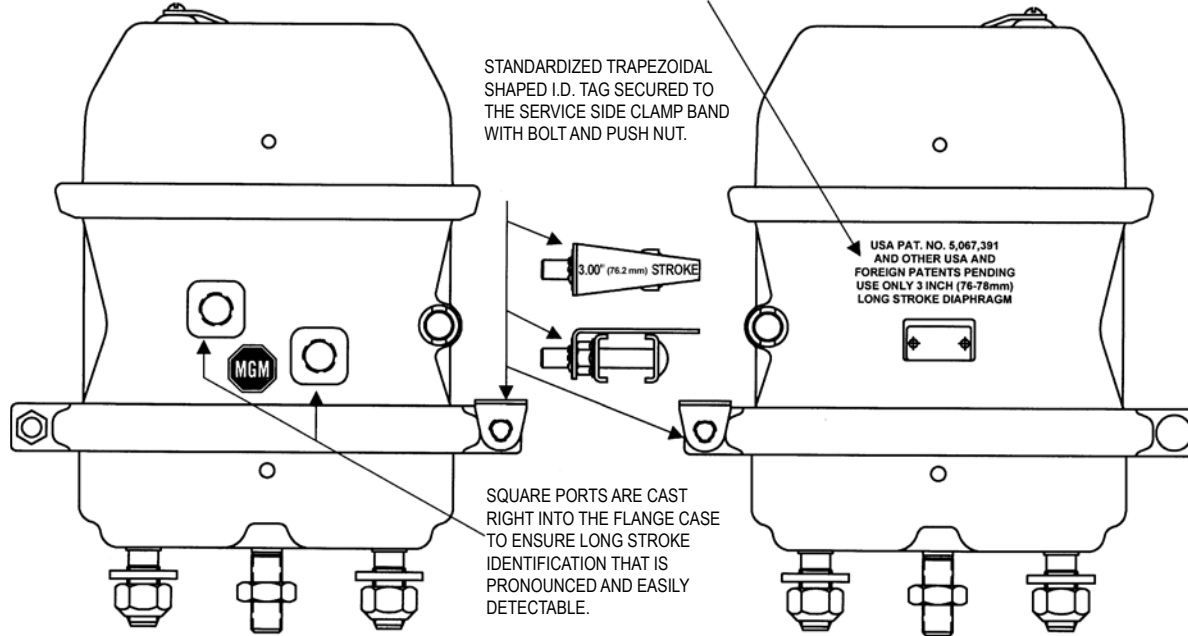
Remote Cylinder



S-Cam Service
C and CS Models

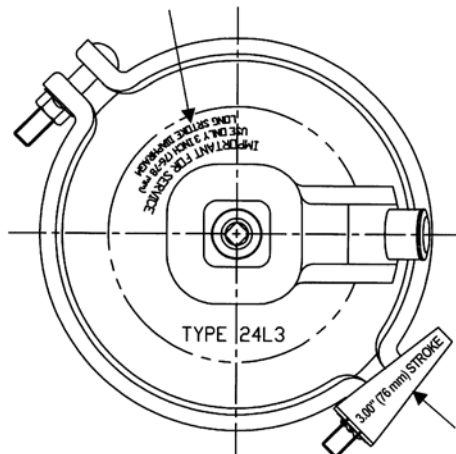
“LONG STROKE” SPRING BRAKE IDENTIFICATION

SERVICING INSTRUCTIONS ARE
EMBOSSSED INTO THE FLANGE
CASE FOR WHEN DIAPHRAGM
REPLACEMENT IS REQUIRED.

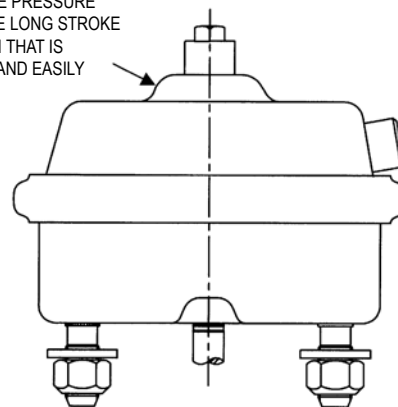


“LONG STROKE” SERVICE CHAMBER IDENTIFICATION

SERVICING INSTRUCTIONS ARE
STAMPED INTO THE PRESSURE
CAP FOR WHEN DIAPHRAGM
REPLACEMENT IS REQUIRED.



SQUARE EMBOSSMENT IS
RAISED A FULL HALF-INCH FROM
THE TOP OF THE PRESSURE
CAP TO ENSURE LONG STROKE
IDENTIFICATION THAT IS
PRONOUNCED AND EASILY
DETECTABLE



STANDARDIZED,
TRAPEZOIDAL SHAPED
I.D. TAG SECURED TO SERVICE
CHAMBER CLAMP BAND BOLTS.

1.0 PURPOSE:

The purpose of this technical bulletin is to recommend a MJ-ET piston type air brake actuator replacement for various MG-T's (now obsolete) and double diaphragm models.

CAUTION:

The recommended MJ-ET replacement may have more parking force than the model it is replacing. An anti compounding valve may be required to prevent excess braking torque. Note: The J-Series (Magnum Performance Plus) models listed on the chart below are 3.00 inch (76.2 mm) stroke actuators. Ensure that installations have proper clearance for 3.00 inches (76.2 mm) of stroke.

MGM Brakes recommends replacing both brakes on an axle if force and/or stroke is different than unit being replaced.

2.0 CROSS REFERENCE CHART:

The following chart provides an easy cross reference for selecting a MJ-ET piston type air brake actuator to replace a MG-T (now obsolete) or double diaphragm air brake actuator.

3.0 MODEL NUMBER DEFINITIONS:

Model numbers for double diaphragm air brake actuators describe the diaphragm size. A model TR2430 describes a type 24 service chamber diaphragm and a type 30 spring chamber diaphragm. Model numbers for piston type air brake actuators describe the service chamber diaphragm size and a level of parking chamber force. A model M2420LG-T describes a type 24 service chamber diaphragm and a parking chamber having 1410 lbs. (6.3 kN) $\pm$ 10% force output at 1.25 inch (31.8 mm) stroke (see chart below).

				MJS1722	MJS2022	MJS2422	MJS3022	MJS1724	MJS2024	MJS2424	MJS3024	MJS2028	MJS2428	MJS3028	MJS3628	MJS2030	MJS2430	MJS3030	MJS3630
Model Size	Stroke Inches (mm)	Parking Force (B)		1725 lbs (7.67 kN)				1922 lbs (8.5 kN)				2320 lbs (10.3 kN)				2450 lbs (10.9 kN)			
		lbs (kN)	Hold-Off Pressure (A) psi (bar)	63 psi (4.4 bar)				71 psi (4.9 bar)				73 psi (5.0 bar)				75psi (5.2 bar)			
TR2430HD	2.50" (63.5 mm)	1580 lbs. (7.0 kN)	68 psi (4.7 bar)																
TR3030HD	2.50" (63.5 mm)	1580 lbs. (7.0 kN)	68 psi (4.7 bar)																
TR2430	3.00" (76.2 mm)	1435 lbs. (6.4 kN)	63 psi (4.3 bar)																
TR2430HD	3.00" (76.2 mm)	1580 lbs. (7.0 kN)	68 psi (4.7 bar)																
TR3030	3.00" (76.2 mm)	1435 lbs. (6.4 kN)	63 psi (4.3 bar)																
TR3030HD	3.00" (76.2 mm)	1580 lbs. (7.0 kN)	68 psi (4.7 bar)																
TR3036	2.50" (63.5 mm)	1960 lbs. (8.7 kN)	66 psi (4.6 bar)																
TR3636	3.00" (76.2 mm)	1960 lbs. (8.7 kN)	68 psi (4.7 bar)																
LTR2430	3.00" (76.2 mm)	1525 lbs. (6.8 kN)	71 psi (4.9 bar)																
LTR3030	3.00" (76.2 mm)	1525 lbs. (6.8 kN)	71 psi (4.9 bar)																
M1620LG-T	2.50" (63.5 mm)	1410 lbs. (6.3 kN)	50 psi (3.4 bar)																
M1624LG-T	2.50" (63.5 mm)	1625 lbs. (7.2 kN)	56.8 psi (4.1 bar)																
M2020LG-T	2.50" (63.5 mm)	1410 lbs. (6.3 kN)	50 psi (3.4 bar)																
M2024LG-T	2.50" (63.5 mm)	1625 lbs. (7.2 kN)	59.6 psi (4.1 bar)																
M2030LG-T	2.50" (63.5 mm)	2360 lbs. (10.5 kN)	58.2 psi (4.0 bar)																
M2420LG-T	2.50" (63.5 mm)	1410 lbs. (6.3 kN)	50 psi (3.4 bar)																
M2424LG-T	2.50" (63.5 mm)	1625 lbs. (7.2 kN)	59.3 psi (4.1 bar)																
M2430LG-T	2.50" (63.5 mm)	2360 lbs. (10.5 kN)	68.2 psi (4.7 bar)																
M3024GT	2.50" (63.5 mm)	1625 lbs (7.2 kN)	60 psi (4.1 bar)																
M3027GT	2.50" (63.5 mm)	2040 lbs. (9.1 kN)	67 psi (4.6 bar)																
M3031GT	2.50" (63.5 mm)	2325 lbs. (10.3 kN)	69 psi (4.8 bar)																

Note: Contact MGM Brakes Sales for models not specified above.

- (A) Hold-Off Pressure (psi) is measured as decreasing air pressure at .200" (of full "OFF" stroke position - (zero stroke)).
 (B) Parking Force (lbs. $\pm$ 10%) is measured at 1.25" (31.8 mm) of stroke.

PROCEDURE: TO CUT THE SERVICE PUSH-ROD TO PROPER LENGTH



Warning: Do not attempt to service or disassemble the spring chamber or any spring brake actuator. A large spring in the spring chamber having extreme force could cause serious bodily injury if it were suddenly released due to inadvertent removal of this clamp or tamper-resistant head.

IMPORTANT: Place blocks under wheels to prevent vehicle runaway before removing air brake actuators.

- REMOVE WORN OR NON-FUNCTIONAL UNIT FROM VEHICLE. Determine manufacturer and model of unit to be replaced. Refer to that manufacturer's service manual for caging and removal instructions.
- Make sure the spring chamber of the removed actuator is fully released (power spring caged) and the service brake push-rod is fully retracted to zero stroke position (i.e. brake fully released). See chart below.

Model Series	Stroke	Measurement
TR 2.25	2.25" (57.2 mm)	3.6" (91.4 mm)
TR 2.50	2.50" (63.5 mm)	3.6" (91.4 mm)
TR 3.00	3.00" (76.2 mm)	3.6" (91.4 mm)
LTR 2.50	2.50" (63.5 mm)	2.20" (55.9 mm)
LTR 3.00	3.00" (76.2 mm)	2.80" (71.1 mm)
MJ 1.75	1.75" (44.5mm)	1.38" (35.1 mm)
MJ 3.00	3.00" (76.2 mm)	1.29" (32.8 mm)

NOTE: All measurements are from top of head to end of bolt TR, and top of the head to the top of the release bolt head J-Series.
All dimensions are for reference only.

- Measure and record the "X" and "Y" dimensions (Figure 1).

"X" Dimension - The dimension from bottom of actuator to end of push-rod.

"Y" Dimension - The dimension from bottom of actuator to centerline of yoke pin.

Figure 1

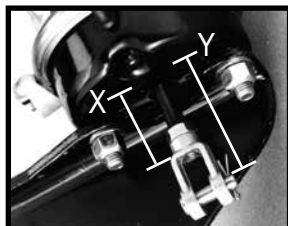
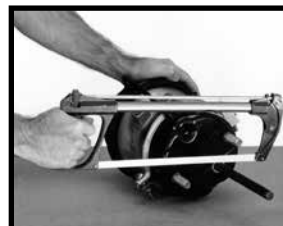


Figure 2



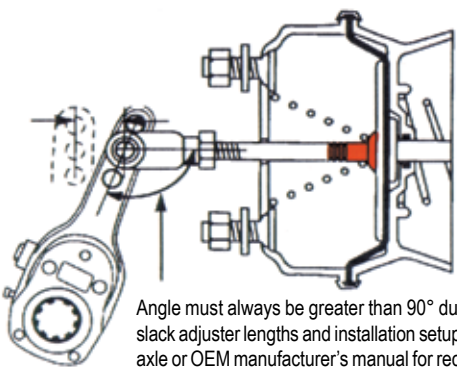
NOTE: If for some reason the spring chamber power spring cannot be caged and fully released, then the "X" and "Y" dimensions will need to be measured from another actuator of the exact type from the same vehicle provided it is retracted to its zero stroke position (brake fully released) and was operating correctly.

- Before marking push-rod to be cut on a new unit, be sure the spring chamber and push-rod are fully retracted to the zero position. (This may be done with the manual caging bolt or by applying 90-100 psi (6.2 - 6.9 bar) air pressure to the spring chamber air inlet port.)
- Take measured "X" dimension from the removed unit and mark push-rod of new unit from the bottom of the actuator.
- Thread jam nut past mark on push-rod. Align bottom edge of nut with mark.
- Use a sharp hack-saw and cut push-rod on the mark (Figure 2).
- After cutting rod, thread jam nut off to clean up the thread.
- Thread jam nut then yoke onto the push-rod. Yoke from removed unit may be reused provided yoke pin hole is not worn. Adjust yoke to the same "Y" dimension as measured from the removed unit.
- Hold yoke to prevent it from turning and tighten jam nut against yoke 25-35 lb-ft (33.9 - 47.5 N-m) torque.

