

Durham Geo-Enterprises, Inc.
S-242 Compactor/Extruder

Operator's Manual

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Durham Geo Model S-242 Compactor / Extruder for AASHTO Method T-307

The S-242 Compactor Extruder is designed to compact 2.8 by 5.6 inch soil samples in accordance with AASHTO Method T-307 Resilient Modulus Testing. The device allows the operator to compact the sample in five equal lifts by both monitoring the length of the sample and the load applied to the sample. The supplied spacers prevent over compaction of sample. Once the sample is compacted, the S-242 can be used to extrude the sample.

Features:

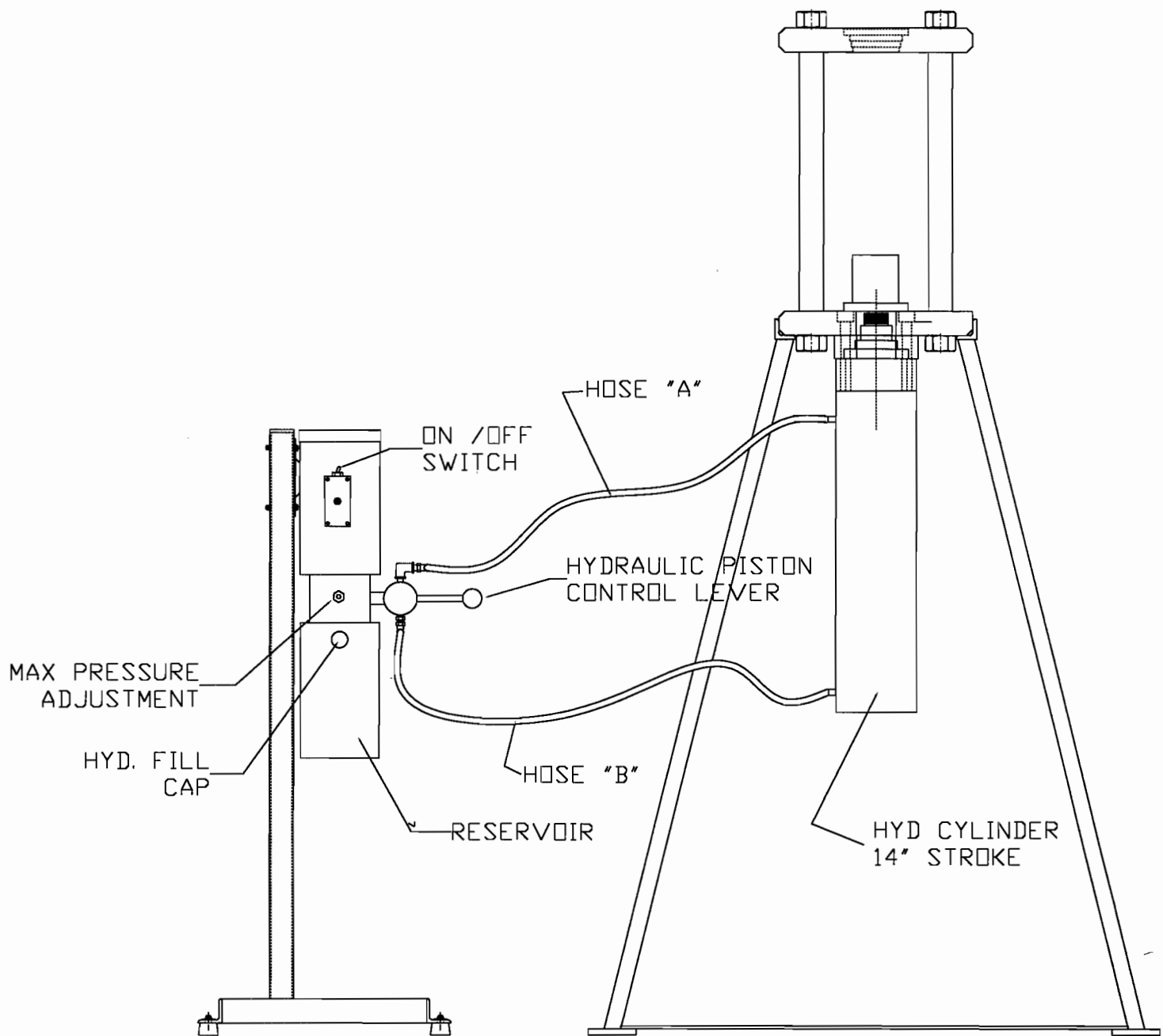
- Power Operated 110 Volt, 1 phase, 15 amp
- 14 inch piston travel
- 2 inch piston diameter for stability
- 30,000 pounds of thrust maximum
- Digital readout displays the load applied
- "Peak Capture" switch allows display of maximum load
- Designed to operate with molds 2.8
- Simplicity of operation allows rapid and safe compaction/extraction
- Option – Digital Display of Compaction Load

