

RODLESS CYLINDER WITH BALL RECIRCULATING GUIDE SERIES



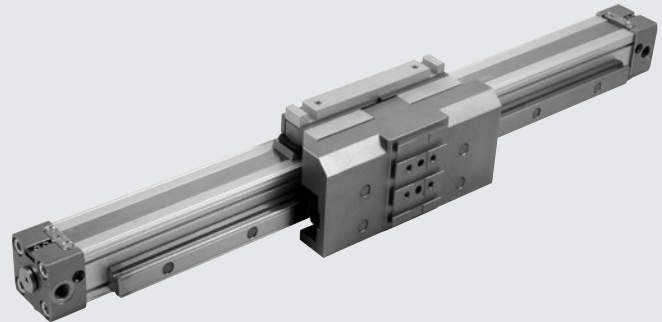
V-Lock rodless cylinders come with bores $\varnothing 16$, $\varnothing 25$ and $\varnothing 32$. Their main feature is that the carriage support has a dovetail with V-Lock grooves for mounting other components in the V-Lock family. The provision of threaded holes and centring pins allows non-V-Lock components to be fixed onto the carriage.

The fixing feet also use the V-Lock system, so the cylinder can be fixed onto something else using K or QS elements.

The carriage support is mounted on ball-recirculation pads that run on tempered guides and can withstand very high loads and moments.

Main features of V-Lock rodless cylinders:

- extruded anodized aluminium alloy cylinder liner;
- sensor grooves in the liner;
- longitudinal pneumatic seal system using stainless steel non-deformable strips;
- very high load capacities acting in any direction, without affecting the cylinder carriage in any way;
- tempered steel guide anchored firmly to the cylinder liner;
- ball-bearing pads made using special technology to allow very silent operation and long maintenance intervals;
- built-in adjustable pneumatic cushioning;
- provision for the application of adjustable stops and shock absorbers;
- with diameter 32 cylinders, the valves can be fixed onto the liner using the retracting sensor grooves, without the need for intermediate brackets.



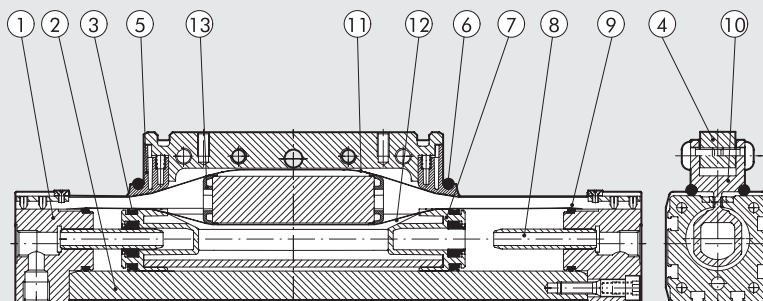
TECHNICAL DATA		$\varnothing 16$	$\varnothing 25$	$\varnothing 32$
Operating pressure	bar		1 to 8	
	MPa		0.1 to 0.8	
	psi		14.5 to 116	
Temperature range	$^{\circ}\text{C}$		-10 to +80	
	Design	Double-acting rodless cylinder with direct transmission system		
Fluid		50 μm unlubricated filtered air Lubrication, if used, must be continuous		
Standard strokes	mm	100 to 1350		100 to 2300
Threaded ports			M5, 1/8", 1/4"	
Fixing position			Free	
Max. speed with or without shock absorbers	m/s		≤ 1	
Lubrication		Every 2000 km or once a year (grease code 9910506)		
Notes		<p>For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.</p> <p>When operating conditions exceed the values shown in the "Diagram of speed and maximum cushionable load", it is advisable to use the version with external shock absorbers.</p>		

WEIGHTS

\varnothing	Version 275		Version 276	
	Weight [g] Stroke = 0	Weight [g] every mm CNK	Weight [g] Stroke = 0	Weight [g] every mm CNK
16	500	1.79	758	1.79
25	1676	2.99	2208	2.99
32	3168	5.04	4381	5.04

COMPONENTS

- ① CYLINDER HEAD: aluminium alloy
- ② LINER: shaped anodized aluminium alloy
- ③ PISTON GASKET: NBR o FKM/FPM
- ④ CENTRAL ELEMENT: aluminium alloy
- ⑤ WIPER RING: Hostaform®
- ⑥ OR-SEAL: FKM/FPM
- ⑦ PISTON: Hostaform®
- ⑧ CUSHIONING CONE: aluminium alloy
- ⑨ STATIC OR-SEAL: NBR or FKM/FPM
- ⑩ CARRIAGE: aluminium alloy
- ⑪ BOUTER STRIP: stainless steel
- ⑫ INNER STRIP: stainless steel
- ⑬ BAND SUPPORT: Hostaform®



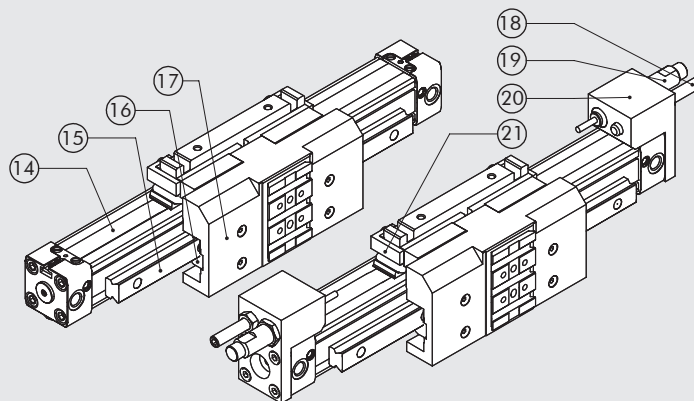
For version 275 _____ CNK

- ⑭ CYLINDER: see above
- ⑮ GUIDE: hardened steel
- ⑯ PAD: steel with hardened ball recirculation
- ⑰ CARRIAGE SUPPORT: anodized aluminium

