

## Series 104

The micro valves 104 series are a cost effective solution with reduced overall dimensions, easy to install and manage. Their main characteristic is the possibility to choose between the version with lateral or rear pneumatic connections realized with quick fitting for Ø4mm tube included.

The valves are available with 2 or 3 ways versions, normally closed or open, 5 ways and 5 ways 3 positions open centres and pressured centres. The 5 ways version is made with two 3 ways valves placed side by side with common inlet.

The operators available for this valve are push button (different versions), selector (key, short and long lever), lever (lever roller or level undirectional) and pneumatic.

It is also possible to combine the 2 and 3 ways valves with electrical switches, normally closed or open.

### Construction characteristics

Body and cover	Technopolymer
Spacers	Technopolymer
Seals	NBR
Springs	Spring steel
Operators	Plastic material for buttons and switches
Pistons	Aluminium (for pneumatic command version)
Spools	Steel

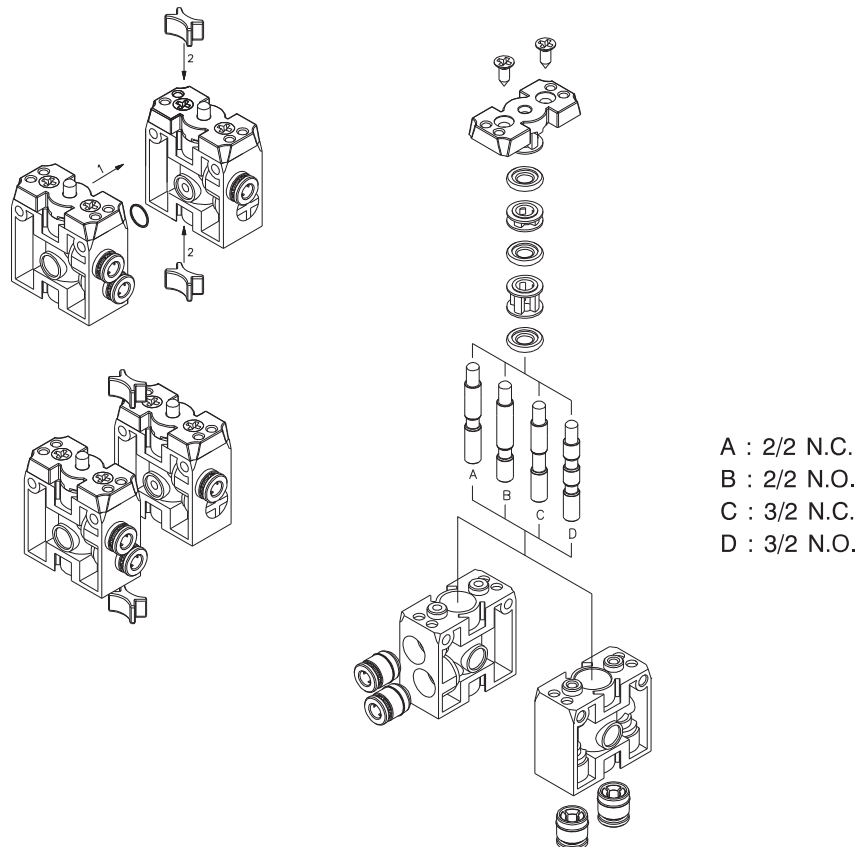
### Use and maintenance

This valves have an average life of 15 million cycles depending on the application and air quality.

Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.

Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.

**ATTENTION:** use hydraulic oil class H for lubrication such as CASTROL MAGNA SW32.





# Spool type valves and solenoid valves Series 104 - Mechanical and manual command - Ø4 mm

## Tappet - Spring

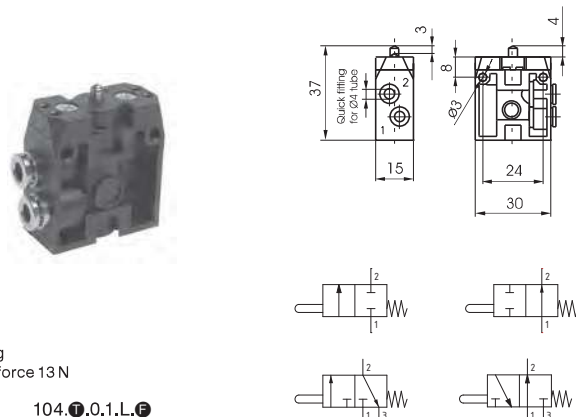
Coding: 104.1.0.1.W.F

### Operational characteristics

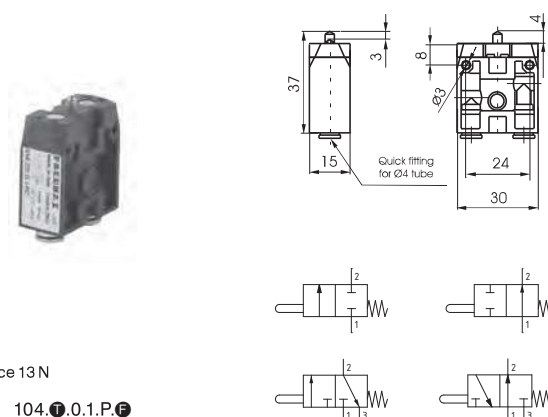
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

TYPE	FUNCTION
<b>T</b> 22 = 2 ways, 2 positions 32 = 3 ways, 2 positions	<b>F</b> A = Normally Open C = Normally Closed
CONNECTION TYPE	
<b>W</b> L = Lateral P = Rear	

