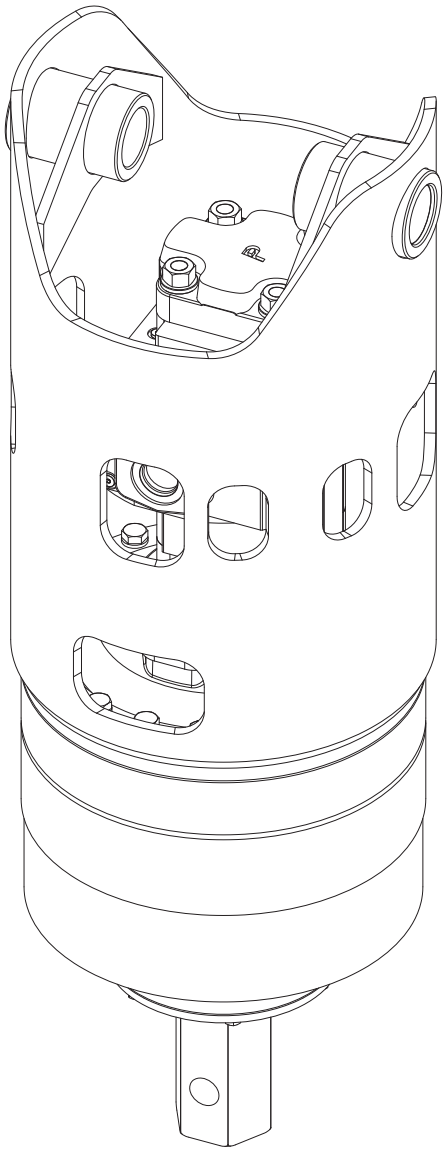
MODEL 7551L INTEGRAL KICKDOWN AUGER DRIVE SERVICE MANUAL



Example Part Number

75	51L	3	2	F	140	R	K2
Model	Ratio	Shaft	Bail Boss	Motor Supplier	Motor Number	Option 1	Option 2

THIS SERVICE MANUAL IS EFFECTIVE:
S/N: 162464 TO CURRENT
DATE: 7-2017 TO CURRENT
VERSION: SM75K2I_112017

NOTE: Individual customer specifications (shaft hex size, bail boss size, motor code, etc.) may vary from exploded drawing and standard part numbers shown. If applicable, refer to customer drawing for details.

