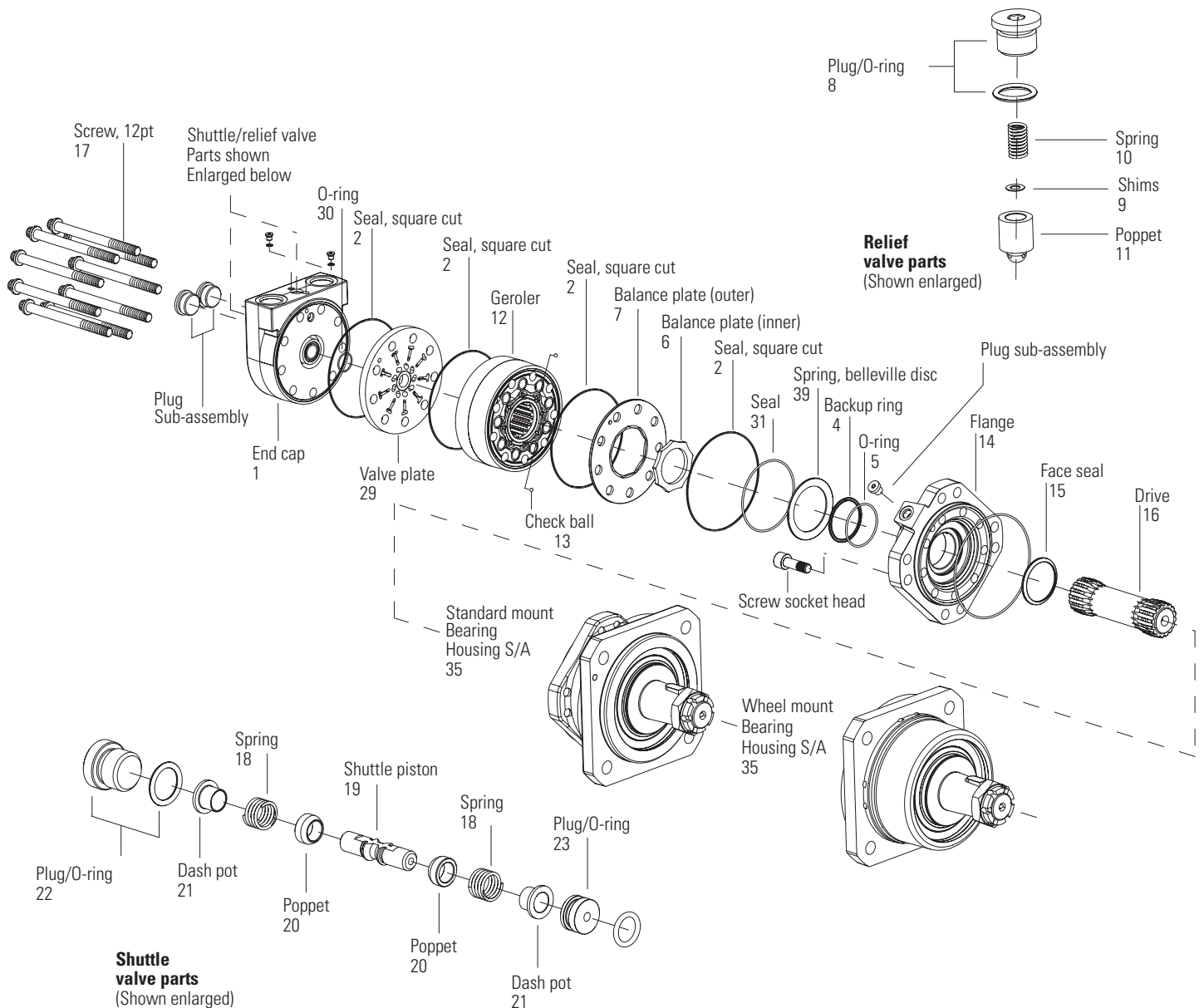


Table of contents

Contents

Exploded view	2
Parts list for standard and wheel motor	3
Disassembly, standard and wheel motor	5
Reassembly, standard and wheel motor	7
Disassembly, bearing pack	9
Reassembly, bearing pack	10
How to order replacement parts	14

Exploded view



VIS standard and wheel motors - 45 series

Parts list

	Ref. no.	Part no.	Description	Quantity
	1	5986560-001	End Cap Assembly 1-5/16-12 O-ring Ports (2)	1
		5986560-008	End Cap Assembly G 1 (BSP) O-ring Ports (2)	1
X	2	14559-007	Seal, Square Cut	4
X	4	14846-001	Ring, Back -up	1
X	5	14502-144	O-ring	1
	6	202943-001	Plate, Balance (Inner)	1
	7	5986548-001	Plate, Balance (Outer)	1
	8	9072-004	Plug, Sub Assembly	1
X		250003-905	O-ring	1
	9	16048-500	Shim (for relief valve only)	A/R
	10	17024-024	Spring (for relief valve only)	1
	11	113538-001	Poppet (for relief valve only)	1
	12	*	Geroler®	1
	13	285020-060	Ball	2
	14	202937-004	Flange, Mounting 9/16-18 Case Drain Port	1
		202937-006	Flange, Mounting G 1/4 (BSP) Case Drain Port	1
X	15	6992-000	Seal, Face	1
	16	*	Drive	1
	17	*	Screw, 12 PT	9
	18	230079-000	Spring	2
	19	201494-002	Piston, Shuttle	1
	20	8567-000	Poppet	2
	21	112126-001	Sleeve, Dash Pot	2
	22	9266-006	Plug, Sub Assembly	1
X		250003-906	O-ring	1
	23	201868-001	Plug, Sub Assembly	1
X		14502-012	O-ring	1
	29	5986547-001	Plate, Valve	1
X	30	14502-023	O-ring	1
X	31	14502-156	Seal	1
	35	202009-004	Housing, Bearing (Standard Mount & 2-5/8 in. Straight Shaft)**	1
		202009-005	Housing, Bearing (Standard Mount & 70 mm 22 Tooth Splined Shaft)**	1
		202009-009	Housing, Bearing (Standard Mount & 60 mm Tapered Shaft)**	1
		202009-010	Housing, Bearing (Standard Mount & 2-3/4 in. 32 Tooth Splined Shaft)**	1
		202009-007	Housing, Bearing (Wheel Mount & 2-5/8 in. Straight Shaft)**	1
		202009-008	Housing, Bearing (Wheel Mount & 60 mm Tapered Shaft)**	1
	39	203196-001	Spring, Belleville Disc	1
		9900203-000	Seal Kit – Contains Parts Indicated by X	

*See chart below.

