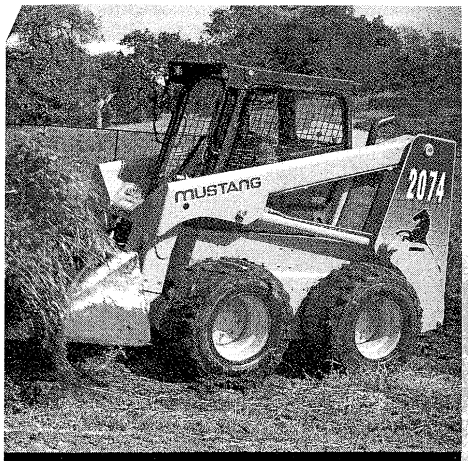



MUSTANG®

# 332, 342
# 442, 552

# SERVICE MANUAL

**PART #087-00184**

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# CONTENTS

FORWARD

STANDARD TORQUE VALUE SPECIFICATIONS & FITTING PROCEDURES

MAINTENANCE CHART (ALL UNITS)

HYDRAULIC & HYDROSTATIC FLOW CHARTS (SECTION 1 )

MODEL SPECIFICATIONS (SECTION 2 ) ---------- 5-8
- 332..... 5
- 342..... 6
- 442..... 7
- 552..... 8

SYSTEM CONTAMINATION CONTROL (SECTION 3 ) ---------- 9-13
- Ten Sound Practices..... 13

HYDRAULIC SYSTEM (SECTION 4 ) ---------- 14-31
- Reservoir..... 14
- Hydraulic Cylinder..... 15
- Neutral Centering Devices..... 21
- Control Tips & Adjustments.... 24
- Trouble Shooting..... 28
- Pressure Checks..... 30

HYDROSTATIC TRANSMISSION (SECTION 5 ) ---------- 32-41
- Hydrostat Removal..... 32
- Hydraulic Motor Removal (332 & 342)..... 33
- Hydraulic Motor Removal (442)..... 35
- Hydraulic Motor Removal (552)..... 37
- Relief Valve/Closed Loop Check..... 39
- Trouble Shooting..... 40

