

Special Products Catalog

Air, Vacuum, Electronic

MADE IN THE USA REVISED 2011.04.15



MANUFACTURED BY BRAKE SYSTEMS INC. 2221 NE HOYT, PORTLAND, OR 97232 PH: 503-236-2116 FAX: 503-239-5005 TOLL FREE: 800-452-5734 EMAIL: brakes vstems@brakes vstemsinc.com

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REV. DATE: 04.08.11



ENGINE IDLE KITS

The Engine Idle Kits energize auxiliary circuits when electronic engines are in idle mode. Typical uses for engine idle kits include exhaust brake/engine retarder interlock circuit, bus door interlock when used in conjunction with brake interlock, and bus deceleration lighting programs.

ENGINE IDLE KIT TYPES:

The 526B Idle Kit can be used with Williams floor mount pedals.

The 533A Idle Kit can be used with many Dodge pickup trucks with Cummins 5.9 electronic engines.

The 540A Idle Kit is used with Williams overhung (firewall) mount pedals.

The 544A Idle Kit is used with many International trucks, including some 2000 and later models, such as 4300, 4700, 4900 and models with DT466 and other engines.

Refer to the next page for part lists of each idle kit. . .

526B:



533A:



540A:



544A:





ENGINE IDLE KIT



526B IDLE KIT:

Item	Qty	Part Number	Description
1	1	526-01	Bracket
2	1	526-02	Spacer
3	1	526-03	Switch
4	2	526-04	Cap Screw
5	2	526-05	Self Lock Nut
6	2	526-06	Cap Screw
7	2	526-07	Self Lock Nut
8	1	526-08	Cap Screw
9	1	526-09	Nut
10	1	526-10	Washer, Big
11	2	526-11	Washer, Small
12	1	11129	Catalog Page

533A IDLE KIT:

Item	Qty	Part Number	Description
1	1	533-01	Mounting Bracket
2	1	533-02	Striker Bracket
3	2	110388	Terminal
4	2	114778	Screw
5	2	115059	Washer
6	1	117784	Switch
7	1	117847	Tinnerman Nut
8	2	160048	Screw
9	1	11129	Catalog Page

540A IDLE KIT:

Item	Qty	Part Number	Description
1	1	540-01	Switch Bracket
2	1	540-02	ldle Bracket
3	2	104741	Blade Connector
4	2	114778	Screw
5	1	117785	Switch
6	1	117847	Tinnerman Nut
7	1	11129	Catalog Page

544A IDLE KIT:

Item	Qty	Part Number	Description
1	1	526-03	Switch
2	2	526-05	Lock Nut
3	1	544-01	Mounting Bracket
4	2	160045	Cap Screw
5	3	160046	Terminal, Elbow
6	1	160047	Terminal, Straight
7	1	11129	Catalog Page



UNIVERSAL REMOTE THROTTLE 531

The 531A is a cable and bracket kit designed to mate with the Williams remote throttle control WM531 for Caterpillar, Cummins, Detroit, Mack and other electronic engines. Based on 2 inch maximum travel. In most cases, an electronic switch module (part number 134224) and an appropriate connector kit will be necessary to complete the wiring harness.

		531A KIT	
1	1	531-01	Bracket
2	1	531-02	Lever Arm
3	1	531-03	Ball Joint
4	1	531-04	Cable Clamp
5	1	531-05	Mounting hardware

	CABLE KIT		
6a	1	531024	Cable Assy –2'
6b	1	531036	Cable Assy –3'
6c	1	531048	Cable Assy –4'
6d	1	531060	Cable Assy –5'
6e	1	531072	Cable Assy –6'



REMOTE DRIVE AND SENSOR ASSEMBLY		
CUMMINS	131032	
NAVISTAR	131032	
CATERPILLAR	131520	
DETROIT 2	131521	
DETROIT 3	131522	
** CUMMINS/BSI 160034		

^{**} ADJUSTABLE HIGH SPEED STOP

CONNECTOR KIT		
CATERPILLAR W	131771	
ROUND CONN.		
CATERPILLAR W	131772	
TRIANGLE CONN.		
CUMMINS & DDEC	131773	
WITH IDLE V.		
DDEC II & III W/O	131774	
IDLE V.		
NAVISTAR W 6 PIN	131775	
CONN.		



