



J.I. Case

Service Manual

1700 Series

Skid Steer or Unloader

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Service Manual

CA-S-1700 SER

1700 UNI-LOADER

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SAFETY PRECAUTIONS



1. Never place any part of your body between the chassis and the loader frame and/or lift and tilt cylinders if service being performed prohibits the use of a safety stop.
2. Whenever the bucket must be raised to aid in servicing, block the bucket in position with lift cylinder stops or a suitable safety stand.
3. Operate controls from the operator's seat only.
4. When working in the area of the jackshaft or drive bell with the engine running, avoid wearing loose clothing if possible and use extreme caution.
5. When working at the rear with the engine running, use care not to be caught in the fan blades or drive belts.
6. Keep hands and fingers clear of drive chains if running with drive compartment cover removed.

GENERAL ENGINE SPECIFICATION 1737 UNI-LOADER

SPARK IGNITION ENGINES

General

Type	4 Cylinder, 4 Stroke Cycle, Valve-in-Head
Firing Order	1-3-4-2
Bore	3-3/8 Inches
Stroke	4-1/8 Inches
Compression Ratio	7.1 to 1
Piston Displacement	148 Cubic Inches
No Load Governed Speed	2150 RPM
Rated Engine Speed	2000 RPM
Engine Idling Speed	950 to 1000 RPM
*Valve Tappet Clearance (Intake)	(Hot and Cold) .014 Inches
(Exhaust)	(Hot) .014 Inches
	(Cold) .020 Inches
Exhaust Valve Rotators	Positive Type
*Hot Settings Are Made After The Engine Has Operated At Thermostat Controlled Temperature For At Least Fifteen Minutes.	

Piston and Connecting Rods

Rings per Piston	4
Number of Compression Rings	3
Number of Oil Rings	1
Type Pin	Full Floating Type
Type Bearings	Replaceable, Precision Steel Back, Copper Lead Alloy Liners.

Main Bearings

Number of Bearings	3
Type Bearings	Replaceable, Precision Steel Back, Copper Lead Alloy Liners

Engine Lubricating System

Crankcase Capacity	4 Quarts
With Filter Change	5 Quarts
Oil Pressure	24 to 32 Pounds with Engine Warm and Operating at Rated Engine Speed
Type System	Pressure Spray Circulation
Oil Pump	Gear Type
Oil Filter	Full Flow, Spin on Type

Fuel System

Carburetor	Marvel-Schebler TSX Series
------------------	----------------------------

Distributor Ignition

Contact Point Gap	.020 Inch
Dwell Angle	42°
Spark Plugs	Prestolite 18 8
Plug Gap	.025 Inch
Thread	18 MM
Shank Length	1/2 Inch

Engine Timing

Static Timing	6° BTDC
Running Timing	40° BTDC at Rated Engine Speed

CLICK ANYWHERE FOR MORE DETAILS

Section 1020

DETAILED SPECIFICATIONS 480 AND 580 SERIES B TRACTORS

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Section

2013

CYLINDER HEAD AND VALVES

148, 159, 188 AND 201
SPARK IGNITION ENGINES

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LOCATING TOP DEAD CENTER AND TAPPET ADJUSTMENTS

FIRING ORDER ----- 1-3-4-2

The Top Dead Center position of number 1 and 4 cylinders is indicated by the TDC mark on the flywheel. Refer to Figure 29.

The tappet adjustments can be done in two steps as described in the following manner.

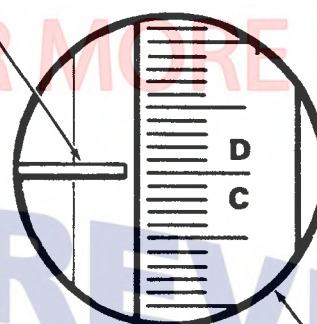
COLD SETTING

STEP 1 - Remove the valve cover. Crank the engine until the timing pointer is aligned with the TDC timing mark on the flywheel, Figure 29. Check the push rods on No. 1 cylinder for looseness. If the push rods are loose, No. 1 cylinder is at TDC on the compression stroke. If the push rods are tight, crank the engine one complete revolution and align the pointer and the TDC mark on the flywheel, Figure 29.

Check and adjust the following valve clearances; intake valve at .014" clearance on cylinders 1 and 2, and the exhaust valves on cylinders 1 and 3 at .020" clearance, Figure 30.

STEP 2 - Crank the engine one complete revolution and align the timing pointer and the TDC mark on the flywheel, Figure 29. Cyl-

TIMING POINTER



FLYWHEEL HOUSING OPENING

Figure 29

inder No. 4 should be at TDC on the compression stroke. Check the push rods on No. 4 cylinder for looseness.