### 2/2 - 3/2 - Lateral connections



### 2/2 - 3/2 - Rear connections



## Push button - Spring

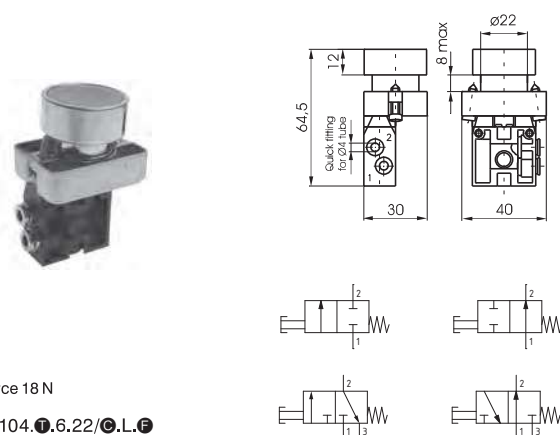
Coding: 104.1.6.22/C.W.F

### Operational characteristics

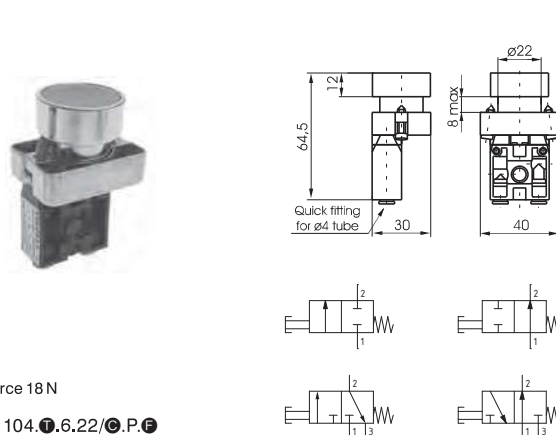
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

TYPE	CONNECTION TYPE
<b>T</b> 22 = 2 ways, 2 positions 32 = 3 ways, 2 positions 52 = 5 ways, 2 positions	<b>W</b> L = Lateral P = Rear
BUTTON COLOR	<b>F</b> FUNCTION (only for 2/2 or 3/2 ways) A = Normally Open C = Normally Closed
<b>C</b> 1 = Red 2 = Black 3 = Green 4 = Yellow	

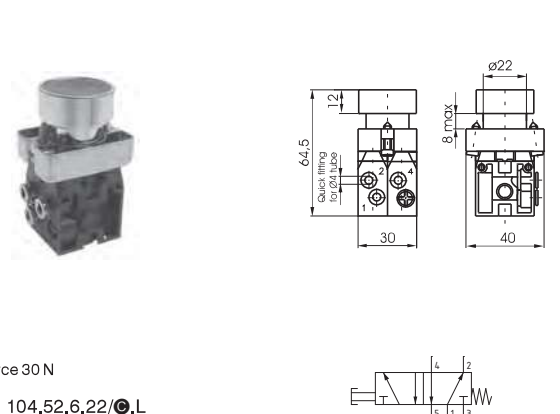
### 2/2 - 3/2 - Lateral connections



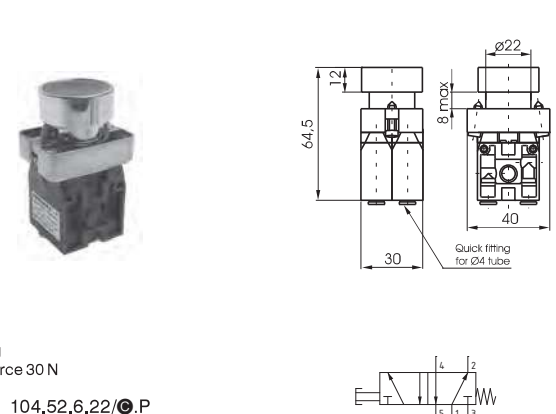
### 2/2 - 3/2 - Rear connections



### 5/2 - Lateral connections



### 5/2 - Rear connections



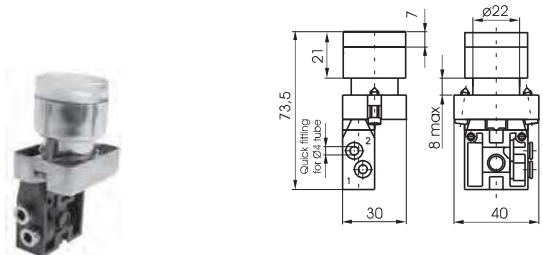
Push button 2 positions (step - step)

Coding: 104.T.6.31.W.F

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

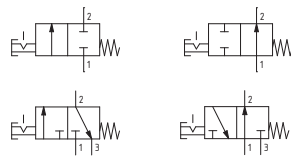
T	TYPE	F	FUNCTION (only for 2/2 and 3/2 ways)
	22 = 2 ways, 2 positions		A = Normally Open
	32 = 3 ways, 2 positions		C = Normally Closed
W	CONNECTION TYPE		
	L = Lateral		
	P = Rear		

