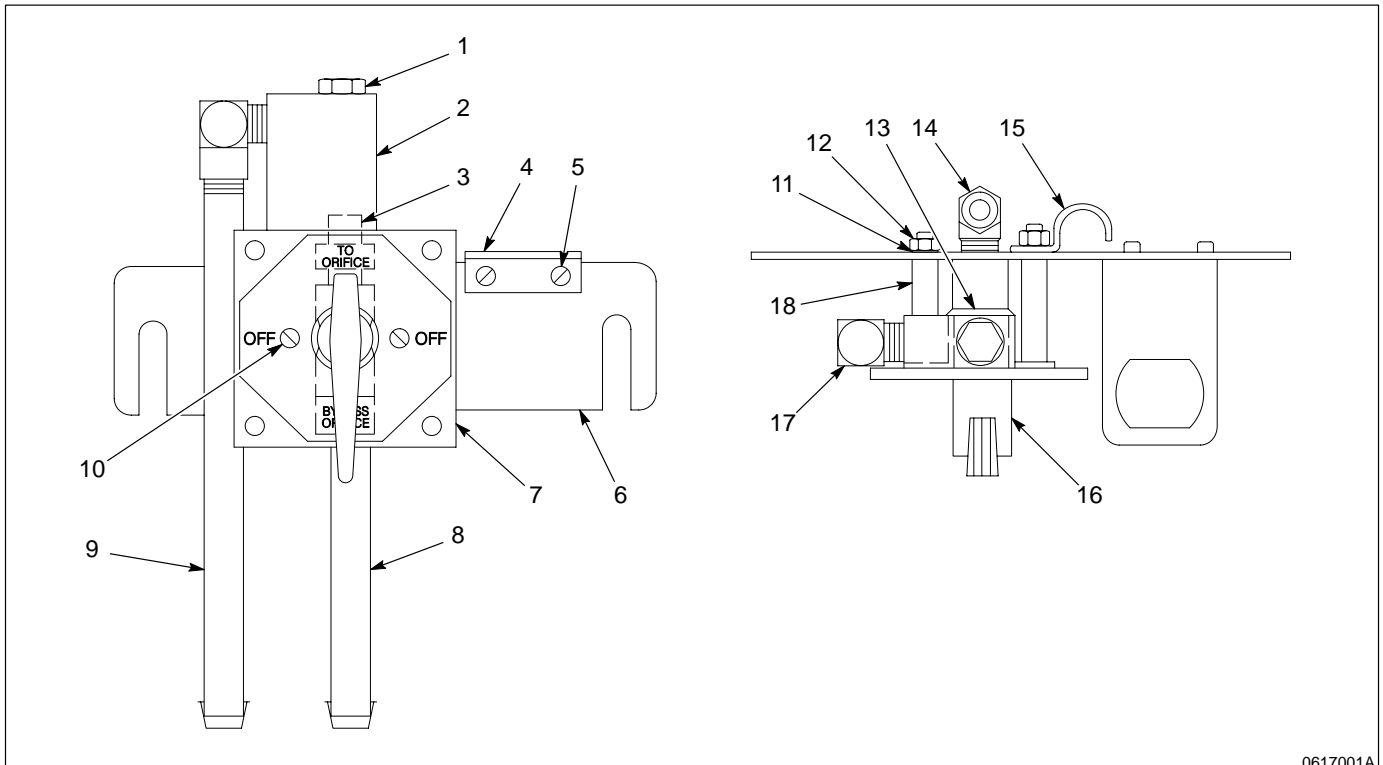


Fixed Orifice Circulation Valve

1. Description

See Figure 1. The fixed orifice circulation valve is available in a variety of orifice sizes. The fixed orifice circulation valve maintains a fixed circulation rate based on the size of the orifice installed.



0617001A

Fig. 1 Fixed Orifice Circulation Valve

2. Parts

Use the following lists to order replacement parts and orifice kits for the fixed orifice circulation valve.

Fixed Orifice Circulation Valve

See Figure 1. Use the following list to order replacement parts for the fixed orifice circulation valve.

