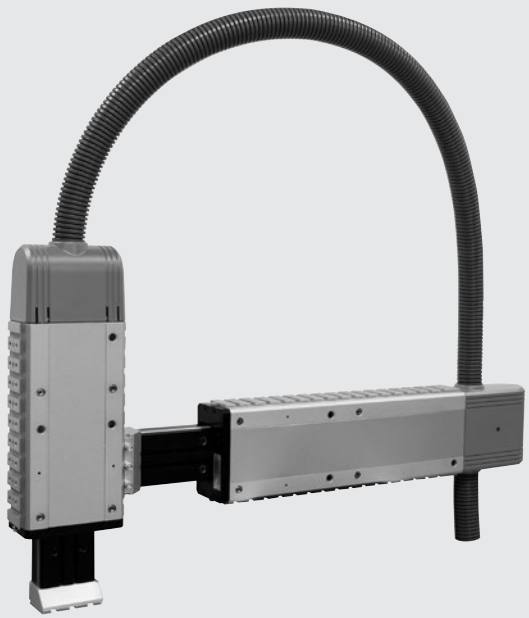
LINEAR UNITS SERIES LEPK

The LEPK linear units are designed for horizontal or vertical mounting. They are driven by an ISO 6432 pneumatic cylinder that can be easily removed when it needs to be replaced.
The precision round bars, which are hardened and incorporated in the rectangular profile enclosed by the body, provide a reliable guide system without any backlash, jointly with the adjustable casters.
The stoke is limited by mechanical stops that are provided with a fine adjustment device and hydraulic shock-absorbers.
A LED visible through the openings provided in the body indicates the switching status. The final positions are controlled by inductive sensors (included in the supply). The front plate comes with V-Lock connections. Dovetail guides are provided on both sides of the body for the connection of the V-Lock or QS system.
The area of the body where to make the transversal grooves for connection with type K fixing elements can be specified at the time of the order. The encapsulated construction ensures the elimination of any points of hazard and increased silent operation.
The linear units are available in two versions:

- version A comes with a retracted position and an adjustable extended position;
- version B is designed to achieve a second supplementary adjustable extended position.

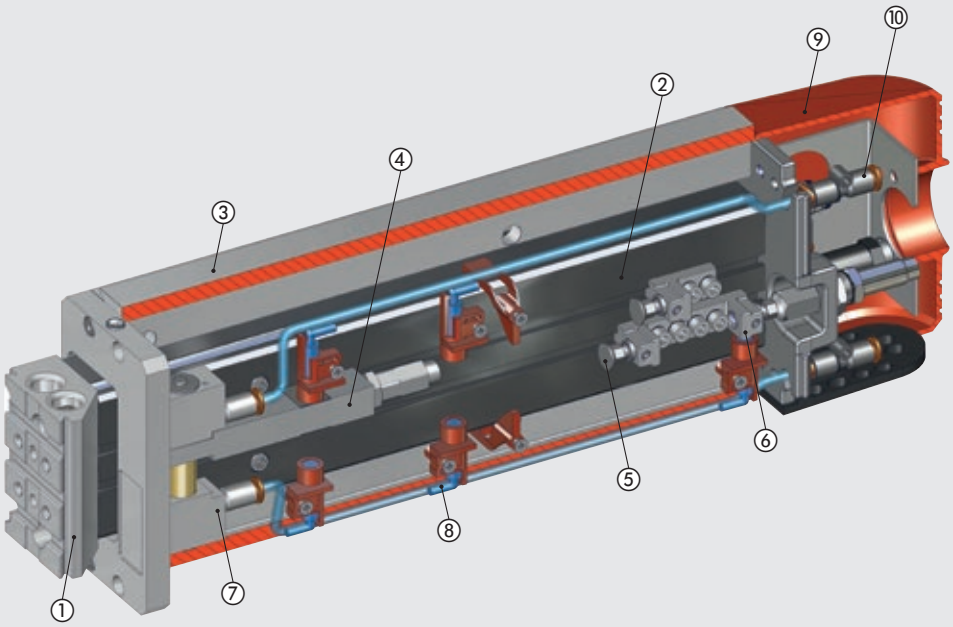
The LEPK units for vertical mounting can be equipped with a return spring to balance the weights. In the event of an emergency or a drop in pressure, the vertical slide is automatically pulled into the upper end-of-stroke position (slide fully retracted). For the orderly arrangement of cables and pipes, a hose pipe can be ordered. The linear unit for horizontal mounting can be supplied complete with an electrical terminal board.

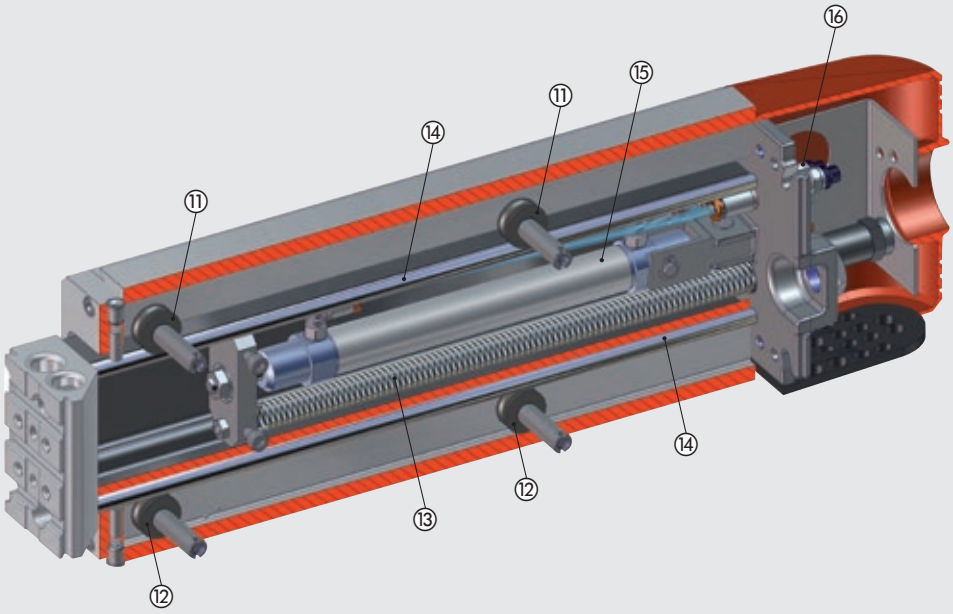


TECHNICAL DATA		LEPK-1-90-H		LEPK-1-160-H		LEPK-1-225-H		LEPK-2-320-H		LEPK-2-450-H		LEPK-1-60-V		LEPK-1-90-V		LEPK-1-160-V	
		Type A	Type B	Type A	Type B	Type A	Type B	Type A	Type B	Type A	Type B	Type A	Type B	Type A	Type B	Type A	Type B
Number of positions		2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Orientation		Horizontal										Vertical					
Operating pressure	bar	3 to 7															
	MPa	0.3 to 0.7															
	psi	43.5 to 101															
Temperature range	°C	-10 to 50															
	°F	14 to 122															
Fluid		Lubricated or unlubricated 20 µm filtered air. If lubricated air is used, lubrication must be continuous															
End position stop shock-absorption	mm	Hydraulic shock-absorbers															
End-position control		Inductive sensors with a LED visible from the outside															
Repeatability (on 100 strokes at constant conditions)	mm	< 0.005															
Piston diameter / Piston rod diameter	mm	16 / 6						20 / 8		25 / 10		16 / 6					
Stroke (min / max)	mm	15 to 90		15 to 160		15 to 225		50 to 320		50 to 450		15 to 60		15 to 90		15 to 160	
Intermediate useful stroke	mm	-	0 to 80	-	0 to 100	-	0 to 100	-	0 to 150	-	0 to 150	-	0 to 50	-	0 to 80	-	0 to 100
Theoretic force at 6 bar:																	
in thrust	N	106		106		106		165		260		Max. 90 (see page **A3**.101/102)					
in traction	N	90		90		90		137		218		Max. 150 (see page **A3**.101/102)					
Weight	kg	2.5	3.1	3.2	3.8	4.5	4.6	8	9.6	10.5	11	2.15	2.5	2.35	3	3.1	3.7
Weight of the moving mass	kg	0.68		0.83		1.25		2.29		3.12		0.61		0.68		0.83	
Maximum kinetic energy	J/stroke	5.88						19.6				5.88					
	J/h	25000						53000				25000					
Electrical protection class with PG29 pipe mounted (only for versions with a terminal board)		IP 42										-		-		-	
Relative air humidity (only for versions with a terminal board)		< 95 %										-		-		-	
Power connection cable (only for versions with a terminal board)		Max. 17 wires 0.14 - 0.5 mm² for max. 15 proximity switches +0 V +24 V										-		-		-	
Pneumatic connection		Pipe Ø 4						Pipe Ø 6				Pipe Ø 4					
Speed control		Flow regulators Ø 4 - M5						Flow regulators Ø 6 - 1/8"				Flow regulators Ø 4 - M5					

IMPORTANT: for maximum forces and moments, see page **A3**.97

COMPONENTS

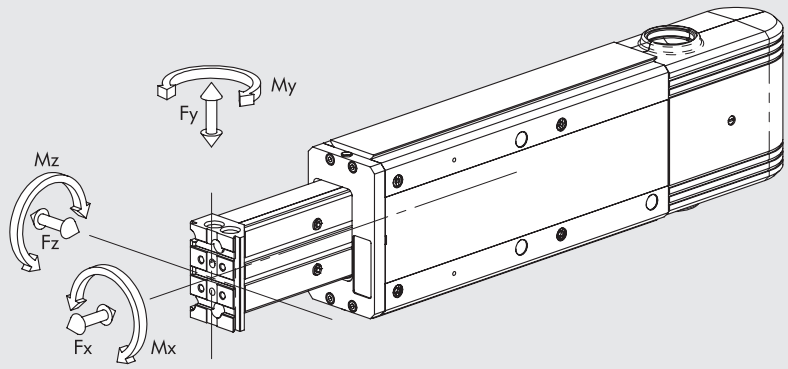




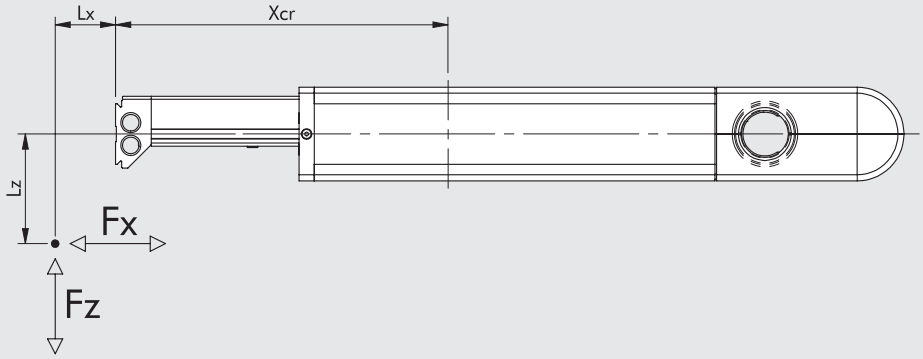
① FRONTAL INTERFACE: anodized aluminium
② SLIDING GUIDE: burnished aluminium
③ BODY: anodized aluminium
④ 3rd POSITION STOP: aluminium
⑤ ADJUSTABLE STOP: zinc-plated steel
⑥ FIXED STOP: zinc-plated steel
⑦ CONTROL CYLINDER, 3rd POSITION
⑧ INDUCTIVE SENSOR
⑨ GUARD: technopolymer
⑩ CYLINDER AIR SUPPLY FITTING, 3rd POSITION
⑪ ECCENTRIC ROLLER
⑫ CENTRIC ROLLER
⑬ RETURN SPRING: steel (optional for vertical versions only)
⑭ HARDENED GUIDE: hardened ground chromed steel
⑮ PNEUMATIC CYLINDER FOR HANDLING
⑯ FLOW REGULATOR FOR PNEUMATIC CYLINDER

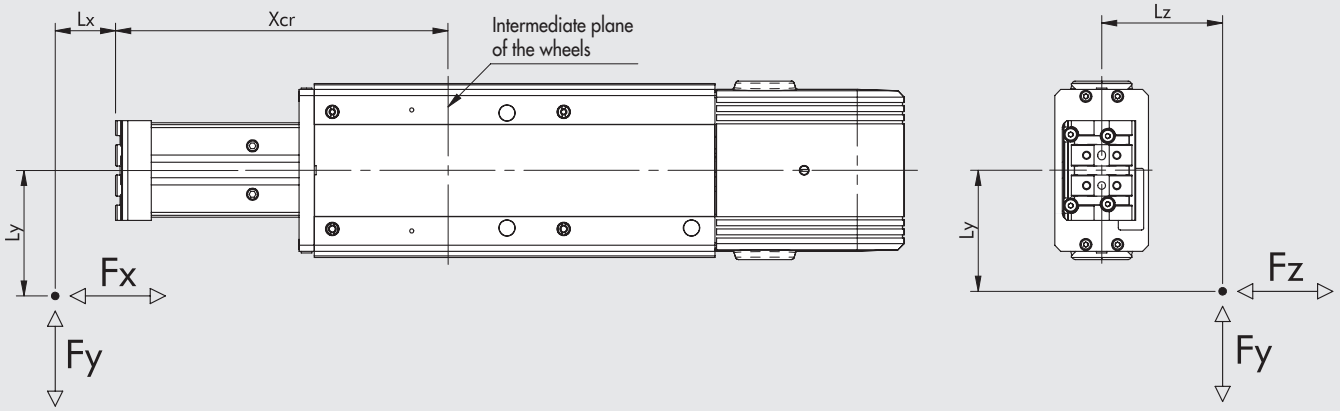
METAL WORK PNEUMATIC

DIAGRAM OF FORCES AND MOMENTS



Type	Xcr [mm]
LEPK-1-90-H-A	100
LEPK-1-90-H-B	128.5
LEPK-1-160-H-A	100
LEPK-1-160-H-B	134
LEPK-1-225-H-A	165
LEPK-1-225-H-B	165
LEPK-1-60-V-A	100
LEPK-1-60-V-B	115.5
LEPK-1-90-V-A	100
LEPK-1-90-V-B	128.5
LEPK-1-160-V-A	100
LEPK-1-160-V-B	134
LEPK-2-320-H-A	132
LEPK-2-320-H-B	179.5
LEPK-2-450-H-A	179.5
LEPK-2-450-H-B	179.5





Size	Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
LEPK-1	550	270	11	20	40
LEPK-2	1000	600	50	60	100

N.B.: The values are calculated on the basis of theoretical useful life of 10.000 km.

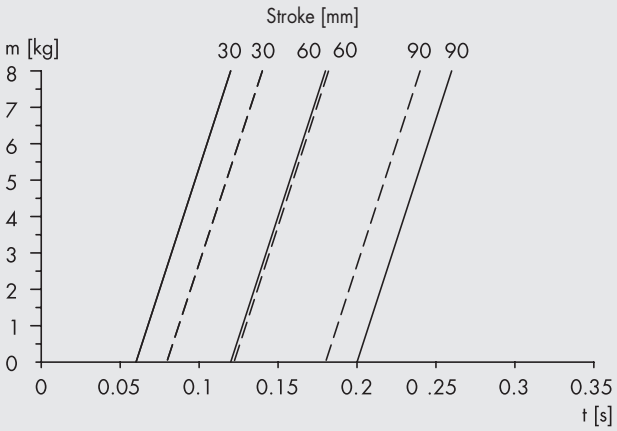
N.B.: When the cylinder is subjected simultaneously to torque and force, keep to the following equations, where the lengths have to be given in metres.