UNIVERSAL **REMOTE THROTTLE**

KIT NO.:	COMES WITH:
531A1	531A and 531024
531A2	531A and 531036
531A3	531A and 531048
531A4	531A and 531060
531A5	531A and 531072



UNIVERSAL REMOTE THROTTLE 531B

The 531B (long stroke) is a cable and bracket kit designed to mate with the Williams remote throttle control WM531 for Caterpillar electronic engines. Based on 3 inch maximum travel. In most cases, an electronic switch module (part number 134224) and an appropriate connector kit will be necessary to complete the wiring harness.

	531B KIT		
1	1	531-01	Bracket
2	1	531-02C	Lever Arm
3	1	531-03	Ball Joint
4	1	531-04	Cable Clamp
5	1	531-05	Mounting hardware

CABLE KIT			
6a	1	531024-3	Cable Assy –2'
6b	1	531036-3	Cable Assy –3'
6c	1	531048-3	Cable Assy –4'
6d	1	531060-3	Cable Assy –5'
6e	1	531072-3	Cable Assy –6'



OPTIONAL SENSOR DRIVE			
CATERPILLAR	132052		
CATERPILLAR	132056*		

*WITH HI-LO STOP

OPTIONAL SENSOR			
CATERPILLAR	132484		
w/ Triangle Plug			
CATERPILLAR	131138		
w/ Round Plug			

CONNECTOR KIT			
CATERPILLAR	131772		
w/ Triangle Conn.			
CATERPILLAR	131771		
w/ Round Conn.			

9	

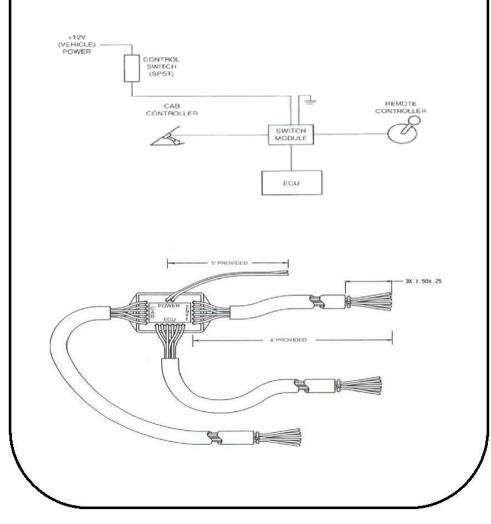
UNIVERSAL REMOTE THROTTLE LONG STROKE

KIT NO.:	COMES WITH:
531B1	531B and 531024-3
531B2	531B and 531036-3
531B3	531B and 531048-3
531B4	531B and 531060-3
531B5	531B and 531072-3



WM534

The WM534 remote switch module is an electrically actuated six pole, double throw switch that allows an operator to select between two independent stations. It can also be used to coordinate the operation of several functions from one station. It is designed for very low voltages and currents that are typically present in electronic engine throttle applications.





REMOTE THROTTLE SWITCH MODULE



AIR SUPPLY KITS

The Air Supply Kits supply compressed air for engaging exhaust brakes.

AIR SUPPLY KIT TYPES:

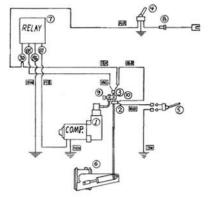
The WM734A Air Supply Kit is used with butterfly brakes only.

The WM734B Air Supply Kit includes an air tank and may be used with the guillotine brake as well as the butterfly type brake.

The WM734C and WM734D Air Supply Kits are a complete supply and control kit for butterfly type exhaust brakes on vehicles without an air supply. Kit includes the (on demand) air compressor, mounting bracket and preassembled circuitry with two variations for idle validation. The WM734C kit includes pins to plug into the engine ECU. The WM734D kit includes a whisker switch with bracket to validate the pedal position.

The 160073 Air Control Assembly contains pre-plumbed wire and sealed control system, all ready to install. Add the compressor, dash switch and idle validation switch to make up the complete unit listed above as the WM734C or WM734D.

