



BOSCH

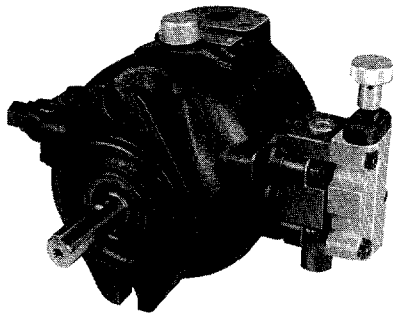
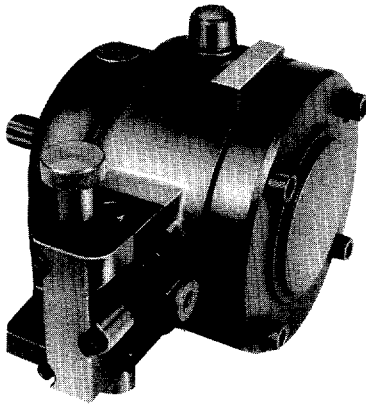
REPAIR PARTS

VARIABLE VOLUME VANE PUMPS SILENTVANE™

MODEL SV-20 2000 PSI
 15 GPM

MODEL SV-25 1000 PSI
 20 GPM

**FLANGE MOUNTED
SUBPLATE MOUNTED
COMBINATION CAPABILITY
-50 THRU -62 DESIGN SERIES**



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

PSV-PSSF-20-HRM-52

- P – PRESSURE COMPENSATOR (STD)
- L – LOAD SENSING FLOW CONTROL
- T – TORQUE LIMITING CONTROL
- M – MULTIPLE CONTROL (P, L, & T)
- S – SOLENOID TWO PRESSURE CONTROL
- J – HYDRAULIC TWO PRESSURE CONTROL
- K – SINGLE STAGE

- N – NO VOLUME CONTROL
- S – SCREW VOLUME CONTROL

S – SUBPLATE MOUNTED

A – FLANGE MTD. SIDE PORTS SAE THREADS

B – FLANGE MTD. REAR PORTS SAE THREADS

C – FLANGE MTD. SIDE PORTS 4 BOLT FLANGES

R – FLANGE MTD. REAR PORTS 4 BOLT FLANGES

M – KEYED SHAFT

FLOW RATE @ 1800 RPM
20 – 15.2 GPM
25 – 20.2 GPM

PRESSURE RATING
E – 1000 psi (SV-25 only)
H – 2000 psi

ROTATION
R – RIGHT HAND ROTATION

- 50 – ORIGINAL DESIGN
- 51 – 2'ND STAGE UPDATE
- 52 – 1'ST & 2'ND STAGE CHANGES
- 53 – SOL. 2-PRESS. CONTROL CHANGES
- 60 – COMBINATION PUMP
- 61 – 2'ND-STAGE UPDATE
- 62 – 1'ST & 2'ND STAGE CHANGES
- 63 – SOL. 2-PRESS. CONTROL CHANGES