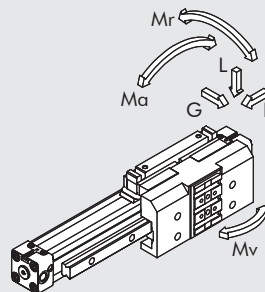
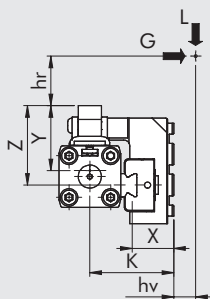
For version 276 _____ CNK

In addition to the above details:

- ⑱ END-OF-STROKE STUD PIN: zinc-plated steel, complete with 2 zinc-plated steel nuts
- ⑲ DECELERATOR: burnished steel, complete with 2 zinc-plated or burnished steel nuts
- ⑳ DECELERATOR SUPPORT: anodized aluminium
- ㉑ BRACKET: hardened-andtempered zinc-plated steel



DIMENSIONING - MOMENTS AND FORCES



Ø	Actual force F at 6 bar [N]	Cushioning stroke [mm]	K [mm]	X [mm]	Y [mm]	Z [mm]	Max. load L [N]	Max. load G [N]	Ma max [Nm]	Mr max [Nm]	Mv max [Nm]
16	110	15	35	16	29	33	500	500	16	15	16
25	250	21	50.5	21	44	51.5	1500	1500	100	50	100
32	420	26	59	22.5	53.5	70	3000	3000	200	100	200

N.B.: When the cylinder is subjected simultaneously to torque and force, keep to the following equations, where the lengths have to be given in metres.

$$Ma = F \cdot (hr + Y) \quad Mr = G \cdot (hr + z) + L \cdot (hv + X) \quad Mv = F \cdot (K + hv)$$

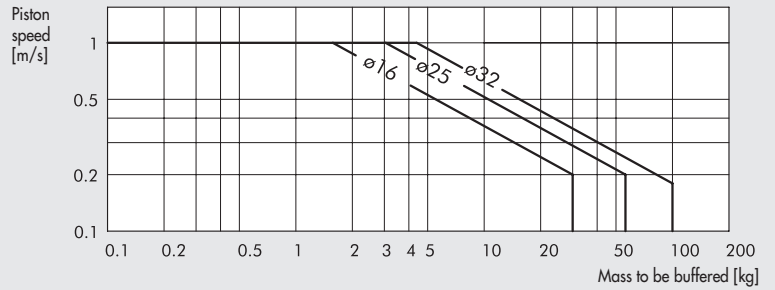
$$\frac{Ma}{Ma_{max}} + \frac{Mr}{Mr_{max}} + \frac{Mv}{Mv_{max}} + \frac{L}{L_{max}} + \frac{G}{G_{max}} \leq 1$$

DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

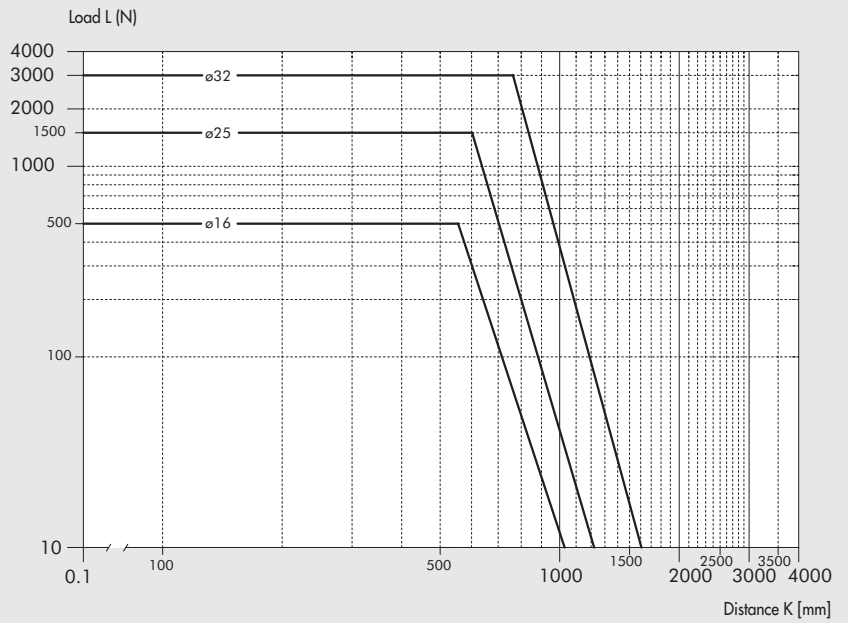
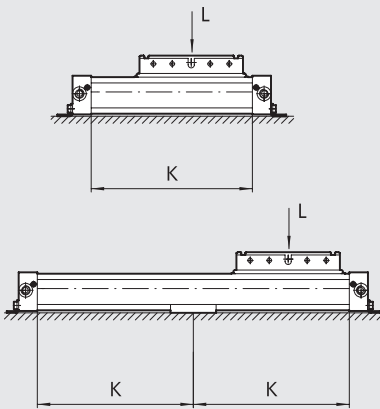
For the cylinder to reach the end-of-stroke position without intense or repeated impact, which would damage it, it is necessary to annul the kinetic energy of the moving mass and the energy generated.