START-UP PROCEDURE (SECTION 6 ) ---------- 42-45

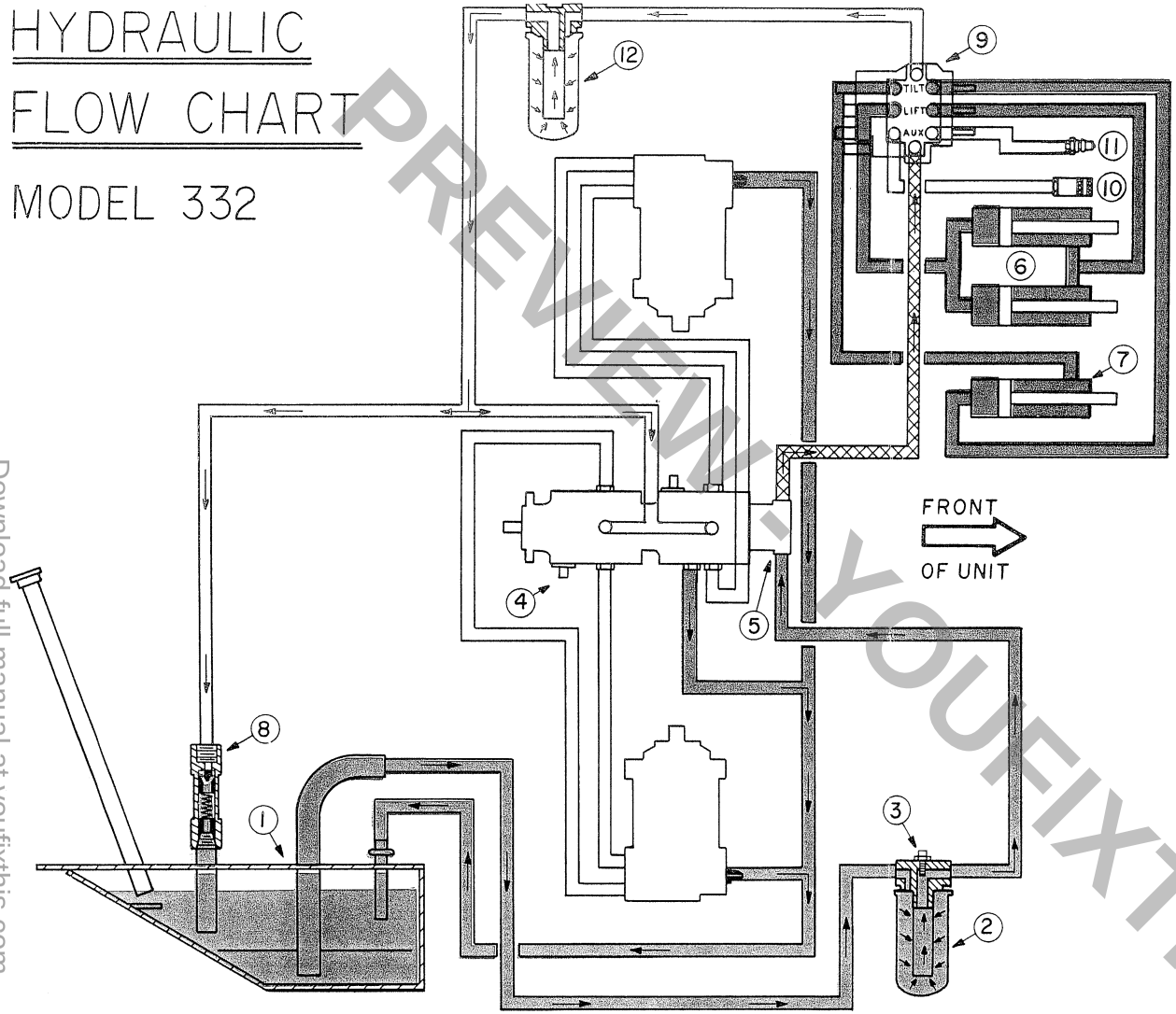
WHEEL DRIVE SYSTEM (SECTION 7 ) ---------- 46-63
- Chain Case, Connecting Links, Checking Chains.... 46
- Adjusting Drive Chains..... 47
- Brake Adjustment & Tips..... 48
- Axle Disassembly & Tips..... 50
- Chain Replacement (332 & 342)..... 51
- Chain Replacement (442)..... 54
- Chain Replacement (552)..... 57
- Motor Sprocket Removal (332, 342 & 442)..... 60
- Motor Sprocket Removal (552)..... 61
- Sprocket Assembly to Motor (All Units)..... 62
- Idler Arm Assembly Replacement & Tips..... 62
- Center Reduction Replacement & Tips..... 63

