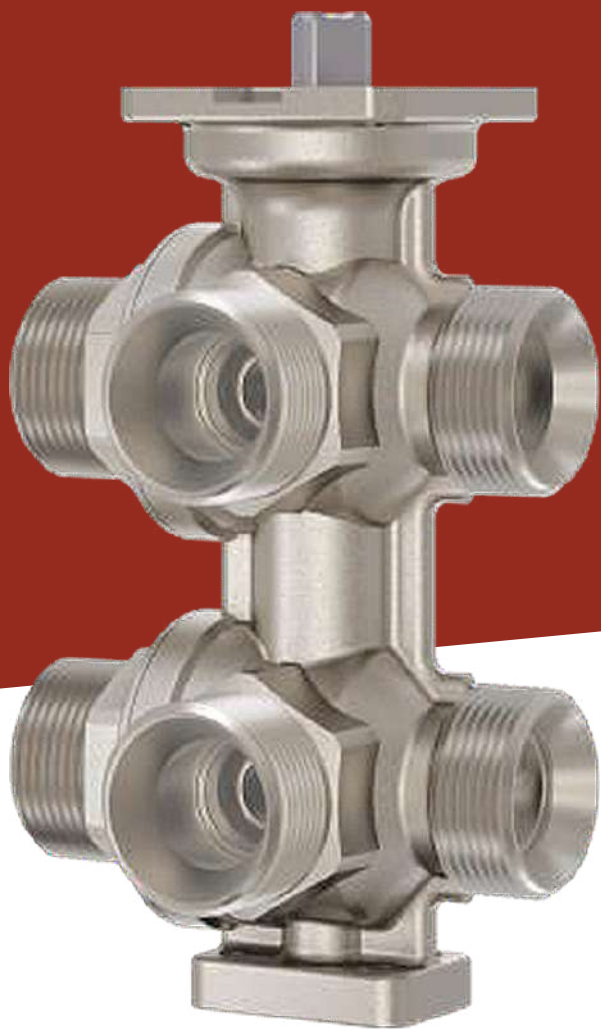




APOLLO
6-way Valve

1. INTRODUCTION

The 6-way ball valve from APOLLO is a compact and precise alternative for regulating heated/ chilled ceilings and fan coils in four-pipe systems. It can be used as a regulating valve or a changeover valve. Conventional solutions with up to four 2-way valves, four actuators and two or three controller outputs now only require a 6-way ball valve and an actuator. With a rotation of 90°, the APOLLO 6-way ball valve can go through both sequences for heating and cooling. The two holes arranged at right angles for the balls ensure that the heating and cooling systems can be separated without leakage. The ball valve can be fitted or selected with different orifice plates for the Kvs value for heating and cooling, according to the design specifications.

2. WHY TO USE THE 6 - WAY VALVE?

- **Versatile Control** – Perfect for **changeover or steady control** in 4-pipe systems, ensuring efficient switching between heating and cooling circuits.
- **Durable & Reliable** – Made from **dezincification-resistant brass**, ensuring long-term performance even in demanding water conditions.
- **Precision Flow Control** – **Adjustable Kvs via exchangeable orifice plates**, allowing optimal flow regulation for different system requirements.
- **Easy Integration** – Compatible with **AKM 115(S) and AKF 112/113(S) actuators**, providing seamless automation for smart HVAC control.
- **High-Quality Standards** – Compliant with **VDI 2035 water quality guidelines**, preventing scaling and corrosion for system longevity.
- **Convenient Installation** – Features **ISO 228 male threads** and optional **strainers & screw fittings** for hassle-free setup and maintenance.

Ideal for commercial and industrial HVAC applications, this valve ensures **energy efficiency, reduced downtime, and superior durability**—making it the smart choice for your system.

