McCULLOCH
EARTH DRILL ATTACHMENT
MODEL 940

THE McCULLOCH EARTH DRILL may be installed as auxiliary equipment on the Model 940 Chain Saw Engine. Installation is readily accomplished by removing the saw transmission and replacing it with the earth drill transmission.

By nature of its use the earth drill cutter blade and lead screw is subjected to constant abrasive wear. To resist this abrasion, all McCulloch cutter blades and lead screw edges are given a hard face coating of tungsten carbide or Stellite. Both the cutter blade and lead screw can be easily removed for repair or replacement.

If the cutter blade is allowed to wear excessively, it will not cut a large enough diameter hole to permit easy entrance of the auger assembly, thereby creating binding and excessive wear on the first few flights of the auger conveyor. A result of this condition will be that the auger cannot be readily removed from the hole due to the varying diameters along the auger conveyor.

It is recommended that the cutter bit and point be checked for wear and replaced as necessary. Worn cutter blades and points may be rebuilt by a good welding shop to proper shape using Stellite No. 6 welding rod. This hard surface material should be built up on the edge as well as the end of the blade.

See the following pages for a complete list of replacement parts which are keyed to an exploded drawing of the earth drill transmission assembly and augers. Lubrication, installation and operation instructions follow the parts list.

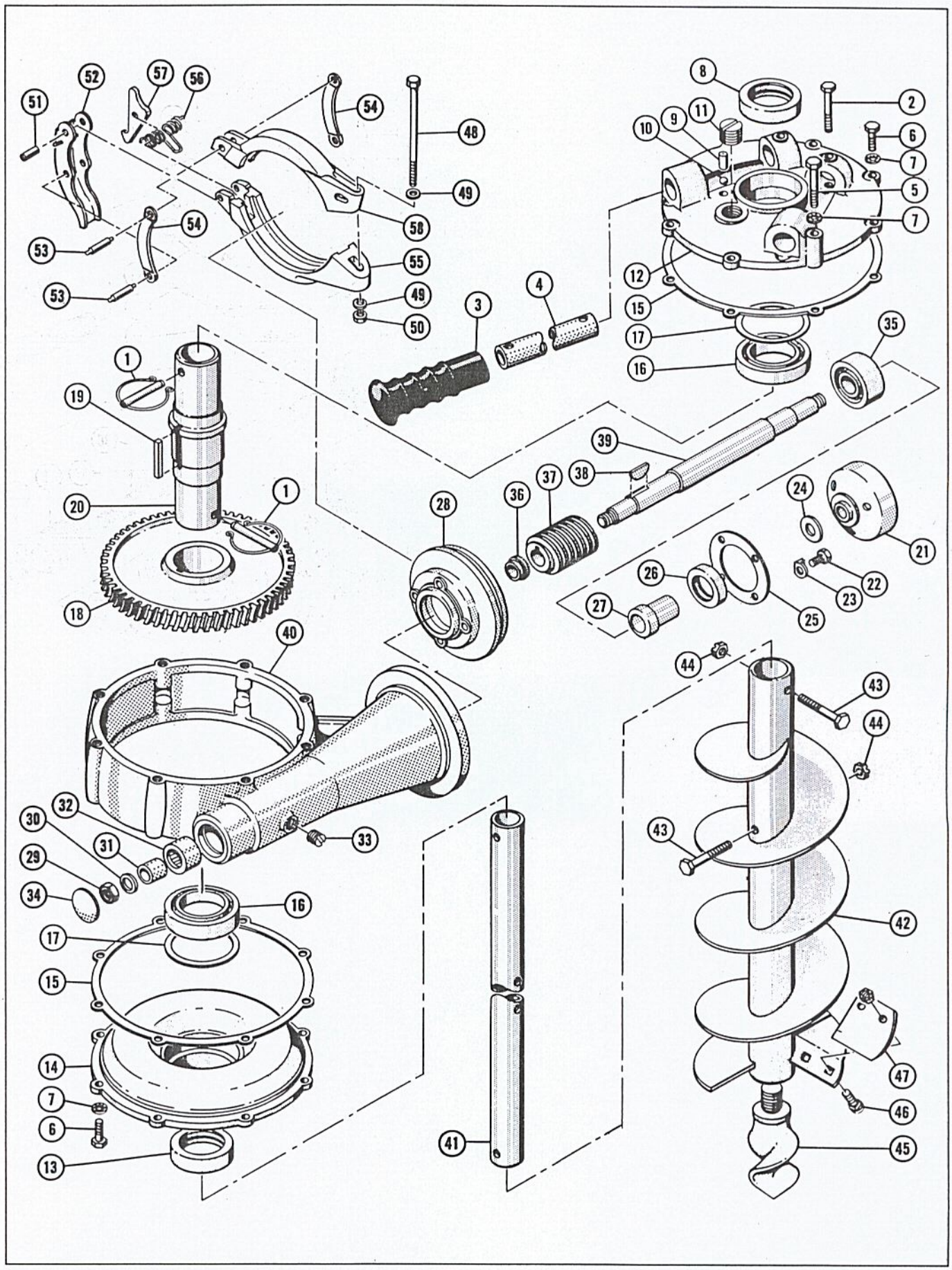
Index No.	Part Number	Nomenclature	Units per Assy
	60851	Earth Drill Assembly (less auger assembly)	1
	25120	. Kit - Drill fastener	1
1	25310	. . Pin and Spring Assembly	2
2	100660	. . Screw - Hex hd 1/4-20 x 2 in. lg	2
	25046A	. Handle Assembly	2
3	18207A	. . Grip - Handle	1
4	25027A	. . Handle	1
5	100660	. Screw - Hex hd 1/4-20 x 2 in. lg	1
6	100374	. Screw - Hex hd 1/4-20 x 7/8 in. lg	15
7	100153	. Lockwasher - Internal 1/4 in.	16
8	101367	. Seal - Oil	1
9	25089	. Plug - Vent	1
10	100549	. Ball - 0.188 in. dia	1
11	100658	. Plug - Pipe 1/2 x 14	1

