

**UN Noah**®

# NAC SERIES MANUAL

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**EMICO**

EUNHA MACHINERY INDUSTRIAL CO.,LTD

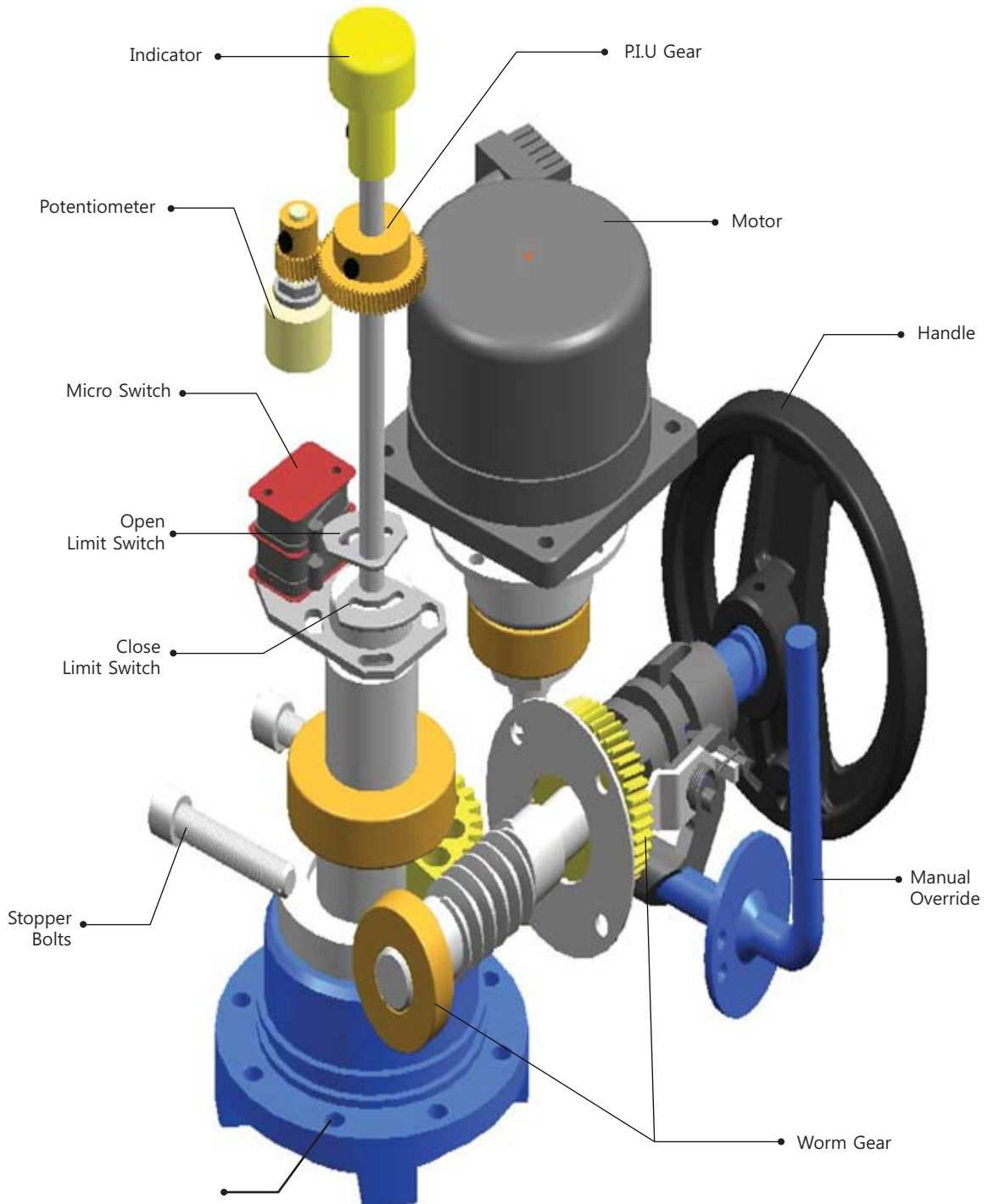
## 1. Performance

Model	Max Output Torque (N·m)	Operating Time (90°)	Max Stem Dia (mm)	Rated Current (A) 1Ph 230V	Duty	Number of Hand Wheel
NAC-006	60	10sec ~ 22sec	22	1.1A	100%	8.5
NAC-009	90	10sec ~ 22sec	22	1.2A	100%	8.5
NAC-015	150	12sec ~ 29sec	22	1.3A	100%	10
NAC-019	190	12sec ~ 29sec	22	1.4A	100%	10
NAC-028	280	15sec ~ 34sec	32	1.5A	100%	12.5
NAC-038	380	15sec ~ 34sec	32	1.6A	100%	12.5
NAC-050	500	15sec ~ 34sec	32	1.7A	100%	12.5
NAC-060	600	18sec ~ 40sec	42	1.8A	100%	14.5
NAC-080	800	18sec ~ 40sec	42	1.9A	100%	14.5
NAC-100	1000	18sec ~ 40sec	42	1.10A	100%	14.5
NAC-150	1500	53sec ~ 117sec	75	1.11A	100%	43.5
NAC-200	2000	53sec ~ 117sec	75	1.12A	100%	43.5
NAC-250	2500	53sec ~ 117sec	75	1.13A	100%	43.5

## 2. Standard Specification

Actuator duty	100% duty cycle continuous modulating
