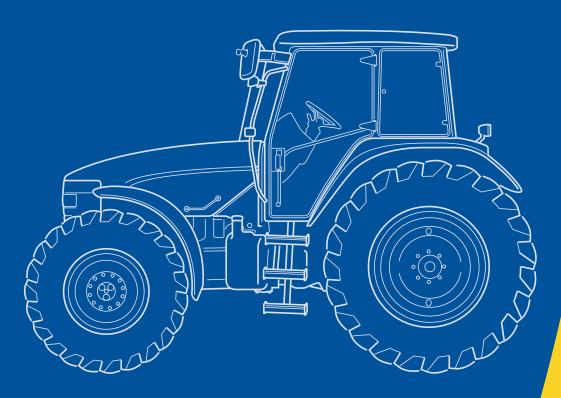
## New Holland TM115 Sample File.

# This single sample file contains samples for

New Holland TM115 Parts - 1382 pages New Holland TM115, TM125, TM135, TM150, TM165 operators manual - 379 pages New Holland TM115, TM125, TM135, TM150, TM165 workshop manual - 1852 pages

## **OPERATOR'S MANUAL**

TM115 TM125 TM135 TM150 TM165



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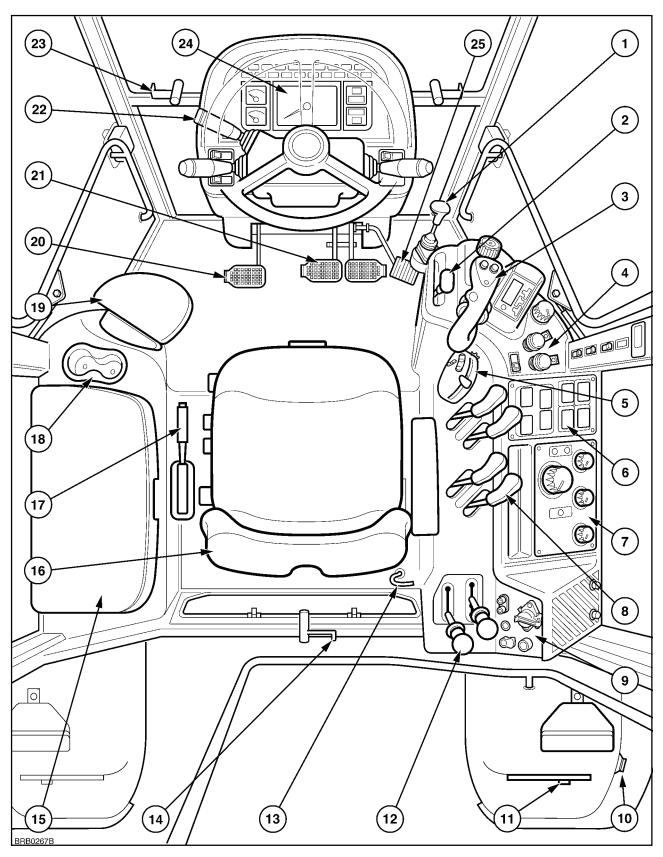


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## **SERIES TM**

Repair Manual - TM115 / 125 / 135 / 150 / 165





## NEW HOLLAND

**GENERAL** 

## **Repair Manual – TM Series Tractors**

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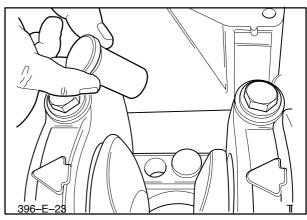
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6. Lift out the tappets, Figure 3, and place in a numbered rack for reassembly.

#### Inspection and repair

- Inspect the camshaft journals, lobes, for damage, pitting, or heat discolouration. If any of these conditions exist install a new camshaft.
- Inspect the oil pump drive gear on camshaft for broken or worn teeth, and mating gear on oil pump. If any wear or damage is apparent fit new gears.
- 3. Check each tappet for wear or damage and check diameters, if not to specification renew, 25.15–25.17mm (0.9900–0.9910 in).
- Measure the diameter and out-of-round condition of bearing journals, if exceeded fit a new camshaft, 60.693-60.719mm (2.389-2.390 in).

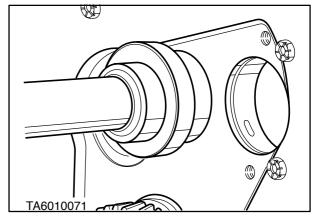


3

#### **CAMSHAFT BEARINGS**

- Inspect the camshaft bearings for wear or damage. Measure the clearance between the internal diameter of bearing and outside diameter of respective journal, 0.025–0.076mm (0.001–0.003 in).
- 2. If specification is exceeded install new bearings using, Remover/Replacer Tool No FT 6203, or 1255 and handle, Tool No N 6261–A or 1442, Figure 4.
- 3. To remove, Position tool against bearing to be removed and attach handle, driving bearing from bore.
- 4. To install, align oil holes of new bearing with holes in block, and drive bearing into bore using tools as described.

**NOTE:** A positive alignment check can only be made with crankshaft removed when a 4.6mm (0.018 in) rod can be passed down the oil passage from the crankshaft main bearing. Bearing is correctly positioned when end of rod passes through oil hole in the bearing.



4

#### Air Cleaner

NOTE: It is not necessary to remove the complete air cleaner body, as described below, to service the air cleaner elements.

#### Removal

- 1. To remove the air cleaner body from the vehicle, raise the engine hood. Slacken and remove the hose clamps on the aspirator tube to muffler, inlet manifold and or turbocharger connection when fitted.
- 2. Remove the air cleaner attaching bolts from the engine hood frame and remove the air cleaner body from the vehicle.

#### Disassembly

1. Unscrew the wing nut and extract the outer element as the nut is unscrewed, Figure 32, naturally aspirated models, Figure turbocharged models.

**IMPORTANT:** The inner safety element, Figure 34. should not be removed or disturbed unless it is damaged or contaminated with dirt by a faulty outer element .

