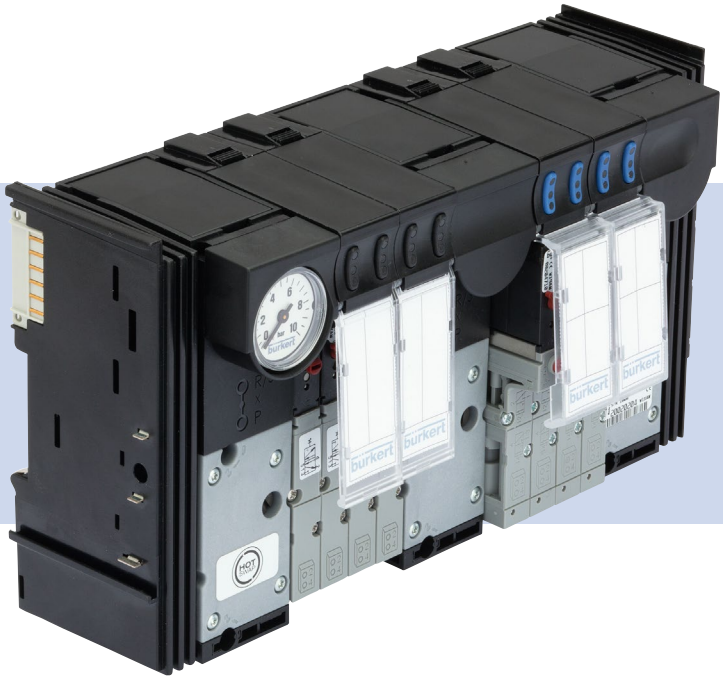
bürkert
FLUID CONTROL SYSTEMS

Type 8644
AirLINE

Modular valve island for pneumatics
Modulare Ventilinsel für Pneumatik
Îlot de distributeurs modulaires pour la pneumatique



Quickstart

English Deutsch Français

MAN 1000325744 EN Version: CStatus: RL (released | freigegeben) printed: 12.07.2023

Operating Instructions 2307/02_EU-ML_00809514 / Original DE

MAN 1000325744 EN Version: CStatus: RL (released | freigegeben) printed: 12.07.2023

1 THE QUICKSTART

The Quickstart contains a short summary of the most important information and instructions for use of the device. The detailed description can be found in the operating instructions for Type 8644.

Keep the Quickstart in an easily accessible location for every user. The Quickstart must be available to each new owner of the device.

Important safety information!

- Carefully read these instructions.
- Above all, observe the safety instructions, intended use and operating conditions.
- Persons who work on the device must read and understand these instructions.

Operating instructions and data sheets for Bürkert products can be found on the Internet at: country.burkert.com

1.1 Definition of terms

Term	in these instructions, refers to
Device, valve island	Valve island Type 8644
Actuator	pneumatic consumer controlled by the valve island
Plant	Machine with pneumatic consumers actuated by the valve island

1.2 Symbols used

DANGER!

Warns of an immediate danger.

- Failure to observe these instructions will result in death or serious injuries.

WARNING!

Warns of a potentially hazardous situation.

- Failure to observe these instructions may result in serious injuries or death.

CAUTION!

Warns of a potential danger.

- Failure to observe these instructions may result in moderate or minor injuries.

NOTE!

Warns of damage.

Important tips and recommendations.

Refers to information in these operating instructions or in other documentation.

- Designates instructions to avoid danger.

→ Highlights a work step which you must carry out.

2 INTENDED USE

The valve island Type 8644 has been designed to control pneumatic consumers in automation systems. The valve island must only be used for controlling suitable pneumatic consumers.

- Use the device only as intended. Non-intended use of the device may be dangerous to people, nearby equipment and the environment.
- In explosion hazardous areas, only use devices that are approved for these areas. These devices are identified by additional approval data on the type label. When used in explosion hazardous areas, always observe the specifications on the type label and the “Additional information for use in the Ex area” included in the scope of delivery.
- Device must not be used outdoors unprotected.
- When using the device, observe the authorised data, operating and deployment conditions specified in the contract documents and in the operating instructions. These are described in Chapter “Technical data”.
- Use the device only in conjunction with third-party devices and components recommended or approved by Bürkert.
- Correct transport, storage and installation as well as careful use and maintenance are essential for safe and faultless operation.
- Use the device only when it is in perfect condition.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take account of any

- contingencies or events which may occur during installation, operation and maintenance of the devices;
- local safety regulations that are within the operator’s scope of responsibility, including those relating to the installation personnel.

Risk of injury from high pressure, escaping medium and uncontrolled movement of the actuators.

- Secure the actuators against shifting before working on the device or plant.
- Switch off the pressure before working on the device or system. Vent or empty the lines.

Risk of injury from electric shock.

- Switch off the power supply before working on the device or system. Secure it against reactivation.
- Observe any applicable accident prevention and safety regulations for electrical devices.

Risk of burns/fire due to hot device surface if device operated continuously.

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

Risk of injury due to improper installation and maintenance.

- Only allow trained technicians to perform installation and maintenance work.
- Perform installation and maintenance work using suitable tools only.

