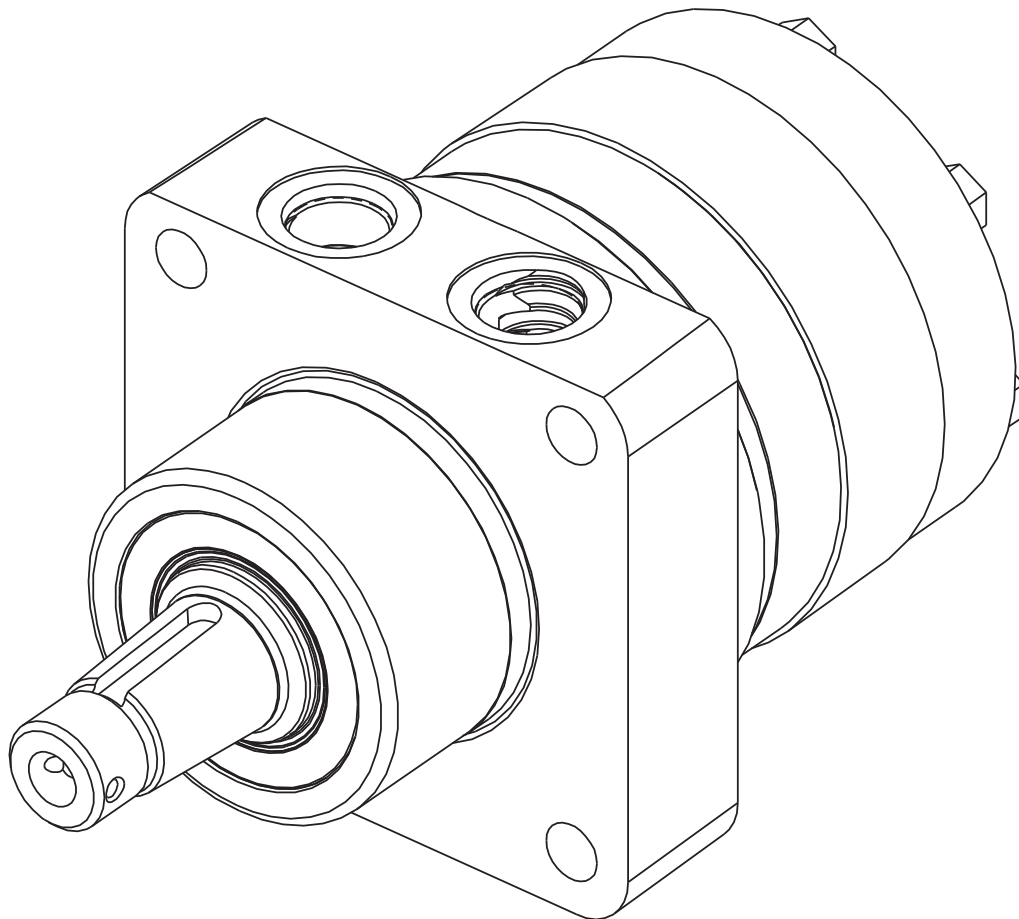


**EATON**

**Char-Lynn**

**Delta Motors**

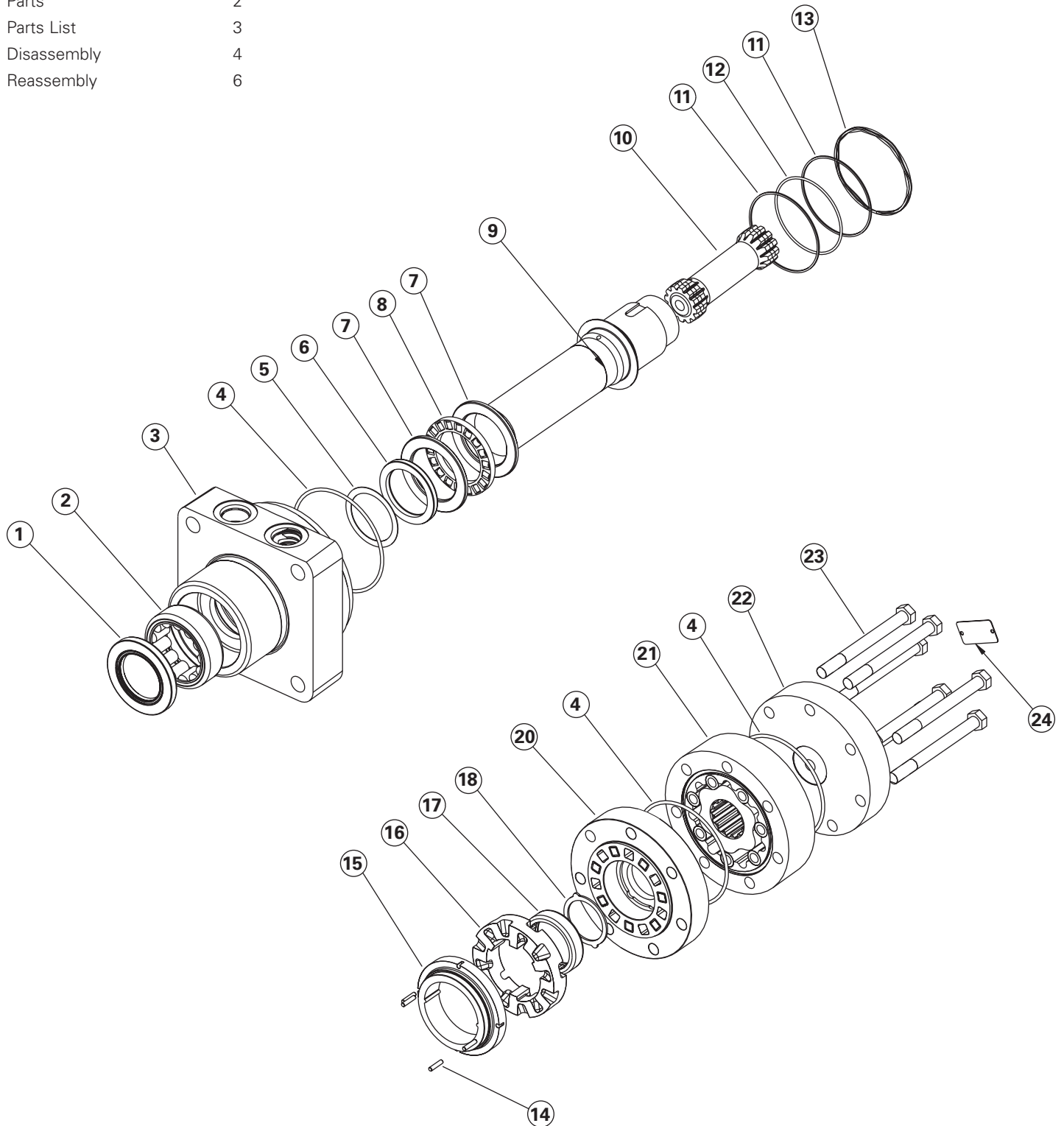
Parts and Repair Manual



# Parts

## Table of Contents

Parts	2
Parts List	3
Disassembly	4
Reassembly	6



# Parts List

REF	PART NO.	QTY.	DESCRIPTION	Tools Required	
=, +	1	5987016-001	1	Grease Seal	1. Screw driver
=, +	2	5986832-001	1	Bearing Shell	2. 9/16 Socket Wrench
	3	4999949-001	1	Housing	3. Torque Wrench
=, +	4	5986912-001	3	O-ring	4. Shell Bearing Tool no. 606253
=, +	5	6943-000	1	Back-up Washer	5. Grease Seal Tool no. 606254
=, +	6	9057-012	1	Shaft Seal	6. Main Seal Tool no. 600421-2
	7	4999849-001	2	Bearing Race	7. Press
	8	5986825-001	1	Thrust Bearing	8. Shaft Bullet no. 606256
	9	4999967-002	1	Output Shaft	9. Loctite 277
	10	—	1	Drive	10. Inside Bearing Tool no. 606252
=, +	11	5990003-001	2	Back-up Ring	11. Hammer
=, +	12	112530-037	1	O-ring	12. Modified Key
	13	5987176-001	1	Valve Spring	13. Modified Cotter Pin Puller
	14	14416-001	4	Dowel Pin	
	15	4999900-001	1	Balancing Ring	
	16	4999904-001	1	Valve	
	17	5990407-001	1	Bearing	
	18	4998396-001	1	Thrust Bearing	
	20	4999898-001	1	Valve Plate	
	21	—	1	Gerolor Assembly	
	22	5986586-001	1	End Cap	
	23	—	7	Hex Head Screw	
		14163-001	1	Nut, Slotted (Not Shown)	
		14392-006	1	Key (Not Shown)	
=		14628-012		Slinger Seal	
		9900436-000		Seal Kit-Contains Parts Indicated by '+'	
		9900437-000		Seal Kit with Seal Guard-Contains Parts Indicated by '='	

