Power Wheel® Service Manual
Model 10 Series B Double Reduction
Shaft and Spindle Output Drives

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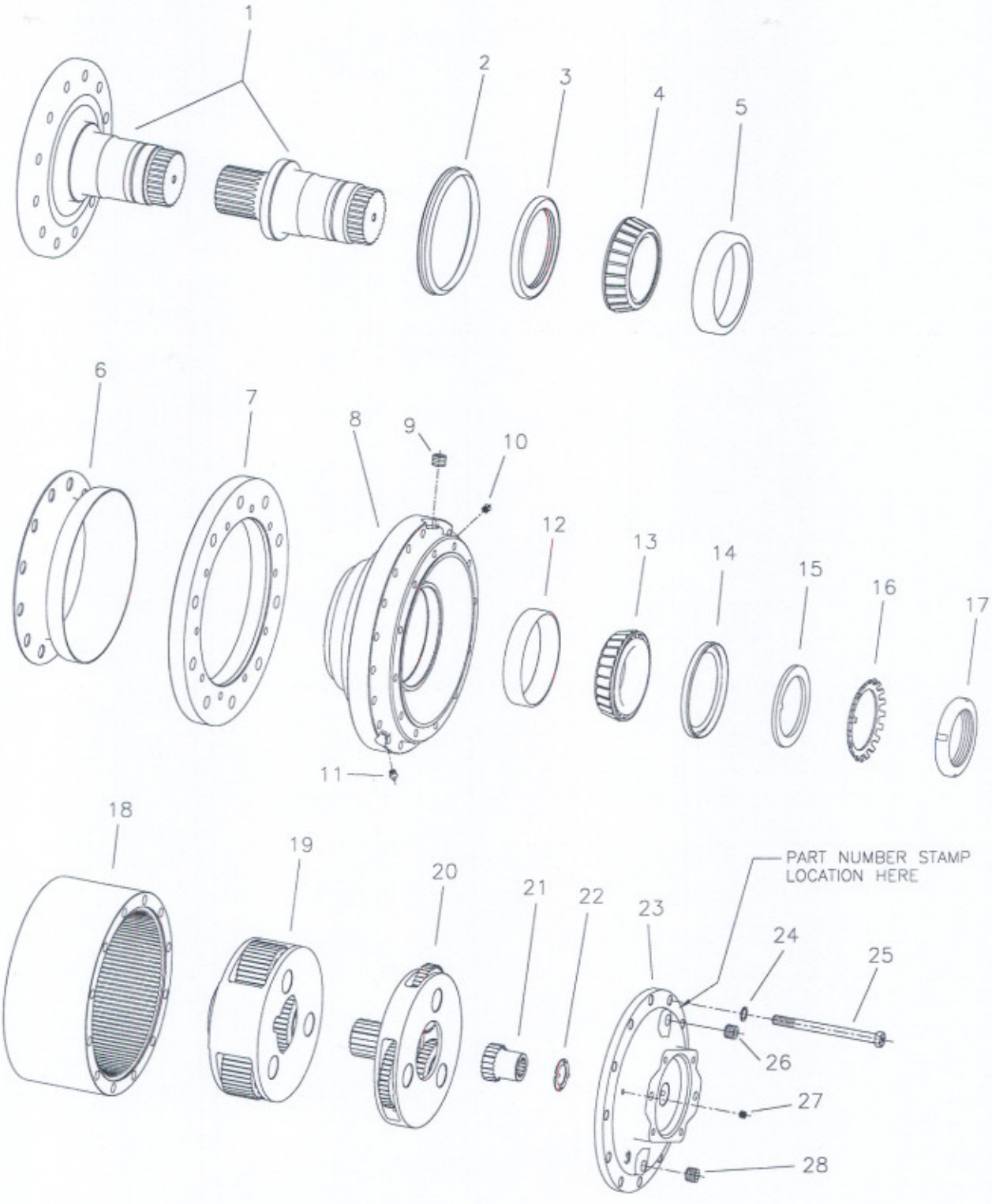

IDENTIFICATION

IMPORTANT: All Power Wheel units and kits are shipped with a label that includes the Auburn Gear part number, order code and work order.

Example:

In addition to the label, Power Wheel drives are stamped with an identification number and date code, which appears on the cover or hub flange as shown.

Example: **60001963, M8 15 SAT**

When ordering parts, the information included on the label or the stamped identification number is necessary to accurately identify the drive and obtain the correct replacement parts. Once this information has been obtained, contact Auburn Gear for the appropriate parts list.

DISASSEMBLY OF POWER WHEEL

STEP 1

Remove twelve hex head bolts (25) and washers (24) from cover (23). Units with adapter ring (7) DO NOT have flat washers (24) included in assembly. Thrust washer (22) usually remains with cover.

STEP 2

Lift sun gear (21) from primary carrier assembly (20).

STEP 3

Remove primary carrier assembly (20) from ring gear (18).

STEP 4

Remove the secondary carrier assembly (19). It may be necessary to remove the ring gear (18) first, if difficulty is encountered in removing the secondary carrier assembly (19).

