



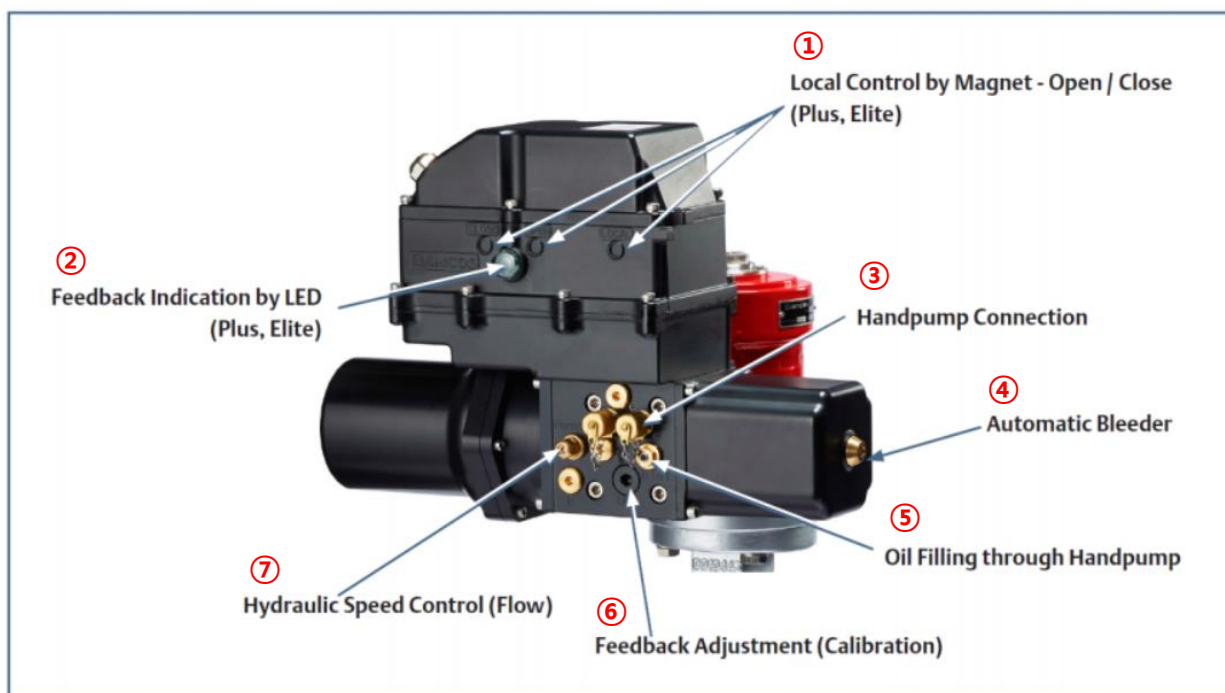
# EMERSON VALVE MANUAL

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# 1. The Product

## 1.1 Components



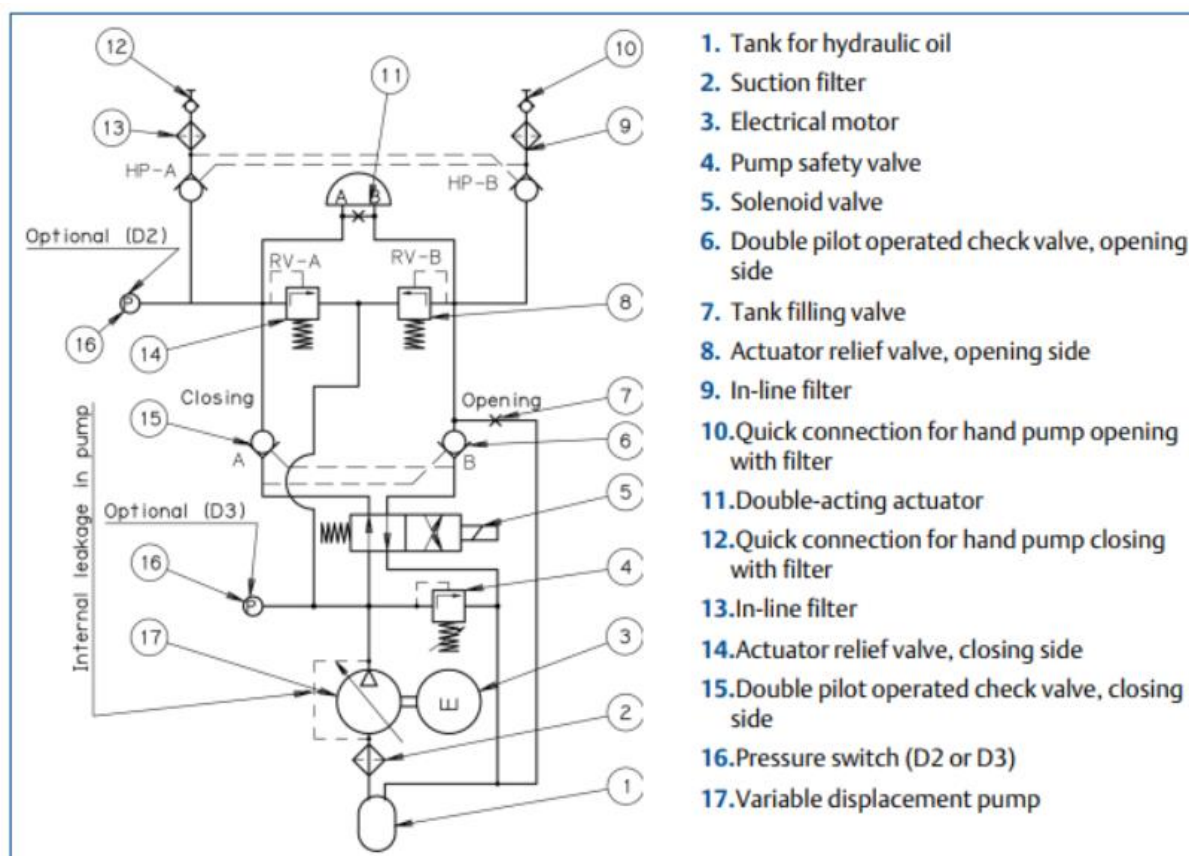
[Figure 1.1] POWER UNIT FOR VALVE

- ① **Local Control by Magnet-Open/Close** : the input terminal for operating valve from local using a magnet.
- ② **Feedback Indication by LED** : led lamp to indicate valve status.
- ③ **Hand pump Connection** : connector to use hand pump.
- ④ **Automatic Bleeder** : a device to prevent damage caused by changes in internal pressure in the oil tank.
- ⑤ **Oil Filling through Hand pump** : connector to fill oil tank by hand pump

- ⑥ **Feedback Adjustment(Calibration)** : a device to regulate open/close feedback of valve.
- ⑦ **Hydraulic Speed Control (Flow)** : a device to regulate speed for valve.