Refer to the following pages for part lists of each air supply kit. . .



- I. COMPRESSOR 12V
- . SOLENOID
- 3. GOVERNOR
- 5. IDLE VALIDATION SWITCH/SYSTEM
- 5. EXHAUST BRAKE
- RFLA
-). SAFETY POP-OFF
- D. MANIFOLD BLOCK



AIR SUPPLY KITS





WM734A SUPPLY KIT:

Item	Qty	Part Number	Description
1	2	728-38	Cap Screw
2	2	728-39	Lock Nut
3	1	160015	Compressor
4	1	160016	Mounting Bracket
5	1	160018	Governor
6	1	160023	Pop Off
7	1	130917A	Roll Hose
8	1	3153X2	Plug
9	1	3325X2	Nipple
10	2	3950X2	Cross
11	2	10004B-102	Hose Barb
12	1	11124A	Catalog Page

WM734C,D SUPPLY KIT:

	Qty			
Item	734C	734D	Part Number	Description
1	1	1	728-12B	Switch, 12V
2	1	1	728-20B	Electrical Package
3	2	2	728-38	Cap Screw
4	2	2	728-39	Lock Nut
5	1	1	734-01A	DWG
6	2	2	10004B-102	Union, 1/2"
7	1	1	110345	Escutcheon Plate
8	1	1	160015	Compressor
9	1	1	160016	Bracket
10	2	-	160020	ECU Pin
11	1	1	160073	Control Assembly
12	1	1	3500X2	Elbow
13	-	1	WM779B	Whisker Kit

160073 CONTROL KIT:

Item	Qty	Part Number	Description
1	1	110390	Connector
2	1	114664	Cap Screw
3	1	117783	Connector
4	3	118872	Wire, Red, 14ga
5	1	118873	Wire, Green, 18ga
6	3	118874	Wire, Black, 18ga
7	4	118875	Wire, Red, 18ga
8	3	118876	Wire, White, 18ga
9	3	118881	Wire, Black, 14ga
10	1	130235	Connector
11	1	130238	Relay, 4 Pin
12	1	160066	Manifold Assembly
13	2	160069	Doubler Blade
14	1	160072	Enclosure Box
15	1	160078	Retainer
16	1	998108	Roll Loom, 1/2"
17	4	H10104	Roll Hose, 1/4"



BLUE OX TAIL GATE LOCK AIR CYLINDERS

• Heavy Duty Assembly

• Cylinder Shell, Hard Anodized Aluminum

• Cylinder Rod, Stainless Steel, Heavy Duty

• End Cap, 2" Modular Cast Iron, Heavy Duty Mounting Boss

• 31/4" Die Cast, Heavy Duty Mounting Boss with Replaceable Bushings

• Piston, Proprietary Design with Buna-N Seals

Trunion Pin: ½"
Clevis Assy: ½" Pin

• Easily Rebuildable, All Components Available

• 40+ Years of Industrial/Automotive Service

Cylinder Assy	Retracted Stroke Length		Cylinder Assembly with Installation Kit
WM-447D2	9.875	4	WM-447D2101
WM-447F2	11.875	6	WM-447F2101
WM-447H2	13.875	8	WM-447H2101

Bore Size: 2" Double Acting Rod Diameter: ½" x 20 U.N.F.
Port Size: ½" NPT x 2
Trunion Pin Dia. ½"

Recommended Operating Pressure: 100 PSI Maximum Operating Pressure: 150 PSI

Cylinder Assy	Retracted Stroke Length		Cylinder Assembly with Installation Kit
WM-463D	10.00	4	WM-463D101
WM-463F	12.00	6	WM-463F101
WM-463H	14.00	8	WM-463H101

Bore Size: 3¼" Double Acting
Rod Diameter: ½" x 20 U.N.F.
Port Size: ¼" NPT x 2
Trunion Pin Dia. ½"