TO INSTALL NEW UNIT ON VEHICLE: Refer to MGM Brakes Service Manual for the model that is being installed.

NOTE: The last half of an air chamber stroke is less efficient than the first half. Therefore, the following adjustments are recommended for maximum efficiency when using manually adjusted slack adjusters.

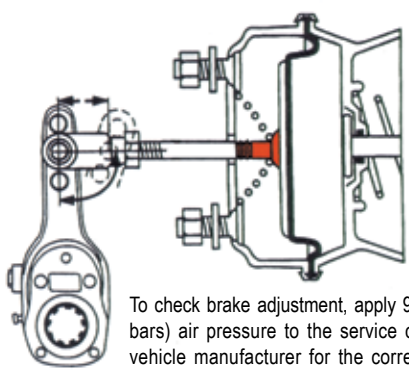
BRAKES "OFF" - NOT APPLIED



Angle must always be greater than 90° due to various slack adjuster lengths and installation setups. (Refer to axle or OEM manufacturer's manual for recommended angle).

Stroke should be as short as possible with no lining to drum contact.

PROPERLY - ADJUSTED BRAKES "ON" - APPLIED

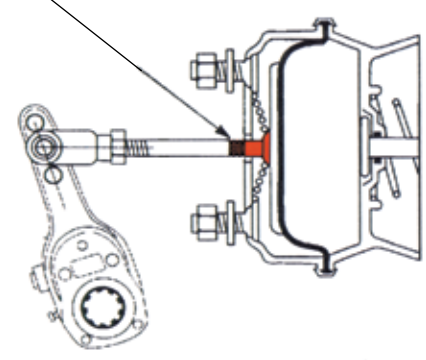


To check brake adjustment, apply 90 to 100 psi (6.2 - 6.9 bars) air pressure to the service chamber. Consult the vehicle manufacturer for the correct angle between the slack adjuster arm and push-rod and/or the push-rod length. This is necessary since different dimensions are required for automatic or manual slacks, various slack lengths and different slack adjuster manufacturers.

IMPROPERLY ADJUSTED BRAKES "ON" - APPLIED

Maximum recommended readjustment stroke has been exceeded)

MGM Brake "Stroke Alert" (Excessive Stroke Warning)



See chart for recommended readjustment stroke

Type	Effective Area (SQ. IN.)	Approx. Diaphragm O.D.		Rated Stroke of Chamber		Maximum Stroke with Brakes Adjusted	"B" MV/MA Recommended Readjustment Stroke	
		Inches	mm	Inches	mm		Inches	mm
9	9	5.00	125	1.75	45	SHOULD BE AS SHORT AS POSSIBLE WITHOUT LINING TO DRUM CONTACT	1.35	35
12	12	5.50	140	1.75	45		1.35	35
16	16	6.00	150	2.25	57		1.75	45
16L	16	6.00	150	2.50	64		2.00	51
20	20	6.50	165	2.25	57		1.75	45
20L	20	6.50	165	2.50	64		2.00	51
24	24	7.00	175	2.25	57		1.75	45
24L	24	7.00	175	2.50	64		2.00	51
24L3	24	7.00	175	3.00	76		2.50	64
30	30	8.00	200	2.50	64		2.00	51
30L3	30	8.00	200	3.00	76		2.50	64
36	36	9.00	230	3.00	76		2.25	57

SOURCE: MVMA (Motor Vehicle Manufacturers Association)

Note: The push-rod must remain perpendicular to the bottom surface of the non-pressure chamber (NPC) within ±3° zero to full stroke.

• IMPORTANT •

RECOMMENDED SPRING BRAKE ACTUATOR DISARMING PROCEDURE



Warning: This procedure must be strictly adhered to. Never attempt to remove the spring chamber clamp ring from a double diaphragm actuator or the spring chamber retaining ring from a piston actuator. Both actuators employ a high energy power spring that could cause serious bodily injury if the spring were suddenly released due to improper disassembly.

All retired spring brake actuators must be safely disarmed before they are disposed of to prevent serious personal injury from accidental sudden release of the high energy spring (as much as 2700 lbs of force -12.0 kN) in the parking chamber. To disarm the unit, remove it from the vehicle following the instructions in the MGM Brakes Service Manual. Be sure to release the brake per Section (2) of the MGM Brakes Service Manual. Never attempt to remove the head which contains the power spring. Observe all safety precautions. Place the unit in a steel *container and use an acetylene torch to cut a hole through the head housing the power spring. Cut completely through at least two spring coils. The steel container must have openings to expose the head where it is to be cut with the acetylene torch and it must be strong enough to prevent parts from hurtling out should the unit suddenly separate before it is safely disarmed. It is the users responsibility to ensure the steel container is safe.

*Information concerning a suitable container is available through your MGM Brakes Representative.

BOLT TORQUES			
Component	Bolt Size	Foot/Pounds of Torque	Newton/Meters of Torque
RELEASE BOLTS			
CAGING TORQUE			
TR Models	1/2 - 13 UNC	40-50	54-68
TR Models	5/8 - 11 UNC	40-50	54-68
L Models	5/8 - 11 UNC	40-50	54-68
J Models	5/8 18 UNF / 1/2 - 13 UNC	74 Max.	100 Max.
STORAGE TORQUE			
TR Models	1/2 - 13 UNC	10	14
TR Models	5/8 - 11 UNC	10	14
L Models		45-50	61-68
J Models		50-60	68-81
CLAMP BAND NUTS & BOLTS			
	5/16 - 24 UNF	18-23	24-31
	3/8 - 16 UNC	30-35	41-47
YOKE NUTS			
	1/2 - 20 UNF	20 - 30	27 - 41
	5/8 - 18 UNF	25 - 50	34 - 68
	3/4 - 16 UNF	75 - 100	102 - 136
	M16 X 1.5 - 6G	25 - 50	34 - 68
MOUNTING NUTS & BOLTS			
	7/16 - 14 UNC	35-40	47-54
	5/8 - 11 UNC	133-155	180-210
	5/8 18 UNF	133-155	180-210
	M16 X 1.5 - 6G	133-155	180-210
AIR INLET FITTINGS			
	3/8 - 18 NPTF	25 - 30	34 - 40
	3/8 - 24 UNF	17 - 19	23 - 26
	M16 X 1.5- 6H	13 - 15	18 - 20



WARNING: DO NOT USE IMPACT WRENCH.

PROCEDURE TO LENGTHEN THE EXTERNAL BREATHING TUBE

1.0 Purpose:

To provide a procedure to add a tube section to lengthen a breathing tube in the field when the replacement actuator needs to be modified to replicate the breathing tube, and/or port positions as per the currently installed OEM actuator.

2.0 Scope:

All MGM Brakes models with an external breathing tube.

3.0 Material required:

8081128 Rubber Extension Tube or 3/8 Inch I.D. Rubber Vacuum/Washer Hose
8052021 3/8 Inch Hose Clamp (2) or Adhesive

NOTE: If rubber extension tube and hose clamps unavailable, use appropriate length of 3/8" I.D. rubber vacuum/washer hose and appropriate adhesive. (Recommend Loctite #414 "Superbond" or equivalent.)

4.0 Procedure:

4.1 Using a plastic tubing cutter or sharp knife, cut the 3/8" O.D. breathing tube approximately half way between the rubber elbows.. (Fig. 1)

4.2 Using the recommended procedure in the MGM Brakes Service Manual (Ref Form 5044 - J-Series, Form 5011 - TR, Form 5042 - LTR, Form 5065 - Wedge) loosen the service chamber clamp and rotate the spring side to the desired position. Tighten service chamber clamp.

NOTE: Units designed for air disc applications are not to be rotated. (Fig. 2)

4.3 If necessary, cut the 8081128 rubber extension tube, or the 3/8" vacuum/washer hose, to a length that will insure a minimum of 1/2 inch engagement over both ends of the cut 3/8" O.D. nylon breathing tube.

4.4 Install the 8052021 hose clamps (2) over each end of the nylon breathing tube, or apply Loctite #414 "Superbond" adhesive, or equivalent, to both ends of the nylon breathing tube.

4.5 Insert the section of 8081128 rubber extension tube over both ends of the cut breathing tube a minimum of 1/2 inch. (Fig. 3)

4.6 If hose clamps are used, compress clamp with pliers and place one over each end of the rubber extension tube. The edge of the clamp should be approximately .050 ± .015 from the edge of the rubber tube when installed. If adhesive is being used, wait for adhesive to dry before proceeding.

5.0 Using the recommended procedure in the MGM Brakes Service Manual (Ref Form 5044 - J-Series, Form 5011 - TR, Form 5042 - LTR, Form 5065 - Wedge), check the service chamber clamp for leaks.

WARNING: Do not remove the spring chamber clamp ring (clamp closest to the release bolt) as serious injury may result from sudden release of the power spring.



Fig. 1
"Cut"



Fig. 2
"Rotate"



Fig. 3
"Insert"

1.0 SCOPE:

Installing and replacing brake chambers with different rated strokes – specifically long stroke versus standard stroke.

2.0 RECOMMENDATION:

MGM Brakes recommends replacing chambers with the same stroke rating across an axle. When servicing a truck/trailer equipped with either standard stroke or long stroke chambers, it is crucial that replacement of the chambers be like for like. For example: if a 3" (76.2 mm) stroke chamber is to replace a 2.5" (63.5 mm) stroke chamber, both chambers on that axle must be upgraded to 3" (76.2 mm) chambers.

CAUTION:

When upgrading from standard stroke to long stroke chambers, be sure there is:

- 1) adequate clearance for the increased stroke of the pushrod, yoke, and slack adjuster at full stroke
- 2) adequate clearance of the longer chamber at the worst case suspension and steering articulation.

Approval from the original vehicle manufacturer for proper clearance is recommended.

3.0 BACKGROUND:

The heat generated by the contact of the lining against the drum, especially during hard or continuous braking situations, causes the drum to "grow", or expand. The ability of a 2.5" (63.5 mm) "standard" stroke chamber to provide adequate pressure of the lining against the ever-expanding drum is limited by the stroke and performance characteristics of the brake. As the 2.5" (63.5 mm) stroke chamber exceeds 2" (50.8 mm) of travel, the operator will begin to sense the "brake fade" phenomenon, which will become more prevalent as the chamber moves closer to its maximum travel position, at which point the brake will cease to provide any braking capability.

However, the performance and operational characteristics of the MGM 3-inch "long stroke" chamber provides braking force beyond the point where the 2.5" (63.5 mm) "standard" stroke chamber ceases to provide braking. The 3" (76.2 mm) "long stroke" chamber provides the same force - output at 2.5" (63.5 mm) of stroke as provided by the "standard" chamber at 2" (50.8 mm) of stroke.

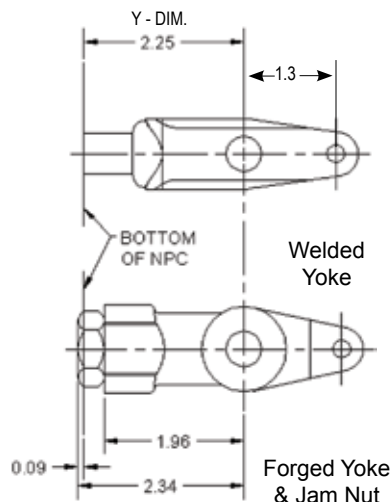
Therefore, because of the differences in the operational characteristics of the standard and long stroke chambers, when they are mixed across an axle, an imbalance may exist in the stopping capability of the vehicle at strokes beyond the recommended readjustment limit of the standard stroke chamber. This may result in the vehicle being "pulled" toward the side of the "long stroke" chamber, which is doing the majority of the braking. This may go unnoticed by the driver during "normal" brake applications, but could cause vehicle instability during "emergency" braking.

FIELD REPLACEMENT OF CHAMBERS EQUIPPED WITH "WELDED" YOKES

Every day, more and more vehicles are being manufactured with 3" (76.2 mm) "long stroke" spring brakes and service chambers with the yoke "welded" to the service push rod.

Because the "welded" yoke is permanently attached to the push-rod, it is virtually impossible to remove and re-use it. Therefore, unless the non-pressure housing (mounting base), push-rod, and/or yoke have been damaged, or are severely worn, MGM Brakes recommends replacement of the single/piggyback unit only.

However, if replacement of the combination/tandem unit is required, it is recommended that a unit equipped with a "welded" yoke be used.



Units manufactured with a "welded" yoke have a preset "Y" dimension, measured from the bottom of the NPC to the center-line of the yoke pin, of 2.25" (57.2 mm). Because the "Y" dimension is relatively short, the corresponding "X" dimension, measured from the bottom of the NPC to the end of the rod, will also be short, at approximately $\frac{3}{4}$ of an inch (19.1 mm).

Consequently, if a replacement unit with a "universal" all-threaded cut-to-fit push rod is used, the "stack-up" of the yoke and jam nut will exceed the "X" dimension by approximately $\frac{1}{8}$ " of an inch (3.2 mm).

