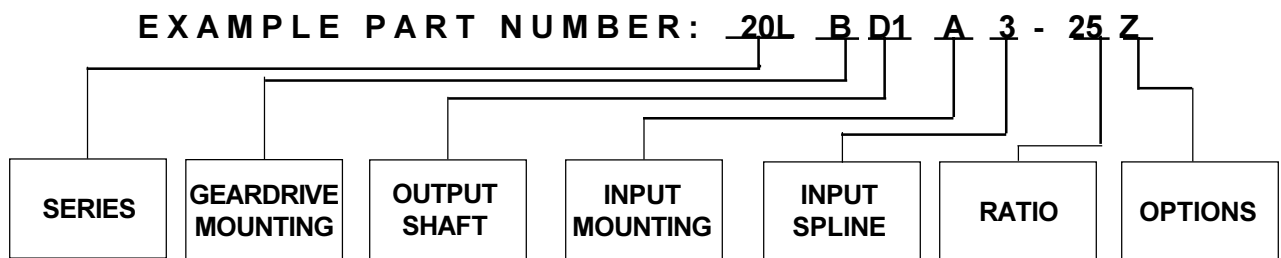
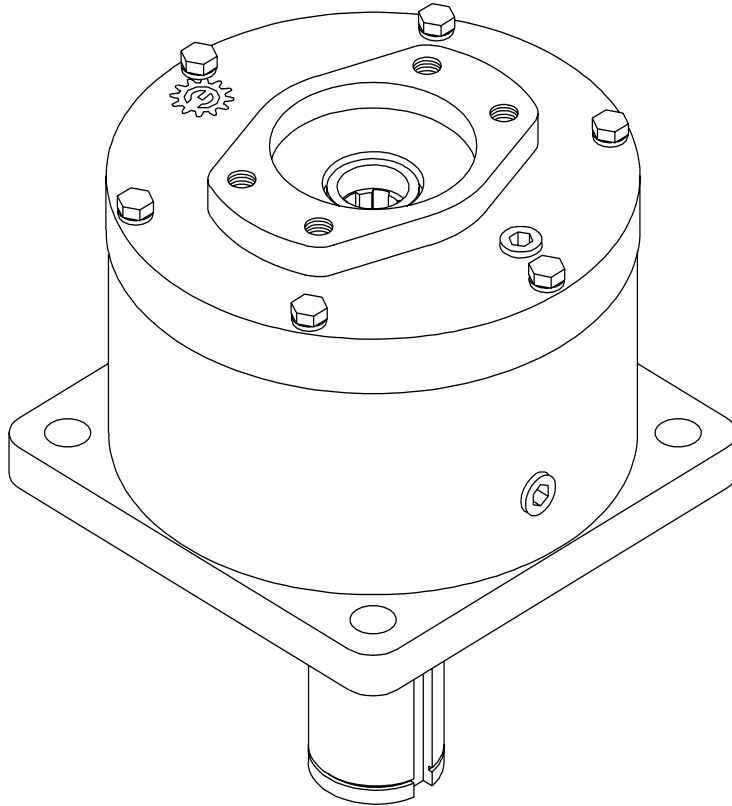


ESKRIDGE



Series 20LB/20LP Planetary Service & Repair Manual

EFFECTIVE FOR:
S/N: 16401 - UP
DATE: 07/01/93 - UP

Equipped with Patented Load-N-Lock™
Shaft Retention System (U.S. Patent no. 5746517)

SM20BLD1-B



MODEL 20LB/20LP SERVICE MANUAL

SINGLE & DOUBLE PLANETARY

GEARDRIVES

This manual will assist in disassembly and assembly of the above model planetary geardrives. Item numbers, indicated in parentheses throughout this manual, refer to the exploded parts breakdown drawing. Individual customer specifications (mounting case, output shaft, brake assembly, etc.) may vary from exploded drawing and standard part numbers shown. If applicable, refer to individual customer drawing for details.

For any spare or replacement parts, contact your distributor or equipment manufacturer. Always try to have available the geardrive unit part number, serial number and date code on the serial tag. This information may be necessary for verification of any component part numbers. Component part numbers and/or manufacturing lot numbers may be stamped on individual parts. This information may also be helpful in identifying replacement components.

LUBRICATION & MAINTENANCE

Change the oil after the first 50 hours of operation. Oil should be changed at 500 hour intervals thereafter. Use a GL-5 grade EP 80/90 gear oil (EP = "Extreme Pressure"). The geardrive should be partially disassembled to inspect gears and bearings at 1000 hour intervals.

If your unit was specified "shaft up" or with a "-Z" after the part number, a grease zerk was provided in the base housing. For shaft-up operation, the output bearing will not run in oil and must be grease lubricated. Use a lithium base or general purpose bearing grease sparingly every 50 operating hours or at regular maintenance intervals. Over-greasing the output bearing tends to fill the housing with grease and thicken the oil.

OPERATING POSITION

Horizontal shaft (Single)

Vertical shaft (Single)

Horizontal shaft (Double)

Vertical shaft (Double)

OIL CAPACITY

.75 pints (0,4 liters)

1.00 pints (0,5 liters)

1.00 pints (0,5 liters)

1.25 pints (0,6 liters)

OIL LEVEL

To horizontal centerline of geardrive

To midway on upper/primary gearset

To horizontal centerline of geardrive

To midway on upper/primary gearset

BEFORE DISASSEMBLY

In the 20LB/20LP series, there are two types of units: single planetaries without a primary carrier, and double planetaries which have a primary planet carrier. Steps with an asterisk (*) apply only to the double planetary model.

*4) Primary planetary assembly is now ready for removal (**includes items 5,7,13,16,20 & 24**). Secondary sun gear (**10**) is splined to primary carrier (**5**) and may come out when removing planetary assembly. If not, remove sun gear.

5) The secondary planetary assembly (**includes items 4,6,12,14,15,19, & 23**) is splined to the output shaft (**3**). It may now be lifted, by hand, from output shaft spline.