Recommended Operating Pressure: 100 PSI Maximum Operating Pressure: 150 PSI

WM447K1				
	Installation Kit, Elec/Air			
Item No.	Qty.	Description		
1	1		Solenoid—4w	
2	1		Breather	
3	1		Fitting, Straight	
4	1		Fitting, Elbow	
5	1		Street Elbow	
6	1		Nipple, Hex	
7	1		Tubing, Nylon	





WM463K1			
	Ins	tallation Kit, Ele	ec/Air
Item No.	Qty.	Part No.	Description
1	1		Solenoid-4w
2	1		Breather
3	1		Fitting, Straight
4	1		Fitting, Elbow
5	1		Street Elbow
6	1		Nipple, Hex
7	1		Tubing, Nylon

REV. 2010.0928



WM568

The WM568 hydraulic over electronic remote control assembly is composed of a hydraulic cylinder which positions an electronic sensor. It is used to control an electronic engine with a variable hydraulic pressure source, 0 to 80 PSI.

The WM568 unit can be used to dampen the response of an electronic engine to accelerator pedal position changes. Different sensors can be fit onto the unit to control different models of electronic engines.

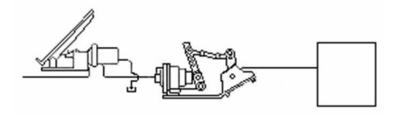
SPECIFICATIONS:

Port Size SAE 6 (9/16 to 18 UNF) straight thread w/ oring Maximum Operating Pressure 125 PSI (850 kPa) Operating Temperature -20 F to 200 F (-29 C to 93C) Piston Area 3.14 inch (20 cm) Cylinder Stroke 0.5 inches (1.3 cm) Mounting Bracket on main body Materials: Body Iridited die cast aluminum alloy Cover Iridited die cast aluminum alloy

Piston Assembly Iridited die cast aluminum alloy

Dynamic Seals Viton

Static Seals Buna N

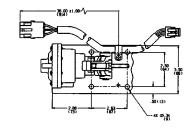


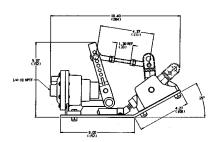


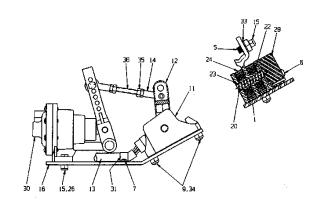
HYDRAULIC/ ELECTRONIC REMOTE SENSOR ASSEMBLY



DIMENSIONAL DATA / CROSS SECTION & PARTS INFORMATION







ORDERING INFORMATION

To order, specify WM568 _____(part number). Select part number below.

Part Number	Applicable Engine		
WM568E	DDEC II		
WM568D	Caterpillar		
WM568C	Navistar		
WM568B	DDEC III without idle validation switch*		
WM568A	Cummins, DDEC III with idle validation switch*		

Service Kit	Service Kit Number	Kit Components
Cylinder repair kit	R512	119280 Repair kit, body lever assy. 119153
Part Number WM 568A	Sensor Kit 132034	130446 screw, 130996 clamp, 131165 harness, 131308 screw, 131856 sensor
WM 568B	132035	130446 screw, 130996 clamp, 131308 screw, 131856 sensor, 131970 harness
WM568C	340000	
WM 568D	131384	130446 screw, 130996 clamp, 131272 sensor, 131308 screw
WM 568E	131140	130063 harness, 130446 screw, 130656 sensor, 130996 clamp, 131308 screw

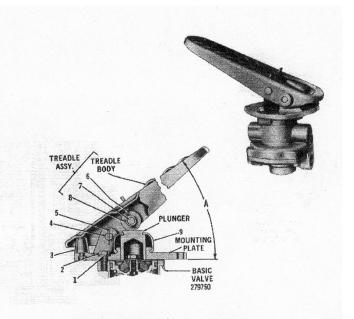


DUAL BRAKE VALVES TYPE E-4

The brake valve is a graduating directional control valve and is generally used to control all of the service brakes on a vehicle. The most popular configuration utilizes a pedal. However, other types of actuating means are available.

Dual brake valves, such as the E-4, are used in dual or split systems.