2. Remove the retaining locknut and extract the inner element, Figure 34.

#### Inspection and Repair

1. Clean and examine the outer casing and repair or seal any damaged seams.

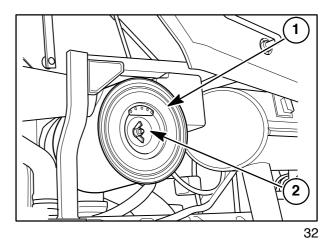
#### **Outer Element**

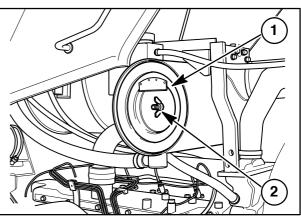
- 1. If dust is present inside the the outer element it must be renewed. If satisfactory clean the element by tapping both ends on the palm of the hand. Do not tap the element against a hard surface as it will be damaged or distorted.
- 2. Alternatively, compressed air, not exceeding 2 bar (30 lbf in<sup>2</sup>) may be used. Insert the air line nozzle inside the element and blow the dust from the inside through the element to the outside. Blow loose particles from the outside of the element by holding the nozzle at least 150 mm (6 in.) from the element, Figure 35.

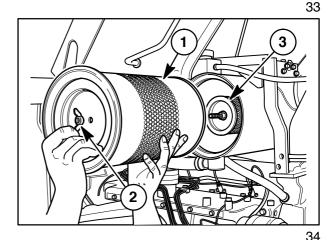


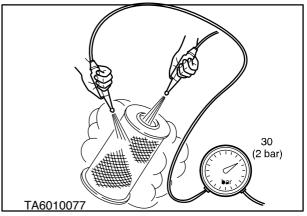


Wear eye protection and a face mask when carrying out this operation.









35

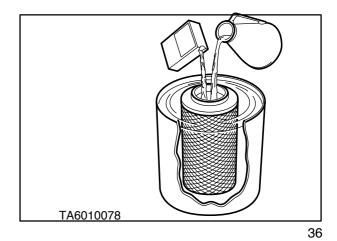
If the filter element is undamaged wash the element every 300 hrs, or after five dry cleanings.

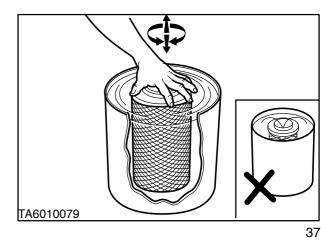
**IMPORTANT:** Never use oil, petrol, or solvent. Use only water but not hotter than the hand can stand, otherwise the element may be damaged.

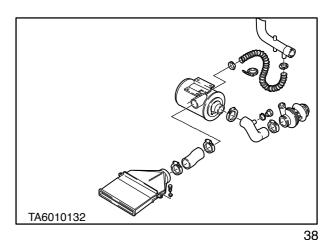
- 3. Seal the small hole at the closed end of the filter with a strip of adhesive tape and place the filter open end up in a deep flat bottomed container or tub. Add a small amount of non–sudsing washing powder (automatic washing machine type) to the inside of the filter element.
  - Add warm water  $35^{\circ}$  C ( $100^{\circ}$  F) to the inside of the element until the level in the container is just below the open end of the element. Allow the element to soak for at least 15 minutes (but never more than 24 hours) in the cleaning solution.
- After soaking gently agitate the element being careful not to allow dirty cleaning solution from the container to splash into the inside of the element.
- 5. Rinse the element in clean cold water allowing water to flow from the inside through the element until the water comes through clear. If using a hose do not use a pressured flow a slow trickle is sufficient. Ensure water is allowed to flow through the entire element.
- Remove the adhesive tape and shake excess water from the filter element and allow to dry naturally. The element will need 24–48 hours to dry thoroughly. Install a new element at this stage retaining the washed element for the next service.

**IMPORTANT:** Do not attempt to dry the element with compressed air or install before thoroughly dry as it may rupture. It is recommended that a new element is installed at this service and the washed element allowed to dry and retained for installation at the next service.

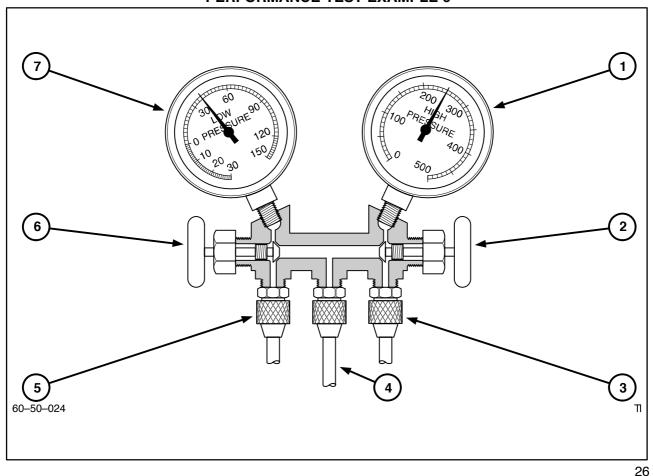
- 7. After drying thoroughly, examine the paper pleats carefully, this can be done by inserting a lamp into the middle of the element and observing the element surface. An even, fine pattern of light indicates the element is clean, undamaged and suitable for further service. If this is not the case discard the element.
- 8. Every 600 hours the element must be renewed.







**Turbocharged Air Cleaner Components** 



#### **Performance Test Example 6**

- 2. High Side Hand Valve Closed
- 3. High Side Hose Connected to High Side Service Connector
- 4. Not Used

1. High Side Normal

#### **PROBLEM:**

Insufficient or no cooling.

#### CAUSE:

Large amount of air in system.

#### **CONDITIONS\***

Low side pressure too high. Gauge should read 1-2 bar  $(15-30 \text{ lbf/in}^2)$ .

High side pressure too high. Gauge should read 13.3–14.8 bar (194–215 lbf/in²).

Evaporator air not cool.

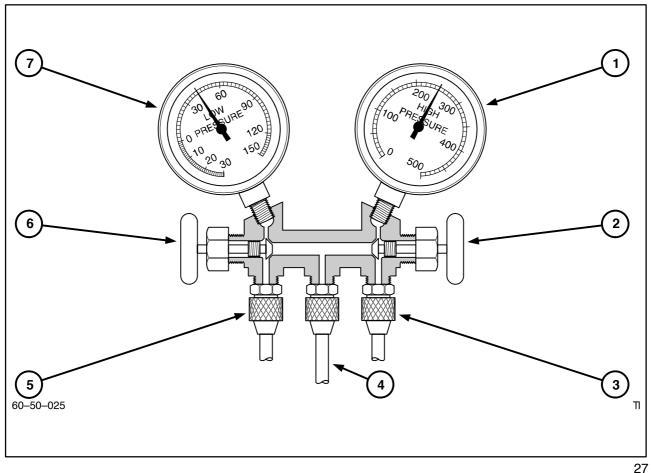
- **5.** Low Side Hose Connected to Low Side Service Connector
- 6. Low Side Hand Valve Closed
- 7. Low Side Normal

#### **CORRECTIVE PROCEDURES**

- Discharge and recover the refrigerant from the system.
- 2. Replace the receiver/dryer.
- 3. Evacuate the system.
- 4. Charge the system.
- 5. Performance test the system.