Check and adjust the following valve clearances; intake valves at .014" clearance on cylinders 3 and 4, and the exhaust valves on cylinders 2 and 4 at .014" clearance, Figure 30.

HOT SETTING

Follow steps 1 and 2 while the engine is hot. The tappet clearances for hot settings are .014" for the intake valves and .014" for the exhaust valves.

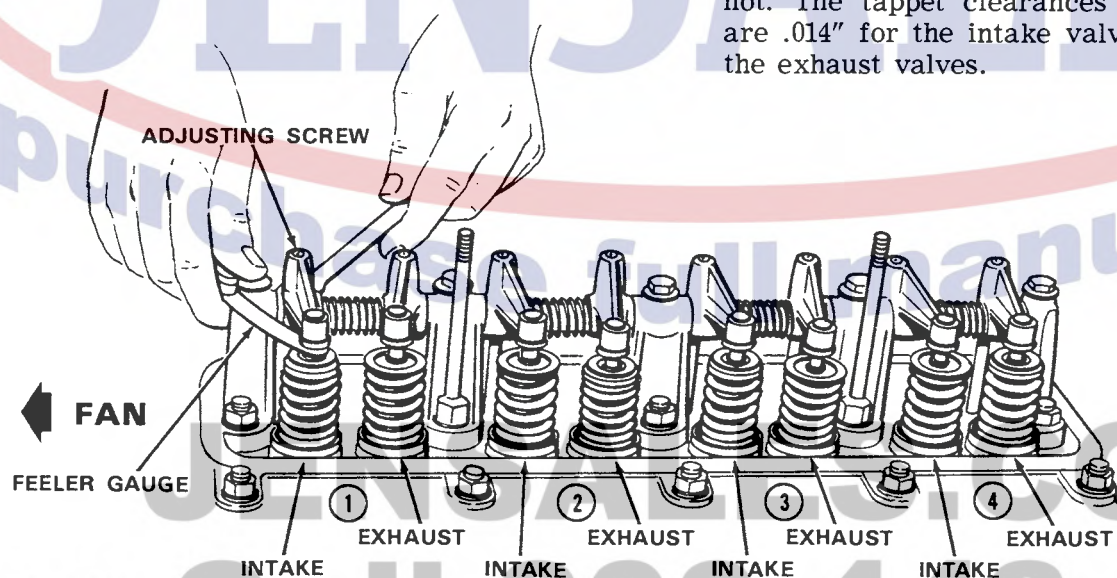


Figure 30

IMPORTANT: The valve tappet clearance is a critical adjustment.

The entire combustion system of the engine will be seriously affected by adjusting the valve tappet clearance to any other setting.

Excessive clearance will change the valve timing and could result in overheating, power loss and possible valve breakage.

Insufficient clearance would allow the valves to remain open and be burned by the hot exhaust gases.

Section

2014

CYLINDER HEAD AND VALVES 188 DIESEL ENGINES

SPECIFICATIONS

	Maximum Limit Including Wear [®]
CYLINDER HEAD	
Warpage	.006"
EXHAUST VALVES	
Tappet Clearance (Hot and Cold)	.014"
Face Angle	44°
Face Run-Out	.002"
O.D. of Head	1.398" to 1.408"
O.D. of Stem	.3399" to .3409" .002"
Length	6.340" to 6.364"
Insert Seat Angle	45°
Seat Face Width	.0608" to .0962"
Seat Run-Out	.002"
Insert Height	.2475" to .2525"
O.D. of Insert	1.4450" to 1.4505"
I.D. of Insert	1.245" to 1.255"
INTAKE VALVES	
Tappet Clearance (Hot and Cold)	.014"
Face Angle	44°
Face Run-Out	.002"
O.D. of Head	1.599" to 1.609"
O.D. of Stem	.3409" to .3419" .002"
Length	6.339" to 6.364"
Seat Angle	45°
Seat Run-Out	.002"
Seat Width	.0704" to .1057"

CLICK ANYWHERE FOR MORE DETAILS

Section 2023

ENGINE BLOCK ASSEMBLIES

201G, 188G, 159G, 148G SPARK IGNITION ENGINES

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Section
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MODEL TSX SERIES CARBURETOR
148G SPARK IGNITION ENGINE

SPECIFICATIONS

CARBURETOR

Type	Marvel-Schebler Updraft, Single Venturi with shut-off solenoid.
Magnetic fuel shut-off solenoid	12 Volt
Idle Speed adjustment	600 to 650 RPM
Idle mixture adjustment	Approximately 1 turn open
Load adjustment	Approximately 2 turns open
Float adjustment	1/4" from gasket
Venturi (at narrowest point)	.782"
Power jet	.0635"
Main nozzle	.115"
Upper Vent hole	.0465"
Idling jet	.033"
Float valve seat	.070"
Idle feed hole	.040"

