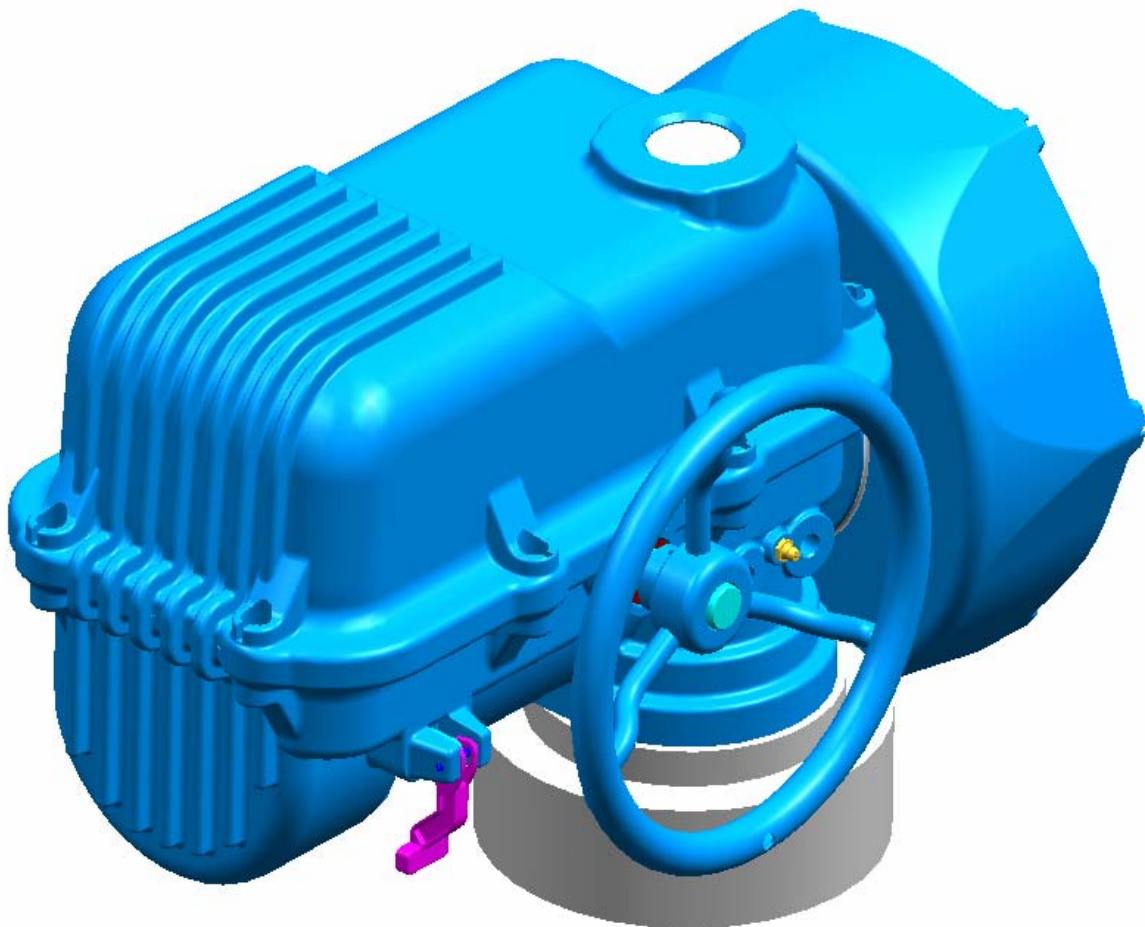


ELECTRIC ACTUATOR *"SR"* SERIES

SPRING RETURN ACTUATOR



1 .PERFORMANCE

| Model | Max output torque | Spring Return Time(90°) | Operating time (90°/3000rpm) | | duty | Motor |
|-------|-------------------|-------------------------|------------------------------|-------|------|-------|
| | kg.m | | Close | Open | | |
| SR-20 | 20kgm | 2sec | 32sec | 50sec | 100% | 200W |

| Modulating Control | | Rated Current (A) | | | Number of Handle turns | Weight(kg) |
|--------------------|-----------|-------------------|--------|-------------|------------------------|------------|
| Input | Output | 110VAC | 220VAC | 380 /440VAC | | |
| 4-20mA DC | 4-20mA DC | 3.5A | 1.6A | 1.6A | 80 | 60kg |
| 1 - 5V DC | | | | | | |
| 1 - 10V DC | | | | | | |

2. STANDARD SPECIFICATION

| | |
|---------------------|--|
| Enclosure | Explosin Proof & watertight Enclosure Ex d II B T4 IP67 |
| Ambient Temperature | -20℃ ~ 55℃ |
| Power Supply | 1Ph 110/230 VAC 50/60Hz |
| Limit Switch | Open/Close Limit switch (250VAC 16A) |
| Travel Angle | 90° ± 5° |
| Indicator | Continuous Position indicator |
| Self Locking | Provided by means of worm wheel |
| Mechanical Stops | External Adjustable Screws |
| Space Heater | 20W |
| Conduit Entries | 3-PF 3/4" |
| | Option : 3-M20, 3-NPT 3/4" |
| Lubrication | Shell ALVIDA EP2 |
| Materials | Aluminium Alloy |
| Surface Treatment | Anodizing |
| Coating | Polyester (TGIC - Free) |

