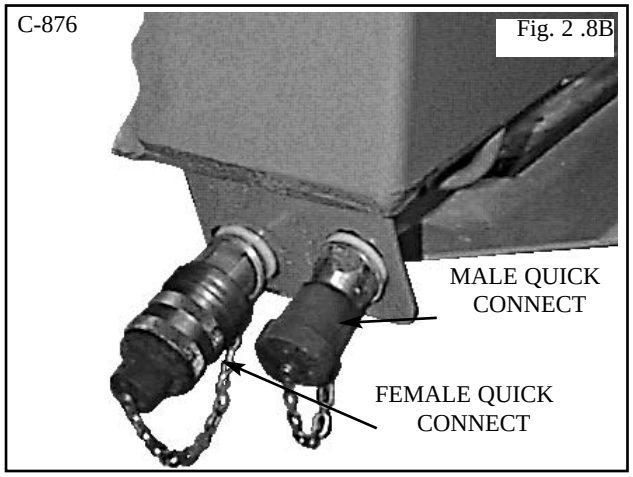
MAIN INDEX

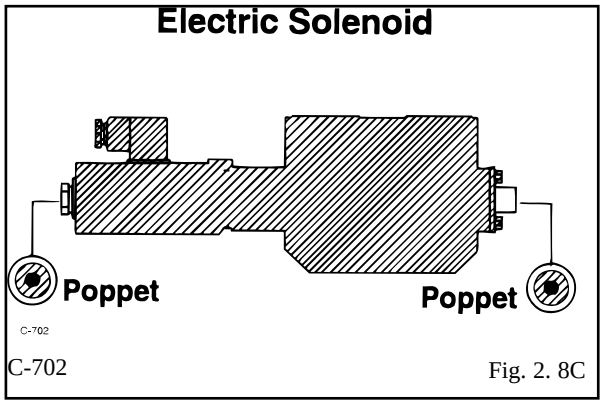


When the auxiliary circuit is not in use, and before starting the loader, ensure the push-pull switch located on the R.H. side of the instrument panel is in the off position, otherwise starting the loader may be difficult or impossible and damage to the starter may occur.

WARNING

Return the auxiliary hydraulic switch located in the dash to the "OFF" position when not in use.

This machine is equipped with electric solenoid controlled auxiliary hydraulics, if for any reason the loader stops or looses current when the electric solenoid is engaged, it can be disengaged by simply turning off the switch located in the upper panel, or by depressing the poppet located at either end of the control valve. (See Fig. 2. 8C).



C-702 Fig. 2. 8C

2. 9 FOOT PEDALS

Operation of the boom lift cylinders, bucket tilt cylinders and auxiliary hydraulic circuit are controlled by foot pedals (Fig. 2. 9) connected to a hydraulic control valve. The hydraulic control valve is a series type valve which allows simultaneous use of both the boom lift and bucket tilt circuits. The control valve is equipped with a relief valve for circuit protection.

WARNING

To avoid personal injury, lower the boom arms, shut off the engine, raise the seat bar and cycle the hydraulics to ensure they are locked. Then, unlatch the seat belt and exit the loader. Do not enter or exit with the engine running unless as specified in this manual or under specific service and backhoe operating procedures.

Boom Lift – The L.H. pedal is the boom lift control (Fig. 2. 9). To raise the boom press on the heel (2) of the pedal. To lower the boom press on the toe (1) of the pedal. Firm pressure on the toe (2) of the pedal will lock the boom in float position. This allows the bucket to follow the ground as the loader moves backward.

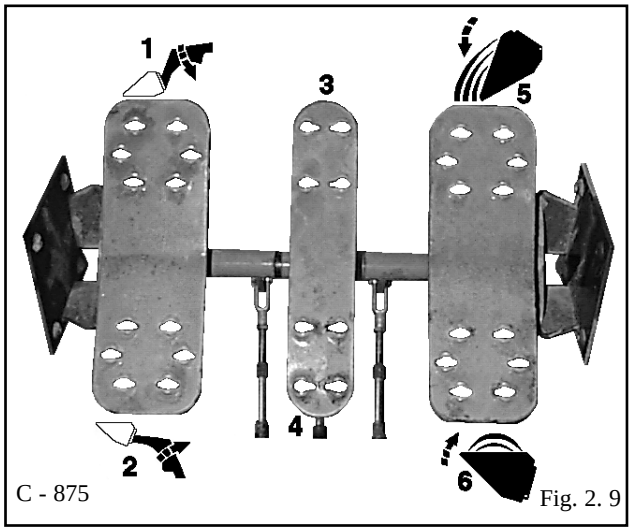


Fig. 2. 9

Auxiliary Hydraulics – The center pedal is used to engage the auxiliary hydraulic circuit to power an attachment such as an auger. Pressing on the toe (3) of the pedal provides hydraulic pressure to the female quick - connect coupling located at the front of the boom arms.