Exploded View Drawing

7551 INTEGRAL KICKDOWN WITH LOAD-N-LOCK® SHAFT RETENTION

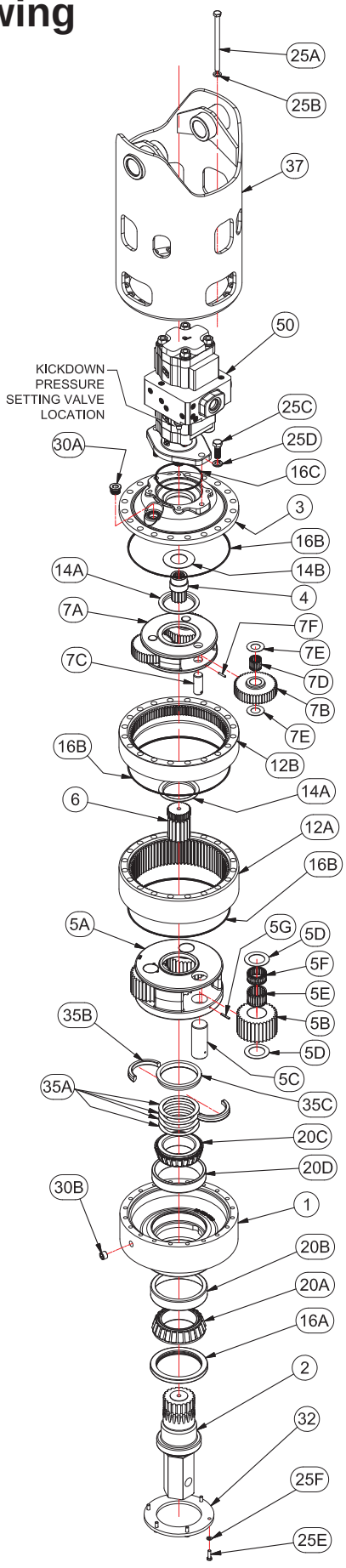
PARTS LIST			
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	BEARING CARRIER	75-004-3022
2	1	OUTPUT SHAFT - 3" HEX	75-004-4012L
		OUTPUT SHAFT - 2-5/8" HEX	75-004-4022L
3	1	COVER	25-004-1222
4	1	INPUT GEAR	25-004-1162
5	(1)	SEC CARRIER ASSY	25-005-2031
5A	1	CARRIER-SEC (250 - 6.0:1)	25-004-1062
5B	3	PLANET GEAR (250 - 6.0:1)	25-004-1082
5C	3	PLANET SHAFT - SECONDARY	25-004-1021
5D	6	WASHER - SEC. PLANET 250	25-004-1041
5E	3	BEARING - PLANET (LONG)	01-105-0550
5F	3	BEARING - PLANET (SHORT)	01-105-0560
5G	3	ROLL PIN - 3/16X1-1/4	01-153-0190
6	1	SUN GEAR - SEC.	25-004-1142
7	(1)	CARRIER ASSY-PRI (250/8.57:1)	25-005-2001
7A	1	CARRIER - PRI (250 - 8.57:1)	25-004-1032
7B	3	PLANET GEAR - PRI (250 - 8.57:1)	25-004-1102
7C	3	PLANET SHAFT - PRIMARY	25-004-1031
7D	3	BEARING - PRIMARY PLANET	01-105-0570
7E	6	THRUST WASHER	81-004-1561
7F	3	ROLL PIN (3/16 X 1)	01-153-0020
12	–	RING GEARS	———
12A	1	RING GEAR- SEC	25-004-1022
12B	1	RING GEAR- PRI	25-004-1012
14	–	THRUST WASHERS & THRUST BEARINGS	———
14A	2	CARRIER THRUST WASHER	25-004-1132
14B	1	WASHER	81-004-2883
16	(1)	SEAL KIT (ITEMS 16A, 16B, 16C)	25-016-2021
16A	1	OUTPUT SHAFT SEAL	01-405-0500
16B	3	O-RING (PARKER#276)	01-402-0020
16C	1	O-RING	01-402-0010
20	–	OUTPUT SHAFT BEARINGS	———
20A	1	BEARING CONE	01-102-0120
20B	1	BEARING CUP	01-103-0110
20C	1	INNER BEARING CONE	01-102-0250
20D	1	INNER BEARING CUP	01-103-0250
25	–	HARDWARE	———
25A	20	HEX HEAD CAP SCREW	01-150-1660
25B	20	FLATWASHER - HDN (1/2 X 7/8 X 1/8)	01-166-0120
25C	2	HHCS (5/8-11 X 1-3/4)	01-150-0110
25D	2	LOCKWASHER - 5/8 ZINC PLATED	01-166-0040
25E	6	5/16-18 X 1, GR5 HEX HEAD CAP SCREW	01-150-1790
25F	6	LOCKWASHER - (5/16)	01-166-0110
30	–	PLUGS	———
30A	1	HOLLOW HEX PLUG (05HP-12)	01-208-0030
30B	1	PLUG - 1/2 NPT MAG	01-207-0041
32	1	SEAL PROTECTOR	75-004-1062
35	–	MISCELLANEOUS	———
35A	*	SHIM	25-004-1051
35B	1	SPLIT RING	25-004-1182
35C	1	LOCK RING	25-004-1192
37	1	BAIL ASSY - 75	75-005-2222
50	1	MOTOR KICKDOWN 10.8 IN^3/REV 3500 PSI	01-304-1400
		MOTOR KICKDOWN 12.75 IN^3/REV 2500 PSI	01-304-1420

* QTY OF SHIMS DEPENDENT ON BEARING PRE-LOAD REQUIRED. AUGER DRIVES GENERALLY REQUIRE MODERATE PRE-LOAD.