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# HYDRAULIC FLOW CHART

## MODEL 332




LEGEND

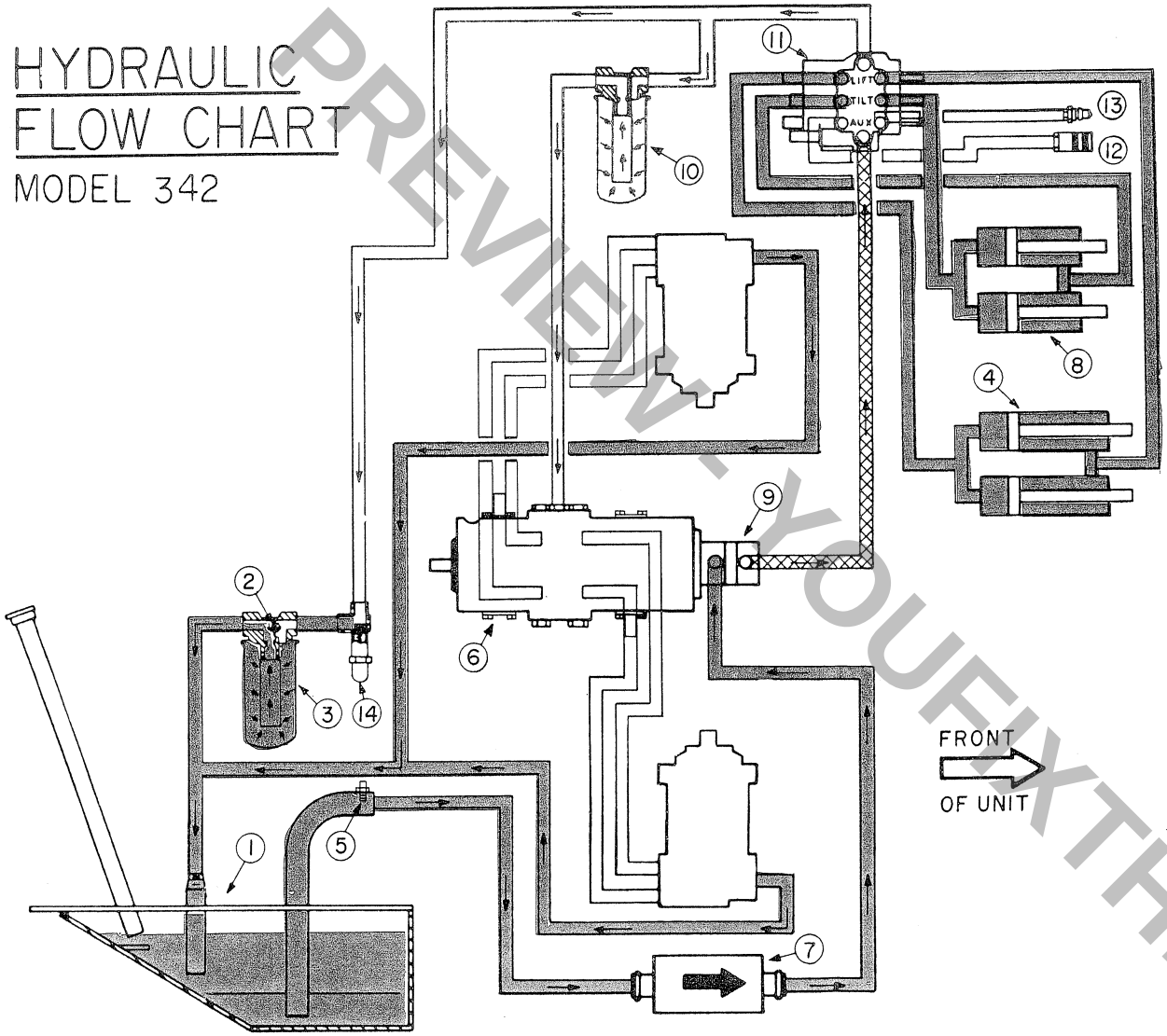
1. RESERVOIR, Capacity: 9 Gal. (34.1 L)
2. SUCTION SCREEN, 100 Mesh
3. TEMPERATURE SWITCH, HYDRAULIC OIL 225° F (107° C)
4. TANDEM PUMP
5. GEAR PUMP, 7.5 GPM (28.2 L/min)
6. LIFT CYLINDERS
7. TILT CYLINDERS
8. CHARGE RELIEF VALVE, 70 PSI [4.70 Bar]
9. CONTROL VALVE, 2000 PSI (136.00 Bar) MAIN RELIEF
10. AUXILIARY COUPLER, FEMALE
11. AUXILIARY COUPLER, MALE (PRESSURE OUT WITH AUX VALVE IN DETENT)
12. CHARGE AND RETURN CIRCUIT FILTER, 7 Micron

RED--EXTEND CYLINDER
BLUE--RETRACT CYLINDER
GREEN--CASE DRAIN AND RESERVOIR
YELLOW-CHARGE PRESSURE
CONTROL VALVE SUPPLY PRESSURE

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# HYDRAULIC FLOW CHART

## MODEL 342




LEGEND

1. RESERVOIR, Capacity: 12 Gal. (45.4 L)
2. BY-PASS VALVE, 25 PSI (1.70 Bar)
3. RETURN FILTER, 7 Micron
4. LIFT CYLINDERS
5. TEMPERATURE SWITCH, HYDRAULIC OIL 225° F (107° C)
6. TANDEM PUMP
7. SUCTION SCREEN, 100 Mesh
8. TILT CYLINDERS
9. VANE PUMP, 14.0 GPM (53.0 L/min)
10. CHARGE FILTER, 7 Micron
11. CONTROL VALVE, 2100 PSI (142.80 Bar) MAIN RELIEF
12. AUXILIARY COUPLER, FEMALE
13. AUXILIARY COUPLER, MALE (PRESSURE OUT WITH AUX VALVE IN DETENT)
14. CHARGE RELIEF VALVE, 145 PSI (9.86 Bar)

RED--EXTEND CYLINDER
BLUE--RETRACT CYLINDER
GREEN--CASE DRAIN AND RESERVOIR
YELLOW-CHARGE PRESSURE
CONTROL VALVE SUPPLY PRESSURE

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# Standard Torque Value Specifications & Procedures

NOTE: Some fasteners have torque specifications lower than those shown below. Use this chart only for unspecified torques.

