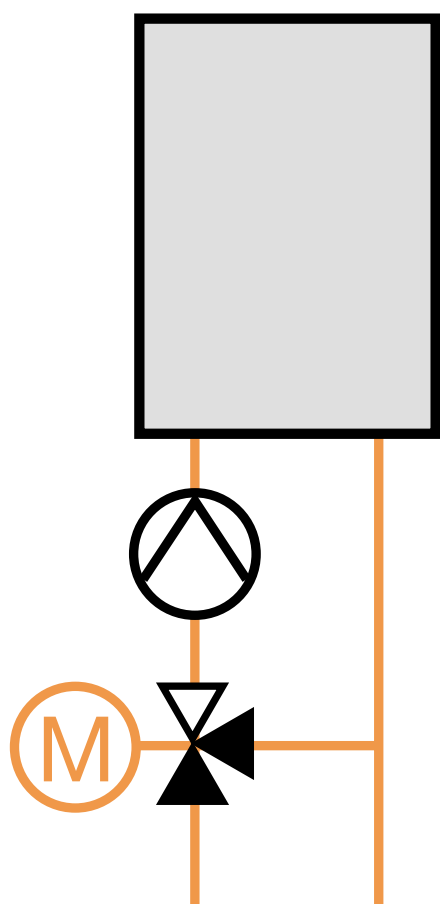


6. VA-1

Product Information

Motorizing globe valves of any make

VA

6.1 NRDVX..

Short-stroke actuators for short-lift valves with an integral spring



- 5.5 mm lift for DN 15...40
- Control, 3-point or modulating

See Section 1

6.1 NV..+UNV..

Linear actuators



- 20 mm lift for DN 15...80
- with emergency function (NO or NC)
- Control, 3-point or modulating

See Section 2

Legend for symbols

	Linear actuators, 3-point
	Linear actuator, modulating
	Modulating linear actuator with inverted lift signal
	Retract spindle (into the actuator)
	Extend spindle (from the actuator)
	Linear actuator with emergency function, with spindle retracted (into the actuator) or extended (from the actuator), on power failure
	Closing point, valve up stem fully extended from valve
	Closing point, valve down stem fully retracted into valve
	Actuating time with 3-point linear actuator
	Actuating time with 3-point linear actuator (shorter actuating time)
	Direction of rotation, manual control of linear actuator, clockwise rotation retracts spindle into actuator
	Direction of rotation, manual control of linear actuator, counter-clockwise rotation extends spindle from actuator

Control ball valves, Open/Close ball valves
see Product Information 5. R..

Rotary actuators for mixing valves
see Product Information 5. NR..

Globe valves with linear actuators
see Product Information 6. H..

SuperCompact control valves with linear
actuators
see Product Information 6. S..

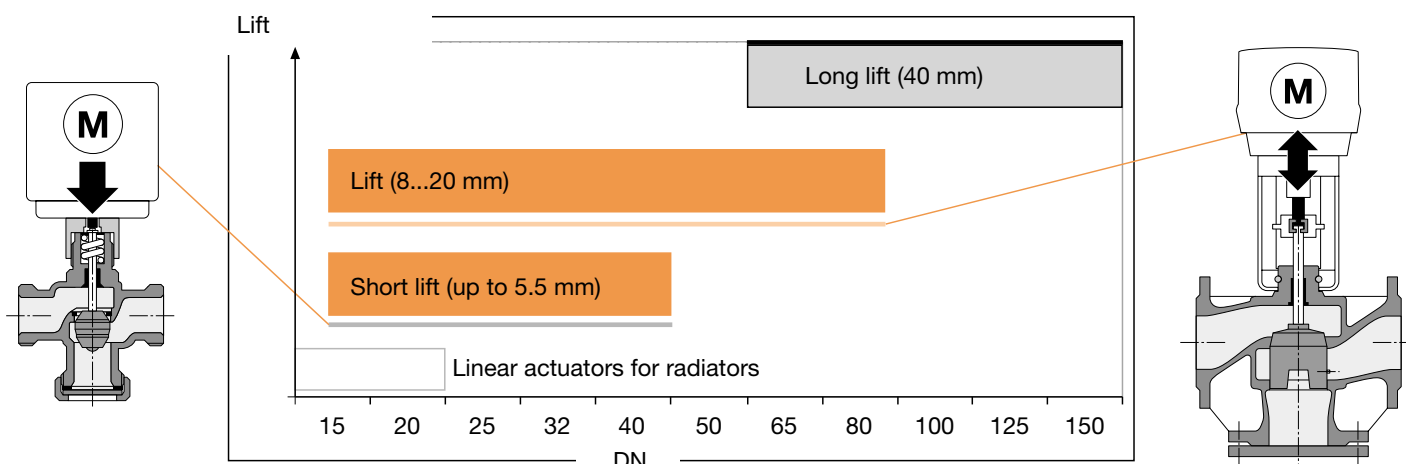
Important:

Use of Belimo direct-coupled actuators

The direct-coupled actuators described in this publication are intended for use in the closed water circuits of heating, venti-

lating and air-conditioning systems. Use of the actuators in conjunction with other liquid or gaseous fluids is not allowed.

Distinguishing between short-lift and standard globe valves



Valves with an integral spring

Short-lift valves incorporate a return spring. Consequently, in order to open the valve the actuator has to overcome the force of the spring. In turn, in order to close the valve the spring has to overcome the force of the actuator.

Valves without an integral spring

Standard globe valves have no return spring. Therefore, the linear actuator must open and close the valve and the spindle must be able to exert both a retracting force and an extending force on the stem of the valve.

Table of contents

Section 1: Short-stroke actuators	4-7
Description of short-lift valves	4
Type code, ordering	4
Overview of short-stroke actuators	4
NRDVX24-3-T-..., NRDVX230-3-T-..	5
NRDVX24-SR-T-..	6
Manual operation, Operating controls, Installation	7
Section 2:	
Standard linear actuators	8-55
Description of standard globe valves	8
Type code, actuators / brackets	8
Types of construction of globe valves	8
Overview, actuators / brackets	9
Ordering, actuators / brackets	10
NV24-3-T, NV230-3-T	12-13
NV24-MFT-T, NVG24-MFT2, NV24-MFT2	14-15
NVF24-MFT-T, NVF24-MFT-E-T	16-17
Wiring diagrams NV..	18-19
Flow characteristics with NV..	19
LED indicator / Assembly NV../UNV..	20
Manual operation NV..	21
Mounting bracket for globe valves:	
UNV-001 (Siebe)	22-23
UNV-002 (Belimo)	24-25
UNV-003 (Siemens)	26-27
UNV-012 (Cazzaniga)	28-29
UNV-015 (Honeywell)	30-31
UNV-017 (tac)	32-33
UNV-018 (Sauter)	34-35
UNV-019 (Johnson Controls)	36-37
UNV-023 (Satchwell)	38-39
UNV-024 (HORA)	40-41
UNV-025 (Osby)	42-43
UNV-027 (Ari)	44-45
UNV-030 (Johnson Controls)	46-47
UNV-034 (Johnson Controls)	48-49
UNV-036 (Controlli)	50-51
UNV-038 (Danfoss)	52-53
Mounting, pressures, maintenance and disposal; Order form for special mounting brackets	54-55

Description of short-lift valves



NR.. linear actuators (actuating force 500 N, max. stroke 5.5 mm)

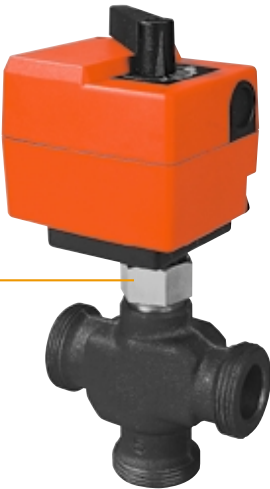
Temporary or permanent disengagement for manual operation



Easy-to-read position indicator



Easy mounting by valve neck nut



Control, 3-point or modulating



Integral terminals, for easy connection of cables on-site



Type code for short-stroke actuators

NRDVX24-SR-T-SI

- NRDVX24-SR-T-SI
- Mounting bracket suitable for:
 - SI = Siemens short-lift valves
 - CA = Cazzaniga short-lift valves
 - T = Terminal connection
- Control
 - SR = modulating
 - 3 = 3-point
- Operating voltage
 - 24 = 24 V
 - 230 = 230 V
- VX = with linear adapter / stroke 5.5 mm
- NRD = Adapted-rating actuator

Overview of short-stroke actuators

Type	modulating	3-point	
	24 V	230 V	24 V
	NRDVX24-SR-T	NRDVX230-3-T	NRDVX24-3-T
AC 230 V, 3-point, 5.5 mm, 500 N		•	
AC 24 V, 3-point, 5.5 mm, 500 N			•
AC / DC 24 V, modulating, 5.5 mm, 500 N	•		
Running time 140 s	•	•	•
Control signal DC 0...10 V	•		
Operating range DC 2...10 V, 0...10 V selectable	•		
Position feedback DC 2...10 V, 0...10 V selectable	•		
Connecting terminals	•	•	•
Make of control valve	Type of mounting bracket		
Cazzaniga	-CA		
Siemens (L&S)	-SI		
	•	•	•
	•	•	•

Ordering example: Short-stroke actuator 230 V, 3-point with integral Cazzaniga mounting bracket: **NRDVX230-3-T-CA**



**Short-stroke actuators
for short-lift valves,
max. nominal stroke 5.5 mm**

3-point actuators
NRDVX24-3-T-.. AC 24 V
NRDVX230-3-T-.. AC 230 V

Applications

The NRDVX..-3-T-.. actuator is intended for motorizing Cazzaniga and Siemens short-lift valves.

Mode of operation

3-point control is employed for short-lift valves used in control applications and Open/Close control for shut-off functions.

Product features

Easy direct mounting on the body of the valve. The stroke is adjusted at the factory to suit the type of valve. The mounting bracket, suitable for the particular type of valve, is an integral part of the actuator.

Functional reliability

The electric motor is de-energized when the actuator runs on to its internal end-stops.

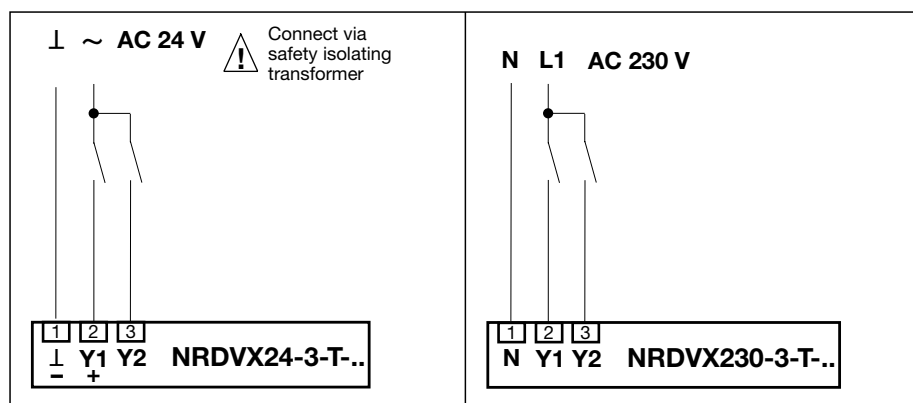
Manual operation

The actuator can be operated manually with a hand lever (temporary disengagement by simply depressing the rotary knob on the housing and permanent disengagement by rotating it).

When the manual lever is rotated clockwise the valve moves in the close direction.

Installation instructions, Page 7

Wiring diagrams

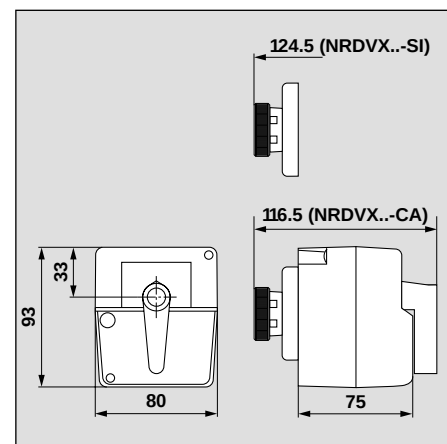


NRDVX....-T-.., suitable for the following makes of valve

	Version	Valve type	DN (mm)	k _{vs} (m³/h)	Actuator type
Cazzaniga	2-way	V02BM.. LN	15...40	3.9...14.5	NRDVX.....-T-CA
	3-way	V03BM.. LN	15...40	3.9...14.5	
Siemens	2-way	VVG44..	15...40	0.25...25	NRDVX.....-T-SI
	2-way	VVI52..	15	0.25...2,5	
	3-way	VXG44..	15...40	0.25...25	

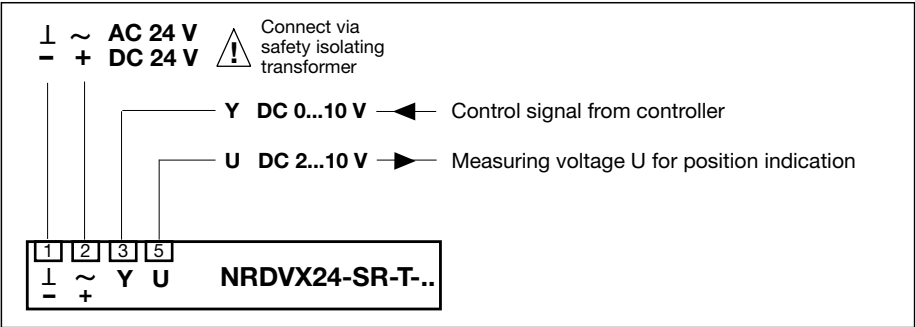
Technical data	NRDVX24-3-T-..	NRDVX230-3-T-..
Nominal voltage	AC 24 V 50/60 Hz	AC 230 V 50/60 Hz
For wire sizing	1.5 VA	2.5 VA
Power consumption	1.5 W	2.5 W
Connecting terminals	2 x 0.75 mm² or 1 x 1.5 mm²	
Nominal stroke	5.5 mm	
Actuating force	500 N	
Manual operation	temporary or permanent disengagement by rotary knob	
Running time	140 s	
Sound power level	max. 35 dB (A)	
Position indication	scale plate 0...1	
Protection class	⚡ (safety extra-low voltage)	II (all-insulated)
Degree of protection	IP40	
Temperature of medium	+5° ... 100°C (including valve)	
Ambient temp. range	0° ... +50°C	
Non-operating temp.	-30° ... +80°C	
Humidity test	to EN 60730-1	
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC	
LV Directive	CE according to 73/23/EEC	
Direction of rotation	as-wired	
Maintenance	maintenance-free	
Weight	0.5 kg (without valve)	0.5 kg (without valve)

Dimensions





Wiring diagrams



NRDVX24-SR-T..., suitable for the following makes of valve

	Version	Valve type	DN (mm)	k _{VS} (m³/h)	Actuator type
Cazzaniga	2-way	V02BM.. LN	15...40	3.9...14,5	NRDVX24-SR-T-CA
	3-way	V03BM.. LN	15...40	3.9...14,5	
Siemens	2-way	VVG44..	15...40	0.25...25	NRDVX24-SR-T-SI
	2-way	VVI52..	15	0.25...2,5	
	3-way	VXG44..	15...40	0.25...25	

Technical data	NRDVX24-SR-T...
Nominal voltage	AC 24 V 50/60 Hz, DC 24 V
Nominal voltage range	AC 19.2...28.8 V, DC 21.6...28.8 V
For wire sizing	3 VA
Power consumption	1.5 W
Connecting terminal	2 x 0.75 mm² or 1 x 1.5 mm²
Control	DC 0...10 V @ 100 kΩ input impedance
Operating range	DC 2...10 V for 0...100%
Position feedback	DC 2...10 V (max. 1 mA)
Uni-rotation	±5%
Nominal stroke	5.5 mm
Actuating force	500 N
Manual operation	temporary or permanent disengagement by rotary knob
Running time	140 s
Sound power level	max. 35 dB (A)
Position indication	scale plate 0...1
Protection class	⚡ (safety extra-low voltage)
Degree of protection	IP40
Temperature of medium	+5° ... 100°C (including valve)
Ambient temperature	0° ... +50°C
Non-operating temp.	-30° ... +80°C
Humidity test	to EN 60730-1
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC
LV Directive	CE according to 73/23/EEC
Maintenance	maintenance-free
Weight	0.5 kg (without valve)

Short-stroke actuators for short-lift valves, max. nominal stroke 5.5 mm

Modulating actuators (AC/DC 24 V)

Modulating control DC 0...10 V

Applications

The NRDVX24-SR-T.. actuator is intended for motorizing Cazzaniga and Siemens short-lift valves.

Mode of operation

Modulating control is employed with a standard control signal of DC 0...10 V. A synchronizing function is triggered each time the power supply is energized. The actuator runs at high speed to the closed position (CLOSED limit switch) and synchronizes itself.

The working range of 2...10 V can be changed to 0...10 V by removing jumper B2 (see Operating controls, Page 7).

Product features

Easy direct mounting on the body of the valve. The stroke is adjusted at the factory to suit the type of valve. The mounting bracket, suitable for the particular type of valve, is an integral part of the actuator.

Functional reliability

The electric motor is de-energized when the actuator runs on to its internal end-stops.

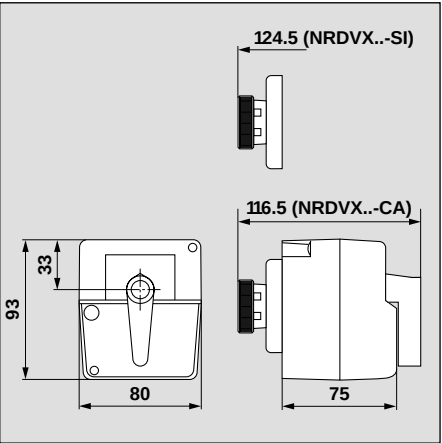
Manual operation

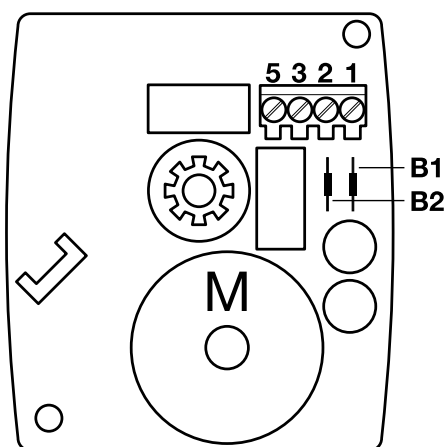
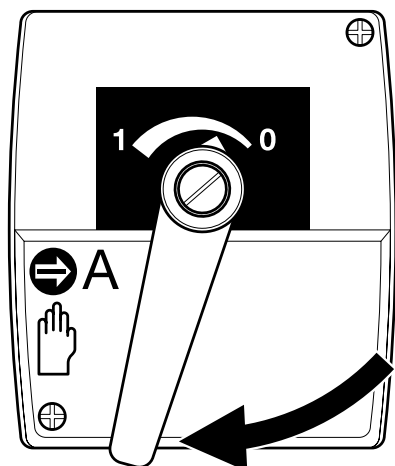
The actuator can be operated manually with a hand lever (temporary disengagement by simply depressing the rotary knob on the housing and permanent disengagement by rotating it).

When the manual lever is rotated clockwise the valve moves in the close direction.

Installation instructions, Page 7

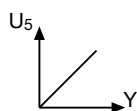
Dimensions





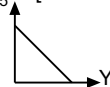
Jumper B1: Rotation

B1 connected
(signal direct)



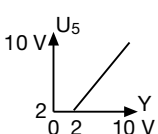
B1 removed
(signal inverted)

U_5 [reversed]

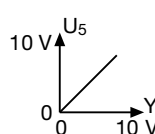


Jumper B2: Working range

B2 connected
(2...10 V)



B2 removed
(0...10 V)



Manual operation

If the black rotary knob is depressed and turned from position A (Automatic) to the hand symbol, manual operation will be permanently engaged. Then, any control signal that might be received will not be acted upon.

The manual operating system incorporates a slipping clutch and is overload-proof. When the manual lever (black) is moved clockwise the actuator spindle retracts and the valve closes (Position 0).

Operating controls of the NRDVX24-SR-T..

Jumpers B1 and B2 will be found under the lid of the housing. In order to gain access to them first loosen the central screw of the black hand lever and remove the two Philips screws securing the lid.

SIEMENS NRDVX...-SI		CAZZANIGA NRDVX...-CA	
1		1	
2		2	
3		3	

Installing the NRDVX...-T on short-lift valves

1) Set the manual operating lever to «Hand». Rotate the black lever clockwise to the end-stop. The lever should now be in the «Zero» position. If it is not, loosen the central screw of the lever, pull it out and turn to the «Zero» position. Then re-secure the lever by tightening the central screw finger-tight.

2) Screw the actuator on to the thread of the valve neck.

3) Tighten the valve neck connection and return the manual operating lever to the «A» position (Automatic).

Description of standard globe valves

NV.. linear actuators (1000 N / 800 N ¹⁾, max. stroke 20 mm)



Manual operation for commissioning and emergencies



Cover in impact-resistant plastic, housing and mounting bracket in strong die-cast aluminium



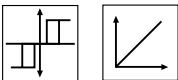
Adjustable valve lift from 8 to 20 mm



Integral easy-to-read position indicator



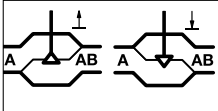
Control, 3-point or modulating, parameterizable



Integral terminals for easy wiring on-site



Selectable closing point with stem extended or retracted



The adapter is very easy to mount on the valve stem

Very simple actuator mounting, the bracket comes with all necessary adapter fittings for the valve concerned

¹⁾ Electrical closing force / blocking force

Type code for linear actuators

NV24-MFT-T

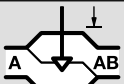
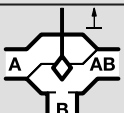
- NV = Linear actuator
- 24 = Operating voltage 24 V
- 230 = Operating voltage 230 V
- 3 = 3-point
- MFT = multi-functional
- T = Connecting terminals

Type code for mounting brackets

UNV-XXX

- UNV = Mounting bracket for NV actuator
- XXX = Suitable for valve (consecutive number)

Types of construction of globe valves

Valve	Valve closing point	Actuator closing point adjustment	Valve diagram
	up	Δ	
	down	▽	
	up	Δ	

Depending on the type of construction of the particular valve the closed point can be in either the up position or the down position. With most makes of valve, or with specific ranges of valves from specific makers, the closed point is in the up position when the stem of the valve is fully extended from the valve body. The flow along the control path is 0% and, with 3-way valves, the flow along the bypass path is 100%. (The sealing part of the valve points upwards and is shaped like Δ).

However, there are also 2-way valves available with the closed point in the down position. With this type of valve the stem is fully retracted into the valve body and the flow along the control path is also 0%. (The sealing part of the valve points downwards and is shaped like ▽).

Overview of linear actuators and mounting brackets

Type	modulating, multi-functional				3-point	
	24 V				230 V	24 V
	NV24-MFT-T 	NV24-MFT2 	NVG24-MFT2 	NVF24-MFT-(E)-T 	NV230-3-T 	NV24-3-T 
AC 230 V, 3-point, 20 mm, 1000 N / 800 N ¹⁾					•	
AC / DC 24 V, 3-point, 20 mm, 1000 N / 800 N ¹⁾						•
AC / DC 24 V, modulating, multifunctional, 20 mm, 1000 N / 800 N ¹⁾	•	•		•		
AC / DC 24 V, modulating, multifunctional, 20 mm, 1600 N ¹⁾			•			
Actuating time 7.5 s/mm, 4,5 mm selectable					•	•
Running time 150 s, (35)75...300 s adjustable ²⁾	•		•	•		
Running time 150 s, (17)35...300 s adjustable ²⁾		•				
Emergency operation < 1,5 s/mm (spring)				•		
Emergency control function, retracting (NVF24-MFT-T)				•		
Emergency control function, extending (NVF24-MFT-E-T)				•		
Control, 3-point					•	•
Control, DC 0...10 V (0...32 V)	•	•	•	•		
Operating range DC 2...10 V selectable	•	•	•	•		
Position feedback DC 2...10 V adjustable	•	•	•	•		
Integral MP-Bus interface	•	•	•	•		
Linking of active sensors and switches	•			•		
Linking of active/passive sensors and switches		•	•			
Closing point, selectable	•	•	•	•	•	•
Automatic stroke adaption	•	•	•	•		
Without connecting lead	•		•	•	•	•
With screw terminals	•	•	•	•	•	•
+ / (+ = fitted; / = supplied separately)						
Control valve make	Mounting bracket see Pages				•	•
Ari	UNV-027	44–45	•	•	•	•
Belimo	UNV-002	24–25	•	•	•	•
Cazzaniga	UNV-012	28–29	•	•	•	•
Controlli ³⁾	UNV-036	50–51	•	•	•	•
Danfoss	UNV-038	52–53	•	•	•	•
Johnson Controls EU ⁴⁾	UNV-019	36–37	•	•	•	•
	UNV-030	46–47	•	•	•	•
	UNV-034	48–49	•	•	•	•
HORA	UNV-024	40–41	•	•	•	•
Honeywell EU	UNV-015	30–31	•	•	•	•
Osby	UNV-025	42–43	•	•	•	•
Sauter	UNV-018	34–35	•	•	•	•
Satchwell	UNV-023	38–39	•	•	•	•
Siebe	UNV-001	22–23	•	•	•	•
Siemens (L&S)	UNV-003	26–27	•	•	•	•
tac	UNV-017	32–33				

¹⁾ Electrical closing force / blocking force

²⁾ 35/17 s with 10 mm stroke only

³⁾ Can also be used for Trend

⁴⁾ State precise valve type and DN when ordering

Actuator types

The NV.. linear actuator is available in a variety of voltage ratings, with different types of control and also with or without MFT multi-function technology for motor-

izing globe valves of many different makes. NVF.. actuators also incorporate an emergency control function.

