



WHEN ORDERING REPLACEMENTS, STATE
SERIAL NUMBER AND SIZE STAMPED ON
PART BY BOTH NAME AND NUMBER.

- 1 FLYWHEEL.
- 2 INNER CLUTCH FLANGE.
- 3 OUTER CLUTCH FLANGE.
- 4 AIR DISTRIBUTOR CAP & BRG. TRUNNION.
- 5 CLUTCH PISTON.
- 6A CLUTCH PISTON PACKINGS.
- 7 CLUTCH PISTON FOLLOWER RING.
- 9 CLUTCH TIE BOLTS.
- 11 CLUTCH CENTER DRIVING PLATE.
- 12 CLUTCH OUTER DRIVING PLATE.
- 13 CLUTCH FRICTION PLATES.
- 14 CLUTCH FRICTION SEGMENTS & RIVETS.
- 15 CLUTCH RELEASE SPRINGS.
- 16 CLUTCH RELEASE SPRING STUDS.

- 17 CLUTCH RELEASE SPRING ADJ. NUTS.
- 19 CLUTCH ADJUSTING WASHERS.
- 20 CLUTCH BEARING SPACER RING.
- 21 CLUTCH INNER BEARING.
- 22 CLUTCH PINION.
- 23 CLUTCH OUTER BEARING.
- 24 CLUTCH SHAFT END PLATE.
- 26 INNER CLUTCH BRG. RETAINER RING.
- 27 CLUTCH PINION RETAINER RING.
- 57 INNER CLUTCH FLANGE INSERT.
- 58 OUTER CLUTCH FLANGE INSERT.
- 61 BEARING SPACER RING.
- 62 OUTBOARD BEARING.
- 63 OUTBOARD BRG. INNER RACE RETAINER RING.
- 64 BEARING RETAINER CAP.
- 65 OUTBOARD BEARING HOUSING.

ADJUSTMENT

THE CLUTCH MUST RELEASE PROMPTLY A MINIMUM OF $\frac{1}{4}$ ", AS MEASURED ON SPRING STUDS (16) WHEN AIR IS EXHAUSTED. IF QUICK OPENING DOES NOT RESULT FROM ADJUSTMENT OF THE RELEASE SPRINGS (15), INVESTIGATE IMMEDIATELY.

WHEN TRAVEL OF THE PISTON EXCEEDS $\frac{3}{8}$ " IT SHOULD BE REDUCED TO $\frac{1}{4}$ " AS FOLLOWS:

- 1 - LOOSEN NUTS ON CLUTCH TIE BOLTS (9).
- 2 - REMOVE SUFFICIENT ADJUSTING WASHERS (19) FROM UNDER THE HEAD OF THE SOCKET SCREWS TO REDUCE TRAVEL OF CLUTCH PISTON (5) TO $\frac{1}{4}$ ", USING SET SCREWS AT THE SIDE OF CLUTCH TIE BOLTS (9) AS JACK SCREWS TO LOOSEN OUTER CLUTCH FLANGE (3) TO FACILITATE REMOVAL OF THE WASHERS.
- 3 - BACK OFF JACK SCREWS SUFFICIENTLY TO ALLOW THE NUTS ON CLUTCH TIE BOLTS (9) TO BE DRAWN UP TIGHT WITH THE OUTER CLUTCH FLANGE (3) SEATING AGAINST THE ADJUSTING WASHERS (19). ADJUST THE SET SCREWS TO A FIRM SEAT AGAINST THE RIM OF THE FLYWHEEL (1).