Torque value listed for both unplated and plated hex-head capscrews.

| Screw Dia. Thread Pitch | Plain Head S.A.E. Grade 2 Foot-Pounds | 3-Radial Dashes S.A.E. Grade 5 Foot-Pounds | 6-Radial Dashes S.A.E. Grade 8 Foot-Pounds |
|---|---|---|---|
| 1/4-20 | 5 | 8 | 12 |
| 1/4-28 | 6 | 10 | 14 |
| 5/16-18 | 11 | 17 | 24 |
| 5/16-24 | 13 | 19 | 27 |
| 3/8-16 | 18 | 31 | 44 |
| 3/8-24 | 20 | 35 | 49 |
| 7/16-14 | 28 | 49 | 70 |
| 7/16-20 | 30 | 55 | 78 |
| 1/2-13 | 39 | 75 | 105 |
| 1/2-20 | 41 | 85 | 120 |
| 9/16-12 | 51 | 110 | 155 |
| 9/16-18 | 55 | 120 | 170 |
| 5/8-11 | 83 | 150 | 210 |
| 5/8-18 | 95 | 170 | 240 |
| 3/4-10 | 105 | 270 | 375 |
| 3/4-16 | 115 | 295 | 420 |
| 7/8-9 | 160 | 395 | 605 |
| 7/8-14 | 175 | 435 | 675 |
| 1"-8 | 235 | 590 | 910 |
| 1"-14 | 250 | 660 | 990 |

Procedure for Installing Pipe Thread Fittings

1. Use a good thread sealant on NPT threads (Teflon Tape, Teflon Spray, "Loctite" pipe sealant).

2. When applying thread sealant, do not put any on the first two threads from the end.

3. Always put thread sealant on the male thread, NEVER on the female thread.

4. Use judgement when torquing pipe thread fittings. Pipe threads will leak if under-torqued or over-torqued.

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# SPECIFICATIONS MODEL 342

## FLUID CAPACITIES

Cooling system..... 10 qt.(9.5 liters )

Fuel tank..... 14.3 gal. (54 liters)

Chain box..... 5.5 gal. (20.8 liters)

Engine lubrication oil (includes ½ qt. w/filter replacement)..... 4 qt. (3.8 liters) gas
6 qt. (5.7 liters) diesel

Hydraulic system..... 15 gal. (57 liters)

## HYDRAULIC SYSTEM

Pressure, relief..... 2000 to 2150 psi

Control..... 3-spool valve, foot pedals

Pump..... vane, 14 gpm (52.6 liters/min)

Filters..... (1) 100 mesh suction
(1) 7 micron charge inlet
(1) 7 micron return

## HYDRAULIC CYLINDERS

| | LIFT (2) | TILT (2) |
|---|---|---|
| Cylinder Type | Double Acting | Double Acting |
| Bore diameter | 2.5 in. (63.5 mm) | 3 in. (76.2 mm) |
| Rod diameter | 1.5 in. (38.1 mm) | 1.25 in. (31.8 mm) |
| Stroke | 28.38 in. (721 mm) | 11.25 in. (286 mm) |

## TRAVEL SPEEDS

Forward or reverse..... 0-5.5 mph (8.8 km/h)

## OPERATIONAL SPECIFICATIONS

Load rating (1/2 SAE tip-up) gas.... 1100 lbs. (500 kg)
diesel... 1100 lbs. (500 kg)

Tipping load (SAE) gas... 2200 lbs. (1000 kg)
diesel.. 2200 lbs. (1000 kg)

Breakout force..... 3100 lbs. (1403 kg)

Raising time..... 4.8 sec.

Lowering time..... 3.4 sec.

Dumping time..... 1.6 sec.

Rollback time..... 1.8 sec.