Mechanical steps at least	0.6% (0.1mA) step
Input signal	4 - 20mA
Feed Back signal	4 - 20mA ( ± 0.05 mA )
Enclosure	Water Ingress Protection IP67 NEMA 4 and 6
Ambient Temperature	Actuator : -20°C ~ 130°C
	Control Board : -0°C ~ 70°C
Power Supply	Free - Voltages : 90V ~ 250V
Control Power	DC 24V
Limit Switches	2 Open / Close, 250V 16A Rating
Travel Angle	90° ± 5°
Indicator	Continuous Position Indicator
Manual Override	Hand - Auto Decutching Mechanism
Self Locking	Provide by means of Worm Gearing
Mechanical Stops	External Adjustable Screws
Conduit Entries	Two PF 3/4", NPT 3/4", M20 x pitch1.5
Lubrication	SHELL ALVANIA EP2
Materials	Steel, Aluminium Alloy , All Bronze
Surface Treatment	Anodizing
External Coating	Polyester ( TGIC - Free)

## 3. Actuator Configuration



## 4. Actuator Mounting

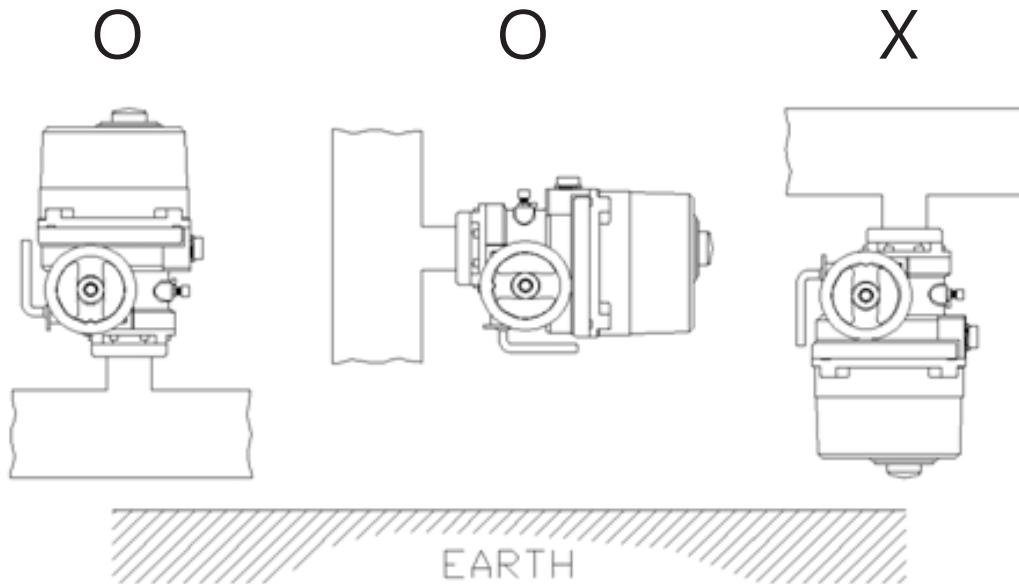


When mount actuator on valve, after making direction of drive bushing of actuator same direction with key way of valve, tighten the 4 retaining bolt by using L-wrench.