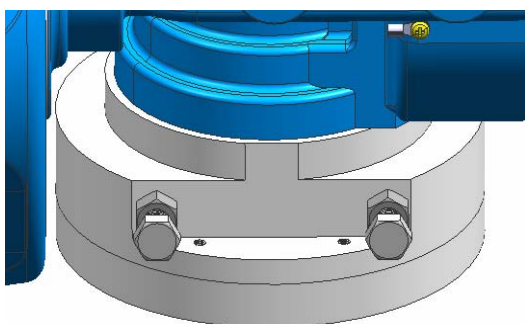
3. FEATURES



MANUAL OVERRIDE LEVER



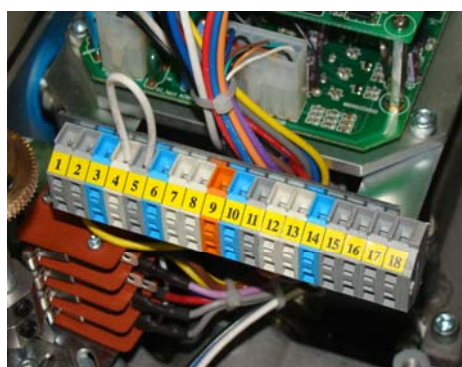
CONTROL BOARD



DASH POT & STOPPER BOLTS



LIMIT SWITCH