## KUBOTA DIESEL ENGINE

Fuel.....Diesel, No. 2

Cooling medium.....Liquid

No. of cylinders..... 3 in-line

Displacement..... 85.1 cu. in. (1395 cc)

* Horsepower..... 28.5 at 2800 RPM (21.2 kw)

Bore..... 3.35" (85 mm)

Stroke..... 3.23" (82 mm)

High idle speed..... 2800 RPM

* Torque..... 63 ft. lb. at 1700 RPM

Alternator..... 60 amp belt driven

Battery..... 12 volt, maintenance free
cold cranking rating: 500 Amps at 0°F. (-17°C.)

Air cleaner.....Replaceable dry cartridge type w/condition indicator

## FORD GASOLINE ENGINE

Fuel.....regular gas

Cooling medium.....Water

No. of cylinders..... 4 in-line

Displacement..... 98 cu. in. (1600 cc)

Bore..... 3.19" (80.98 mm)

Stroke..... 3.06" (77.62 mm)

* Horsepower..... 33 at 2600 RPM (24.7 kw)

* Torque..... ..... 72.8 FT. LBS. at 1600 RPM

High idle speed..... 2800 RPM

Alternator..... 60 amp belt driven

Battery..... 12 volt, maintenance free
cold cranking rating: 500 amps at 0°F. (-17°C.)

Air cleaner.....Replaceable dry cartridge type w/condition indicator

Governor.....Belt driven

Oil pressure.....hot @2000 RPM
35-40 psi (240-275 kn/m$^2$)

Spark plug..... 425-32704

Spark plug gap..... .032" (.813 mm)
point gap..... .025" (.635 mm)

Timing 10°-12° BTDC.....@ low idle with distributor

Dwell 38°-40°.....vacuum advance line plugged

* Manufacturers' Rating



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# MAINTENANCE CHART - ALL UNITS

| MAXIMUM HOURLY INTERVAL | | | | COMPONENTS | SERVICE REQUIRED | CAPACITY OR MEASUREMENT (G-denotes gasoline units) (D-denotes diesel units) |
|---|---|---|---|---|---|---|
| 10 | 100 | 500 | 1000 or year | | | |
| X | | | | Air Cleaner | Check indicator Empty dust cap | Clean or replace as needed |
| X | | | | Cooling System | Check coolant level | |
| X | | | | Engine Crankcase | Check oil level | Between marks on dipstick |
| X | | | | Loader pivot pins | Lubricate grease fittings | |
| X | | | | Fuel Filter Bowl | Check for water in bowl | Drain as needed |
| X | | | | General Conditions | Safety devices Loose, missing or damaged parts | |
| X | | | | Radiator (Liquid cooled) | Clean fins (See Note) | |
| | X | | | Belt | Tighten to proper deflection | |
| | X | | | Drive shaft splines | Lubricate grease fittings | |
| | X | | | Tires | Check air pressure | |
| | X | | | Brakes | Check | |
| | X | | | Spark arrestor muffler | Remove plug and clean out | |
| X* | X | | | Engine oil and filter | Change oil and filter | 332-G 4.0 qt. 342-D 6.0 qt.<br>332-D 4.9 qt. 442-D 9.0 qt.<br>342-G 4.0 qt. 552-D 6.0 qt.<br>(includes ½ qt. w/filter replacement) |
| | X | | | Engine cooling fins (332-G only) | Clean fins if obstructed | |
| | X | | | Battery | Check terminals and battery top | |
| | X | | | Engine breaker, points & plugs (332-G & 342-G) | Check, clean or replace | |
| X* | | X | | Hydraulic filter(s) | Replace element(s) | |
| X* | | X | | Drive chains | Tighten to proper deflection. Check fluid level. | |
| | X | | | Universal joints | Grease | |
| | | X | | Engine (332-G only) | Clean carbon from heads | |
| | | X | | Liquid cooled engine | Flush cooling system | |
| | | X | | Fuel filter | Change filter | |
| | | | X | Hydraulic Reservoir | Drain and refill | 332- Approx. 12 U.S. Gallons<br>342- Approx. 15 U.S. Gallons<br>442- Approx. 15 U.S. Gallons<br>552- Approx. 19 U.S. Gallons |
| | | | X | 100 mesh screen | Flush to clean | |
| | | | X | Chain case | Drain and refill | 332- 4.5 U.S. Gallons<br>342- 5.5 U.S. Gallons<br>442- 6.0 U.S. Gallons<br>552- 8.0 U.S. Gallons |