DISPLACEMENT	HEX HEAD SCREW		LENGTH		GEROLER	WIDTH		DRIVE	LENGTH	
	cm <sup>3</sup> /r	in <sup>3</sup> /r	mm	inch		mm	inch		mm	inch
113	6.9	14384-026	88.1	3.47	4999844-001	18.5	0.73	5986952-001	88.9	3.50
146	8.9	14384-026	88.1	3.47	4999844-002	24.1	0.95	5986952-002	94.2	3.71
198	12.1	14384-025	100.8	3.97	4999844-003	32.5	1.28	5986952-003	102.9	4.05
234	14.3	14384-025	100.8	3.97	4999844-004	38.6	1.52	5986952-004	109.0	4.29
252	15.4	14384-001	108.2	4.26	4999844-012	41.4	1.63	5986952-012	112.0	4.41
300	18.3	14384-025	100.8	3.97	4999844-005	38.6	1.52	5986952-005	108.7	4.28
347	21.2	14384-002	113.0	4.45	4999844-006	44.7	1.76	5986952-006	114.8	4.52
395	24.1	14384-002	113.0	4.45	4999844-007	50.8	2.00	5986952-007	121.2	4.77
470	28.7	14384-004	127.3	5.01	4999844-008	60.7	2.39	5986952-008	131.1	5.16
542	33.1	14384-007	138.4	5.45	4999844-009	69.9	2.75	5986952-009	140.5	5.53
649	39.6	14384-009	151.1	5.95	4999844-010	83.6	3.29	5986952-010	154.2	6.07
754	46.0	14384-012	164.6	6.48	4999844-011	99.6	3.92	5986952-011	167.9	6.61

# Disassembly

## Step 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.

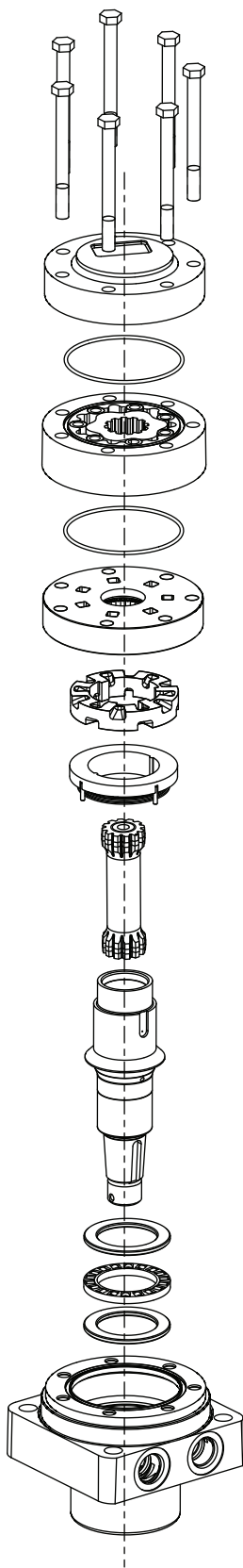
**Important Note:** All seals should be replaced when the motor is disassembled. Front shell bearing should be replaced only when shaft is to be removed.

## Step 2

Remove the seven bolts and disassemble the motor in a vertical position as shown. As the dowel pins are glued in during assembly, they may or may not come loose.