The maximum cushionable load depends on the traversing speed and the absorption of the air buffer supplied standard with the various cylinders.

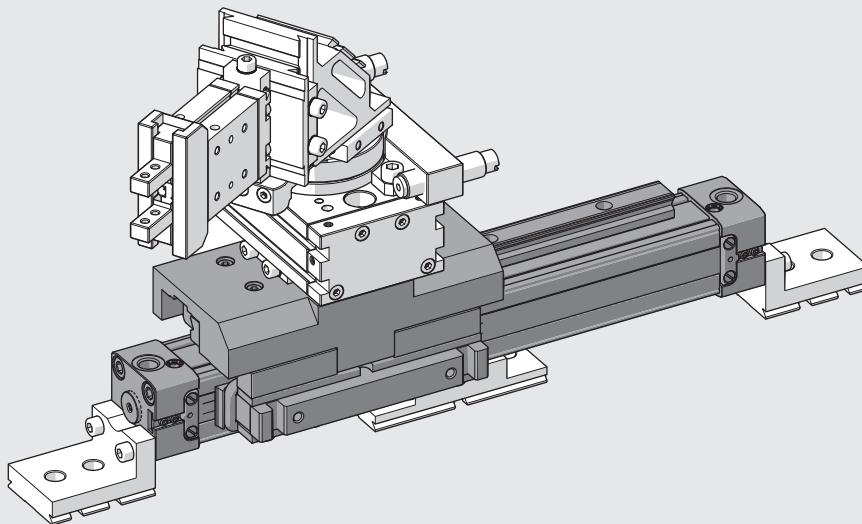
The diagram shows the speeds and cushionable masses for the various diameters at a pressure of 6 bar.



MAXIMUM LOAD BASED ON DISTANCE BETWEEN SUPPORTS

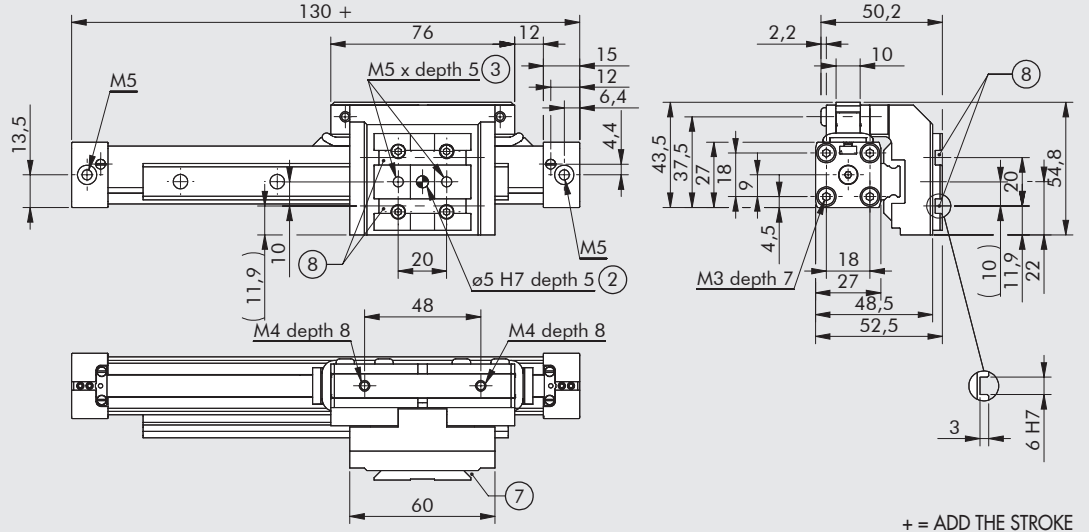


EXAMPLES OF APPLICATION



DIMENSIONS

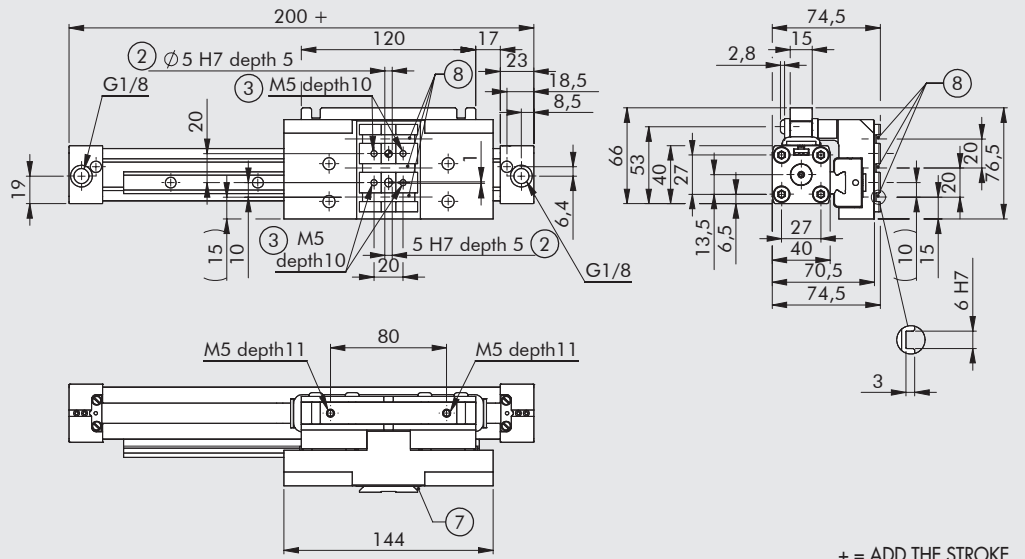
Ø 16



- ② Holes for centring pins
- ③ Threaded holes for fixing
- ⑦ Dovetail for "V-Lock" fixing. For standard dimensions, see chapter V-Lock adaptors
- ⑧ Slot for "V-Lock" precision key

