

# Racine

fluid power products

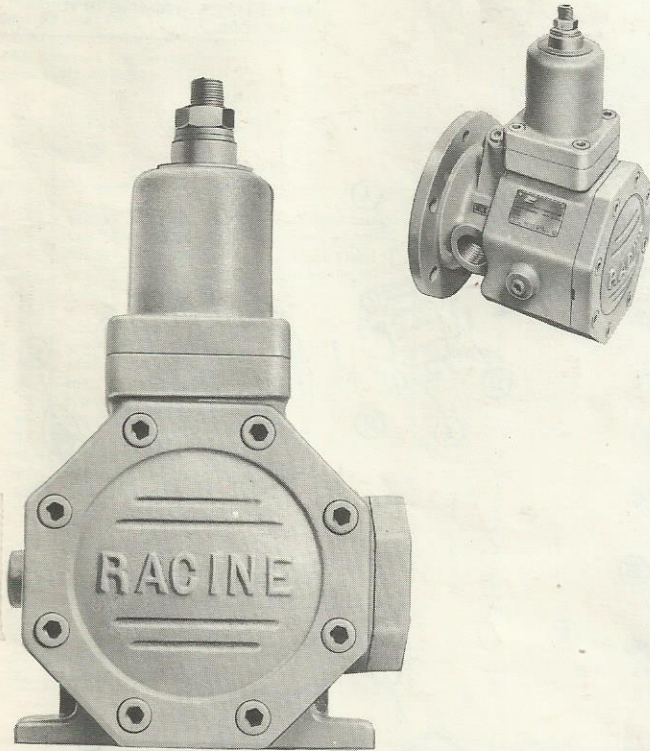
## REPAIR PARTS

### MODEL PVF

### VARIABLE VOLUME VANE TYPE PUMP

FOOT MOUNTED

FLANGED MOUNTED



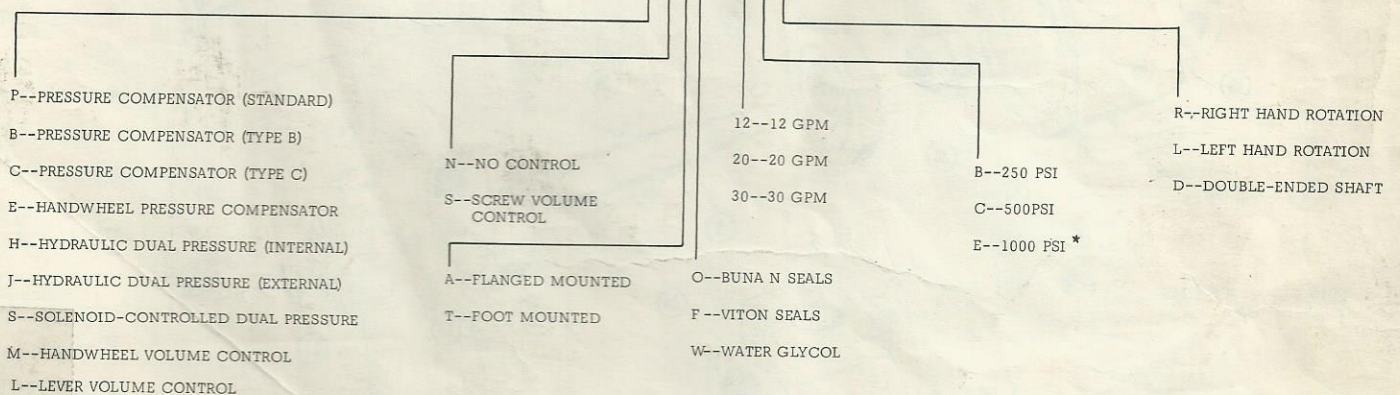
WHEN ORDERING PARTS, FURNISH:

1. COMPLETE CODE NUMBER
2. PARTS REQUIRED
3. SHIPPING INSTRUCTIONS

WRITE FACTORY FOR NEAREST AUTHORIZED PARTS AND SERVICE CENTER.

