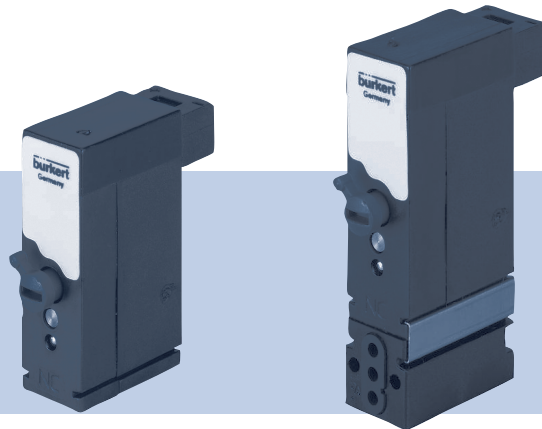


Type 6144

3/2-way flipper valve

3/2 Flipperventil

Électrovanne à languette 3/2 voies



Operating Instructions

Bedienungsanleitung

Manuel d'utilisation

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1 OPERATING INSTRUCTIONS

The operating instructions contain important information.

- ▶ Read the instructions carefully and follow the safety instructions in particular, and also observe the operating conditions.
- ▶ Instructions must be available to each user.
- ▶ The liability and warranty for Type 6144 are void if the operating instructions are not followed.

1.1 Symbols

- ▶ Designates an instruction to prevent risks.
- designates a procedure which you must carry out.

Warning of injuries:



DANGER!

Imminent danger. Serious or fatal injuries.



WARNING!

Potential danger. Serious or fatal injuries.



CAUTION!

Danger. Minor or moderately severe injuries.

Warns of damage to property:

NOTE!

2 INTENDED USE

Use of the Flipper Valve Type 6144 for other than its intended purpose may create hazards for persons, nearby equipment and the environment.

- ▶ The device may not be used in outdoor locations.
- ▶ Always observe the conditions for operations and use and the permissible data specified on the type plate and in the operating instructions.
- ▶ Safe and correct operation is only possible with proper transport, storage and installation, and careful operation and maintenance.
- ▶ Use the flipper valve only for its intended purpose.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any contingencies and events which may arise during installation, operation and maintenance.



Danger of injury from high pressure.

- ▶ Before working on the system or device, switch off the pressure- and vent or drain lines.

If switched on for a prolonged time, risk of burns or fire due to hot device surface.

- ▶ Keep the device away from highly flammable substances and media and do not touch with bare hands.

General hazardous situations.

To prevent injuries:

- ▶ In a hazardous area, the device may be used only in accordance with the specification on the separate Ex rating plate. To use the device in an explosion-risk area, observe the additional information with safety instructions for the explosion-risk area enclosed with the device or the separate explosion-risk operating instructions.

- ▶ Devices without a separate Ex rating plate may not be used in a potentially explosive area.
- ▶ Do not make any internal or external changes on the device and do not subject it to mechanical stress.
- ▶ Secure to prevent unintentional actuation.
- ▶ Only trained technicians may perform installation and maintenance work.
- ▶ After an interruption, ensure that the process is restarted in a controlled manner.
- ▶ Observe the general rules of technology.

5 STRUCTURE AND FUNCTION

The Flipper Valve Type 6144 is a 3/2-way solenoid valve that can be operated either electrically (monostable or bistable) or mechanically via manual actuation.

6 TECHNICAL DATA

6.1 Operating conditions

WARNING!



Danger of injury due to function failure.

The device is not designed for use in outdoor locations.

- Do not use the Type 6144 in outdoor locations, and avoid heat sources that could cause the temperature to exceed the permissible temperature range.

Ambient temperature -10 to +55 °C

Fluid temperature -10 to +55 °C

Fluids Compressed air: oiled, oil-free or dry;
neutral liquids and gases (5 µm filtering); Technical vacuum.

