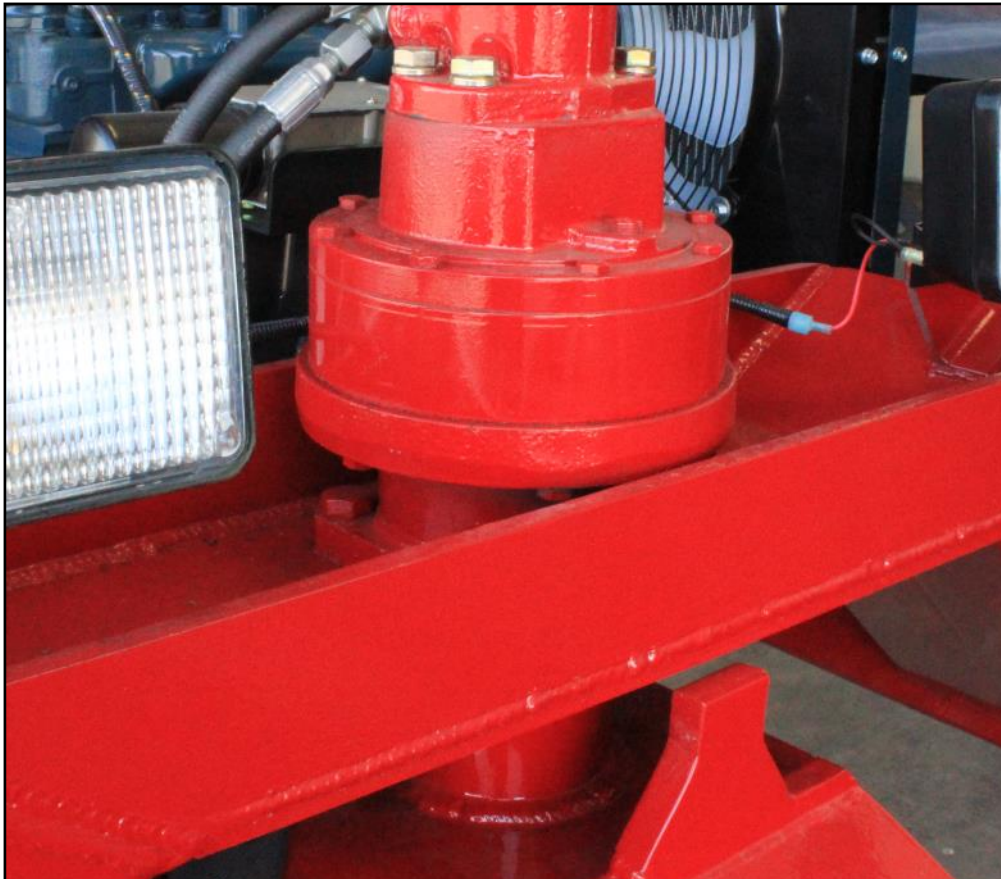




Service Manual

Pavement Saver Steering Hub



Etnyre International

www.etnyre.com

Cautions and Warnings

Always read all instructions thoroughly and familiarize yourself with the equipment before operating or attempting repairs or service.

Observe all caution and warning statements in the applicable manual and on the equipment.

Always use extreme caution when working with any pressurized system. Always be aware of other persons and/or equipment in the immediate area and the hazards involved. Be prepared to immediately shut down the truck and/or hydraulic system if required, especially during initial startup and testing.

The equipment must be assembled and serviced by a trained mechanic or technician. Ensure only properly trained individuals should operate the equipment.

Always use personal protection equipment, such as eye and ear protection, when indicated by the instructions or by the work environment.

Always operate equipment safely and within its rated capacity and performance range. Hydraulic fluid in the human bloodstream can be fatal. If hydraulic fluid penetrates the skin under pressure, seek medical attention immediately! Hydraulic oil, solvents, and pipe sealers may cause skin irritation and rashes. Avoid lengthy exposure to these materials. Wash your hands thoroughly after contact with oils, solvents, and other chemicals. Remove clothing that is saturated with oil.