**DIAGNOSIS:** Air in system. This, and the moisture in the air, is contaminating the refrigerant, causing the system to operate improperly.

**NOTE:** Test procedure based upon ambient temperature of 35°C (95° F). For proper high side gauge reading for other ambient temperatures, refer to the pressure temperature chart.



#### Performance Test Example 7

- 1. High Side High
- 2. High Side Hand Valve Closed
- 3. High Side Hose Connected to High Side Service Connector
- 4. Not Used

#### **PROBLEM:**

Insufficient or no cooling.

#### CAUSE:

Improper operation of thermostatic expansion valve (stuck open)

#### **CONDITIONS\***

Low side pressure too high. gauge should read 1-2 bar  $(15-30 \text{ lbf/in}^2)$ .

High side pressure too high. Gauge should read 13.3–14.8 bar (194–215 lbf/in²).

Evaporator air warm.

Evaporator and suction hose (to compressor) surfaces show considerable moisture.

#### **CORRECTIVE PROCEDURES**

1. Check for sticking expansion valve as follows:-

- Low Side Hose Connected to Low Side Service Connector
- 6. Low Side Hand Valve Closed
- 7. Low Side Hide

Operate the system at maximum cooling.

Check the low side gauge. The pressure should drop slowly.

2. If the test indicates that the expansion valve is defective, proceed as follows:

Discharge and recover the refrigerant from the system.

Replace the expansion valve.

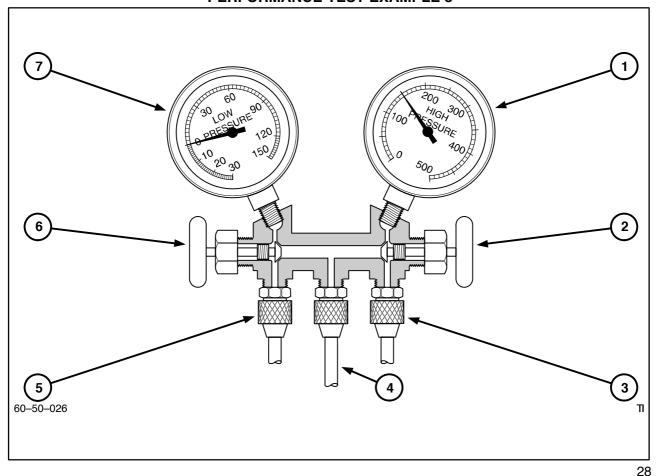
Evacuate the system.

Charge the system.

Performance test the system.

**DIAGNOSIS:** Thermostatic expansion valve is allowing too much refrigerant to flow through the evaporator coils. Valve may be stuck open.

**NOTE:** Test procedure based upon ambient temperature of 35 °C (95 ° F). For proper high side gauge reading for other ambient temperatures, refer to the pressure temperature chart.



#### **Performance Test Example 8**

- 1. High Side Low
- 2. High Side Hand Valve Closed
- **3.** High Side Hose Connected to High Side Service Connector
- 4. Not Used

PROBLEM: Insufficient cooling.

**CAUSE:** Improper operation of thermostatic expansion valve (stuck closed).

#### **CONDITIONS\***

Low side pressure too low (zero or vacuum). Gauge should read 1–2 bar (15-30 lbf/in<sup>2</sup>).

High side pressure low. Gauge should read 13.3–14.8 bar (194–215 lbf/in<sup>2</sup>).

Evaporator air cool, but not sufficiently cold.

Evaporator inlet pipe surface shows considerable moisture or frost.

Low pressure switch cutting out.

#### **CORRECTIVE PROCEDURES**

 Place finger on expansion valve to evaporator tube. If too cold to touch, proceed as follows: Operate the system at maximum cooling.

- **5.** Low Side Hose Connected to Low Side Service Connector
- 6. Low Side Hand Valve Closed
- 7. Low Side Low

Check the low side gauge. The pressure should drop slowly.

2. If the procedure outlined in Step 1 shows that the expansion valve is defective, proceed as follows:

Discharge system

Replace expansion valve

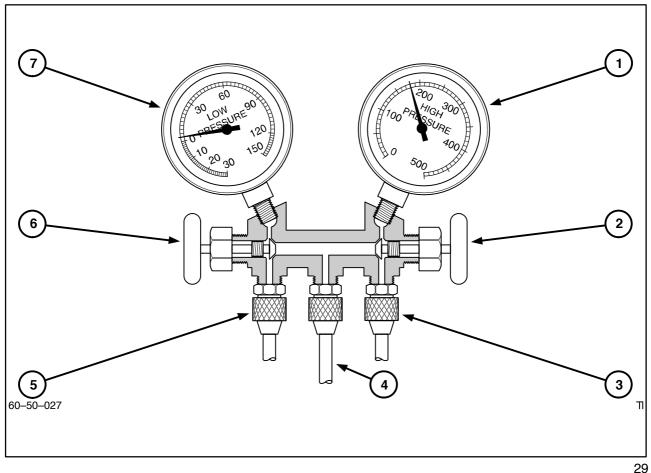
Evacuate the system.

Charge the system.

Performance test the system.

**DIAGNOSIS:** Expansion valve is not permitting a sufficient flow of refrigerant. May be caused by valve stuck in restricted or closed position.

**NOTE:** Test procedure based upon ambient temperature of 35 °C (95 ° F). For proper high side gauge reading for other ambient temperatures, refer to the pressure temperature chart.



#### Performance Test Example 9

- 2. High Side Hand Valve Closed
- High Side Hose Connected to High Side Service Connector
- 4. Not Used

1. High Side Low

#### PROBLEM:

Insufficient cooling.

#### CAUSE:

Restriction in high side of system.

#### **CONDITIONS\***

Low side pressure too low. Gauge should read 1–2 bar (15-30 lbf/in²).

High side pressure too low. Gauge should read 13.3–14.8 bar (194–215 lbf/in²).

**NOTE:** A normal or high reading of the high side pressure gauge under these conditions indicates the system is overcharged or the condenser or receiver/dryer is too small.