6) Place unit on a press table with the output shaft (**3**) protruding downward through a hole in the table. Unit should be supported only by mounting case (**1**). The only thing retaining output shaft (**3**) is the Load-N-Lock™ (**8 & 25**). Remove lock ring (**25**) from output shaft, followed by split ring (**8**) and bearing shims (**9**).

CAUTION: Retaining ring is no longer retaining output shaft. Take precautions if moving unit. Shaft may fall out.

7) With output shaft down through centerhole in press table and unit supported by case, press shaft out by applying press load to top end of shaft (**internal end**) until it passes through inner bearing cone (**17**). Outer bearing cone (**17**) will come out of unit attached to shaft.

DISASSEMBLY PROCEDURE

All parts should be carefully inspected as they are removed from unit. Scribe across mounting case (**1**) and cover (**2**) joint on outside of gearbox to assure proper orientation of oil fill and drain plugs, motor mounting, etc., as unit is reassembled.

1) Remove hydraulic motor and Eskridge Brake from gearbox. Drain oil.

2) Remove the six 5/16 x 1 1/2" hex cap screws (**22**) and 5/16 lockwashers (**26**), which retain cover (**2**) to mounting case (**1**).

3) Lift cover (**2**) off of unit and remove input gear (**11**) and input thrust washer (**21**).

CAUTION: Care should be taken not to injure feet or damage output shaft during this procedure. Once shaft has been pressed through inner shaft bearing, it will drop from unit.

The unit is now disassembled into groups of parts and/or subassemblies. The area requiring repair or service should be identified by thorough inspection of the parts after they have been washed in solvent. If repair is necessary, refer to the individual repair section to follow.

OUTPUT SHAFT SUBASSEMBLY (ITEMS 3,17,30) DISASSEMBLY AND REPAIR

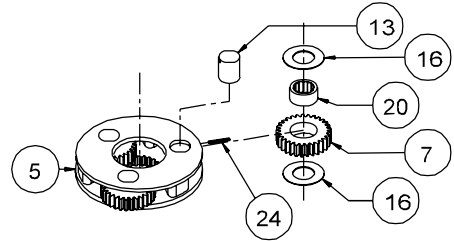
1) If outer bearing cone (17) needs replacing, it will need to be pressed off of output shaft (3). Also inspect inner bearing cone (17). Shaft was pressed through inner bearing cone during shaft removal procedure, so find bearing in mounting case seated inside the inner bearing cup (18). In some instances, outer bearing cone (17) may need to be removed if shaft seal (30) is to be replaced. If outside diameter of output shaft (**external end opposite bearing**) is smaller than inside diameter of seal, then shaft seal may be replaced without removing bearing cone.

2) Lubricate inner lip of new shaft seal (30) and turn so that open side of seal is up. Slide seal onto output shaft until it fits snug over shaft seal diameter.

3) With small end of outer bearing cone (17) pointed upward, place it onto the internal end of the output shaft (3). Press until bearing is seated tightly against shoulder. If the original bearing was removed only to replace shaft seal, it may be reused.

NOTE: Press only on inner race of bearing cone. **DO NOT** press on outer roller cage of bearing or it will damage bearing.

*PRIMARY PLANETARY SUBASSEMBLY (ITEMS 5,7,13,16,20 & 24) DISASSEMBLY AND REPAIR



Rotate primary planet gears (7) to check for any abnormal noises or roughness in the primary planet bearings (20). At the same time, inspect planet gears for any damage or worn teeth. If replacement or further inspection is required, proceed as follows.

1) Drive the spring pins (or roll pins) (24) completely into the planet shafts (13) using a pin punch. Press planet shafts out of carrier (5).

NOTE: Only support primary carrier (5) while pressing planet shafts out.

2) Remove planet gears (7) and primary planet washers (16) from carrier (5).

3) If any of the primary planet bearings (20) need replacing, press them out of planet gears.

4) Check primary planet shafts (13) for any abnormal wear, especially ones in which bearings needed to be replaced. If any abnormal wear is found, replace planet shaft.

5) Using a punch, drive roll pins out of planet shafts.

6) If required, press new primary planet bearings (20) into planet gears.

7) With a primary planet washer (16) on both sides of planet gear, with bearing installed, slide gear into carrier (5). Insert primary planet shaft (13) through the carrier, planet gear, and washers. During planet shaft installation, align roll pin hole in planet shaft, to the roll pin hole in outside diameter of carrier.

NOTE: Inserting a 1/8" diameter punch in the roll pin hole of planet shaft will help in the alignment of holes between planet shaft and carrier during step #7.

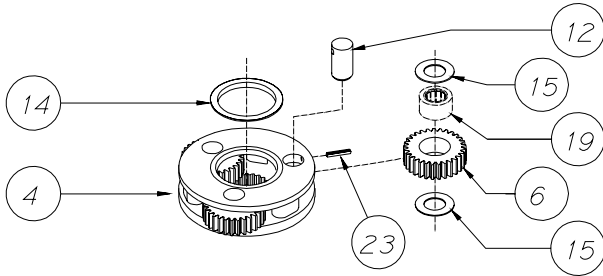
Once holes are properly aligned, drive a roll pin (24) through primary carrier and into planet shaft to retain parts. Use a drift to drive roll pin flush to carrier and to prevent striking planet gear teeth.

8) Repeat the same process for remaining gears.

SECONDARY PLANETARY SUBASSEMBLY

(ITEMS 4,6,12,14,15,19 & 23)

DISASSEMBLY AND REPAIR



Follow same procedures as that for the Primary Planetary Subassembly, only substitute item numbers as indicated; Secondary carrier (4), secondary planet gear (6), secondary planet shaft (12), carrier thrust washer (14), secondary planet washer (15), secondary planet bearing (19), secondary roll pin (23).

CASE SUBASSEMBLY

(ITEMS 1,18,27, & 28)

DISASSEMBLY AND REPAIR

1) Inspect inner and outer bearing cups (18). If cups are damaged, the cups and case (1) may need replacement. Contact Eskridge, inc. if you have questions.

2) Clean all foreign material from magnetic oil plug (27) located inside of mounting case (1). Add a small amount of pipe thread compound to pipe plug before installing back into case.

All subassembly service or repairs should be complete at this time. Continue on through Unit Assembly to complete unit buildup.