Do not operate equipment that is damaged or in need of maintenance. Repair equipment as soon as problems are identified.

Use tools that are suited to the task, and keep your tools in good repair.

Use proper lifting equipment when moving or installing heavy components.

Keep your work area clean and safe. Always clean up any spills immediately and properly dispose of the material in the designated refuse container.

Always shut off the vehicle engine and disconnect pump electrical power before working on the hydraulic system.

Etnyre International is not responsible or liable for injury, damage, or loss caused by improper installation by the end user, misuse of the equipment, lack of maintenance, accidents, or failure to follow instructions. In cases where equipment application was determined by the end user, Etnyre International is not responsible or liable for injury, damage, or loss caused by misapplication of this equipment.

Specifications, parts descriptions, illustrations, and instructions in this manual were accurate at the time of publication. Etnyre International reserves the right to discontinue products and to change specifications and/or designs at any time without notice and without incurring any obligation.



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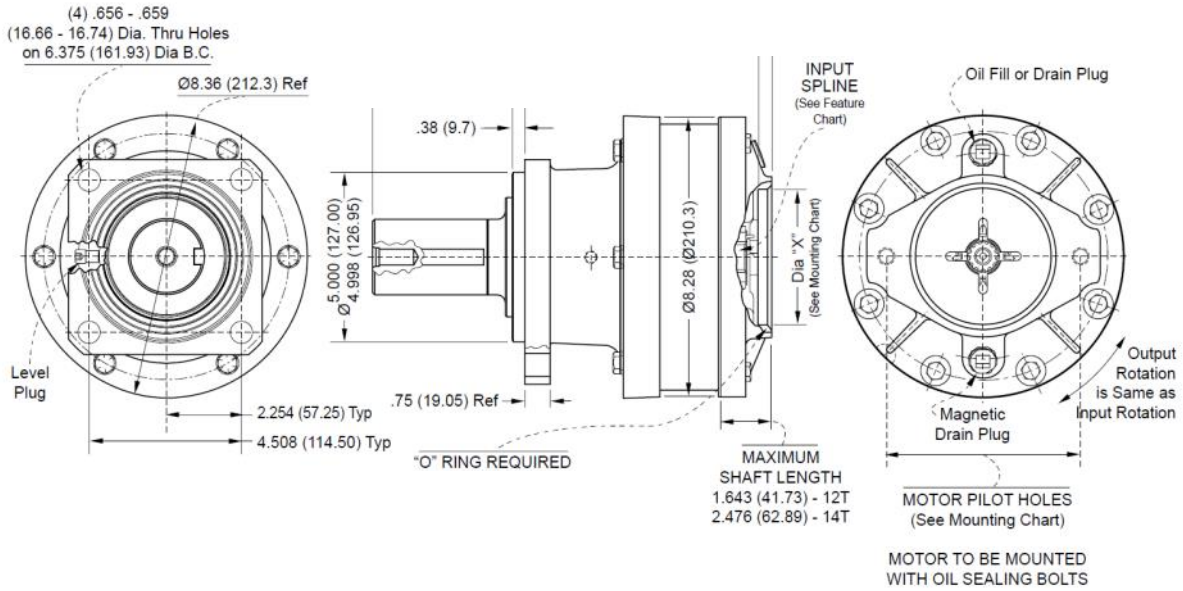
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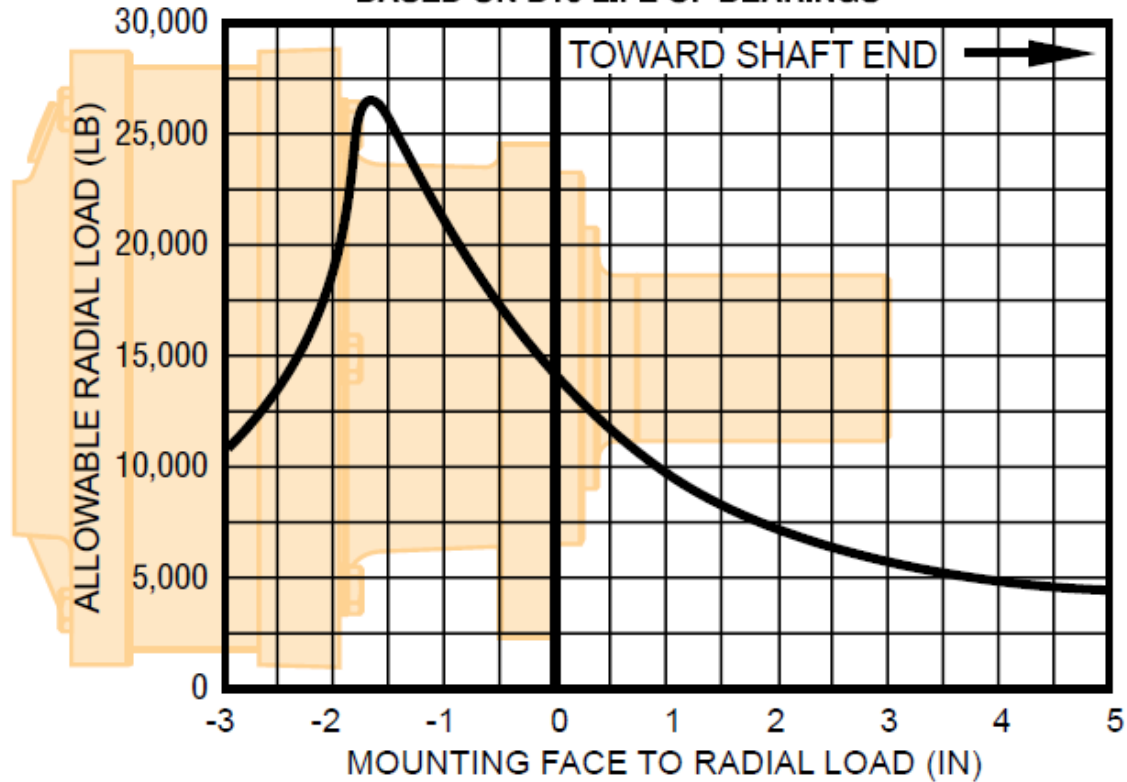
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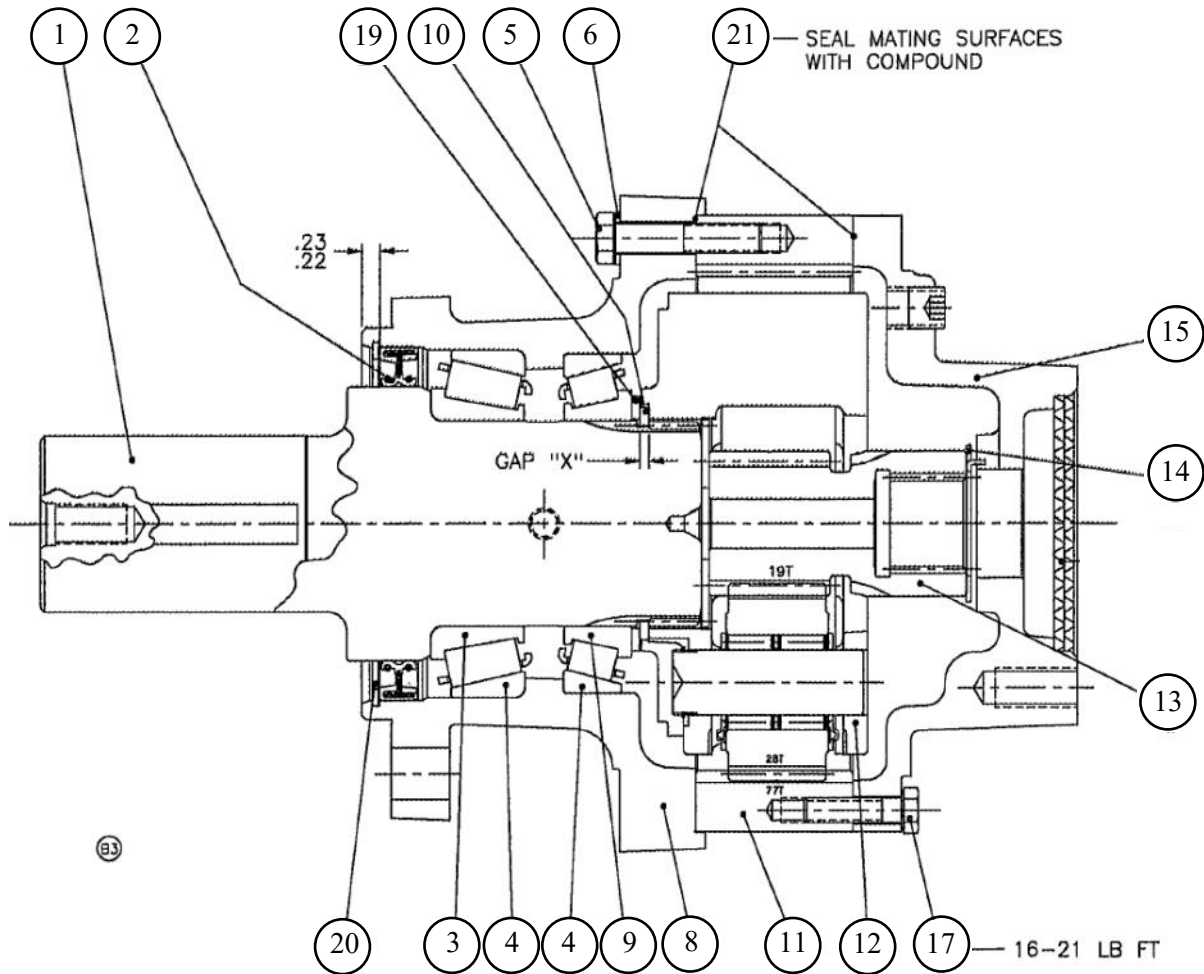
PSII Steering Hub PN 110001259