$Mx = Fz \cdot Ly + Fy \cdot Lz$ $My = Fz \cdot (Lx + Xcr) + Fx \cdot Lz$ $Mz = Fy \cdot (Lx + Xcr) + Fx \cdot Ly$

$$\frac{[Mx]}{Mx_{max}} + \frac{[My]}{My_{max}} + \frac{[Mz]}{Mz_{max}} + \frac{[Fy]}{Fy_{max}} + \frac{[Fz]}{Fz_{max}} \leq 1$$

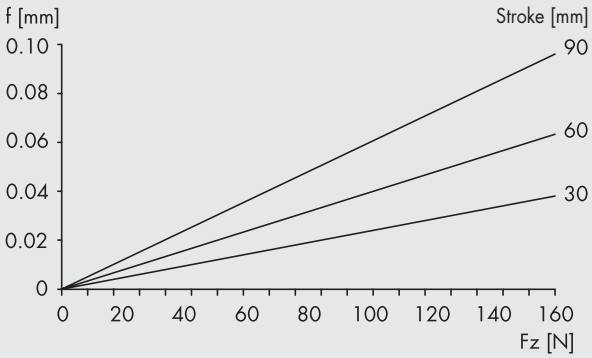
HORIZONTAL LAYOUT

LEPK-1-90-H-A/B - Diagram of traverse times



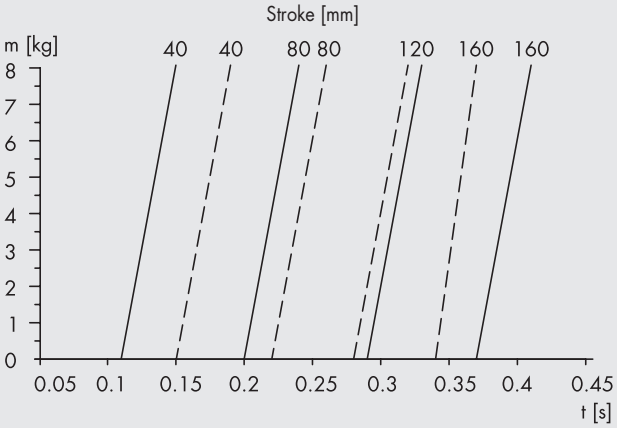
— — — Extension time
——— Retraction time at 5 bar without choke

LEPK-1-90-H-A/B - Stress-deformation diagram



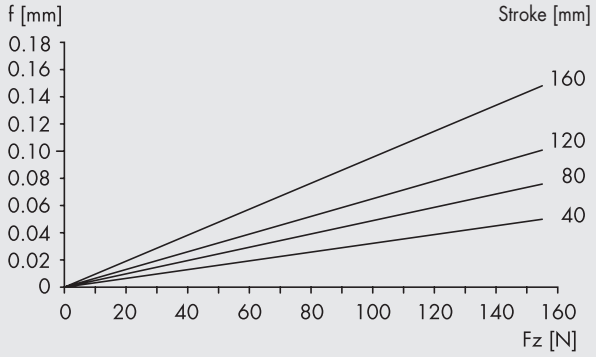
f = Deflection (measured at the locking plate)
Fz = The sum of all vertical forces

LEPK-1-160-H-A/B - Diagram of traverse times



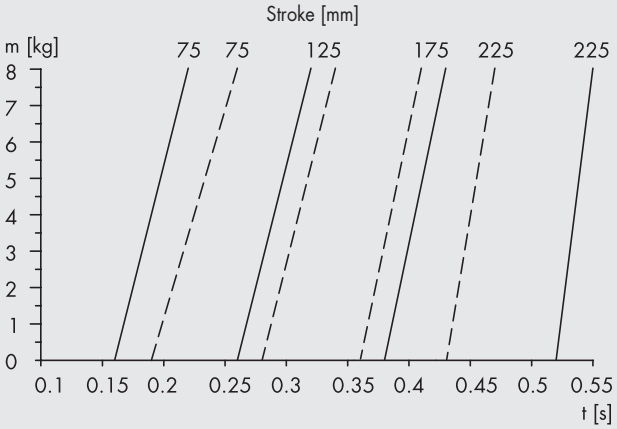
— — — Extension time
——— Retraction time at 5 bar without choke

LEPK-1-160-H-A/B - Stress-deformation diagram



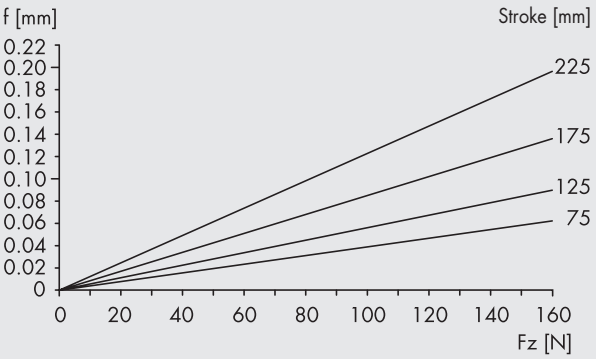
f = Deflection (measured at the locking plate)
Fz = The sum of all vertical forces

LEPK-1-225-H-A/B - Diagram of traverse times



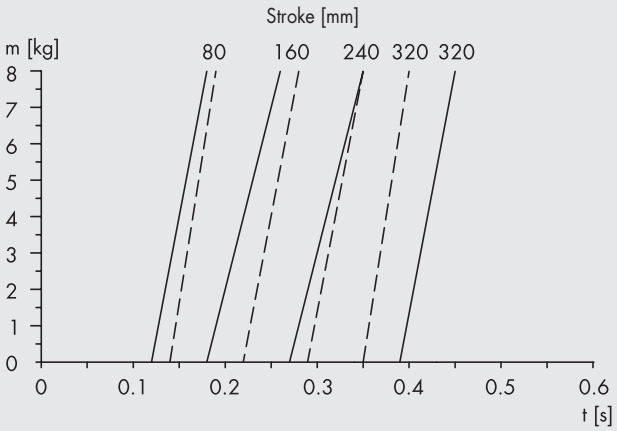
— — — Extension time
——— Retraction time at 5 bar without choke

LEPK-1-225-H-A/B - Stress-deformation diagram



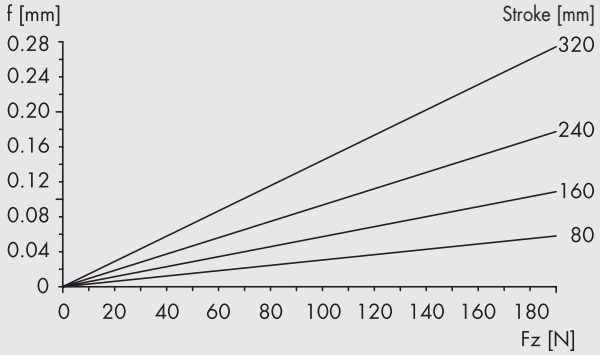
f = Deflection (measured at the locking plate)
Fz = The sum of all vertical forces

LEPK-2-320-H-A/B - Diagram of traverse times



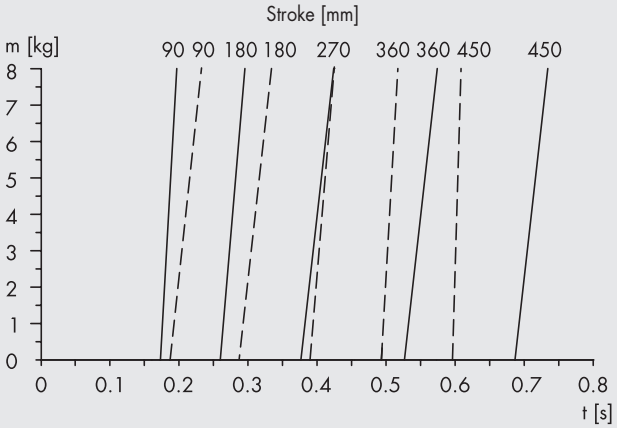
— — — Extension time
——— Retraction time at 5 bar without choke

LEPK-2-320-H-A/B - Stress-deformation diagram



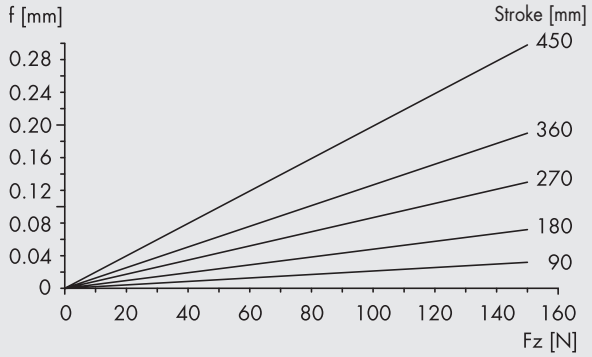
f = Deflection (measured at the locking plate)
Fz = The sum of all vertical forces

LEPK-2-450-H-A/B - Diagram of traverse times



— — — Extension time
——— Retraction time at 5 bar without choke

LEPK-2-450-H-A/B - Stress-deformation diagram



f = Deflection (measured at the locking plate)
Fz = The sum of all vertical forces

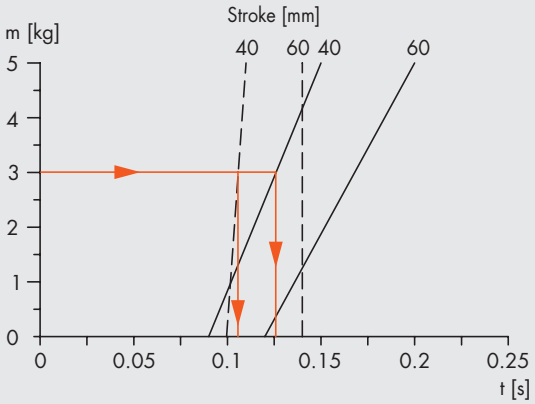
VERTICAL LAYOUT

EXAMPLE
LEPK-1-60-V-A/B - Traverse times

Extension time
m = 3 kg
Stroke = 40 mm
Result: t = 0.11 s

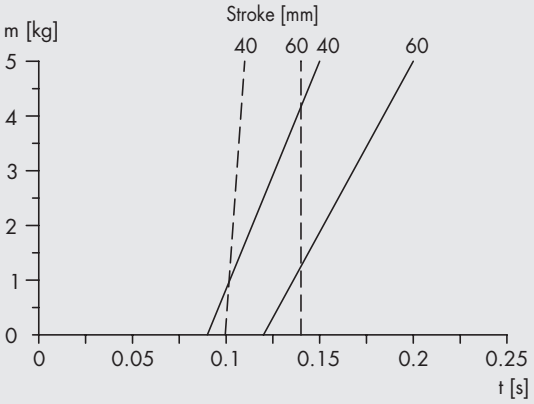
Retraction time
m = 3 kg
Stroke = 40 mm
Result: t = 0.13 s

m = Mass applied [kg]
t = Traverse times [s]
Stroke = Traverse stroke [mm]



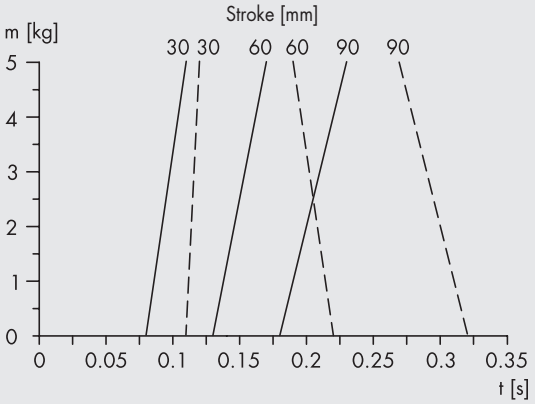
Extension time
Retraction time at 5 bar without choke

LEPK-1-60-V-A/B - Diagram of traverse times



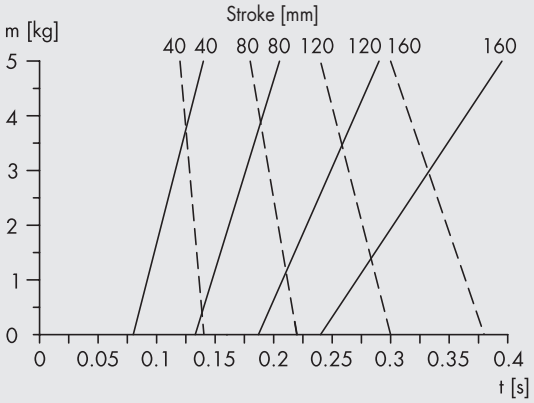
Extension time
Retraction time at 5 bar without choke

LEPK-1-90-V-A/B - Diagram of traverse times



Extension time
Retraction time at 5 bar without choke

LEPK-1-160-V-A/B - Diagram of traverse times

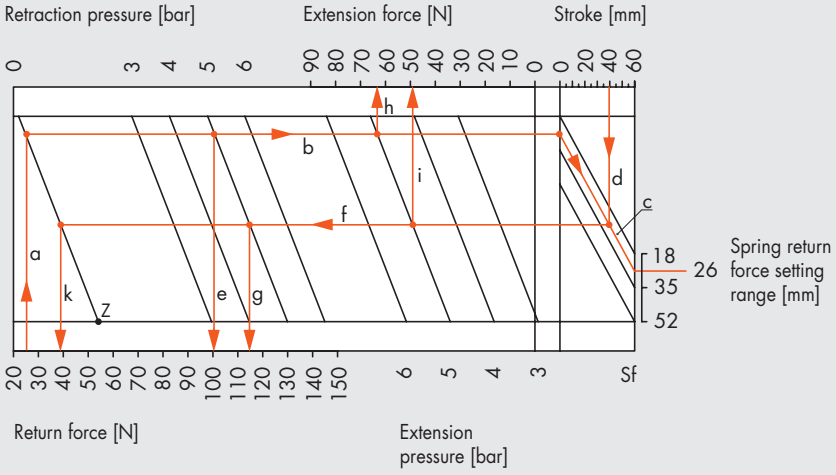


Extension time
Retraction time at 5 bar without choke

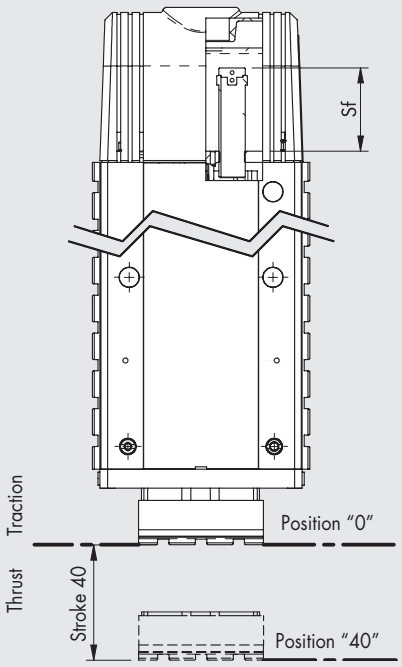
FORCES RELATING TO LEPK VERTICAL UNITS WITH SPRING

EXAMPLE
LEPK-1-60-V-A/B – Diagram of forces – Interpretation of the diagram of LEPK vertical unit forces

Stroke = 40 mm
Operating pressure = 5 bar
Mass applied = 2.5 kg (about 25 N)
Requirement = in no-pressure conditions (0 bar), the mass applied (2.5 kg) must move to the upper end-of-stroke position ("0")



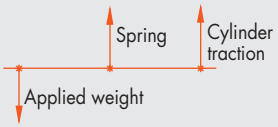
Vertical mounting position



1) Maintenance of the LEPK in position "0" with no pressure (stroke = 0 mm, pressure = 0 bar):
starting from the weight force of the mass to be lifted (25 N), and following the lines **a** - **b** - **c**, you can set the Sf = 26 mm and the following force values:

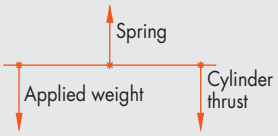
- **line e**: tractive force in position "0" and with a pressure of 5 bar in the cylinder on the front side (stroke = 0 mm, pressure = 5 bar): in the case in point, it is around 100 N.
  The mass applied must now be subtracted:
  F = 100 N - 25 N = 75 N

Traction position "0" p = 5 bar



- **line h**: thrust force in position "0" and with a pressure of 5 bar in the cylinder on the back side (stroke = 0 mm, pressure = 5 bar): in the case in point, it is about 65 N.
  The mass applied must now be added up, which gives:
  F = 65 N + 25 N = 90 N

Thrust position "0" p = 5 bar

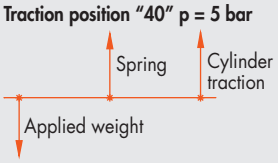


N.B.: As can be seen in the graph, for the LEPK-1-60-V, the maximum weight sustainable by the spring alone without pressure is about 55 N (with Sf = 52 mm). See point "**Z**" in the graph.