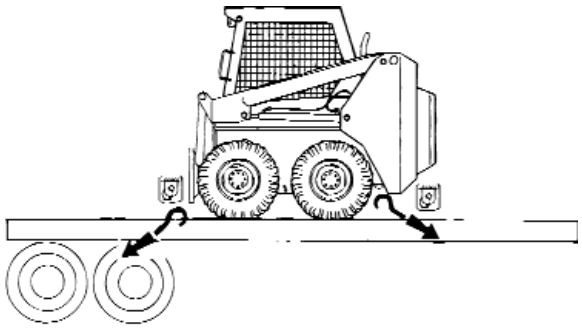
Firm pressure on the toe (3) of the pedal places the valve in detent position providing a continuous flow of hydraulic oil to the attachment. Pressing on the heel of the pedal (4) provides hydraulic pressure to the male quick-connect coupling reversing the flow of hydraulic oil. When the auxiliary circuit is not in use return the foot pedal to neutral position, otherwise starting the loader may be difficult or impossible and damage to the starter may occur.

Bucket Tilt – The R.H. pedal is the bucket tilt (dump) control. Pressing on the toe (5) of the pedal will dump the bucket. Pressing on the heel (6) of the pedal will roll the bucket back.

4. Lower the restraint bar to activate the brake system. Towing with the restraint bar up could result in damage to the braking system. If towing from the front, remove the blocks supporting the attachment prior to engaging tow equipment.
5. The attachment point on the towing or winching equipment should be kept as low as possible and in as direct a line as possible with the stuck loader. A steep tow line angle or side pull could result in upsetting the stuck loader.

3. 9 SECURING

There are 4 points provided for securing the loader while trailering (Fig. 3. 9). These attachment points will accommodate a 5/16" through 5/8" diameter chain for use with accompanying load binders.



C-727 Fig. 3.9

WARNING

To avoid personal injury, lower the boom arms, shut off the engine, raise the seat bar and cycle the hydraulics to ensure they are locked. Then, unlatch the seat belt and exit the loader. Do not enter or exit with the engine running unless as specified in this manual or under specific service and backhoe operating procedures.

3. 10 BATTERY MAINTENANCE AND BOOSTING:

Inspect the battery on a regular basis for damage such as a cracked or broken case or cover which would allow electrolyte loss.

WARNING

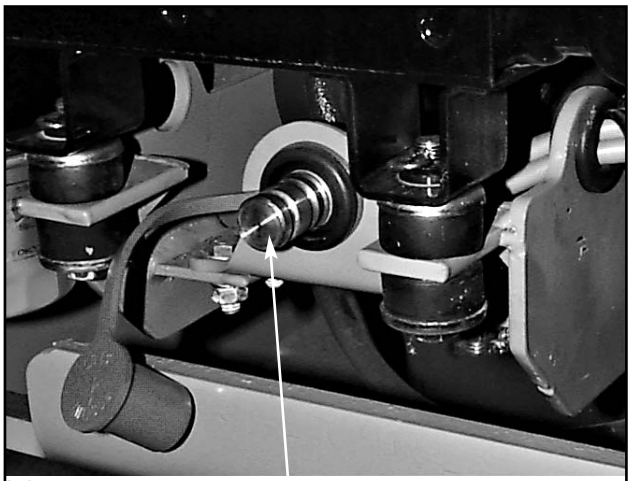
To prevent personal injury DO NOT charge a frozen battery because it can explode and cause personal injury. Let the battery warm to 60ÞF. (15.5ÞC.) before putting on a charger.

Check the battery cables for tightness and that they are corrosion free. Remove any acid corrosion from the battery and cables with a baking soda and water solution. Coat the terminal connections with di - electric grease.

If it is necessary to use a booster battery to start the engine, BE CAREFUL! There must be one person in the operator's seat and one person to connect and disconnect the battery cables. The ignition must be in the "OFF" position. The booster battery to be used must be 12 volt. Connect the end of the first cable to the positive (+) terminal of the booster battery. Connect the other end of the same cable to the optional boosting lug. (See Fig. 3. 10).

WARNING

Lead-acid batteries contain sulfuric acid which will damage the eyes or skin on contact. Always wear goggles to avoid acid in the eyes. If acid contacts the eyes, wash immediately with large quantities of clean water and get medical attention. Wear rubber gloves and protective clothing to keep acid off the skin. If acid contacts the skin, wash off immediately with clean water.



C-944 Boosting Lug Fig. 3. 10

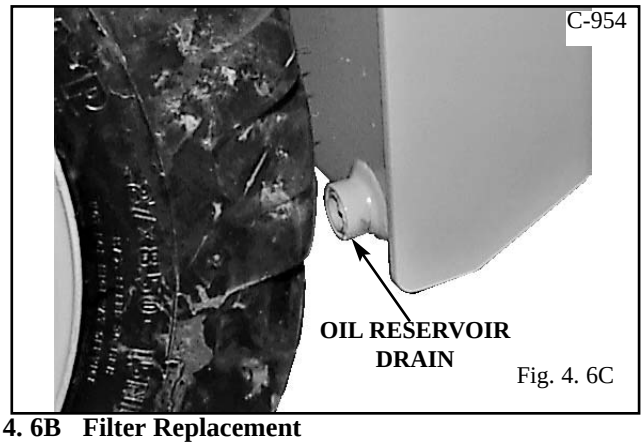


Fig. 4. 6C

4. 6B Filter Replacement

The hydraulic filter must be changed after the first 50 hours of operation and every 150 hours thereafter.