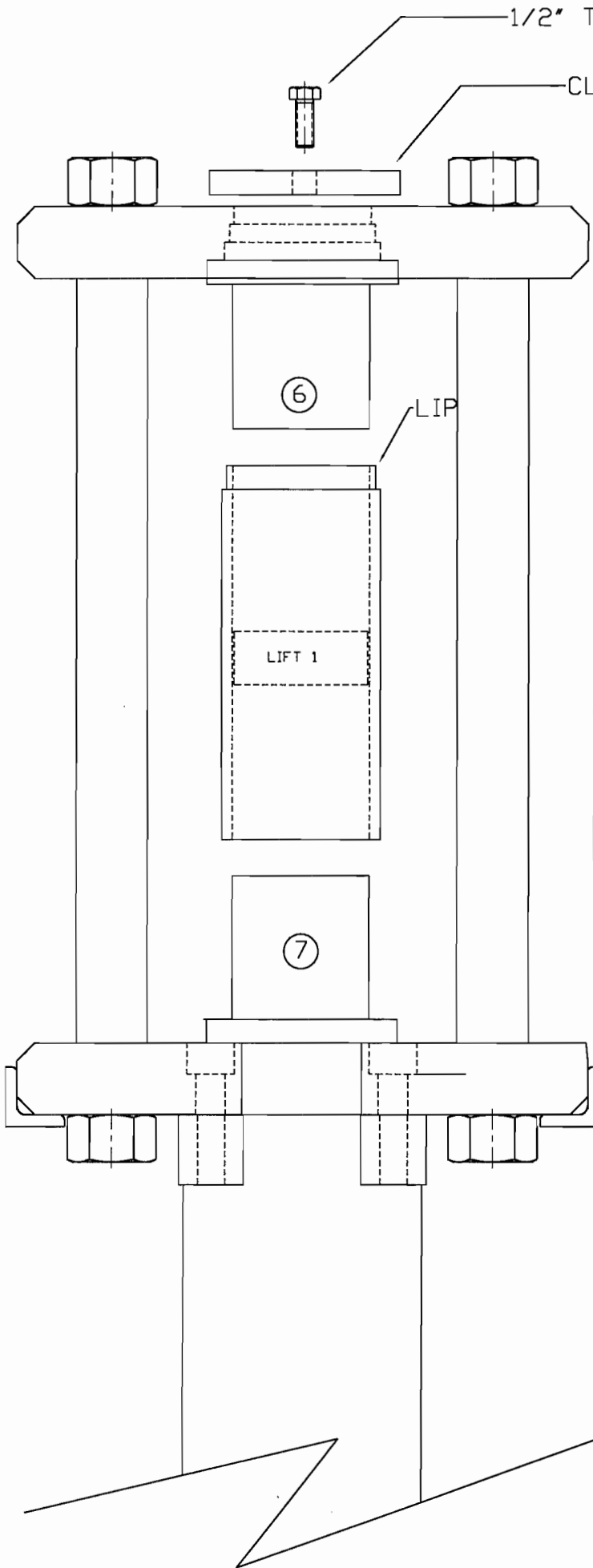
Controls:

- Pump on / off switch
- Lever control operates up - down travel
- Adjustable Max Load Valve

Method of Operation (refer to attached sketch for numbered items)