When valve is closed (or opened), make actuator closed (or opened) by using manual handle or switch on the panel.

If key way direction of drive bushing is not same direction of key way of valve, it is not proper way of mounting

### 4-1. Actuator Positioning



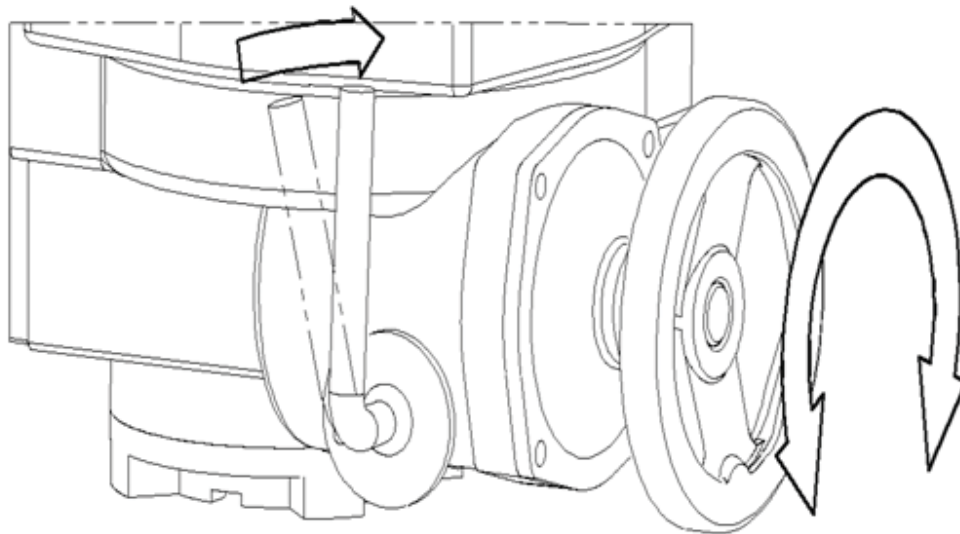
## 5. Manual Mode

If you want to operate actuator by manual, pull the lever (toward handwheel), so that clutch is to be engaged with handwheel.

If it is engaged, then you can operate actuator to any direction by manual.

Direction Indication of Open and Close is marked on the handwheel and handle cover and in general, to turn clockwise is close and counter clockwise is open.

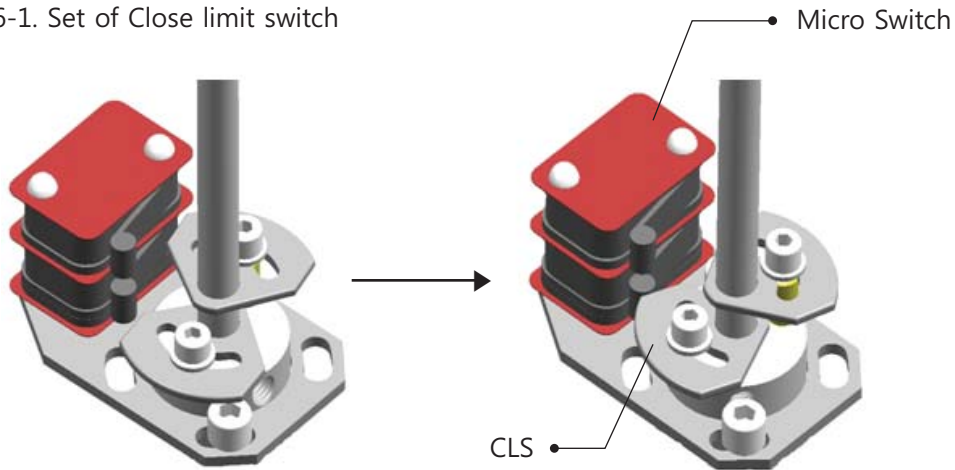
Clock wise	Close
Anti Clock wise	Open



Hand / auto declutching lever for handwheel engagement.  
The power drive is automatically restored by motor start.