To change the filter; set the parking brake, lower the boom arms, ground any attachment and shut off the engine. Remove the oil filter. Lubricate the seal of the new filter and install hand tight.

4. 6C Draining System Fluid

Change the hydraulic oil after 1000 operating hours or if the oil has become contaminated or after any major hydrostatic repair.

To drain the oil; remove the drain plug located at the bottom of the oil reservoir (Fig. 4. 6C) on the L.H. side.

Refill the hydraulic oil reservoir with 10W30 API Classification SE/CD engine oil only.

Fig. 4. 7A

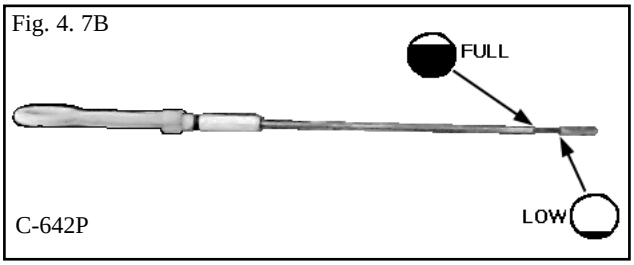


Fig. 4. 7B

4. 7 ENGINE MAINTENANCE

4. 7A Oil Level Check

To check the oil level, stop the engine with the loader on level ground, set parking brake and open the rear door and remove the dipstick (Fig. 4. 7A).

Keep the oil level between the full and low mark on the dipstick (Fig. 4.7B). Do no fill above the full mark – use 10W30 API classification SE/CD oil.

4. 7B Engine Oil and Filter Replacement

Operate the engine until warm. Stop the engine.

Remove the oil drain plug located at the bottom of the oil pan.

Remove the oil filter. Clean the filter housing surface. Put clean oil on the seal of the new filter. Install the new filter and tighten hand tight.

Replace the oil drain plug. Remove the filler cap and add oil. See specifications for quantity. Start the engine and run for 5 minutes. Stop the engine and check for leaks at the filter. Recheck the oil level and add oil until the level is at the top mark on the dipstick. Change the engine oil every 75 hrs. and the oil filter every 150 hrs. as indicated in the service schedule.

4. 7C Cooling System Fluid

WARNING

To avoid personal injury: DO NOT remove the radiator cap when the engine is hot.

The engine cooling system fluid is a 50 - 50 mixture of ethylene glycol and water for cold-weather protection. See specifications for quantity.

To drain the cooling system; remove the radiator cap, open the drain valve located on the base of the radiator.

4. 11G Engine

SYMPTOM	PROBABLE CAUSE	SOLUTION
Excessive lubricant oil consumption	Piston rings gap facing the same direction	Shift gap direction
	Oil ring worn or stuck	Replace
	Piston ring groove worn	Replace
	Valve stem and guide worn	Replace
	Crankshaft bearing and crank pin bearing worn	Replace
Fuel mixed into lubricant oil	Injection pump's plunger worn	Replace pump element or pump
	Injection pump broken	Replace
Water mixed into lubricant oil	Head gasket defective	Replace
	Cylinder block or cylinder head flawed	Replace
Low oil pressure	Engine oil insufficient	Replenish
	Oil strainer clogged	Clean
	Relief valve stuck with dirt	Clean
	Relief valve spring weakened or broken	Replace
	Excessive oil clearance of crankshaft bearing	Replace
	Excessive oil clearance of crank pin bearing	Replace
	Excessive oil clearance of rocker arm bearing	Replace
	Oil passage clogged	Clean
	Oil pump defective	Use the specified oil type
High oil pressure	Different type of oil	Use the specified oil type
	Relief valve defective	Replace
Engine overheated	Engine oil insufficient	Replenish
	Fan belt broken or elongated	Change or adjust
	Cooling water insufficient	Replenish
	Radiator net and radiator fin clogged with dust	Clean
	Inside of radiator corroded	Clean or replace
	Cooling water flow route corroded	Clean or replace
	Radiator cap defective	Replace
	Overload running	Loosen the load
	Head gasket defective	Replace
	Incorrect injection timing	Adjust
	Unsuitable fuel used	Use the specified fuel
Deficient output	Incorrect injection timing	Adjust
	Engine's moving parts seem to be seizing	Repair or replace
	Uneven fuel injection	Repair or replace injection pump
	Deficient nozzle injection	Repair or replace nozzle
	Compression leak	Replace head gasket, tighten cylinder head bolt, glow plug and nozzle holder
Battery quickly discharges	Battery electrolyte insufficient	Replenish distilled water recharge
	Fan belt slips	Adjust belt tension or change
	Wiring disconnected	Connect
	Rectifier defective	Replace
	Alternator defective	Replace
	Battery defective	Change