2) Verification of the forces with stroke setting to 40 mm:
starting from the 40 mm stroke and following the line **d** - **f** the following values of force are obtained:

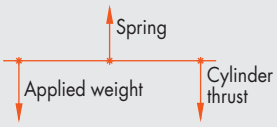
- **line g**: traction force in position "40" and with a pressure of 5 bar in the cylinder on the front side (stroke = 0 mm, pressure = 5 bar): in the case in point, it is around 115 N.
  The mass applied must now be subtracted, which gives:
  F = 115 N - 25 N = 90 N

Traction position "40" p = 5 bar



- **line i**: thrust force in position "40" and with a pressure of 5 bar in the cylinder on the back side (stroke = 40 mm, pressure = 5 bar): in the case in point, it is about 50 N.
  The mass applied must now be added up, which gives:
  F = 50 N + 25 N = 75 N

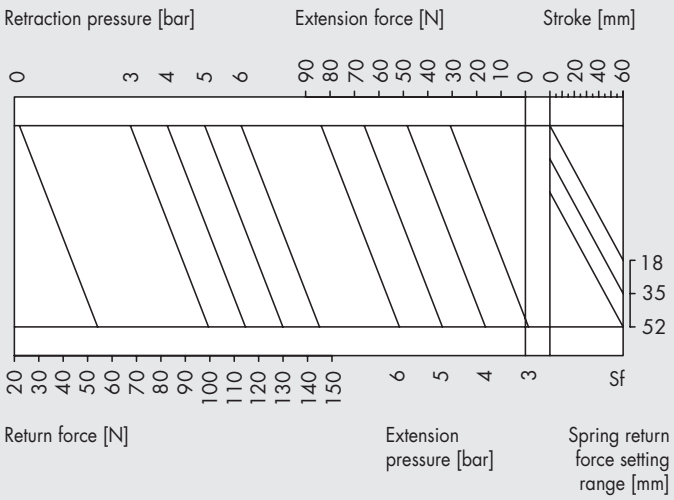
Thrust position "40" p = 5 bar



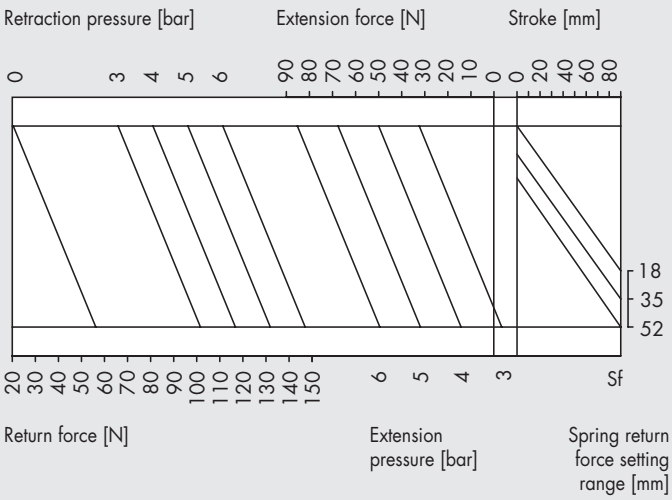
- **line k**: tractive force of the spring in position "40" and without pressure (stroke = 40 mm, pressure = 0 bar): in the case in point it is about 39 N.
  The mass applied must now be subtracted, which gives:
  F = 39 N - 25 N = 14 N

Traction position "40" p = 0 bar

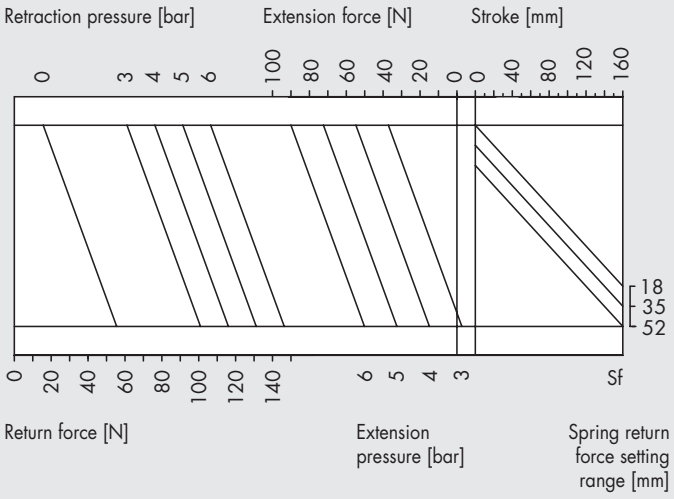
LEPK-1-60-V-A/B - Diagram of forces



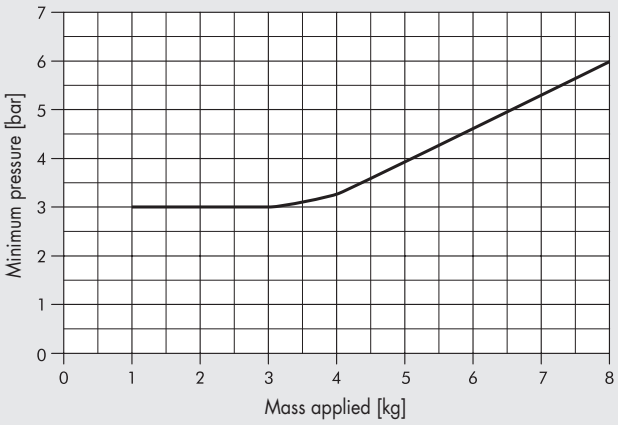
LEPK-1-90-V-A/B - Diagram of forces



LEPK-1-160-V-A/B - Diagram of forces

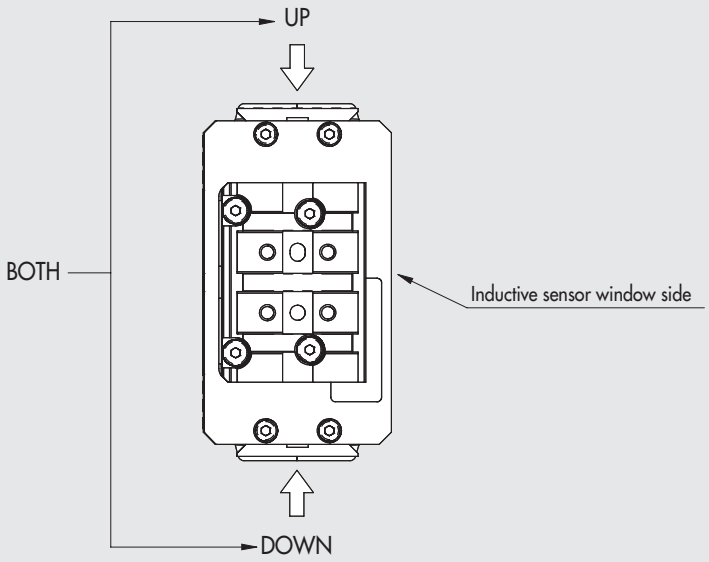


Minimum vertical retraction actuation pressure without spring



MOUNTING OPTIONS

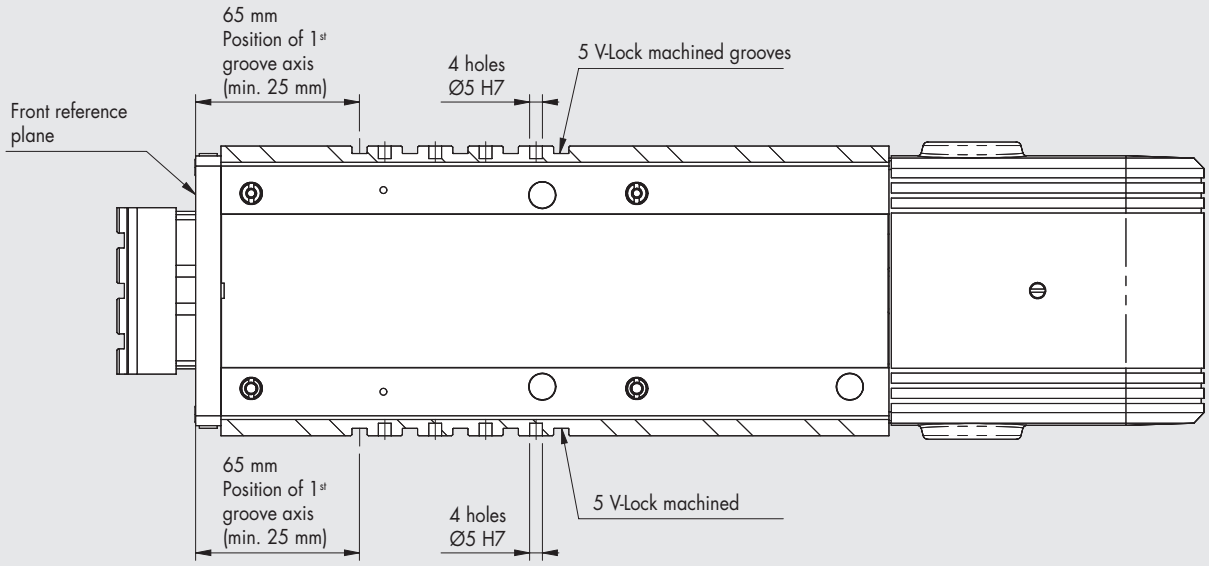
At the encoding stage, you need to determine whether to make the V-Lock grooves and on what side. Number "0" (Zero) identifies the no machining condition, while the letters "U" (Up), "D" (Down) and "B" (Both) identify the side where V-Lock connections must be provided.
The letters identify the position of machining in accordance with the diagram shown in the drawing below.



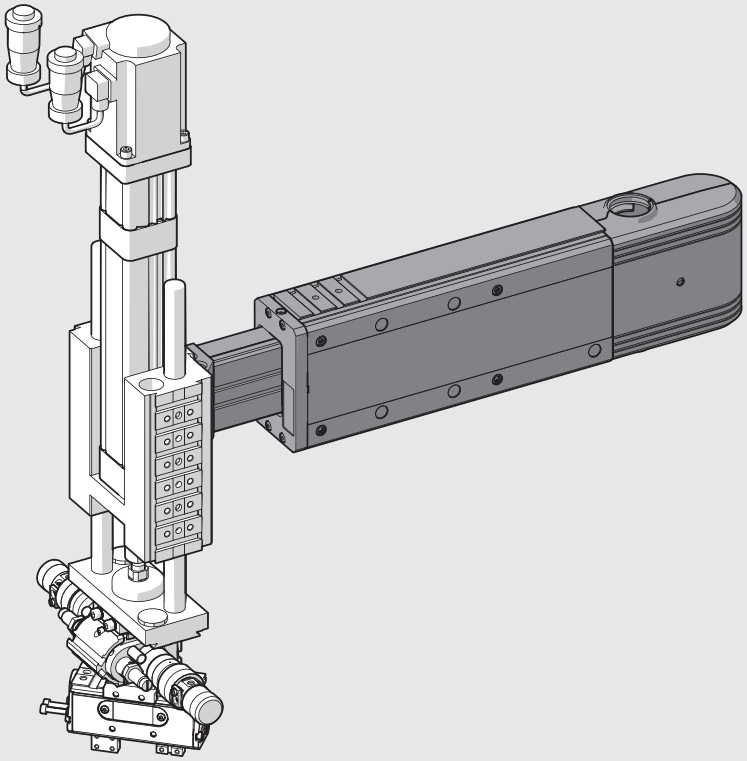
After determining the side of machining, you need to establish the point at which to perform the first V-Lock machining (the reference is the front plane).
The position of the first machining shall be in accordance with the following rules:
- minimum distance from the front reference plane: 25 mm;
- subsequent distances: starting from 25 mm, the distance is increased by 20 mm steps at a time (i.e. 25, 45, 65, 85, etc.).
The number of the V-Lock grooves to be machined is then indicated (the number of Ø5 H7 pinholes coincides with the number of grooves less 1).

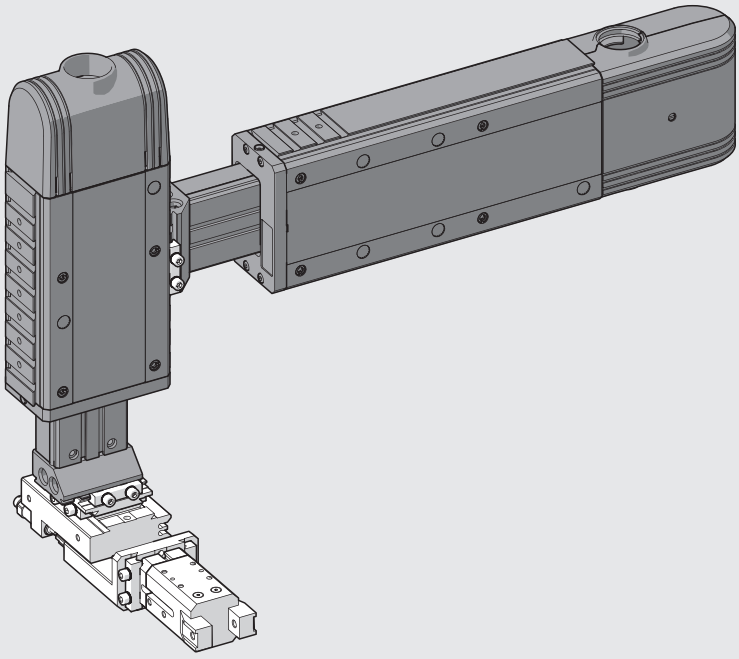
IMPORTANT!
If you decide for version "B", i.e. the one with the grooves machined on both sides of the body, the distance values and the number of grooves shall apply to both sides.

EXAMPLE
If you order an LEPK unit encoded **K1012H00090B06505K** the part ordered will be as follows:



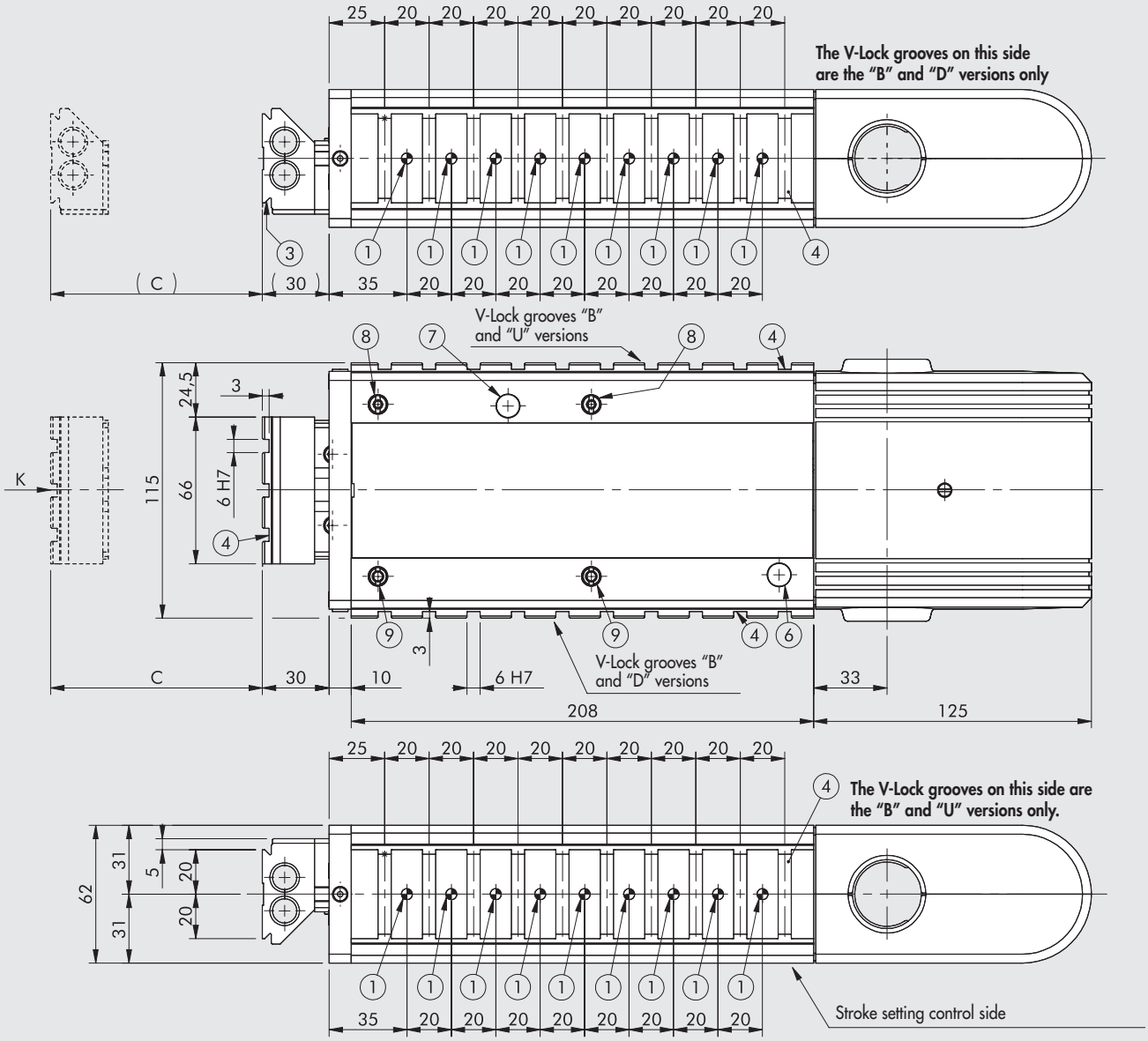
EXAMPLES OF APPLICATION





METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-1-90-H-A LINEAR UNIT (horizontal, 2 positions)

