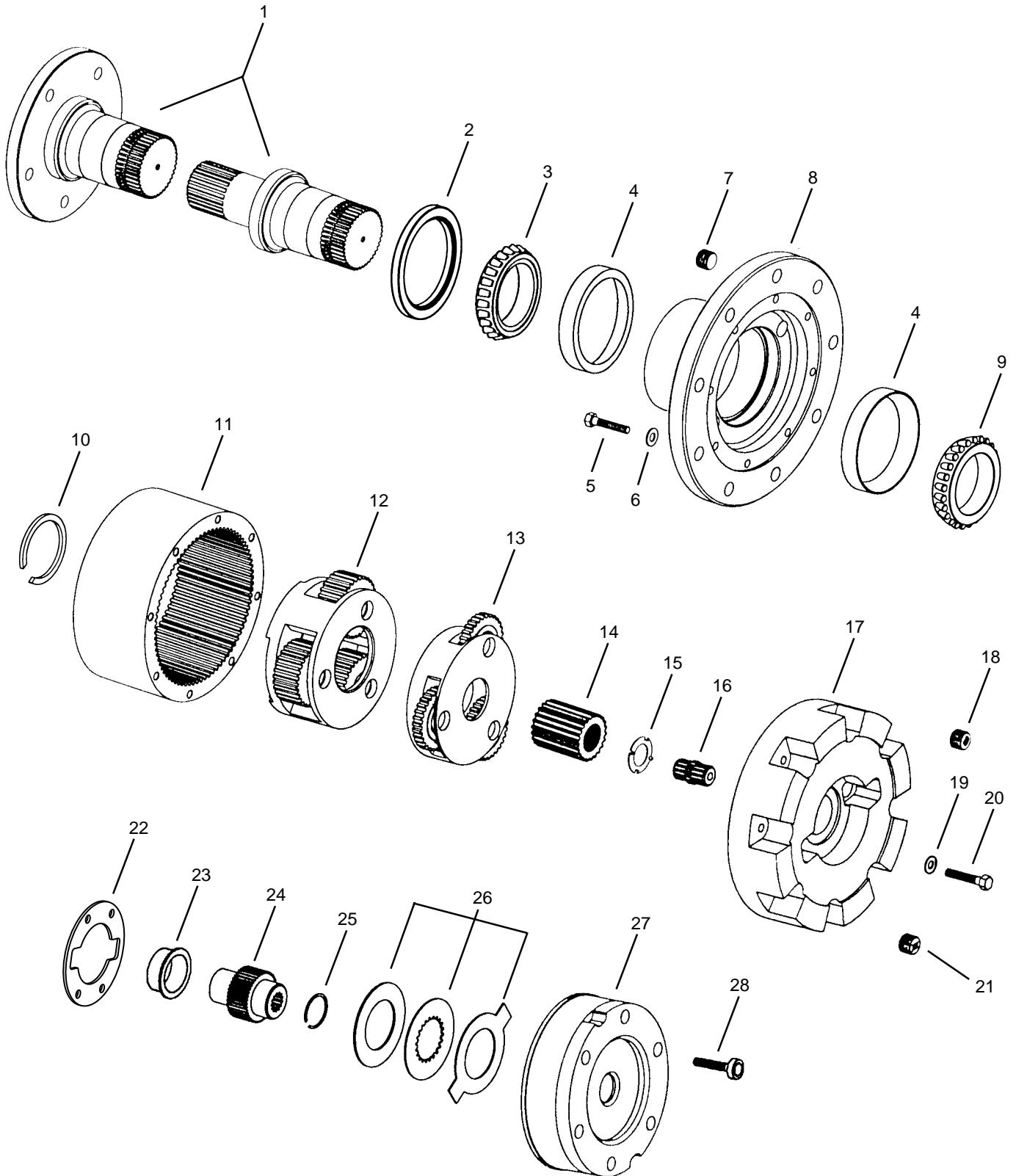


Power Wheel® Service Manual
Model 6 Double Reduction
Shaft and Spindle Output Drives
With Integral Parking Brake Option



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IDENTIFICATION

IMPORTANT: All Power Wheel units and kits are shipped with a nameplate that includes the Auburn Gear part number and order code as shown.



Example:

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

Example: **6000236-A-4-9**

When ordering parts, the information included on the nameplate 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

If brake portion of drive is to be serviced: SAE A and SAE B MOUNT BRAKES – Remove motor from planetary drive. SAE B MOUNT BRAKES – Temporarily install two 1/2-13 x 1.25 screws into hydraulic motor mounting holes and torque to 50 lb. ft. (67 Nm). These must be used to hold spring back-up plate in position when parking brake assembly is removed from the drive. If the brake portion of drive does not require service go to step 5.

