



End Operated Vacuum Valves with Sliding Shaft Seal

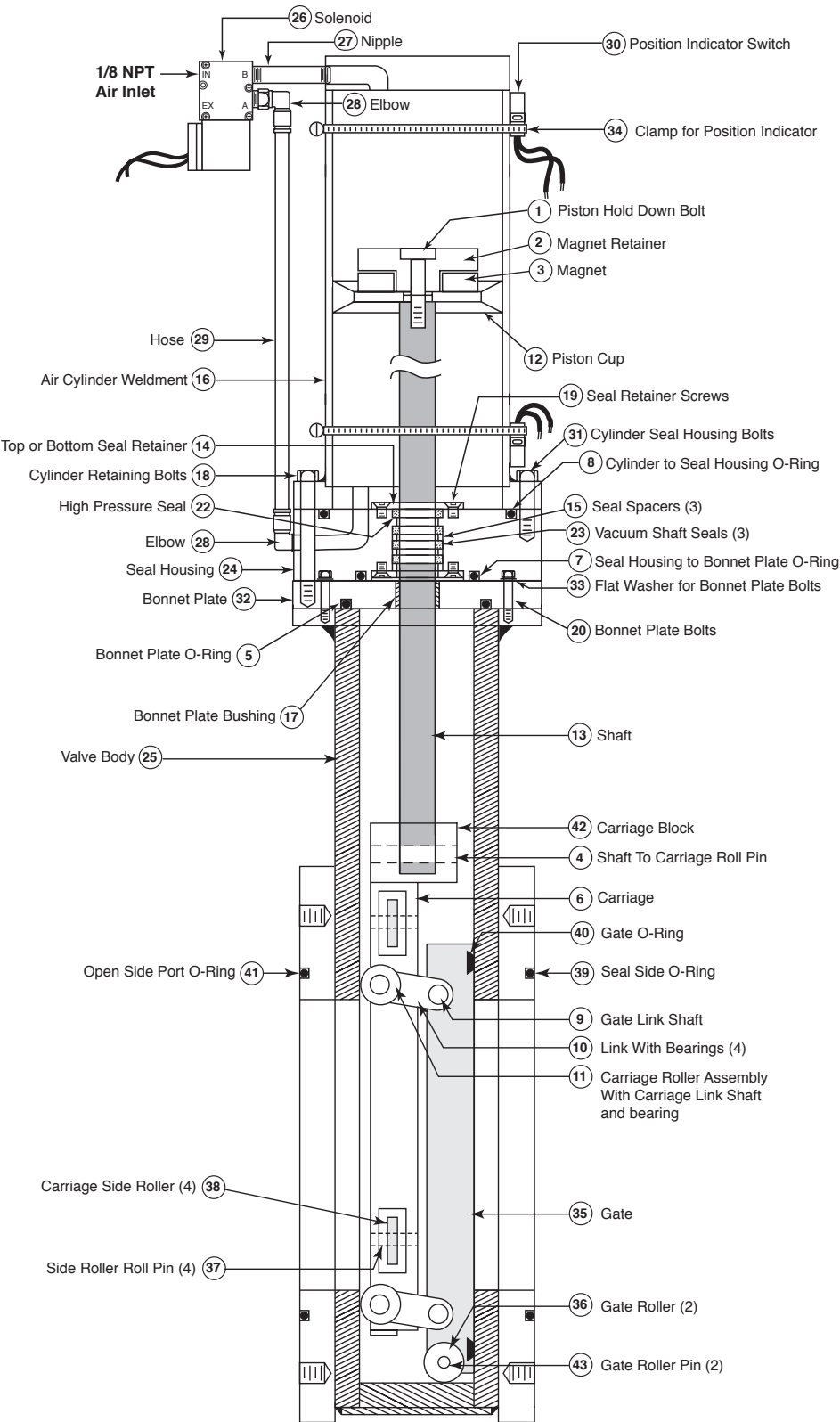
**Instruction Manual
& Spare Parts List
for Valves with ISO, CONFLAT,
ANSI Standard, & ANSI
Large Port (LP) Flanges.**

INTRODUCTION:

The uncomplicated design of the End Operated Valves makes servicing very easy. Assembly and reassembly requires no special training or practice. There is only one way to put any part or assembly in place and there are no critical adjustments. The drawing shows the details of the stem seal and the no-scuff sealing gate action. The gate O-Ring seals in a motion perpendicular to the seat, without any scuffing or dragging of the O-Ring. The gate-carriage assembly is held securely in the open or closed positions by the air pressure in the cylinder. The operating air pressure should be regulated so that it is no more than 5 Kg/cm² (71 psi) to help prevent damage inside the valve in case of an obstruction or hang up in the internal mechanism. This air pressure also helps minimize vibration when the gate-carriage assembly strikes the valve body at the end of the opening or closing stroke.