Attach upper top hat 96 to underside of top plate using the ½ inch threaded bolt. Place mold over base top hat #7 with mold lip facing up. Fill mold with correct weight material for 115 of total sample. Slide mold against the locating pins (stops) which align mold with piston. Turn on pump. Turn on digital display and press "peak reset" switch. Move Control Lever up until correct load is reached, or until the upper lip of mold makes contact with underside of top hat #6. Push Control Lever down until mold can be slid back. Next slide spacer ring #1 (red) onto #6. Prepare sample in mold as per T-307. Slide mold onto #7 and push against stops. Compress sample as per first lift. Return piston to lower position and remove mold from #7. Now slide ring #2 (black) over #7. Prepare sample and place mold onto #7 with lip of mold *down*. Slide mold back into position against stops and repeat load cycle. Return piston and remove mold. Place #3 ring (red) onto # 6 upper top hat. Prepare sample and place mold onto 47 with mold lip facing up. Repeat loading process. Withdraw piston and remove mold from #7. Side #4 ring (black) over #7. Prepare sample and place mold onto #7 with lip facing *down*. Repeat loading cycle. Remove mold from base #7. Remove all rings and place on storage / support bar provided. Remove # 6 top hat by removing ½ inch bolt. Now place extrusion platen over piston. Next carefully place mold, lip facing up, over platen. Now lift mold slowly using control lever until mold lip is correctly inserted into recess in top plate. Continue to move piston up until sample is completely extruded from top side of upper plate.





