

---

# PNEUMATIC CONTROL DRIVE

---

## INSTRUCTION MANUAL

### SE-01H ~ SE-200H



**SEG** Shin Hwa Eng Co., Ltd

## Contents

1	Product description .....	4
1-1	General .....	4
1-2	Standard specifications .....	4
1-3	Form Mark.....	5
2	Installation .....	6
2-1	Structure .....	6
2-2	Movement and installation.....	7
(1)	Movement .....	7
(2)	Location of installation.....	7
(3)	Installation.....	7
(4)	Example of installation .....	8
2-3	Piping and wiring.....	9
(1)	Air pipe connections.....	9
(2)	Electric wiring.....	9
2-4	Appearance.....	10
(1)	SE-05H (Lever Type)j.....	10
(2)	SE-15H (Handle Type) .....	10
2-5	Auto/Manual switching procedure .....	11
(1)	Lever type manual operator (SE-01H ~ SE-05H) .....	11
(2)	Handle type manual operator (SE-08H ~ SE-100H) .....	12
(3)	Switch from “MANUAL“ to “AUTO“ .....	12
2-6	Changing the acting direction of power shaft rotation .....	13
2-7	Adjustment of accessories .....	14
(1)	Positioner .....	14
(2)	Limit switch .....	15
(3)	Lock up valve .....	16
(4)	Booster Relay .....	17
(5)	Hand valve .....	17
(6)	Hand valve lock device .....	18
(7)	Adjustment of current transmitter (SRC-30A) .....	18
(8)	Adjustment of current transmitter (SRC-10A) .....	19
(9)	Positioner setting.....	20
3	Maintenance.....	22

3-1 Maintenance cycle ..... 22

3-2 Air Cylinder disassembly and assembly procedure ..... 23

3-3 Inside section drawing..... 24

    (1) SE-01H ~ SE-05H Type ..... 24

    (2) SE-08H ~ SE-200H Type ..... 25

## 1 Product description

### 1-1 General

- (1) Pneumatic Actuator is driving equipment controlled by remote method such as damper which is adjusting various fluid flow rate or Vane damper for fan.
- (2) The Actuator is consisted with air cylinder combined with link device positioner, air sets and current transmitter etc. and is totally enclosed structure.

### 1-2 Standard specifications

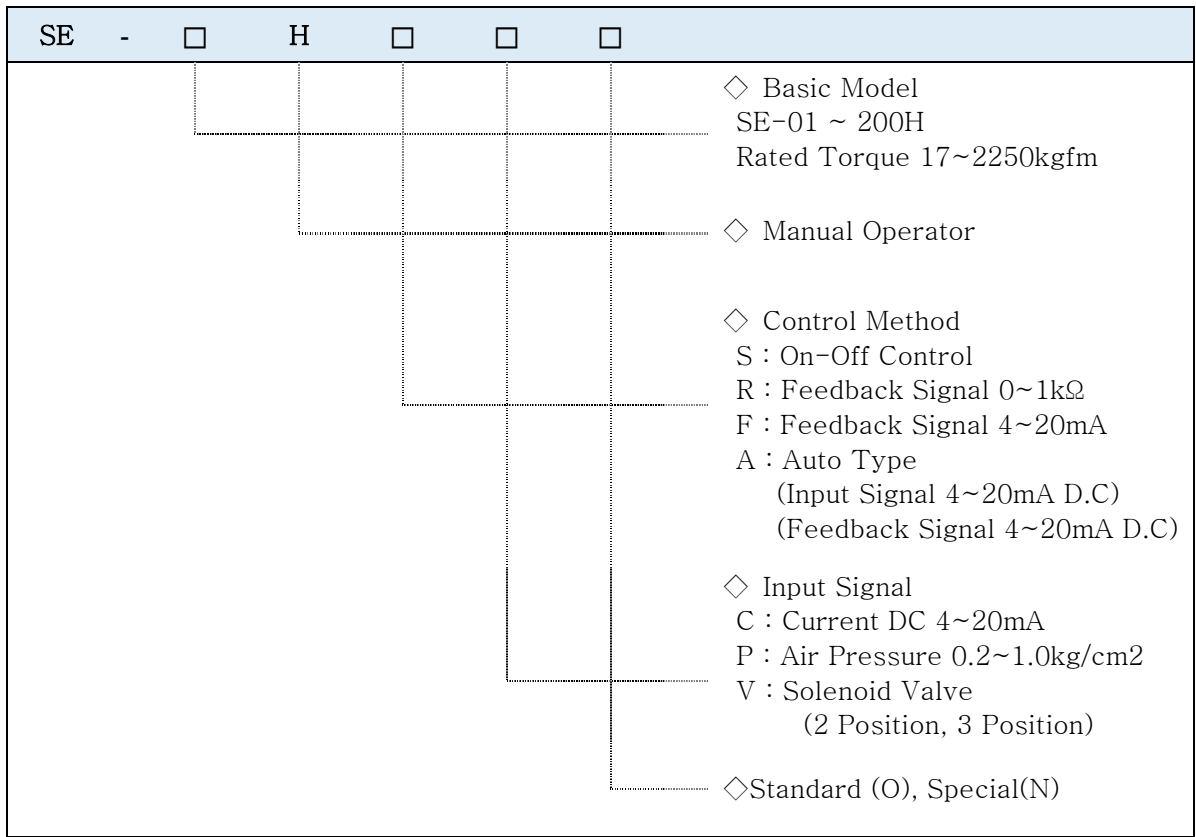
Construction	: Totally Enclosed Outdoor Type	Air Supply Pressure	: 0.14 ~ 0.7 Mpa
Ambient Temperature	: -10°C ~ 50°C	Operating Angle	: 90°
Relative Humidity	: Below 85%	Air Consumption	: 25Nℓ / min. (Balancing Position)
Rating	: Continuous	Painted Color	: Musell 7.5 BG 6/1.5
Input Signal	: Current : DC 4 ~ 20mA Pneumatic Pressure : : 0.02 ~ 0.1Mpa		

MODEL		RATED TORQUE(Kgf-m)			CYLINDER SIZE (mm)			APPROX. WEIGHT (kg)
		S.A.P kg/cm <sup>2</sup>			BORE	STROKE	ROD DIA.	
IP54	IP55	4.0	5.0	5.5				
SE-01H	SE-01H	11	15	17	Φ 100	100	Φ 30	70
SE-02H	SE-02H	19	24	26	Φ 125	100	Φ 36	80
SE-05H	SE-05H	33	42	45	Φ 160	100	Φ 40	160
SE-08H	SE-08H	62	79	85	Φ 180	150	Φ 45	190
SE-15H	SE-15H	104	132	140	Φ 200	200	Φ 50	280
SE-25H	SE-25H	155	198	210	Φ 200	300	Φ 50	380
SE-40H	SE-40H	250	315	330	Φ 250	300	Φ 60	440
SE-60H	SE-60H	424	530	580	Φ 300	350	Φ 70	620
SE-80H	-	545	680	750	Φ 300	450	Φ 70	720
-	SE-80HW	550	690	760	Φ 340	350		
SE-100H	-	665	838	924	Φ 300	550	Φ 75	820
-	SE-100H	705	895	970	Φ 385	350		
SE-150H	SE-150H	1010	1265	1390	Φ 385	500	Φ 80	1550
SE-200H	SE-200H	1300	1625	1730	Φ 435	500	Φ 85	1950

\*Hysteresis : 2%

\*Linearity : 3%

1-3 Form Mark



## 2 Installation

### 2-1 Structure

- (1) In case of checking maintenance Pneumatic Actuator, please refer to following inside constructions.

