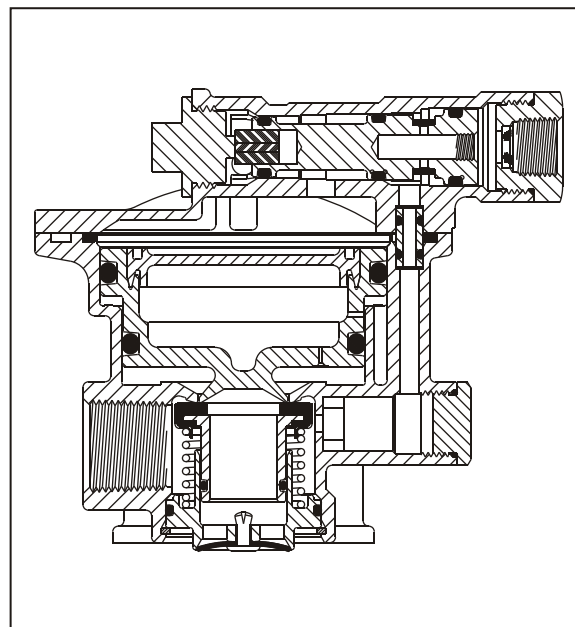
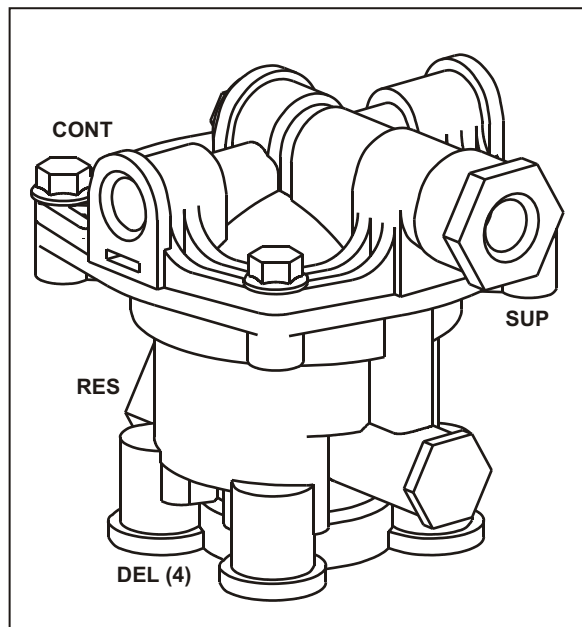


RELAY EMERGENCY VALVES



Relay Emergency Valves – Charging (4 Delivery Ports)



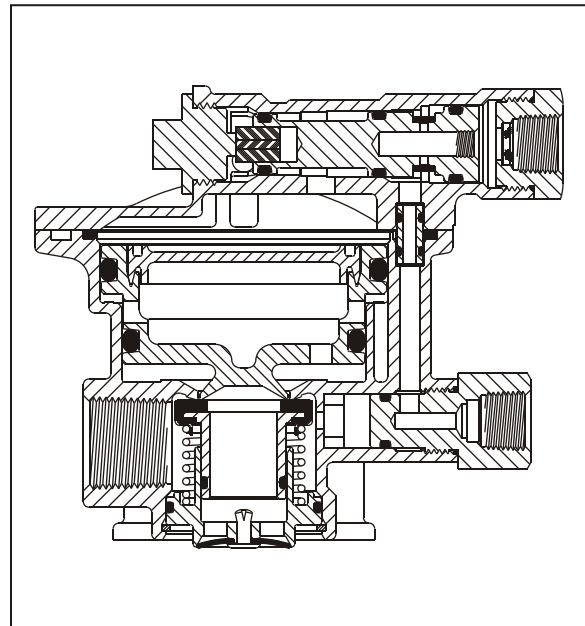
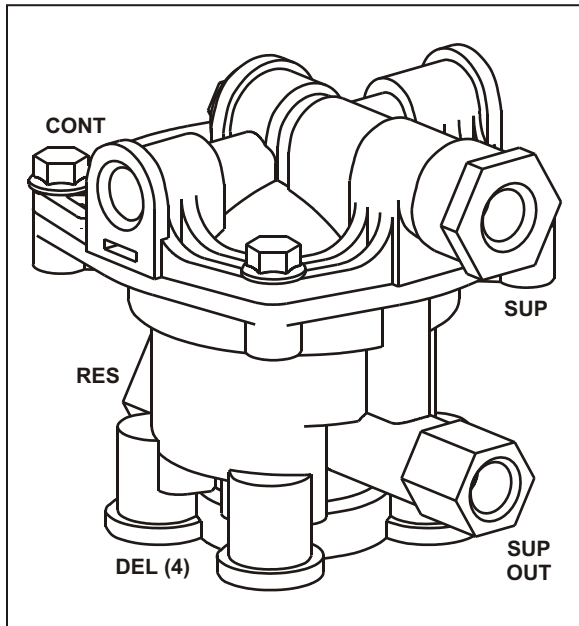
- The Ratio Feature is considered a benefit in hard stop situations & refers to the relationship between the control air pressure to the valve & the delivered air pressure from the valve to the service brake chambers. During normal stopping a 1:1 ratio exists between the control & delivered air pressures. In a hard stop the ratio momentarily changes to 1:1.5 until valve lap-off occurs & the 1:1 ratio is restored. This change takes place in less than 1/100th of a second.
 - Do not use ratio feature valves on converter dollies or trailer turnable axles
 - Mounting Hardware on pages 61 & 62
 - Piping examples on page 69
 - **PLUG UNIT ASSEMBLY 110143**
 - **MAJOR REPAIR KIT 110201**
 - **SPOOL ASSEMBLY 110162**
 - **MINOR SPOOL KIT 110166**
- * No Plug Unit available for this part number