Evaporator only slightly cool.

Liquid line and receiver/dryer are cool to touch and show frost or considerable moisture.

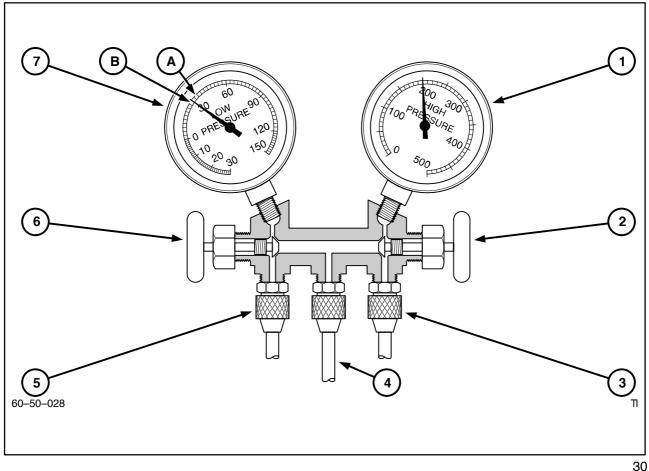
- **5.** Low Side Hose Connected to Low Side Service Connector
- 6. Low Side Hand Valve Closed
- 7. Low Side Low

#### **CORRECTIVE PROCEDURES**

- 1. Discharge and recover the refrigerant from the system.
- 2. Replace the liquid lines, receiver/dryer, or other obstructed components.
- 3. Evacuate the system.
- 4. Charge the system.
- 5. Performance test the system.

**DIAGNOSIS:** Restriction in the liquid line and/or receiver/dryer resulting in a "starved" evaporator (compressor moving refrigerant from the evaporator faster than it can enter).

**NOTE:** Test procedure based upon ambient temperature of 95° F. For proper high side gauge reading for other ambient temperatures, refer to the pressure temperature chart.



#### Performance Test Example 10 5. Low Side Hose Connected to

- 1. High Side Normal 2. High Side Hand Valve Closed
- 3. High Side Hose Connected to High Side Service Connector
- 4. Not Used

- Low Side Service Connector
- 6. Low Side Hand Valve Closed
- 7. Low Side Gauge Compressor Cycles on at 34 lbf/in2 (2.3 bar) Compressor Cycles off at 28 lbf/in<sup>2</sup> (1.9 bar)

#### **PROBLEM:**

Compressor cycles (cuts in and out) too rapidly.

#### CAUSE:

Thermostatic switch defective.

#### **CONDITIONS\***

Low side pressure readings too high during both "on" and "off" compressor cycles and between cycles. Readings should be:

0.8-1.0 bar (12-15 lbf/in<sup>2</sup>) - cycle "off"

2.5-2.7 bar (36-39 lbf/in<sup>2</sup>) - cycle "on"

1.7–1.9 bar (24-27 lbf/in<sup>2</sup>) - between cycles High side pressure normal. Gauge should read 13.3-14.8 bar (194-215 lbf/in<sup>2</sup>).

#### **CORRECTIVE PROCEDURES**

- 1. Stop the engine and shut off A/C system.
- 2. Replace thermostatic switch with switch of same type.
- 3. Make sure the switch's temperature sensor is installed in the same position and depth (in evaporator core) as previous.
- 4. Performance test the system.

**DIAGNOSIS:** Defective thermostatic switch.

NOTE: Test procedure based upon ambient temperature of 35°C (95° F). For proper high side gauge reading for other ambient temperatures, refer to the pressure temperature chart.

#### **CHARGING THE SYSTEM**

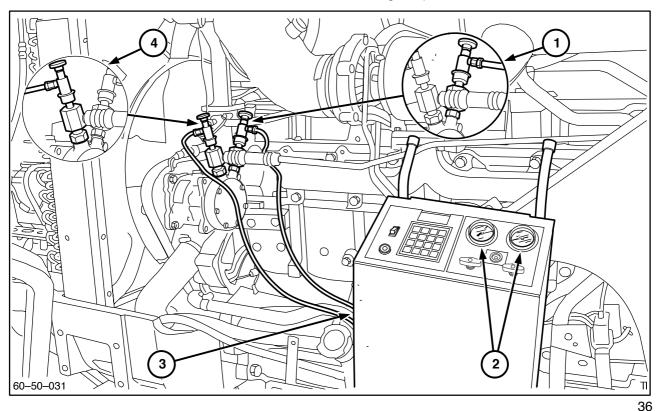
**IMPORTANT:** Be sure there are no leaks in the system and the system has been fully evacuated. Observe all safety recommendations when handling refrigerant R-134a, see "Precautions when Handling Refrigerant R-134a" in this Section.

- Ensure the charging unit is correctly connected to the tractor air conditioning system in accordance with the manufacturers instructions.
- 2. If a charging unit, in conjunction with the manifold gauge set is used, open the high and low side hand valves on the manifold.
- 3. Charge the system with 1.4kg (3.1lbs) of refrigerant as per the manufacturers instructions.
- 4. If the charging rate becomes very slow close the high side valve, start the tractor and set engine speed to idle. Turn 'ON' the air conditioning so

- that the compressor can pull the remainder of the refrigerant into the system.
- 5. If the refrigerant charge will not completely transfer to the air conditioning system, recover and recharge the system.
- Close the high and low side valves on the units control panel, or manifold gauge set if being used and test the air conditioning as detailed in Performance Testing The Air Conditioning System on Page 15.

**NOTE:** After charging a system use the following start up procedure to ensure the lubricating oil is properly dispersed around the system:

- · Ensure air conditioning is switched OFF.
- Start the engine and bring speed down to idle.
- Turn the air conditioning ON and allow system to operate for at least one minute before increasing engine speed.



#### Connecting Recovery Evacuation and Recycling/Charging Station to the Tractor

- 1. High Side Service Valve (Red Hose)
- 2. Built In Manifold Gauge Set

- 3. Recovery/Recharging Unit
- 4. Low Side Service Valve (Blue Hose)

## COMPONENT OVERHAUL (EXCLUDING COMPRESSOR)

#### **GENERAL**



#### WARNING



Before disconnecting components in the air conditioning system the refrigerant gas must be discharged and recovered using a certified recovery system. Refer to Discharging the system on Page 31. **Do Not** discharge the gas into the atmosphere.