TEREX SPECIAL IN STOCK 101877



TYPE E-4			REFERENCE DETAILS						
DUAL BRAKE VALVE O.E. PC. NO.	REMFR. EXCH. (BASIC)* PC. NO.	TREADLE & MTG. PLATE ASSY. PC. NO.	TREADLE ASSY. PC. NO.	TREADLE BODY PC. NO.	PLUNGER PC. NO.	MTG. PLATE PC. NO.	A DEG.		
A279757	279750	279751	228484	228281	236981	236979	27		
280037	279750	280038	226834	226835	236981	236979	34		
280246	279750	279751	228484	228281	236981	236979	27		
281418	279750	281433	NONE	NONE	236981	236979			
B282330	279750		226834	226835	236981	236979	34		
B283846	279750		228484	228281	236981	236979	27		
285569	279750	280038	226834	226835	236981	236979	34		
C286208	279750	285825	283659	275460	235814	243807	17		

A-Add Mounting Plate, 244433.

E-4 BRAKE VALVE CONVERSION LIST

O.E. PC. NO.	REMFR. EXCH PC. NO.		
279750	279750		
279757	279750		
280037	279750		
280246	279750		
280459	279750		
280578	279750		
280755	279750		
280756	279750		
281136	279750		
281388	279750		

O.E. PC. NO.	REMFR. EXCH. PC. NO.
281418	279750
281423	279750
281424	279750
281445	281510
281510	281510
281571	279750
281752	279750
281574	281574
281575	281574
281856	279750

O.E. PC. NO.	REMFR. EXCH. PC. NO.
281904	281904
282330	279750
282855	282855
282856	282855
283322	279750
283846	279750
284354	279750
285569	279750
286208	279750
286524	279750

B-Add Mounting Plate, 246025.

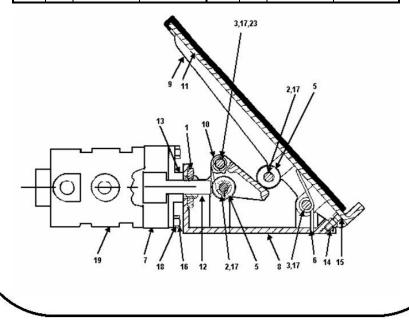
C-Uses Stop Button, 239512 & Lock Nut, 230903.



WM569A

The WM569A is a dual circuit brake application valve for air brake systems. A dual air brake system will provide many of the same safety considerations that passenger cars with hydraulic brakes have enjoyed since 1967. Many vehicles, including motor homes, utilize above floor mounted brake valves. Using such brake valves, it is unnecessary to drill holes through the floor board to mount and plumb the brake pedal.

Ite m	Qty	Part Number	Description	lte m	Qty	Part Number	Description
1	1	101114	Mount Nut	11	3	114878	Screw
2	2	102371	Pin	12	3	115102	Lck. Washer
3	2	103113	Roller	13	1	116722	Base
4	1	103670	Cover	14	2	117216	Treadle Pin
5	1	103704	Spring	15	1	117259	Lever
6	1	104964	Flange	16	1	118775	Treadle
7	8	106857	Ret. Clip	17	1	160043	Spacer
8	1	110264	Spring	18	1	160044	Push Rod
9	1	114537	Jam Nut	19	1	286171	Valve—PBD
10	1	114780	Stop Screw				





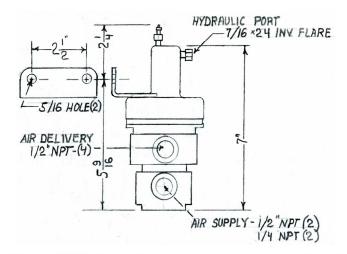
DUAL CIRCUIT TREADLE

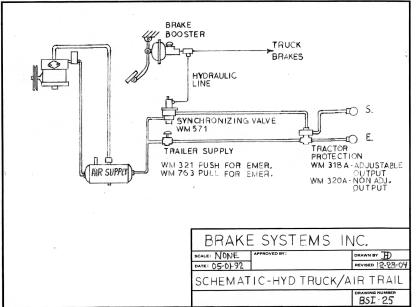




WM571A

The WM571A is usually part of the brake system of a truck with hydraulic brakes pulling a trailer with air brakes. The synchronizing valve provides the foot brake signal to the trailer. Selective trailer brake control is also available by using an air hand valve. Hydraulic/air ratio is approximately 13 to 1.