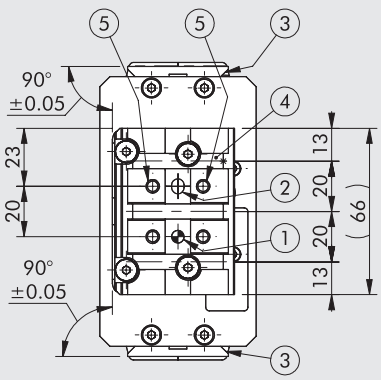


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K101AH00090B02510K with the maximum number of V-Lock grooves (version BOTH)

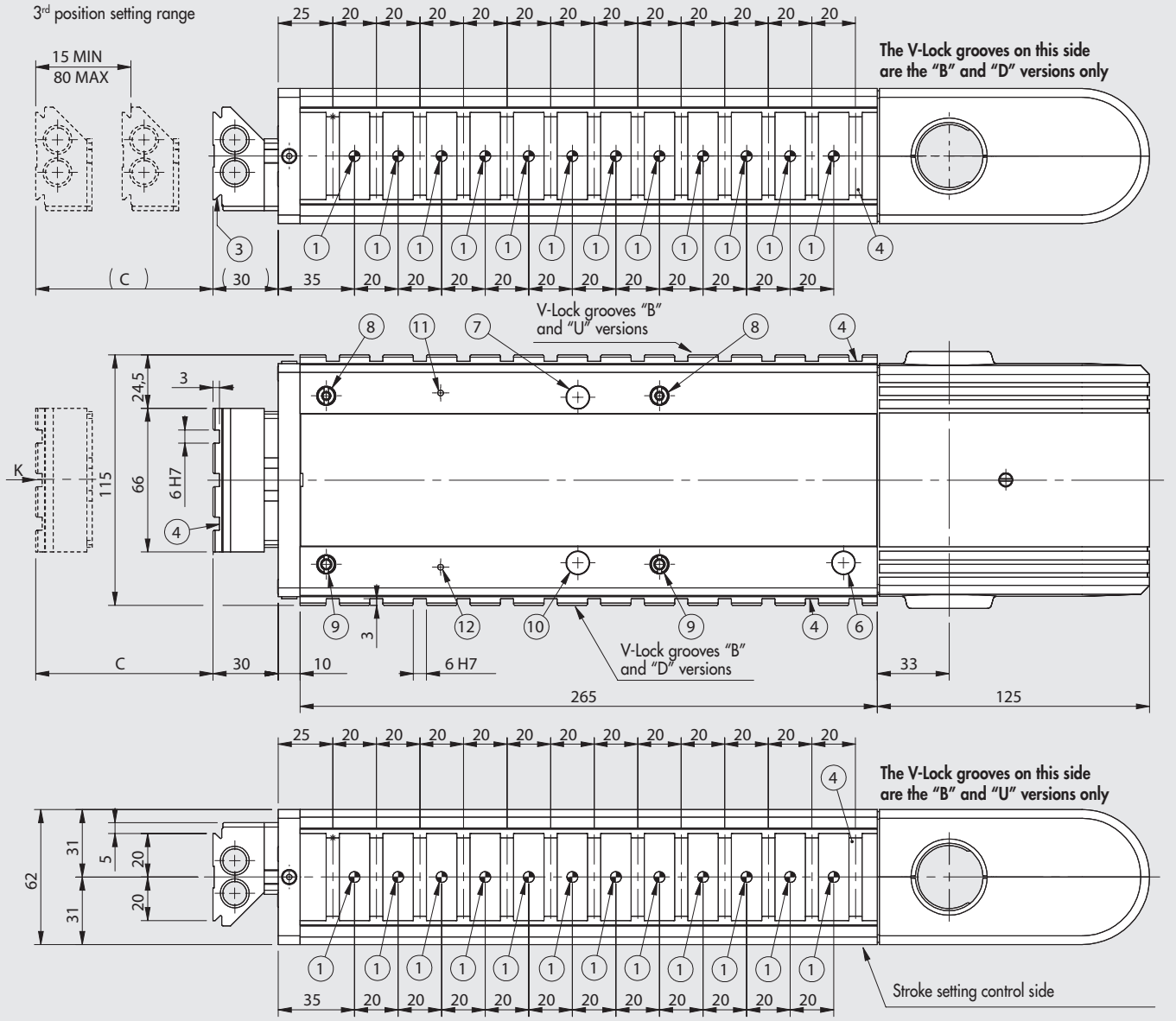
Code	Description	C
K101AH00090000000K K101AH00090B _ _ _ _ _ K K101AH00090D _ _ _ _ _ K K101AH00090U _ _ _ _ _ K	LEPK-1-90-H-A	15 to 90
K101AH20090000000K K101AH20090B _ _ _ _ _ K K101AH20090D _ _ _ _ _ K K101AH20090U _ _ _ _ _ K	LEPK-1-90-H-A without terminal board	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-90-H-A can hold maximum 10 V-Lock grooves and hence a maximum of 9 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-1-90-H-B LINEAR UNIT (horizontal, 3 positions)

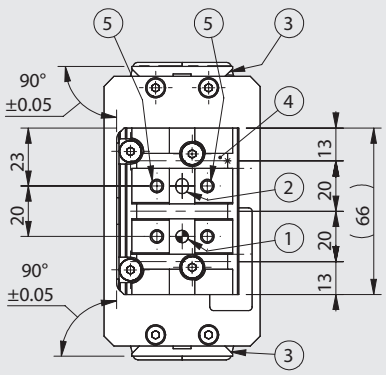


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K101BH00090B02513K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K101BH00090000000K	LEPK-1-90-H-B	15 to 90
K101BH00090B _ _ _ _ _ K		
K101BH00090D _ _ _ _ _ K		
K101BH00090U _ _ _ _ _ K		
K101BH20090000000K	LEPK-1-90-H-B without terminal board	
K101BH20090B _ _ _ _ _ K		
K101BH20090D _ _ _ _ _ K		
K101BH20090U _ _ _ _ _ K		

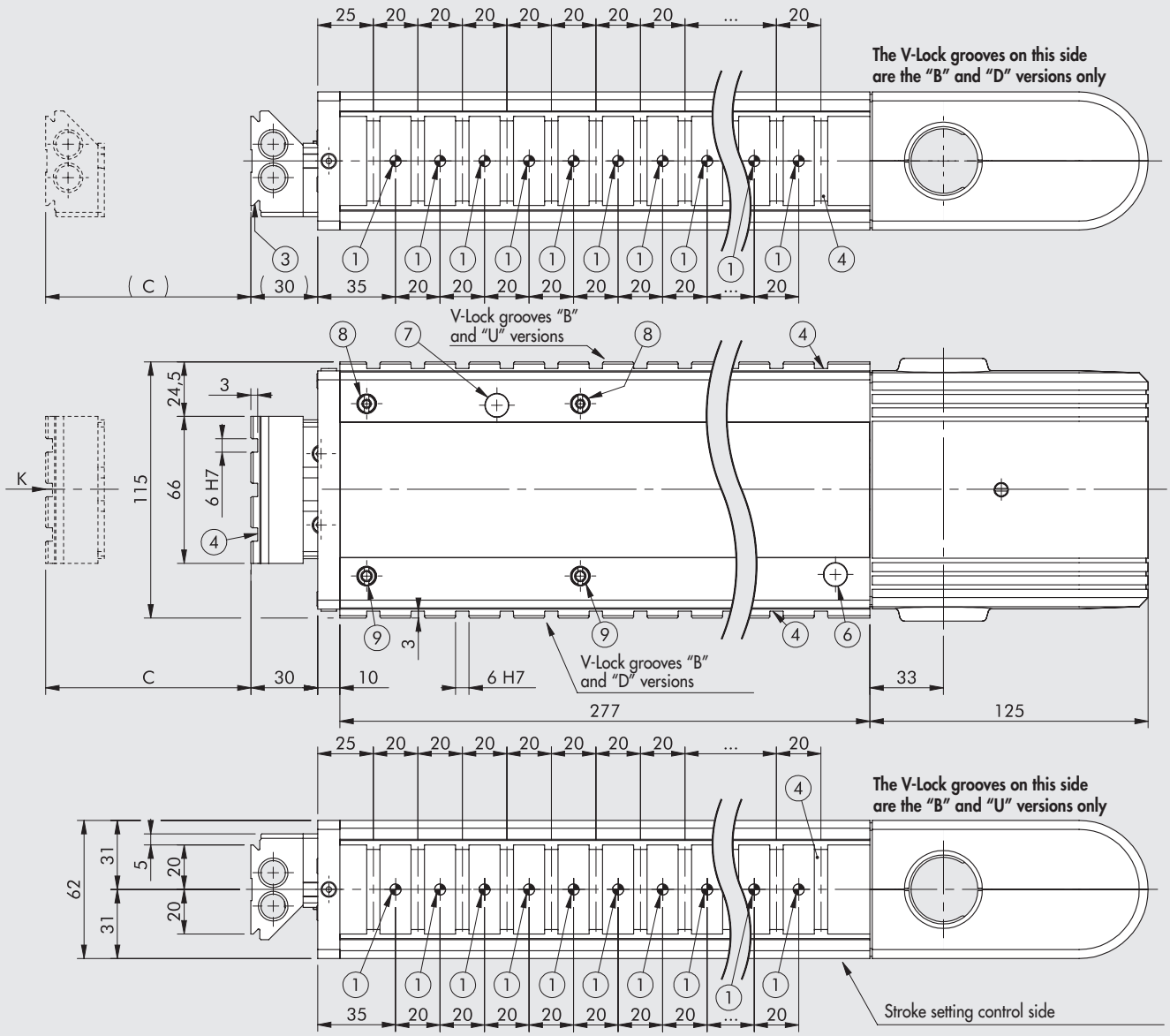
VIEWED FROM "K"



IMPORTANT. The LEPK-1-90-H-B can hold maximum 13 V-Lock grooves and hence a maximum of 12 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-1-160-H-A LINEAR UNIT (horizontal, 2 positions)

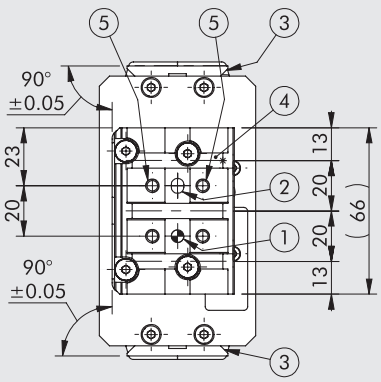


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K101AH00160B02513K with the maximum number of V-Lock grooves (version BOTH)

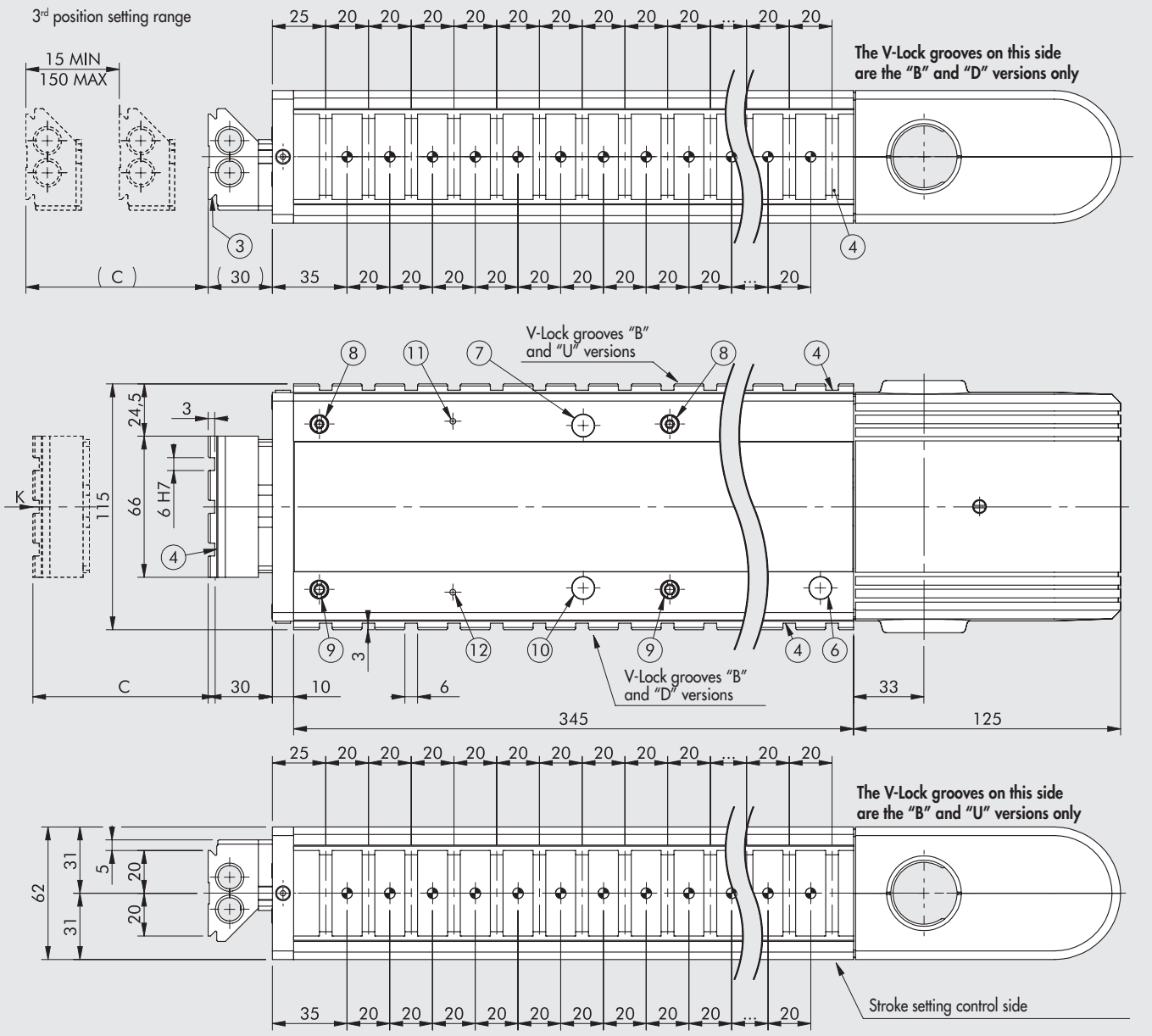
Code	Description	C
K101AH00160000000K K101AH00160B _ _ _ _ _ K K101AH00160D _ _ _ _ _ K K101AH00160U _ _ _ _ _ K	LEPK-1-160-H-A	15 to 160
K101AH20160000000K K101AH20160B _ _ _ _ _ K K101AH20160D _ _ _ _ _ K K101AH20160U _ _ _ _ _ K	LEPK-1-160-H-A without terminal board	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-160-H-A can hold maximum 13 V-Lock grooves and hence a maximum of 12 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-1-160-H-B LINEAR UNIT (horizontal, 3 positions)

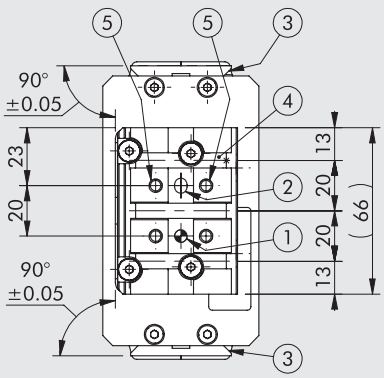


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K101BH00160B02517K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K101BH00160000000K	LEPK-1-160-H-B	15 to 160
K101BH00160B _ _ _ _ _ K		
K101BH00160D _ _ _ _ _ K		
K101BH00160U _ _ _ _ _ K		
K101BH20160000000K	LEPK-1-160-H-B without terminal board	
K101BH20160B _ _ _ _ _ K		
K101BH20160D _ _ _ _ _ K		
K101BH20160U _ _ _ _ _ K		

