

# MILL DRIVES FOR CEMENT INDUSTRY

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CIMENTEC ENGINEERING LTD

# A. Ball Mill Drives

## SINGLE MOTOR DRIVES

- Ring gear and pinion with low-speed synchronous motor and air clutch
- Ring gear and pinion with high-speed motor, gearbox and fluid coupling
- Ring gear and pinion with high speed slip ring motor, liquid rheostat and gear box

# A. Ball Mill Drives

## SINGLE MOTOR DRIVES

- Centre drive with high torque motor:
  - Slip ring motor
  - High torque synchronous motor
  - Synchronous-slip ring induction motor

# A. Ball Mill Drives

## SINGLE MOTOR DRIVES

- Centre drive with low-torque synchronous motor and fluid coupling
- Centre drive with low-torque synchronous motor and air clutch

# B. Ball Mill Drives

## DUAL DRIVES, TWIN MOTOR DRIVES

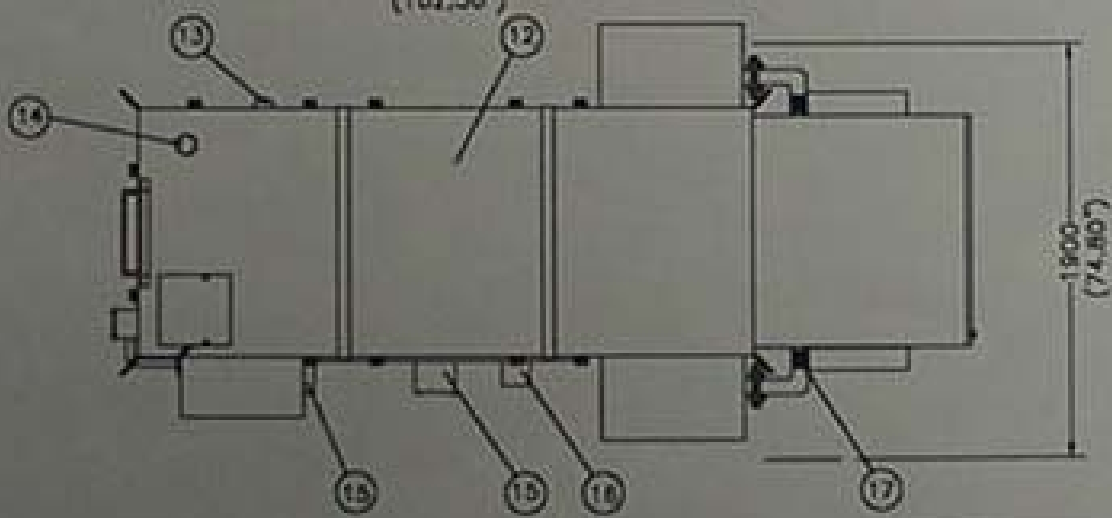
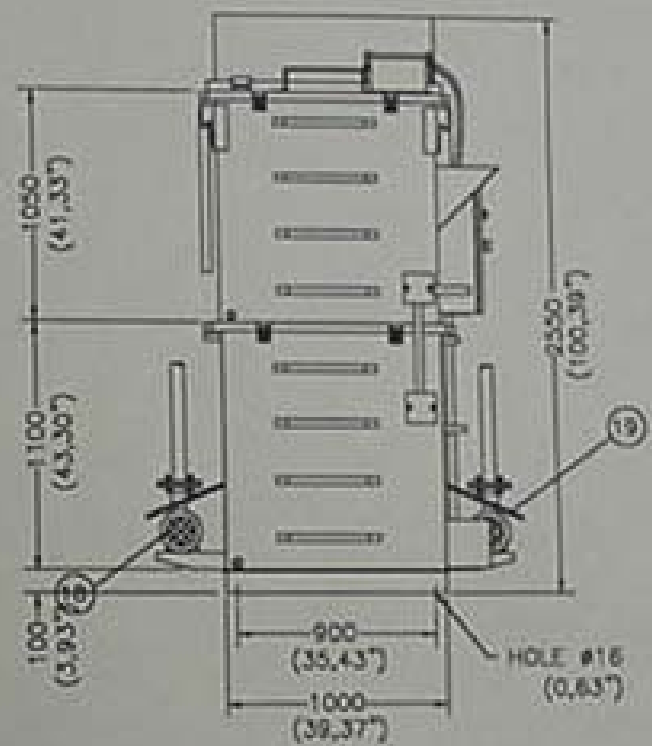
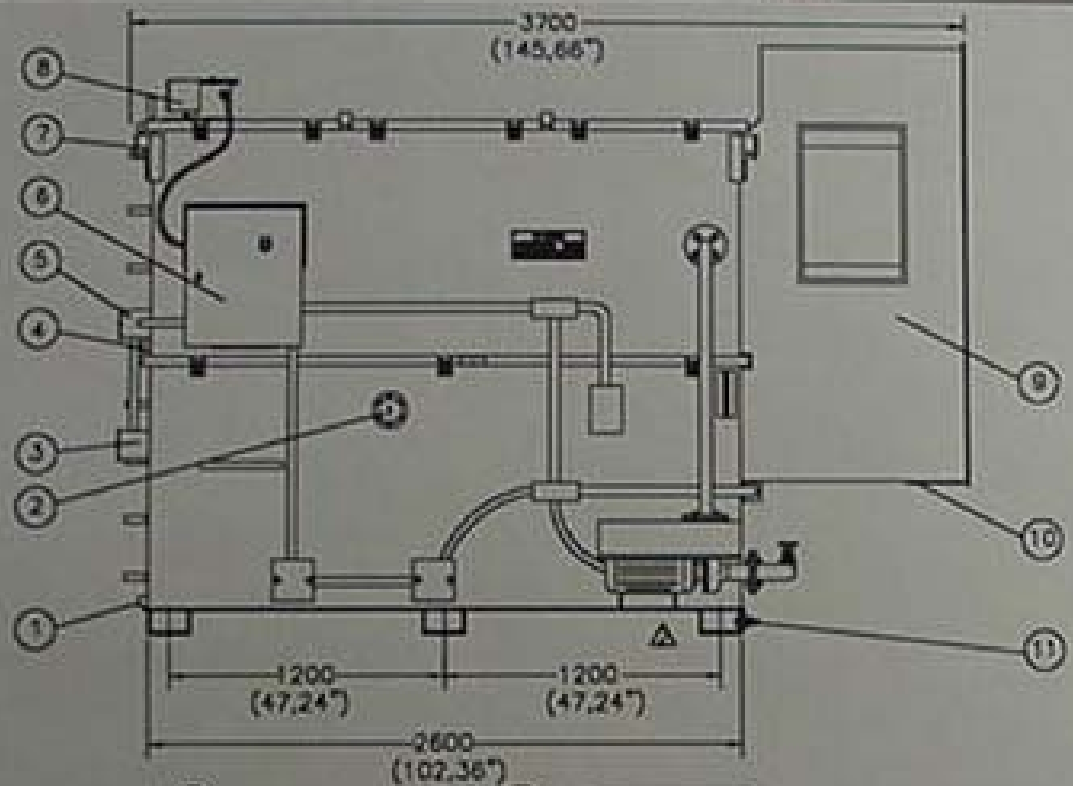
- High speed slip ring induction motors, liquid rheostat, slip compensation resistance and gearbox
- Low speed low torque synchronous motors with air or hydraulic clutches.