EFFECTIVE DATE: 7/21/2017

EFFECTIVE S/N: 162464

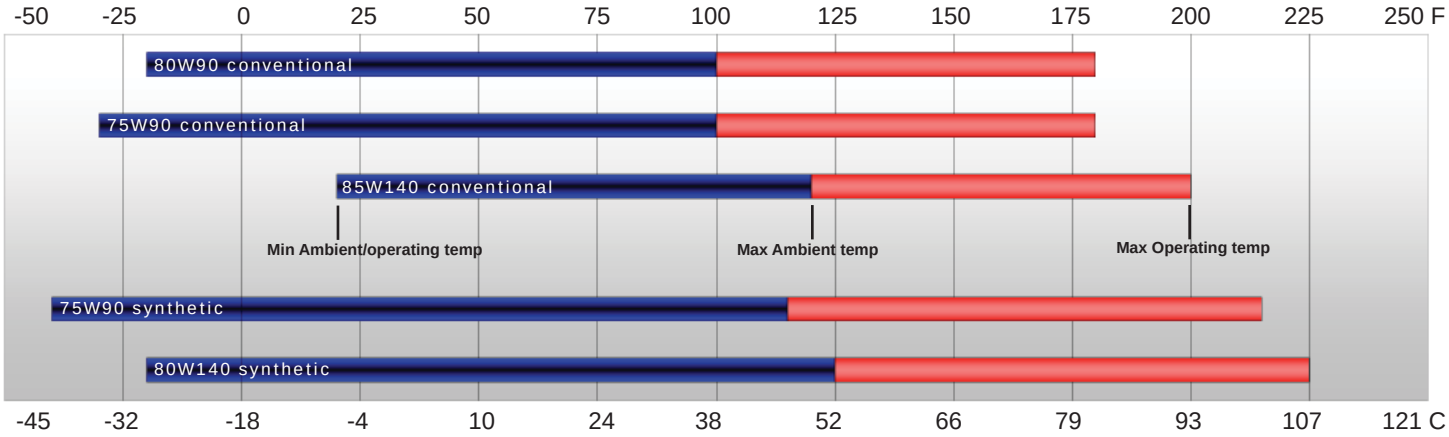
X7551L-K2-AA DATE: 11/1/2017



LUBRICATION & MAINTENANCE

Using the chart below, determine an appropriate lubricant viscosity. Use only EP (extreme pressure) or API GL-5 designated lubricants. Change the lubricant after the first 50 hours of operation and at 500 hour intervals thereafter. The auger drive should be partially disassembled to inspect gears and bearings at 1000 hour intervals.

Recommended ambient and operating temperatures for conventional and synthetic gear lubricants



Note: Ambient temperature is the air temperature measured in the immediate vicinity of the gearbox. A gearbox exposed to the direct rays of the sun or other radiant heat sources will operate at higher temperatures and therefore must be given special consideration. The max operating temp must not be exceeded under any circumstances, regardless of ambient temperature.

If your unit was specified “shaft up” or with a “-Z” option, 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 based or general purpose bearing grease sparingly every 50 operating hours or at regular maintenance intervals. Over-greasing the output bearing should be avoided as it tends to fill the housing with grease and thicken the oil

ESKRIDGE MODEL 75 OIL CAPACITY

Operating Position	Oil Capacity			Oil Level
	Single stage	Double stage	Triple stage	
 Vertical Shaft (Pinion Down)		10 pts / 4.7 liters		To midway on upper/ primary gear set 

WARNING: While working on this equipment, use safe lifting procedures, wear adequate clothing and wear hearing, eye and respiratory protection.

ESKRIDGE PART NUMBER INTERPRETATION

Note: All non custom Eskridge Geardrives are issued a descriptive part number which includes information regarding the Model, means of shaft retention, base style, shaft style, input mounting, input shaft size, overall ratio and various available options. For a detailed breakdown of this information, please refer to Eskridge product specification sheets found at: http://www.eskridgeinc.com/diggers/diggerprodspecs.html

Unit Disassembly Procedure

1) Scribe a diagonal line across the outside of the unit from the bail **(37)** to the bearing carrier/base **(1)** before disassembly to aid in the proper positioning of pieces during reassembly.

2) Remove magnetic drain plug **(30B)** and drain oil from unit. The oil will drain out faster and more completely if warm.

3) Remove the twenty hex-head capscrews **(25A)** and flat washers **(25B)**.

4) Separate bail **(37)** from cover **(3)** and remove from digger assembly.

5) Remove hex-head capscrews **(25C)** and lockwashers **(25D)** and remove motor **(50)** from cover **(3)**. Remove o-ring **(16C)** from pilot of motor **(50)** or cover **(3)**.

6) Remove cover **(3)**, thrust washers **(14A & 14B)**, and input gear **(4)**. Inspect o-ring **(16B)**; discard if damaged or deformed.

7) Lift input-stage (primary) planet carrier assembly **(7)** out of the unit. Remove ring gear **(12B)** and inspect o-ring **(16B)**; o-rings in these applications frequently need to be replaced because they have taken a "set".

8) Remove secondary sun gear **(6)** and thrust washer **(14A)**.

9) Lift the secondary (output stage) planet carrier assembly **(5)** out of the unit.

10) Remove the secondary ring gear **(12A)**. Inspect o-ring **(16B)**; as before, discard if damaged.

11) The unit is now separated into subassemblies. The area(s) requiring repair should be identified by thorough inspection of the individual components after they have been cleaned and dried.