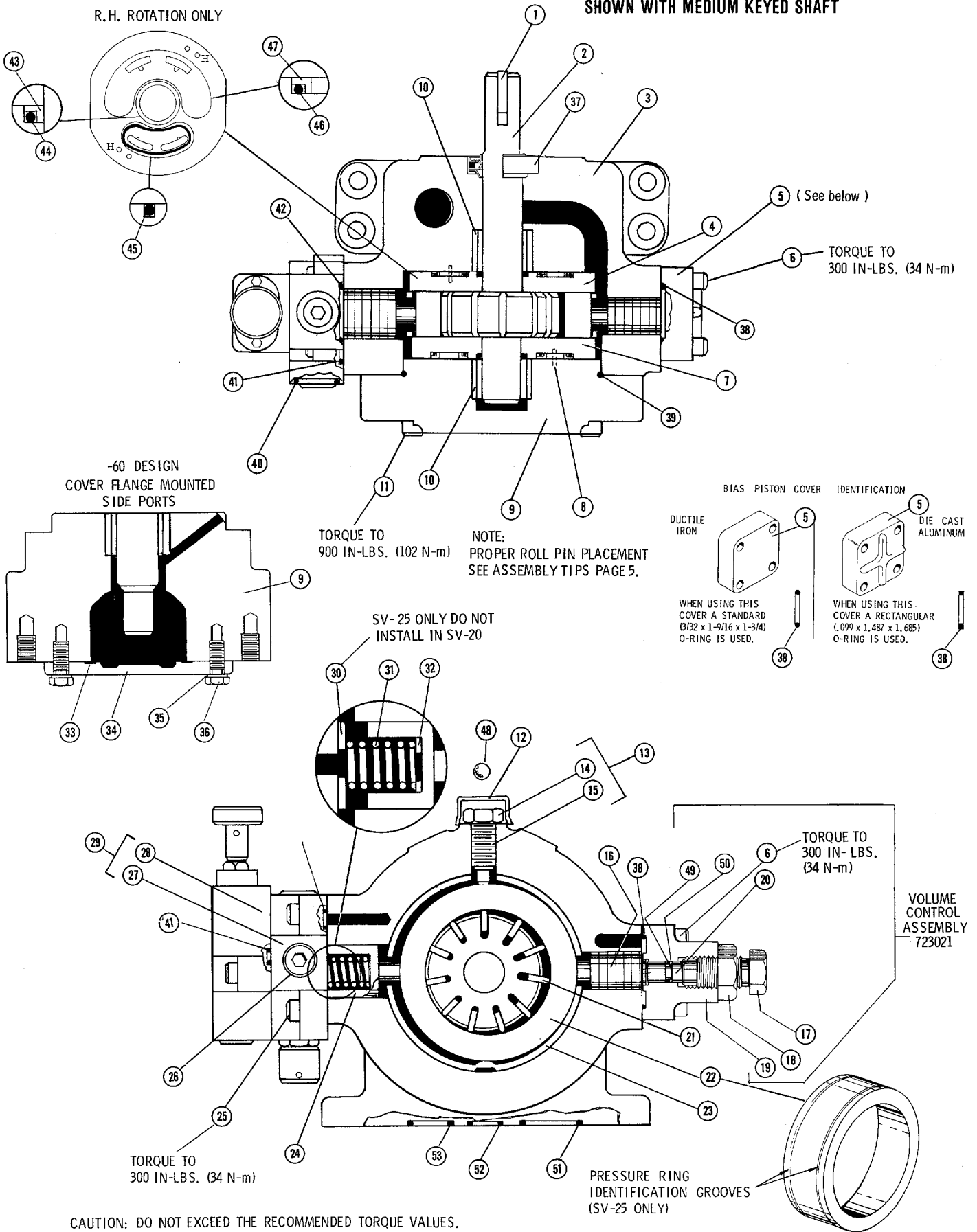
CORRESPONDING LITERATURE BULLETINS

	PUMP	CONTROLS	ADAPTORS
ENG.	A-5-52-62	A-11	A-14
SERV.		7.90-52-62	14, 60

O – BUNA N SEALS
F – VITON SEALS

MANIFOLD MOUNTING RIGHT HAND ROTATION PUMP SHOWN WITH MEDIUM KEYED SHAFT

R.H. ROTATION ONLY



CAUTION: DO NOT EXCEED THE RECOMMENDED TORQUE VALUES.

Ref. No.	Part No.	Description	Qty.
1	405646	Key, Long (Used w/Medium, Long, Medium Thru & Long Thru Shafts)	1 or 2
1	408906	Key, Short (Used w/Short & Short Thru Shafts)	1 or 2
2	308760	Rotor Shaft, Medium Keyed	1
2	308768	Rotor Shaft, Short Keyed Thru (R.H. Rotation Subplate Mtd. SV-20 Only)	1
2	308769	Rotor Shaft, Long Keyed Thru (Subplate Mtd. Only)	1
2	308770	Rotor Shaft, Long Keyed	1
2	308771	Rotor Shaft, Splined	1
2	308772	Rotor Shaft, Medium Keyed Thru	1
2	308773	Rotor Shaft, Short Keyed (SV-20 Only)	1
2	308986	Rotor Shaft, Combo (-60)	1
3	222815	Body, R.H. Flange Mtd.	1
3	222816	Body, L.H. Flange Mtd.	1
3	222817	Body, R.H. Subplate Mtd.	1
3	222818	Body, L.H. Subplate Mtd.	1
4	222942	Port Plate, R.H. Body, L.H. Cover	1
5	222521	Bias Cover, Cast Iron Design	1
5	492010	Bias Cover, Die Cast Aluminum	1
6	400789	Screw, 5/16-18 x 1-1/4	4
7	222943	Port Plate, R.H. Cover, L.H. Body	1
8	401712	Roll Pin	4
9	222822	Cover, R.H. & L.H. Flange Mtd. w/Rear Ports	1
9	222855	Cover, R.H. & L.H. Flange Mtd. w/Side Ports (Used w/Thru Shafts)	1
9	222856	Cover, R.H. & L.H. Flange Mtd. w/Side Ports	1
9	222858	Cover, R.H. & L.H. Subplate Mtd.	1
9	222859	Cover, R.H. & L.H. Subplate Mtd. (Used w/Thru Shafts)	1
9	222980	Cover, R.H. & L.H. 4 Bolt Flange Side Ported	1
9	222990	Cover, R.H. & L.H. SAE Str. THD. Side Ported	1
9	222933	Cover, R.H. & L.H. 4 Bolt Flange Rear Ported	1
9	222934	Cover, R.H. & L.H. SAE Str. THD. Rear Ported	1
10	778083	Sleeve & Bearing Assembly	2

Ref. No.	Part No.	Description	Qty.
11	408892	Screw, 7/16-14 x 2	4
12	490775	Thrust Screw Cap	1
13	723504	Thrust Screw Assembly	1
14	401015	Nut	1
15	308676	Thrust Screw, 5/8-18 UNF	1
16	308316	Bias Piston	1
17	308127	Adjusting Screw	1
18	401016	Lock Nut 3/4-16	1
19	222524	Body	1
20	308317	Piston	1
21	778343	Vane Set (SV-20)	1
22	308128	Pressure Ring (SV-20)	1
22	308675	Pressure Ring (SV-25)	1
23	308903	Spacer Ring (SV-25)	1
23	308320	Spacer Ring (SV-20)	1
24	308129	Control Piston	1
25	400789	Screw, Socket Hd. 5/16-18 x 1-1/4	4
25	491838	Screw, Ferry Hd., 5/16-18 x 1-1/4	1
26	491832	Hollow Hex Plug, #8 SAE	1
27	—	First Stage of Two-Stage Compensator	1
28	—	Second Stage of Two-Stage Compensator	1
29	956131	Assem., Two-Stage Compensator	1
30	492742	Washer (SV-25 Only)	1
31	408717	Spring	1
32	491907	Washer (SV-25 Only)	1
—	400925	Plug, 1/16 NPTF (Not Shown)	4
—	491854	Nameplate (Not Shown)	1
—	491865	Rivet Nameplate (Not Shown)	2
33	492233	Gasket	1
34	222975	End Cover	1
35	407799	Wash	2
36	408892	Screw, 3/8-16 x 7/8	2

* On Standard Compensated and Load Sensing Compensated pumps, this screw is used to mount the 1st Stage to the pump body. All other optional compensators or controls use 491838 Ferry Head Cap Screws. CAUTION: Do not over torque.