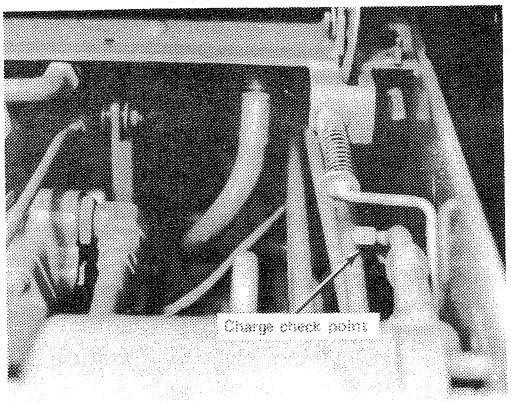
NOTE: Hourly intervals must be decreased under very hot, dusty, cold, corrosive conditions, or conditions with "air suspended" material (leaves, paper, chaff, etc.).

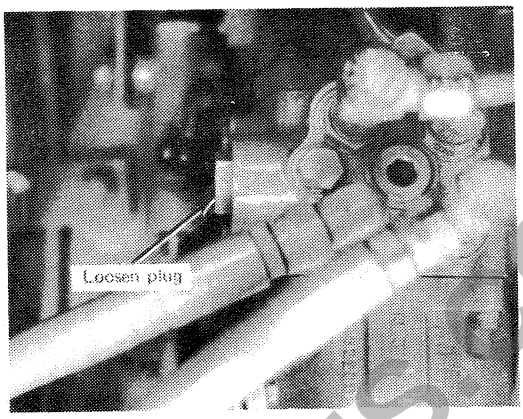
" X* " Perform the initial time at 50 hours, then at " X " intervals.



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# START–UP PROCEDURES––ALL UNITS

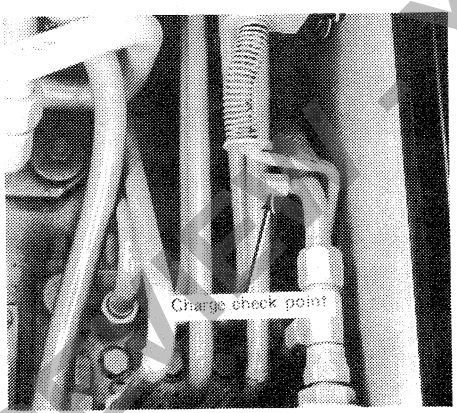


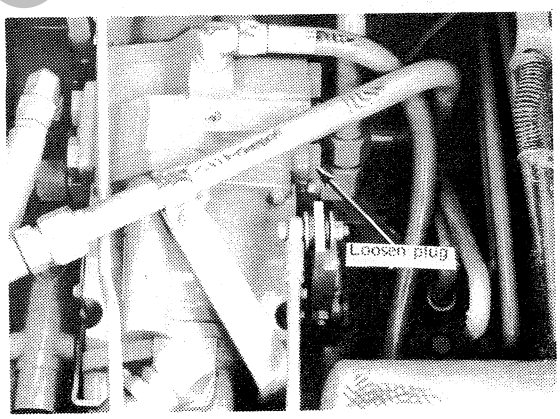




MODEL 342

Install psi gauge at indicated check point. Loosen charge relief poppet plug (on R.H. side of tandem) as shown, do not remove completely. Apply (5-10 psi) air pressure to reservoir and watch for oil flow from the loosened plug. If no indication of flow, operator may have to "jog" the starter (DO NOT START ENGINE) at 1 minute intervals until steady flow from loosened plug is obtained.

When flow is evident, tighten plug, maintain reservoir pressure, start engine at low idle and continue on to step #4.




MODEL 442

Install psi gauge at indicated check point. Loosen charge relief poppet plug (on L.H. side of tandem as shown), do not remove completely. Apply (5-10 psi) air pressure to reservoir and watch for oil flow from loosened plug. If no indication of flow, operator may have to "jog" the starter (DO NOT START THE ENGINE) at 1 minute intervals until a steady flow from loosened plug is obtained.