In some cases, this will prevent the unit from achieving zero-stroke, or, if the push rod opening in the NPC is large enough, the jam nut will protrude into the NPC and may damage the protective stone shield.

Spring brakes and service chambers must fully retract to zero-stroke in order to completely release the foundation brakes so the lining no longer contacts the drum, and to allow the automatic slack adjusters to properly operate and adjust the stroke.

Therefore, do not use a replacement unit with a universal all-threaded cut-to-fit push rod to replace a unit with a "welded" yoke.

NOTE: Be sure to always replace "like for like". Do not mix 2.5" (63.5 mm) "standard stroke" chambers with 3" (76.2 mm) "long stroke" chambers across an axle. Reference MGM Technical Bulletin on page 146.



PERFORMANCE CHART - SPRING BRAKE CHAMBERS

SAE

DOUBLE DIAPHRAGM SPRING BRAKE CHAMBERS

MODELS (d)	Spring Chamber Size	Rated Service Stroke (in)	Vol. Displ. @ 100psi (in ³) (a)	Hold-Off Pressure Required (psi) (b)	Spring Brake Force-Output (Pounds-Force) @ in. of Stroke (c)									in-lbs. of Torque Applied @ 1.25" Stroke by S-Cam Camshaft w/Slack Adjuster Length of (in)**			
					1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	5.00	5.50	6.00	6.50
TR2024	24	2.25	76.2	78	1280	1210	1150	1080	1000	840	-	-	-	6050	6655	7260	7865
TRxx24HD	24	2.25	76.2	78	1480	1396	1320	1250	1177	1074	-	-	-	6980	7678	8376	9074
TRxx24L	24	2.50	76.2	78	1280	1210	1150	1080	1000	840	620	-	-	6050	6655	7260	7865
TRxx30	30	2.50	101.8	64	1510	1420	1339	1257	1172	1084	994	-	-	7100	7810	8520	9230
TRxx30HD	30	2.50	103.2	68	1681	1580	1488	1396	1303	1211	1119	-	-	7900	8690	9480	10270
TRxx30LP3HD	30	3.00	115.4	68	1681	1580	1488	1396	1303	1211	1119	1026	934	7900	8690	9480	10270
TRxx30LP3	30	3.00	115.4	63	1519	1435	1352	1270	1187	1098	1009	919	837	7175	7893	8610	9328
TR3036	36	2.50	121.9	66	2050	1960	1867	1774	1679	1584	1487	-	-	9800	10780	11760	12740
TR3636	36	3.00	138.7	68	2050	1960	1867	1774	1679	1584	1487	1390	1280	9800	10780	11760	12740
LTRxx30T	30	2.50	104.8	70	1510	1420	1350	1280	1210	1145	1070	-	-	7100	7810	8520	9230
LTRxx30L3	30	3.00	108	71	1615	1525	1435	1350	1260	1160	1050	935	-	7625	8388	9150	9913

PISTON TYPE SPRING BRAKE CHAMBERS

MJ_xx16AT	16	1.75	44.4	78	1404	1310	1211	1098	-	-	-	-	-	7020	7722	8424	9126
MJ_xx22ET	22	3.00	98.5	68	1780	1725	1624	1546	1468	1389	1310	1230	1151	8625	9488	10350	11213
MJ_xx24BT	24	2.00	83.3	71	2000	1922	1842	1771	1696	-	-	-	-	10000	11000	12000	13000
MJ_xx24ET	24	3.00	98.5	71	2000	1922	1842	1771	1696	1607	1528	1449	1370	9610	10571	11532	12493
MJ_xx28ET	28	3.00	128.4	73	2423	2320	2207	2070	1982	1870	1756	1670	1521	11600	12760	13920	15080
MJ_xx30ET	30	3.00	128.4	75	2556	2450	2350	2256	2183	2086	1987	1858	1657	12250	13475	14700	15925

REMOTE MOUNT CYLINDERS

MODELS	-	Rated Stroke (in)	-	Hold-Off Pressure (psi)	Spring Brake Force-Output (Pounds-Force) @ in. of stroke						
					1.00	1.50	2.00	2.50	3.00	3.50	4.00
R4A	-	4.50	-	73	800	745	690	640	585	535	480
R5AHD	-	4.20	-	75	1720	1580	1440	1300	1160	1020	875
R7A	-	2.75	-	56	461	429	400	368	-	-	-
R8H	-	2.75	-	1500	461	429	400	368	-	-	-

(**) Brake chambers with 2.00" or less rated stroke are calculated at 1.00" stroke.

(a) Spring chamber volume measured at full "OFF" (zero) stroke. Reference SAE J1469

(b) Hold off pressure measured as decreasing air pressure required to activate spring chamber to within .020" (5 mm) of full "OFF" (deactivated) stroke.

(c) Spring brake force output measured at end of service chamber push-rod using power springs which have been held compressed to assembly shut height for 24 hours to remove initial false load. Forces shown are nominal performance (+/- 10%) for all spring chamber model sizes.

(d) Performance levels shown hold true for all design versions of the same model size. For example... read the performance for Models TR2430T and TR3030TS as shown above for Model TRXX30 for spring brake force output.

PERFORMANCE CHART - SERVICE BRAKE CHAMBERS



DOUBLE DIAPHRAGM SPRING BRAKE CHAMBERS - SAE

Model (g)	Rated Service Stroke (in)	Vol. Displ. @ 100 psi Rated Service Stroke (in³) (e)	Application Pressure of (psi)	Service Brake Force-Output (Pounds-Force) @ in. of Stroke (f)									in-lbs. of Torque Applied @ 1.25" Stroke by S-Cam Camshaft w/Slack Adjuster Length of (in)**			
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	5.00	5.50	6.00	6.50
TR20xx	2.25	53.4	20	325	325	320	310	250	160	-	-	-	1625	1788	1950	2113
			40	710	710	690	630	540	390	-	-	-	3550	3905	4260	4615
			60	1080	1085	1080	1040	900	620	-	-	-	5400	5940	6480	7020
			80	1410	1480	1470	1375	1200	840	-	-	-	7050	7755	8460	9165
			100	1800	1855	1845	1790	1500	1125	-	-	-	9000	9900	10800	11700
TR17xx	2.50	57.02	20	303	306	303	291	274	221	120	-	-	1532	1685	1839	1992
			40	568	559	547	528	497	445	362	-	-	2793	3072	3351	3631
			60	1051	1071	1069	1044	994	868	617	-	-	5354	5889	6424	6960
			80	1426	1455	1452	1426	1364	1212	904	-	-	7275	8003	8730	9458
			100	1797	1835	1831	1805	1734	1561	1209	-	-	9175	10093	11010	11928
TR20xx	2.50	57.19	20	304	305	299	287	266	200	91	-	-	1524	1676	1829	1981
			40	676	685	678	654	610	490	296	-	-	3425	3768	4110	4453
			60	1053	1069	1060	1030	967	810	538	-	-	5346	5881	6415	6950
			80	1432	1455	1443	1409	1332	1150	812	-	-	7276	8003	8731	9459
			100	1805	1836	1823	1786	1695	1489	1101	-	-	9179	10096	11014	11932
TR21xxL	2.50	77.6	20	307	293	286	279	264	250	221	-	-	1464	1611	1757	1904
			40	686	679	671	664	650	621	586	-	-	3393	3732	4071	4411
			60	1064	1057	1057	1050	1036	1007	950	-	-	5286	5814	6343	6871
			80	1436	1436	1443	1443	1429	1386	1321	-	-	7179	7896	8614	9332
			100	1814	1814	1829	1829	1814	1771	1700	-	-	9071	9979	10886	11793
TR24xxL	2.50	69.8	20	362	372	379	377	365	336	278	-	-	1860	2046	2232	2418
			40	808	824	840	842	820	773	676	-	-	4120	4532	4944	5356
			60	1245	1270	1296	1302	1279	1223	1106	-	-	6350	6985	7620	8255
			80	1682	1717	1757	1764	1739	1674	1534	-	-	8585	9444	10302	11161
			100	2115	2158	2211	2224	2201	2133	1980	-	-	10790	11869	12948	14027
TR27xx	2.50	92.76	20	445	437	433	424	409	389	363	-	-	2186	2404	2623	2841
			40	959	957	958	951	930	897	849	-	-	4786	5264	5743	6221
			60	1478	1483	1490	1484	1460	1419	1351	-	-	7414	8156	8897	9639
			80	1986	2001	2016	2007	1983	1937	1859	-	-	10007	11008	12009	13009
			100	2496	2520	2539	2533	2509	2460	2361	-	-	12600	13860	15120	16380
TR30xx	2.50	87	20	526	528	528	515	489	427	290	-	-	2640	2904	3168	3432
			40	1120	1130	1135	1115	1064	950	718	-	-	5650	6215	6780	7345
			60	1717	1737	1748	1724	1658	1510	1208	-	-	8685	9554	10422	11291
			80	2307	2337	2358	2331	2254	2083	1731	-	-	11685	12854	14022	15191
			100	2894	2937	2967	2940	2856	2667	2277	-	-	14685	16154	17622	19091
TR20xxLP3H	3.00	68.29	20	293	298	308	312	312	305	295	277	230	1540	1694	1848	2002
			40	654	662	679	695	699	693	679	647	568	3395	3735	4074	4414
			60	1006	1018	1048	1074	1084	1081	1067	1026	925	5240	5764	6288	6812
			80	1353	1371	1415	1451	1468	1470	1457	1409	1294	7075	7783	8490	9198
			100	1693	1718	1777	1826	1850	1858	1848	1796	1675	8885	9774	10662	11551
TR24xxLP3	3.00	83.2	20	355	358	368	376	378	369	351	326	246	1840	2024	2208	2392
			40	783	790	814	835	839	827	795	750	616	4070	4477	4884	5291
			60	1204	1218	1255	1288	1296	1282	1247	1184	1008	6275	6903	7530	8158
			80	1623	1642	1694	1738	1752	1734	1696	1620	1399	8470	9317	10164	11011
			100	2034	2061	2129	2185	2204	2188	2147	2067	1800	10645	11710	12774	13839
TR30xxLP3	3.00	107.5	20	493	508	524	524	512	498	479	446	363	2620	2882	3144	3406
			40	1062	1091	1109	1113	1103	1090	1063	1009	892	5545	6100	6654	7209
			60	1628	1658	1695	1698	1694	1683	1649	1576	1442	8475	9323	10170	11018
			80	2183	2229	2277	2283	2283	2274	2241	2149	1997	11385	12524	13662	14801
			100	2735	2788	2855	2867	2870	2868	2835	2745	2581	14275	15703	17130	18555

NOTE: Product information and specifications subject to change without notice.

DOUBLE DIAPHRAGM SPRING BRAKE CHAMBERS

Model (g)	Rated Service Stroke (in)	Vol. Displ. @ 100 psi Rated Service Stroke (in³) (e)	Application Pressure of (psi)	Service Brake Force-Output (Pounds-Force) @ in. Stroke (f)										in-lbs. of Torque Applied @ 1.25" Stroke by S-Cam Camshaft w/Slack Adjuster Length of (in)**			
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	5.00	5.50	6.00	6.50	
TR36xx	3.00	122.12	20	624	624	626	619	607	584	539	446	284	3130	3443	3756	4069	
			40	1338	1334	1328	1324	1311	1298	1218	1087	846	6640	7304	7968	8632	
			60	2042	2030	2029	2028	2014	1976	1898	1731	1436	10145	11160	12174	13189	
			80	2733	2720	2727	2733	2718	2681	2591	2405	2071	13635	14999	16362	17726	
			100	3412	3402	3423	3444	3439	3411	3336	3169	2858	17115	18827	20538	22250	
LTR24xxT	2.50	69.8	20	362	372	379	377	365	336	278	-	-	1860	2046	2232	2418	
			40	808	824	840	842	820	773	676	-	-	4120	4532	4944	5356	
			60	1245	1270	1296	1302	1279	1223	1106	-	-	6350	6985	7620	8255	
			80	1682	1717	1757	1764	1739	1674	1534	-	-	8585	9444	10302	11161	
			100	2115	2158	2211	2224	2201	2133	1980	-	-	10790	11869	12948	14027	
LTR30xxT	2.50	87	20	526	528	528	515	489	427	290	-	-	2640	2904	3168	3432	
			40	1120	1130	1135	1115	1064	950	718	-	-	5650	6215	6780	7345	
			60	1717	1737	1748	1724	1658	1510	1208	-	-	8685	9554	10422	11291	
			80	2307	2337	2358	2331	2254	2083	1731	-	-	11685	12854	14022	15191	
			100	2894	2937	2967	2940	2856	2667	2277	-	-	14685	16154	17622	19091	
LTR24xxL3	3.00	83.2	20	355	358	368	376	378	369	351	326	246	1840	2024	2208	2392	
			40	783	790	814	835	839	827	795	750	616	4070	4477	4884	5291	
			60	1204	1218	1255	1288	1296	1282	1247	1184	1008	6275	6903	7530	8158	
			80	1623	1642	1694	1738	1752	1734	1696	1620	1399	8470	9317	10164	11011	
			100	2034	2061	2129	2185	2204	2188	2147	2067	1800	10645	11710	12774	13839	
LTR30xxL3	3.00	107.5	20	493	508	524	524	512	498	479	446	363	2620	2882	3144	3406	
			40	1062	1091	1109	1113	1103	1090	1063	1009	892	5545	6100	6654	7209	
			60	1628	1658	1695	1698	1694	1683	1649	1576	1442	8475	9323	10170	11018	
			80	2183	2229	2277	2283	2283	2274	2241	2149	1997	11385	12524	13662	14801	
			100	2735	2788	2855	2867	2870	2868	2835	2745	2581	14275	15703	17130	18558	

(**) Brake chambers with 2.00" (50.8 mm) or less rated stroke are calibrated at 1.00" (25.4 mm) stroke.