Item	Part	Description	Quantity	Note
—	248 884	Valve, circulation, fixed orifice	1	A
1	248 536	• Holder, restrictor	1	
2	248 534	• Block, orifice	1	
3	973 073	• Nipple, hex, $\frac{3}{8}$ x $\frac{3}{8}$ x 1.45	1	
4	750 475	• Bracket, agitator	1	
5	981 200	• Screw, fillister head, with lock washer, $\frac{1}{4}$ -20 x 0.500	2	
6	750 474	• Bracket, 5 gallon bucket	1	
7	248 533	• Plate, valve mounting	1	
8	973 060	• Nipple, steel, sched 40, $\frac{3}{8}$, 7.38	1	
9	973 074	• Nipple, steel, sched 40, $\frac{3}{8}$, 12.0	1	
10	981 506	• Screw, flat head, $\frac{1}{4}$ -20 x 3.0	2	
11	983 140	• Washer, lock, e, $\frac{1}{4}$	2	
12	984 130	• Nut, hex, heavy, $\frac{1}{4}$ -20	2	
13	750 055	• Bracket	1	
14	972 180	• Elbow, male, 37, $\frac{1}{2}$ -20 x $\frac{3}{8}$ NPT	1	
15	939 023	• Clip, conduit	1	
16	247 948	• Valve, ball, 3-way	1	B
17	973 175	• Elbow, pipe, 90°, $\frac{3}{8}$	1	
18	248 881	• Spacer	2	

NOTE A: Orifices are not included with the circulation valve. Refer to *Orifice Kits* for ordering information.

B: Refer to manual 6-1C, *Three-Way Ball Valve*, for replacement parts for the three-way ball valve.

Orifice Kits

See Figure 2. Use the following lists to order an orifice kit for the fixed-orifice circulation valve.