+ = ADD THE STROKE

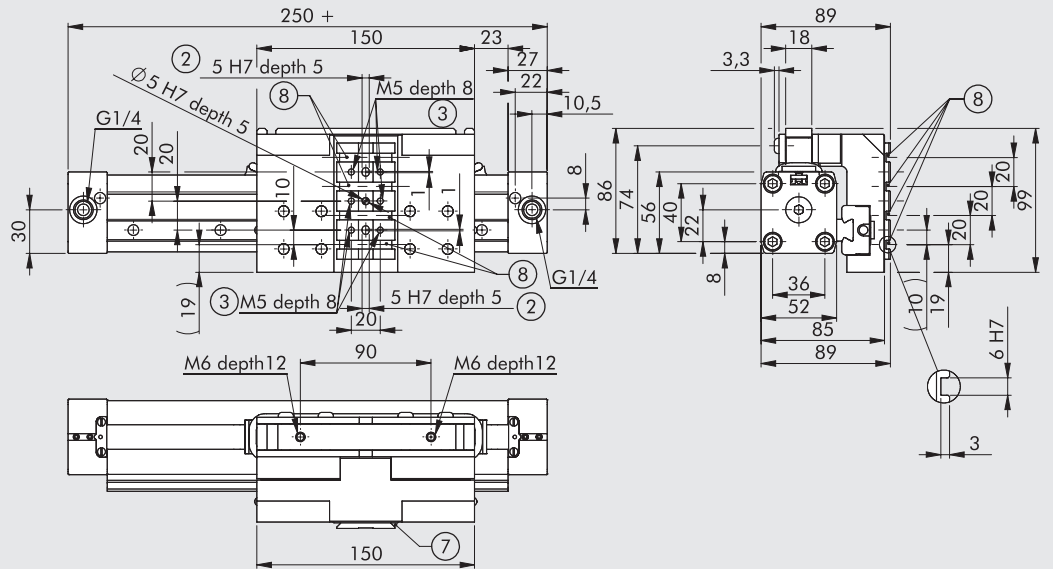
Ø 25



- ② Holes for centring pins
- ③ Threaded holes for fixing
- ⑦ Dovetail for "V-Lock" fixing. For standard dimensions, see chapter V-Lock adaptors
- ⑧ Slot for "V-Lock" precision key

+ = ADD THE STROKE

Ø 32

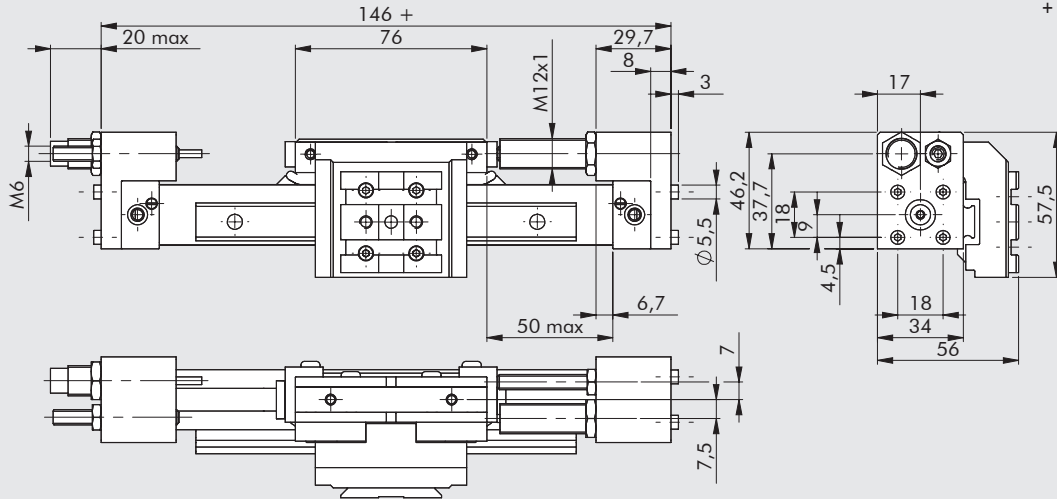


- ② Holes for centring pins
- ③ Threaded holes for fixing
- ⑦ Dovetail for "V-Lock" fixing. For standard dimensions, see chapter V-Lock adaptors
- ⑧ Slot for "V-Lock" precision key