Risk of injury due to unintentional activation of the device and system and uncontrolled restart.

- Secure the device and system against unintentional activation.
- Ensure that the system starts up in a controlled manner only.

Risk of injury due to allergic reaction to lubricants.

- Avoid skin contact with lubricants.
- Wear protective gloves.

General hazardous situations.

To prevent injuries, observe the following:

- Do not feed any aggressive or combustible media into the media connections of the device.
- Do not place the housing under mechanical stress (e.g. by placing objects on it or standing on it).
- Note that pipes and valves must not be released in pressurised systems.
- Always switch off the power before working on the system.
- Make the pressure supply as large-volume as possible to avoid pressure drops during switching.
- The system cannot be activated unintentionally.
- Installation and maintenance work may only be carried out by authorised specialist personnel using suitable tools.
- Only restart the process in a controlled manner following disruptions.
  Observe sequence:
  1. Apply electrical supply.
  2. Pressurise with medium.
- Operate the device only when it is in perfect condition and in accordance with the operating instructions.
- Observe the general rules of technology.

NOTE!

Avoid pressure drops!

To avoid a pressure drop, provide the device's pressure supply to the greatest extent possible.

Electrostatically sensitive components and assemblies.

The device contains electronic components that are susceptible to the effects of electrostatic discharging (ESD). Components that come into contact with electrostatically charged persons or objects are at risk. In the worst case scenario, these components will be destroyed immediately or fail after start-up.

- Meet the requirements specified by EN 61340-5-1 to minimise or avoid the possibility of damage caused by a sudden electrostatic discharge.
- Do not touch electronic components when the supply voltage is connected.

4 NOTES ON COMPATIBILITY AND REVISION LEVELS

The valve island Type 8644 is available in combination with decentralised peripheral devices from the cooperation partners “WAGO”, “Phoenix Contact”, “Siemens” and “Rockwell Automation”.

The **“WAGO” variant** was revised (see Chapter 4.1).
The variants “Phoenix Contact”, “Siemens” and “Rockwell Automation” were **not** revised.

4.1 Overview of revision levels

Valve island width per station 11 mm*	
REV.1	**REV.2**
Electronic modules REV.1	
Pneumatic base modules REV.1	Pneumatic base modules REV.2
Connection modules REV.1	Connection modules REV.2
Solenoid valve Types 6524 and 6525 REV.1 • 1 flange pattern for double valves Type 6524 2 x 3/2-way • 1 flange pattern for single valves Type 6524 3/2-way Type 6525 5/2-way	Solenoid valve Types 6524 and 6525 REV.2 • 1 flange pattern for double valves and single valves Type 6524 2 x 3/2-way Type 6524 3/2-way Type 6525 5/2-way
Solenoid valve Type 0460 1 flange pattern for pulse valves and bistable valves Type 0460 5/2-way Type 0460 5/3-way	
AirLINE Quick REV.1	AirLINE Quick REV.2

*) *only applies to the “WAGO” variant valve islands*

Valve island width per station 16 mm*	
REV.1	REV.2
Electronic modules REV.1	
Pneumatic base modules REV.1	Pneumatic base modules REV.2
Connection modules REV.1	Connection modules REV.2
Solenoid valve Types 6526, 6527 and 0461 • 1 flange pattern for single valves Type 6526 3/2-way Type 6527 5/2-way 1 flange pattern for pulse valves and bistable valves Type 0461 5/2-way Type 0461 5/3-way	
AirLINE Quick REV.1	AirLINE Quick REV.2

*) *only applies to the "WAGO" variant valve islands*

4.2 Notes on valve islands revision 2 (only applies to "WAGO" valve islands)

The single valves of Types 6524 and 6525, the pneumatic base modules and connection modules as well as the control cabinet base adaptation AirLINE Quick have been revised due to various optimisations. Compatibilities must therefore be taken into account in the following cases:

- Valve replacement (see operating instructions for details)
- Extension, repair or conversion of valve blocks (see operating instructions for details)

Revision 2 (REV.2) only affects pneumatic components of valve island 8640. Not affected by the revision:

– Electrical data

– Configuration

- Outer dimensions

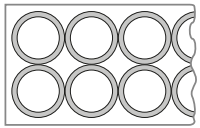
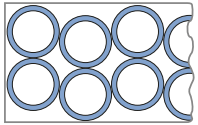
4.3 Distinguishing features between valve islands REV.1 and REV.2

Only applies to the “WAGO” variant valve islands.

Colour of release rings (push-in connectors)

REV.1	REV.2
black	blue

Channel arrangement of the working connections

REV.1	REV.3
 parallel	 undulating

Note on the type label of the valve island

REV.1	REV.2
without note “REV.”	with note “REV.2”

4.4 Distinguishing features between individual valves REV.1 and REV.2

Only applies to the “WAGO” variant valve islands.

Single valves REV.1:
The single valves Type 6524 3/2-way and Type 6525 5/2-way have the same flange pattern as the pneumatic base module. This single valve flange pattern differs from that of the double valve Type 6524 2 x 3/2-way.