(e) Service chamber volume measured at maximum "on" stroke (ref. SAE J1469).

(f) Service brake force output measured at end of service chamber push-rod. Forces shown are nominal performance (+/- 5%) for all service chamber sizes.

(g) Performance levels shown hold true for all design versions of the same model size. For example... read the same performance for Models TR3036T and TR3030TS as shown above for Model TR30xx.

PISTON TYPE SPRING BRAKE CHAMBERS

Model (g)	Rated Service Stroke (in)	Vol. Displ. @ 100 psi Rated Service Stroke (in³) (e)	Application Pressure of (psi)	Service Brake Force-Output (Pounds-Force) @ in. of Stroke (f)									in-lbs. of Torque Applied @ 1.25" Stroke by S-Cam Camshaft w/Slack Adjuster Length of (in)**			
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	5.00	5.50	6.00	6.50
MJ_12xxAT	1.75	28	20	190	190	150	90	-	-	-	-	-	950	1045	1140	1235
			40	410	400	350	200	-	-	-	-	-	2000	2200	2400	2600
			60	650	620	545	360	-	-	-	-	-	3100	3410	3720	4030
			80	900	875	760	490	-	-	-	-	-	4375	4813	5250	5688
			100	1120	1080	930	650	-	-	-	-	-	5400	5940	6480	7020
MJ_16xxBT	2.00	42.7	20	295	307	314	312	14	-	-	-	-	1535	1689	1842	1996
			40	615	629	645	643	261	-	-	-	-	3145	3460	3774	4089
			60	927	946	968	963	460	-	-	-	-	4730	5203	5676	6149
			80	1234	1258	1286	1270	621	-	-	-	-	6290	6919	7548	8177
			100	1545	1574	1608	1554	799	-	-	-	-	7870	8657	9444	10231
MJ_17xxET	3.00	58.84	20	269	258	248	239	225	207	184	148	73	1288	1417	1545	1674
			40	597	580	571	560	542	515	472	401	268	2901	3191	3481	3771
			60	920	901	894	887	869	834	777	683	516	4505	4955	5406	5856
			80	1238	1219	1215	1212	1194	1154	1087	975	773	6095	6705	7314	7924
			100	1551	1534	1538	1544	1529	1492	1423	1303	1087	7671	8438	9206	9973
MJ_20xxET	3.00	67.5	20	293	298	308	312	312	305	295	277	230	1490	1639	1788	1937
			40	654	662	679	695	699	693	679	647	568	3310	3641	3972	4303
			60	1006	1018	1048	1074	1084	1081	1067	1026	925	5090	5599	6108	6617
			80	1353	1371	1415	1451	1468	1470	1457	1409	1204	6855	7541	8226	8912
			100	1693	1718	1777	1826	1850	1858	1848	1796	1675	8590	9449	10308	11167
MJ_24xxET	3.00	83.2	20	355	358	368	376	378	369	351	326	246	1840	2024	2208	2392
			40	783	790	814	835	839	827	795	750	616	4070	4477	4884	5291
			60	1204	1218	1255	1288	1296	1282	1247	1184	1008	6275	6903	7530	8158
			80	1623	1642	1694	1738	1752	1734	1696	1620	1399	8470	9317	10164	11011
			100	2034	2061	2129	2185	2204	2188	2147	2067	1800	10645	11710	12774	13839
MJ_27xxET	3.00	106.3	20	272	261	252	241	229	211	186	146	92	1305	1436	1566	1697
			40	598	580	569	558	542	515	469	394	286	2898	3188	3478	3768
			60	915	893	883	876	860	826	766	666	514	4467	4913	5360	5807
			80	1232	1208	1200	1197	1183	1146	1073	950	764	6038	6642	7246	7850
			100	1545	1522	1522	1519	1513	1476	1398	1261	1046	7610	8371	9132	9893
MJ_30xxET	3.00	107.5	20	493	508	524	524	512	498	479	446	363	2620	2882	3144	3406
			40	1062	1091	1109	1113	1103	1090	1063	1009	892	5545	6100	6654	7209
			60	1628	1658	1695	1698	1694	1683	1649	1576	1442	8475	9323	10170	11018
			80	2183	2229	2277	2283	2283	2274	2241	2149	1997	11385	12524	13662	14801
			100	2735	2788	2855	2867	2870	2868	2835	2745	2581	14275	15703	17130	18558
MJ_36xxET	3.00	122.77	20	622	623	623	620	612	598	574	534	438	3115	3427	3738	4050
			40	1313	1310	1319	1322	1313	1295	1259	1188	1027	6595	7255	7914	8574
			60	1989	1989	2008	2017	2011	1992	1950	1860	1659	10040	11044	12048	13052
			80	2658	2667	2698	2714	2712	2694	2647	2543	2318	13490	14839	16188	17537
			100	3324	3342	3385	3410	3414	3398	3348	3235	2994	16925	18618	20310	22003



PERFORMANCE CHART - SERVICE BRAKE CHAMBERS

SAE

SERVICE CHAMBERS

Model	Rated Service Stroke (in)	Vol. Displ. @ 100 psi Rated Service Stroke (in ³) (e)	Application Pressure of (psi)	Service Brake Force-Output (Pounds-Force) @ in. of Stroke (f)									in-lbs. of Torque Applied @ 1.25" Stroke by S-Cam Camshaft w/Slack Adjuster Length of (in)**			
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	5.00	5.50	6.00	6.50
C12	1.75	26	20	190	190	150	90	-	-	-	-	-	950	1045	1140	1235
			40	410	400	350	200	-	-	-	-	-	2000	2200	2400	2600
			60	650	620	545	360	-	-	-	-	-	3100	3410	3720	4030
			80	900	875	760	490	-	-	-	-	-	4375	4813	5250	5688
			100	1120	1080	930	650	-	-	-	-	-	5400	5940	6480	7020
C16	2.25	45.1	20	250	250	250	250	215	135	-	-	-	1250	1375	1500	1625
			40	580	600	600	580	490	335	-	-	-	3000	3300	3600	3900
			60	900	915	920	890	780	510	-	-	-	4575	5033	5490	5948
			80	1220	1250	1250	1200	1050	755	-	-	-	6250	6875	7500	8125
			100	1525	1585	1585	1510	1360	1035	-	-	-	7925	8718	9510	10303
C20	2.25	50.8	20	325	325	320	310	250	160	-	-	-	1625	1788	1950	2113
			40	710	710	690	630	540	390	-	-	-	3550	3905	4260	4615
			60	1080	1085	1080	1040	900	620	-	-	-	5400	5940	6480	7020
			80	1410	1480	1470	1375	1200	840	-	-	-	7050	7755	8460	9165
			100	1800	1855	1845	1790	1500	1125	-	-	-	9000	9900	10800	11700
C16L	2.50	53.71	20	260	260	260	250	250	240	220	-	-	1300	1430	1560	1690
			40	605	605	605	600	595	550	475	-	-	3025	3328	3630	3933
			60	930	930	930	930	910	860	750	-	-	4650	5115	5580	6045
			80	1260	1260	1270	1280	1260	1200	1090	-	-	6300	6930	7560	8190
			100	1590	1595	1610	1640	1600	1550	1400	-	-	7975	8773	9570	10368
C16LH	2.50	59.72	20	265	260	250	240	225	200	165	-	-	1300	1430	1560	1690
			40	598	575	565	550	530	500	435	-	-	2875	3163	3450	3738
			60	920	900	890	875	850	800	730	-	-	4500	4950	5400	5850
			80	1240	1220	1210	1200	1170	1110	1020	-	-	6100	6710	7320	7930
			100	1560	1550	1540	1525	1495	1440	1315	-	-	7750	8525	9300	10075
C20L	2.50	59.9	20	295	298	300	300	300	280	245	-	-	1490	1639	1788	1937
			40	655	665	680	690	680	645	570	-	-	3325	3658	3990	4323
			60	1010	1030	1060	1075	1060	1015	900	-	-	5150	5665	6180	6695
			80	1380	1400	1450	1465	1450	1390	1250	-	-	7000	7700	8400	9100
			100	1750	1780	1840	1850	1840	1760	1610	-	-	8900	9790	10680	11570
CS20L	2.50	58.71	20	295	298	300	300	300	280	245	-	-	1490	1639	1788	1937
			40	655	665	680	690	680	645	570	-	-	3325	3658	3990	4323
			60	1010	1030	1060	1075	1060	1015	900	-	-	5150	5665	6180	6695
			80	1380	1400	1450	1465	1450	1390	1250	-	-	7000	7700	8400	9100
			100	1750	1780	1840	1850	1840	1760	1610	-	-	8900	9790	10680	11570
C24L	2.50	69.6	20	362	372	379	377	365	336	278	-	-	1860	2046	2232	2418
			40	808	824	840	842	820	773	676	-	-	4120	4532	4944	5356
			60	1245	1270	1296	1302	1279	1223	1106	-	-	6350	6985	7620	8255
			80	1682	1717	1757	1764	1739	1674	1534	-	-	8585	9444	10302	11161
			100	2115	2158	2211	2224	2201	2133	1980	-	-	10790	11869	12948	1402
C27	2.50	67.1	20	445	437	433	424	409	389	359	-	-	2186	2404	2623	2841
			40	959	957	958	951	930	897	849	-	-	4786	5264	5743	6221
			60	1478	1484	1490	1484	1460	1419	1351	-	-	7421	8164	8906	9648
			80	1986	2001	2016	2007	1983	1937	1859	-	-	10007	11008	12009	13009
			100	2496	2520	2539	2533	2509	2460	2361	-	-	12600	13860	15120	16380

SAE

SERVICE CHAMBERS

Model	Rated Service Stroke (in)	Vol. Displ. @ 100 psi Rated Service Stroke (in ³) (e)	Application Pressure of (psi)	Service Brake Force-Output (Pounds-Force) @ in. of Stroke (f)									in-lbs. of Torque Applied @ 1.25" Stroke by S-Cam Camshaft w/Slack Adjuster Length of (in)**			
				1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	5.00	5.50	6.00	6.50
C30	2.50	90.1	20	526	528	528	515	489	427	290	-	-	2640	2904	3168	3432
			40	1120	1130	1135	1115	1064	950	718	-	-	5650	6215	6780	7345
			60	1717	1737	1748	1724	1658	1510	1208	-	-	8685	9554	10422	11291
			80	2307	2337	2358	2331	2254	2083	1731	-	-	11685	12854	14022	15191
			100	2894	2937	2967	2940	2856	2667	2277	-	-	14685	16154	17622	19091
C36	3.00	124.29	20	624	624	626	619	607	584	539	446	284	3130	3443	3756	4069
			40	1338	1334	1328	1324	1311	1298	1218	1087	846	6640	7304	7968	8632
			60	2042	2030	2029	2028	2014	1976	1898	1731	1436	10145	11160	12174	13189
			80	2733	2720	2727	2733	2718	2681	2591	2405	2071	13635	14999	16362	17726
			100	3412	3402	3423	3444	3439	3411	3336	3169	2858	17115	18227	20538	22250
CS20L3	3.00	68.29	20	293	298	308	312	312	305	295	277	230	1540	1694	1848	2002
			40	654	662	679	695	699	693	679	647	568	3395	3735	4074	4414
			60	1006	1018	1048	1074	1084	1081	1067	1026	925	5240	5764	6288	6812
			80	1353	1371	1415	1451	1468	1470	1457	1409	1294	7075	7783	8490	9198
			100	1693	1718	1777	1826	1850	1858	1848	1796	1675	8885	9774	10662	11551
C24L3	3.00	83.2	20	355	358	368	376	378	369	351	326	246	1840	2024	2208	2392
			40	783	790	814	835	839	827	795	750	616	4070	4477	4884	5291
			60	1204	1218	1255	1288	1296	1282	1247	1184	1008	6275	6903	7530	8158
			80	1623	1642	1694	1738	1752	1734	1696	1620	1399	8470	9317	10164	11011
			100	2034	2061	2129	2185	2204	2188	2147	2067	1800	10645	11710	12774	13839
C30L3	3.00	111.76	20	493	508	524	524	512	498	479	446	363	2620	2882	3144	3406
			40	1062	1091	1109	1113	1103	1090	1063	1009	892	5545	6100	6654	7209
			60	1628	1658	1695	1698	1694	1683	1649	1576	1442	8475	9323	10170	11018
			80	2183	2229	2277	2283	2283	2274	2241	2149	1997	11385	12524	13662	14801
			100	2735	2788	2855	2867	2870	2868	2835	2745	2581	14275	15703	17130	18558
CW9	1.75	21.25	20	175	170	150	55	-	-	-	-	-	-	-	-	-
			40	355	340	300	174	-	-	-	-	-	-	-	-	-
			60	530	510	415	260	-	-	-	-	-	-	-	-	-
			80	720	690	615	375	-	-	-	-	-	-	-	-	-
			100	895	860	775	515	-	-	-	-	-	-	-	-	-
CW12	1.75	28.8	20	225	225	180	70	-	-	-	-	-	-	-	-	-
			40	455	455	385	200	-	-	-	-	-	-	-	-	-
			60	685	680	570	350	-	-	-	-	-	-	-	-	-
			80	915	910	820	560	-	-	-	-	-	-	-	-	-
			100	1145	1130	1080	800	-	-	-	-	-	-	-	-	-
CW16	1.75	38.9	20	312	310	300	145	-	-	-	-	-	-	-	-	-
			40	630	620	610	385	-	-	-	-	-	-	-	-	-
			60	960	950	920	630	-	-	-	-	-	-	-	-	-
			80	1290	1275	1235	780	-	-	-	-	-	-	-	-	-
			100	1605	1585	1560	980	-	-	-	-	-	-	-	-	-