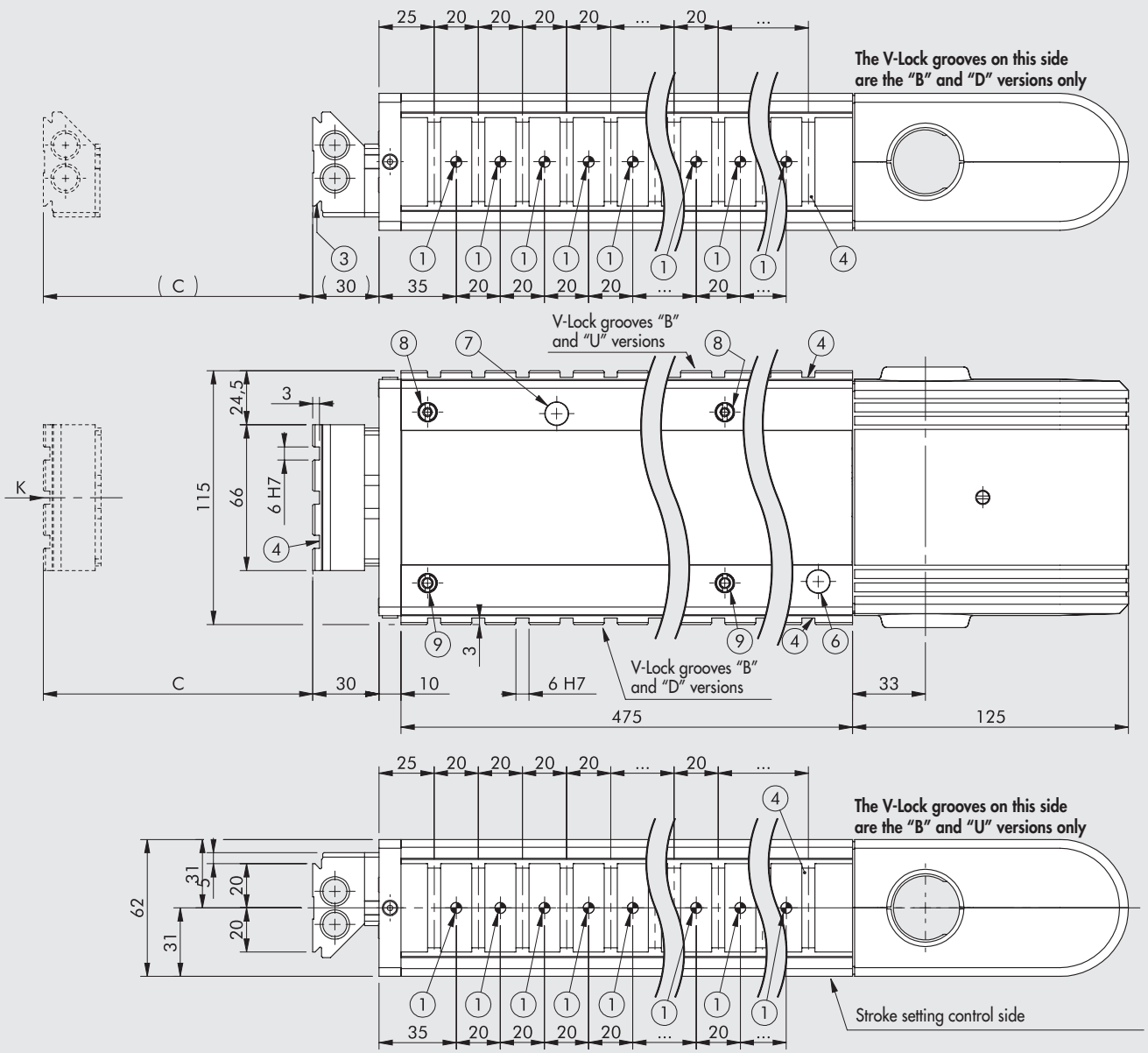
VIEWED FROM "K"



IMPORTANT. The LEPK-1-160-H-B can hold maximum 17 grooves and hence a maximum of 16 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-1-225-H-A LINEAR UNIT (horizontal, 2 positions)

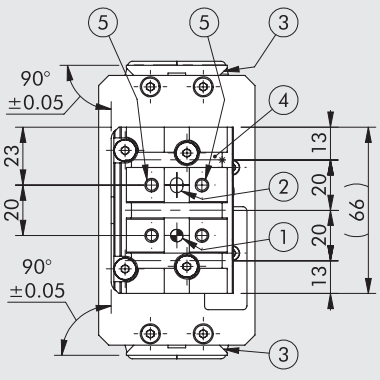


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K101AH00225B02523K with the maximum number of V-Lock grooves (version BOTH)

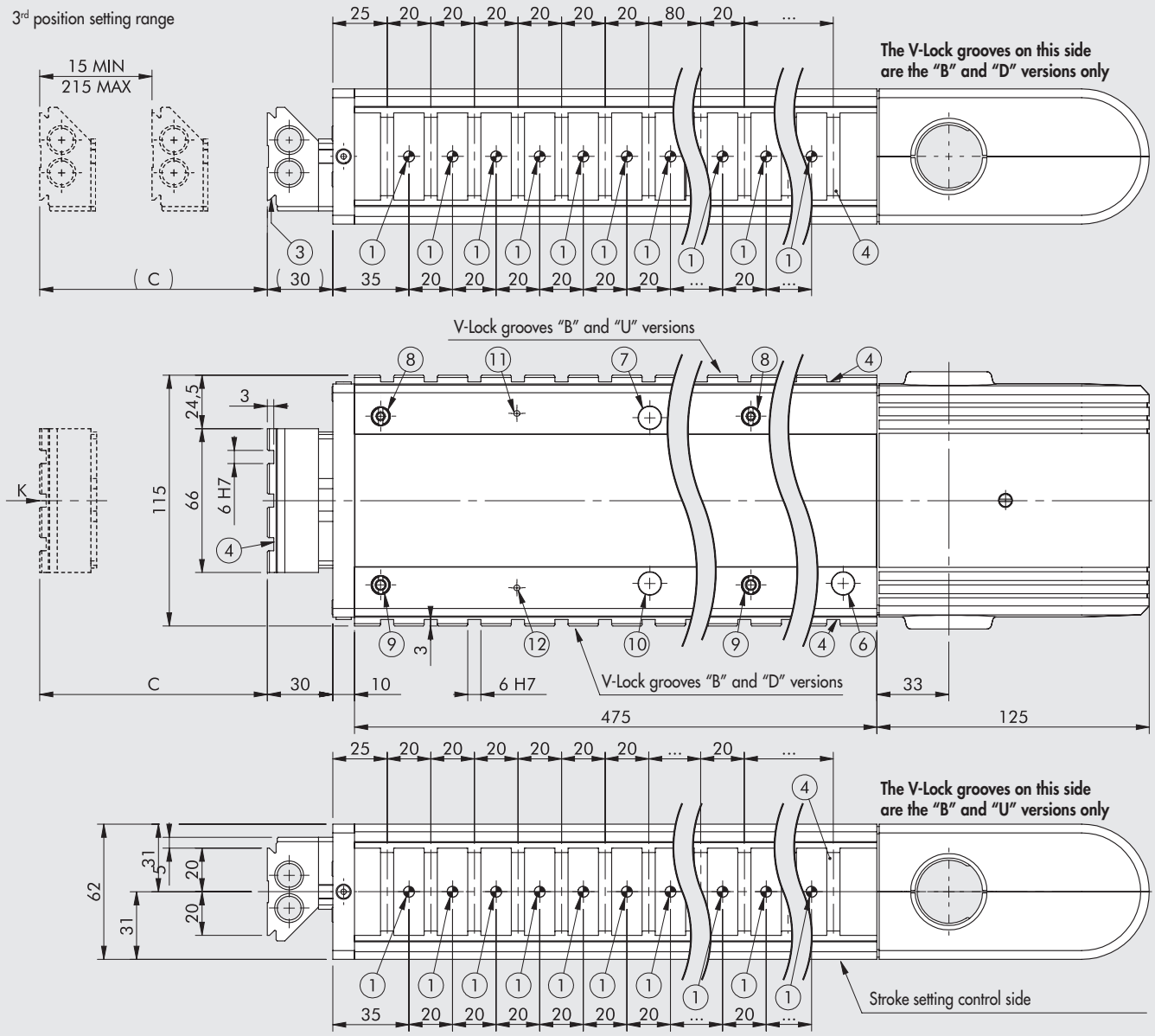
Code	Description	C
K101AH00225000000K K101AH00225B _ _ _ _ _ K K101AH00225D _ _ _ _ _ K K101AH00225U _ _ _ _ _ K	LEPK-1-225-H-A	15 to 225
K101AH20225000000K K101AH20225B _ _ _ _ _ K K101AH20225D _ _ _ _ _ K K101AH20225U _ _ _ _ _ K	LEPK-1-225-H-A without terminal board	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-225-H-A can hold maximum 23 grooves and hence a maximum of 22 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-1-225-H-B LINEAR UNIT (horizontal, 3 positions)

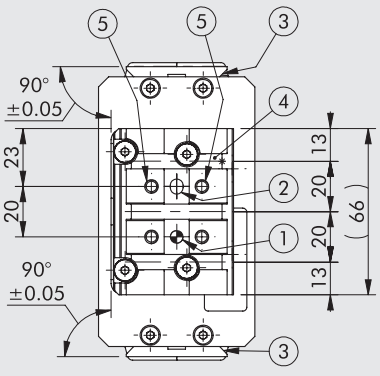


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K101BH00225B02523K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K101BH00225000000K K101BH00225B _ _ _ _ _ K K101BH00225D _ _ _ _ _ K K101BH00225U _ _ _ _ _ K	LEPK-1-225-H-B	15 to 225
K101BH20225000000K K101BH20225B _ _ _ _ _ K K101BH20225D _ _ _ _ _ K K101BH20225U _ _ _ _ _ K	LEPK-1-225-H-B without terminal board	

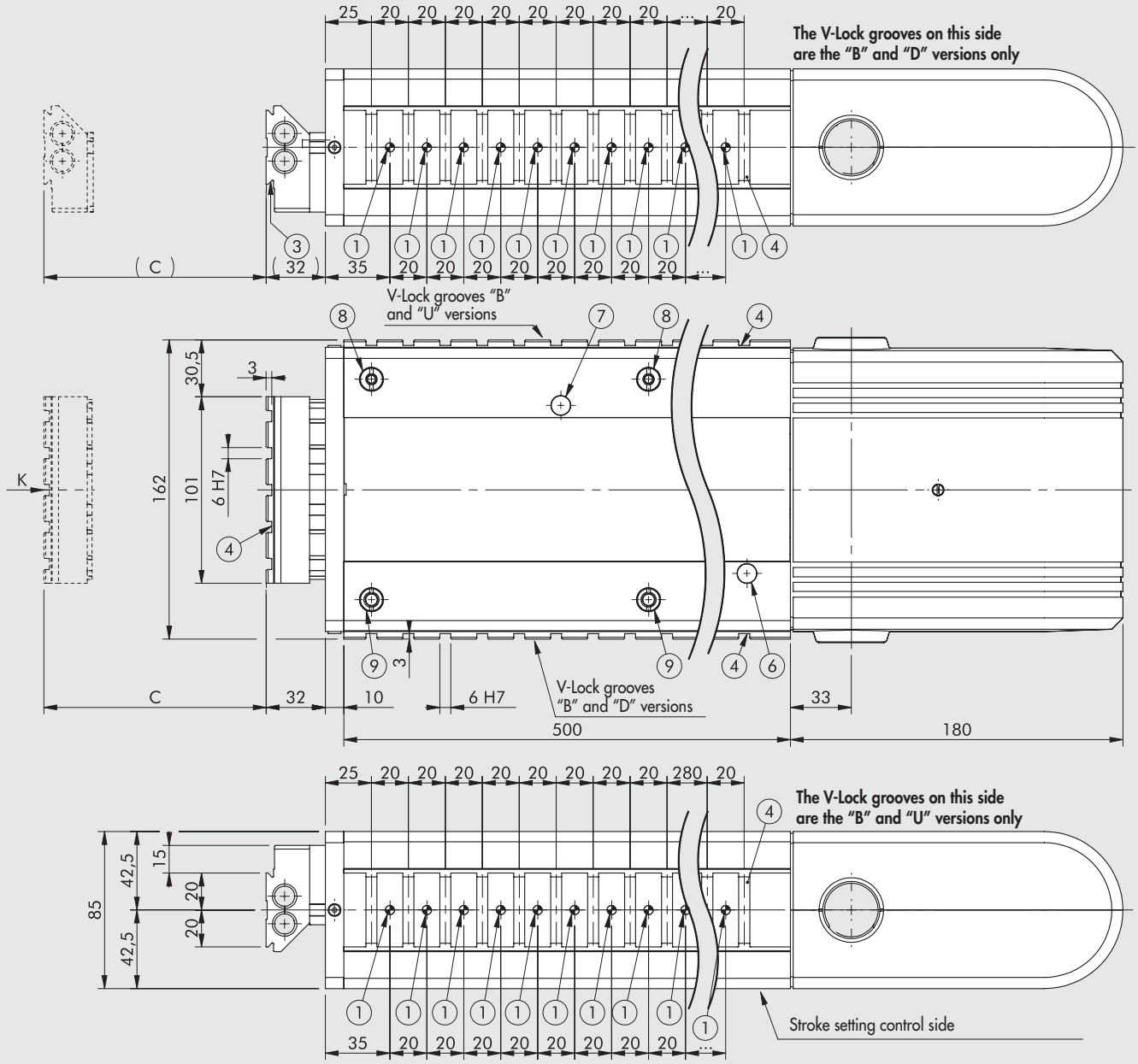
VIEWED FROM "K"



IMPORTANT. The LEPK-1-225-H-B can hold maximum 23 V-Lock grooves and hence a maximum of 22 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-2-320-H-A LINEAR UNIT (horizontal, 2 positions)

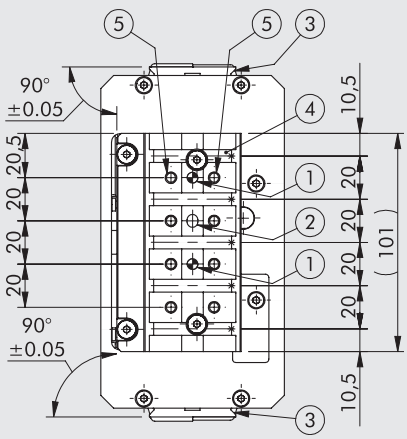


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K102AH00320B02524K with the maximum number of V-Lock grooves (version BOTH)

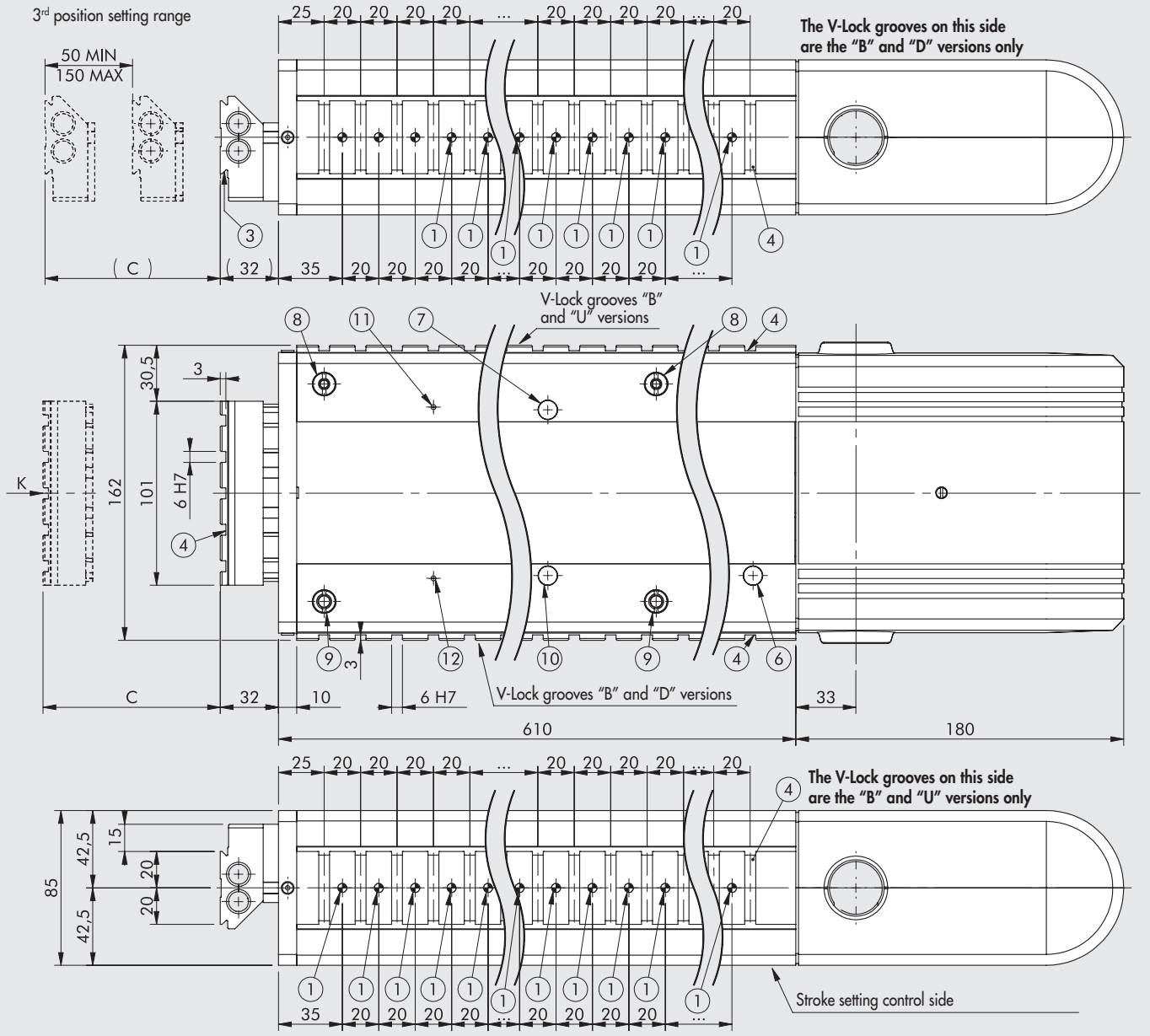
Code	Description	C
K102AH00320000000K K102AH00320B _ _ _ _ _ K K102AH00320D _ _ _ _ _ K K102AH00320U _ _ _ _ _ K	LEPK-2-320-H-A	50 to 320
K102AH20320000000K K102AH20320B _ _ _ _ _ K K102AH20320D _ _ _ _ _ K K102AH20320U _ _ _ _ _ K	LEPK-2-320-H-A without terminal board	