When flow is evident, tighten plug, and maintain reservoir pressure, start engine at low idle and continue on to step #4.



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# HYDRAULIC SYSTEM

Hydraulic Reservoir--All Units (service, draining and refilling procedures)

1. Whenever servicing any part of the system, clean off fittings, filler caps, etc., thoroughly prior to removal and be sure parts are cleaned before reinstalling.

2. Check fluid level every 10 hours of operation or daily. The hydraulic oil filler tube and dipstick is located at rear of unit (NOTE: See item #6.).

   WARNING! Hot liquid under pressure, allow to cool. Remove cap slowly or severe burns may result.

3. Change hydraulic fluid every 1000 hours of operation. If loader is operated in severe conditions, change the fluid more often.

4. To drain the reservoir: (USE PROPER SAFETY PROCEDURES!)

   Raise the lift arm to full height and roll back the bucket (allowing lift circuit oil drainage to reservoir). Shut off engine and proceed to drain the reservoir. When the reservoir is nearly empty, dump the bucket and lower the lift arm, then drain the remaining oil from reservoir.

5. Fill hydraulic reservoir with clean oil. See Unit Specifications or the Maintenance Chart for capacity requirements for each New Generation machine.

6. Make sure that dipstick is pushed all the way down fill tube when checking the oil level.

   CAUTION: Care must be taken to make sure that the flat of the dipstick is against the bottom of the fill tube surface and pushed as far as it will go into the fill tube, which is about 1/2" to 1" into tube.

7. Raise the lift arm to its extreme height, dump and curl back the bucket, and lower lift arm to the ground. Repeat this cycle at least 4 times to be sure air is not trapped in the system.

8. With the bucket and lift arm in the lowered position and the engine shut off, check the fluid level with the dipstick. Add fluid if needed.

9. Change hydraulic filters at the same time the reservoir fluid is changed, also flush 100 mesh screen until cleaned.

10. When installing new filter elements, lubricate gasket and tighten.

11. After changing the hydraulic reservoir fluid, block machine up, with an operator in seat, run engine at full throttle. Have the operator activate "T" bar using light force, operate 5 minutes in forward travel and 5 minutes in reverse. This procedure will help eliminate contaminants in the power loop.



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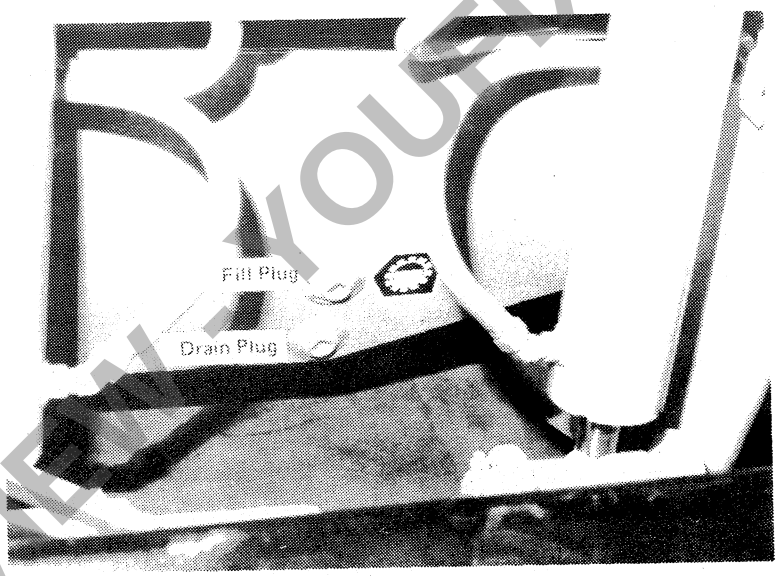
Replacement of Drive Chain (80H) Models 332 and 342 (cont)

13. Hold adjusting screw and tighten the adjusting nut an additional 1/4 inch turn. This PRE-LOAD is necessary to prevent movement of the idler arm assembly.

14. Fill the chain case with oil, the level should be to the bottom of the upper plug hole.

15. Check chain case cover for damage, clean off the gasket surface, install gasket and cover.

    Replace sealing washers (4) if any are damaged. Tighten threadrolling capscrews but do not overtighten.




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