## C. Roller Mill Drives

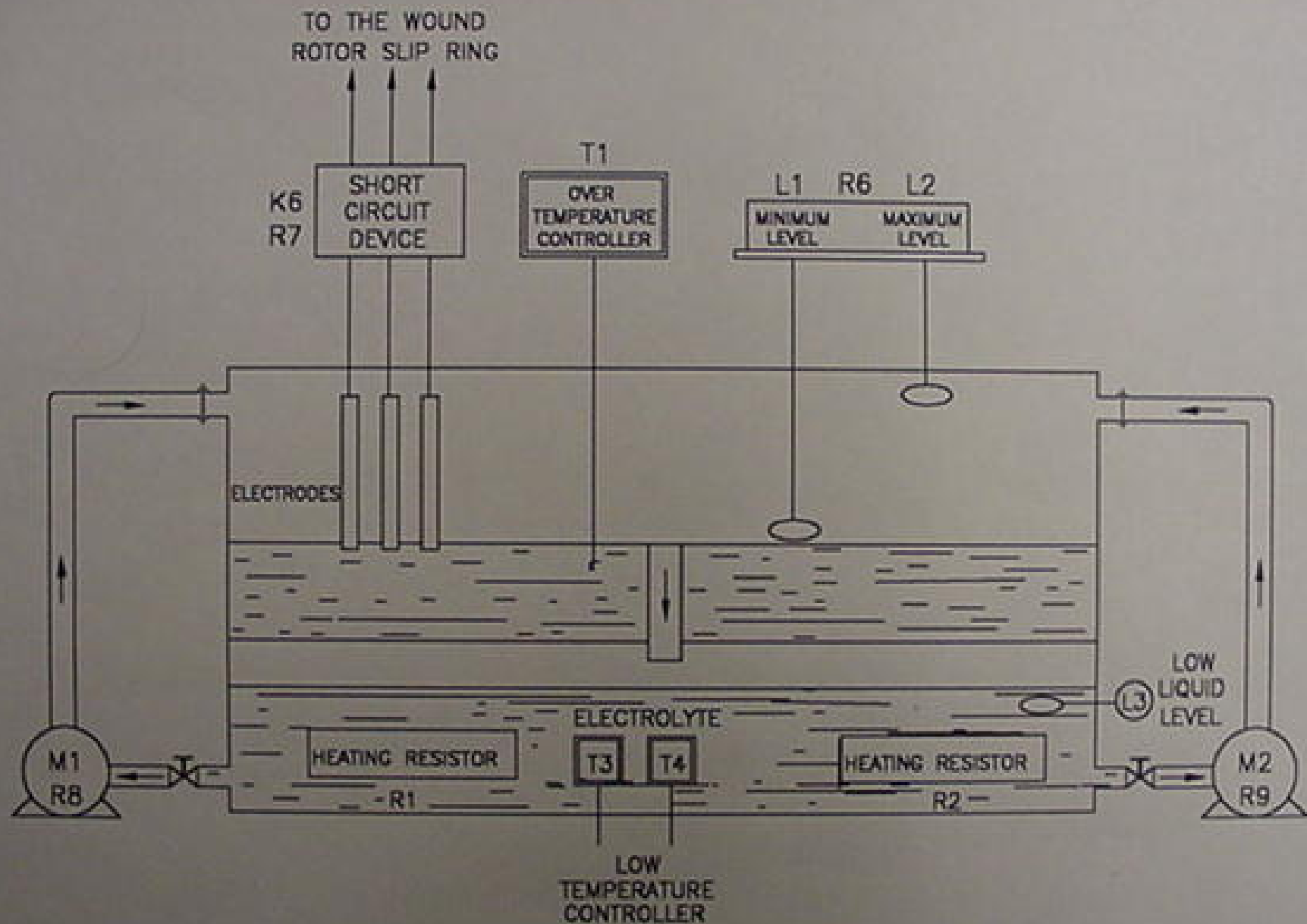
- High speed slip ring induction motor with rheostat
- High speed low torque synchronous motor (Roller Lifters)
- High speed high torque synchronous motor. (without roller lifter)