DISASSEMBLY:

To disassemble just remove the bolts from the bonnet flange and lift the actuator, bonnet plate, and gate-carriage assembly from the valve body. The body section can stay bolted in the vacuum system. To inspect or replace the piston cup disconnect one end of the plastic air line and remove the bolts from the air cylinder flange. Then carefully lift the air cylinder straight up from the bonnet plate until it has cleared the piston.



SPARE PARTS FOR VACUUM RESEARCH END OPERATED VALVES

DESCRIPTION	END STD. 2	Port 2"	END LP 2	2" ANSI Flange, 2 1/2" Port
	END ISO 63	ISO 63mm Port	END LP 3	3" ANSI Flange, 4" Port
			END STD 4	4" ANSI Flange, 4" Port
			END ISO 100	ISO-100 mm Port
			END CF 6 IN. OD	6" O.D. X 4" Port
Clean and test Valves Returned to Factory	X815000	\$81.00	X815001	\$81.00
Complete Shaft Seal & O-Ring Kit, Buna-N w/o Flange O-Rings	X701EO100B	\$14.00	X701EO200B	\$14.00
Complete Shaft Seal & O-Ring Kit, VITON w/o Flange O-Rings	X701EO100V	\$51.00	X701EO200V	\$51.00
Shaft Seal Kit Only, 3 Seal Rings, 2 Spacers plus Wiper Seal, Viton	X706EO116V	\$16.00	X706EO116V	\$16.00
Shaft Seal Kit Only, 3 Seal Rings, 2 Spacers plus Wiper Seal, Buna-N	X706EO116B	\$10.00	X706EO116B	\$10.00
Valve Body, N1 Style, no neck (Contact Factory)	STD2	\$256.,	LP2 \$256., LP3 \$343.,	STD 4 \$348, ISO 100 \$376.
Gate Carriage Assembly with Gate O-Ring	X810541	\$300.00	X810537	\$300.00
Carriage Shaft, Roller and Link Assembly with Bushings and Retaining Ring, Set of 4	X806504	\$104.00	X806500	\$104.00
1. Piston Hold Down Bolt	X702014	\$1.00	X702014	\$1.00
2. Magnet Retainer	X700463	\$23.00	X700046	\$23.00
3. Magnet	X132003	\$22.00	X132003	\$22.00
4. Shaft to Carriage Roll Pin	X702036	\$1.00	X702036	\$1.00
5. Bonnet Plate O-Ring (Add Suffix B for Buna V forViton)	X701153 B.	\$1.00 V. \$3.00	X701249 B.	\$1.00 V. \$6.00
6. Carriage	X700139	\$152.00	X700052	\$159.00
7. Seal Housing to Bonnet Plate O-Ring (Add Suffix B for Buna V forViton)	NA		X701226 B.	\$1.00 V. \$4.00
8. Cylinder to Seal Housing O-Ring (Add Suffix B for Buna V forViton)	X701134 B.	\$1.00 V. \$2.00	X701231 B.	\$1.00 V. \$4.00
9. Gate Link Shaft (4 Required)	X02LP131R2	\$2.00 EACH	X02LP131R2	\$2.00 EACH
10. Link With Bearings (4 Required)	X700137A	\$11.00	X04LP133	\$11.00