Protection category IP40 with rectangular connector

Protection class 3 acc. to VDE 0580,
UL with class II power supply unit

6.2 Mechanical data

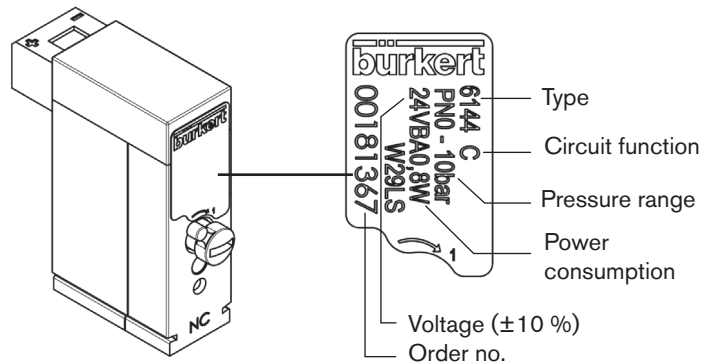
Dimensions see data sheet

Housing material PPS, fibreglass reinforced

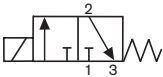
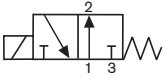
Seal material FKM

6.3 Type plate

Example: WWC



6.4 Pneumatic data

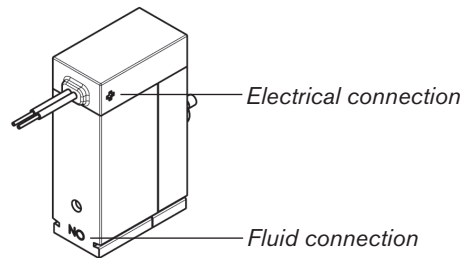
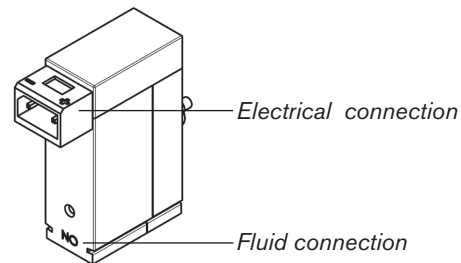
Circuit functions		
C		3/2-way valve, direct acting, outlet 2 depressurized when deenergized
D		3/2-way valve, direct acting, outlet 2 pressurized when deenergized

Fluidische Anschlüsse				
WW C	1	NC	(P)	Closed with no current (NC), compressed-air connection
	2	COM	(A)	Working connection
	3	NO	(R)	Opened with no current (NO), deaeration
WW D	1	NO	(P)	Opened with no current (NO), deaeration
	2	COM	(A)	Working connection
	3	NC	(R)	Closed with no current (NC), compressed-air connection

Pressure range

see type plate

6.5 Labelling of the electrical and fluid connections



6.6 Electrical data



Correct polarity is essential for the device to function.

See chapter „6.5 Labelling of the electrical and fluid connections“

Operating voltage as per type plate $\pm 10\%$

Nominal power see type plate

Standard operating mode continuous operation,
duty cycle 100%

6.6.1. Control of the bistable version:

Labelling	Polarity Min. pulse duration 50 ms	
	+	—
+	Valve (P seat) is opened	Valve (P seat) is closed
—	Valve (P seat) is closed	Valve (P seat) is opened

7 ASSEMBLY

7.1 Safety instructions



WARNING!

Assembly work may result in hazardous situations.

- ▶ Such work may only be performed by persons with appropriate technical knowledge and using suitable tools.
- ▶ After an interruption of the electricity or the compressed air supply, ensure that the process is started up again in a defined or controlled manner.

Danger from unintentional activation of the system.

Unintentional start-up of the system may lead to injuries and property damage.

- ▶ Use suitable means to prevent the system from being activated unintentionally.

7.1.1. Devices which are designed for use in zone 2/22

The user must ensure that this unit complies with the degree of protection IP54 in accordance with EN 60529. For example, by installing it in a suitable housing.

7.2 Fluid installations



WARNING!

Danger of injury from high pressure.

- Before detaching lines and valves, cut off pressure and vent.

Risk of injury due to malfunction/escape of medium.

If the exhaust air from other processes is used to generate compressed air for the device, the seals may be destroyed by the media contained in the air.

- Use only fresh air to generate compressed air for the device.



Important operating conditions to avoid malfunctions:

The valve must be at least 5 mm away from other ferromagnetic materials.

Installation position: any, preferably with the drive upwards.

Before assembly:

- Clean pipes and flange connections.
- To protect against malfunctions, install a filter (5 µm) upstream of the valve.

Assembly of Type 6144 with Bürkert flange:

(see Figure 1: Assembly drawing for Bürkert flange)



WARNING!

Danger of escaping fluids!

Connections will leak if the seal is not properly seated.

- Ensure that the supplied sealing mat is correctly seated.