STEP 2

SAE A MOUNT BRAKES – Remove the four socket head cap screws (28) retaining the brake to the drive, leaving the two screws in line with the motor mounting holes in place. These two screws hold the spring back-up plate in position when the parking brake assembly is removed from the drive. SAE B MOUNT BRAKES – Remove the four T-50 head screws (28) holding the parking brake assembly in position. (Some models may be equipped with socket head cap screws). It may be necessary to lightly strike the piston assembly (27) with a rubber mallet to loosen from spindle or cover.

STEP 3

Remove disc pack (26) from drive only if necessary. Be careful to maintain discs in order.

STEP 4

If brake piston assembly (27) has been removed slide the coupling (24) and retaining ring (25) from splines on input shaft (16). Remove sleeve bearing (23) only if replacement is required.

STEP 5

Remove eight hex head bolts (20) and flat washers (19) from cover (17). Lift cover (17) from assembly. Thrust washer (15) usually remains with cover (17).

STEP 6

Remove the splined input shaft (16) and lift sun gear (14) from primary carrier assembly (13).

STEP 7

Remove primary and secondary carrier assemblies (12 & 13) from ring gear (11).

STEP 8

Remove twelve hex head bolts (5) and washers (6) from hub (8). Pull ring gear (11) from remaining assembly. It may be necessary to strike ring gear (11) with rubber mallet to loosen from hub (8).

STEP 9

Remove retaining ring (10) from groove in output shaft (1). Pull output shaft (1) from hub (8). **NOTE:** To remove retaining ring (10), use retaining ring expander tool.

STEP 10

Remove oil seal (2) and bearing cones (3 & 9) from hub (8). Inspect bearing cups (4) in hub (8) and remove only if replacement is required.

ASSEMBLY OF POWER WHEEL

STEP 1

Press new bearing cups (4) in each side of the hub (8). It is recommended that bearing cups (4) and cones (3 & 9) be replaced in sets.

STEP 2

Assemble bearing cone (3) into cup (4) at seal end of hub (8) and press a new seal (2) into hub (8).

STEP 3

Lubricate lips of oil seal (2) and lower hub (8) onto output shaft (1). Hub (8) should be centered as it is lowered over output shaft (1) to prevent seal damage.

STEP 4

Assemble bearing cone (9) over output shaft (1) and into bearing cup (4). If bearing (3, 4 & 9), hub (8) or output shaft (1) is replaced, a new retaining ring (10) is required for proper bearing setting. Do not re-use snap ring after it has been installed and removed from unit. Select the thickest retaining ring (10) that can be assembled into ring groove of the splined end of output shaft (1) above bearing cone (9). Bearing should have from .000 – .006 inches (0.00 – 0.15 mm) of end play when proper retaining ring (10) is installed.

STEP 5

Clean mating surfaces and apply a bead of silicone sealant to face of hub (8) that mates with ring gear (11). (See instructions on sealant package).

STEP 6

Assemble ring gear (11) to hub (8) being careful to align all the bolt holes.

STEP 7

Install twelve grade 8 hex head bolts (5) and flat washers (6). Torque bolt to 52 – 60 lb. ft. (70 – 81 Nm).

STEP 8

Place secondary carrier assembly (12) into ring gear (11) aligning the gear teeth. Carrier splines mesh with splines on output shaft (1).

STEP 9

Assemble the primary carrier assembly (13) into the ring gear (11). It will be necessary to rotate carrier to align secondary sun gear {part of the primary carrier assembly (13)} with planet gear teeth in secondary carrier assembly (12).

STEP 10

Install primary sun gear (14) into primary carrier assembly. Sun gear (14) should turn freely by hand when assembled. Assemble splined input shaft (16) into sun gear (14).

STEP 11

Apply a bead of silicone sealant to cover face of ring gear (11). Secure thrust washer (15) with tangs engaged in cover (17). **NOTE:** Washer (15) can be secured to cover (17) with a small amount of grease or silicone sealant. Assemble cover (17) to ring gear (11). Align cover (17) with hub (8) such that pipe plug holes on cover (17) align with mounting holes in hub (8).

STEP 12

Install sleeve bearing (23) in cover (17). Assemble retaining ring (25) to coupling (24) and place into sleeve bearing (23) in cover (17). It may be necessary to rotate coupling to align splines.

