

Alfa Laval Koltek Valves

Shutter valves

Introduction

The Alfa Laval Koltek Valve can be either manually or pneumatically operated. The valve is suitable for use with products that are highly viscous, contain large particles, or have strict requirements to minimize pressure loss.

Application

The koltek valve is designed for use in the food, chemical, pharmaceutical and many other industries.

Benefits

- Flexible in-line valve with three-port flow diversion
- Minimized pressure loss
- Hygienic design
- Capable of handling products highly viscous, contain large particles, or have strict requirements to minimize pressure loss

Standard design

The koltek valve consists of a rigid body with an internal cylindrical bore, a PTFE shutter and three ports for pipe connection. The two lids have guide rings or bearings for an internal shaft, which supports and positions the shutter. The stainless-steel handle for manual operation or the actuator for automatic operation is fitted to turn the shaft. The actuator consists of a system of cylinders and one or two main pistons interconnected with a toothed bar which interacts with a gear wheel on the valve shaft. The system is insensitive to pressure shocks in the valve.

Working principle

The Alfa Laval Koltek Valve is operated by means of a handle or an actuator. A spring system presses the shutter against the inside cylindrical surface of the valve body thus ensuring complete tightness.

The air-actuated valve can be fitted with an Alfa Laval ThinkTop® V50 or V70 control unit, or an indication unit installed laterally for remote indication of the valve position.

The manually operated valve can be fitted with indication units (used for Alfa Laval LKLA actuators) installed laterally. The valve actuator is available in two versions: a single-acting actuator or a double-acting actuator. The single-acting actuator operates with



one main piston whereas the double-acting actuator operates with two main pistons.

TECHNICAL DATA

Temperature

Max. temperature:	230°F
-------------------	-------

Pressure

Max. pressure against shutter:	44 PSI (3 bar)
Max. pressure behind shutter:	145 PSI (10 bar)
Air pressure for actuator:	Max. 116 PSI (8 bar) Min. 73 PSI (5 bar)

ATEX

Classification:	II 2 G D ¹
-----------------	-----------------------

¹ This equipment is outside the scope of the directive 2014/34/EU and must not carry a separate CE marking according to the directive as the equipment has no own ignition source

Air Connections

Compressed air:

R 1/8" (BSP), internal thread

PHYSICAL DATA

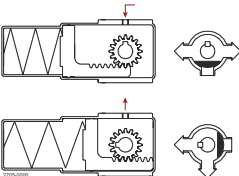
Materials

Product wetted steel parts:	1.4404 (316L.)
Finish:	Semi-bright (Ra = 32 µin)
Product wetted seals:	Shutter in PTFE EPDM
Actuator seals:	NBR

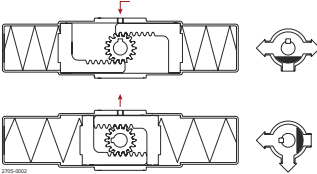
Actuator functions

- for 1" to 3" (25 mm to 76.1 mm) valves only
- two positions
- spring/air
- turning angle 1x90°

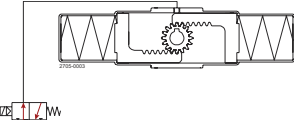
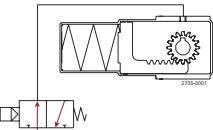
Sizes 1" t o 2":



Sizes 2½" - 3": Double acting actuator

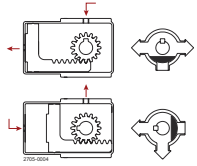
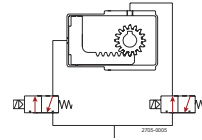
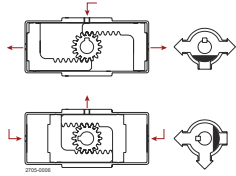
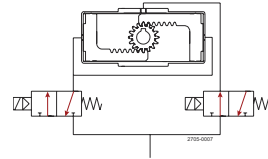


Pneumatic connections

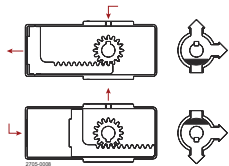
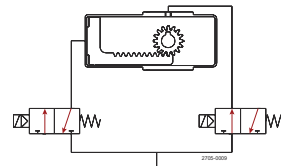
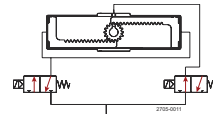
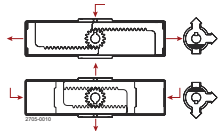


Actuator type 631:

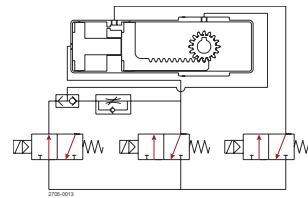
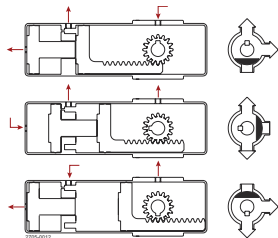
- two positions
- air/air
- turning angle 1x90°

Sizes 1" - 3":**Pneumatic connections****Sizes 4": Double acting actuator****Pneumatic connections****Actuator type 632:**

- two positions
- air/air
- turning angle 1x180°

Sizes 1" - 3":**Pneumatic connections****Sizes 4": Double acting actuator****Actuator type 633:**

