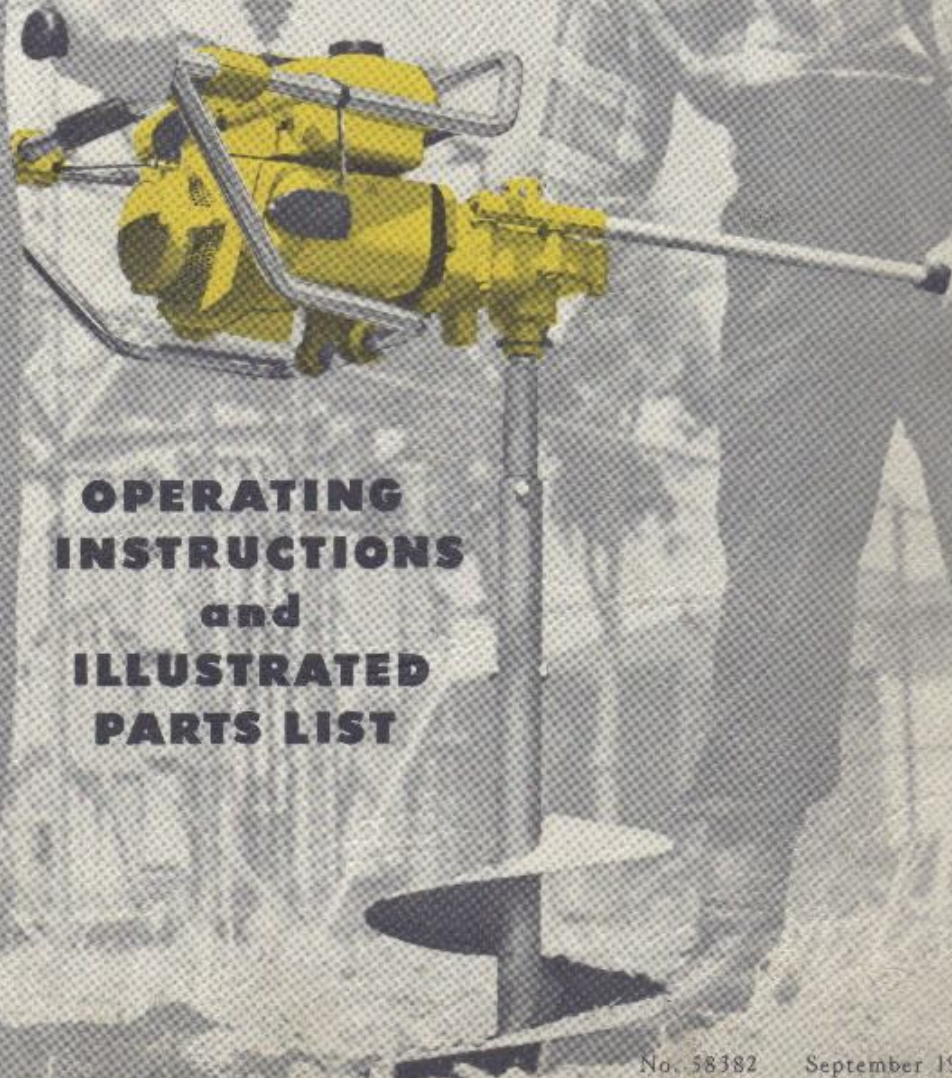




McCULLOCH

*Heavy-duty*  
**EARTH  
DRILL**



**OPERATING  
INSTRUCTIONS  
and  
ILLUSTRATED  
PARTS LIST**

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McCULLOCH CORPORATION • Los Angeles 45, California

# McCULLOCH



## HEAVY DUTY EARTHDRILL ATTACHMENT

The McCulloch Heavy Duty Earthdrill Attachment is designed for use on McCulloch 1-92 series chain saw engines and power units, and will drill either six, nine, or twelve-inch diameter holes depending on the size of the auger used. The unit should be operated by two men for maximum stability and control over drilling pressure. The attachment weighs about twenty-five pounds plus the weight of the auger, and the entire drilling unit (attachment, auger and engine) is easily carried from place to place.