**ALLOWABLE RADIAL LOAD vs LOAD POSITION
BASED ON B10 LIFE OF BEARINGS**

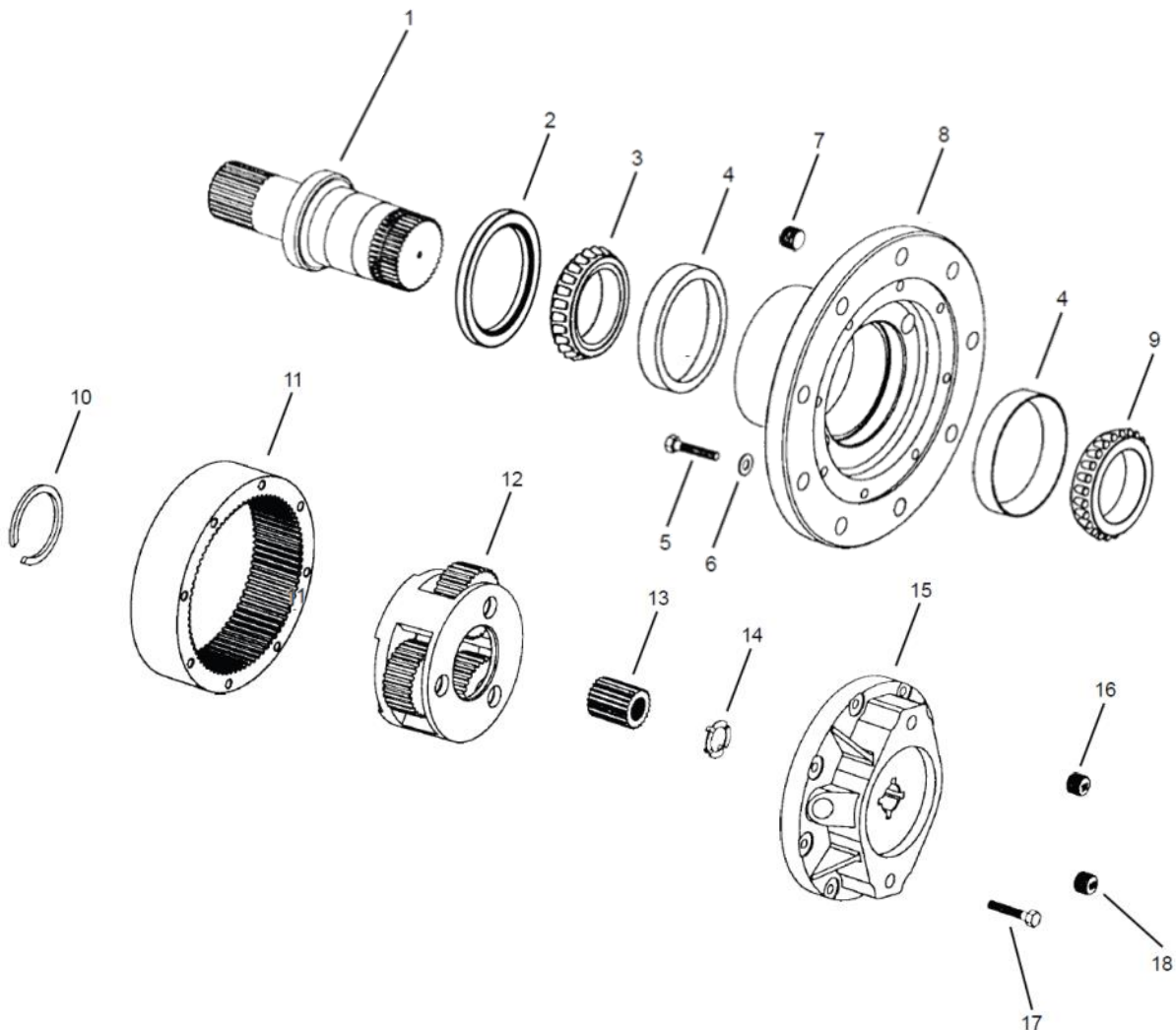


RETAINING RING SELECTION CHART				
GAP "X"	RING THICKNESS	PART NO	COLOR CODE	ENDPLAY
.107-.111	.107-.105	14-00-139-041	ORANGE	.000-.006
.112-.116	.112-.110	14-00-139-042	GREY	.000-.006
.117-.121	.117-.115	14-00-139-043	DARK GREEN	.000-.006
.122-.126	.122-.120	14-00-139-044	PLAIN	.000-.006
.127-.131	.127-.125	14-00-139-045	BROWN	.000-.006
.132-.136	.132-.130	14-00-139-046	DARK BLUE	.000-.006
.137-.141	.137-.135	14-00-139-047	PINK	.000-.006



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ITEM NO.	DESCRIPTION*	NO. USED IN ASS'Y.	ITEM NO.	DESCRIPTION*	NO. USED IN ASS'Y.
1	Output Shaft or Spindle	1	10	Retaining Ring Kit	1
2	Oil Seal 110002718	1	11	Ring Gear	1
3	Bearing Cone	1	12	Carrier Assembly	1
4	Bearing Cup	2	13	Sun Gear	1
5	Hex Head Bolt (Grade 8)	6	14	Thrust Washer	1
6	Flat Washer	6	15	Cover	1
7	Pipe Plug	1-2	16	Magnetic Plug	1
8	Hub	1	17	Hex Head Bolt	8
9	Bearing Cone	1	18	Pipe Plug	1



DISASSEMBLY

STEP 1

Remove bolts (17) from cover (15). Lift cover (15) from assembly. Thrust washer (14) usually remains with cover (15).

STEP 2

Lift sun gear (13) from carrier assembly (12).