11. Carriage Roller Assembly (4 Required)	X706124	\$16.00 EACH	X706124	\$16.00 EACH
12. Piston Cup	X205006	\$17.00	X205002	\$17.00
13. Actuator Shaft	X700245	\$92.00	X700048	\$100.00
14. Top or Bottom Seal Retainer	X700404	\$20.00	X700045	\$20.00
15. Seal Spacers 2 pc on 2" & ISO 63; 3 Req'd on All other Sizes	X700054 (2	\$11.00)	X700054	\$11.00
16. Air Cylinder Weldment	X740015	\$201.00	X740003	\$203.00
17. Bonnet Plate Bushing	NA		X702142	\$10.00
18. Cylinder Retaining Bolts	X702045 (4)	.50 EACH/4 Required	X702048 (6)	.50 EACH/6 Required
19. Seal Retainer Screws (4Required) per Retainer	X702055 (4)	\$1.00/4 PCS	X702055	\$1.00/4 PCS
20. Bonnet Plate Bolts	X702220 (2)	.50 EACH/2 Required	X702016 (8)	.50 EACH/8 Required
22. High Pressure Seal (Add Suffix B for Buna V forViton)	X70112500500 B.	\$7.00 V. \$19.00	X70112500500 B.	\$7.00 V. \$19.00
23. Vacuum Shaft Seals (3 required) (Add Suffix B for Buna V for Viton)	X701Q4206 B.	\$4.00 V. \$9.00	X701Q4206 B.	\$4.00 V. \$9.00
24. Seal Housing	Integral with #32		X700067	\$125.00
25. Valve Body	P/N as required to indicate roughing ports and O-Rings on Flanges			
26. Solenoid	115VAC P/N X703005, 24VDC P/N X.703031, 220VAC P/N X134010 \$87.00			
27. Nipple	X300009	\$3.00	X300009	\$3.00
28. Elbow (2 required)	X702043	\$4.00 EACH	X702043	\$4.00 EACH
29. Hose	X701101	\$1.00/ft.	X701101	\$1.00/ft.
30. Position Indicator Switch	X703016	\$65.00	X703016	\$65.00
31. Cylinder Seal Housing Bolts	NA		NA	
32. Bonnet Plate	X700138	Includes Seal Housing \$140.00	X700241	\$102.00
33. Flat Washer for Bonnet Plate Bolts	X702250	\$1.00/8 PCS	X702250(8)	\$1.00/8 PCS
34. Clamp for Position Indicator	X703101	\$3.00	X703101	\$3.00
35. Gate	X700140	\$100.00	X700051	\$105.00
36. Gate Roller (2 required)	X02LP136A	\$3.00 EACH	X02LP136A	\$3.00 EACH
37. Side Roller Pin (4 required)	X702032	\$1.00/4	X702032	\$1.00/4
38. Carriage Side Roller (4 required)	X700049	\$2.00 EACH	X02LP137A	\$2.00 EACH
39. Seal Side O-Ring (Add Suffix B for Buna V forViton)				
40. Gate O-Ring (Add Suffix B for Buna V forViton)	X701232	B. \$1.00 V. \$4.00	X701244	B \$2.00 V \$5.00
41. Open Side Port O-Ring (Add Suffix B for Buna V for Viton)				
42. Carriage Block	X700136	\$34.00	X700053	\$42.00
43. Gate Roller Pin	X702030	\$1.00	X702030	\$1.00
44. Spring Set	X706122	\$4.00	X706106	\$4.00