SEAL KITS

Buna Seals			
Ref. No.	Part No.	Description	Qty.
* 37	794468	Shaft Seal	1
38	492122	O-Ring, Rectangular	1
38	406513	O-Ring, 3/32 x 1-9/16 x 1-3/4 (Always use on Volume Control)	1
39	407591	O-Ring, 1/8 x 4-7/8 x 5-1/8	1
40	407139	O-Ring, #8 SAE	3
41	406797	O-Ring, 1/16 x 5/16 x 7/16	5
42	407105	O-Ring, 1/16 x 1-1/2 x 1-5/8	2
43	490746	Back-up Ring	2
44	409156	O-Ring, 1/16 x 1-1/4 x 1-3/8	2
45	492275	O-Ring, 3/32 x 1-3/4 x 1-15/16	2
46	401294	O-Ring, 1/8 x 3-1/8 x 3-3/8	2
47	491827	Back-up Ring	2
48	492143	Acetal Ball	1
49	406269	O-Ring, 1/16 x 3/8 x 1/2	1
50	408846	Back-up Ring	1
51	406513	O-Ring, 3/32 x 1-9/16 x 1-3/4	1
52	406555	O-Ring, 3/32 x 13/16 x 1	1
53	407148	O-Ring, 3/32 x 1-3/16 x 1-3/8	1

Viton Seals			
Ref. No.	Part No.	Description	Qty.
* 37	794468	Shaft Seal	1
38	492122	O-Ring, Rectangular	1
38	406513	O-Ring, 3/32 x 1-9/16 x 1-3/4 (Always use on Volume Control)	1
39	407146	O-Ring, 1/8 x 4-7/8 x 5-1/8	1
40	407139	O-Ring, #8 SAE	3
41	406797	O-Ring, 1/16 x 5/16 x 7/16	5
42	407105	O-Ring, 1/16 x 1-1/2 x 1-5/8	2
43	490746	Back-up Ring	2
44	409156	O-Ring, 1/16 x 1-1/4 x 1-3/8	2
45	492275	O-Ring, 3/32 x 1-3/4 x 1-15/16	2
46	406702	O-Ring, 1/8 x 3-1/8 x 3-3/8	2
47	491827	Back-up Ring	2
48	492143	Acetal Ball	1
49	406269	O-Ring, 1/16 x 3/8 x 1/2	1
50	408846	Back-up Ring	1
51	406513	O-Ring, 3/32 x 1-9/16 x 1-3/4	1
52	406555	O-Ring, 3/32 x 13/16 x 1	1
53	407148	O-Ring, 3/32 x 1-3/16 x 1-3/8	1

* On-52 double ended pump the shaft seals are #794485

REPAIR & SEAL KIT INFO.

Pump Model	Shaft Type	Design Digit	Repair Kit Number	Seal Kit Number
SV-20 (Subplate and Flange Mounted)	Short Single – Buna	-50 thru -52	794130	723726
	Short Single – Viton	-50 thru -52	794131	723724
	Medium Single – Buna	-50 thru -52	794132	723726
	Medium Single – Viton	-50 thru -52	794133	723724
	Long Single – Buna	-50 thru -52	794134	723726
	Long Single – Viton	-50 thru -52	794135	723724
	Short Double – Buna	-50 thru -52	794138	794114
	Short Double – Viton	-50 thru -52	794139	794115
	Medium Double – Buna	-50 thru -52	794140	794114
	Medium Double – Viton	-50 thru -52	794141	794115
	Long Double – Buna	-50 thru -52	794142	794114
	Long Double – Viton	-50 thru -52	794143	794115
	Combo Single – Buna	-60 thru -62	794398	723726
	Combo Single – Viton	-60 thru -62	794399	723724

Pump Model	Shaft Type	Design Digit	Repair Kit Number	Seal Kit Number
SV-25 (Subplate and Flange Mounted)	Medium Single – Buna	-50 thru -52	794147	723726
	Medium Single – Viton	-50 thru -52	794144	723724
	Medium Double – Buna	-50 thru -52	794149	794114
	Medium Double – Viton	-50 thru -52	794146	794115
	Combo Single – Buna	-60 thru -62	794400	723726
	Combo Single – Viton	-60 thru -62	794401	723724

DESIGN CHANGES
(OLD STYLE -50 TO -60)

THE DISTANCE FROM THE PUMP MOUNTING FLANGE TO THE CENTER OF THE PORT, INCREASED BY 5/16" (SV-20/SV-25).