## 6. Limit Setting

### 6-1. Set of Close limit switch

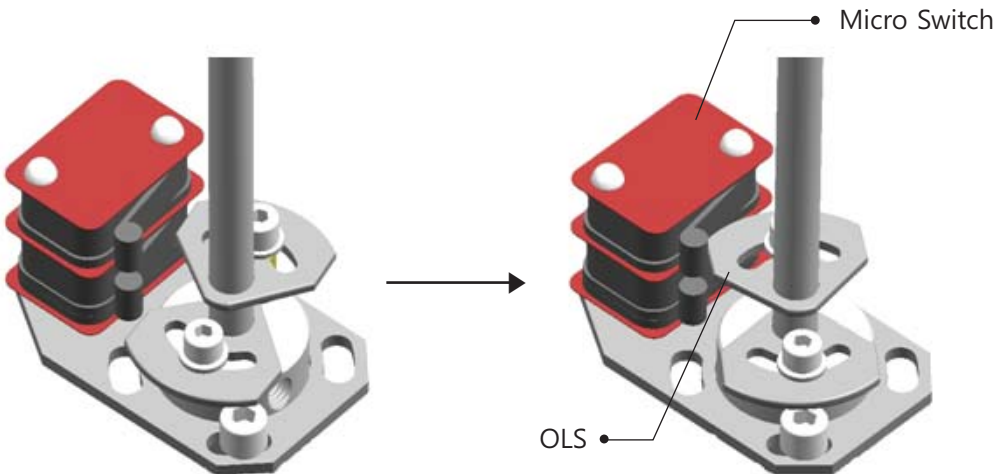


#### Valve Position : Full Close



Pulling the lever and turn the handwheel toward clockwise to make valve full close position.

Then adjusting lower cam to be contacted to close limit switch, tighten the bolt for limit cam and fix.



#### Valve Position : Full Open



Turning the manual handwheel to counter clockwise and make actuator full Open.

Then adjust upper cam of limit switch (Open limit switch) as same way to adjust Close limit switch.

## 7. Potentionmeter Setting



Actuator Delivered Full Close at 85 ~ 120Ω  
 After Limit Setting it should check at Closed 85 ~ 120Ω

### Setting

10-1. Make actuator full closed and power of by moving of P.I.U. GEAR



Actuator Position  
 - Full Close

10-2. For connector N and P at 80~120Ω in case of full closed

### POTENTIONMETER SPEC

Manufacturing company	Sakae
Model	FCP22AC
	1+D1067 ± 15%

## 8. Mechanical Stop Bolt

Preventing mechanical broken after limit s/w setting Stop Bolts setting.