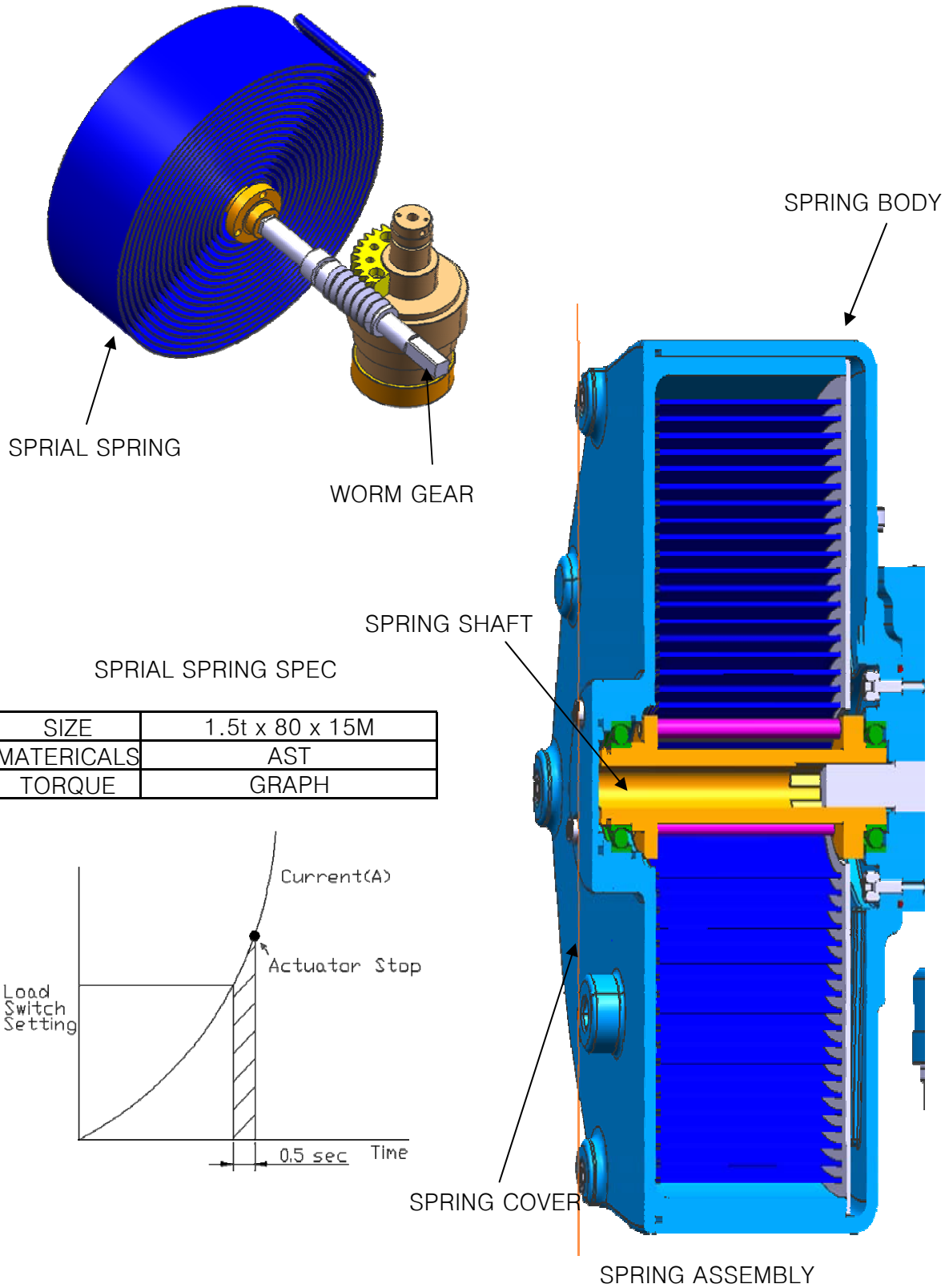


WIRING CONNECTOR

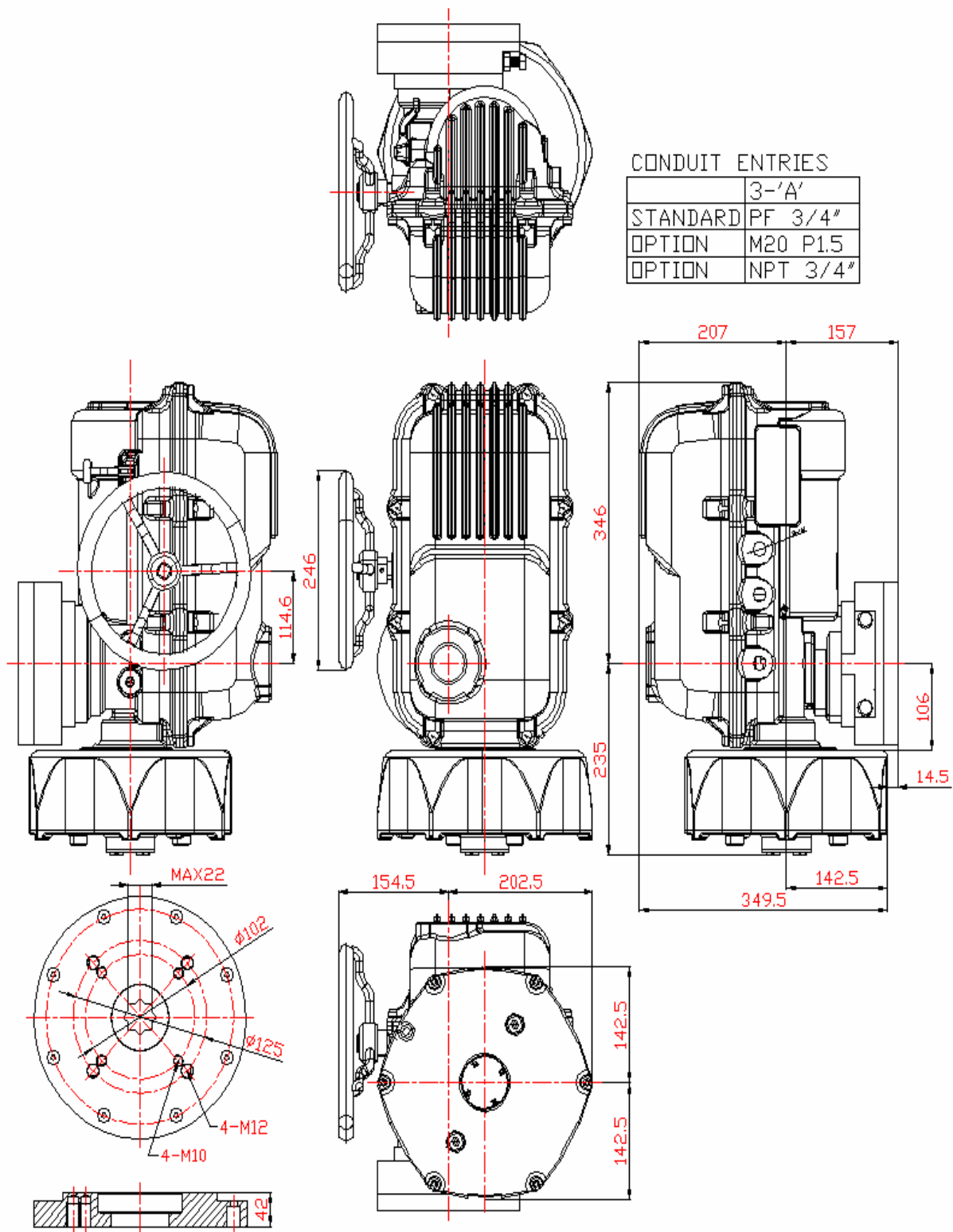


ELECTRIC BRAKE

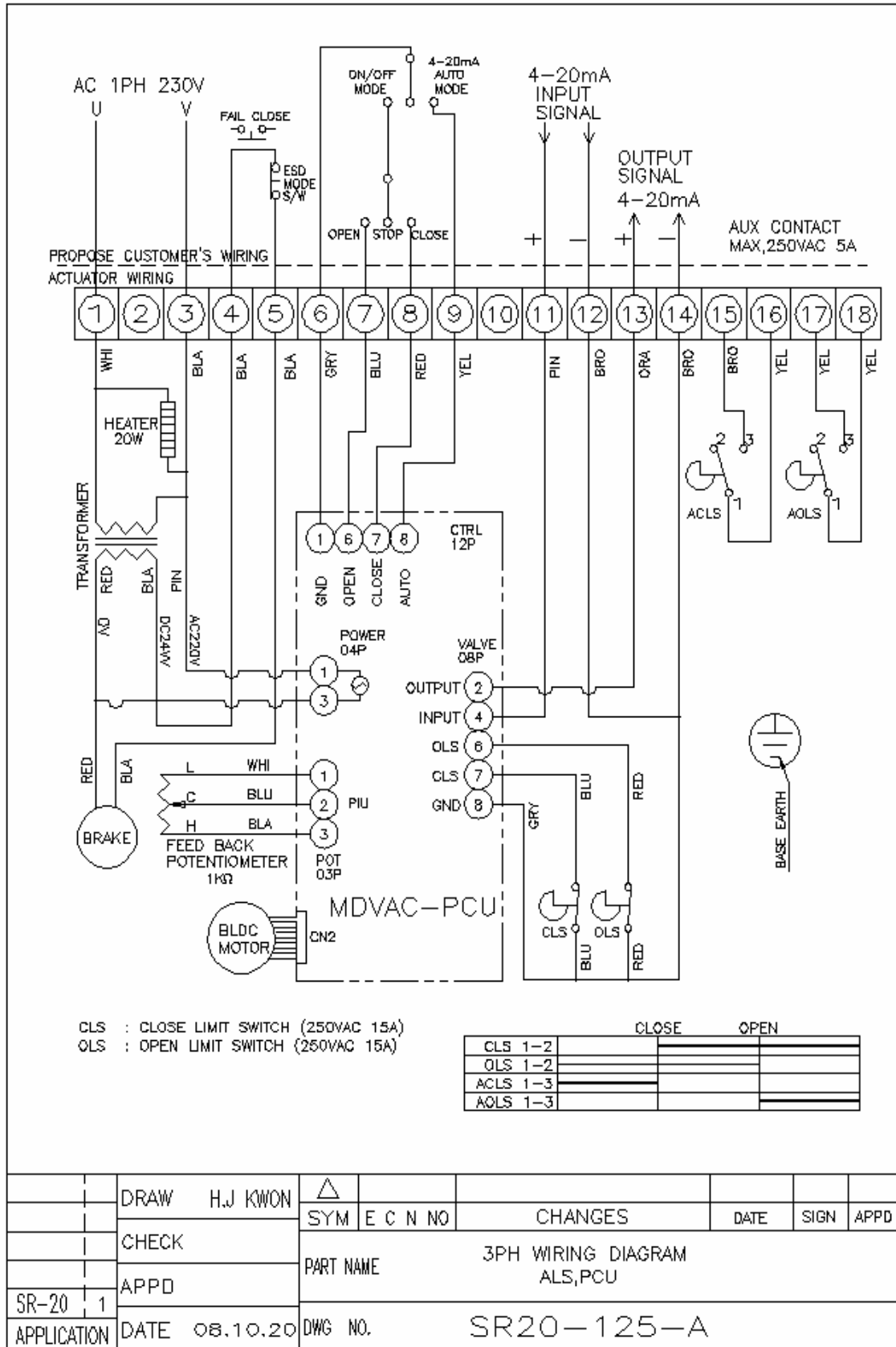