2/2 - 3/2 - Lateral connections

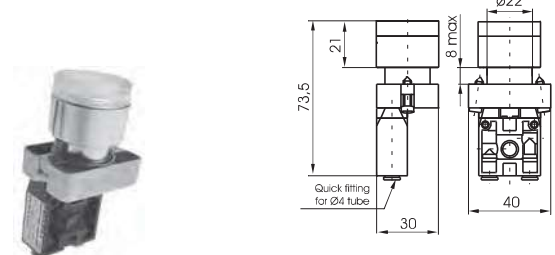


Weight 60 g  
Operating force 18 N

104.T.6.31.L.F

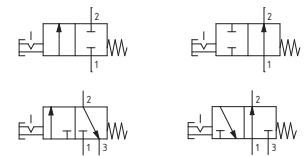


2/2 - 3/2 - Rear connections

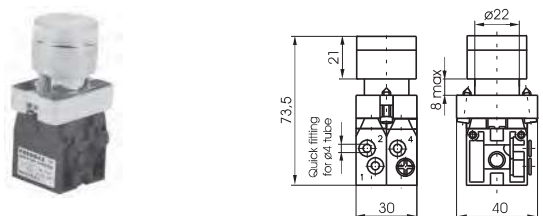


Weight 60 g  
Operating force 18 N

104.T.6.31.P.F

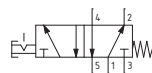


5/2 - Lateral connections

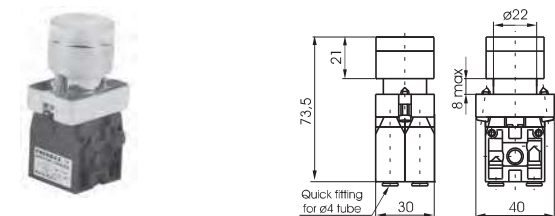


Weight 110 g  
Operating force 30 N

104.52.6.31.L

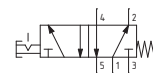


5/2 - Rear connections



Weight 110 g  
Operating force 30 N

104.52.6.31.P





# Spool type valves and solenoid valves Series 104 - Mechanical and manual command - Ø4 mm

## Raised Push button - Spring

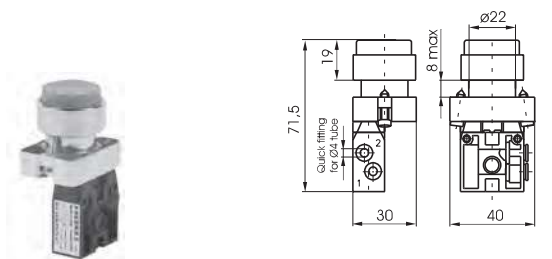
Coding: 104.1.6.23/C.W.F

### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

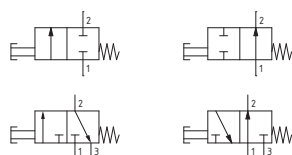
TYPE	CONNECTION TYPE
<b>T</b> 22 = 2 ways, 2 positions 32 = 3 ways, 2 positions 52 = 5 ways, 2 positions	<b>W</b> L = Lateral P = Rear
<b>C</b> BUTTON COLOR 1 = Red 2 = Black 3 = Green 4 = Yellow	<b>F</b> FUNCTION (only for 2/2 or 3/2 ways) A = Normally Open C = Normally Closed