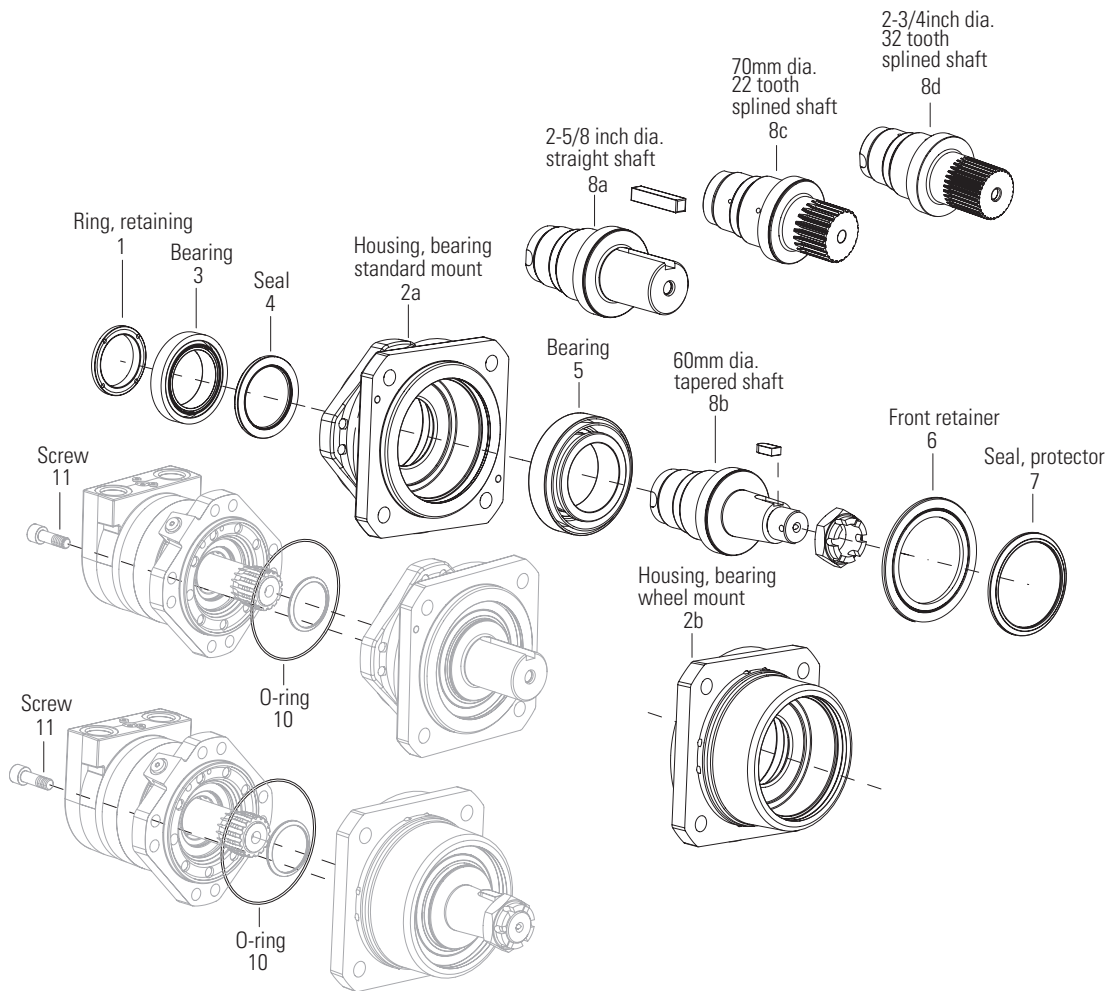
**See next page for parts breakdown.

A/R - as required

Displacement	Ref no. 12 Geroler®	Width	Ref no. 16 Drive	Length	Ref no. 17 Cap screw	Length
cm ³ /r (in ³ /r)		mm (in)		mm (in)		mm (in)
520 (31.7)	5986550-002	33,3 (1.31)	201361-002	149,6 (5.89)	113388-575	146,1 (5.75)
572 (34.9)	5986550-003	36,6 (1.44)	201361-003	152,9 (6.02)	113388-575	146,1 (5.75)
630 (38.6)	5986550-004	40,6 (1.60)	201361-004	157,0 (6.18)	113388-600	152,4 (6.00)
720 (43.9)	5986550-010	46,0 (1.81)	201361-010	162,3 (6.39)	113388-625	158,8 (6.25)
805 (48.6)	5986550-005	50,8 (2.00)	201361-005	167,6 (6.60)	113388-625	158,8 (6.25)
990 (60.5)	5986550-006	63,2 (2.49)	201361-006	179,6 (7.07)	113388-675	171,5 (6.75)
1245 (76.0)	5986550-007	79,5 (3.13)	201361-007	195,8 (7.71)	113388-750	190,5 (7.50)
1560 (95.0)	5986550-008	99,3 (3.91)	201361-008	215,6 (8.49)	113388-825	209,6 (8.25)