VIEWED FROM "K"



IMPORTANT. The LEPK-2-320-H-A can hold maximum 24 V-Lock grooves and hence a maximum of 23 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-2-320-H-B LINEAR UNIT (horizontal, 3 positions)

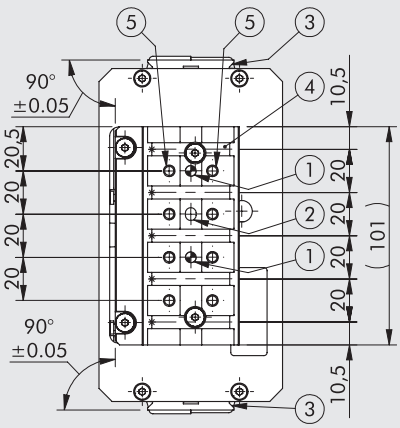


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K102BH00320B02529K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K102BH00320000000K	LEPK-2-320-H-B	50 to 320
K102BH00320B _ _ _ _ _ K		
K102BH00320D _ _ _ _ _ K		
K102BH00320U _ _ _ _ _ K		
K102BH20320000000K	LEPK-2-320-H-B without terminal board	
K102BH20320B _ _ _ _ _ K		
K102BH20320D _ _ _ _ _ K		
K102BH20320U _ _ _ _ _ K		

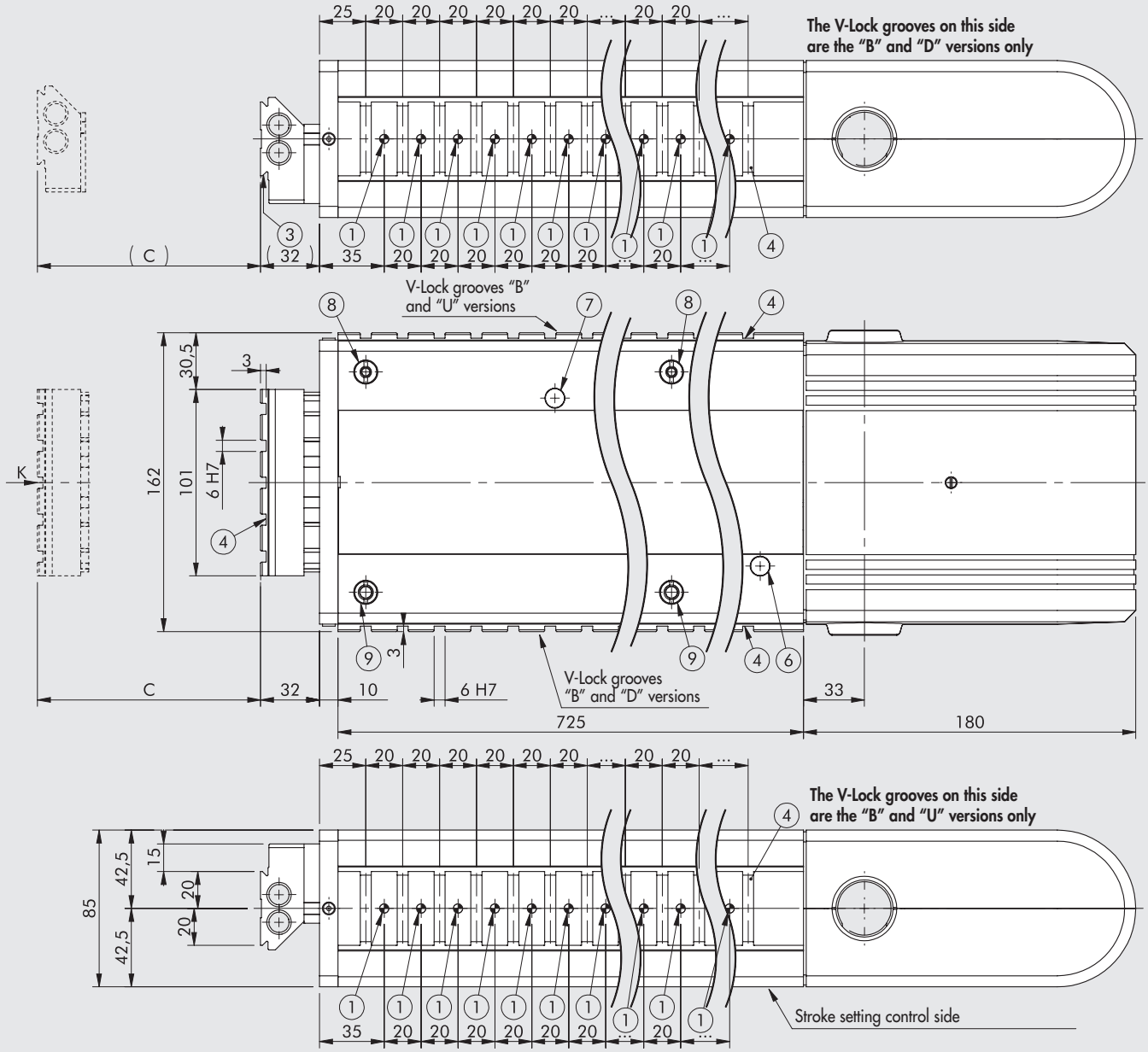
VIEWED FROM "K"



IMPORTANT. The LEPK-2-320-H-B can hold maximum 29 V-Lock grooves and hence a maximum of 28 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-2-450-H-A LINEAR UNIT (horizontal, 2 positions)

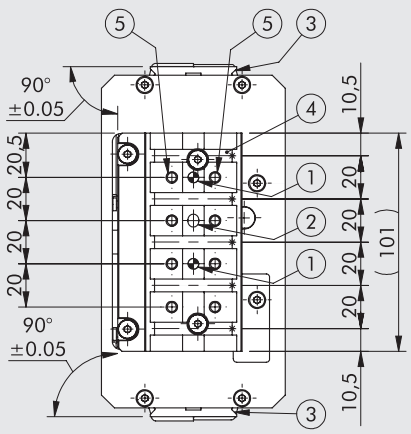


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K102AH00450B02535K with the maximum number of V-Lock grooves (version BOTH)

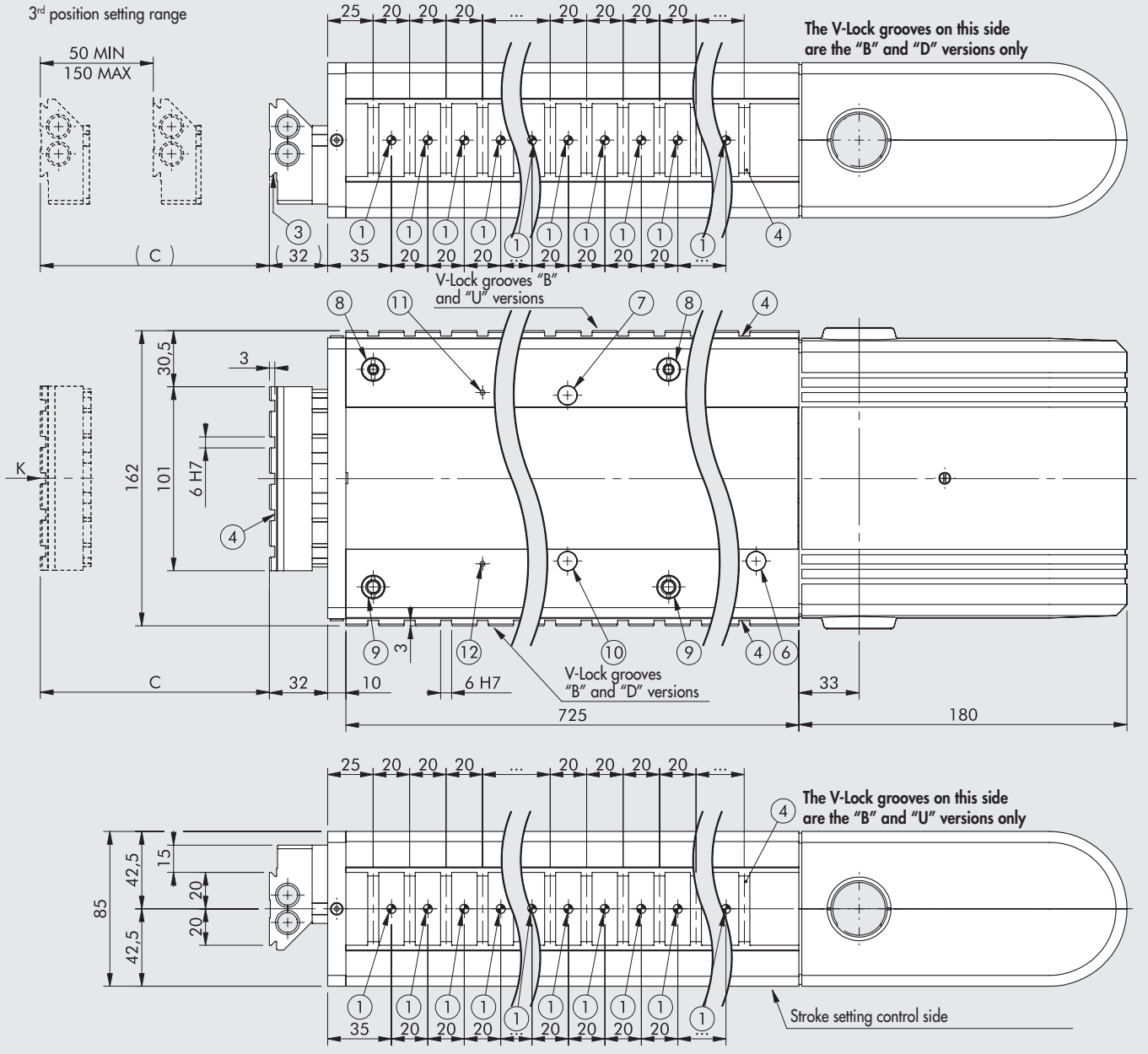
Code	Description	C
K102AH00450000000K	LEPK-2-450-H-A	50 to 450
K102AH00450B _ _ _ _ _ K		
K102AH00450D _ _ _ _ _ K		
K102AH00450U _ _ _ _ _ K		
K102AH20450000000K	LEPK-2-450-H-A without terminal board	
K102AH20450B _ _ _ _ _ K		
K102AH20450D _ _ _ _ _ K		
K102AH20450U _ _ _ _ _ K		

VIEWED FROM "K"



IMPORTANT. The LEPK-2-450-H-A can hold maximum 35 V-Lock grooves and hence a maximum of 34 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-2-450-H-B LINEAR UNIT (horizontal, 3 positions)

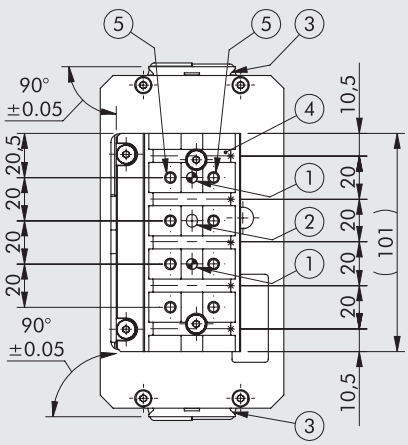


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K102BH00450B02535K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K102BH00450000000K K102BH00450B _ _ _ _ _ K K102BH00450D _ _ _ _ _ K K102BH00450U _ _ _ _ _ K	LEPK-2-450-H-B	50 to 450
K102BH20450000000K K102BH20450B _ _ _ _ _ K K102BH20450D _ _ _ _ _ K K102BH20450U _ _ _ _ _ K	LEPK-2-450-H-B without terminal board	

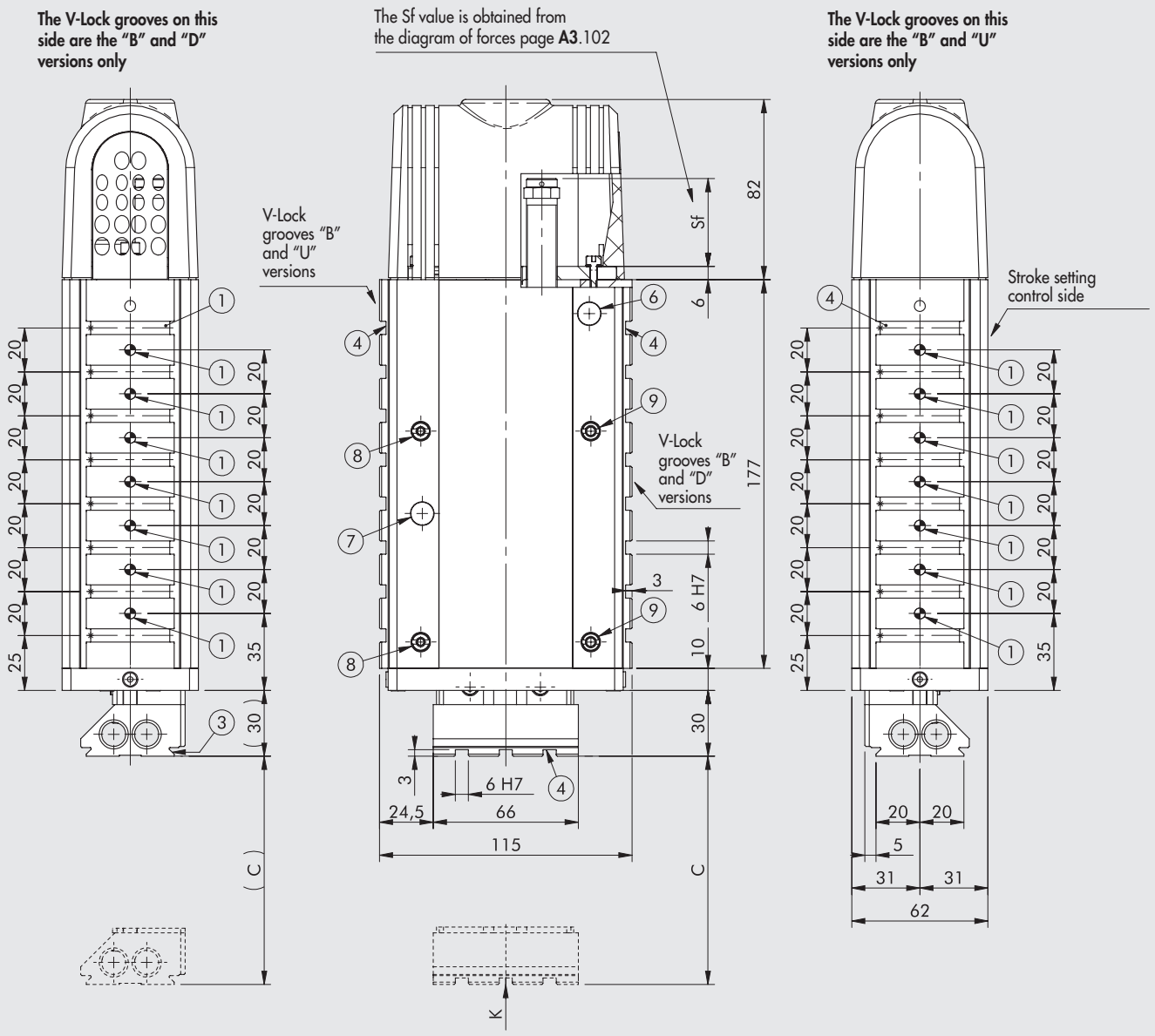
VIEWED FROM "K"