4. SPRING CONFIGURATION



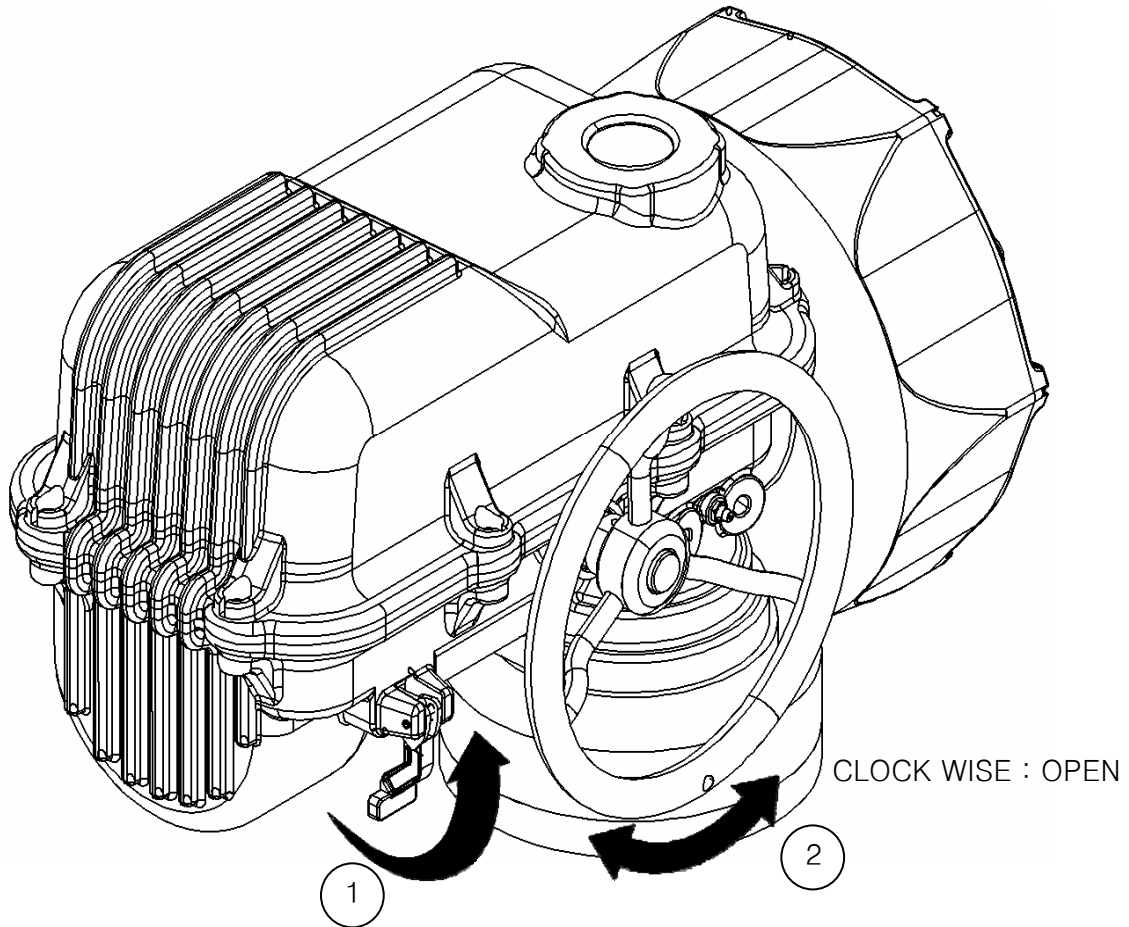
5. SPRING DIMENSION



6. WIRING

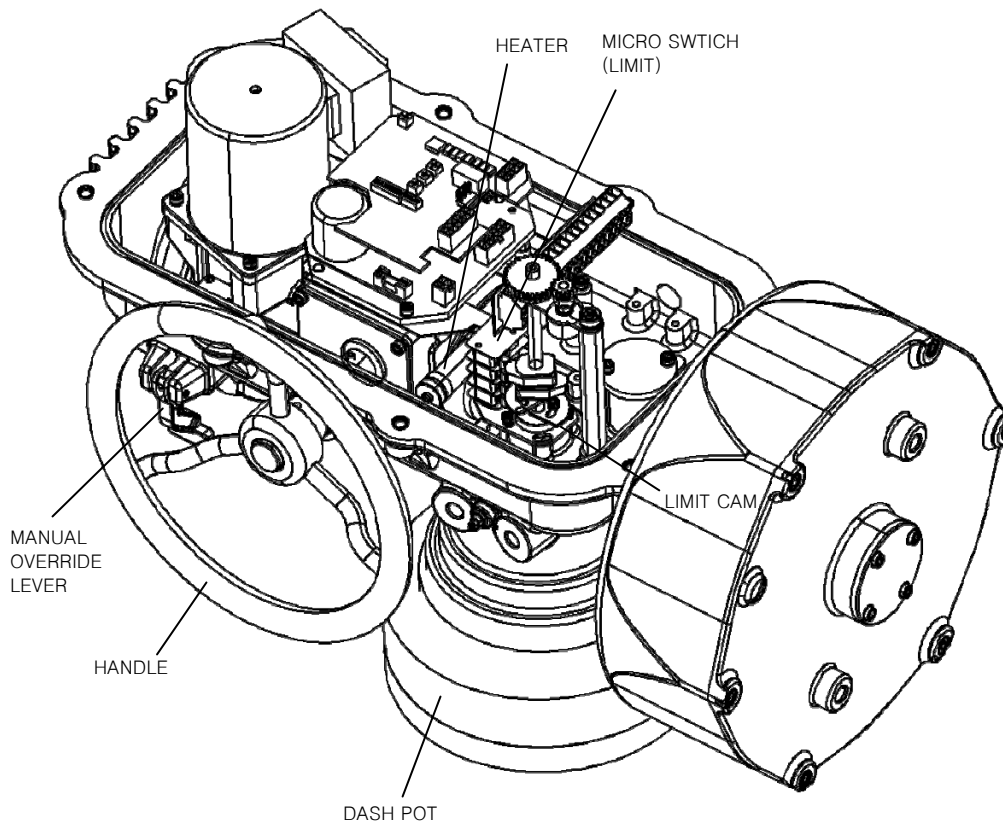
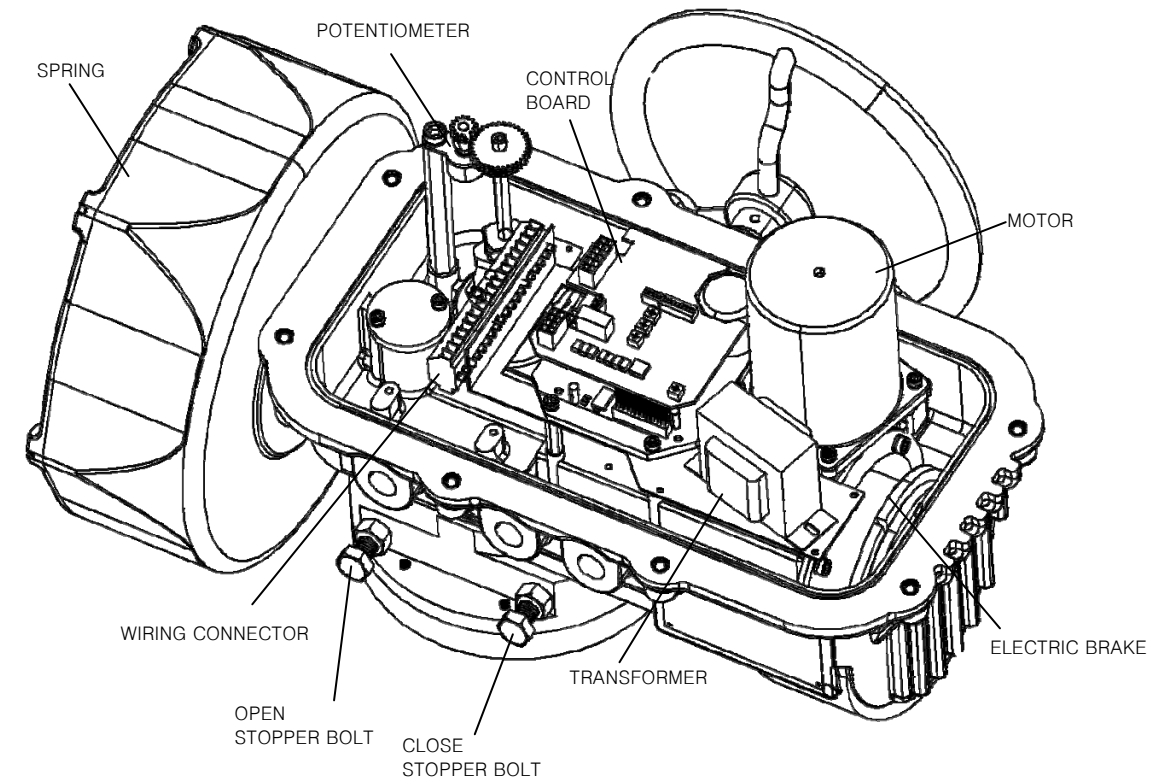