+ = ADD THE STROKE

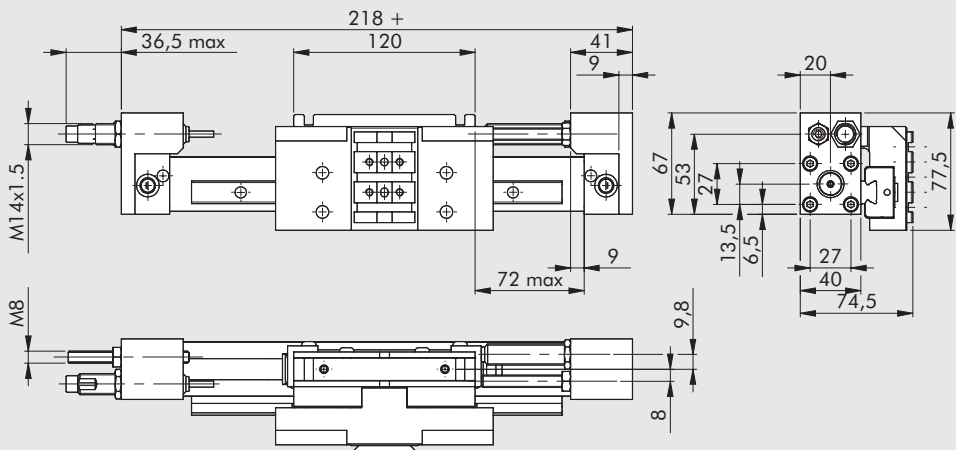
DIMENSIONS OF VERSION WITH DECELERATORS

Ø 16



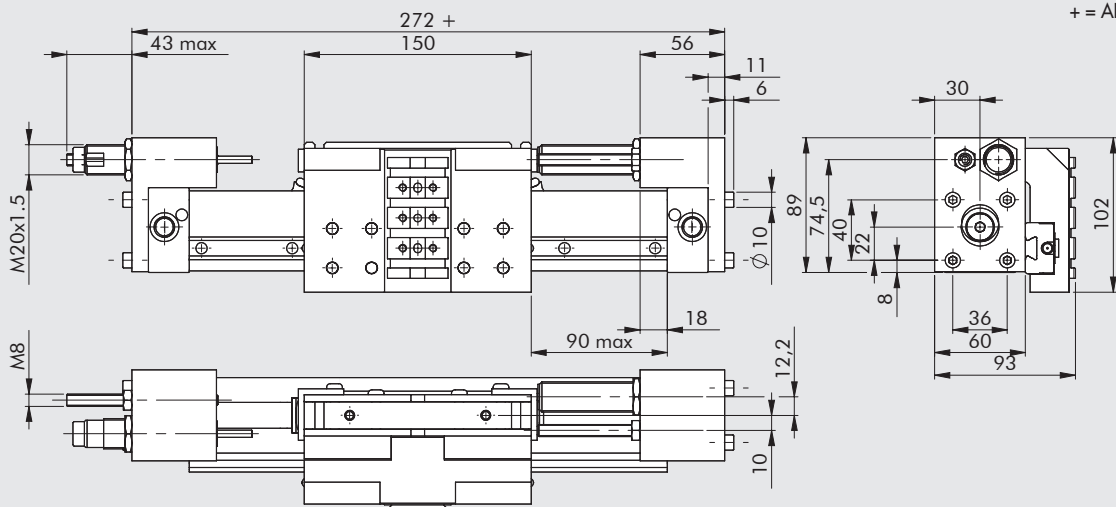
+ = ADD THE STROKE

Ø 25



+ = ADD THE STROKE

Ø 32

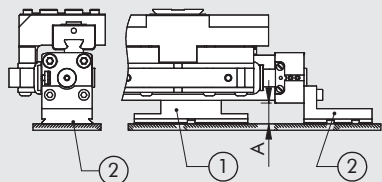


+ = ADD THE STROKE

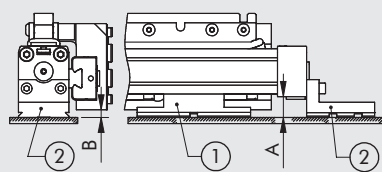
Ø	Stroke	Max. cushioning		Max. impact force [N]	Max. thrust force [N]
		For stroke [J]	For hour [J]		
16	10	4.5	14125	1000	220
25	16	18	34000	2800	530
32	22	40	53700	3750	890

ASSEMBLY DIAGRAMS

275 (horizontal)

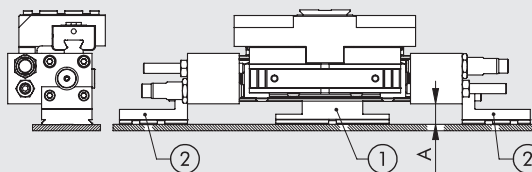


275/276 (vertical)

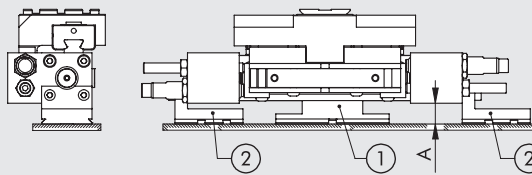


276 (horizontal)

Ø 16 - 25



Ø 32



Ø	Horizontal		A	B	Vertical		
	Intermediate support code (1)	Foot code (2)			Intermediate support code (1)	Foot code (2)	
16	17	W0950164004K	W0950167001K	17	5.7	W0950164004K	W0950167001K
25	16.5	W0950254004K	W0950257001K	16.5	6	W0950254004K	W0950257001K
32	17.5	W0950324004K	W0950327001K	17.5	4.5	W0950324004K	W0950327001K

KEY TO CODES

CYL	2 7	5	0	3 2	0 1 0 0	C	N	K
	TYPE			BORE	STROKE		GASKETS	FAMILY
	27 Rodless cylinder	5 Dual-acting, cushioned, magnetic, with ball recirculation guides ▲ 6 Dual-acting, cushioned, with ball recirculation guides + adjustable stops and decelerators	0 Magnetic S Non-magnetic ■ G No stick-slip	16 25 32	Ø 16: 100 to 1350 mm Ø 25 and 32: 100 to 2300 mm		N NBR gaskets	K V-Lock

■ Use at speeds lower than 0.2 m/s to prevent bounce. Use unlubricated air only.