SPARE PARTS FOR VACUUM RESEARCH END OPERATED VALVES

DESCRIPTION	END LP 4 4" ANSI Flange, 6" Port END STD 6 6" ANSI Flange, 6" Port END ISO 160 ISO-100, 150 - 160 mm Port END CF 8 IN. OD 8" O.D. X 6" Port	END LP 6 6" ANSI Flange, 8" Port END STD 8 8" ANSI Flange, 8" Port END ISO 200 ISO-200 mm Port END CF 10 IN. OD 10" O.D. X 8" Diam Port
Clean and test Valves Returned to Factory	X815002 \$81.00	X815003 \$136.00
Complete Shaft Seal & O-Ring Kit, Buna-N w/o Flange O-Rings	X701EO400B \$22.00	X701EO600B \$40.00
Complete Shaft Seal & O-Ring Kit, VITON w/o Flange O-Rings	X701EO400V \$77.00	X701EO600V \$113.00
Shaft Seal Kit Only, 3 Seal Rings, 2 Spacers plus Wiper Seal, Viton	X706EO118V \$19.00	X706EO118V \$19.00
Shaft Seal Kit Only, 3 Seal Rings, 2 Spacers plus Wiper Seal, Buna-N	X706EO118B \$10.00	X706EO118B \$10.00
Valve Body, N1 Style, no neck (Contact Factory)	LP4 \$403., STD 6 \$457., ISO-160 \$458., CF 8 \$479.	LP6 \$708., STD 8 \$970., ISO-200 \$773
Gate Carriage Assembly with Gate O-Ring	X810538 \$342.00	X810539 \$454.00
Carriage Shaft, Roller and Link Assembly with Bushings and Retaining Ring, Set of 4	X806500Rev1 \$104.00	X806500 \$104.00
1. Piston Hold Down Bolt	X702210 \$1.00	X702210 \$1.00
2. Magnet Retainer	X700031 \$47.00	X700031 \$47.00
3. Magnet	X132002 \$22.00	X132002 \$22.00
4. Shaft to Carriage Roll Pin	X702036 \$1.00	X702084 \$1.00
5. Bonnet Plate O-Ring (Add Suffix B for Buna V forViton)	X701260 \$2.50	X701265 \$3.50
6. Carriage	4EO117M VRL Casting \$165.00	X700117 \$183.00
7. Seal Housing to Bonnet Plate O-Ring (Add Suffix B for Buna V forViton)	X701226 B \$1.00 V \$4.00	X701226 B \$1.00 V \$4.00
8. Cylinder to Seal Housing O-Ring (Add Suffix B for Buna V forViton)	X701235 B \$.35 V \$1.00	X701235 B \$.35 V \$1.25
9. Gate Link Shaft (4 Required)	X02LP131R2 \$2.00 EACH	X02LP131R 2 \$2.00 EACH
10. Link With Bearings (4 Required)	X04LP133 \$11.00	X04LP133 \$11.00
11. Carriage Roller Assembly (4 Required)	X706124 \$18.00	X706124 \$18.00
12. Piston Cup	X205004 \$22.00	X205004 \$21.00
13. Actuator Shaft	X700316 \$100.00	X700202 \$119.00
14. Top or Bottom Seal Retainer	X700029 \$20.00	X700029 \$20.00
15. Seal Spacers 2 pc on 2" & ISO 63; 3 Req'd on All other Sizes	X700028 \$11.00 EACH	X700028 \$11.00 EACH
16. Air Cylinder Weldment	X740024 \$212.00	X740011 \$212.00
17. Bonnet Plate Bushing	X702254 \$11.00	X702254 \$11.00
18. Cylinder Retaining Bolts	X702219 (6) .50 EACH/6 Required	X702219 (6) .50 EACH/6 Required
19. Seal Retainer Screws (4 Required) per Retainer	X702055 \$1.00/4 PCS	X702055 \$1.00/4 PCS
20. Bonnet Plate Bolts	X702016 (8) 50 EACH/8 Required	X702016 (8) 50 EACH/8 Required
22. High Pressure Seal (Add Suffix B for Buna V forViton)	X70112500625 B \$7.00 V \$19.00	X70112500625 B \$7.00 V \$19.00
23. Vacuum Shaft Seals (3 required) (Add Suffix B for Buna V for Viton)	X701Q4208 B \$6.00 V \$13.00	X701Q4208 B \$6.00 V \$13.00
24. Seal Housing	X700333 \$128.00	X700333 \$128.00
25. Valve Body	P/N as required to indicate roughing ports and O-Rings on Flanges	
26. Solenoid	115VAC P/N X703005, 24VDC P/N X703031, 220VAC P/N X134010 \$87.00	
27. Nipple	X300009 \$3.00	X300009 \$3.00
28. Elbow (2 required)	X702043 \$4.00 EACH	X702043 \$4.00 EACH
29. Hose	X701101 \$1.00/FT.	X701101 \$1.00/FT.
30. Position Indicator Switch	X703016 \$65.00	X703016 \$65.00
31. Cylinder Seal Housing Bolts	NA	NA
32. Bonnet Plate	X700242 \$154.00	6END110 \$158.00
33. Flat Washer for Bonnet Plate Bolts	X702250(8) \$1.00/8 PCS	X702250(8) \$1.00/8 PCS
34. Clamp for Position Indicator	X703101 \$3.00	X703101 \$3.00
35. Gate	X04WA116 \$162.00	X406116 \$187.00
36. Gate Roller (2 required)	X04LP136A \$3.00 EACH/2 Required	X06LP136B \$3.00 EACH/2 Required
37. Side Roller Pin (4 required)	X702032 \$1.00/4	X702032 \$1.00/4
38. Carriage Side Roller (4 required)	X700310 (4) \$2.00 EACH	F-X02LP137A \$2.00 EACH
39. Seal Side O-Ring (Add Suffix B for Buna V forViton)		
40. Gate O-Ring (Add Suffix B for Buna V forViton)	X701259 B \$3.00 V \$7.00	X701369 B \$5.00 V \$13.00
41. Open Side Port O-Ring (Add Suffix B for Buna V for Viton)		
42. Carriage Block	NA	X700019 \$62.00
43. Gate Roller Pin	X702037 \$1.00	X702084 \$1.00
44. Spring Set	X706206 \$7.00	X706306 \$15.00