1/2" THREADED BOLT

CLAMP PLATE

FIRST LIFT

ATTACH ITEM ⑥ TO UPPER PLATE USING BOLT AND CLAMP PLATE
 PLACE ITEM ⑦ ON SHELF AND PLACE MOLD OVER ⑦, LIP @ TOP

THEN FILL WITH CORRECT WEIGHT OF SOIL.
 NOW SLIDE MOLD OVER HYDRAULIC PISTON

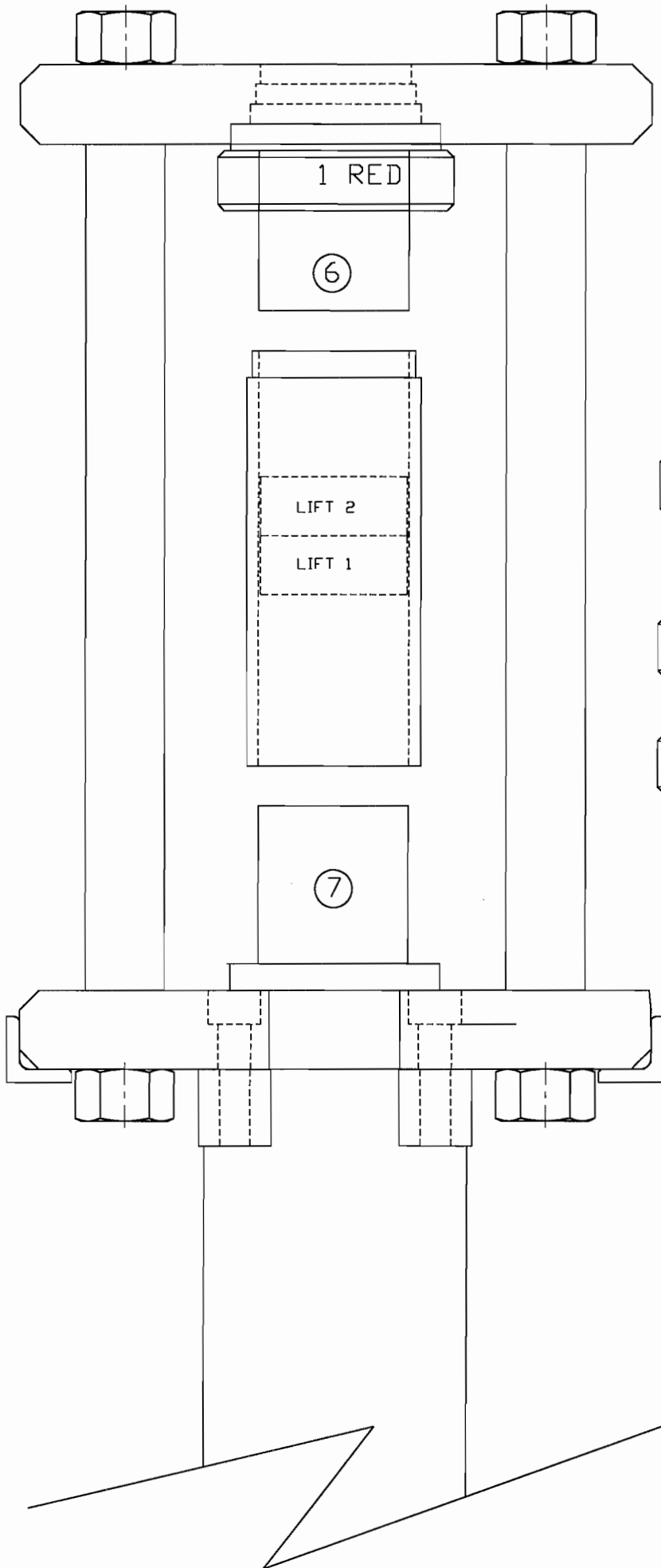
1 RED

3 RED

4 BLACK

2 BLACK

USING HYDRAULIC PISTON CONTROL LEVER, RAISE TOP HAT ⑦ UNTIL SOIL IS COMPACTED
 NOTE MOLD TOP EDGE AND BOTTOM EDGES ARE IN CONTACT WITH TOP AND BOTTOM FLANGES OF ⑥ AND ⑦

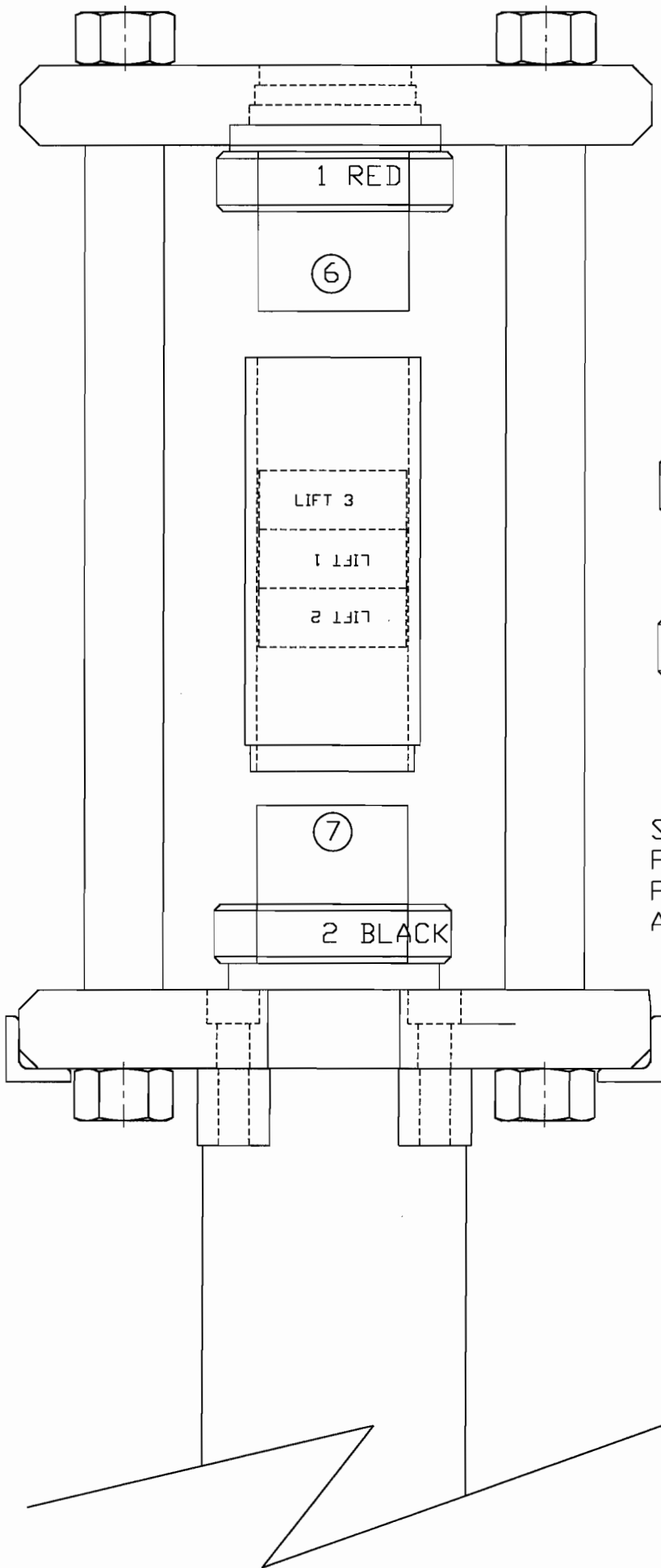


2ND LIFT
 RETURN HYDRAULIC CYLINDER
 TO LOWEST POSITION, SLIDE
 MOLD OUT
 PLACE RED SPACER RING
 OVER (6) SCRATCH SOIL
 SURFACE OF LIFT, NOW FILL
 WITH 2ND LIFT OF SOIL.
 SLIDE MOLD OVER PISTON
 AND RAISE MOLD UNTIL BOTH
 ENDS OF MOLD ARE IN
 CONTACT WITH RING.
 LOWER FLANGE OF (7)