#60910 A
August, 1965

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Index No.	Part Number	Nomenclature	Units per Assy
12	25026	Cover - Gear housing top.	1
13	101367	Seal - Oil	1
14	25083	Cover - Gear housing bottom	1
15	25028	Gasket - Cover	2
16	101368	Bearing - Ball	2
17	25314	Shim - (0.003 in.)	As Req.
	25315	Shim - (0.012 in.)	As Req.
	25316	Shim - (0.021 in.)	As Req.
18	25020	Gear - Worm.	1
19	25021	Key - Square	1
20	25019	Shaft - Worm gear	1
21	58134	Drum Assembly - Clutch	1
22	102128	Screw - Hex hd 1/4-20 x 1-1/4 in. lg	4
23	10067	Lockplate - 1/4 in.	4
24	60796	Washer - Special	1
25	25013	Gasket	1
26	101366	Seal - Oil	1
27	60797	Spacer	1
28	60799	Adapter	1
29	101179	Nut - Hex jam 7/16-20	1
30	101093	Washer - Plain 7/16 in.	1
31	101372	Race - Bearing	1
32	101323	Bearing - Needle	1
33	100432	Plug - Pipe 1/4-18	1
34	101402	Plug - Expansion 1-1/2 in.	1
35	101369	Bearing - Ball	1
36	25011	Spacer - Worm	1
37	25010	Worm.	1
38	101370	Key - Woodruff	1
39	60798	Shaft - Worm.	1
40	25017A	Housing - Gear	1
41	25045	Extension - Auger	1
	110191	Oil - Pint can	2
	25074B	Auger Assembly - Six inch	1
	25075B	Auger Assembly - Nine inch	Alternate
	25076B	Auger Assembly - Twelve inch	Alternate
42	25062	Conveyor Assembly - Six inch	1
	25066	Conveyor Assembly - Nine inch	Alternate
	25069	Conveyor Assembly - Twelve inch	Alternate
43	60209	Screw - Hex hd 3/8-24 x 2 in. lg.	2
44	101141	Nut - Hex 3/8-24	2
45	25055	Point Assembly	1
46	104291	Bolt - Plow 3/8 (with nut)	2
47	25124A	Blade - Cutter - Six inch	1
	25125A	Blade - Cutter - Nine inch	Alternate
	25126A	Blade - Cutter - Twelve inch	Alternate
	58181D	Clamp Assy - Transmission	1
48	104488	Bolt - Clamp ring	1
49	100311	Washer - Plain 1/4 in.	2
50	101143	Nut - Hx 1/4-20	1
51	104887	Pin - Groove 1/4 x 1 in. lg	1
52	24446	Lever - Clamp ring	1
53	24447	Pin - Clamp ring	2
54	24445A	Link - Clamp ring	2
55	58186B	Ring - Clamp (lower)	1
56	24719	Spring - Latch	1
57	24720	Latch - Spring	1
58	58182A	Ring - Clamp (upper)	1