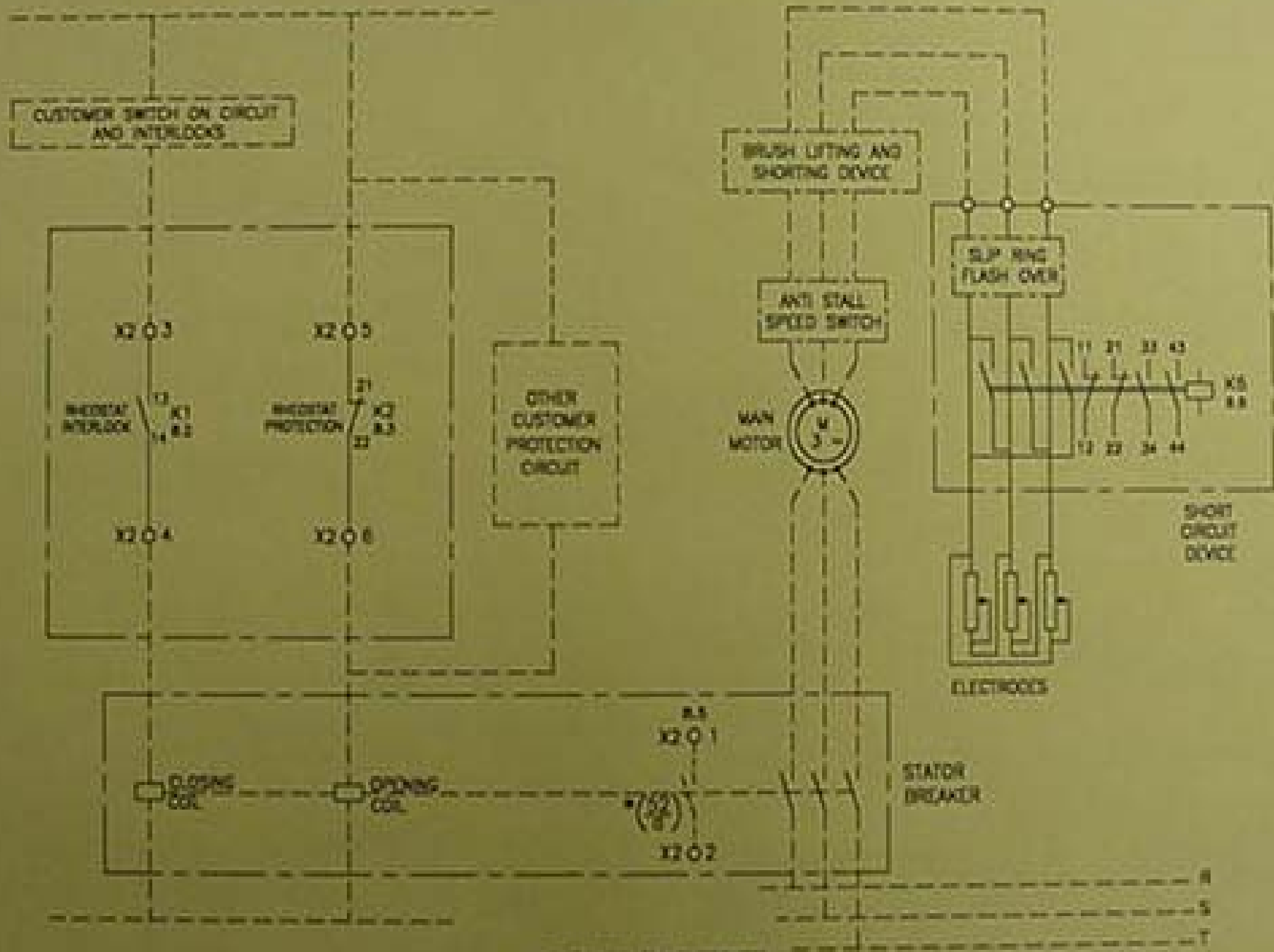
# D. GEARLESS BALL MILL DRIVE

- For large mills, greater than 10'000 hp (speed from 13 to 15 1/min)

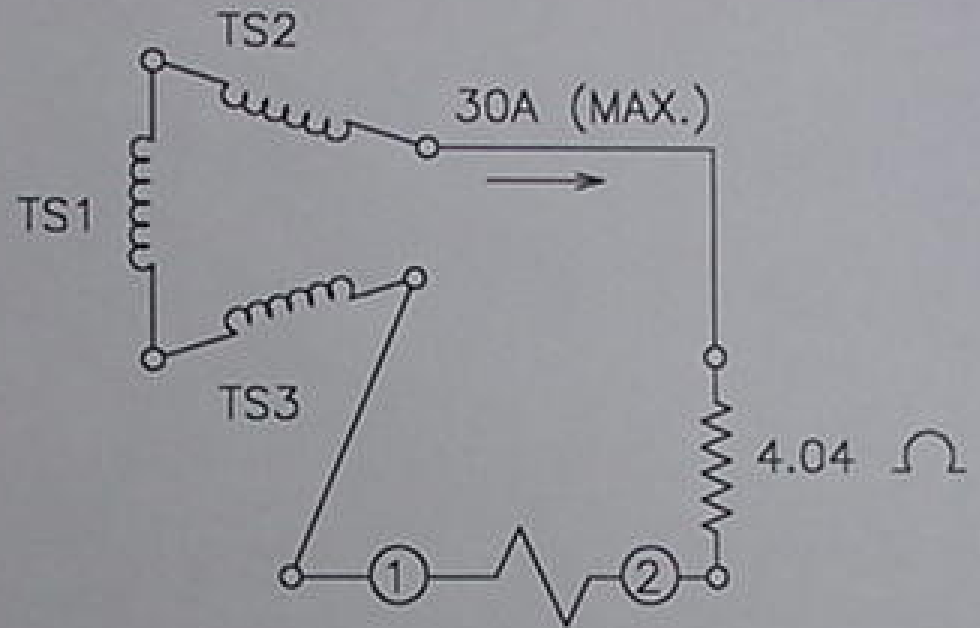
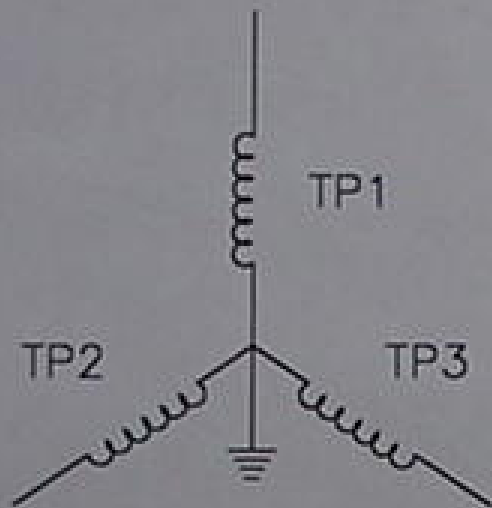


APPROXIMATED WEIGHT WITHOUT ELECTROLYTE: 1450 kg  
 APPROXIMATED WEIGHT WITH ELECTROLYTE : 4350 kg  
 COLOR: GRAY MUNSELL N6.5  
 INSTALLATION: OUTDOOR  
 STARTING TORQUE: 180 N  
 AMBIENT TEMPERATURE:  $-15^{\circ}\text{C}/+40^{\circ}\text{C}$   
 DIMENSIONS IN MILLIMETERS  
 (DIMENSIONS IN INCHES)