Nominal Diameter	1/2" 3/4"
Operating Temperature	41 - 194 °F
Operating Pressure	Max. 230 Psi /PN 16
Differential pressure	v
Medium	Heating and cooling water according to VDI 2035
Kvs value	3.2

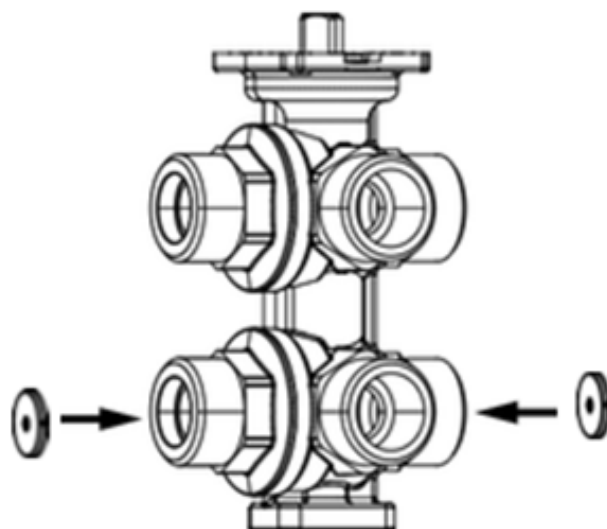
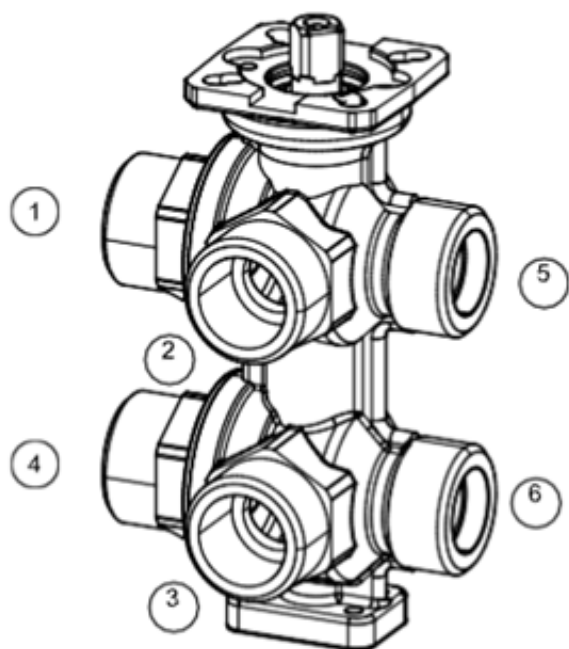
3. MAIN FEATURES

- 6-way ball valve for changeover or steady control of heating and cooling circuits in a 4-pipe system
- Body made of moulded brass CW602N (dezincification-resistant) or CW617N
- With male thread as per ISO 228
- Kvs selection with exchangeable orifice plates
- In combination with valve actuators AKM 115(S) and AKF 112, 113(S) as a control unit
- Strainer and screw fitting available as accessories
- Water quality as per VDI 2035