PORT CHANGES

PUMP MODEL (Port Type)	DASH-50 DESIGN		DASH-60 DESIGN	
	INLET	OUTLET	INLET	OUTLET
SV-20/SV-25 (Straight Thread)	SAE 20 1-5/8 x 12	SAE 16 1-5/16 x 12	SAE 24 1-7/8 x 12	SAE 16 1-5/16 x 12
SV-20/SV-25 (4 Bolt Flange)	1-1/4"	1"	1-1/2"	1"

FIELD CONVERSION INFORMATION

	SV-20	LP SV-20
Compensator Spool	Remove { 308736 (White) 491831 Pins in "H"	Replace With { 308952 (Green) 492126 (Red) Pins in Unmarked
Spring (Compensator, 1st Stage)		
Port Plates	Stays { 308128 308320	Stays { 308128 308320
Pressure Ring		
Spacer Ring	Same { None None	Same { None None
Washer (Control Piston)	Remove — 408717	Replace With — 492107 (Red)
Shim (Compensator)		
Priming Spring		
	SV-25	LP SV-25
Compensator Spool	Remove { 308736 (White) 491831 Pins in "H"	Replace With { 308952 (Green) 492126 Pins in Unmarked
Spring (Compensator, 1st Stage)		
Port Plates	Stays { 308675 308903	Stays { 308675 308903
Pressure Ring		
Spacer Ring	Same { 491907 *492742	Same { 491907 *492742
Washer (Control Piston)	Remove — 408717	Replace With — 492107 (Red)
Shim (Compensator)		
Priming Spring		
	SV-20	SV-25
Compensator Spool	Stays Same { 308736 (White) 491831 Pins in "H"	Stays Same { 308736 (White) 491831 Pins in "H"
Spring (Compensator, 1st Stage)		
Port Plates	Remove { 308128 308320	Replace With { 308675 308903
Pressure Ring		
Spacer Ring	Stays Same — 408717	Stays Same — 408717
Washer (Control Piston)		
Shim (Compensator)		
Priming Spring		

REF: When converting a standard SV-20 to a low pressure SV-20.

REF: When converting a standard SV-25 to a low pressure SV-25.

REF: When converting a SV-20 to a SV-25.

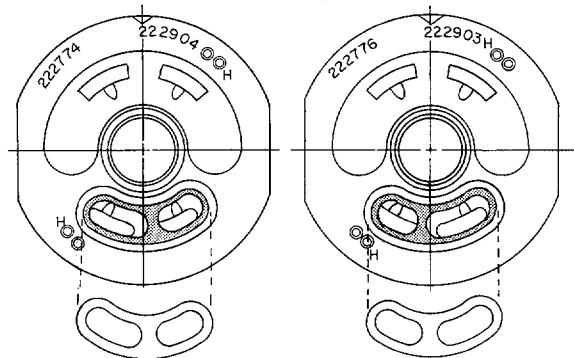
*When using a torque limiter control or an old style compensator (powdered metal with tear drop counterbore), use shim 492352.

When making any conversions, always remember to change the name tag coding. Recalibrate pump according to specific pump size.

ASSEMBLY TIPS

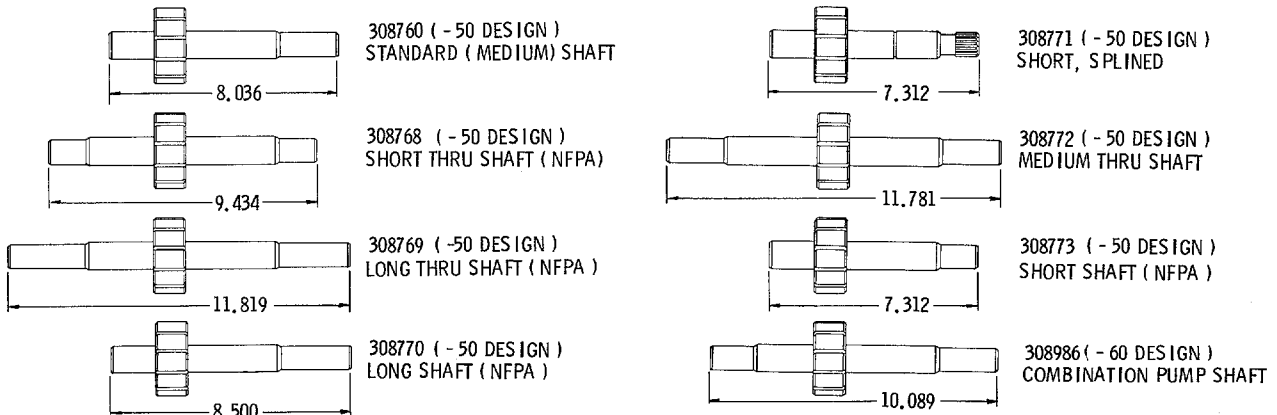
NOTE: PLACEMENT OF BACK-UP RING IN SUCTION PORT IS IMPORTANT. IF LARGER ARC IS NOT LOCATED AS SHOWN BACK-UP CAN FALL INTO BODY CAVITY. THIS IS DUE TO PORT PLATES BEING ROTATED 7°.

ALL PUMPS DO NOT CONTAIN THESE PORT PLATES. CURRENT DESIGN ELIMINATES THE BACK-UP RING. VISUALLY INSPECT FOR CORRECT PARTS REPLACEMENT.

