



# Williams Controls

## WM-318

### Williams Customer Specification

Original Release: 04/91  
Original Project: 119910



#### DESCRIPTION

Used Primarily in vehicular air brake systems, the WM318 series valves are three-way, compensating, pilot pressure-operated relay valves. These valves deliver an output pressure that is proportional to the amount of control pressure applied. Some models in the WM318 series feature an adjustment which allows the output/ control pressure ratio to be changed. On other models, this ratio is fixed.

#### OPERATION

To actuate a WM318 series relay valve, a maximum control pressure of 1.5 PSI (10.3 kPa) is required against a 100 PSI (690 kPa) supply. When control pressure is applied, two internal diaphragms expand, closing the exhaust port and opening the outlet port. Air flows from the supply port to the outlet port. As service line pressure increases and the trailer brakes are applied, pressure builds on one side of each diaphragm until a balanced condition is achieved . When this condition occurs, the supply port closes. With no control pressure applied, the valve releases an y pressure at the outlet port through the exhaust

#### APPLICATION

The WM318 relay valves are commonly used as tractor protection valves in tractor-trailer braking systems. These relays protect brake system pressure because the control signal is exhausted through the service treadle and cannot escape downstream through an open service line. When models with the adjustable output/control pressure ratio are installed on trucks or tractors, the trailer brake pressure may be balanced with the tractor brake pressure. Other WM318 models are used in application where a nonadjustable, factory-preset output/control pressure ratio is desired. The WM318 relays are used in WM346 fast brake kits to activate the trailer brakes

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	<b>Williams Customer Specification Form</b>						
DOCUMENT NUMBER:	<b>119910</b>	Revision Level	A	Date Effective	04/1991	DAF#	

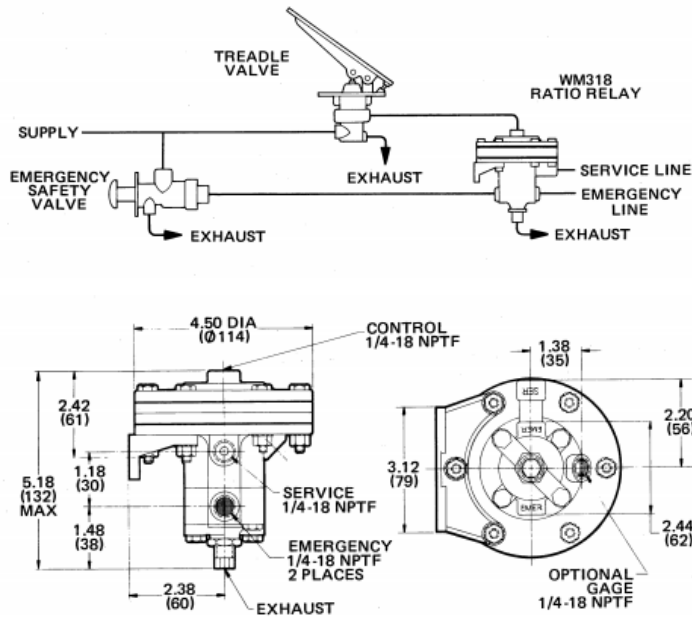


**SPECIFICATION**

Port Size	1/4-18 NPTF
Maximum Operating Pressure	150 PSI (1034.2kPa)
Operating Temperature	-28.9°C to 93.3°C
Flow Rating	50 SCFM @ 100 PSI (1m <sup>3</sup> /min @ 690 kPa)
Cracking Pressure	1.5PSI (10.3kPa) w/ 100 PSI (690 kPa) Supply
Output Adjustability	20% less than control pressure To 30% greater than control pressure
<b>Materials</b>	
Body Casting	Iridated Die Cast Aluminum
Diaphragms	Fabric-Reinforced Buna N
Poppet	Chrome-Plated Brass w/ Buna N insert
Bumper & O-rings	Buna N
Net Weight	4lb (1.8kg)

For Continuous operation beyond this range, contact factory.

