POWER OFF
Remove all power from master switch before providing service or repairs.

I. Mounting
Mounting brackets are incorporated at the base of the master switch on Nema 1 enclosures for floor type mounting; (4.344” diameter holes are provided.) A 1-1/4” conduit opening is located at the base of the switch. For open type or desk mounting, use the four counter-sunk .219” diameter holes located on the Intermediate Plate (1).

IIA. Handle Arrangement
Handle arrangement can be changed from STANDARD RIGHT HAND MASTER to LEFT HAND MASTER by the following method:

1) Remove four mounting screws (27) and take off cover (28).
2) Remove one stop screw (61) on gear box (3).
3) Remove four gear box mounting screws (4).
4) Turn Handle 90°
5) Remove one spring pin (63) inside gear housing on operating shaft. Drive the gear spring pin (63) 5/8” deep into the gear hub to clear operating shaft.
6) Pull out handle and shaft, while holding gear, from gear housing.
7) Reposition gear, (spring pin up), for standard left hand arrangement. Insert handle and shaft. Align hole in shaft and gear, and drive spring pin into shaft, (1/16” below gear hub diameter).
8) Install Spring pin (63) into hole in operating shaft.
9) Apply loctite to threads on stop screw (61). Install stop screws into gear housing.

NOTE “A”
Handle should be in the up-right position and the switch in the off-point position. This insures proper cam to handle orientation.
10) Reinstall gear box assembly on master switch to new position.

IIIB. Auxiliary Pushbutton Handle Arrangement
The Master Switch handle can be changed from standard right hand to left hand operation only! For 90° rotation, turn Master Switch enclosure 90°.
The Master Switch must be removed from the enclosure or desk. Follow Part IV instructions for changing cams. (1 thru 6), and continue:

1) Disconnect switch wires from terminal block (12), cut off “push-on” terminals from wires. (Follow II A HANDLE ARRANGEMENT instructions 1 thru 9).
2) Feed handle cable through intermediate plate (1) and hole in main frame (10). (See Note “A”).
3) Align cable and gear box (3) on master switch and tighten four mounting screws (4).

4) Install cover (28) and tighten four mounting screws (27).
5) Install new “crimp-on” terminals on handle wires and connect terminals to block (12).
6) Install Master Switch into enclosure or desk, and follow Part IV instructions 1 thru 6 in reverse order to assemble Master Switch.

III. Gear Box Assembly
NOTE “B”
The gear box (3) can be repositioned from standard right hand to left hand operation when contact sequence is identical for forward and reverse. This can be accomplished by rotating the gear box only, and interchanging electrical connections 1F and 1R on contact blocks (14).

CAUTION: Remove all power from Master Switch before interchanging electrical connections.

The gear box assembly can be repositioned to one of the alternate 90° locations by the following method:

CAUTION: Be sure that the switch is in off-point position prior to repositioning the gear box assembly. The detent follower must be engaged with the off-
Type 4216 Cam Operated Master Switch

Items 19-22 not sold separately; available in kits 49018-201, 49018-202, 49018-203 or 49018-204. See following page for more information.
Type 4216 Cam Operated Master Switch

1. APPLY ITEM 8 LOCTITE #4027 TO ITEM 7 STUD AND THREAD INTO LOWER BEARING BLOCK- TIGHTEN.
3. APPLY ITEM 9 LOCTITE #4071 TO ITEM 5 STUD AND THREAD INTO SPRING RETURN HUB - TIGHTEN.

SEE SHEET A-49015-006 AND 49015-007 FOR SPRING RETURN UNIT SELECTION GUIDE

ALL DIMENSIONS IN INCHES 1 = 4

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<th>DWG. NO.</th>
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* Part Numbers are for reference only and not available as individual items.

PERCAUTIONARY NOTE:

BE SURE THAT THE ROSE ON THE MAIN SHAFT EXTENDS DOWN BEYOND THE SURFACE OF THE LOWER BEARING BLOCK APPROX. 1/32".
IF THE ROSE ON THE MAIN SHAFT EXTENDS FROM THE BEARING SLICE 1/4" OR DEEPER, IT IS DANGEROUS TO OPERATE THE SWITCH. IN THIS CASE A NEW MAIN SHAFT MUST BE INSTALLED AND 100 SERIES SPRING RETURN UNIT MAY THEN BE USED.
Type 4216 Cam Operated Master Switch

Pub 105-1 Instructions

(Continued from front page)

be removed prior to main shaft (10) removal. It is not necessary to remove the potentiometer coupling (24) from the main shaft (10).
8) Remove detent cam compression spring (32).
9) Remove four screws (34) and lockwashers (30) which secure lower bearing block (18).
10) Remove the main shaft assembly from the main frame (17).
11) Remove pinion (5) off top of main shaft (10).
12) Remove upper bearing (38).
13) Remove locknut (37) that secures detent cam (36) and circuit cams (35).

CAUTION: Observe the orientation and order of assembly of detent cam (36) and circuit cams (35).
14) Refer to cam coding on wiring diagram for proper cam orientation.
15) Re-assemble the Master Switch. The handle should be in an up-right position with the main shaft in the off-point position to insure proper cam-to-handle orientation.

V. Adjusting Potentiometer Assembly (25)
(For Stepless Application)
1) Remove all power to Master Switch.
2) Remove wires #2 & 4 on Potentiometer Assembly (25) Terminal Board.

3) Remove 4 flat head screws from Intermediate Plate (1).
4) Lift and tilt the Master Switch so the bottom of switch (Potentiometer Assembly) clears the Housing. Support the tilted switch.
5) Attach Ohm Meter leads to Potentiometer Assembly Terminals #2 & 4.
6) Move handle from STOP to STOP in opposite directions. Record the Ohmic Value. Loosen two locking screws, (do not remove), on bottom of Circuit Board. Rotate handle on switch to stop position and rotate potentiometer until ohmic value is equal in both directions. Secure two locking screws. Check Ohmic Value again in both directions.
7) Re-assemble Master in reverse order.

VI. Lubrication

Your Euclid Type 4216 Mill Master Switch is equipped with double sealed and lubricated ball bearings on the main shaft and oilite bronze sleeve bearings impregnated with oil on the operator shaft. While the sealed ball bearings do not require lubrication maintenance, the oilite bearings may be lubricated periodically with an SAE30 non-detergent oil.

The pinion-bevel gear combination should be inspected on a regular basis, and lubricated with an NLGI #1 grease such as Lubriplate #107 or equivalent.

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### Electrical Ratings

Electrical Contacts are rated in accordance with NEMA StandardICS-2-125
(B600 and N600 Table Rating)

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