Combination units

Each price quoted in the Product and Price Catalogue refers to a combination unit, i.e. actuator and mounting bracket.

Therefore, a correct order will require the following information to be provided:

① Linear actuator



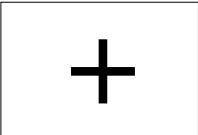
NV linear actuator

NV linear actuator

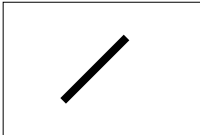
The following data must be provided:

- Control, 3-point or modulating
- Rated voltage AC / DC 24 V or AC 230 V
- With or without emergency control function

② Combination units



Mounting bracket fitted



Separately

Linear actuators and mountig brackets can be supplied to order as follows:

- Mounting bracket fitted (+)
- Mounting bracket/actuator separately (/)
- Different delivery dates for mounting brackets and actuators on request

③ Mounting bracket



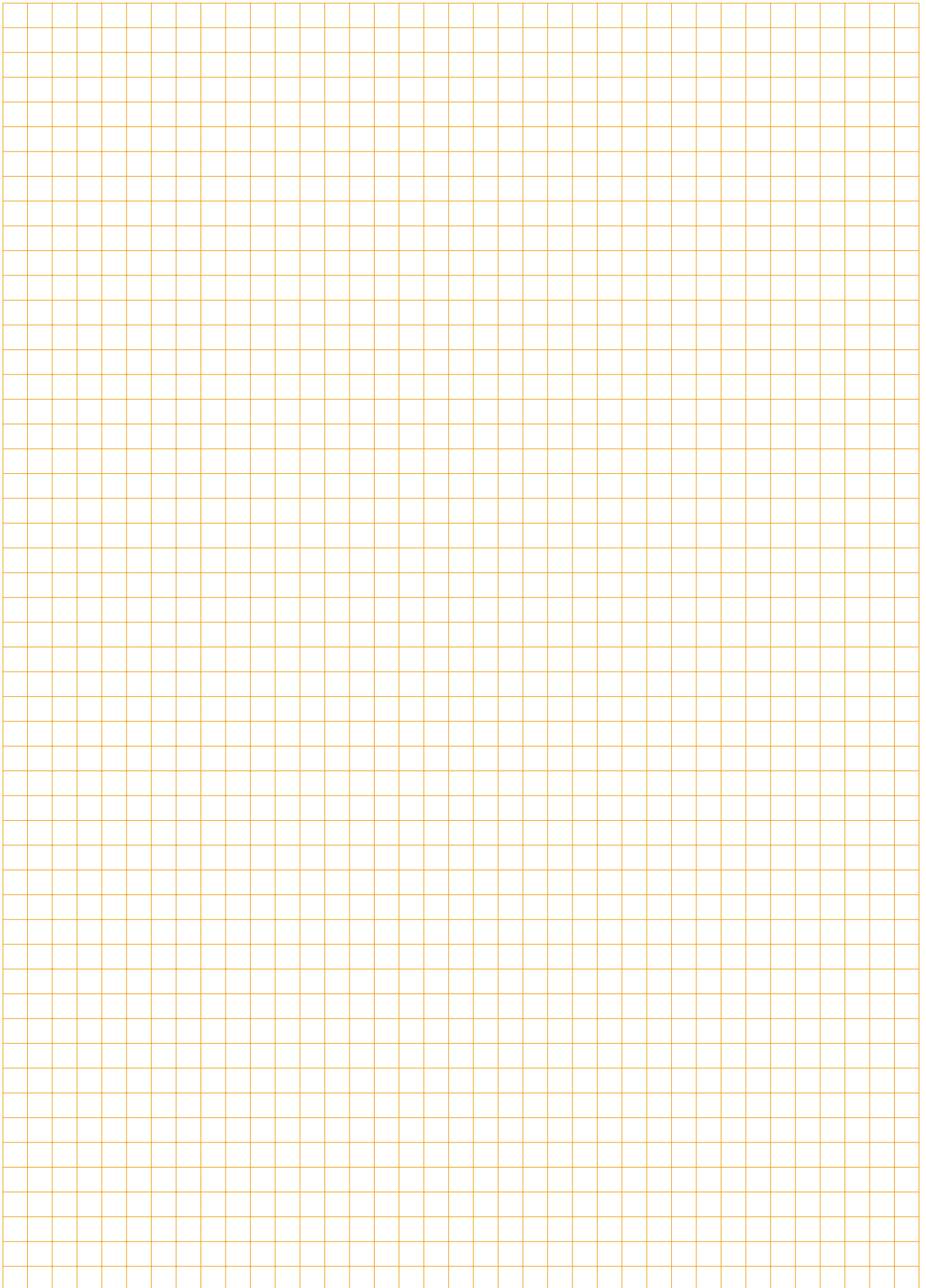
NV linear actuator and UNV mounting bracket

Specify the mounting brackets needed for the different makes and types of valve:

- e.g. Belimo mounting bracket UNV-003
Siemens VVG41.25 valves

Ordering example

Designation:	NV24-3-T+UNV-003
	↑ ↑ ↑
① Linear actuator type NV24-3-T:	① ② ③
Rated voltage	Linear actuator, AC / DC 24 V
Control	3-point
Connections	Terminals
② Combination unit +	Mounting bracket fitted
③ Mounting bracket	Suitable for Siemens valves (e.g. VVG41..)





Linear actuator for globe valves of 8...20 mm lift

3-point actuators

NV24-3-T

AC / DC 24 V

NV230-3-T

AC 230 V

Applications

The NV...-3-T actuator is intended for motorizing globe valves by exerting an operating force on the valve stem in either a retracting or an extending direction.

Mode of operation

The brushless motor is controlled by a 3-point control signal.

When the actuator is lifting and it reaches the seat for either VALVE OPEN or VALVE CLOSED the supply of current to the actuator is reduced. Thanks to the use of a brushless motor the control signals Y1 and Y2 do not need to be interrupted externally (therefore, overload protection is assured).

Functional reliability

The electric motor is de-energized when the actuator runs on to its internal end-stops.

Manual operation

Inserting a 5 mm hexagonal key and turning it clockwise causes the spindle of the actuator to emerge from the housing (an extending action). The spindle will remain in that position until the power supply is energized (the controller has first priority).

Position indication

The stroke is indicated mechanically on the UNV-... mounting bracket.

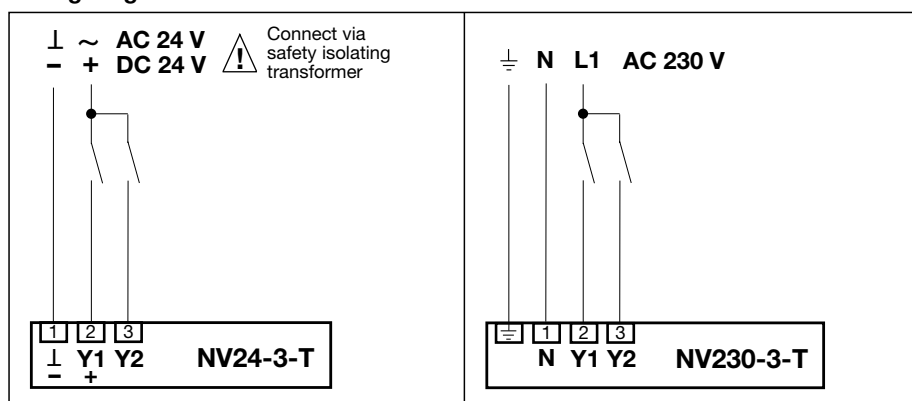
Safety note

The linear actuator contains no components which the user can replace or repair.

Dimensions

The dimensions depend on the type of UNV-... mounting bracket used; see from Page 22.

Wiring diagram



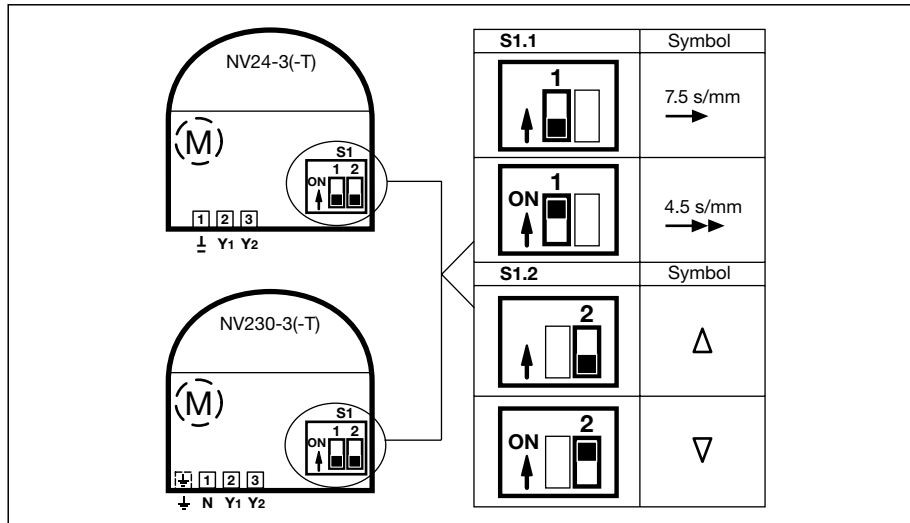
Technical data	NV24-3-T	NV230-3-T
Nominal voltage	AC 24 V 50/60 Hz, DC 24 V	AC 230 V 50/60 Hz
Nominal voltage range	AC 19.2...28.8 V DC 21.6...28.8 V	AC 198...264 V
For wire sizing	5 VA	7 VA
Power consumption	3 W	6 W
Connecting	terminals 2 x 1.5 mm ² or 1 x 2.5 mm ²	
Nominal stroke	20 mm	
Actuating force	1000 N ¹⁾ / (800 N) ²⁾	
Manual operation	hexagonal key, self-resetting ³⁾	
Actuating time	7.5 s/mm	
Sound power level	max. 35 dB (A)	
Position indicator	mechanical 8...20 mm stroke (mounting bracket)	
Protection class	⚡ (safety extra-low voltage)	I (with PE conductor)
Degree of protection	IP54	
Ambient temp. range	0°...+50°C	
Non-operating temp.	-40°...+80°C	
Humidity test	to EN 60730-1	
EMC	CE according to 89/336/EEC, 92/31/EWG, 93/68/EEC	
LV Directive	CE according to 73/23/EEC	
Mode of operation	Type 1 to EN 60730-1	
Maintenance	maintenance-free	
Weight	1.7 kg (without mounting bracket UNV)	

¹⁾ Electrical closing force

²⁾ Blocking force

³⁾ Permanent manual operation to order

Arrangement of the operating controls



The terminals for connecting the lead and the S1 control device will be found under the cover of the actuator.

The factory setting of actuating time is 7.5 s/mm. By moving the slide switch S1.1 to the «ON» position this time can be reduced by approximately half.

The closing point of the valve is defined with slide switch S1.2. The factory setting of the closing point is «up». When a Y1 signal is present the actuator spindle extends and the valve opens (when the «up» closing point has been selected).

The direction of travel of the actuating spindle can also be inverted by interchanging the Y1 and Y2 conductors.

Functional description

Function	Description	Switch	Symbol	Bold type in the table means standard factory setting.
Actuating time	For the nominal stroke function the running time for full stroke varies. (With 20 mm stroke and standard actuating time the running time is 150 s).	S1.1		
Standard	Actuating time 7.5 s/mm	OFF	7.5 s/mm →	
High speed	Actuating time 4.5 s/mm	ON	4.5 s/mm →→	
Closing point valve	The closing point is when the actuated spindle is either retracted or extended. There is no flow through the valve control path ($V = 0\%$).	S1.2	Symbol	Effect
up	The actuated spindle is retracted into the actuator and the valve stem is extended from the valve body.	OFF	Δ	
down	The actuated spindle is extended from the actuator and the valve stem is retracted into the valve body.	ON	∇	

Wiring diagrams see Page 18

NV24-MFT-T, NVG24-MFT2, NV24-MFT2

Direct-coupled actuators for globe valves



Linear actuators for globe valves of 8...20 mm lift

Modulating actuator (AC/DC 24 V)

Control signal DC 0...10 V

Applications

The NV24-MFT-T, NVG24-MFT2 and NV24-MFT2 actuators are intended for motorizing globe valves by exerting an operating force on the valve stem in either a retracting or an extending direction.

Mode of operation

Modulating control is effected by means of a standard signal of DC 0...10 V.

The control signal is produced by the microprocessor and acts on the brushless motor. When the actuator is powered up for the first time the stroke is acquired automatically and stored in the microprocessor. The control signal and the running time are then adapted to suit that value of stroke. If no correct adaption is performed at that time (e.g. because there is no valve mounted) another adaption will be performed the next time the actuator is powered up. When the actuator is lifting and it reaches the seat for either VALVE OPEN or VALVE CLOSED the supply of current to the actuator is reduced. The actuator has an anti-blocking feature which, should dirt on the valve seat prevent it from closing properly, causes the actuator to move several times in the open and close directions over 1 to 5% stroke.

High-speed version

With the Type NV24-MFT2 actuator the running time can be reduced to 35 s or 17 s for 10 mm stroke.

Functional reability

The actuator is short-circuit-proof and protected against polarity reversal. The stroke is adapted automatically.

Manual operation

Inserting a 5 mm hexagonal key and turning it clockwise causes the spindle of the actuator to emerge from the housing (an extending action). The spindle will remain in that position until the power supply is applied (the controller has first priority).

Position indication

The stroke is indicated mechanically on the UNV-... mounting bracket and the maximum stroke adjusts itself automatically. There is a two-colour LED status indicator under the cover of the housing.

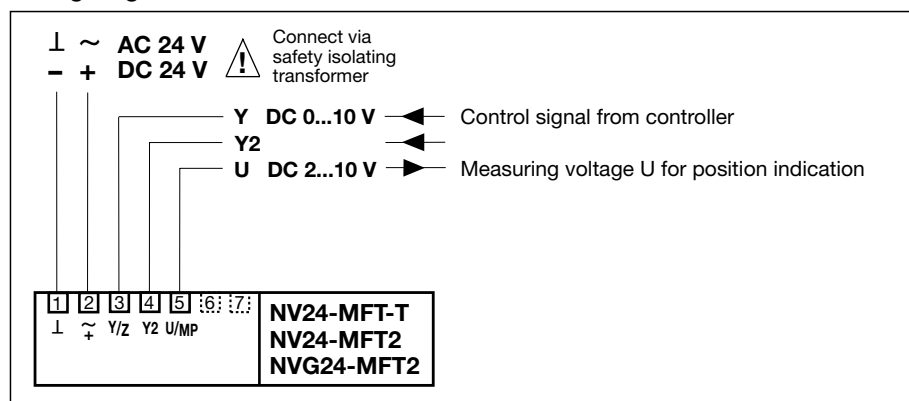
Safety note

The linear actuator contains no components which the user can replace or repair.

Dimensions

The dimensions depend on the type of UNV-... mounting bracket used; see from Page 22.

Wiring diagram



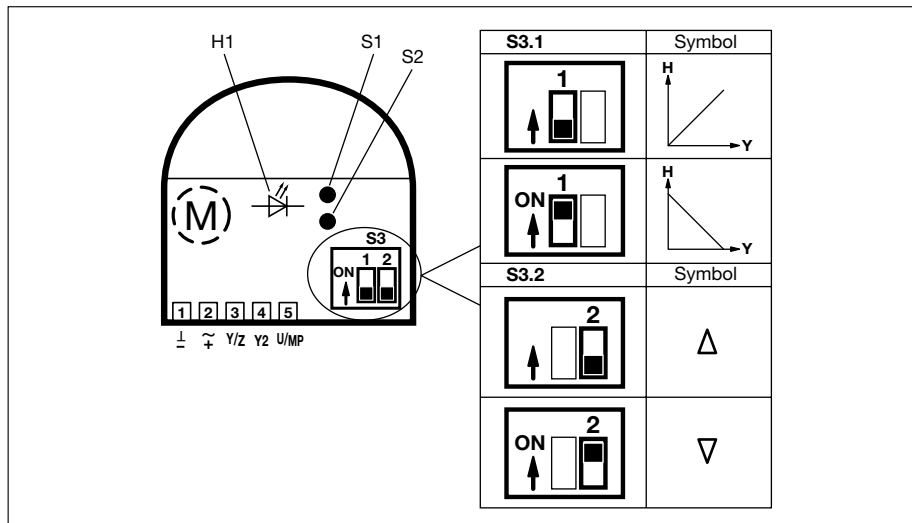
Technical data	NV24-MFT-T	NV24-MFT2	NVG24-MFT2
Nominal voltage	AC 24 V, 50/60 Hz, DC 24 V		
Nominal voltage range	AC 19.2...28.8 V DC 21.6...28.8 V		
For wire sizing	5 VA		
Power consumption	3 W		
Connecting cable:		1 m, 5 x 0.75 mm ²	1 m, 5 x 0.75 mm ²
terminals:	2 x 1.5 mm ² or 1 x 2.5 mm ²		
Control	DC 0...10 V @ 100 kΩ		
Operating range	DC 2...10 V for 0...100% stroke		
Position checkback	2...10 V @ 0.5 mA		
Uni-rotation	±5%		
Nominal stroke	20 mm		
Actuating force	1000 N ¹⁾ / (800 N) ²⁾		1600 N
Manual operation	hexagonal key, self resetting ³⁾		
Running time	150 s		
Sound power level	max. 35 dB (A)		
Position indication	mechanical 8...20 mm stroke (mounting bracket)		
Protection class	◊ (safety extra-low voltage)		
Degree of protection	IP54		
Ambient temp. range	0°...+50°C		
Non-operating temp.	-40°...+80°C		
Humidity test	to EN 60730-1		
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC		
Software	Class A to EN 60730-1		
Mode of operation	Type 1 to EN 60730-1		
Maintenance	maintenance-free		
Weight	1.7 kg (without mounting bracket UNV)		

¹⁾ Electrical closing force

²⁾ Blocking force

³⁾ Permanent manual operation to order

Arrangement of the operating controls



Under the cover of the actuator are the terminals for connecting the lead, the control devices S1, S2 and S3 and the LED indicator H1.

By setting the slide switch S3 appropriately or by pressing push-buttons S1 and S2 it is possible to configure the actuator very simply on-site to suit actual requirements when changes from the factory settings are needed.

LED indicator H1
see details on Page 20

Functional description S

Function	Description	Switch	Bold type in the table means standard factory setting.		
Test	The valve covers the full stroke in maximum running time and verifies the adapted stroke to ensure that both end-points are reached (H = 0% and H = 100%).	S1 press			
Adaptation	The effected stroke (between the two mechanical end-stops of the valve) is acquired as 100% stroke and stored in the micro-processor. The control signal and running time are then matched to this 100% stroke.	S2 press			
Direction of stroke	The direction of travel in response to the control signal	S3.1	Symbol	Effect	
direct	0% control signal corresponds to 0% position checkback. (The actuating spindle is then retracted or extended depending on the choice of closing point).	OFF			
inverted	0% control signal corresponds to 100% position checkback. (The actuating spindle is then retracted or extended depending on the choice of closing point).	ON			
Closing point valve	The closing point is when the actuating spindle is either retracted or extended. There is no flow through the valve control path.	S3.2	Symbol	Effect	
up	The actuating spindle is retracted into the actuator and the valve stem is extended from the valve body. The position checkback shows 0% for direct travel.	OFF			
down	The actuating spindle is extended from the actuator and the valve stem is retracted into the valve body. The position checkback shows 0% for direct travel. (This setting is not necessary with Belimo Type H4.., H5.., H6.. and H7.. globe valves.)	ON			

Only properly authorised and trained persons may change the settings of slide switch S3 and push-button S2.

MFT

Parameter	Standard	Variable
Control signal	DC 0...10 V	3-point, Open/Closed
Operating range	DC 2...10 V	Start point DC 0.5...30 V End point DC 2.5...32 V
Position checkback U ₅	DC 2...10 V	Start point 0.5...8 V End point 1.5...10 V Parameterizable for fault alarm
Running time	150 s	(35) 75...300 s ¹⁾ (17) 35...300 s ²⁾
Actuating force	100%	25...100%

Multi-Function Technology allows optimum matching of parameters to the different needs of an installation. The parameters are either entered as standard values at the factory or altered subsequently using an MFT-H adjuster.

Bold type in the table means standard factory setting.

¹⁾ with NV24-MFT-T, NVG24-MFT2 ²⁾ with NV24-MFT2

NVF24-MFT-T, NVF24-MFT-E-T

Direct-coupled actuators for globe valves



Linear actuators for globe valves of 8...20 mm lift

Modulating actuator (AC/DC 24 V)

Control signal DC 0...10 V

Applications

The NV...MFT-(E)T actuator is intended for motorizing globe valves by exerting an operating force on the valve stem in either a retracting or an extending direction.

Mode of operation

Modulating control is effected by means of a standard signal of DC 0...10 V. The control signal is produced by the microprocessor and acts on the brushless motor. When the actuator is powered up for the first time the stroke is acquired automatically and stored in the microprocessor. The control signal and the running time are then adapted to suit that value of stroke. If no correct adaption is performed at that time (e.g. because there is no valve mounted) another adaption will be performed the next time the actuator is powered up. When the actuator is lifting and it reaches the seat for either VALVE OPEN or VALVE CLOSED the supply of current to the actuator is reduced. The actuator has an anti-blocking feature which, should dirt on the valve seat prevent it from closing properly, causes the actuator to move several times in the open and close directions over 1 to 5% stroke. When de-energized, the spindle of the NVF24-MFT-T retracts and that the NVF24-MFT-E-T extends.

Functional reliability

The actuator is short-circuit-proof and protected against polarity reversal. The stroke is adapted automatically.

Manual operation

Inserting a 5 mm hexagonal key and turning it clockwise causes the spindle of the actuator to emerge from the housing (an extending action). The spindle will remain in that position until the power supply is applied (the controller has first priority).

Position indication

The stroke is indicated mechanically on the UNV-... mounting bracket and the maximum stroke adjusts itself automatically. There is a two-colour LED status indicator under the cover of the housing.

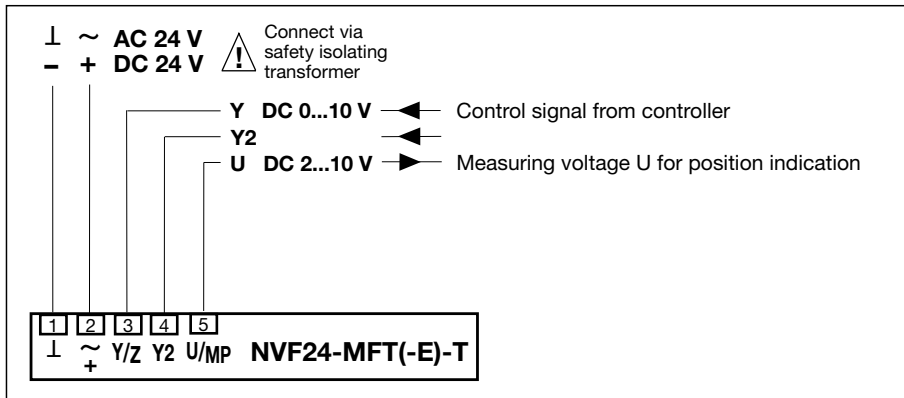
Safety note

The linear actuator contains no components which the user can replace or repair.