IMPORTANT. The LEPK-2-450-H-B can hold maximum 35 V-Lock grooves and hence a maximum of 34 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-1-60-V-A LINEAR UNIT (Vertical, 2 positions)

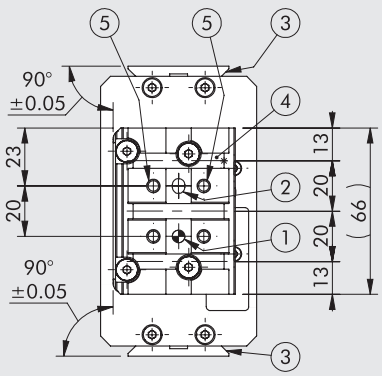


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K101AV00060B02508K with the maximum number of V-Lock grooves (version BOTH)

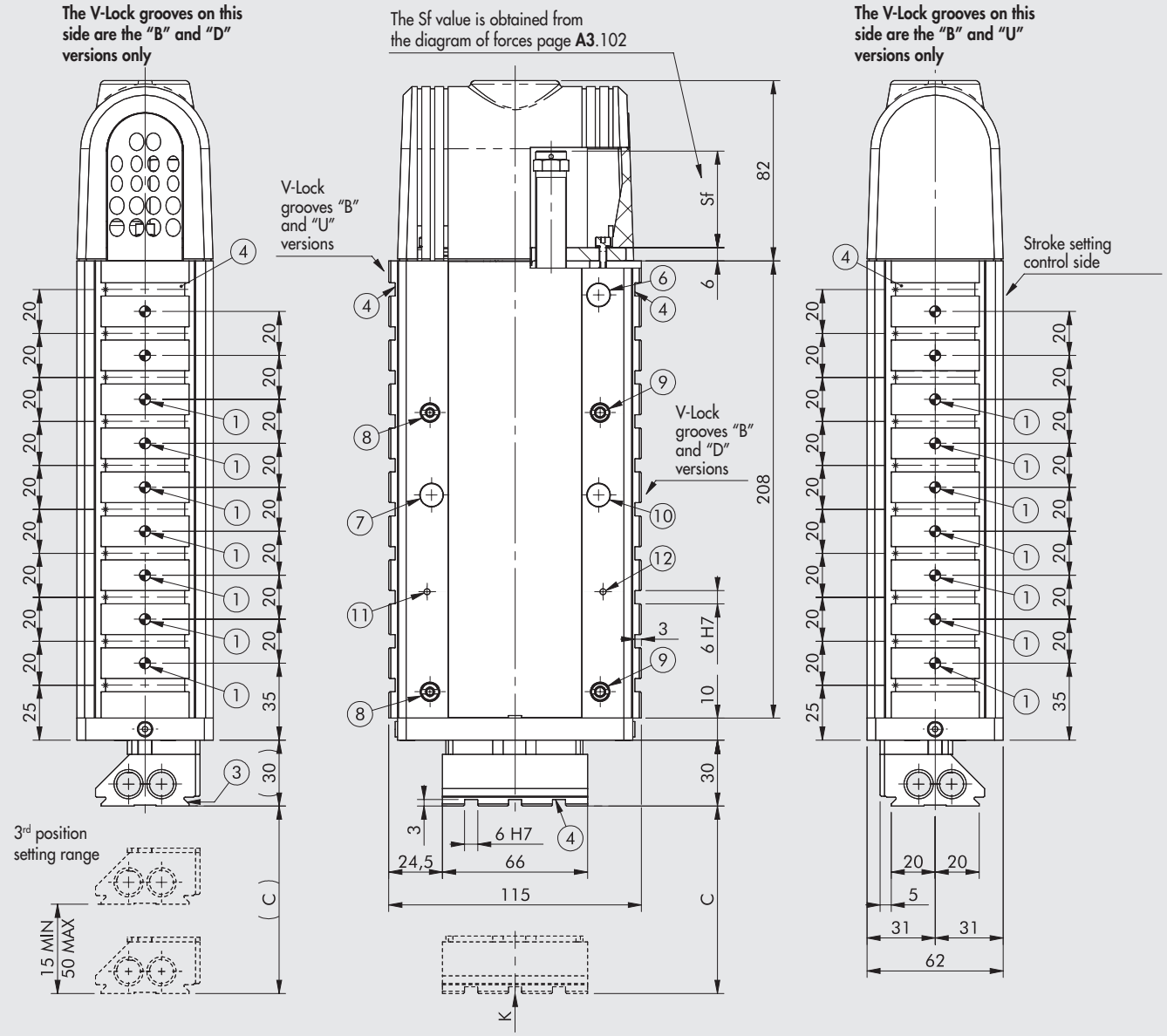
Code	Description	C
K101AV20060000000K K101AV20060B _ _ _ _ _ K K101AV20060D _ _ _ _ _ K K101AV20060U _ _ _ _ _ K	LEPK-1-60-V-A	15 to 60
K101AS20060000000K K101AS20060B _ _ _ _ _ K K101AS20060D _ _ _ _ _ K K101AS20060U _ _ _ _ _ K	LEPK-1-60-V-A without spring	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-60-V-A can hold maximum 8 V-Lock grooves and hence a maximum of 7 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-1-60-V-B LINEAR UNIT (Vertical, 3 positions)

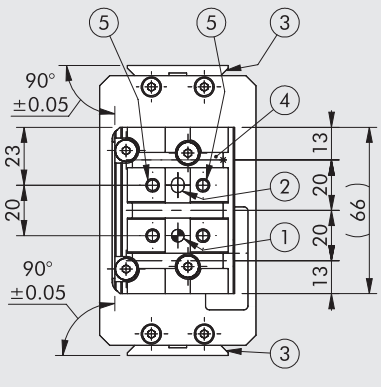


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K101BV00060B02510K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K101BV20060000000K	LEPK-1-60-V-B	15 to 60
K101BV20060B _ _ _ _ _ K		
K101BV20060D _ _ _ _ _ K		
K101BV20060U _ _ _ _ _ K		
K101BS20060000000K	LEPK-1-60-V-B without spring	
K101BS20060B _ _ _ _ _ K		
K101BS20060D _ _ _ _ _ K		
K101BS20060U _ _ _ _ _ K		

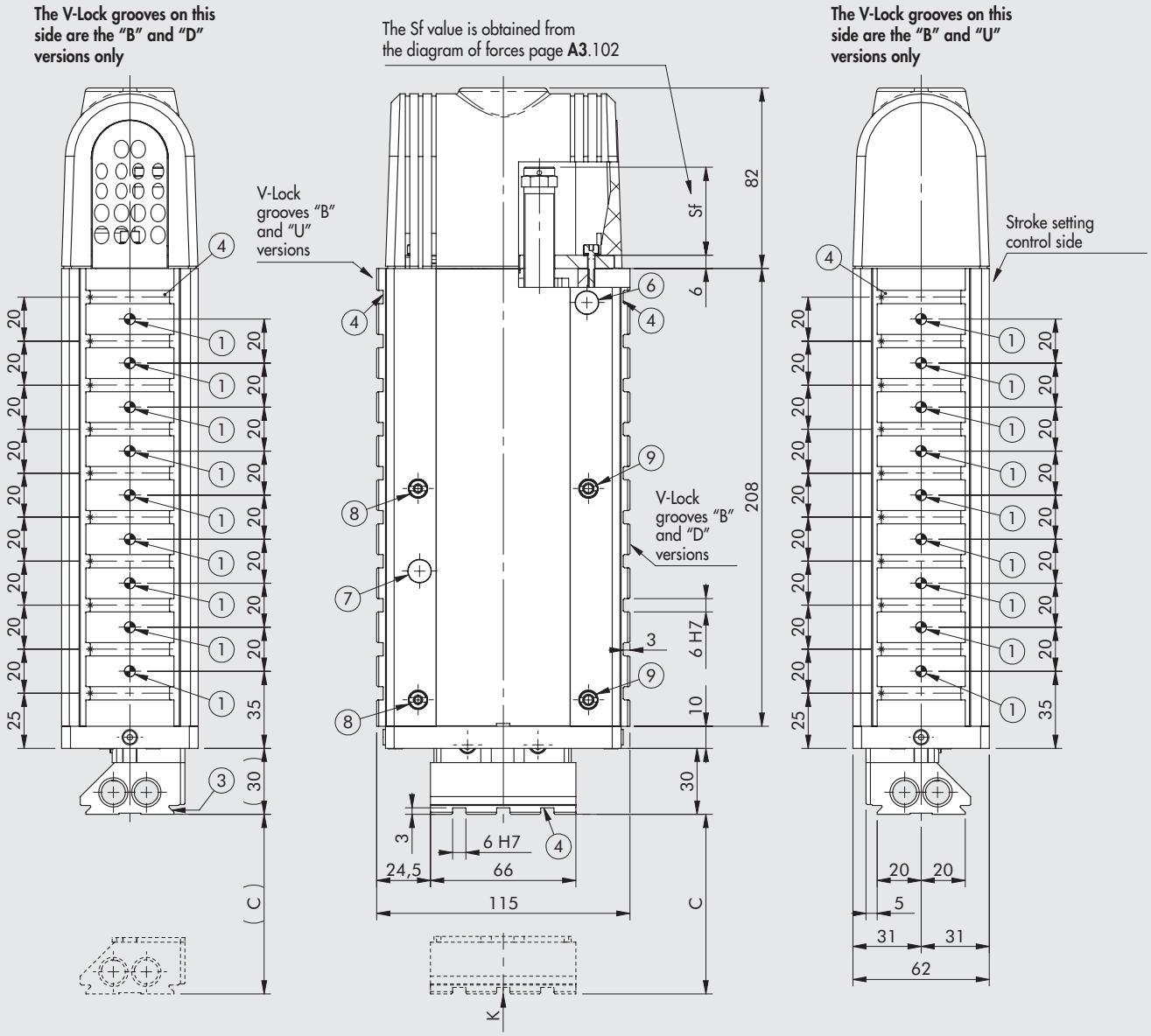
VIEWED FROM "K"



IMPORTANT. The LEPK-1-60-V-B can hold maximum 10 V-Lock grooves and hence a maximum of 9 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-1-90-V-A LINEAR UNIT (Vertical, 2 positions)

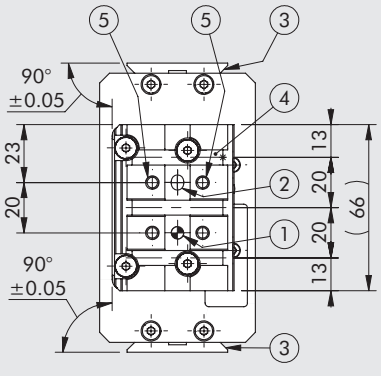


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K101AV00090B02510K with the maximum number of V-Lock grooves (version BOTH)

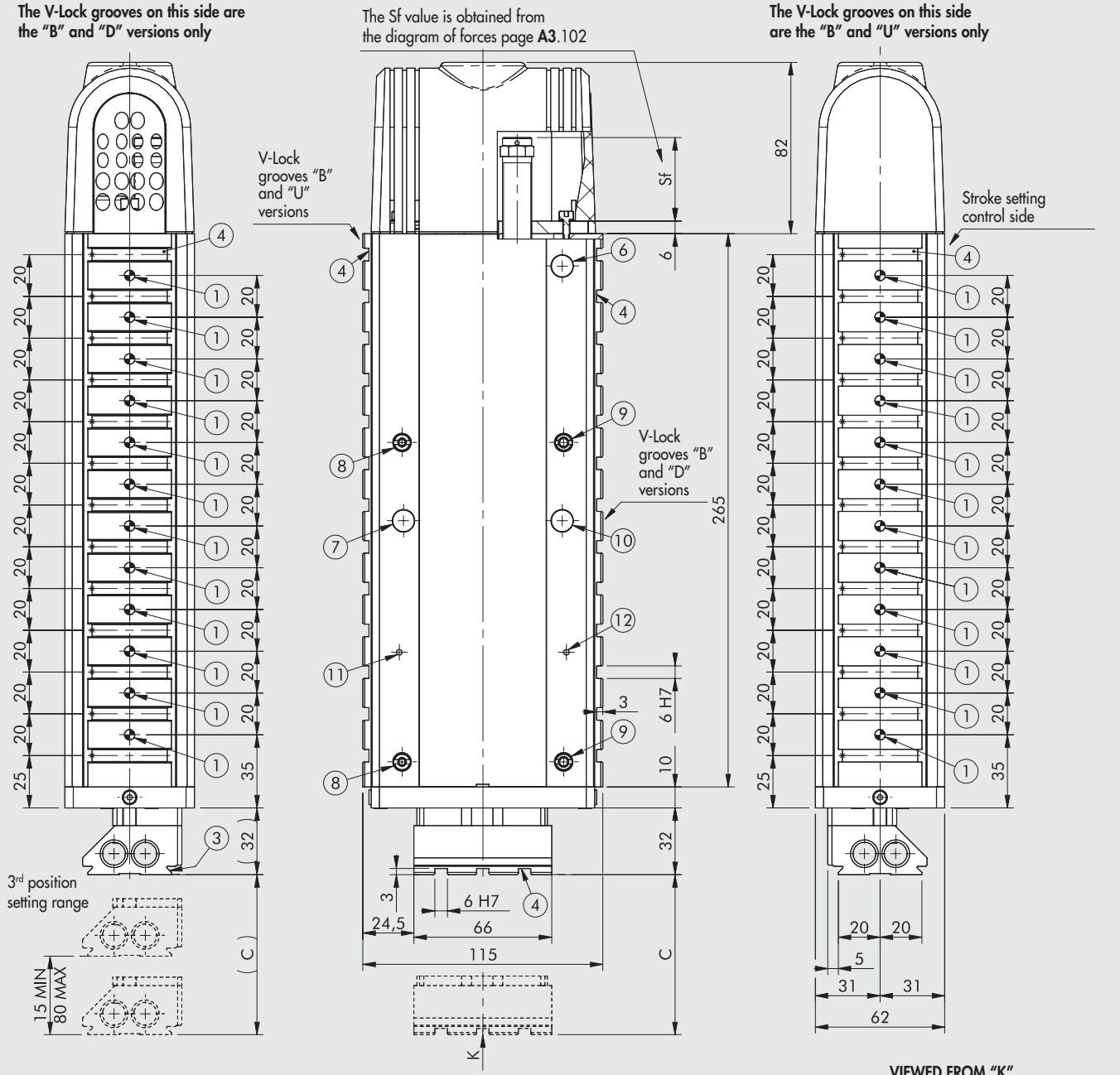
Code	Description	C
K101AV20090000000K K101AV20090B _ _ _ _ _ K K101AV20090D _ _ _ _ _ K K101AV20090U _ _ _ _ _ K	LEPK-1-90-V-A	15 to 90
K101AS20090000000K K101AS20090B _ _ _ _ _ K K101AS20090D _ _ _ _ _ K K101AS20090U _ _ _ _ _ K	LEPK-1-90-V-A without spring	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-90-V-A can hold maximum 10 V-Lock grooves and hence a maximum of 9 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-1-90-V-B LINEAR UNIT (Vertical, 3 positions)

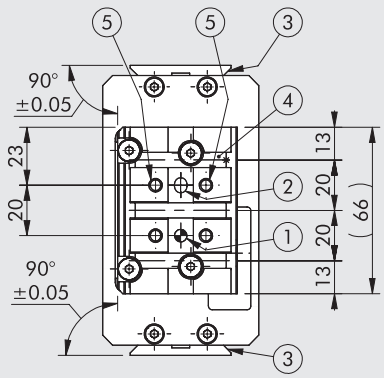


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K101BV00090B02513K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K101BV20090000000K	LEPK-1-90-V-B	15 to 90
K101BV20090B _ _ _ _ _ K		
K101BV20090D _ _ _ _ _ K		
K101BV20090U _ _ _ _ _ K		
K101BS20090000000K	LEPK-1-90-V-B without spring	
K101BS20090B _ _ _ _ _ K		
K101BS20090D _ _ _ _ _ K		
K101BS20090U _ _ _ _ _ K		