- Insert sealing mat into the valve.
- Assign fluids 1, 2 and 3 correctly on the valve and connection plate.
- Drill holes in accordance with hole pattern.
- Screw valve to connection plate
- Check valve for proper seal

Assembly of Type 6144 with lateral flange:

(see Figure 2: Assembly drawing for lateral flange)

- Assign fluids 1, 2 and 3 correctly on the valve and connection plate.
- Drill holes in accordance with hole pattern.
- Screw valve to connection plate
- Check valve for proper seal

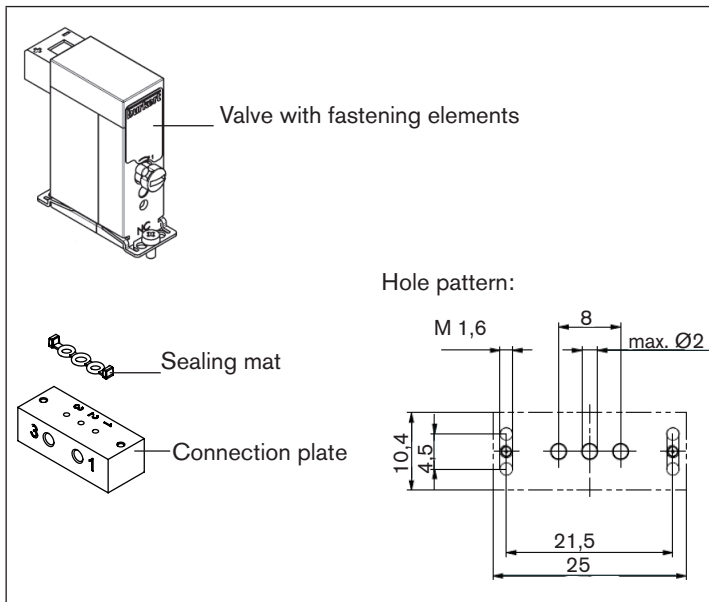


Fig. 1: Assembly drawing for Bürkert flange

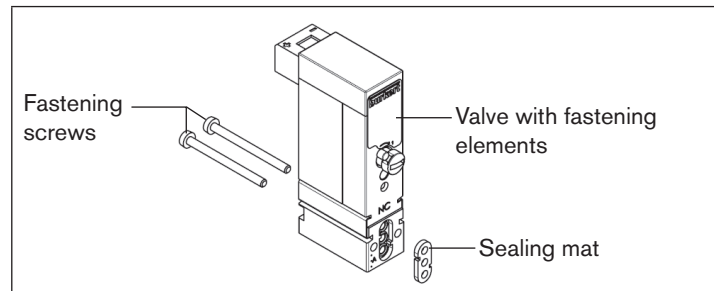


Fig. 2: Assembly drawing for lateral flange

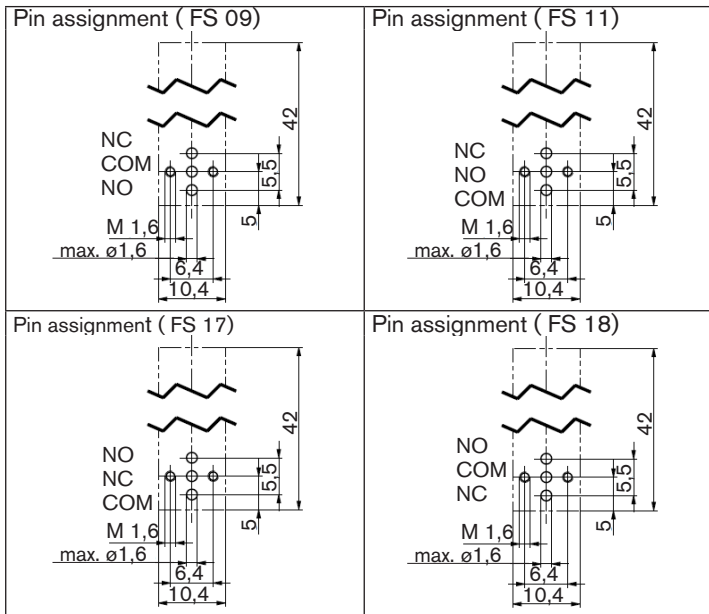


Fig. 3: Pin assignment for pin assignment

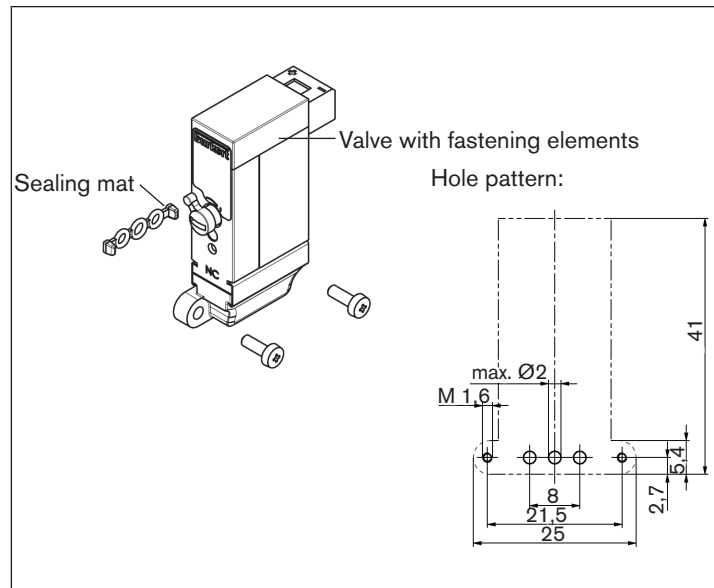


Fig. 4: Assembly drawing for lateral flange FS33

7.2.1. Manual actuation

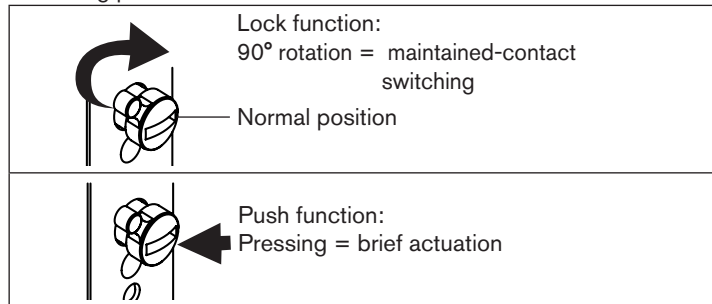
- The valve can be actuated manually via a hand lever.

NOTE!

The hand lever may be damaged if it is pressed and turned at the same time.

- Do not press and turn the hand lever at the same time.

Switching positions of the hand lever:



! The push function is not available for all device variants (see table)

7.2.2. Description of variants

- The location and function of the manual override and the position of the fluid connections vary depending on the design (see the following table).

Description of the most important variants:		
Circuit function	Manual override next to port	Possible manual override lever function
WWC	P (NC)	Push & Lock
	R (NO)	Lock
WWD	P (NO)	Lock
	R (NC)	Push & Lock

7.3 Electrical installation

! Important instructions for proper functioning of the device:

The device is designed for battery voltage.

Do not use any technical DC voltage!

Correct polarity is essential for the device to function.

