NEW HOLLAND

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Service Manual

Harvester 1900, 2100

Issue 8-89

(Replaces All Previous Issues)

40190022

Reprinted

INTRODUCTION

This service manual provides you with the technical information needed to properly service the 1900 and 2100 harvesters. By using this service manual, in addition to the operator's manual supplied with the harvesters, you should be able to correctly service and maintain the harvesters.

Whenever working on Ford New Holland equipment, left and right sides of the machine are determined by standing behind the machine, looking in the direction of travel.

This manual details the procedures of removal, disassembly, reassembly, etc., that have been found to be the easiest and least time-consuming. There may be several other ways of completing the same job, but it has been established that the detailed methods in this manual are best. Modifications to these procedures are your own decision.

Certain hardware on the harvesters must be tightened to particular torque specifications. If there are no specific torque specifications for the hardware, tighten to the torque listed in the front section of this manual.

Units have been manufactured in several configurations as listed below, so it's important that you know the harvester's serial number when using this manual:

1900

— Serial numbers 440350 and below have a clutch pack reversing gearbox and Metalert® I.

— Serial numbers 440351 through and including 440385 have a clutch pack reversing gearbox and Metalert II.

— Serial numbers 440386 and above have an electric clutch reversing gearbox and Metalert II.

— Serial numbers 500000 and above have an automatic sharpener

2100

— Serial numbers 469333 and below have a clutch pack reversing gearbox and Metalert I.

— Serial numbers 469334 and above have an electric clutch reversing gearbox and Metalert II.

IMPROVEMENTS

Ford New Holland, Inc. is continually striving to improve its products. We must, therefore, reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

CONTENTS

PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements ("CAUTION", "WARNING", and "DANGER") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.

CAUTION: THE WORD "CAUTION" IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.

WARNING: THE WORD "WARNING" DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.

DANGER: THE WORD "DANGER" DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.

FAILURE TO FOLLOW THE "CAUTION", "WARNING", AND "DANGER" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

MACHINE SAFETY

Additional precautionary statements ("ATTENTION" and "IMPORTANT") are followed by specific instructions. These statements are intended for machine safety.

ATTENTION: The word "ATTENTION" is used to warn the operator of potential machine damage if a certain procedure is not followed.

IMPORTANT: The word "IMPORTANT" is used to inform the reader of something he needs to know to prevent minor machine damage if a certain procedure is not followed.

STANDARD TORQUE DATA FOR HYDRAULIC TUBES AND FITTINGS

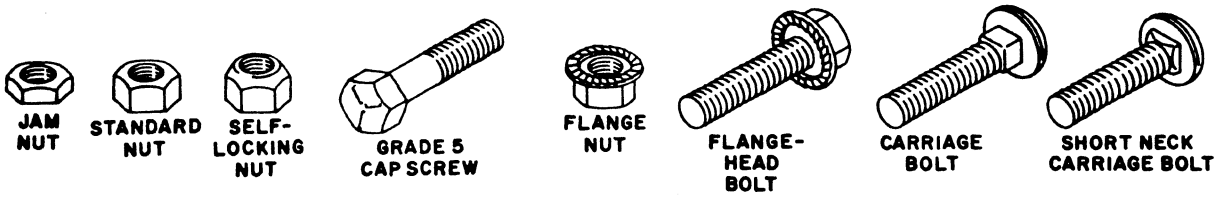
TUBE NUTS FOR 37° FLARED FITTINGS								O-RING BOSS PLUGS, ADJUSTABLE FITTING LOCK NUTS, SWIVEL JIC — 37° SEATS			
				TORQUE				TORQUE			
SIZE	TUBING O.D.		THREAD SIZE	FOOT POUNDS		NEWTON METERS		FOOT POUNDS		NEWTON METERS	
	Inches	mm		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
4	1/4	6.4	7/16-20	9	12	12	16	6	10	8	14
5	5/16	7.9	1/2-20	12	15	16	20	10	15	14	20
6	3/8	9.5	9/16-18	21	24	29	33	15	20	20	27
8	1/2	12.7	3/4-16	35	40	47	54	25	30	34	41
10	5/8	15.9	7/8-14	53	58	72	79	35	40	47	54
12	3/4	19.1	1-1/16-12	77	82	104	111	60	70	81	95
14	7/8	22.2	1-3/16-12	90	100	122	136	70	80	95	109
16	1	25.4	1-5/16-12	110	120	149	163	80	90	108	122
20	1¼	31.8	1⅝-12	140	150	190	204	95	115	129	156
24	1½	38.1	1⅞-12	160	175	217	237	120	140	163	190
32	2	50.8	2½-12	225	240	305	325	250	300	339	407

Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installations.

Swivel nuts either swaged or brazed.

These torques are not recommended for tubes of ½" (12.7 mm) O.D. and larger with wall thickness of 0.035" (0.889 mm) or less. The torque is specified for 0.035" (0.889 mm) wall tubes on each application individually.

HARDWARE KEY



Cap Screw — CS
Carriage Bolt — CB
Short Neck Carriage Bolt — SNCB
Flat Washer — FW
Lock Washer — LW
Lock Nut — LN
Regular Nut — N
Jam Nut — JN

National Fine Thread — N.F.
Grade 5 — GR. 5
Grade 8 — GR. 8
Cotter Pin — CP
Machine Screw — MS
Flange Nut — FN
Flange Head Bolt —FHB

STAINLESS STEEL BOLT
(TORQUE-USE GRADE 5 SPECIFICATIONS)

MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS (NEWTON-METRES) FOR NORMAL ASSEMBLY APPLICATIONS

	GRADE 2 SAE	GRADE 5 SAE		GRADE 8 SAE	
Bolt Size	Unplated or Plated	Unplated	Plated	Unplated	Plated
1/4"	5 (7)	8 (11)	7 (9)	12 (16)	10 (13)
5/16"	10 (13)	18 (24)	15 (20)	26 (35)	21 (28)
3/8"	18 (24)	31 (42)	25 (34)	48 (65)	39 (53)
7/16"	31 (42)	53 (72)	43 (58)	75 (101)	60 (81)
1/2"	45 (61)	82 (111)	66 (89)	115 (155)	92 (124)
5/8"	82 (111)	170 (230)	140 (189)	235 (317)	190 (256)
3/4"	155 (209)	290 (392)	230 (310)	415 (560)	330 (445)
7/8"	165 (223)	430 (580)	340 (459)	600 (810)	480 (648)
1"	250 (337)	640 (864)	510 (688)	900 (1215)	720 (972)

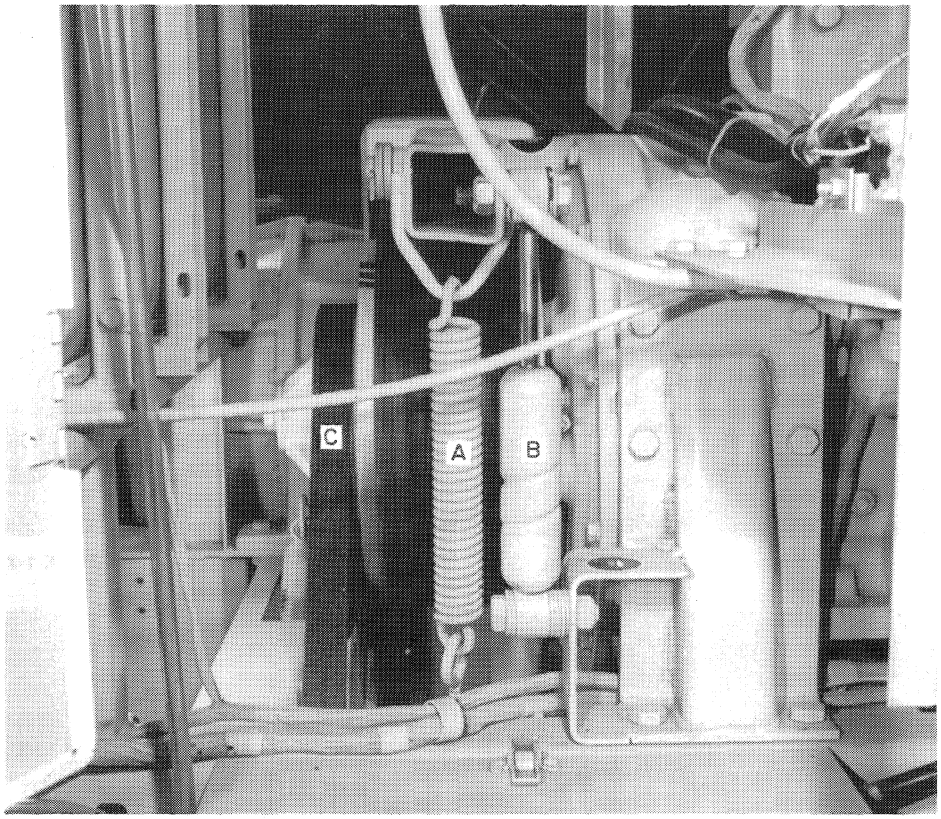
SAFETY

YOUR SAFETY IS OF UTMOST CONCERN TO FORD NEW HOLLAND, PLEASE FOLLOW THE SAFETY RULES LISTED, NOT ONLY FOR YOUR OWN GOOD, BUT FOR THE PEOPLE AROUND YOU.

1. DO NOT ALLOW CHILDREN OR BYSTANDERS AROUND THE MACHINE WHILE IT IS BEING ADJUSTED, SERVICED, OR OPERATED.
2. ALWAYS USE A SAFETY STAND IN CONJUNCTION WITH HYDRAULIC JACKS OR HOISTS. DO NOT RELY ON THE JACK OR HOIST TO HOLD THE LOAD COMPLETELY, AS THEY COULD FAIL.
3. ALWAYS WEAR SAFETY GLASSES WHEN USING A HAMMER, CHISEL, OR OTHER TOOLS THAT MAY CAUSE CHIPS TO FLY OFF THE WORK.
4. KEEP WORK ORGANIZED AND CLEAN. WIPE UP OIL SPILLS OF ANY KIND TO MINIMIZE THE POSSIBILITY OF A FALL. KEEP TOOLS AND PARTS OFF THE FLOOR TO FURTHER REDUCE THE POSSIBILITY OF SERIOUS INJURY.
5. BE SURE TO REINSTALL SAFETY DEVICES SUCH AS GUARDS OR SHIELDS AFTER ADJUSTING OR SERVICING THE HARVESTER.
6. AFTER SERVICING THE HARVESTER, BE SURE ALL TOOLS, PARTS, OR SERVICING EQUIPMENT ARE REMOVED FROM THE MACHINE.
7. WHEN USING A GAS TORCH, ALWAYS WEAR WELDING GOGGLES AND GLOVES. KEEP A FULLY CHARGED FIRE EXTINGUISHER WITHIN REACH. DO NOT HEAT OR WELD NEAR A FUEL TANK OR FUEL LINES, AND UTILIZE PROPER SHIELDING AROUND HYDRAULIC LINES.
8. ELECTRIC STORAGE BATTERIES GIVE OFF HIGHLY FLAMMABLE GAS WHEN CHARGING, AND CONTINUE TO DO SO FOR SOME TIME AFTER RECEIVING A STEADY CHARGE. DO NOT UNDER ANY CIRCUMSTANCES ALLOW AN ELECTRIC SPARK OR FLAME NEAR THE BATTERY. ALWAYS DISCONNECT THE BATTERY FIRST BEFORE WORKING ON THE ELECTRIC SYSTEM.
9. HYDRAULIC FLUID ESCAPING UNDER PRESSURE CAN HAVE ENOUGH FORCE TO PENETRATE THE HUMAN SKIN. HYDRAULIC FLUID MAY INFECT A MINOR CUT OR OPENING IN THE SKIN. IF INJURED BY ESCAPING FLUID SEE A DOCTOR AT ONCE. DO NOT ATTEMPT TO REPAIR OR TIGHTEN HOSES THAT ARE UNDER PRESSURE. CYCLE ALL HYDRAULIC CONTROL VALVES TO RELIEVE ALL PRESSURE BEFORE DISCONNECTING THE LINES OR BEFORE PERFORMING OTHER WORK ON THE HYDRAULIC SYSTEM. MAKE SURE ALL CONNECTORS ARE TIGHT AND HOSES AND LINES ARE IN GOOD CONDITION BEFORE APPLYING PRESSURE TO THE SYSTEM. TO LOCATE A LEAK UNDER PRESSURE, USE A SMALL PIECE OF CARDBOARD, NEVER USE YOUR HANDS.
10. USE PULLERS TO REMOVE BEARINGS, BUSHINGS, CYLINDER SLEEVES, ETC. USE HAMMERS, PUNCHES, AND CHISELS ONLY WHEN ABSOLUTELY NECESSARY AND BE SURE TO WEAR SAFETY GLASSES.
11. BE CAREFUL WHEN USING COMPRESSED AIR. USE APPROVED AIR BLOW GUNS, DO NOT EXCEED 35 PSI (2.4 BAR), WEAR SAFETY GOGGLES, AND USE PROPER SHIELDING TO PROTECT EVERYONE IN THE WORK AREA.
12. DO NOT WEAR RINGS, WRIST WATCHES, OR LOOSE FITTING CLOTHING WHEN WORKING ON MACHINERY, AS THEY COULD CATCH ON MOVING PARTS AND CAUSE SERIOUS INJURY. WEAR STURDY WORK SHOES.