Single valves REV.2:
Compared to the REV.1, the flange patterns of the valves have been standardised with regard to the pneumatic base modules. The single valves 3/2-way and 5/2-way as well as the double valves 2 x 3/2-way now have the same/standardised pneumatic flange pattern.

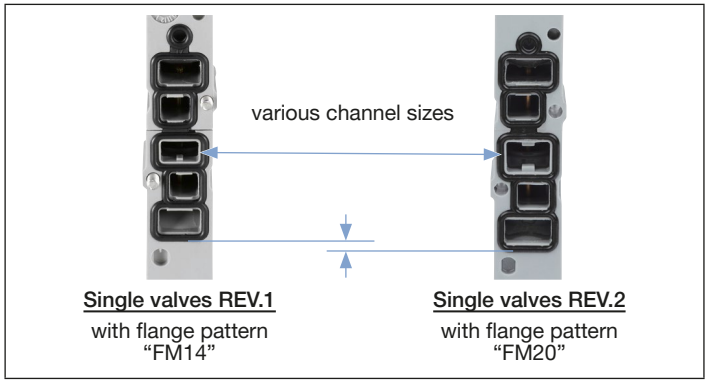


Figure 1: Differences between flange patterns of REV.1 and REV.2 for single valves Type 6524 and Type 6525

5 GENERAL INFORMATION

5.1 Contact address

Germany

Bürkert Fluid Control Systems
Sales Centre
Christian-Bürkert-Str. 13–17
D-74653 Ingelfingen
Tel. +49 (0) 7940 - 10 91 111
Fax +49 (0) 7940 - 10 91 448
Email: info@burkert.com

International

The contact addresses can be found on the back pages of the printed Quickstart.

They are also available online at: country.burkert.com

5.2 Warranty

A precondition for the warranty is that the device is used as intended in consideration of the specified operating conditions.

5.3 Information on the Internet

Operating instructions and data sheets for Type 8644 can be found on the Internet at:

country.burkert.com → 8644

6 TECHNICAL DATA

6.1 Standards and directives

The device complies with the relevant EU harmonisation legislation. In addition, the device also complies with the requirements of the laws of the United Kingdom.

The harmonised standards that have been applied for the conformity assessment procedure are listed in the current version of the EU Declaration of Conformity/UK Declaration of Conformity.

6.2 General technical data

NOTE!

To avoid damage to the device, use only direct current to power the device.

Degree of protection (according to EN 60529) verified by Bürkert, not evaluated by UL	IP20 IP65 in closed control cabinets 4X in combination with AirLINE Quick (see chapter 9.3 on page 16) in closed control cabinets

	when using the pilot valve Types	
	6524, 6525, 6526, 6527	0460, 0461
Pressure range	Vac. to 10 bar UL devices: Vac. to 8 bar	
Operating voltage*	24 V DC	
Voltage tolerance	+20%/–15%	± 10%
Ambient temperature	0...+55 °C	0...+50 °C

*) UL approved Versions must be supplied by one of the following:
a. Limited Energy Circuit (LEC) according to UL/ IEC 61010-1
b. Limited Power Source (LPS) according to UL/ IEC 60950
c. SELV/ PELV with UL Recognized Overcurrent Protection dimensioned according to UL/ IEC 61010-1 Table 18
d. NEC Class 2 power source

6.2.1 Valve island type label

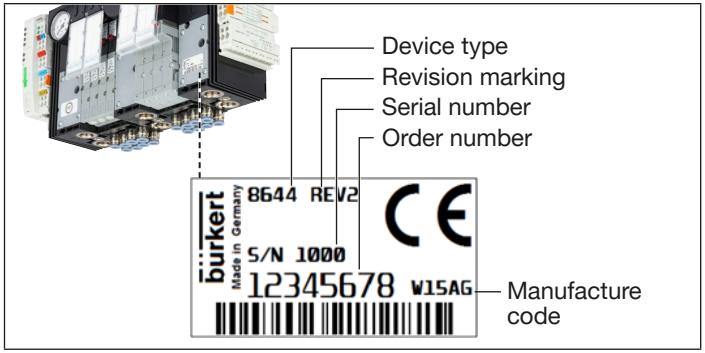


Figure 2: Location and description of the type label (example)

6.2.2 UL type label

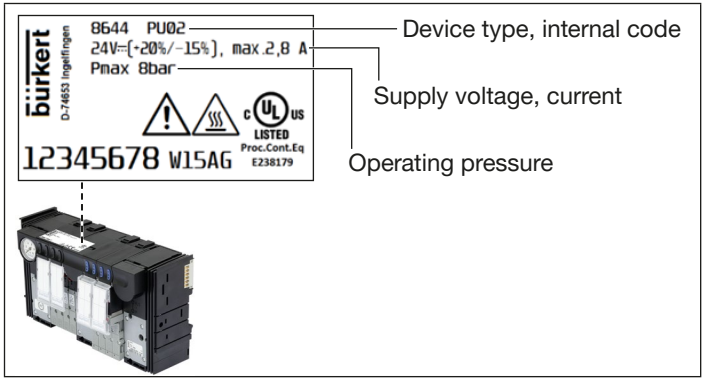


Figure 3: Location and description of the UL type label (example)