### PUMP CODING

PVF - PNT0 - I2ER - 01



\* 12 and 20 GPM pumps only.

ASSEMBLE WASHER  
WITH CHAMBER ON  
I. D. FACING SEAL.

ABOVE STANDARD COMPENSATOR  
APPEARS ON THIS PAGE.  
FOR ADDITIONAL COMPENSATORS  
SEE OPTION PAGE.

SEE OPTION PAGE  
FOR SCREW VOLUME  
CONTROL.

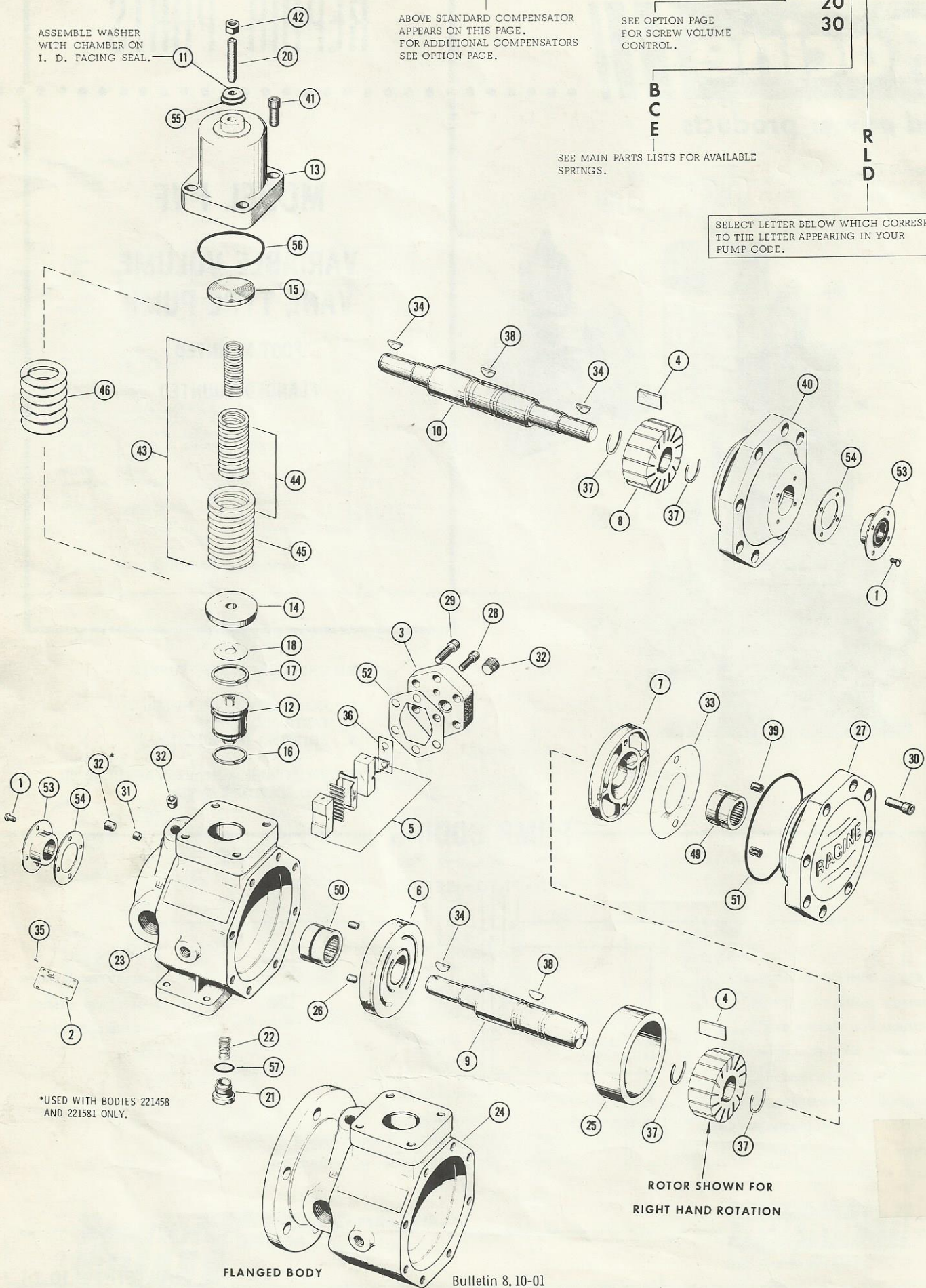
20  
30

B  
C  
E

SEE MAIN PARTS LISTS FOR AVAILABLE  
SPRINGS.