### 2/2 - 3/2 - Lateral connections

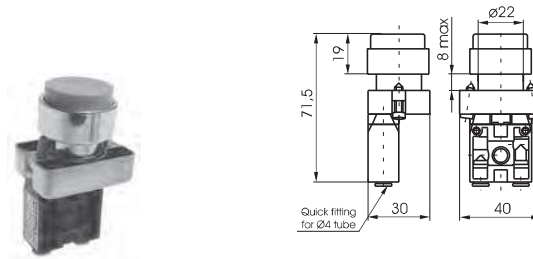


Weight 50 g  
Operating force 18 N

104.1.6.23/C.L.F

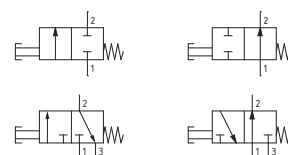


### 2/2 - 3/2 - Rear connections

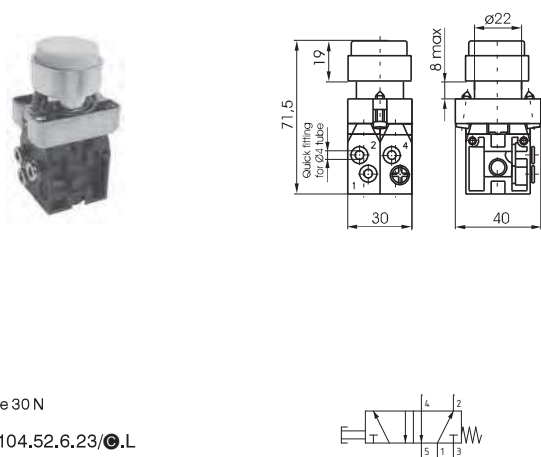


Weight 50 g  
Operating force 18 N

104.1.6.23/C.P.F

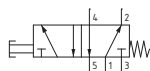


### 5/2 - Lateral connections

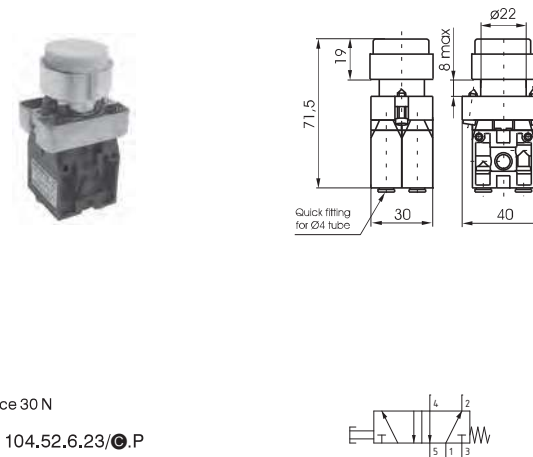


Weight 105 g  
Operating force 30 N

104.52.6.23/C.L

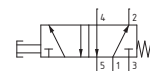


### 5/2 - Rear connections



Weight 105 g  
Operating force 30 N

104.52.6.23/C.P





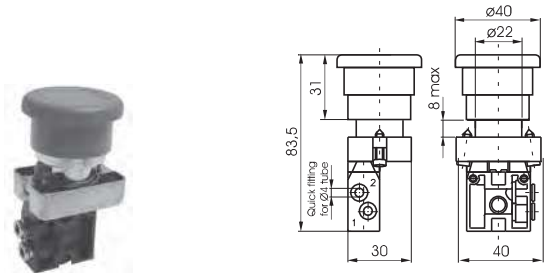
**Palm button 2 position**

Coding: 104.1.6.25.W.F

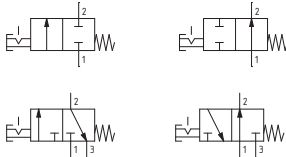
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

T	TYPE	F	FUNCTION (only for 2/2 and 3/2 ways)
	22 = 2 ways, 2 positions		A = Normally Open
	32 = 3 ways, 2 positions		C = Normally Closed
W	52 = 5 ways, 2 positions		
	CONNECTION TYPE		
	L = Lateral		
	P = Rear		

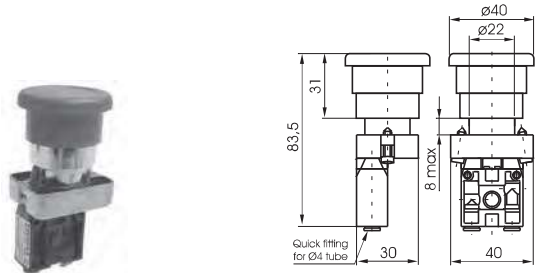
2/2 - 3/2 - Lateral connections



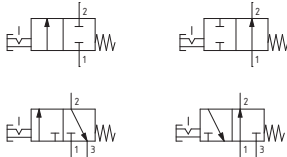
Weight 65 g  
Operating force 19 N  
Emergency - Rotate to unlock  
104.1.6.25.L.F



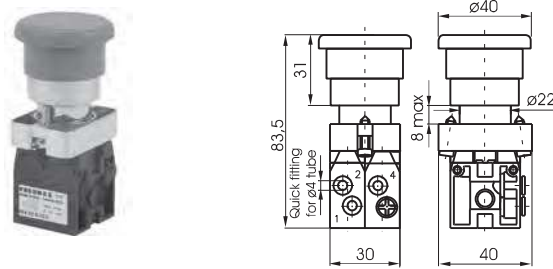
2/2 - 3/2 - Rear connections



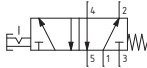
Weight 65 g  
Operating force 19 N  
Emergency - Rotate to unlock  
104.1.6.25.P.F



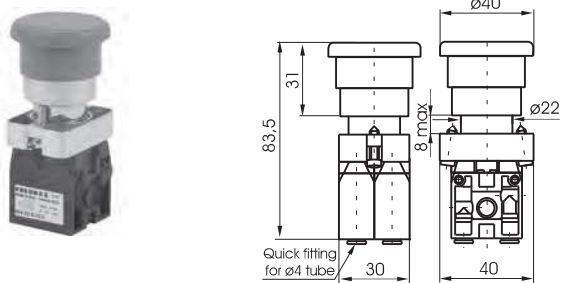
5/2 - Lateral connections



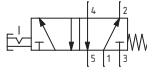
Weight 120 g  
Operating force 32 N  
Emergency - Rotate to unlock  
104.52.6.25.L



5/2 - Rear connections



Weight 120 g  
Operating force 32 N  
Emergency - Rotate to unlock  
104.52.6.25.P



**Switch - short lever**

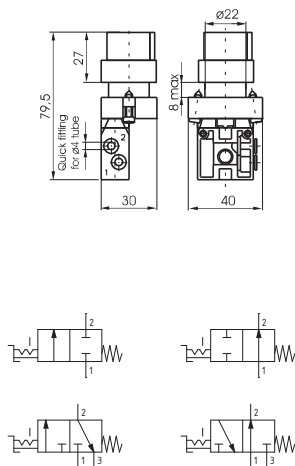
Coding: 104.**T.F**<sup>1</sup>.6.30.**S.W.F**<sup>2</sup>

**Operational characteristics**

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with Δp=1 (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

<b>T</b>	TYPE	<b>S</b>	SWITCH POSITION (only for 5/3 ways)
	22 = 2 ways, 2 positions		0 = 3 instable positions
	32 = 3 ways, 2 positions		1 = 3 stable positions
	52 = 5 ways, 2 positions		
<b>F</b> <sup>1</sup>	53 = 5 ways, 3 positions	<b>W</b>	CONNECTION TYPE
			L = Lateral
			P = Rear
<b>F</b> <sup>2</sup>	FUNCTION 1 (only for 5/3 ways)	<b>F</b> <sup>2</sup>	FUNCTION 2 (only for 2/2 or 3/2 ways)
	32 = Open centres		A = Normally Open
	33 = Pressured centres		C = Normally Closed

