

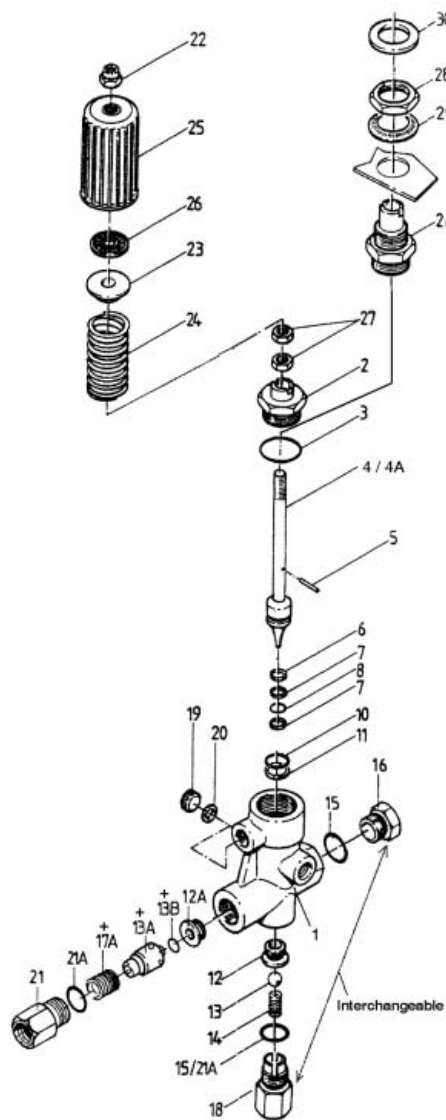
Models

Unloader / Regulator

22760A / 22760L / 22760APM

22760A-SS / 22760-01 (Viton) / 22760-03 (EPDM) = Unloaders

22760AR / 22760LR / 22760ARPM = Regulators



†Items 13A, 13B, & 17A are not present in 22760AR, 22760LR or 22760ARPM

Repair Kit # 09108

Includes Items #: 3, 6, 7, 8, 10, 11, 13B, 15, 21A

Repair Kit # 09108-01 - Viton

Includes Items #: 3, 6, 7, 8, 10, 11, 13B, 15, 21A

Repair Kit # 09108-03 - EPDM

Includes Items #: 3, 6, 7, 8, 10, 11, 13B, 15, 21A

ITEM#	PART#	DESCRIPTION	QTY.
1	12301	Valve Body	1
2	12302	Guide Plug (Except 22760APM, 22760ARPM)	1
2A	12336	Guide Plug (22760APM, 22760ARPM Only)	1
3	06015	O-Ring (Except 22760-01, 22760-03)	1
3	06015-0001	O-Ring, Viton (22760-01 Only)	1
3	06015-0003	O-Ring, EPDM (22760-03 Only)	1
4	12303	Piston Rod (Except 22760APM, 22760ARPM)	1
4A	12337	Piston Rod (22760APM, 22760ARPM Only)	1
5	22764	Serrated Pin	1
6	12305	Guide Ring	1
7	12018	Guide Ring	2
8	11507	O-Ring (Except 22760-01, 22760-03)	2
8	11507-0001	O-Ring, Viton (22760-01 Only)	2
8	11507-0003	O-Ring, EPDM (22760-03 Only)	2
10	12307	O-Ring, Piston (Except 22760-01, 22760-03)	1
10	12307-0001	O-Ring, Piston, Viton (22760-01 Only)	1
10	12307-0003	O-Ring, EPDM (22760-03 Only)	1
11	12308	Backup Ring, Piston (Except 22760-01, 22760-03)	1
11	12308-0001	Backup Ring, Viton (22760-01, 22760-03 Only)	1
12	12309	Valve Seat	1
12A	12324	Kick Back Valve Seat	1
13	12014	Valve Ball	1
13A+	12325	Kick Back Valve Cone	1
13B+	12326	O-Ring (Except 22760-01, 22760-03)	1
13B+	12326-0001	O-Ring, Viton (22760-01, 22760-03 Only)	1
14	12321	Bypass Valve Spring	1
15	12007	O-Ring (Except 22760-01, 22760-03)	2
15	12007-0001	O-Ring, Viton (22760-01 Only)	2
15	12007-0003	O-Ring, EPDM (22760-03 Only)	1
16	12311	Plug	1
17A+	12328	Kick Back Valve Spring	1
18	12313	Spring Retainer (Except 22760A-SS)	1
18	12350-4000	Spring Retainer S.S. (22760A-SS Only)	2
19	12280	Plug	2
20	12332	Copper Seal	2
21	12350-4000	Kick Back Valve, Spring Retainer	1
21A	12351	O-Ring (Except 22760A-SS)	1
21A	12351	O-Ring (22760A-SS Only)	2
21A	07770-0001	O-Ring, Viton (22760-01, 22760-03 Only)	1
22	12317	Lock Nut	1
23	12318	Spring Tension Disc	1
24	12319	Spring (except 22760L & 22760LR)	1
24	12106	Spring (22760L & 22760LR Only)	1
25	13263	Hand Wheel, Brown	1
26	12323	Bearings	1
27	12320	Limiting Nut	2
28	12335	Nut (22760APM, 22760ARPM Only)	1
29	12333	Retainer (22760APM, 22760ARPM Only)	1
30	12334	Lock Washer (22760APM, 22760ARPM Only)	1