4. DESIGN

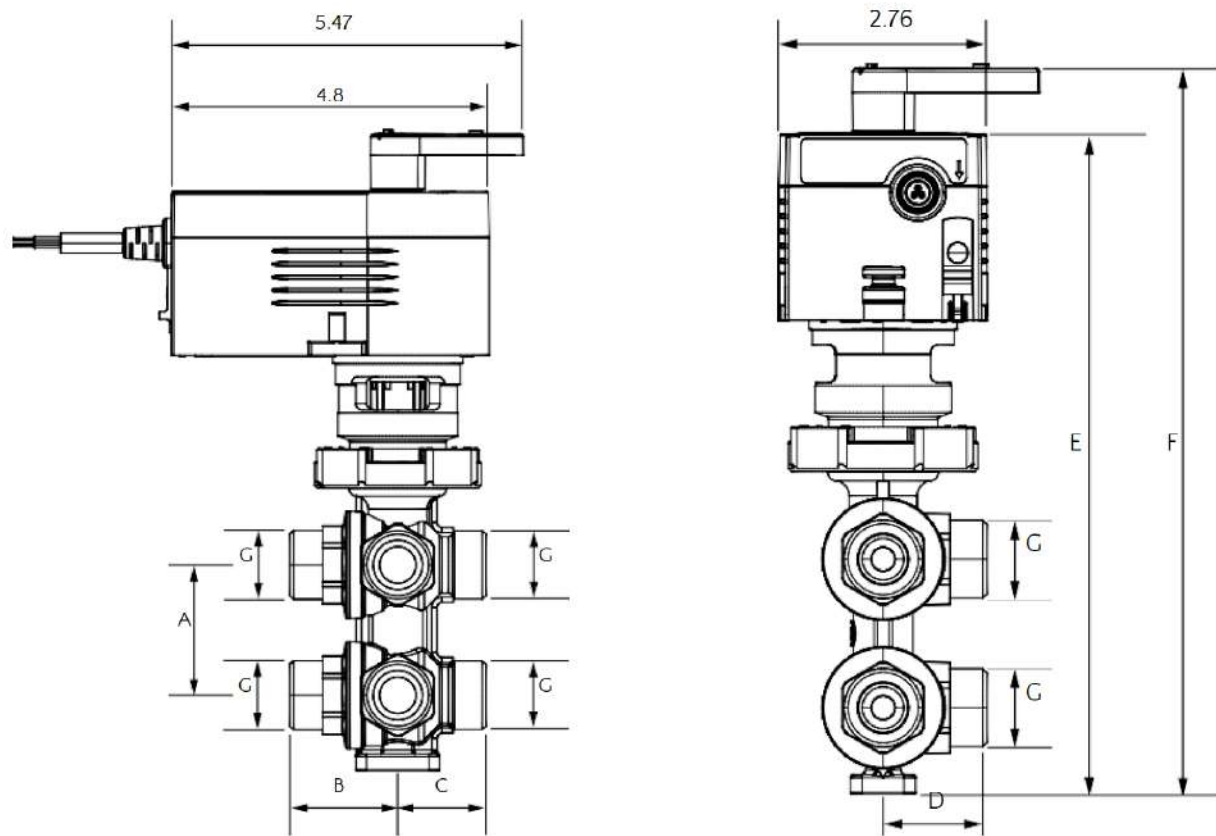
- (1) Supply for Network 1
- (2) Supply for heated/chilled ceiling
- (3) Return for heated/chilled ceiling
- (4) Return for network 1
- (5) Supply for network 2
- (6) Return for network 2

The APOLLO 6-Way Valve consists of two three-way ball valves arranged one above the other, which are connected to each other via a common rotary axis. Via a rotation angle of 90°, either the two left or the two right connections are switched to the middle connections to supply the connected unit with heat or cold. In the middle position, all connections are shut off.



Network open/closed circuit

5. DIMENSIONS

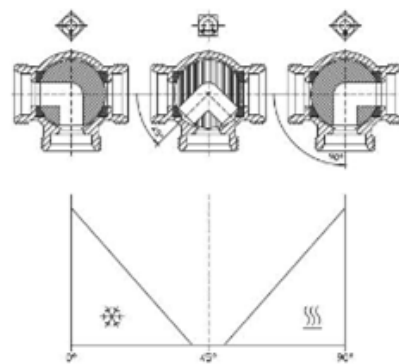


Type	A (inch)	B (inch)	C (inch)	D (inch)	E (inch)	F (INCH)	G (inch)
APOLLO 6-Way Valve ½"	1.96	1.61	1.28	1.38	8.78	9.72	G ¾
APOLLO 6-Way Valve ¾"	2.36	1.67	1.67	1.61	9.72	10.67	G ¾

6. FUNCTIONS

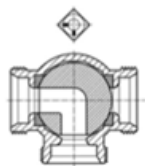
The switchover is performed by the actuator, which can also be used to approach intermediate positions. The rotary actuator is mounted to the six-way ball valve with a union nut and acts on the rotary axis via a square. The position of the six-way ball valve is indicated on the rotary actuator. When the rotary actuator is removed, the position can be read off from notches in the square.

The APOLLO 6-way ball valve is used for heating and cooling operation in a four-pipe system with heating/cooling ceilings or fan coil units. Due to its design, it can be integrated in a space-saving way. It combines several functions in one component: the APOLLO 6-way valve takes over the tasks of up to four straight valves. This way, not only the space required but also the material and installation costs can be reduced.



