HL…S.10 series

2/3 Port, Female Threaded Connection

Equipped with HA500 series electric actuator, the valve has a rich function and compact shape which is suitable for limited space inside of AHU.

Product Features

- **Low leakage rate**

The valve core and valve seat sealing surface are all stainless steel which could avoid the damage caused by debris in medium and ensure the low leakage rate after long time running.

- **V-shaped Sealing Ring Gland+ Spring Auto-compensation**

Due to V-shaped ring of the sealing gland, the effects of the inner hole shrinkage and cylindrical expansion of the sealing grand in the case of pressing by the spring, which ensures the sealing of the stem part is effective for a long time.

- **Equal-percentage Flow Characteristics**

The rangeability of valve is 100:1, equipped with TW...series actuator which can get a perfect equal-percentage control curve.

- **Wide Flow Passage, Low Noise**

The design of wide and smooth flow passage can effectively reduce the noise.

- **High-quality Materials**

The valve body is made of high-quality stainless steel with a much higher strength than brass. The precision casting process gives the valve exquisite appearance.

Type Overview

PN16 series

Series	**HA500...**
Actuator Rated Stroke	26mm
Nominal Output Force	500N
Icon	

Type	Model	DN [mm]	Stroke [mm]	Max. flow coef-ficient Kvs [m³/h]	ΔPs [kPa]
PN16 2-port water valve  Medium temperature: -10~130°C	HL15-2VBC-S.10-KVS0.63	DN15	10	0.63	1000
	HL15-2VBC-S.10-KVS1.00	DN15	10	1.0	1000
	HL15-2VBC-S.10-KVS1.60	DN15	10	1.6	1000
	HL15-2VBC-S.10-KVS2.50	DN15	10	2.5	1000
	HL15-2VBC-S.10	DN15	10	4	1000
	HL20-2VBC-S.10	DN20	10	6.3	1000
	HL25-2VBC-S.10	DN25	15	10	800
	HL32-2VBC-S.10	DN32	20	16	500
	HL40-2VBC-S.10	DN40	20	25	300
	HL50-2VBC-S.10	DN50	20	40	200
PN16 3-port mixing valve  Medium temperature: -10~130℃	HL15-3VBC-S.10-KVS0.63	DN15	10	0.63	1000
	HL15-3VBC-S.10-KVS1.00	DN15	10	1.0	1000
	HL15-3VBC-S.10-KVS1.60	DN15	10	1.6	1000
	HL15-3VBC-S.10-KVS2.50	DN15	10	2.5	1000
	HL15-3VBC-S.10	DN15	10	4	1000
	HL20-3VBC-S.10	DN20	10	6.3	1000
	HL25-3VBC-S.10	DN25	15	10	800
	HL32-3VBC-S.10	DN32	20	16	500
	HL40-3VBC-S.10	DN40	20	25	300
	HL50-3VBC-S.10	DN50	20	40	200
PN16 3-port diverting valve  Medium temperature: -10~130℃	HL15-3VBC-S.10-KVS0.63	DN15	10	0.63	500
	HL15-3VBC-S.10-KVS1.00	DN15	10	1.0	500
	HL15-3VBC-S.10-KVS1.60	DN15	10	1.6	500
	HL15-3VBC-S.10-KVS2.50	DN15	10	2.5	500
	HL15-3VBC-S.10	DN15	10	4	500
	HL20-3VBC-S.10	DN20	10	6.3	500
	HL25-3VBC-S.10	DN25	15	10	400
	HL32-3VBC-S.10	DN32	20	16	250
	HL40-3VBC-S.10	DN40	20	25	150
	HL50-3VBC-S.10	DN50	20	40	100

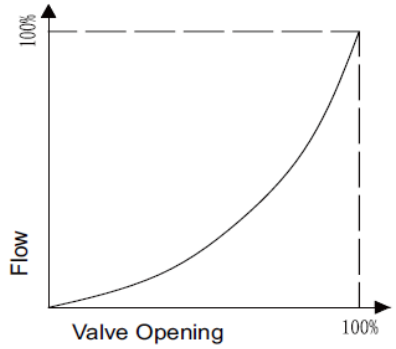
Type Overview

PN25 series

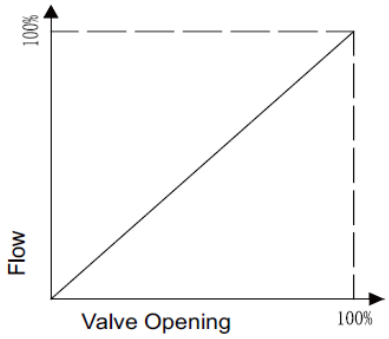
Series	HA500...
Actuator Rated Stroke	26mm
Nominal Output Force	500N
Icon	