STEP 3

Remove carrier assembly (12).

STEP 4

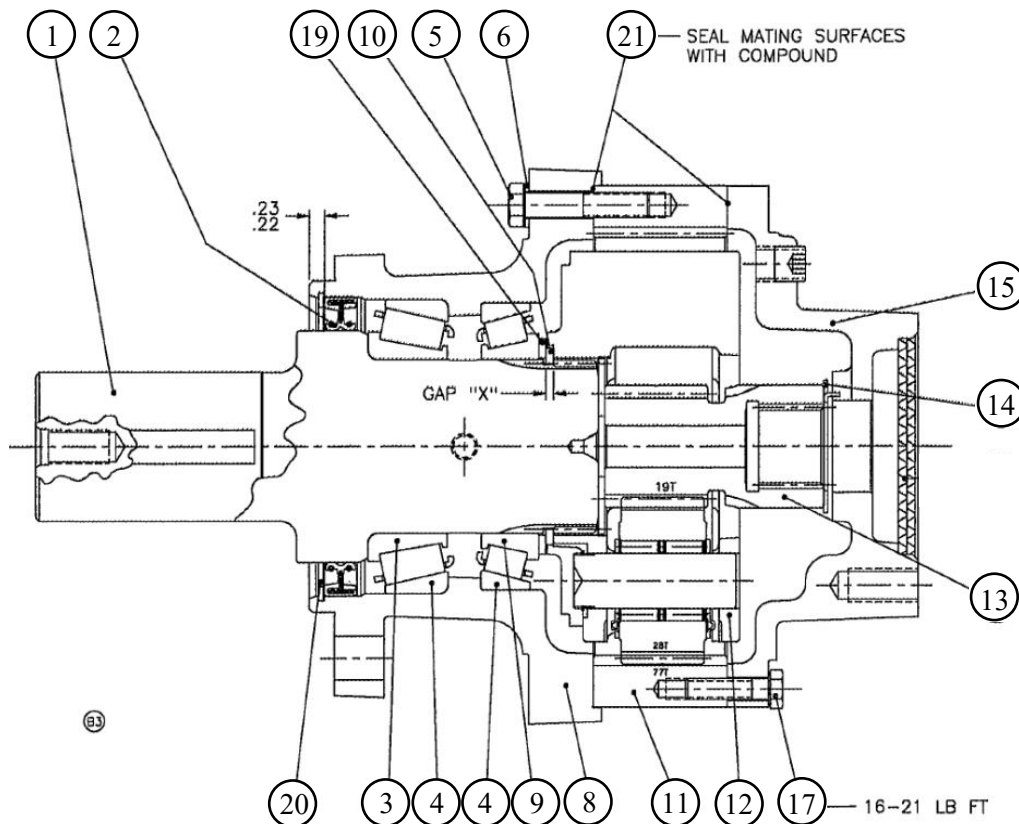
Remove six hex head bolts (5) and washers (6) from hub (8). Pull ring gear (11) from remaining assembly. **NOTE:** It may be necessary to strike ring gear (11) with a rubber mallet to loosen from hub (8).

STEP 5

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

STEP 6

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

STEP 1

Press new bearing cups (4) into each side of 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) in hub (8).

STEP 3

Lubricate lips of oil seal (2) and lower hub (8) onto output shaft (1). Keep hub (8) centered to prevent damage to oil seal (2).

STEP 4

Assemble bearing cone (9) over output shaft (1) and into bearing cup (4). If bearings (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 the ring groove of the splined end of output shaft (1) above bearing cone (9). Bearing should have from .000 – .006 inches (.00 – .15mm) of end play when proper retaining ring (10) is installed.

STEP 5

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 bolt holes.

STEP 7

For Style R and Style T drives install six hex head bolts (5) and washers (6). Torque bolts to 52 – 60 lb. ft. (70 – 81 Nm).