Dimensions

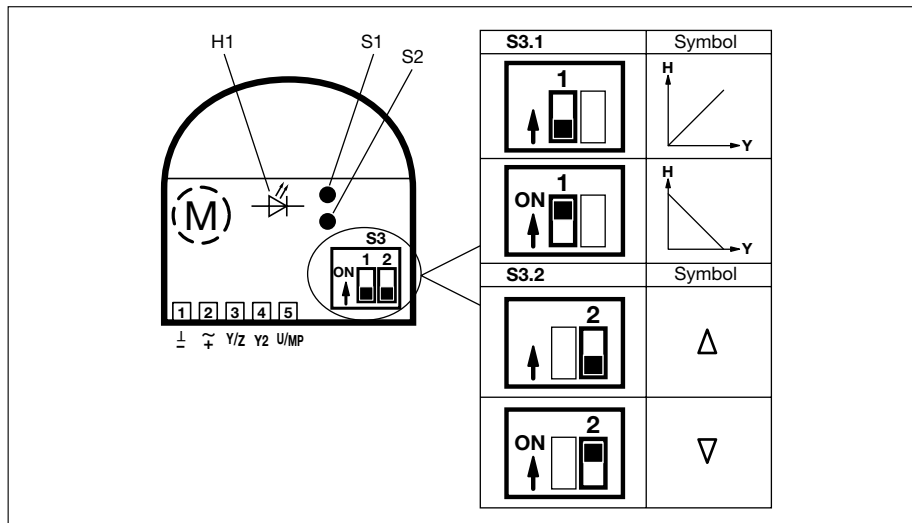
The dimensions depend on the type of UNV-... mounting bracket used; see from Page 22.

Wiring diagram



Technical data	NVF24-MFT-T	NVF24-MFT-E-T
Emergency function	retracting	extending
Nominal voltage	AC 24 V 50/60 Hz, DC 24 V	
Nominal voltage range	AC 19.2...28.8 V DC 21.6...28.8 V	
For wire sizing	10 VA	
Power consumption	5.5 W	
Connecting	terminals 2 x 1.5 mm ² or 1 x 2.5 mm ²	
Control	DC 0...10 V @ 100 kΩ	
Operating range	DC 2...10 V for 0...100% stroke	
Position checkback	2...10 V @ 0.5 mA	
Uni-rotation	±5%	
Nominal stroke	20 mm	
Actuating force	800 N	
Manual operation	hexagonal key, self-resetting	
Running time	150 s	
Emergency operation	<1.5 s/mm	
Sound power level	max. 35 dB (A) max. 50 dB (A) emergency operation (spring)	
Position indication	mechanical 8...20 mm stroke (mounting bracket)	
Protection class	⚡ (safety extra-low voltage)	
Degree of protection	IP54	
Ambient temp. range	0°...+50°C	
Non-operating temp.	-40°...+80°C	
Humidity test	to EN 60730-1	
EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC	
Software	Class A to EN 60730-1	
Mode of operation	Type 1 to EN 60730-1	
Maintenance	maintenance-free	
Weight	2.0 kg (without mounting bracket UNV)	

Arrangement of the operating controls



Under the cover of the actuator are the terminals for connecting the lead, the control devices S1, S2 and S3 and the LED indicator H1.

By setting the slide switch S3 appropriately or by pressing push-buttons S1 and S2 it is possible to configure the actuator very simply on-site to suit actual requirements when changes from the factory settings are needed.

LED indicator H1
see details on Page 20

Functional description S

Function	Description	Switch	Bold type in the table means standard factory setting.	
Test	The valve covers the full stroke in maximum running time and verifies the adapted stroke to ensure that both end-points are reached ($H = 0\%$ and $H = 100\%$).	S1 press		
Adaptation	The effected stroke (between the two mechanical end-stops of the valve) is acquired as 100% stroke and stored in the micro-processor. The control signal and running time are then matched to this 100% stroke.	S2 press		
Direction of stroke	The direction of travel in response to the control signal	S3.1	Symbol	Effect
direct	0% control signal corresponds to 0% position checkback. (The actuating spindle is then retracted or extended depending on the choice of closing point).	OFF		
inverted	0% control signal corresponds to 100% position checkback. (The actuating spindle is then retracted or extended depending on the choice of closing point).	ON		
Closing point valve	The closing point is when the actuating spindle is either retracted or extended. There is no flow through the valve control path.	S3.2	Symbol	Effect
up	The actuating spindle is retracted into the actuator and the valve stem is extended from the valve body. The position checkback shows 0% for direct travel.	OFF		
down	The actuating spindle is extended from the actuator and the valve stem is retracted into the valve body. The position checkback shows 0% for direct travel. (This setting is not necessary with Belimo Type H4..., H5..., H6... and H7.. globe valves.)	ON		1)

Only properly authorized and trained persons may change the settings of slide switch S3 and push-button S2.

1) Depending on the type of emergency function chosen, NVF24-MFT-T or NVF24-MFT-E-T, the electrical closing point is either identical to or opposite to the de-energized position of the actuator spindle. The type of actuator chosen depends on the design of valve involved and the required NO function (valve open when de-energized) or NC function (valve closed when de-energized).

MFT

Parameter	Standard	Variable
Control signal	DC 0...10 V	3-point, Open/Closed
Operating range	DC 2...10 V	Start point DC 0.5...30 V End point DC 2.5...32 V
Position checkback U_5	DC 2...10 V	Start point 0.5...8 V End point 1.5...10 V Parameterizable for fault alarm
Running time	150 s	(35)75...300 s ¹⁾

¹⁾ 35 s for 10 mm stroke

Multi-Function Technology allows optimum matching of parameters to the different needs of an installation. The parameters are either entered as standard values at the factory or altered subsequently using an MFT-H adjuster.

Bold type in the table means standard factory setting..

Wiring diagram NV24-3-T, NV230-3-T

3-point		Symbols		Signal «direct»	Signal «inverted»	Closing point «up»	Closing point «down»	Control signal min. (e.g. Y = 2 V)	Control signal max. (e.g. Y = 10 V)	Actuator spindle moves	
Actuating time	Closing point Valve									CCW NV	CW NV
				S1.1	S1.2			0	0	stationary	stationary
7.5 s/mm →	Δ	OFF		OFF		0	1	0	0	IN	OUT
	▽	OFF			ON	1	0	1	0	IN	OUT
						0	1				
						1	0			IN	OUT
4.5 s/mm →→	Δ		ON	OFF		0	1	0	1		OUT
	▽		ON		ON	1	0	1	0	IN	OUT
						0	1				
						1	0			IN	OUT

In the case of the classic 3-point actuator (NV..-3-T) the actuating time can be reduced from 7.5 s/mm to 4.5 s/mm by moving the slide switch 1.1 to the «ON» position. With less than 20% of the valves used the closing point is in the down position so the slide switch S1.2 can be set to the «ON» position.

Wiring diagram NV24-MFT(2)-T, NVF24-MFT(2)(-E)-T, NVG24-MFT2

Modulating		Symbols		Signal «direct»	Signal «inverted»	Closing point «up»	Closing point «down»	Control signal min. (e.g. Y = 2 V)	Control signal max. (e.g. Y = 10 V)	Measur. signal min. (e.g. U = 2 V)	Measur. signal max. (e.g. U = 10 V)	Actuator spindle moves	
Actuating time	Closing point Valve											CCW NV	CW NV
				S3.1	S3.2								
	Δ	OFF		OFF		x	x	x	x			IN	OUT
	▽	OFF			ON	x	x	x	x			OUT	OUT
	Δ		ON ¹⁾	OFF		x	x	x	x			IN	OUT
	▽		ON ¹⁾		ON	x	x	x	x			IN	OUT

1) If the controller produces a negative signal (<0.15 V) the slide switch S3.1 may not be set to the «ON» position if the parameters for the working range of the actuator have been assigned to 2...10 V (except when the start point in the parameterized working range is 0.5 V).

Setting the slide switch S3.1 to the «ON» position inverts the control signal so that the valve closes as the control signal is increased. This is a simple way of matching the sequences in the actuator. With less than 20% of the valves used the closing point is in the down position so the slide switch S3.2 must be set to the «ON» position. The position checkback signal U₅ is also matched to the closing point.

Wiring diagram NV24-MFT(2)-T, NVF24-MFT(2)(-E)-T, NVG24-MFT2

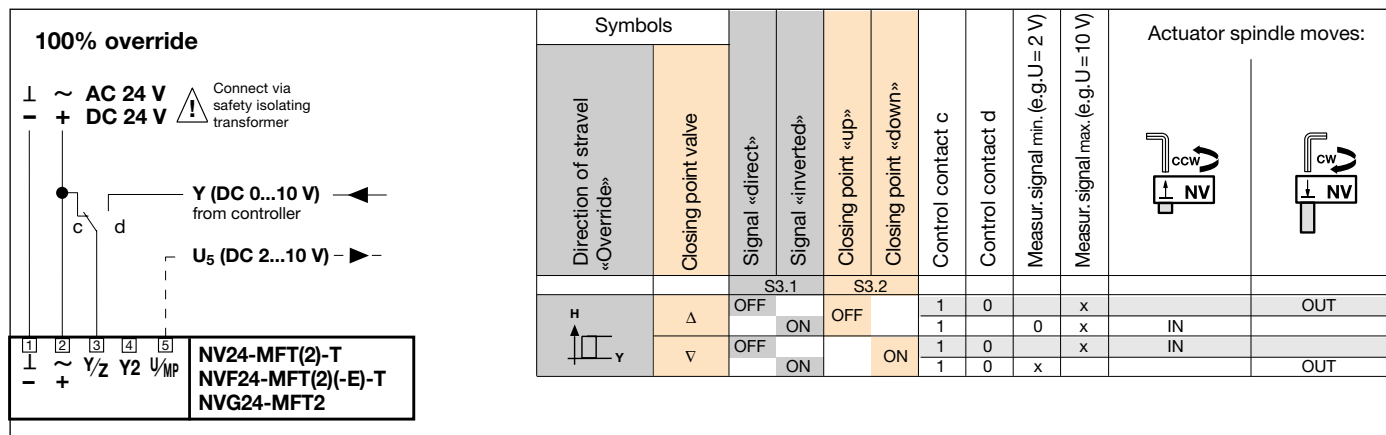
3-point parameterized MFT actuator		Symbols		Signal «direct»	Signal «inverted»	Closing point «up»	Closing point «down»	Control contact a (Y/Z)	Control contact b (Y/Z)	Measur. signal min. (e.g. U = 2 V)	Measur. signal max. (e.g. U = 10 V)	Actuator spindle moves	
Direction of stroke «3-point»	Closing point Valve											CCW NV	CW NV
				S3.1	S3.2								
	Δ	OFF		OFF		0	0	*)	*)			stationary	stationary
	▽	OFF			ON	1	0	m	m			OUT	OUT
						0	1	m	m			IN	IN
						1	0	m	m			OUT	OUT
	Δ		ON	OFF		1	0	m	m			IN	IN
	▽		ON		ON	0	1	m	m			OUT	OUT
						1	0	m	m			IN	IN
						0	1	m	m			OUT	OUT

*) Measuring signal U₅ according to position

m: When control contact a or b is in position 1 for longer than the running time (150 s)

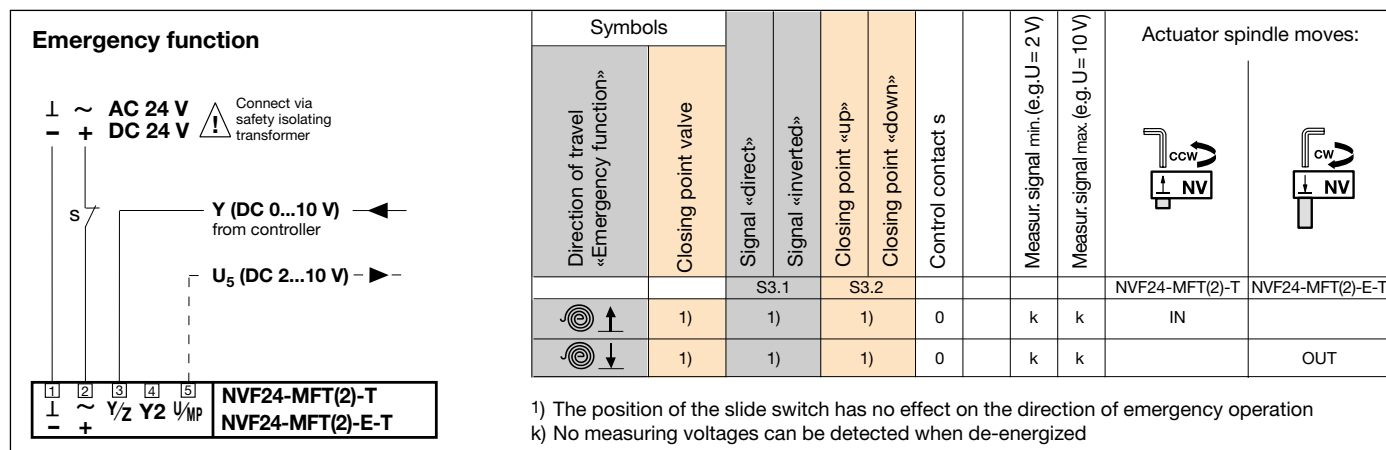
The MFT linear actuator NV..-MFT.. can also be used as a 3-point control device. However, in this case the actuator must be assigned parameters for 3-point control and be provided with a 4-wire connection. **Note:** It will only function with an **AC 24 V** power supply!

Wiring diagram NV24-MFT(2)-T, NVF24-MFT(2)(-E)-T, NVG24-MFT2



A typical use for 100% override is in a frost protection circuit. Whether or not the frost protection thermostat needs to interrupt the signal circuit to the controller «d» depends on the particular make of controller used (it is not necessary when the signal output of the controller is short-circuit-proof and protected against polarity reversal).

Wiring diagram NVF24-MFT(2)-T, NVF24-MFT(2)-E-T



If the power supply is interrupted the actuator spindle will move to the end stop. With Type NVF24-MFT(2)-T actuators the spindle retracts into the housing. With Type NVF24-MFT(2)-E-T actuators the spindle extends from the housing. Depending on the particular design of valve with the closing point in the up or down position, the valve behaves as either an NO device (open when de-energized) or an NC device (closed when de-energized).

Effect of the actuator spindle on different types of valve (choice of closing point)

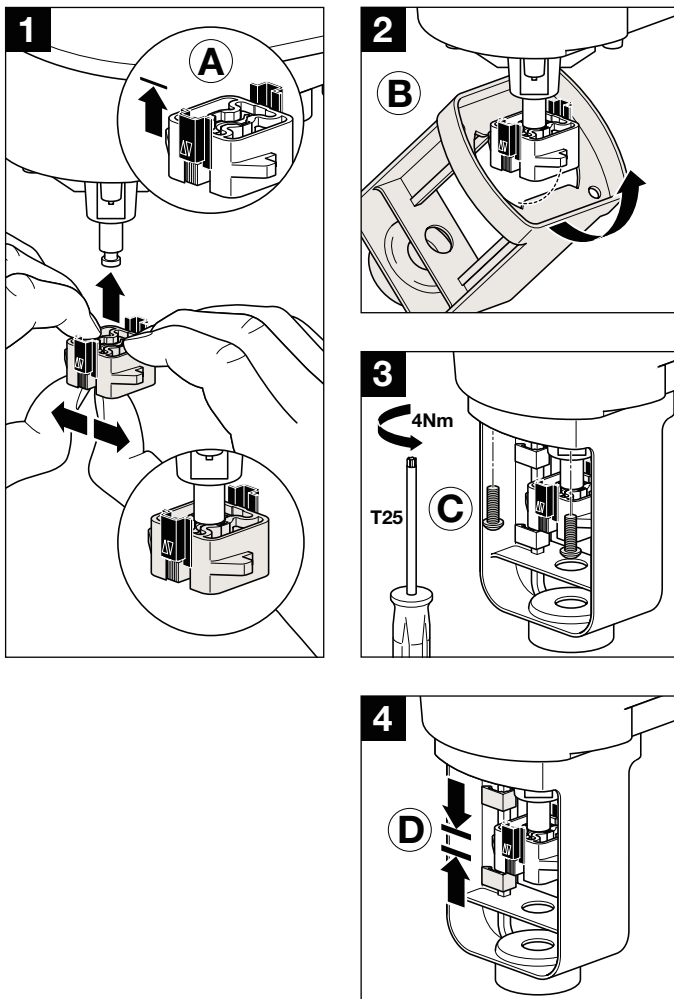
Valve	Closing point valve	Closing point setting linear actuator	Actuator spindle retracting		Actuator spindle extending	
	up	Δ		Control path valve closing (0% flow rate)		Control path valve opening (100% flow rate)
	down	▽		Control path valve opening (100% flow rate)		Control path valve closing (100% flow rate)
	up	Δ		Control path valve closing (0% flow rate), Bypass 100% open		Control path valve opening (100% flow rate), Bypass 0% closed

LED indicator H1

Green steady light	Actuator working properly
Green flashing light	Test run or adaptation with synchronization in progress
Red steady light	Fault; repeat adaptation
Red flashing light	After power interruption (> 2 sec.). By the next closing movement the valve will be automatically synchronized in the chosen closing point. The LED indicator will change from a red flashing into a green steady light.
Alternate red / green flashing light	Addressing via control system and operation of adaptation push-button S2 in progress

The actuator is maintenance-free. The twin-colour LED indicator is under the cover of the actuator; the indicator shows actual actuator status. It also allows simple commissioning if the factory settings need to be changed.

Assembling the actuator and mounting bracket NV../UNV..



❶ If the mounting bracket (B) has been supplied with the actuator (ordering example: NV24-3-T / UNV-002), first attach the coupling (A) to the actuator spindle.

❷ Next, slide the mounting bracket (B) on to the coupling.

❸ Secure the mounting bracket to the actuator with the 4 screws (C). Hexagon socket-head screws (Torx) are used in order to ensure secure attachment.

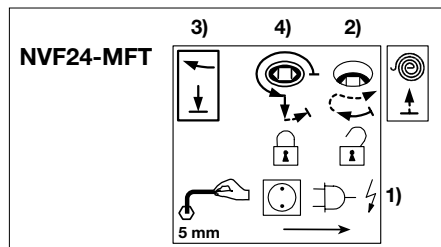
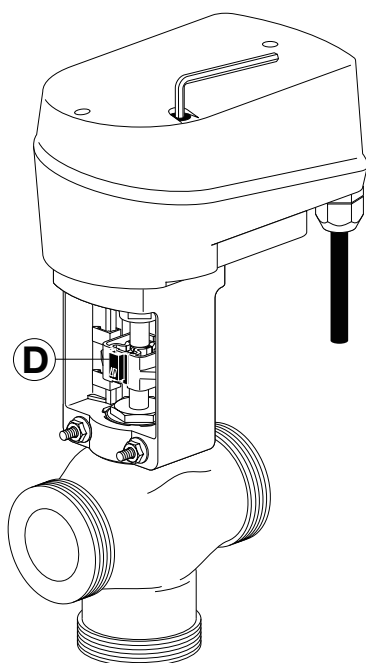
❹ Then slide the two «orange riders» [for mechanical position indication (D)] on to the spindle/stem coupling.

Manual operation of NV.. linear actuators

When an actuator is supplied together with a valve, but the two items are not assembled, the spindle of the actuator is extended to approximately the 3/4 stroke position. If necessary, the spindle can be

operated with a 5 mm (3/16") hexagon socket-head key (the key is not included with the actuator). The manual operating mechanism is over-load-proof. The spindle of the actuator will

remain at the manual setting until the power supply to the actuator is energized or, the next time the power supply is interrupted, it will move to whichever end position has been selected.



1) Isolate the actuator from the power supply

2) Disengaging manual operation of the NVF24-MFT

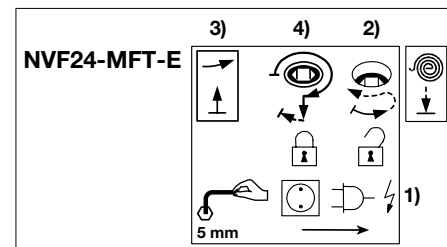
Turn the hexagonal key clockwise through approx. 45° until resistance is encountered. Then lift the key (approx. 7 mm) until the black socket for the key is level with the top of the housing cover. The spring mechanism will now rotate the key counter-clockwise and the actuator spindle will retract.

3) Manual operation of the NVF24-MFT

Turning the hexagonal key clockwise causes the actuator spindle to extend; it must be stopped at the required position of lift.

4) Locking manual operation of the NVF24-MFT

Turn the hexagonal key back 3/4 turn counter-clockwise and then press it down into the cover of the housing (the black socket will move inwards approx. 7 mm). Slight counter-clockwise rotation of the key will then lock the manual operating mechanism in position.



1) Isolate the actuator from the power supply

2) Disengaging manual operation of the NVF24-MFT-E

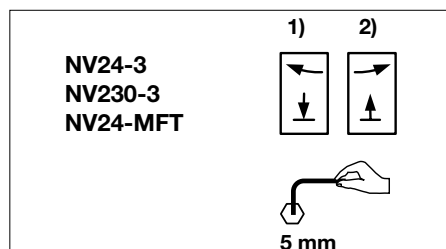
Turn the hexagonal key counter-clockwise through approx. 45° until resistance is encountered. Then lift the key (approx. 7 mm) until the black socket for the key is level with the top of the housing cover. The spring mechanism will now rotate the key clockwise, the actuator spindle will extend fully, the position indicator (D) will move down and the valve can be coupled up.

3) Manual operation of the NVF24-MFT-E

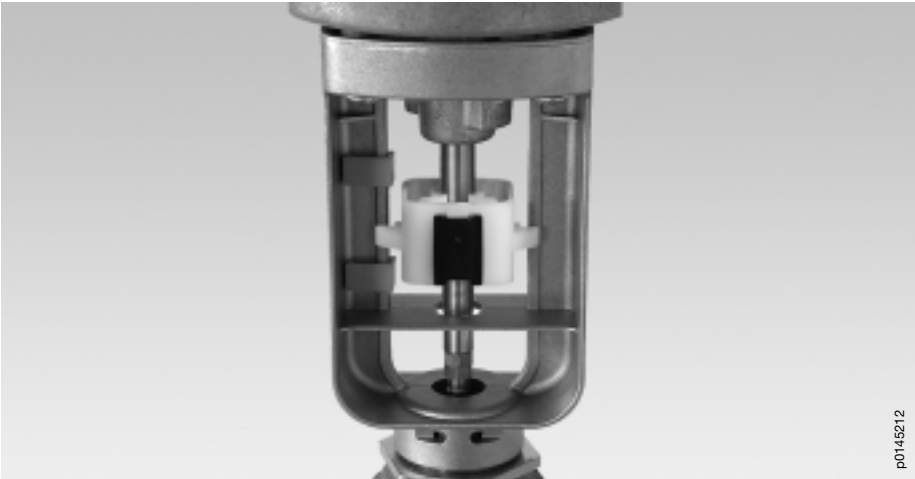
Turning the hexagonal key counter-clockwise causes the actuator spindle to retract; it must be stopped at the required position of lift.

4) Locking manual operation of the NVF24-MFT-E

Turn the hexagonal key back 3/4 turn clockwise and then press it down into the cover of the housing (the black socket will move inwards approx. 7 mm). Slight clockwise rotation of the key will then lock the manual operating mechanism in position.



Turning the hexagon socket-head key clockwise 1) causes the actuator spindle to extend; turning it counter-clockwise 2) causes it to retract.