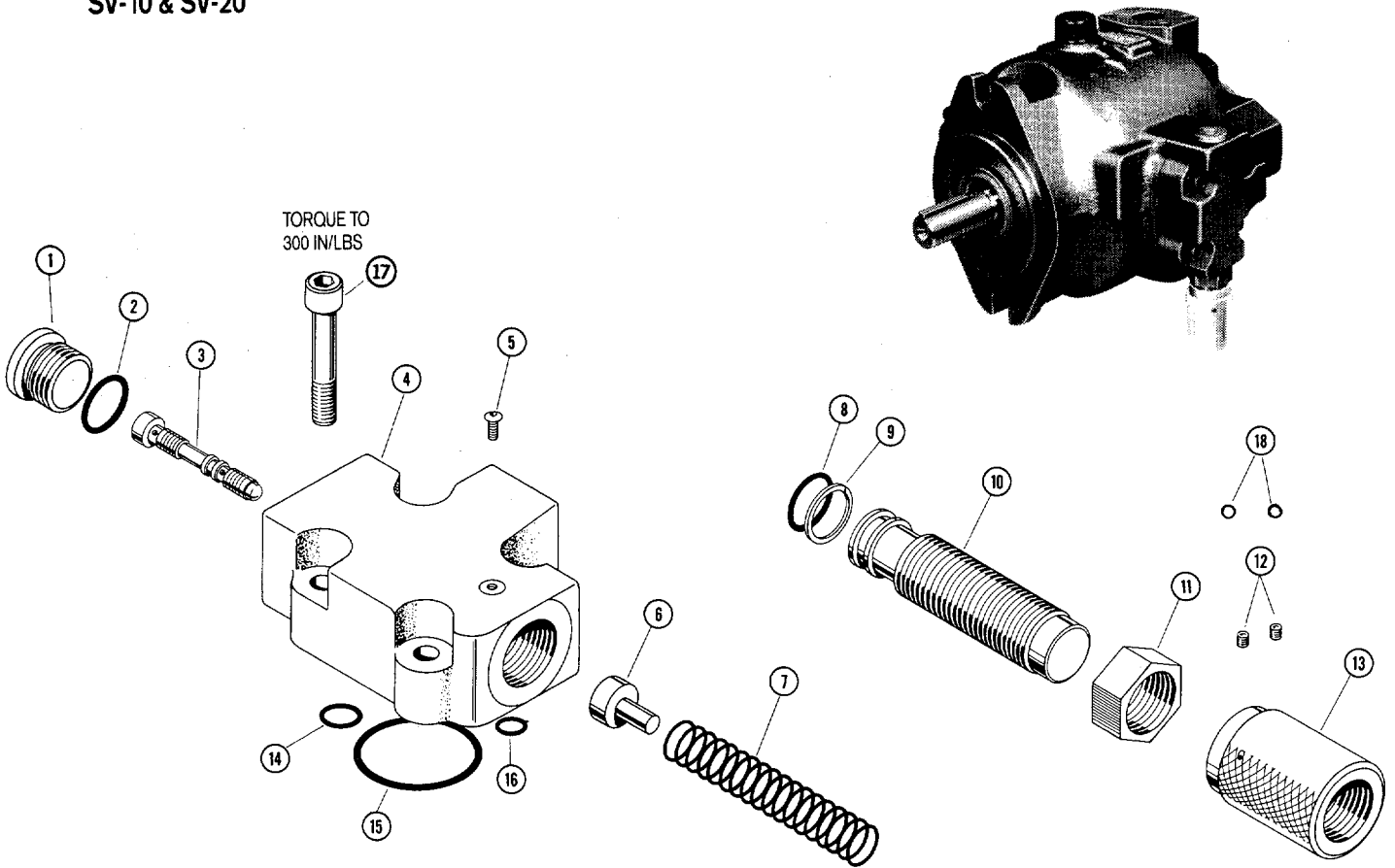


BOTH PORT PLATES	ONLY USE HOLES MARKED "H"
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SHAFT IDENTIFICATION



SV-10 & SV-20



COMPLETE ASSEMBLY

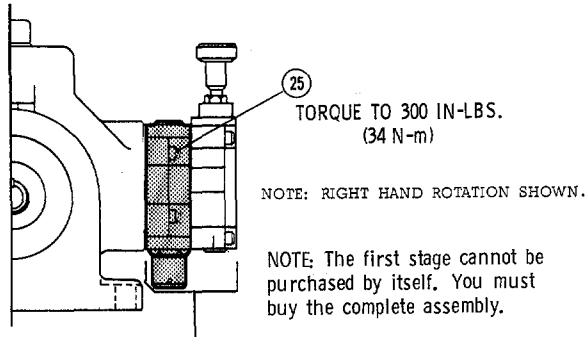
- 956304 (factory set @ 1000 psi)
- 956302 (factory set @ 2000 psi)
- 956300 (factory set @ 3000 psi)

Ref. No.	Part No.	Description	Qty.
1	491832	Plug SAE #8	1
2	407139	O-Ring SAE #8 -908	1
3	309291	Spool	1
4	223109	Body	1
5	457564	Screw	1
6	309290	Spring Seat	1
7	457561	Spring	1
8	406554	O-Ring 5/8 x 3/4 x 1/6 -016	1
9	492369	Back-Up Ring	1
10	309289	Internal Adjustment Barrel	1
11	309019	Lock Nut	1
12	457688	Set Screw	2
13	309292	Pressure Adjustment Knob	1
14	406797	O-Ring 1-16 x 5/16 x 7/16 -011	1
15	407105	O-Ring 1-16 x 1-1/2 x 1-5/8 -029	1
16	406565	O-Ring 1-16 x 7/16 x 9/16 -013	1
*17	400789	Screw 5/16-18 x 1-1/4	4
18	457689	Plastic Balls	2

*These bolts are not included in the complete assembly.