R  
L  
D

SELECT LETTER BELOW WHICH CORRESPONDS  
TO THE LETTER APPEARING IN YOUR  
PUMP CODE.



\*USED WITH BODIES 221458  
AND 221581 ONLY.

FLANGED BODY

ROTOR SHOWN FOR  
RIGHT HAND ROTATION

Ref. No.	Part No.	Description	Qty.
1	404782	Screw 1/4-20 x 3/8	4
2	406780	Nameplate	1
3	220515	Cap	1
4	406081	Vane (Set of 15) 12 GPM	1
4	405434	Vane (Set of 15) 20 GPM	1
4	405435	Vane (Set of 15) 30 GPM	1
5	777000	Thrust Block	1
6	777029	Port Plate RH } 12 GPM	1
6	777032	Port Plate LH } 12 GPM	1
6	777030	Port Plate RH } 20 GPM	1
6	777033	Port Plate LH } 20 GPM	1
6	777031	Port Plate RH } 30 GPM	1
6	777034	Port Plate LH } 30 GPM	1
7	777089	Cover Plate 12 GPM	1
7	777090	Cover Plate 20 GPM	1
7	777091	Cover Plate 30 GPM	1
8	302002	Rotor 12 GPM	1
8	302003	Rotor 20 GPM	1
8	302004	Rotor 30 GPM	1
9	302012	Shaft RH & LH Rotation	1
9	302016	Shaft for Piston Pump Combination	1
10	302017	Shaft - Double Ended	1
11	491405	Washer	1
12	220056	Piston	1
13	220516	Housing	1
14	301148	Stop	1
15	400578	Seat	1
16	401104	Ring	1
17	401105	Ring	1
18	404544	Shim .003"	As Req'd
18	404545	Shim .005"	As Req'd
20	404908	Screw	1
21	302674	Retainer	1
22	401524	Spring	1
23	221337	Body (RH Rotation)	1
23	221386	Body (Use with Journal Bearings RH Rotation)	1
23	221341	Body (LH Rotation)	1
23	221413	Body (Use with Journal Bearings LH Rotation)	1
23	221458	Body (Use with Handwheel and Lever Volume Control RH Rotation)	1
23	221581	Body (Use with Handwheel and Lever Volume Control LH Rotation)	1
24	221342	Body (RH Rotation)	1
24	221741	Body (Use with Journal Bearings RH Rotation)	1
24	221343	Body (LH Rotation)	1
24	221580	Body (Use with Handwheel and Lever Volume Control RH Rotation)	1
24	221997	Body (Use with Handwheel and Lever Volume Control LH Rotation)	1