UNIT ASSEMBLY

1) Start with case assembly (1). Turn case upside down and position it so that the side with the threaded holes is resting on the press table. Case pilot diameter should be pointed upward with outer bearing cup (18) exposed. Apply a layer of lithium bearing grease to outer bearing cup surface.

2) Invert the output shaft assembly (3) (retaining ring groove down) and carefully lower into the case (1) until the shaft's outer bearing cone (17) is seated against the outer bearing cup (18).

3) Press shaft seal (30) into case until it is flush with bottom of pilot diameter. Use a press fixture, if possible, to eliminate distorting seal. If press fixture is not available, a hammer and flat-ended drift may be used by tapping outer edge of seal lightly and alternating sides.

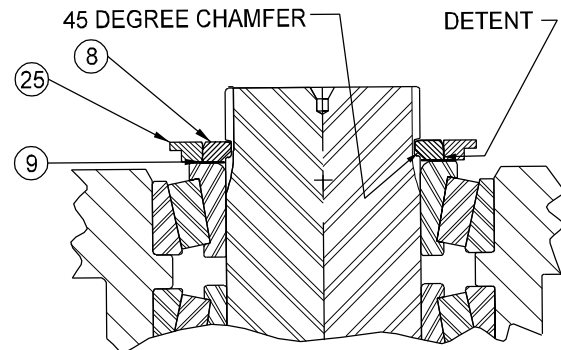
4) Stand unit assembly upright on output shaft (3).

CAUTION: The only thing retaining output shaft and case together at this point is the tightness in fit of the shaft seal. Securely and cautiously turn unit upright, not allowing case and shaft to separate.

5) While holding output shaft (3) with one hand, rotate case (1) to be certain it turns freely and smoothly. The slight resistance felt, if any, is due to shaft seal load (drag) on output shaft.

6) Apply a layer of lithium grease to inner bearing cup (18) and surface.

7) Install inner bearing cone (17) (small end down) over internal end of output shaft. Press bearing down slowly until it is just seated against inner bearing cup (18). With a slight press load still applied, rotate case (1) by hand to ensure that the roller bearings are rotating evenly and smoothly. Slide bearing shims (9) over output shaft and down onto inner bearing cone (17). The same number (quantity) of shims which were removed from unit during Disassembly Procedure should be returned.



8) Lubricate Load-N-Lock™ lock ring (25) and split ring segments (8). Press split ring segments (45° chamfer side down) into the groove in shaft (4) directly on top of shims (9) (see detail). This can be done with a soft drift punch & hammer or a C-clamp or adjustable pliers across both segments of split ring. Drive lock ring (25) over outside of split ring segments until the detent engages between split and lock rings. The lock ring should then be seated against the shims. This may require a firm blow with a soft mallet.

NOTE: Proper positioning of Load-N-Lock™ split ring (8) and lock ring (25) is critical to proper assembly of unit. Do not use steel hammer or hydraulic press to install split or lock ring or damage may result.

NOTE: Quantity of shims (9) may vary from unit to unit. Always use the same quantity of shims when reassembling.

9) Install secondary carrier (4) assembly into unit. Carrier assembly should be installed with hub side down (24 tooth spline). Rotate carrier assembly back and forth to mesh secondary planet gear teeth (6) with case (1) teeth. Once teeth mesh, let secondary carrier slide down until it makes contact with the output shaft spline. The carrier splined hub (4) should spline onto output shaft (3). Carrier hub will rest on top of retaining ring (25) when splines are fully engaged. Install carrier thrust washer (14).

*10) Turn primary carrier assembly upside down so that splined end of carrier (5) is up. Insert splined end of secondary sun gear (10) into carrier spline until fully engaged. Install carrier assembly into unit, sun gear down. Sun gear teeth will mesh with the secondary planet gears, and the primary planet gear teeth (7) will mesh with the mounting case (1).

11) Put input thrust washer (21) over step of input gear (11). Insert input gear into unit so that teeth mesh with planet gears.

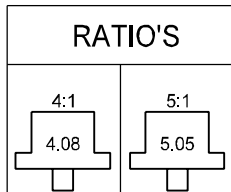
12) Fill unit with proper level (see page 2) of a GL-5 grade EP 80/90 gear oil. Proper oil level will measure to middle of primary planet gears (7).

13) Grease a new o-ring (29) and install into bottom of cover (2). Refer back to scribe marks made across external joint prior to Disassembly Procedure. Line up scribe marks between cover and case (1) so that orientation of motor mount holes and oil plugs are back to their original positions.

NOTE: Be certain o-ring (29) stays seated in cover during step #12.

14) Install all six of the 5/16 lockwashers (26) and the 5/16 hex capscrews (22) and torque them to 20 ft-lbs.

THE GEARBOX IS NOW READY FOR USE.