PART NUMBER	PORT SIZES (NPT)					RATIO FEATURE	NOMINAL CRACK PRESSURE
	Supply	Control	Reservoir	Delivery	Sup. Out		
110200	1/4"	1/4"	3/4"	3/8"	-	Yes	4.5 psi
110205	3/8"	3/8"	3/4"	3/8"	-	Yes	4.5 psi
110459 *	3/8"	3/8"	3/4"	3/8"	3/8"	No	8.5 psi
110460	1/4"	1/4"	3/4"	3/8"	-	No	4.5 psi
110470	3/8"	3/8"	3/4"	3/8"	-	No	4.5 psi
110475	3/8"	3/8"	3/4"	3/8"	3/8"	No	4.5 psi

RELAY EMERGENCY VALVES



Relay Emergency Valve – Non-Charging (4 Delivery Ports)



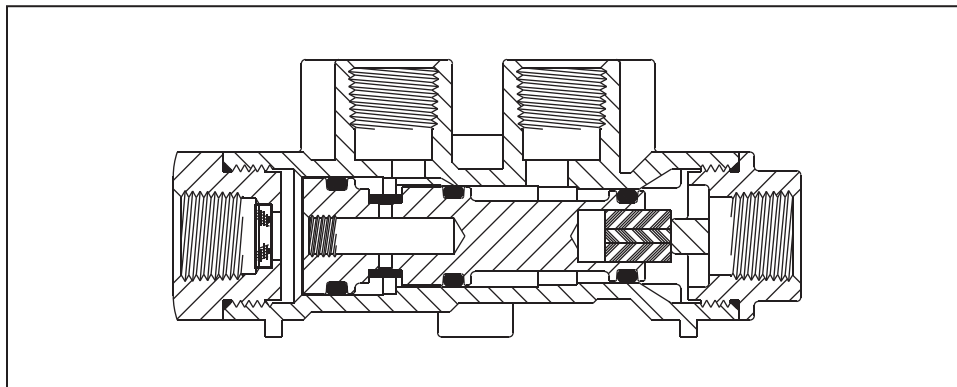
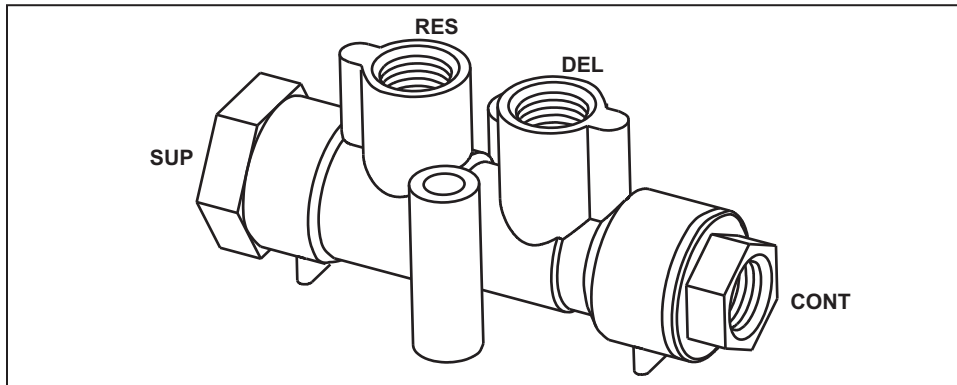
INFORMATION:

- Complies with all changes to FMVSS 121, Docket 90-3 effective 10-8-92
- Commonly used on converter dollies, turnable axles, heavy haulers, ag trailers and air lift axles with service brake chambers
- Commonly used in conjunction with 110257 Emergency Brake Pressure Protection Valve
- No ratio feature included
- Mounting Hardware on pages 61 & 62
- Piping examples on page 73
- **PLUG UNIT ASSEMBLY 110143**
- **MAJOR REPAIR KIT 110359**
- **SPOOL ASSEMBLY 110162**
- **MINOR SPOOL KIT 110166**

