

SAFETY INSTRUCTIONS

Fitting, connecting and putting into operation of pneumatic ball valves has to be executed by qualified personnel having regard to the instructions and directives of this manual. Inaccurate or incorrect fitting, application or/and operation results in the loss of any warranty.

Attention

Never carry-out any activity at the pneumatic ball valve while either the compressed control air or medium (fluid) is activated (pressurized). Injury danger occurs if the above is ignored in particular during for instance fitting, dismantling or adjusting work. It is recommended to fully separate the pneumatic ball valve from pressure and fluid sources.

Before fitting and putting into operation the pneumatic ball valve it has to be checked whether the technical specifications comply with the circumstances of the application, such as among things pressure and temperature both of medium (fluids) and environment. Overload by any means may result in serious damage or brake down of the pneumatic ball valve or/and the system in which it is applied.

No force or stress should be affected at the valve.

The pneumatic ball valve has to fitted absolutely free of any stress. It has to be considered, special for larger sizes, to support the valve to avoid stress or even pipe line deformation caused by the weight of the valve.

During welding, if applicable, overheating of the pneumatic ball valve has to be prevented.

In all cases national and international safety rules and standards have to be respected concerning any activity where pneumatic ball valves are involved. This in order to prevent accidents or damages of any kind.

MATERIAL LIST - PNEUMATIC ACTUATOR

Type	Description	Material
Standard version	Body (1) End capes (2) Piston (3) O-Ring (5, 8, 12) Guide set (4, 7, 9, 11) Pinion (10) Screws (13)	Extruded aluminium alloy ASTM 6063, anodized 10681 Die-cast aluminium alloy EN AC-46100 UNI EN 1706:1999, color RAL 5015 (blue) Die-cast aluminium alloy EN AC-46100 UNI EN 1706:1999 NBR 70 SH Delrin ISO 9988 Steel 11SMBPB37, electroless nickel plated Stainless steel AISI 304 AISI 304
Chemical version	Body (1) Edn capes (2) Piston (3) O-Ring (5, 8, 12) Guide set (4, 7, 9, 11) Pinion (10) Screws (13)	Extruded aluminium alloy ASTM 6063, hardcoated and teflon Die-cast aluminium alloy EN AC-46100 UNI EN 1706:199, color RAL 5015 (blau) Die-cast aluminium alloy EN AC-46100 UNI EN 1706:1999 NBR 70 SH Delrin ISO 9988 Stainless steel AISI 304 Stainless steel AISI 304

Material list - ball valve

Type:
PKH.EP.E3.I, PKH.GE.E3.I, PKH.EP.3E.I, PKH.GE.3E.I

Body: Stainless steel AISI 316
Ball: Stainless steel AISI 316
Ball seal: PTFE, glasfiber
Stem: Stainless steel AISI 316
Stem seal: PTFE
O-Ring: Fluorelastomer, FKM

Type:
PKH.EN.M.I und PKH.EN.3M.I

Body: Brass CW 617 N UNI EN 12165
Ball: Brass CW 617 N UNI EN 12165, hard chrome plated
Ball seal: PTFE, glasfiber
Stem: Brass CW 617 N UNI EN 12165, hard chrome plated
Stem seal: PTFE
O-Ring: Fluorelastomer, FKM

Technical specifications - Operatinal conditions

For pneumatic operated ball valves series: PKH.EP.E3.I, PKH.GE.E3.I, PKH.EP.3E.I, PKH.GE.3E.I, PKH.EN.M.I and PKH.EN.3M.I the following is applicable

Medium, fluids (ball valve)

In general the valve is designed for the application in non aggressive, neutral fluid systems. In case of any doubt the chemical resistance of the ball valve materials has to be checked. The exposure of the valve to certain media (fluids) may result in accelerated wear and malfunction of the ball valve.

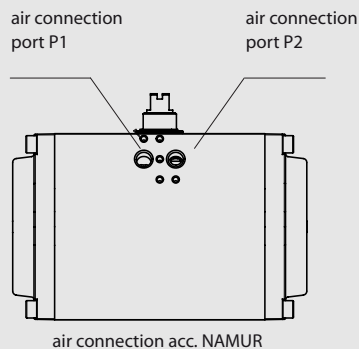
Operation of the ball valve (actuator)

The operation/activation of the ball valve series PKH is achieved by the application of a single- or double acting pneumatic actuator. For the sizing of the right actuator a compressed control air pressure of 5,5 bar (0.55 MPa) is applied. The maximum admissible pressure is 10 bar (1 MPa). The control air (or inert gas) has to meet the PNEUROP/ISO class 4 standard. Depending on operational conditions deviation from the above may result in accelerated wear and malfunction of the pneumatic operated ball valve.

Further technical specifications

Further technical specifications like temperature and pressure limits and applied standards of the valve as well as the actuator are mentioned in the product datasheets for this specific product. We recommend to consult the product datasheets of pneumatic operated valves and actuators for optional accessories.

Air connection



Fitting the pneumatic ball valves

ATTENTION:

Follow the „safety direction“ of this manual and local, national and international safety directions, rules and laws in order to avoid accidents and system damage.

Fitting the pneumatic ball valve - Preparation

Before fitting the valve to a fluid system see that the pipeline is clean and free of particles. We recommend the application of strainers to protect the valve internals.

Fitting the pneumatic ball valve – Female threaded.

Pipe-line threaded ends to be fitted to the valve while tightness is secured for leak-free connection.
Valve and connected pipe to be „in-line“

Fitting the pneumatic ball valve – Weld ends

During welding the valve should be dismantled and separated from the weld-ends. Valve and connected pipe to be „in-line“

Operating the pneumatic ball valve

The valve actuators can be executed single or double acting.

Single acting actuators have sets of spring cartridges to achieve an open (NO) or closed (NC) position of the valve when the actuator is de-pressurized. If port P1 of the actuator is pressurized the actuator will switch the valve in an other position (open or close). Springs will be pressed together. When P1 is depressurized the springs will move the actuator and the valve back in its basic position.

Double acting actuators are not equipped with springs and only return to the basic position when port P2 is pressurized and P1 is de-pressurized at the same time.

Both single and double acting can be pneumatically controlled by, for instance, solenoid, spool or other kind of pneumatic valves in 3/2 (single acting only), 5/2 or 4/2-way executions. Direct mounting of such valves has to be according NAMUR-standard. For single acting control by a 3/2-way pay attention to the correct connection of the actuator P2-vent-port

Manufacturer's Declaration of Incorporation acc. Machinery Directive 2006/42/EG

Herewith is declared, that the supplied products with all their concerned modifications are intended for incorporation into a machinery. They must not be put into a machinery.

Manufacturer:	max process GmbH Robert-Koch-Str. 10 53501 Grafschaft-Gelsdorf
Mashine - Description:	Pneumatic ball valve (pneumatically driven ball valve, 2/2-way and 3/2-way-version)
Type:	PKH.EP.E3.I, PKH.GE.E3.I, PKH.EP.3E.I, PKH.GE.3E.I, PKH.EN.M.I, PKH.EN.3M.I
EG-Directive:	Machinery Directive 2006/42/EG
National standard:	EN 292 and VDI/VDE 3845

Grafschaft-Gelsdorf, 02.01.2010

max process GmbH
Quality management