Rotation of the auger is controlled by the throttle trigger on the engine. When the engine is idling, the auger will not turn. Speeding up the engine engages the clutch drive and the auger begins to turn. The faster the engine runs, the faster the auger turns. Releasing the throttle trigger slows the engine and the auger stops. If the auger becomes stuck in the ground, the direction that the auger turns can be reversed and the auger will turn itself out of the ground.

Six, nine, and twelve-inch diameter augers are available from your McCulloch Dealer. Repair parts for the earthdrill and the augers are shown in figure 9. The augers can be mounted close to the gear housing when drilling shallower holes or in an extended position for digging deeper ones.

TABLE 1. TORQUE VALUES

	inch - pounds	foot - pounds
Auger mounting screws	160 to 190	13-1/2 to 16
Gear housing mounting screws	40 to 50	3-1/2 to 4
Gear housing cover screws	40 to 50	3-1/2 to 4
Handle mounting screws	40 to 50	3-1/2 to 4

## INSTALLATION OF THE EARTHDRILL ATTACHMENT

1. Remove the channels from the gear housing cover. Turn them right side up and mount the handles in the channels on the cover using the screws, nuts and washers fastening the channels to the cover (figure 1).

### NOTE

If you have a torque wrench, Table 1 on page 1 will give you the correct torque values for screws and nuts. If you do not use a torque wrench, make sure that all nuts and screws are tightened securely.

2. Insert the auger extension up through the drive shaft in the gear housing. Line up the pin holes at the top and bottom of the drive shaft with the pin holes in the extension, and fasten the shaft and extension together with the pin and spring assemblies (figure 2).

3. Slide the auger on the end of the auger extension and fasten together with the two 2-inch long screws and nuts from the kit (figure 3). You can mount the auger in either of two positions: close to the gear housing or toward the end of the extension.

### CAUTION

Do not attempt to drill holes deeper than the earthdrill is designed to drill by mounting the extension with its upper pin hole at the lower pin hole in the drive shaft or by mounting the auger with its top screw hole at the bottom screw hole of the extension. If you do this, the auger, extension or drive shaft will be damaged as soon as you begin to use the unit. Always use both sets of mounting holes in the extension (see figure 4).

