

DT-1300 MAINTENANCE & REPAIR INSTRUCTIONS

MAINTENANCE

THE DT-1300 NOZZLE TEST PUMP IS A RELATIVELY MAINTENANCE FREE INSTRUMENT AND WITH PROPER USE AND CARE SHOULD REQUIRE MINIMAL MAINTENANCE. FOLLOWING IS A LIST OF ITEMS THAT SHOULD BE PERFORMED ON A DAILY/WEEKLY AND ANNUAL BASIS.

DAILY/WEEKLY MAINTENANCE

1. USE ONLY CLEAN NUMBER 1 OR 2 DIESEL FUEL, OR AN APPROVED DIESEL FUEL PUMP CALIBRATING FLUID.
2. THE PUMP FILLER PLUG, PART NUMBER DT-15, SHOULD BE IN PLACE AT ALL TIMES, LOOSE WHEN THE UNIT IS IN USE, TIGHT OTHERWISE.
3. ALL FITTINGS AND CONNECTIONS SHOULD BE KEPT CLEAN AND CARE TAKEN NOT TO DAMAGE THREADS OR SEATING SURFACES.

ANNUAL MAINTENANCE

1. THE INLET FILTER, DT-34 SHOULD BE REPLACED, MORE OFTEN UNDER HEAVY USE.
2. GENERAL INSPECTION FOR LEAKAGE AROUND FITTINGS, VALVES OR GAUGE CONNECTIONS.
3. REPLACEMENT OF O-RINGS IF PUMP CONDITION DICTATES.

TROUBLESHOOTING GUIDE

CONDITION

UNIT WILL NOT PUMP FLUID

POSSIBLE PROBLEMS

1. LOW FUEL LEVEL
2. CLOSED PUMP VALVE
3. BALL CHECK VALVE NOT SEATING
4. PUMP PISTON SEAL LEAKAGE

TO ISOLATE THE CAUSE OF THE PROBLEM FOR THIS CONDITION FOLLOW STEPS BELOW:

1. CHECK FUEL LEVEL IN RESERVOIR
2. CHECK POSITION OF PUMP VALVE (ITEM 19)
3. CHECK OPERATION OF BALL CHECK VALVE (ITEM 29) AND PUMP PISTON LEAKAGE BY CLOSING OPERATING PUMP HANDLE (ITEM 11) AND CLOSING THE PUMP VALVE AT THE SAME TIME. IF THE CHECK VALVE IS WORKING THE PUMP HANDLE OPERATES FREELY, WITH THE PUMP VALVE CLOSED, THE BALL CHECK IS FAILING TO SEAT, DUE TO DIRT OR A DEFECTIVE SEATING SURFACE. IF THERE IS RESISTANCE TO THE PUMP HANDLE OPERATION THE TOP OF THE PUMP CYLINDER SHOULD BE INSPECTED FOR LEAKAGE.
4. FAILURE OF UNIT TO PUMP ANY FLUID WOULD GENERALLY INDICATE EITHER A PLUGGED INLET FILTER (ITEM 4) OR BLOCKED PASSAGE.

CONDITION

UNIT PUMPS FLUID BUT WILL NOT
HOLD PRESSURE WITH FUEL
INJECTION NOZZLE ATTACHED

POSSIBLE PROBLEMS

1. LOOSE CONNECTOR NUTS
AND/OR CONNECTOR TUBING
2. GAUGE VALVE INCORRECTLY
POSITIONED
3. LEAKAGE AT PRESSURE GAUGE
4. LEAKAGE AT DISCHARGE
CONNECTION/CHECK VALVE

TO ISOLATE THE CAUSE OF THE PROBLEM FOR THIS CONDITION FOLLOW STEPS BELOW:

1. TIGHTEN LOOSE CONNECTORS AS REQUIRED
2. POSITION OF THE GAUGE VALVE (ITEM 20) SHOULD BE CHECKED. CORRECT OPEN POSITION IS ONE TURN COUNTERCLOCKWISE FROM THE FULLY CLOSED POSITION.
3. IF STEPS 1 & 2 DO NOT RESOLVE THE PROBLEM, REMOVE ANY EXTERNAL DEVICES, FUEL INJECTION NOZZLES UNIT INJECTORS ETC., FROM UNIT AND INSTALL A GAG NUT (DT-4169, AVAILABLE FROM KIENE DIESEL ACCESSORIES), LOOSELY. OPERATE THE PUMP HANDLE UNTIL FLUID IS DISCHARGED THROUGH THE GAG NUT CONNECTION, TIGHTENING THE GAG NUT UNTIL LEAKAGE STOPS. THE PUMP VALVE (ITEM 19) AND THE GAUGE VALVE (ITEM 20) SHOULD BE OPEN. WHEN THE GAUGE (ITEM 21) INDICATES 3000 TO 3500 PSI PUMPING SHOULD STOP, AND THE PRESSURE SHOULD REMAIN STEADY. A DROP IN PRESSURE INDICATES LEAKAGE. LEAKAGE AT THE DISCHARGE FITTING CAN BE CHECKED VISUALLY, AND INDICATES A WORN DISCHARGE FITTING REQUIRING REPLACEMENT.
4. LEAKAGE AT THE GAUGE CAN BE CHECKED BY NOTING ANY LEAKAGE AT THE PUMP BLOCK (ITEM 1) DIRECTLY UNDER THE GAUGE. LEAKAGE WOULD BE APPARENT AT THE GAUGE BLEED PORT IN THE PUMP BLOCK, AND INDICATES THE O-RINGS (ITEM 23) ARE WORN.
5. LEAKAGE AT THE DISCHARGE CHECK VALVE (ITEM 32) CAN BE ISOLATED BY CLOSING THE PUMP VALVE (ITEM 19). IF LEAKAGE, A DROP IN GAUGE PRESSURE STOPS, THE CHECK VALVE SHOULD BE INSPECTED FOR DIRT OR MALFUNCTION.