6.2.3 Valve type label

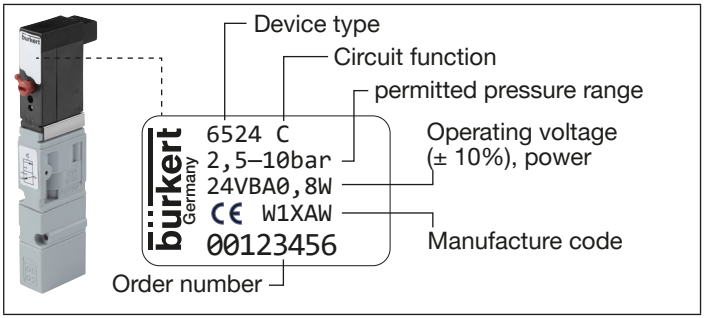


Figure 4: Location and description of the type label (example Type 6524)

7 CONNECT VALVES

7.1 Single valves width per station 11 mm

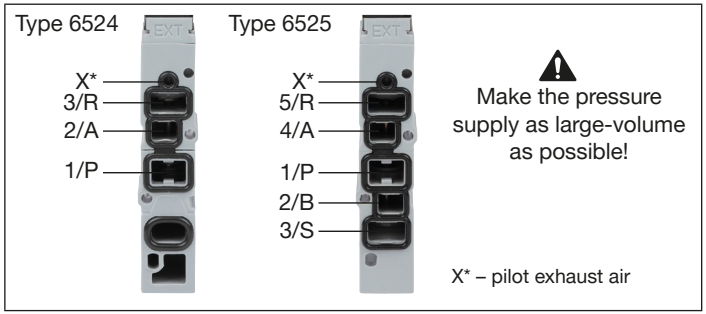


Figure 5: Fluid connection single valves Type 6524 and Type 6525

7.2 Double valves width per station 11 mm

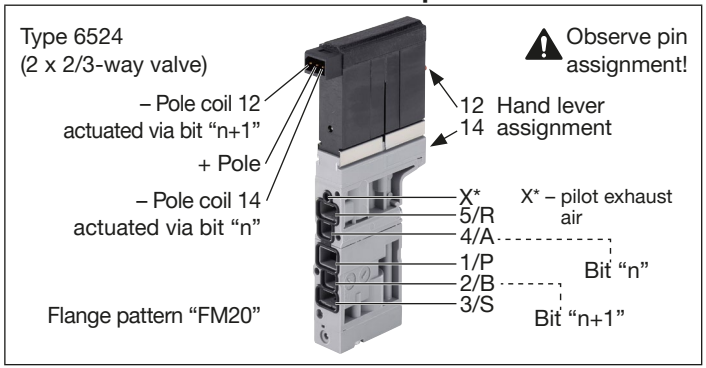


Figure 6: Fluid and electrical connection double valves Type 6524

7.3 Single valves width per station 16 mm

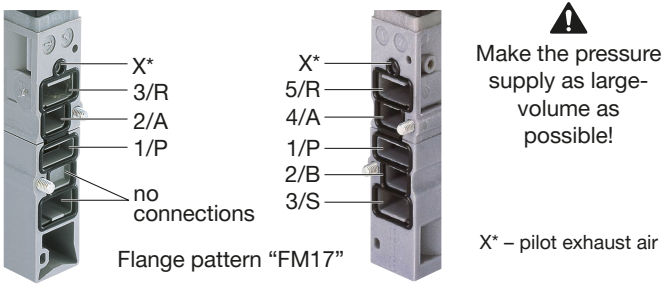


Figure 7: Fluid connection single valves Type 6526 and Type 6527

8 REMOVING THE VALVE BLOCK FROM THE STANDARD RAIL

DANGER!

Danger due to electrical voltage!

- Before reaching into the device or the system, switch off the power supply and secure it against reactivation.

The valve block is firmly screwed onto the standard rail. Other electrical modules/terminals can be attached to its sides.

Procedure:

→ Loosen the adjacent modules/clips (if any).

→ Unlock the attachment of the valve block to the standard rail. Turn the fastening screws anticlockwise until they stop.

→ Lift the valve block vertically off the standard rail.

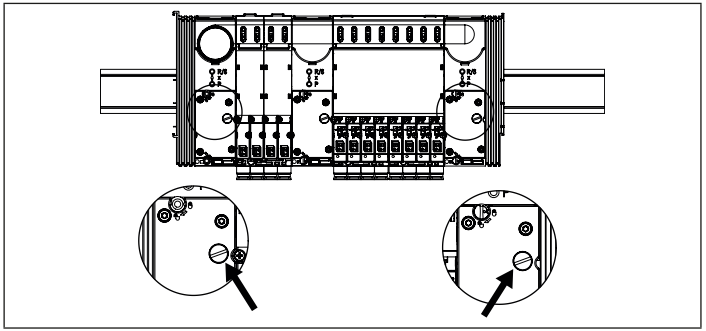


Figure 8: Unlocking the valve block attachment to the standard rail

There must be sufficient space between the valve block and the predecessor module (> 6 mm).

→ Detach modules/clips from the standard rail according to the manufacturer's description.

NOTE!