STANDARD TWO-STAGE COMPENSATOR—FIRST STAGE

— 51 DESIGN
— 61 DESIGN



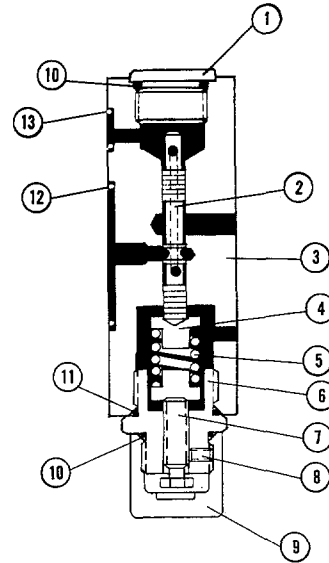
STANDARD TWO STAGE PRESSURE COMPENSATOR
(COMPLETE)

SV-20 -956131
SV-25 -956112

Ref. No.	Part No.	Description	Qty.
1	491832	Plug, #8 SAE	1
2	308736	Spool	1
3	222780	Body, 1st Stage	1
4	308943	Spring Seat	2
5	491831	Spring	1
6	308735	Adaptor	1
7	308734	Adjustment Screw	1
8	408637	Set Screw	1
9	308936	Safety Cap	1
*10	407139	O-Ring, #8 SAE (-908)	2
*11	407138	O-Ring, #10 SAE (-910)	1
*12	407105	O-Ring, 1/16 × 1-1/2 × 1-5/8	1
*13	406797	O-Ring, 1/16 × 5/16 × 7/16	1
**25	400789	Screw, Socket Hd., 5/16-18 × 1-1/4	4
25	491838	Screw, Ferry Hd., 5/16-18 × 1-1/4	4

* Included in Seal Kits 794726(Buna) & 794724 (Viton)

** On Standard Compensated and Load Sensing Compensated pumps, this screw is used to mount the 1st Stage to the pump body. All other optional compensators or controls use 491838 Ferry Head Cap Screws. CAUTION: Do not over torque.

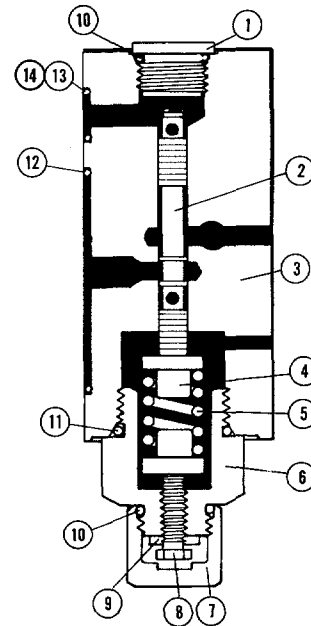


— 52 DESIGN
— 62 DESIGN

Ref. No.	Part No.	Description	Qty.
1	491832	Plug, #8 SAE	1
2	308736	Spool	1
3	223052	Body, 1st Stage	1
4	308943	Spring Seat	2
5	491831	Spring	1
6	309052	Adaptor	1
7	308936	Safety Cap	1
8	309051	Adjustment Screw	1
9	457641	Lock Nut	1
*10	407139	O-Ring, #8 SAE (-908)	2
*11	407138	O-Ring, #10 SAE (-910)	1
*12	407105	O-Ring, 1/16 × 1-1/2 × 1-5/8	1
*13	406797	O-Ring, 1/16 × 5/16 × 7/16 (Used with 222780)	2
*13	406797	O-Ring, 1/16 × 5/16 × 7/16 (Used with 223052)	1
14	406565	O-Ring, 1/16 × 1/2 × 9/16 (Used with 223052 Only)	1

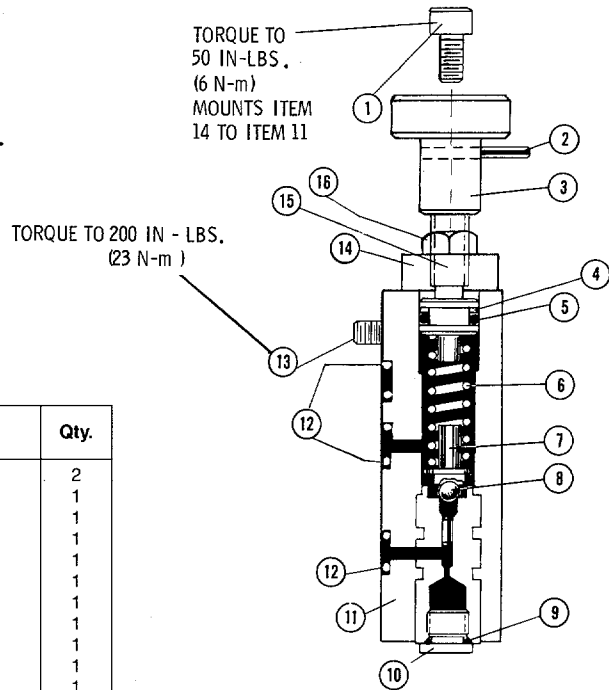
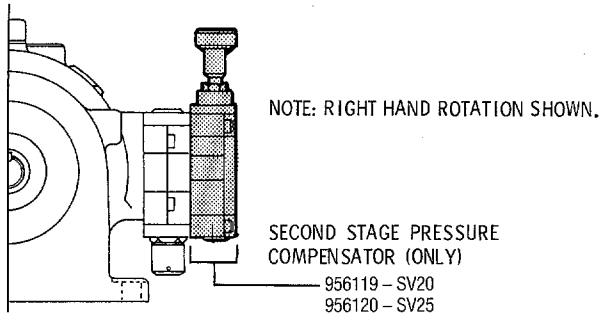
* Included in Seal Kits 794726(Buna) & 794724 (Viton)