Mounting bracket UNV-001
suitable for Siebe globe valves
of nominal lift up to 15 mm (1/2")

- In combination with Belimo linear actuators**
- NV24-3-T AC/DC 24 V (P.12)
 - NV230-3-T AC 230 V (P.12)
 - NV24-MFT-T AC/DC 24 V (P.14)
 - NV24-MFT2 AC/DC 24 V (P.14)
 - NVG24-MFT2 AC/DC 24 V (P.14)
 - NVF24-MFT-T AC/DC 24 V (P.16)
 - NVF24-MFT-E-T AC/DC 24 V (P.16)

Siebe valves

Valve	2-way	DN	3-way	DN
Type with closing point up Δ	VB7213	1/2" ... 2"	VB7313	1/2" ... 2"
Type with closing point down ∇	VB7223	1/2" ... 2"	VB9000	1/2" ... 1 1/4"
Temperature of medium	2...120°C			

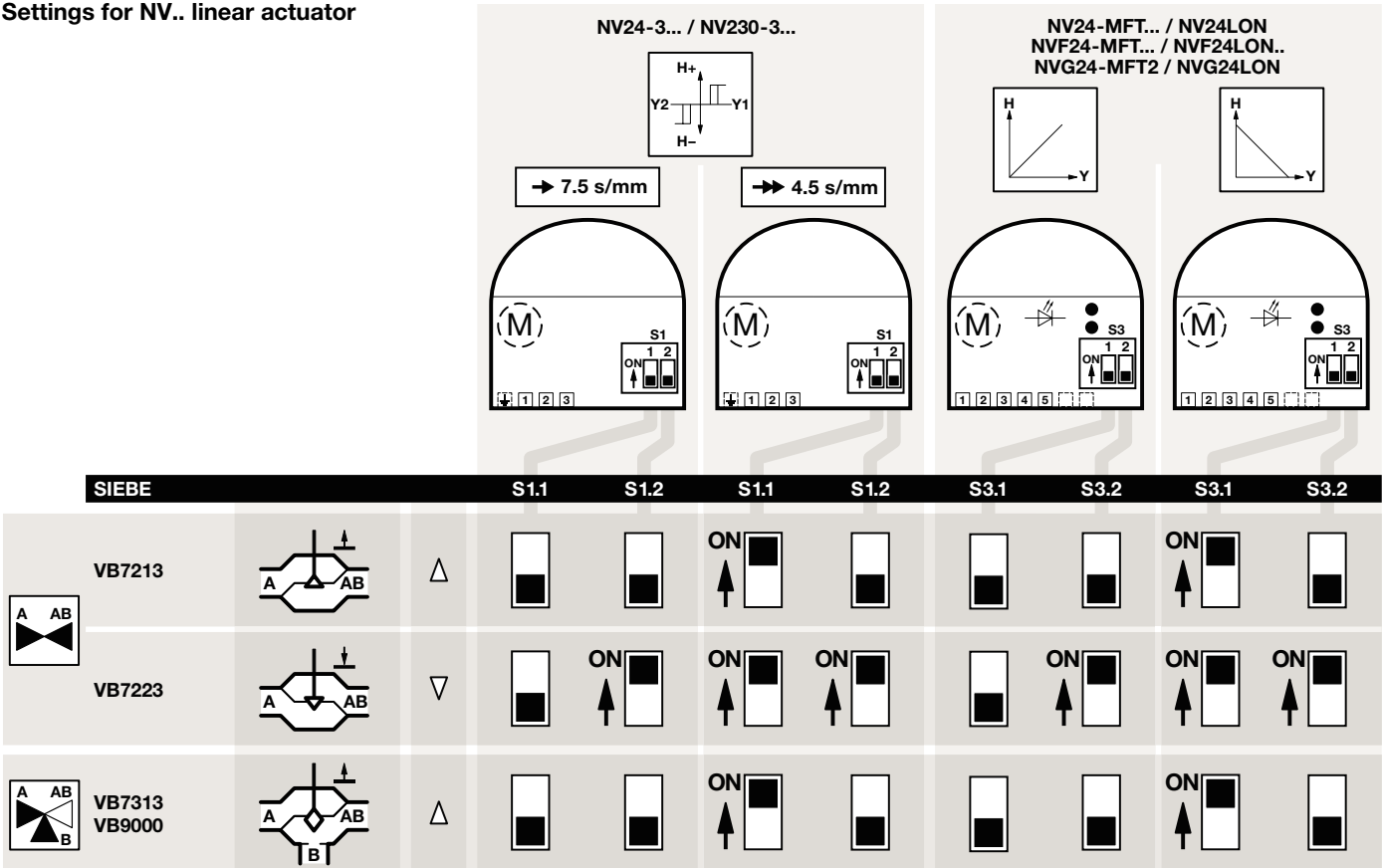
Mounting bracket materials

Mounting bracket	die-cast aluminium
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.22 kg

Applications
Siebe Series VB7000 and VB9000 valves are easy to motorize using a Type NV..-T linear actuator and a UNV-001 mounting bracket.

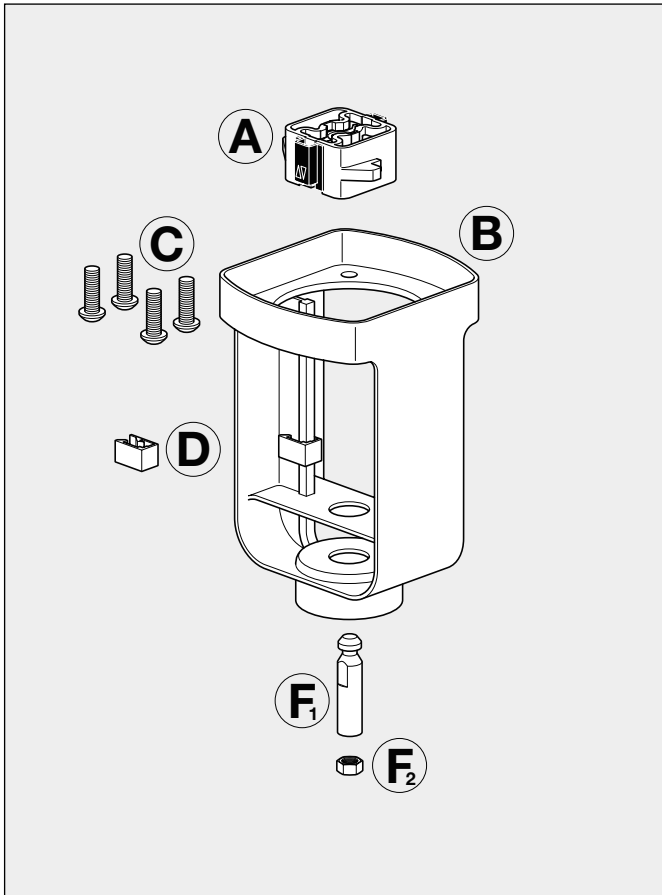
Product features
The UNV-001 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Siebe valve. The mounting bracket screws directly on to the thread on the neck of the Siebe valve. The stem adapter attaches to the stem of the valve and the connection to the actuator spindle is semi-automatic by means of the stem coupling.

Settings for NV.. linear actuator

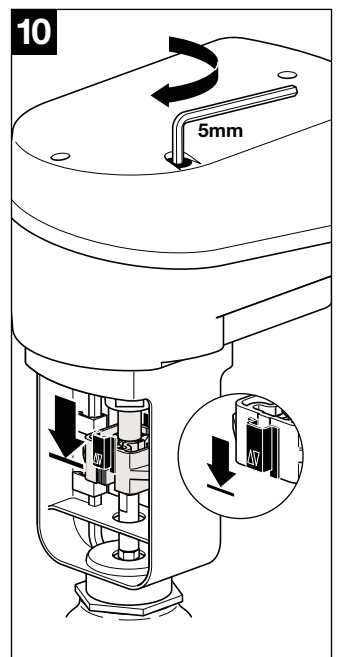
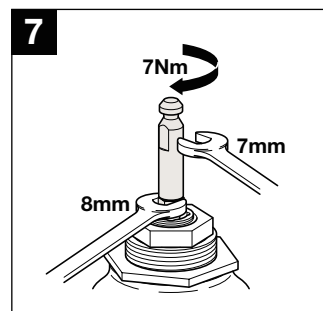
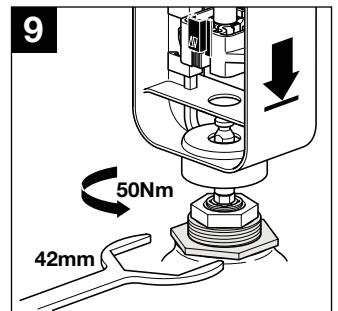
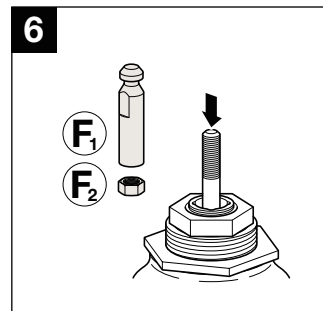
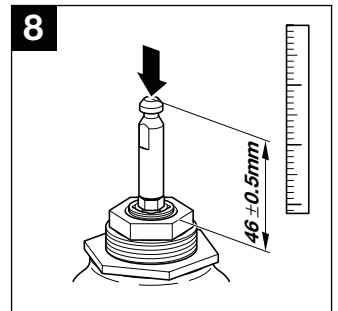
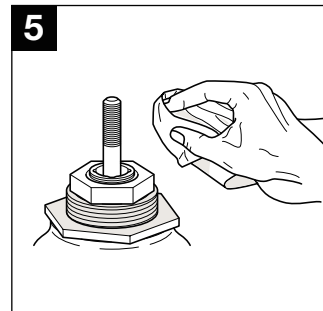


Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV..-T).

Assembly instructions NV..+UNV-001



Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

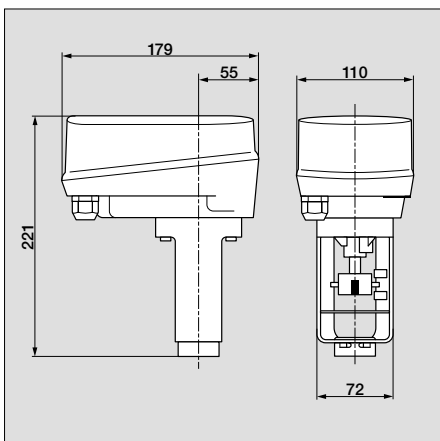


The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-002

suitable for Belimo globe valves
of lift 10...20 mm

In combination with Belimo
linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)
NVF24-MFT-E-T	AC/DC 24 V	(P.16)

Applications

Belimo Series H4, H5, H6 and H7 valves
are easy to motorize using a Type NV..-T
linear actuator and a UNV-002 mounting
bracket.

Product features

The UNV-002 mounting bracket is secured
to the NV.. actuator by means of 4 screws.
The mounting bracket screws directly on
to the thread on the neck of the Belimo
valve. The connection between the valve
stem and the actuator spindle is semi-
automatic by means of the stem coupling.
The actuator and the mounting bracket
can be swivelled through 360° on the neck
of the valve.

Position indication

The stroke of the valve is indicated mech-
anically on the mounting bracket and the
maximum lift adjusts itself automatically.

Belimo valves

Valve	2-way	DN	3-way	DN
Type with closing point up	H4 H6	15...50 15...80	H5 H7	15...50 15...80
Temperature of medium	2...120°C			

Mounting bracket materials

Mounting bracket	die-cast aluminium
Stem adapter	stainless steel
Weight	0.22 kg

Settings for NV.. linear actuator

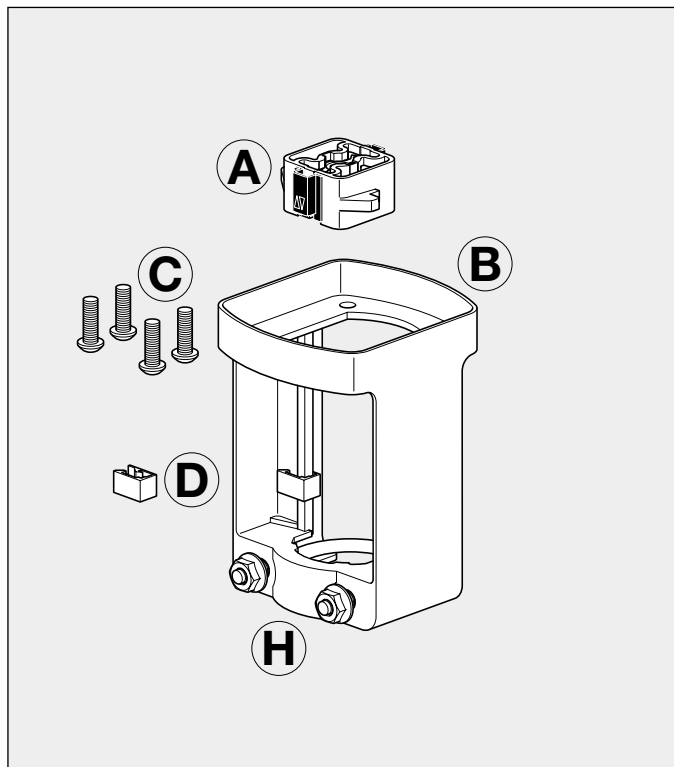
NV24-3... / NV230-3...

→ 7.5s/mm → 4.5s/mm

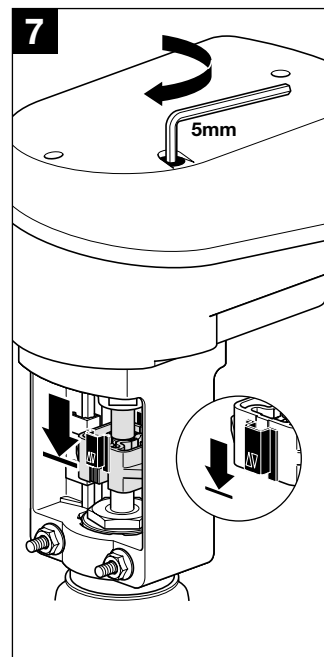
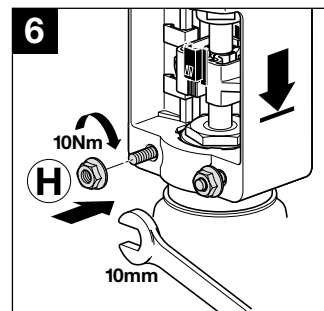
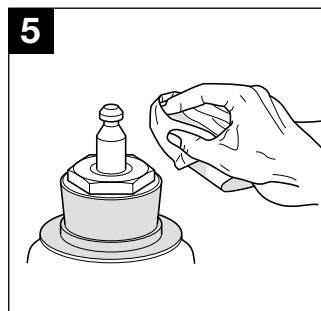
NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

BELIMO			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	H4 H6									
	H5 H7									

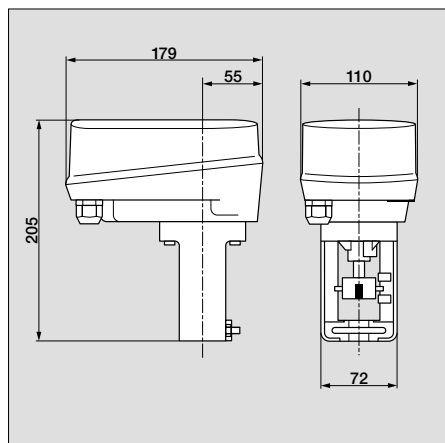
Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV..-T).

Assembly instructions NV..+UNV-002


Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)


Note

When a Belimo valve is ordered together with a Type NV.. linear actuator, the mounting bracket UNV-002 is included with it.

Dimensions with NV..-T linear actuator




Mounting bracket UNV-003
suitable for Siemens
(Landis & Staefa) globe valves
of nominal lift 20 mm

In combination with Belimo
linear actuators
NV24-3-T AC/DC 24 V (P.12)
NV230-3-T AC 230 V (P.12)
NV24-MFT-T AC/DC 24 V (P.14)
NV24-MFT2 AC/DC 24 V (P.14)
NVG24-MFT2 AC/DC 24 V (P.14)
NVF24-MFT-T AC/DC 24 V (P.16)

Siemens valves (Landis & Staefa)

Valve	2-way	DN	3-way	DN
Type with closing point up Δ	VVF21	20...80	VXF21	25...80
	VVF31	20...80	VXF31	25...80
	VVF40	15...80	VXF40	15...80
	VVF41	50	VXF41	50...(80)
	VVG41	15...50	VXG41	15...50
	VVF52	15...40	VXF61	15...25
	VPF61	15...25		
Temperature of medium	2...(120)150°C			

Applications
L&S Series V.F21, V.F31, V.F40, V.F41, V.G41, V.F52 and V.F61 valves are easy to motorize using a Type NV..-T linear actuator and a UNV-003 mounting bracket.

Product features

The UNV-003 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a L&S valve. The mounting bracket is bolted directly to the neck of the valve giving a friction-locked connection. The stem adapter is secured to the valve stem.

Mounting bracket materials

Mounting bracket	die-cast aluminium
Stem adapter	stainless steel/brass
Stem coupling	stainless steel
Weight	0.34 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

→ 7.5s/mm → 4.5s/mm

S1.1 S1.2 S1.1 S1.2

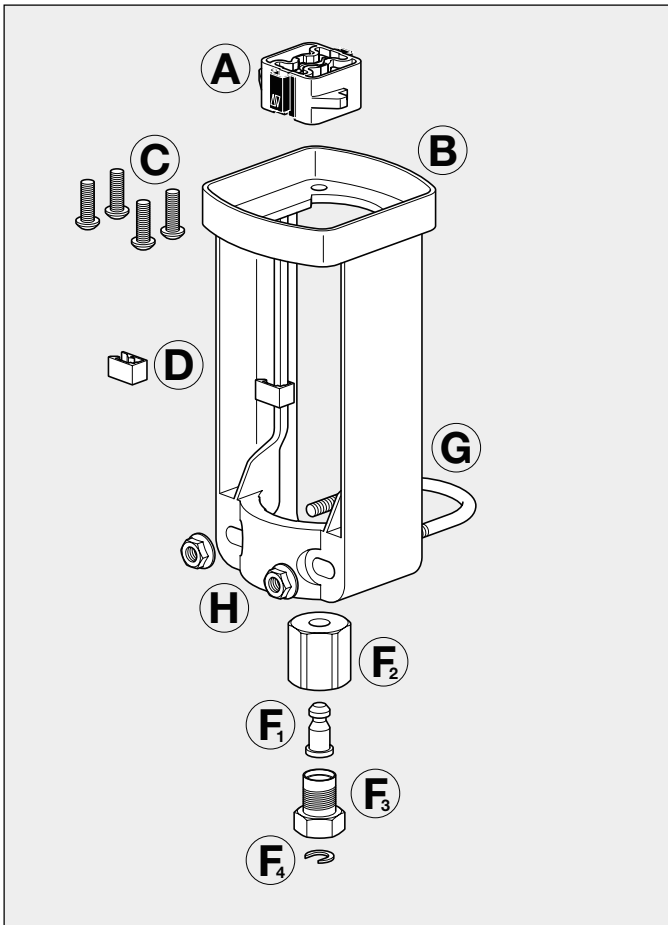
NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

S3.1 S3.2 S3.1 S3.2

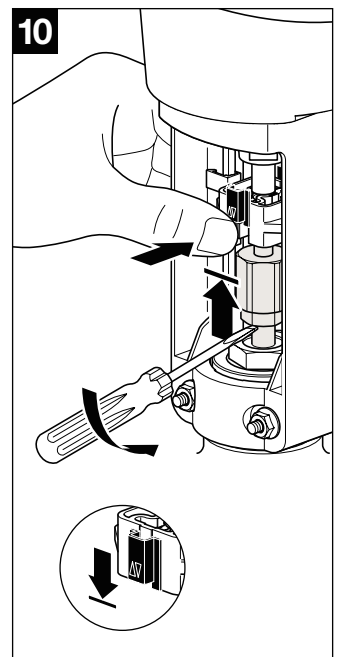
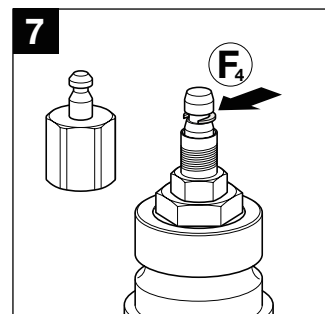
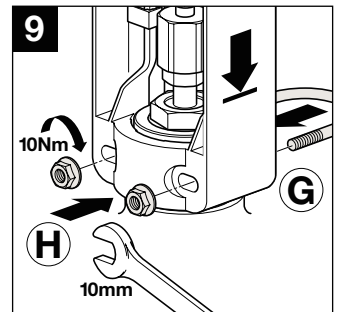
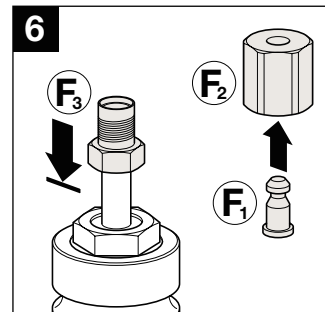
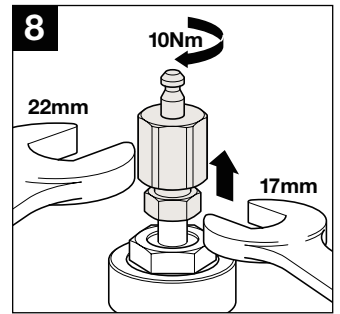
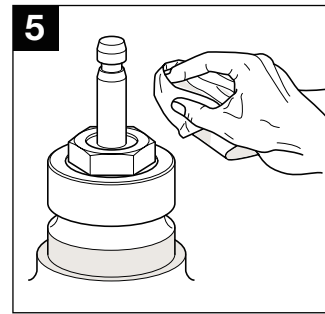
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Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV..-T).

Assembly instructions NV..+UNV-003



Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

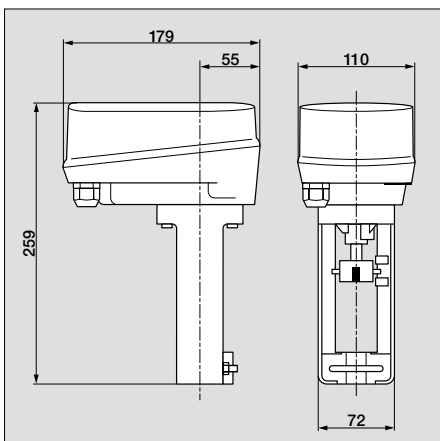


The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-012

suitable for Cazzaniga globe valves of nominal lift 20 mm

In combination with Belimo linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)

Applications

Cazzaniga Series V2BM and V3BM valves are easy to motorize using a Type NV..-T linear actuator and a UNV-012 mounting bracket.

Product features

The UNV-012 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Cazzaniga valve. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is then inserted into the valve stem and locked. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

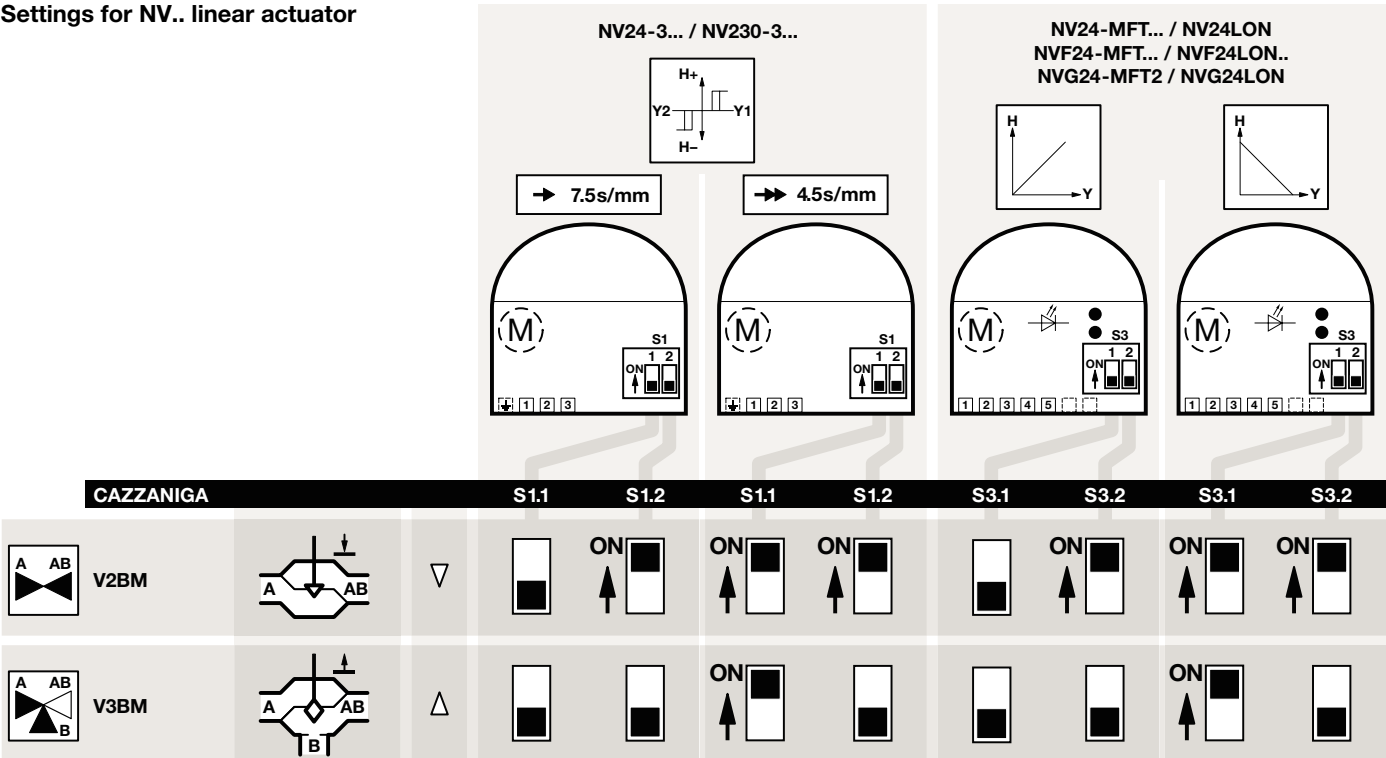
Cazzaniga valves

Valve	2-way	DN	3-way	DN
Type with closing point down ▽	V2BM	15...50		
Type with closing point up △			V3BM	15...50
Temperature of medium	2...(110)150°C			

Mounting bracket materials

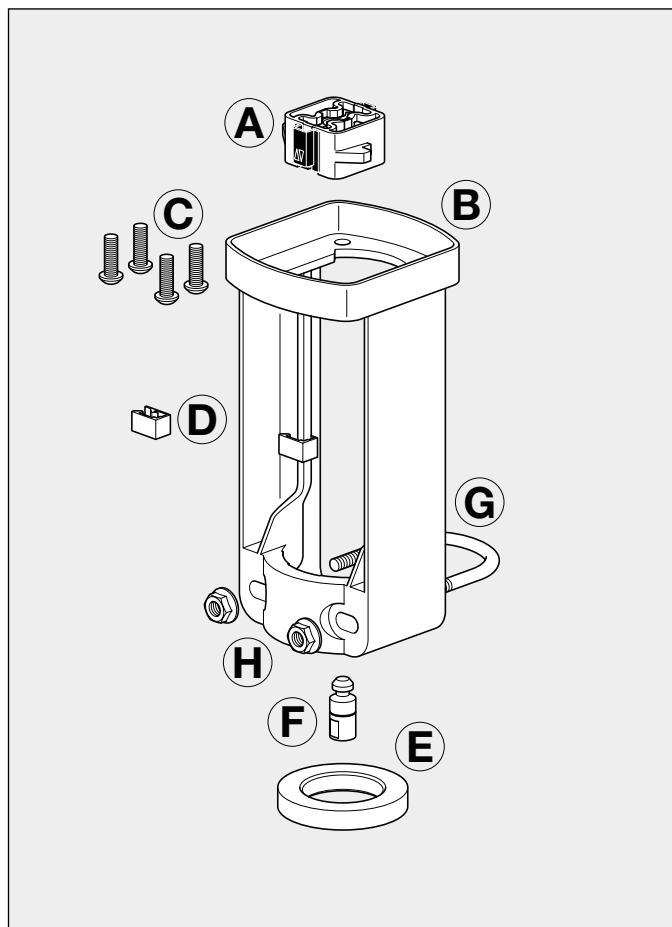
Mounting bracket	die-cast aluminium
Stem adapter	stainless steel/brass
Stem coupling	stainless steel
Weight	0.38 kg

Settings for NV.. linear actuator



Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV..-T).