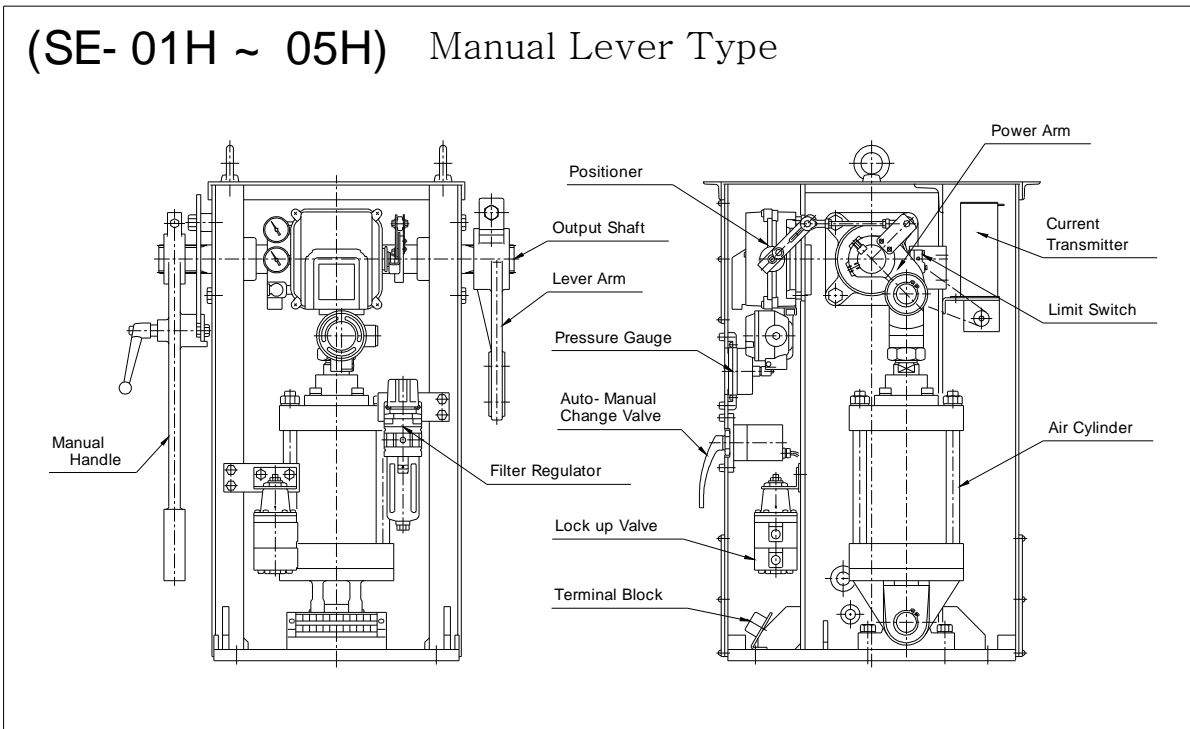


Fig.-1. Lever type structure

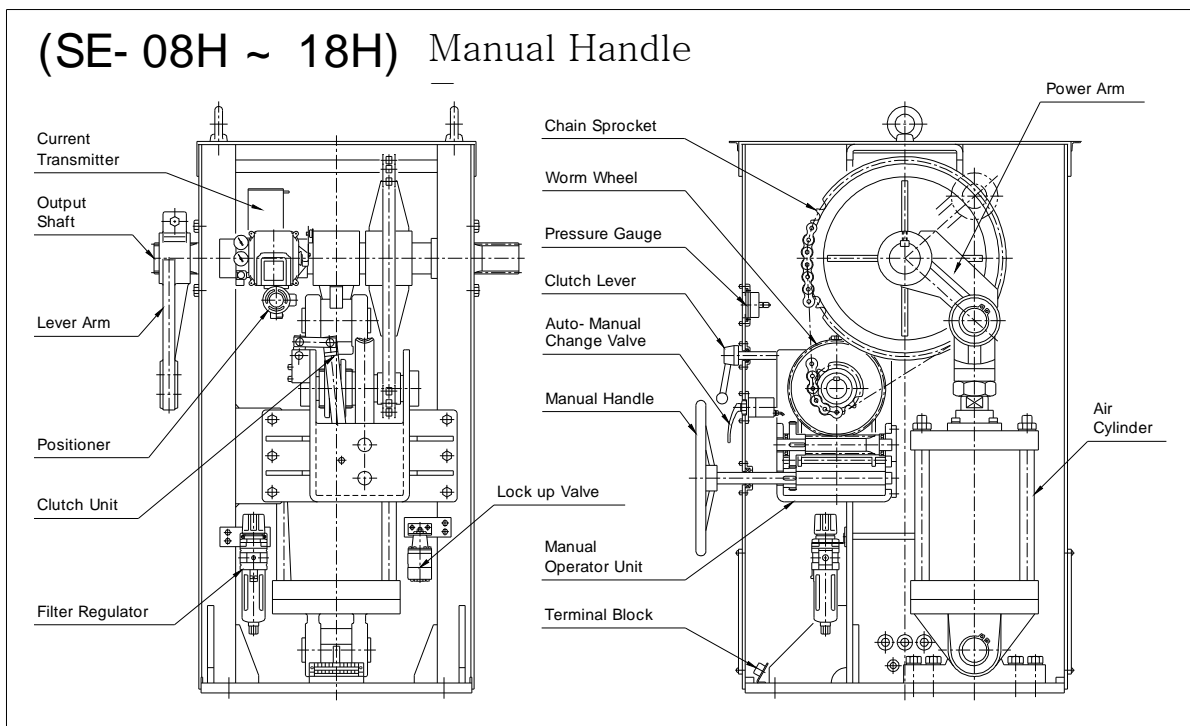


Fig.-2. Handle type structure

## 2-2 Movement and installation

### (1) Movement

- ① When lifting the Pneumatic Actuator, please use the two hook on eye bolt and lift.
- ② And please move slowly so that you are not hurt because it is heavy (Fig.3)

### (2) Location of installation

- ① The installation place of Pneumatic Actuator should be selected a rigid and flat level foundation in order to withstand for the pneumatic actuator output
- ② And be determined a location where will not inconvenient to the setting of link mechanism between lever arm of pneumatic actuator and opponent lever.
- ③ Also the enough space for maintenance and inspection services should be provided at the surrounding of pneumatic actuator.

The space should be at least 1 meter.

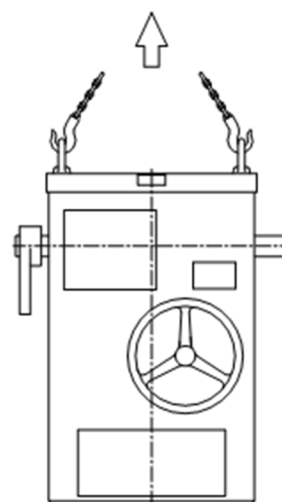


Fig.-3. Movement

### (3) Installation

- After removing front cover of pneumatic actuator, please tighten anchor bolt from the front. And other two set of anchor bolt must be tightened after separating back cover completely. The anchor bolts and nut should be tightened completely by use of offset wrench, etc. to avoid shortage of tightening.
  - At the installation of connecting link, the following points should be observed carefully
  - In order to maintain the rated output of pneumatic actuator, adjust so that the angle created by lever arm and connecting link (turnbuckle), should be 90° at 50% upon opening of pneumatic actuator. (Fig. 4)
  - The installation angle of lever arm should be changed at any positions of 360° by 10 ~ 12° pitch against torque shaft.
  - The connecting link should be installed precisely so that the center line of connecting link may be matched with the center-line of lever arm. (Fig. 4)
  - As the lever arm and output axis are clutched to torque shaft by spline, it can be shifted to the axial direction of torque shaft.
- When the lever arm is shifted to shaft direction for the resetting between lever arm and connecting link, the spline joint must be maintained with sufficient engaged length.