Primary Planet Carrier Teardown

1) Rotate planet gears **(7B)** to check for abnormal noise or roughness in bearings **(7D)** or planet shafts **(7C)**. If further inspection or replacement is required, proceed as follows.

NOTE: Support only the carrier (7A) while pressing out planet shafts.

2) Drive roll pins **(7F)** completely into the planet shafts **(7C)**.

3) Press or drive planet shafts **(7C)** out of carrier **(7A)**.

4) Remove planet gears **(7B)**, thrust washers **(7E)** and bearings **(7D)** from the carrier **(7A).**

5) Inspect the planet gear **(7B)** bearing bore, planet shaft **(7C)** and bearings **(7D)**. Check for spalling, bruising or other damage. Replace components as necessary. If bearing requires replacement, the planet shaft should be replaced as well.

6) Use 3/16 inch pin punch to remove roll pins **(7F)** from planet shafts **(7C)**.

Reassembly

1) Install bearing **(7D)** into planet gear **(7B)**. Place one thrust washer **(7E)** on each face of the planet gear. Install gear assembly into carrier **(7A)**.

2) Planet shafts **(7C)** should be installed with chamfered end of 3/16 inch hole toward outside diameter of the carrier **(7A)**. This will aid in alignment of holes while inserting roll pins **(7F)**.

3) Drive a roll pin **(7F)** through the carrier hole and into the planet shaft to retain the parts. Repeat for other planet gears.

Secondary Planet Carrier Teardown

Rotate planet gears **(5B)** to check for abnormal noise or roughness in bearings **(5E & 5F)**. If further inspection or replacement is required, proceed as follows.

1) Drive roll pins **(5G)** completely into the planet shafts **(5C)**.

2) Slide planet shafts **(5C)** out of carrier **(5A)**.

3) Remove planet gears **(5B)**, washers **(5D)** and bearings **(5E & 5F)** from carrier **(5A)**.

4) Inspect the planet gear **(5B)** bearing bore, planet shaft **(5C)** and bearings **(5E & 5F)**. Check for spalling, bruising or other damage. Replace components as necessary.

5) Remove roll pins **(5G)** from planet shafts **(5C)** using a 3/16 inch pin punch.

Reassembly

1) Install bearing **(5E & 5F)** into planet gear **(5B)**. Place one thrust washer **(5D)** on each face of the planet gear. Install gear assembly into carrier **(5A)**.

2) Planet shafts **(5C)** should be installed with the chamfered end of the 3/16 inch hole towards the outside diameter of the carrier **(5A)**; this will aid in alignment of holes while inserting roll pins **(5G)**.

3) Drive roll pin **(5G)** into the carrier hole and into the planet shaft **(5C)** to retain the parts. Repeat for remaining planet gears.

Base Subassembly

1) Using a pry-bar or heel bar, remove the lock-ring **(35C)** from the split ring **(35B)** and remove split ring pieces **(35B)** and-shims **(35A)**.

Caution: Since the output shaft is no longer retained, care should be taken to avoid personal injury. Care should also be taken not to damage it when it is pressed through base.

2) Remove the six hex-head capscrews **(25E)** and lockwashers **(25F)** and remove seal protector **(32)** from bearing carrier/base **(1)**.

3) Base **(1)** should be set - shaft side down, as shown, on a press table. Press output shaft **(2)** through the bottom of base **(1)** by applying a load to top end (internal end) of shaft until it passes through inner shaft bearing cone **(20C)**.

Note: Removing the shaft from the base assembly damages the shaft seal and the seal will need to be replaced.

4) A gear puller may be used to remove the outer bearing cone **(20A)** from the shaft **(2)**. If reusing old bearing cone, do not pull on or damage roller cage. Remove the shaft seal **(16A)** from the shaft for replacement.

5) Inspect inner and outer bearing cups **(20B & 20D)**. If cups are damaged, drive them out using a brass drift and utilizing the bearing knock-out notches in the base **(1)**

Reassembly

1) Clean all foreign material from magnetic oil plug **(30B)** located on the side of the base **(1)**.

2) Place base **(1)** (output side up, opposite shown) on the table.

3) Apply a layer of lithium or general purpose bearing grease to the roller contact surface of outer bearing cup **(20B)**.

4) Press outer bearing cone **(20A)** (large end down as shown) onto the shaft **(2)** until it seats against the shoulder.

Note: Press bearing cone onto output shaft by pressing on inner race only. DO NOT press on roller cage, as it will damage bearing.