SYNCHRONIZING VALVE AIR/HYDRAULIC

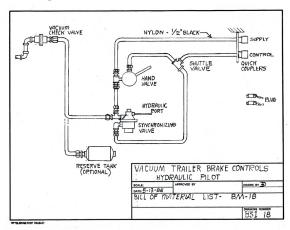
REV. 2010.12.13





WM38 SERIES

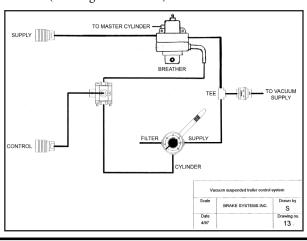
A control valve (on-off) for trailers with vacuum suspended brake systems, (vacuum/hydraulic or straight vacuum). This is not a proportional brake application valve, it functions only to apply the trailer brakes (park), or release the brakes for normal operation.



WM573 SERIES

The synchronizing valve provides trailer brakes with normal application of the foot brake on the towing vehicle. It is used in vacuum suspended brake systems such as vacuum/hydraulic trailer brakes. It will provide full trailer brake at 600psi (20 in./Hg) or 700 psi (22 in./Hg).

In higher pressure hydraulic brake systems (1200 to 1500 psi), a hydraulic proportioning valve will hold off the trailer brake application until hydraulic pressures are attained. (see diagram BSI 18B)



FOR VACUUM SYSTEMS



TRAILER CONTROL VALVE WM38A



SYNCHRONIZING VALVE WM573A

REV. 2011.04.15



TRAILER BRAKE TEST KIT WM576

(ONE MAN) OPERATION

WM576, a slick quick way to test your trailer brakes in the yard (or anywhere else) with one man and an air supply (usually a tractor). Just insert the test kits glad hands between the air source and the trailer, block the tractor so it won't roll and test away. The control panel will go right with you under or next to the trailer and just turn the brakes on and off at your own speed and the following will happen:

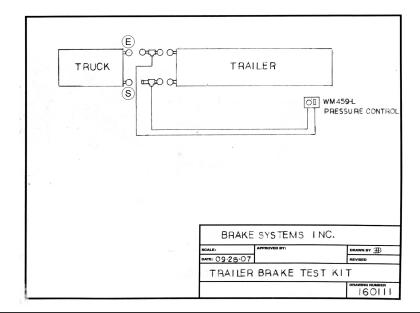
- 1. Test for air leaks at the valves and tank connections with application.
- 2. Measure travel of push rods to verify adjustment is okay.
- 3. Check for air leaks when released.

Move on to the next trailer and repeat the above. After you've repositioned the tractor, the test time can be as little as 5 minutes.



TRAILER BRAKE TEST KIT

Weight: 5 lbs



REV. 2011.04.15



AIR LINE ANTI FREEZE







Gallon 99845

When it's below freezing, air valves on trucks and industrial machinery often time cease to function or at least begin to leak as a result of water vapor freezing. In the valve assembly o-rings get hard and do not conform to metal parts easily (remember the space shuttle?).

BSI can supply alcohol injectors (downstream devices) or alcohol evaporators (compressor inlet) which will preclude most freezing problems. In certain high humidity ambient with temperatures at or near freezing, a highway truck may pump in a pint or so of water in a 400 mile run. Spitter valves will dump most of the water from the tank at intervals but the water vapor is always present and whenever the temperature drops below freezing, you're in for trouble. In some cases alcohol may be introduced to the air system by temporarily disconnecting the main air line from the compressor and pouring a few ounces directly into the air tank this way.

Containers of this product are stocked in Portland and may be picked up at the BSI warehouse or shipped by UPS with an additional hazmat charge. Call BSI for details.



THE SUPPLEMENTAL DRIVELINE BRAKE

If you have a parking problem As the solution.





The Driveline Brake is a proven solution to provide a safe, reliable supplemental parking brake.

Everything you need is in the kit.

Rotor, caliper, brackets, cable plus easy to follow instructions.