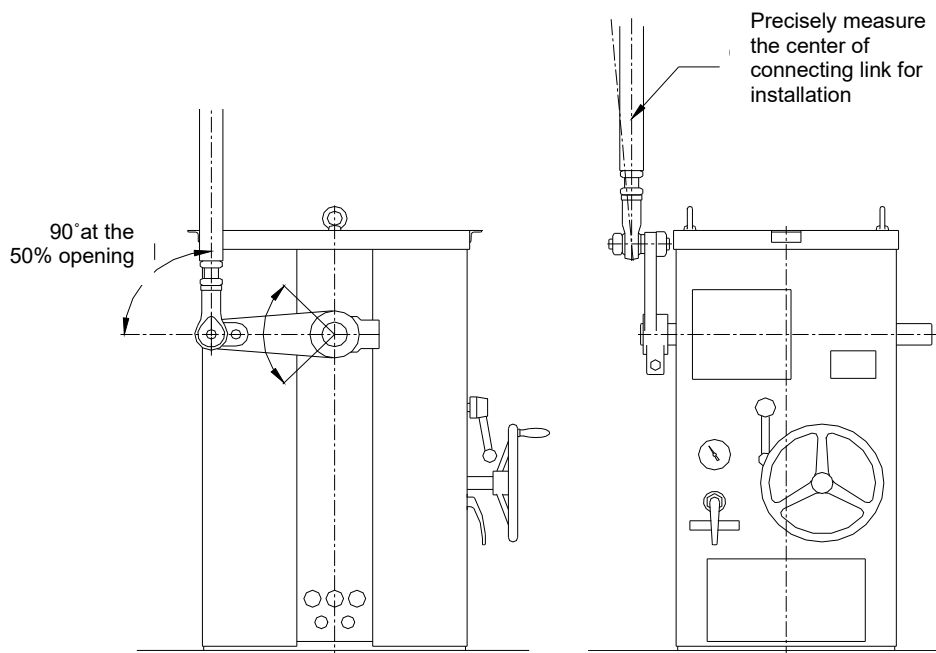


Fig.-4. Caution for Installation

(4) Example of installation

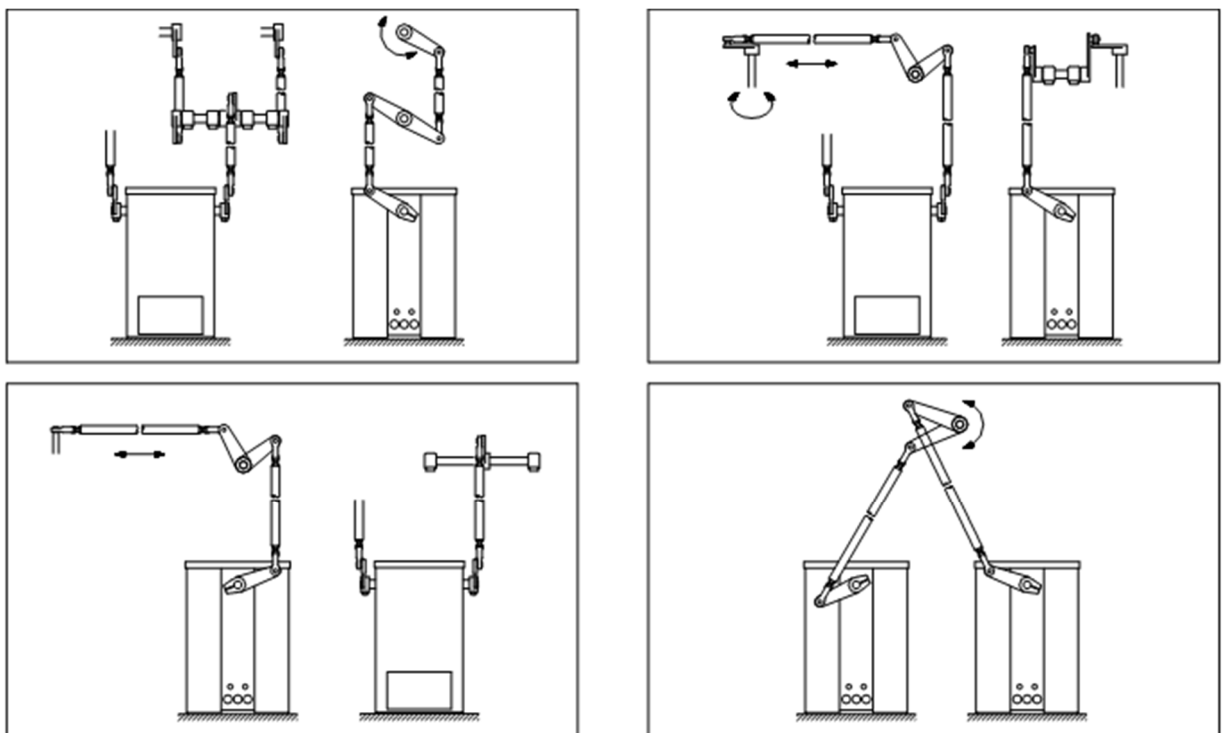


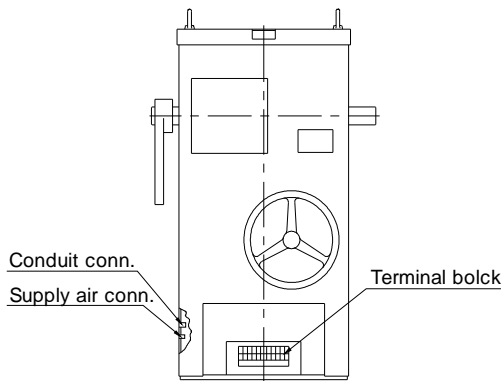
Fig.-5. Example of installation



2-3 Piping and wiring

(1) Air pipe connections

- Air supplying line shall be connected to port as shown Fig. 1
- Both air supplying connection ports are threaded KS PT 1/4" screw.
- The case of explosion proof type connect the wire to positioner and limit switch directly because terminal block is cannot be used.



1	2	3	4	P	N	P <sub>1</sub>	N <sub>1</sub>	R	T	R <sub>1</sub>	T <sub>1</sub>
Signal Description				T B No.			Range Capacity		Remark		
Actuator				1, 2							
Limit Switch				3, 4							
I/P Positioner				P (+) N (-)			4~20mA				
Feed back signal (R/I Converter)				P <sub>1</sub> N <sub>1</sub>			4~20mA				
R/I Converter Power source				R T			AC 110V 220V				
Space heater Power source				R <sub>1</sub> T <sub>1</sub>			AC 110V 220V				

Fig.-6. Air pipe connection

(2) Electric wiring(Optional)

- There are 3ports for conduit connecting. Two PT 3/4" port  
In two port, please connect electric wiring and other one is for spare connection port.
- In case of the electric parts are not provided in the inside of Actuator, attach cap in order to avoid penetration of rain water, etc.
- If non-explosion-proof type electric parts are installed in the inside of pneumatic actuator assembly electric terminal block inside actuator and also electric parts and terminal block must be fabricated before dispatching from factory.
- When wiring to terminal from external are made, please connect the wire to specified terminal no. Marked on block in accordance with wiring diagram. (Fig. 6)
- Basic piping diagram

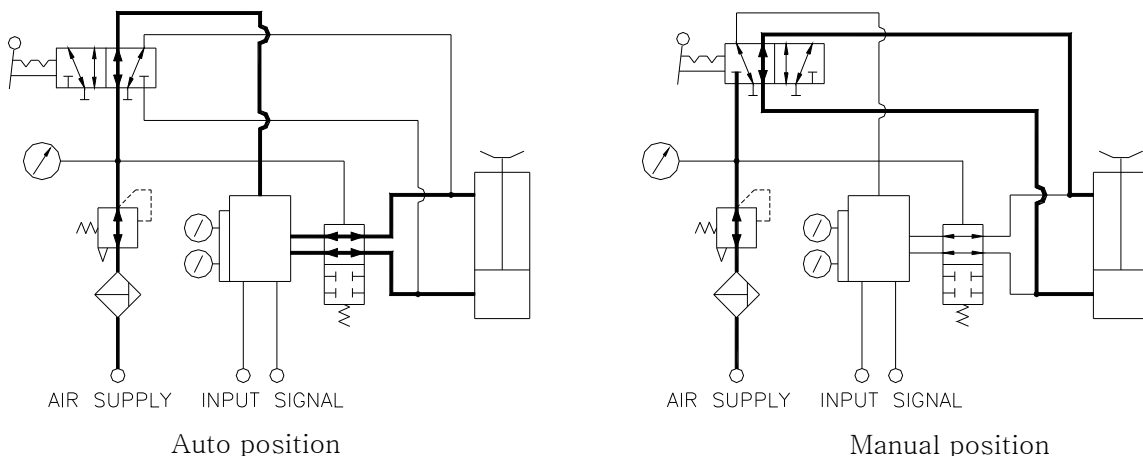


Fig-7. Basic piping diagram

2-4 Appearance

(1) SE-05H (Lever Type)

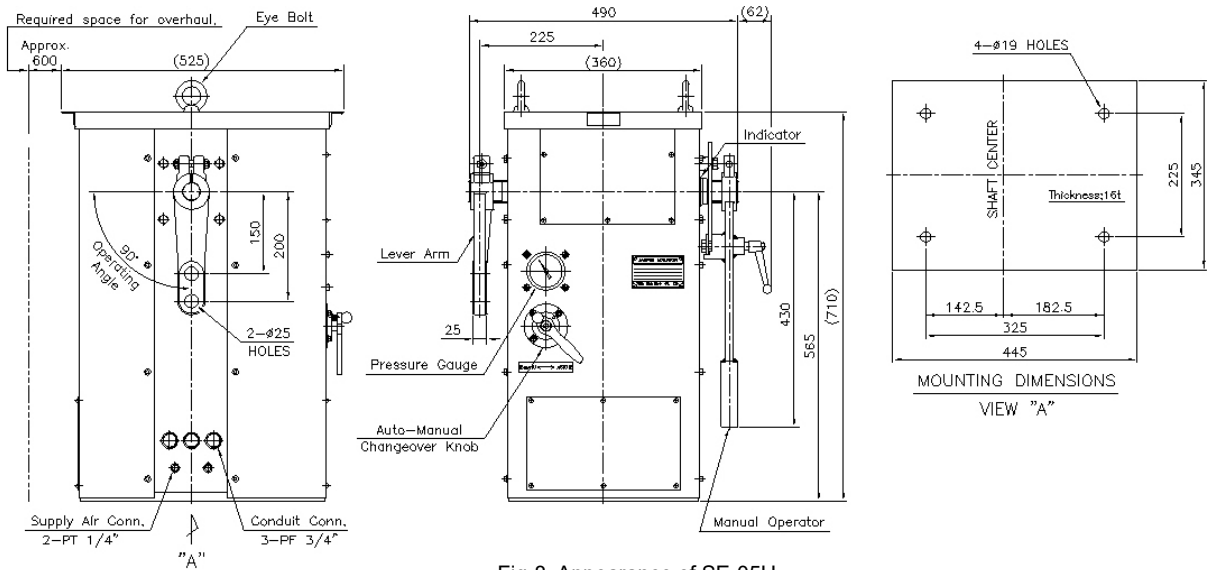


Fig-8. Appearance of SE-05H

(2) SE-15H (Handle Type)

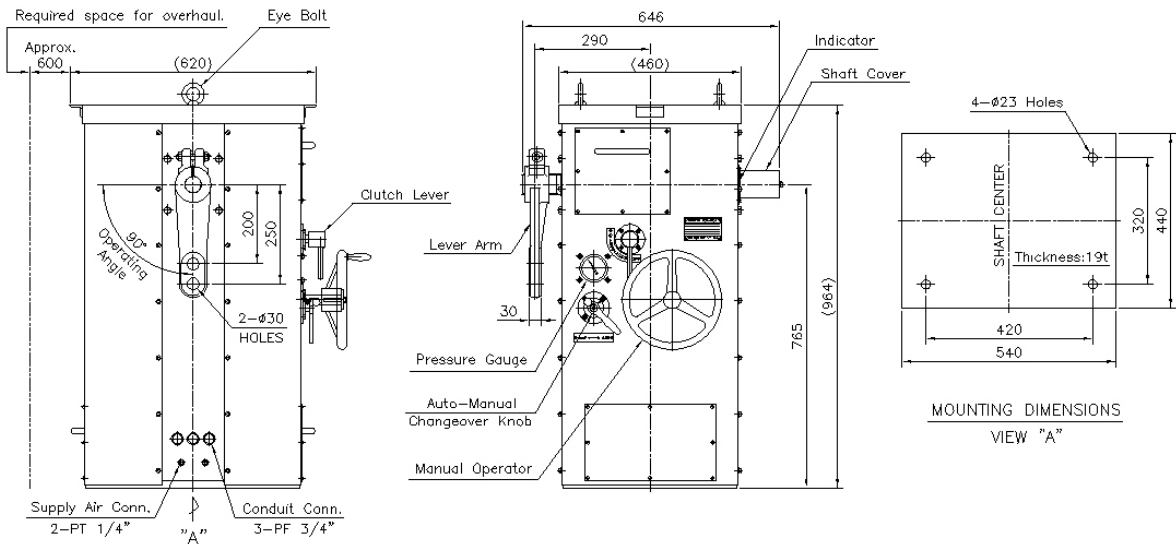


Fig-9. Appearance of SE-15H

### 2-5 Auto/Manual switching procedure

- (1) Lever type manual operator (SE-01H ~ SE-05H)
  - As the manual operation lever is made solid with the output lever, manual operation can be worked simply.
  - For switching over to a manual operation, turn the knob of transfer valve mounted at front face of pneumatic actuator to "MANUAL" position.
  - In this time, as the pneumatic actuator will lose its output power, if unit is being loaded, tighten the lock lever located on the manual operation lever by clockwise direction, then the lever can be locked.
  - For the turning back to "AUTO" operation, after matching the input signal to its opening of pneumatic actuator, the transfer valve can be turned over to "AUTO" position.