▲ For use in conditions exceeding those shown in the "Diagram of speed and maximum cushionable load" on page A3.39.

NOTES

ACCESSORIES: FIXINGS

FOOT Ø 16, CODE W0950167001K

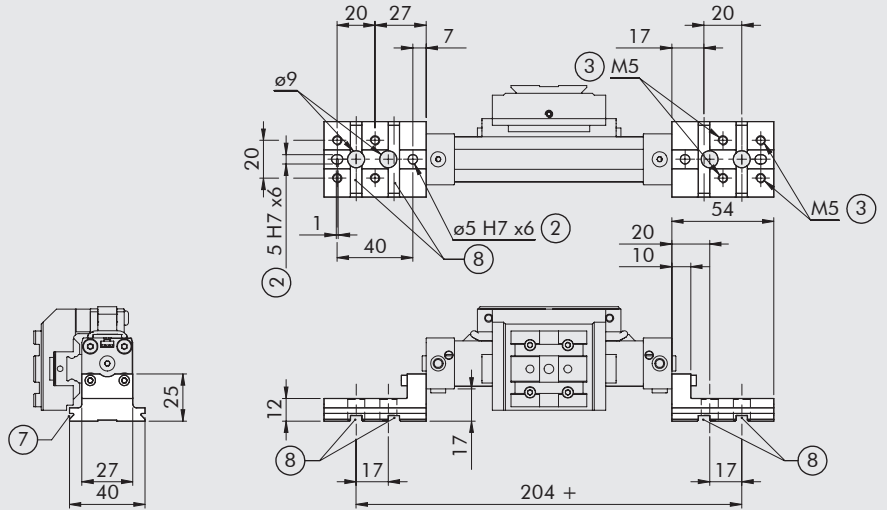


+ = ADD THE STROKE

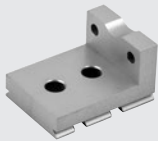
- ② Holes for centring pins
- ③ Threaded holes for fixing
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key

Weight: 68 g

Note: One element per pack, complete with 2 short screws for fixing to the head and 2 long screws for use when a decelerator support is prese



FOOT Ø 25, CODE W0950257001K

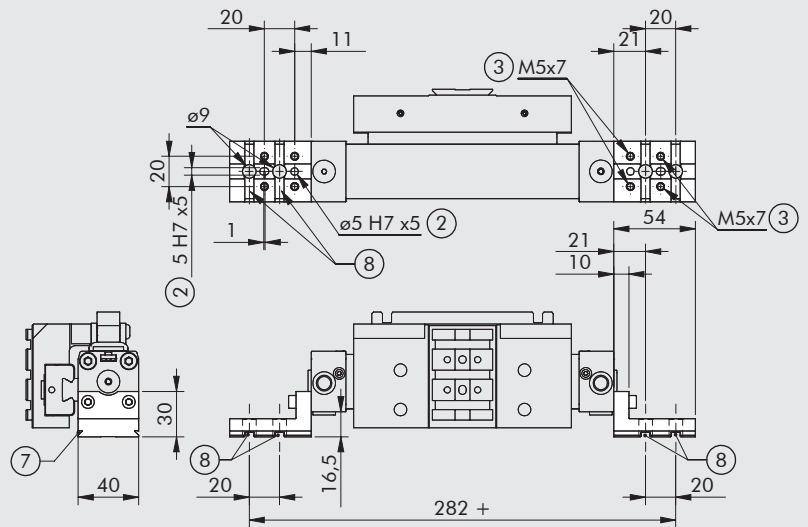


+ = ADD THE STROKE

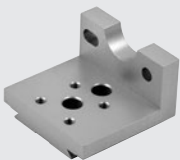
- ② Holes for centring pins
- ③ Threaded holes for fixing
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key

Weight: 94 g

Note: One element per pack, complete with 2 short screws for fixing to the head and 2 long screws for use when a decelerator support is prese



FOOT Ø 32, CODE W0950327001K

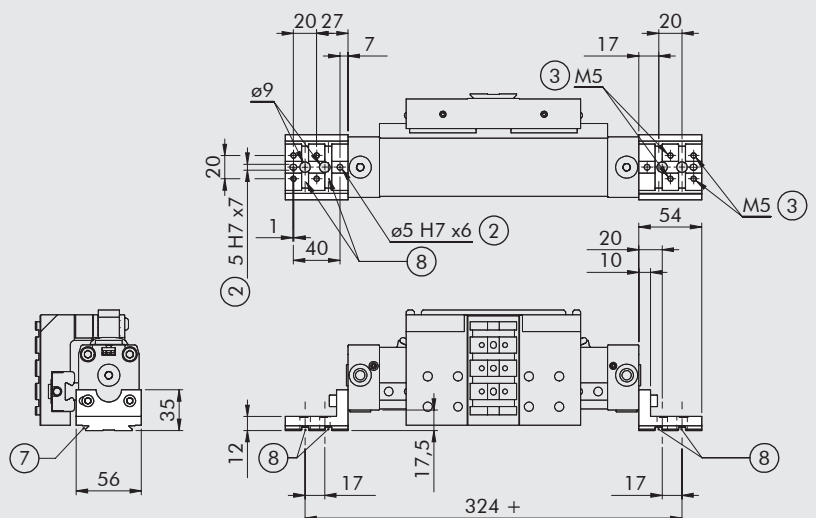


+ = ADD THE STROKE

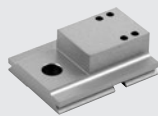
- ② Holes for centring pins
- ③ Threaded holes for fixing
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key