The interface of the left connection module contains elements that can break off if force is applied.

- Never place the valve block on its side.
- Observe the permissible installation position of the valve block.

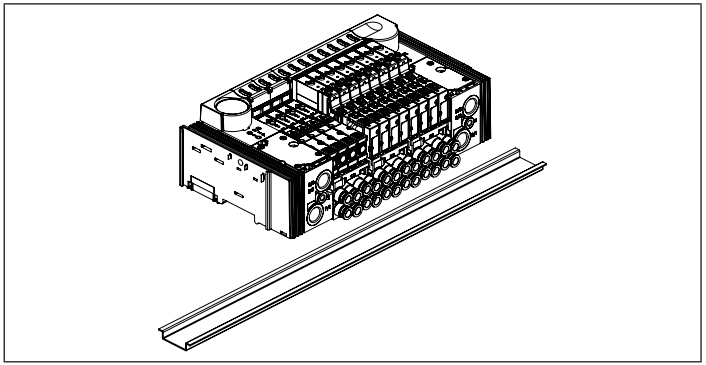


Figure 9: Detaching the modules/clips from the standard rail

NOTE!

- When re-screwing the valve block on the standard rail, observe a max. torque of 2 Nm!

9 INSTALLATION OF THE VALVE ISLAND IN THE CONTROL CABINET

9.1 Safety instructions

DANGER!

Risk of explosion!

For devices in the potentially explosive atmosphere, which are installed in a control cabinet, ensure the following:

- The control cabinet must be approved for use in the potentially explosive atmosphere.
- The control cabinet must be dimensioned in such a way that the resulting heat loss can be discharged to the outside using suitable means.
- The internal temperature of the control cabinet must not exceed the maximum permitted ambient temperature for the device.

Risk of injury from electric shock.

- Switch off the power supply before working on the device or system. Secure it against reactivation.

WARNING!

Risk of injury due to improper installation.

- Only trained specialist personnel may carry out assembly and disassembly work.
- Only carry out assembly work using suitable tools.

CAUTION!

Medium leakage and malfunction.

If seals are not properly positioned, leaks and functional impairments may arise due to pressure loss.

- Ensure the seals are properly positioned in the electronics assemblies and pneumatics.

Short circuit, loss of function.

The electrical connection requires exact contacting.

- Do not bend the contacts.
- Replace the affected components if connections are damaged or bent.
- Only activate the device when the components are in perfect condition.

Risk of injury due to falling heavy equipment.

During transportation or installation work, a heavy device may fall and cause injuries.

- Heavy equipment must only be transported, installed and removed with the help of a second person and using suitable equipment.

The valve block is not firmly connected to the standard rail before tightening the fastening screws.

- Make sure that the valve block cannot fall during the entire installation.

Risk of injury due to sharp edges.

Sharp edges can cause cuts.

- Wear suitable protective gloves.

NOTE!

Valve island Type 8644 is supplied as a fully assembled device. Modifications may only be made by Bürkert.

The valves are excluded from this and may be exchanged by the user for valves of the same variant.

9.2 Installation on standard rail

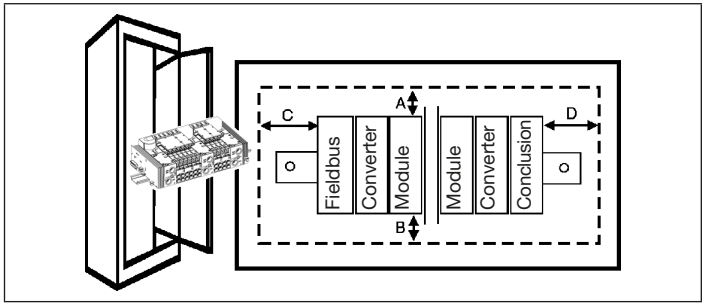


Figure 10: Installation on standard rail in the control cabinet

→ Install the standard rail firmly in the control cabinet.

→ Establish a short, wide PE connection between the standard rail and the control cabinet.

The valve island must be freely accessible from above. Ensure good heat dissipation.

Recommended distance when installing in the control cabinet:

A	30 mm	C	30 mm
B	30 mm	D	60 mm

9.3 Installation with AirLINE Quick

For installation with AirLINE Quick, a cut-out must first be provided in the control cabinet base or wall. This can be done, for example, with a laser or punch.

For the dimensions of the corresponding flange pattern, see Chapter *"9.3.1 Dimensions of the flange patterns for AirLINE Quick"*.

The distances to the left, right, front and top depend on the selected valve island configuration.

Recommended distance between the control cabinet and valve island:

left	right	front	top
30 mm	60 mm	30 mm	50 mm

NOTE!

The cut-out in the control cabinet must be burr-free so that the AirLINE Quick adapter seal is not damaged.

→ Insert the seal of the AirLINE Quick Adapter into the groove of the flange opening without damaging it.
→ Position the valve island on the cut-out made in the control cabinet.
→ Install the stabilising plate from the outside to avoid warping and secure it with M 5 x 10 screws from the supplied attachment set.