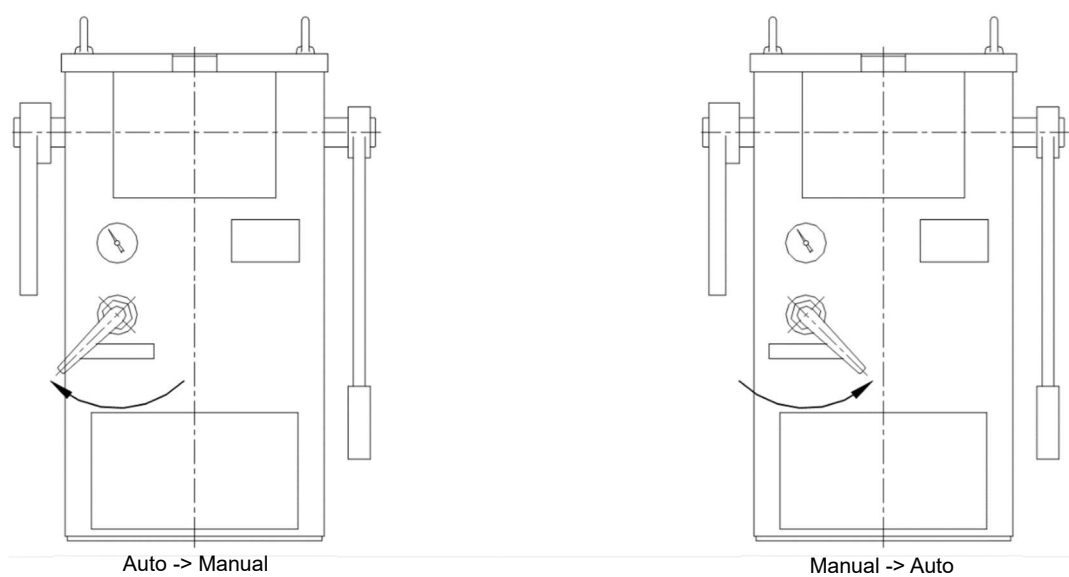


Fig.-10. Lever type manual operator

- (2) Handle type manual operator (SE-08H ~ SE-100H)
- Switch from "AUTO" to "MANUAL"
  - Turn over the lever to manual position(manual clutch on position) in which is located on left-upper side of hand wheel.
  - This procedure is that the clutch is connected with manual drive reducer.  
But if the clutch engagement is not fitted with the relation of clutch position, in that case find the engaged point with rotating of hand wheel by any directions, then turn over the lever.
  - Next, turn over the changeover valve's knob located under the input signal pressure gauge mounted on front face of Pneumatic actuator to manual position.
- (3) Switch from "MANUAL" to "AUTO"
- After matching input signal and Actuator's opening position, please switch No.1 change over valve's knob which is installed under pressure gauge "Auto" mode and immediately switch No 2 change over valve's knob into "AUTO : mode.
  - The switching operations for "Auto to Manual" and "Manual to Auto" should be performed securely.  
If this operation is not perfect, the troubles such as spline teeth damage of clutch unit may occur.  
So please operate this carefully.
  - In order to prevent the damage of clutch unit of manual mechanism, "Auto to Manual" be performed at the time when the drive unit is at standstill.

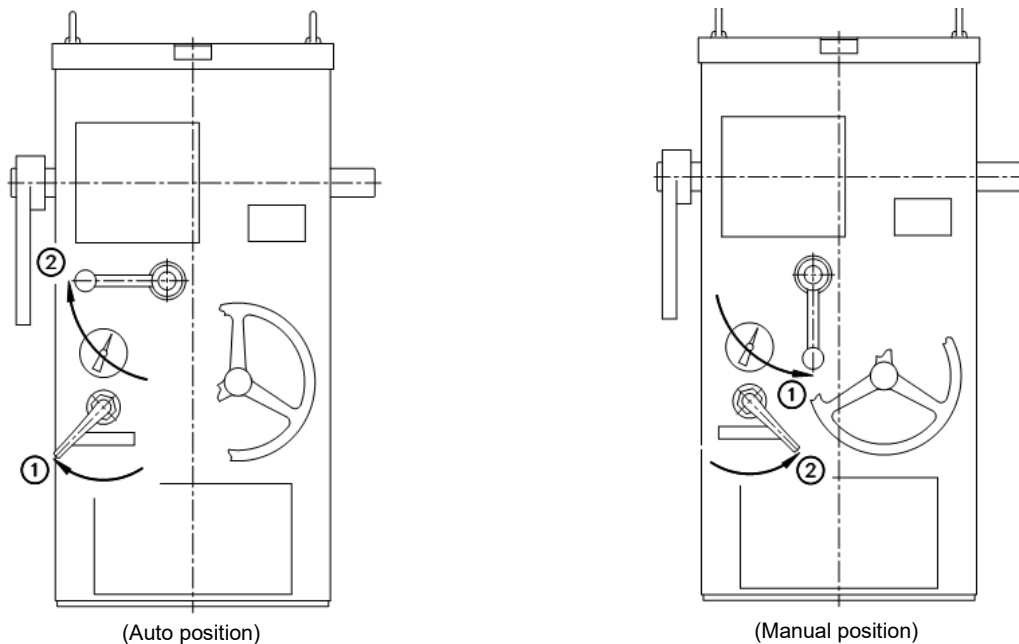


Fig.-11. Handle type manual operator

## 2-6 Changing the acting direction of power shaft rotation

- (1) A pneumatic actuator called direct-acting(DA) when an increase in the input signal causes the piston of power cylinder moving upward. The power shaft moves counterclockwise in view from right side.
- (2) The Pneumatic actuator is called reverse-acting(RA) when an increase in the input signal causes the piston of power cylinder moving downward.  
The direction of shaft rotation for reverse-acting is reverse motion of direct-acting.
  - ① For instance, in order to change made from direct-acting to reverse-acting, the pipe line from positioner output-1 should be changed the connection to up from bottom of cylinder, and also output-2 should be changed the connection to bottom from top of power cylinder.
  - ② Next, remove the positioner cover, then the characterized cam consisting in positioner mechanism should be attached inside out. (Confirm to the stamp on front face of cam.)
  - ③ The changing method to direct-acting from reverse-acting should be made by reverse procedure to the above.

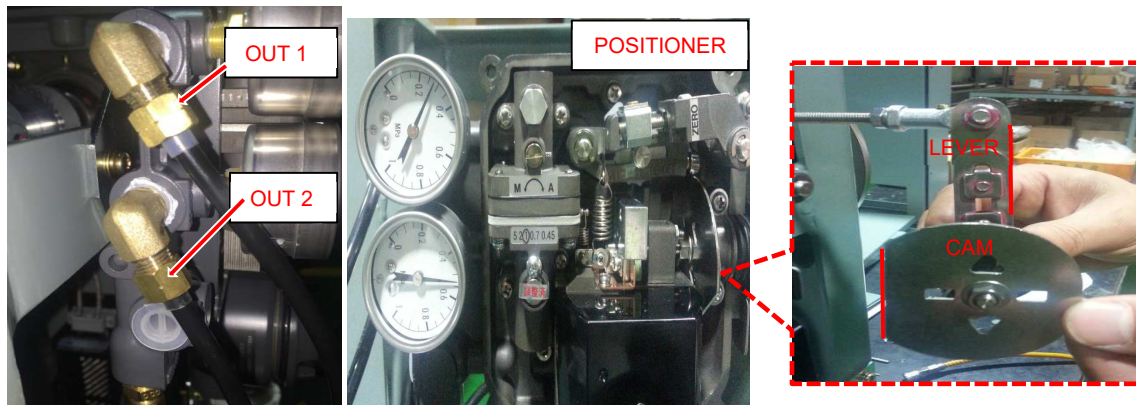


Fig.-12. Changing the acting direction

## 2-7 Adjustment of accessories

### (1) Positioner

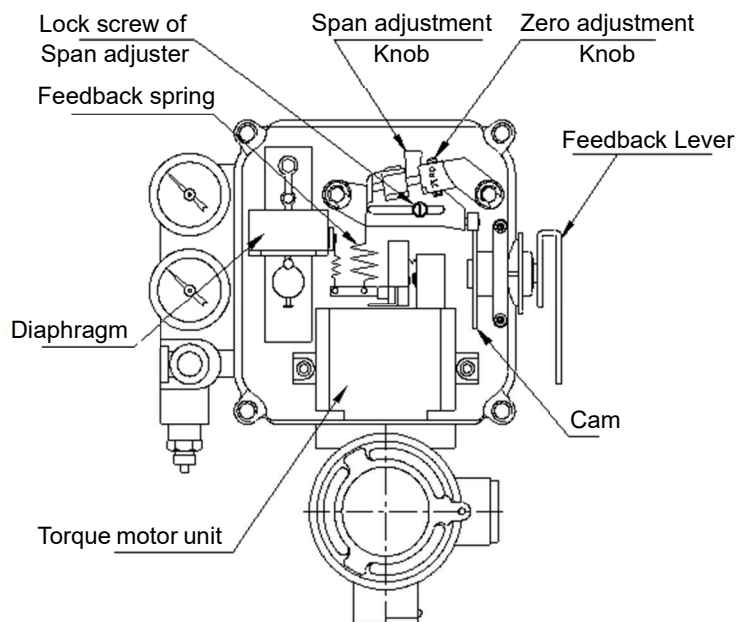


Fig.-13. Positioner

- ① At 0% or 100% opening position of drive unit, the contact point of cam roller installed on the feedback lever should be matched at start point of cam.
- ② Provide the input signal of 4mA(zero point) to the positioner, and adjust the spring load by the zero adjustment knob so that the opening of drive unit will be 0%(Full close or open).
- ③ Next, for the input signal range from 4~20mA, span adjuster so that the drive until will move its full stroke.
- ④ Before the span adjustment, loosening the lock screw of span adjuster.
- ⑤ A repeat zero adjustment should be made because the zero point may be changed by touching of span adjuster.
- ⑥ A repeat adjustment by the zero and span adjusting knobs should be continued until the 50% opening(Linear Cam, when the using of Square Cam; 22.4%) at 12mA of input signal and full stroke operation in input signal change from 4~20mA can be obtained.
- ⑦ After the span adjustment, don't forget the locking of lock screw.
- ⑧ In the linearity has been deviated from specified value( $\pm 3^\circ$ ), it can be compensated by adjusting the length of turnbuckle jointed with feedback lever of positioner and power arm installed on power shaft of Pneumatic actuator.