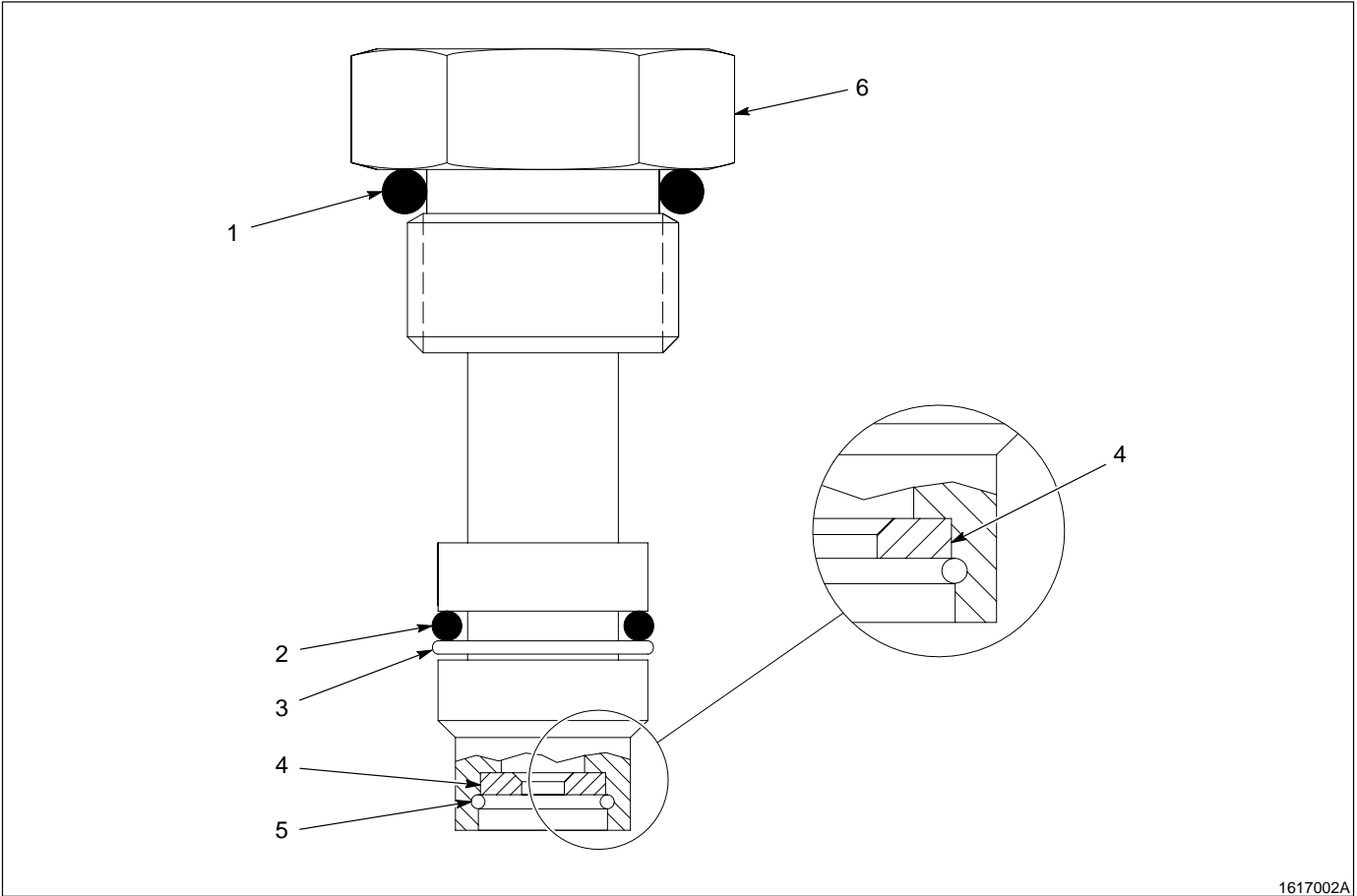


Fig. 2 Orifice Kits

Note: Install the chamfered restrictor (4) as shown in Figure 2.

Item	Part	Description	Quantity	Note
—	248 537	Accessory group, orifice, 0.010 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 910	• Restrictor, 0.010 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Orifice Kits (contd)

Item	Part	Description	Quantity	Note
—	248 538	Accessory group, orifice, 0.012 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 912	• Restrictor, 0.012 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 539	Accessory group, orifice, 0.015 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 915	• Restrictor, 0.015 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 540	Accessory group, orifice, 0.018 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 918	• Restrictor, 0.018 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 541	Accessory group, orifice, 0.020 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 920	• Restrictor, 0.020 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 542	Accessory group, orifice, 0.025 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 925	• Restrictor, 0.025 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 543	Accessory group, orifice, 0.033 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 933	• Restrictor, 0.033 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Orifice Kits (contd)

Item	Part	Description	Quantity	Note
—	248 544	Accessory group, orifice, 0.040 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 940	• Restrictor, 0.040 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 545	Accessory group, orifice, 0.050 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 950	• Restrictor, 0.050 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 546	Accessory group, orifice, 0.060 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 980	• Restrictor, 0.060 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 547	Accessory group, orifice, 0.070 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 981	• Restrictor, 0.070 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 548	Accessory group, orifice, 0.080 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 982	• Restrictor, 0.080 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 549	Accessory group, orifice, 0.100 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 983	• Restrictor, 0.100 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Orifice Kits (contd)

Item	Part	Description	Quantity	Note
—	248 550	Accessory group, orifice, 0.120 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 984	• Restrictor, 0.120 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 551	Accessory group, orifice, 0.140 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 985	• Restrictor, 0.140 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

Item	Part	Description	Quantity	Note
—	248 552	Accessory group, orifice, 0.160 in.	1	
1	945 046	• O-ring, Viton, black, $\frac{5}{16}$ tube	1	
2	940 113	• O-ring, Viton, black, 0.313 x 0.438 in.	1	
3	954 028	• Back-up ring, single, $\frac{5}{16}$ x $\frac{7}{16}$	1	
4	029 986	• Restrictor, 0.160 in.	1	
5	986 119	• Retaining ring, internal, 31, bowed	1	
6	248 536	Holder, restrictor	1	A
NOTE A: See Figure 1, (1) for the location of the restrictor holder.				

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