STEP 8

Place carrier assembly (12) into ring gear (11) aligning the gear teeth. Carrier splines mesh with splines on output shaft (1). Place sun gear (13) into carrier assembly (12). Sun gear (13) should turn freely by hand.

STEP 9

Apply a bead of silicone sealant to cover face of ring gear (11). Secure thrust washer (14) with tangs engaged in cover (15). **NOTE:** Washer (14) can be secured to cover (15) with a small amount of grease or silicone sealant. Assemble cover (15) to ring gear (11). Align cover (15) with hub (8) such that pipe plug holes on cover (15) align with mounting holes in hub (8).



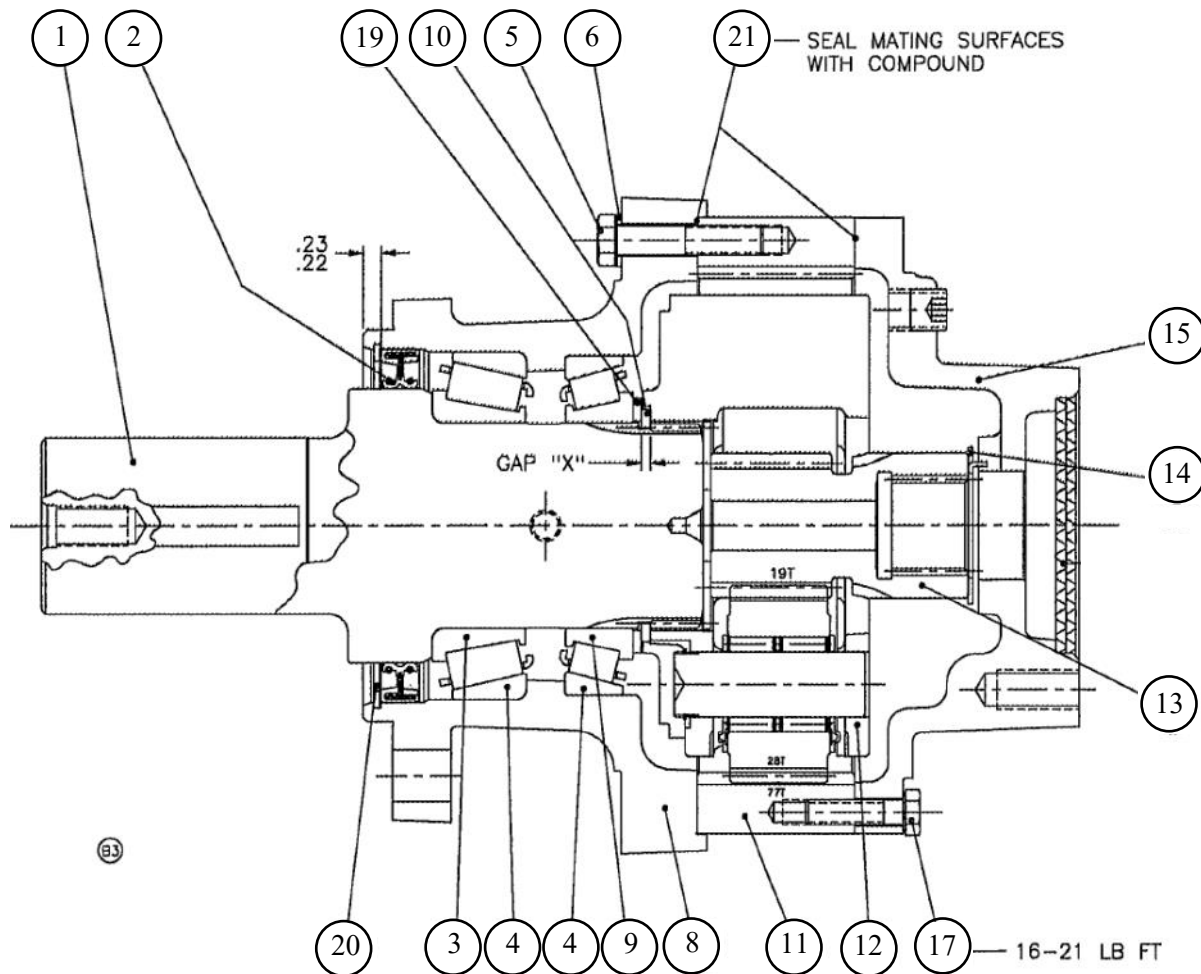
STEP 10

Install eight hex head bolts (17) 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 11

Position filler opening horizontally and fill unit to oil level hole in hub (8). Install pipe plugs (7), (16) and (18).