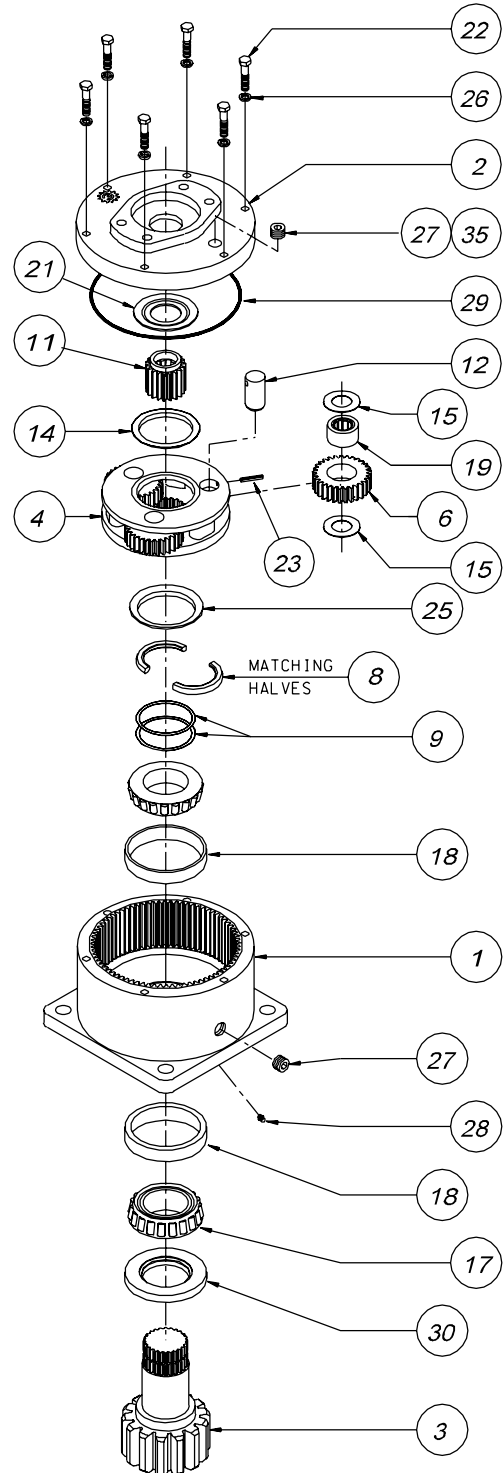
MODEL B20L
SINGLE PLANETARY



EFFECTIVE
FROM: S/N 16401 07-01-93
TO: (CURRENT)

PART NUMBER	PART NUMBER	QTY.	ITEM	C O D E	DESCRIPTION
←	20-004-3024	1	1		B20 CASE-SQUARE- (NO ZERK)
←	20-004-3024Z	1	1		B20 CASE-SQUARE- W/ZERK
-	-	-	-		CB20 CASE-CUSTOM PER CUSTOMER SPECS.
←	85-004-1513	1	2	A	COVER-SAE 'A'
←	85-004-1503	1	2	B	COVER-SAE 'B' 2-BOLT
←	28-004-1013	1	2	C	COVER-SAE 'C' 4-BOLT
←	20-004-4022L	1	3	D1	2"DIA SHAFT-3/8" KEYWAY
←	20-004-4032L	1	3	D2	SHAFT 23T, 16/32 D.P. SPLINE
←	20-004-4042L	1	3	D3	2" DIA.SHAFT-1/2"KEYWAY
←	28-004-4202L	1	3	D4	2.25"D.SHAFT-1/2"KEYWAY
-	-	-	-	C1	SHAFT-CUSTOM PER CUSTOMER SPECS.
←	20-004-1282	1	4		CARRIER-SECONDARY
←	20-004-1041	3	6		PLANET GEAR-SEC.
←	20-004-1362	1	8		SPLIT RING (MATCHING HALVES)
←	20-004-1091	*	9		SHIM
←	20-004-1302	N/A	1	1	INPUT GEAR 21T,20/40 D.P.SPLINE
←	20-004-1122	N/A	1	2	INPUT GEAR 13T,16/32 D.P.SPLINE
←	20-004-1102	N/A	1	3	INPUT GEAR SAE 1"-6B SPLINE
←	20-004-1192	N/A	1	4	INPUT GEAR 14T,12/24 D.P.SPLINE
←	20-004-1322	N/A	1	5	INPUT GEAR 15T,16/32 D.P.SPLINE
←	20-004-1142	N/A	1	6	INPUT GEAR 1"DIA X .25" KEY
←	20-004-1081	3	12		PLANET SHAFT-SECONDARY
←	50-004-1011	1	14		THRUST WASHER-SEC.CUP
←	85-004-1181	6	15		THRUST WASHER - (SEC. PLANET GEAR)
←	01-102-0160	2	17		BEARING CONE
←	01-103-0160	2	18		BEARING CUP
←	01-105-0010	3	19		BEARING-SEC.PLANET
←	50-004-1091	1	21		THRUST WASHER-INPUT
←	01-150-1400	6	22		HEX CAPSCREW 5/16-18 X 1.5, GR8
←	01-153-0210	3	23		ROLLPIN-SECONDARY 3/16 X 7/8
←	20-004-1372	1	25		LOCK RING
←	01-166-0110	6	26		LOCKWASHER 5/16 MED
←	01-207-0070	2	27		PIPE PLUG-MAG. 3/8 NPT-SOC HD
←	01-215-0050	(1)	28		GREASE FITTING (OPTIONAL)
←	01-402-0560	1	29		O-RING 167 MM X 3 MM
←	01-405-0550	1	30		SEAL-SHAFT
←	01-216-0070	(1)	35		AIR VENT 3/8 NPT (OPTIONAL)
-	-	-	-		-

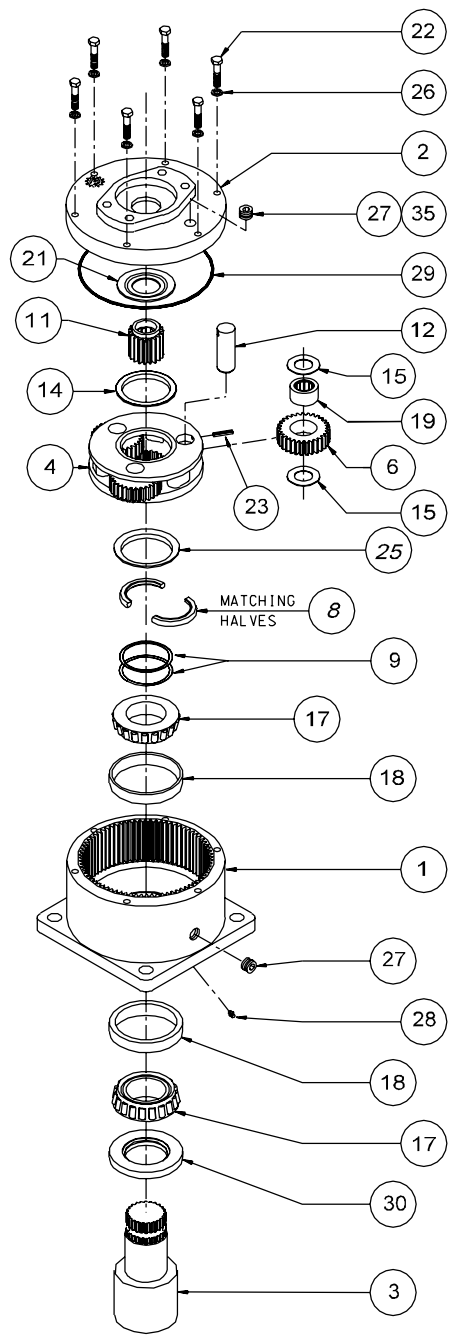
NOTE * BEARING PRELOAD DETERMINES QUANTITY OF SHIMS.
SEAL KIT: P/N 20-016-0501; INCLUDES ITEMS 29 AND 30.