Ref. No.	Part No.	Description	Qty.
25	301131	Ring - 12 GPM (2 FA)	1
25	301132	Ring - 20 GPM (4 FA)	1
25	301133	Ring - 30 GPM (6 FA)	1
26	301142	Pin	2
27	221167	Cover - Use with Journal Bearings RH Rotation	1
27	221608	Cover - Use with Journal Bearings LH Rotation	1
27	220523	Cover	1
28	400813	Screw 3/8-16 x 7/8	2
29	400822	Screw 7/16-14 x 1	6
30	400825	Screw 1/2-13 x 1-1/4	8
31	400928	Plug 1/4 N.P.T.F.	1
32	400930	Plug 3/8 N.P.T.F.	2/3
33	400591	Shim .001"	As Req'd
33	400592	Shim .0015"	As Req'd
33	400593	Shim .002"	As Req'd
33	400594	Shim .003"	As Req'd
34	401119	Key (2 Required on Double Ended Pump)	1
35	401296	Pin	4
36	401819	Shim .003"	As Req'd
36	401820	Shim .005"	As Req'd
36	401821	Shim .010"	As Req'd
36	405468	Shim .0015"	As Req'd
37	401847	Ring	2
38	401871	Key	1
39	403308	Pin	2
40	221759	Cover	1
40	222032	Cover - Use with Journal Bearings RH Rotation	1
41	400826	Screw 1/2-13 x 1	4
42	401015	Nut 1/2-20	1
43	401551	Spring	1
43	401583	Spring 1000 PSI - 12 GPM	1
43	401591	Spring	1
44	401581	Spring 500 PSI - 12 GPM	1
44	401591	Spring	1
45	401591	Spring 250 PSI - 12 GPM	1
45	401589	Spring - C	1
46	401590	Spring - B	1
46	405579	Spring - 1000 PSI - 20 GPM	1
46	405578	Spring - 500 PSI - 20 & 30 GPM	1
46	405580	Spring - 250 PSI - 20 & 30 GPM	1
49	405066	Bearing	1
49	777364	Journal Bearing	1
50	405067	Bearing	1
50	777363	Journal Bearing	1
51	220528	Cover for Piston Pump (Not Shown)	1
52	400827	Bolts for Adaptors	8

Use Adaptor #220533 for 20 Pump  
Use Adaptor #220534 for 80 Pump

**STANDARD SEAL KIT**  
**722391**

**VITON SEAL KIT**  
**722392**

KIT CONSISTS OF -			
Ref. No.	Part No.	Description	Qty.
51	401274	"O" Ring 1/8 x 6 OD 252	1
52	401842	Gasket	1
53	404320	Seal (2 Required on Double Ended Pumps)	1
54	404322	Gasket	1
55	491372	Thread Seal	1
56	401281	"O" Ring 1/8 x 3-1/2 OD 236	1
57	401251	"O" Ring 1/8 x 1-1/8 OD 212	1

USED WITH MINERAL OIL AND WATER BASED FLUIDS.

KIT CONSISTS OF -			
Ref. No.	Part No.	Description	Qty.
51	406511	"O" Ring 1/8 x 6 OD	1
52	401842	Gasket	1
53	404321	Seal (2 Required on Double Ended Pumps)	1
54	404322	Gasket	1
55	491404	Thread Seal	1
56	406510	"O" Ring 1/8 x 3-1/2 OD	1
57	406094	"O" Ring 1/8 x 1-1/8 OD	1

USED WITH SYNTHETIC FLUIDS (PHOSPHATE ESTER AND HALOGENATED BASE).

**REPAIR PARTS KITS\***

NEEDLE BEARING KITS

JOURNAL BEARING KITS

	12 GPM	20 GPM	30 GPM	12 GPM	20 GPM	30 GPM
SINGLE SHAFT - RIGHT HAND ROTATION - STANDARD SEALS-----	NO. 722581	NO. 722585	NO. 722589	723359	723371	723373
SINGLE SHAFT - LEFT HAND ROTATION - STANDARD SEALS-----	NO. 722582	NO. 722586	NO. 722590	723360	723370	723374
SINGLE SHAFT - RIGHT HAND ROTATION - VITON SEALS-----	NO. 722583	NO. 722587	NO. 722591	723361	723369	723375
SINGLE SHAFT - LEFT HAND ROTATION - VITON SEALS-----	NO. 722584	NO. 722588	NO. 722592	723362	723368	723376
DOUBLE ENDED SHAFT - STANDARD SEALS-----	NO. 722750	NO. 722756	NO. 722758	723363	723367	723377
DOUBLE ENDED SHAFT - VITON SEALS-----	NO. 722755	NO. 722757	NO. 722759	723364	723366	723378

\* Each kit contains the following parts:

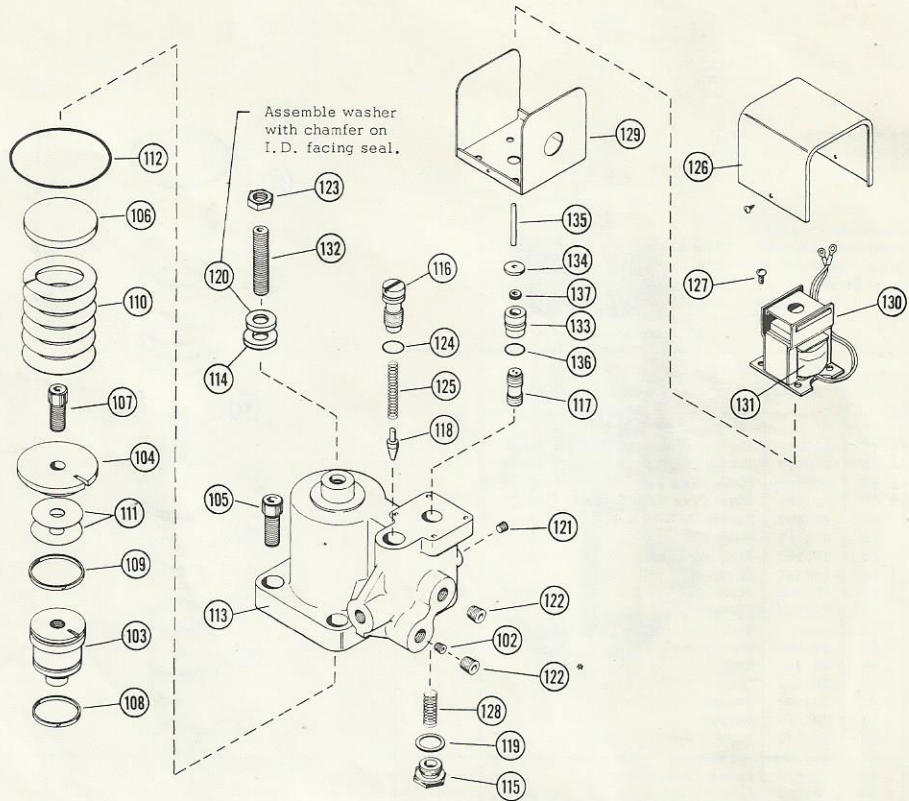
One pressure ring, one set vanes, all shims, one port plate, one cover plate, one cover bearing, one body bearing, one rotor, two piston rings, two snap rings, one thrust block assembly, one shaft, and one seal kit.

# OPTIONS

## SOLENOID - CONTROLLED DUAL PRESSURE COMPENSATOR

Complete Assembly  
 Buna Internal Pilot 956023  
 Viton Internal Pilot 956044  
 Buna External Pilot 956022  
 Viton External Pilot 956053

Ref. No.	Part No.	Description	Qty.
102	405420	Orifice Plug	1
103	220057	Piston (Internal Pilot)	1
103	220059	Piston (External Pilot)	1
104	301147	Stop	1
105	400826	Screw 1/2-13 x 1	4
106	400578	Seat	1
107	405590	Screw 1/2-13 x 1	1
108	401104	Ring	1
109	401105	Ring	1
110	405578	Spring	1
111	404544	Shim .003"	As Req'd
111	404545	Shim .005"	As Req'd
112	401281	"O" Ring 1/8 x 3-1/2 OD	1
112	406510	"O" Ring (Viton)	1
113	220718	Body	1
114	491498	Thread Seal	1
115	302310	Seat	1
116	302431	Screw	1
117	304439	Piston	1
118	305873	Poppet	1
119	400247	Gasket	1
120	491500	Washer	1
121	400925	Plug 1/16 NPTF	1
122	400928	Plug 1/4 NPTF	2
123	401013	Nut	1
124	401271	"O" Ring 3/32 x 3/4 OD	1
124	406518	"O" Ring (Viton)	1
125	401485	Spring	1
126	401800	Cover	1
127	402208	Screw #10-32 x 1/2	4
128	405445	Spring	1
129	402663	Base	1
130	Table#1	Solenoid	1
131	Table#1	Coil	1
132	403476	Screw	1
133	304639	Guide	1
134	304640	Retainer	1
135	304641	Pin	1
136	401277	"O" Ring 3/32 x 11/16 OD	1
136	406478	"O" Ring (Viton)	1
137	402917	Seal	1
137	406092	Seal (Viton)	1