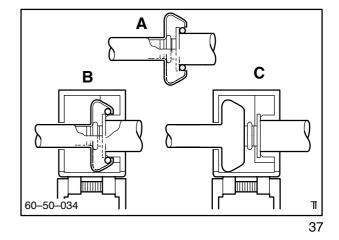
If an air conditioning component is to be replaced during a system overhaul it is necessary to drain any refrigerant oil that has collected in the component being replaced into a clean calibrated container.

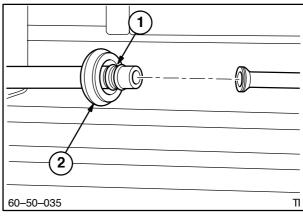
A volume of clean refrigerant oil equivalent to that removed from the replaced component must then be added to the new item before being installed onto the tractor.

Upon completion of the repair evacuate, recharge, leak test and performance test the system to ensure correct operation.

## Disconnection and Reconnection Of Air Conditioning Spring Lock Couplings

- The spring lock couplings, Figure 37(A), can be separated using Special Tools reference No.295031, which are available for <sup>3</sup>/<sub>8</sub>, <sup>1</sup>/<sub>2</sub>, <sup>5</sup>/<sub>8</sub>, <sup>3</sup>/<sub>4</sub> inch diameter air conditioning tubes.
- 2. To separate the connection position the tool around the connector and slide the tool into the coupling, Figure 37(B), The sleeve on the tool will then release the retaining spring in the connector.
- 3. Pull the connector tubes to separate the coupling Figure 37(C).
- 4. Prior to reconnecting the connections examine the 'O' ring seals for damage and replace as necessary.
- 5. Coat the 'O' rings with compressor oil.
- 6. To reconnect the connector install the plastic ring, (1), (not part of the tool but supplied with the tractor) into the bulbous section of the coupling, (2), Figure 38.
- 7. Push couplings firmly together until they 'lock' at which time the plastic ring will be ejected from the bulbous section of the tube.



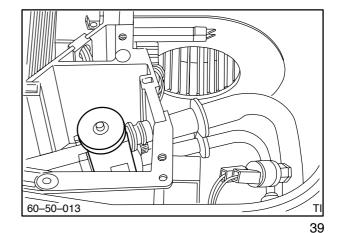


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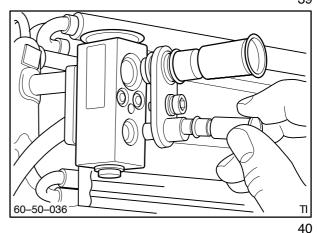
#### **EXPANSION VALVE**

The expansion valve is not a serviceable item and must be replaced if defective.

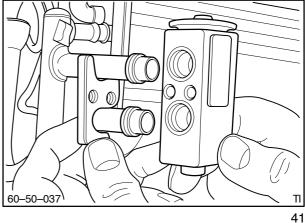
1. Fully discharge the air conditioning system.



2. Remove roof access hatch and evaporator cover plate to gain access to the valve, Figure 39.

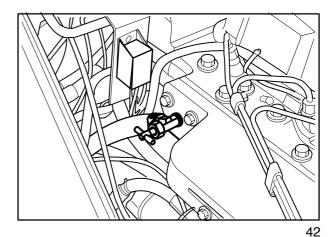


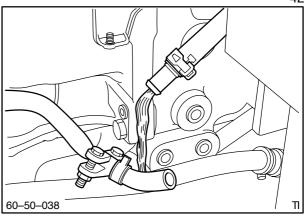
- 3. To gain access to the expansion valve spring lock couplings partially lift the evaporator core from its position in the cab roof.
- 4. Disconnect the two spring lock couplings to the expansion valve.
- 5. Remove Allen screw securing the inlet and outlet connections to the valve, Figure 40 and pull valve from tubing.
- 6. Replace the 'O' ring seals and lubricate with refrigerant oil prior to installing the valve using disassembly procedure in reverse, Figure 41.
- 7. Evacuate, leak test and recharge the system.

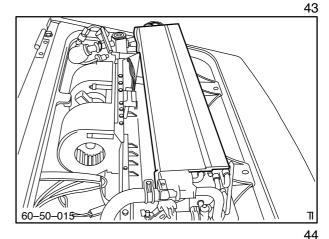


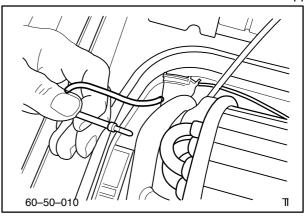
#### **EVAPORATOR**

- 1. Close the heater shut—off valve on the rear of the inlet manifold, Figure 42.
- Turn the cab heater temperature control to maximum heat.
- 3. Apply a clamp to the heater return hose at the left side of the engine. Disconnect the hose and drain the heater system of coolant, Figure 43.
- 4. Discharge and reclaim refrigerant gas using certified recovery systems.
- 5. Remove the black cover plate to reveal evaporator assembly.
- 6. Partially lift evaporator and heater core from plastic housing to improve access to hoses, Figure 44.
- 7. Remove temperature cycling control thermocouple, Refer to Figure 45.
- 8. Disconnect tubing to expansion valve.
- 9. Disconnect heater hoses and remove evaporator and heater core assembly.
- 10. Check the evaporator assembly fins for damage. Straighten fins if necessary.
- 11. Clean the evaporator core of all foreign material to be sure it is free of obstructions.
- 12. Check the evaporator assembly for indications of refrigerant leakage. If damage or leaks are evident, replace the evaporator core.
- 13. If a new evaporator is to be installed drain the refrigerant oil in the evaporator into a clean calibrated container. Measure the quantity of oil obtained and add the same quantity of new refrigerant oil directly into the replacement evaporator core.
- Install evaporator using disassembly procedure in reverse.
- 15. Evacuate, leak test and recharge the system.









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#### 2. Rotor Field Winding Continuity Test

With reference to Figure 10

- 1. Remove the regulator and brushbox assembly as described in this chapter.
- 2. Connect an ohmmeter(3) between the two slip rings(2). The resistance should read 2.6 ohms at 20°C.

If the resistance is outside of the specification renew the rotor(1) as detailed in the following overhaul section.

## 3. Brushes-and-Springs and Rotor Slip Rings

- 1. Remove the regulator and brushbox assembly as described in this Chapter.
- 2. Ensure the brushes and slip rings are clean and check for freedom of movement of the brushes in the brushbox moulding.
- 3. Check the brush spring pressure with a push type spring gauge and record the spring pressure when the brush end face is flush with the moulding. Install a new regulator and brushbox assembly if the pressure is less than specified.