SINGLE PLANETARY				EFFECTIVE FROM: S/N 16401 07-01-93 TO: (CURRENT)
4:1 4.08	5:1 5.05	RATIO		
PART NUMBER	PART NUMBER	QTY.	ITEM	DESCRIPTION
←	20-004-3074	1	1	P20 CASE-SQUARE- (NO ZERK)
←	20-004-3074Z			P20 CASE-SQUARE W/ZERK
←	-			CP20 CASE-CUST.MTG PER CUSTOMER SPECS.
←	85-004-1513	1	2	A COVER-SAE 'A'
←	85-004-1503			B COVER-SAE 'B' 2-BOLT
←	28-004-1013			C COVER-SAE 'C' 4-BOLT
←	20-004-4122L	1	3	F1 SHAFT-1.5" KEYED
←	20-004-4112L			F2 SHAFT-2" KEYED
←	-			C1 SHAFT-CUSTOM PER CUSTOMER SPECS.
←	20-004-1282	20-004-1292	1	4 CARRIER-SECONDARY
←	-	-	-	5 CARRIER-PRIMARY
←	20-004-1041	20-004-1051	3	6 PLANET GEAR-SEC.
←	-	-	-	7 PLANET GEAR-PRI.
←	20-004-1362	-	1	8 SPLIT RING (MATCHING HALVES)
←	20-004-1091	*	9	SHIM
←	-	-	-	10 SUN GEAR-SECONDARY
←	20-004-1302	N/A	1	1 INPUT GEAR 21T,20/40 D.P.SPLINE
←	20-004-1122	20-004-1132		2 INPUT GEAR 13T,16/32 D.P.SPLINE
←	20-004-1102	20-004-1112		3 INPUT GEAR SAE 1"-6B SPLINE
←	20-004-1192	N/A		4 INPUT GEAR 14T,12/24 D.P.SPLINE
←	20-004-1322	20-004-1312		5 INPUT GEAR 15T,16/32 D.P.SPLINE
←	20-004-1142	N/A		6 INPUT GEAR 1"DIA X .25" KEY
←	20-004-1081	-	3	12 PLANET SHAFT-SECONDARY
←	-	-	-	13 PLANET SHAFT-PRIMARY
←	50-004-1011	-	1	14 THRUST WASHER-SEC.CUP
←	85-004-1181	-	6	15 THRUST WASHER-(SEC.PLANET GEAR)
←	-	-	-	16 THRUST WASHER-(PRI.PLANET GEAR)
←	01-102-0160	-	2	17 BEARING CONE
←	01-103-0160	-	2	18 BEARING CUP
←	01-105-0010	-	3	19 BEARING-SEC.PLANET
←	-	-	-	20 BEARING-PRI.PLANET
←	50-004-1091	-	1	21 THRUST WASHER-INPUT
←	01-150-1400	-	6	22 HEX CAPSCREW 5/16-18 X 1.5, GR8
←	01-153-0210	-	3	23 ROLLPIN-SECONDARY 3/16 X 7/8
←	-	-	-	24 ROLLPIN-PRIMARY 1/8 X 1
←	20-004-1372	-	1	25 LOCK RING
←	01-166-0110	-	6	26 LOCKWASHER 5/16 MED
←	01-207-0070	-	2	27 PIPE PLUG-MAG. 3/8 NPT-SOC HD
←	01-215-0050	(1)	28	28 GREASE FITTING (OPTIONAL)
←	01-402-0560	-	1	29 O-RING 167 MM X 3 MM
←	01-405-0610	-	1	30 SEAL-SHAFT
←	01-216-0070	(1)	35	35 AIR VENT 3/8 NPT (OPTIONAL)
←	-	-	-	-

▷ INVERTED RATIO SUNGEAR IS NOT COUNTERBORED FOR CODE 4 INPUT. MOTOR COMPATIBILITY MUST BE VERIFIED.
NOTES:
* BEARING PRELOAD DETERMINES QUANTITY OF SHIMS.

SEAL KIT (P/N 20-016-0511) INCLUDES (1 EA.) O-RINGS AND (1 EA.) SEAL.
AND (1 EA.) SEAL.





ESKRIDGE MODEL B20L

EQUIPPED WITH PATENTED "LOAD-IN-LOCK"™ SHAFT RETENTION SYSTEM. (U.S. PATENT NO. 5746517).