## (2) Limit switch

- ① As the assembly position of limit switches has been adjusted at factory, so major adjustment may not be necessary.
- ② If the adjustment of contact point is required, loosen the screw on cam attached to power shaft, then change the cam position.

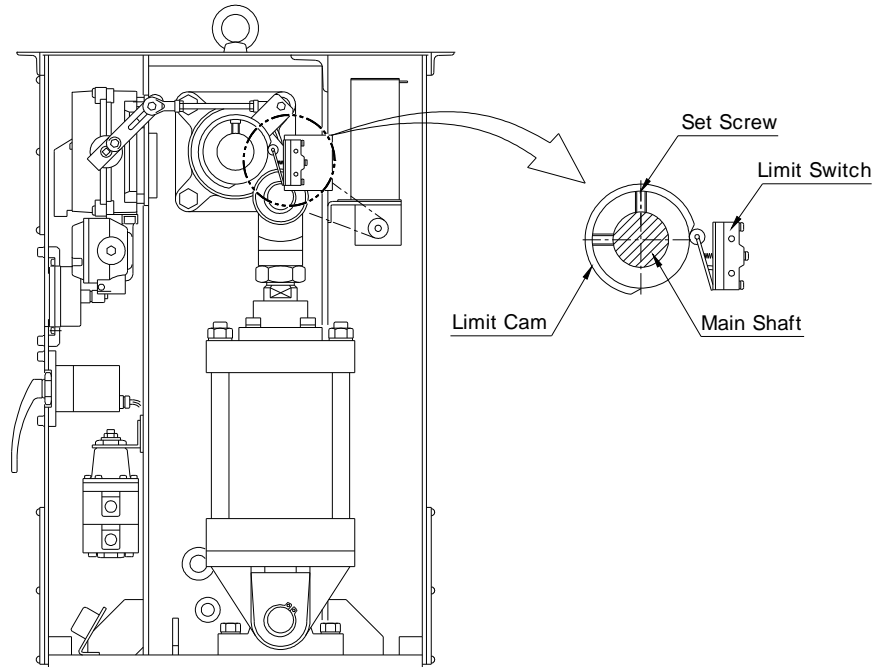


Fig.-14. Limit switch

## (3) Lock up valve

- ① Air lock up valve is in front inside cover.
- ② air lock up valve's setting pressure.
  - Use air lock up valve's pressure gauge, and check whether positioner supplying pressure is same as setting pressure or high or not in pre-set valve.
  - Unscrew ⑨locking nut in ⑩adjusting screw of setting pressure, and check Driver devices may be moved or not according to pressure signal's increasing or decreasing.
  - After modifying pressure on pressure signal, decrease air pressure slightly.
  - When driver devices may not move even above process, air supply pressure is air lock up valve setting pressure.
  - Air lock up valve setting pressure must be set not higher 1.0kg/cm<sup>2</sup> of than air deduction setting pressure.
  - If air lock up valve setting pressure and air deduction valve's difference is near to 1.0kg/cm<sup>2</sup>, hunting shall be happened.

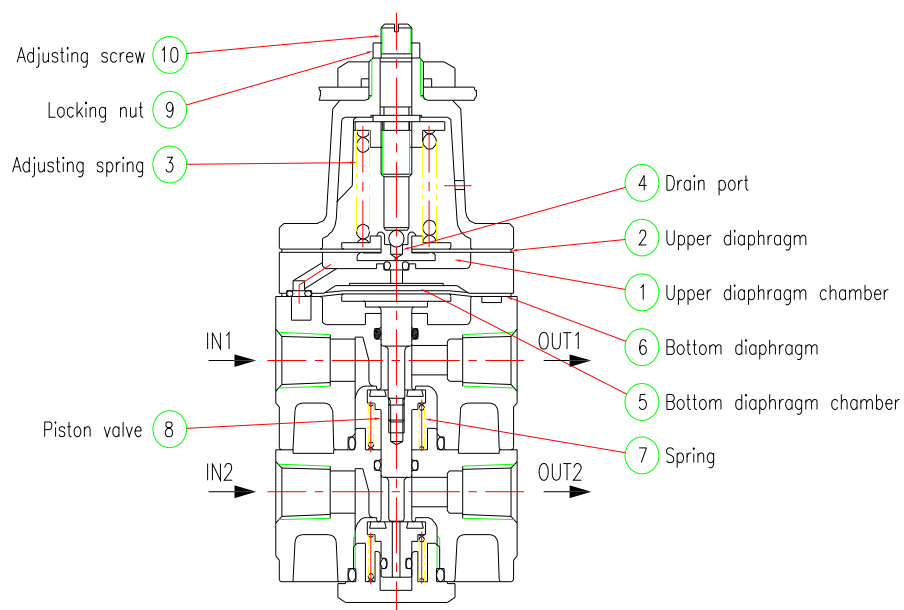


Fig-15. Structure of Lock up valve



(4) Booster Relay

- ① The input pressure from devices enters ① pressure chamber and acts on the ② Diaphragm A and counteracts the power generated by the ③ diaphragm B in the output.
- ② In the case of generating strong force according to the pressure, the ⑥ inner valve is pressed down and supply air flows into the output side.
- ③ In case of reversing ⑥ inner valve is shut off and open the ⑤ exhaust and exhausted.
- ④ So, the ②,③ diaphragm A and B are transformed so that the generated forces are parallel.
- ⑤ The input side and the output side can be connected with a ④ needle valve, and by adjusting this orifice valve, the stability improvement of the closed loop system including the booster relay is possible.

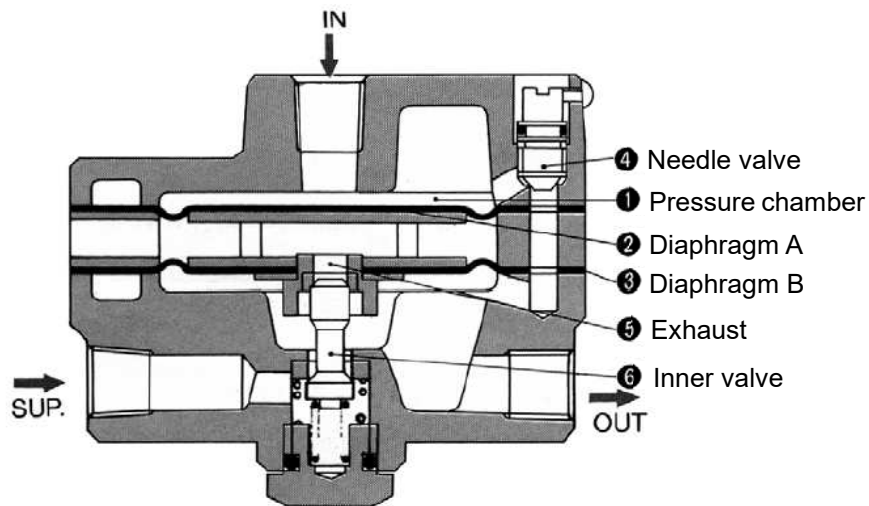


Fig-16. Structure of Booster relay

(5) Hand valve

- ① It is manual and auto mode converting device.
- ② Simplification of valve parts, minimization of failure factors, and high durability products developed and patented by our company are used and supplied to domestic power plants and district heating corporation.

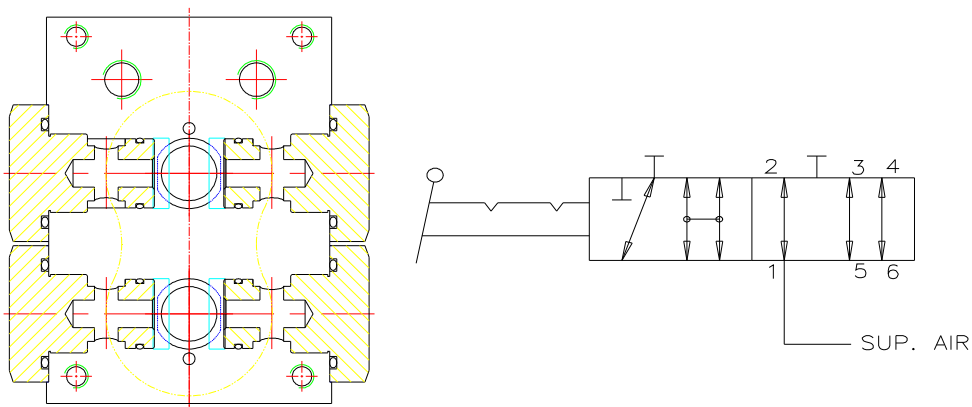


Fig-17. Hand valve

(6) Hand valve lock device

- ① Stop pin which is safety device, is equipped in hand lever.
- ② Even hand lever is loosen, stop-pin only can fix hand-lever.