† Earlier -52 Design



STANDARD TWO-STAGE COMPENSATOR — SECOND STAGE

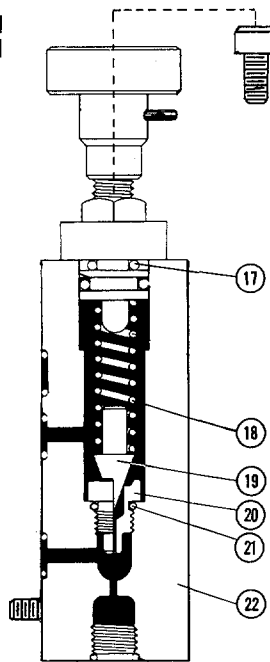
- 50 DESIGN



Ref. No.	Part No.	Description	Qty.
1	402396	Screw, #10-24 x 1/2	2
2	401713	Roll Pin	1
3	308730	Knob	1
* 4	490418	Back-Up Ring	1
* 5	406579	O-Ring, 3/32 x 7/16 x 5/8	1
6	406239	Spring (VOID)	1
7	308861	Spring Seat (VOID)	1
8	492209	Tungsten Carbide Ball (VOID)	1
* 9	407141	O-Ring, #4 SAE (-904)	1
10	490708	Plug, #4 SAE	1
11	778313	Body Assembly (-50) (VOID)	1
* 12	406797	O-Ring, 1/16 x 5/16 x 7/16	3
13	400779	Screw, 1/4-20 x 1-1/4	3
14	221777	Retaining Cap	1
15	309028	Adjusting Screw	1
16	401011	Lock Nut	1
17	492455	O-Ring, 3/32 x 5/16 x 1/2 (-51/61) (VOID)	1
18	407846	Spring (-51/52 & -61/62)	1
19	307161	Poppet (-51/61 Only) (VOID)	1
20	308012	Seat (-51/61 Only) (VOID)	1
21	407123	O-Ring, #3 SAE (-903)	1
22	222962	Body (-51/52 & -61/62)	1
23	309057	Poppet (-52/62 Only)	1
24	309058	Seat (-52/62 Only)	1

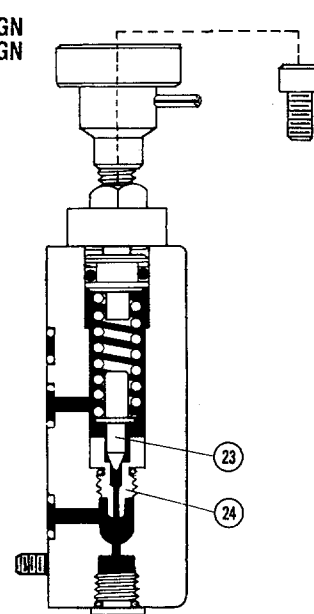
* Included in Seal Kits # 723726 (Buna) & # 723724 (Viton)

- 51 DESIGN
- 61 DESIGN



NOTE: ITEMS SHOWN ARE THE ONLY DIFFERENCE FROM -50 DESIGN.

- 52 DESIGN
- 62 DESIGN



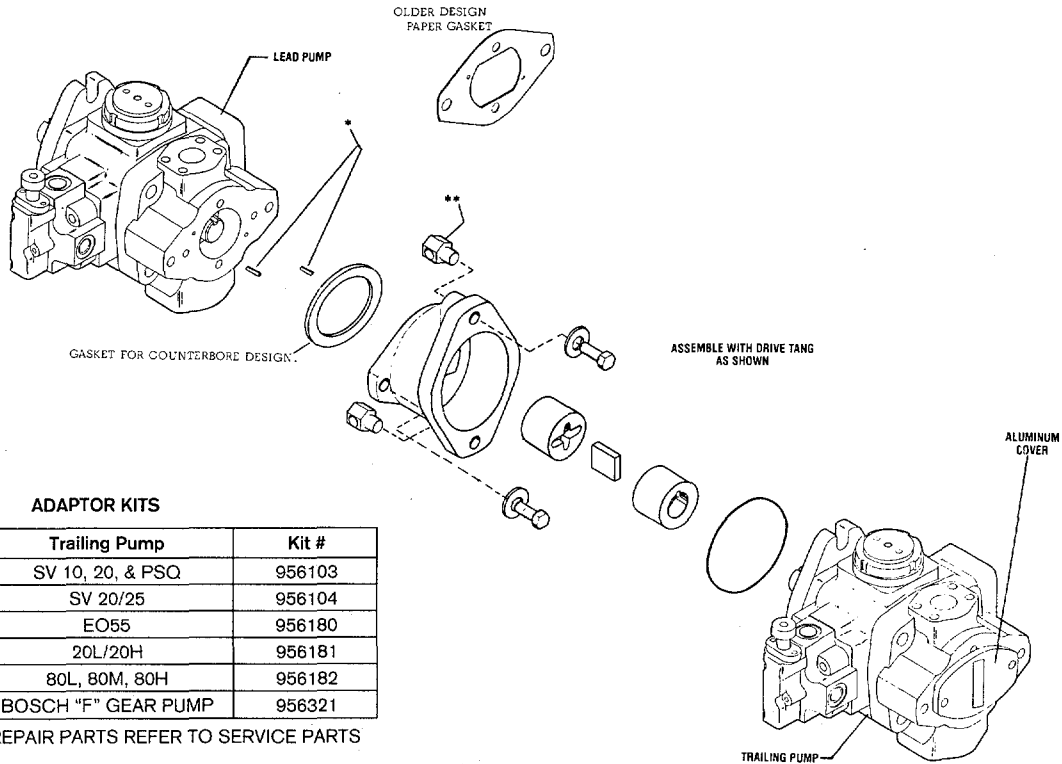
NOTE: ITEMS SHOWN ARE THE ONLY DIFFERENCE FROM -51/61 DESIGN.