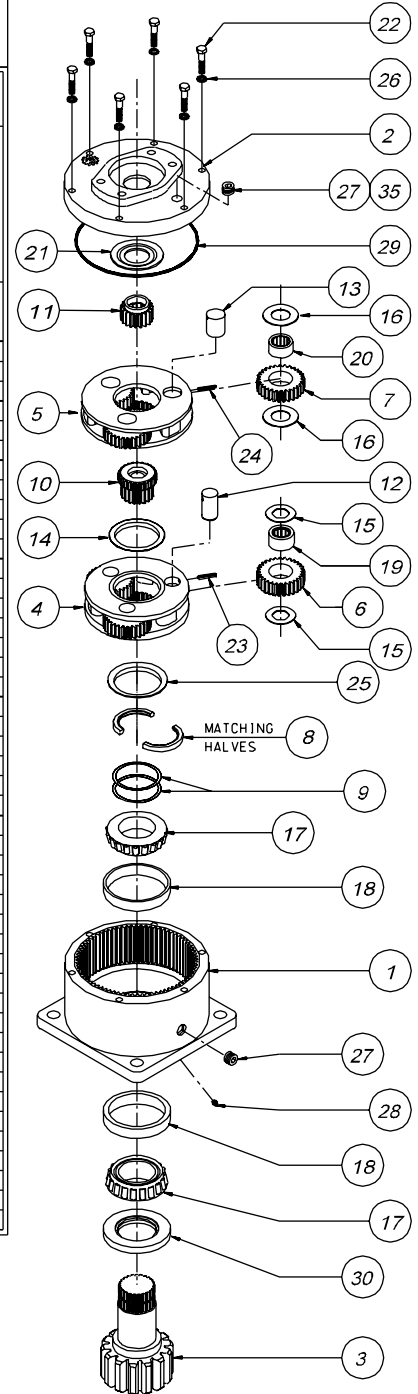
EFFECTIVE FROM: S/N 16401 07-01-93 TO: (CURRENT)		DOUBLE PLANETARY					
		RATIO	16.65:1 4.08 4.08	20.62:1 5.05 4.08	20.62:1 4.08 5.05 INVERTED	25.53:1 5.05 5.05	
CODE	DESCRIPTION	ITEM	QTY.	PART NUMBER	PART NUMBER	PART NUMBER	PART NUMBER
	B20 CASE-SQUARE- (NO ZERK)						
	B20 CASE-SQUARE- W/ZERK						
	C20 CASE-CUSTOM PER CUSTOMER SPECS.						
A	COVER-SAE 'A'						
B	COVER-SAE 'B' 2-BOLT						
C	COVER-SAE 'C' 4-BOLT						
D1	2" DIA SHAFT-3/8" KEYWAY						
D2	SHAFT 23T, 16/32 D.P. SPLINE						
D3	2" DIA.SHAFT-1/2"KEYWAY						
D4	2.25"D.SHAFT-1/2"KEYWAY						
C1	SHAFT-CUSTOM PER CUSTOMER SPECS.						
	CARRIER-SECONDARY	4	1	20-004-1282	20-004-1282	20-004-1292	20-004-1292
	CARRIER-PRIMARY	5	1	50-004-1082	50-004-1072	50-004-1082	50-004-1072
	PLANET GEAR-SEC.	6	3	20-004-1041	20-004-1041	20-004-1051	20-004-1051
	PLANET GEAR-PRI.	7	3	85-004-1031	85-004-1021	85-004-1031	85-004-1021
	SPLIT RING (MATCHING HALVES)	8	1	20-004-1362			
	SHIM	9	*	20-004-1091			
	SUN GEAR-SECONDARY	10	1	20-004-1332	20-004-1062	20-004-1072	20-004-1072
1	INPUT GEAR 21T,20/40 D.P. SPLINE			85-004-1402		85-004-1402	N/A
2	INPUT GEAR 13T,16/32 D.P. SPLINE			85-004-1102	85-004-1062		85-004-1062
3	INPUT GEAR SAE 1" *6B SPLINE			85-004-1122	85-004-1112		85-004-1112
4	INPUT GEAR 14T,12/24 D.P. SPLINE			85-004-1533		85-004-1533	N/A
5	INPUT GEAR 15T,16/32 D.P. SPLINE			85-004-1542	85-004-1422		85-004-1422
6	INPUT GEAR 1" DIA X .25" KEY			85-004-1582		85-004-1582	N/A
	PLANET SHAFT-SECONDARY	12	3	20-004-1081			
	PLANET SHAFT-PRIMARY	13	3	81-004-0071			
	THRUST WASHER-SEC.CUP	14	1	50-004-1011			
	THRUST WASHER-(SEC. PLANET GEAR)	15	6	85-004-1181			
	THRUST WASHER-(PRI. PLANET GEAR)	16	6	81-004-1561			
	BEARING CONE	17	2	01-102-0160			
	BEARING CUP	18	2	01-103-0160			
	BEARING-SEC.PLANET	19	3	01-105-0010			
	BEARING-PRI.PLANET	20	3	01-105-0410			
	THRUST WASHER-INPUT	21	1	50-004-1091			
	HEX CAPSCREW 5/16-18 X 1.5, GR8	22	6	01-150-1400			
	ROLLPIN-SECONDARY 3/16 X 7/8	23	3	01-153-0210			
	ROLLPIN-PRIMARY 1/8 X 1	24	3	01-153-0080			
	LOCK RING	25	1	20-004-1372			
	LOCKWASHER 5/16 MED	26	6	01-166-0110			
	PIPE PLUG-MAG. 3/8 NPT-SOC HD	27	2	01-207-0070			
	GREASE FITTING (OPTIONAL)	28	(1)	01-215-0050			
	O-RING 167 MM X 3 MM	29	1	01-402-0560			
	SEAL-SHAFT	30	1	01-405-0550			
	AIR VENT 3/8 NPT (OPTIONAL)	35	(1)	01-216-0070			
-	-	-	-	-	-	-	-

▶ INVERTED RATIO SUNGEAR IS NOT COUNTERBORED FOR CODE 4 INPUT. MOTOR COMPATIBILITY MUST BE VERIFIED.

NOTES:

★ BEARING PRELOAD DETERMINES QUANTITY OF SHIMS.

SEAL KIT (P/N 20-016-0501) INCLUDES (1 EA.) O-RINGS AND (1 EA.) SEAL.
AND (1 EA.) SEAL.





MODEL P20L

EQUIPPED WITH PATENTED "LOAD-N-LOCK"™
SHAFT RETENTION SYSTEM. (U.S. PATENT NO. 5746517).