If the visible length of the brushes(1) in the free position is less than 0.25 in. (5mm) this is a probable cause of open circuit in the field circuit and the regulator and brushbox assembly should be renewed, Figure 11.

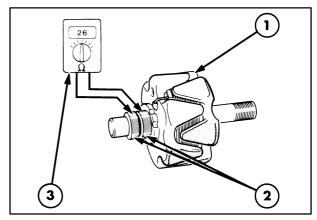
NOTE: The brushes are an integral part of the regulator and brushbox assembly and cannot be replaced as individual items.

#### **55 301 ALTERNATOR OVERHAUL AND COMPONENT TESTING**

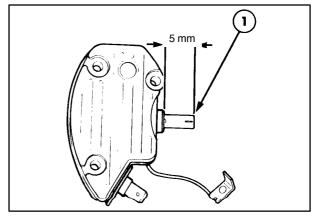
#### **Alternator Removal**

With reference to Figure 12

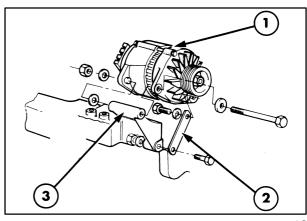
- 1. Disconnect the battery negative cable.
- 2. Disconnect the four cables from the rear of the alternator.
- 3. Remove the alternator drive belt in the following manner. Place a lever with socket attachment. onto the tensioner retaining bolt and gently lever the tensioner up, Figure 3. Remove the fan belt from the pulley, and allow the tensioner to return to its untensioned position once the belt has been removed.
- 4. Remove the alternator arm(2) and the lower mounting through bolts and remove the alternator(1) from the engine bracket(3).



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11



#### Figure Search for TM115 TRACTOR (11/99-) MAIN SECTIONS MPARTS[01] MAINTENANCE PARTS SEC. 01 ENGINE SEC. 02 ENGINE EQUIP. SEC. 03 TRANSMISSION SEC. 04 FRONT AXLE SEC. 05 REAR AXLE SEC. 06 ELECTRICAL SEC. 07 HYDRAULICS SEC. 08 SHEET METAL SEC. 09 LINKAGE SEC. 10 DRIVER'S COMPARTMENT 1/2 SEC. 10 DRIVER'S COMPARTMENT 2/2 SEC. 11 TRACTION .0001 NO. AMER. D.I.A. ACCESSORIES 0.02.1[01] ENGINE ASSY 0.04.0[01] CYLINDER BLOCK & RELATED PARTS 0.04.0[02] CYLINDER BLOCK & RELATED PARTS 0.04.2[01] OIL SUMP & RELATED PARTS 0.04.3[01] ENGINE COVERS & GASKETS 0.06.0[01] CYLINDER HEAD & RELATED PARTS 0.06.0[02] CYLINDER HEAD, ROCKER ARM, VALVES & RELATED PARTS 0.06.0[03] CYLINDER HEAD, ROCKER ARM, VALVES & RELATED PARTS 0.07.0[01] SUCTION AND EXHAUST DUCT 0.08.0[01] CRANKSHAFT & RELATED PARTS 0.08.2[01] PISTON & CONNECTING ROD 0.08.2[02] PISTON & CONNECTING ROD 0.08.2[03] PISTON & CONNECTING ROD 0.08.4[01] DAMPER AND FLYWHEEL 0.12.0[01] DRIVE-GEARING TAPPETS AND PUSHRODS 0.14.0/ A[01] INJECTOR BREAKDOWN 0.14.0/ A[02] INJECTOR BREAKDOWN 0.14.0/ B[01] FUEL FILTER BREAKDOWN 0.14.0/ C[01] SEPARATORY ASSY FUEL/WATER BREAKDOWN 0.14.0[01] FUEL SYSTEM 0.14.0[02] FUEL SYSTEM 0.30.0[01] PUMP, ENGINE OIL 0.30.2[01] FILTER, ENGINE OIL 0.34.7/ A[01] WATER PUMP BREAKDOWN 0.34.7[01] WATER PUMP / FAN 0.36.0/ A[01] STARTER MOTOR BREAKDOWN 0.36.0[01] STARTER MOTOR 0.40.0/ A[01] ALTERNATOR BREAKDOWN 0.40.0/ B[01] (VAR.179) ALTERNATOR BREAKDOWN

0.40.0[01] ALTERNATOR

002[01] DECALS - GERMAN VERSION

001[01] FRANCE VERSION - LICENSE PLATE & LAMP

007[01] NORTH AMERICA VERSION - NASO - WORK LIGHTS

Page 1

#### Figure Search for TM115 TRACTOR (11/99-) 007[02] DECALS- NORTH AMERICA VERSION 007[03] WARNING DECALS- NORTH AMERICA VERSION 034[01] AUSTRIA VERSION - DECALS 042[01] ADDITIONAL FUEL TANK 1.14.0[01] FUEL TANK 1.14.6[01] FUEL, LINES 1.14.7[01] FUEL TANK SUPPORT 1.15.1[01] SILENCER (MUFFLER) 1.17.0/86[01] PIPES FOR AIR CONDITIONING 1.17.0/86[02] PIPES FOR AIR CONDITIONING 1.17.0/87[01] CONDENSER AND DEHYDRATING FILTER FOR AIR CONDITIONING 1.17.0/88[01] COMPRESSOR, AIR CONDITIONING 1.17.0/88A[01] COMPRESSOR BREAKDOWN, AIR CONDITIONING 1.17.0[01] RADIATOR & RELATED PARTS 1.17.0[02] RADIATOR & RELATED PARTS 1.17.1[01] COOLING, EXPANSION TANK / TEMPERATURE CONTROL 1.17.9[01] HEAT EXCHANGER 1.19.1[01] DRY AIR FILTER-PIPES 1.21.0[01] HOUSING, GEARS 1.21.0[02] HOUSING, GEARS 1.21.0[03] HOUSING, GEARS 1.21.1/1[01] SUPPORT FOR 4WD FRONT AXLE 1.21.1/ 1[03] SUPPORT FOR 4WD SUPERSTEER FRONT AXLE 1.21.1/1[04] SUPPORT FOR 4WD FRONT AXLE 1.21.1[01] SUPPORT FOR 2WD FRONT AXLE 1.25.3[01] CLUTCH, P.T.O. 1.28.7[01] CLUTCH ENGAGEMENT 1.28.7[02] CLUTCH ENGAGEMENT 1.28.7[03] CLUTCH ENGAGEMENT 1.28.7[04] CLUTCH ENGAGEMENT 1.28.7[05] CLUTCH ENGAGEMENT 1.28.7[06] CLUTCH ENGAGEMENT 1.28.7[07] CLUTCH ENGAGEMENT 1.28.7[08] CLUTCH ENGAGEMENT 1.28.7[09] CLUTCH ENGAGEMENT 1.28.7[10] CLUTCH ENGAGEMENT 1.29.6[01] HYDRAULIC GEARBOX CONTROL 1.29.6[02] HYDRAULIC GEARBOX CONTROL 1.29.6[03] HYDRAULIC GEARBOX CONTROL 1.29.7[01] GEARBOX LUBRICATION PIPING 1.29.7[02] GEARBOX LUBRICATION PIPING 1.32.0[01] TRANSMISSION, COVERS AND SUPPORTS 1.32.1[01] CENTRAL REDUCTION GEARS