Choke Lever Spring:

Number of coils	5
Wire diameter	.0317"
I.D.	.281"

Idle Adjusting Needle Spring:

Number of coils	5
I.D.	.203"
Free length	.531"

Choke Valve Spring:

Number of coils	26 to 27
Wire diameter	.029"
Free length	1.062"

Throttle Lever Spring

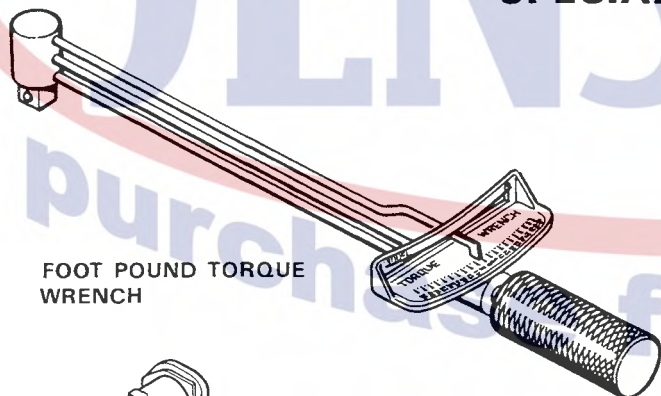
Number of coils	4-1/2 to 5
I.D.	.165"
Free length	.281"

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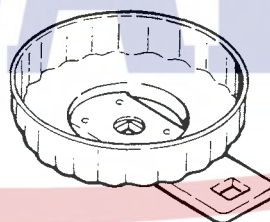
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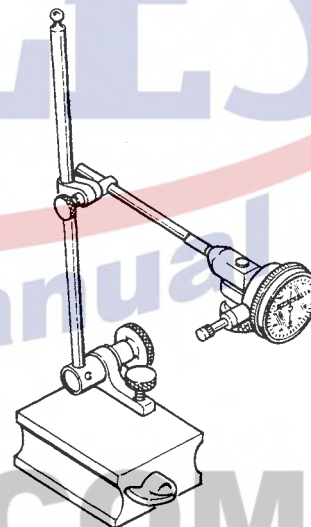
SPECIAL TOOLS



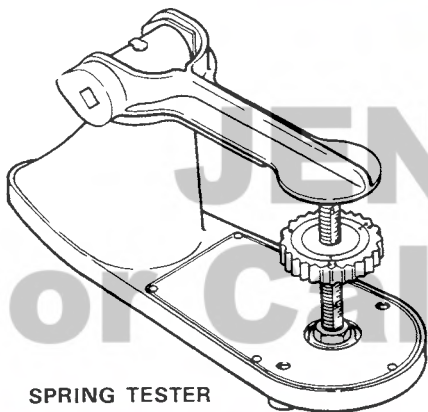
FOOT POUND TORQUE
WRENCH



FILTER WRENCH
A64761



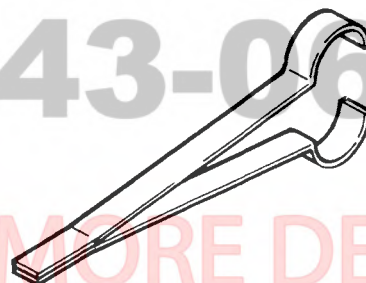
DIAL INDICATOR



SPRING TESTER



SLEEVE TOOL CD322



SEAL COMPRESSION TOOL CD331



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** *When testing or adjusting fuel injectors, do not place your hands or arms in front of the injector nozzle.*

The fuel spray from an injector has sufficient penetrating power to puncture the flesh and destroy tissue. Should the fuel enter the blood stream, it may cause blood poisoning.

In the event the skin is punctured from the dis-

charge of an injector, apply the following first aid immediately and then have the injury examined by a physician as quickly as possible.

Wash the injured part with boric acid solution, support the injured finger or hand with a splint and sling so the injured part will remain absolutely at rest until a physician can examine it.

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Section

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FUEL STRAINER AND FILTER

SPARK IGNITION ENGINES

SPECIFICATIONS

Fuel strainer servicing Every 200 hours

Fuel filter replacement Every 1000 hours or earlier when loss of
engine horsepower is indicated.

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is probably defective, requiring end cover replacement.