### Setting

2~3 turns anti clock wise from touch of bolt and worm gear



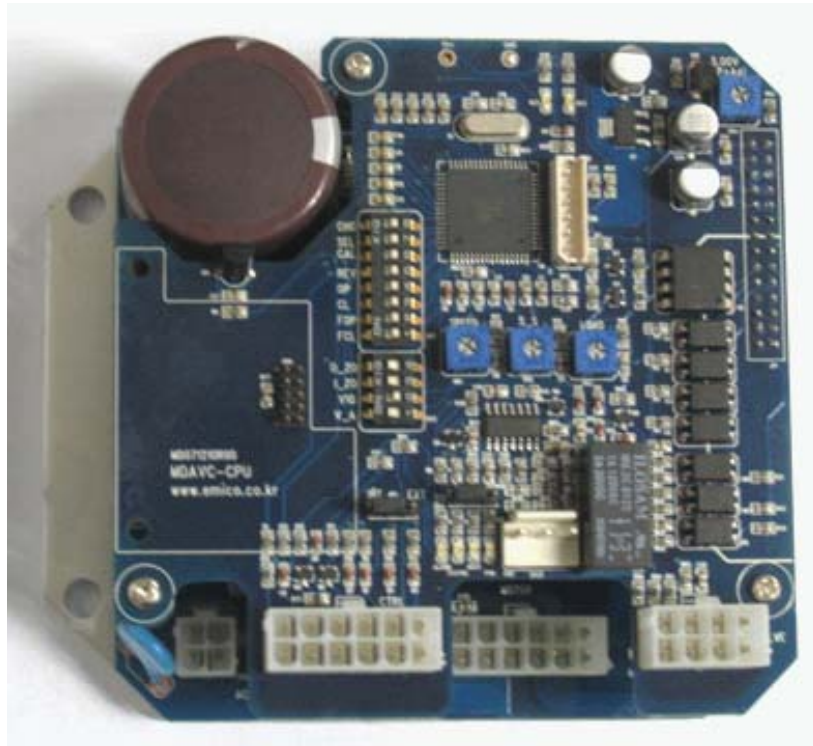
Close Stop Bolt



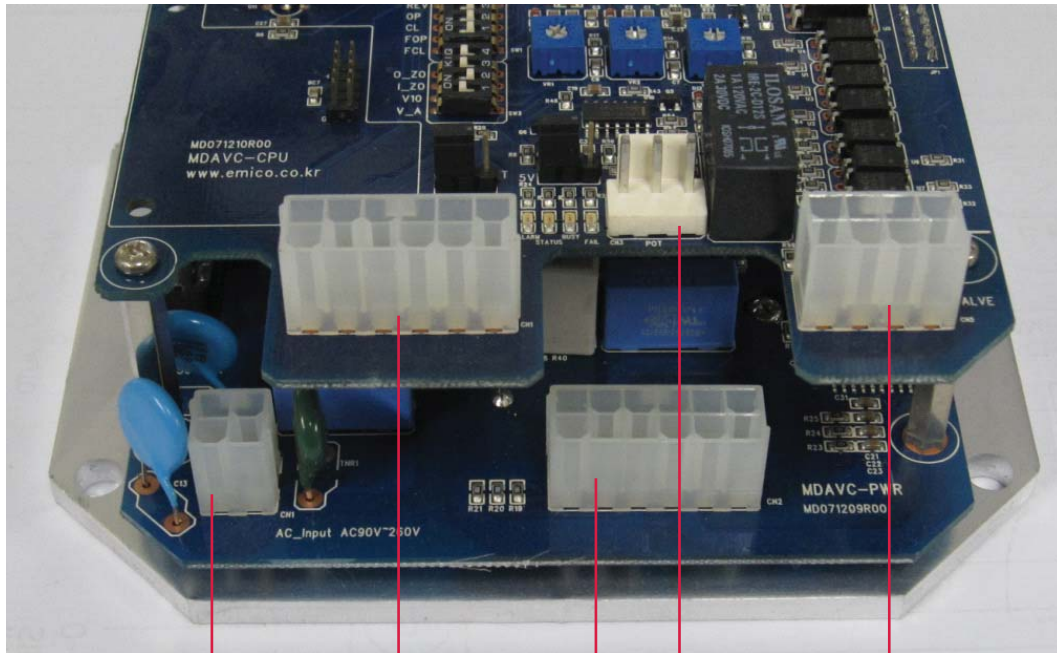
Open Stop Bolt



## 9. Control Board Spec



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



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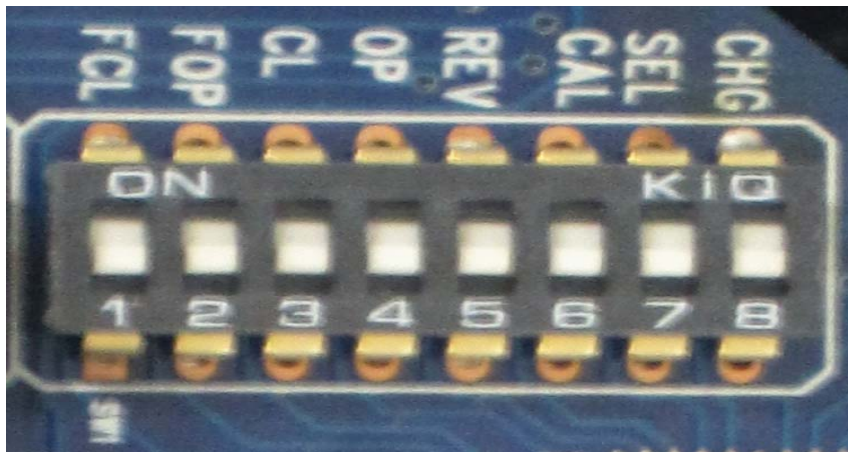
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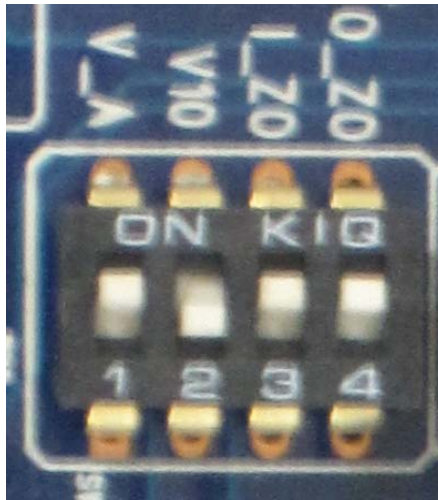
Number	Name	Model
①	Main Power Connector	MOLEX 5566-6
②	Control Connector	MOLEX 5566-12
③	P.I.U	JST B30-VH
④	Motor Connector	MOLEX 5566-12
⑤	In/Output Connector	MOLEX 5566-8