OPERATING CONDITIONS

	U.S	(Metric)
Flow (22760A, 22760AR, 22760ARPM, 22760APM, 22760A-SS, 22760-01):	1.3 - 8 GPM	(5-30 L/min)
Flow (22760L, 22760LR & 22760-03):	0.03 - 8 GPM	(0.1 - 30 L/min)
Pressure (22760A, 22760AR, 22760ARPM, 22760APM, 22760A-SS, 22760-01):	145 - 3045 PSI	(10 - 210 Bar)
Pressure (22760L, 22760LR & 22760-03):	600 PSI	(40 bar)
Max Temp.:	160° F	70° C
Inlet Port:		3/8" FNPT
Outlet Port:		3/8" FNPT
Bypass:		1/4" FNPT

INSTALLATION & OPERATING INSTRUCTIONS

Construction Characteristics

- Ball Kick-Back Valve, Tapered Kick-Back Valve or Plate Kick-Back Valve
- Interchangeable Stainless Steel Valve Seats.
- Connections for Pressure Gauge, Pressure Switch and Flow Switch.

Operation

The whole discharge must be guided through the valve. Should the actual operating pressure exceed the adjusted operating pressure, the valve then acts as a pressure regulator. When the spray gun shuts off, the valve switches to pressure-free bypass operation, and the spray pressure between gun and valve remains idle. The valve can be operated together with several spray guns. It is also possible to connect several pumps to one common discharge line.

Service and Adjustment

Service and adjustment of the unloader should only be performed by a skilled tradesmen.

Safety Instructions

Important! Observe direction of flow. Under no circumstances, should the bypass be closed or fitted with any shut-off device.

Replacement of Piston Seals

1. Remove the guide plug (2) out of valve body (1). Remove the serrated pin (5) and take the piston rod (4/4A) out of plug.
2. Cut out the worn seals.
3. Grease all parts lightly with Silicone before reinstalling.
4. Put guide ring (6), O-ring (8) and guide ring (7) carefully over the threads onto the piston rod. Note order of installation.
5. Clip the O-ring (10) and backup rings (11) onto the piston body. Check inner surfaces of casing and guide plug (dirt or damage will quickly wear out seals).

To Check Valves

1. Remove the plugs (16, 18, 21) and examine balls (13) and cones (13A), as well as valve seats (12 /12A) for wear.
2. Valve seats can be removed with an inner-hexagon-wrench (6mm). If the valve seat (12) (in the kick-back ball version) is worn, the ball (13) must be "coined" carefully against the sealing edges of the valve seat.
3. Glue in new valve seats with Loctite 572. Before putting into operation, allow the glue to dry for 60 minutes.

Adjusting Pressure

1. The Valve should be tension-free, i.e., loosen nut (22) and hand wheel (25) so that the piston rod (4/4A) can be moved manually.
2. Spring tension is performed with the pressure spring (24) and nut (22) via the spring tension disc (23). Adjustments are to be made with an open gun [if multiple guns are used, all need to be open] and while the pump is running. When the required operating pressure has been reached, no more water should run out on the bypass side. On the hand-wheel-version, the maximum operating pressure can be set by tightening and locking the limiting nut (27) to the spring tension disc (23). Various operating pressures (up to the maximum operating pressure) can be set by turning the hand wheel. If the nozzle hole is properly suited to the output and pressure of the pump, no more water should flow through the bypass after the required operating pressure has been reached. If the required operating pressure has been reached and the nozzle hole is too small to allow all the fluid to run through the hole, **do not adjust** account the valve higher than the maximum operating pressure of the pump. In this case, the bypass is to be left partially open. Nevertheless, it is recommended to use properly sized nozzles.

Troubleshooting Guide		
Problem	Cause	Remedy
Valve switches repeatedly when gun is closed	Leaky gun	Repair gun
	Leaky pressure pipe	Seal pressure pipe
	Leaky O-rings (8,10)	Replace O-rings.
	Worn out kick-back valve body (12A) or o-ring (13B)	Replace kick-back valve body or o-ring or examine valve seat.
Leaky piston rod	Defective O-Ring (8) / support Ring (7)	Replace piston rod seals and examine surfaces in guide plug
Leaky bypass at nominal pressure	Nozzle too small, too much water	Install larger nozzle
	Worn out bypass valve	Examine ball (13) and bypass valve body (12) and renew as necessary
Pressure Gauge shows high pressure peaks when shutting off gun	Valve set too high above operating pressure	Turn back hexagon nut (22) or hand wheel (25) or readjust locking nuts (27)



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