Assembly instructions NV..+UNV-012

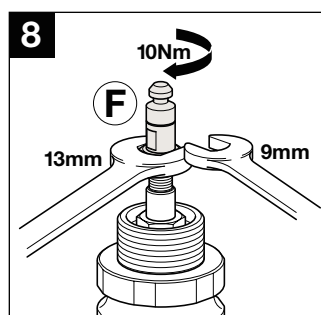
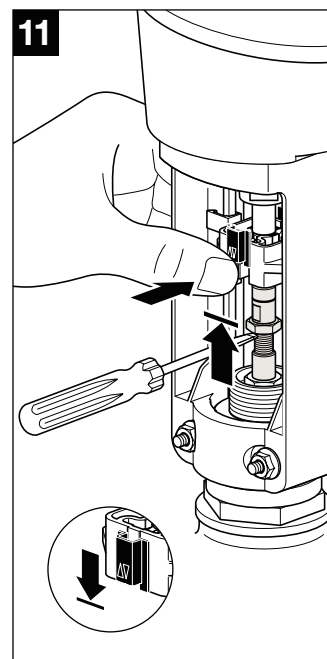
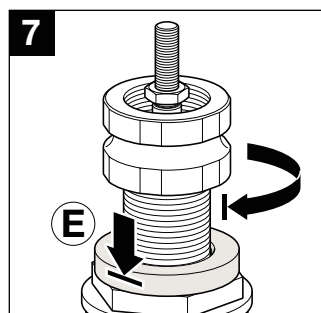
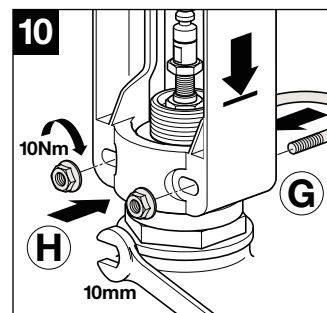
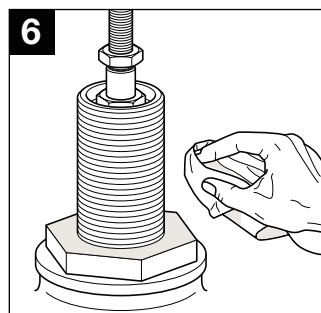
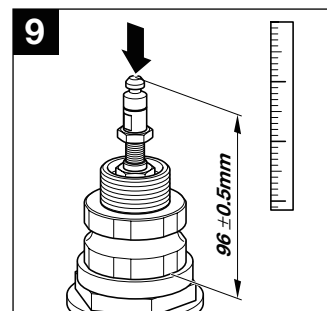
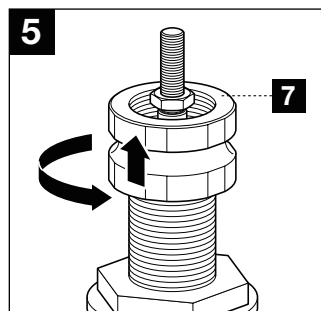
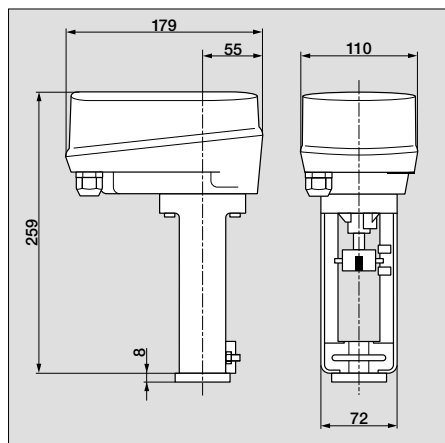


Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-015
suitable for Honeywell (Europe)
globe valves of nominal lift 20 mm

- In combination with Belimo
linear actuators
- | | | |
|-------------|------------|--------|
| NV24-3-T | AC/DC 24 V | (P.12) |
| NV230-3-T | AC 230 V | (P.12) |
| NV24-MFT-T | AC/DC 24 V | (P.14) |
| NV24-MFT2 | AC/DC 24 V | (P.14) |
| NVG24-MFT2 | AC/DC 24 V | (P.14) |
| NVF24-MFT-T | AC/DC 24 V | (P.16) |

Honeywell valves

Valve	2-way	DN	3-way	DN
Type with closing point down ∇	V5011R	15...50		
	V5049A	15...65		
	V5095A	20...80		
	V5328A	15...80		
Type with closing point up Δ			V5013A	15...50
			V5013R	15...50
			V5015	25...80
			V5050A	15...80
			V5329A	15...80
			V5329C	15...80
Temperature of medium	2...150°C			

Applications
Honeywell Series V5011R, V5049A, V5095A, V5328A, V5013A, V5013R, V5015, V5050A, V5329A and V5329C valves are easy to motorize using a Type NV...-T linear actuator and a UNV-015 mounting bracket.

Product features

The UNV-015 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Honeywell valve.
The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is then inserted into the valve stem and locked. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling.

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.5 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

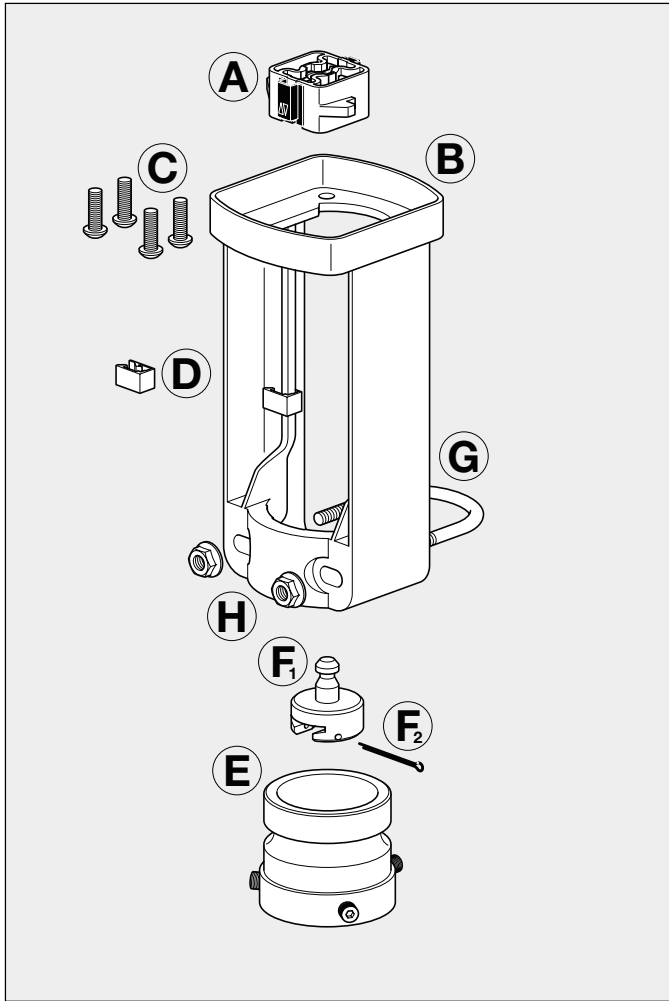
→ 7.5s/mm → 4.5s/mm

NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

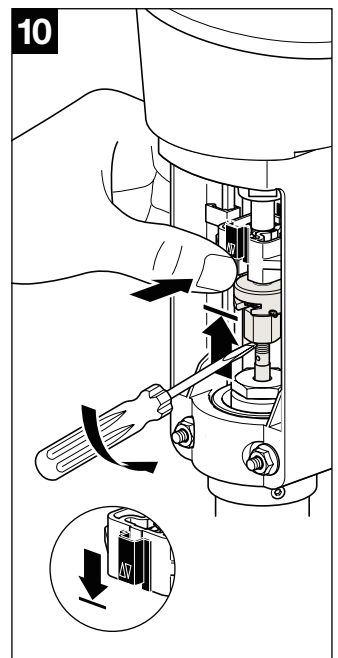
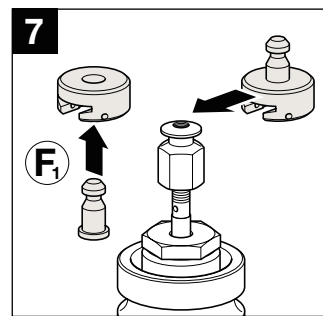
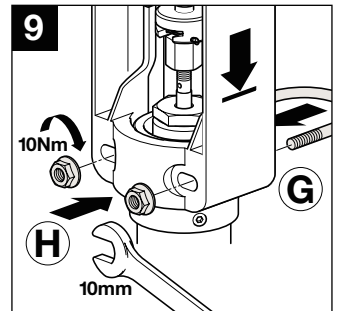
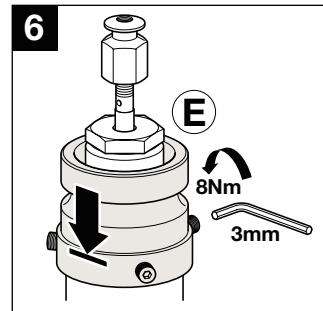
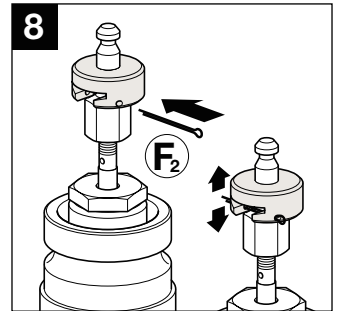
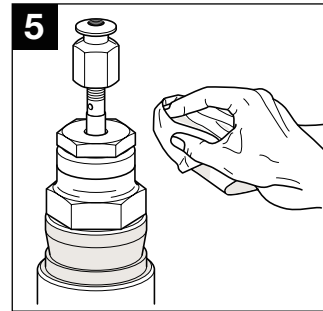
HONEYWELL			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	V5011R V5049A V5095A V5328A									
	V5013A V5013R V5015 V5050A V5329A V5329C									

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-015



Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

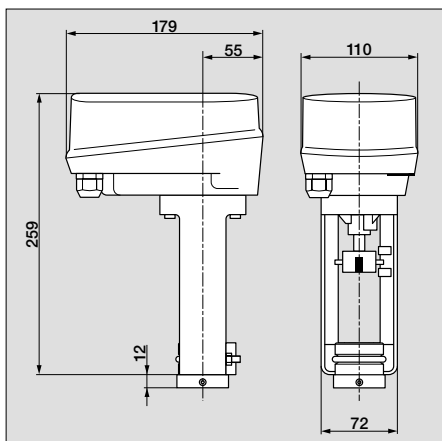


The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-017

suitable for tac globe valves
of nominal lift 20 mm

In combination with Belimo
linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)

Applications

tac Series V241, V341 and V294 valves are easy to motorize using a Type NV..-T linear actuator and a UNV-017 mounting bracket.

Product features

The UNV-017 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a tac valve.
The mounting bracket is bolted directly to the neck of the valve giving a friction-locked connection. The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling.

tac valves

Valve	2-way	DN	3-way	DN
Type with closing point up Δ	V241	15...50	V341	15...50
Type with closing point down ∇	V294	15...32		
Temperature of medium	2...150°C			

Mounting bracket materials

Mounting bracket	die-cast aluminium
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.3 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

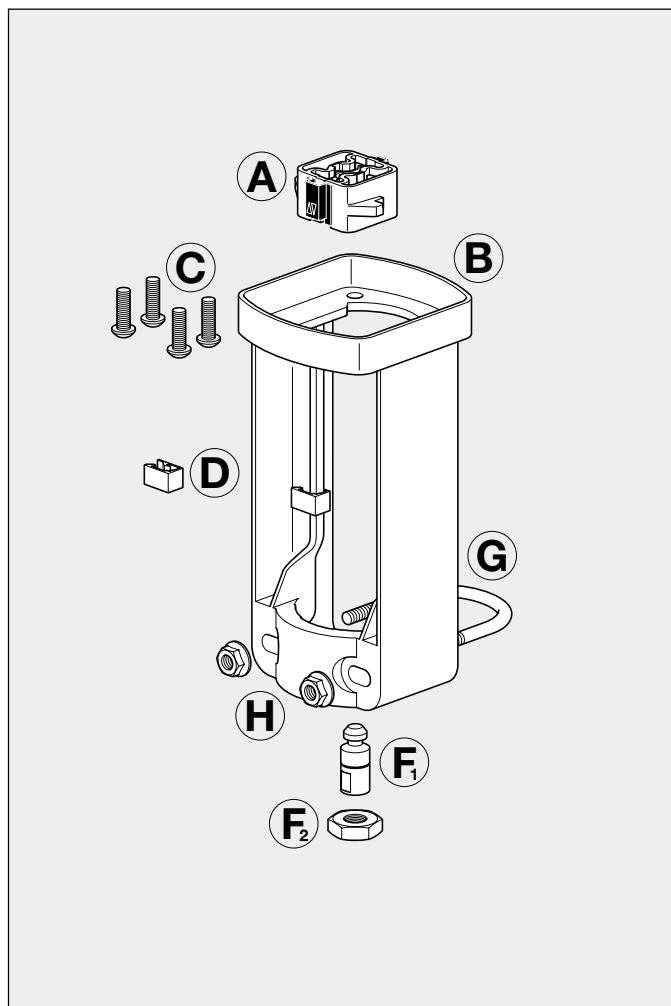
→ 7.5s/mm → 4.5s/mm

NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

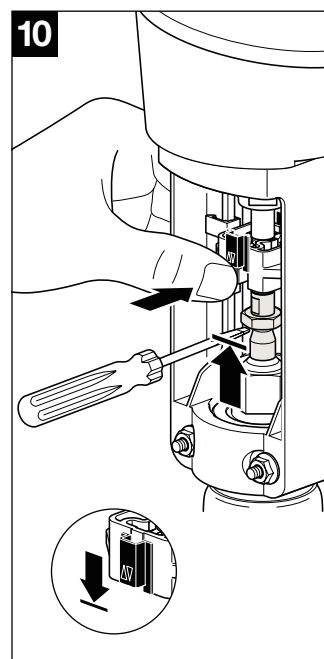
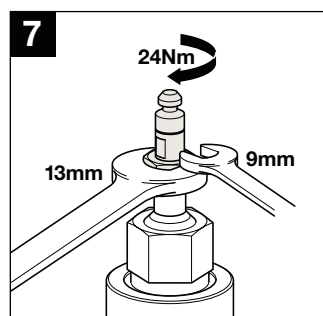
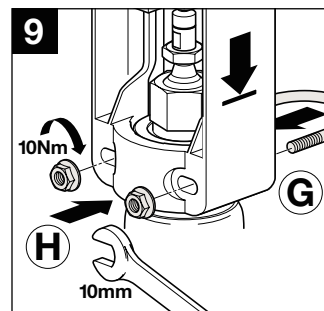
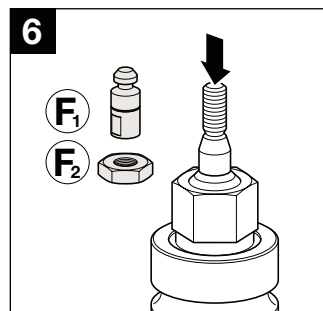
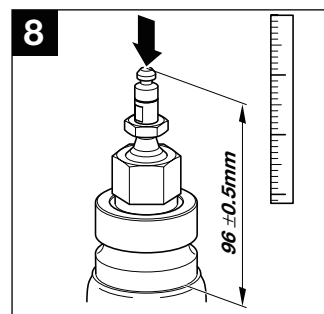
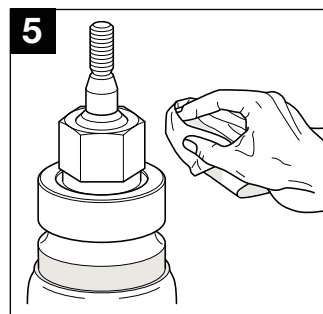
TAC			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	V241									
	V294									
	V341									

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV..-T).

Assembly instructions NV..+UNV-017



Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

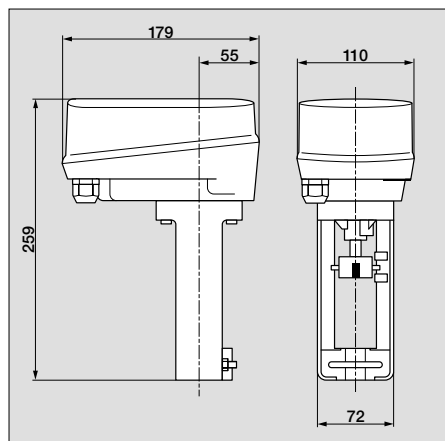


The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





p0151212

Sauter valves

Valve	2-way	DN	3-way	DN
Type with closing point up	V6R..F	15...50	B6R..F	15...50
	VXD..F	15...50	BXD..F	15...50
	VXE..F	15...50	BXE..F	15...50
	V6F..F	15...50	B6F..F	15...50
	V6G..F	15...50	B6G..F	15...50
	V6S..F	15...50	B6S..F	15...50
Temperature of medium	2...(130)150°C			

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck ring	stainless steel
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.38 kg

Mounting bracket UNV-018

suitable for Sauter globe valves of nominal lift 14 mm

In combination with Belimo linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)
NVF24-MFT-E-T	AC/DC 24 V	(P.16)

Applications

Sauter Series V6..., VX..., B6.. and BX.. valves are easy to motorize using a Type NV...-T linear actuator and a UNV-018 mounting bracket.

Product features

The UNV-018 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Sauter valve. The valve neck ring is inverted on to the neck of the valve, the mounting bracket is placed on the valve neck ring and bolted directly to the neck of the valve giving a friction-locked connection.

Settings for NV.. linear actuator

NV24-3... / NV230-3...

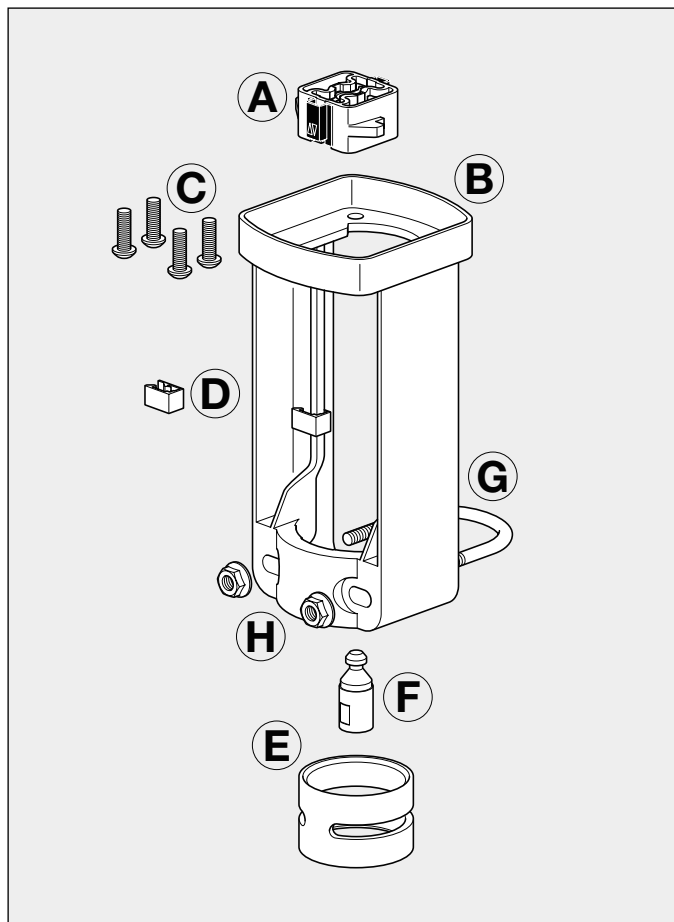
→ 7.5s/mm → 4.5s/mm

NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

SAUTER		S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
 V6R...F... VXD...F... VXE...F... V6F...F... V6G...F... V6S...F...									
 B6R...F... BXD...F... BXE...F... B6F...F... B6G...F... B6S...F...									