Switchover and shutoff

Cooling

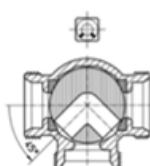


Rotation angle: 0° (fully open)

Actuator control: 0 V

The system connection on the left (typically cooling) to the unit is fully open

Shutoff (Dead Zone)

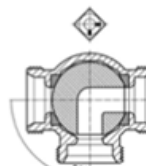


Rotation angle: 45° (shut off)

Actuator control: 5 V

All connections are shut off

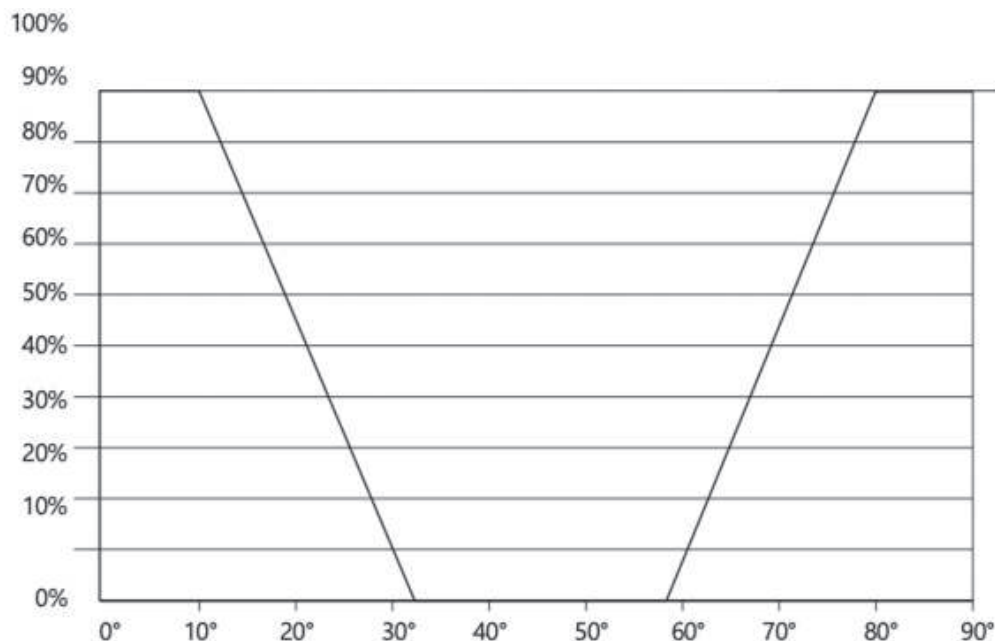
Heating



Rotation angle: 90° (fully open)