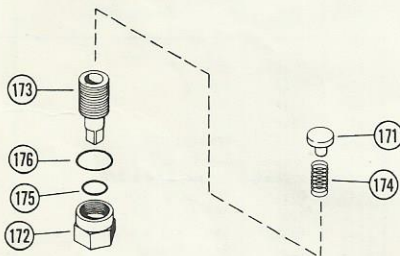
NOTE: ORIFICE PLUG #405420 (REFERENCE #102) USED ONLY WITH EXTERNAL PILOT.

\* REMOVE FOR EXTERNAL PILOT.

DC SOLENOIDS		
Complete Solenoid (130)	Coil Only (131)	DC Voltage
403294	403427	6
403233	404044	12
402570	405671	24
405719	405720	90
403006	—	125
402447	403353	220
402448	403479	250

AC SOLENOIDS		
Complete Solenoid (130)	Coil Only (131)	AC Voltage
400991	401662	115/60
400992	401663	230/60
400993	401664	440/60
403158	403772	115/50
402953	403975	220/50
406030	404711	440/50

## SCREW VOLUME CONTROL



Assembly Numbers  
 Buna 720067  
 Viton 721999

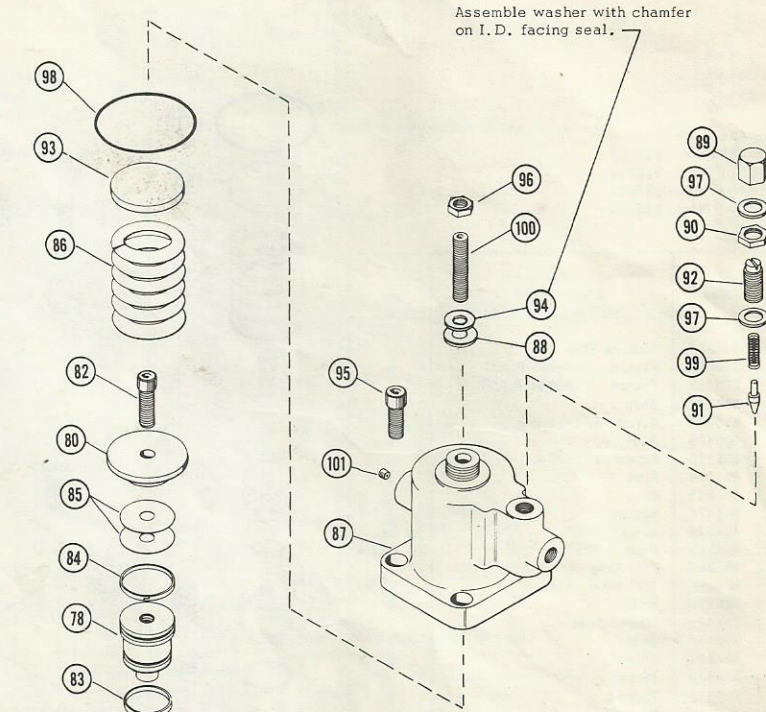
Ref. No.	Part No.	Description	Qty.
171	301173	Button	1
172	301175	Nut	1
173	301176	Stem	1
174	401524	Spring	1
175	401248	"O" Ring 3/32 x 13/16 OD	1
175	406584	"O" Ring (Viton)	1
176	401282	"O" Ring 1/8 x 1-5/16 OD	1
176	406802	"O" Ring (Viton)	1