PERFORMANCE CHART - SPRING BRAKE CHAMBERS

METRIC

DOUBLE DIAPHRAGM SPRING BRAKE CHAMBERS

Model (d)	Spring Chamber Size	Rated Service Stroke (mm)	Vol. Displ. @ 6.89 bar (cm ³) (a)	Hold-Off Pressure Required (bar) (b)	Spring Brake Force-Output (Newtons) @ mm. of Stroke (c)									Newton-meters of Torque Applied @ 31.8mm Stroke by S-Cam Camshaft w/ Slack Adjuster Length of (mm)**			
					25.4	31.8	38.1	44.5	50.8	57.2	63.5	69.9	76.2	127.0	139.7	152.4	165.1
TR2024	24	57.2	1248.7	5.4	5694	5382	5115	4804	4448	3737	-	-	-	684	752	820	889
TRxx24HD	24	57.2	1248.7	5.4	6583	6210	5872	5560	5236	4777	-	-	-	789	867	946	1025
TRxx24L	24	63.5	1248.7	5.4	5694	5382	5115	4804	4448	3737	2758	-	-	684	752	820	889
TRxx30	30	63.5	1668	4.4	6717	6316	5956	5591	5213	4822	4422	-	-	802	882	963	1043
TRxx30HD	30	63.5	1691.1	4.7	7477	7028	6619	6210	5796	5387	4978	-	-	893	982	1071	1160
TRxx30LP3HD	30	76.2	1891.1	4.7	7477	7028	6619	6210	5796	5387	4978	4564	4155	893	982	1071	1160
TRxx30LP3	30	76.2	1891.1	4.3	6757	6383	6014	5649	5280	4884	4488	4088	3723	811	892	973	1054
TR3036	36	63.5	1997.6	4.6	9119	8719	8305	7891	7469	7046	6615	-	-	1107	1218	1329	1439
TR3636	36	76.2	2272.9	4.7	9119	8719	8305	7891	7469	7046	6615	6183	5694	1107	1218	1329	1439
LTRxx30T	30	63.5	1717.4	4.8	6717	6316	6005	5694	5382	5093	4760	-	-	802	882	963	1043
LTRxx30L3	30	76.2	1769.8	4.9	7184	6784	6383	6005	5605	5160	4671	4159	-	862	948	1034	1120

PISTON TYPE SPRING BRAKE CHAMBERS

MJ_xx16AT	16	44.5	727.6	5.4	6245	5827	5387	4884	-	-	-	-	-	740	814	888	962
MJ_xx22ET	22	76.2	1614.1	4.7	7920	7670	7230	6880	6530	6180	5830	5470	5120	974	1072	1169	1266
MJ_xx24BT	24	50.8	1365.0	4.9	8896	8549	8194	7878	7544	-	-	-	-	1086	1194	1303	1412
MJ_xx24ET	24	76.2	1614.1	4.9	8896	8549	8194	7878	7544	7148	6797	6445	6094	1086	1194	1303	1412
MJ_xx28ET	28	76.2	2104.1	5.0	10778	10320	9817	9208	8816	8318	7811	7428	6766	1311	1442	1573	1704
MJ_xx30ET	30	76.2	2104.1	5.2	11370	10898	10453	10035	9710	9279	8839	8265	7371	1384	1522	1661	1799

REMOTE MOUNT CYLINDERS

Models	-	Rated Stroke (mm)	-	Hold-Off Pressure (bar)	Spring Brake Force-Output (Newtons) @ mm. of Stroke						
					25.4	38.1	50.8	63.5	76.2	88.9	101.6
R4A	-	114.3	-	5.0	-	3314	3069	2847	2602	2380	2135
R5AHD	-	106.7	-	5.2	7651	7028	6405	5783	5160	4537	3892
R7A	-	69.9	-	4.1	2051	1908	1779	1637	-	-	-
R8H	-	63.5	-	103.5	2051	1908	1779	1637	-	-	-

(**) Brake chambers with 2.00" (50.8 mm) or less rated stroke are calibrated at 1.00" (25.4 mm) stroke.

(a) Spring chamber volume measured at full "OFF" (zero) stroke. Reference SAE J1469

(b) Hold off pressure measured as decreasing air pressure required to activate spring chamber to within .020" (5 mm) of full "OFF" (deactivated) stroke.

(c) Spring brake force output measured at end of service chamber push-rod using power springs which have been held compressed to assembly shut height for 24 hours to remove initial false load. Forces shown are nominal performance (+/- 10%) for all spring chamber model sizes.

(d) Performance levels shown hold true for all design versions of the same model size. For example... read the performance for Models TR2430T and TR3030TS as shown above for Model TRXX30 for spring brake force output.

METRIC

DOUBLE DIAPHRAGM SPRING BRAKE CHAMBERS

Model (g)	Rated Service Stroke (mm)	Vol. Displ. @ 6.89 bar Rated Service Stroke (cm³) (e)	Application Pressure of (bar)	Service Brake Force-Output (Newtons) @ mm. Stroke (f)									Newton-meters of Torque Applied @ 31.8mm Stroke by S-Cam Camshaft w/Slack Adjuster Length of (mm)**			
				25.4	31.8	38.1	44.5	50.8	57.2	63.5	69.9	76.2	127.0	139.7	152.4	165.1
TR20xx	57.2	875.1	1.4	1446	1446	1423	1379	1112	712	-	-	-	184	202	220	239
			2.8	3158	3158	3069	2802	2402	1735	-	-	-	401	441	481	521
			4.1	4804	4826	4804	4626	4003	2758	-	-	-	613	674	736	797
			5.5	6272	6583	6539	6116	5338	3736	-	-	-	836	920	1003	1087
			6.9	8007	8251	8207	7962	6672	5004	-	-	-	1048	1153	1258	1362
TR17xx	63.5	934.4	1.4	1106	1062	1016	952	862	733	535	-	-	135	148	162	175
			2.8	2526	2485	2434	2350	2210	1981	1612	-	-	316	347	379	410
			4.1	3927	3897	3851	3750	3568	3262	2760	-	-	495	544	594	643
			5.5	5324	5313	5282	5174	4959	4593	3997	-	-	675	742	810	877
			6.9	6721	6733	6720	6609	6364	5945	5255	-	-	855	941	1026	1112
TR20xx	63.5	937.2	1.4	1353	1356	1328	1276	1182	891	404	-	-	172	189	207	224
			2.8	3008	3047	3015	2910	2713	2177	1315	-	-	387	426	464	503
			4.1	4685	4756	4713	4581	4300	3602	2393	-	-	604	664	725	785
			5.5	6369	6473	6420	6269	5924	5114	3612	-	-	822	904	986	1069
			6.9	8031	8166	8110	7946	7541	6623	4898	-	-	1037	1141	1244	1348
TR21xx	63.5	1271.6	1.4	1366	1303	1271	1239	1176	1112	985	-	-	165	182	199	215
			2.8	3050	3018	2987	2955	2891	2764	2605	-	-	383	422	460	498
			4.1	4734	4702	4702	4671	4607	4480	4226	-	-	597	657	717	776
			5.5	6386	6386	6418	6418	6355	6164	5878	-	-	811	892	973	1054
			6.9	8070	8070	8134	8134	8070	7880	7562	-	-	1025	1127	1230	1332
TR24xxL	63.5	1143.8	1.4	1610	1655	1686	1677	1624	1495	1237	-	-	210	231	252	273
			2.8	3594	3665	3736	3745	3648	3438	3007	-	-	465	512	559	605
			4.1	5538	5649	5765	5792	5689	5440	4920	-	-	717	789	861	933
			5.5	7482	7638	7815	7847	7735	7446	6824	-	-	970	1067	1164	1261
			6.9	9408	9599	9835	9893	9790	9488	8807	-	-	1219	1341	1463	1585
TR27xx	63.5	1520.1	1.4	1979	1944	1925	1887	1821	1732	1614	-	-	247	272	296	321
			2.8	4264	4258	4261	4229	4137	3991	3778	-	-	541	595	649	703
			4.1	6574	6596	6628	6599	6494	6310	6011	-	-	838	921	1005	1089
			5.5	8836	8903	8966	8928	8820	8617	8270	-	-	1131	1244	1357	1470
			6.9	11101	11209	11295	11267	11159	10943	10501	-	-	1424	1566	1708	1851
TR30xx	63.5	1425.7	1.4	2340	2349	2349	2291	2175	1899	1290	-	-	298	328	358	388
			2.8	4982	5026	5049	4960	4733	4226	3194	-	-	638	702	766	830
			4.1	7638	7727	7775	7669	7375	6717	5373	-	-	981	1079	1178	1276
			5.5	10262	10395	10489	10369	10026	9266	7700	-	-	1320	1452	1584	1716
			6.9	12873	13064	13198	13078	12704	11863	10129	-	-	1659	1825	1991	2157
TR20xxLP3H	3.0	1119.1	1.4	1303	1326	1370	1388	1388	1357	1312	1232	1023	168	185	202	219
			2.8	2909	2945	3020	3091	3109	3083	3020	2878	2527	374	411	449	486
			4.1	4475	4528	4662	4777	4822	4809	4746	4564	4115	575	633	690	748
			5.5	6018	6098	6294	6454	6530	6539	6481	6268	5756	775	852	929	1007
			6.9	7531	7642	7904	8122	8229	8265	8220	7989	7451	971	1068	1165	1262
TR24xxLP3	76.2	1363.4	1.4	1579	1592	1637	1673	1681	1641	1561	1450	1094	202	222	243	263
			2.8	3483	3514	3621	3714	3732	3679	3536	3336	2740	446	491	536	580
			4.1	5356	5418	5582	5729	5765	5703	5547	5267	4484	688	757	826	894
			5.5	7219	7304	7535	7731	7793	7713	7544	7206	6223	928	1020	1113	1206
			6.9	9048	9168	9470	9719	9804	9733	9550	9194	8007	1164	1281	1397	1514

PERFORMANCE CHART - SERVICE BRAKE CHAMBERS

MGM

METRIC

DOUBLE DIAPHRAGM SPRING BRAKE CHAMBERS

Model (g)	Rated Service Stroke (mm)	Vol. Displ. @ 6.89 bar Rated Service Stroke (cm³) (e)	Application Pressure of (bar)	Service Brake Force-Output (Newtons) @ mm. Stroke (f)										Newton-meters of Torque Applied @ 31.8mm Stroke by S-Cam Camshaft w/ Slack Adjuster Length of (mm)**			
				25.4	31.8	38.1	44.5	50.8	57.2	63.5	69.9	76.2	127.0	139.7	152.4	165.1	
TR30xxLP3	76.2	1761.6	1.4	2193	2260	2331	2331	2277	2215	2131	1984	1615	287	316	344	373	
			2.8	4724	4853	4933	4951	4906	4849	4728	4488	3968	616	678	740	801	
			4.1	7242	7375	7540	7553	7535	7486	7335	7010	6414	937	1030	1124	1218	
			5.5	9710	9915	10129	10155	10155	10115	9968	9559	8883	1259	1385	1511	1637	
			6.9	12166	12402	12700	12753	12766	12757	12611	12210	11481	1575	1733	1890	2048	
TR36xx	76.2	2001.2	1.4	2776	2776	2785	2753	2700	2598	2398	1984	1263	353	388	423	458	
			2.8	5952	5934	5907	5889	5832	5774	5418	4835	3763	754	829	904	980	
			4.1	9083	9030	9025	9021	8959	8790	8443	7700	6388	1147	1261	1376	1491	
			5.5	12157	12099	12130	12157	12090	11926	11525	10698	9212	1537	1690	1844	1998	
			6.9	15177	15133	15226	15320	15297	15173	14839	14096	12713	1922	2114	2306	2498	
LTR24xxT	63.5	1143.8	1.4	1610	1655	1686	1677	1624	1495	1237	-	-	210	231	252	273	
			2.8	3594	3665	3736	3745	3648	3438	3007	-	-	465	512	559	605	
			4.1	5538	5649	5765	5792	5689	5440	4920	-	-	717	789	861	933	
			5.5	7482	7638	7815	7847	7735	7446	6824	-	-	970	1067	1164	1261	
			6.9	9408	9599	9835	9893	9790	9488	8807	-	-	1219	1341	1463	1585	
LTR30xxT	63.5	1425.7	1.4	2340	2349	2349	2291	2175	1899	1290	-	-	298	328	358	388	
			2.8	4982	5026	5049	4960	4733	4226	3194	-	-	638	702	766	830	
			4.1	7638	7727	7775	7669	7375	6717	5373	-	-	981	1079	1178	1276	
			5.5	10262	10395	10489	10369	10026	9266	7700	-	-	1320	1452	1584	1716	
			6.9	12873	13064	13198	13078	12704	11863	10129	-	-	1659	1825	1991	2157	
LTR24xxL3	76.2	1363.4	1.4	1579	1592	1637	1673	1681	1641	1561	1450	1094	202	222	243	263	
			2.8	3483	3514	3621	3714	3732	3679	3536	3336	2740	446	491	536	580	
			4.1	5356	5418	5582	5729	5765	5703	5547	5267	4484	688	757	826	894	
			5.5	7219	7304	7535	7731	7793	7713	7544	7206	6223	928	1020	1113	1206	
			6.9	9048	9168	9470	9719	9804	9733	9550	9194	8007	1164	1281	1397	1514	
LTR30xxL3	76.2	1761.6	1.4	2193	2260	2331	2331	2277	2215	2131	1984	1615	287	316	344	373	
			2.8	4724	4853	4933	4951	4906	4849	4728	4488	3968	616	678	740	801	
			4.1	7242	7375	7540	7553	7535	7486	7335	7010	6414	937	1030	1124	1218	
			5.5	9710	9915	10129	10155	10155	10115	9968	9559	8883	1259	1385	1511	1637	
			6.9	12166	12402	12700	12753	12766	12757	12611	12210	11481	1575	1733	1890	2048	

(**) Brake chambers with 2.00" (50.8 mm) or less rated stroke are calibrated at 1.00" (25.4 mm) stroke.