VIS standard and wheel motors - 45 series

Parts list



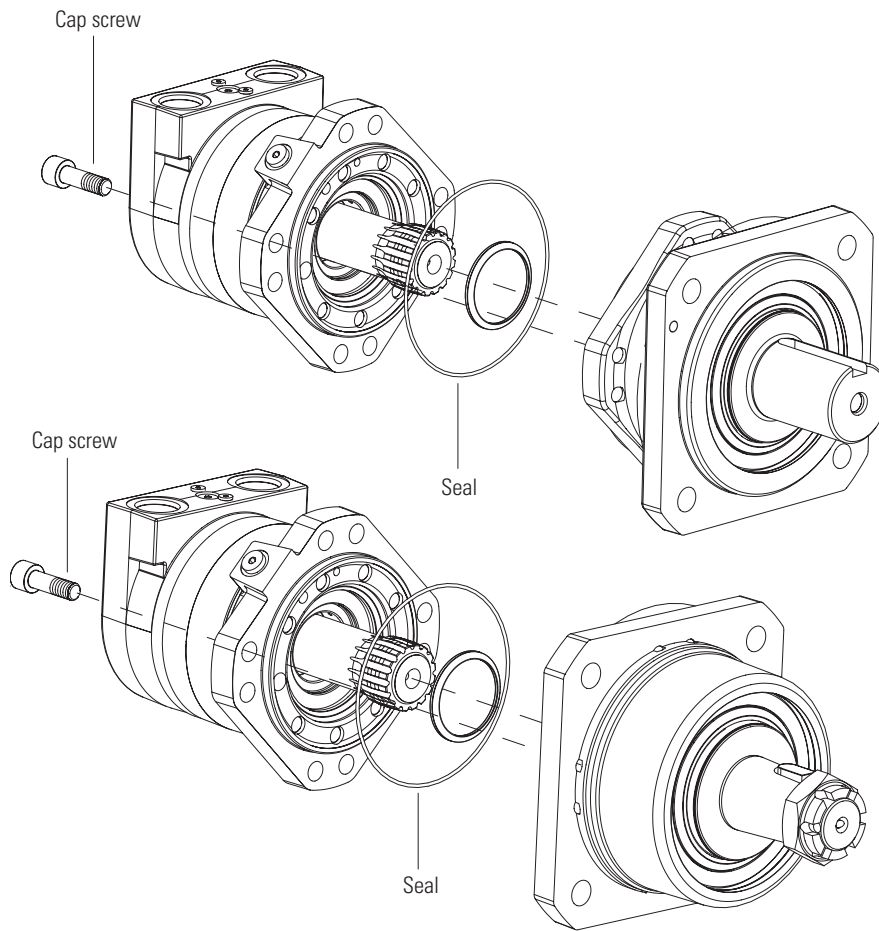
	Ref. no.	Part No.	Description	Quantity
X	1	14686-001	Ring, Retaining	1
	2	201996-006	Housing, Bearing (Standard)	1
		201996-001	Housing, Bearing (Wheel)	1
	3	9103-019	Bearing	1
X	4	14813-001	Seal	1
	5	9103-020	Bearing	1
	6	202029-002	Front Retainer	1
X	7	14628-009	Seal, Protector	1
	8a	204125-003	Shaft (2-5/8 in. Straight)	1
		14770-001	Key for 2-5/8 in. Straight	1
	8b	204125-007	Shaft (60 mm Tapered)	1
		14828-001	Key for 60 mm Tapered	1
		14827-001	Nut for 60 mm Tapered	1
	8c	204125-004	Shaft (70 mm 22 Tooth Splined)	1
	8d	204125-008	Shaft (2-3/4 in. 32 Tooth Splined)	1
X	10	250001-163	O-ring	1
	11	16333-916	Screw	8
		61328-000	Front Seal Kit – Contains Parts Indicated by X	

VIS standard and wheel motors - 45 series

Disassembly

Tools required

- 1/4 in hex key
- 3/16 in hex key
- 5/8 in hex key (end ported motor only)
- Torque wrench – 200 Nm (150lb-ft) capacity



VIS standard and wheel motors - 45 series

Disassembly

Disassembly

1. Cleanliness is extremely important when repairing hydraulic motors. Work in a clean area. Before disconnecting the hydraulic motor thoroughly clean the exterior. Remove motor from application and drain the oil from the motor before disassembly.
2. Remove the 9 cap screws and disassemble the motor in the vertical position as shown in Figure 1. Note placement of small ball checks in Geroler.
3. Remove shuttle valve (and relief valve if applicable) from end cap.
4. Remove two plugs from end cap, end ported motors only.
5. Check all mating surfaces. To reduce the chance of leakage, replace any parts that have scratches or burrs. Wash all metal parts in clean solvent. Blow them dry with pressurized air. Do not wipe parts dry with paper towels or cloth as lint in a hydraulic system will cause damage.

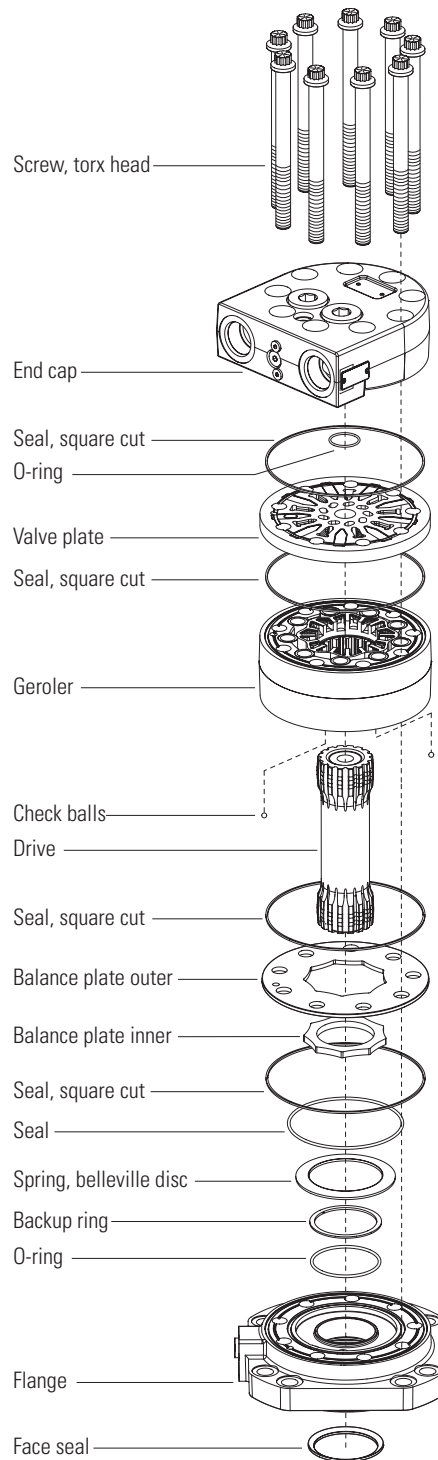
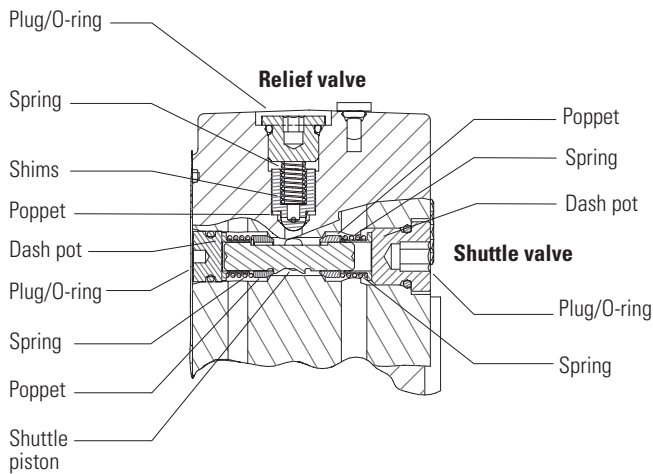