REPAIR

DISASSEMBLY INSTRUCTIONS

THE MAJOR SUBASSEMBLIES OF THE DT-1300 ARE AS FOLLOWS:

1. PUMP BLOCK ASSEMBLY (ITEM 1)
2. GAUGE ASSEMBLY (ITEM 21)
3. PUMP HOUSING ASSEMBLY (ITEM 7)

REMOVAL OF THE GAUGE ASSEMBLY IS ACCOMPLISHED BY PLACING BOTH HANDS AROUND THE GAUGE RING ON THE PUMP HOUSING ASSEMBLY AND PRESSING UPWARD ON THE GAUGE WITH FINGERS UNDER THE GAUGE. THE GAUGE ASSEMBLY SHOULD "POP" OUT OF THE PUMP BLOCK. REPLACEMENT IS ACCOMPLISHED BY REVERSING THE ABOVE PROCEDURE, LUBRICATING THE O-RINGS BEFORE INSTALLATION WILL ALLOW EASIER REPLACEMENT. FURTHER DISASSEMBLY IS NOT USUALLY REQUIRED.

REMOVAL OF THE PUMP BLOCK ASSEMBLY IS DONE BY FIRST REMOVING THE GAUGE ASSEMBLY, PUMP VALVE (ITEM 19) AND GAUGE VALVE (ITEM 20). THE PUMP BLOCK IS THEN REMOVED BY REMOVING TWO SOCKET HEAD SET SCREWS (ITEM 39). WHEN REMOVING THE BLOCK THE PUMP PISTON (ITEM 24) SHOULD BE HELD IN PLACE TO PREVENT LOSS. WHEN THE PUMP BLOCK IS REMOVED FURTHER DISASSEMBLY CAN BE COMPLETED AS FOLLOWS:

<u>ITEM</u>	<u>DISASSEMBLY</u>	<u>ASSEMBLY</u>
1. PLUGS (ITEM 2 & 36)	REMOVE WITH ALLEN WRENCH	REINSTALL WITH ALLEN WRENCH
2. FUEL FILTER (ITEM 4)	REMOVE FILTER	REPLACE FILTER
3. VALVE GLAND NUTS (ITEM 30)	REMOVE WITH SOCKET OR REPLACE WITH SOCKET OR BOX END WRENCH	BOX END WRENCH
4. DISCHARGE CONNECTOR (ITEM 35 AND CHECK VALVE (ITEM 32)	REMOVE WITH SOCKET OR REPLACE WITH SOCKET OR BOX END WRENCH	BOX END WRENCH
5. CHECK VALVE SEAT (ITEM 38)	10-32 X 1 ½ SCREW	10-32 X 1 ½ SCREW

REMOVAL OF THE PLUGS, FILTER AND VALVE GLAND NUTS REQUIRES TOOLS AVAILABLE LOCALLY. FOR REMOVAL OF THE DISCHARGE CONNECTOR AND CHECK VALVE, THE PUMP BLOCK SHOULD BE PLACED IN A BENCH VISE AND SECURELY CLAMPED IN PLACE. CARE SHOULD BE TAKEN WHEN REMOVING THE DISCHARGE CONNECTOR NOT TO LOSE THE SMALL CHECK VALVE SPRING (ITEM 33). REMOVAL OF THE CHECK VALVE SEAT REQUIRES A 10-32 X 1 ½ INCH SCREW OR THREADED ROD. THE VALVE SEAT IS REMOVED BY INSERTING THE SCREW INTO THE SEAT AND THEN PULLING THE SEAT OUT. INSTALLATION IS ACCOMPLISHED IN THE REVERSE MANNER.

A REPAIR KIT FOR THE DT-1300 IS AVAILABLE UNDER PART NO. DT-1300RK. THE KIT CONTAINS THE ITEMS NORMALLY REQUIRING REPLACEMENT AND INCLUDES O-RINGS, FILTER ETC. INDIVIDUAL COMPONENTS ARE ALSO AVAILABLE.



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