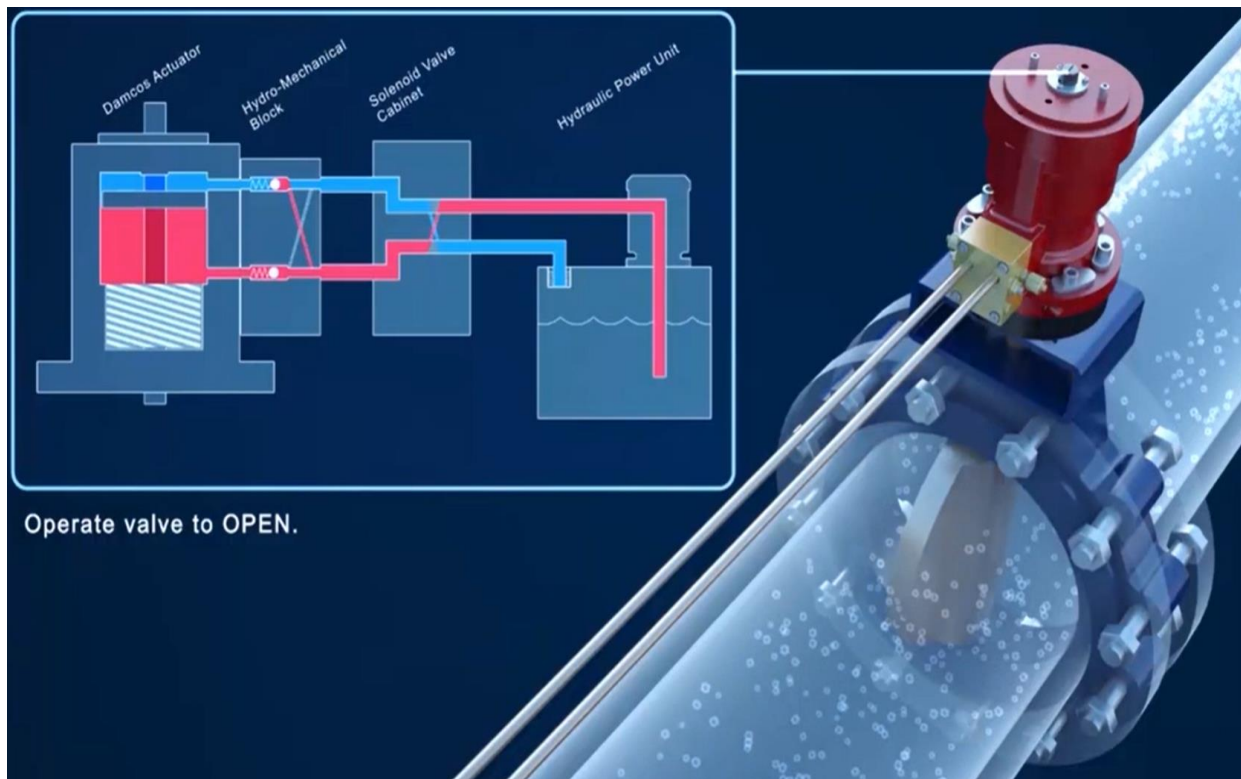
## 1.2 Principle

It's a EHS(Electro Hydraulic System) valve. use the electric motor to suck oil and supply to inside the piston of the actuator to make a hydraulic pressure. \*refer to [figure1.2], [figure1.3], [figure1.4]