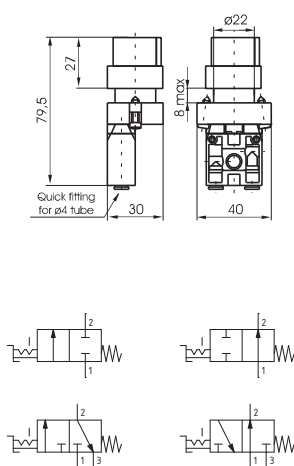
**2/2 - 3/2 - Lateral connections**



Weight 65 g  
Switch 2 positions stable

104.**T**.6.30.**L.F**<sup>2</sup>

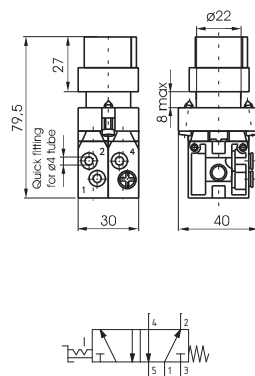
**2/2 - 3/2 - Rear connections**



Weight 65 g  
Switch 2 positions stable

104.**T**.6.30.**P.F**<sup>2</sup>

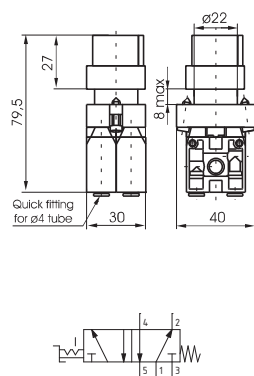
**5/2 - Lateral connections**



Weight 120 g  
Switch 2 positions stable

104.52.6.30.**L**

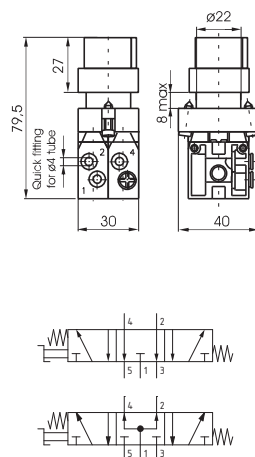
**5/2 - Rear connections**



Weight 120 g  
Switch 2 positions stable

104.52.6.30.**P**

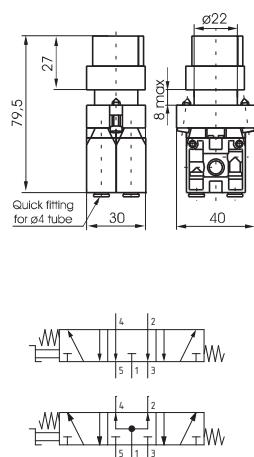
**5/3 - Lateral connections**



Weight 120 g

104.53.**F**<sup>1</sup>.6.30.**S.L**

**5/3 - Rear connections**



Weight 120 g

104.53.**F**<sup>1</sup>.6.30.**S.P**

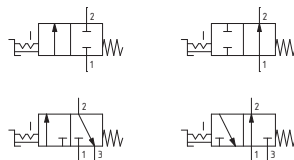
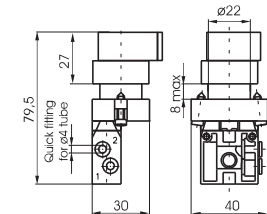
## Switch - long lever

Coding: 104.1.F<sup>1</sup>.6.27.S.W.F<sup>2</sup>

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with Δp=1 (NI/min)	90
Orifice size (mm)	2.5
Working ports size	Ø4 tube

TYPE		SWITCH POSITION (only for 5/3 ways)	
1	22 = 2 ways, 2 positions	S	0 = 3 instable positions
	32 = 3 ways, 2 positions		1 = 3 stable positions
	52 = 5 ways, 2 positions		
F <sup>1</sup>	53 = 5 ways, 3 positions	W	CONNECTION TYPE
			L = Lateral
			P = Rear
F <sup>2</sup>	FUNCTION 1 (only for 5/3 ways)	F <sup>2</sup>	FUNCTION 2 (only for 2/2 or 3/2 ways)
	32 = Open centres		A = Normally Open
	33 = Pressured centres		C = Normally Closed

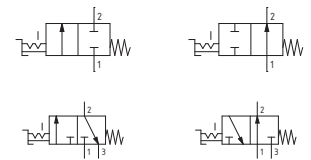
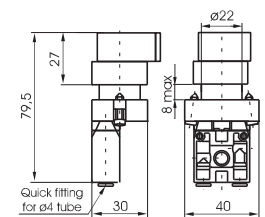
### 2/2 - 3/2 - Lateral connections



Weight 65 g  
Switch 2 positions stable

104.1.6.27.L.F<sup>2</sup>

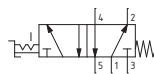
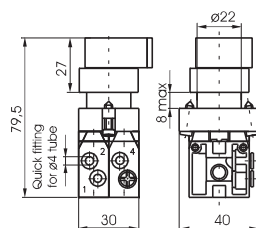
### 2/2 - 3/2 - Rear connections