(e) Service chamber volume measured at maximum "on" stroke (ref. SAE J1469).

(f) Service brake force output measured at end of service chamber push-rod. Forces shown are nominal performance (+/- 5%) for all service chamber sizes.

(g) Performance levels shown hold true for all design versions of the same model size. For example... read the same performance for Models TR3036T and TR3030TS as shown above for Model TR30xx.

METRIC

PISTON TYPE SPRING BRAKE CHAMBERS

Model (g)	Rated Service Stroke (mm)	Vol. Displ. @ 6.89 bar Rated Service Stroke (cm³) (e)	Application Pressure of (bar)	Service Brake Force-Output (Newtons) @ mm. of Stroke (f)										Newton-meters of Torque Applied @ 31.8mm Stroke by S-Cam Camshaft w/Slack Adjuster Length of (mm)**			
				25.4	31.8	38.1	44.5	50.8	57.2	63.5	69.9	76.2	127.0	139.7	152.4	165.1	
MJ_12xxAT	44.5	458.8	1.4	845	845	667	400	-	-	-	-	-	107	118	129	140	
			2.8	1824	1779	1557	890	-	-	-	-	-	226	249	271	294	
			4.1	2891	2758	2424	1601	-	-	-	-	-	350	385	420	455	
			5.5	4003	3892	3381	2180	-	-	-	-	-	494	544	593	643	
			6.9	4982	4804	4137	2891	-	-	-	-	-	610	671	732	793	
MJ_16xxBT	50.8	699.7	1.4	1312	1366	1397	1388	62	-	-	-	-	173	191	208	225	
			2.8	2736	2798	2869	2860	1161	-	-	-	-	355	391	426	462	
			4.1	4123	4208	4306	4284	2046	-	-	-	-	534	588	641	695	
			5.5	5489	5596	5720	5649	2762	-	-	-	-	711	782	853	924	
			6.9	6872	7001	7153	6913	3554	-	-	-	-	889	978	1067	1156	
MJ_17xxET	76.2	964.2	1.4	1194	1146	1103	1062	1000	919	816	658	325	146	160	175	189	
			2.8	2656	2581	2542	2491	2411	2290	2099	1782	1192	328	361	393	426	
			4.1	4091	4008	3977	3944	3864	3711	3458	3037	2297	509	560	611	662	
			5.5	5509	5423	5405	5391	5312	5132	4835	4335	3438	689	758	826	895	
			6.9	6900	6825	6843	6870	6803	6636	6331	5797	4834	867	953	1040	1127	
MJ_20xxET	76.2	1106.1	1.4	1303	1326	1370	1388	1388	1357	1312	1232	1023	168	185	202	219	
			2.8	2909	2945	3020	3091	3109	3083	3020	2878	2527	374	411	449	486	
			4.1	4475	4528	4662	4777	4822	4809	4746	4564	4115	575	633	690	748	
			5.5	6018	6098	6294	6454	6530	6539	6481	6268	5356	775	852	929	1007	
			6.9	7531	7642	7904	8122	8229	8265	8220	7989	7451	971	1068	1165	1262	
MJ_24xxET	76.2	1363.4	1.4	1579	1592	1637	1673	1681	1641	1561	1450	1094	202	222	243	263	
			2.8	3483	3514	3621	3714	3732	3679	3536	3336	2740	446	491	536	580	
			4.1	5356	5418	5582	5729	5765	5703	5547	5267	4484	688	757	826	894	
			5.5	7219	7304	7535	7731	7793	7713	7544	7206	6223	928	1020	1113	1206	
			6.9	9048	9168	9470	9719	9804	9733	9550	9194	8007	1164	1281	1397	1514	
MJ_27xxET	76.2	1741.9	1.4	1212	1161	1120	1073	1019	940	826	649	411	147	162	177	192	
			2.8	2661	2578	2531	2484	2411	2291	2088	1753	1272	327	360	393	426	
			4.1	4069	3974	3929	3895	3825	3676	3407	2961	2287	505	555	606	656	
			5.5	5480	5372	5337	5325	5261	5097	4774	4227	3398	682	750	819	887	
			6.9	6872	6770	6770	6758	6729	6565	6217	5609	4651	860	946	1032	1118	
MJ_30xxET	76.2	1761.6	1.4	2193	2260	2331	2331	2277	2215	2131	1984	1615	287	316	344	373	
			2.8	4724	4853	4933	4951	4906	4849	4728	4488	3968	616	678	740	801	
			4.1	7242	7375	7540	7553	7535	7486	7335	7010	6414	937	1030	1124	1218	
			5.5	9710	9915	10129	10155	10155	10115	9968	9559	8883	1259	1385	1511	1637	
			6.9	12166	12402	12700	12753	12766	12757	12611	12210	11481	1575	1733	1890	2048	
MJ_36xxET	76.2	2011.8	1.4	2767	2771	2771	2758	2722	2660	2553	2375	1948	352	387	422	458	
			2.8	5840	5827	5867	5881	5840	5760	5600	5284	4568	740	814	888	962	
			4.1	8847	8847	8932	8972	8945	8861	8674	8274	7380	1124	1236	1348	1461	
			5.5	11823	11863	12001	12072	12064	11983	11774	11312	10311	1507	1657	1808	1959	
			6.9	14786	14866	15057	15168	15186	15115	14893	14390	13318	1888	2077	2266	2454	

PERFORMANCE CHART - SERVICE BRAKE CHAMBERS

MGM

METRIC

SERVICE CHAMBERS

Model	Rated Service Stroke (mm)	Vol. Displ. @ 6.89 bar Rated Service Stroke (cm³)	Application Pressure of (bar)	Service Brake Force-Output (Newtons) @ mm. of Stroke										Newton-meters of Torque Applied @ 31.8mm Stroke by S-Cam Camshaft w/Slack Adjuster Length of (mm)**			
				25.4	31.8	38.1	44.5	50.8	57.2	63.5	69.9	76.2	127.0	139.7	152.4	165.1	
C12	44.5	426.1	1.4	845	845	667	400	-	-	-	-	-	107	118	129	140	
			2.8	1824	1779	1557	890	-	-	-	-	-	226	249	271	294	
			4.1	2891	2758	2424	1601	-	-	-	-	-	350	385	420	455	
			5.5	4003	3892	3381	2180	-	-	-	-	-	494	544	593	643	
			6.9	4982	4804	4137	2891	-	-	-	-	-	610	671	732	793	
C16	57.2	739.1	1.4	1112	1112	1112	1112	956	601	-	-	-	141	155	169	184	
			2.8	2580	2669	2669	2580	2180	1490	-	-	-	339	373	407	441	
			4.1	4003	4070	4092	3959	3470	2269	-	-	-	517	569	620	672	
			5.5	5427	5560	5560	5338	4671	3358	-	-	-	706	777	847	918	
			6.9	6784	7050	7050	6717	6050	4604	-	-	-	895	985	1074	1164	
C20	57.2	832.5	1.4	1446	1446	1423	1379	1112	712	-	-	-	184	202	220	239	
			2.8	3158	3158	3069	2802	2402	1735	-	-	-	401	441	481	521	
			4.1	4804	4826	4804	4626	4003	2758	-	-	-	613	674	736	797	
			5.5	6272	6583	6539	6116	5338	3736	-	-	-	836	920	1003	1087	
			6.9	8007	8251	8207	7962	6672	5004	-	-	-	1048	1153	1258	1362	
C16L	63.5	880.1	1.4	1157	1157	1157	1112	1112	1068	-	-	-	147	162	176	191	
			2.8	2691	2691	2691	2669	2647	2447	2113	-	-	342	376	410	444	
			4.1	4137	4137	4137	4137	4048	3825	3336	-	-	525	578	630	683	
			5.5	5605	5605	5649	5694	5605	5338	4849	-	-	712	783	854	925	
			6.9	7073	7095	7162	7295	7117	6895	6227	-	-	901	991	1081	1171	
C16LH	63.5	978.6	1.4	1179	1157	1112	1068	1001	890	734	-	-	147	162	176	191	
			2.8	2660	2558	2513	2447	2358	2224	1935	-	-	325	357	390	422	
			4.1	4092	4003	3959	3892	3781	3559	3247	-	-	508	559	610	661	
			5.5	5516	5427	5382	5338	5204	4938	4537	-	-	689	758	827	896	
			6.9	6939	6895	6850	6784	6650	6405	5849	-	-	876	963	1051	1138	
C20L	63.5	981.6	1.4	1312	1326	1334	1334	1334	1245	1090	-	-	168	185	202	219	
			2.8	2914	2958	3025	3069	3025	2869	2535	-	-	376	413	451	488	
			4.1	4493	4582	4715	4782	4715	4515	4003	-	-	582	640	698	756	
			5.5	6139	6227	6450	6517	6450	6183	5560	-	-	791	870	949	1028	
			6.9	7784	7918	8185	8229	8185	7829	7162	-	-	1006	1106	1207	1307	
CS20L	63.5	962.1	1.4	1312	1326	1334	1334	1334	1245	1090	-	-	168	185	202	219	
			2.8	2914	2958	3025	3069	3025	2869	2535	-	-	376	413	451	488	
			4.1	4493	4582	4715	4782	4715	4515	4003	-	-	582	640	698	756	
			5.5	6139	6227	6450	6517	6450	6183	5560	-	-	791	870	949	1028	
			6.9	7784	7918	8185	8229	8185	7829	7162	-	-	1006	1106	1207	1307	
C24L	63.5	1140.5	1.4	1610	1655	1686	1677	1624	1495	1237	-	-	210	231	252	273	
			2.8	3594	3665	3736	3745	3648	3438	3007	-	-	465	512	559	605	
			4.1	5538	5649	5765	5792	5689	5440	4920	-	-	717	789	861	933	
			5.5	7482	7638	7815	7847	7735	7446	6824	-	-	970	1067	1164	1261	
			6.9	9408	9599	9835	9893	9790	9488	8807	-	-	1219	1341	1463	1585	
C27	63.5	1099.6	1.4	1979	1944	1925	1887	1821	1732	1598	-	-	247	272	296	321	
			2.8	4264	4258	4261	4229	4137	3991	3778	-	-	541	595	649	703	
			4.1	6574	6602	6628	6599	6494	6310	6011	-	-	839	922	1006	1090	
			5.5	8836	8903	8966	8928	8820	8617	8270	-	-	1131	1244	1357	1470	
			6.9	11101	11209	11295	11267	11159	10943	10501	-	-	1424	1566	1708	1851	