6. Inspect the pressure plate for scoring, pitting and excessive wear.

Assembly

1. Position gears in body as shown in Figure 29. The check valve spring in the driven gear must be up.

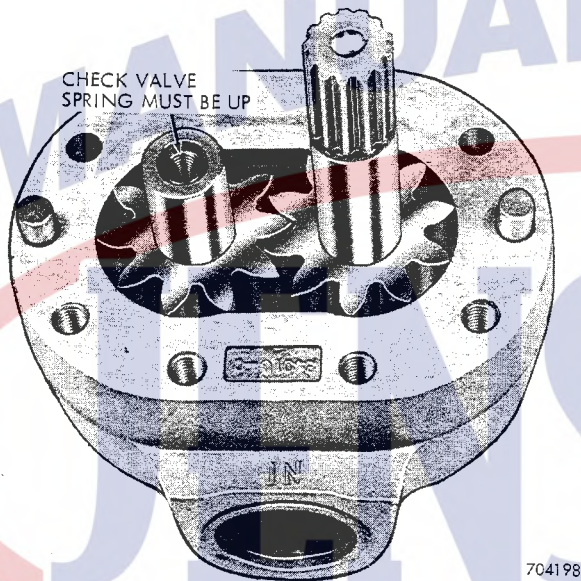


Figure 29 - Installing Gears

2. If the shaft seal was removed, press in a new seal. The seal must be square to the bushing within .002" and pressed in .010"-.020" below the edge of the seal bore.
3. Coat the smooth side of the pressure plate with a light, clean grease and position on end cover as shown in Figure 30. Then coat the O-ring with grease and position in groove formed by the pressure plate and end cover.
4. Set body on work bench with gears up and install end cover over gears being careful not to damage the shaft seal. When end cover starts on dowel pins invert the pump and set the pump on open jaws of vise. Strike the body with a soft hammer until the body is seated against the end cover.
5. Secure the end cover to the body with the eight ferry head bolts (four long and

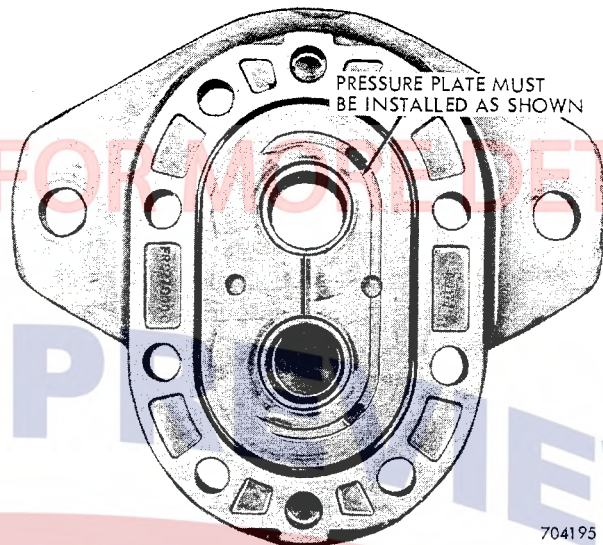


Figure 30 - Pressure Plate Installed

four short). Torque the bolts evenly to 25-35 foot pounds. Torque bolts in sequence as shown in Figure 31.

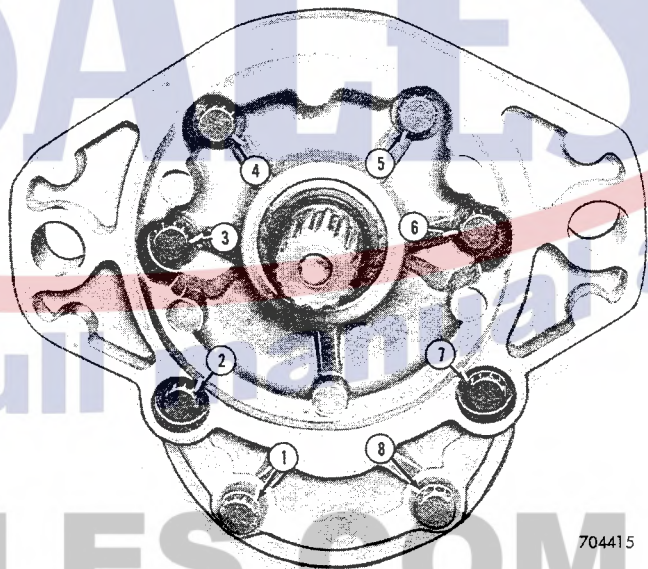


Figure 31 - Torque Sequence

Installation

1. Position pump against the gear box flange and install mounting bolts, lockwashers and nuts. Then install the filter body mounting capscrews with lockwashers and flat washers. Torque the pump mounting bolts to 45-55 foot pounds and the filter body mounting capscrews to 15-20 foot pounds.

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