# OPTIONS

## HYDRAULIC DUAL PRESSURE COMPENSATOR

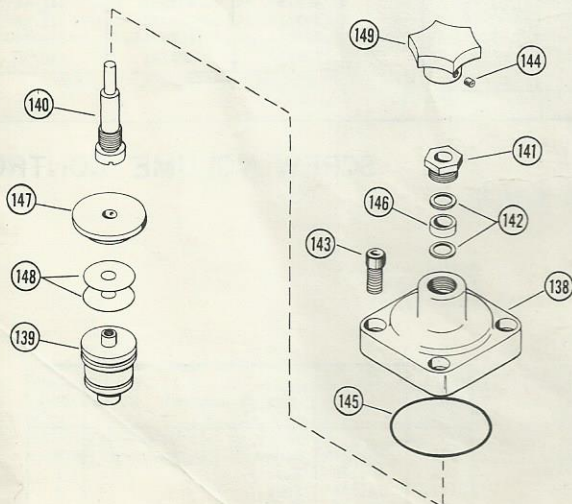
Complete Assembly  
 Buna Internal Pilot 956021  
 Viton Internal Pilot 956045  
 Buna External Pilot 956020  
 Viton External Pilot 956046

Ref. No.	Part No.	Description	Qty.
78	220057	Piston (Use with Internal Pilot)	1
78	220059	Piston (Use with External Pilot)	1
80	301147	Stop (Use with Internal Pilot)	1
80	301148	Stop (Use with External Pilot)	1
82	405590	Screw 1/2-13 x 1	1
83	401104	Ring	1
84	401105	Ring	1
85	404544	Shim .003"	As Req'd
85	404545	Shim .005"	As Req'd
86	405578	Spring	1
87	220031	Body	1
88	491498	Thread Seal	1
89	301161	Cap	1
90	301162	Nut	1
91	305873	Poppet	1
92	305963	Screw	1
93	400578	Seat	1
94	491500	Washer	1
95	400826	Screw 1/2-13 x 1	4
96	401013	Nut	1
97	401083	Gasket	2
98	401281	"O" Ring 1/8 x 3-1/2 OD	1
98	406510	"O" Ring (Viton)	1
99	401489	Spring	1
100	403476	Screw	1
101	405420	Orifice Plug	1



NOTE: ORIFICE PLUG #405420 (REFERENCE #101) USED ONLY WITH EXTERNAL PILOT.

## HANDWHEEL VOLUME CONTROL



Complete Assembly  
 Buna 956047  
 Viton 956048

Ref. No.	Part No.	Description	Qty.
138	220038	Cap	1
139	220056	Piston	1
140	301098	Stem	1
141	301099	Nut	1
142	301171	Washer	2
143	400825	Screw 1/2-13 x 1-1/4	4
144	400854	Screw 1/4 x 3/8	1
145	401281	"O" Ring 1/8 x 3-1/2 OD	1
145	406510	"O" Ring (Viton)	1
146	403277	Seal 5/8 x 3/16 OD	2
146	406479	Seal (Viton)	2
147	301145	Stop	1
148	404544	Shim .003"	As Req'd
148	404545	Shim .005"	As Req'd
149	404784	Handwheel	1

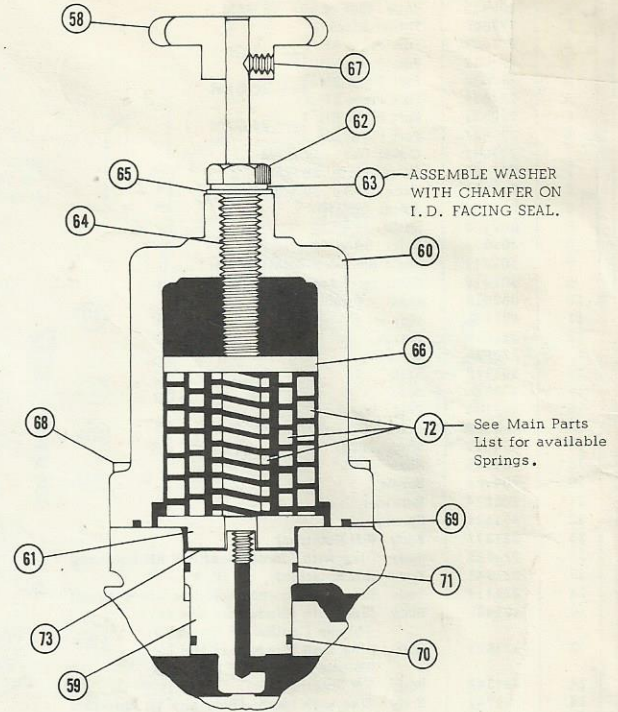
\*NOTE: USE RING HOLD-UP SPRING #401512 WITH THIS OPTION (SIMILAR TO REFERENCE #22, PAGE 2). ALSO REFER TO REFERENCE NO. 23 FOR SPECIAL BODY THAT IS REQUIRED.