NOTE: When installing a hydraulic motor it is necessary to place an “O” ring or gasket between the motor and planetary drive. “O” ring sizes: SAE A 2-042. Apply sealant to motor mounting bolt threads when holes in cover are thru holes.



CARRIER ASSEMBLIES

It is recommended that the carrier assembly (12) be serviced in its entirety to protect the integrity of the PSII Steering Hub.

LUBRICATION RECOMMENDATIONS

IMPORTANT: REPLACEMENT PSII STEERING HUBS ARE SHIPPED WITHOUT LUBRICANT AND MUST BE FILLED TO THE PROPER LEVEL PRIOR TO START UP.

Observe lubrication recommendations given by the PSII Owners Manual. When specific recommendations are not available, use mild extreme pressure lubricant API-GL-5, No. 80 or 90 when filling under normal temperature ranges between 0 - 120°F (-18 to 49°C). Fill half full of oil when unit is mounted. 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 Rayner Equipment Systems for oil and level recommendations.

SEALING COMPOUND

Silastic RTV732 sealer and General Electric Silimate RTV No. 1473 or RTV No. 1503 are 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.

SPECIFICATIONS

Maximum intermittent output torque30,000 lb. in. (3,390 Nm)
Maximum input speed3,500 RPM
Oil capacity17 oz (500 ml)



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Description	Qty	Pack
SEAL-OIL ~ #6H	1	1
WASHER-FLAT (SVC = 10/PKG)	6	10
PLUG-PIPE ~ 1/4-18, MAGNET	1	1
RING-RETAINING ~ #6		1
RING-RETAINING ~ #6		1
RING-RETAINING ~ #6		1
RING-RETAINING ~ #6		1
RING-RETAINING ~ #6		1
RING-RETAINING ~ #6		1
RING-RETAINING ~ #6		1
PLUG-SHIPPING, SAE A, 3.31" O.	1	1
ASSY-SEC CARRIER ~ 6"	1	1
SHAFT-OUTPUT ~ #6 - S/R	1	1
COVER ~ 6" A-4 MOUNT	1	1
GEAR-RING ~ 6" - NARROW	1	1
GEAR-SUN ~ #6	1	1
HUB ~ 6"	1	1
WASHER-THRUST (SVC = 5/PKG)	1	5
WASHER-THRUST	1	1
RING-RETAINING	1	1
BEARING-CONE #6 (395A) SERVICE	1	--
BOLT-HEX HEAD ~ 5/16-18 X 1-1/	8	--
BOLT-HEX HEAD ~ 3/8-24 X 1-7/8	6	--
PLUG-PIPE ~ 1/4-18	1	1
PLUG-PIPE ~ 1/8-27	1	1
BEARING-CUP(39520)SERVICE USE	1	--
BEARING-CONE(39590)SERVICE USE	1	--
BEARING-CUP ~ #6(394A) SERVICE	1	--
COMPOUND-SEALING - 10.2 OZ. CA		1



**Service Manual
Pavement Saver Steering Hub**

BILL TO: Company: _____ Name: _____ Address: _____ Phone: _____ FAX: _____	SHIP TO: Company: _____ Name: _____ Address: _____ Phone: _____ FAX: _____
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Page #	QTY	Ref #	Description

Preferred Shipping Method:

Send Order To:
 Etnyre International.
 3650 Sabin Brown Rd.
 Wickenburg, AZ 85390
 USA
 Phone: 888-897-0575