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-018



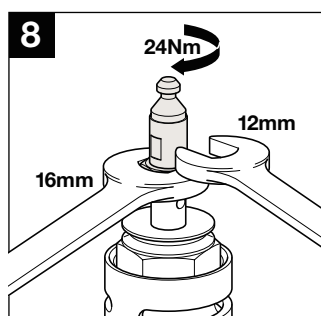
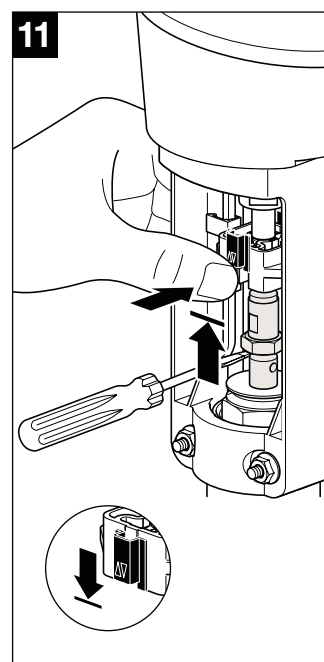
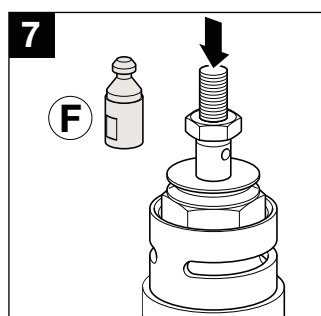
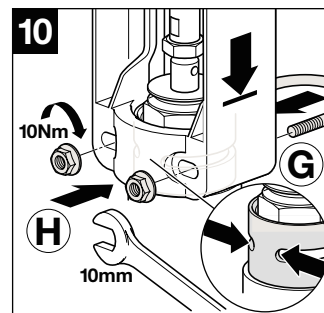
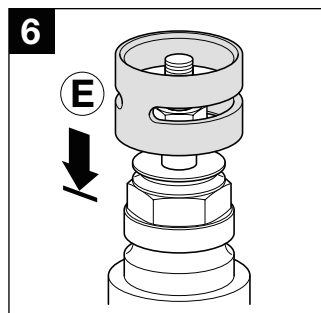
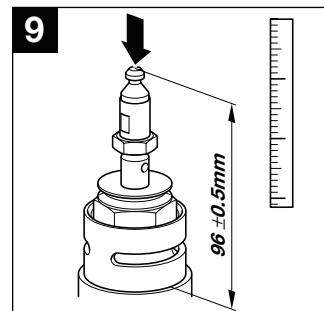
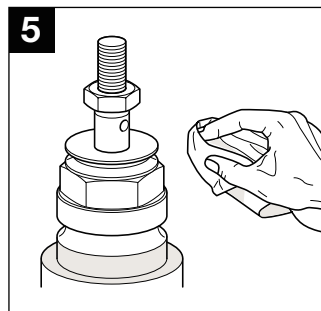
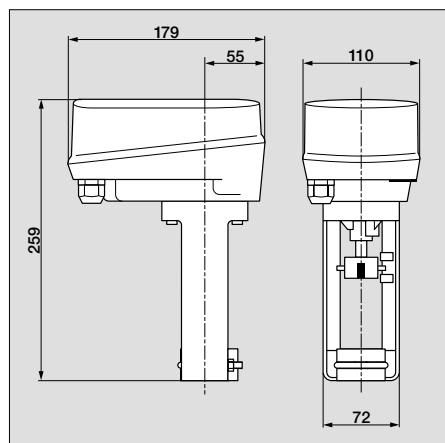
Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-019
suitable for Johnson Controls
globe valves of nominal lift 8 mm

- In combination with Belimo
linear actuators
- NV24-3-T AC/DC 24 V (P.12)
 - NV230-3-T AC 230 V (P.12)
 - NV24-MFT-T AC/DC 24 V (P.14)
 - NV24-MFT2 AC/DC 24 V (P.14)
 - NVG24-MFT2 AC/DC 24 V (P.14)
 - NVF24-MFT-T AC/DC 24 V (P.16)

Johnson Controls valves

Valve	2-way	DN*	3-way	DN*
Type with closing point up Δ	VG7401	15...20	VG7802	15...20
Type with closing point down ▽	VG7201	15...20		
Temperature of medium	2...120°C			

* DN 25...50 see UNV-030)

Applications
Johnson Controls Series VG72..., VG74... and VG78... valves up to DN 20 are easy to motorize using a Type NV...-T linear actuator and a UNV-019 mounting bracket.

Product features

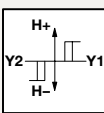
The UNV-019 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Johnson Controls valve.
The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is secured to the valve stem.

Mounting bracket materials

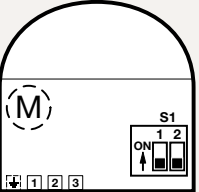
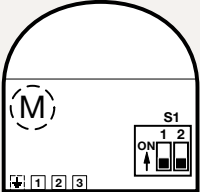
Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.62 kg

Settings for NV.. linear actuator

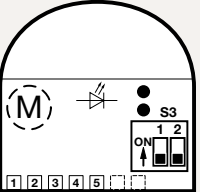
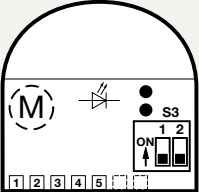
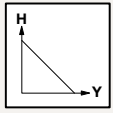
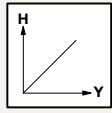
NV24-3... / NV230-3...

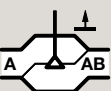
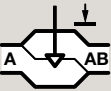
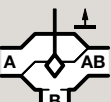


→ 7.5s/mm → 4.5s/mm



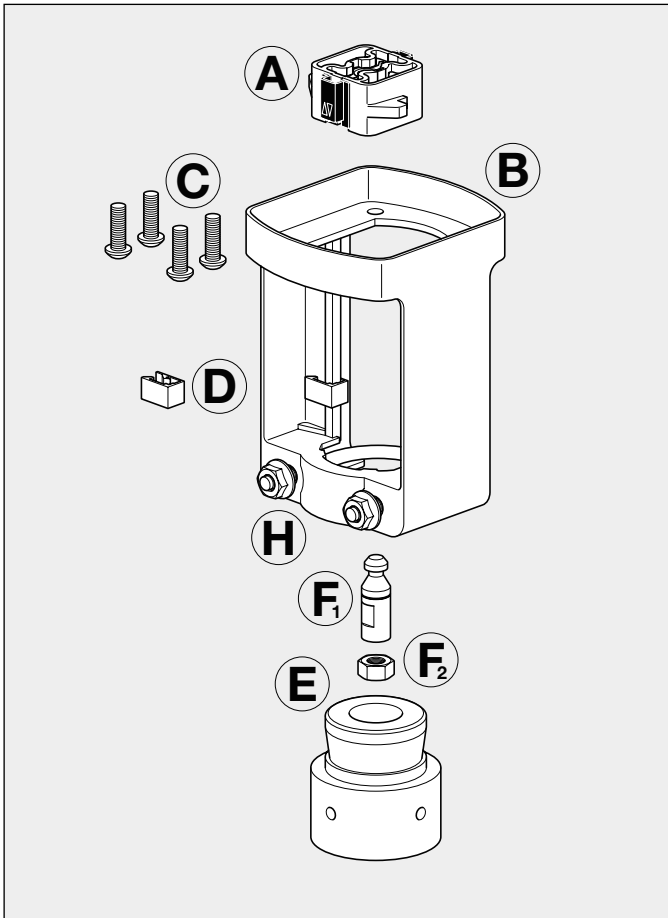
NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON...
NVG24-MFT2 / NVG24LON



JOHNSON			S1.1		S1.2			S3.1		S3.2		
	VG7401											
	VG7201											
	VG7802											

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-019



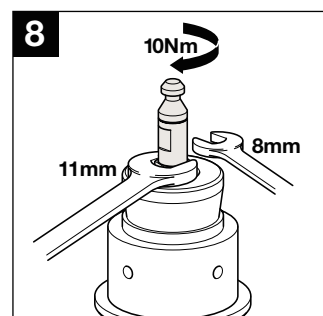
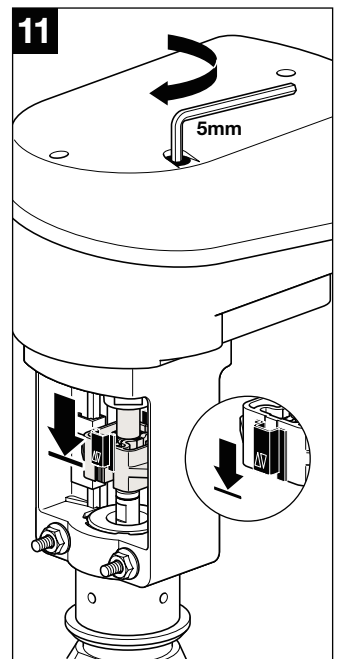
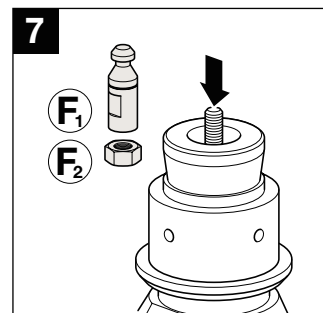
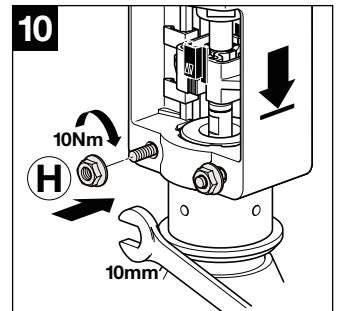
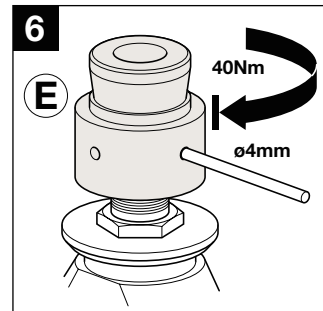
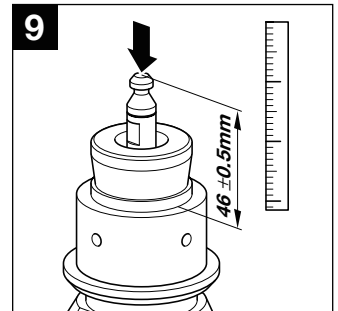
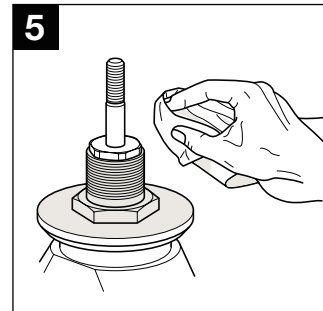
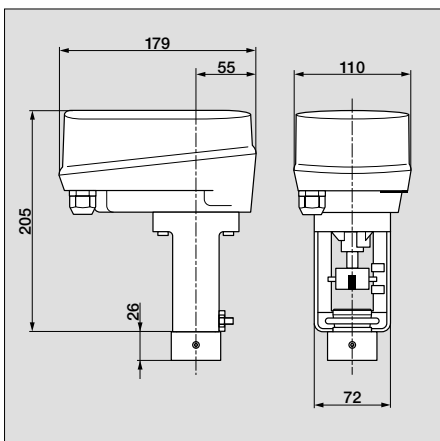
Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-023

suitable for Satchwell globe valves of lift 10...16 mm

In combination with Belimo linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)

Applications

Satchwell Series VZ, VSF, MZ and MJF valves are easy to motorize using a Type NV...-T linear actuator and a UNV-023 mounting bracket.

Product features

The UNV-023 mounting bracket is secured to the NV... actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Satchwell valve. The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling.

Satchwell valves

Valve	2-way	DN	3-way	DN
Type with closing point up	VZ VSF	1/2"...2" 15...25	MZ MJF	1/2"...2" 15...25
Temperature of medium	2...(130)150°C			

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.44 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

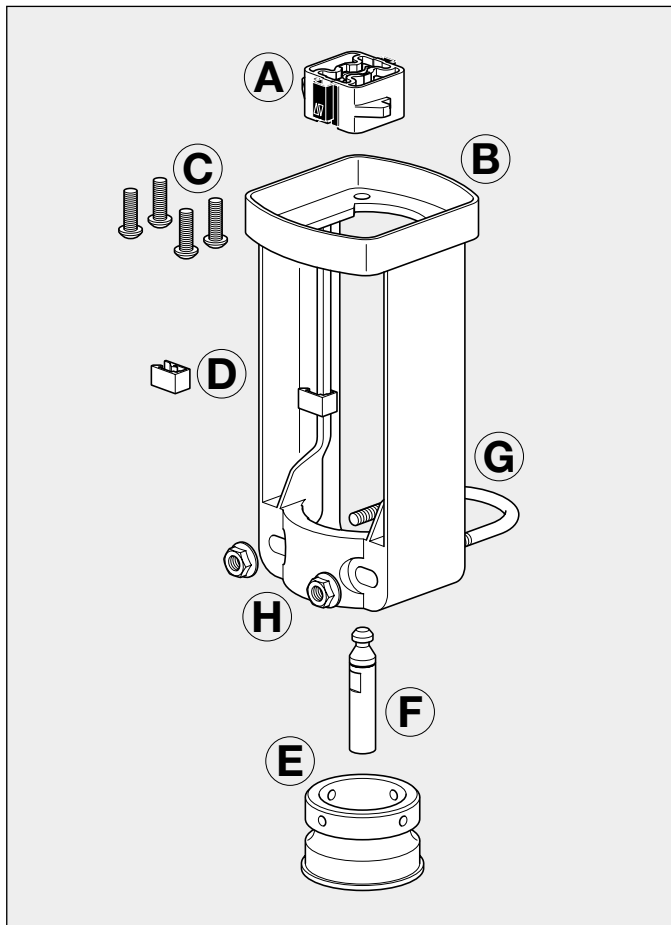
→ 7.5s/mm → 4.5s/mm

NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON...
NVG24-MFT2 / NVG24LON

SATCHWELL			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-023

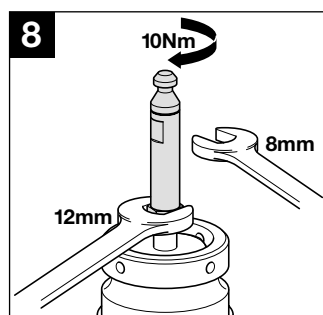
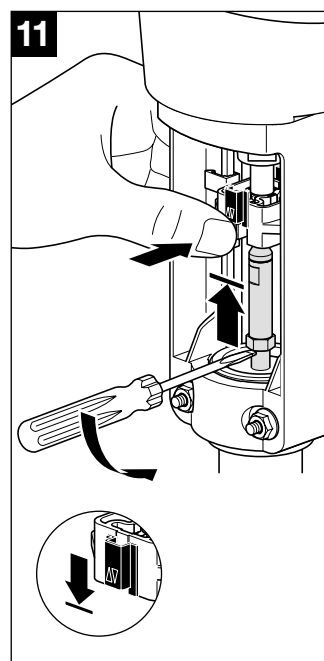
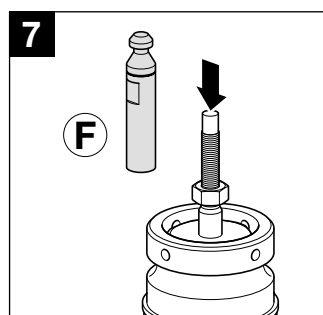
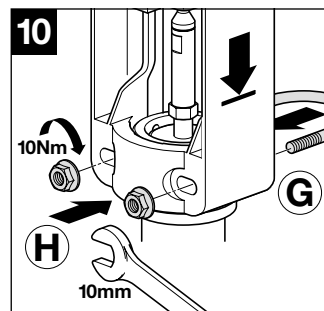
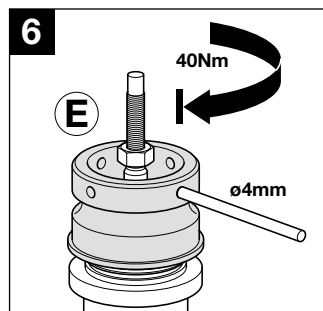
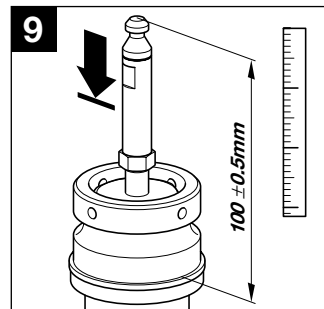
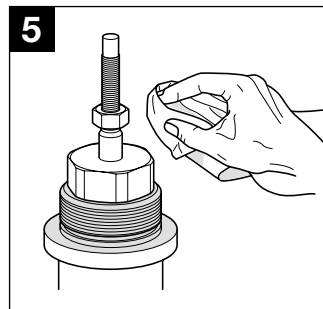


Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

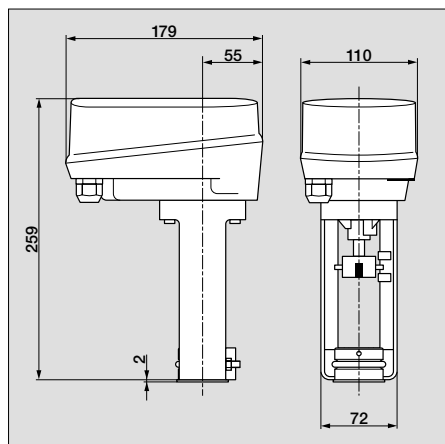
The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

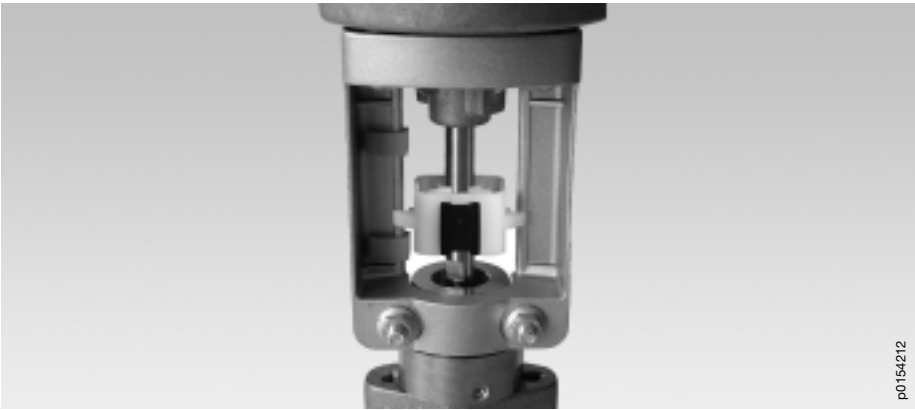
Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.



Dimensions with NV..-T linear actuator





Mounting bracket UNV-024
suitable for HORA globe valves
of nominal lift 16 mm

- In combination with Belimo
linear actuators
- NV24-3-T AC/DC 24 V (P.12)
 - NV230-3-T AC 230 V (P.12)
 - NV24-MFT-T AC/DC 24 V (P.14)
 - NVF24-MFT-T AC/DC 24 V (P.16)
 - NVG24-MFT-E-T AC/DC 24 V (P.16)

HORA valves

Valve		2-way	DN	3-way	DN
Type with closing point up Δ		BR206GG	15...50	BR306GG	15...50
		BR216GG	15...50	BR316GG	15...50
		BR216RGA	1/2"...2"	BR316RGA	1/2"...2"
Type with closing point down ∇		BR225RG	15...25		
Temperature of medium		2...120°C			

Applications
HORA Series BR206, BR216, BR306, BR316 and BR225 valves are easy to motorize using a Type NV...-T linear actuator and a UNV-024 mounting bracket.

Product features

The UNV-024 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a HORA valve.
The valve neck adapter is mounted on the neck of the valve with a friction-locked connection. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is secured to the valve stem.

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.48 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

→ 7.5s/mm → 4.5s/mm

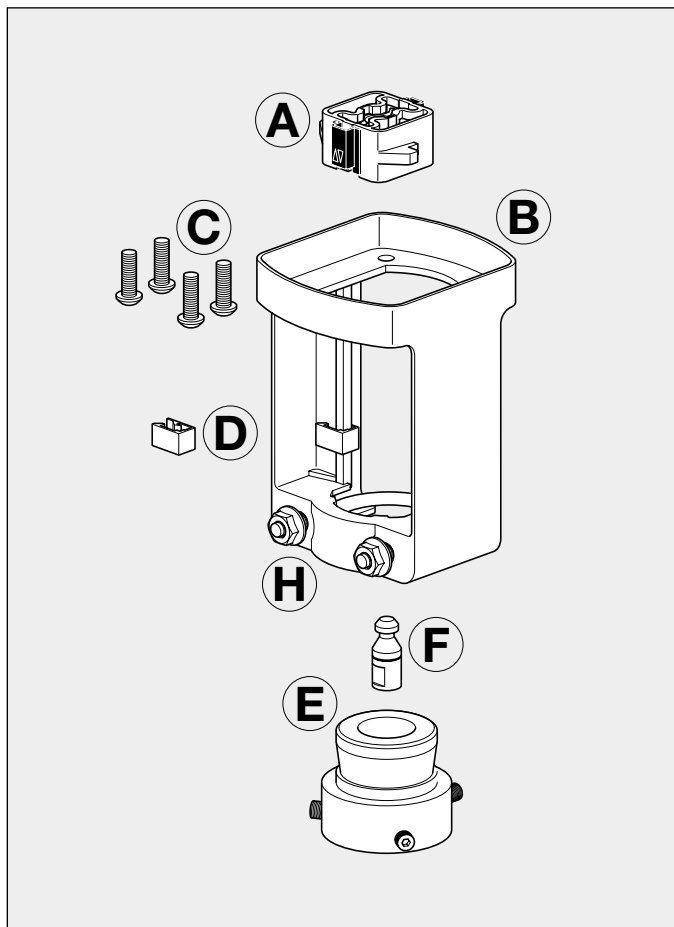
NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

S3

HORA			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	BR206GG BR216GG BR216RGA									
	BR225RG									
	BR306GG BR316GG BR316RGA									

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-024



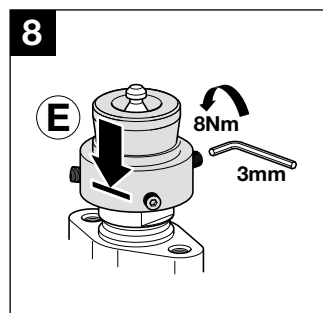
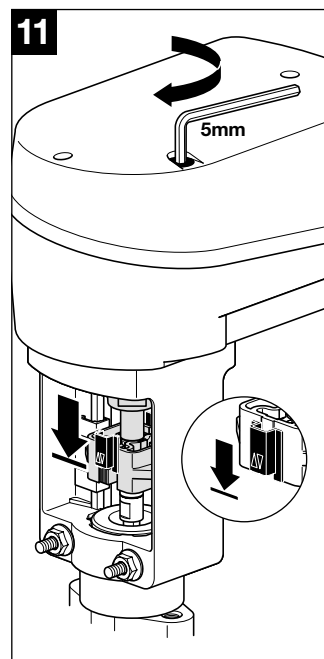
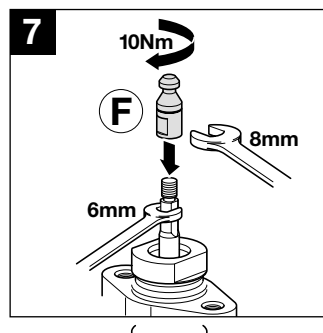
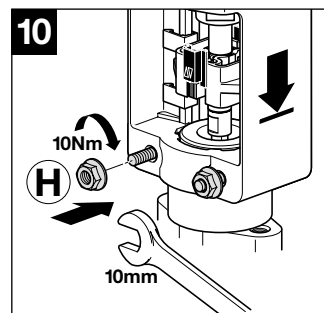
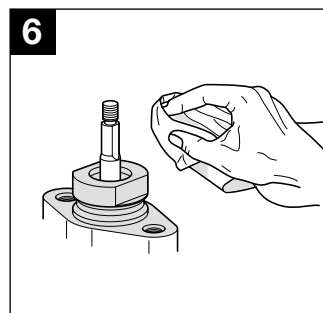
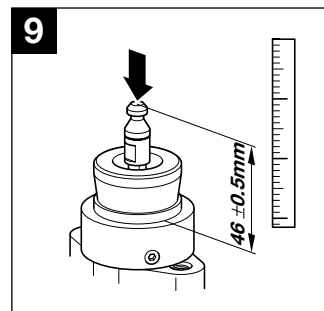
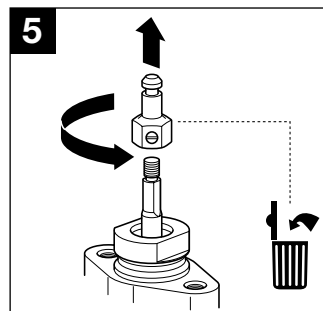
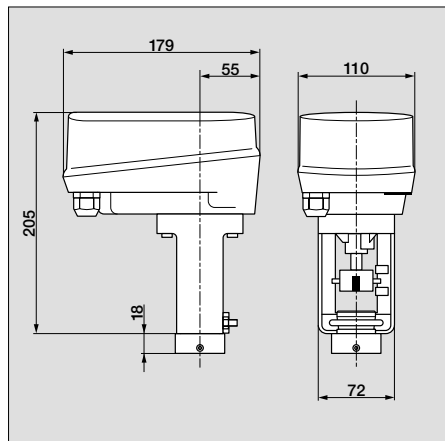
Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-025
suitable for Osby globe valves
of nominal lift 19 mm

- In combination with Belimo linear actuators
- | | | |
|---------------|------------|--------|
| NV24-3-T | AC/DC 24 V | (P.12) |
| NV230-3-T | AC 230 V | (P.12) |
| NV24-MFT-T | AC/DC 24 V | (P.14) |
| NV24-MFT2 | AC/DC 24 V | (P.14) |
| NVG24-MFT2 | AC/DC 24 V | (P.14) |
| NVF24-MFT-T | AC/DC 24 V | (P.16) |
| NVF24-MFT-E-T | AC/DC 24 V | (P.16) |

Applications
Osby Series MTV and MTR valves are easy to motorize using a Type NV..-T linear actuator and a UNV-025 mounting bracket.

Osby valves

Valve	2-way	DN	3-way	DN
Type with closing point up	MTV	15...50	MTR	15...50
Temperature of medium	2...150°C			

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.68 kg

Product features

The UNV-025 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Osby valve. The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling.

Settings for NV.. linear actuator

NV24-3... / NV230-3...