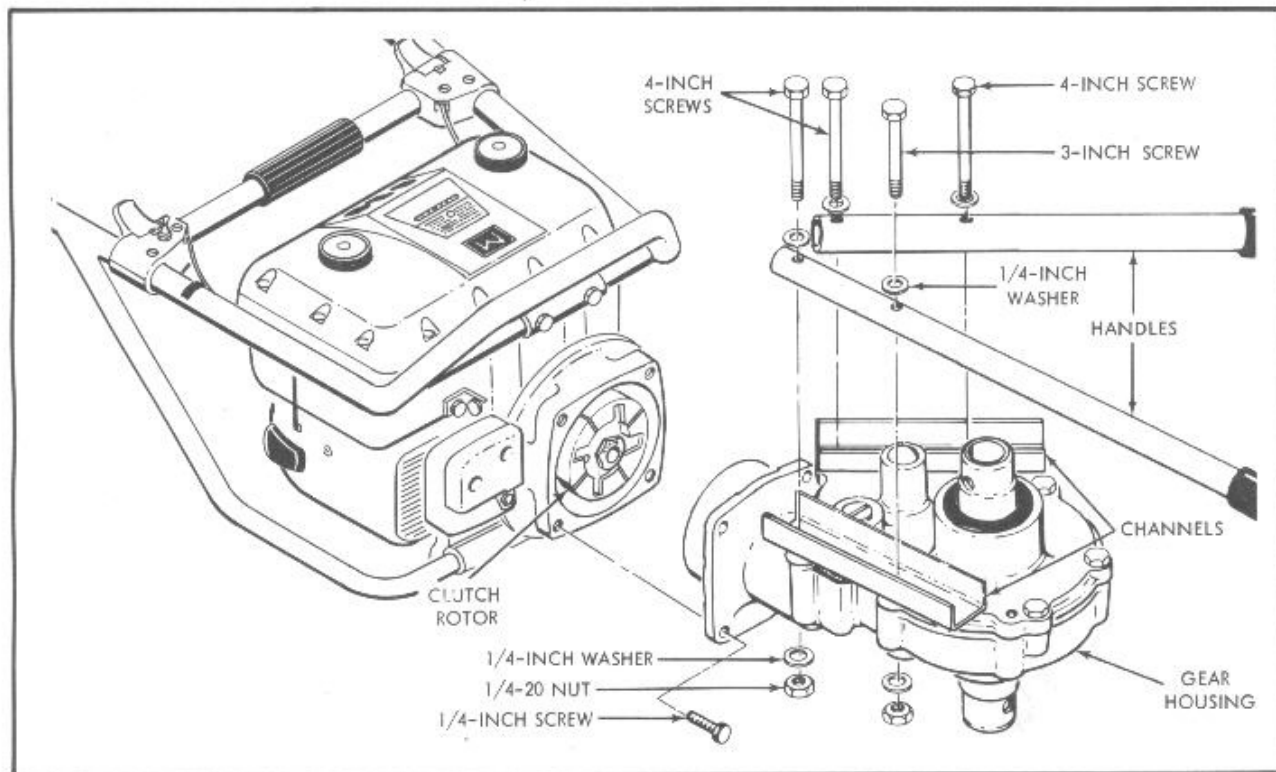


Figure 1. Install Gear Housing and Handles

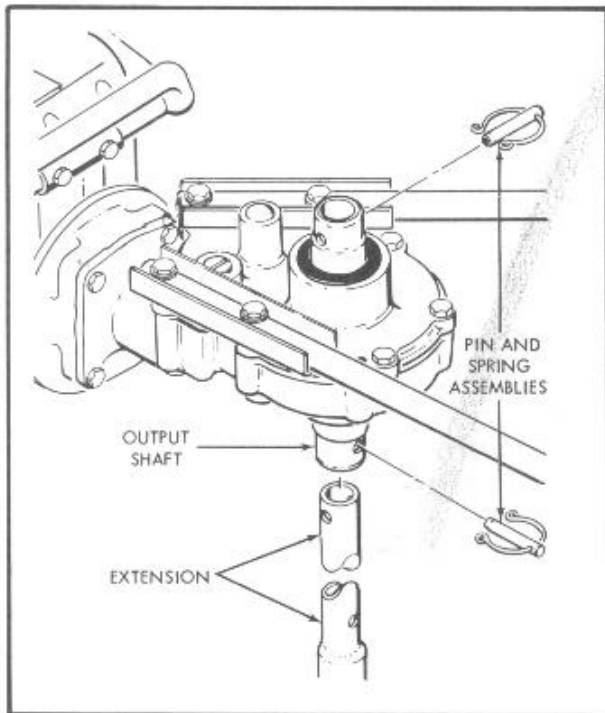


Figure 2. Install Auger Extension

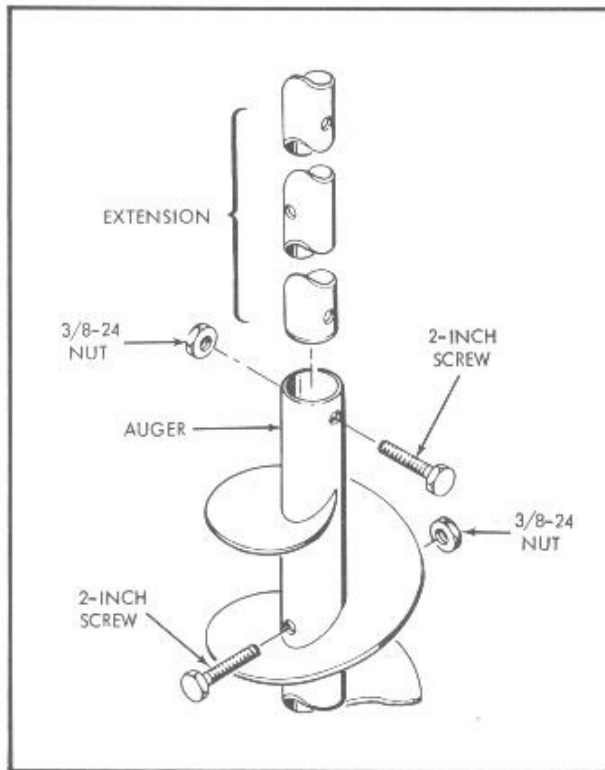


Figure 3. Install Auger



Figure 4. Auger Extension

4. Remove the gearcase from your 1-92 series chain saw in the manner described in your chain saw Operator's Manual and install the earthdrill in its place.