See chapter [„6.5 Labelling of the electrical and fluid connections“](#).

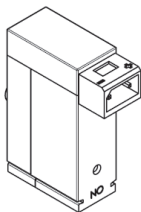
7.3.1. Electrical connection:

Observe voltage and type of current in accordance with type plate.

Connection with direct current:

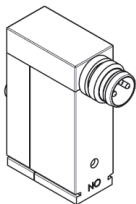
Standard version

with rectangular plug

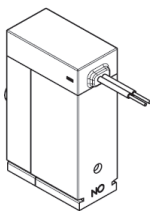


Alternative electrical connections:

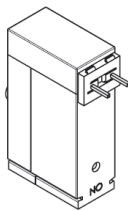
Circular plug M8x1



2 Flying leads



2 connector pins



8 MAINTENANCE / MALFUNCTIONS

NOTE!

Damage caused by electrostatic charge.

An electrostatic discharge may damage the device.

- Clean the device surface of the flipper valve by gently wiping it with a damp cloth.

Under normal conditions, operation of the valve is maintenance-free. In the event of heavy external fouling, cleaning with suitable cleaning agents is recommended. If necessary, a test should be carried out to determine the suitability of the cleaning agent.

8.1 Malfunctions

In the event of a malfunction, check the following:

- the line connections
- the operating pressure
- the voltage supply and valve actuation

If the valve still does not operate, please contact your Bürkert service office.

9 PACKAGING, TRANSPORT, STORAGE

NOTE!

Transport damages.

Inadequately protected equipment may be damaged during transport.

- During transportation protect the device against wet and dirt in shock-resistant packaging.
- Avoid exceeding or dropping below the allowable storage temperature.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location.
- Storage temperature. -20 ... +65 °C.

Damage to the environment caused by device components contaminated with media.

- Dispose of the device and packaging in an environmentally friendly manner.
- Observe applicable regulations on disposal and the environment.

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