Actuator control: 10 V

The system connection on the right (typically heating) to the unit is fully open

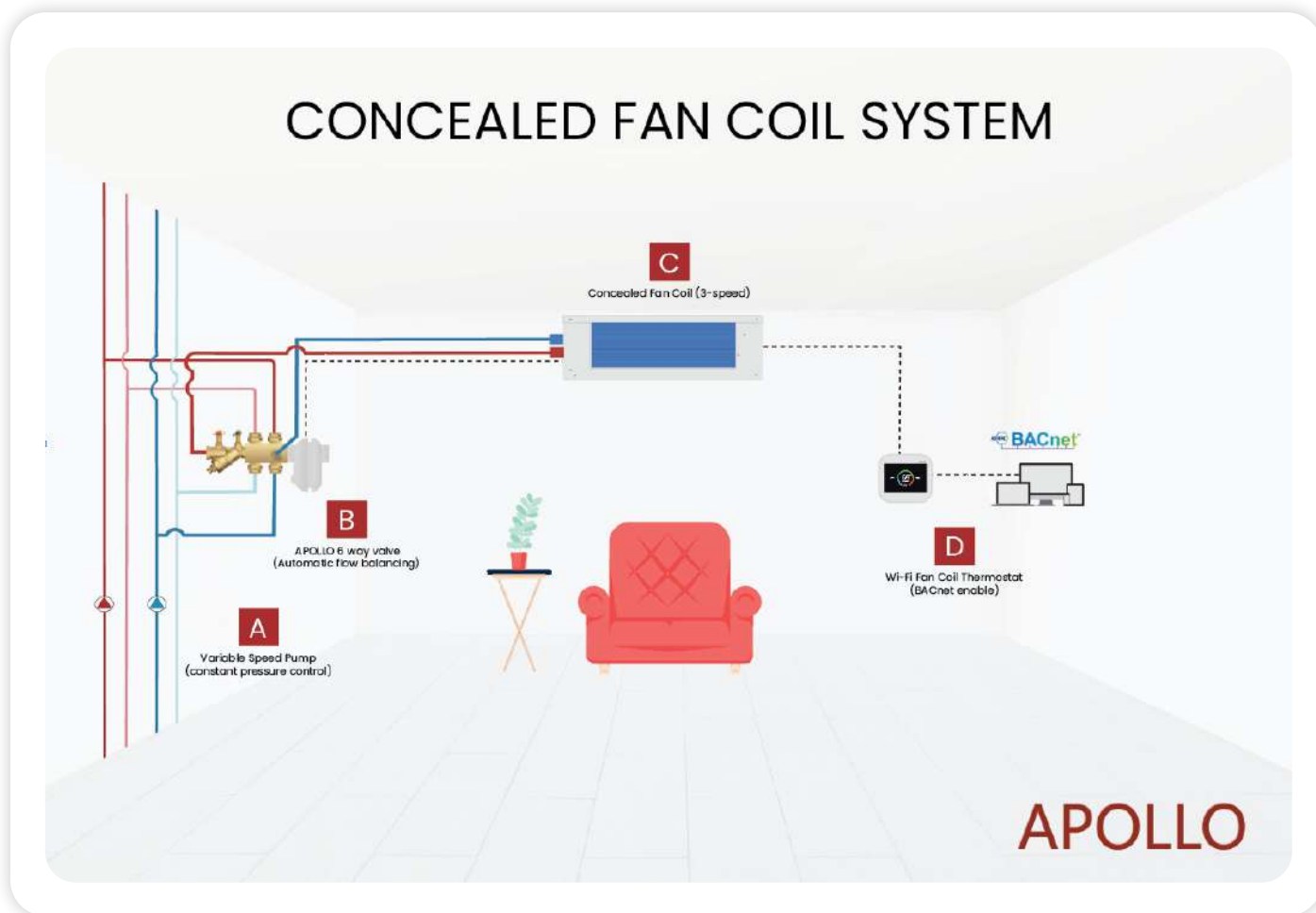


6.1 Flow regulation

The APOLLO 6-way valves are equipped with an internal pressure relief function. A change in the media temperature (closed valve position, 45°) in the heated/chilled ceiling can cause positive pressure or negative pressure. This could possibly damage the heated/chilled ceiling. The pressure relief function prevents this damage because the pressure in the heated/chilled ceiling is balanced with the pressure in the supply line.

7. APPLICATIONS

In combination with other APOLLO products, complete solutions can be composed for flow regulation and individual room control of heating and cooling ceilings and other surface systems for combined heating and cooling.