EFFECTIVE
FROM: S/N 16401 07-01-93
TO: (CURRENT)

DOUBLE PLANETARY

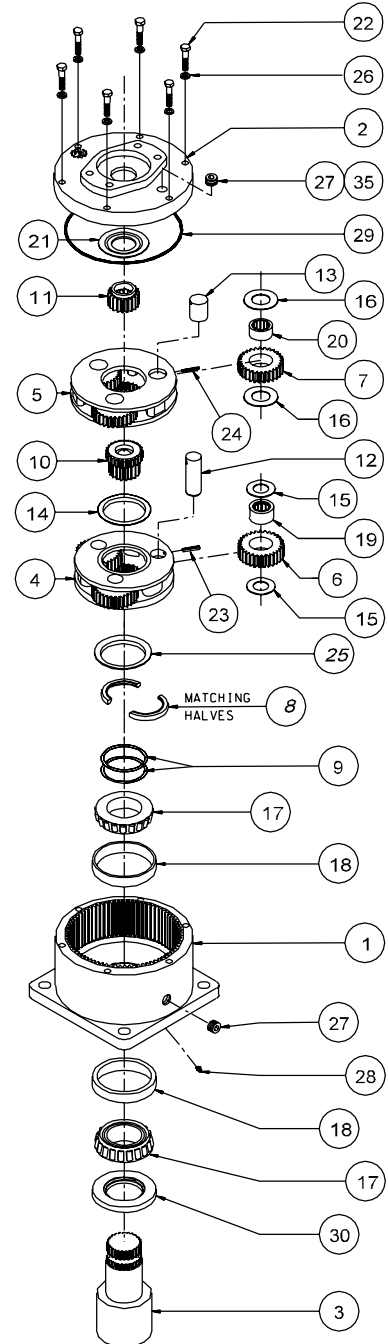
CODE	DESCRIPTION
	P20 CASE-SQUARE- (NO ZERK)
	P20 CASE-SQUARE W/ZERK
	CP20 CASE-CUST.MTG PER CUSTOMER SPECS.
A	COVER-SAE 'A'
B	COVER-SAE 'B' 2-BOLT
C	COVER-SAE 'C' 4-BOLT
F1	SHAFT-1.5" KEYED
F2	SHAFT-2" KEYED
C1	SHAFT-CUSTOM PER CUSTOMER SPECS.
	CARRIER-SECONDARY
	CARRIER-PRIMARY
	PLANET GEAR-SEC.
	PLANET GEAR-PRI.
	SPLIT RING (MATCHING HALVES)
	SHIM
	SUN GEAR-SECONDARY
1	INPUT GEAR 21T,20/40 D.P.SPLINE
2	INPUT GEAR 13T,16/32 D.P.SPLINE
3	INPUT GEAR SAE 1"-68 SPLINE
4	INPUT GEAR 14T,12/24 D.P.SPLINE
5	INPUT GEAR 15T,16/32 D.P.SPLINE
6	INPUT GEAR 1" DIA X .25" KEY
	PLANET SHAFT-SECONDARY
	PLANET SHAFT-PRIMARY
	THRUST WASHER-SEC.CUP
	THRUST WASHER-(SEC.PLANET GEAR)
	THRUST WASHER-(PRI.PLANET GEAR)
	BEARING CONE (NTN NO.28584)
	BEARING CUP (NTN NO.28521)
	BEARING-SEC.PLANET (TOR.NO.HJ142212)
	BEARING-PRI.PLANET (BH NO. 1610)
	THRUST WASHER-INPUT
	HEX CAPSCREW 5/16-18 X 1.5, GR8
	ROLLPIN-SECONDARY 3/16 X 7/8
	ROLLPIN-PRIMARY 1/8 X 1
	LOCK RING
	LOCKWASHER 5/16 MED
	PIPE PLUG-MAG. 3/8 NPT-SOC HD
	GREASE FITTING (OPTIONAL)
	O-RING 167 MM X 3 MM
	SEAL-SHAFT (NAT. NO. 416404)
	AIR VENT 3/8 NPT (OPTIONAL) (ALEMITE #313650)
-	-

RATIO	<table border="1"> <tr> <td>16.65:1 4.08 4.08</td> <td>20.62:1 5.05 4.08</td> <td>20.62:1 4.08 5.05 INVERTED</td> <td>25.53:1 5.05 5.05</td> </tr> </table>				16.65:1 4.08 4.08	20.62:1 5.05 4.08	20.62:1 4.08 5.05 INVERTED	25.53:1 5.05 5.05
	16.65:1 4.08 4.08	20.62:1 5.05 4.08	20.62:1 4.08 5.05 INVERTED	25.53:1 5.05 5.05				
ITEM QTY.	PART NUMBER	PART NUMBER	PART NUMBER	PART NUMBER				
1	1	20-004-3064						
		20-004-3064Z						
2	1	85-004-1513						
		85-004-1503						
		28-004-1013						
3	1	20-004-4122L						
		20-004-4112L						
4	1	20-004-1282	20-004-1282	20-004-1292	20-004-1292			
5	1	50-004-1082	50-004-1072	50-004-1082	50-004-1072			
6	3	20-004-1041	20-004-1041	20-004-1051	20-004-1051			
7	3	85-004-1031	85-004-1021	85-004-1031	85-004-1021			
8	1	20-004-1362						
9	*	20-004-1091						
10	1	20-004-1332	20-004-1062	20-004-1072	20-004-1072			
		85-004-1402		85-004-1402	N/A			
		85-004-1102	85-004-1062		85-004-1062			
		85-004-1122	85-004-1112		85-004-1112			
		85-004-1533		85-004-1533	N/A			
		85-004-1542	85-004-1422		85-004-1422			
		85-004-1582		85-004-1582	N/A			
11	1							
12	3	20-004-1081						
13	3	81-004-0071						
14	1	50-004-1011						
15	6	85-004-1181						
16	6	81-004-1561						
17	2	01-102-0160						
18	2	01-103-0160						
19	3	01-105-0010						
20	3	01-105-0410						
21	1	50-004-1091						
22	6	01-150-1400						
23	3	01-153-0210						
24	3	01-153-0080						
25	1	20-004-1372						
26	6	01-186-0110						
27	2	01-207-0070						
28	(1)	01-215-0050						
29	1	01-402-0560						
30	1	01-405-0610						
35	(1)	01-216-0070						
-	-	-	-	-	-			

▶ INVERTED RATIO SUNGEAR IS NOT COUNTERBORED FOR CODE 4 INPUT. MOTOR COMPATIBILITY MUST BE VERIFIED.

NOTES:
* BEARING PRELOAD DETERMINES QUANTITY OF SHIMS.

SEAL KIT (P/N 20-016-0511) INCLUDES (1 EA.) O-RINGS AND (1 EA.) SEAL.
AND (1 EA.) SEAL.