3 RED

4 BLACK

2 BLACK



3RD LIFT

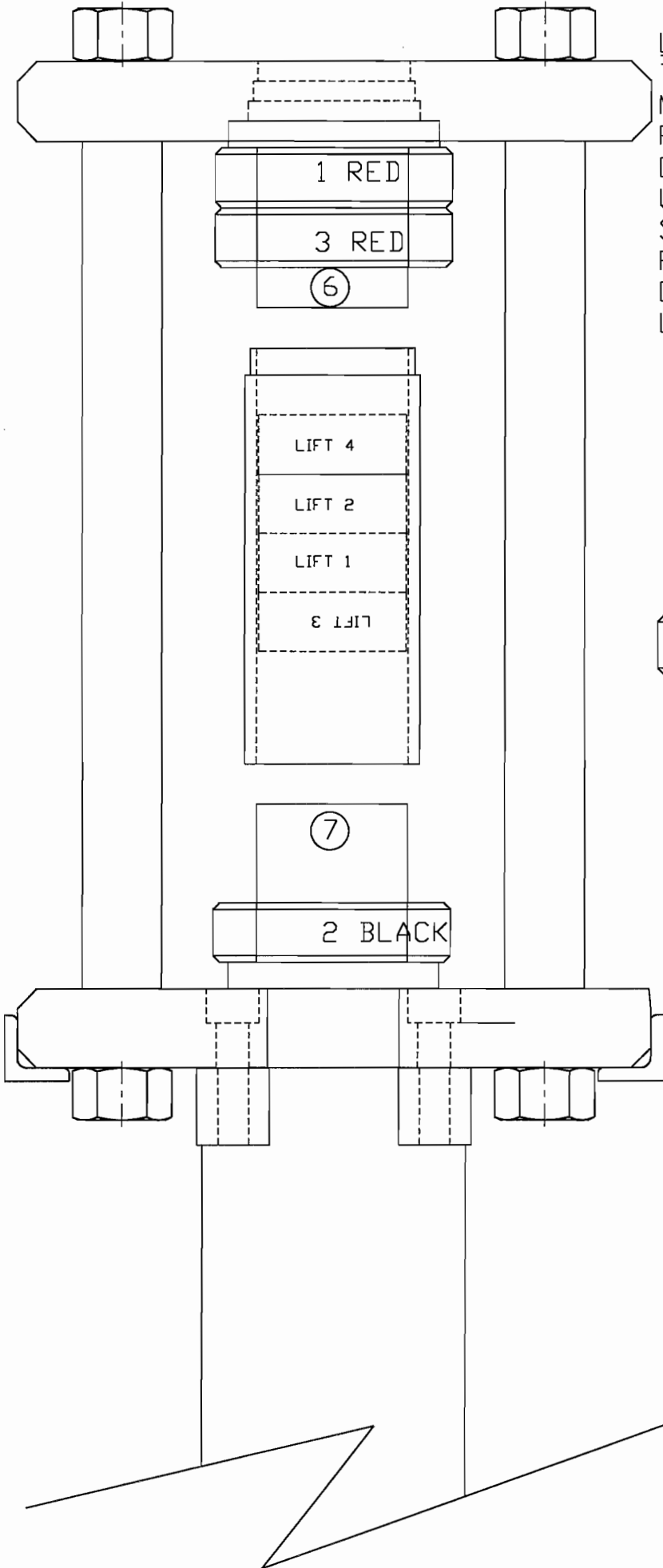
RETURN HYD. PISTON TO LOWEST POSITION.