The earthdrill can be rotated for drilling horizontally as well as vertically by loosening the clamp ring and placing the earthdrill in the desired position.

#### LUBRICATION

The gear housing was filled with oil to the correct level at the factory. However, it is possible for the oil to leak past the filler plug if the plug becomes loosened. So, before using the earthdrill for the first time, remove the filler plug (figure 5) and check the oil level. When the attachment is upright and the gear housing level, the oil should come just below the top of the worm teeth. If the oil is not at the right level, add SAE 90 hypoid gear oil until the oil is high enough.

Do not let the oil come above the worm gear, or the oil seals in the gear housing may become damaged when the earthdrill is used, allowing the gear housing oil to leak out of

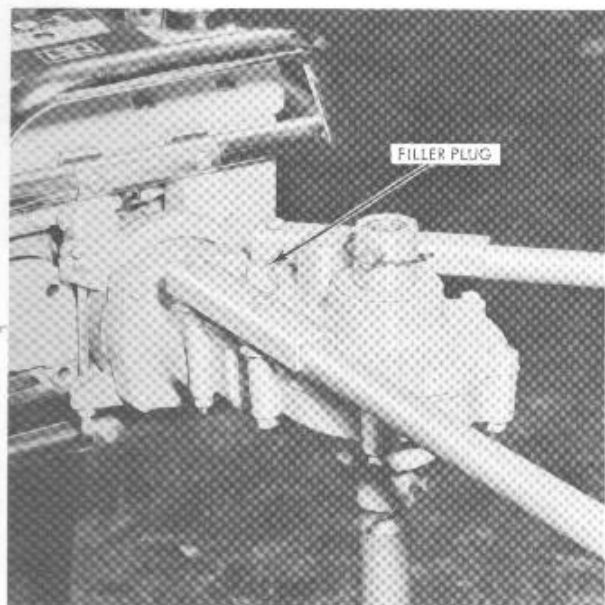


Figure 5. Filler Plug

the housing onto the clutch rotor or onto the drive shaft, extension and auger.

After each 500 hours of operation and at least every six months, remove the filler plug and drain the oil from the housing. Refill the housing with five ounces of SAE 90 hypoid gear oil. If there is any sign of leaking oil, check the level of the oil in the gear housing before you use the earthdrill. Should the oil leak around the seals, take the earthdrill to your McCulloch Dealer so he can replace the damaged seal or seals.

#### REVERSING AUGER ROTATION

If the auger becomes stuck in the ground and you cannot lift it out of the hole, the turning direction of the auger can be reversed so that the engine turns the auger out of the hole.

1. Remove the pin and spring assemblies fastening the auger extension to the drive shaft.
2. Lift the engine and gear housing off the auger extension and turn the gear housing upside down. Replace them on the auger extension.

3. Reinstall the pin and spring assemblies in the drive shaft and auger extension holes.

4. Start and run the engine. When the gear housing is upside down, the auger will turn counterclockwise and pull itself out of the hole. Lift the unit free as the auger comes out of the ground.

5. Remove the engine and the gear housing and reinstall them with the gear housing right side up.

#### GEAR ADJUSTMENT

After each 500 hours of operation, remove the gear housing cover and lift the output shaft out of the gear housing. Check the position of the worm gear in relation to the worm. They should mesh as shown in figure 6. If they do not, raise or lower the worm gear by adding or removing shims (item 32, figure 9) from between the worm gear and the bushing in the bottom of the gear housing.