Weight 65 g  
Switch 2 positions stable

104.1.6.27.P.F<sup>2</sup>

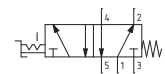
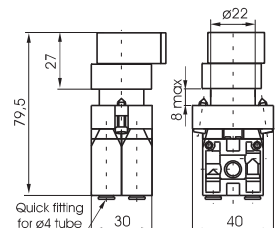
### 5/2 - Lateral connections



Weight 120 g  
Switch 2 positions stable

104.52.6.27.L

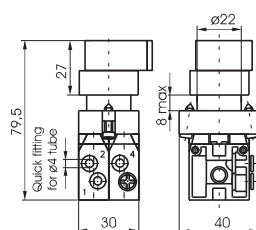
### 5/2 - Rear connections



Weight 120 g  
Switch 2 positions stable

104.52.6.27.P

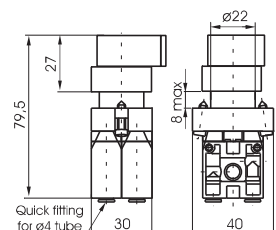
### 5/3 - Lateral connections



Weight 120 g

104.53.F<sup>1</sup>.6.27.S.L

### 5/3 - Rear connections



Weight 120 g

104.53.F<sup>1</sup>.6.27.S.P



# Spool type valves and solenoid valves Series 104 - Mechanical and manual command - Ø4 mm

## Key switch

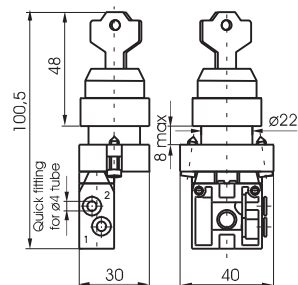
Coding: 104.**T.F**<sup>1</sup>.6.28.**S.W.F**<sup>2</sup>

### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

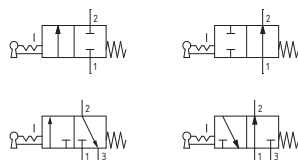
<b>T</b>	TYPE	<b>S</b>	SWITCH POSITION (only for 5/3 ways)
	22 = 2 ways, 2 positions		0 = 3 instable positions
	32 = 3 ways, 2 positions		1 = 3 stable positions
	52 = 5 ways, 2 positions		
<b>F</b> <sup>1</sup>	53 = 5 ways, 3 positions	<b>W</b>	CONNECTION TYPE
			L = Lateral
		<b>P</b>	Rear
<b>F</b> <sup>2</sup>	FUNCTION 1 (only for 5/3 ways)	<b>F</b> <sup>2</sup>	FUNCTION 2 (only for 2/2 or 3/2 ways)
	32 = Open centres		A = Normally Open
	33 = Pressured centres		C = Normally Closed