## 9-2. Dip S/W A

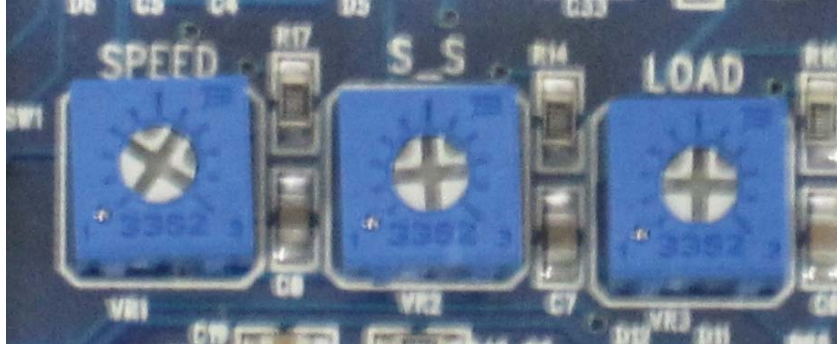


Number	Name	Spec
1	FCI	Fail close
2	FOP	Fail open
3	CL	Input fully close ex ) 5mA fully close Input 5mA Dip s/w on/off
4	OP	Input fully open ex ) 19mA fully open Input 19mA Dip s/w on/off
5	REV	Open / Close reverse set
6	CAL	Auto Setting
		After P.I.U or Limit resetting Always required AUTO callibration

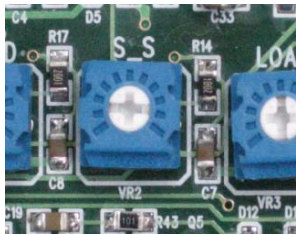
### 9-3. Dip S/W B



Number	Name	Spec
1	V_A	ON : for 0 ~ 20mA input setting OFF : for 0 ~ 10V and 0 ~ 5V input setting
2	CL	Input (V) Detail setting OFF : 0 ~ 10V input ON : 0 ~ 5V input
3	OP	Input Zero input value setting ON : 4~20mA/1~5V/2~10V input setting OFF : 0~20mA/0~5V/0~10V input setting
4	REV	Output Zero input value setting ON : 4~20mA/1~5V/2~10V input setting OFF : 0~20mA/0~5V/0~10V input setting

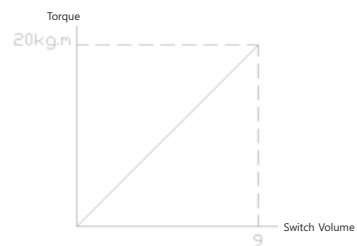


## 9-4. Output Setting



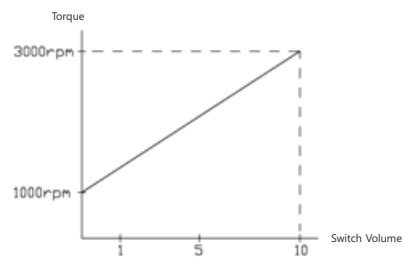
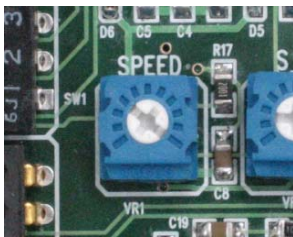
7-4-1.  
S\_S : Output 4 ~ 20mA output detail setting

## 9-5. ACTUATOR Torque Setting



7-5-1.  
LOAD : MOTOR torque setting

## 9-6. Actuator Speed Setting



7-6-1.

Speed : Motor Speed Control Operating Time : 30 ~ 70sec

## 9-7. 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	FCI	Motor woring : on, Motor stop : OFF
4	FOP	No input signal Lamp on
5	FCI	Full open : on
6	FOP	Full close : on