After adjusting the worm gear to mesh properly with the worm, lay a straight edge across the upper surface of the pinion gear (figure 7) and measure the clearance between the straight edge and the sides of the gear housing. Write down this clearance. Then lay the straight edge across the cover (figure 8) and measure the clearance between the sides of the cover and the cover bushing. Add this clearance to the first

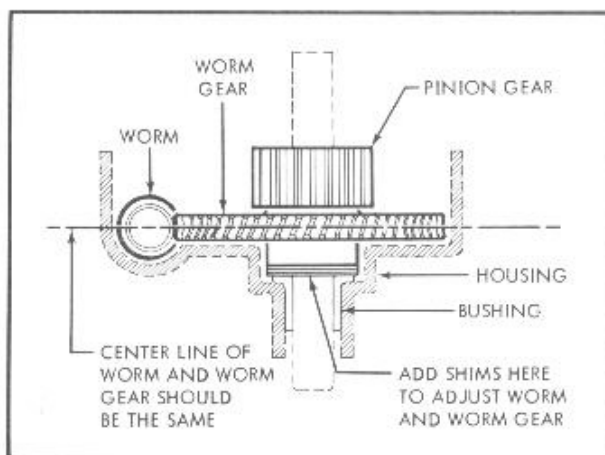


Figure 6. Gear Alignment

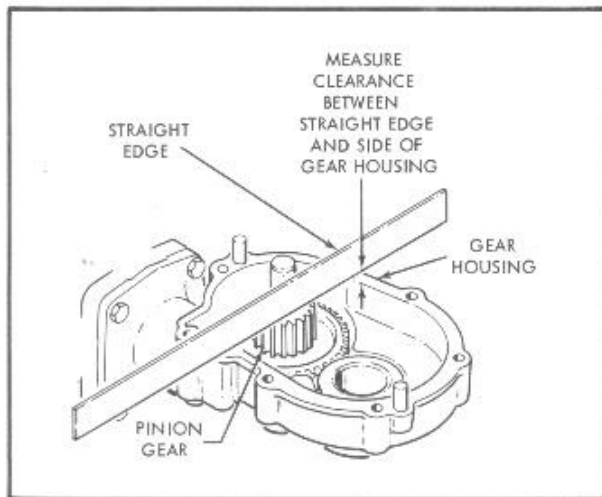


Figure 7. Gear Clearance

clearance and install the shim or shims on top of the pinion gear which come to within 0.004 to 0.008 of an inch of the total of the two clearances.

#### MAINTENANCE OF THE AUGER POINT AND CUTTER BLADE

The auger point and cutter blade are subject to constant abrasive wear when in use. Both the auger point and cutter blade can be removed for repair or replacement.

Do not let either unit wear excessively. If

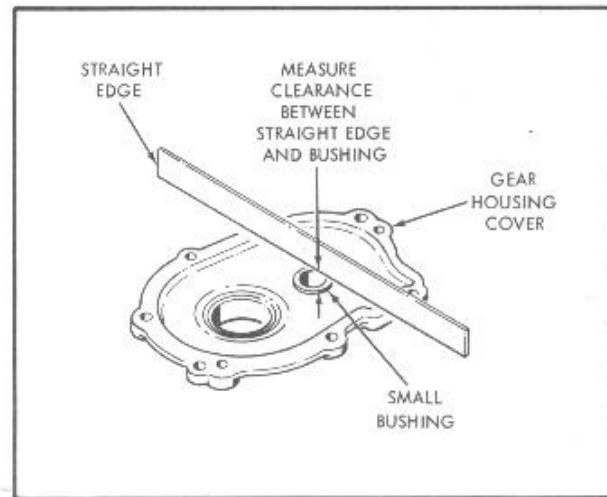


Figure 8. Bushing Clearance

the blade is worn or blunted it will not cut as easily nor will it cut as large a diameter hole as when new. This will tend to cause binding and wear on the sides of the conveyer and result in holes of smaller and smaller diameter.

Replace the auger point and cutter blade when they become blunt or dull. You can have the blades rebuilt by a good welding shop to proper shape using Stellite No. 6 welding rod. Use this material to build up the edge as well as the end of the blade.