→ 7.5s/mm

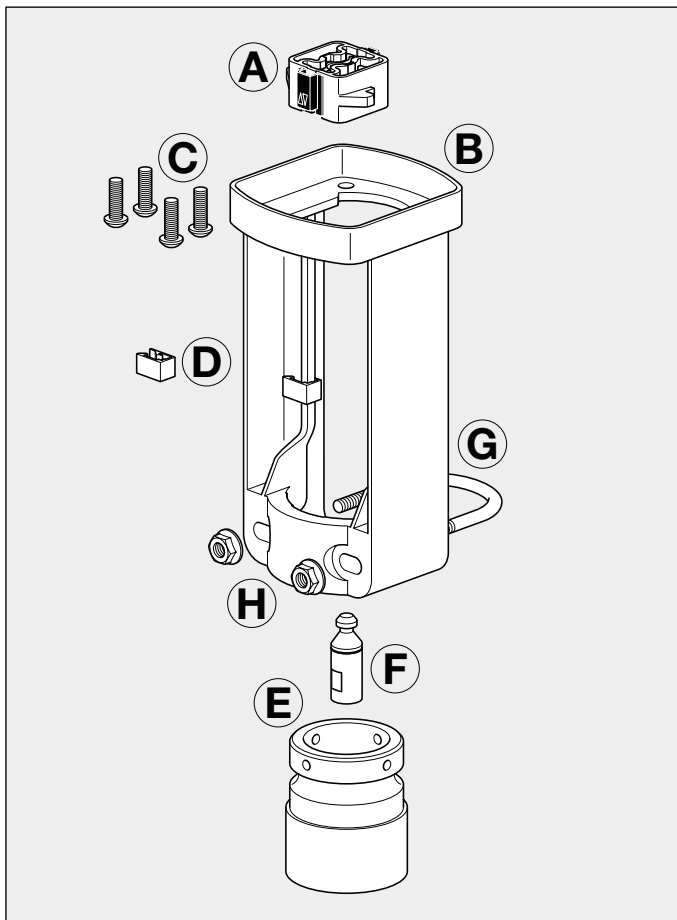
NV24-MFT... / NV24LON

→ 4.5s/mm

OSBY			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
MTV										
MTR										
MTV MTR	DN 15 ... 25 DN 15 ... 25						F < 750N F < 750N		MFT-H F=75% MFT-H F=75%	

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV..-T).

Assembly instructions NV..+UNV-025



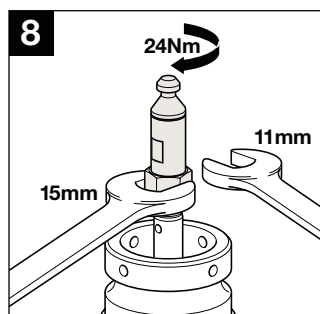
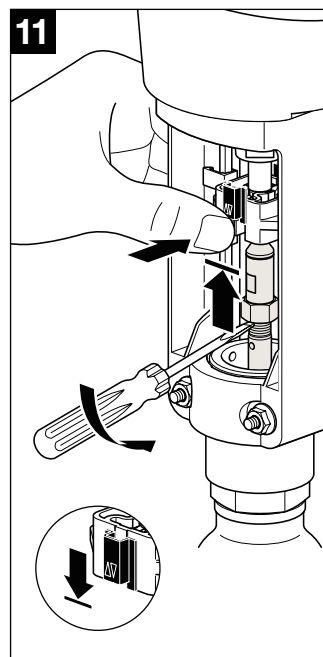
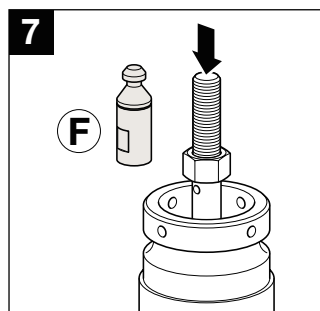
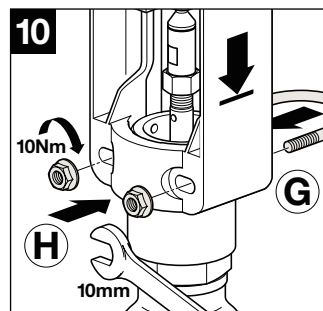
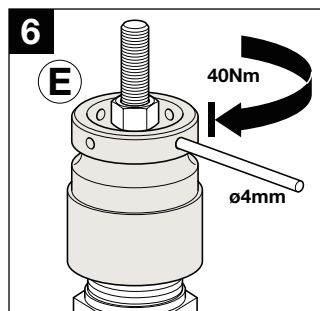
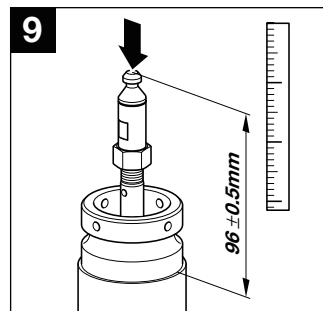
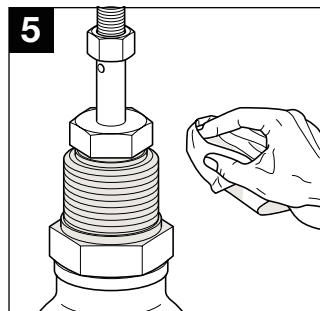
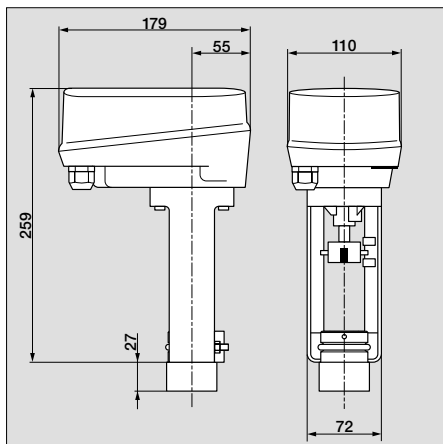
Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

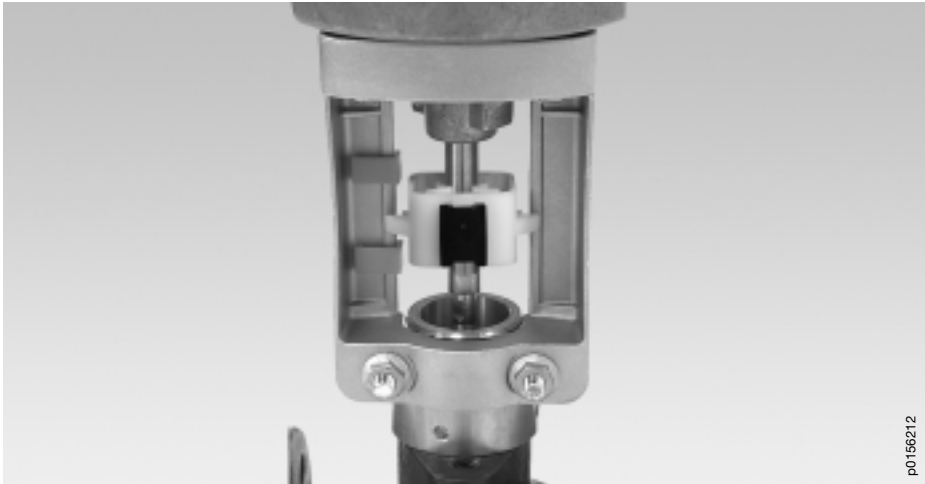
The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-027

suitable for Ari globe valves
of nominal lift 14 mm

In combination with Belimo
linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)
NVF24-MFT-E-T	AC/DC 24 V	(P.16)

Applications

Ari Series BR485, BR486 and ..487 valves are easy to motorize using a Type NV...-T linear actuator and a UNV-027 mounting bracket.

Ari valves

Valve	2-way	DN	3-way	DN
Type with closing point up	BR486	15...50	BR485 ..487	15...50 15...50
Temperature of medium	2...120°C			

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.46 kg

Product features

The UNV-027 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Ari valve.
The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection. The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling.

Settings for NV.. linear actuator

NV24-3... / NV230-3...

→ 7.5s/mm → 4.5s/mm

(M) S1 1 2 ON

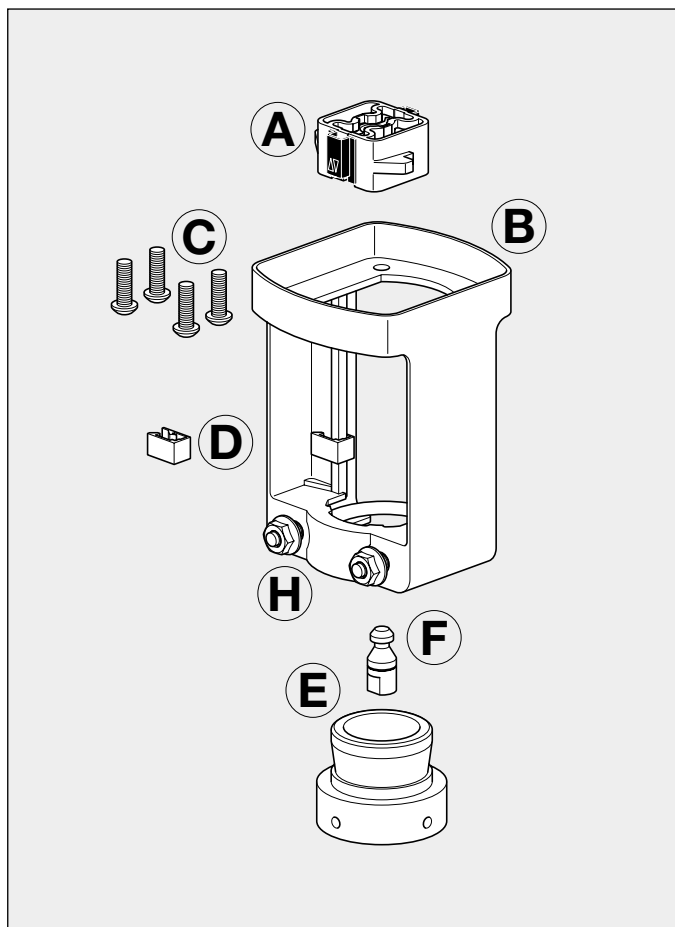
NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

(M) S3 1 2 ON

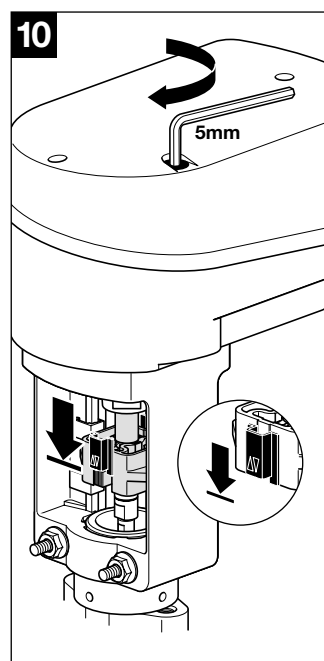
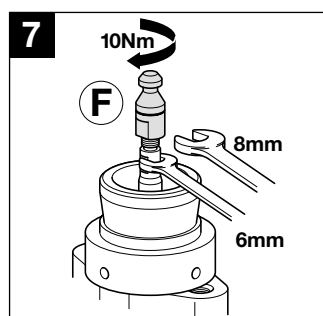
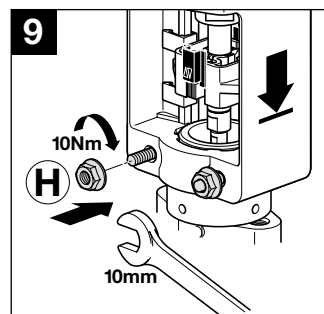
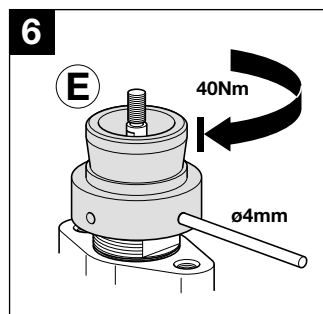
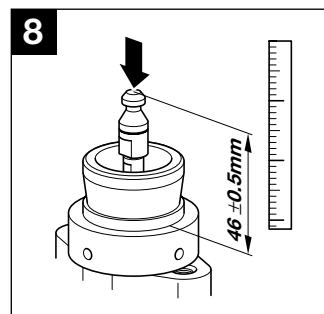
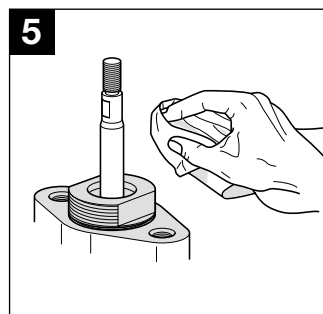
ARI			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
BR486										
BR485 ..487										

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-027



Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

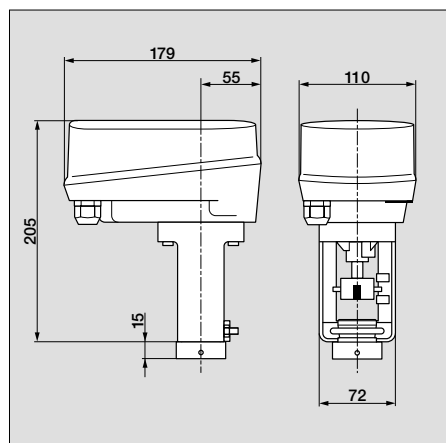


The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-030

suitable for Johnson Controls globe valves of lift 13...19 mm

In combination with Belimo linear actuators

- NV24-3-T AC/DC 24 V (P.12)
- NV230-3-T AC 230 V (P.12)
- NV24-MFT-T AC/DC 24 V (P.14)
- NV24-MFT2 AC/DC 24 V (P.14)
- NVG24-MFT2 AC/DC 24 V (P.14)
- NVF24-MFT-T AC/DC 24 V (P.16)
- NVF24-MFT-E-T AC/DC 24 V (P.16)

Johnson Controls valves

Valve	2-way	DN*	3-way	DN*
Type with closing point up Δ	VG7401	25...50	VG7802	25...50
	VG7403	25...50	VG7804	25...50
			BM-2XX8	15...50
Type with closing point down ∇	VG7201	25...50		
	VG7203	25...50		
	BM-2XX2	15...50		
Temperature of medium	2...(140)150°C			

*DN 15...20 see UNV-019

Mounting bracket materials

Mounting bracket	die-cast aluminium
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.32 kg

Applications

Johnson Controls Series VG72..., VG74..., VG78..., BM-2XX2, BM-2XX8 valves and DN 25 ...50 are easy to motorize using a Type NV...-T linear actuator and a UNV-030 mounting bracket.

Product features

The UNV-030 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Johnson Controls valve. The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving

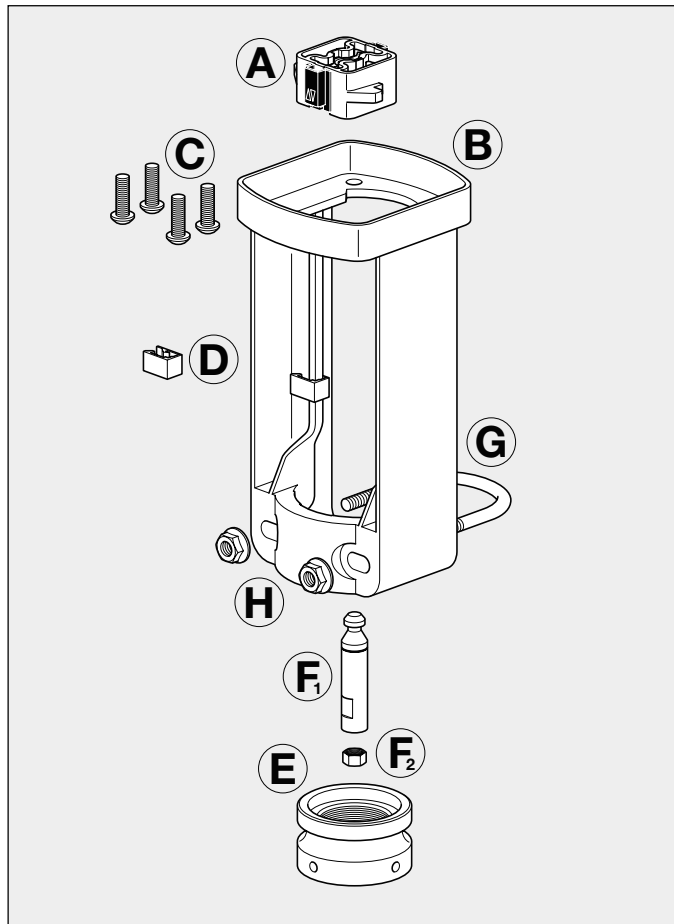
Settings for NV.. linear actuator

NV24-3... / NV230-3...

JOHNSON			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2	
	VG7401 VG7403		Δ								
	VG7201 VG7203 BM-2XX2		∇								
	VG7802 VG7804 BM-2XX8		Δ								

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-030

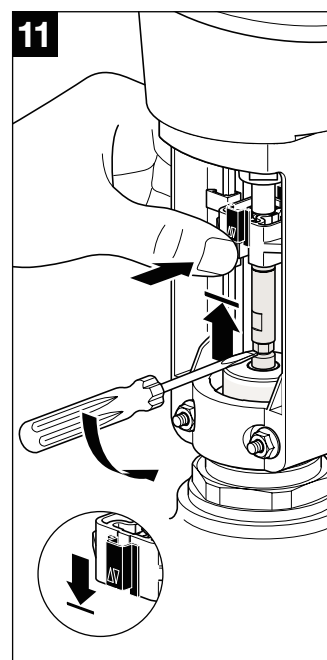
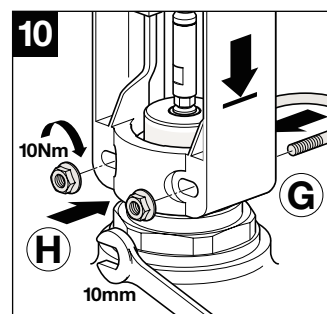
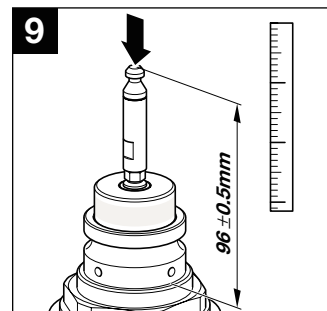
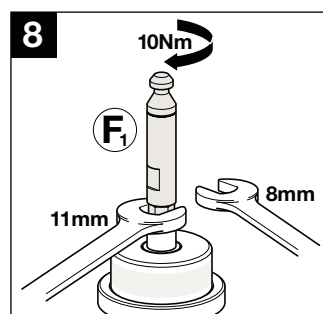
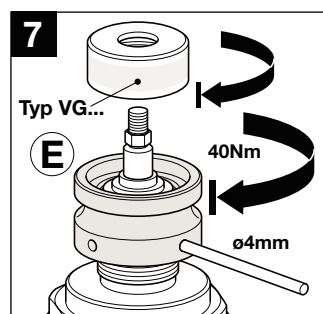
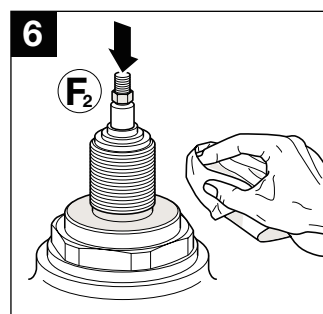
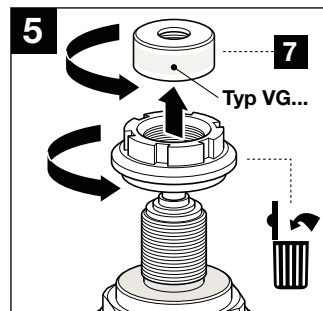


Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

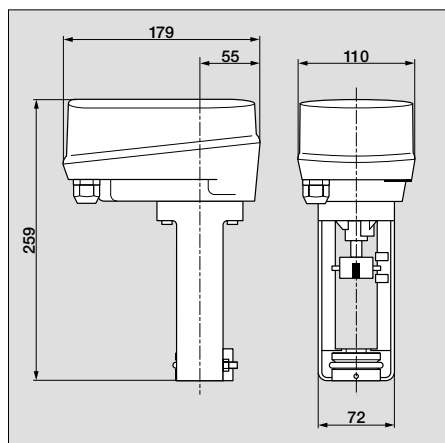
a friction-locked connection. The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.



Dimensions with NV..-T linear actuator





Mounting bracket UNV-034
suitable for Johnson Controls
globe valves of nominal lift 13 mm

- In combination with Belimo linear actuators**
- | | | |
|-------------|------------|--------|
| NV24-3-T | AC/DC 24 V | (P.12) |
| NV230-3-T | AC 230 V | (P.12) |
| NV24-MFT-T | AC/DC 24 V | (P.14) |
| NV24-MFT2 | AC/DC 24 V | (P.14) |
| NVG24-MFT2 | AC/DC 24 V | (P.14) |
| NVF24-MFT-T | AC/DC 24 V | (P.16) |

Johnson Controls valves

Valve	2-way	DN	3-way	DN
Type with closing point up Δ	VBF-0XX4	15...50	VBF-0XX8	15...50
	VBF-2XX4	15...50	VBF-2XX8	15...40
	VG84XX	15...40	VG88XX	15...40
			VG89XX	15...40
	VBD-4XX4	15...40	VBD-4XX8	15...40
Type with closing point down ∇	VG82XX	15...40		
Temperature of medium	2...(130)150°C			

Applications
Johnson Controls Series VBF-0..., VBF-2..., VG84., VBD-4.. and VG82. valves are easy to motorize using a Type NV...-T linear actuator and a UNV-034 mounting bracket.

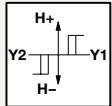
Product features
The UNV-034 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Johnson Controls valve.
The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection.

Mounting bracket materials

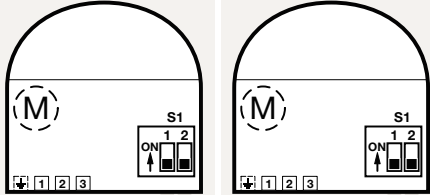
Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.32 kg

Settings for NV.. linear actuator

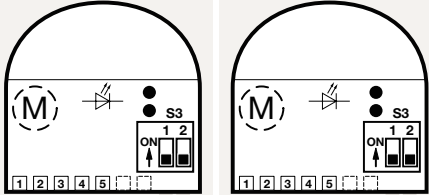
NV24-3... / NV230-3...