## Step 3

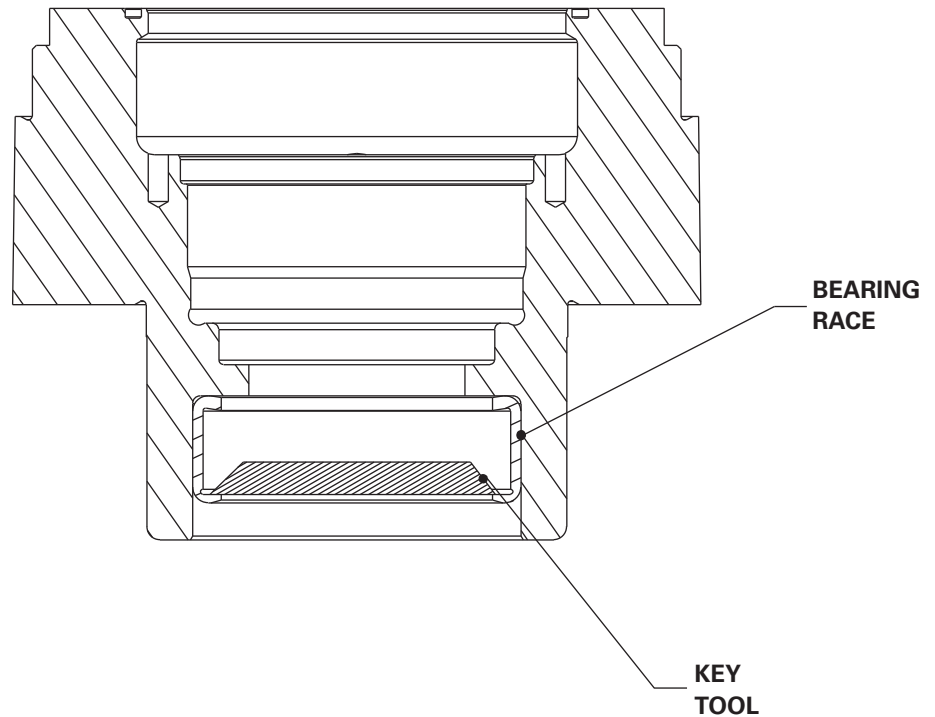
Examine condition of bearing in the valve plate. Replace the bearing only if signs of wear and/or contamination are visible. If necessary remove the bearing from valve plate by tapping it with a hammer and a screwdriver.



# Disassembly

## Step 4

Remove grease seal by wedging it out with a screwdriver. Remove the shell bearing by prying the bearing cage open. Remove the rollers and insert key (.25" key stock, 2.2" long, 45° recess) horizontally in between the races. Press the key to remove the bearing from the housing.

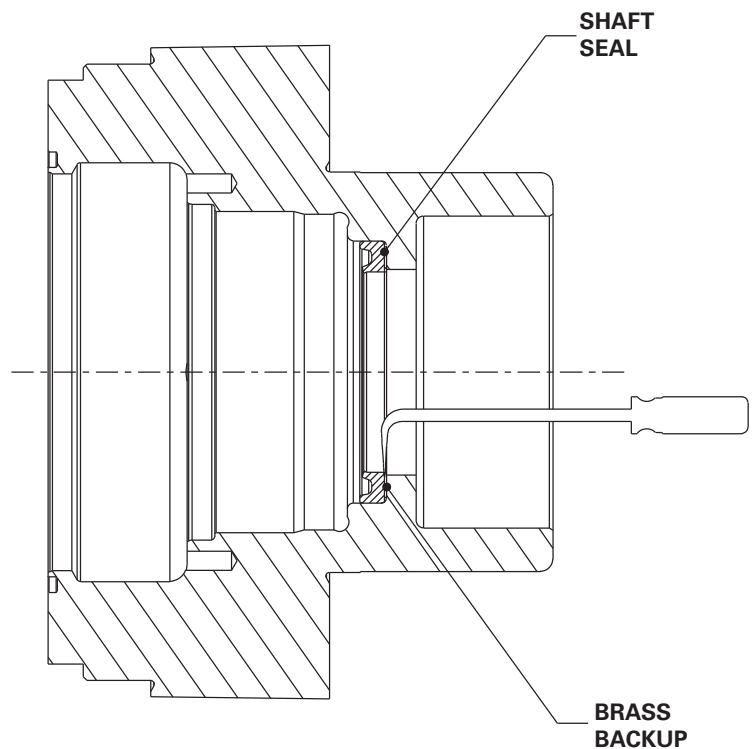


## Step 5

Insert flat point of a modified cotter pin puller (with tip ground to a flat point) between housing and brass backup. Wiggle up and down to begin to dislodge the seal and work the point deeper in. Work all the way round the seal. Some locations work better than others, some seals come out easier than others.

## Step 6

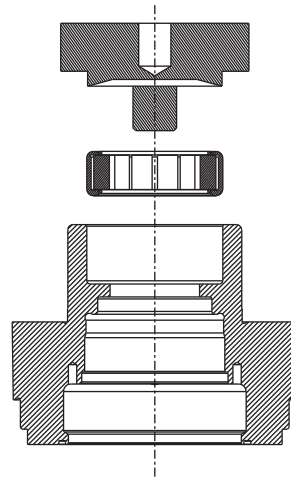
Check all mating surfaces. To reduce the chance of leakage, replace any parts that have scratches or burrs. Wash all metal parts in clean solvent. Blow them dry with pressurized air. Do not wipe parts dry with paper towels or cloth, as lint in a hydraulic system will cause damage.