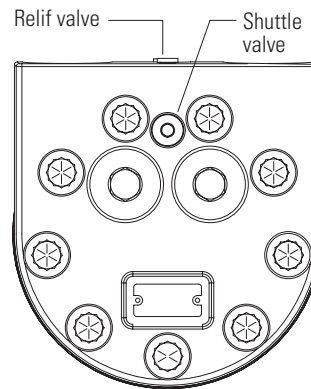
Figure 1

VIS standard and wheel motors - 45 series

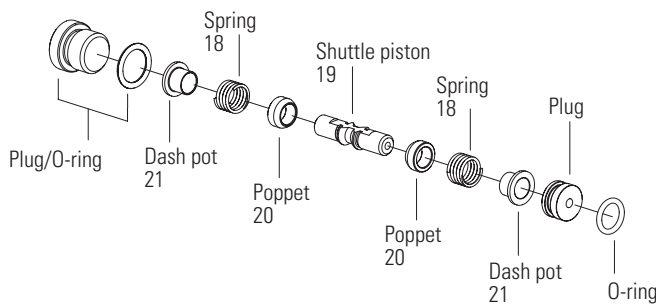
Reassembly



End cap (top ported)



Shuttle valve



Relief valve

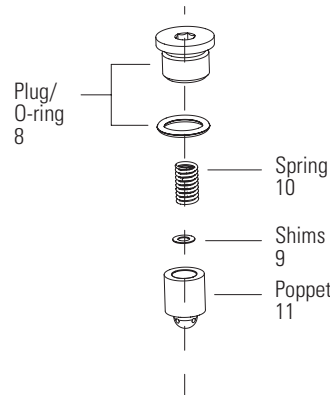


Figure 2

Reassembly

Note:

Always use new seals when reassembling hydraulic motors. Refer to parts list for seal kit number and replacement parts.

6. Install one poppet, spring and dash pot into shuttle valve bore from valve plate side of end cap.
7. Install non-threaded plug with o-ring into end cap shuttle valve bore. O-ring and plug are to be lightly coated with petroleum jelly to ease assembly and plug should be inserted flush with end cap mounting surface.
8. Install shuttle piston from opposite end of shuttle valve cavity.
9. Install one shuttle valve poppet, spring and dash pot onto piston.

Important:

During reassembly, lubricate the new seals with a petroleum jelly such as Vaseline®. Also lubricate machined surfaces with clean hydraulic fluid.

10. Install one shuttle valve threaded internal hex plug with o-ring. Shuttle plug threads may have light coat of oil or preservative. Torque plug to 37-45 Nm [324-396 lb-in].
11. For a motor with low pressure relief valve, install poppet, shims, spring and plug. Plug threads may have light coat of oil or preservative. Torque plug to 23-29 Nm [207-253 lb-in].
12. For a motor without low pressure relief valve, install plug with o-ring and torque plug to 23-29 Nm [207-253 lb-in].

VIS standard and wheel motors - 45 series

Reassembly

Flange assembly

- Position flange on workbench with the o-ring grooves face down and install face seal (72,9 [2.87] OD).
- With mounting flange o-rings grooves up, install two o-ring seals (150,8 [5.94] ID & 107,7 [4.24] ID) into flange. Install back up-up ring (69,5 [2.74] OD) over o-ring (63,2 [2.49] ID) with flat side up (See Figure 3). Back-up ring and o-rings may be greased to assist in retaining parts.

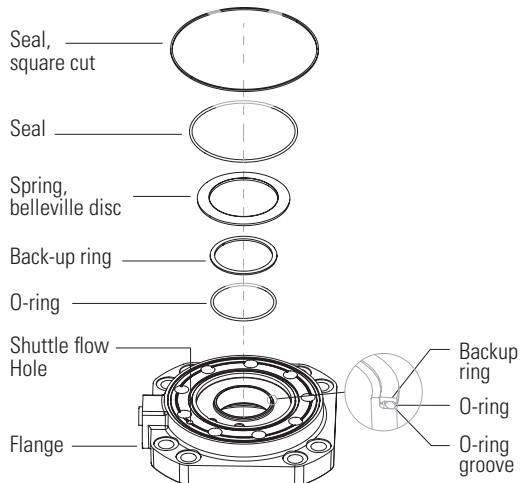


Figure 3

Final assembly

- Place drive into build fixture. Place mounting flange (seal grooves up) over drive.
- Place Belleville spring (concave side down) in groove in mounting flange.
- Place outer and inner balance plates on mounting flange. Align shuttle flow cavity of outer balance plate with shuttle flow cavity of mounting flange.
- Install two steel balls into seats of star (one per seat). Retain balls with grease.
- Install o-ring seals (150,8 [5.94] ID) in o-ring grooves on both sides of Geroler. Seal on balance ring side of Geroler must have sufficient coating of petroleum jelly to assist in retaining seal in the groove. Place Geroler assembly over outer balance plate. Make sure that balls are in their seats. Align shuttle flow cavity of Geroler with shuttle flow cavity of outer balance plate.
- Place valve plate onto Geroler. Align bolt holes and shuttle flow hole with mating holes on Geroler.
- Place end cap on workbench name plate side down, seal grooves face up. Install o-rings (150,8 [5.94] ID & 26,7 [1.05] ID) into seal grooves. Seals must have sufficient coating of petroleum jelly to assist in retaining seal in the groove.
- Carefully invert end cap and place onto valve plate. Make sure that shuttle flow cavities are aligned. Install nine cap screws lubricated with DTE-26/DTE-24. Pre-torque each in a crisscross pattern to 80 ± 10 lb-ft. Finally, in a crisscross pattern, tighten screws to 135 ± 5 lb-ft. (See Figure 5)

Note: Damage to the balance plate will occur if these bearingless motors are lifted by the drive.