PART NUMBER	PORT SIZES (NPT)					NOMINAL CRACK PRESSURE
	Supply	Control	Reservoir	Delivery	Sup. Out	
110338	3/8"	3/8"	3/4"	3/8"	3/8"	4.5 psi

RELAY EMERGENCY VALVES

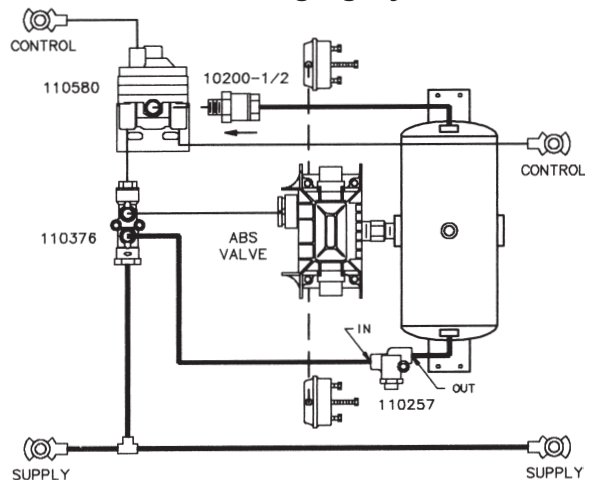
Emergency Control Valve



INFORMATION:

- Commonly used on converter dollies
- Commonly used on trailer turnable axles & trailers exempt from spring brakes
- Always used in conjunction with 110257 Emergency Brake Pressure Protection Valve
- **SPOOL ASSEMBLY 110162**
- **MINOR SPOOL KIT 110166**

Single Axle Dolly Non-Charging System

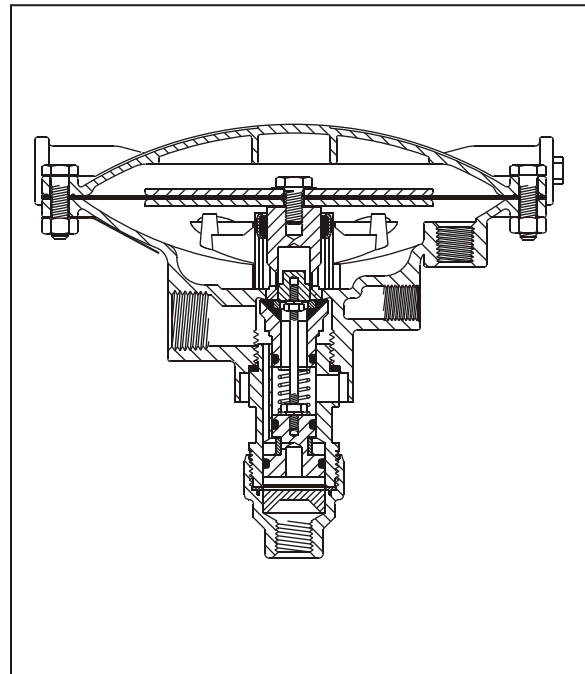
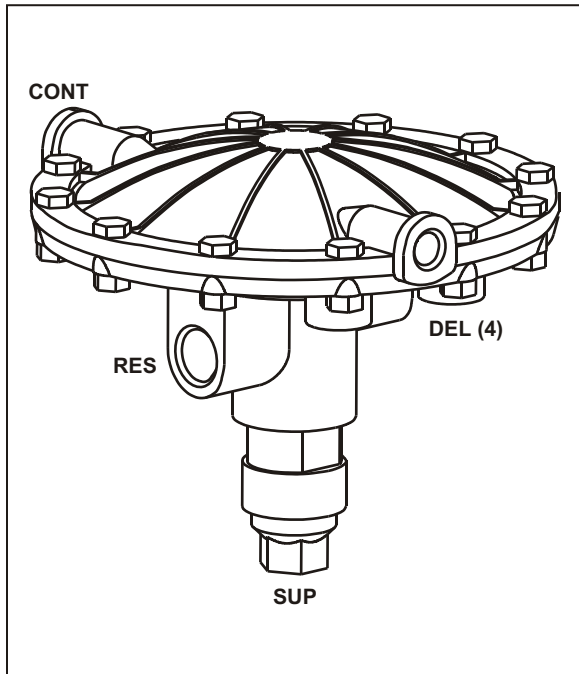


PART NUMBER	PORT SIZES (NPT)			
	Supply	Control	Reservoir	Delivery
110376	3/8"	3/8"	3/8"	3/8"