7. MANUAL MODE

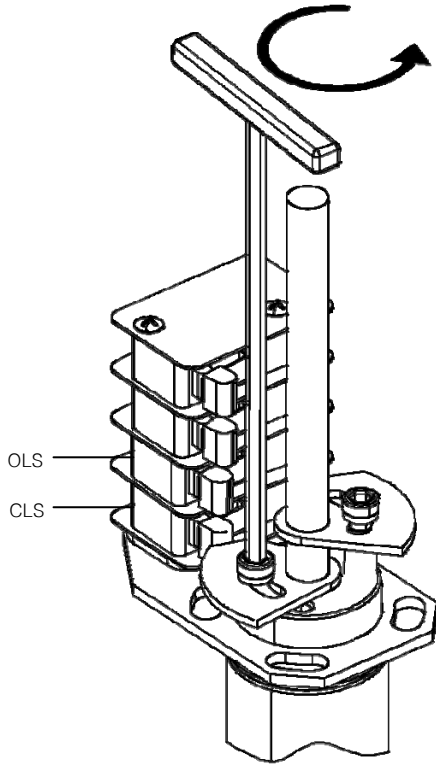


1. PUSH UP MANUAL OVERRIDE HANDLE FOR MANUAL OPERATION.
2. CHECK PROPER WORKING BY HANDLE WHEEL TURNING RIGHT AND LEFT.
3. MANUAL OVERRIDE HANDLE SHOULD BE RETURN FOR ELECTRIC AND SPRING OPERATION.

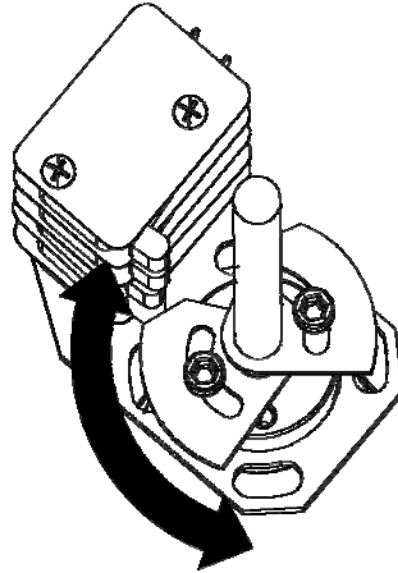
8. ACTUATOR SETTING



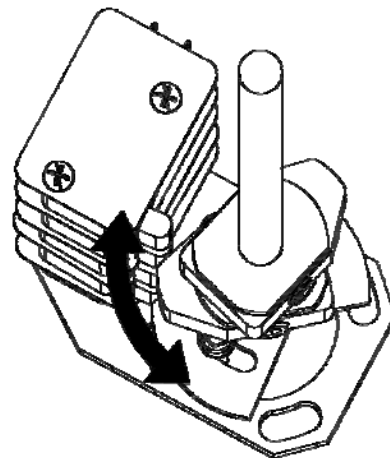
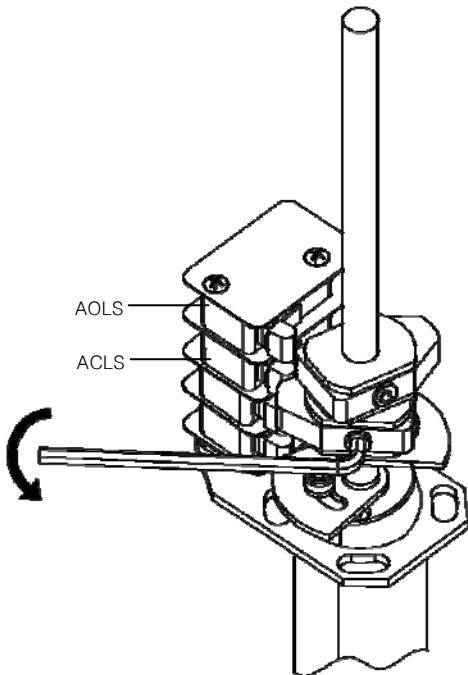
8-1. LIMIT SETTING



| | |
|------|--------------------------------|
| AOLS | Dry contact Open Limit Switch |
| ACLS | Dry contact Close Limit Switch |
| OLS | Open Limit Switch |
| CLS | Close Limit Switch |

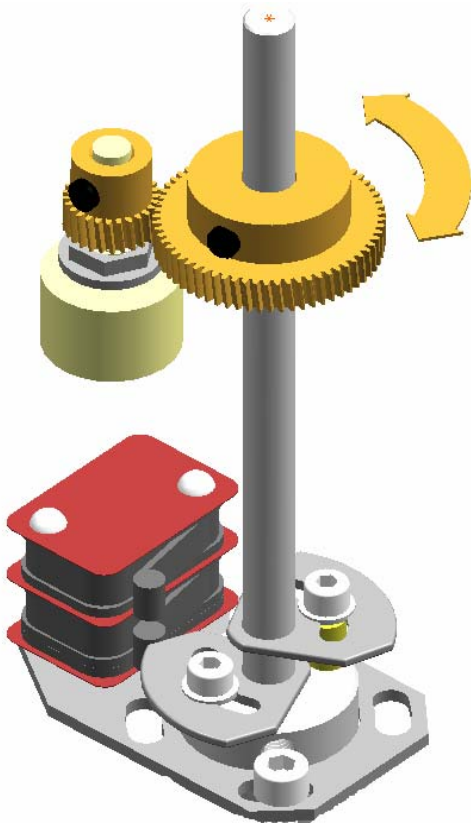


ADJUST LIMIT SWITCHES FOR ACCORD TO VALVE END POSITIONS OPEN/CLOSE



ADJUST LIMIT SWITCHES FOR ACCORD TO VALVE END POSITIONS OPEN/CLOSE

8-2. POTENTIOMETER SETTING



Full Closed Position set
85~120 Ω from factory.