Weight: 148 g

Note: One element per pack, complete with 2 short screws for fixing to the head and 2 long screws for use when a decelerator support is prese



INTERMEDIATE SUPPORT Ø 16, CODE W0950164004K



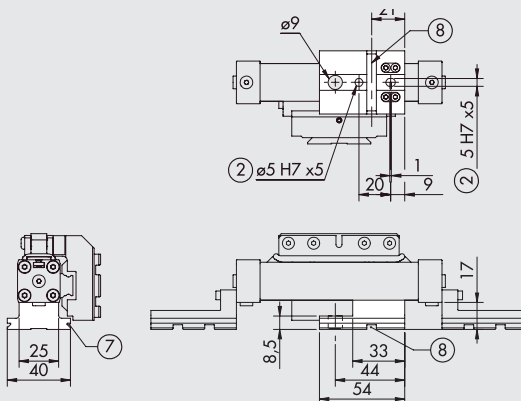
- ② Holes for centring pins
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key

Weight: 70 g

Note: 1 per pack, complete with 4 screws.

To fix it to the barrel, make the holes indicated in the instruction together with the accessory.

Use only as a support and not as a fixture



INTERMEDIATE SUPPORT Ø 25, CODE W0950254004K



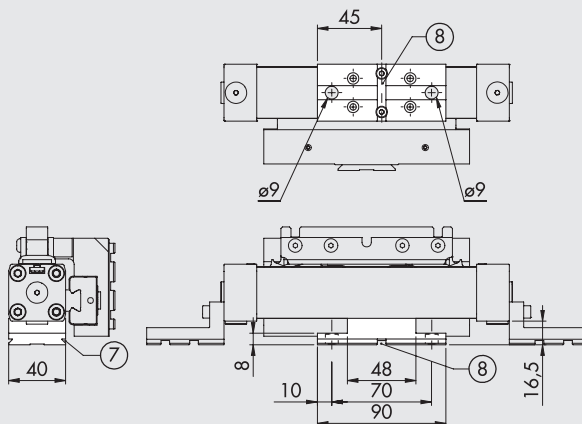
- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key

Weight: 127 g

Note: Plate supplied with 2 screws.

To fix it to the barrel, make the holes indicated in the instruction together with the accessory.

Use only as a support and not as a fixture



INTERMEDIATE SUPPORT Ø 32, CODE W0950324004K

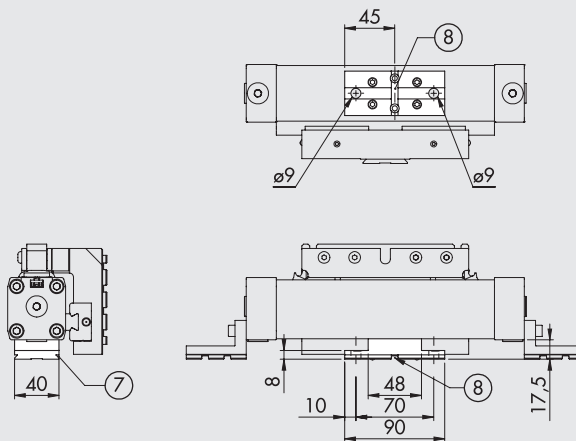


- ⑦ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
- ⑧ Slot for "V-Lock" precision key

Weight: 136 g

Note: 1 support + 4 screws and 4 fixing plates.

Use only as a support and not as a fixture

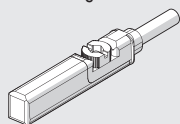


ACCESSORIES: MAGNETIC SENSORS

RETRACTING SENSOR

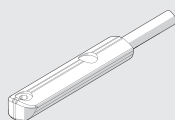
SENSOR, SQUARE TYPE

Latest generation,
secure fixing



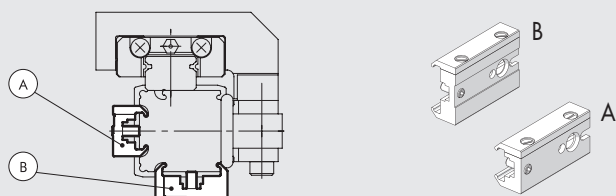
SENSOR, OVAL TYPE

Traditional



For codes and technical data, see **chapter A6**.