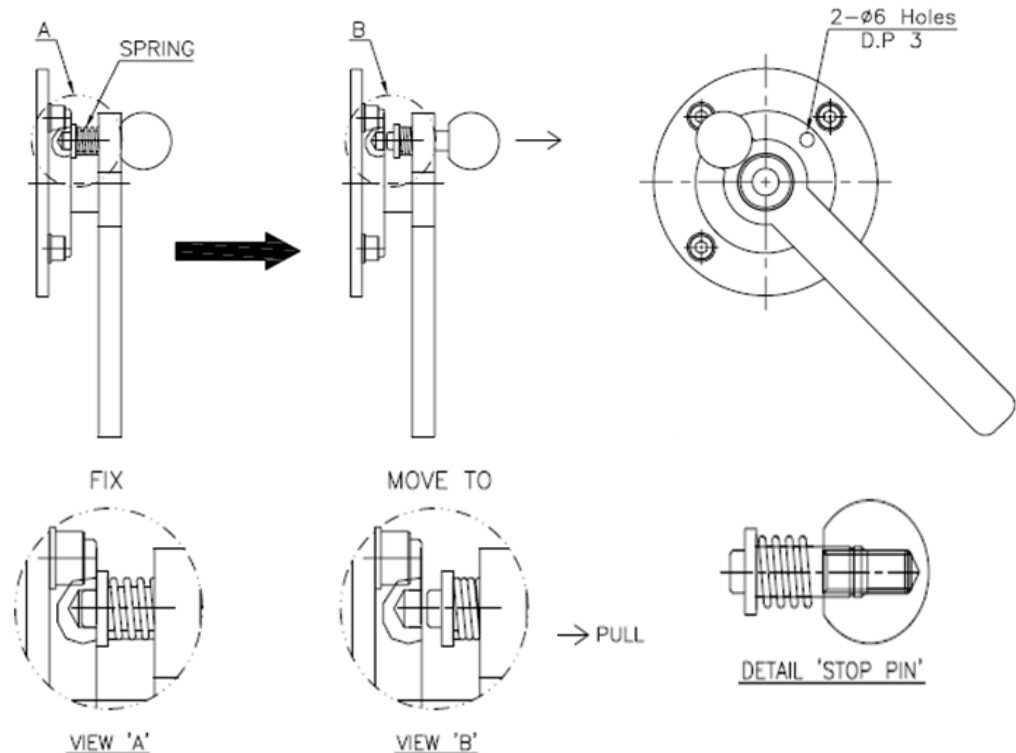


Fig-18. Hand valve lock device

(7) Adjustment of current transmitter (SRC-30A)

- ① SRC-30A is device which input resistance signal can be converted into current signal.
- ② Please check that DC 24V power supply is connected or not. (Power lamp is on)
- ③ Operate actuator into 0% position
- ④ Please verify that there can be DC4mA or not after checking terminal block P1 and N1's current.
- ⑤ Without outputting DC4mA, rotate left and right with Zero adjustment screw and then adjust into 4mA.
- ⑥ Next, Operate actuator into 100% position.
- ⑦ Again, Please verify that there can be DC20mA or not after checking terminal block P1 and N1's current.
- ⑧ Without outputting DC20mA, rotate left and right with Zero adjustment screw and then adjust into 20mA.
- ⑨ Above process is required 2-3 times repeatedly in order to do correct setting

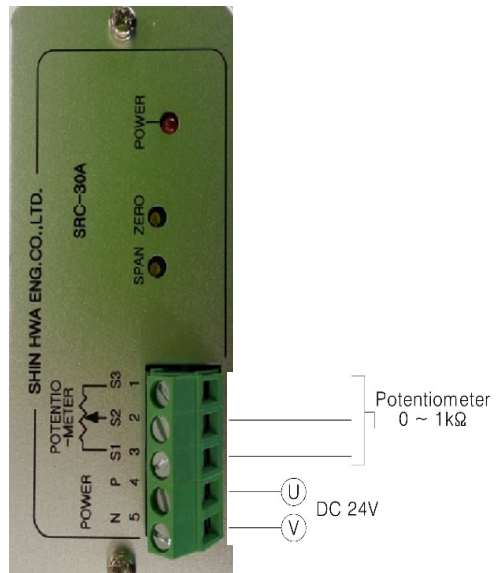


Fig-19. Current Transmitter(SRC-30A)

(8) Adjustment of current transmitter (SRC-10A)

- ① This current transmitter is conversion device that input signal resistance is changed into output electric current signal.
- ② Make sure that power is connected or not. When power is on, it is normal condition if SET LED is light off 0.5 second interval.
- ③ Actuator should be operated in complete closing position with manual.
- ④ After measuring current between terminal P and N, make sure that it is DC 4mA or not. If not appear DC 4mA, please push for 3-4 seconds interval R/I converter Zero setting switch.
- ⑤ And then, make manual handle rotate and locate while actuator should be completely open mode.
- ⑥ Again measure P1 and N1 terminal's current, make sure whether it reaches into DC20mA or not. If not appear DC 20mA, please push for 3-4 seconds interval R/I converter SPAN adjustment press switch.
- ⑦ Again after actuator is located on closing mode completely, measure P1 , N1 current, and if not appear DC 4mA, repeat above procedure and if it reaches into approximately DC 4mA, the adjustment is completed.
- ⑧ Generally, zero span setting value is executed by above process, but in case that installation place, device etc. has tolerance, please do minute adjustment as below described method.
- ⑨ ZERO, SPAN value adjustment value press MODE SWITCH and adjustment KEY change is as followings.

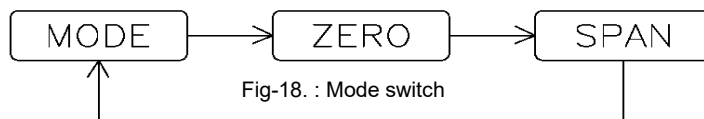


Fig-18. : Mode switch

- ⑩ If press MODE switch, Zero switch changes Down function, Span switch change into Up function.
- ⑪ After actuator close completely, press Mode switch one time and adjust minutely in 0% position(4mA) by adjusting Up and Down with Zero/Span switch.
- ⑫ After above (14) process, actuator must be opened completely, and press Mode switch one time again, and with Zero/Span switch, adjust 100% position(20mA) minutely.
- ⑬ After completing minute adjustment, press Mode switch one time again, and escape.

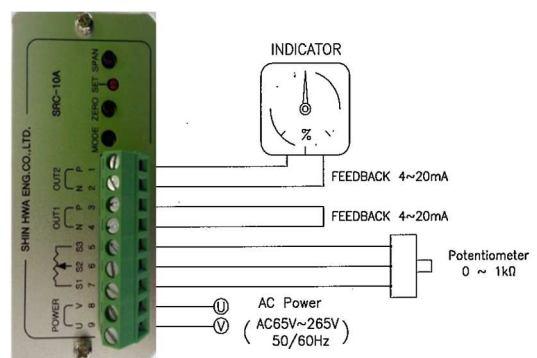
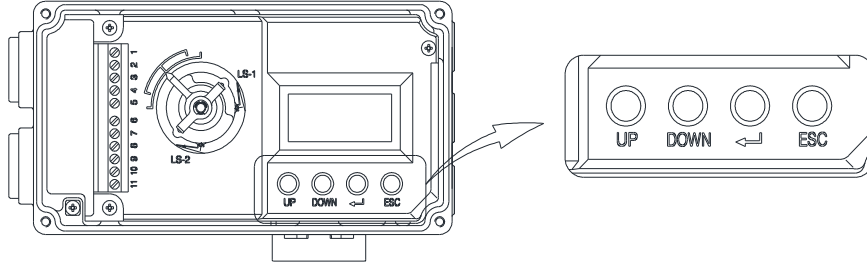


Fig-19. : Adjustment of resistance

(9) Positioner setting

① operation button type

The positioner has four(4) buttons.



<UP> & <DOWN>	: It is used when moving to another menu or changing a parameter value in a menu
<ENTER>	: It is used when entering into main menu or sub menu, or designated parameter value
<ESC>	: It is used when returning from the current menu to a higher one step menu

② Normal operating mode

After connecting power to the positioner, RUN PV mode shall be appeared on positioner's LCD monitor after 10seconds as described picture.

"RUN PV" stands for the current position of positioner.

"50.0%" indicates that valve opening is 50%



③ Auto Calibration Mode (AUTO CAL)

In case of using AUTO CAL function, control position and function necessary in adjustment can be set automatically.

5~10 minutes are required and according to driving size, the requiring time can increased or decreased.

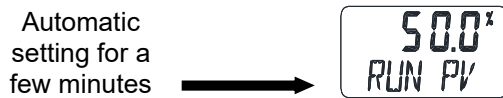
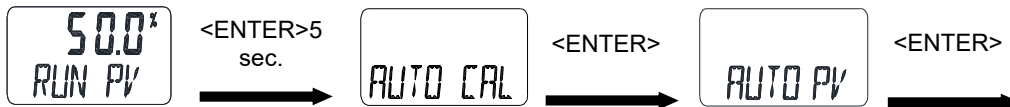
After Initial installation, you need to run "Auto all"

④ Auto PV calibration

AUTO PV re-set Zero point(0%) and End point(100%) only.