# OPTIONS

## HANDWHEEL PRESSURE COMPENSATOR

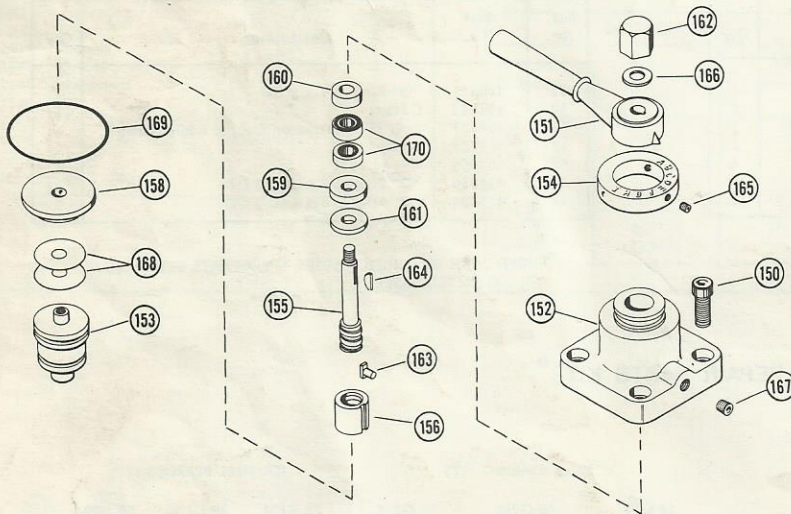
Complete Assembly  
Buna 956049  
Viton 956050

Ref. No.	Part No.	Description	Qty.
58	404784	Hand Wheel	1
59	220056	Piston	1
60	220516	Housing	1
61	301148	Stop	1
62	401015	Nut	1
63	491405	Washer	1
64	308600	Stem	1
65	491372	Washer	1
66	400578	Seat	1
67	400854	Screw, 1/4 X 3/8	1
68	400826	Screw 1/2 - 13 X 1	4
69	401281	"O" Ring, 1/8 X 3 1/2 OD (Buna)	1
69	406510	"O" Ring, 1/8 X 3 1/2 OD (Viton)	1
70	401104	Ring	1
71	401105	Ring	1
72	See Main Parts List	Springs	3/1
73	404544	Shim .003"	As Req'd
73	404545	Shim .005"	As Req'd



\*SEE MAIN PARTS LIST FOR AVAILABLE SPRINGS

## \* LEVER VOLUME CONTROL



Complete Assembly  
Buna 956051

Ref. No.	Part No.	Description	Qty.
150	400825	Screw 1/2-13 x 1-1/4	4
151	220037	Lever	1
152	220040	Body	1
153	220056	Piston	1
154	275071	Collar	1
155	301096	Stem	1
156	301097	Nut	1
158	301145	Stop	1
159	301357	Washer	1
160	301358	Washer	1
161	301959	Washer	1
162	301969	Nut	1
163	301971	Key	1
164	306088	Key	1
165	400853	Set Screw	3
166	400909	Washer	1
167	400922	Plug	1
168	404544	Shim .003"	As Req'd
168	404545	Shim .005"	As Req'd
169	401281	"O" Ring 1/8 x 3-1/2 OD	1
169	406510	"O" Ring (Viton)	1
170	400668	Seal	2

\* NOTE: USE RING HOLD-UP SPRING #401512 WITH THIS OPTION (SIMILAR TO REFERENCE #22, PAGE 2). ALSO REFER TO REFERENCE NO. 23 FOR SPECIAL BODY THAT IS REQUIRED.

**Rexnord** Hydraulic Components  
Division  
RACINE, WISCONSIN  
53401

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