SPARE PARTS FOR VACUUM RESEARCH END OPERATED VALVES

DESCRIPTION	END LP 8	8" ANSI Flange, 10" Port	END LP 10	10" ANSI Flange, 12" Port	END LP 10	10" ANSI Flange, 12" Port
	END STD 10	10" ANSI Flange, 10" Port	END STD 12	12" ANSI Flange, 12" Port	END STD 12	12" ANSI Flange, 12" Port
	END ISO 250	ISO-250 mm Port	END ISO 320	ISO-320 mm Port	END ISO 320	ISO-320 mm Port
	END CF 12 IN. OD	12" O.D. X 10" Diam. Port	END CONFLAT 14	14" O.D. X 12" Diam Port	END CONFLAT 14	14" O.D. X 12" Diam Port
				Oct. 31 2005 and Before		Nov 1, 2005 and Later
Clean and test Valves Returned to Factory	X815004	\$152.00	X815005	\$163.00		
Complete Shaft Seal & O-Ring Kit, Buna-N w/o Flange O-Rings	X701EO1000B	\$56.00	X701EO1200B	\$59.00	X810749	\$59.00
Complete Shaft Seal & O-Ring Kit, VITON w/o Flange O-Rings	X701EO1000V	\$135.00	X701EO1200V	\$138.00	X810755	\$138.00
Shaft Seal Kit Only, 3 Seal Rings, 2 Spacers plus Wiper Seal, Viton	X706EO118V	\$19.00	X706EO318V	\$19.00	X810701	\$19.00
Shaft Seal Kit Only, 3 Seal Rings, 2 Spacers plus Wiper Seal, Buna-N	X706EO118B	\$10.00	X706EO318B	\$10.00	X810702	\$10.00
Valve Body, N1 Style, no neck (Contact Factory)	LP8 \$1406., STD 10 \$1471., ISO-250 \$1493.		LP10 \$1515., STD 12 \$1629., ISO-320 \$1656.		CONTACT FACTORY	
Gate Carriage Assembly with Gate O-Ring	X810540	\$790.00	X810617	\$790.00	X810617	\$790.00
Carriage Shaft, Roller and Link Assy. with Bushings and Retaining Ring, Set of 4	X806503	\$310.00	X806503	\$310.00	X806503	\$310.00
1. Piston Hold Down Bolt	X702210	\$1.00	X702210	\$1.00	X702210	\$1.00
2. Magnet Retainer	X700031	\$47.00	X700031	\$47.00	X700031	\$47.00
3. Magnet	X132002	\$22.00	X132002	\$22.00	X132002	\$22.00
4. Shaft to Carriage Roll Pin	X702084	\$1.00	X702084	\$1.00	X702084	\$1.00
5. Bonnet Plate O-Ring (Add Suffix B for Buna V for Viton)	X701274	B \$3.00 V \$10.00	X701274	B \$3.00 V \$10.00	X701274	B \$3.00 V \$10.00
6. Carriage	X700018	\$213.00	X700228	\$286.00	X700228	\$286.00
7. Seal Housing to Bonnet Plate O-Ring (Add Suffix B for Buna V for Viton)	X701226	B \$1.00 V \$4.00	X701228	B \$1.00 V \$4.00	X701232	B \$1.00 V \$4.00
8. Cylinder to Seal Housing O-Ring (Add Suffix B for Buna V for Viton)	X701238	B \$1.00 V \$5.00	X701243	B \$1.00 V \$5.00	X701244	B \$1.00 V \$5.00
9. Gate Link Shaft (4 Required)	X700022	\$4.00 EACH	X700022	\$4.00 EACH	X700022	\$4.00 EACH
10. Link With Bearings (4 Required)	X700020	\$22.00 EACH	X700020	\$22.00 EACH	X700020	\$22.00 EACH
11. Carriage Roller Assembly (4 Required)	X706424	\$45.00 EACH	X706424	\$45.00 EACH	X706424	\$45.00 EACH
12. Piston Cup	X205001	\$26.00 EACH	X205007	\$27.00 EACH	X205003	\$30.00 EACH
13. Actuator Shaft	X700050	\$128.00	X700216	\$128.00	X700748	\$150.00