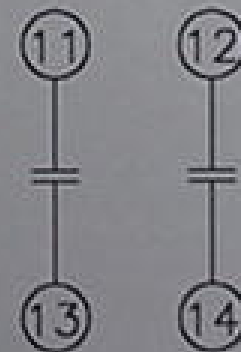




★ SUPPLIED BY CUSTOMER

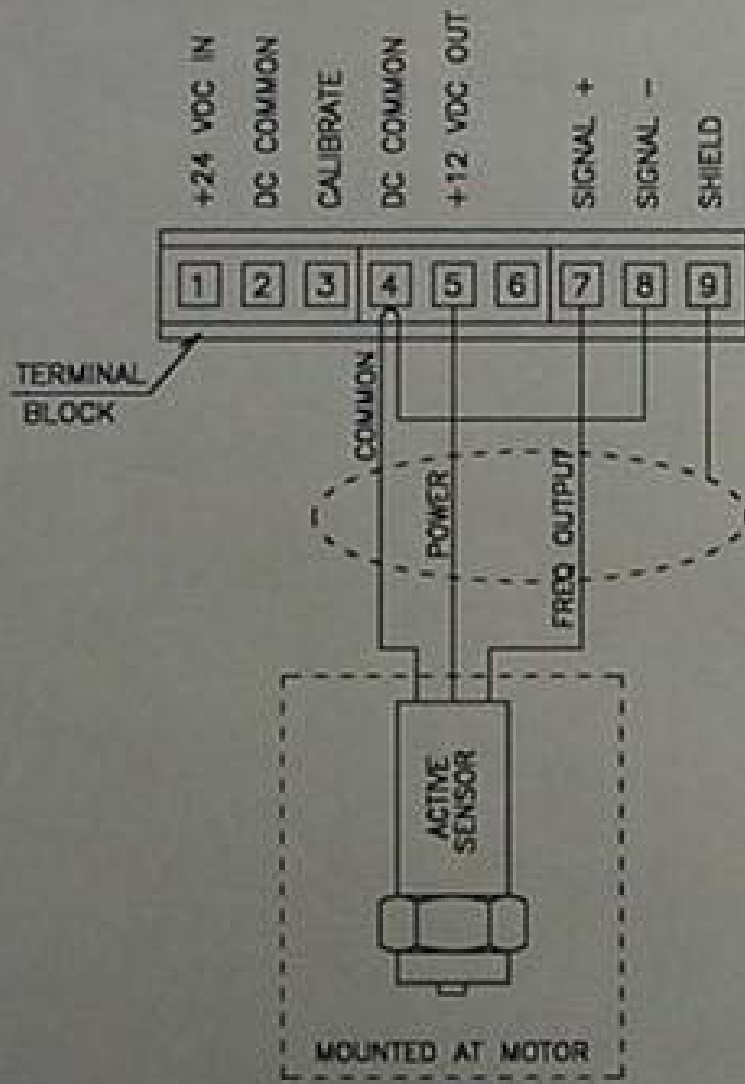


RELAY- PJC  
(ADJUSTED AT 0.5 A)

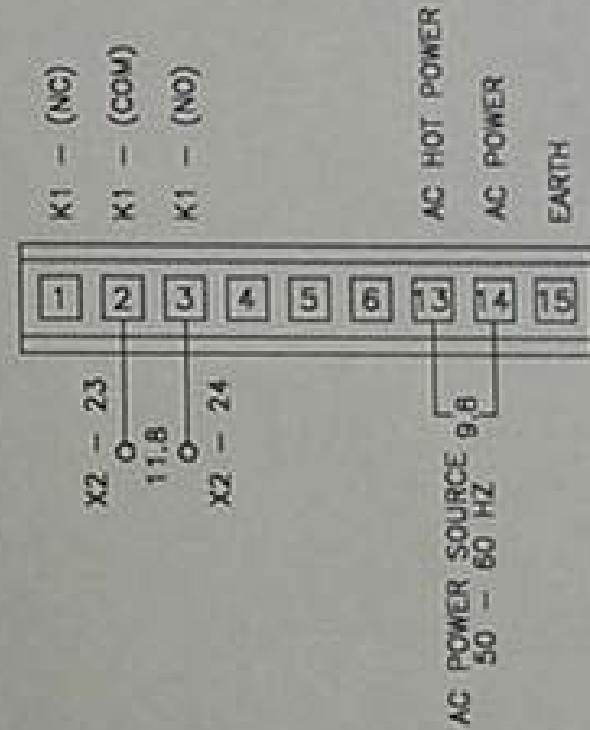


NOTE: ALL COMPONENTS SUPPLIED  
BY GEVISA AND ASSEMBLED  
IN THE SHORT CIRCUIT DEVICE PANEL

TB2



TB1



NOTE: TACH - PAK3 SUPPLIED BY GEVISA  
 MOUNTED IN THE RHEOSTAT PANEL  
 TB1 AND TB2 - TERMINAL BLOCKS  
 INSIDE TACK - PAK TOP COVER

3/8 NPT FOR ROTOR LEADS (REF.)