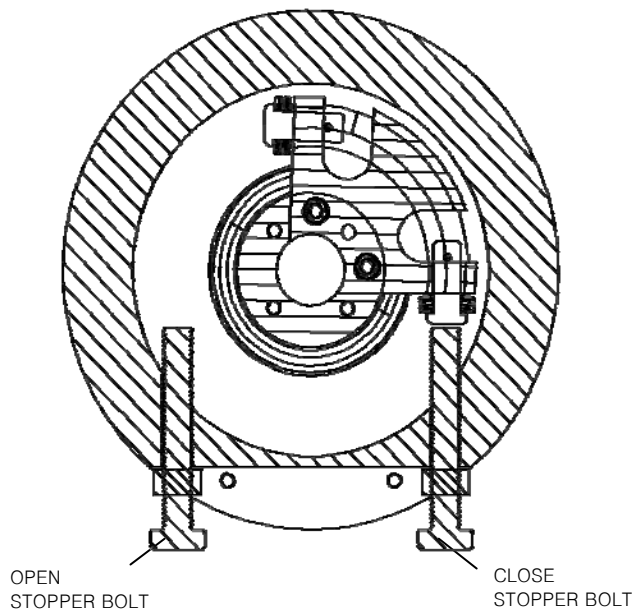
After Limit Setting always need
recheck Closed 85~120 Ω.

POTENTIOMETER SPEC

| | |
|-------|------------|
| MAKER | Sakae |
| MODEL | FCP22AC |
| | 1000 ± 15% |

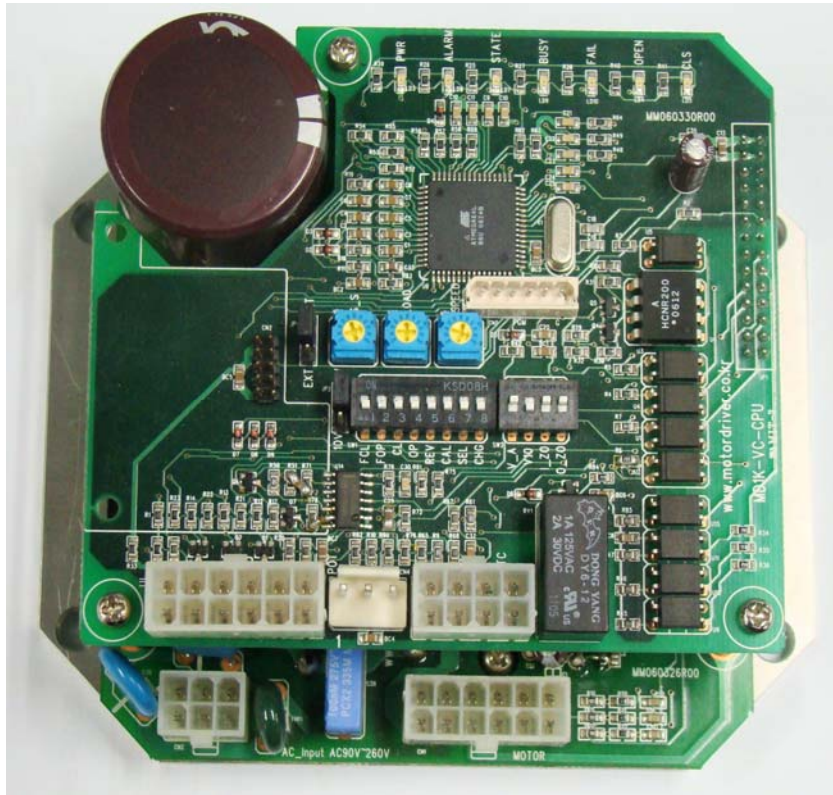
Always required auto callibration
after resetting limit s/w and PIU

8-3. DASH POT & STOPPER BOLTS SETTING



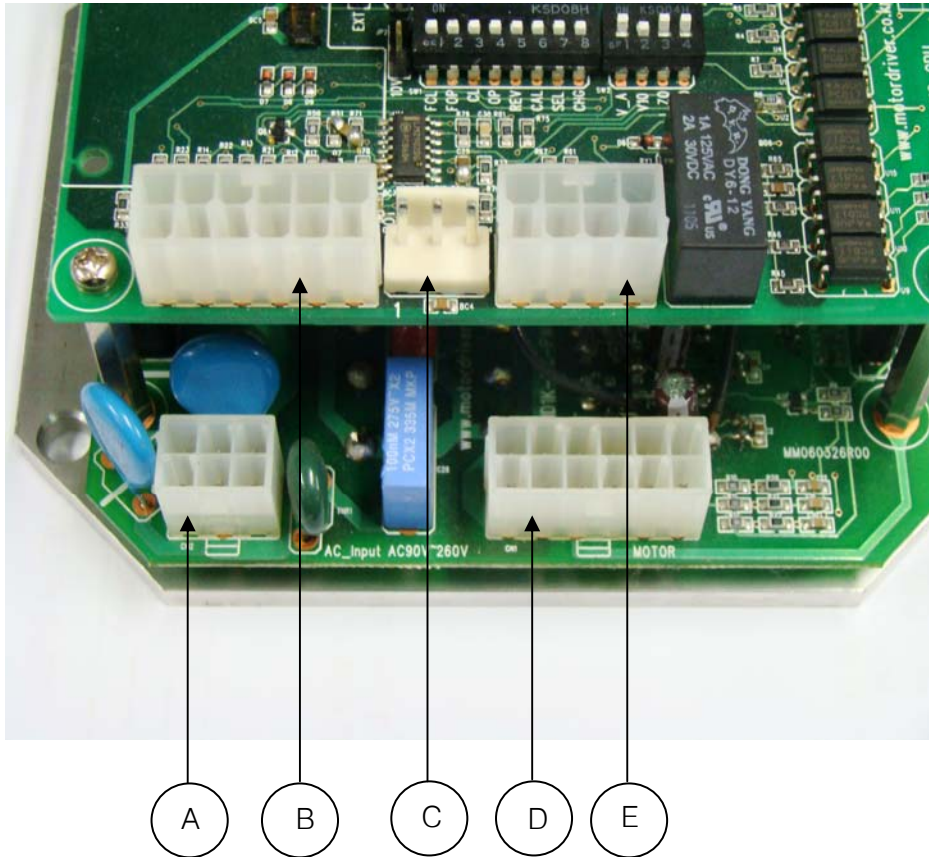
Make actuator full close/open
and make dash pot bolts touch
the
worm gear after that loosen bolts
2 ~ 3 turn outward.