METRIC

SERVICE CHAMBERS

Model	Rated Service Stroke (mm)	Vol. Displ. @ 6.89 bar Rated Service Stroke (cm³)	Application Pressure of (bar)	Service Brake Force-Output (Newtons) @ mm. of Stroke										Newton-meters of Torque Applied @ 31.8mm Stroke by S-Cam Camshaft w/Slack Adjuster Length of (mm)**			
				25.4	31.8	38.1	44.5	50.8	57.2	63.5	69.9	76.2	127.0	139.7	152.4	165.1	
C30	76.2	1363.4	1.4	2340	2349	2349	2291	2175	1899	1290	-	-	298	328	358	388	
			2.8	4982	5026	5049	4960	4733	4226	3194	-	-	638	702	766	830	
			4.1	7638	7727	7775	7669	7375	6717	5373	-	-	981	1079	1178	1276	
			5.5	10262	10395	10489	10369	10026	9266	7700	-	-	1320	1452	1584	1716	
			6.9	12873	13064	13198	13078	12704	11863	10129	-	-	1659	1825	1991	2157	
C36	76.2	1831.4	1.4	2776	2776	2785	2753	2700	2598	2398	1984	1263	353	388	423	458	
			2.8	5952	5934	5907	5889	5832	5774	5418	4835	3763	754	829	904	980	
			4.1	9083	9030	9025	9021	8959	8790	8443	7700	6388	1147	1261	1376	1491	
			5.5	12157	12099	12130	12157	12090	11926	11525	10698	9212	1537	1690	1844	1998	
			6.9	15177	15133	15226	15320	15297	15173	14839	14096	12713	1922	2114	2306	2498	
CS20L3H	63.5	1140.5	1.4	1303	1326	1370	1388	1388	1357	1312	-	-	168	185	202	219	
			2.8	2909	2945	3020	3091	3109	3083	3020	-	-	374	411	449	486	
			4.1	4475	4528	4662	4777	4822	4809	4746	-	-	575	633	690	748	
			5.5	6018	6098	6294	6454	6530	6539	6481	-	-	775	852	929	1007	
			6.9	7531	7642	7904	8122	8229	8265	8220	-	-	971	1068	1165	1262	
C24L3	76.2	1363.4	1.4	1579	1592	1637	1673	1681	1641	1561	1450	1094	202	222	243	263	
			2.8	3483	3514	3621	3714	3732	3679	3536	3336	2740	446	491	536	580	
			4.1	5356	5418	5582	5729	5765	5703	5547	5267	4484	688	757	826	894	
			5.5	7219	7304	7535	7731	7793	7713	7544	7206	6223	928	1020	1113	1206	
			6.9	9048	9168	9470	9719	9804	9733	9550	9194	8007	1164	1281	1397	1514	
C30L3	76.2	1831.4	1.4	2193	2260	2331	2331	2277	2215	2131	1984	1615	287	316	344	373	
			2.8	4724	4853	4933	4951	4906	4849	4728	4488	3968	616	678	740	801	
			4.1	7242	7375	7540	7553	7535	7486	7335	7010	6414	937	1030	1124	1218	
			5.5	9710	9915	10129	10155	10155	10115	9968	9559	8883	1259	1385	1511	1637	
			6.9	12166	12402	12700	12753	12766	12757	12611	12210	11481	1575	1733	1890	2048	
CW9	44.5	348.2	1.4	778	756	667	245	-	-	-	-	-	-	-	-	-	
			2.8	1579	1512	1334	774	-	-	-	-	-	-	-	-	-	
			4.1	2358	2269	1846	1157	-	-	-	-	-	-	-	-	-	
			5.5	3203	3069	2736	1668	-	-	-	-	-	-	-	-	-	
			6.9	3981	3825	3447	2291	-	-	-	-	-	-	-	-	-	
CW12	44.5	471.9	1.4	1001	1001	801	311	-	-	-	-	-	-	-	-	-	
			2.8	2024	2024	1713	890	-	-	-	-	-	-	-	-	-	
			4.1	3047	3025	2535	1557	-	-	-	-	-	-	-	-	-	
			5.5	4070	4048	3648	2491	-	-	-	-	-	-	-	-	-	
			6.9	5093	5026	4804	3559	-	-	-	-	-	-	-	-	-	
CW16	44.5	637.5	1.4	1388	1379	1334	645	-	-	-	-	-	-	-	-	-	
			2.8	2802	2758	2713	1713	-	-	-	-	-	-	-	-	-	
			4.1	4270	4226	4092	2802	-	-	-	-	-	-	-	-	-	
			5.5	5738	5671	5494	3470	-	-	-	-	-	-	-	-	-	
			6.9	7139	7050	6939	4359	-	-	-	-	-	-	-	-	-	

BRAKETECH PROGRAMS



**Self-Study Courses Feature
MGM Brakes Products and
Servicing Procedures**



BrakeTECH Self-Study Training Programs

MGM Brakes created the **BrakeTECH Self-Study Training Programs (Form No. 5038 and 5043)** for counter and outside sales personnel and service technicians involved in providing replacement parts and maintenance to the heavy-duty trucking industry. The goal of these programs is to assist participants in becoming more knowledgeable about the MGM Brakes products they sell and service each and every day.

Participants can study the course booklet at their own pace, regardless of schedule, to become better acquainted with MGM Brakes products and service procedures. A final review quiz made up of true & false and multiple choice questions completes the course.

MGM Brakes issues a "Certificate of Completion" to any participant successfully scoring a minimum of 85% on the quiz. In addition, Parts Personnel who successfully complete the course (form 5038) will receive a **BrakeTECH** pin and hat, while Service Technicians who successfully complete the course (form 5043) will be sent a patch and decal as tokens of MGM Brakes' appreciation for a job well done. These will go one step further toward singling participants out in the eyes of their colleagues and customers alike as true experts on MGM Brakes products.

The **BrakeTECH Self-Study Training Programs** are offered free of charge. Please visit our website (<http://www.mgmbrakes.com>) to conveniently download the course booklet or if you prefer a hardcopy or CD-Rom you may place an order online, just fill out a Literature Request Form.

These books are also available in Spanish - 5038S and 5043S and French Canadian - 5038FC and 5043FC.

Have more questions? Go to www.MGMBrakes.com for information on a sales representative in your area.

*BrakeTECH (5038) and BrakeTECH Service (5043)
are available on-line only for our customers outside North America/Canada.*



MGM BRAKES WARRANTY POLICIES





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NOTE: Product information and specifications subject to change without notice.

MGM BRAKES • WARRANTY POLICY

MGM Brakes, Charlotte, NC, U.S.A. warrants that all spring brake and service chamber models manufactured by MGM Brakes in the U.S.A., when properly installed and placed under normal service and use, are free from defects in materials and workmanship for a varied period of time computed from the date of manufacture stamped on the product. The warranty period is determined by specific model and applies irrespective of mileage. All spring brake models are warranted for a three year period except models "MJW" and "WM" which are warranted for two years, and LTR models which are warranted for six years (Form #VII.6a.2).

LIMITATIONS OF WARRANTY

1. This warranty applies exclusively to MGM Brakes' spring brake models sold for use on the North American continent.
2. This warranty does not apply to parts and assemblies which have been subjected to misuse, improper installation, abnormal service, accident, fire, improper repair, tampering or abuse. Without limiting the foregoing, this warranty does not apply to:
 - a spring brake which has been used while its end cap or breather cap has been removed,
 - a spring brake which has been used while the external breather tube with connecting fittings has not been kept in place and in good repair when so equipped upon purchase,
 - or a spring brake which was previously repaired using non MGM component parts.

Deviation from these provisions requires written permission from MGM Brakes.

LIMITATION OF REMEDY

1. THE RESPONSIBILITY OF MGM BRAKES UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT (AT MGM BRAKES' OPTION) OF THE DEFECTIVE PART OR ASSEMBLY.
2. IN NO EVENT AND UNDER NO CIRCUMSTANCES SHALL MGM BRAKES BE RESPONSIBLE UNDER THIS LIMITED WARRANTY FOR ANY OTHER CHARGE WHATSOEVER, INCLUDING BUT NOT LIMITED TO CHARGES OR CLAIMS FOR LABOR, LOST BUSINESS, LOST TIME, LOST PROFITS, LOSS OF USE, OR ANY KIND OF CONSEQUENTIAL DAMAGES, HOWEVER DENOMINATED OR DESCRIBED. THE REMEDY UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT.

DISCLAIMER OF OTHER WARRANTIES

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED. ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED.

PROCEDURE FOR WARRANTY CLAIMS

1. OEM Dealers - Without superseding OE coverage and direction, contact your MGM Brakes Regional Sales Manager.
Distributors - Contact your MGM Brakes Regional Sales Manager.
Fleets - Contact your distributor/dealer or your MGM Brakes Regional Sales Manager.
For a listing of MGM Brakes Regional Sales Managers, call the MGM Brakes Corporate Sales Department: 1-800-527-1534, or visit the MGM Brakes website at <http://www.mgmbreaks.com>.
2. In the event that MGM Brakes wants to examine product prior to disposition, MGM Brakes shall specify a destination to which the claimed defective part or assembly should be shipped freight prepaid.
3. Upon receipt, freight prepaid, of the claimed defective part or assembly, MGM Brakes shall examine the part and assembly and, if MGM Brakes concurs that said part or assembly was defective in materials or workmanship within the warranty period, will repair or replace same and return said repaired or replaced item freight prepaid.
4. If the part or assembly received by MGM Brakes does not meet the requirements of the Warranty Program set forth above, the part or assembly will either be returned or repaired at the customer's cost and returned freight collect.

Form No. VII.6a
Revised 8/2012

NOTE: Product information and specifications subject to change without notice.

MGM BRAKES • WARRANTY POLICY

LTR “LONG LIFE” SERIES SPRING BRAKES

MGM Brakes, Charlotte, NC, USA warrants all LTR-L3 and LTR-T “Long Life” single/piggyback spring brake models manufactured by MGM Brakes in the U.S.A. to be free from defects in materials and workmanship for a period of Six (6) Years from date of manufacture stamped on the product.

LIMITATIONS OF WARRANTY

1. This warranty applies exclusively to MGM Brakes LTR “Long Life” single piggyback spring brake models manufactured after April 1, 1996, when properly installed and placed in normal use upon on-highway, over-the-road trucks and trailers, irrespective of mileage, and sold for use on the North American continent.
2. LTR Complete Spring Brakes installed in Severe Service Applications such as dry bulk hauling, refuse collection, ready-mix concrete hauling, transit coach, etc., will be warranted for a period of Three (3) Years from date of manufacture stamped on the product, irrespective of mileage.
3. This warranty does not apply to parts and assemblies which have been subjected to misuse, improper installation, abnormal service, accident, fire, improper repair, tampering or abuse. Without limiting the foregoing, this warranty does not apply to:
 - a spring brake which has been used while its end cap or breather cap has been removed,
 - a spring brake which has been used while the external breather tube with connecting fittings has not been kept in place and in good repair when so equipped upon purchase,
 - or a spring brake which was previously repaired using non MGM component parts.

Deviation from these provisions requires written permission from MGM Brakes.

LIMITATION OF REMEDY

1. THE RESPONSIBILITY OF MGM BRAKES UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT (AT MGM BRAKES' OPTION) OF THE DEFECTIVE PART OR ASSEMBLY.
2. IN NO EVENT AND UNDER NO CIRCUMSTANCES SHALL MGM BRAKES BE RESPONSIBLE UNDER THIS LIMITED WARRANTY FOR ANY OTHER CHARGE WHATSOEVER, INCLUDING BUT NOT LIMITED TO CHARGES OR CLAIMS FOR LABOR, LOST BUSINESS, LOST TIME, LOST PROFITS, LOSS OF USE, OR ANY KIND OF CONSEQUENTIAL DAMAGES, HOWEVER DENOMINATED OR DESCRIBED. THE REMEDY UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT.

DISCLAIMER OF OTHER WARRANTIES

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED. ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED.

PROCEDURE FOR WARRANTY CLAIMS

1. OEM Dealers - Without superseding OE coverage and direction, contact your MGM Brakes Regional Sales Manager.
Distributors - Contact your MGM Brakes Regional Sales Manager.
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For a listing of MGM Brakes Regional Sales Managers, call the MGM Brakes Corporate Sales Department: 1-800-527-1534, or visit the MGM Brakes website at <http://www.mgmbreaks.com>.
2. In the event that MGM Brakes wants to examine product prior to disposition, MGM Brakes shall specify a destination to which the claimed defective part or assembly should be shipped freight prepaid.
3. Upon receipt, freight prepaid, of the claimed defective part or assembly, MGM Brakes shall examine the part and assembly and, if MGM Brakes concurs that said part or assembly was defective in materials or workmanship within the warranty period, will repair or replace same and return said repaired or replaced item freight prepaid.
4. If the part or assembly received by MGM Brakes does not meet the requirements of the Warranty Program set forth above, the part or assembly will either be returned or repaired at the customer's cost and returned freight collect.

Form No. VII.6a.2
Revised 8/2012

NOTE: Product information and specifications subject to change without notice.

MGM BRAKES • WARRANTY POLICY**e•STROKE® SPRING BRAKES & COMPONENTS**

MGM Brakes, Charlotte, NC, USA warrants that all e•STROKE® system components supplied by MGM Brakes in the U.S.A., when properly installed and placed under normal service and use, are free from defects in materials and workmanship for a varied period of time. The warranty period is determined by specific component and applies irrespective of mileage.

All e•STROKE® spring brake and service chamber models—including their internal e•STROKE® components—are warranted for a three year period computed from the date of manufacture stamped on the product, except LTR models which are warranted for six years (see Form #VII.6a.2). All other external e•STROKE® system components are warranted for a one year period computed from the date put into service. These one-year components include: Chassis Communications Modules (CCM), Power Cables, Sensor Assemblies, Sensor Harnesses, and all other associated external components.

LIMITATIONS OF WARRANTY

1. This warranty applies exclusively to MGM Brakes e•STROKE® systems sold for use within the North American continent.
2. This warranty does not apply to parts and assemblies which have been subjected to misuse, improper installation, abnormal service, accident, fire, improper repair, tampering or abuse. Without limiting the foregoing, this warranty does not apply to:
 - a spring brake which has been used while its end cap or breather cap has been removed,
 - a spring brake which has been used while the external breather tube with connecting fittings has not been kept in place and in good repair when so equipped upon purchase,
 - or a spring brake which was previously repaired using non MGM component parts.