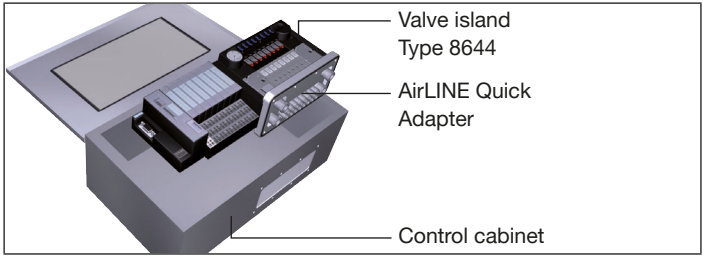


Figure 11: Positioning the valve island in the control cabinet

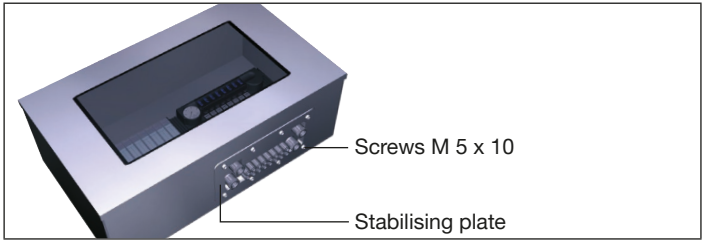


Figure 12: Fixing the stabilising plate

9.3.1 Dimensions of the flange patterns for AirLINE Quick

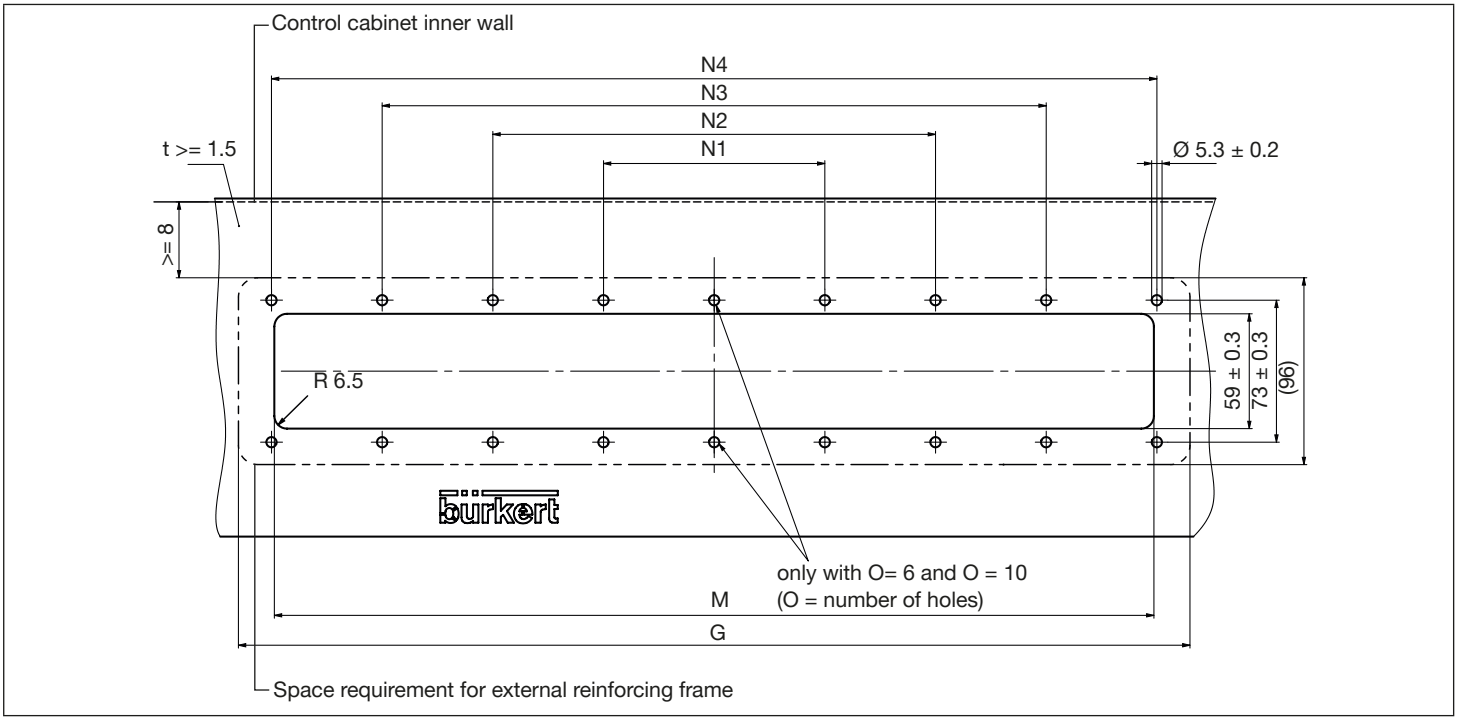


Figure 13: Flange pattern AirLINE Quick – for dimensions, see table Tab. 1 on page 18

Variant	8-valve	12-valve	16-valve
Special feature	–	–	–
M	155 ± 0.4	199 ± 0.4	243 ± 0.4
N1	54 ± 0.3	68 ± 0.3	123 ± 0.4
N2	158 ± 0.4	202 ± 0.4	246 ± 0.4
N3	–	–	–
N4	–	–	–
O (number of holes)	8	8	10
G	192	236	280

Variant	16-valve	24-valve	24-valve
Special feature	with interme-diate feed	–	with interme-diate feed
M	276 ± 0.4	331 ± 0.4	364 ± 0.4
N1	140 ± 0.4	66 ± 0.3	73 ± 0.3
N2	279 ± 0.4	200 ± 0.4	219 ± 0.4
N3	–	334 ± 0.4	367 ± 0.4
N4	–	–	–
O (number of holes)	10	12	12
G	313	368	401

Tab. 1: Dimensions of the flange pattern AirLINE Quick

10 INSTALLATION

10.1 Fluidic installation

DANGER!