### 2/2 - 3/2 - Lateral connections

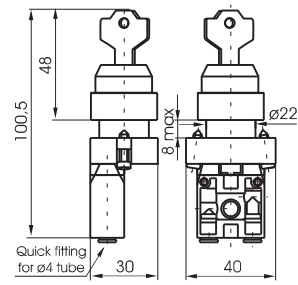


Weight 100 g  
Switch 2 positions stable

104.**T**.6.28.**L.F**<sup>2</sup>

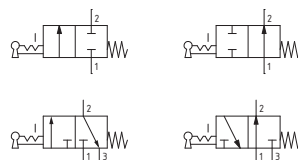


### 2/2 - 3/2 - Rear connections

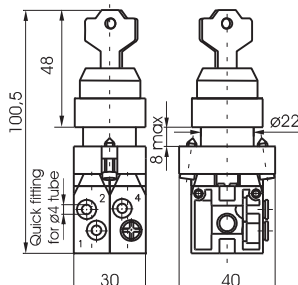


Weight 100 g  
Switch 2 positions stable

104.**T**.6.28.**P.F**<sup>2</sup>

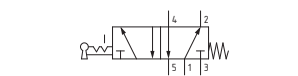


### 5/2 - Lateral connections

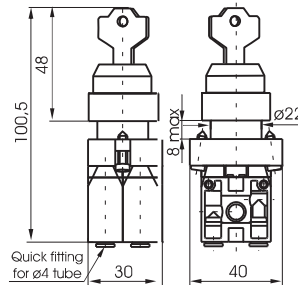


Weight 155 g  
Switch 2 positions stable

104.52.6.28.**L**

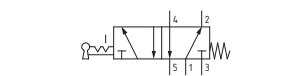


### 5/2 - Rear connections

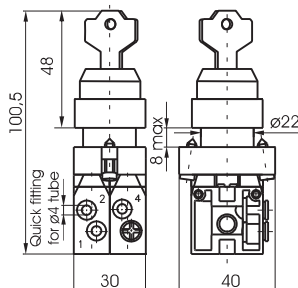


Weight 155 g  
Switch 2 positions stable

104.52.6.28.**P**



### 5/3 - Lateral connections

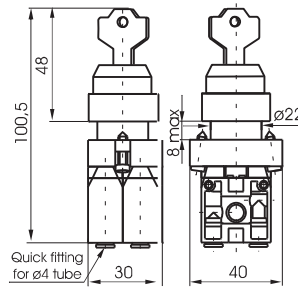


Weight 155 g

104.53.**F**<sup>1</sup>.6.28.**S.L**



### 5/3 - Rear connections



Weight 155 g

104.53.**F**<sup>1</sup>.6.28.**S.P**





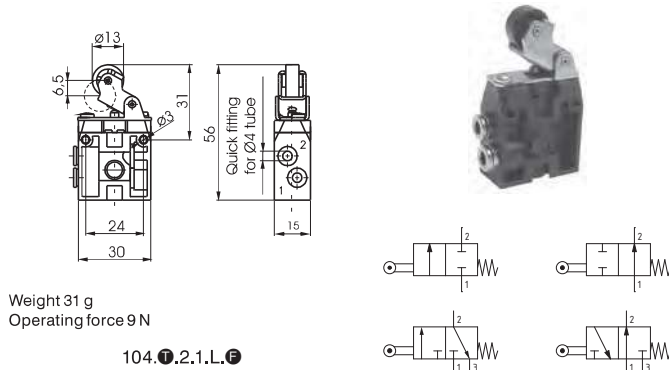
## Lever roller - Spring

Coding: 104. **T**.2.1. **W**. **F**

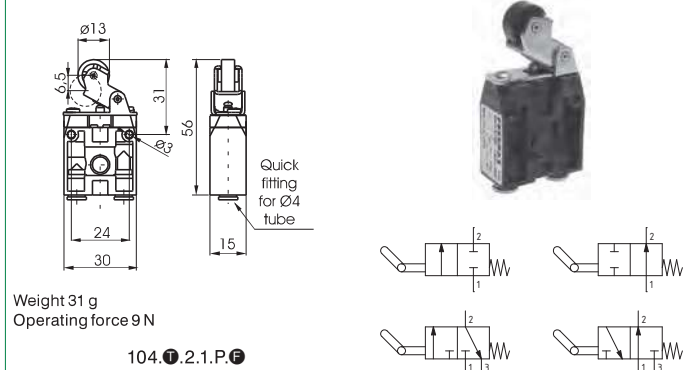
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

TYPE	FUNCTION
<b>T</b> 22 = 2 ways, 2 positions 32 = 3 ways, 2 positions	<b>F</b> A = Normally Open C = Normally Closed
CONNECTION TYPE	
<b>W</b> L = Lateral P = Rear	

### 2/2 - 3/2 - Lateral connections



### 2/2 - 3/2 - Rear connections



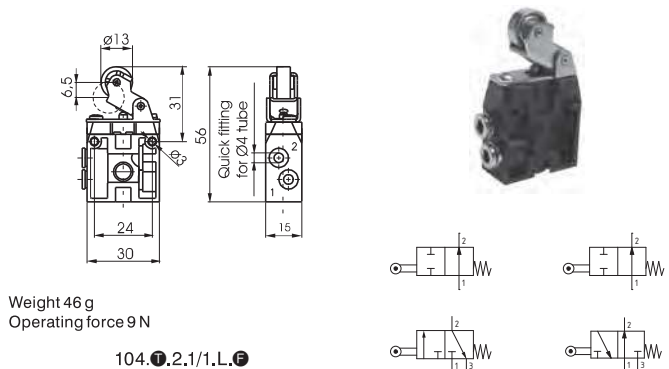
## Lever roller ball bearing - Spring

Coding: 104. **T**.2.1/1. **W**. **F**

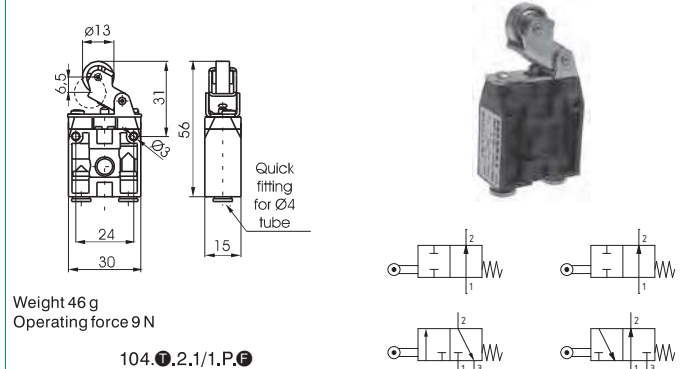
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

TYPE	FUNCTION
<b>T</b> 22 = 2 ways, 2 positions 32 = 3 ways, 2 positions	<b>F</b> A = Normally Open C = Normally Closed
CONNECTION TYPE	
<b>W</b> L = Lateral P = Rear	

### 2/2 - 3/2 - Lateral connections



### 2/2 - 3/2 - Rear connections



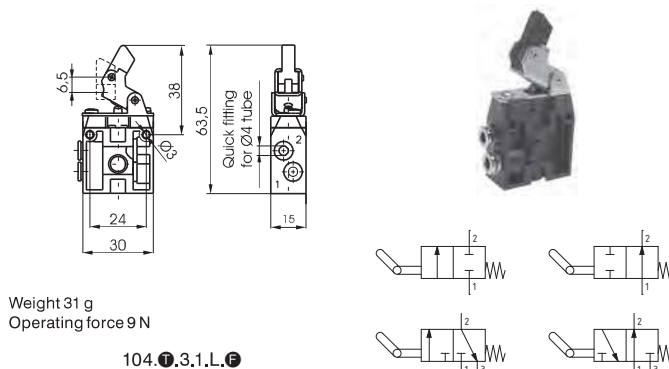
## Lever unidirectional - Spring

Coding: 104. **T**.3.1. **W**. **F**

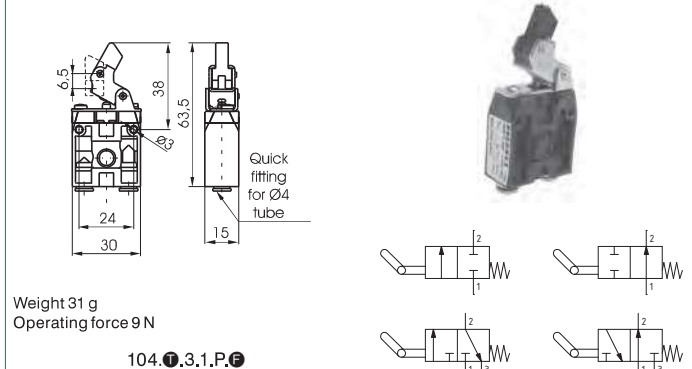
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +70
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

