



Allis Chalmers
Service Manual
I-60 & I-600
Industrial

Service Manual

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SERVICE SECTION

MODELS

**I-60 & I-600 INDUSTRIAL
TRACTORS**

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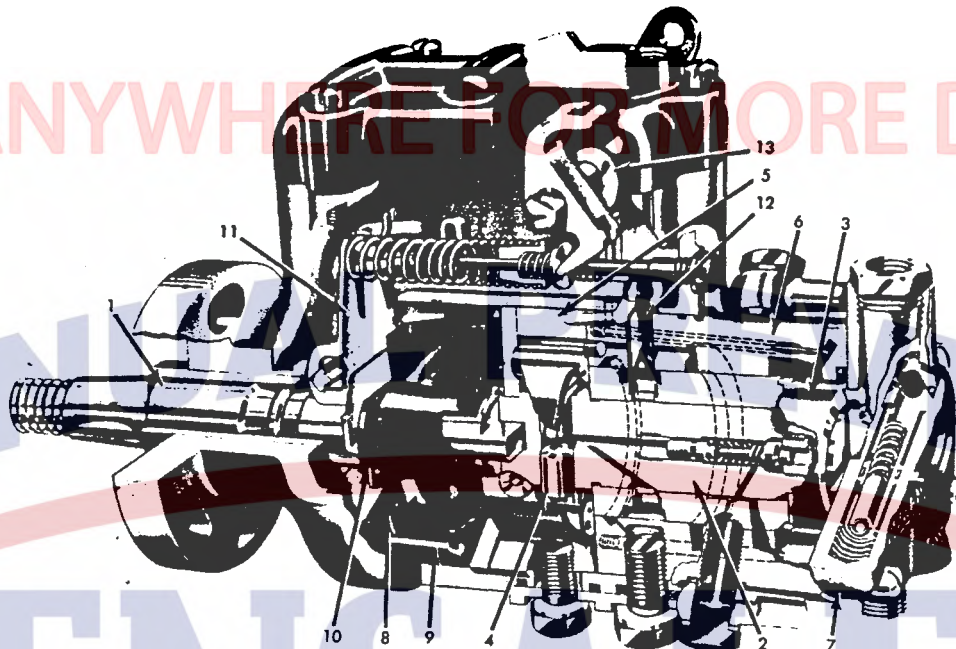
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CONSTRUCTION AND OPERATION



A. COMPONENTS AND FUNCTIONS

The Roosa Master Fuel Injection Pump is described as a single cylinder, opposed plunger, inlet metering, distributor type.

To readily understand the basic operating principles of the Roosa Master pump, it is necessary to become familiar with the function of the main components, some of which rotate. See the cutaway view in Fig. 1 for construction details.

These main components are:

1. Drive Shaft
2. Distributor Rotor
3. Transfer Pump
4. Pumping Plungers
5. Internal Cam Ring
6. Hydraulic Head
7. End Plate
8. Governor

The rotating members revolve on a common axis, and are:

1. Drive Shaft
2. Distributor Rotor (containing the plungers and mounting the governor)
3. Transfer Pump

With reference to Fig. 1, the drive shaft (1) engages the distributor rotor (2) in the hydraulic head (6). The drive end of the rotor has a diametric bore containing two plungers (4).

The plungers are actuated toward each other

simultaneously by an internal cam ring (5) through rollers and shoes which are carried in guide slots in the flanged end of the rotor. Normally, there are as many lobes as there are cylinders to be served.

The transfer or supply pump (3) in the opposite end of the rotor from the pumping cylinder, is of the positive displacement, vane type and is covered by the end plate (7).

The "DB" Pump incorporates a single, angled passage for charging and an axial bore incorporating a delivery valve to serve all outlets for discharging. The hydraulic head contains the bore in which the rotor revolves, the metering valve bore, the charging ports and the head outlets, to which are connected through appropriate fuel line connectors, the injection pipes leading to the cylinders.

Covering the transfer pump, on the outer end of the hydraulic head, is the end plate. This assembly houses the fuel inlet connection, fuel strainer and transfer pump pressure regulating valve.

The Roosa Master Model "DB" Pump contains its own mechanical or flyweight type governor (8), capable of close speed regulation.

The action of the weights in their retainer (9) is transmitted through a sleeve (10) to the governor arm (11) and through a positive linkage to the metering valve (12). The metering valve is closed to shut off fuel through a solid linkage by an independently operated shut-off lever (13).

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HYDRAULIC POWER ASSIST SHUTTLE CLUTCH

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