HEATER AND LIGHTING TERMINAL BOX

(1)  $\phi 1"$  PULSE (START)

32.00

10.00

4.00

1.00

PUL TRA

AIR INLET

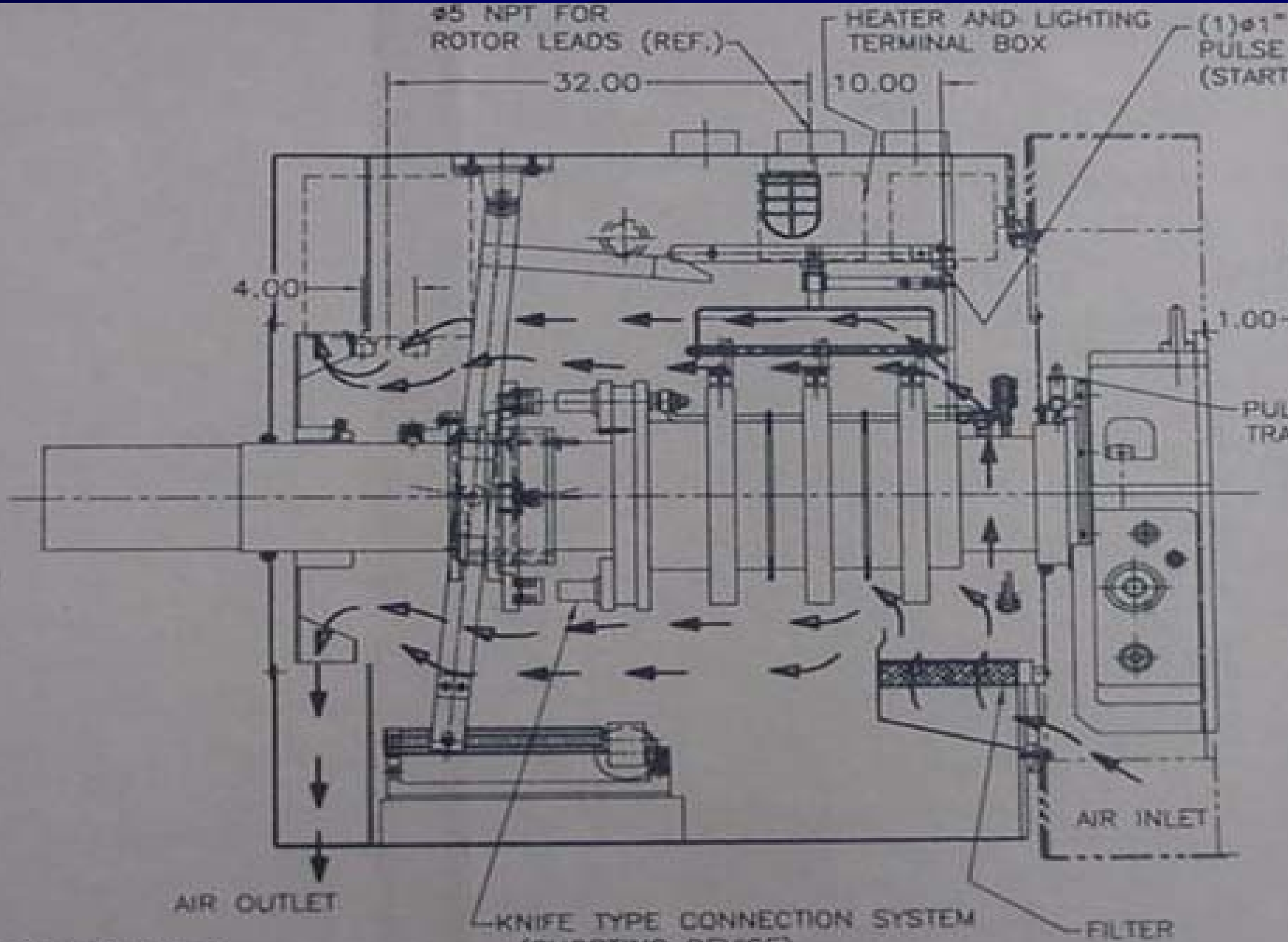
AIR OUTLET

KNIFE TYPE CONNECTION SYSTEM (SHORTING DEVICE)

FILTER

FOR INFORMATION ONLY

SHORTING DEVICE IS COMPOSED BY A MECHANISM WITH TWO FUNCTIONS.