TYPE	FUNCTION
<b>T</b> 22 = 2 ways, 2 positions 32 = 3 ways, 2 positions	<b>F</b> A = Normally Open C = Normally Closed
CONNECTION TYPE	
<b>W</b> L = Lateral P = Rear	

### 2/2 - 3/2 - Lateral connections



### 2/2 - 3/2 - Rear connections





► Complete lever roller operator

Coding: 104.2.1



► Complete lever unidirectional

Coding: 104.3.1



► Push button

Coding: 104.6.22/☉



☉	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow

► Push button 2 positions

Coding: 104.6.31

(step - step)



► Switch - short lever

Coding: 104.6.30.☉



☉	SWITCH POSITION (only for 3 position)
	0 = 3 instable positions
	1 = 3 stable positions

Switch 2 positions stable

104.6.30

Switch 3 positions

104.6.30.☉

► Key switch

Coding: 104.6.28.☉



☉	SWITCH POSITION (only for 3 position)
	0 = 3 instable positions
	1 = 3 stable positions

Switch 2 positions stable

104.6.28

Switch 3 positions

104.6.28.☉

► Contact electric element

Coding: 104.☐



☐	FUNCTION
	NO = Normally Open
	NC = Normally Closed

► Push button protection cover

Coding: 104.02



► Complete lever roller ball bearing operator

Coding: 104.2.1/1



► Fixing plate

Coding: 104.00

Complete with fixing screws



► Raised Push button

Coding: 104.6.23/☉



☉	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow

► Palm button 2 position

Coding: 104.6.25

Emergency - Rotate to unlock



► Switch - long lever

Coding: 104.6.27.☉



☉	SWITCH POSITION (only for 3 position)
	0 = 3 instable positions
	1 = 3 stable positions

Switch 2 positions stable

104.6.27

Switch 3 positions

104.6.27.☉

► Joystick selector switch, 3 instable positions

Coding: 104.6.39.0



► Complete Pneumatic Operator

Coding: 104.11





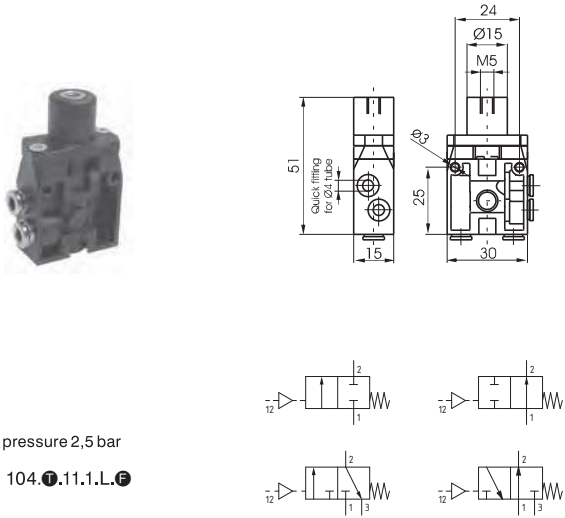
Pneumatic - Spring

Coding: 104.11.1.W.F

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	10
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (NI/min)	90
Orifice size (mm)	2.5
Working ports size	Ø4 tube
Pilot ports size	M5

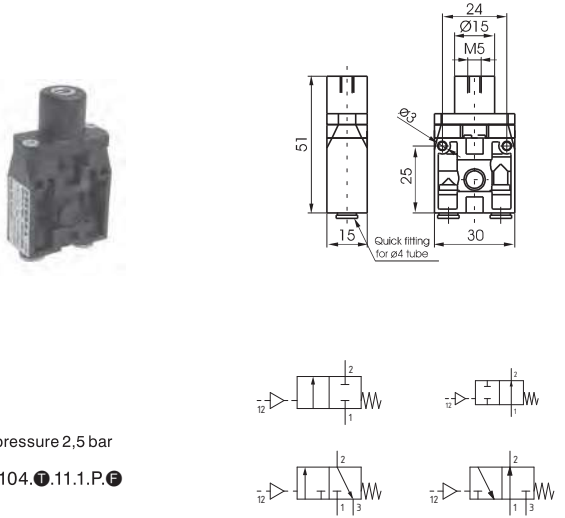
TYPE	FUNCTION
11 = 2 ways, 2 positions	A = Normally Open
32 = 3 ways, 2 positions	C = Normally Closed
CONNECTION TYPE	
L = Lateral	
P = Rear	

2/2 - 3/2 - Lateral connections



Weight 25 g  
Minimum pilot pressure 2,5 bar  
104.11.1.L.F

2/2 - 3/2 - Rear connections



Weight 25 g  
Minimum pilot pressure 2,5 bar  
104.11.1.P.F