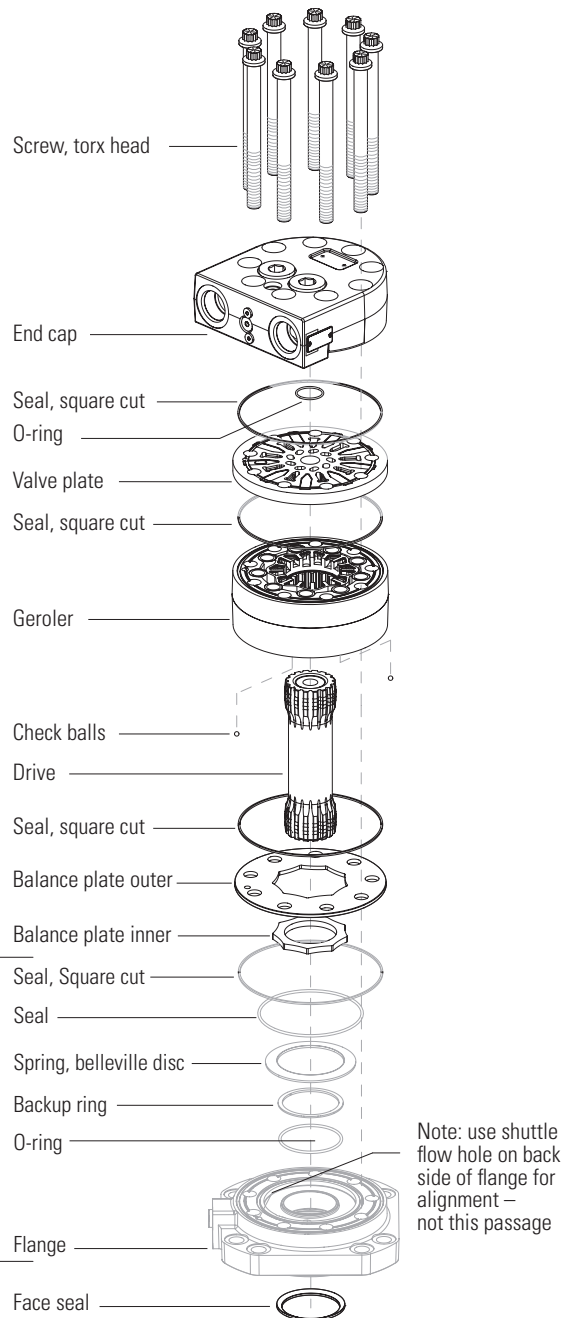


Figure 4

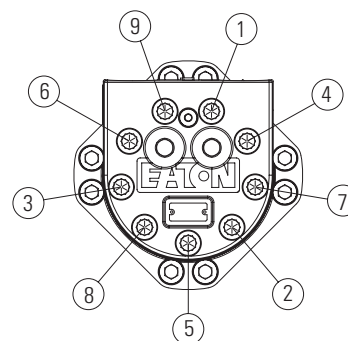


Figure 5

VIS bearing pack - 45 series

Disassembly

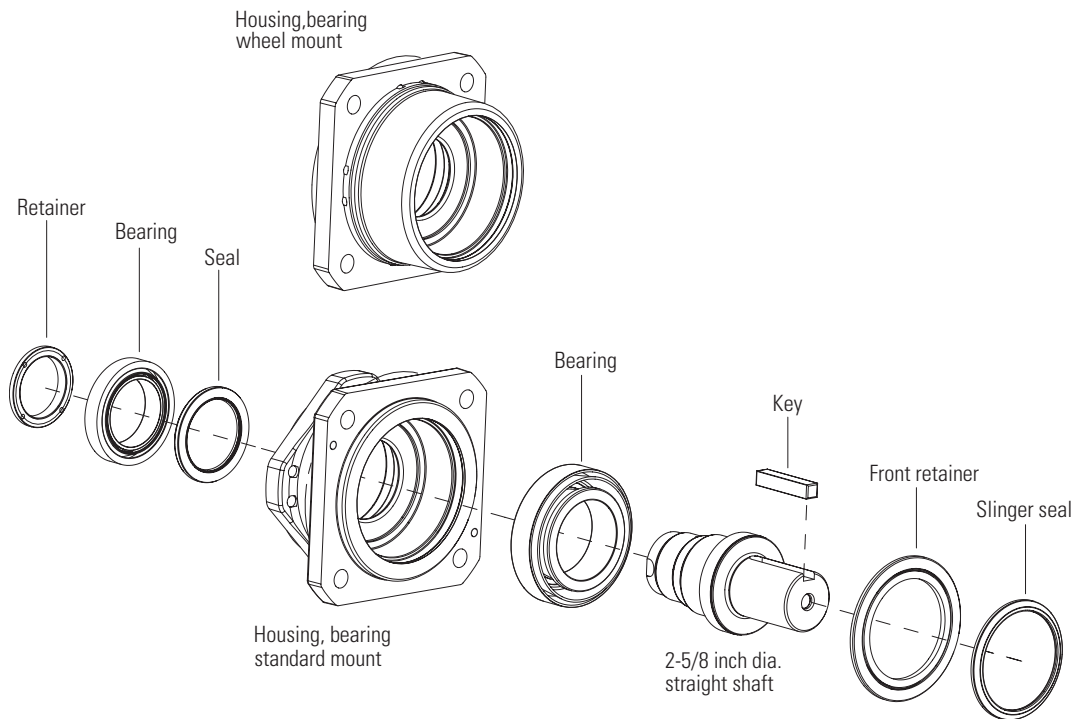


Figure 6

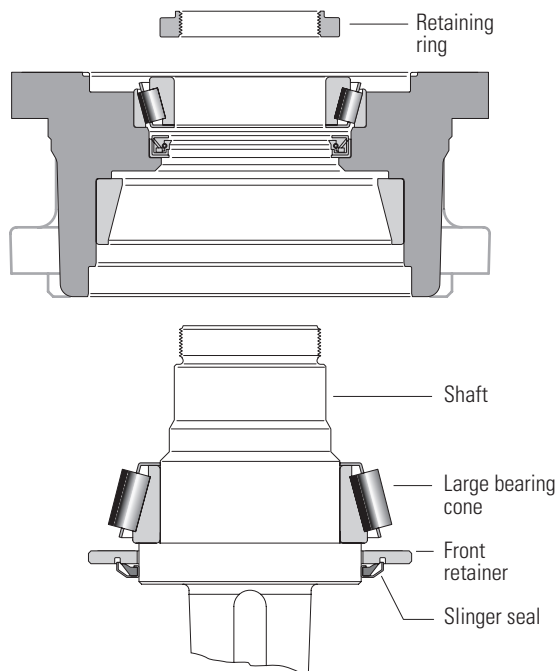


Figure 7

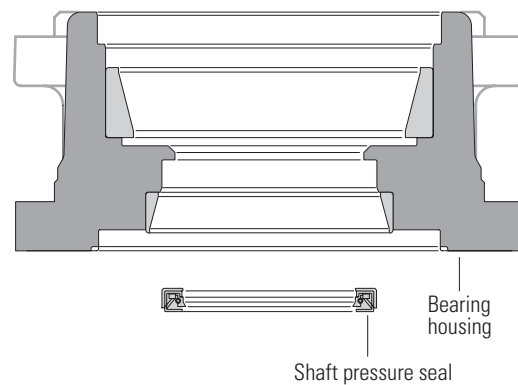


Figure 8

Disassembly bearing housing subassembly

23. Remove retaining ring, the crimp lock should be rounded away from flat on shaft before turning retaining ring. Carefully press shaft from housing as shown (see Figure 7).
24. Remove shaft pressure seal and discard.
25. Inspect bearings to determine a need for replacement, if you choose to replace shaft pressure seal only ignore steps 26, 28, and 30.