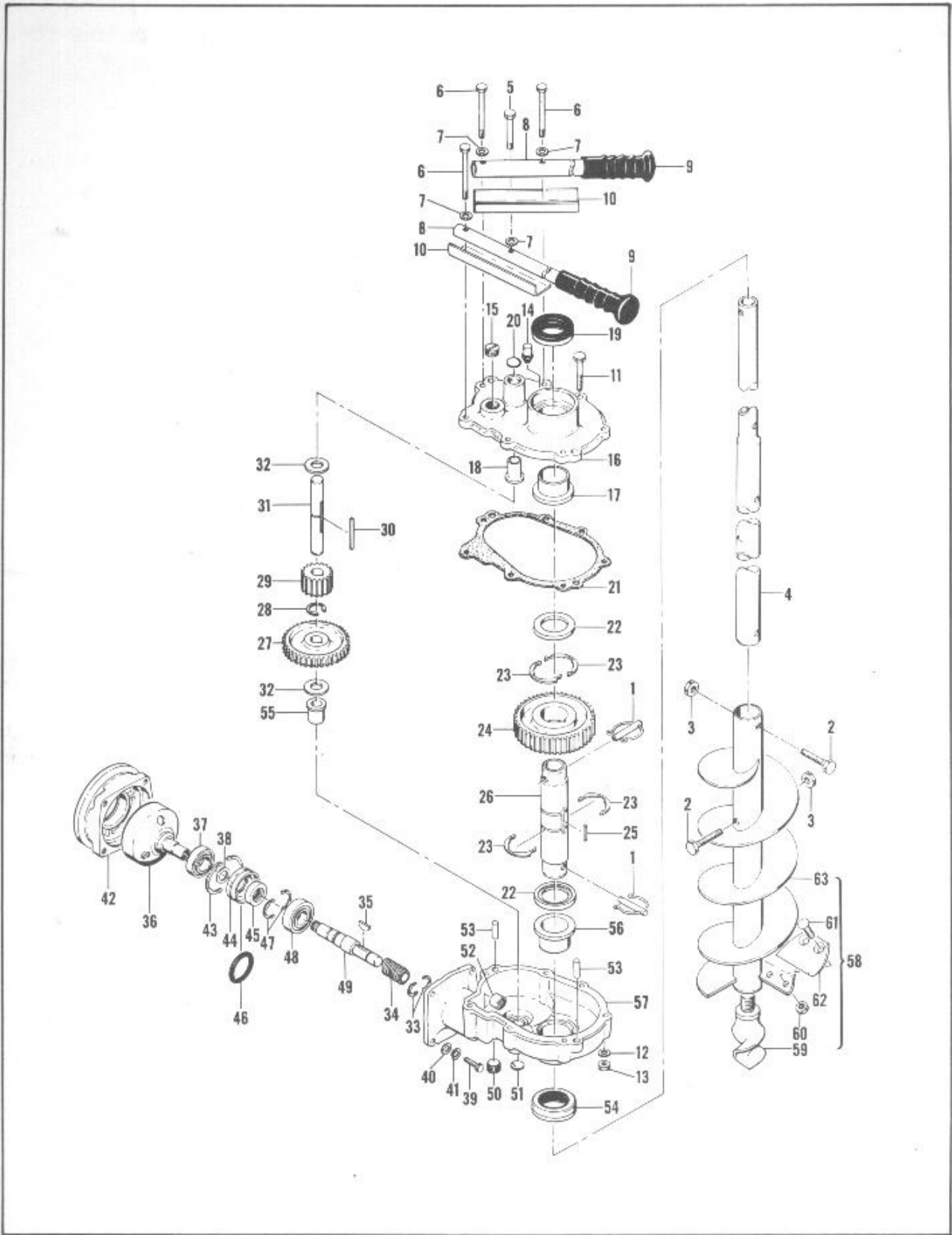


Figure 9. Earthdrill Attachment and Auger Assemblies

Index No.	Part Number	Nomenclature	Units Per Assy
		<b>EARTHDRILL ATTACHMENT AND AUGER ASSEMBLIES</b>	
	58371	Earthdrill Assembly (Does not include an auger assembly) .....	1
	50322	Drill Fastener Kit .....	1
1	50323	Pin and Spring Assembly .....	2
2	104438	Screw - Hex hd 3/8-24 x 2 in. lg. ....	2
3	101141	Nut - Hex 3/8-24 .....	2
4	50706	Extension - Auger .....	1
5	102150	Screw - Hex hd 1/4-20 x 3 in. lg. ....	1
6	102172	Screw - Hex hd 1/4-20 x 4 in. lg. ....	3
7	104410	Washer - 1/4 in. ....	4
	25046A	Handle Assembly .....	2
8	25027A	Handle .....	1
9	18207A	Grip - Handle .....	1
10	50320	Channel - Handle .....	2
11	100660	Screw - Hex hd 1/4-20 x 2 in. lg. ....	3
12	100005	Washer - Plain 1/4 in. ....	7
13	101143	Nut - Hex 1/4-20 .....	7
14	104385	Vent - Alemite 131000 .....	1
15	100658	Plug - Pipe 1/2 NPT .....	1
16	50318	Cover Assembly - Gear Housing .....	1
17	104207	Bushing - Oilite .....	1
18	104208	Bushing .....	1
19	104372	Oil Seal .....	1
20	100169	Plug - Expansion .....	1
21	50317	Gasket - Cover .....	1
22	50316	Spacer - Output shaft .....	2
23	104212	Ring - Retaining .....	2
24	50312	Gear - 54 tooth .....	1
25	50315	Key - Output shaft .....	1
26	50310	Shaft - Output .....	1
27	50299	Gear - Worm .....	1
28	104304	Ring - Retaining .....	1
29	50302	Pinion - 18 tooth .....	1
30	50828	Key - Worm gear shaft .....	1
31	50300	Shaft - Worm gear .....	1
32	57666	Shim - Worm gear (0.005 in. thick) .....	As Req'd
	57553	Shim - Worm gear (0.015 in. thick) .....	As Req'd
	57554	Shim - Worm gear (0.030 in. thick) .....	As Req'd
	57555	Shim - Worm gear (0.042 in. thick) .....	As Req'd
	57314	Shim - Worm gear (0.058 in. thick) .....	As Req'd