ADAPTOR/COUPLING SYSTEM

NOTE: COUPLING SYSTEM IS A "WET DESIGN". THE LEAD PUMP DOES NOT HAVE A REAR SHAFT SEAL. THIS ALLOWS THE ADAPTOR TO FILL WITH FLUID TO LUBRICATE AND COOL THE COUPLING.

***NOTE:** ROLL PINS SHOULD BE PRESSED INTO PUMP PRIOR TO ASSEMBLY.

****NOTE:** REFERENCE SUPPORT ROD INFORMATION LISTED BELOW.



ADAPTOR KITS

Lead Pump	Trailing Pump	Kit #
SV 20/25	SV 10, 20, & PSQ	956103
SV 20/25	SV 20/25	956104
SV 20/25	EO55	956180
SV 20/25	20L/20H	956181
SV 20/25	80L, 80M, 80H	956182
SV 20/25	BOSCH "F" GEAR PUMP	956321

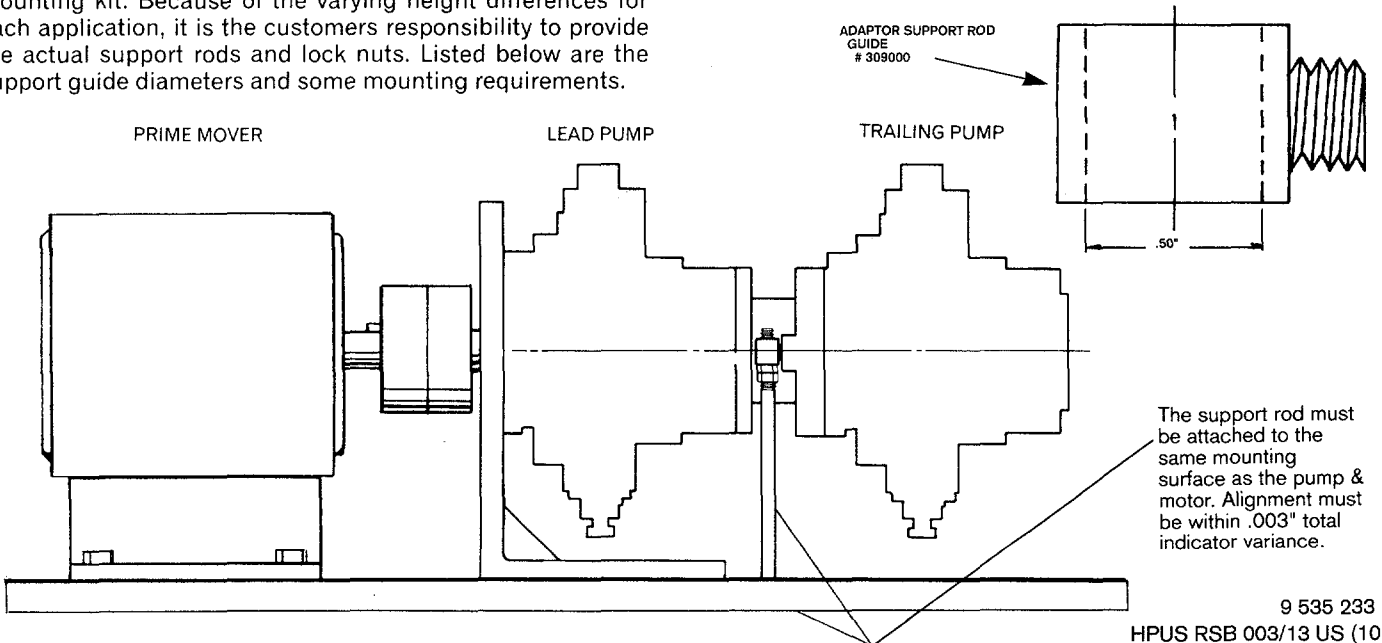
FOR ADAPTOR KIT REPAIR PARTS REFER TO SERVICE PARTS BULL. 14.60.

SUPPORT RODS

Racine Bosch Group includes support guides in each tandem mounting kit. Because of the varying height differences for each application, it is the customers responsibility to provide the actual support rods and lock nuts. Listed below are the support guide diameters and some mounting requirements.

** IMPORTANT NOTES **

1. Support rods are required when a trailing pump or pumps exceed 65 lbs. in weight.
2. The support rod must be mounted with the bottom of the rod attached to the same mounting surface as the electric motor and pump flange bracket (see above picture).



9 535 233 240
HPUS RSB 003/13 US (10.95)