Risk of injury from high pressure in the system.

- Before loosening lines or valves, switch off the pressure! Vent or empty the lines.
- Make the pressure supply as large-volume as possible.
- Close open connections that are not required with lock screws.
- Connections for pilot exhaust air (x) must not be closed.
- Check the connections 1 and 3 or 5 are correctly assigned. These must not be interchanged under any circumstances.

NOTE!

The hose lines must meet the following requirements for the working connections:

- Minimum hardness of 40 Shore D (according to DIN 53505 or ISO 868)
- Outer diameter according to DIN 73378 (max. permissible deviation ± 0.1 mm from nominal dimension)
- Burr-free, cut off at right angles and undamaged on the external diameter surface

- Insert the hose lines into the working connections as far as they will go.

10.1.1 Connect feed

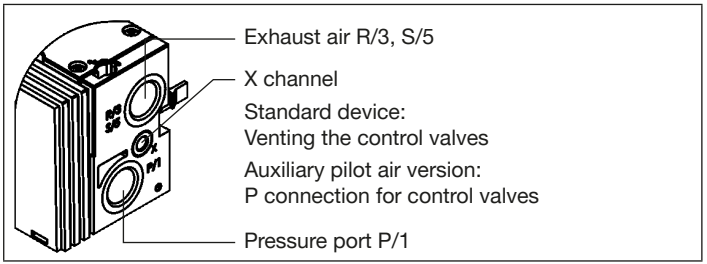


Figure 14: Pneumatic connections feed

→ Screw the G1/4 connection adapter onto the P and R/S connections.

→ Insert or screw the hose lines into the corresponding connections (depending on the variant).

NOTE!

Risk of leakage if the screw connection is too strong!

- When installing the fluidic connection adapters on the P, R/S connections, observe the maximum tightening torque of 12 Nm.

Irreversible damage to the seal in the thread of the fitting!

- When screwing or unscrewing the connection adapters, prevent the corresponding connection from twisting by holding it with a suitable tool.

10.1.2 Connecting the working ports

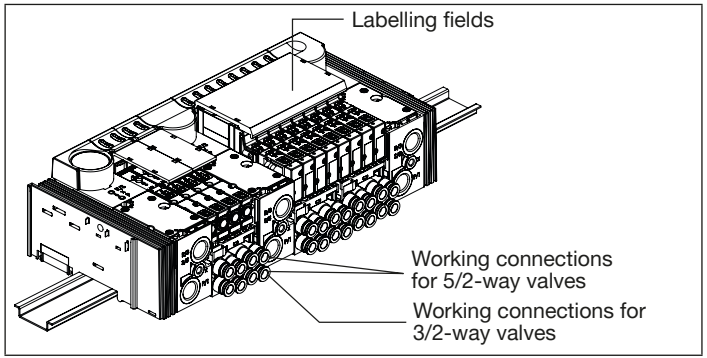


Figure 15: Pneumatic connections – Working connections

→ Insert or screw the hose lines into the corresponding working connections (depending on the variant).
Connection nipples can be used for threaded variants.

Labelling of connections:

→ Label the labelling fields with the data of the valve connections.

10.1.3 Connecting the feed with AirLINE Quick

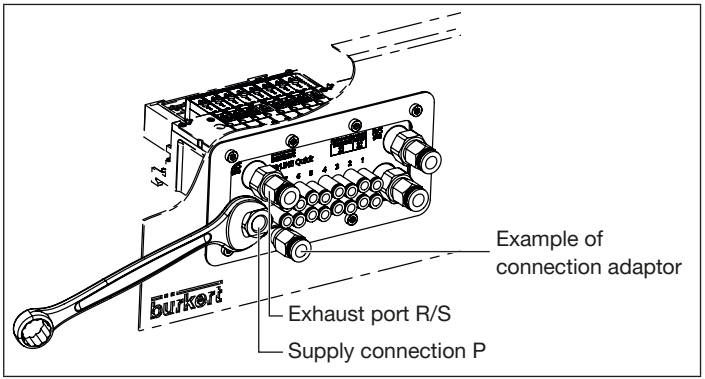


Figure 16: Connecting the feed with AirLINE Quick

→ Screw the G1/4 connection adapter onto the P and R/S connections.

→ Insert the hose lines into the corresponding connections.

NOTE!

Risk of leakage if the screw connection is too strong!

- When installing the fluidic connection adapters on the P, R/S connections, observe the maximum tightening torque of 12 Nm.