Ask our sales professionals about the Driveline kit.

BSI Part Number 160158.

"Specializing in Manufacture and Distribution of

REV. 2011.01.27



BRAKE SYSTEMS, INC.

WARRANTY POLICY TERMS AND CONDITIONS

For New Pneumatic Systems

Brake Systems, Inc. warrants that products furnished by it will be free from defects in materials and workmanship until the first of the following occurs:

One (1) year after delivery of the product to the ultimate user;

50,000 miles of operation on highway vehicles;

1000 hours of operation on other types of equipment.

This warranty does not extend to 1.) any losses due to misuse, accident, abuse, neglect, normal wear and tear, or improper installation, maintenance or application; 2.) products that have been repaired or altered outside of Brake Systems, Inc. factory unless authorized in writing by Brake Systems, Inc.; or 3.) any labor charges for removal and/or replacement of the nonconforming or defective product or part thereof.

In the event that claims are made with regard to the defective product, the responsibility of Brake Systems, Inc. is limited to repairing or replacing any units which shall, within the provisions of the warranty specified above, be returned with transportation charges prepaid, and found to be defective. All warranty claims shall be presented within thirty (30) days after the defect is discovered. In no event shall Brake Systems, Inc. be liable for consequential damages related to misuse or misapplication of products.

The foregoing states Brake Systems Inc. sole responsibility for breach of this warranty. In no event shall Brake Systems be liable for consequential damages.

No other warranty, whether expressed or implied by operation of law or otherwise (including any warranty of merchantability, fitness or performance), shall exist in connection with the sale or use of any product sold by Brake Systems, Inc.

2221 N.E. Hoyt Street's Portland, Oregon 97232 s (503) 236-2116



BRAKE SYSTEMS, INC.



2221 N.E. HOYT PORTLAND, OR 97232

503-236-2116 FAX 503-239-5005 TOLL FREE 1-800-452-5734



PRODUCT LINES	WWW.BRAKESYSTEMSINC.COM email: brakesystems@brakesystemsinc.com			
DISTRIBUTOR OF:				
AIR CYLINDERS	MIDLAND HALDEX BRAKE PRODUCTS			
BENDIX - POWER BRAKES HYDRAULICS & COMPRESSORS	PBD REPLACEMENT AIR VALVES			
BLUE OX EXHAUST BRAKES	REXROTH INDUSTRIAL CONTROLS WABCO			
C/R,SKF AIR DRYERS, BEARINGS	TSE SPRING BRAKES			
CARLISLE INDUSTRIAL BRAKE PRODUCTS	VELVAC BRAKE & ELECTRIC PRODUCTS			
CHICAGO RAWHIDE AIR DRYERS	WAGNER / FEDERAL MOGUL			
DELCO BOOSTERS & VACUUM PUMPS	WEATHERHEAD HOSE & FITTINGS			
DEL HYDRAULIC	WILLIAMS CONTROLS - AIR VALVES & ELECTRONIC THROTTLES			
ELECTRONIC THROTTLE CONTROLS	ZERO-RUST			
EUCLID / SEALCO/ARVIN-MERITOR	MANUFACTURER OF: SPECIALTY ELECTRONIC THROTTLE & BRAKE PRODUCTS			
FIRESTONE - RIDE RITE	EXHAUST BRAKES - BLUE OX			
GROVER AIR HORNS	AIR CYLINDERS - BSI & WILLIAMS			
HAYES LEMMERZ CONTROLLERS	AIR VALVES - BSI & WILLIAMS			
HORTON FAN CLUTCHES	REMANUFACTURER OF:			
Haldex SUPER STORE	BRAKE BOOSTERS			
KIP SOLENOIDS	LUCAS/GIRLING BACKING PLATES			
LOCKTITE	AIR VALVES, FAN HUBS			
MAGNETEK / PATRIOT / GEMCO / WAGNER INDUSTRIAL BRAKE PRODUCTS	PRESSURE CONVERTERS			
MGM SPRING BRAKES	INDUSTRIAL CALIPERS			
BRAKE PRODUCTS	AIR COMPRESSORS			

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