Execute AUTO CAL without changing existing parameter value.

It is used when the positioner's installation position is slightly changed.



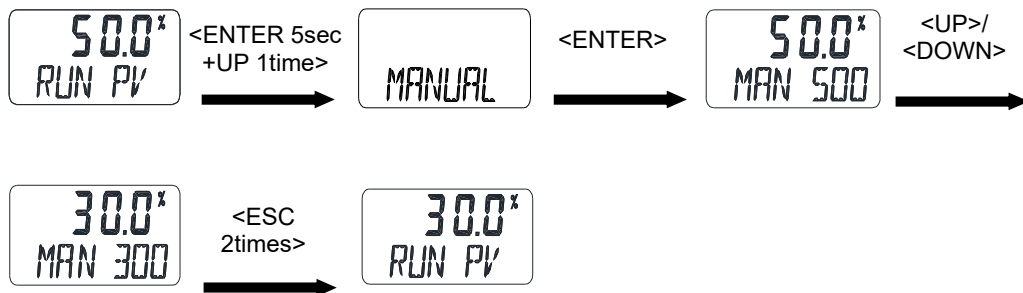
⑤ AUTO ALL

Set all parameter values suitable to Zero Point, End Point, and parameter value suitable to driving facility



⑥ Manual mode

In case that command signal (4~20mA) doesn't supply to positioner with using <DOWN> or <UP> button in manual mode, actuator can be operated.



The numbers of the 2<sup>nd</sup> row indicates the target position and MAN 300 of captioned indicator shows 30.0%

⑦ For more detailed positioner contents, please note positioner manual.

### 3 Maintenance

#### 3-1 Maintenance cycle

- (1) Check about every 3months whether the pin and key part have no abnormality and also the manual handle mechanism can be operated normally.
- (2) The packing of power cylinder should be inspected once a year and the packing replaced as required.
- (3) Lubrication Cycle  
We consist of a private type box.  
The need the lubrication of the separate way does not exist in first stage.  
They must do suitable lubrication according to a driving environment.

Point	Ⓐ	Ⓑ	Ⓒ	Ⓓ
Capacity	5cc	20cc	100cc	5cc
Cycle	1 Year			
Model	EP2			
Manufacturers	Alvania No. 2			

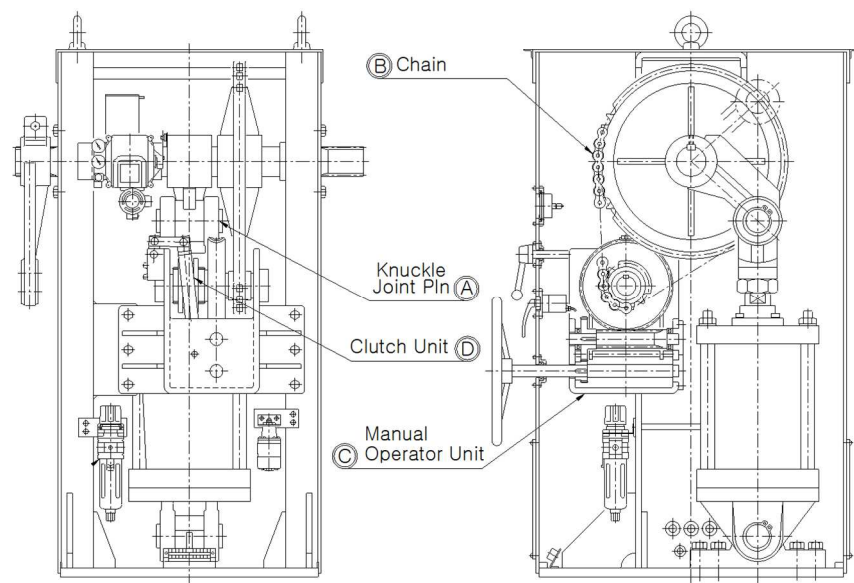


Fig.-21 Actuator inspection parts

### 3-2 Air Cylinder disassembly and assembly procedure

- (1) Before removing the air cylinder from the main unit, check the marks on the upper and lower ends of the piston stroke. This is a mark for when reassembling the device.
- (2) Remove the rear cover and remove the ⑥,⑦Knuckle Pins and take the air cylinder out of the main unit.
- (3) When disassembling the air cylinder, be careful not to damage the packing surface and the sliding surface of the piston.
- (4) When replacing and reassembling the packing, paint Super Lube on the piston and sliding surfaces.
- (5) After assembling the cylinder unit, place it horizontally on a worktable and check that the piston moves smoothly when one connection of the cylinder is open to the atmosphere. A pressure of 0.5 to 0.8 kg/m<sup>2</sup> is applied to the other connection.
- (6) Install the air cylinder in the main unit and connect the power while adjusting the thread engagement length into the piston rod so that the upper and lower dead end positions match the indicated position of the indicator article (1).
- (7) When adjusting the positioner, please note “2-7 (9) Positioner setting”.

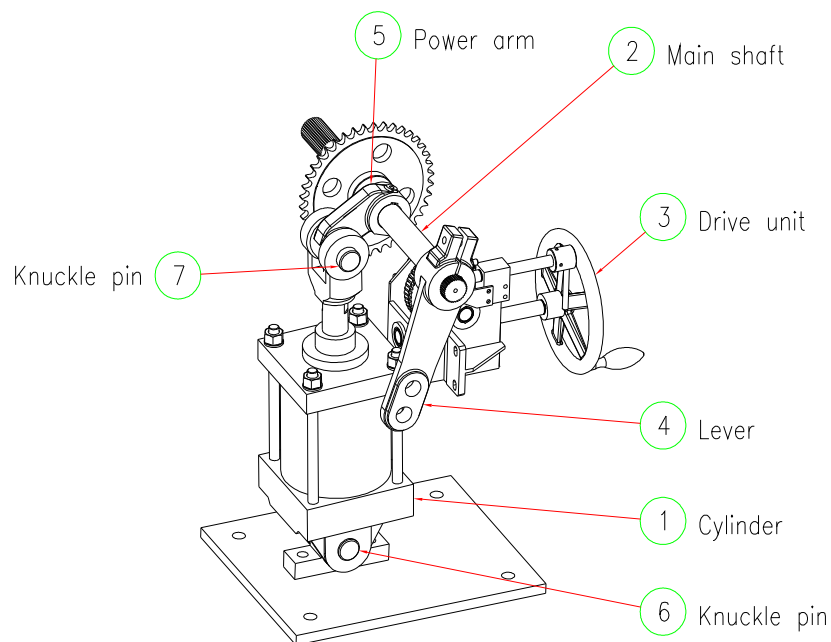
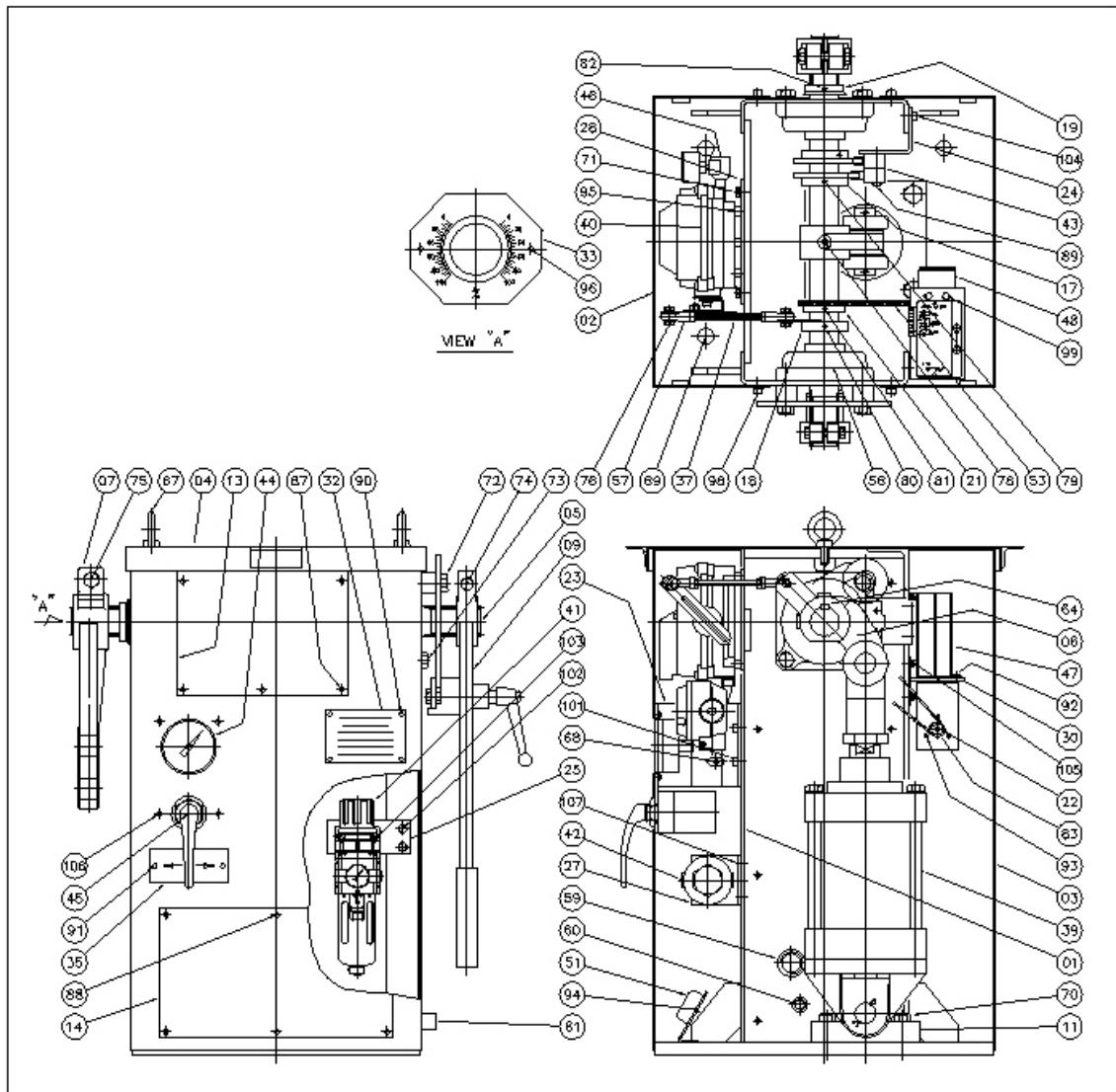