SLIDE OUT MOLD AND TURN UPSIDE DOWN. (LIP FACING DOWN.) SCRATCH SOIL SURFACE OF LIFT "1" AND FILL WITH CORRECT WEIGHT OF SOIL. PLACE BLACK SPACER RING OVER ⑦ AND THEN PLACE MOLD (LIP DOWN) OVER ⑦

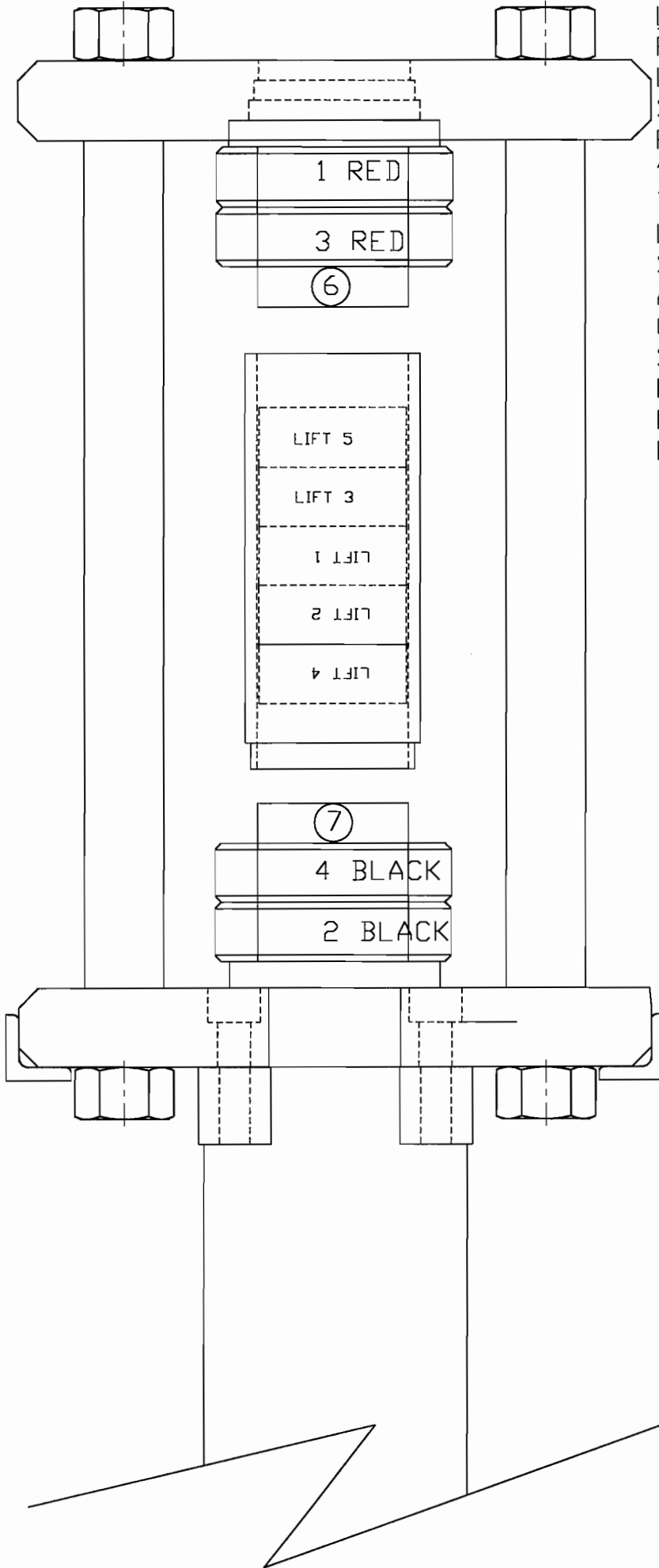
3 RED

4 BLACK

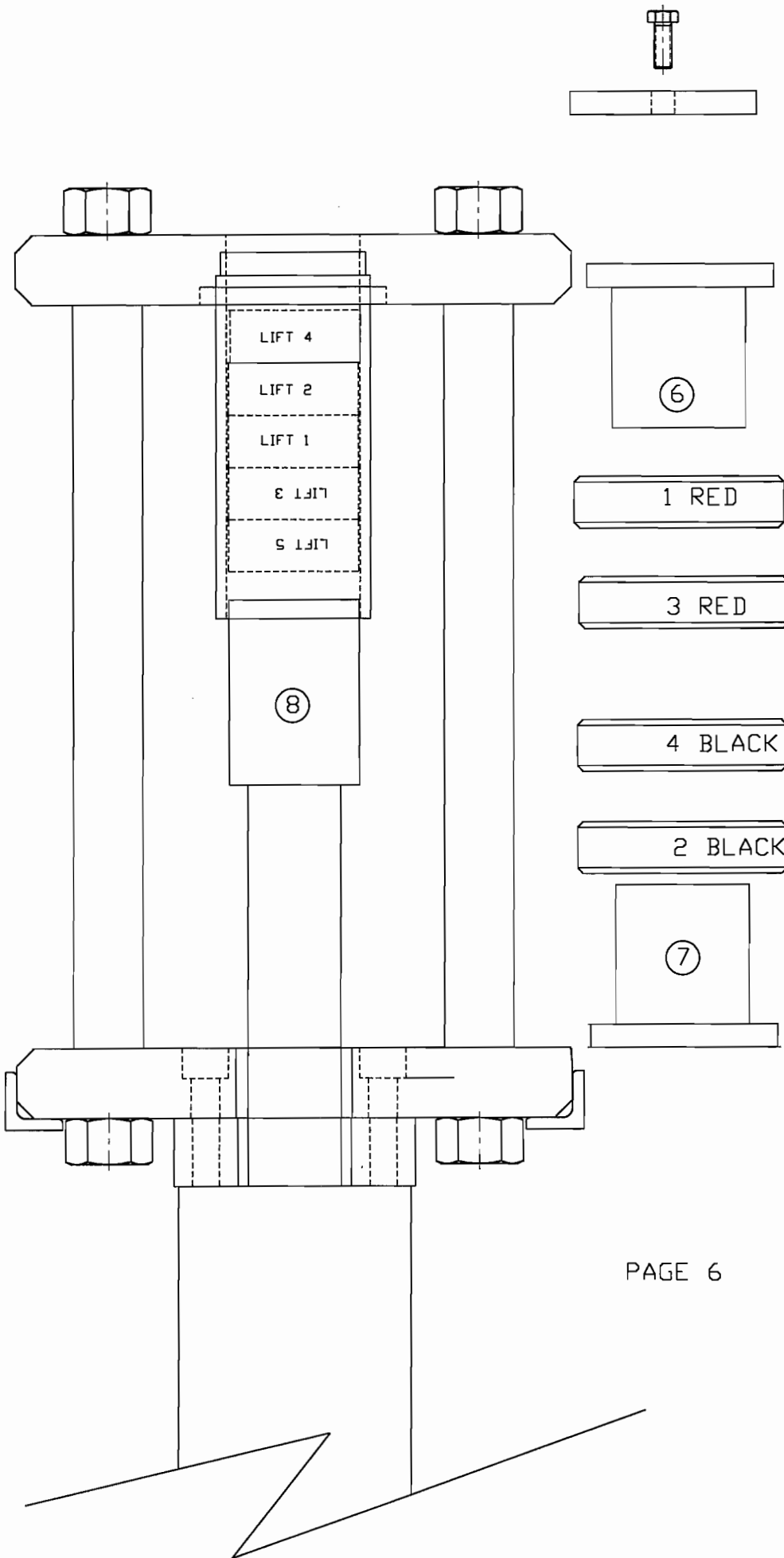
SLIDE ⑦ BACK INTO POSITION AND RAISE PISTON IN SAME MANNER AS LIFT 2



LIFT 4 RETURN HYD PISTON TO LOWEST POSITION AND SLIDE MOLD OUT. PLACE 2ND SPACER RING "RED" OVER ⑥ TURN MOLD LIP FACING UP OVER ⑦. SCRATCH SURFACE OF LIFT 2. FILL MOLD WITH CORRECT WEIGHT OF SOIL, REPEAT AS FOR 3RD LIFT



LIFT 5
 RETURN HYD PISTON TO
 LOWEST POSITION. AND
 SLIDE MOLD OUT.
 PLACE 2ND SPACER
 "BLACK" OVER ⑦ AND
 THEN PLACE MOLD OVER ⑦
 LIP DOWN. SCRATCH
 SURFACE OF 3RD LIFT
 AND THEN FILL WITH
 CORRECT WEIGHT OF SOIL.
 SLIDE MOLD BACK INTO
 POSITION.
 REPEAT COMAPCTION
 PROCESS.



EXTRACTING SAMPLE
 RETURN HYD PISTON TO
 LOWEST POSITION, REMOVE
 MOLD FROM ⑦
 REMOVE TOP HAT ⑥ PLACE
 EXTRACTOR PISTON OVER HYD
 PISTON

PLACE MOLD OVER
 PISTON "LIP UP"
 AND SLOWLY LIFT
 MOLD UNTIL LIP
 IS ENGAGED IN
 RECESS. NOW
 CONTINUE TO
 EXTRUDE SAMPLE
 SLOWLY