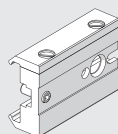
Ø 16 SENSOR SUPPORT



Code	Description	Type	Mounting on the carriage opposite side	Mounting on the guide opposite side
0950164003	Sensor support short	A	•	
0950164001	Sensor support std	B		•

Note: Supplied complete with 2 screw, 1 pin

Ø 25 SENSOR SUPPORT

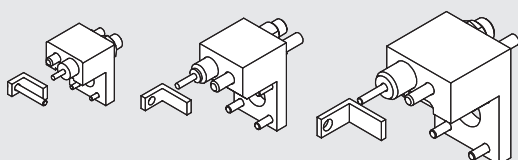


Code	Description
0950164001	Sensor support STD

Note: Supplied with 1 stud pin, 2 screws

ACCESSORIES: DECELERATORS

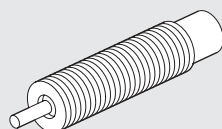
ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS KIT



Code	Description	Weight [g]
0950164002K	Rodless cylinder limit switch and shock absorbers Ø 16 V-Lock	133
0950254002K	Rodless cylinder limit switch and shock absorbers Ø 25 V-Lock	267
0950324002K	Rodless cylinder limit switch and shock absorbers Ø 32 V-Lock	610

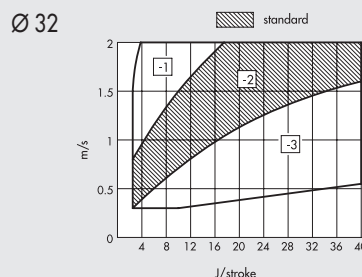
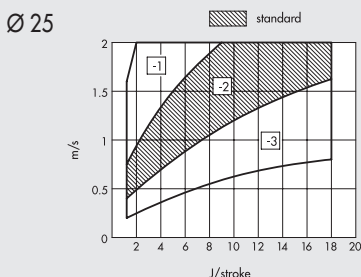
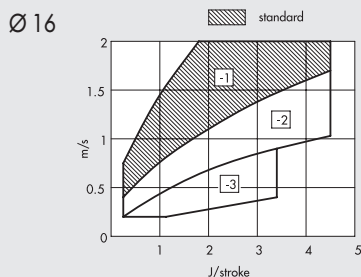
Note: Kit contents: 1 decelerator support, 1 decelerator, 1 decelerator nut, 1 stop grub screw, 1 grub screw nut, 1 bracket, 1 bracket screw (for Ø 16 only), 4 support locking screws.

SHOCK ABSORBERS



Code	Description	Ø
0950004003	Shock absorbers ECO15 MF1 + nut M12x1	16
0950004004	Shock absorbers ECO25 MC2 + nut M14x1.5	25
0950004005	Shock absorbers ECO50 MC2 + nut M20x1.5	32

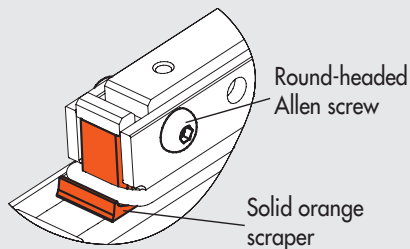
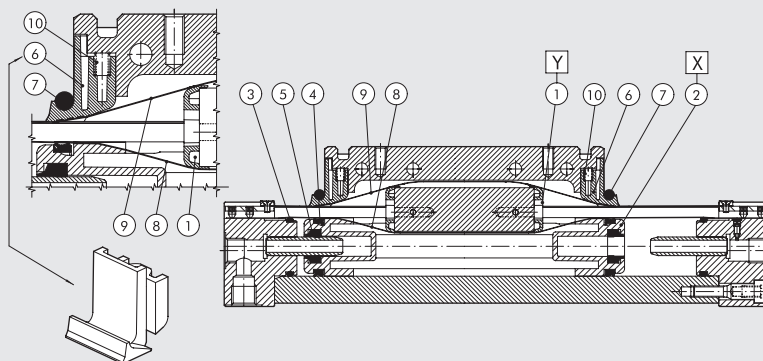
GRAPHS TO HELP CHOOSE THE RIGHT SHOCK ABSORBERS



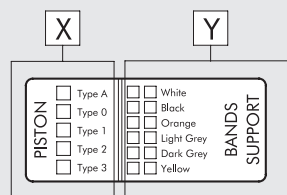
The dotted areas indicate that the SHOCK ABSORBERS is supplied standard. Other options can be selected depending on the speed [m/sec] and the maximum work force [J/stroke] to dissipate at each stroke. Refer to the diagrams above to select the correct option.

SPARES

- ① Band support kit
- ② Piston kit
- ③ ④ ⑤ ⑥ ⑦ ⑩ NBR gaskets Kit (FKM/FPM for ⑦)
- ⑧ ⑨ Bands Kit (inner/outer)



Spare parts label on one cylinder side



BANDS SUPPORT KIT POS 1 (Y)

Ø	Code White	Code Black	Code Orange	Code Light grey	Code Dark grey	Code Yellow
16	0090165080	0090165081	0090165082	0090165083	0090165084	0090165085
25	0090255080	0090255081	0090255082	0090255083	0090255084	0090255085
32	0090325080	0090325081	0090325082	0090325083	0090325084	0090325085

PISTON KIT POS 2 (X)

Ø	Code Type 0 (0 rings)	Code Type 1 (1 rings)	Code Type 2 (2 rings)	Code Type 3 (3 rings)	Code Type A (4 rings)	Code Yellow
16	0090165015	0090165016	0090165017	0090165018	-	0090165085
25	0090255015	0090255016	0090255017	0090255018	0090255019	0090255085
32	0090325015	0090325016	0090325017	0090325018	0090325019	0090325085

BANDS KIT (INNER AND OUTER) POS. 8-9

Ø	Code
16	0090166_ _ _ _
25	0090256_ _ _ _
32	0090326_ _ _ _

Complete the code with the 4 figure cylinder stroke.

NBR GASKET KIT POS. 3-4-5-6-7-10

Ø	Code
16	0090165022
25	0090255022
32	0090325022