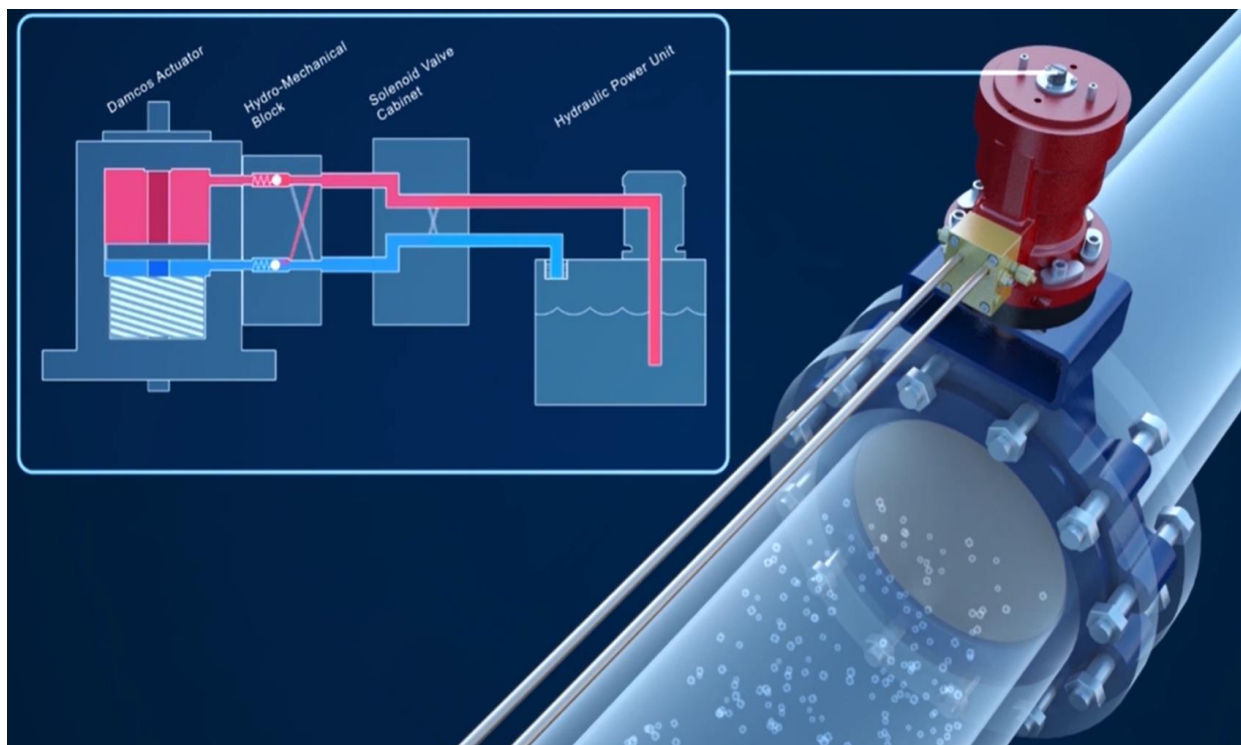


[Figure 1.2] VALVE OPERATING DIAGRAM

[Figure 1.2] VALVE OPERATING DIAGRA



[Figure 1.3] Valve Open



[Figure 1.4] Valve Close

## 2. Initial Set Up

### 2.1 Calibration Mode

This is the process of calibrating open/close status of the valves shipped.

- a. Please make sure the valve must be closed
- b. Touch the magnet on the Local input terminal (for approximately 35 seconds) → Indication Lamp will be blinked as red → remove the magnet  
\*refer to [figure 2.1]



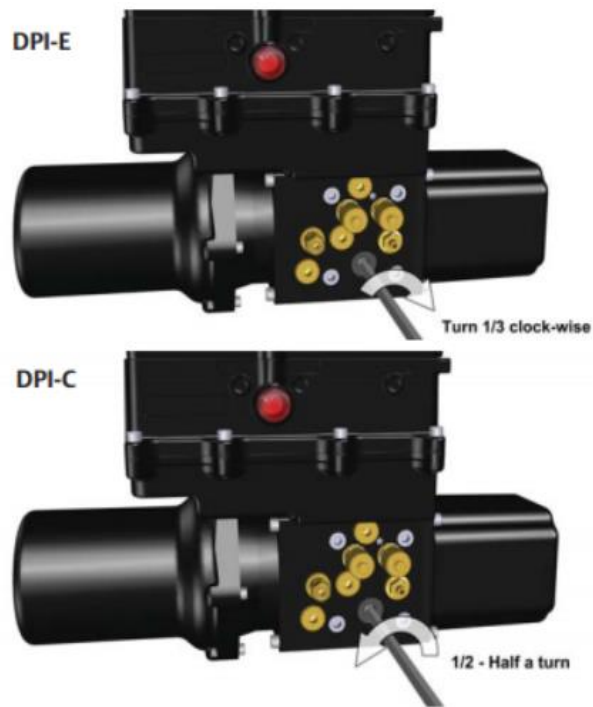
[Figure 2.1 Entering Calibration Mode]

- c. Turn to DPI(Direct Position Indicator) clockwise or counterclockwise slowly by the wrench → stop at the section where the indication lamp starts red blinking. \*refer to [figure 2.2]



[Figure 2.2 Regulating DPI]

- d. In case of Open/Close Type, turn to the wrench clockwise as 1/3  
In case of Throttle Type, turn to the wrench counterclockwise as 1.2  
\* refer to [figure 2.3]



**[Figure 2.3 Regulating DPI for ON/OFF Type & Throttle Type]**

- e. Touch the magnet on the Local input terminal (for approximately 3 seconds) → remove the magnet → Indication Lamp will be blinked as green \*refer to [figure 2.4]



**[Figure 2.4 Releasing Calibration Mode]**



## 2.2 Learn Mode

It's a self-learning process about position of open/close & the speed of valve operation & etc, after complete calibration mode

- a. Touch the magnet on the Local input terminal (for approximately 25 seconds) → Indication Lamp will be blinked as white → remove the magnet  
\* refer to [figure 2.5]



[Figure 2.5 Entering Learn Mode]

- b. When remove magnet, the valve will be opened /closed automatically → after close the valve, it will be opened slightly
- c. Touch the magnet on the Local input terminal (shortly) → Indication Lamp will become Yellow.
- d. Please close the opened valves. (refer to **3.Operating** part to figure out how to operating valves)



## 3. Operating

### 3.1 Local

In case of On/Off Type:

Touch the magnet on the Local input terminal and Open input terminal at the same time.(shortly) → the valve will be opened. \*refer to [figure 3.1]



[Figure 3.1] Open for ON/OFF Type Valve

Touch the magnet on the Local input terminal and Close input terminal at the same time.(shortly) → the valve will be closed.\*refer to [figure 3.2]