VIS bearing pack - 45 series

Reassembly

Reassembly bearing housing

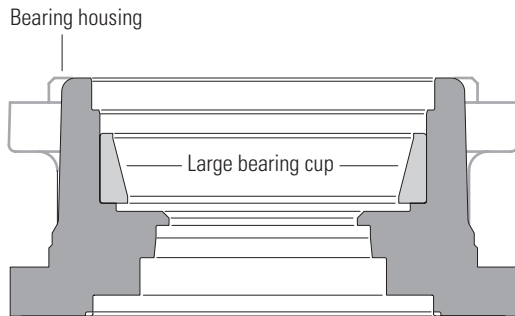


Figure 9

26. Place large bearing cup into 152,37 [5.999] dia. of bearing housing with taper facing outward. Protect taper surface from damage.

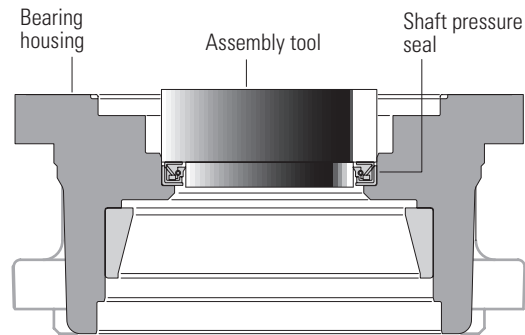


Figure 10

27. Lightly lubricate seal lip of shaft pressure seal with Mobil EP-2 grease or petroleum jelly (e.g. Vaseline). Place seal on assembly tool and press into 105,00 [4.134] dia. bore of bearing housing. Press until seal makes positive stop with bearing housing shoulder. Protect 80,01 [3.150] diameter shaft seal area from damage.

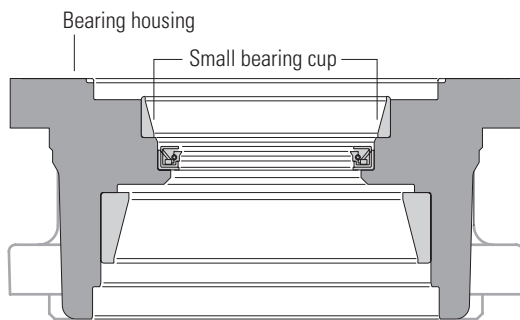


Figure 11

28. Place small bearing cup into 114,96 [4.526] dia. of bearing housing with taper facing outward. Protect taper surface from damage.

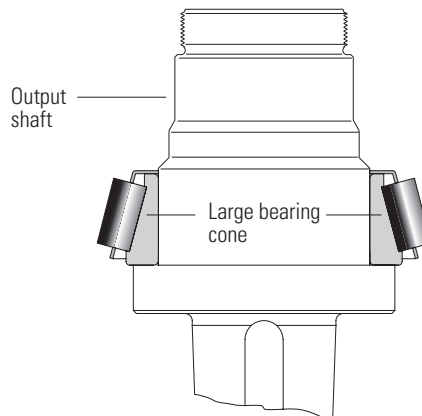


Figure 12

29. Grease pack large bearing cone with Mobile SHC 220 Grease.
30. Place large bearing cone against shaft shoulder with 22241 ± 890 N [5000±200 lbf].

VIS bearing pack - 45 series

Reassembly

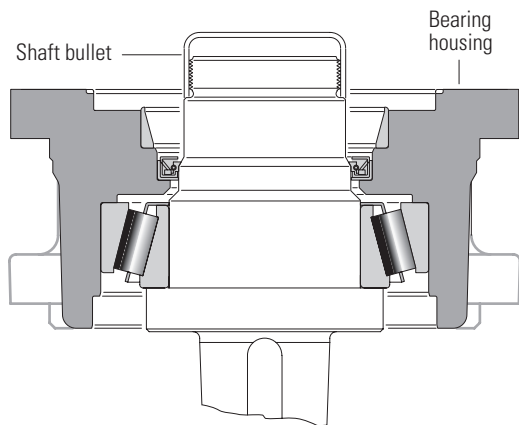


Figure 13

31. Lightly lubricate seal lip of shaft pressure seal with Mobile EP-2 grease or petroleum jelly (e.g. Vaseline). Assemble bearing housing over shaft so that large bearing cup is mating with large bearing cone use shaft bullet to prevent seal lip damage during installation.

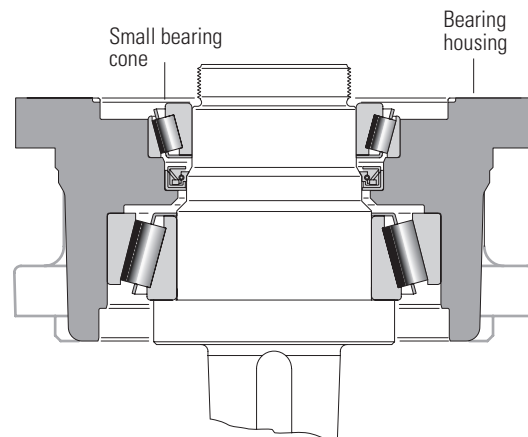


Figure 14

32. Place small bearing cone onto 75,052 [2.9548] dia. with 22241 ± 890 N [5000 \pm 200 lbf].

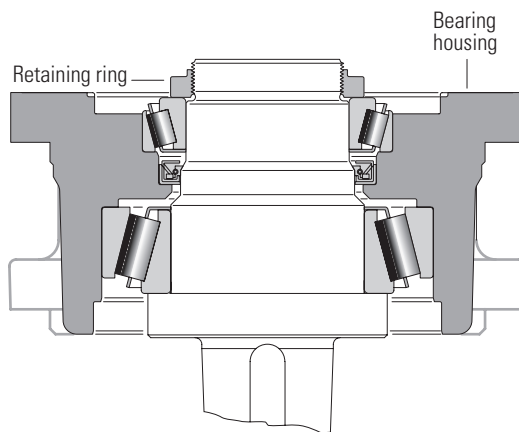


Figure 15

Important: Bearings to be rotated when force is being applied or rotated after pressing to insure proper seating of rollers.

Note: If it loosens, replace bearings.

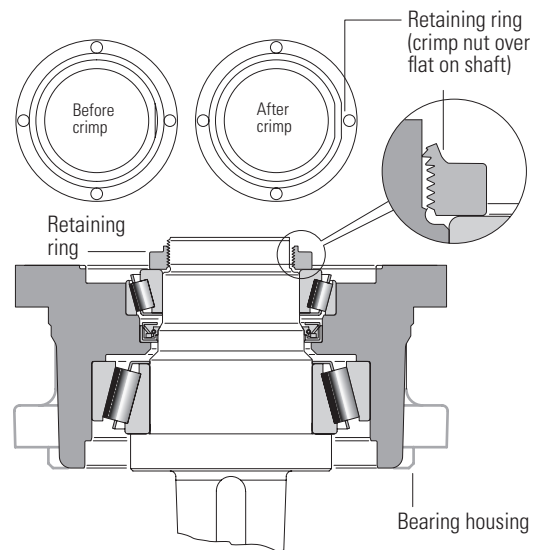


Figure 16

33. Immediately after assembly of small bearing cone, install retaining ring onto shaft and torque to 244 Nm [180 ft-lb]. Crimp nut over flat surface on shaft thread to prevent nut from loosening. Crimp should be at least 10,2 [0.4] long with no gap between nut and shaft.

VIS bearing pack - 45 series

Reassembly

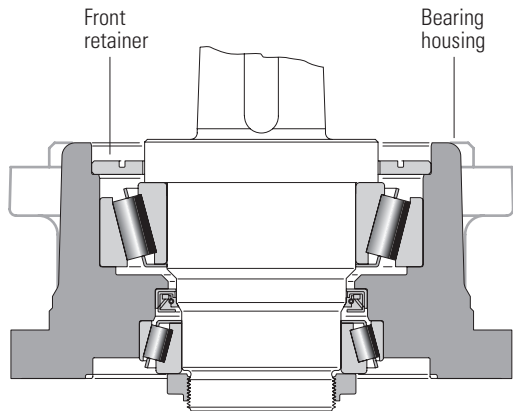


Figure 17

34. Fill cavity containing large bearing with Mobil SHC 220 grease.
35. Place front retainer onto 158,22 [6.299] dia. bore of bearing housing with light press force until seated. The groove in the front retainer should be visible after installation.

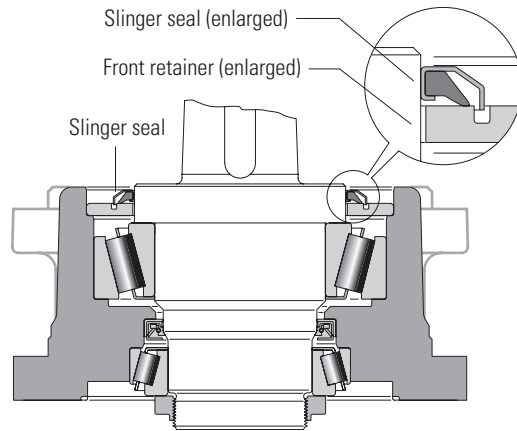


Figure 18

36. Place slinger seal onto 110,01 [4.331] dia. of output shaft with light press force until outer diameter of seal locates into groove of front retainer.

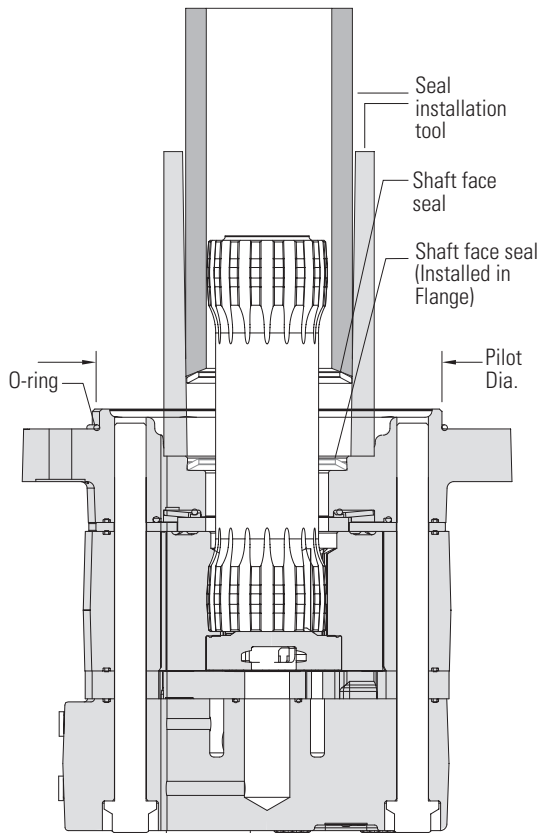


Figure 19

37. Install shaft face seal flange of bearingless portion of motor. Use an installation tool as shown, lubricate seal with Mobil EP-2 grease or petroleum jelly (e.g. Vaseline) and compress seal into place.
38. Lightly lubricate o-ring with Mobil EP-2 grease or petroleum jelly (e.g. Vaseline). Install onto pilot diameter of bearingless motor.