THE ABOVE IS ONLY A PARTIAL LIST OF SAFETY WORK RULES. IN ADDITION, ALWAYS REFER TO THE OPERATOR'S MANUAL FOR ADDITIONAL SAFE WORK RULES REGARDING THIS MACHINE.

SECTION 1
REPLACING MODEL 1900 MAIN DRIVE BELTS



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-1**

SPECIAL TOOLS - None

REMOVAL

1. Remove the belt tension spring, A, Figure 1-1, and the shock absorber, B.
2. Remove the hydraulic pump drive belt, C, Figure 1-1.
3. Remove the hydraulic pump drive belt idler, A, Figure 1-2, by removing the cotter pin, B, and unbolting the mounting bracket, C.
4. There will be more access for changing belts if the right side shield is removed. Remove the shield by removing the bolts, B, Figure 1-3.

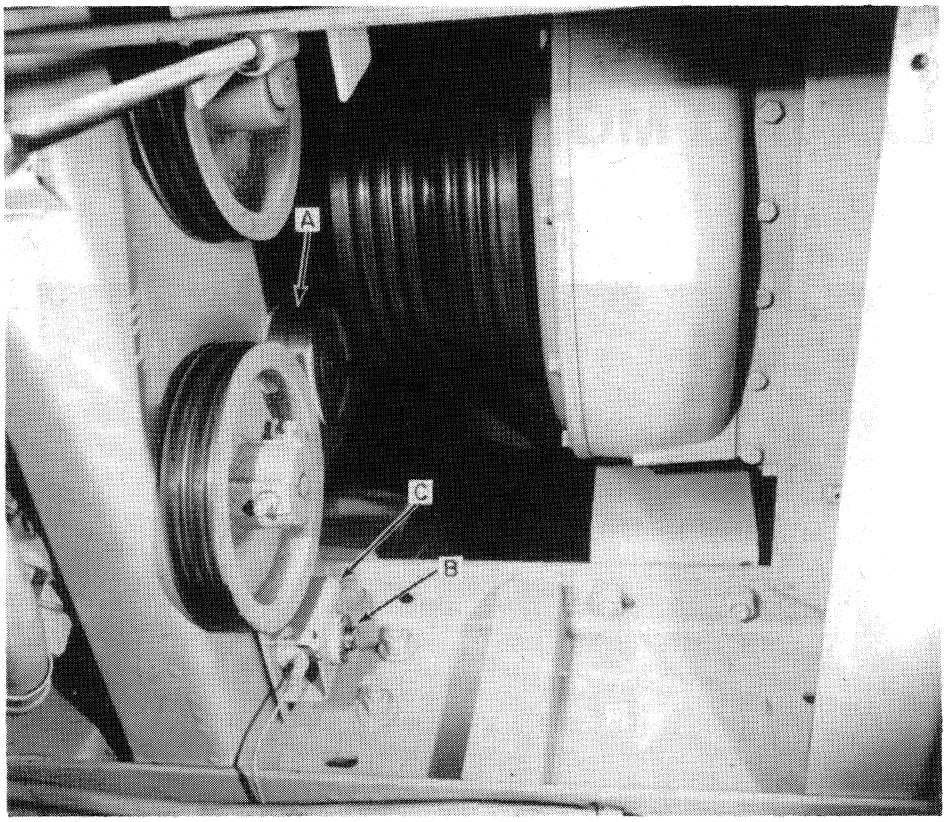


FIGURE 1-2

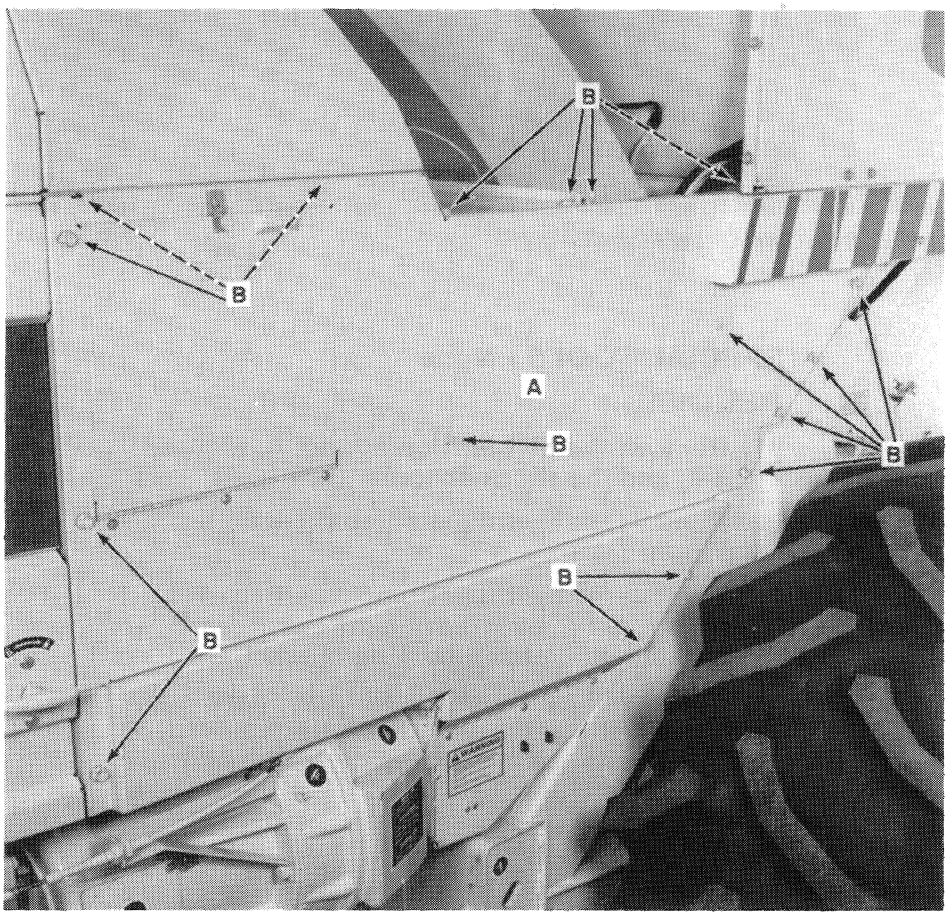
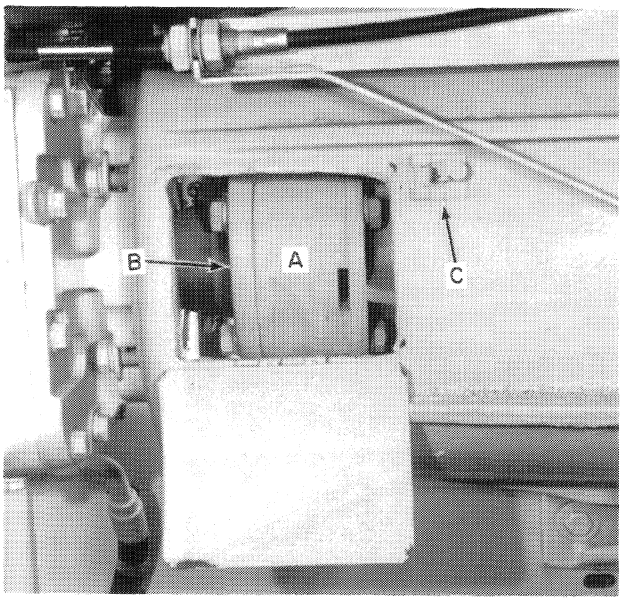


FIGURE 1-3



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-4**

5. Remove the spacer block, A, Figure 1-4, in the hydrostatic pump drive. Slide the rear hub, B, off the hydrostatic pump splined shaft.
6. Remove the latch at C, Figure 1-4.

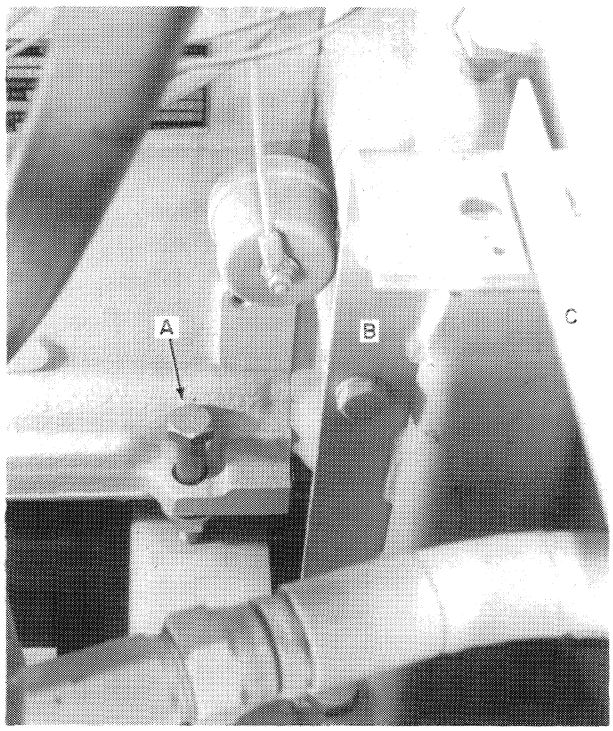
   NOTE: It may be necessary to remove the right front engine mount to remove bolt, B, Figure 1-6. See step 7.
7. Position a ½" x 1¼" cap screw and nut at A, Figure 1-5. Adjust the nut so the cap screw supports the engine. The cap screw and nut will act as a screw jack. Remove the right forward engine mount, B, and brace, C, Figure 1-5.
8. Remove bolt, A, Figure 1-6 on both sides of the idler. Remove the idler by removing bolt, B.

   NOTE: Early model machines may not have a brace on the idler.
9. Remove the idler arm.
10. Remove the belts as shown in Figure 1-7.

DRIVE BELT INSTALLATION

Before installing belts, check and service the following as needed. Refer to the appropriate section for information.