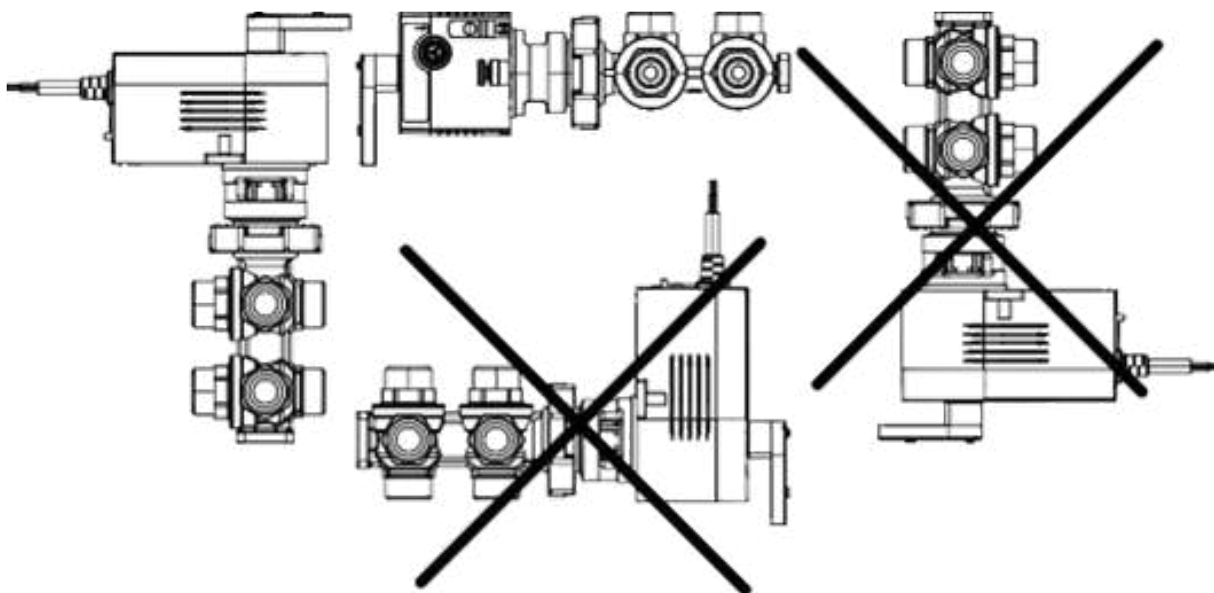


8. INSTALLATION

8.1 Fitting position

CAUTION!

Damage to property. Do not install the 6-way ball valve in a suspended position. Penetrating condensate or dripping water can damage the actuator.



8.2 Using with glycol

When using water mixed with glycol or an inhibitor, the compatibility of the materials and seals used in the APOLLO 6-way valve should be clarified with the manufacturer. The material list shown below may be used here. When using glycol we recommend a concentration of 20% to 50%.

Material numbers as per DIN: 6 way ball valve ½"

	DIN Material No.	DIN Designation
Body	CW617N	Cu Zn 40 Pb2 according to EN12164
Stem	CW614N	Cu Zn 39 Pb3 according to EN12164
Ball, polished, chrome-plated	CW614N	Cu Zn 39 Pb3 according to EN12164
Seat	PTFE	-
O-ring	EPDM	-

Material numbers as per DIN: 6 way ball valve ¾"

	DIN Material No.	DIN Designation
Body	CW602N	Cu Zn 36 Pb2/As according to EN12167
Stem	CW614N	Cu Zn 39 Pb3 according to EN12164
Ball, polished, chrome-plated	CW614N	Cu Zn 39 Pb3 according to EN12164
Seat	PTFE	-
O-ring	EPDM	-

9. ADDITIONAL TECHNICAL DATA

Issue				
Nominal pressure	PN 16 (15bar or 230 psi)			
• Valve characteristic • Leakage rate	• Quasi-linear • Class A as per EN 12266-1			
• Total angle of rotation	• 90° (valve closed at 45°)			
Ambient conditions				
• Operating temperature	• 41...194 °F			
Standards and directives				
• Pressure and temperature data • Flow parameters • PED 2014/68/EU	• EN 764, EN 133, EN 60534 • Fluid group II, liquid • No CE label as per article 4.3			
Overview of Types				
Type	Nominal diameter Connection	Kvs value without	Material	Weight
APOLLO 6 - Way Valve ½"	G¾"B	5.5 GPM	Moulded brass CW617N	36.54 oz
APOLLO 6 - Wav Valve ¾"	G¾"B	12.33 GPM	Moulded brass CW602N	65.96 oz

A Kvs value without orifice plate. Kvs values can be adapted using orifice plates.

Orifice plates for setting the Kvs value

Orifice plate set for APOLLO 6- Way Valve ½"		Part number
Kvs value	0589540001 Supplied with the 6-way ball valve	
1.10 GPM		
1.76 GPM		
2.77 GPM		
4.40 GPM		
Orifice plate set for APOLLO 6- Way Valve ¾"		Part number
Kvs value	0589540001 Supplied with the 6-way ball valve	
1.10 GPM		
1.76 GPM		
2.77 GPM		
4.40 GPM		

Warranty: The technical data and pressure differences indicated here are applicable only in combination with APOLLO valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

Definition of Δp : Maximum admissible pressure drop in the event of a malfunction (pipe break after the ball valve) at which the actuator reliably closes the ball valve using the return spring.

Definition of Δp_{max} : Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Actuator	
Rotational torque	5.9 ft-lbs
Control signal	2-/3-point, 0...10 V
Running time	35/60/120 s
Operating voltage	24 V~/V=

Δp_{max}	
APOLLO 6-way valve ½"	2.0
APOLLO 6-way valve ¾"	2.0

APOLLO

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