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HARTFORD MACHINE SCREW COMPANY - DIVISION OF STANDARD SCREW COMPANY

RM-S-D SERIES
The end plate is common to all models of the pump and varies only slightly for engine demands. Its three basic functions are:

1. To provide passages for fuel, and cover and absorb end thrust of the transfer pump.
2. To house the pressure regulating valve.
3. To house the priming by-pass spring which permits fuel to by-pass the transfer pump during hand priming.

The end plate, pressure regulating valve, priming by-pass spring and strainer are shown in Fig. 6. Figs. 7, 8 and 9 show the regulating piston in three positions - at rest, during hand priming and in operation.

Fig. 7 shows the piston covering the hand priming port (A) and resting against the priming by-pass spring.

During hand priming, Fig. 8, the pressure differential across the transfer pump, caused by the hand primer, forces the piston down, compressing the spring, until the priming port (A) is uncovered. Fuel then by-passes the stationary transfer pump to fill the system.

Fig. 9 shows the piston in operation. Fuel forces the piston up the sleeve until the regulating port or ports (B) are uncovered. Since the pressure on the piston is opposed by the regulating spring, the delivery pressure of the transfer pump is controlled by the spring rate and size and number of regulating ports.
STEP 15 Disassemble the transfer or supply pump (revealed after end plate removal, Step 12). Remove the transfer pump seal, and then the transfer pump liner by lifting it out carefully. If the transfer pump blades do not come out with the liner, carefully remove them from their slots in the transfer pump rotor.

STEP 16 Using Roosa Master Tool #1721-1A placed over the transfer pump rotor, and Tool #1712 in the tang slot of the distributor rotor, loosen and remove the transfer pump rotor.

STEP 17 With the hydraulic head assembly standing on the bench (weight retainer up), remove the snap ring with Roosa Master Tool #1711. Lift off the governor weight retainer and internal cam ring.

Before removing the maximum fuel leaf springs, check the maximum fuel adjustment as follows before removing rotor from head:

Apply air (30-100PSI) to any head outlet, and rotate the rotor in the head until air pressure forces the rollers to their extreme outward limit. Carefully measure the dimension from the outside of one roller, to the outside of the other with a 1" to 2" micrometer. This dimension must be maintained in reassembly. To set this dimension during assembly, turn the leaf spring adjustment screw inward (clockwise) to increase, and outward (counter-clockwise) to decrease plunger travel.

STEP 18 Remove spring pack from rotor. Withdraw the distributor rotor from its bore in the hydraulic head, being extremely careful that the shank of the rotor body is not damaged in any way, and rollers and shoes are not permitted to fall out. Remove the cam rollers and cam roller shoes from the guide slots. With a small brass rod or other suitably soft material, push out the two pump plungers being careful not to nick or otherwise damage them.
Insert the drive hub into its bore in the mounting adapter. Assemble the governor weights, thrust washer and sleeve into their retainer. Slide this assembly over the drive shaft, and insert the drive shaft, with its key, into the drive hub. Assemble the drive hub retaining screw and washer to the shaft and torque to 45 ft. lbs. See Fig. 22.

Insert the contact assembly with two retaining screws, washers and nuts with contacts in proper relation to the trip lever assembly on the housing, Fig 23, and wire leads at the top. Do not assemble cover until adjustments are made in contact assembly.

**ADJUSTMENT CONTACT ASSEMBLY**

**IMPORTANT:** Apply slight pressure on arm E, away from overspeed button G, to fully collapse governor weights before making adjustments.

**GAP ADJUSTMENTS:**

1. **Gap C:** .140"-.120" (bend arm E to adjust).
2. **Gap D:** .030" approximately (bend arm F to adjust).
3. **Gap H:** .040"-.050" (bend contact arm 2 to adjust).
4. Contact arm 1 should close with and flex contact arm 3 approximately .030" at point of contact. Bend contact arm 1 to adjust.

**SPEED ADJUSTMENTS:**

1. **Spring adjusting screw B:** Turn "in" (clockwise) to increase speed setting at which arm E overcomes the idling spring force, breaking contact 1 from contact 3. A slight additional speed increase will close contacts 1 and 4 before arm E meets overspeed button G. At this point (contacts 1 and 4 closed), gap H should remain at .040"-.050".
2. **Spring adjusting screw A:** Turn "in" (clockwise) to increase overspeed setting at which contacts 4 and 2 will close. Overspeed button G prevents closing of contacts 4 and 2 until maximum permissible engine overspeed is reached.

Mount the pump mounting seal in position, slide the pump over the drive shaft (with the tang locating pin lined up with the locating hole in the pump drive slot) and adjust to the timing line relationship noted before disassembly. Assemble the three washers, lockwashers and pump mounting nuts to their studs and tighten. Drop cover over studs and assemble and tighten two cover retaining nuts and lockwashers.