1.32.1[02] CENTRAL REDUCTION GEARS 1.32.1[03] CENTRAL REDUCTION GEARS 1.32.1[04] CENTRAL REDUCTION GEARS 1.32.1[05] CENTRAL REDUCTION GEARS 1.32.1[06] CENTRAL REDUCTION GEARS

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1.74.2[02] BATTERY & BATTERY MOUNTING

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Figure Search for TM115 TRACTOR (11/99-)

#### Figure Search for TM115 TRACTOR (11/99-) 425[03] 4-CONTROL VALVE UNIT W/LEVER CONTROL FOR CCLS - D4660 425[04] 4-CONTROL VALVE UNIT W/LEVER CONTROL FOR CCLS - D4660 425[05] 4-CONTROL VALVE UNIT W/LEVER CONTROL FOR CCLS 436 RICE FIELD VERSION FOR SEMI POWER-SHIFT TRANSMISSION 437 LONG AXLE FOR NON-TWIN WHEELS WITH SHEET STEEL DISC 440/ 1[01] VALVE CONTROL UNIT WITH JOYSTICK FOR LOADER W/HI-LO 440/ 1[02] VALVE CONTROL UNIT WITH JOYSTICK FOR LOADER W/HI-LO 440/2[01] VALVE CONTROL UNIT WITH JOYSTICK FOR LOADER W/CAB SUSP. 440/ 2[02] VALVE CONTROL UNIT WITH JOYSTICK FOR LOADER W/CAB SUSP. 440[01] VALVE CONTROL UNIT WITH JOYSTICK FOR LOADER 440[02] VALVE CONTROL UNIT WITH JOYSTICK FOR LOADER 444[01] VALVE CONTROL UNIT WITH JOYSTICK FOR FRONT LIFT 444[02] VALVE CONTROL UNIT WITH JOYSTICK FOR FRONT LIFT 444[03] VALVE CONTROL UNIT WITH JOYSTICK FOR FRONT LIFT 449[01] RICE FIELD VERSION 449[03] RICE FIELD VERSION 452/ 1[01] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[02] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[03] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[03A] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[04] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[05] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[06] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/ 1[07] CLASS 3 FRONT AXLE WITH BRAKE AND STEERING SENSOR 452/3[01] 4WD FRONT AXLE WITH SUSPENSIONS, BRAKE AND "TERRALOCK" - SEMI POWER SHIFT 452/ 3[03] 4WD FRONT AXLE WITH SUSPENSIONS, BRAKE AND "TERRALOCK" - SEMI POWER SHIFT 452/ 3[03A] 4WD FRONT AXLE WITH SUSPENSIONS,BRAKE AND "TERRALOCK" - SEMI POWER SHIFT 452/ 3[05] 4WD FRONT AXLE WITH SUSPENSIONS, BRAKE AND "TERRALOCK" - SEMI POWER SHIFT 452/ 3[07] 4WD FRONT AXLE WITH SUSPENSIONS, BRAKE AND "TERRALOCK" - SEMI POWER SHIFT 452/ 3[09] 4WD FRONT AXLE WITH SUSPENSIONS, BRAKE AND "TERRALOCK" - SEMI POWER SHIFT 452[01] CLASS 3 FRONT AXLE WITH STEERING SENSOR 452[02] CLASS 3 FRONT AXLE WITH STEERING SENSOR 470-471 REAR WEIGHTS FOR SHEET STEEL DISCS 476-477 REAR WEIGHTS FOR SHEET STEEL DISCS 497/1[01] DYNAMIC FRONT FENDERS (4WD) FOR SUPERSTEER OR SUSP. FRONT AXLE 497/1[02] DYNAMIC FRONT FENDERS (4WD) FOR SUPERSTEER OR SUSP.FRONT AXLE 497[01] DYNAMIC FRONT FENDERS (4WD) 497[02] DYNAMIC FRONT FENDERS (4WD) 569[01] AUTOMATIC HITCH (WITH 1 ADDITIONAL JACK) 569[02] AUTOMATIC HITCH (WITH 1 ADDITIONAL JACK) 569[03] AUTOMATIC HITCH (WITH 1 ADDITIONAL JACK) 573[01] 3RD REMOTE VALVE FOR CCLS 573[02] 3RD REMOTE VALVE FOR CCLS 574[01] 4TH REMOTE VALVE FOR CCLS 574[02] 4TH REMOTE VALVE FOR CCLS 628[01] REAR AUXILIARY "SAE" POWER SOCKET ADAPTOR 640[01] HINGED WINDSHIELD