STEP 13

Install eight flat washers (19) and eight hex head bolts (20) and torque to 20 – 25 lb. ft. (27 – 34 Nm) with dry threads. Lubed threads torque to 16 – 21 lb. ft. (22 – 28 Nm).

STEP 14

The proper disc pack and piston cylinder assembly will depend on the Power Wheel brake model number. Contact Auburn Gear for specific part numbers. Disc packs are supplied as a matched set. Replacement packs are packaged individually to retain the matched characteristics. After removing from package pre-soak the disc pack (26) in the oil used in the Power Wheel drive before placing into the unit. Take care to keep disc pack (26) in proper order and separate from other disc packs.

STEP 15

Align the tangs on the steel separator plates and carefully place the complete disc pack (26) into the Power Wheel drive so that the tangs on the separator plates are within the slots in the drive. Also, the spline on the friction discs should be aligned with the spline on the Power Wheel coupling (24). Check to make sure that the disc pack is properly seated.

STEP 16

Clean seal surface of the drive and piston assembly (27) of any old sealant and wipe any oil from seal surface of spindle or cover. Most piston kits include a gasket (22) which should be placed on cover face to seal interface with piston assembly. If no gasket is included, apply a continuous 1/32 bead of silicone sealant to seal surface on inside of the bolt circle. **NOTE:** Do not use excessive amount of sealant as this can interfere with proper operation of the parking brake.

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.

STEP 17

SAE A MOUNT BRAKES – Align the four brake assembly holes with the four holes in the Power Wheel spindle or cover. Apply Locktite 262 to the four screws to be installed and torque to 110 – 125 lb. ft. (148 – 169 Nm). SAE B MOUNT BRAKES – Align the four piston assembly holes with the four holes in the Power Wheel spindle or cover. Apply Locktite 262 to the four screws to be installed and torque to 80 – 94 lb. ft. (108 – 127 Nm).

STEP 18

SAE B MOUNTS ONLY – Remove the two screws installed in motor mounting holes.

STEP 19

Before using the brake, it is recommended that a pressure release check be performed. Using a suitable hydraulic source, bleed the air from the brake and pressurize the brake to the specified release pressure. The brake plates should now turn freely. If the hydraulic source will provide at least 1000 PSI pressure, apply 1000 PSI and check to make sure that the pressure does not decay more than 30 PSI in 60 seconds.

STEP 20

After motor is assembled to drive or drive is sealed at cover, fill with lubricant to proper level and replace all plugs.

CARRIER ASSEMBLIES

It is recommended that the secondary and primary carrier assemblies (12 & 13) 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 and ring gear. Oil is to be changed after first 50 hours of operation with subsequent changes every 1000 hours or yearly, whichever 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

Silastec 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 bolt hole location. For service requirements order Auburn Gear part number 604101.

SPECIFICATIONS

Maximum intermittent output torque	50,000 lb. in. (5,650 Nm)
Maximum input speed	2,500 RPM
Oil capacity	35 oz (1,035 ml)
Maximum parking brake release pressure	3,000 PSI (206 bar)

ITEM NO.	DESCRIPTION*	NO. USED IN ASS'Y.	ITEM NO.	DESCRIPTION*	NO. USED IN ASS'Y.
1	Output Shaft or Spindle	1	15	Thrust Washer	1
2	Oil Seal 14-00-044-010	1	16	Splined Input Shaft	1
3	Bearing Cone 04-01-101-35	1	17	Cover	1
4	Bearing Cup 04-01-102-12	2	18	Magnetic Plug 14-00-052-002	1
5	Hex Head Bolt (Grade 8)	12	19	Flat Washer	8
6	Flat Washer 14-00-047-002	12	20	Head Hex Bolt	8
7	Pipe Plug 03-04-101-09	1	21	Pipe Plug 605204	1
8	Hub	1	22	Gasket 904502	1
9	Bearing Cone 04-01-101-17	1	23	Sleeve Bearing 612701	1
10	Retaining Ring Kit 14-02-410-003	1	24	Coupling	1
11	Ring Gear	1	25	Retaining Ring 613915	1
12	Secondary Carrier Assembly	1	26	Disc Pack	1
13	Primary Carrier Assembly	1	27	Piston Assembly	1
14	Primary Sun Gear	1	28	Socket or Torx Head Screw	4

* 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.

Model 6 Power Wheel® Service Kits

Part No.	Description	Included Items
14-02-410-003	Retaining Ring Kit	10 (7 Retaining Rings)
641008**	Bearing and Seal Kit	2, 3, 4, 9, and 10
641017**	Seal Kit	2 and 10

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