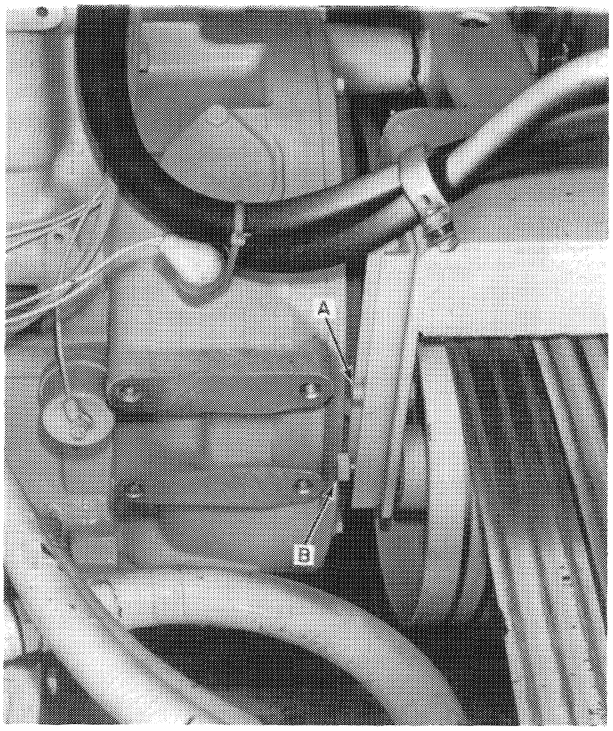
A. Engine drive shaft end-play
B. Main drive idler bearings
C. Shock absorber
D. Hydraulic pump drive belt idler



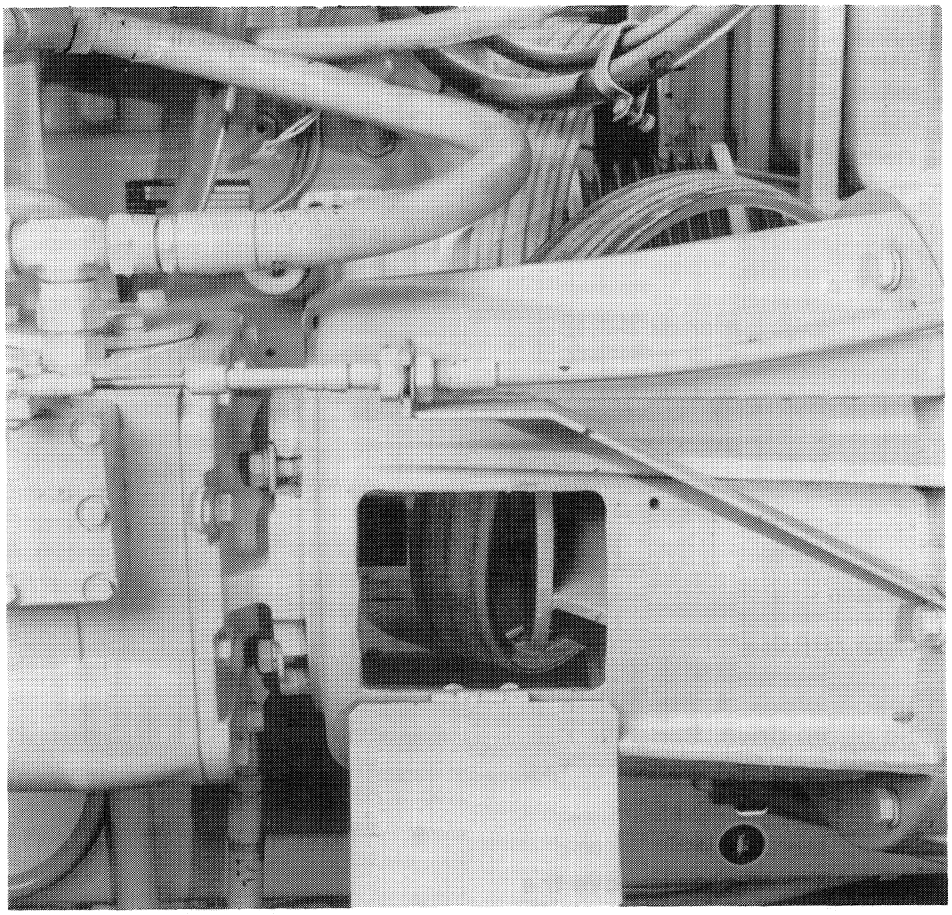
SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-5**

E. Hydrostatic pump shaft and drive hub splines
F. Driven sheave assembly bearings

Assembly is the reverse of disassembly.



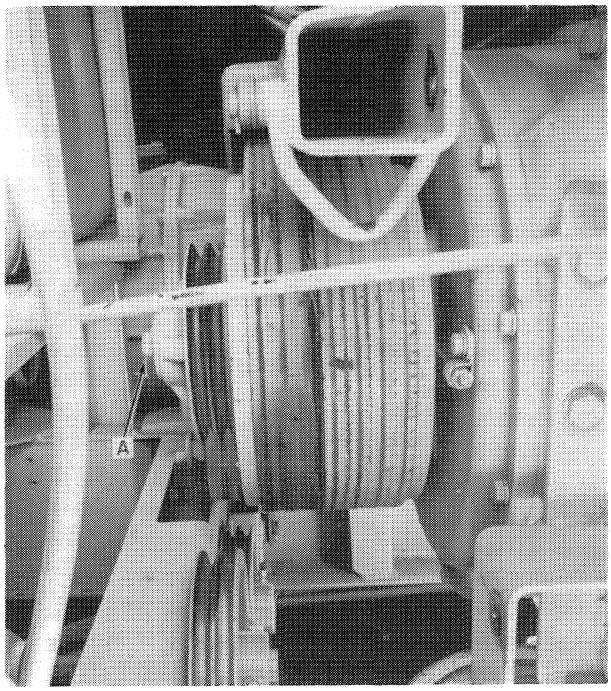
SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-6**



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-7**

NOTE: Replace belts only as matched sets.

It may be necessary to remove the engine sheave to install the new belts. The sheave is drilled and tapped for ½" cap screws.



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-8**

To remove the sheave, remove the cap screw and flat washer at A, Figure 1-8 holding the sheave on the shaft. Install a puller as shown in Figure 1-9 and remove the sheave from the tapered spline. When reinstalling the sheave, torque the mounting bolt to 140 ft. lbs. (190 N·m).

BELT TENSION ADJUSTMENT

Main Drive Belt

NOTE: Two different springs have been used on the main drive belt idler.

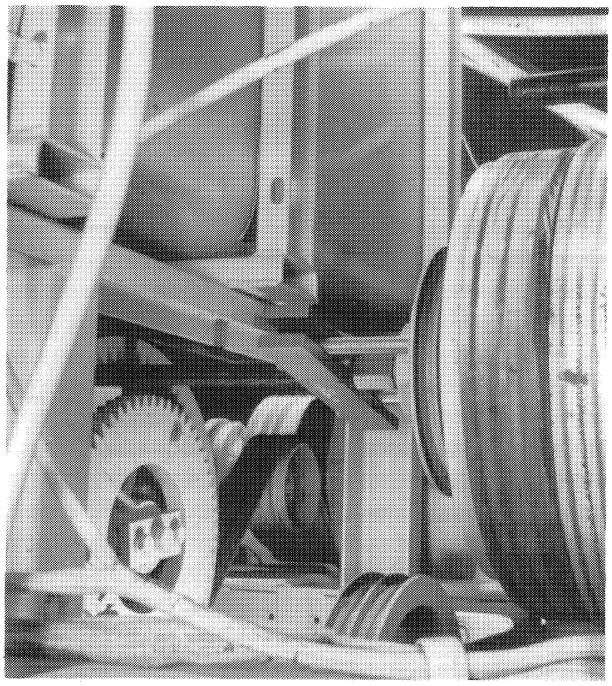
#49722 spring (1⅜" diameter) should be adjusted to 11¾" (30 cm) between the hooks.

#602914 spring (2" diameter) should be adjusted to 12¾" (32 cm) between the hooks.

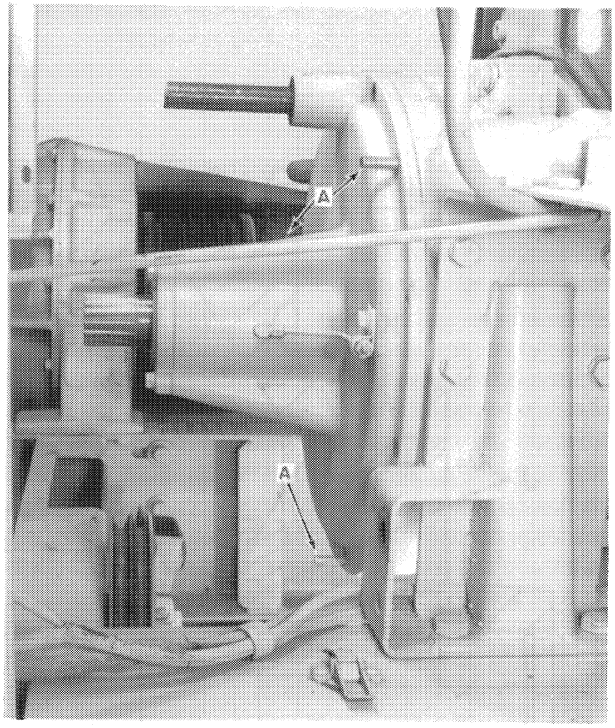
Hydraulic Pump Belt

Adjust the idler spring to a length of 13" (33 cm) between the hooks.

MODEL 1900 ENGINE DRIVE ASSEMBLY
REPAIR



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-9**



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-10**

SPECIAL TOOLS - Three ⅜" x 3" headless bolts

REMOVAL

1. Remove the drive belts (see "Replacing Model 1900 Main Drive Belts").
2. Remove the drive sheave, L, Figure 1-11. See Figure 1-9. The sheave is tapped for ½" bolts for using a puller.
3. Install three ⅜" x 3" headless bolts as shown at A, Figure 1-10. This will prevent damage to the drive blocks, C, Figure 1-11, during removal and installation.
4. Remove the drive assembly. **NOTE: Use a support as the assembly is heavy.**

DISASSEMBLY (Figure 1-11)

1. Remove the drive spacer, B. The spider is tapped for using a puller.
2. Remove the bearing cap, H. The shaft will slide out.

PARTS INSPECTION

Drive Blocks

Replace if scuffed or worn.

ASSEMBLY NOTES (Refer to Figure 1-11)

1. It is possible to install the shaft backward. The end of the shaft where the drive spider mounts measures 3-13/16" (9.7 cm) to the bearing shoulder. If the shaft is installed backward, the sheave will contact the housing.
2. Shim the shaft for .005" - .008" (.13-.2 mm) end-play. The shims are .005" (.13 mm), .0075" (.2 mm).
3. Install seal, D, as shown.
4. The idler pivot shaft, N, is replaceable on later model 1900 harvesters.

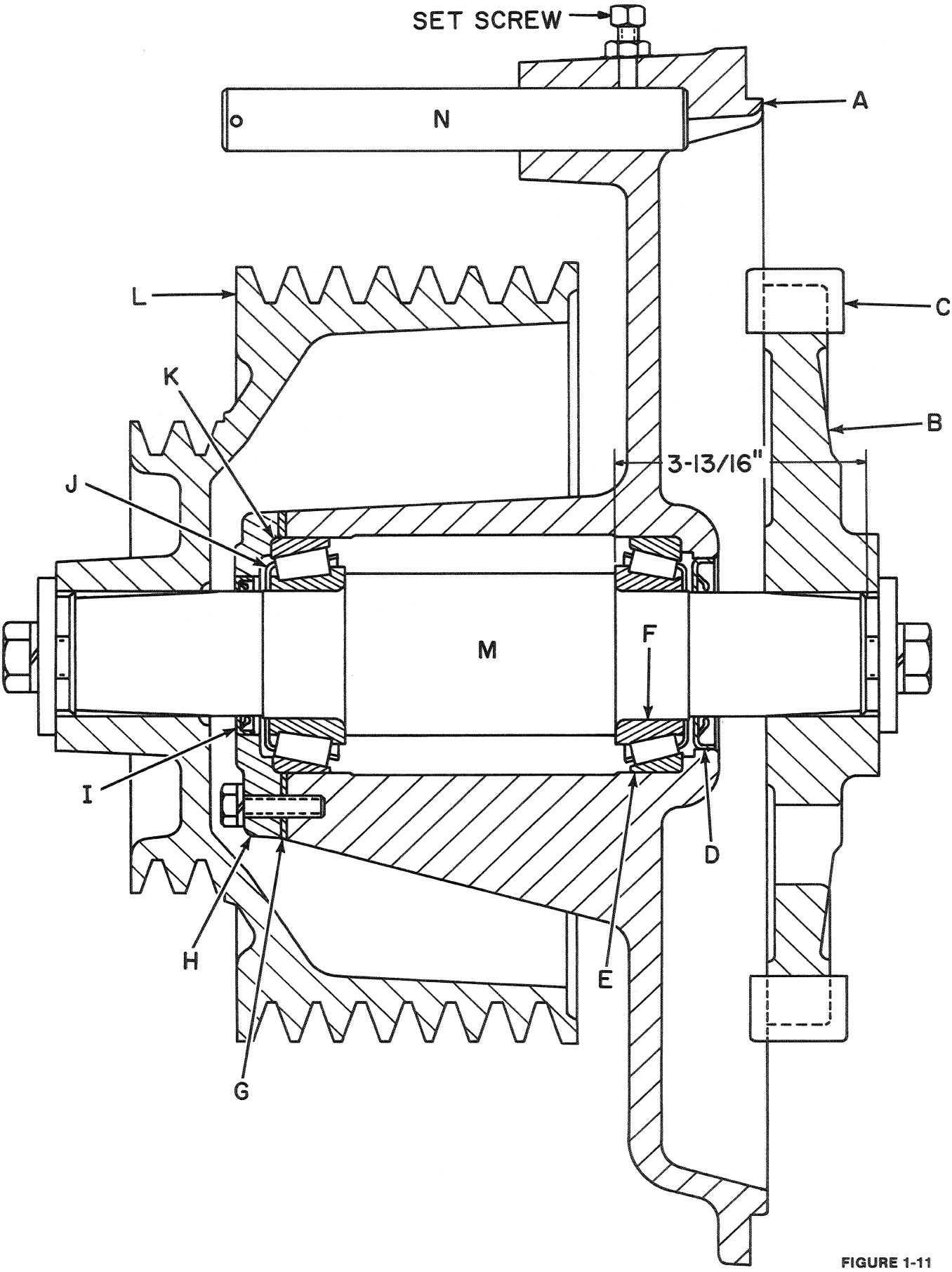


FIGURE 1-11

FIGURE 1-11

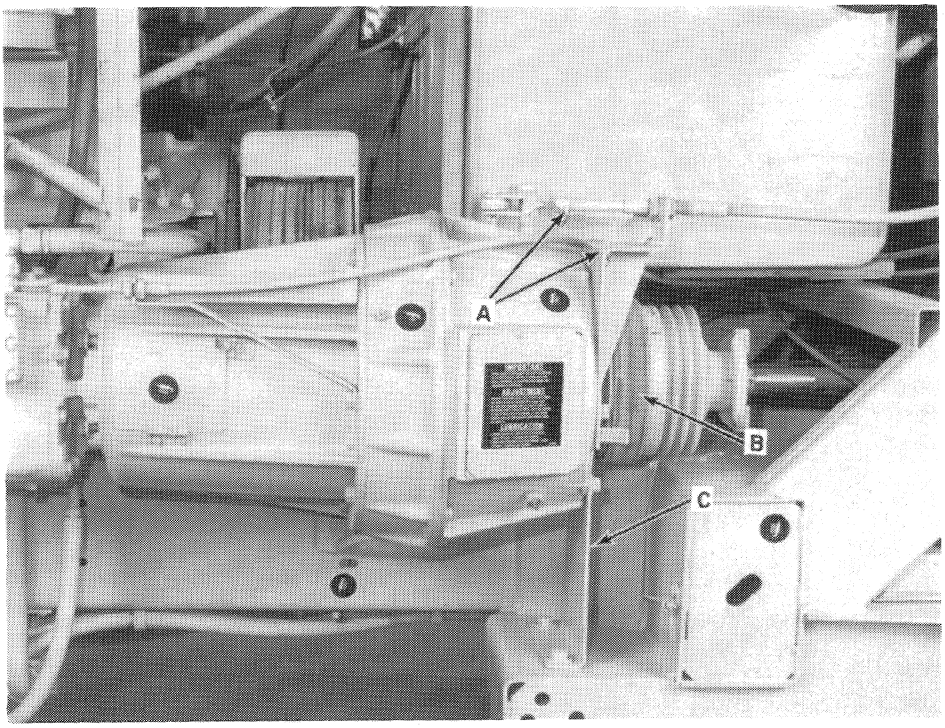
A. Housing
B. Drive spider
C. Drive blocks
D. Seal
E. Bearing cup
F. Bearing cone
G. Shims
H. Bearing cap
I. Seal
J. Bearing cone
K. Bearing cup
L. Sheave
M. Shaft
N. Idler pivot

INSTALLATION

Installation of the assembly is the reverse of removal. Be careful not to lose any of the rubber blocks.

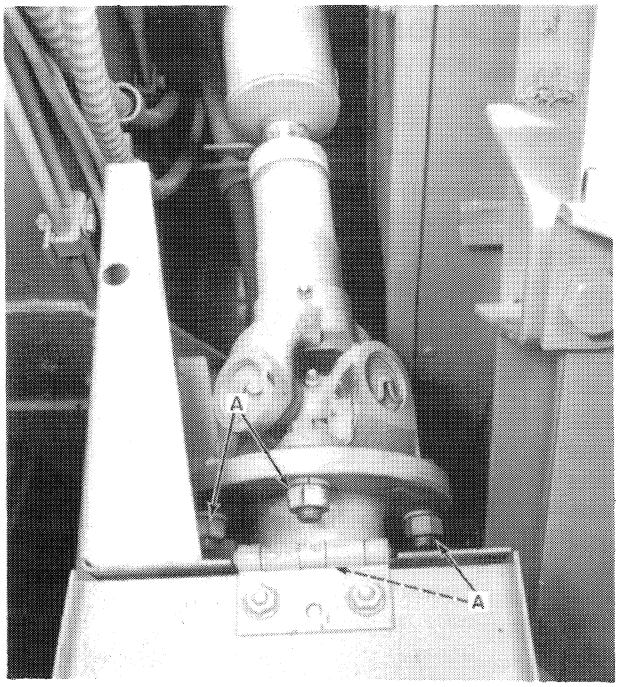
MODEL 1900 SHEAVE AND DRIVE RING ASSEMBLY

REPAIR



SHIELDS SHOWN REMOVED FOR CLARITY.

FIGURE 1-12



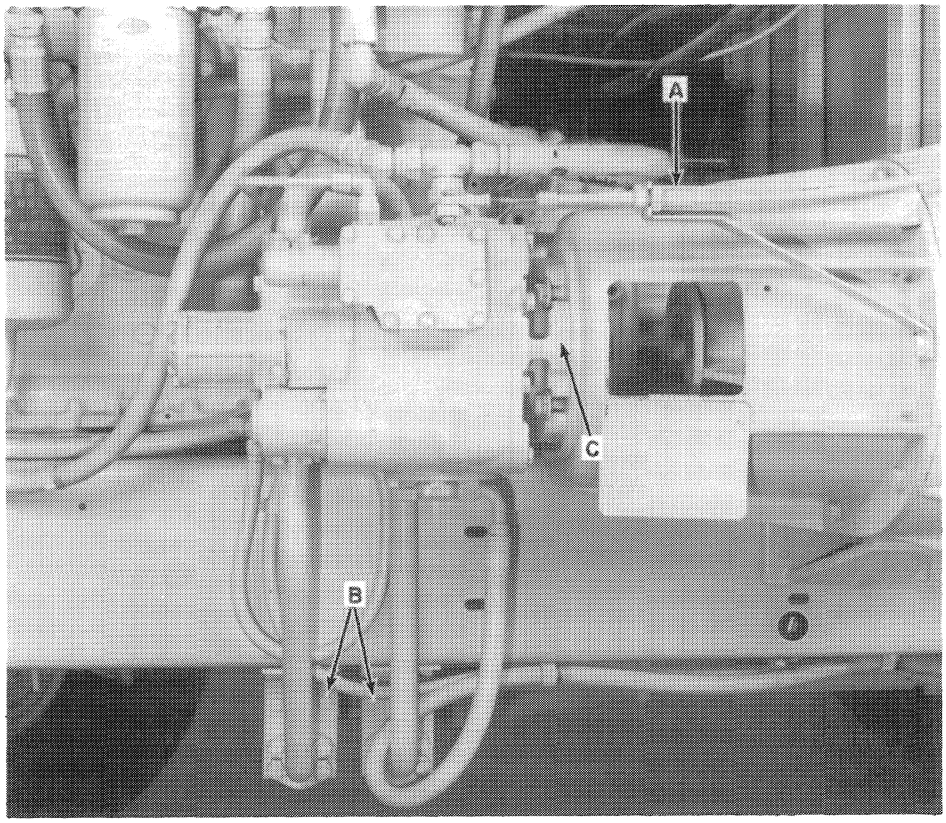
SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-13**

SPECIAL TOOLS - See Figure 1-19.

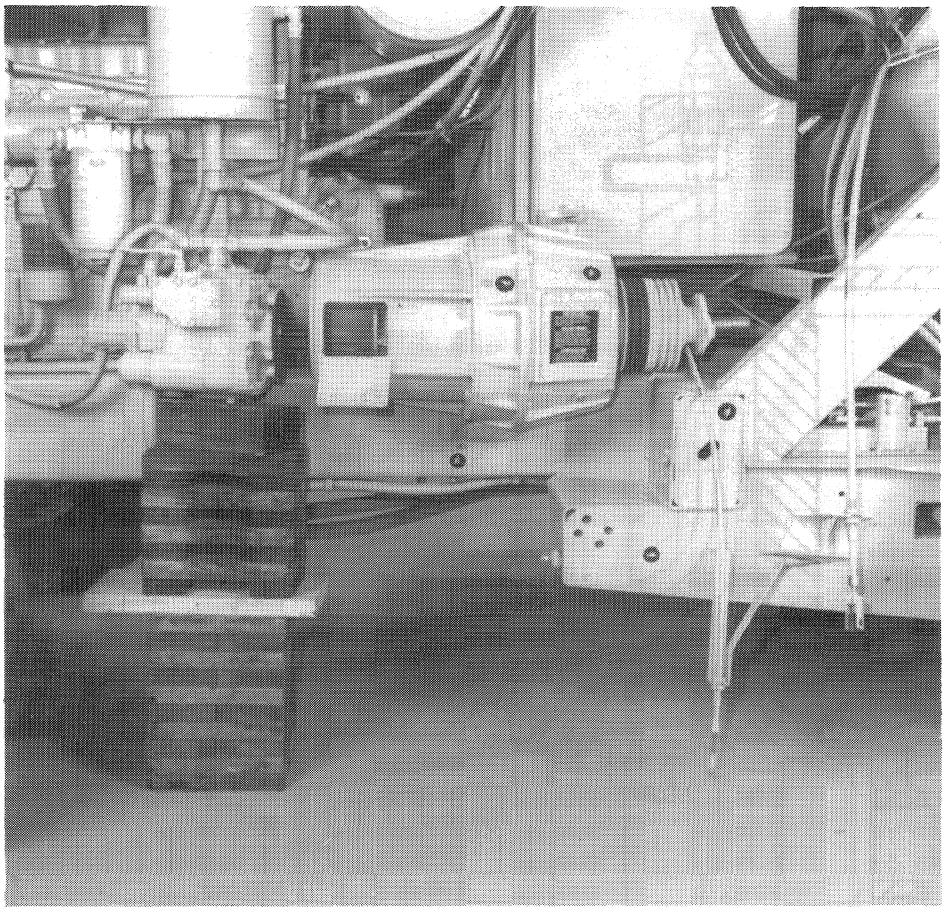
REMOVAL

The sheave and drive ring assembly is easily serviced by removing it and the cutterhead clutch assembly as a unit.

1. Remove shields over the clutch assembly.
2. Remove main drive belt (see "Replacing Main Drive Belts").
3. Remove the drive shaft to the cutterhead gearbox by removing the driveline shear bolts and unbolting the shaft at A, Figure 1-13.
4. Remove the cutterhead clutch cable and mounting bracket, A, Figure 1-12. Remove the blower belt, B, and the support bracket, C, Figure 1-12.
5. Remove the hydrostatic control cable and mounting bracket, A, Figure 1-14. Remove the cap screws at B, Figure 1-14, holding the high pressure tube mounting brackets.



SHIELDS SHOWN REMOVED FOR CLARITY. **FIGURE 1-14**



SHIELDS SHOWN REMOVED FOR CLARITY.

FIGURE 1-15

Support the hydrostatic pump with a hoist and remove the four mounting bolts at C, Figure 1-14. Slide the pump rearward and support it as shown in Figure 1-15.

6. Support the sheave housing and clutch assembly as shown in Figure 1-16. Remove the six cap screws holding the assembly to the frame. Lift off the assembly.
7. Remove the cap screws holding the clutch assembly to the sheave housing. Remove the clutch assembly. Be careful to pull the assembly straight out to avoid damaging the fiber gears.

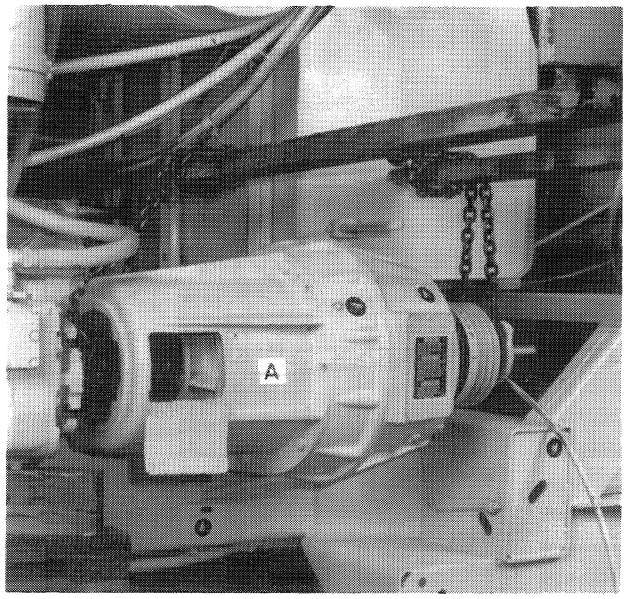


FIGURE 1-16

SHIELDS SHOWN REMOVED FOR CLARITY.

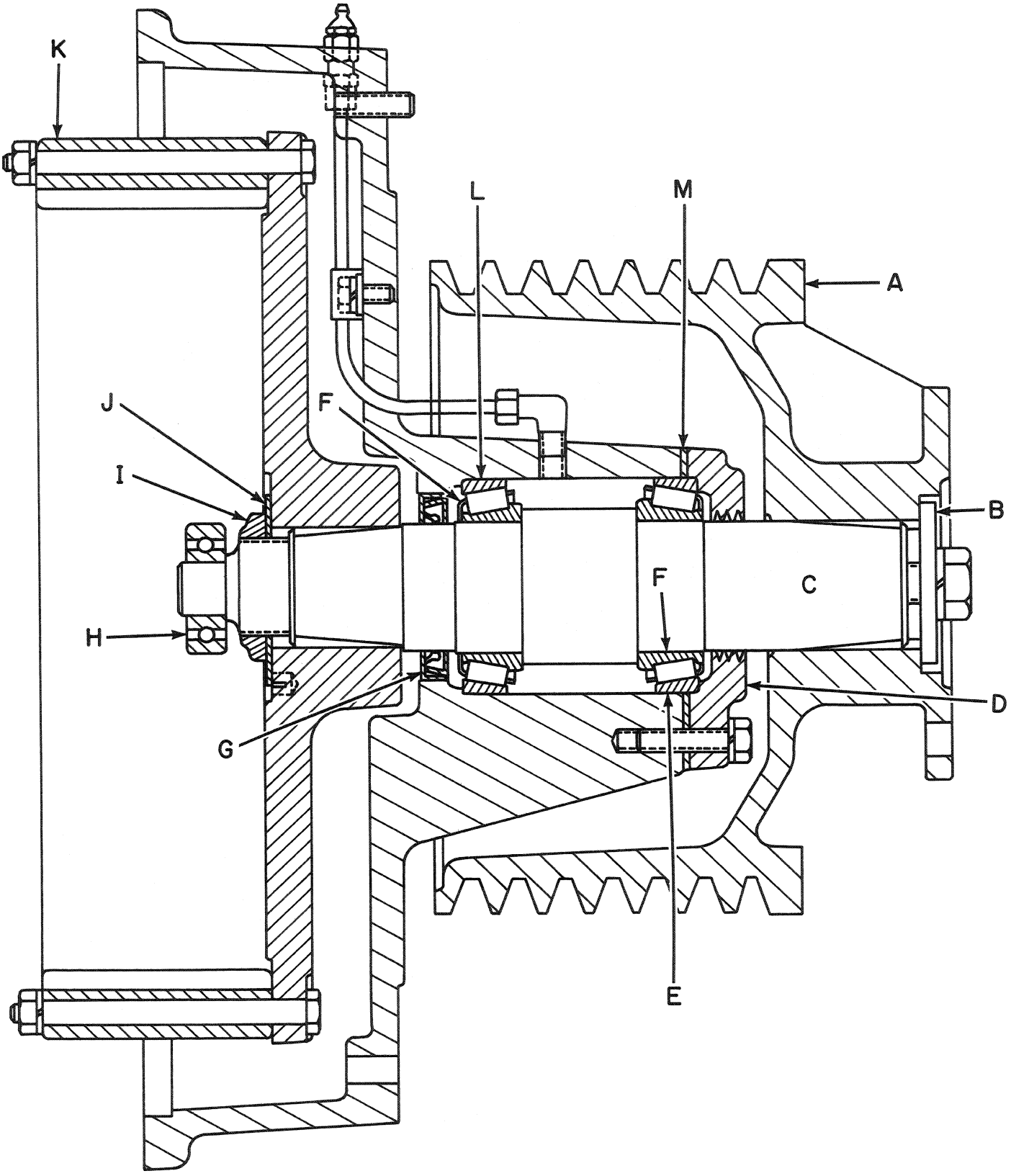
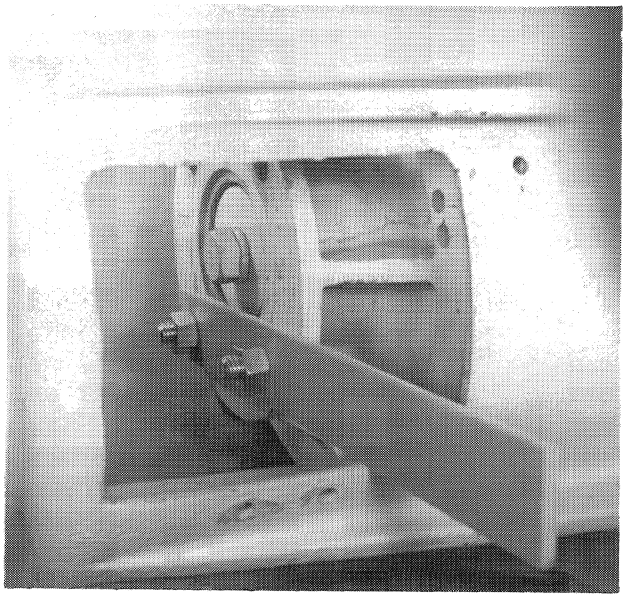


FIGURE 1-17

FIGURE 1-17

A. Sheave
B. Washer
C. Shaft
D. Bearing cap
E. Bearing cup
F. Bearing cone
G. Seal
H. Pilot bearing
I. Nut
J. Locking tab
K. Drive ring assembly
L. Bearing cup
M. Shims



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-18**

DISASSEMBLY
(Refer to Figures 1-17 and 1-18)

1. Remove the pilot bearing, H, Figure 1-17.
2. Remove the nut, I. The shaft can be prevented from turning by bolting a bar to the sheave as shown in Figure 1-18. See Figure 1-19 for dimensions of bar.
3. Remove the locking tab, J, and use a puller to remove the drive ring, 11. The ring is tapped for a puller.
4. Loosen the drive sheave hardware using the bar in Step 2 to hold the sheave. Then remove the housing around the sheave. Remove the sheave.
5. Remove the bearing cap and the shaft will slide out.

ASSEMBLY NOTES (Refer to Figure 1-17)

NOTE: Pack the bearings with grease before assembling.

1. Shim the bearing cap for a shaft end-play of .003" to .005" (.08 mm-.13 mm). The shims are .005" (.13 mm), .0075" (.19 mm), and .020" (.51 mm).
2. Install seal, G, as shown.
3. Install the sheave and tighten the cap screw to 140 ft. lbs. (190 N·m).
4. Install the "C" housing.
5. Install the bar, Figure 1-19, and then install the drive ring.

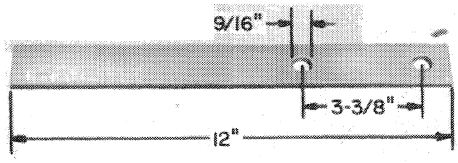
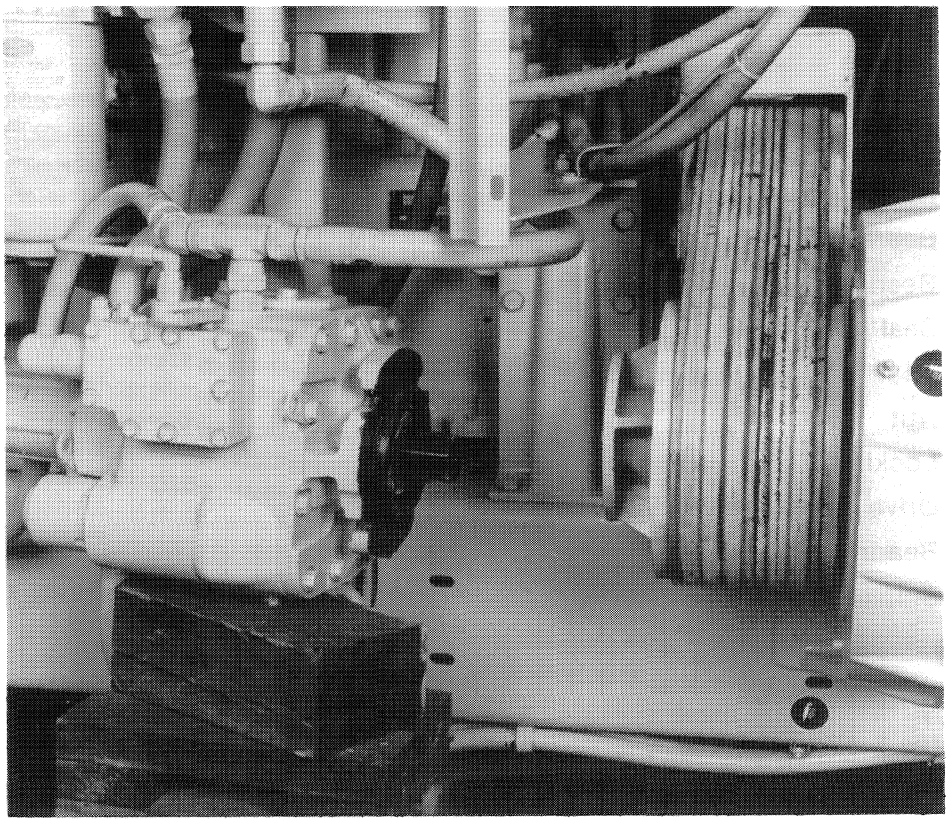


FIGURE 1-19

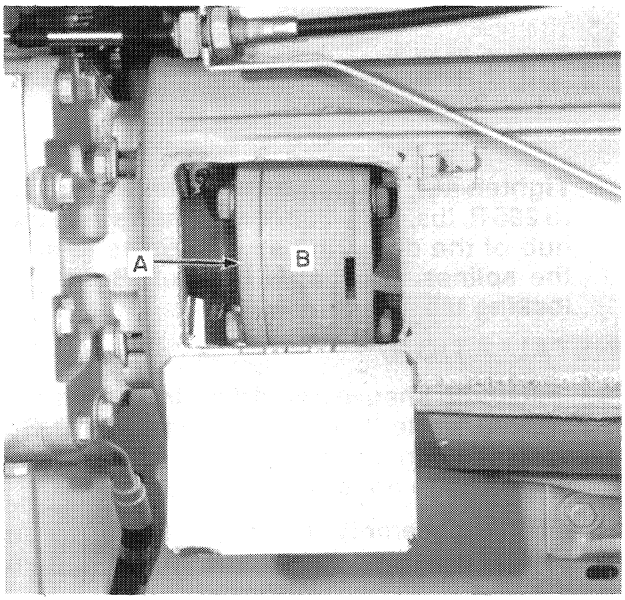
Tighten nut, 1, holding the drive ring to 275 to 285 ft. lbs. (373-386 N·m). Then strike the hub of the drive ring several times to seat the splines. Re-torque the nut. Bend the locking tab, J, against the nut.

INSTALLATION

1. Install the sheave and drive ring assembly on the cutterhead clutch assembly. Be careful when mating the fiber gears to the drive ring to not damage the gears.
2. Lift the assembly into place as shown in Figure 1-16, and install but do not tighten the mounting hardware.
3. Remove the supporting chain to the rear "C" housing and then remove the "C" housing, A, Figure 1-16.



SHIELDS SHOWN REMOVED FOR CLARITY. **FIGURE 1-20**

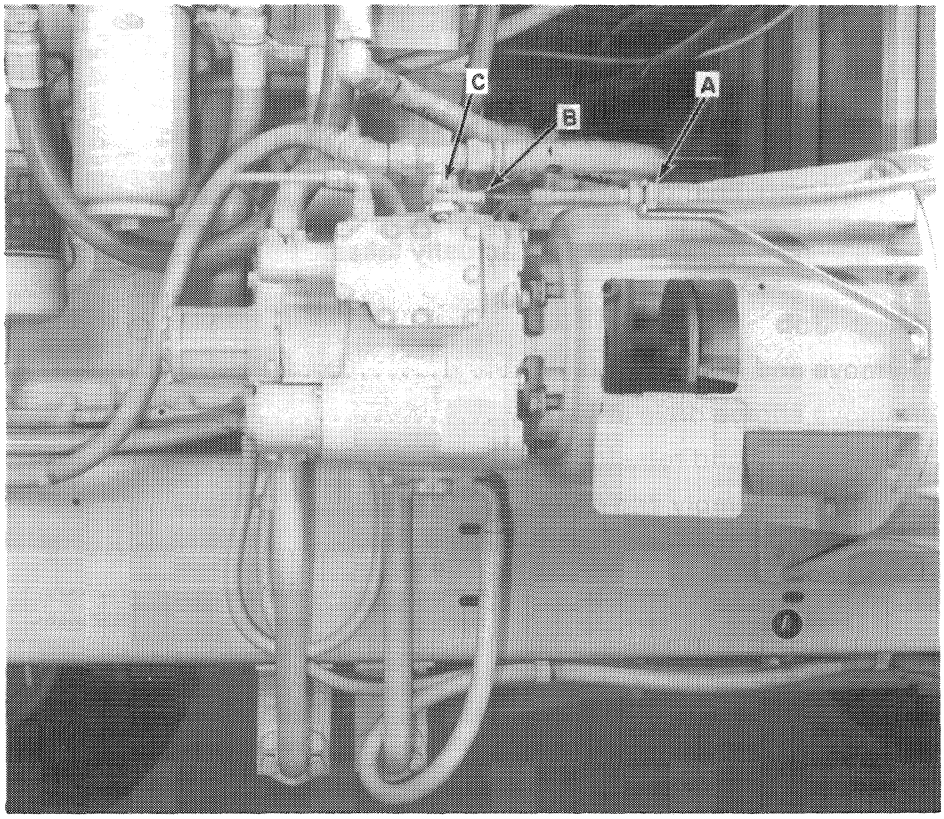


SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 1-21**

4. Align the sheaves by shifting the assembly in the slotted mounting holes. Reinstall the belts as shown in Figure 1-20.
5. Reinstall the "C" housing.
6. Install the hydrostatic pump and then install the flange, A, and spacer, B, Figure 1-21. Tighten all hardware.

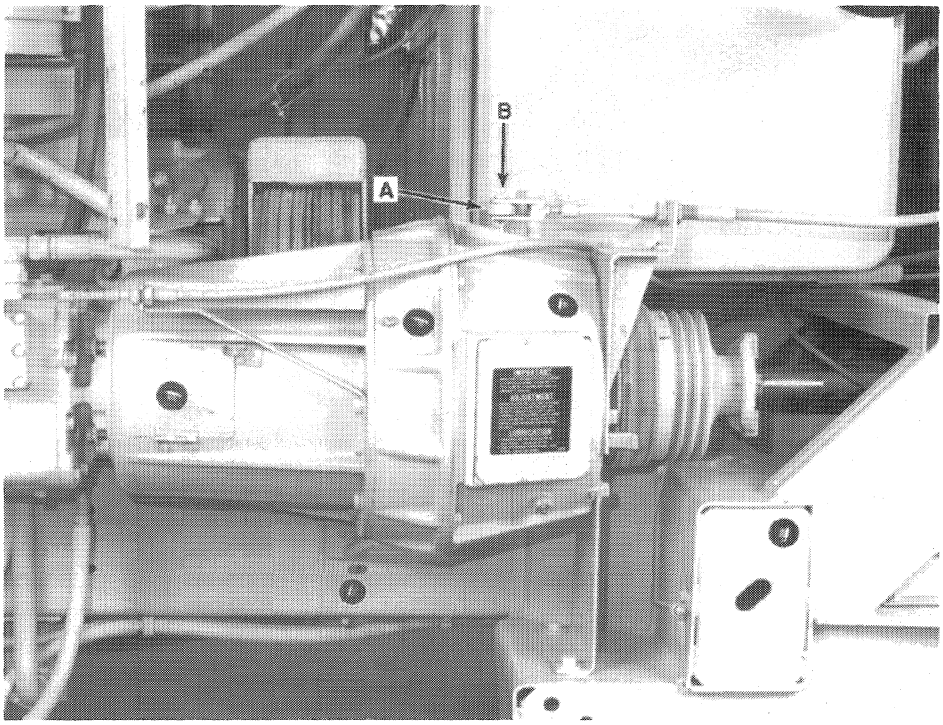
IMPORTANT: Follow Step #6 as detailed to insure proper alignment of the shafts.

7. Install the hydrostatic control cable and support. **NOTE: When installing the cable, position the control lever in the cab in neutral. Adjust the cable at A or B, Figure 1-22, so the mounting bolt, C, will install without forcing.**



SHIELDS SHOWN REMOVED FOR CLARITY. **FIGURE 1-22**

8. Install the blower belt and tension the idler spring to 7" (17.5 mm) hook to hook.
9. Install the cutterhead clutch cable. Adjust the cable so the clutch lever, A, Figure 1-23, has some free play in each direction when pin, B, is installed.
10. Reinstall the drive shaft and all shielding.



SHIELDS SHOWN REMOVED FOR CLARITY. **FIGURE 1-23**

LABOR GUIDE

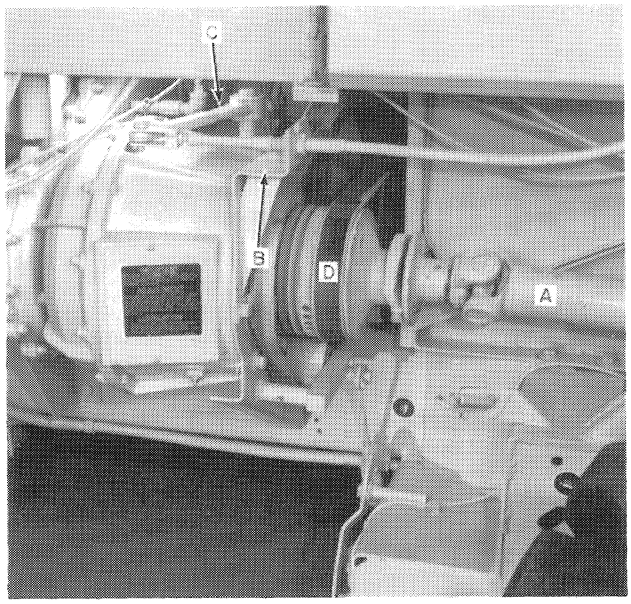
The following labor amounts are listed as a guide only. Work experience, conditions, etc. will vary the time it actually takes.

Job	Man Hours
Remove and replace belts	2½
Remove engine drive assembly	2
Disassemble and rebuild	1
Reinstall assembly and belts	2
Remove, rebuild, install sheave and drive ring	5

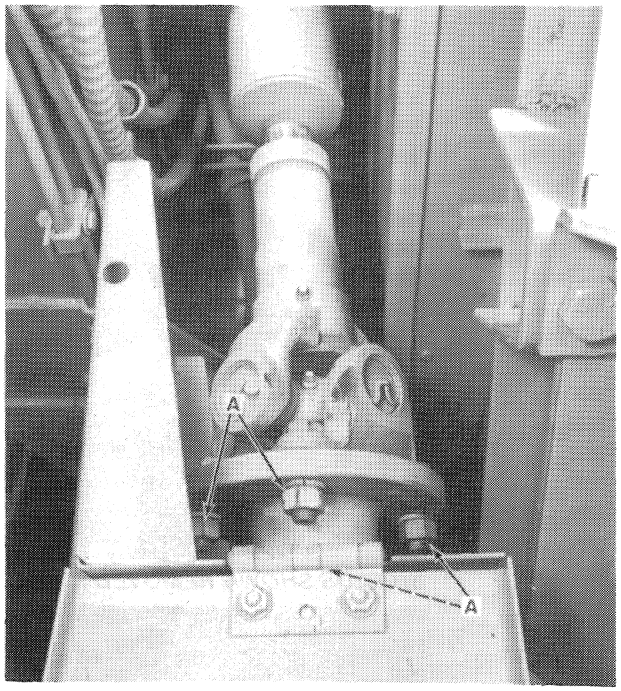
SECTION 2

CUTTERHEAD CLUTCH ASSEMBLY

REPAIR



SHIELDS SHOWN REMOVED FOR CLARITY. **FIGURE 2-1**



SHIELDS SHOWN OPEN FOR CLARITY. **FIGURE 2-2**

SPECIAL TOOLS

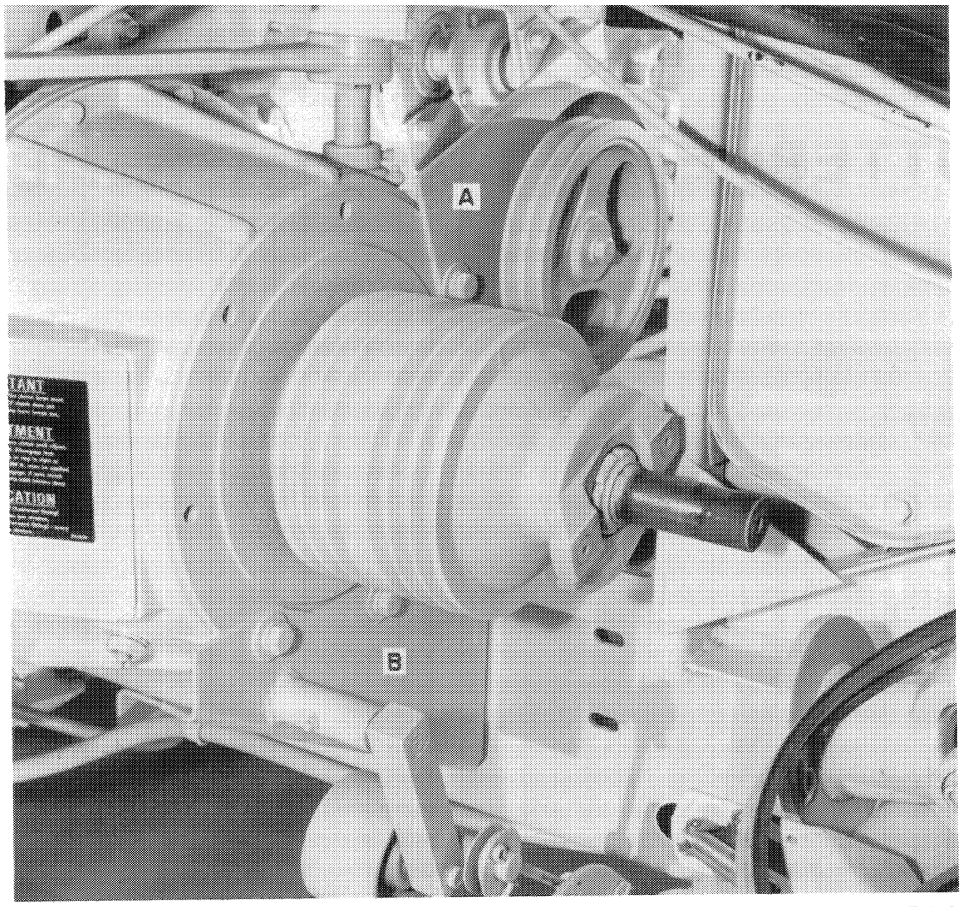
1 - Removal bracket (Figure 2-5)

1 - Shaft - 2" x 6"

2 - Supports - 1¼" x 4½"

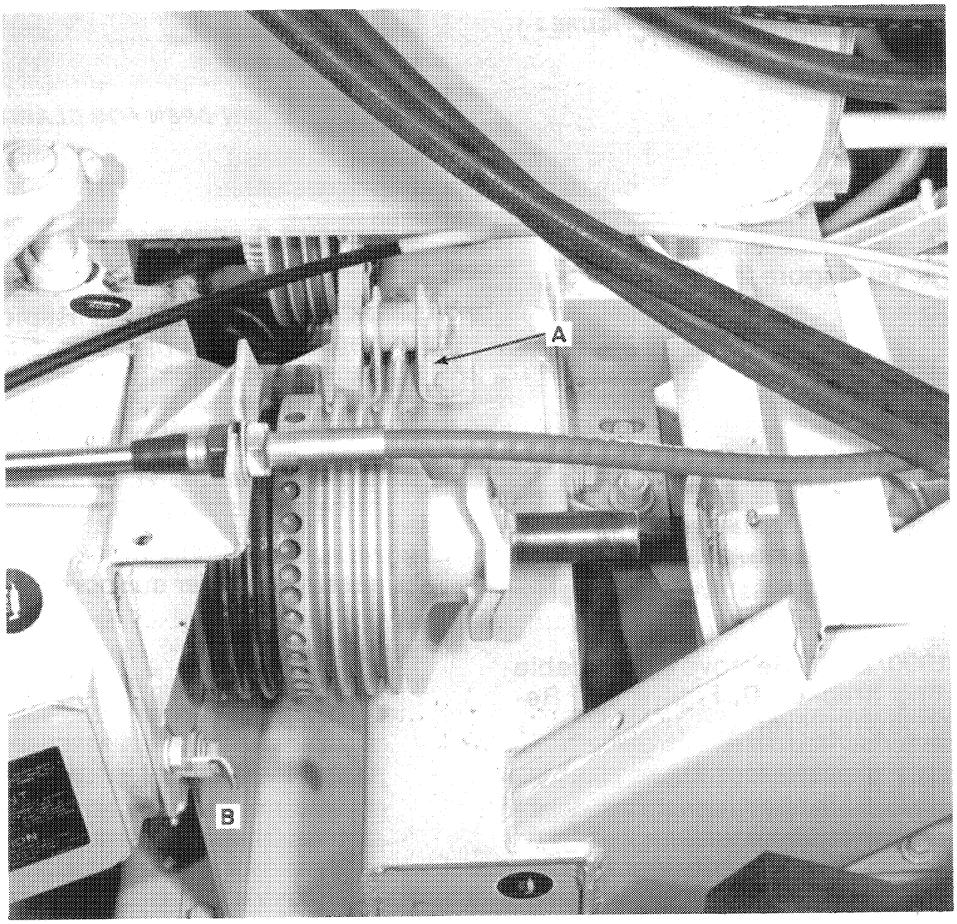
REMOVAL

1. MODEL 1900 ONLY - Remove shielding over the clutch assembly.
2. MODELS 1900/2100 - Remove the drive shaft, A, Figure 2-1, by removing the shear bolts and unbolting the shaft at A, Figure 2-2.
3. MODELS 1900/2100 - Remove clutch cable and mounting bracket, B, Figure 2-1. Remove the engaging lever, C.
4. MODELS 1900/2100 - Remove the blower drive belt, D.
5. MODEL 2100 ONLY - Remove the cutterhead reverse drive belt. Remove the two cap screws holding the reverse drive mounting bracket, A, Figure 2-3, and swing the reverse drive out of the way.
6. MODEL 1900 ONLY - Remove the blower drive belt idler, A, Figure 2-4.
7. MODELS 1900/2100 - Remove the clutch assembly lower support bracket, B, Figure 2-3 or 2-4.



SHIELDS SHOWN REMOVED FOR CLARITY.

FIGURE 2-3



SHIELDS SHOWN REMOVED FOR CLARITY.

FIGURE 2-4

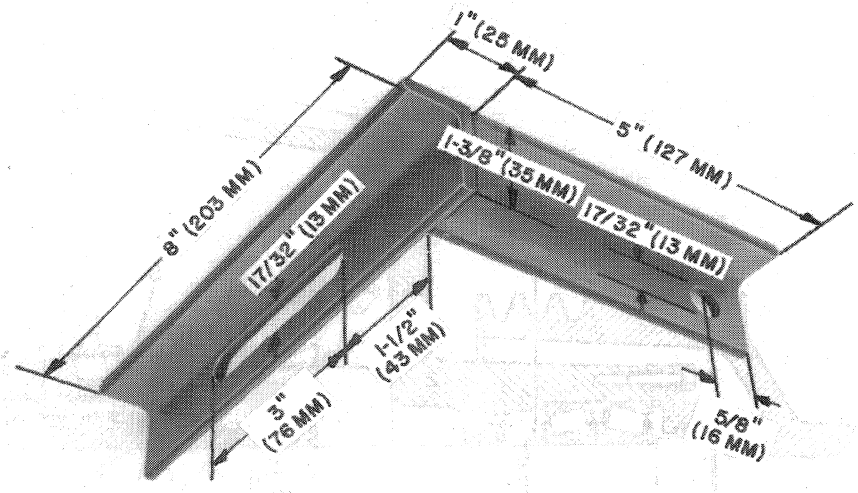


FIGURE 2-5

8. MODELS 1900/2100 - Install the special removal bracket, Figure 2-5, as shown in Figure 2-6.

CAUTION: THE BRACKET MUST BE FASTENED TO THE FORKLIFT FORK TO PREVENT THE ASSEMBLY FROM FALLING OFF.

9. MODELS 1900/2100 - Remove the clutch assembly mounting bolts. Slide the assembly forward until the fiber gears clear the ring gear.

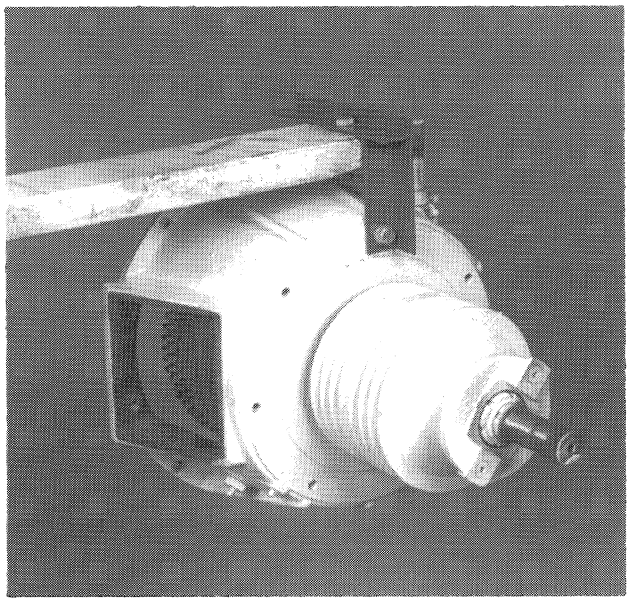


FIGURE 2-6

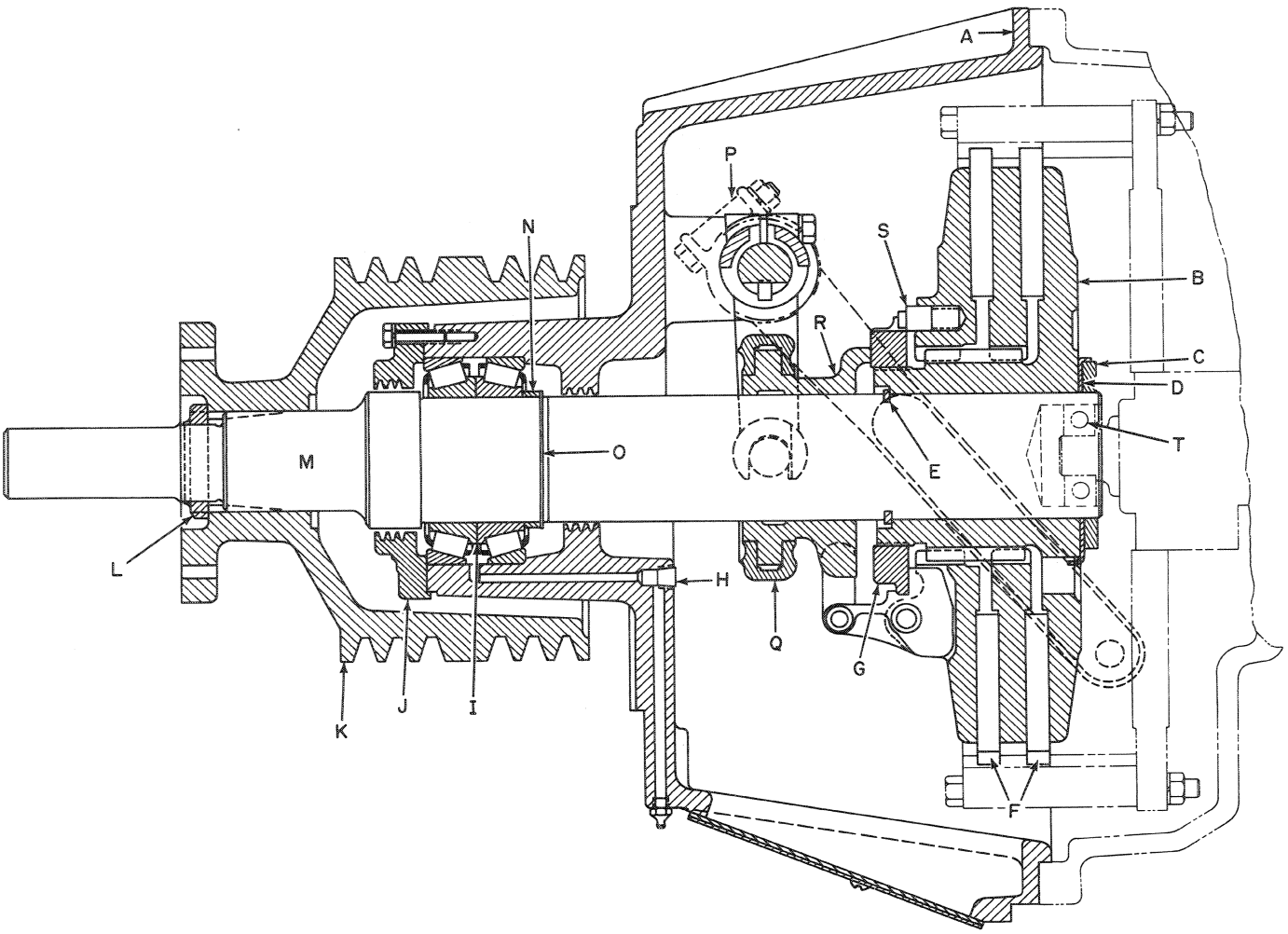


FIGURE 2-7

A. Housing
B. Clutch assembly
C. Nut
D. Locking tab
E. Split ring
F. Fiber gears
G. Adjusting nut
H. Plug
I. Bearing set
J. Bearing cap
K. Sheave
L. Stake nut
M. Shaft
N. Spacer
O. Snap ring
P. Lever assembly
Q. Trunnion bearing
R. Sliding collar
S. Locking pin
T. Pilot bearing

DISASSEMBLY

1. Remove nut, C, Figure 2-7, and the locking tab, D.
2. Remove the spanner nut, L, and the sheave, K. The spanner nut is deformed into the groove in the shaft to lock it. Drive a chisel into the groove to unlock the nut.
3. Remove the bearing cap, J.

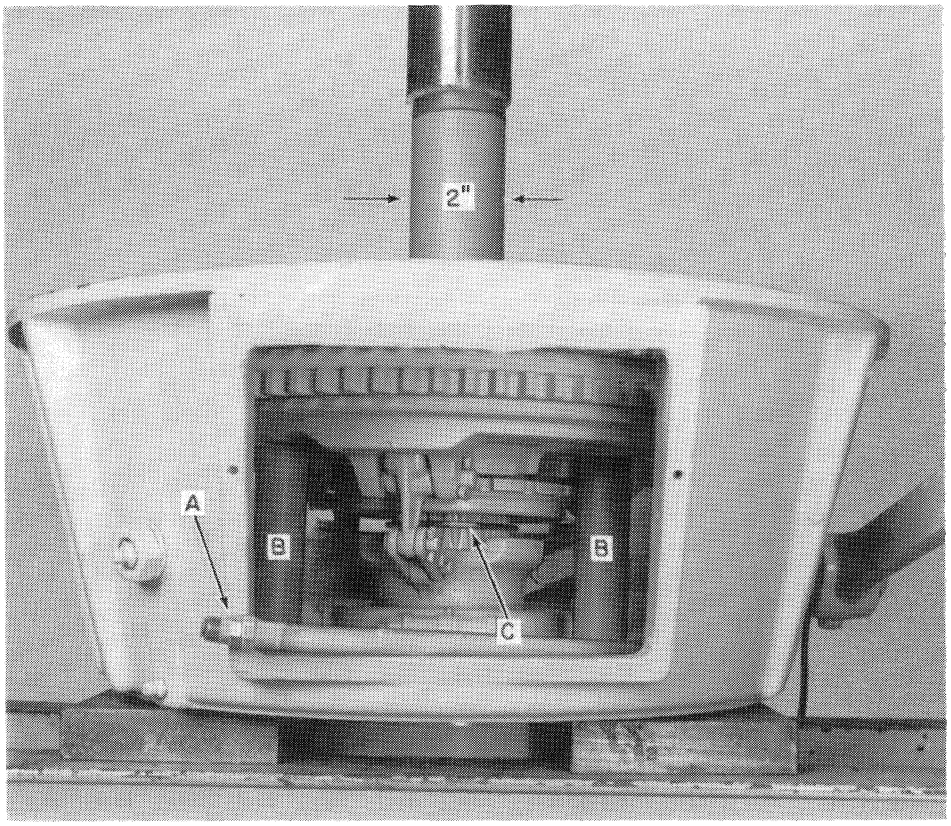


FIGURE 2-8

4. Disconnect the grease line, A, Figure 2-8.
5. Position the assembly in a press as shown in Figure 2-8. Support the clutch assembly with two supports, 1¼" x 4½" (3 cm x 11 cm), as shown at B, Figure 2-8.
6. Use a shaft, 2" x 6" (5 cm x 15 cm) to press the shaft out. Press the shaft ½" (12 mm) and then remove the split rings at C, Figure 2-8.
7. Continue to press the shaft out of the housing.
8. The clutch engaging lever assembly can be disassembled if necessary.
9. To remove the fiber gears, F, Figure 2-7, unscrew the adjusting nut, G.

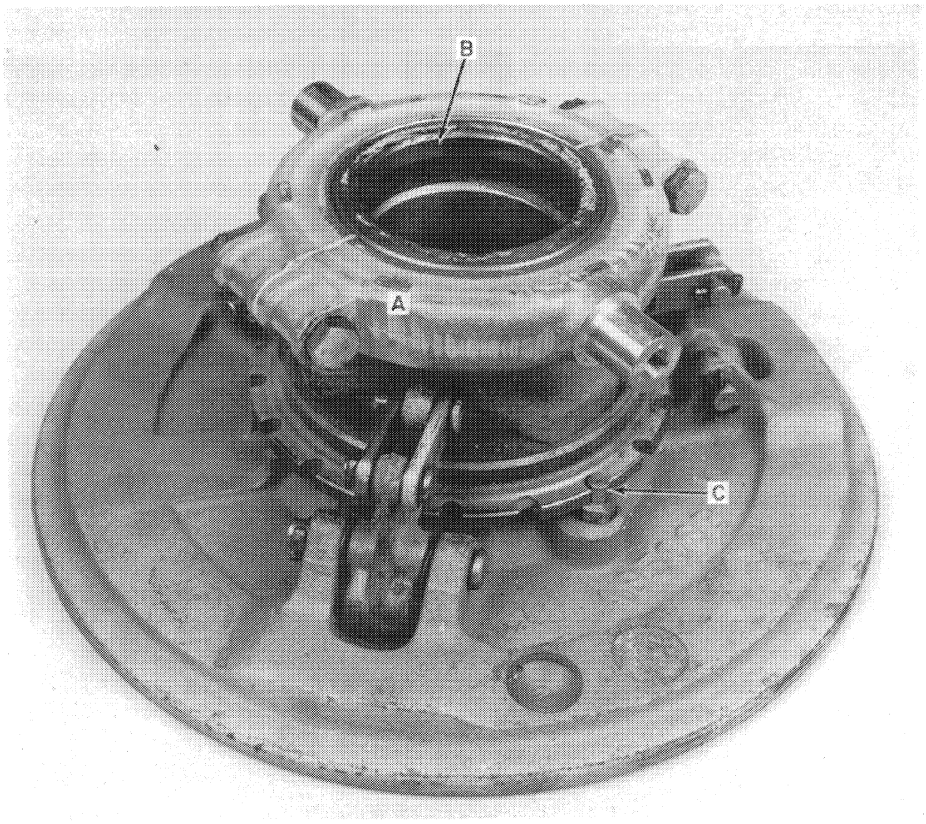


FIGURE 2-9

PARTS INSPECTION

Fiber Gears - Replace if gear teeth are worn or broken. The gear should be a minimum 5/16" (8 mm) thick. Bronze Trunnion Bearing (A, Figure 2-9) - should be replaced if loose or scored.

Sliding Collar (B, Figure 2-9) - The grease passages should be cleaned. Replace the sliding collar if the inside diameter is scored.

Locking Pin (C, Figure 2-9) - The pin should move freely. Remove the pin and spring and polish pin if necessary to free it.

ASSEMBLY (Figure 2-7)

NOTE: Be sure plug, H, is installed tightly.

1. Assemble clutch assembly, being sure all parts are free.
2. Install the bearings, I, spacer, N, and snap ring, O, if required.
3. Install the engaging lever assembly if necessary. Centering of the assembly is done by the collar on the outside of the housing.
4. Set the clutch assembly on a support in the press. Position the housing on the press (see Figure 2-10). It should be supported by the clutch assembly only. Install the shaft and press it into the assembly until the split rings can be installed. Install the split rings and press the shaft until it is seated.

   NOTE: No special timing of the clutch assembly and the shaft is required.

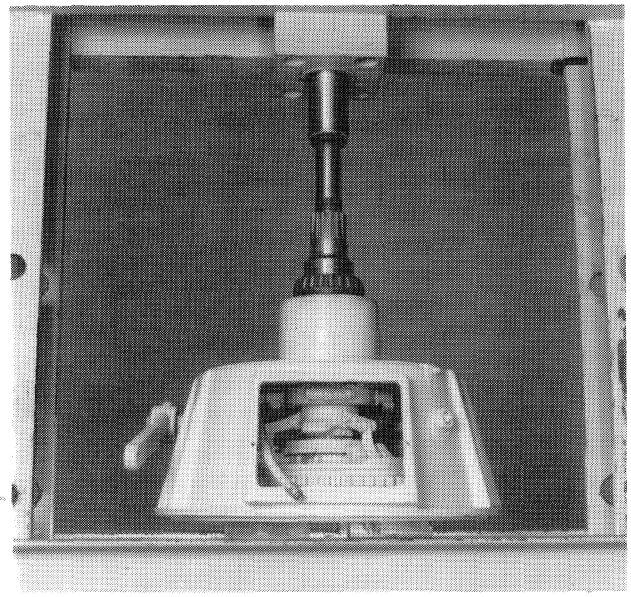


FIGURE 2-10

5. After the shaft is pressed on, install the locking tab, D, and nut, C, Figure 2-7. The nut should be tightened securely. Then bend the locking tab up against the nut.
6. Install the grease line and tighten securely.
7. Install the bearing cap, J.

   NOTE: There are no shims used under the cap.
8. Install the sheave, K, and seat it securely. Install the stake nut. Turn the nut ¼ turn after the sheave is seated. Lock the nut by deforming it into the groove on the shaft.

ADJUSTMENTS

1. Adjust the clutch activating yoke, so it is centered on the trunnion bearing and doesn't bind.
2. Adjust the clutch assembly so 205 lbs. (93 kg) force is required on the lever, to engage the clutch.

INSTALLATION

Installation is the reverse of removal.

NOTE: Be careful when mounting the clutch assembly to not damage the fiber gears or pilot bearing.

1. Adjust the clutch assembly so 205 lbs. (93 kg) force is required on the lever to engage the clutch. To increase the engaging force, depress the locking pin, A, Figure 2-11, and rotate the adjusting nut, B, up.
2. Adjust the shifting cable, C, so the engaging lever has some free-play in both directions when the clutch is disengaged.
3. Adjust blower drive belt tension.

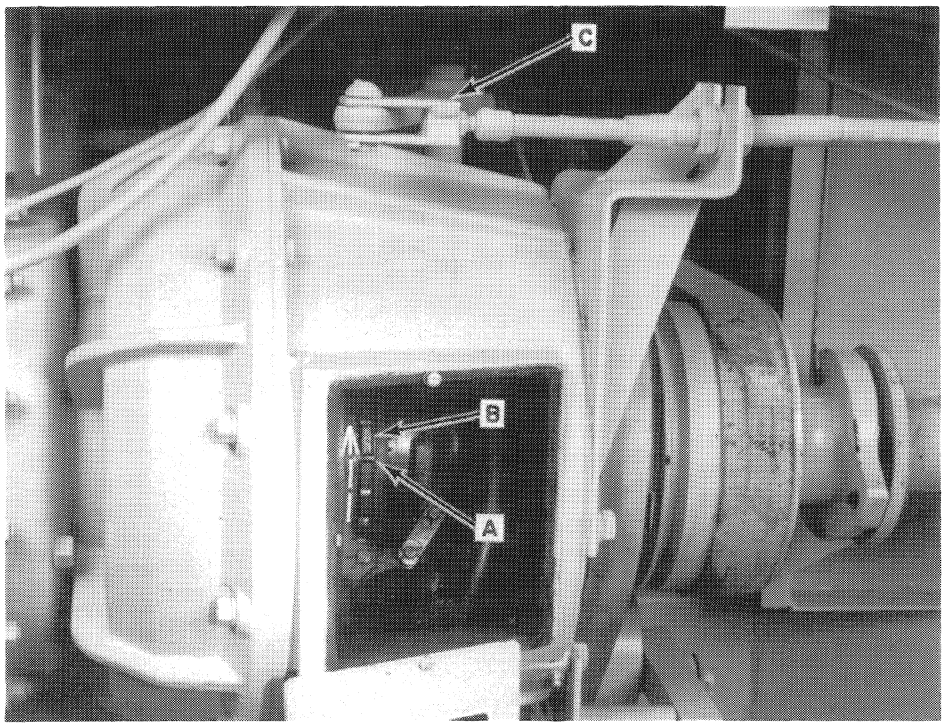
   Model 1900 - Tighten idler spring to 7" (17.8 cm) between hooks.

   Model 2100 - Tighten adjusting nut until it is tight against the spacer inside the spring. Loosen nut one turn then lock jam nut.

LABOR GUIDE

The following labor amount is listed as a guide only. Work experience, conditions, etc., will vary the time it actually takes.

Job	Man Hours
Remove, rebuild, and install	4



SHIELDS SHOWN REMOVED FOR CLARITY.

FIGURE 2-11