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LUBRICATION

Fill the gear housing with two pints of Pennzoil SAE 140 No. 420 Gear Lubricant. Inspect the housing regularly for quantity and condition of the lubricant. Refill as necessary, using only the specified lubricant. The oil level may be checked by removing the plug (Index No. 33 on the exploded drawing) at the side of the housing. To add lubricant, remove the plug (Index No. 11) from the cover.

INSTALLATION

To install the earth drill on the Model 940 chain saw engine, proceed as follows:

1. Install handle assemblies through bosses in the cover casting and secure them with two screws (Index No. 2).

2. Install the auger and conveyor assembly (Index No. 42) on the auger extension (Index No. 41) with the two screws (Index No. 43) and nuts (Index No. 44).

3. Disconnect the flexible oil line from the chain saw oiler tank.

4. Release the saw transmission clamp and remove the transmission from the saw.

5. With the saw transmission assembly removed, slip the earth drill clutch drum (Index No. 21) over the engine clutch rotor and position the gear housing (Index No. 40) against the engine clutch housing assembly.

6. Fit the earth drill clamp assembly over the flanges of the clutch housing assembly and the earth drill transmission adapter (Index No. 28). Adjust the clamp assembly for proper tightness by turning the screw which attaches the two halves of the clamp. With the clamp assembly properly adjusted, the transmission should be held firmly when the clamp lever is down and will turn freely when the lever is released.

OPERATION

The earth drill was designed for two man operation - one man operating the engine and one man stabilizing the auger side. Both operators load the unit for maximum drilling pressure consistent with the type soil being drilled. Other than this, ordinary operation of the unit requires no special instructions.

The auger will rotate only when the engine is accelerated and will stop when engine speed returns to idle. NOTE: Should the auger become stuck in the hole, the direction of rotation may be reversed by observing the following steps:

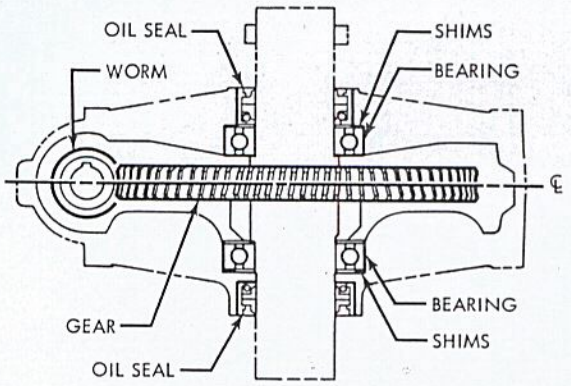
1. Remove the pin and spring assembly (Index No. 1) which holds the auger extension to the transmission assembly. Lift the engine and transmission assembly free of the extension.

2. Release the lever of the clamp ring assembly and rotate the transmission assembly 180 degrees (so handles will be in lower position). Secure the transmission assembly in place by pushing down on the clamp lever.

3. Reinstall the auger extension. The auger will now rotate counterclockwise and withdraw from the drilled hole.

CAUTION

The transmission of the earth drill attachment is shipped from the factory without gear oil. Make sure to add two (2) pints of Pennzoil SAE 140 No. 420 gear lubricant to the transmission before putting this earth drill attachment in operation.



When either the worm (Index No. 37) or the worm gear (Index No. 18) is replaced in the earth drill attachment, it is important that correct alignment and tooth contact be maintained. This may be accomplished by adjustment of the gear up or down to align its centerline with that of the worm as illustrated above.

To adjust the gear up or down for proper meshing of the teeth between worm and gear, add or remove shims (Index No. 17) under the lower bearing and above the upper bearing (Index No. 16).