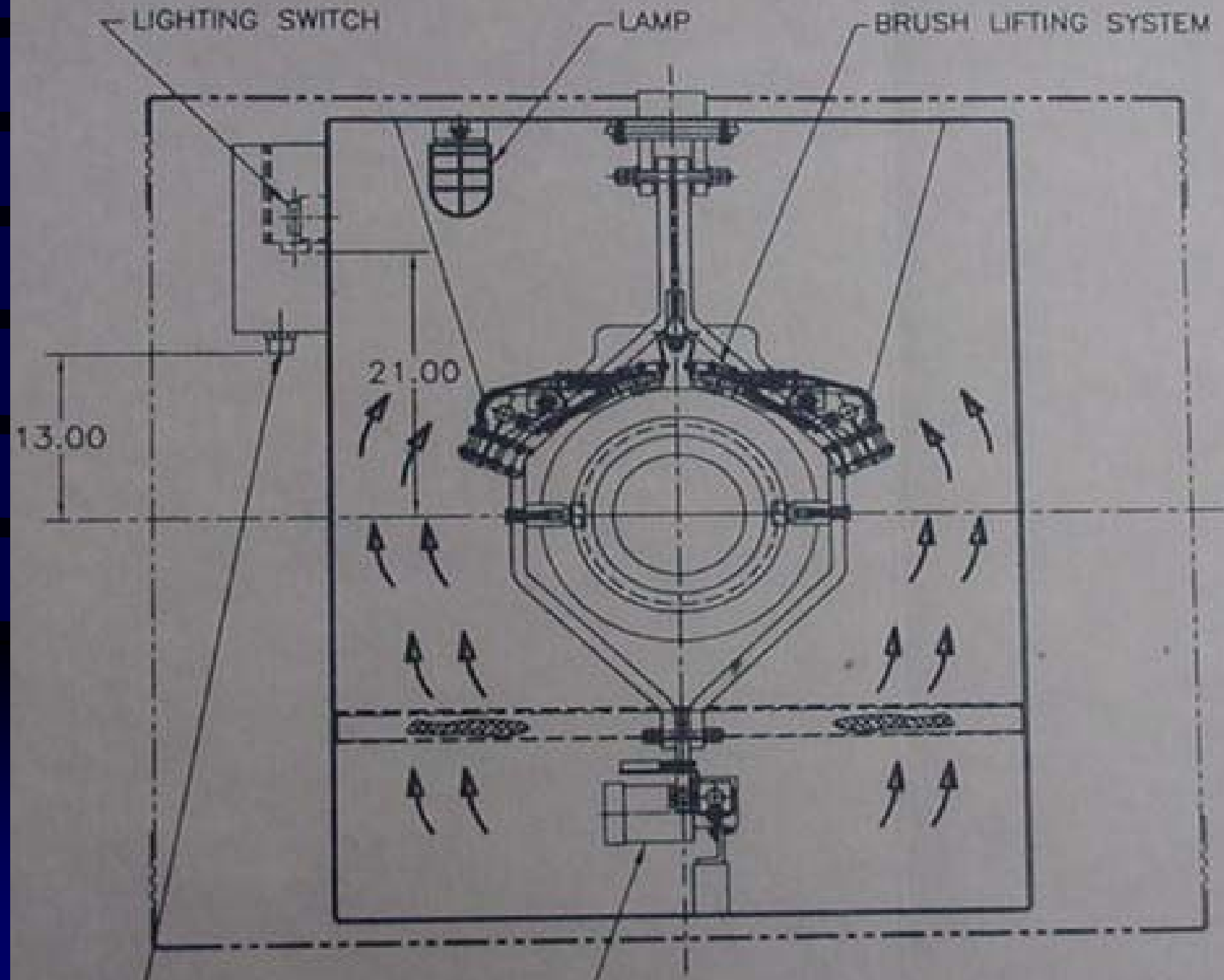
LIGHTING SWITCH

LAMP

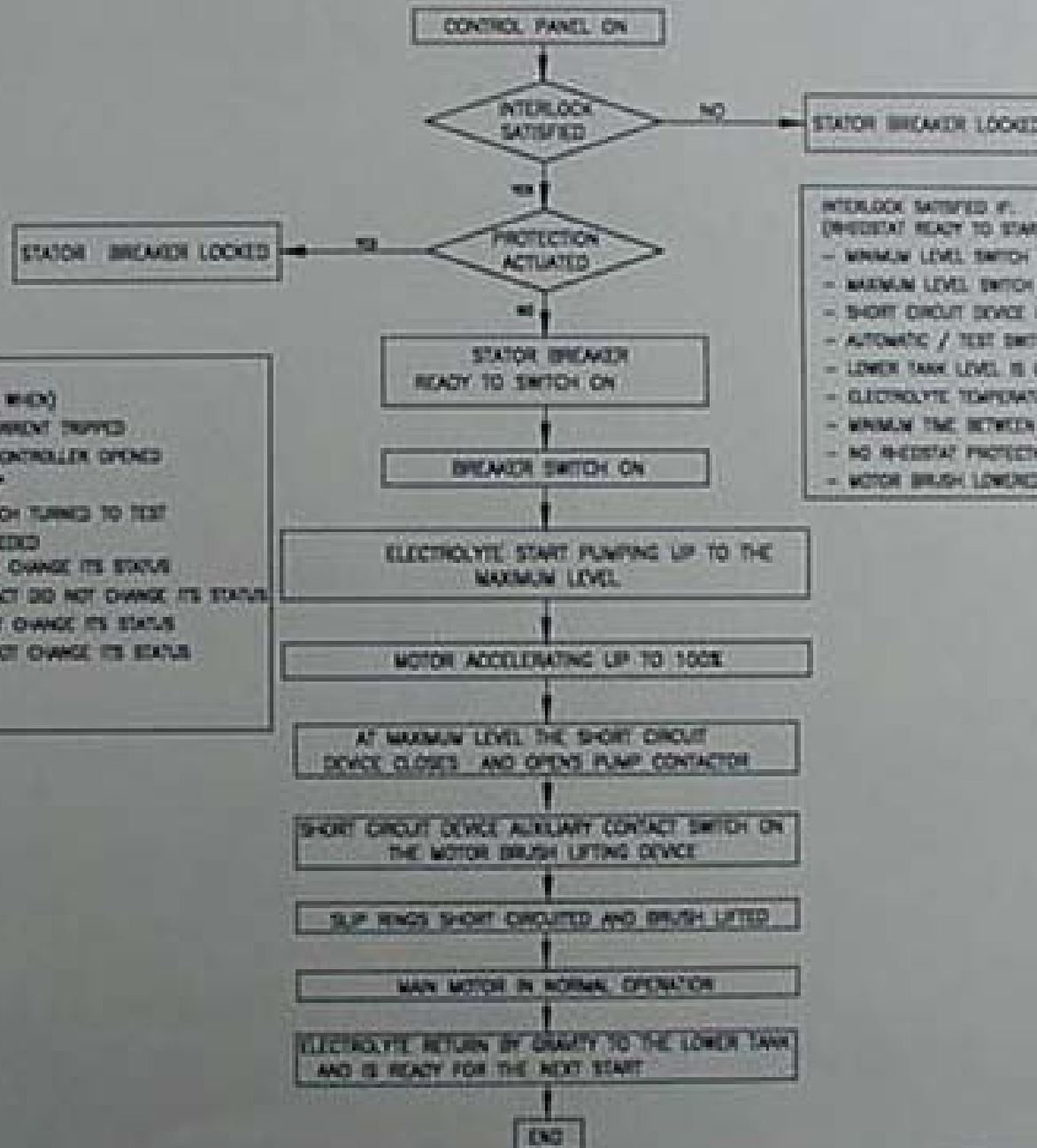
BRUSH LIFTING SYSTEM

13.00

21.00



# BLOCK DIAGRAM



**PROTECTION**  
 (RHODESTAT PROTECTION WILL ACTUATE WHEN)

- MOTOR PUMP OVERLOAD / OVERCURRENT TRIPPED
- ELECTROLYTE HIGH TEMPERATURE CONTROLLER OPENS
- SHORT CIRCUIT DEVICE "WELDING"
- AUTOMATIC / TEST SELECTION SWITCH TURNED TO TEST
- CONTROL OF EXCESSIVE TIME EXCEEDED
  - MINIMUM LEVEL SWITCH DO NOT CHANGE ITS STATUS
  - SHORT CIRCUIT AUXILIARY CONTACT DO NOT CHANGE ITS STATUS
  - MAXIMUM LEVEL SWITCH DO NOT CHANGE ITS STATUS
  - MOTOR PUMP CONTACTOR DO NOT CHANGE ITS STATUS
- MOTOR STALLED
- SLIP RING FLASHOVER

**INTERLOCK SATISFIED IF:**  
 (RHODESTAT READY TO START)

- MINIMUM LEVEL SWITCH IS CLOSED
- MAXIMUM LEVEL SWITCH IS OPENED
- SHORT CIRCUIT DEVICE IS OPENED
- AUTOMATIC / TEST SWITCH SET TO AUTOMATIC
- LOWER TANK LEVEL IS CORRECT
- ELECTROLYTE TEMPERATURE IS ABOVE THE MINIMUM SET
- MINIMUM TIME BETWEEN SUCCESSIVE STARTS EXCEEDED
- NO RHODESTAT PROTECTION ACTUATED
- MOTOR BRUSH LOWERED