RELAY EMERGENCY VALVES

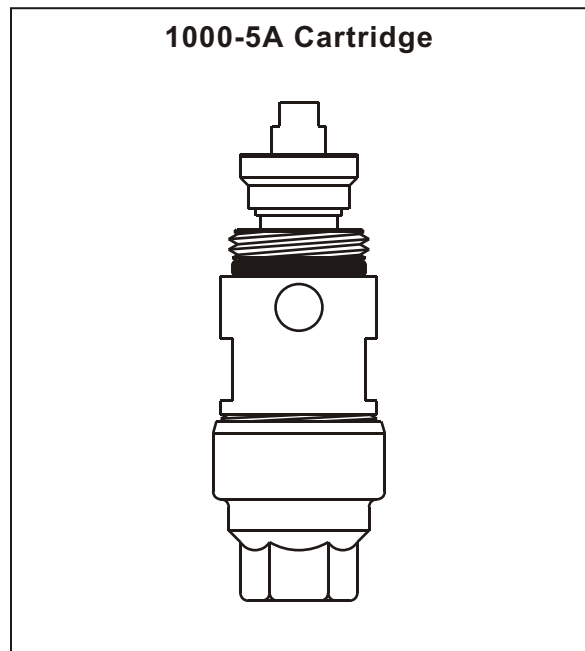


Relay Emergency Valve – Pre FMVSS 121 (4 Delivery Ports)



INFORMATION:

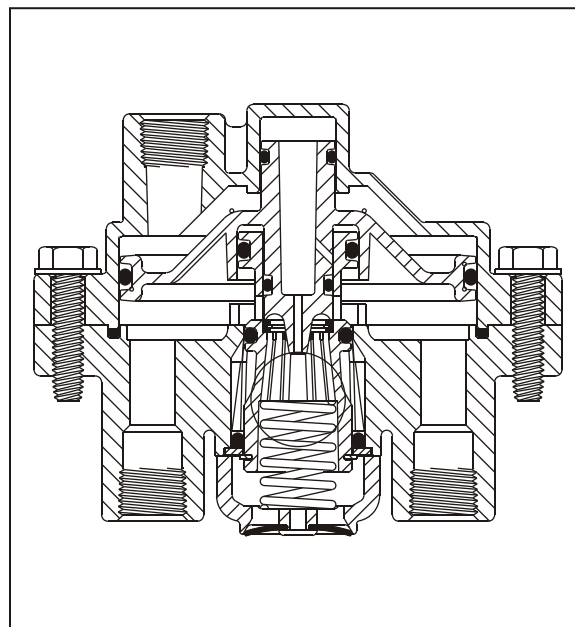
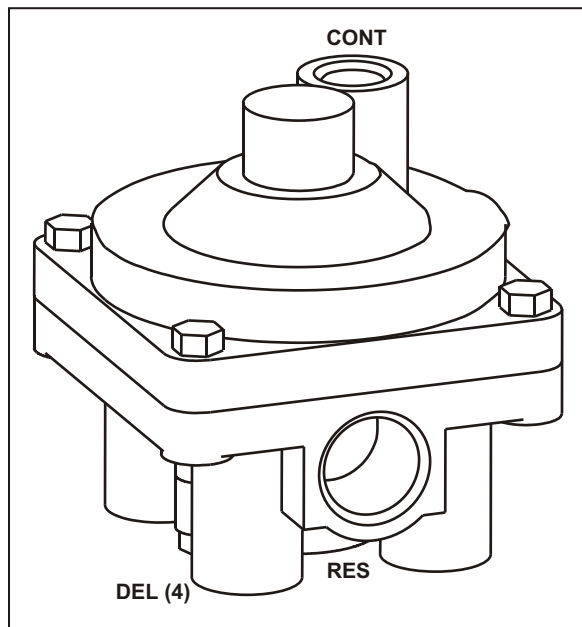
- Used only on brake systems prior to the implementation of FMVSS 121
- Mounting Hardware on pages 61 & 62
- **CARTRIDGE 1000-5A**
- **REPAIR KIT 10-5**



PART NUMBER	PORT SIZES (NPT)				NOMINAL CRACK PRESSURE
	Supply	Control	Reservoir	Delivery	
A1000S	1/4"	1/4"	1/2"	1/4"	1.5 psi

SERVICE RELAY VALVES

Service Relay Valves (4 Delivery Ports)