Type	Model	DN [mm]	Stroke [mm]	Max. flow coef-ficient Kvs [m³/h]	ΔPs [kPa]
PN16 2-port water valve Medium temperature: -10~130°C	HL15-2VBD-S.10-KVS0.63	DN15	10	0.63	1000
	HL15-2VBD-S.10-KVS1.00	DN15	10	1.0	1000
	HL15-2VBD-S.10-KVS1.60	DN15	10	1.6	1000
	HL15-2VBD-S.10-KVS2.50	DN15	10	2.5	1000
	HL15-2VBD-S.10	DN15	10	4	1000
	HL20-2VBD-S.10	DN20	10	6.3	1000
	HL25-2VBD-S.10	DN25	15	10	800
	HL32-2VBD-S.10	DN32	20	16	500
	HL40-2VBD-S.10	DN40	20	25	300
	HL50-2VBD-S.10	DN50	20	40	200
PN16 3-port mixing valve Medium temperature: -10~130℃	HL15-3VBD-S.10-KVS0.63	DN15	10	0.63	1000
	HL15-3VBD-S.10-KVS1.00	DN15	10	1.0	1000
	HL15-3VBD-S.10-KVS1.60	DN15	10	1.6	1000
	HL15-3VBD-S.10-KVS2.50	DN15	10	2.5	1000
	HL15-3VBD-S.10	DN15	10	4	1000
	HL20-3VBD-S.10	DN20	10	6.3	1000
	HL25-3VBD-S.10	DN25	15	10	800
	HL32-3VBD-S.10	DN32	20	16	500
	HL40-3VBD-S.10	DN40	20	25	300
	HL50-3VBD-S.10	DN50	20	40	200
PN16 3-port diverting valve Medium temperature: -10~130℃	HL15-3VBD-S.10-KVS0.63	DN15	10	0.63	500
	HL15-3VBD-S.10-KVS1.00	DN15	10	1.0	500
	HL15-3VBD-S.10-KVS1.60	DN15	10	1.6	500
	HL15-3VBD-S.10-KVS2.50	DN15	10	2.5	500
	HL15-3VBD-S.10	DN15	10	4	500
	HL20-3VBD-S.10	DN20	10	6.3	500
	HL25-3VBD-S.10	DN25	15	10	400
	HL32-3VBD-S.10	DN32	20	16	250
	HL40-3VBD-S.10	DN40	20	25	150
	HL50-3VBD-S.10	DN50	20	40	100

Flow Characteristics



A-AB Equal-percentage Flow Characteristics



B-AB Equal-linear Flow Characteristics

Relationship between Differential Pressure and Flow

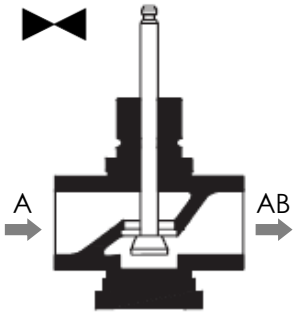
$$Kvs = \frac{V}{\sqrt{\frac{\Delta P}{100}}}$$

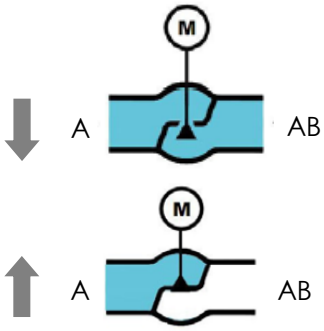
ΔP: Differential pressure when valve is full open (Unit: KPa)

V: Rating flow at the ΔP (Unit: m^3/h)

Kvs: Nominal flow coefficient, which refers to the flow when medium (Density = 1g/cm₃) goes through the full open control valve, whose ΔP is 100KvPa.

Structure Characteristics

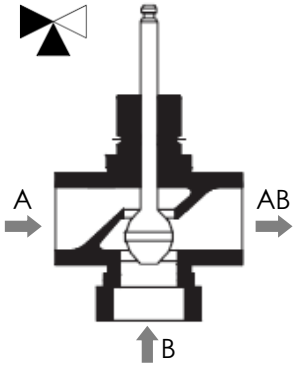


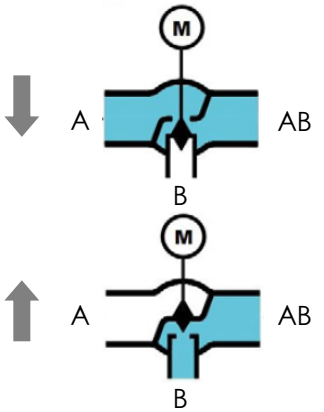


2-port Valve

When the valve stem is at lower limit, the valve will be opened from A to AB.