# Reassembly

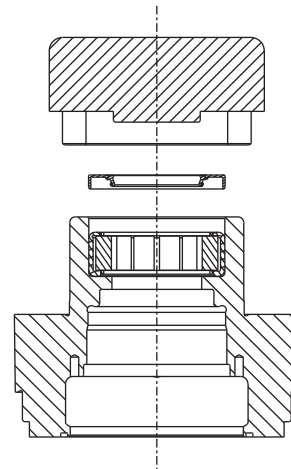
## Step 1

Position the housing in the vertical position on a clean smooth surface, use shell bearing tool No. 606253 and press the shell bearing into position in the housing. The lettering on the bearing race denotes the side to be contacted by the tool.



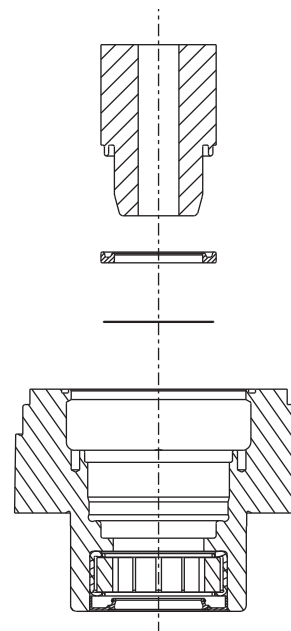
## Step 2

Lubricate the grease seal with Mobilux EP 111 and press it into position in the housing with tool No. 606254.



## Step 3

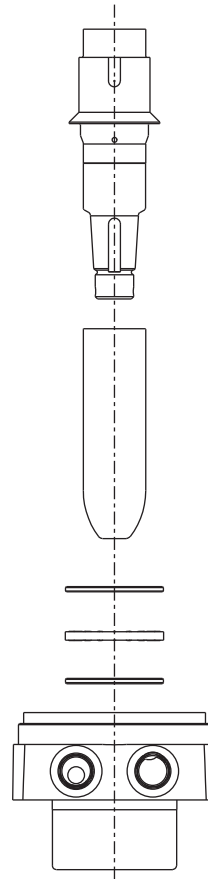
Flip housing. Install back-up washer into interior bore of the housing. Lubricate the shaft seal lip with Mobilux EP 111, place on assembly tool No. 600421-2 and press it into the interior bore of the housing.



# Reassembly

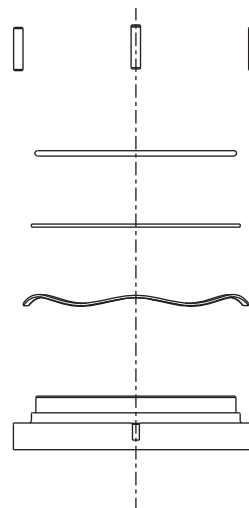
## Step 4

Place a bearing race, then a thrust bearing, and then the second bearing race into interior bore of the housing. Place shaft bullet No. 606256 over output end of shaft and install into the bearing housing.



## Step 5

Install four dowel pins into the blind holes on the balancing ring using sufficient Loctite 277 to hold the pins. Install one backup ring, then the o-ring onto the balance ring. Install the wave spring with sufficient petroleum jelly to keep it in place.

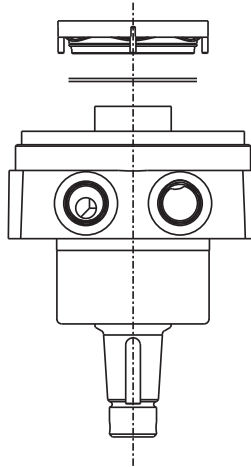


# Reassembly

## Step 6

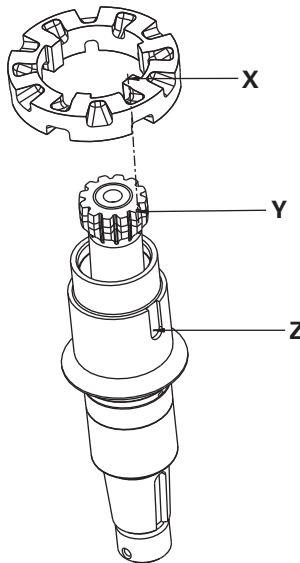
Install the second backup ring into the housing. Invert the balance ring and place into the housing making sure to align the dowel pins with the holes in the housing.

**Important Note:** Press on the balance ring and verify that it springs back when released. This ensures that the ring has not been pinched.