9. CONTROL BOARD SPEC

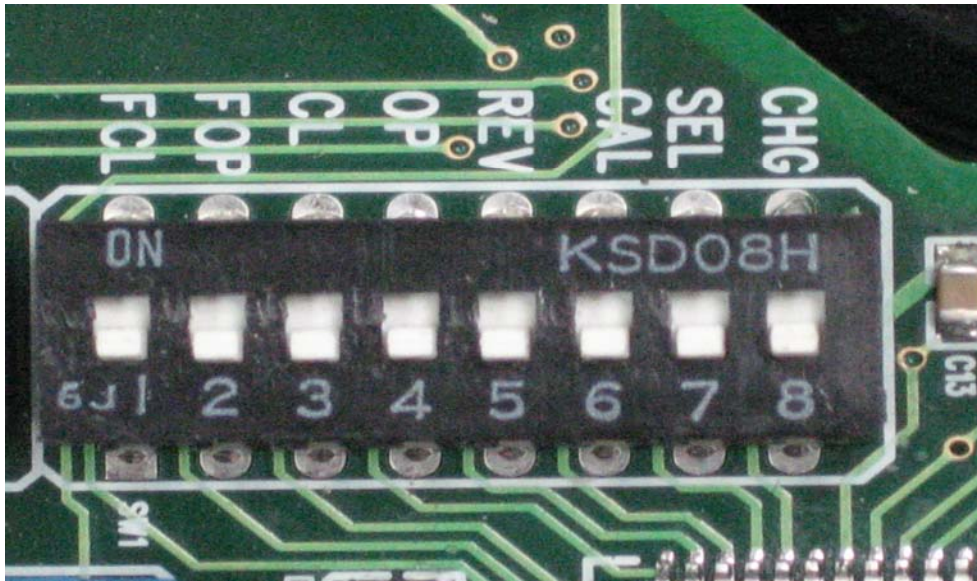


MDAVC – CPU

| | |
|---------------------|---|
| Size | 110 x 110 x 70 |
| Power | AC90 ~ 260VAC (50/60HZ) |
| Resolution | 1/500 |
| Dead Band | 0.6%(0.1mA) |
| Time adjustment | 0.5sec |
| Operating | - 10C ~ 70C |
| Operating Humidity | 90% RH Max (Non condensing) |
| Input signal | 4~20mA / 1~5 VDC |
| Output signal | 4~20mA / 1~5 VDC |
| Dielectric strength | AC1800V/1 min |
| Insulation | DC500V (Mega tester) more than 100M Ohm |

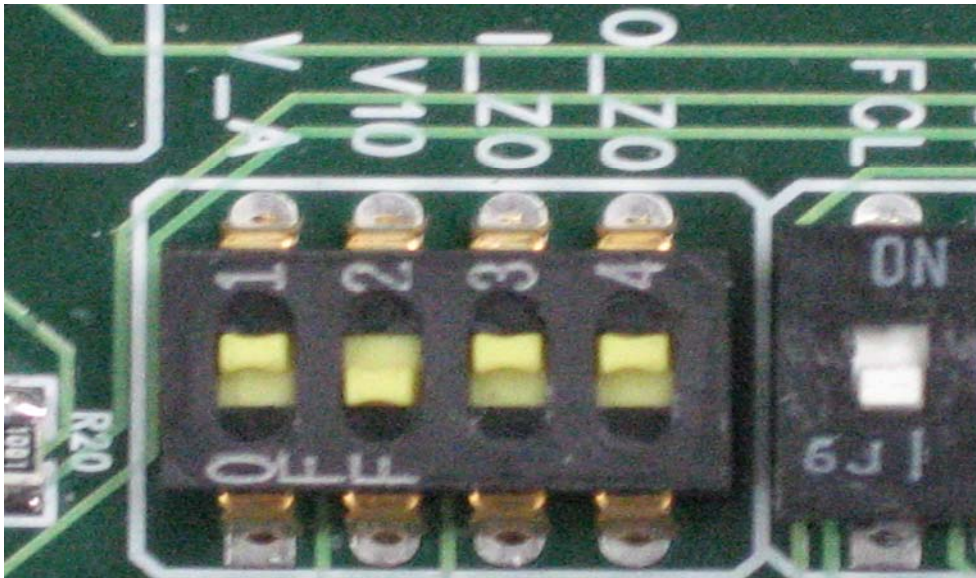


| NUMBER | NAME | MODEL |
|--------|----------------------|-----------------|
| A | Main power connector | MOLEX 5566 – 6 |
| B | Control connector | MOLEX 5566 – 12 |
| C | P.I.U | JST B30 – VH |
| D | Motor connector | MOLEX 5566 – 12 |
| E | In/Output connector | MOLEX 5566 – 8 |



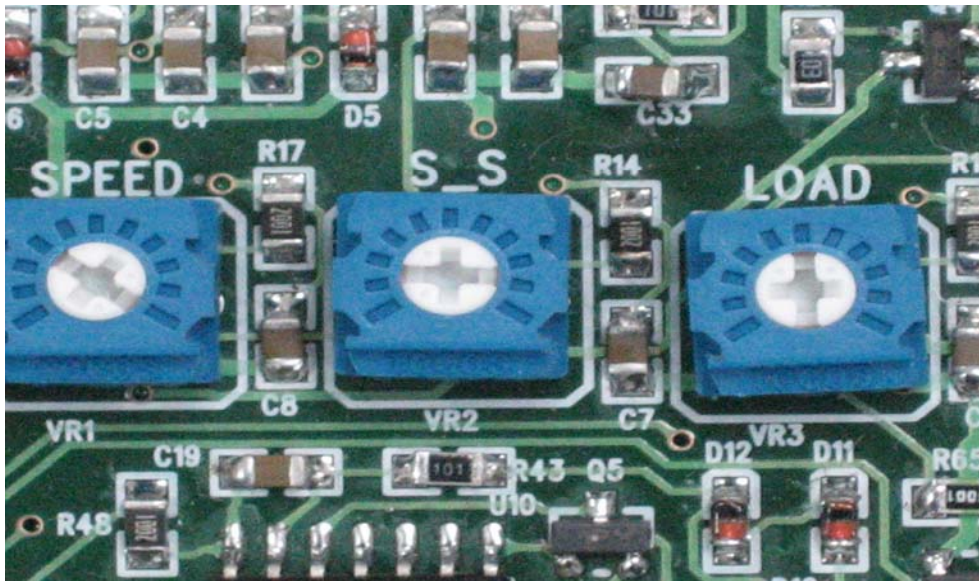
9 - 1. Dip S/W A

| NUMBER | NAME | SPEC |
|--------|------|---|
| 1 | FCI | Fail close |
| 2 | FOP | Fail open |
| 3 | CL | Input fully close ex) 5mA fully close Input 5mA Dip s/w on/off |
| 4 | OP | Input fully open ex) 19mA fully open Input 19mA Dip s/w on/off |
| 5 | REV | Open / Close reverse set |
| 6 | CAL | Auto Setting |
| | | After P.I.U or Limit resetting Always required AUTO callibration |