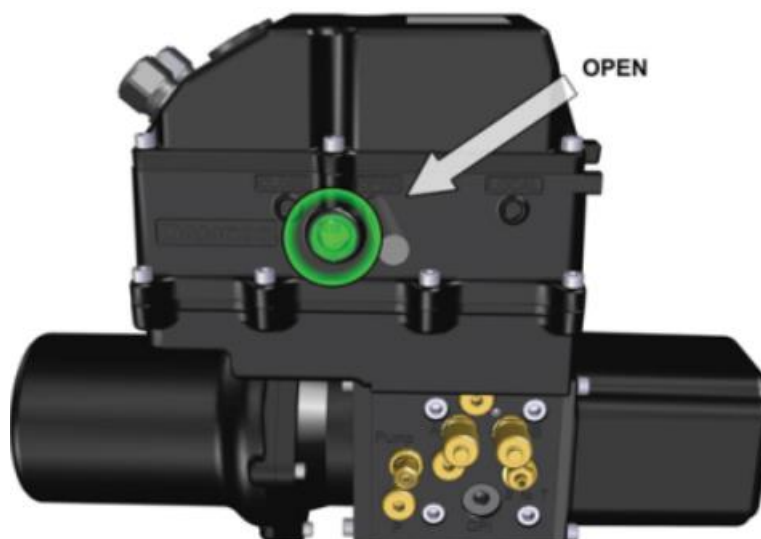


[Figure 3.2] Close for ON/OFF Type Valve

In case of Throttle Type:

Enter the local mode as touching magnet on the Local input terminal. (for approximately 3 seconds) the indication lamp will be blinked as blue → touch the magnet on open/close input terminal and then check the operating valve properly → touch again the magnet on local input terminal (for approximately 5 seconds) to release the local mode.

\*refer to [figure 3.3], [figure3.4]



[Figure 3.3] Open for Throttle Type Valve



[Figure 3.4] Close for Throttle Type Valve

## 3.2 Remote

In case of On/Off Type:

BWTS Main Control Panel → Check Mode → Valve Check → Touch the Open or Close button briefly.



In case of Throttle Type

BWTS Main Control Panel → Check Mode → Valve Check → Touch the Open or Close button long.

## 4. LED Lamp Table










This is a table which explain status for Led Indicating Lamp.

### LED Explanation for Remote Controlled LPU (Plus and Elite)







LED Indication	Sequence	Description
	Steady Green	The valve is open and in remote control.
	Flashing Green	The valve is open and in calibration mode.
	Steady Red	The valve is closed and in remote control.
	Flashing Red	The valve is closed and in calibration mode.
	Steady Yellow	The valve is in intermediate position and in remote control.
	Flashing Yellow 1/2 seconds (default for 30 seconds)	Indicates an error!
	Flashing Blue 1/4 seconds	Indicates Learn mode and that the LPU is controlled locally.
	Flashing long Blue 3/4 seconds and short Green 1/4 seconds	The valve is open and in local control or locked.
	Flashing long Blue 3/4 seconds and short Red 1/4 seconds	The valve is closed and in local control or locked.
	Flashing long Blue 3/4 seconds and short Yellow 1/4 seconds	The valve is intermediate position and in local control or locked.
	Flashing white once every 15 seconds	Indicates the need of Maintenance.

[Figure 4.1] LED Lamp Description in Remote Mode

## LED Explanation for Magnet Implicated Modes (Basic, Plus and Elite)

Magnet Input LOCAL Activated until (seconds)	LED Indication	Function if Magnet Input LOCAL is released here	See page
5	 Blue Steady	NORMAL remote function	
10	 Blue Flashing	LOCAL	28
20	 Blue Steady	NORMAL remote function	
25	 White Flashing	LEARN	29
30	 Blue Steady	NORMAL remote function	
35	 Red Flashing	ADJUST	31
40	 Blue Steady	NORMAL remote function	
45	 Green Flashing	TIME	34
50	 Blue Steady	NORMAL remote function	

[Figure 4.2] LED Lamp Description in Local Mode

Magnet input LOCAL Activated until (seconds)	LED indication	Function if Magnet input LOCAL is released here	See page
55	 Yellow Flashing	INPUT MODE select	36
60	 Blue Steady	NORMAL remote function	
65	 Flashing Red/Green	SET LPU-TYPE 0	37
70	 Blue Steady	NORMAL remote function	
75	 Flashing Blue/Yellow	AUX OUT	27, 49
80+	 Blue Steady	NORMAL remote function	

[Figure 4.3] LED Lamp Description in Local Mode