5) Place the shaft **(2)** with the bearing **(20A)** into the base **(1)**.

6) Flip this assembly, resting the base **(1)** on the end of the output shaft **(2)**.

7) Apply a layer of lithium or general purpose bearing grease to the roller contact surface of the inner bearing cup **(20D)**. Press the inner bearing cone **(20C)** (large end up as shown) onto the shaft **(2)** until it is seated against inner bearing cup **(20D)**.

8) Without the shaft seal **(16A)** installed, the preload may result in a rolling torque that varies between 50 to 300 in-lb. The bearing preload should be tailored to your application; a low-speed application may require a high pre-load, high-speed applications usually benefit from low pre-load. Adding shims **(35A)** will increase the pre-load on the bearing set. Determine your pre-load requirement and install shims to obtain this pre-load. Place the split ring **(35B)** into the groove in the shaft **(2)** and over the shims **(35A)** and install the lock ring **(35C)** over the split ring segments **(35A)**. Press the lock ring **(35C)** on until it snaps into place over the split ring **(35B)**

9) Flip the bearing carrier/base assembly **(1)** over with shaft **(2)** pointed up. Lubricate inner lip of new shaft seal **(16A)** and slide it onto the shaft **(2)** and over the shaft seal diameter then press the seal into the bearing carrier/base bore **(1)**.

Unit Assembly

1) When all subassemblies are complete, the unit is ready to be assembled.

2) Install the secondary carrier assembly **(5)** onto the output shaft **(2)**; align the splines of the carrier **(5A)** with the splines of the shaft **(2)** and slide the carrier onto the shaft **(2)**.

3) Install secondary (output stage) sun gear **(6)** into secondary carrier assembly **(5)**. Place thrust washer **(14A)** onto the secondary (output stage) carrier **(5A)**.

4) Lubricate o-ring **(16B)** and install on the external pilot of the secondary (output stage) ring gear **(12A)**.

Caution: Hold ring gear by outside or use lifting device to prevent injury.

5) Align gear teeth of ring gear **(3)** with the gear teeth of the planet gears **(5B)** and place on base **(1)**. Align mounting holes of ring gear **(12A)** with holes in base **(1)** using the scribed line made during disassembly for reference.

6) Lubricate o-ring **(16B)** and install on the pilot of the primary (input stage) ring gear **(12B)**. Install ring gear **(12B)** and align mounting holes of ring gear with holes in base **(1)**. Use the scribed line made during disassembly for reference.

7) Align primary planet gear **(7B)** teeth with ring gear **(12B)** teeth and install primary carrier assembly **(7)** down and rotate it until it meshes with the spline of the sun gear **(6)**.

8) Install input gear **(4)** and thrust washers **(14A & 14B)**. Lubricate o-ring **(16B)** and install on the pilot of the gearbox cover **(3)**. Noting the scribed line made during disassembly, install cover **(3).**

9) Loosely install a capscrew **(25A)** into the cover **(3)** to maintain alignment. Spin test the unit to be sure it runs smoothly without any tight-spots or rough spots.

10) Install motor **(50)** onto cover **(3)** using hex-head capscrews **(25C)** and lockwashers **(25D).** Lube fasteners and torque to 130 ft-lb.

Note: Support the unit during these steps so it does not tip over and cause injury or damage.

11) Remove the alignment cap screws.

12) Place bail **(37)** onto assembly and align holes in bail and cover **(3)** using scribed line made during disassembly as a reference. Install and torque the 20 1/2-13 hex head capscrews **(25A)** with flatwashers **(25B)**. **Torque the capscrews to 110 ft-lbs dry, or 80 ft-lbs if fasteners are lubricated.**

13) Fill the unit to the proper level, as specified, with GL5 EP 80/90 gear oil.

14) The motor with integral kickdown valve is factory set for the proper shift point so no adjustment should be necessary. If adjustment is necessary, the location of the kickdown valve is shown on the exploded drawing and adjustment can be done through the access holes in the bail **(37)**. Screwing the adjustment screw “in” will increase the shift pressure at an approximate rate shown in the table below. Testing must be done to get an exact pressure.

ITEM	PART NO.	DESCRIPTION	RATE OF CHANGE/ REVOLUTION
50	01-304-1400	MOTOR - 10.8 IN^3/REV 3500 PSI	900 $psi/rev_{(adjustment\ screw)}$
50	01-304-1420	MOTOR 12.75 IN^3/REV 2500 PSI	500 $psi/rev_{(adjustment\ screw)}$

The digger is now ready to use.