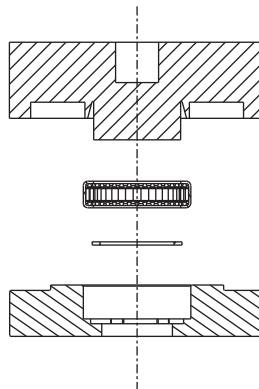
## Step 7

Install the valve into the housing with the shaft notch lining up with the longest tang of the valve. Insert button end of the drive into the shaft and mark the spline tooth that lines up with the notch in the shaft. This marked tooth is critical in the timing of the motor.



## Step 8

Insert the thrust bushing in the valve plate aligning its tabs. Press bearing into valve plate with Tool No. 606252 with the lettering on the bearing contacting the tool. Place valve plate assembly into the housing aligning the bolt holes.





# Reassembly

## Step 9

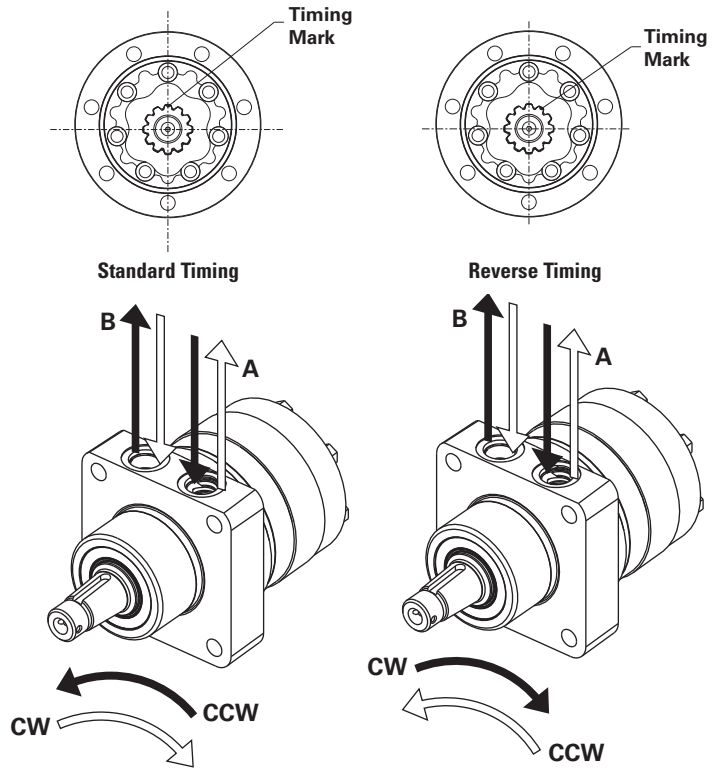
Install two greased seals into the Geroler®. Install the Geroler® onto the drive with splined end away from the housing. Align star according to rotation preference as outlined in the timing procedure. Timing procedure is given below.

### a. Standard Timing

Align the marked spline of the drive with star tip. This produces CCW rotation when the A port is pressurized.

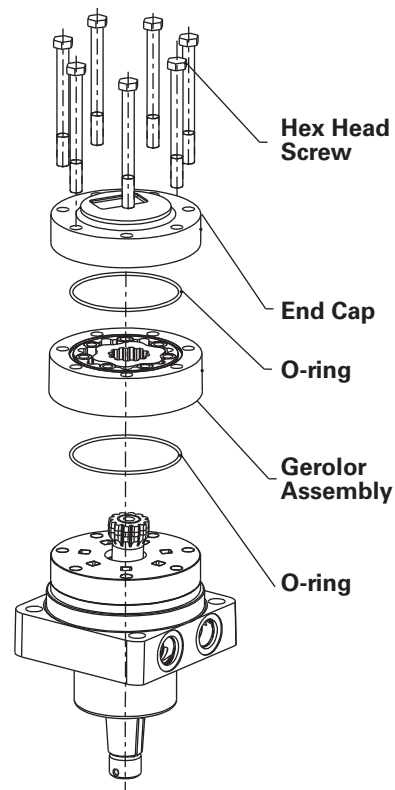
### b. Reverse Timing

Align the marked spline of the drive with star valley. This produces CW rotation when the A port is pressurized.



## Step 10

Place the end cap on the Geroler® and align the bolt holes. Lubricate and insert seven bolts and torque them to  $500 \pm 50$  lbf-in ( $42 \pm 4$  lbf-ft,  $56 \pm 5$  Nm) in a crisscross pattern.



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