Deviation from these provisions requires written permission from MGM Brakes.

LIMITATION OF REMEDY

1. THE RESPONSIBILITY OF MGM BRAKES UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT (AT MGM BRAKES' OPTION) OF THE DEFECTIVE PART OR ASSEMBLY.
2. IN NO EVENT AND UNDER NO CIRCUMSTANCES SHALL MGM BRAKES BE RESPONSIBLE UNDER THIS LIMITED WARRANTY FOR ANY OTHER CHARGE WHATSOEVER, INCLUDING BUT NOT LIMITED TO CHARGES OR CLAIMS FOR LABOR, LOST BUSINESS, LOST TIME, LOST PROFITS, LOSS OF USE, OR ANY OTHER KIND OF CONSEQUENTIAL DAMAGES, HOWEVER DENOMINATED OR DESCRIBED. THE REMEDY UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT.

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For a listing of MGM Brakes Regional Sales Managers, call the MGM Brakes Corporate Sales Department: 1-800-527-1534, or visit the MGM Brakes website at <http://www.mgmbreaks.com>.
2. In the event that MGM Brakes wants to examine product prior to disposition, MGM Brakes shall specify a destination to which the claimed defective part or assembly should be shipped freight prepaid.
3. Upon receipt, freight prepaid, of the claimed defective part or assembly, MGM Brakes shall examine the part and assembly and, if MGM Brakes concurs that said part or assembly was defective in materials or workmanship within the warranty period, will repair or replace same and return said repaired or replaced item freight prepaid.
4. If the part or assembly received by MGM Brakes does not meet the requirements of the Warranty Program set forth above, the part or assembly will either be returned or repaired at the customer's cost and returned freight collect.

Form No. VII.6a.3

Revised 8/2012

NOTE: Product information and specifications subject to change without notice.

Warranty policies published by MGM Brakes are for the U.S.A. and Canada only. Warranty policies are developed for the rules/regulations (gross vehicle weight, vehicle duty cycle, etc) and road conditions in the U.S.A. and Canada.

For warranty outside of the U.S.A. and Canada please contact MGM Brakes customer service at 1-800-527-1534 or 704-547-7411 ext. 750 or contact the Director - International Sales and Marketing, John Dare at jdare@mgmbrakes.com.

GLOSSARY OF TERMS



ABS	Anti-Lok Braking System. Prevents wheel lock-up by regulating brake actuation through modulation of system air pressure.
Actuator	Brake chamber. Usually refers to combination units and service chambers.
Actuator Sensor	Electromagnetic device that outputs actuator stroke codes to the Chassis Communications Module (CCM).
Air Governor	Maintains system air pressure between predetermined minimum and maximum levels.
Air Tank	Reservoir for compressed air.
AL Factor	Mathematical representation of the brake adjuster and brake chamber combination. "A" equals the effective area of the brake chamber in square inches (type 30 chamber has effective area of 30 square inches). "L" equals the effective length of the slack adjuster, in inches (slack length = 5"). Example, 30 X 5 = AL Factor of 150
Anti-Compounding	System that prevents service brakes from adding to the force being exerted by the parking brake.
Axle	Components to which wheels, brakes and suspension are attached.
Bar	The bar is widely used in descriptions of pressure because it is only about 1% smaller than "standard" atmospheric pressure, and is legally recognized in countries of the European Union. 1 Atmosphere = 1.01325 BAR 1 BAR = 100,000 Pascals 1 BAR = 14.5037744 PSI
Bogie	Assembly of two or more drive axles, usually a pair in tandem.
Boot	Flexible rubber cover. Installs over service push rod to keep solid and liquid contaminants out of service chamber.
Brake Drag	Brake fails to completely release, causing lining or pads to maintain contact with the brake drum or rotor. May result in excessive lining and drum wear, or possibly a wheel fire if the component parts become excessively hot.
Brake Fade	Usually the result of heat-induced expansion of the brake drum caused by the friction of the lining rubbing against the drum.
Brake Pot	Brake Chamber. Usually refers to "complete" or "combination" unit, meaning service and spring parking brake chambers combined.
Bulk Pack	See "X-Pack"
Bushing	A cylindrical lining designed to reduce friction and wear inside a hole.
Cage	Refers to "releasing" the spring brakes.
Caging Bolt	Release tool. Used to "cage" the spring brake. Also referred to as a "Release Bolt".

NOTE: Product information and specifications subject to change without notice.

Can	Refers to service chamber or combination brake.
Cap	See "End Cap"
CCM	Chassis Communication Module. Receives and displays brake stroke condition codes from sensors on brake chambers.
Center Section	See "Flange Case".
Clevis	Connects service chamber push rod to slack adjuster. Also referred to as a "Yoke".
Combination	Service and spring parking brake chambers combined.
Combo	See "Combination".
Common Carrier	Trucking company that hauls for hire.
Complete	See "Combination".
Converter-Dolly	Auxiliary axle assembly equipped with fifth wheel for towing pup or semi-trailer.
Crack Pressure	Minimum air pressure, expressed in pounds per square inch (psi), required to open an air valve.
CVSA	Abbreviation for Commercial Vehicle Safety Alliance.
DD-3	Bendix brake actuator that uses a mechanical roller locking mechanism for parking. Used primarily on transit coaches and intercity buses.
Dead Axle	Un-powered axle that can be lifted off the ground to save wear and tear on the tires when the truck or trailer is empty. Usually mounted forward of "drive" axles.
Diaphragm	Flexible rubber, or neoprene rubber, disc that separates pressurized areas of the chamber from non-pressurized areas.
Disc Brake	Brake design in which a disc (rotor) is sandwiched between the brake pads.
Dolly	See "Converter-Dolly".
Drive Axles	Axles that drive the truck or tractor. Usually refers to rear axle or axles.
Dust Boot	Flexible rubber cover installed over service push rod to keep solid and liquid contaminants out of service chamber.
e•DT	e-STROKE Diagnostic Tool. Hand held or dash mounted "reader" that allows operator to view data stored in the Chassis Communications Module.
e•LINK	Link between trailer CCM and tractor cab. Provides operator with instant notification of any "fault" registered by the trailer Chassis Communications Module.
e•S3	Third generation e-STROKE System

NOTE: Product information and specifications subject to change without notice.

e-STROKE	Electronic brake stroke monitoring system.
E Model	MGM obsolete model spring brake. Replaced by the TR Model.
Emergency Brake	Independently actuated secondary brake system used for parking or braking when the service brake is inoperative.
End Cap	Plastic piece used to close "release bolt" hole in top of spring brake. Also referred to as a "plug".
Fault Code	Blinking light on CCM that indicates problem with brake stroke status.
Flange Case	Usually made of aluminum and contains pocket for release tool and air inlet ports. Also referred to as "Center Section".
FMVSS	Abbreviation for Federal Motor Vehicle Safety Standard.
Front Axle	Axle at the front of the vehicle. Also known as the "steer" axle.
Glad Hand	Air brake line connector between truck and trailer.
HD	Heavy Duty
Head	Top of chamber . Also referred to as the spring cap.
Interlock	A mechanical device that prevents a component from functioning or situated in a particular way. For Example, on transit coaches, the interlock applies the brakes and holds the throttle at idle when a door is open. The interlock releases when the door is closed.
Jake Brake	Device that manipulates the engine's fuel system, intake and exhaust valves to eliminate the power stroke and create drag.
Jam Nut	Nut on service push rod. Used to "lock" yoke onto rod.
L Model	Original MGM "double diaphragm" spring brake. Replaced by LTR-T Model.
Lift Axle	Un-powered axle that can be lifted off the ground to save wear and tear on the tires when the truck or trailer is empty.
Long Stroke Brake	Any actuator, of equal size, with maximum stroke exceeding that of the standard model.
LTR-L3 Model	Integral Release Bolt, Tamper Resistant, 3-Inch (76.2 mm) Stroke.
LTR-T Model	Integral Release Bolt, Tamper Resistant, with External Breather Tube.
Magnum	Brand name for MGM Models MB-T and MG-T piston/diaphragm brakes.
Maxi-Brake	Brand name also used as a generic reference for spring parking brake.
Mounting Base	See "Non-Pressure Chamber".
Multiplexing	Means of sending discreet electrical signals to multiple devices through a common set of wires.

NOTE: Product information and specifications subject to change without notice.

Newton	The newton is the unit of force derived in the SI system; it is equal to the amount of force required to accelerate a mass of one kilogram at a rate of one metre per second per second. 1Newton = 1 kg·m/s² 1000Newton=1 Kilo-Newton
NHTSA	Abbreviation for National Highway Transportation Safety Administration.
Non-Pressure Chamber	Component part of service or combination brake used to attach chamber to vehicle or trailer foundation brake.
Non-Pressure Housing	See "Non-Pressure Chamber".
NPC	See "Non-Pressure Chamber".
Pancake	Diaphragm.
Piggyback	Spring Brake or Parking Brake Chamber.
Piggyback Plus Kit	Piggyback, clamp band and diaphragm packaged as a "kit".
Pintle Hook	Coupling device used in double, triple and truck-trailer combinations.
Plug	Plastic piece used to close "release bolt" hole in top of spring brake. Also referred to as "cap".
Pocket	Storage pocket for release bolt. Usually located on side of flange case.
Ports	Threaded openings cast into "flange case" where air lines connect to chamber.
Pot	Brake Chamber or Actuator.
Pressure Cap	Steel or aluminum top for service chambers with one or two air inlet ports.
Pressure Transducer	Signals brake pedal application to Chassis Communications Module (CCM).
PSI	Pounds Per Square Inch.
Pull	Vehicle moves, or pulls, to one side when braking.
Pup	Short, 25 to 35 foot trailer or semi-trailer.
Push Rod	Rod protruding from a brake chamber that connects to a slack adjuster via a clevis.
Pusher Axle	An additional axle, added to support heavy loads, may be able to be lifted off the ground to save wear and tear on the tires when the truck or trailer is empty. Usually mounted ahead of the drive axle.
Release Bolt	Used to "capture" or "cage" the spring brake portion of the brake chamber, allowing the push rod to return to zero (0) stroke. Also referred to as a "Caging Bolt".

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Return Spring	Conical shaped coiled spring used to return internal parts of service chamber or spring brake to fully retracted position.
Rotochamber	Refers to actuator with a rolling diaphragm.
SAE	Abbreviation for Society of Automotive Engineers.
Semi-Trailer	A trailer designed to be towed with a fifth wheel on a converter dolly or tractor.
Service Brake	Mechanism for slowing or stopping the vehicle.
Shipping Bolt	Short "release bolt", usually associated with brakes manufactured for production installations.
Short Stop	Brand name for early MGM WM and WL Model Wedge Brakes.
Short Stroke	Chamber fails to travel to maximum allowable stroke.
Single	Spring Brake or Parking Brake Chamber. Also referred to as the piggyback.
Single Axle	One axle on the rear of a truck, tractor or trailer.
Spanner Nut	Castellated nut on wedge tube. Used to "lock" tube into wedge housing.
Standard Stroke	Refers to actuators with 2.50 inch (63.5 mm) maximum stroke, or length of stroke when actuator originally designed.
Stinger	Non-powered axle, mounted at rear of vehicle, behind "drive" axles. Can be lifted off the ground to save wear and tear on the tires when the truck or trailer is empty.
Stop Guard	Brand name for early MGM L and E Model Spring Brakes. Replaced by LTR-T and TR Models.
Stroke	Maximum distance traveled by a brake chamber push rod, or slack adjuster arm, during application.
Stroke Alert	Orange stripe or mark on service push rod that indicates when service chamber is approaching 80% of its rated stroke.
Super Single	Extremely wide tire. Replaces "dual" tires with "single" tire.
Tag Axle	Non-powered axle that can be lifted off the ground to save wear and tear on the tires when the truck or trailer is empty. Usually mounted to the rear of "drive" axles. See "Lift Axle".
Tandem	See "Combination".
Tandem Axle	Two axles on the rear of a truck, tractor or trailer.
Tractor	Vehicle designed primarily to pull trailers by means of a fifth wheel connection.

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Tractor Trailer	Tractor and trailer in combination. Also know as a "Rig". Tractor pulling a semi-trailer.
Truck	Vehicle designed to "carry" cargo within a body or on a bed mounted on its chassis.
Type	Refers to chamber size; i.e. 16, 20, 24, 30, 36, etc.
Un-Cage	Removal of "release bolt" or "caging" bolt.
VIN Number	Vehicle Identification Number or Serial Number.
Warning Light	Indicator light mounted on vehicle dash that illuminates to indicate status of the e-STROKE System.
Wedge Brake	Brake shoes are applied by a single or double wedge-type mechanism as opposed to brake applied by rotation of an "S-cam".
Welded Yoke	Yoke permanently attached to service push rod.
X - Dimension	Measurement taken from bottom of NPC to end of push rod thread.
X-Pack	Large quantity of chambers packaged in one container. Also know as a "Bulk Pack".
Y - Dimension	Measurement taken from bottom of NPC to center-line of yoke pin.
Yoke	Connects service chamber push rod to slack adjuster. Also referred to as a "Clevis".
Zero Stroke	When service push rod is completely retracted into the service chamber.

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