When the valve stem is at upper limit, the valve will be closed from A to AB.

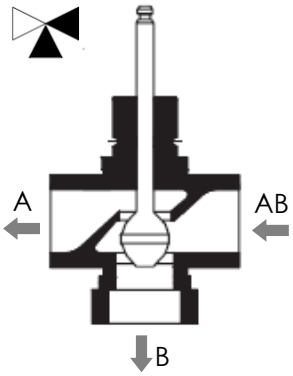


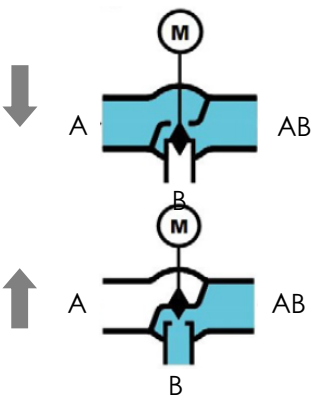


3-port Mixing Valve

When actuator stem is at lower limit, the valve will be opened from A to AB and closed from B to AB.

When actuator stem is at lower limit, the valve will be closed from A to AB and opened from B to AB.





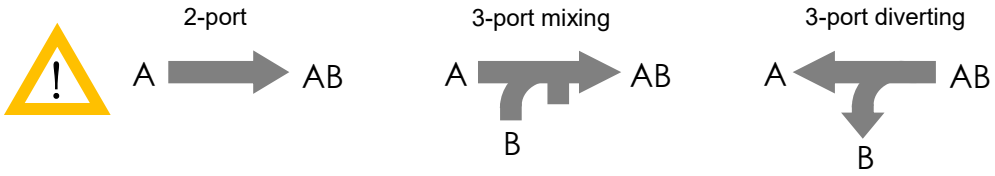
3-port Diverting Valve

When actuator stem is at lower limit, the valve will be opened from A to AB and closed from B to AB.

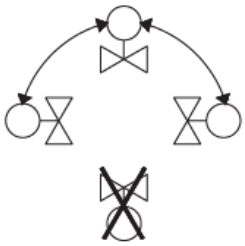
When actuator stem is at lower limit, the valve will be closed from A to AB and opened from B to AB.

Connection with Pipeline

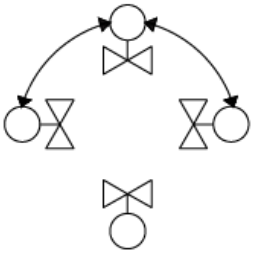
1. Valve can be installed on the water supply pipe or return water pipe (installed on the return water pipe can control the water flow more smoothly, meanwhile the return water temperature is lower which can extends the service time of valve).
2. Filter and check valve are recommended to be installed.
3. When the medium is steam, install drain valve in the pipe can remove the condensed water, or it will affect the service time of valve.
4. Please note that the medium flow direction in valve should be consistent with the medium of pipeline.



5. Please pay attention to the valve mounting orientation.



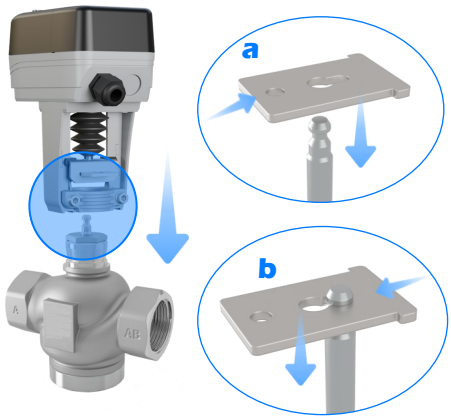
Medium is chilled/hot water
Downward installation is forbidden



Medium is steam
Any installation position is OK

Connection with Actuator

You can complete the installation with the actuator's Allen wrench. It doesn't need further tools or any adjustment. The actuator can start stroke test. Warning! Prohibit installing outdoors to avoid PCB damage due to the condensation and water. Rain cover and heating belt are necessary incase of outdoor installation.



1.

Loosen the slider and clip, then put the actuator on the valve body and keep the two connecting faces coinciding, fix the screws on the slit with Allen wrench.