	57315	Shim - Worm gear (0.062 in. thick) .....	As Req'd
	57316	Shim - Worm gear (0.066 in. thick) .....	As Req'd
	57317	Shim - Worm gear (0.070 in. thick) .....	As Req'd
	57318	Shim - Worm gear (0.074 in. thick) .....	As Req'd
33	104201	Ring - Retaining .....	1
34	50290	Worm .....	1
35	103886	Key - Woodruff #406 .....	1
36	58361	Drum Assembly - Clutch .....	1
37	103836	Bearing - Ball .....	1
38	57708	Spacer .....	1
39	101982	Screw - Hex hd 1/4-20 x 1 in. lg. ....	4
40	100005	Washer - Plain .....	4
41	100153	Lockwasher .....	4
42	58362	Adapter .....	1
43	104211	Ring - Retaining .....	1
44	50292	Adapter Assembly - Seal .....	1
45	101304	Seal - Oil .....	1
46	104282	"O" Ring .....	1
47	104206	Ring - Retaining .....	1
48	100683	Bearing - #204 .....	1
49	50288	Shaft - Worm .....	1
50	101003	Plug - Pipe 1/8 NPT .....	1



Index No.	Part Number	Nomenclature	Units Per Assy
	50282	Housing Assembly - Gear	1
51	100169	Plug - Expansion	1
52	104299	Bearing - Needle	1
53	104307	Dowel - 0.375 dia x 1 in. lg	2
54	104372	Oil Seal	1
55	104208	Bushing	1
56	104207	Bushing - Oillite	1
57		Housing - Gear (Order Gear Housing Assembly #50282)	1

#### AUGER ASSEMBLIES

58	25074A	Auger Assembly - Six-inch	1
59	25055	Point Assembly - Auger	1
60	101334	Nut - 3/8-16	2
61	104291	Bolt - 3/8-16 x 1 in. lg.	2
62	25124	Blade - Cutter (six-inch)	1
63	25062	Conveyer - Six-inch	1
58	25075A	Auger Assembly - Nine-inch	1
59	25055	Point Assembly - Auger	1
60	101334	Nut - 3/8-16	2
61	104291	Bolt - 3/8-16 x 1 in. lg.	2
62	25125	Blade - Cutter (nine-inch)	1
63	25066	Conveyer - Nine-inch	1
58	25076A	Auger Assembly - Twelve-inch	1
59	25055	Point Assembly - Auger	1
60	101334	Nut - 3/8-16	2
61	104291	Bolt - 3/8-16 x 1 in. lg.	2
62	25126	Blade - Cutter (twelve-inch)	1
63	25069	Conveyer - Twelve-inch	1