VIS bearing pack - 45 series

Reassembly

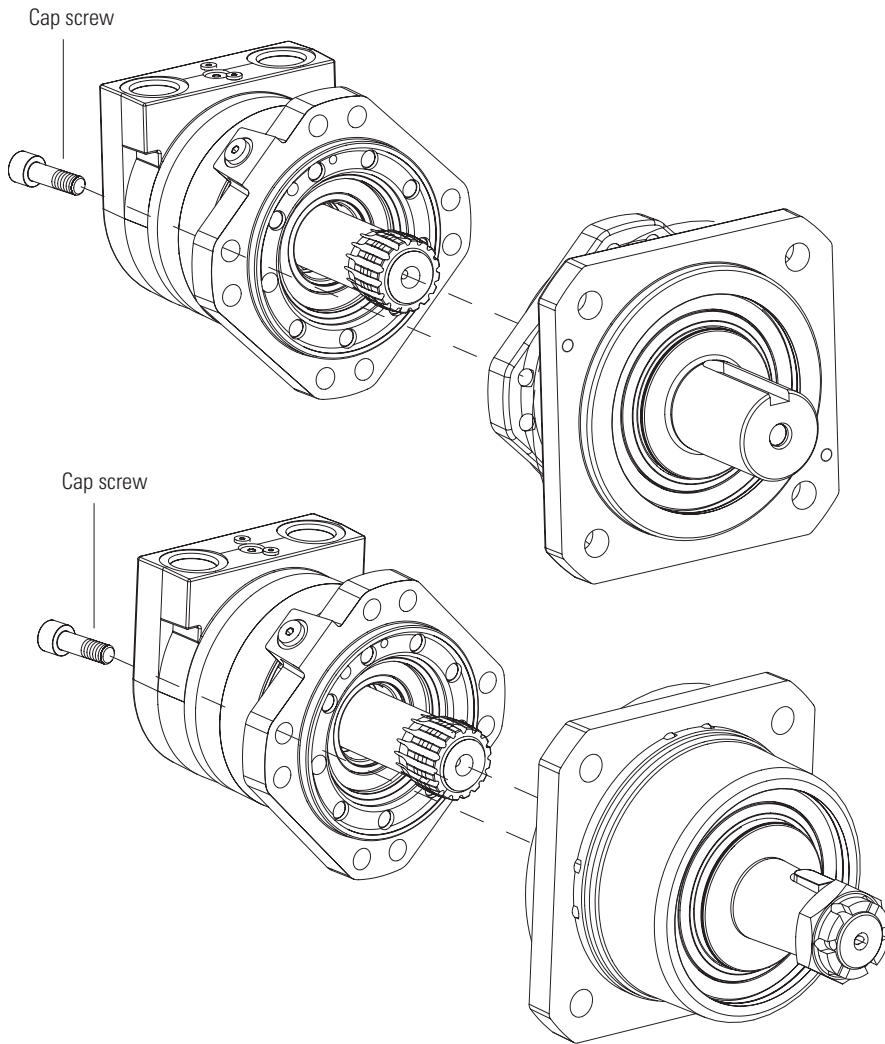


Figure 20

39. Assemble bearing subassembly to bearingless motor and install 8 mounting bolts. Torque bolts to 203 Nm [150 ft-lb] using criss-cross pattern.

VIS geroler motors - 45 series

How to order replacement parts

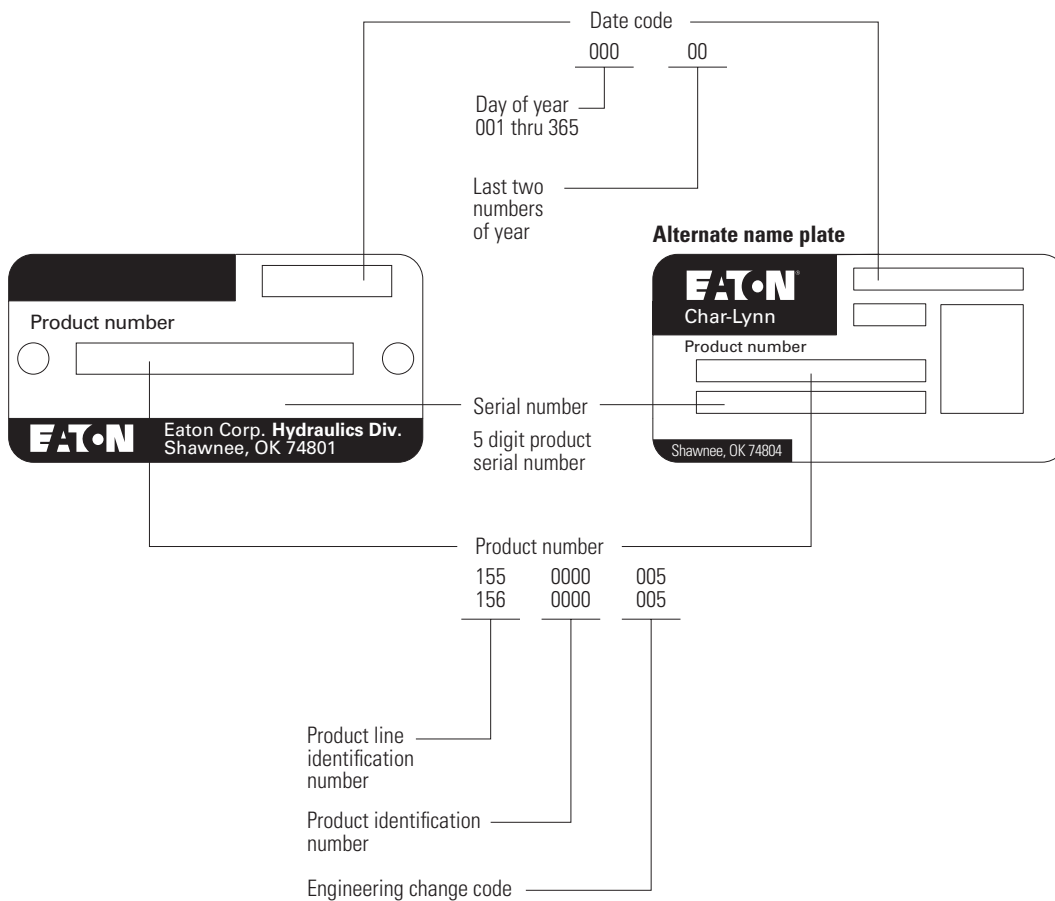
Each order must include the following:

1. Product number
2. Date code
3. Part name
4. Part number
5. Quantity of parts

For more detailed information, please contact

Eaton's Hydraulics
14615 Lone Oak Road
Eden Prairie, MN 55344

For specifications and performance data, refer to
catalog E-MOLO-MC001-E3



Eaton
Hydraulics Group USA
14615 Lone Oak Road
Eden Prairie, MN 55344
USA
Tel: 952-937-9800
Fax: 952-294-7722
www.eaton.com/hydraulics

Eaton
Hydraulics Group Europe
Route de la Longeraie 7
1110 Morges
Switzerland
Tel: +41 (0) 21 811 4600
Fax: +41 (0) 21 811 4601

Eaton
Hydraulics Group Asia Pacific
Eaton Building
No.7 Lane 280 Linhong Road
Changning District,
Shanghai 200335
China
Tel: (+86 21) 5200 0099
Fax: (+86 21) 2230 7240