Irreversible damage to the seal in the thread of the fitting!

- When screwing or unscrewing the connection adapters, prevent the corresponding connection from twisting by holding it with a suitable tool.

10.1.4 Connecting working ports with AirLINE Quick

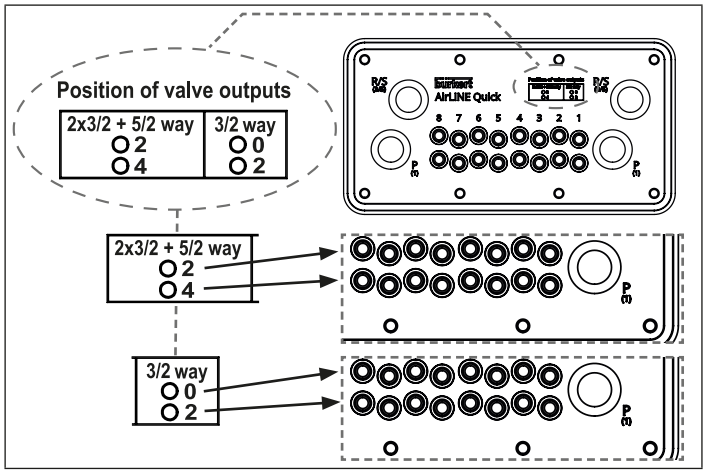


Figure 17: Pneumatic connections – AirLINE Quick

→ Plug the hose lines into the corresponding working connections.

10.1.5 Loosen hose lines

→ To loosen the hose lines, press in the pressure ring on the working connection and pull out the hose line.

10.2 Electrical installation

DANGER!

Risk of injury from electric shock!

- Before reaching into the device or the system, switch off the power supply and secure it against reactivation!

The electrical installation of the AirLINE system corresponds to the installation of the decentralised peripheral device (depending on the respective cooperation partner Siemens, WAGO, Phoenix or Rockwell).

All steps required here can be found in the respective manuals of the cooperation partners.

11 START-UP

11.1 Safety instructions

WARNING!

Risk of injury due to improper operation!

Improper operation may result in injuries as well as damage to the device and the surrounding area.

- Before start-up, ensure that the operating personnel are aware of and have completely understood the contents of the operating instructions.
- The safety instructions and the intended use must be observed.
- Only adequately trained personnel may start up the system/ device.

11.2 Fluidic start-up

NOTE!

- First switch on the supply pressure.
- Only then switch on the voltage!

Measures before fluidic start-up:

→ Check connections, voltage and operating pressure.

→ Make sure that max. operating data are not exceeded.

→ Check that connections 1 and 3 or 5 are correctly assigned. These must not be interchanged under any circumstances.

→ For electrical operation, unlock the manual override.

11.3 Electrical start-up

The electrical start-up of the valve island corresponds to the installation of the decentralised peripheral device (depending on the respective cooperation partner Siemens, WAGO, Phoenix or Rockwell).

All steps required here can be found in the respective manuals of the cooperation partners.

12 MAINTENANCE

NOTE!

Irreversible damage to the seal.

When loosening the connection adapters at the P and R/S connections, the seal in the thread of the fitting can be damaged.

- ▸ Prevent the corresponding connection from twisting by holding it with a suitable tool.

13 SPARE PARTS

Spare parts for valve island Type 8644 can be found in the data sheet at country.burkert.com → 8644

Different flange patterns of the single valve Types 6524/6525 REV.1 and 6524/6525 REV.2!

The single valves (3/2-way valve Type 6524 and 5/2-way valve Type 6525) were optimised. The channel cross-sections and thus the flange pattern of these valves were revised, among other things. Valves REV.1 and valves REV.2 are therefore different.

When replacing single valves, observe the following:

- The different design of the mechanical interface eliminates the accidental installation of incompatible valves.
- It is **not** possible to exchange single valves between REV.1 and REV.2 (Type 6524/6525).
- **With regard to spare parts, it must be ensured that the matching variant of the valve is used.**

This does not apply to the double valve (2 x 3/2-way valve Type 6524).

14 TRANSPORT, STORAGE, PACKAGING

WARNING

Risk of injury due to improper behaviour during transport.

- Only have transport carried out by trained specialists.

During transportation or installation work, a heavy device may fall and cause injuries.

- Transport, install and remove a heavy device only with the aid of a second person and using suitable equipment.

NOTE!

Transport damage.

Inadequately protected devices may be damaged during transport.

- Use shock-resistant packaging to protect the device against moisture and dirt during transport.
- Avoid exceeding or dropping below the permitted storage temperature.
- Protect the electrical interfaces and pneumatic connections from damage and dirt by fitting protective caps.

Incorrect storage may damage the device.

- Store the device in a dry and dust-free location!

Storage temperature –20...+60 °C.

Environmentally friendly disposal

- Follow national regulations regarding disposal and the environment.
- Collect electrical and electronic devices separately and dispose of them as special waste.

Further information country.burkert.com.

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FLUID CONTROL SYSTEMS

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MAN 1000325744 EN Version: CStatus: RL (released | freigegeben) printed: 12.07.2023