14. Top or Bottom Seal Retainer	X700029	\$20.00	X700135	\$22.00	X700126 Top X700132 Bottom	\$27. EA
15. Seal Spacers 2 pc on 2" & ISO 63; 3 Req'd on All other Sizes	X700028	\$11.00 EACH	X700134	\$14.00 EACH	X700130	\$18.00 EACH
16. Air Cylinder Weldment	X740044	\$277.00	X740020	\$372.00	X740108	\$390.00
17. Bonnet Plate Bushing	X702254	\$11.00	X702232	\$14.00	X702143	\$24.00
18. Cylinder Retaining Bolts	X702219	.50 EACH/6 Required	X702219	.50 EACH/6 Required	X702219	.50 EACH/6 Required
19. Seal Retainer Screws (4 Required) per Retainer	X702055	\$1.00/4 PCS	X702055	\$1.00/4 PCS	X702141	\$1.00/4 PCS
20. Bonnet Plate Bolts	X702018	.50 EACH/12 Required	X701020	.50 EACH/12 Required	X702018	.50 EACH/12 Required
22. High Pressure Seal (Add Suffix B for Buna V for Viton)	X70112500625	B \$8.00 V \$19.00	X70112500750	B \$9.00 V \$22.00	X70125001000	B \$9.00 V \$45.00
23. Vacuum Shaft Seals (3 required) (Add Suffix B for Buna V for Viton)	X701Q4208	B \$6.00 V \$13.00	X701Q4210	B \$8.00 V \$15.00	X701Q4214	B \$9.00 V \$16.00
24. Seal Housing	X700414	\$164.00	X700294	\$201.00	X700742	\$201.00
25. Valve Body			P/N as required to indicate roughing ports and O-Rings on Flanges			
26. Solenoid			115VAC P/N X703005, 24VDC P/N X703031, 220VAC P/N X134010 \$87.00			
27. Nipple	X300009	\$3.00	X300009	\$3.00	X300009	\$3.00
28. Elbow (2 required)	X702043	\$4.00 EACH	X702043	\$4.00 EACH	X702043	\$4.00 EACH
29. Hose	X701101	\$1.00/Ft.	X701101	\$1.00/Ft.	X701101	\$1.00/Ft.
30. Position Indicator Switch	X703016	\$65.00	X703016	\$65.00	X703016	\$65.00
31. Cylinder Seal Housing Bolts	NA		X702009	\$1.00/4	NA	
32. Bonnet Plate	10END110	\$198	X700215	\$203	X700743	\$203
33. Flat Washer for Bonnet Plate Bolts	X702250	\$1.00/8 PCS	X702250	\$1.00/8 PCS	X702250	\$1.00/12 PCS
34. Clamp for Position Indicator	X703100	\$4.00	X703100	\$4.00	X703100	\$4.00
35. Gate	X700017	\$310.00	X700269	\$321.00	X700269	\$321.00
36. Gate Roller (2 required)	X700021	\$4.00 EACH	X700021	\$4.00 EACH	X700021	\$4.00 EACH
37. Side Roller Pin (4 required)	X702035	\$1.00/4	X702634	\$2.00/4	X702634	\$2.00/4
38. Carriage Side Roller (4 required)	X700023	\$3.00 EACH/4 Required	X700369	\$3.00 EACH/4 Required	X700369	\$3.00 EACH/4 Required
39. Seal Side O-Ring (Add Suffix B for Buna V for Viton)						
40. Gate O-Ring (Add Suffix B for Buna V for Viton)	X701450	B \$3.00 V \$29.00	X701453	B \$6.00 V \$30.00	X701453	B \$6.00 V \$30.00
41. Open Side Port O-Ring (Add Suffix B for Buna V for Viton)			X701453	B \$6.00 V \$30.00	X701455	B \$8.00 V \$35.00
42. Carriage Block	X700019	\$62.00	X700019	\$62.00	X700816	\$62.00
43. Gate Roller Pin	X702084	\$1.00 EACH	X702084	\$1.00 EACH	X702084	\$1.00 EACH
44. Spring Set	X706406	\$21.00	X706406	\$21.00	X706406	\$21.00