640[02] HINGED WINDSHIELD

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#### Figure Search for TM115 TRACTOR (11/99-) 780[09] FRONT HPL AND FRONT P.T.O. (W/21 SPLINE) "CCLS" 780[10] FRONT HPL AND FRONT P.T.O. (W/21 SPLINE) "CCLS" 780[11] FRONT HPL AND FRONT P.T.O. (W/21 SPLINE) "CCLS" 781[01] FRONT HPL AND FRONT P.T.O. (W/6 SPLINE) "CCLS" 782[01] LIFT ASSIST CYLINDER W/MECHANICALLY CONTROLLED HYDRAULIC LIFT (OPEN CENTRE) 783[01] LIFT ASSIST CYLINDER 787[01] PREARRANGEMENT FOR EXTRA CYLINDER 789[01] FRONT HPL FOR C.C.L.S 789[02] FRONT HPL FOR C.C.L.S 789[03] FRONT HPL FOR C.C.L.S 789[04] FRONT HPL FOR C.C.L.S 789[05] FRONT HPL FOR C.C.L.S 789[06] FRONT HPL FOR C.C.L.S 789[07] FRONT HPL FOR C.C.L.S 809[01] POWER TAKE-OFF 540/1000 RPM WITH SPRING - C4730 809[01A] POWER TAKE-OFF 540/1000 RPM WITH SPRING - D4730 81.00[01] 2WD FRONT WHEELS 812[01] FRONT HPL FOR FOR OPEN CENTRE - CONVERSION KIT 815[01] SYNCHRO MESH GEARED POWER TAKE-OFF 815[02] SYNCHRO MESH GEARED POWER TAKE-OFF 817[01] POWER TAKE-OFF 540/750/1000 RPM 817[02] POWER TAKE-OFF 540/750/1000 RPM 82.00[01] 4WD DRIVING WHEELS 82.00[03] 4WD DRIVING WHEELS 82.00[04] 4WD DRIVING WHEELS 82.00[05] 4WD DRIVING WHEELS 82.00[07] 4WD DRIVING WHEELS 83.00[01] DRIVE WHEELS 83.00[04] DRIVE WHEELS 83.00[05] DRIVE WHEELS 83.00[07] DRIVE WHEELS 83.00[08] DRIVE WHEELS 83.00[09] DRIVE WHEELS 83.00[10] DRIVE WHEELS 838[01] OUTER P.T.O. CONTROL MOUNTED ON MUDGUARDS 847[01] SYNCHRO MESH GEARED POWER TAKE-OFF 847[02] SYNCHRO MESH GEARED POWER TAKE-OFF 853[01] IMPLEMENT CARRIER (2/3 CAT.) FOR ELECTRONIC LIFT 863 DOUBLE CHOCK 865 PASSENGER SEAT 879 TELESCOPIC REAR VIEW MIRROR 881[01] IMPLEMENT CARRIER (TELESCOPIC ARMS) 2/3 CAT. AND ANTI-SHACKE PLATES 881[02] IMPLEMENT CARRIER (TELESCOPIC ARMS) 2/3 CAT. AND ANTI-SHACKE PLATES 881[03] IMPLEMENT CARRIER (TELESCOPIC ARMS) 2/3 CAT. AND ANTI-SHACKE PLATES 885/ A[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE 885/ B[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE 885/ C[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE

885[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE

#### Figure Search for TM115 TRACTOR (11/99-) 885[02] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE 885[03] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE 885[04] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR OPEN CENTRE 887[01] ROTARY HITCH SUPPORT ON PITON SKIDS 892[01] PULL HOOK 894[01] AUTOMATIC HITCH 894[02] AUTOMATIC HITCH 894[03] AUTOMATIC HITCH 895 TRAILER BRAKE LEVER SUPPORT (FOR ITALY) 895/ 1[01] FRONT TOW HOOK (W/FRONT WEIGHTS) 897[01] AUTOMATIC HITCH, SLIDING SUPPORT 898/ 1[01] AUTOMATIC HITCH (WITHOUT ADDITIONAL JACKS) 900/ C[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 900/ D[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 900/ E[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 900[01] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS - C4660 900[01A] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS - C4660 900[01B] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS - D4660 900[01C] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS - D4660 900[03] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 900[04] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 900[05] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 900[06] HYDR. ADJUST. FOR TOP LINK AND RIGHTHAND LIFT-ROD FOR CCLS 907[01] DRAWBAR FOR SLIDING SUPPORT 910[01] TOW-BAR WITH ROLLERS 911[01] IMPLEMENT CARRIER (TELESCOPIC ARMS), ANTI-SCHAKE PLATES 911[02] IMPLEMENT CARRIER (TELESCOPIC ARMS), ANTI-SCHAKE PLATES 912[01] SWAY-BAR (EUROPE) 913[01] DRAWBAR (29MM) FOR ITALY 914[01] SWAY-BAR (NASO) 928[01] SLIDING HITCH WITHOUT DRAWBAR 932[01] TOW-BAR, CATEGORY "D2" (ITALY) FOR SLIDING SUPPORT 946[01] AUTO LINKAGE STABILIZERS 947[01] TOW-BAR, CATEGORY "D3" FOR SLIDING SUPPORT 965[01] LICENSE PLATE LAMP & SUPPORT, MOUNTING ON MUDGUARD 966[01] LICENSE PLATE LAMP & SUPPORT, MOUNTING ON CAB ROOF

982[01] FRENCH DECAL KIT - NORTH AMERICA VERSION 982[02] FRENCH DECAL KIT - NORTH AMERICA VERSION 986[01] SPANISH DECAL KIT - NORTH AMERICA VERSION 986[02] SPANISH DECAL KIT - NORTH AMERICA VERSION

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996 SET OF TOOLS

# TM115 TRACTOR (11/99-) 0.02.1[01] ENGINE ASSY

### TM115 TRACTOR (11/99-)

0.02.1[01] ENGINE ASSY						
Ref Part Number	Qty Description					
Ref Part Number  1 87801769 2 87801770 2 87801772 2 87801773 3 87801197 3 87801198 4 1930959 5 1930960	Company					

## TM115 TRACTOR (11/99-) 0.04.0[01] CYLINDER BLOCK & RELATED PARTS 0.06.0 PAG.2

TM	TM115 TRACTOR (11/99-)						
0.04.0[01] CYLINDER BLOCK & RELATED PARTS							
Ref	Part Number	Qty	Description				
1 1 2 3 4 4 5 6 7 8 9 10 11 12	87801976 87802470 86505157 F2NN6A828AA 83957023 83957024 83960218 81868410 81868411 81808472 83956679 83957025 82851790 83998292	1 ( 2   3   AR   2   4   2   1   AR   1	CYLINDER BLOCK, TM115 PIN, 1/2 X 1.00 PIUG, 1-1/2" PLUG, 1.50 PLUG, 1.56 DOWEL, PLUG, PLUG, PLUG, PLUG, PLUG, PLUG, PLUG, SLEEVE, PLUG, 1.81 PLUG, 1.81 PLUG, 1.81 PLUG, 1.81 PLUG, PLUG, PLUG, PLUG, PLUG, PLUG, PLUG, 824 PLUG, 1.81 PLUG, 1.81 PLUG, 81 PLUG				