- three positions
- air/air
- turning angles 2x90°

Sizes 1" - 3":

Dimensions (inch)

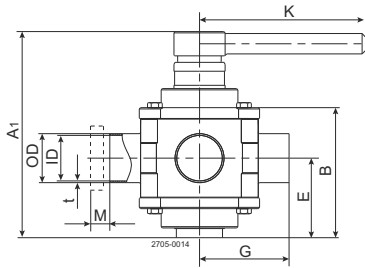


Figure 1. MH53 with handle

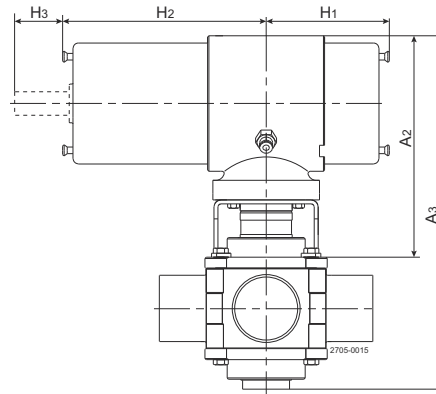


Figure 2. MH53 with actuator, type KH631

AH valves:

Size	1"	1.5"	2"	2.5"	3"	4"
A ₁	4.57	5.87	6.34	7.05	8.03	11.50
B	2.56	3.54	4.02	4.65	5.39	7.68
OD	1.00	1.51	2.06	2.53	3.00	4.00
ID	0.89	1.40	1.91	2.37	2.83	3.82
t	0.06	0.05	0.07	0.08	0.08	0.09
E	1.65	2.20	2.44	2.76	3.15	4.61
G	2.17	2.76	3.23	4.13	4.33	6.10
G ₁ (Clamp)	4.75	5.83	6.82	8.27	9.46	13.08
K	5.12	5.12	7.09	7.09	9.25	12.99
Weight (lbs.)	4.00	7.30	10.60	15.20	25.15	55.15

Actuators

Size	1"	1.5"	2"	2.5"	3"	4"
A ₁	6.69	6.69	6.69	6.77	7.01	7.64
A ₂	9.17	10.24	10.75	11.42	12.40	15.31
H ₁ 630	2.24	2.24	2.24	11.22	11.22	-
H ₁ 631	2.24	2.24	2.24	2.24	2.24	4.69
H ₁ 632	3.74	3.74	3.74	3.74	3.74	7.64
H ₁ 633	3.74	3.74	3.74	3.74	3.74	11.06
H ₂ 630	12.83	12.83	12.83	11.22	11.22	-
H ₂ 631	4.69	4.69	4.69	4.69	4.69	4.69
H ₂ 632	6.18	6.18	6.18	6.18	6.18	7.64
H ₂ 633	9.57	9.57	9.57	9.57	9.57	11.06
H ₃	1.69	1.69	4.69	1.69	1.69	1.69

Caution, opening/closing time:

Opening/closing time will be affected by the following:

- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

Options

- Male parts or clamp liners in accordance with required standard.
- Control and Indication: IndiTop, ThinkTop V50 or ThinkTop V70 .
- Bottom fitted indication unit.
- Rebuilding to double acting valve for high viscosity product or quick operation.

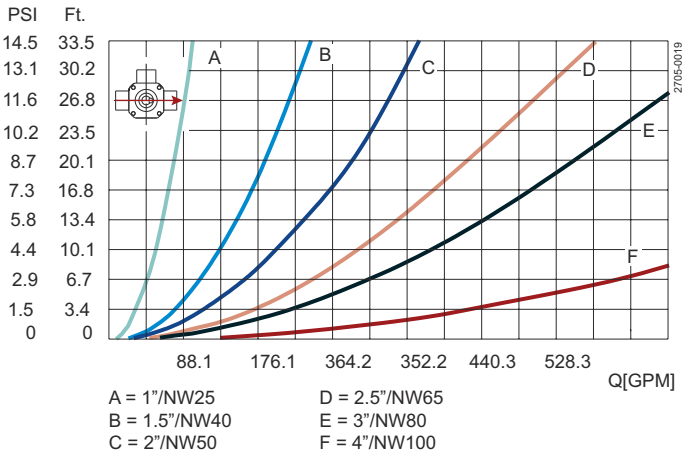
 **Note!** For further details, see also instruction IM 70735.

Bottom fitted indication units (together with bracket for indication unit)

Indication unit	Actuator type			
	KH630	KH631	KH632	KH633
LKLA (lateral indication unit)	1 pcs.	1 pcs.	2 pcs.	2 pcs.

 **Note!** For all manually operated valves: Use LKLA indication units.

Pressure drop/capacity diagrams



 **Note!**
For the diagram the following applies:
Medium: Water (68°F).
Measurement: In accordance with VDI 2173.

This document and its contents are subject to copyrights and other intellectual property rights owned by Alfa Laval AB (publ) or any of its affiliates (jointly "Alfa Laval"). No part of this document may be copied, re-produced or transmitted in any form or by any means, or for any purpose, without Alfa Laval's prior express written permission. Information and services provided in this document are made as a benefit and service to the user, and no representations or warranties are made about the accuracy or suitability of this information and these services for any purpose. All rights are reserved.