→ 7.5s/mm → 4.5s/mm



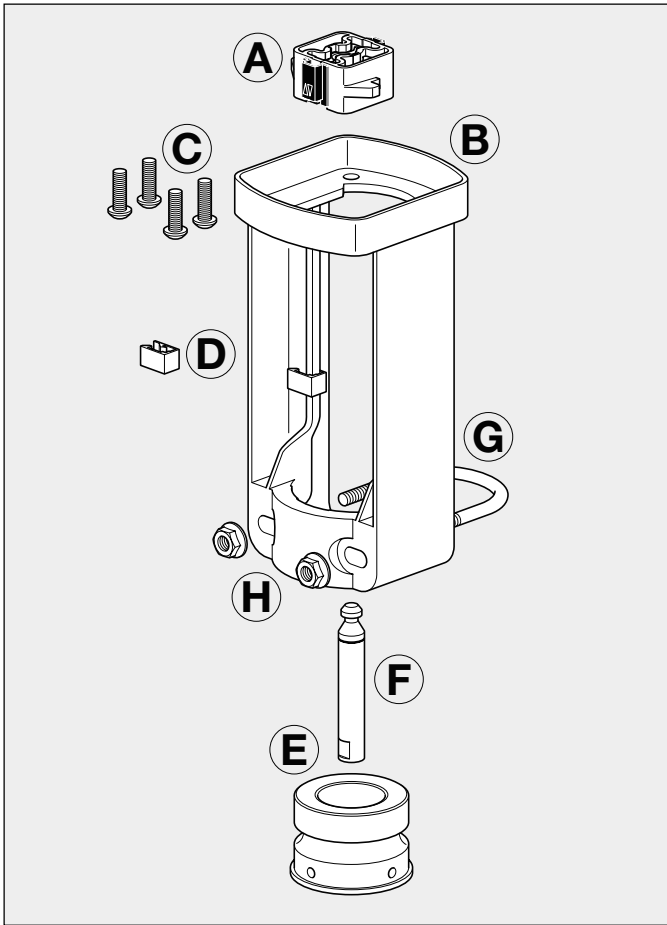
NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON



JOHNSON			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	VBF-0XX4 VBF-2XX4 VG84XX VBD-4XX4	Δ								
	VG82XX	∇								
	VBF-0XX8 VBF-2XX8 VG88XX VG89XX VBD-4XX8	Δ								

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-034

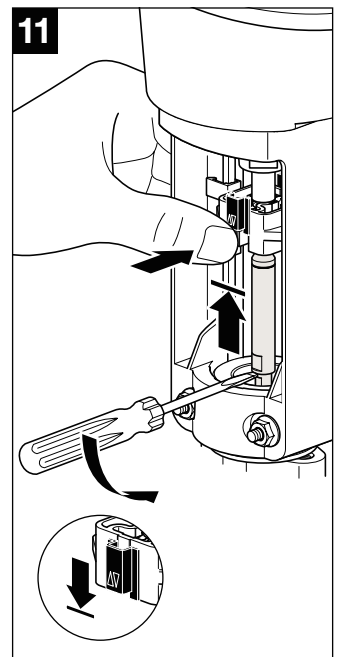
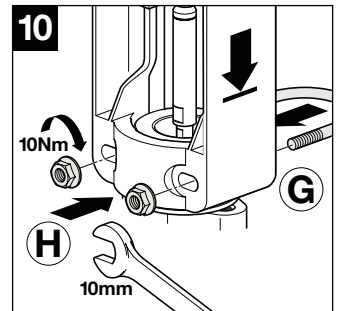
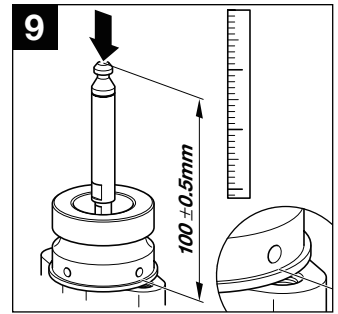
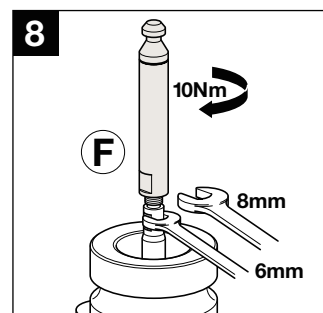
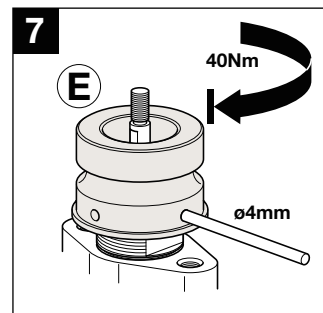
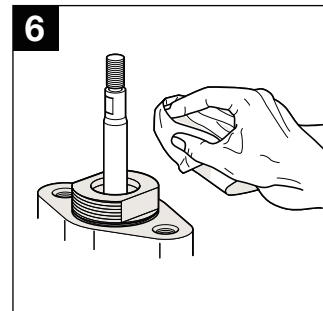
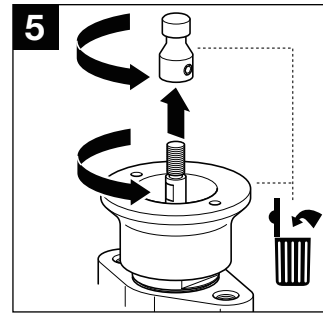


Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

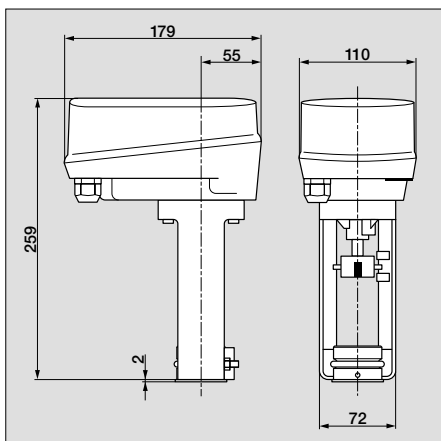
The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.



Dimensions with NV..-T linear actuator





Mounting bracket UNV-036
suitable for Controlli globe
valves of nominal lift 13 mm

In combination with Belimo
linear actuators

- NV24-3-T AC/DC 24 V (P.12)
- NV230-3-T AC 230 V (P.12)
- NV24-MFT-T AC/DC 24 V (P.14)
- NV24-MFT2 AC/DC 24 V (P.14)
- NVG24-MFT2 AC/DC 24 V (P.14)
- NVF24-MFT-T AC/DC 24 V (P.16)

Controlli valves

Valve	2-way	DN	3-way	DN
Type with closing point up Δ	VSB	15...50	VMB	15...50
	VSBXXF	15...50	VMBXXF	15...50
	GIBT/21/XX ¹⁾	15...50	GIBT/32/XX ¹⁾	15...50
	GIBF/21/XX ¹⁾	15...50	GIBF/32/XX ¹⁾	15...50
Temperature of medium	2...120°C			

¹⁾ Trend type designation

Applications

Controlli Series VSB, VMB valves and the Trend Series GIBT and GIBF are easy to motorize using a Type NV...-T linear actuator and a UNV-036 mounting bracket.

Product features

The UNV-036 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Controlli and Trend valve.

The valve neck adapter is screwed on to the neck of the valve and locked. The mounting bracket is placed on the valve neck adapter and bolted to it giving a friction-locked connection.

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.5 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

7.5s/mm

4.5s/mm

NV24-MFT... / NV24LON
NVF24-MFT... / NVF24LON..
NVG24-MFT2 / NVG24LON

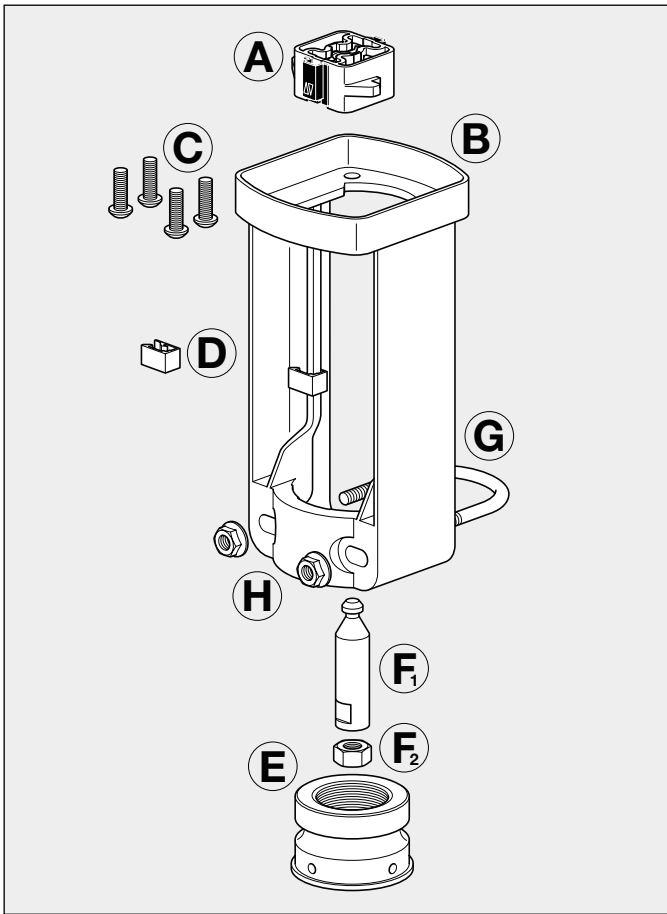
CONTROLLI/TREND		S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	CONTROLLI VSB VSBXXF		Δ						
	TREND GIBT/21/XX GIBF/21/XX		Δ						
	CONTROLLI VMB VMBXXF		Δ						
	TREND GIBT/32/XX GIBF/32/XX		Δ						

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

50

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Assembly instructions NV..+UNV-036



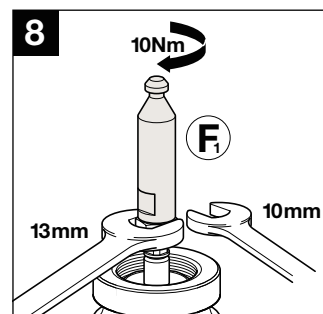
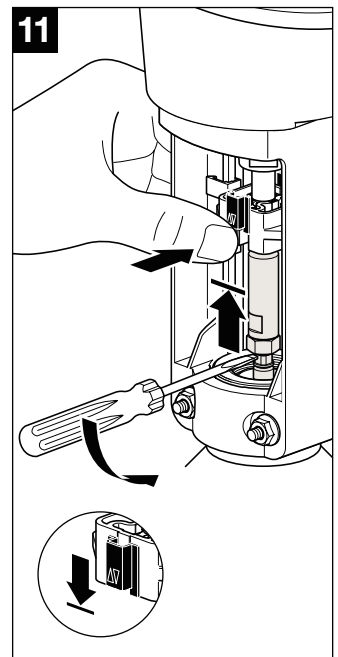
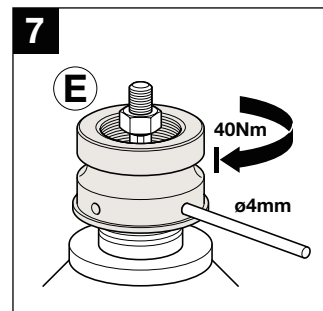
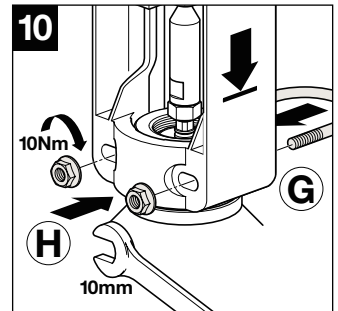
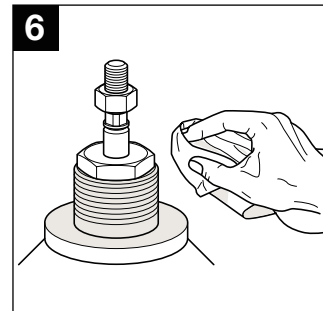
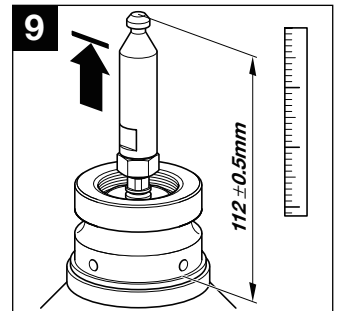
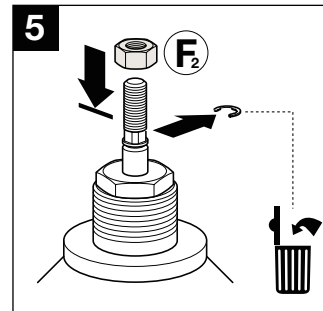
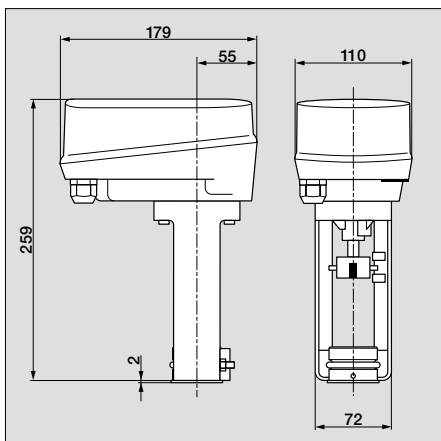
Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

The stem adapter is secured to the valve stem. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling. The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Position indication

The lift is indicated mechanically on the mounting bracket; the indicator adjusts itself automatically.

Dimensions with NV..-T linear actuator





Mounting bracket UNV-038
suitable for Danfoss globe
valves of nominal lift 13 mm

In combination with Belimo
linear actuators

NV24-3-T	AC/DC 24 V	(P.12)
NV230-3-T	AC 230 V	(P.12)
NV24-MFT-T	AC/DC 24 V	(P.14)
NV24-MFT2	AC/DC 24 V	(P.14)
NVG24-MFT2	AC/DC 24 V	(P.14)
NVF24-MFT-T	AC/DC 24 V	(P.16)

Danfoss valves

Valve	2-way	DN	3-way	DN
Type with closing point up Δ	(H)VF2	25...50	(H)VF3	15...50
	(H)VL2	15...50	(H)VL3	15...50
	(H)VRB2	15...25	(H)VRB3	15...50
			(H)VRG3	15...50
Type with closing point down ∇	(H)VE2	25...50		
	(H)VFS2	15...50		
	VR2	15...25		
Temperature of medium	2...120°C			

Applications

Danfoss Series (H)VF..., (H)VL..., (H)VR..., (H)VE..., VR2 valves are easy to motorize using a Type NV...-T linear actuator and a UNV-038 mounting bracket.

Product features

The UNV-038 mounting bracket is secured to the NV.. actuator by means of 4 screws. It comes with all necessary adapters needed for attaching to a Danfoss valve. The mounting bracket is placed on the valve neck ring and bolted directly to the neck giving a friction-locked connection. The connection between the valve stem and the actuator spindle is semi-automatic by means of the stem coupling.

Mounting bracket materials

Mounting bracket	die-cast aluminium
Valve neck adapter	brass
Stem adapter	stainless steel
Stem coupling	stainless steel
Weight	0.5 kg

Settings for NV.. linear actuator

NV24-3... / NV230-3...

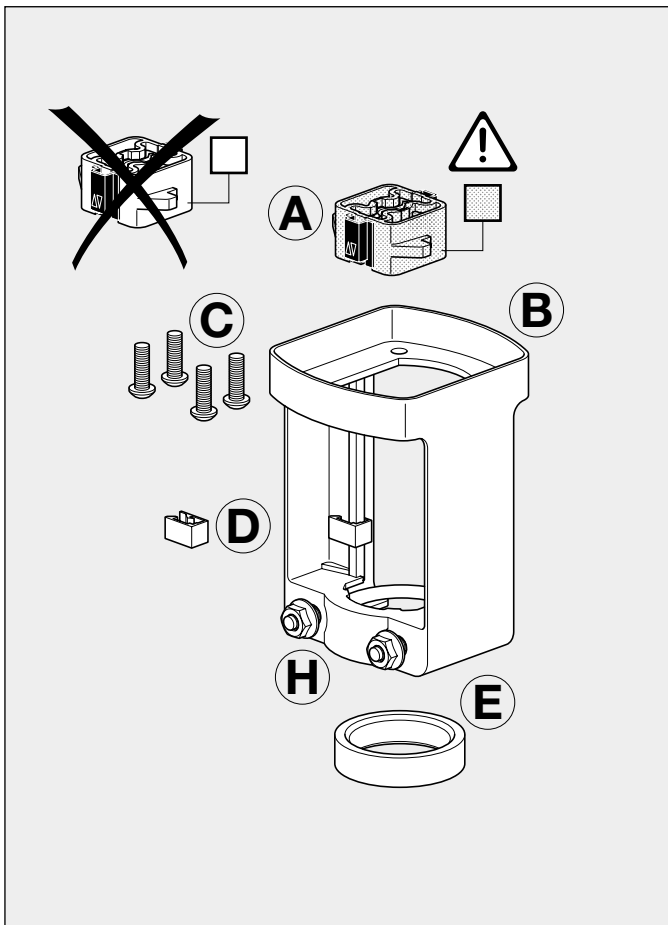
→ 7.5s/mm → 4.5s/mm

NV24-MFT... / NV24LON

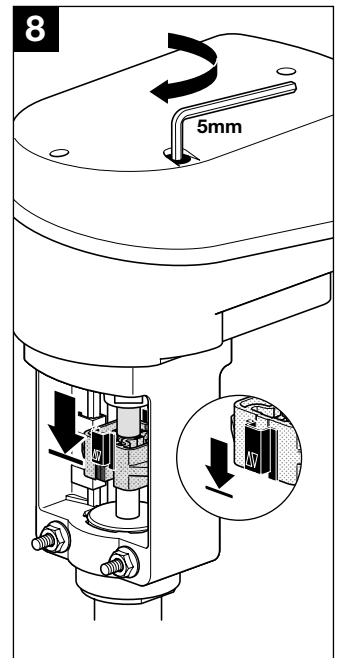
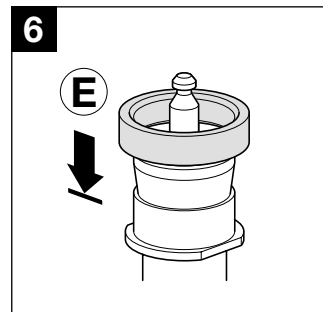
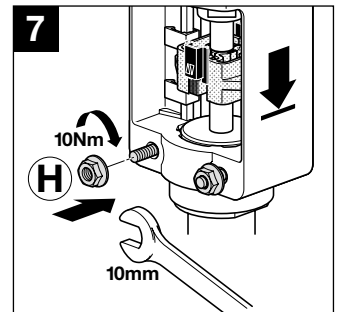
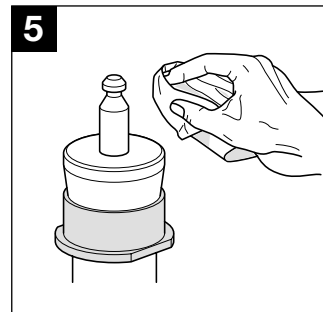
DANFOSS			S1.1	S1.2	S1.1	S1.2	S3.1	S3.2	S3.1	S3.2
	(H)VF2									
	(H)VL2									
	(H)VRB2									
	(H)VE2									
	(H)VFS2									
	VR2									
	(H)VF3									
	(H)VL3									
	(H)VRB3									
	(H)VRG3									
	(H)VRG3									
	(H)VRG3									

Depending on the particular type of linear actuator and valve being used the slide switch allows easy matching to the actuator (see also NV...-T).

Assembly instructions NV..+UNV-038



Mounting the UNV bracket on the actuator (steps 1 to 4 see Page 20)

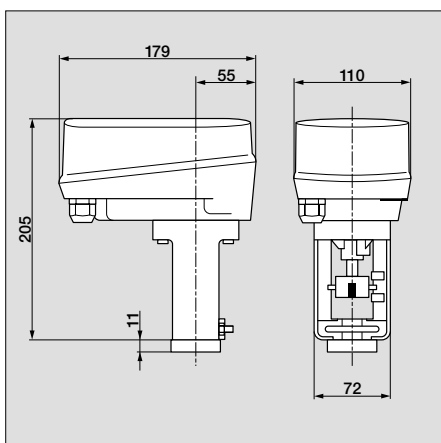


Note

The grey stem coupling **A** can only be used for the UNV-038 (the white stem coupling that is used for other UNV mounting brackets cannot be used here).

The actuator and the mounting bracket can be swivelled through 360° on the neck of the valve.

Dimensions with NV..-T linear actuator



Mounting position

Short-lift valves

The recommended mounting positions for the NRDVX.. are either vertically upright or horizontal. Upside down mounting is not allowed.

The direction of flow must be as indicated by the valve manufacturer and must be adhered to whatever type of system or loading is being employed.

Globe valves

Globe valves can be mounted either vertically upright (Fig. 1) or horizontal (Fig. 2). However, it is not recommended that the valve be mounted with the stem pointing downwards, i.e. upside down (Fig. 3). The direction of flow must be as indicated by the valve manufacturer and must be adhered to whatever type of system or loading is being employed.

Lagging limits

With the NV.. the lagging on the mounting bracket must not exceed <30 mm.

Maximum pressures – Δp_s-closing pressure

Short-lift valves

The Δp_s closing pressure is governed by the return spring in the short-stroke actuator and cannot be altered through the actuating force generated by the NRDVX actuator.

Globe valves

The max. closing pressure Δp_s, at which the actuator can still achieve the permitted leakage rate varies according to the design of the particular valve and the method of sealing employed.

As an approximation:

$$\Delta p_s \approx \frac{[F - DN \cdot 3]}{DN^2} \cdot 1100$$

Δp_s: Closing pressure [kPa]
DN: Nominal size [mm]
F: Actuating force [N]

Δp_{MAX} (max. pressure difference)
This is the maximum permitted pressure difference for long service life using the appropriate control path referred to the full opening range of the valve. It depends on the type of materials chosen for the valve seats. Depending on the particular make and design of valve the value of Δp_{MAX} can vary for the same nominal size. The instructions given by the valve manufacturer should be adhered to.

Max. permitted medium temperature
This depends on the type of valve materials being used and on the length of the mounting bracket. The longer the bracket, the higher the temperature of the medium allowed.

Therefore, it is actually limited by the maximum values of temperature permitted for the components of the valve and the UNV mounting bracket.

Maintenance
The actuators are maintenance-free. However, if any work needs to be carried out on them the power supply must always be isolated first (by disconnecting the electrical lead if necessary). The pumps delivering into the appropriate sections of piping must be isolated and the associated shut-off valves closed (allow everything to cool down if necessary and reduce the system pressure to atmospheric). Recommissioning should not take

place until the valve and the actuator have been reassembled and the pipe runs refilled in the proper manner.

Disposal
If an actuator needs to be disposed of it must first be disassembled into parts of different materials which must then be sorted before they are disposed of correctly.

Valve neck dimensions

Form No. _____

Although no suitable mounting bracket might be listed here for a particular make of valve it is nevertheless usually possible for Belimo to offer an appropriate solution. In order to provide Belimo with the necessary information please photocopy this page, fill it in and send it to them by post or fax.

Name: _____ Position: _____

Company: _____ Dept.: _____

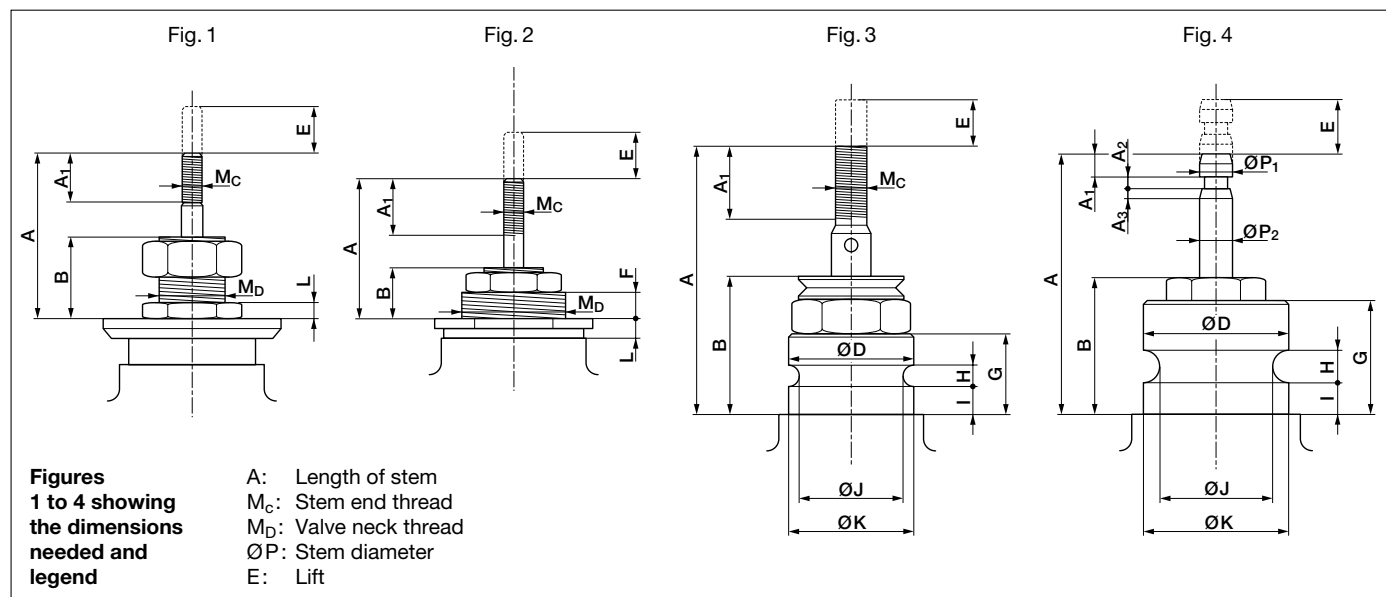
Address: _____

Tel.: _____ Fax: _____ E-Mail: _____

Date: _____ Signed: _____

Remarks: _____

The dimensions needed



Valve specification

Fig. No. _____

Valve manufacturer _____

Valve type _____

DN (nominal size) _____

Tick type ☒ ☐ ☒ ☐

No. of mounting brackets required _____

Enter the dimensions here (in mm)

A = _____ A1 = _____ A2 = _____ A3 = _____

B = _____ Md = _____

E = _____ Mc = _____

Ø P1 = _____ Ø P2 = _____

Ø D = _____ Ø J = _____ Ø K = _____

I = _____ H = _____ G = _____

Please restrict one form to one type of valve only !

Now send the completed form to Belimo by post or fax.

Air applications



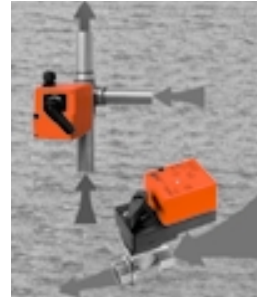
Standard actuators and spring-return actuators for air control dampers in HVAC systems



Safety actuators for motorizing fire and smoke extraction dampers



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