PRODUCT WARRANTY

ESKRIDGE, INC. ("Eskridge") warrants to its original purchaser ("Customer") that new component parts ("Parts") sold by Eskridge to the Customer will be free of defects in material and workmanship and will conform to standard specifications set forth in current Eskridge sales literature or to any custom specifications of the Customer acknowledged in writing by Eskridge, **SUBJECT TO THE FOLLOWING QUALIFICATIONS AND LIMITATIONS:**

- 1) Prior to placing warranted Parts in service, the Customer shall provide proper storage such that foreign objects (e.g., rain or debris) cannot enter any Parts via entry ports which are normally closed during operation.
- 2) If Parts requiring motorized power for operation are received from Eskridge without a motor, documentation must be available indicating proper lubrication upon placement of the Parts in service.
- 3) The Customer must notify Eskridge in writing of any claim for breach of this warranty promptly after discovery of a defect and in any event prior to the termination of the warranty period, which shall commence when a unit is placed in service and shall expire upon the earlier of (i) the expiration of twelve (12) months from the date of Commencement of Service (as defined in Paragraph 4) (ii) the completion of one thousand (1,000) hours of service of the Parts (iii) the expiration of six (6) months after the expiration of any express warranty relating to the first item of machinery or equipment in which the Parts are installed or on which it is mounted, or (iv) the installation or mounting of the Parts in or on an item of machinery or equipment other than the first such item in which the Parts are installed or on which the Parts are mounted.
- 4) Parts shall be deemed to have been placed in service (the "Commencement of Service") at the time the machinery or equipment manufactured or assembled by the Customer and in which the Parts are installed or on which the Parts are mounted is delivered to the Customer's dealer or the original end-user, whichever ever receives such machinery or equipment first.
- 5) This warranty shall not apply with respect to Parts which, upon inspection by Eskridge, show signs of disassembly, rework, modifications or improper installation, mounting, use or maintenance.
- 6) Eskridge makes no warranty in respect to hydraulic motors mounted on any Parts. Failure of any such motor will be referred to the motor manufacturer.
- 7) Claims under this warranty will be satisfied only by repair of any defect(s) or, if repair is determined by Eskridge in its sole, absolute and uncontrolled discretion to be impossible or impractical, by replacement of the Parts or any defective component thereof. No cash payment or credit will be made for defective materials or workmanship. **IN NO EVENT SHALL ESKRIDGE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND OR NATURE, WHICH DAMAGES ARE HEREBY EXPRESSLY DISCLAIMED.**
- 8) From time to time, Eskridge may make changes in the component parts manufactured by it without incorporating such changes in the component parts previously shipped. Such changes shall not constitute an admission by Eskridge of any defects or problems with previously manufactured component parts.
- 9) All freight charges on Parts returned for warranty service are the responsibility of the Customer.

THE FOREGOING WARRANTY IS THE SOLE WARRANTY MADE BY ESKRIDGE WITH RESPECT TO ANY PARTS, AND IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ESKRIDGE EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, REGARDLESS OF ANY KNOWLEDGE ESKRIDGE MAY HAVE OF ANY PARTICULAR USE OR APPLICATION INTENDED BY THE PURCHASER. THE SUITABILITY OR FITNESS OF THE PARTS FOR THE CUSTOMER'S INTENDED USE, APPLICATION OR PURPOSE AND THE PROPER METHOD OF INSTALLATION OR MOUNTING MUST BE DETERMINED BY THE CUSTOMER.

WARRANTY RETURN POLICY

- 1) All Parts shall be returned freight prepaid.
- 2) Any Parts qualifying for warranty will be repaired with new Parts free of charge (except for freight charges as provided above).
- 3) If parts are found to be operable, you have two options:
 - a. The Parts can be returned to you with a service charge for inspection, cleaning, and routine replacement of all rubber components and any other parts that show wear; or
 - b. We can dispose of the Parts at the factory if you do not wish it to be returned.

NOTE: Any order of Parts by customer shall only be accepted by Eskridge subject to the terms stated herein. Any purchase order forms used by Customer (to accept this offer to sell) which contain terms contrary to, different from, or in addition to the terms herein shall be without effect, and such terms shall constitute material alteration of the offer contained herein under K.S.A 84-2-207 (2)(b), and shall not become part of the contract regarding the sale of the Parts.



OTHER ESKRIDGE PRODUCTS

PLANETARY GEARDRIVES

SERIES

TORQUE RATING

	MAX. INTERMITTENT
20/28 SERIES	20,000-28,000 IN-LB
50 SERIES	50,000 IN-LB
60 SERIES	60,000 IN-LB
100 SERIES	100,000 IN-LB
130 SERIES	130,000 IN-LB
150 SERIES	150,000 IN-LB
250 SERIES (MODEL 250 & 252)	250,000 IN-LB
600 SERIES	600,000 IN-LB
1000 SERIES	1,000,000 IN-LB

MULTIPLE DISC BRAKES

SERIES

TORQUE RATING

90B SAE B	TO 4,800	IN-LB
90BA SAE B ADJUSTABLE TORQUE	TO 4,800	IN-LB
92B SAE B LOW PROFILE	TO 2,800	IN-LB
93 FOR NICHOLS MOTORS	TO 6,100	IN-LB
95C SAE C	TO 12,000	IN-LB
95W SAE C WHEEL MOUNT	TO 21,000	IN-LB
98D SAE D	TO 25,000	IN-LB

PLANETARY AUGER DRIVES (DIGGERS)

SERIES

TORQUE RATING

D50 MODELS 1500, 2500, 3000, 4000, 4500 & 5000	1,500-5,000	FT-LB
76 MODELS BA & BC, TWO SPEED	8,000-12,500	FT-LB
77 MODELS BA, BC & BD	6,000-12,500	FT-LB
78 MODELS 35 & 48, TWO SPEED	9,000-12,500	FT-LB
75 MODELS 38 & 51, TWO SPEED	16,500-20,000	FT-LB



1900 Kansas City Road
 Olathe, Kansas 66061
 phone (913) 782-1238
 fax (913) 782-4206

Your nearest Eskridge Distributor is:

