50 Crawler Series D

Service Manual

S 406236M2

Reprinted

CASE

TABLE OF CONTENTS

TABLE OF CONTENTS (CON'T)

Thanks very much for your reading,

Want to get more information,

Please click here, Then get the complete manual

NOTE:

If there is no response to click on the link above, please download the PDF document first, and then click on it.

Have any questions please write to me:
admin@servicemanualperfect.com

SAFETY

THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL, WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

WARNING: Always use a non-flammable solvent for cleaning parts. DO NOT use gasoline or other flammable substances.

WARNING: Clean Rubber parts by washing in clean brake fluid. DO NOT use mineral base cleaning solvents such as acetone or paint thinner on any rubber parts. If a mineral base solvent is used, the rubber will start to deteriorate and continue to deteriorate after the part is put back into service. The continued deterioration of the rubber could cause the part to fail.

WARNING: DO NOT service the machine with the engine running. If necessary to make checks with engine operating, have one man stay at the controls while the other makes the check.

Whenever servicing the machine, always tag mark the ignition switch to alert other operators and prevent accidental start-ups.

WARNING: To help prevent eye injury, wear eye protection when servicing this machine.

CAUTION: When checking coolant level, remove cap on radiator slowly to relieve pressure within the system.

CAUTION: Disconnect both leads from the batteries when working on the engine or electrical system. Always disconnect the Ground lead first.

WARNING: Use extreme care when handling the track. Never insert fingers between track shoes when removing track.

DANGER: Exhaust fumes can kill. If necessary to start engine in an enclosed area, be sure to provide adequate ventilation.

CAUTION: ENGINE FAN AND BELTS - To prevent possible serious injury avoid contact with rotating fan and belts.

WARNING: BATTERIES PRODUCE EXPLOSIVE GASES. Keep flames, sparks and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.

POISON/DANGER: BATTERY ACID CAUSES SEVERE BURNS. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing.

Antidote: EXTERNAL - flush with water. INTERNAL - drink large quantities of water or milk. Follow with Milk of Magnesia, beaten egg or vegetable oil. Call physician immediately. EYES: Flush with water for 15 minutes and get prompt medical attention.

KEEP OUT OF REACH OF CHILDREN.

WARNING: Do not allow battery fluid to contact skin, eyes, fabric or painted surfaces. Battery fluid is sulfuric acid solution which could cause serious injury or property damage.

CAUTION: When working on the hydraulic system, be sure to relieve all pressure in the lines by working the controls back and forth several times before removing component.

CAUTION: NEVER lay metal objects across the battery posts to check the charge. The air directly above the batteries contains highly explosive hydrogen gas. Sparks may cause an explosion.

DO NOT wear loose clothing which may catch in moving parts.

CAUTION: Hydraulic systems are high pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks - never use the hands or other parts of the body.

Relieve hydraulic pressure before disconnecting circuits. When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious complications may arise if medical attention is not given at once.

WARNING: This machine is equipped with a 24-volt starting system. Sparking will occur across greater distances than with a conventional 12 volt system. NEVER WEAR RINGS OR OTHER METAL OBJECTS that may ground a live circuit.

CAUTION: Warn all personnel who may be servicing or in path of machine before starting engine. Be sure all operating controls are in neutral and Parking Brake is set.

CAUTION: The idler wheel spring is under tension. If for any reason this spring must be removed, use EXTREME caution.

Inspect the machine daily for loose, worn or damaged parts. Have unsafe conditions corrected immediately.

CAUTION: Before removing or disassembling the swing brake, SET BOOM ON GROUND to prevent turntable from rotating.

WARNING: If boom is removed, do not swing the turntable over the side of the crawler base. The machine will tip. Never remove the boom unless the upperstructure is directly over the front or rear of the crawler base.

WARNING: To avoid personal injury, keep hands clear of turntable ring gear while turntable is being rotated.

Keep a fire extinguisher on hand and KNOW HOW TO USE IT. Check it regularly to ensure it is in good working order.

WARNING: Any changes to the controls must be clearly noted and posted in the Operator's Cab. If any control changes are made, a new Operator's Control Pattern decal must be installed in the cab to warn other operators of the changes.

Wipe oil spills, immediately and keep work area as clean as possible. A cluttered work area invites accidents.

WARNING: Never operate the alternator on an open circuit. With no battery or other electrical load on the circuit, a voltage buildup will occur within the alternator. This voltage buildup could be extremely dangerous to anyone touching the alternator "BAT" terminal.

CAUTION: When releasing grease from the track adjustment cylinder, loosen the adapter SLOWLY. Very high pressure can exist in the adjustment cylinder when under tension. The adapter fitting could fly loose and cause personal injury.

When bleeding brakes, loosen bleeder plug approximately one-half to three-quarter turn or until oil just starts to flow. If plug is loosened too far, it may be blown out under pressure.

CAUTION: Engage Digging Brake whenever the unit is not "crawling." Accidental engagement of the Drive Lock Switch will cause the machine to immediately move in the forward direction.

Never smoke while refueling, servicing the fuel system or working with batteries.

GENERAL INFORMATION

INTRODUCTION

This manual provides instructions for maintenance and service of the DROTT 50 series "D" Crawler. All components and systems are included, with the exception of the engine which is covered in the engine manufacturer's manual supplied with each machine.

The manual is divided into six sections, preceded by a general section on safety, machine description and specifications.

A separate section entitled "Scheduled Preventive Maintenance" is provided to cover all components which require periodic maintenance. Refer to this section whenever performing normal maintenance. It includes a Maintenance Schedule, Component Capacities, Hydraulic System Operating Pressures, Maintenance Chart and Maintenance Details.

The Service section is divided into three general areas - Mechanical, Electrical and Hydraulic. Included in the Service section is general descriptive and operational information to provide a basic understanding of each system and its components. All disassembly and repair information is contained in the last section of the manual and arranged in the general sequence established in the service section, i.e. Mechanical, Electrical and Hydraulic.

Troubleshooting charts for all the systems are contained in a separate section (See Section 5).

Torque Charts and Schematic Drawings of the Electrical and Hydraulic systems are located in back of this manual for easy reference when troubleshooting the machine.

If further service information is required, contact your nearest DROTT dealer or Service Representative for assistance.

EXPLANATION OF INTERNATIONAL SYMBOLS

Symbols are a universal language. International symbols are used in this manual to help identify components requiring service.

PARTS AND SERVICE

When writing to the dealer or manufacturer about your DROTT machine, always give reference to the model and PIN (Product Identification Number) in addition to the part name and location. The PIN plate is on the lower right corner of the cab (Figure 1).

All main components of the machine have an identification plate or number on the component housing. The location of the engine serial plate is shown in Figure 2.

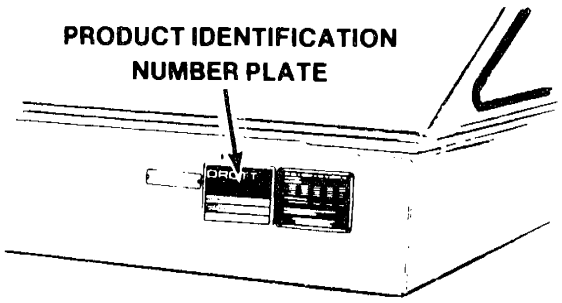


Figure 1. Machine Identification

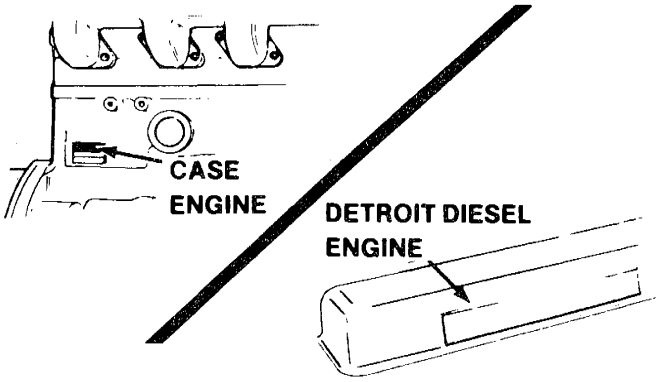
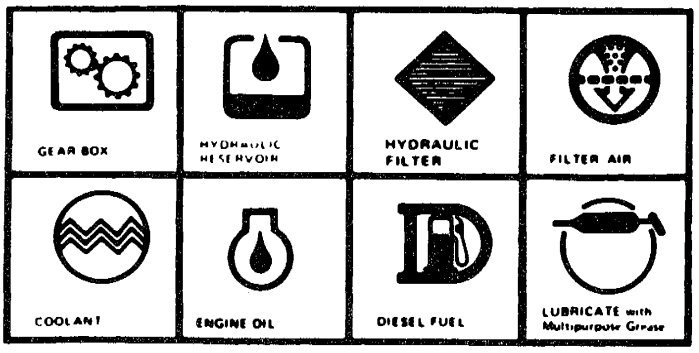


Figure 2. Engine Serial Plate



NOMENCLATURE

NOTE: Machine shown in Digging Position (front of turntable over rear of undercarriage).

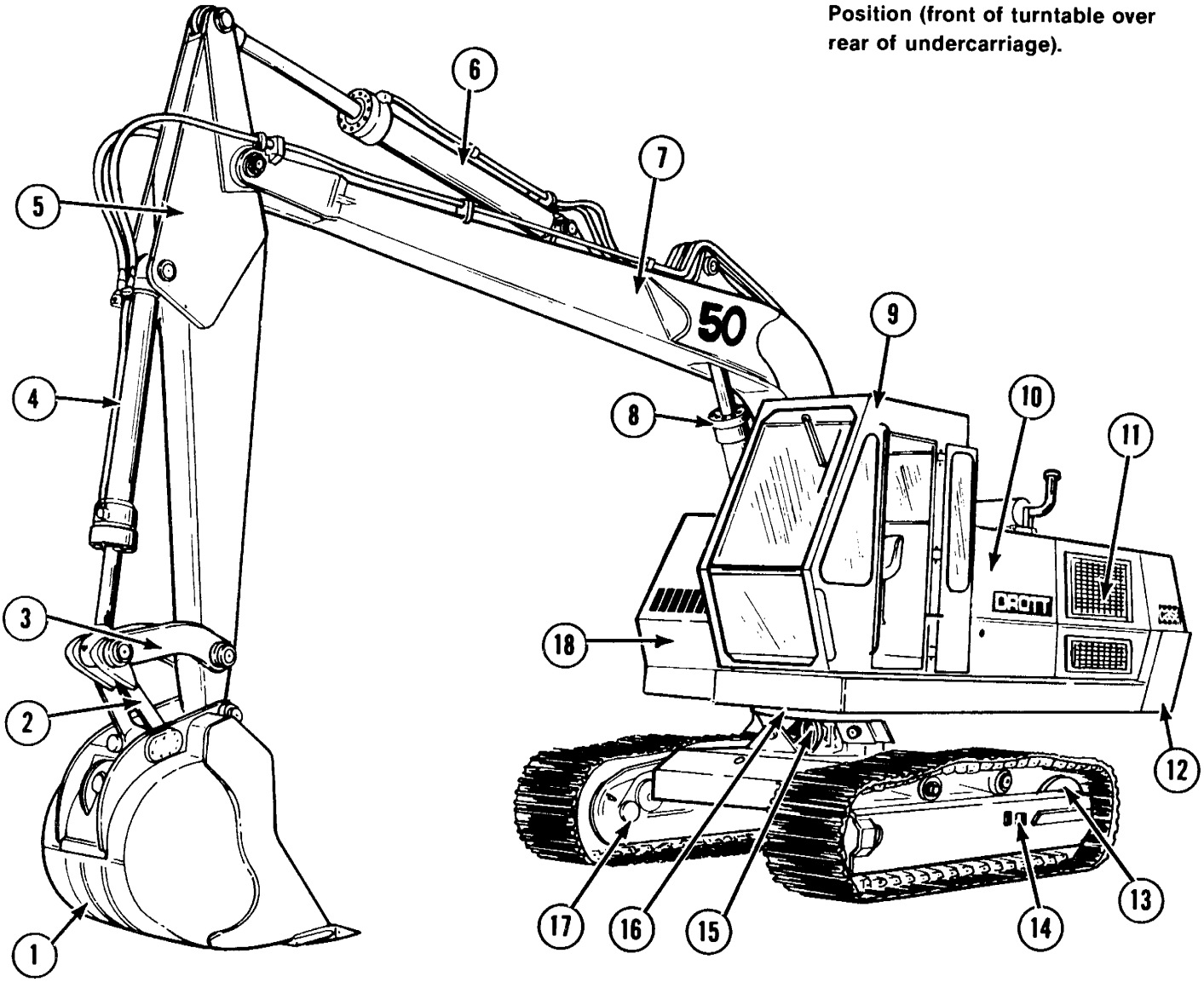


Figure 3. Nomenclature

1. Backhoe Bucket (Tool)
2. Tool Link
3. Side Levers
4. Tool Cylinder
5. Dipperstick
6. Crowd Cylinder
7. Main Boom
8. Hoist Cylinder
9. Operator's Cab w/Controls
10. Location of Main Control Valves and Hydraulic Oil Tank
11. Engine Compartment and Location of Hydraulic Pumps
12. Counterweight
13. Idler Wheel
14. Location of Track Adjuster Cylinder
15. Leveler Assembly (Optional)
16. Turntable Bearing
17. Final Drive Transmission
18. Location of Fuel Tank and Swing Mechanism

DIRECTIONAL REFERENCE

The turntable on this machine rotates through a full 360 degrees. The normal driving position is with the Boom over the front of the undercarriage (track drive transmission to the rear), as shown in figure 4. In this position, directional callouts for both the turntable and the undercarriage are the same. All references to Front, Rear, Right and Left will be made with respect to this position. RIGHT is the Operator's right; LEFT is the Operator's left.

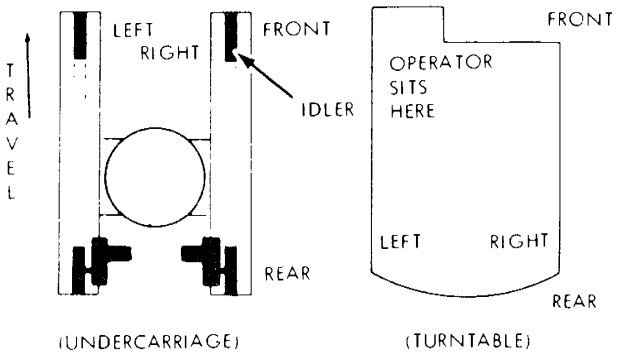


Figure 4. Directional Reference

GENERAL DESCRIPTION

The Drott 50 Crawler is a fully hydraulic excavator. Engine power is converted to hydraulic energy, then reconverted to mechanical force by means of cylinders and motors.

In the hydraulic system, oil from a 2-section gear pump is routed through two 4-spool valves and a single spool valve (optional) to the machine's functions. To get maximum use of the engine's power, a "Power Sensing" valve is connected between the two main pumping circuits.

Figure 5 shows the distribution of the engine power to the hydraulic and electrical systems. The machine has a pilot operated hydraulic control system.

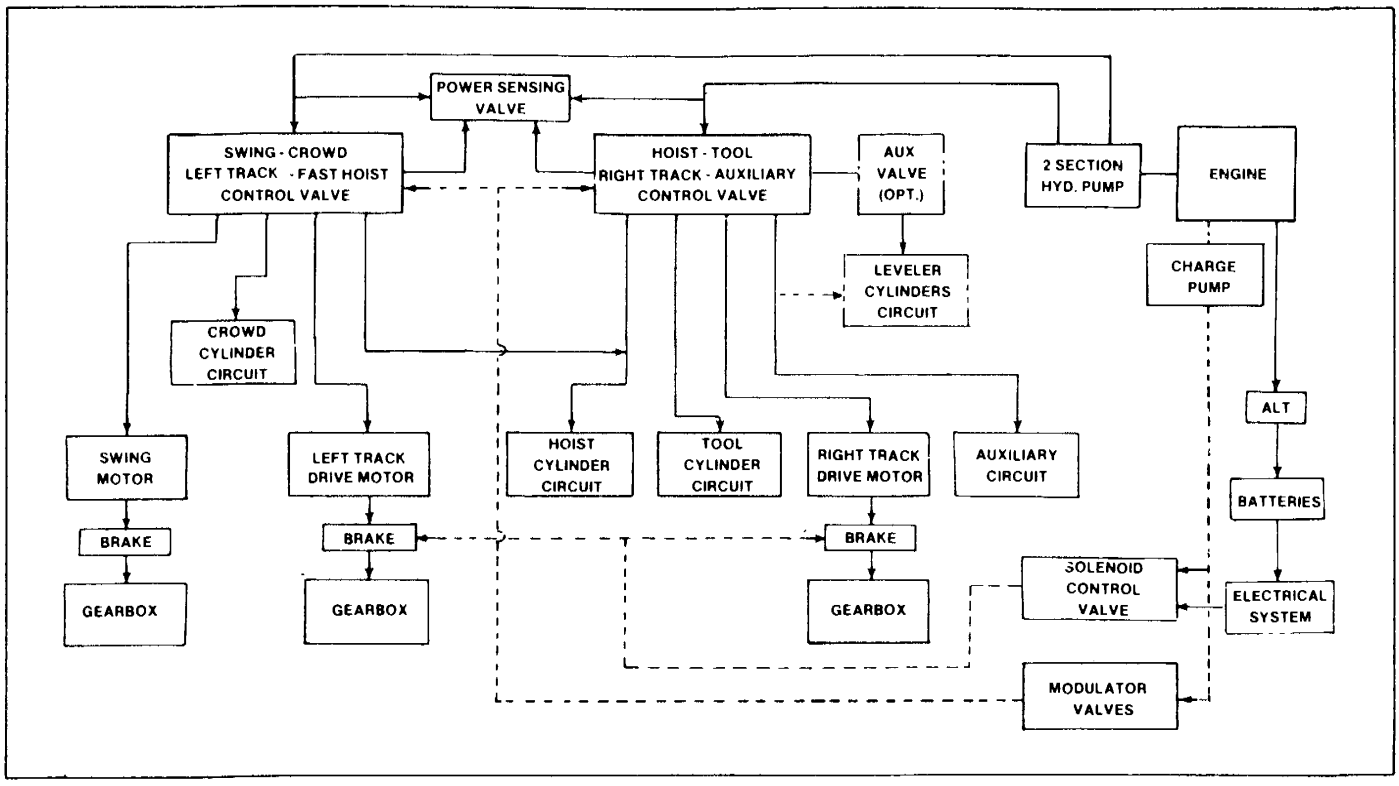


Figure 5. Block Diagram - 50D Crawler

SPECIFICATIONS

ENGINE:

	Detroit Diesel 6V-53N	Case 504 BDT
Type	Diesel, 2 stroke cycle, naturally aspirated	Diesel, 4 stroke cycle, turbocharged
Number of cylinders	6	6
Bore	3.875 in (98.4 mm)	4.625 in (117.5 mm)
Stroke	4.5 in (114 mm)	5 in (127 mm)
Displacement	318 cu in (5.2 litre)	504 cu in (8.2 litre)
Compression Ratio	21 to 1	15.8 to 1
Horsepower SAE Net	174 (129.8 kW)	189 (140.9 kW)
Horsepower at Gov. Speed	190 (141.7 kW)	206 (153.6 kW)
High (no load) rpm	2530	2230-2270
Load rpm	2400	2100
Idle speed	550-600	725-775

Undercarriage:

Track Frame ..... Rigid, welded construtions
Track Idlers ..... Sealed hub, spring cushion, hydraulic adjust
Crawler Drive ..... Hydraulic gear motor, spur gear final drive
Track Brake ..... Hydraulically released disc, on input to final drive
Track Rollers ..... Cast and machined construction, sealed hub
Carrier Rollers ..... Cast and machined construction, sealed, 2 per side
Track Gauge - Narrow Position ..... 8 ft (2.43 m)
Track Gauge - Wide Position ..... 9 ft (2.74 m)

Electrical System:

Machines through PIN 6280344 ..... 24 volt start, 12 volt operating, direct current negative ground; 72 amp alternator
Machines with PIN 6280345 and After ..... 24 volt, direct current, negative ground 42 amp alternator

Hydraulic System:

Type ..... Two pump circuits, summated
Pump (Main) ..... Two section gear, driven off rear of engine
Main Control Valves ..... Two 4-spool valves, single spool auxiliary valve optional; Series and parallel spool for simultaneous operation of two or more functions
Filters ..... Two 100 mesh screens and two 10 micron full flow filters in return lines; four 140 mesh screens in summator system; two screen diffusers and filler screen in tank
Cylinders ..... Double-acting type for hoist, crowd, tool and auxiliary functions, single-acting type for optional leveler
Motors ..... Gear type for swing and track drive functions, internally-valved, two-speed motor for track drive

---

Turntable Swing: Single race ball bearing with integral ring gear; powered by hydraulic gear motor through DROTT gearbox. Mechanically actuated disc brake on input to gearbox (for holding brake only).

Boom Options: "E" Main Boom with 9 ft. (2.7 m), 10 ft. 5 in. (3.2 m), or 12 ft. (3.65 m) dipperstick

Attachment Options: Standard and Severe Duty backhoe buckets, Ditch Bucket, Front Loading Bucket, Ripper Tooth, Wrist-O-Twist, Turntable Leveler.

SECTION 1
SCHEDULED PREVENTIVE MAINTENANCE

INTRODUCTION

Scheduled preventive maintenance is necessary to keep the machine in top operating condition. Decide from the start upon a maintenance schedule that will best suit your particular needs. The type of work being done, the size of loads, and ground and weather conditions should all be taken into consideration when establishing a schedule.

Use the engine hourmeter along with a calendar and checklist to ensure that all recommended maintenance is performed at the prescribed intervals. Recommendations contained in this manual are based upon average operating conditions, and should be considered as MINIMUM maintenance requirements for the CRAWLER.

Depart from recommended intervals only when conditions warrant shortening them, or when changes in ambient temperature require it. Recommended intervals should be shortened whenever the machine is operated under extreme conditions, such as on a dusty job site, in extreme heat or cold, under intermittent operation or extremely heavy loads.

LUBRICANTS

It is not the policy of J I Case, Drott Division, to publish lists of approved lubricants or to guarantee lubricant performance. The responsibility for the quality of any lubricant rests solely with the distributor or manufacturer of the lubricant.

In various paragraphs of this manual, you will find the statement "Use (lubricant brand name) or functional equivalent". This statement does not constitute an unconditional guarantee of the performance of the brand of oil mentioned; it is intended only as a guide to the type of lubricant recommended for a given application.

SOUNDPROOFING INSULATION

Care must be taken when cleaning the cab interiors that have soundproofing insulation. To clean the insulating material, use only a vacuum cleaner or damp cloth with plain water or mild detergent solution.

DO NOT steam clean, wash or rinse with a water hose, etc., since only slight wetting of the insulation will substantially reduce its soundproofing capabilities.

SPARK ARRESTOR

Laws of some states or provinces may require that this unit be equipped with a spark arrestor or spark arresting muffler. The State of California, as an example, is one state which has such regulations for agricultural and forestry applications, plus a regulation for construction applications in forest-covered, brush-covered or grass-covered lands.

Typically, such laws and regulations require spark arresting devices to be maintained in good working order and typically to be attached to the exhaust system on naturally aspirated engines (engines without a turbo-charger).

IMPORTANT: Always install new decals whenever the old decals are destroyed, lost, painted over, or illegible. When individual parts are replaced that have decals attached, be sure to install a new decal with the new part. Replacement decals are available from your Drott dealer.

HYDRAULIC OIL RECOMMENDATIONS

Drott DHF Fluid is recommended for year-around use in the hydraulic system; or as alternate, use oils listed below:

OIL WEIGHT	SYSTEM OPERATING TEMPERATURE
SAE 20-20W	50° to 210° F (10° to 99° C)
SAE 10W	0° to 180° F (-18° to 82° C)
SAE 5W or 5W-20	Arctic Conditions

Viscosity: The viscosity of the oil at starting should not exceed 9000 SSU or drop below 60 SSU for sustained high temperature operation. The optimum operating conditions are between 80 SSU and 180 SSU. The viscosity index should not be less than 90 (for this service).

Arctic Conditions: The use of an auxiliary heater, a warm-up period avoiding high speed operation of hydraulic components until the system is warm, and the use of SAE 5W or SAE 5W-20 oils may be necessary, provided the viscosity requirements for sustained high temperature operation are not exceeded at maximum operation temperatures. See preceding paragraph on Viscosity.

HYDRAULIC SYSTEM OPERATING PRESSURES

VALVE		PRESSURE SETTING	
		PSI	kPa
Main Reliefs		3300	22 700
Hoist Port Reliefs		3400	23 400
Crowd Port Reliefs		3400	23 400
Tool Port Reliefs		3400	23 400
Swing Port Reliefs		2500	17 200
Track Port Reliefs		2500	17 200
Power Sensing Reliefs	Case	2800	19 300
	D.D.	2600	17 900
Pilot System Relief		550	3 800
Swing Cushion Relief		1550	10 700
Leveler (optional)		2500	17 200

COMPONENT CAPACITIES

Component	Lubricant/Fluid	Capacity
Engine Cooling System	½ ethylene glycol base anti-freeze, ½ water	8½ gal. (32 L)
Engine Crankcase	See Engine Manufacturer's Manual	See Specifications, page 8
Fuel Tank	No. 2 Diesel Fuel, See Engine Manual	75 gal. (284 L)
Hydraulic System (Complete)	DROTT DHF Fluid or See Page 10	65 gal. (246 L)
Hydraulic Oil Tank		25 gal. (95 L)
Final Drive Transmissions	HD80-90 Gearlube	14 qts. (13.2 L)
Swing Gearbox	HD80-90 Gearlube	11 pts. (5.2 L)
Turntable Bearing Ring Gear	Open Gear Lubricant, such as Mobil Mobitac E, Texaco Crater Compound, or functional equivalent	Apply liberal amount. Rotate turntable so pinion spreads the lubricant
Pressure Grease Fittings	Multipurpose E.P. No. 2 lithium grease, molydisulfide grease, or functional equivalent	Use sufficient amount to remove the old, contaminated grease at each location (See List of Grease Fittings)

RATED PUMP OUTPUT @ GOV. RPM

ENGINE	OUTPUT PER SECTION	
	GPM	L/MIN
Detroit Diesel 6V-53	65	246
Case 504 BDT	67	253

MAINTENANCE CHART

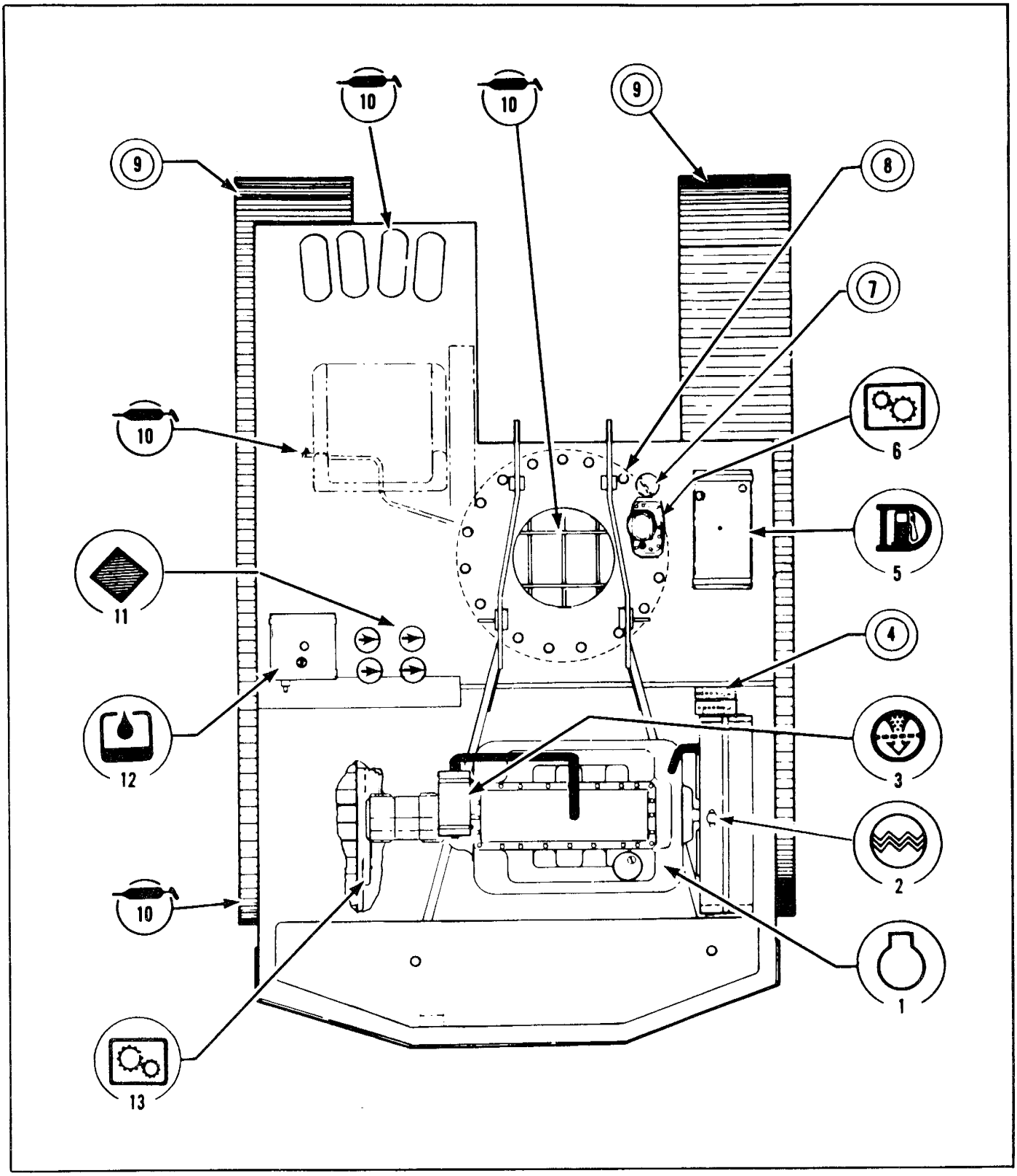


Figure 6. Maintenance Chart

PREVENTIVE MAINTENANCE CHART

REF.	COMPONENT/SYSTEM	Daily - 10 Hours	Weekly - 50 Hours	2 Weeks - 100 Hours	Monthly - 250 Hours	2 Months - 500 Hours	6 Months - 1500 Hours	12 Months - 3000 Hours	SERVICE/CHECK	INSTRUCTION
1	ENGINE	X							Check oil, drain fuel filter	See Engine Manual
				X					Change oil and filters	See Engine Manual
2	RADIATOR, COOLING SYSTEM	X							Check coolant level	See page 16
			X						Clean fins, remove obstruction, check fan belts	See page 32
						X			Check specific gravity, add corrosion inhibitor	See page 31
								X	Drain and flush system	See Engine Manual
3	AIR CLEANER	X							Check restriction indicator, empty dust cup	See page 17
						X			Clean or replace element	See page 17
4	BATTERIES		X						Check electrolyte level (except "Maintenance Free" type)	See page 17
							X		Clean battery case, posts and connections	See page 17
5	FUEL TANK	X							Fill at end of shift, drain water from tank	See page 17
						X			Clean breather	See page 17
6	SWING GEARBOX		X						Check oil level	See page 18
							X		Change oil, clean breather	See page 18
7	TURNTABLE BEARING	X							Lubricate the ring gear	See page 18
			X						Lubricate the bearing race (thru Central Lube)	See Illustrated Listing
8	TURNTABLE CAPSCREWS				X				Check torque (See also "Special Maintenance" below)	See page 36
9	TRACK	X							Grease pillow blocks, clean tracks	See Illustrated Listing
			X						Check and adjust track tension	See page 25
10	LUBRICATION FITTINGS	X	X						Apply grease per intervals in Illustrated Listing	See page 14
11	HYDRAULIC FILTERS					X			Clean 100 mesh screens, replace paper elements	See page 19
12	HYDRAULIC OIL TANK	X							Check oil level	See page 19
						X			Replace breather	See page 19
							X		Change oil, clean screens	See page 19
13	FINAL DRIVE TRANS.		X						Check oil level, look for damage or leaks	See page 20
							X		Change oil	See page 20
14	CAB and CONTROLS	X							Clean cab, check operation of controls	See page 9
					X				Check condition and adjustment of the controls	See page 94
15	BOOM and ATTACHMENT	X							Lubricate thoroughly	See page 39

SPECIAL MAINTENANCE

End of First Day or First 10 Hours of Operation

Hydraulic Filters ..... Replace paper elements, clean 100 mesh screens

After First 20 Hours of Operation

Case engine ..... Change run-in oil and filters. See Engine Manual

After First Week or 50 Hours of Operation

Turntable Capscrews ..... Check for correct torque

ILLUSTRATED LISTING OF GREASE FITTINGS

LUBRICATION FITTING CHART

Figure No.	Location/Title	Qty.	Interval
7	Turntable Bearing	1	Weekly/50 hours
8	Control Pedals	4	Weekly/50 hours
9	Turntable Leveler	(See Figure 9)	Weekly/50 hours
10	Drive Sprocket Pillow Block	2 per side	Daily/10 hours
11	Fan Pulley (Detroit Diesel Engine)	1	Weekly/50 hours
12	Boom and Bucket	15	Daily/10 hours

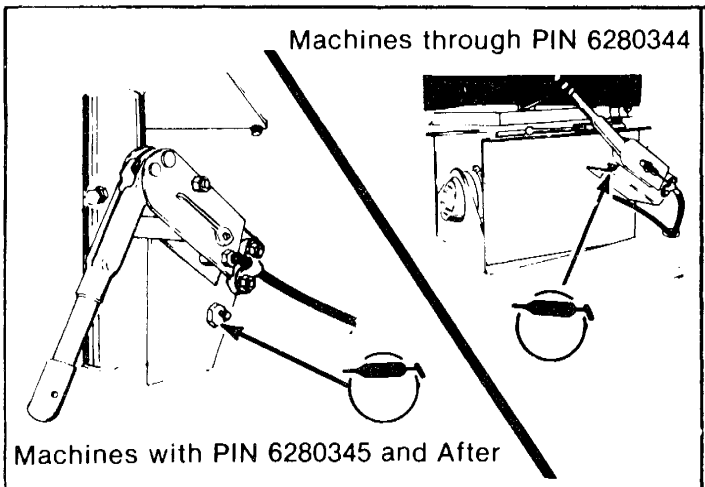


Figure 7. Lubrication Point for Turntable Bearing

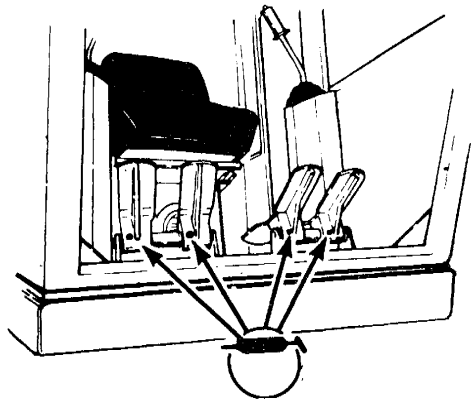


Figure 8. Controls and Linkages

TOTAL OF 8 (Machines through PIN 6280344)
TOTAL OF 6 (Machines with PIN 6280345 and After)

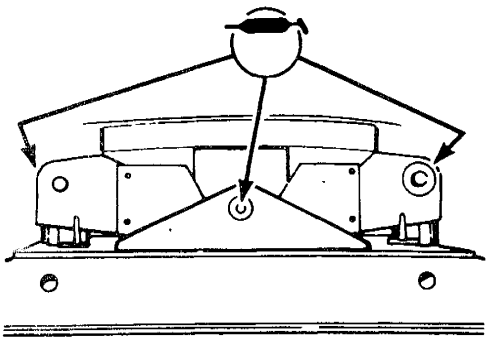


Figure 9. Turntable Leveler

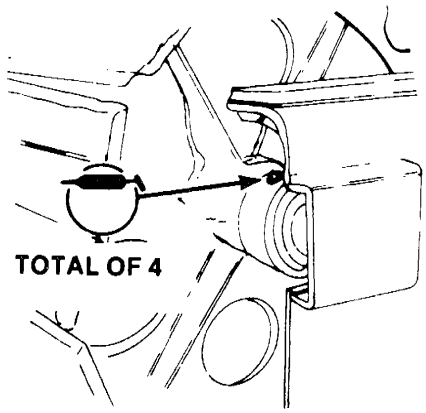


Figure 10. Drive Sprocket Pillow Block

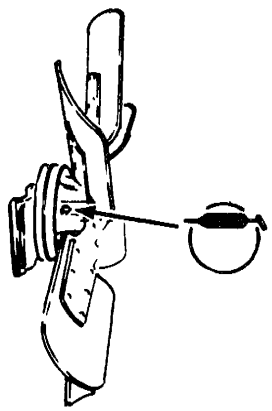
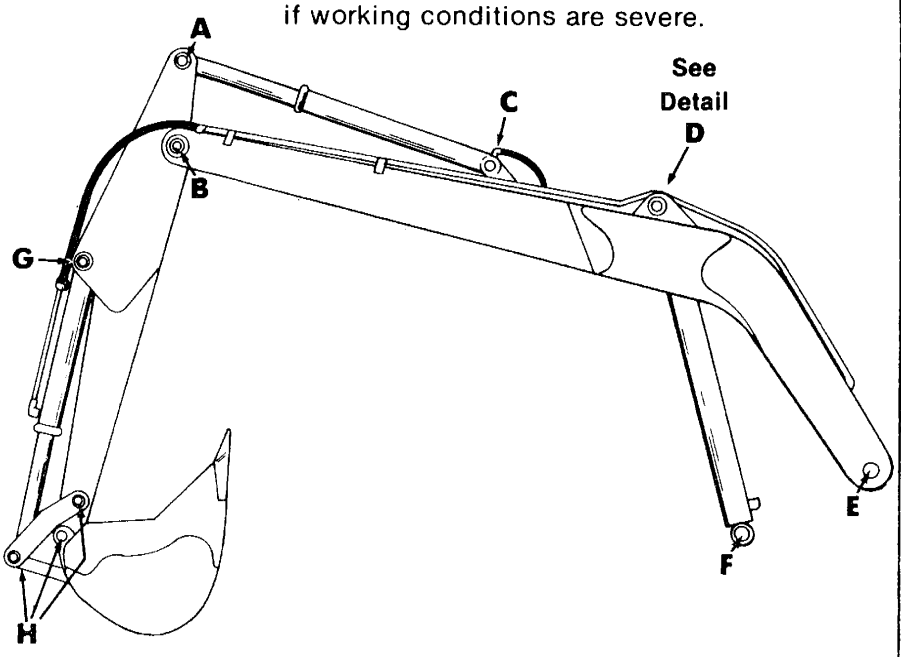
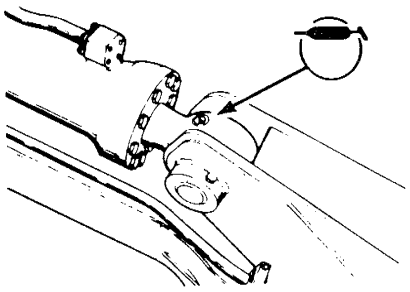


Figure 11. Fan Pulley (Detroit Diesel Engine)

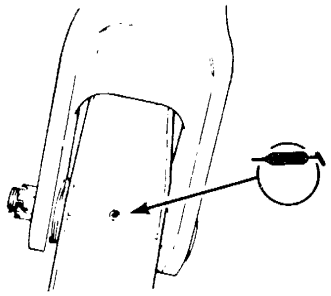
BOOM LUBRICATION

NOTE: Grease at least every 4 hours for first 20 hours of operation. Continue to grease every 4 hours if working conditions are severe.

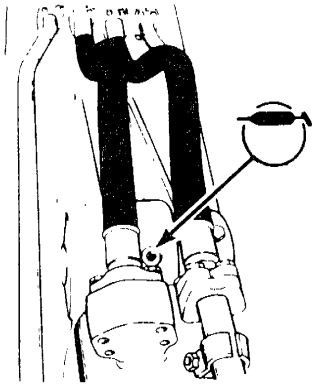




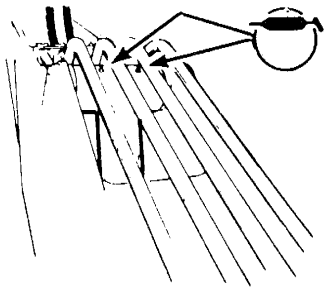
Detail A



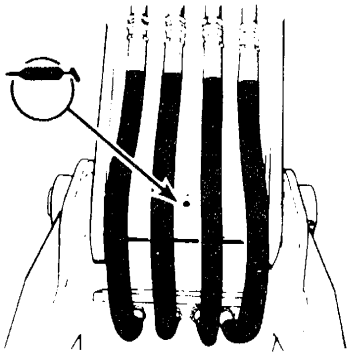
Detail B



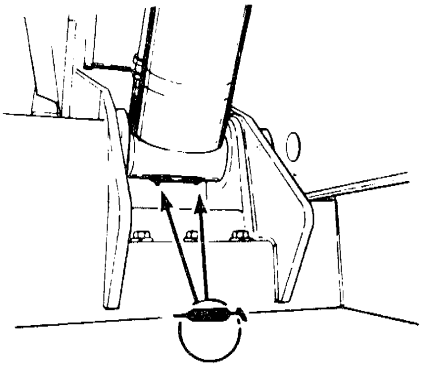
Detail C



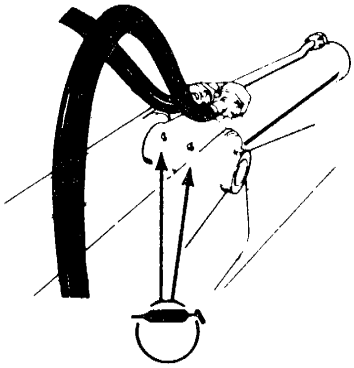
Detail D



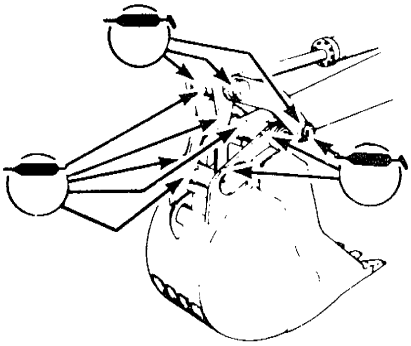
Detail E



Detail F



Detail G



Detail H

Figure 12. Lubrication Fittings on Boom

ITEMIZED INSTRUCTIONS

1. **ENGINE** - See separate engine manual for required engine maintenance.

   Lubrication System: Engine oil should be checked daily before operation. See engine manual for oil recommendations, oil and filter change procedures.

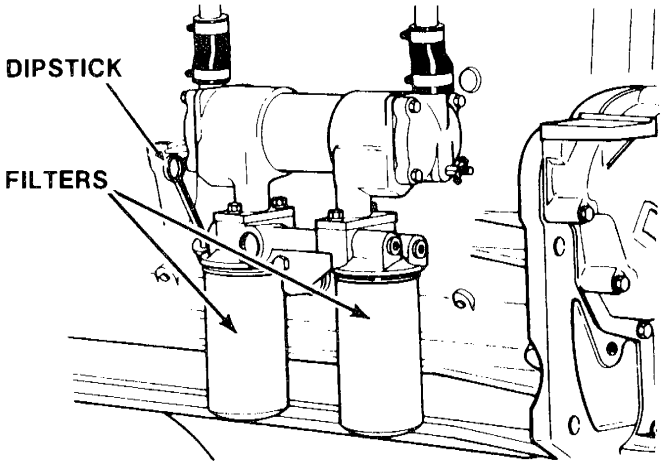


Figure 13. Oil Filters (Case Engine)

Fuel System: Before operation, drain water and sediment from fuel filters. This helps prevent condensation and sediment buildup in the fuel system. See engine manual for additional maintenance.

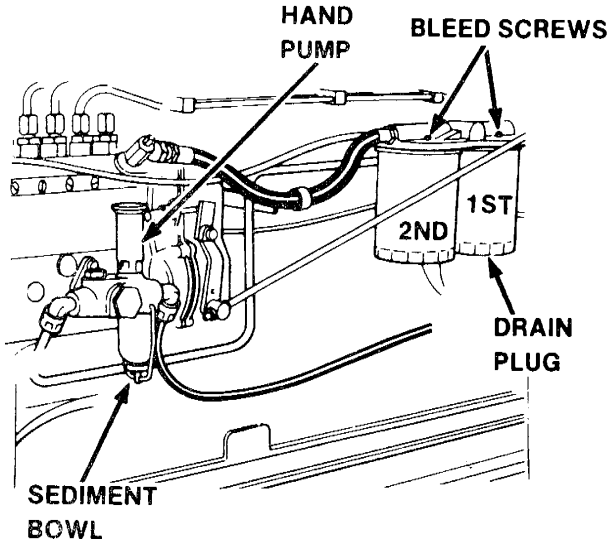


Figure 14. Fuel Filters on Case Engine

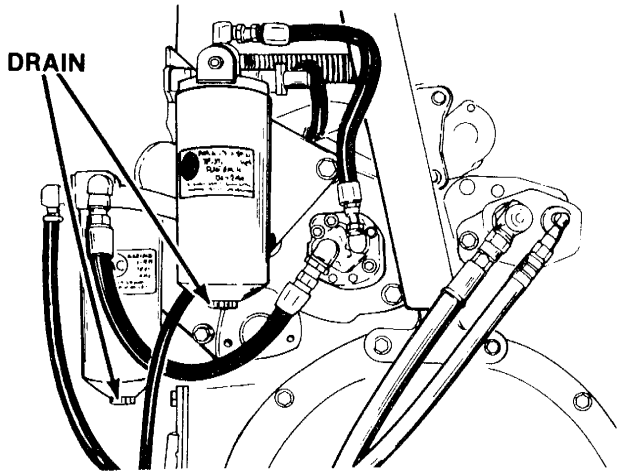


Figure 15. Fuel Filters on Detroit Diesel Engine

2. **RADIATOR AND OIL COOLER** - Check Radiator coolant level daily. When freezing temperatures threaten, fill with solution of 50% ethylene glycol base antifreeze and 50% water.

NOTE: Antifreeze with sealant additives is NOT recommended in Detroit Diesel Engines due to the possibility of plugging cooling system ports.

CAUTION: When checking coolant level, remove cap on radiator slowly to relieve pressure within the system.

Blow foreign matter from Radiator and Oil Cooler fins weekly. Inspect hoses and connections for leaks and cracks at the same time. Be sure the engine is shut off when using compressed air. If overheating occurs in hot weather, the following suggestions are offered to help ensure maximum cooling system efficiency:

CAUTION: ENGINE FAN AND BELTS - To prevent possible serious injury avoid contact with rotating fan and belts.

a. Keep radiator and oil cooler fins clean.

b. Check the radiator pressure cap. It must maintain 7 psi (48 kPa) on the Radiator. Either high or low pressure can cause overheating.

3. **AIR CLEANER** - Check Air Restriction Indicator on air cleaner inlet line daily. Remove and clean (or replace) the element when the red indicator band remains in full view with the engine off. Remove the dust cup daily or every 10 hours and clean out accumulated dust.

   Clean and inspect (or replace) the element every 500 hours or two months whichever occurs first. To service the element, remove and tap it against your hand. Blow out from inside with compressed air. Then wash in a solution of non-sudsing detergent (DO NOT use HOT water). Shake out excess water and let dry.

NOTE: Never run an engine with the Air Cleaner or Dust Collector removed.

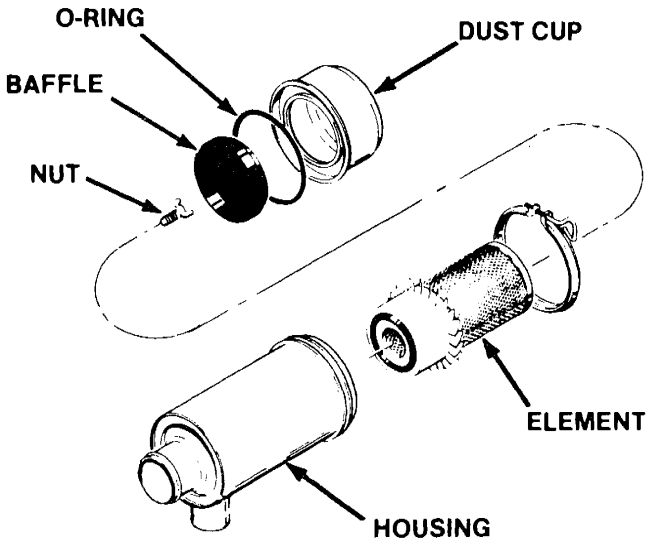


Figure 16. Engine Air Cleaner (typical)

Test element by holding a lighted bulb inside. If light shows through unevenly, replace the element. Keep an extra element on hand for quick replacement.

NOTE: Air Cleaner elements should be replaced after five cleanings.

CAUTION: Disconnect both leads from the batteries when working on the engine or electrical system. Always disconnect the Ground lead first.

4. **BATTERIES** -Clean Battery terminals and other metal parts with soda water solution and rinse with clean water every 1500 hours or six months. Brighten terminal posts and inside of connectors with a wire brush. After connecting terminals, coat them with petroleum jelly or STP oil treatment to help prevent corrosion. On units not equipped with "Maintenance-free" batteries, check the electrolyte level weekly or every 50 hours. Add distilled water as necessary to keep the electrolyte level above the cell plates.

WARNING: BATTERIES PRODUCE EXPLOSIVE GASES. Keep flames, sparks and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.

5. **FUEL TANK** - Keep the Fuel Tank filled to prevent condensation when the machine is not being used. Refer to Engine Manufacturer's Manuals for fuel recommendations. Drain water trap in bottom of tank daily or every 10 hours.

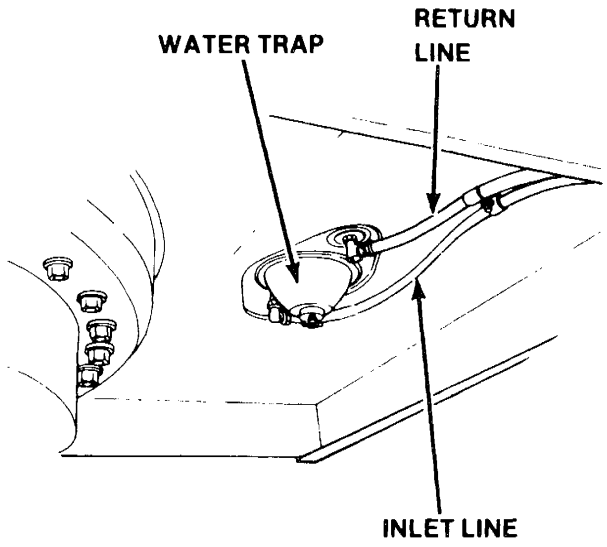


Figure 17. Fuel Tank Water Trap

Never smoke while refueling, servicing the fuel system or working with batteries.

6. **SWING GEARBOX** - Check oil level weekly or every 50 hours whichever comes first. Drain and refill every 6 months or 1500 hours, whichever comes first. FILL, CHECK and DRAIN plugs are shown in Figure 18.

   Check and adjust house brake monthly, every 250 hours, or as necessary. See page 36.

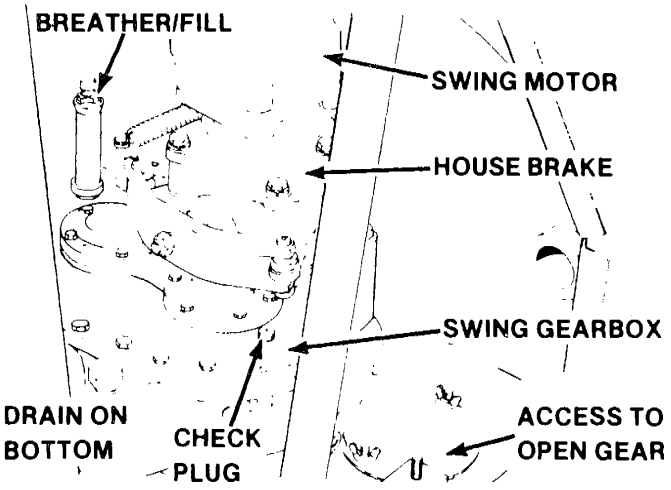


Figure 18. Turntable Ring Gear Access Hole and Swing Mechanism

7. **TURNTABLE BEARING RING GEAR** - Lubricate daily or every 10 hours, whichever occurs first. Use a spray-on open gear lubricant such as Mobiltac E, Sohio Sohitac No. 1, Sunoco 407 Compound B, Texaco Crater Compound or functional equivalent.

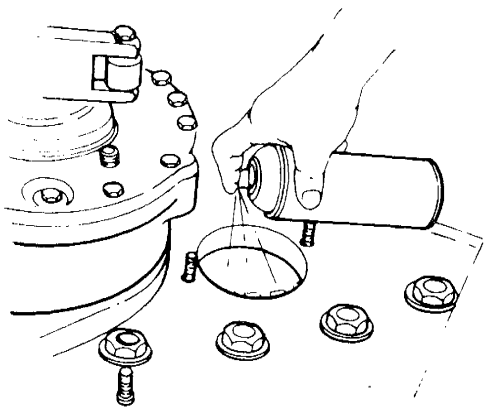
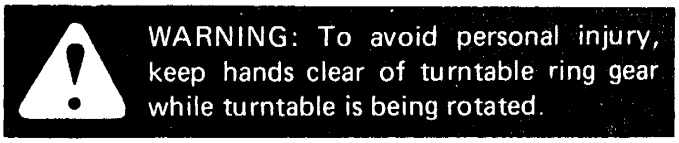


Figure 19. Lubricating the Ring Gear

Remove the access cover and spray or brush on the lubricant while the Turntable is slowly rotating through 360°. (See Figure 19.)

NOTE: Rotate turntable so that Pinion helps spread the lubricant.



8. **TURNTABLE CAPSCREWS** - The capscrews which hold the turntable to bearing and bearing to carbody should be checked for proper torque after the first 50 hours or first week of operation. Thereafter they should be checked every 250 hours or monthly (see page 37).

9. **TRACK** - Track Rollers are pre-lubricated and sealed. They require no periodic lubrication. Check the Rollers for leaks. Grease the Drive Sprocket Pillow Block Bearings daily or every 10 hours with a general purpose lithium base grease. See Illustrated Listing.

   Check the Track for proper tension every 50 hours or weekly, whichever comes first. See page 25.

10. **LUBRICATION (GREASE) FITTINGS** - Lubricate all grease fittings at the intervals indicated in the LUBRICATION FITTING CHART. Lubrication points in high wear areas such as the boom and bucket must be greased at least every 4 hours for the first 20 hours of operation and daily or every 10 hours thereafter. If working conditions are severe, continue to grease these areas after every 4 hours. Use a multipurpose lithium base grease, unless otherwise noted. When working in wet or swampy areas, grease those components exposed to water every 4 hours. If grease fitting will not accept lubricant, remove it and clean out the obstruction or replace the fitting. Apply sufficient grease to force out the old grease.

11. **IN-LINE HYDRAULIC FILTERS** - Every 2 months or 500 hours clean the screen filters and replace the paper filters. The filters are found at the rear of the boom. See Figure 20. Clean around the filter housings before servicing to prevent entry of dirt into the hydraulic system.

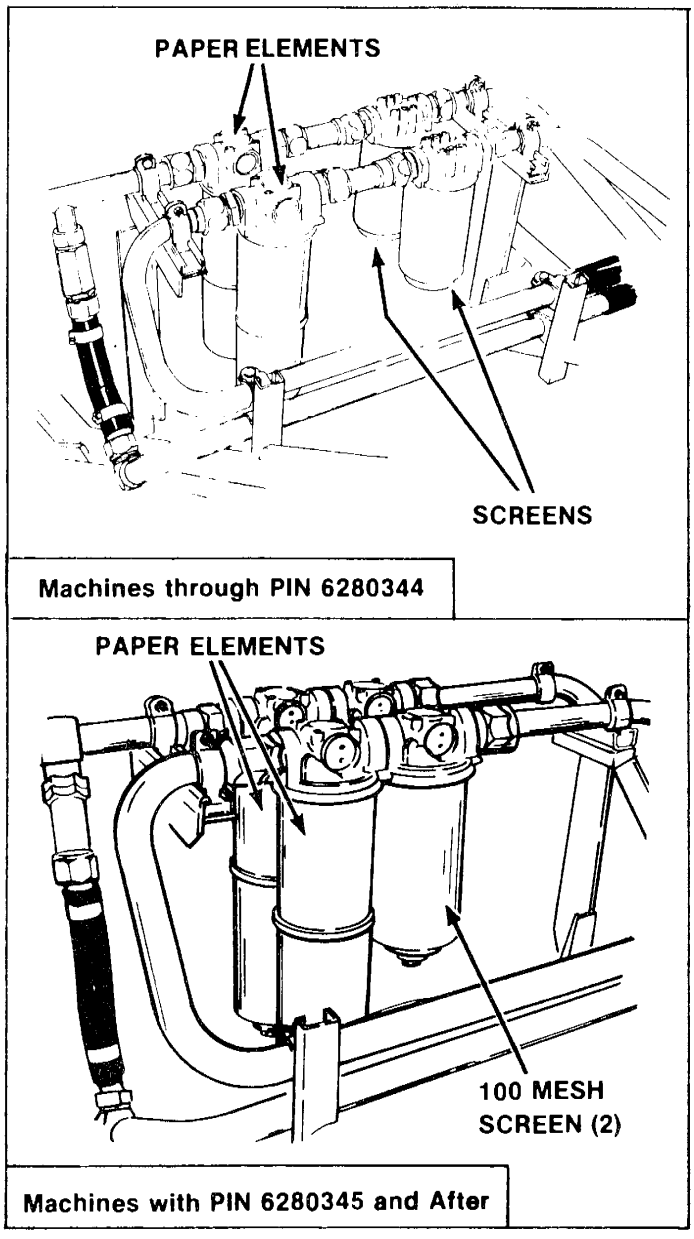


Figure 20. Location of In-Line Hydraulic Filters

To service the 100 Mesh Screens: (Machines through PIN 6280344)

a. Unscrew the center post. Remove center post, housing, back-up washer and filter element.

b. Discard old seals. Clean filter element and parts in non-flammable solvent. Blow dry with compressed air. If screen has damage, replace the screen.

c. Install new seals and assemble the filter as shown in figure 21.

d. Tighten the center post to a torque of 40 lb-ft (54 Nm) maximum.

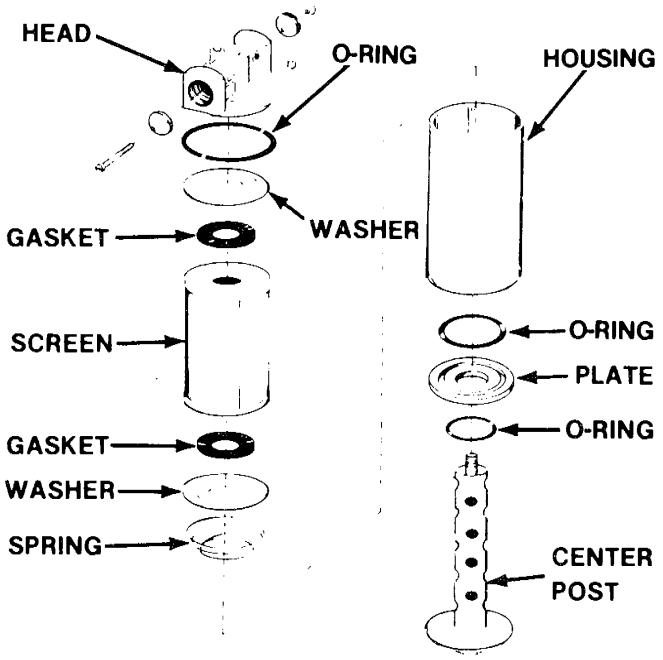


Figure 21. Screen Filter - Machines through PIN 6280344

NOTE: On machines with PIN 6280345 and after, a tandem filter assembly is installed. Refer to figure 22 for basic arangement of the internal parts.

To service the Paper elements and Tandem Filter:

a. Loosen the center bolt and remove it along with the filter housing, element and indicator assembly.

b. Remove filter element from housing. Remove the indicator from the element with a twisting motion. DO NOT attempt to pull it straight out or pry it loose. The indicator ears are fragile.