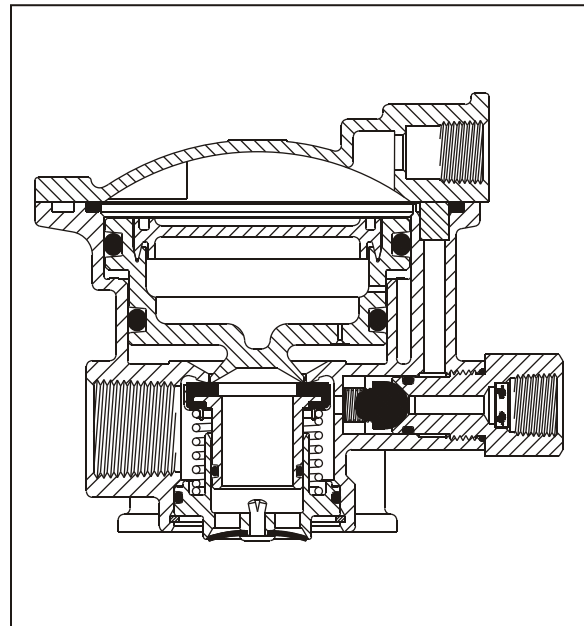
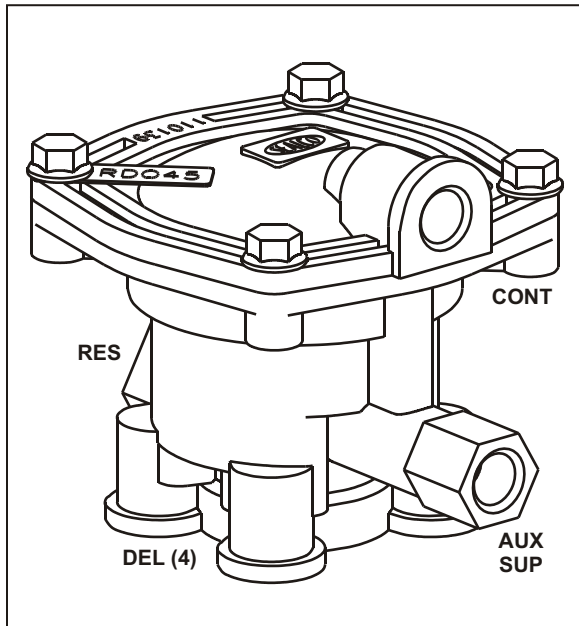
INFORMATION:

- Nipple mounted 110380 & 110415 are used primarily for tandem axle trailer service brakes with four brake chambers
- 110385 may be used as a frame mounted version of 110380
- 110416 & 110448 commonly used as a tractor, straight truck or trailer Service Relay Valve
- Mounting Hardware on pages 61 & 62
- No Plug Units or Repair Kits available

PART NUMBER	PORT SIZES (NPT)			NOMINAL CRACK PRESSURE	MOUNTING INFORMATION
	Control	Reservoir	Delivery		
110380	3/8"	3/4"	3/8"	1.5 psi	Use 6003 or 6006 nipple
110385	3/8"	3/4"	3/8"	1.5 psi	Frame Bracket Kit 110395 included
110415	3/8"	3/4"	3/8"	4.0 psi	Use 6003 or 6006 nipple
110416	3/8"	3/4"	3/8"	4.0 psi	Frame Bracket Kit 110395 included
110488	3/8"	3/4"	3/8"	5.5 psi	Use 6003 or 6006 nipple
110615	3/8"	3/4"	3/8"	4.0 psi	Use 4 - #2030 screws

SERVICE RELAY VALVES

Service Relay Valves (4 Delivery Ports)



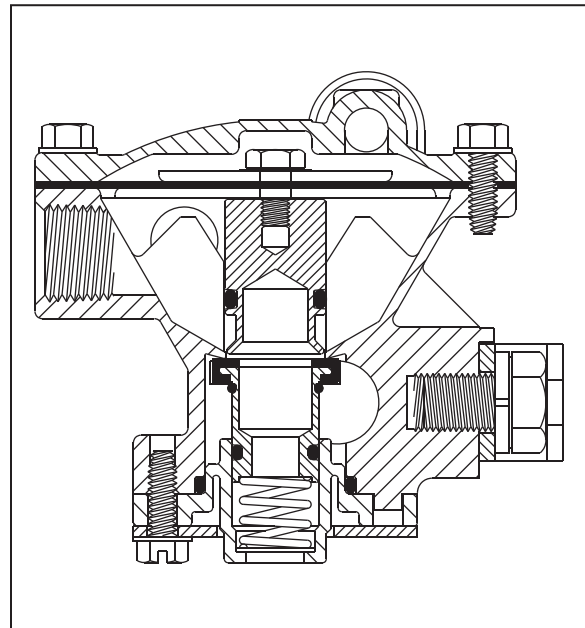
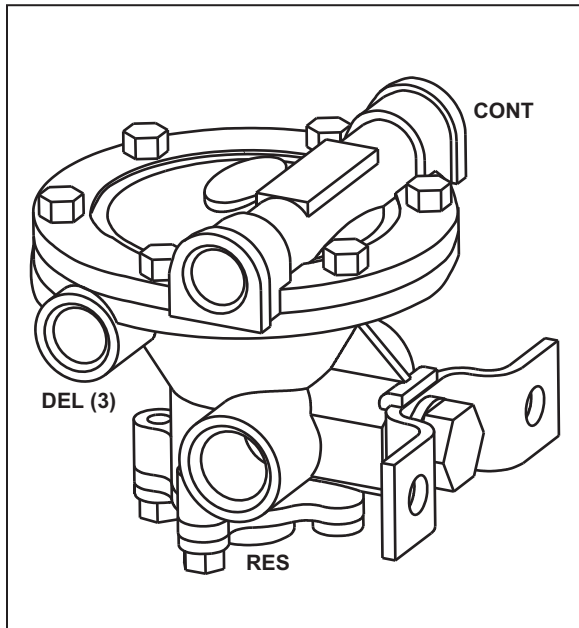
INFORMATION:

- The Ratio Feature is considered a benefit in hard stop situations & refers to the relationship between the control air pressure to the valve & the delivered air pressure from the valve to the service brake chambers. During normal stopping a 1:1 ratio exists between the control & delivered air pressures. In a hard stop the ratio momentarily changes to 1:1.5 until valve lap-off occurs & the 1:1 ratio is restored. This change takes place in less than 1/100th of a second.
- Do not use ratio feature valves on converter dollies, trailer turnable axles or lift axles
- Mounting Hardware on pages 61 & 62
- Piping examples on page 74
- **PLUG UNIT ASSEMBLIES 110143 & 110583**
- **MINOR PLUG UNIT KIT 110005** • **MAJOR REPAIR KIT 110118**
- **AUXILARY SUPPLY PORT REPAIR KIT 110673**

PART NUMBER	PORT SIZES (NPT)				RATIO FEATURE	NOMINAL CRACK PRESSURE	PLUG UNIT
	Auxiliary Supply	Control	Reservoir	Delivery			
110139	3/8"	3/8"	3/4"	3/8"	Yes	4.5 psi	110143
110450	3/8"	3/8"	3/4"	3/8"	No	4.5 psi	110143
110575	3/8"	3/8"	3/4"	3/8"	Yes	8.5 psi	n/a
110584	3/8"	3/8"	3/4"	3/8"	Yes	5.5 psi	110583
110600	Capped	3/8"	3/4"	3/8"	Yes	4.5 psi	110143

SERVICE RELAY VALVES

Service Relay Valves (3 Delivery Ports)



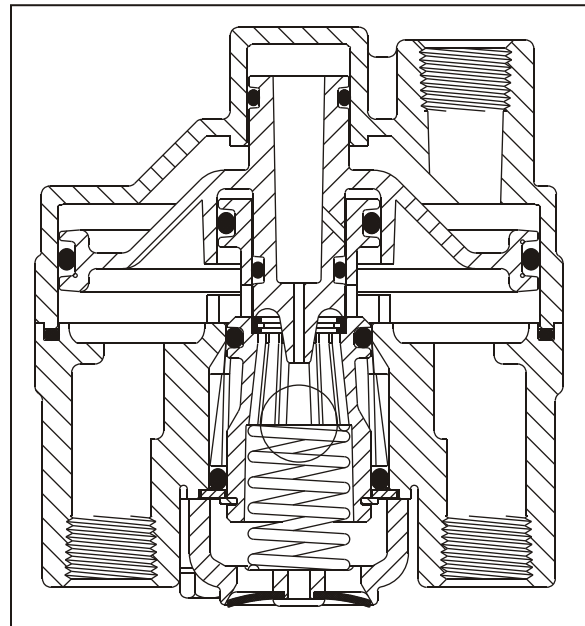
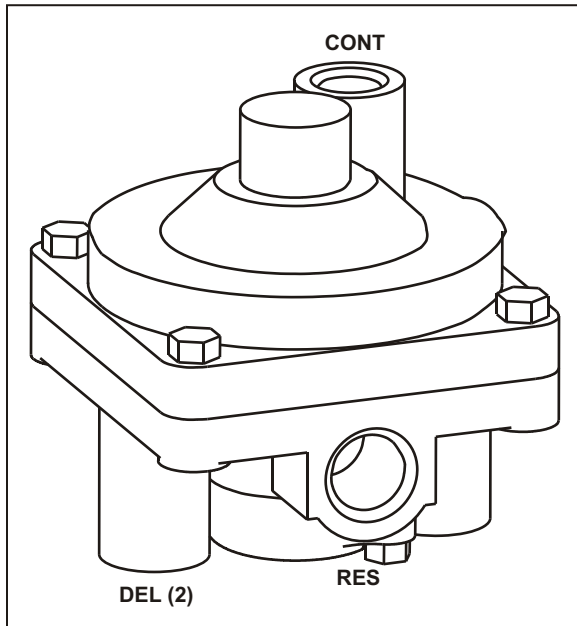
INFORMATION:

- Commonly used as a tractor or straight truck Relay Valve
- Part number 9125 replaces both part numbers 9125 1/4 and 9125 3/8
- Part number 110228 replaces part number 110155
- **PLUG UNIT ASSEMBLY 9125-5**
- **REPAIR KIT 912-5**

PART NUMBER	PORT SIZES (NPT)			NOMINAL CRACK PRESSURE	MOUNTING KIT INCLUDED
	Control (2)	Reservoir (2)	Delivery (3)		
9125	1/4"	1/2"	3/8" (2) 1/2" (1)	5.5 psi	110237
110207	3/8"	1/2"	3/8" (2) 1/2" (1)	5.5 psi	110237
110228	3/8"	1/2"	3/8" (2) 1/2" (1)	5.5 psi	110156

SERVICE RELAY VALVES

Service Relay Valves (2 Delivery Ports)



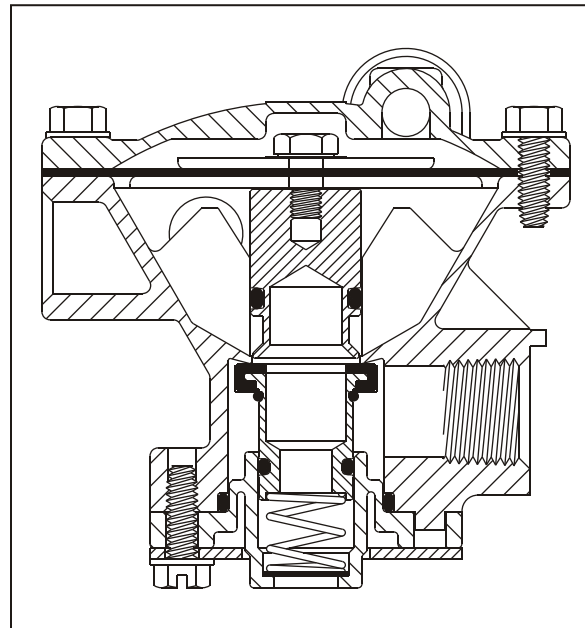
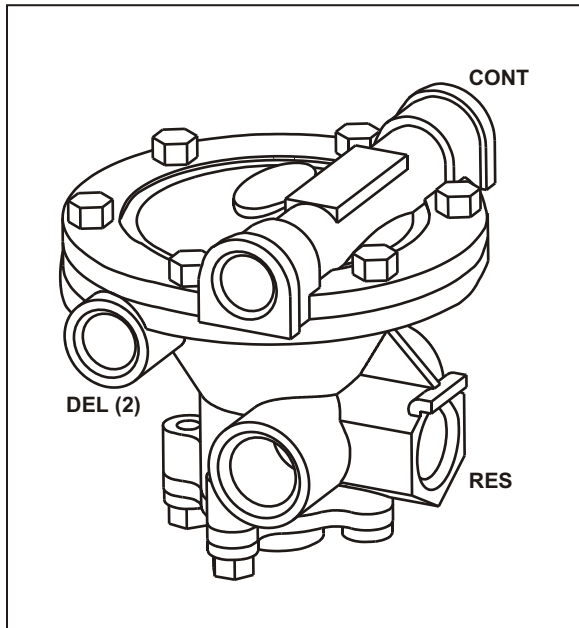
INFORMATION:

- Nipple mounted 110360 & 110410 are used primarily for single axle trailer service brakes or tandem axle by axle trailer brake designs
- 110365 may be used as a frame mounted version of 110360 or as a Control Line Valve to replace 110463 or 110464
- 110412 & 110487 may be used as a tractor, straight truck or trailer Service Relay Valve
- Mounting Hardware on pages 61 & 62
- Piping examples on page 74
- No Plug Units or Repair Kits available

PART NUMBER	PORT SIZES (NPT)			NOMINAL CRACK PRESSURE	MOUNTING INFORMATION
	Control	Reservoir	Delivery		
110360	3/8"	1/2"	3/8"	1.5 psi	Use 6002 or 6003 nipple
110365	3/8"	1/2"	3/8"	1.5 psi	Frame Bracket Kit 110485 included
110410	3/8"	1/2"	3/8"	4.0 psi	Use 6002 or 6003 nipple
110412	3/8"	1/2"	3/8"	4.0 psi	Frame Bracket Kit 110485 included
110487	3/8"	1/2"	3/8"	5.5 psi	Use 6002 or 6003 nipple

SERVICE RELAY VALVES

Service Relay Valves (2 Delivery Ports)