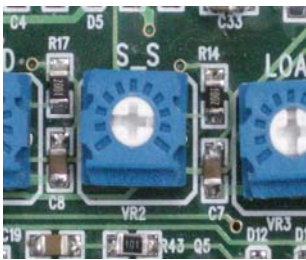


9 - 2. Dip S/W B

| NUMBER | NAME | SPEC |
|--------|------|---|
| 1 | V_A | OFF : for 0 ~ 10V and 0 ~ 5V input setting ON : for 0 ~ 20mA input setting |
| 2 | V10 | Input (V) Detail setting OFF : 0 ~ 10V input ON : 0 ~ 5V input |
| 3 | 1_20 | Input Zero input value setting ON : 4 ~ 20mA / 1 ~ 5V / 2 ~ 10V input setting OFF : 0 ~ 20mA / 0 ~ 5V / 0 ~ 10V input setting |
| 4 | 0_20 | Out Zero input value setting ON : 4 ~ 20mA / 1 ~ 5V / 2 ~ 10V output setting OFF : 0 ~ 20mA / 0 ~ 5V / 0 ~ 10V output setting |

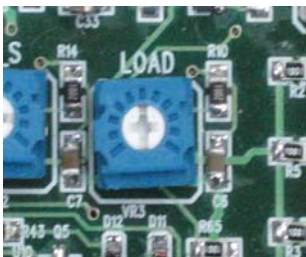


9 – 3. Output Setting

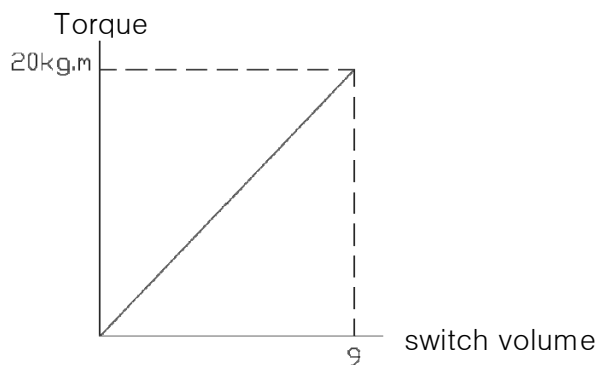


1. S_S : Output 4 ~ 20mA output detail setting

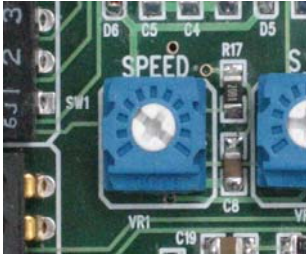
9 – 4. ACTUATOR Torque Setting



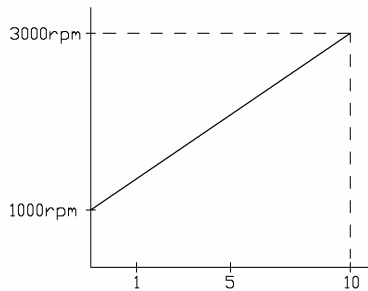
2. LOAD : MOTOR torque setting



9 – 4. ACTUATOR Speed Setting



3. SPEED : MOTOR SPEED CONTROL
OPERATING TIME : 30 ~ 70sec



9 – 5. Fuction and LAMP signal

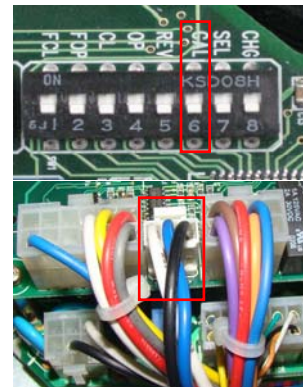
| NUMBER | NAME | SPEC |
|--------|-------|--|
| 1 | ALARM | Over Torque (Volume s/w LOAD) No function after 0.5sec Lamp on rebooting = Torque resetting Power off -> 2sec -> Power on |
| 2 | STATE | Flicking firing operation |
| 3 | BUSY | Motor working : on, Motor stop : OFF |
| 4 | FAIL | No input signal Lamp on |
| 5 | OLS | Full open : on |
| 6 | CLS | Full close : on |

10. ACTUATOR SETTING ORDER

1. PULLING THE LEVER AND TURN THE HANDWHEEL TOWARD CLOCKWISE TO MAKE VALVE FULL CLOSE POSITION.
2. ACTUATOR & VALVE INTERFACE (ACTUATOR BASE F10,F12)
3. THEN ADJUSTING LOWER CAM TO BE CONTACTED TO CLOSE LIMIT SWITCH, TIGHTEN THE BOLT FOR LIMIT CAM AND FIX.
4. CLOSE STOPPER BOLT SETTING (IT SHOULD BE SET FOR FAIL DIRECTION)
5. POTENTIOMETER SETTING (ACTUATOR FULL CLOSE 80 ~ 120Ω)
6. AS FOR OPEN LIMIT SWITCH SETTING, FOLLOW THE INSTRUCTION OF CLOSE LIMIT SWITCH SETTING.
7. ACTUATOR WIRING
8. TERMINAL NO.1 & 3 : MAIN POWER ON (220V AC)
9. Dip Switch 6 On → Off : Actuator Callibration (AUTO SCAN)

→ ACTUATOR OPEN, CLOSE ACTION

→ ACTUATOR DELIVERED FULL CLOSE AT 85 ~ 120 Ω

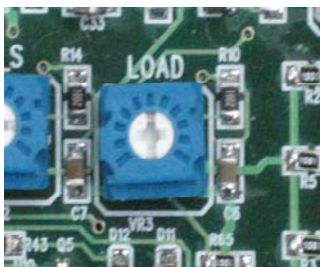


10. ACTUATOR INPUT

- 10-1. TERMINAL 6 AND 7 : ACTUATOR FULL OPEN
- 10-2. TERMINAL 6 AND 8 : ACTUATOR FULL CLOSE
- 10-3. TERMINAL 6 AND 9 : MODULATING

12. CONTROL BOARD SETTING

12-1. ACTUATOR TORQUE SETTING



12-2. ACTUATOR SPEED SETTING