STEP 5

Remove ring gear (18) from hub (8). It may be necessary to strike ring gear (18) with a rubber mallet to loosen from hub (8).

STEP 6

One tab of lock washer (16) will be engaged in slot of bearing nut (17); bend tab back to release. Remove the bearing nut (17), lock washer (16) and thrust washer (15). NOTE: A special locknut wrench, 609BBB, is required for the removal of the bearing locknut. Contact Auburn Gear to purchase wrench and other service tools.

STEP 7

Place assembly in press with output shaft or spindle (1) down on hub flange (8) place material under output shaft or spindle so not to damage when it's pressed out of hub. Care should be taken to avoid damaging splines and threads on output shaft or spindle while pressing it out. NOTE: Bearing cone (13) has been designed with a press fit with respect to output shaft or spindle (1). Considerable force will be required to remove cone from output shaft or spindle.
If a press is not available you will need the 609BB Spindle/Shaft removal tool. You place the small disk on the end of the spindle/shaft. Mount the cross tube to the ring gear. Turn the screw against the small disk, DO NOT use an impact gun. Turning the screw will force the spindle/shaft out of the bearing cone.

STEP 8

Remove the oil seal (3) & boot seal (2), if included and bearing cones (4 & 13) from hub (8). Inspect bearing cups (5 & 12) in position and remove only if replacement is required.

STEP 9

Remove thrust washer (15) from in front of the bearing cone (13). If unit is equipped with the grease cavity option (Order Code "V") it will be necessary to first remove grease cavity seal (14). Pull output shaft or spindle (1) from hub (8). If bearings are not a loose fit, it may be necessary to press output shaft or spindle (1) from hub.

(See Special Instructions for Adaptor Ring and Shaft Bearing Grease Cavity.)

ASSEMBLY OF POWER WHEEL

STEP 1

Press new bearing cups (5 & 12) in each side of the hub (8). It is recommended that bearing cups (5 & 12) and cones (4 & 13) be replaced in sets.

STEP 2

Assemble bearing cone (4) into cup (5) at seal end of hub (8) and press a new seal (3) into hub (8). Install boot seal (2) on hub (8) if unit is so equipped.

STEP 3

Position output shaft or spindle (1) upright on bench. Lubricate lips of seals (2) and (3) and lower hub (8) onto output shaft or spindle (3). Hub (8) should be centered as it is lowered over output shaft or spindle (1) to prevent seal damage.
NOTE: **[On heavy duty seals (order code T) there is to be no lubricate on seal (3), output shaft or spindle (1), or hub (8)].**

STEP 4

Assemble bearing cone (13) over output shaft or spindle (1). Press bearing cone (13) over output shaft or spindle bearing journal using press and cylindrical bearing cone driver 609B. Press bearing cone (13) down until rollers just touch cup (12). Continue to press cone while rotating the hub (8) until 6500 PSI is reached on the press.

STEP 5

For drives equipped with the grease cavity option (Order Code "V"), press a new seal (14) into hub (8) until flush with surface of hub where seal is installed.

STEP 6

Install thrust washer (15) and lock washer (16) with tabs in keyway of output shaft or spindle (1) and bearing nut (17). Torque bearing nut (17) using bearing locknut tool 609BBB. Torque bearing nut to 65-75 lb.-ft. (88-100 Nm).

STEP 7

Secure bearing nut (17) by bending a lock washer (16) with tabs in keyway of output shaft or spindle (1) and bearing nut slots (17). If no tab aligns with a slot, the nut maybe tightened to the first slot that aligns with lock washer tab (16).

STEP 8

Assemble the secondary carrier assembly (19) on the output shaft or spindle (1).

STEP 9

Clean mating surfaces and apply a bead of silicone sealant to face of hub (8) that mates with ring gear (18). See instructions on sealant package. Assemble ring gear (18) to hub (8) being careful to align boltholes.

STEP 10

Assemble the primary carrier assembly (20) into the ring gear (18). It will be necessary to rotate carrier to align secondary sun gear {part of primary carrier assembly (20)} with planet gear teeth in secondary carrier assembly (19). Install primary sun gear (21) into primary carrier assembly. Sun gear (21) should turn freely by hand when assembled.

STEP 12

Apply a bead of silicone sealant to cover face of ring gear (18). Secure thrust washer (22) with tangs engaged in cover (23). **NOTE:** Washer (22) can be secured to cover (23) with a small amount of grease or silicone sealant. Assemble cover (23) to ring gear (18). Align cover (23) with hub (8) such that pipe plug holes on cover align with mounting holes in hub.

STEP 13

Assemble the twelve 9/16-12 x 7 inch grade 8 bolts (25) and flat washers (24). Torque bolts to 120 - 130 lb.-ft. (163.2 – 176.8 Nm).

STEP 14

After motor is assembled to drive or drive is sealed at output shaft or spindle. Position filler opening horizontally and fill unit to oil level hole in cover (23). Install pipe plugs (26 & 27). Torque pipe plug (27) 4-8 lb.-ft. and pipe plugs (9, 26 & 28) 11-25 lb.-ft.