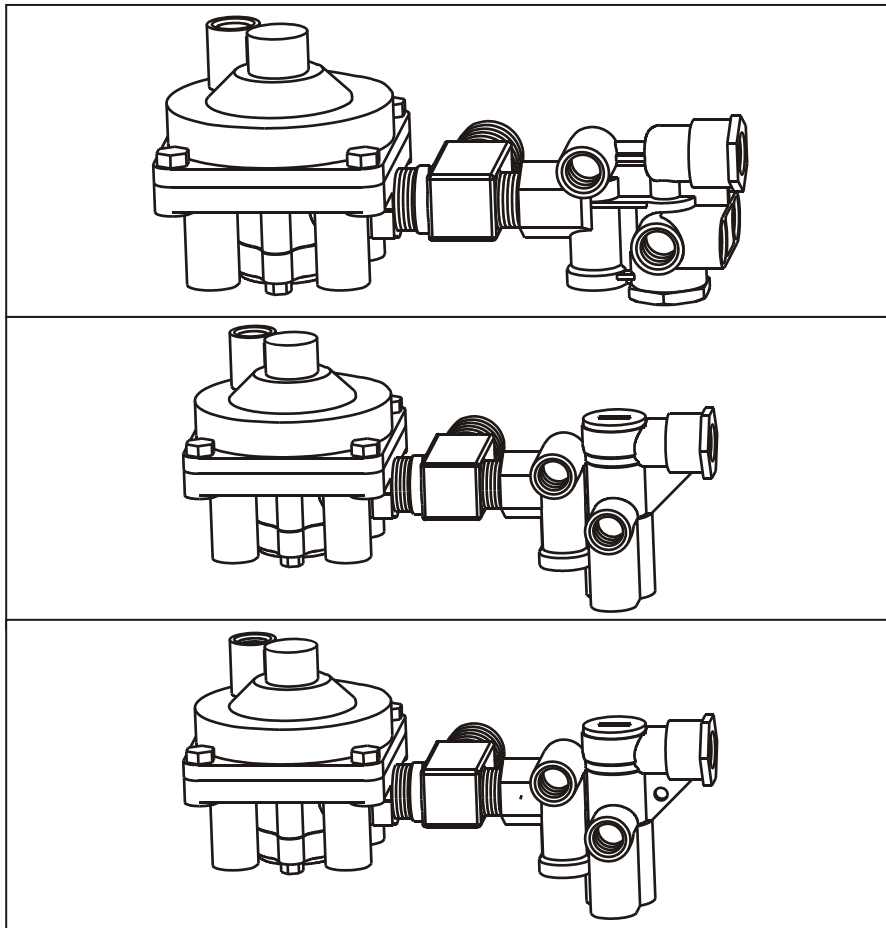
INFORMATION:

- Used primarily for single axle trailer service brakes or tandem axle by axle trailer brake designs
- Mounting Hardware on pages 61 & 62
- Piping examples on page 72
- **PLUG UNIT ASSEMBLY 110227 (No plug unit available for 110507)**
- **REPAIR KIT 912-5**

PART NUMBER	PORT SIZES (NPT)			NOMINAL CRACK PRESSURE	MOUNTING INFORMATION
	Control (2)	Reservoir	Delivery		
110197	3/8"	1/2"	3/8"	4.0 psi	Use 6002 or 6003 nipple
110198	3/8"	1/2"	3/8"	4.0 psi	6002 nipple included
110199	3/8"	1/2"	3/8"	4.0 psi	6003 nipple included
110275	3/8"	1/2"	3/8"	4.0 psi	Frame Bracket Kit 110237 included
110507	3/8"	1/2"	3/8"	6.0 psi	Use 6002 or 6003 nipple

RELAY & SPRING BRAKE VALVES

RSA Valves (Relay & Spring Brake Valve Assembly)



INFORMATION:

- Replaces Haldex / Midland Full Function Valves FFV & FF2
- Uses 110415 4-port Service Relay Valve & allows for choice of Service Reservoir Priority with 110700 SBCV or Spring Brake Priority with either 110500 or 110800 SBCV
- Allows for future repair or replacement of individual Relay Valve or Spring Brake Control Valve instead of having to replace the entire Full Function Valve
- Relay Valve & Spring Brake Control Valve come assembled on heavy duty brass tee with vibraseal

PART NUMBER	SYSTEM PRIORITY	VALVES MOUNTED ON BRACKET		NOMINAL CRACK PRESSURE	TANK PORT MOUNTING SIZE
		Relay Valve	Spring Brake Cont.		
110542	Spring Brake	110415	110500	4.0 psi	1/2" NPT
110544	Spring Brake	110415	110500	4.0 psi	3/4" NPT
110742	Service Reservoir	110415	110700	4.0 psi	1/2" NPT
110744	Service Reservoir	110415	110700	4.0 psi	3/4" NPT
110842	Spring Brake	110415	110800	4.0 psi	1/2" NPT
110844	Spring Brake	110415	110800	4.0 psi	3/4" NPT