FOR DISASSEMBLY OF CLUTCH FROM SHAFT

- 1 - BLOCK UP FLYWHEEL WITH STENCIL "TOP" UPPERMOST BY WEDGING BENEATH RIM (1).
- 2 - DISCONNECT MAIN AIR SUPPLY LINE AND REMOVE ROTARY AIR DISTRIBUTOR. REMOVE DOWELS AND BOLTS HOLDING OUTBOARD BEARING SUPPORT (65) ON THE OUTBOARD BEARING BASE. REMOVE OUTBOARD BEARING SUPPORT WITH BEARING RETAINER CAP (64), BEARING ROLLERS, OUTER RACE OF BEARING (62) AND BEARING SPACER RING.
- 3 - REMOVE CLUTCH TIE BOLTS (9), LEAVING TOP TWO HALFWAY IN HOLES. SLIDE OUTER FLANGE (3), WITH PISTON (5) AND OUTER DRIVING PLATE (12), OUT HORIZONTALLY AS A UNIT UNTIL THEY CAN BE LIFTED. THEN SLIDE REMAINING CLUTCH PLATES (11) AND (13) OUT OF FLYWHEEL (1).
- 4 - REMOVE SHAFT END PLATE (24), INNER RACE OF BEARING (23) AND PINION RETAINER RING (27).
- 5 - PULL CLUTCH PINION (22) WITH STUDS AND CLAMP ACROSS SHAFT END, AFTER FIRST PULLING KEYS.
- 6 - REMOVE FLYWHEEL (1) BY UNSCREWING CAP SCREWS FROM INNER FLANGE (2).
- 7 - REMOVE INNER FLANGE (2) WITH INNER CLUTCH BEARING (21), AND CLUTCH BEARING RETAINER RING (26).
- 8 - TO REMOVE INNER CLUTCH BEARING (21) FROM INNER FLANGE (2), DISASSEMBLE BEARING RETAINER RING (26), THEN DRIVE AGAINST INNER FLANGE INSERT (57), TAKING CARE NOT TO DAMAGE CAPILLARY GROOVES.
- 9 - TO REMOVE OUTER CLUTCH BEARING (23), REMOVE AIR DISTRIBUTOR CAP AND OUTBOARD BEARING TRUNNION (4), AND DRIVE AGAINST OUTER FLANGE INSERT (58), TAKING CARE NOT TO DAMAGE CAPILLARY GROOVES.
- 10 - TO REMOVE ANNULAR PISTON (5) FROM OUTER FLANGE (3), UNSCREW RELEASE SPRING ADJUSTING NUTS (17), FIRST NOTING WHERE THEY HAD BEEN SET. REMOVE SPRINGS (15) AND OUTER DRIVING PLATE (12). THE PISTON ASSEMBLY PULLS OUT FROM THE CYLINDER, BUT TO AVOID POSSIBLE DAMAGE TO LIPS OF PISTON PACKINGS (6 #6A), REASSEMBLE WITH PARTS UNCLAMPED. WITH OUTER FLANGE (3) LYING HORIZONTALLY, PLACE THE FOLLOWER RING (7) IN THE CYLINDER, INSERT PISTON PACKINGS (6 #6A) WITH EXPANDERS, INSTALL PISTON (5) AND BOLT ASSEMBLY TOGETHER INSIDE CYLINDER. WIRE TO EACH OTHER ALL CAP SCREW HEADS.
- 11 - WHEN REASSEMBLING CLUTCH BE CERTAIN TO DRIVE CLUTCH PINION (22) TIGHT HOME. WIRE TO EACH OTHER ALL CAP SCREW HEADS INSIDE THE CLUTCH.

LUBRICATION

THE CLUTCH INNER BEARING (21), CLUTCH OUTER BEARING (23), AND OUTBOARD BEARING (62) SHOULD BE LUBRICATED WITH MODERATE AMOUNT OF GREASE AT TWO WEEK INTERVALS. EXCESS GREASE WILL FORCE PAST RETAINING CAPILLARIES AND THROW TO OUTSIDE OF CLUTCH AND OUTBOARD BEARING. LUBRICATE PACKINGS (6 #6A) WEEKLY WITH HOUGHTEN HYDRO-DRIVE M.I.H. OR EQUIVALENT THRU PETCOCK IN CLUTCH AIR VALVE.

AIR PRESSURE REGULATION

A REGULATING VALVE TO MAINTAIN PRESSURE AS INDICATED ON AIR GAUGE IS SUPPLIED WITH MACHINE. IT REGULATES TORQUE OF CLUTCH TO SAFE CAPACITY OF MACHINE. CLUTCH WILL SLIP AND MACHINE WILL STALL ONLY FROM OVERLOAD IF AIR IS KEPT AT PROPER PRESSURE AND VALVES ARE OPERATING PROPERLY.

TO CLEAN CLUTCH CYLINDER

REMOVE PIPE PLUGS (C) IN OUTER CLUTCH FLANGE (3) AND, WITH FLYWHEEL REVOLVING, OPERATE CLUTCH ALLOWING AIR TO BLOW ANY ACCUMULATION IN CYLINDER TO OUTSIDE.

* A HOOK AS SHOWN IN SKETCH, IS FURNISHED FOR DISASSEMBLY OF OF OUTER CLUTCH FLANGE (3) AND CLUTCH PLATES (11), (12), AND (13).