**DIMENSIONS**



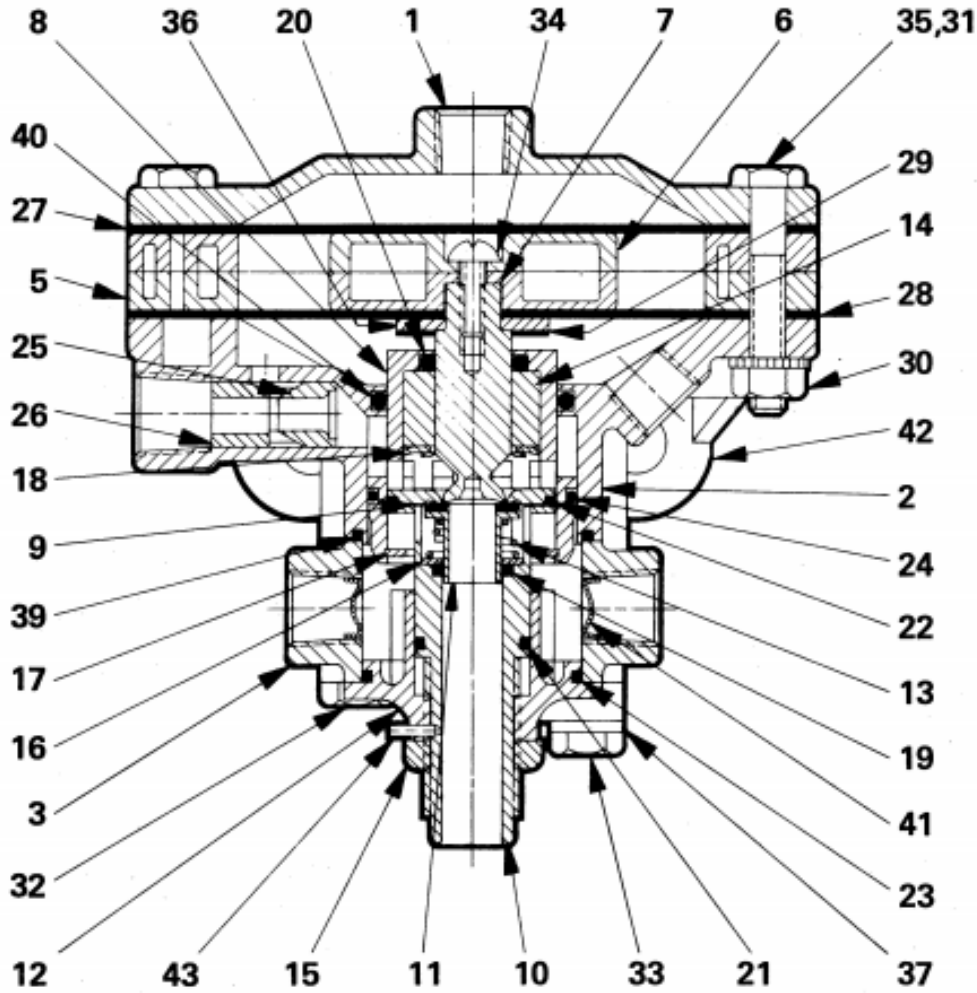
**TO ORDER**

To order <b>Specify WM318</b> _____, <b>Part Number</b> _____ as below			
Suffix	Part Number	Output/Control Pressure Ratio	Gage Port
WM318 A	112201	Adjustable	¼-18 NPTF

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**PARTS IDENTIFICATION**



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ITEM	DESCRIPTION	QTY	
		A	B
1	Cover	1	1
2	Body	1	1
3	Emergency Body	1	1
5	Diaphragm Spacer	2	2
6	Diaphragm Plate	2	2
7	Exhaust Stem	1	1
8	Inlet Cage	1	1
9	Inlet Seat	1	1
10	Stem	1	1
*11	Poppet	1	1
12	Cartridge Body	1	1
13	Spring	1	1
14	Stem Guide	1	1
15	Nut (114590)	1	1
16	Washer	1	1
17	Retaining Ring	1	1
*18	Retaining Ring	1	1
*19	O-Ring (116303)	1	1
*20	O-Ring	1	1
*21	O-Ring	1	1
*22	O-Ring	1	1
*23	O-Ring	1	1
*24	O-Ring	1	1
25	Orifice	1	1
26	Expansion Tube	1	1
*27	Upper Diaphragm	1	1
*28	Diaphragm	1	1
*29	Bumper	1	1
30	Locknut	6	6
31	Screw	3	3
32	Screw	2	2
33	Screw	2	2
34	Screw	1	1
35	Screw	3	3
36	Washer	1	1
37	Lockwasher	2	2
*39	O-Ring	1	1
*40	O-Ring	1	1
41	Screen (116456)	2	2
42	Bracket (105182)	1	1
43	Roll Pin		1
Service this unit with repair kit number 114262. Repair Kit includes parts to service the cartridge assembly. To replace the cartridge assembly in the WM318A order part number 102047. Other replaceable items are flowed by part numbers *Asterisk designates parts included in repair kit			

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