Fig-22. Structure of Air Cylinder

3-3 Inside section drawing

(1) SE-01H ~ SE-05H Type

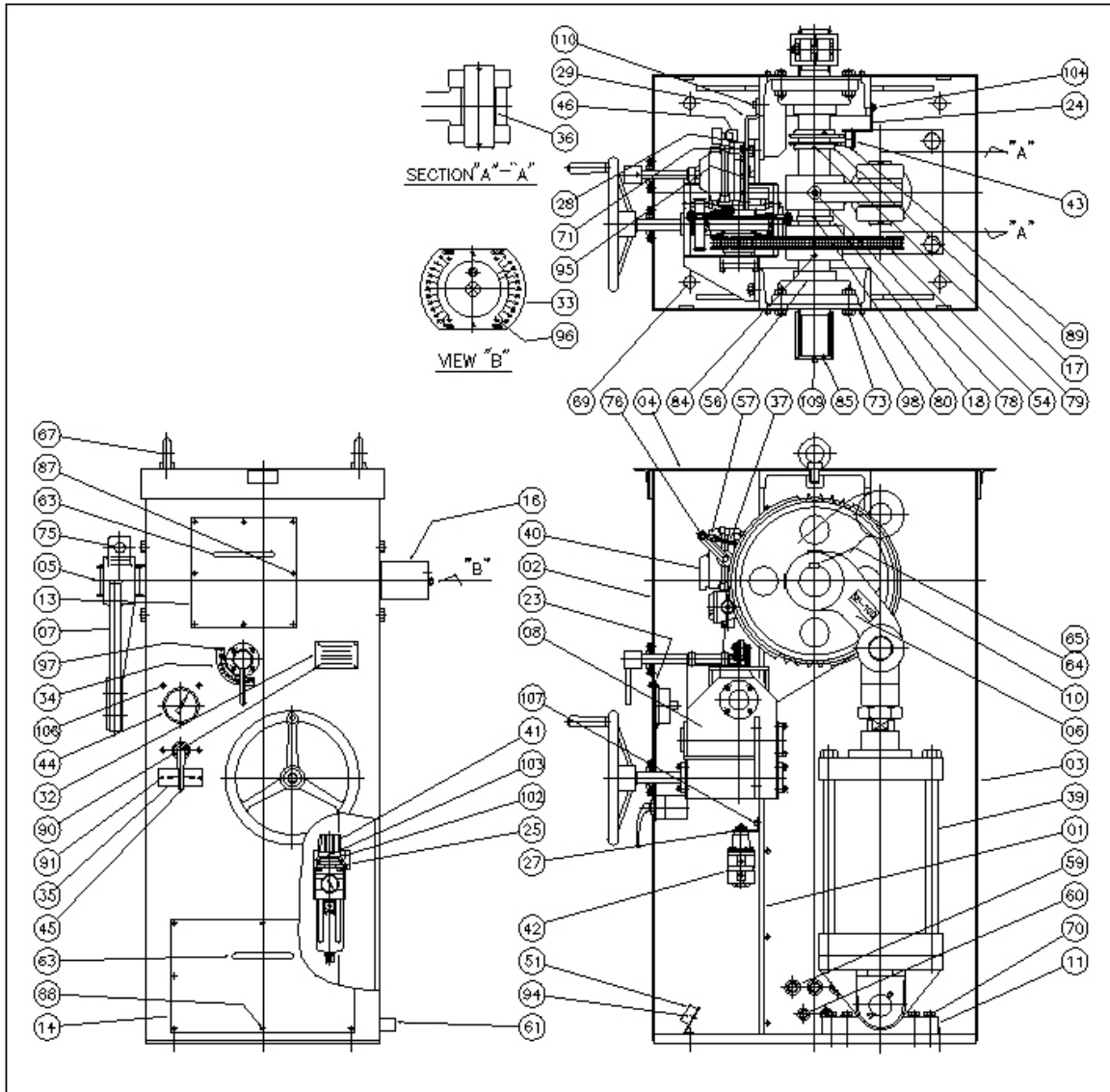


NO.	DESCRIPTIONS	MAT'L	23	SUPPORTING PLATE		46	SPEED CONTROLLER	
01	FRAME	SS400	24	L/S BRACKET	SS400	47	CURRENT TRANSMITTER	
02	FRONT COVER	Z	25	F/R BRACKET		48	POTENTIOMETER	
03	REAR COVER	Z	27	L/V BRACKET	Z	51	TERMINAL BLOCK	
04	TOP COVER	SS400	28	POSITIONER BRACKET A	Z	53	SMALL CHAIN	
05	OUT-PUT SHAFT	SUS304	30	C/T BRACKET	SS400	56	BEARING	
06	POWER ARM	FCD50	31	P/M BRACKET	SS400	57	ROD END BEARING	
07	LEVER ARM	FCD50	32	NAME PLATE	BC3	59	CONDUIT CONN.	
09	MANUAL HANDLE UNIT	SS400	33	INDICATE PLATE	AL	60	SUPPLY AIR CONN.	
11	HINGE	Z	35	INDICATE PLATE	AL	61	F/R DRAIN CONN.	PURCH.
13	INSPECTION COVER	Z	37	CONNECTING SCREW	S20C	64	KEY	S45C
14	INSPECTION COVER	SS400	38	S/H MODULATOR BRACKET	SS400	67	EYE BOLT	S20C
17	LIMIT CAM	BC3	39	AIR CYLINDER	PURCH.	68	HEX. BOLT, S/W & P/W	—
18	POSITIONER CAM	Z	40	I/P POSITIONER		69~71	HEX. BOLT & S/W	—
19	INDICATOR	Z	41	FILTER REGULATOR		72~76	HEX. BOLT, NUT & S/W	S20C
21	F-BACK CHAIN GEAR	Z	42	LOCK UP VALVE		78~83	SET SCREW	S20C
22	F-BACK CHAIN PINION	BC3	43	LIMIT SWITCH		87~96	ROUND HEAD BOLT	S20C
23	SUPPORTING PLATE	SS400	44	PRESSURE GAUGE		98~107	WRENCH BOLT & P/W	S20C
			45	A/M CHANGE VALVE				

Fig-23. SE-01H~SE05H internal structure



(2) SE-08H ~ SE-200H Type



NO.	DESCRIPTIONS	MAT'L	24	L/S BRACKET		54	CHAIN	
01	FRAME	SS400	25	F/R BRACKET		56	BEARING	
02	FRONT COVER		27	L/V BRACKET		57	ROD END BEARING	
03	REAR COVER		28	POSITIONER BRACKET A		59	CONDUIT CONN.	
04	TOP COVER	SS400	29	POSITIONER BRACKET B	SS400	60	SUPPLY AIR CONN.	
05	OUT-PUT SHAFT	SUS304	32	NAME PLATE	BC3	61	F/R DRAIN CONN.	
06	POWER ARM	FC050	33~35	INDICATOR PLATE	AL	63	GRIP	S45C
07	LEVER ARM	FC050	36	BEARING BUSH	PURCH.	64,65	KEY	S45C
08	DRIVE UNIT	-	37	CONNECTING SCREW	PURCH.	67	EYE BOLT	S20C
10	SPROCKET GEAR	SS400	38	S/H MODULATOR BRACKET	SS400	69,70	HEX. BOLT & S/W	
11	HINGE	SS400	39	AIR CYLINDER		71	ROUND HEAD BOLT	
13,14	INSPECTION COVER	SS400	40	I/P POSITIONER		73~76	HEX. BOLT, NUT & S/W	
16	SHAFT COVER	STKM	41	FILTER REGULATOR		78~85	SET SCREW	
17	LIMIT CAM	BC3	42	LOCK UP VALVE		87~97	ROUND HEAD BOLT	
18	POSITIONER CAM	BC3	43	LIMIT SWITCH		98	WRENCH BOLT & P/W	
21	F-BACK CHAIN GEAR	BC3	44	PRESSURE GAUGE		102~104	ROUND HEAD BOLT	
22	F-BACK CHAIN PINION	BC3	45	A/M CHANGE VALVE		106	WRENCH BOLT & P/W	
23	SUPPORTING PLATE	SS400	46	SPEED CONTROLLER		107	ROUND HEAD BOLT	
			51	TERMINAL BLOCK		109	WRENCH BOLT & P/W	
						110	HEX. BOLT & S/W	

Fig-24. SE-08H~SE-200H internal structure

**SEG** SHINHWA ENG. Co., Ltd.

## Manufacturer information

Company Name : SHIN HWA ENG Co., Ltd

Address : 242 Cheongneungdae-ro ( 80B -2L ), Namdong gu,  
Incheon Korea

ZIP CODE : 21695

Tel : 82-32-817-8030

Fax : 82-32-815-8036

E mail : [8030@seg.co.kr](mailto:8030@seg.co.kr)

Website : <http://www.seg.co.kr>

COPYRIGHT 2020(C) Shin Hwa Eng Co., Ltd .ALL RIGHTS RESERVED