STEP 15

If the drive includes the grease cavity option, fill entire cavity approximately 14.5 oz of Timken NLGI grade 2 # GR219C or equivalent grease with heavy-duty moly.

NOTE: When installing a hydraulic motor to the Power Wheel drive it is necessary to place an "O" ring or gasket (not supplied by Auburn Gear) between the motor and the planetary drive. "O" ring sizes: SAE A 2-042, SAE B 2-155, SAE C 2-159.

SPECIAL INSTRUCTIONS FOR MOUNTING ADAPTOR RING

Certain models utilize an adaptor ring (7) for mounting the Power Wheel. A Power Wheel with an adaptor ring (7) can be removed in its entirety for service by removing the twelve 9/16 – 12UNC hex head bolts (25) from cover (23).

SPECIAL INSTRUCTIONS FOR SHAFT BEARING GREASE CAVITY

Certain models utilize a grease seal (14), grease fitting (10) and pressure relief fitting (11) to provide a separate grease cavity for the output shaft bearings that is necessary for vertical shaft up applications. Bearings should be greased on a regular basis with interval depending on duty cycle and operating conditions. Lubricate with Timken NLGI grade 2 part No. GR219C or equivalent grease with heavy-duty moly based grease through fitting (10) until grease is purged from relief fitting (11). Always grease bearings if drive is to be stored or shut down for an extended period.

CARRIER ASSEMBLIES

It is recommended that the primary and secondary carrier assemblies (19 & 20) be serviced in their entirety to protect the integrity of the Power Wheel drive.

LUBRICATION RECOMMENDATIONS

IMPORTANT: POWER WHEEL PLANETARY DRIVES ARE SHIPPED WITHOUT LUBRICANT AND MUST BE FILLED TO THE PROPER LEVEL PRIOR TO START UP.

Observe lubrication recommendations given by the original equipment manufacturer. When specific recommendations are not available, use mild extreme pressure lubricant API-GL-5, No. 80 or 90 when filling the Power Wheel under normal temperature ranges between 0 - 120°F (-18 to 49°C). Power Wheel is to be half full of oil when unit is mounted level and horizontal. Use drain and fill plugs located in cover. Oil is to be changed after first 50 hours of operation with subsequent changes every 1000 hours or yearly, which ever comes first. If unit is to be operated vertically, if ambient conditions are outside the specified range, or if the oil temperature exceeds 200°F (93°C) contact Auburn Gear for oil and level recommendations.

STORAGE

A protective film is applied to the Power Wheel at the factory to prevent rust during shipment. Additional protection may be required if the Power Wheel is to be stored for an extended period of time.

SEALING COMPOUND

Silastic RTV732 sealer and General Electric Silimate RTV No. 1473 or RTV No. 1503 are currently recommended for sealing gasket surfaces. Sealant should be applied in a continuous bead, which should be centered on the surface to be sealed but should move to the inside of the hole at each bolthole location. For service requirements order Auburn Gear part number 604101.

SPECIFICATIONS

Maximum intermittent output torque ..... 180,000 lb. in. (20,340 Nm)
Maximum input speed ..... 5,000 RPM
Oil capacity ..... 96 oz (2,840 cc)

ITEM NO.	DESCRIPTION*	NO. USED IN ASS'Y.
1	Shaft or Spindle Output	1
2 ***	Boot Seal	1
3	Oil Seal	1
4	Bearing Cone 613305	1
5	Bearing Cup 613306	1
6 ***	Guard 603501	1
7 ***	Adaptor Ring	1
8	Hub	1
9 ***	Magnetic Plug 14-00-052-002	1
10 ***	Grease Zerk 621801	1
11 ***	Pressure Relief Fitting 621802	1
12	Bearing Cup 613327	1
13	Bearing Cone 613326	1
14 ***	Oil Seal "V" Grease Cavity	1
15	Thrust Washer 619333	1
16	Lock Washer 605006	1
17	Bearing Nut 614917	1
18	Ring Gear	1
19	Secondary Carrier Assembly	1
20	Primary Carrier Assembly	1
21	Primary Sun Gear	1
22	Thrust Washer	1
23	Cover	1
24	Washer-Flat	12
25	Hex Head Bolt	12
26	Pipe Plug 03-04-101-01	1
27	Pipe Plug 03-04-101-09	1
28	Magnetic Plug 14-00-052-002	1

* Contact Auburn Gear with part number and order code of drive to obtain the appropriate parts list. Refer to parts list for the specific part numbers and quantities.

*** Not required in all assemblies

Model 10 Series B Power Wheel® Service Kits

Part No.	Description	Included Items
592A	Bearing Locknut Tool	Not Shown
609B	Bearing Cone Driver	Not Shown
609BB	Spindle/Shaft Drive Tool	Not Shown
641053**	Bearing & Seal Kit	3,4,5,12,13
641061**	Seal Kit	3
604411	Boot Seal	Sold Separately

** Indicates kit also includes a tube of sealant, part number 604101