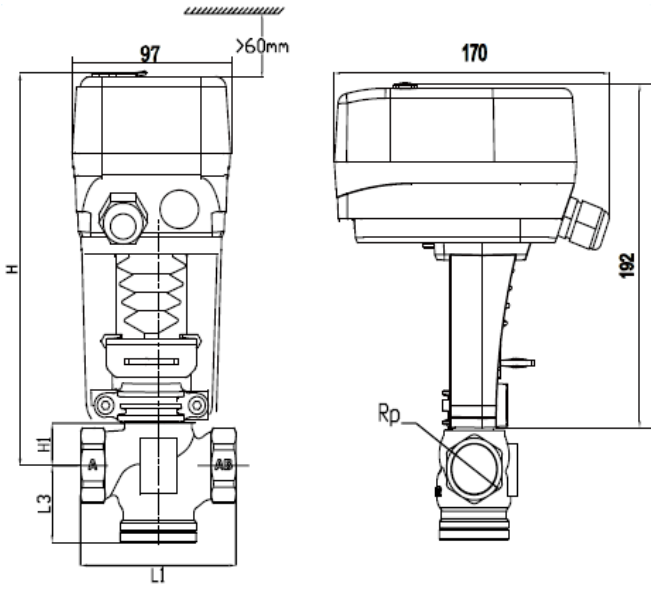
2.

Place the slider into the actuator and tighten the two screws.

3.

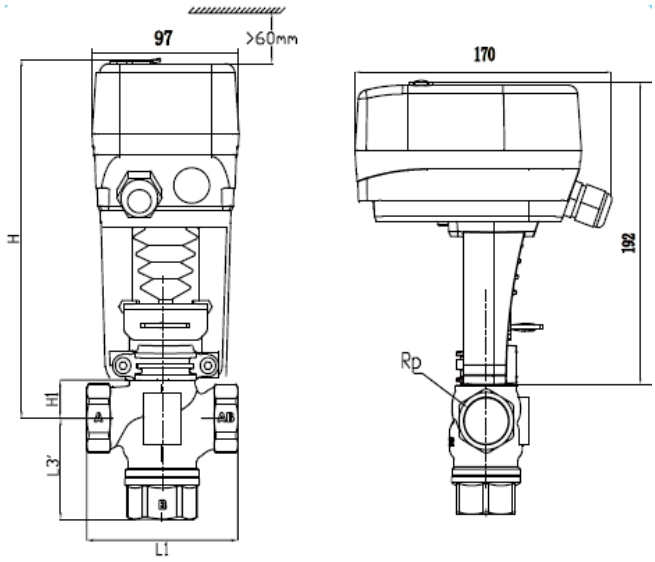
This is how the valve and actuator should look after correct assembly.

Dimension Figure for 2-port



DN	Rp	L1 (mm)	L3 (mm)	H1 (mm)	H (mm)	N.W. kg
DN15	1/2”	81	39	29	221	0.71
DN20	3/4”	86	39	29	221	0.82
DN25	1”	115	43	34.5	226.5	1.13
DN32	1-1/4”	122	52.5	35	227	1.55
DN40	1-1/2”	140	60	43	235	2.07
DN50	2”	158	68	56.5	248.5	2.82

Dimension Figure for 3-port



DN	Rp	L1 (mm)	L3 (mm)	H1 (mm)	H (mm)	N.W. kg
DN15	1/2”	81	56	29	221	0.71
DN20	3/4”	86	56	29	221	0.84
DN25	1”	115	64	34.5	226.5	1.14
DN32	1-1/4”	122	76.5	35	227	1.54
DN40	1-1/2”	140	83.5	43	235	2.06
DN50	2”	158	95	56.5	248.5	2.9

Technical Parameters

• Functional data	
Nominal size	DN15-DN50
Nominal pressure	PN16
Flow characteristics 2-port 3-port	 A-AB: equal-percentage flow characteristics A-AB: equal-percentage flow characteristics B-AB: equal-linear flow characteristic
Rangeability	>100：1
Leakage rate 2-port 3-port	 ≤0.01% kvs A-AB: ≤0.01% of kvs; B-AB: ≤0.02% of kvs
Permissible medium Water valve（-10~130℃）	 Chilled/hot water, glycol under 50%
Connection standard	Female threaded connection ISO7-1

• Spare Parts Material	
Valve body	Stainless steel
Valve Stem	Stainless steel
Valve core	Stainless steel
Sealing ring	PTFE

• Environmental condition	
Running	
Ambient temperature	-25~+65℃
Ambient humidity	≤95% RH non-condensation
Storage	
Ambient temperature	-25~+65℃
Ambient humidity	≤95% RH non-condensation