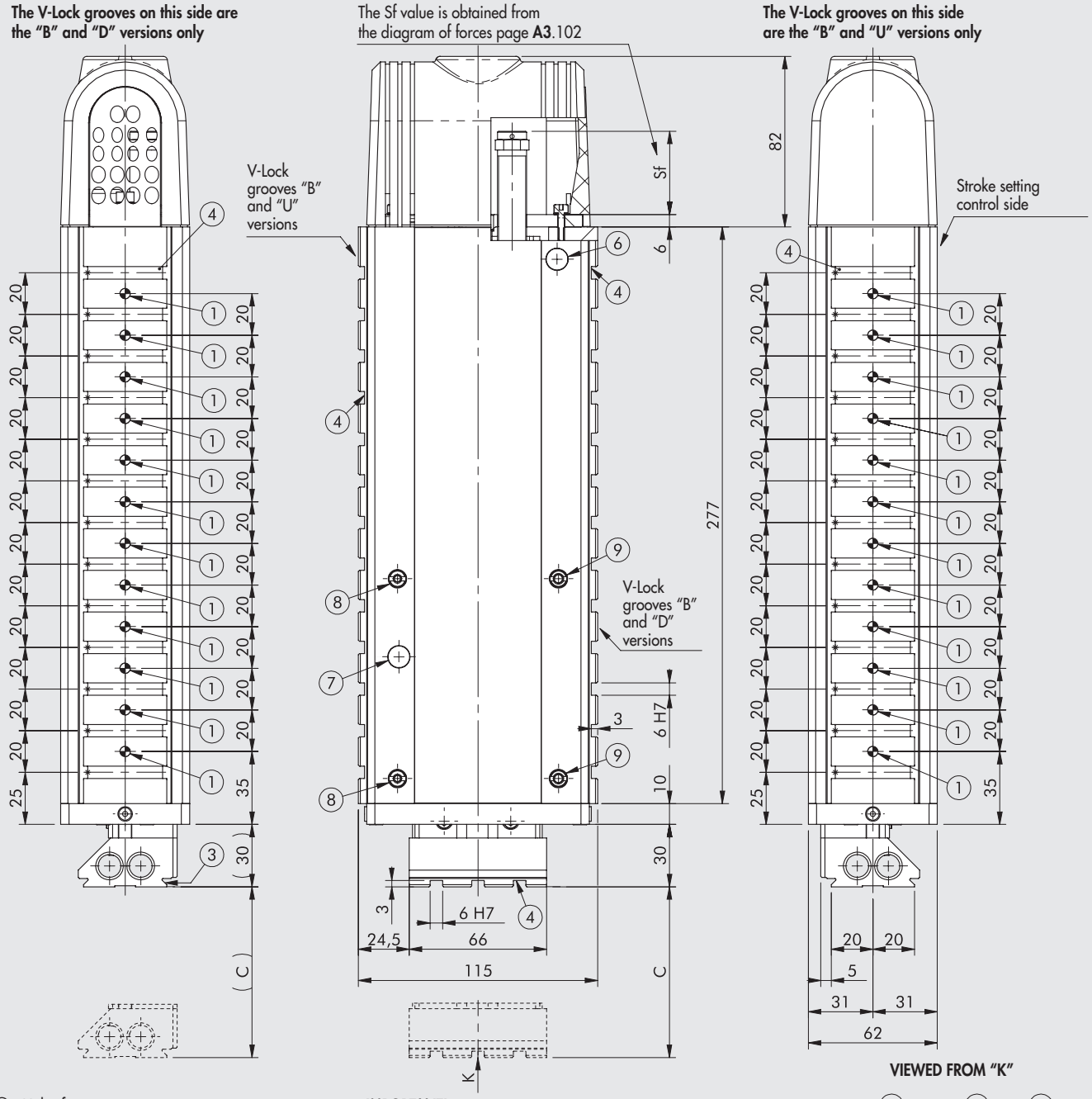
VIEWED FROM "K"



IMPORTANT. The LEPK-1-90-V-B can hold maximum 13 V-Lock grooves and hence a maximum of 12 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

DIMENSIONS OF THE LEPK-1-160-V-A LINEAR UNIT (Vertical, 2 positions)

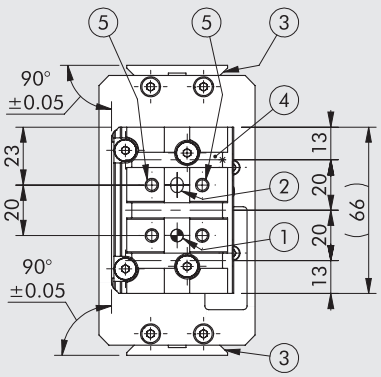


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing. For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod

IMPORTANT!
The drawing shows the code K101AV00160B02513K with the maximum number of V-Lock grooves (version BOTH)

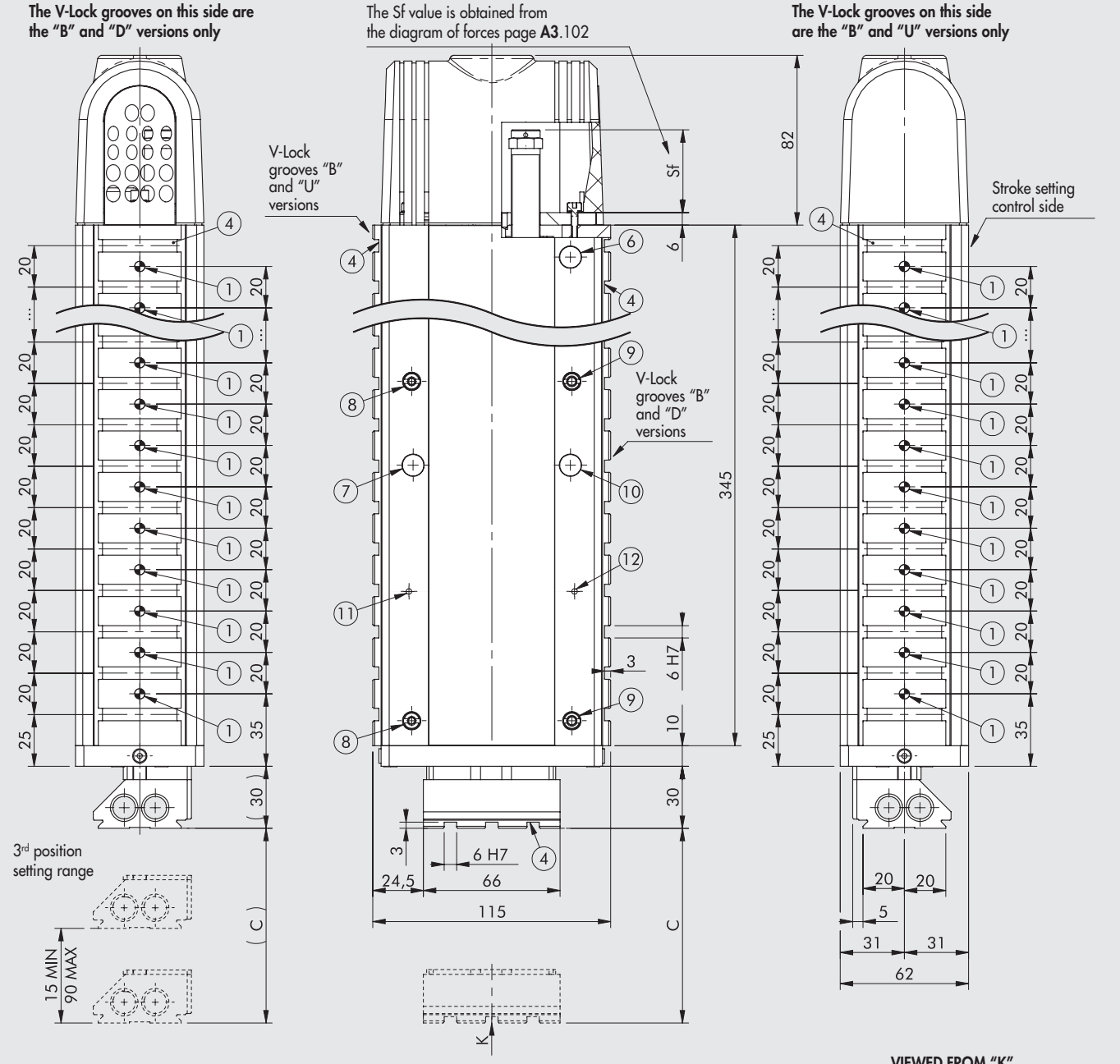
Code	Description	C
K101AV20160000000K K101AV20160B _ _ _ _ _ K K101AV20160D _ _ _ _ _ K K101AV20160U _ _ _ _ _ K	LEPK-1-160-V-A	15 to 160
K101AS20160000000K K101AS20160B _ _ _ _ _ K K101AS20160D _ _ _ _ _ K K101AS20160U _ _ _ _ _ K	LEPK-1-160-V-A without spring	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-160-V-A can hold maximum 13 grooves and hence a maximum of 12 Ø5 H7 pinholes.

DIMENSIONS OF THE LEPK-1-160-V-B LINEAR UNIT (Vertical, 3 positions)

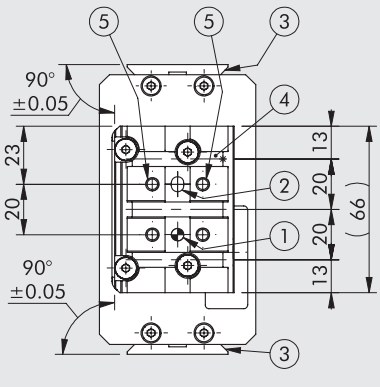


① Holes for centring pins
② Centring slot
③ Dovetail for "V-Lock" fixing.
For standard dimensions, see **chapter V-Lock adaptors**
④ Slot for "V-Lock" precision key
⑤ Threaded holes for fixing
⑥ Sensor LED inspection hole for the retracted position ("0")
⑦ Sensor LED inspection hole for the extended position
⑧ Eccentric rod for backlash take-up
⑨ Centric rod
⑩ Sensor LED inspection hole for 3rd position
⑪ Sensor LED inspection hole for 3rd position DISABLED
⑫ Sensor LED inspection hole for 3rd position ENABLED

IMPORTANT!
The drawing shows the code K101BV00160B02517K with the maximum number of V-Lock grooves (version BOTH)

Code	Description	C
K101BV20160000000K **K101BV20160B _ _ _ _ _ K** **K101BV20160D _ _ _ _ _ K** **K101BV20160U _ _ _ _ _ K**	LEPK-1-160-V-B	15 to 160
K101BS20160000000K **K101BS20160B _ _ _ _ _ K** **K101BS20160D _ _ _ _ _ K** **K101BS20160U _ _ _ _ _ K**	LEPK-1-160-V-B without spring	

VIEWED FROM "K"



IMPORTANT. The LEPK-1-160-V-B can hold maximum 17 V-Lock grooves and hence a maximum of 16 Ø5 H7 pinholes.

METAL WORK PNEUMATIC

KEY TO CODES

K10	1	A	H	0	0	090	0	000	00	K
	SIZE	POSITION	ORIENTATION			STROKE	V-Lock CONNECTION	V-Lock POSITION	Number of V-Lock GROOVES	FAMILY
Linear units series LEPK	**1** Size 1 ◀ **2** Size 2	**A** 2 positions **B** 3 positions	**H** Horizontal **V** Vertical (with return spring) **S** Vertical (without return spring)	**0** Inductive sensors (with terminal board) ● **2** Inductive sensors (without terminal board)		▼ **060** ◆ **090** ◆ **160** ✚ **225** ✱ **320** ✱ **450**	**0** None **B** Grooves above and below **D** Grooves below **U** Grooves above	☐ **000** None ▲ _ _ _ Position	☐ **00** None ■ _ _ Number of grooves	**K** V-Lock

◀ Available only in horizontal orientation (H).
● Standard for the version with vertical orientation (V).
▼ Only size 1 - V/S
◆ Only size 1 - V/S/H
✚ Only size 1 - H
✱ Only size 2 - H
☐ Always use when "V-Lock connection" is equal to "0" (none)
▲ For connecting V-Lock "B" - "D" - "U" minimum value "025", the following values vary by steps of 20 mm (e.g. "045", "065" and "085").
For mounting options, see page **A3**.103

■ The maximum number of possible grooves is:

LEPK 1-60-V/S-A = n. 08	LEPK 1-160-V/S-A = n. 13
LEPK 1-60-V/S-B = n. 10	LEPK 1-160-V/S-B = n. 17
LEPK 1-90-V/S-A = n. 10	LEPK 1-225-H-A = n. 23
LEPK 1-90-V/S-B = n. 13	LEPK 1-225-H-B = n. 23
LEPK 1-90-H-A = n. 10	LEPK 2-320-H-A = n. 24
LEPK 1-90-H-B = n. 13	LEPK 2-320-H-B = n. 29
LEPK 1-160-H-A = n. 13	LEPK 2-450-H-A = n. 35
LEPK 1-160-H-B = n. 17	LEPK 2-450-H-B = n. 35

N.B.: The number of Ø5 H7 pinholes always coincides with the number of grooves ordered less 1.
For mounting options, see page **A3**.103

ORDERING CODES

Code	Description
LEPK-1 HORIZONTAL	
K101AH000900000000K	LEPK-1-90-H-A without V-Lock
K101AH00090B____K	LEPK-1-90-H-A V-Lock above and below
K101AH00090D____K	LEPK-1-90-H-A V-Lock above
K101AH00090U____K	LEPK-1-90-H-A V-Lock below
K101AH200900000000K	LEPK-1-90-H-A without V-Lock
K101AH20090B____K	LEPK-1-90-H-A V-Lock above and below
K101AH20090D____K	LEPK-1-90-H-A V-Lock above
K101AH20090U____K	LEPK-1-90-H-A V-Lock below
K101BH000900000000K	LEPK-1-90-H-B without V-Lock
K101BH00090B____K	LEPK-1-90-H-B V-Lock above and below
K101BH00090D____K	LEPK-1-90-H-B V-Lock above
K101BH00090U____K	LEPK-1-90-H-B V-Lock below
K101BH200900000000K	LEPK-1-90-H-B without V-Lock
K101BH20090B____K	LEPK-1-90-H-B V-Lock above and below
K101BH20090D____K	LEPK-1-90-H-B V-Lock above
K101BH20090U____K	LEPK-1-90-H-B V-Lock below
K101AH000160000000K	LEPK-1-160-H-A without V-Lock
K101AH00160B____K	LEPK-1-160-H-A V-Lock above and below
K101AH00160D____K	LEPK-1-160-H-A V-Lock above
K101AH00160U____K	LEPK-1-160-H-A V-Lock below
K101AH201600000000K	LEPK-1-160-H-A without V-Lock
K101AH20160B____K	LEPK-1-160-H-A V-Lock above and below
K101AH20160D____K	LEPK-1-160-H-A V-Lock above
K101AH20160U____K	LEPK-1-160-H-A V-Lock below
K101BH001600000000K	LEPK-1-160-H-B without V-Lock
K101BH00160B____K	LEPK-1-160-H-B V-Lock above and below
K101BH00160D____K	LEPK-1-160-H-B V-Lock above
K101BH00160U____K	LEPK-1-160-H-B V-Lock below
K101BH201600000000K	LEPK-1-160-H-B without V-Lock
K101BH20160B____K	LEPK-1-160-H-B V-Lock above and below
K101BH20160D____K	LEPK-1-160-H-B V-Lock above
K101BH20160U____K	LEPK-1-160-H-B V-Lock below
K101AH002250000000K	LEPK-1-225-H-A without V-Lock
K101AH00225B____K	LEPK-1-225-H-A V-Lock above and below
K101AH00225D____K	LEPK-1-225-H-A V-Lock above
K101AH00225U____K	LEPK-1-225-H-A V-Lock below
K101AH202250000000K	LEPK-1-225-H-A without V-Lock
K101AH20225B____K	LEPK-1-225-H-A V-Lock above and below
K101AH20225D____K	LEPK-1-225-H-A V-Lock above
K101AH20225U____K	LEPK-1-225-H-A V-Lock below
K101BH00225000000K	LEPK-1-225-H-B without V-Lock
K101BH00225B____K	LEPK-1-225-H-B V-Lock above and below
K101BH00225D____K	LEPK-1-225-H-B V-Lock above
K101BH00225U____K	LEPK-1-225-H-B V-Lock below
K101BH202250000000K	LEPK-1-225-H-B without V-Lock
K101BH20225B____K	LEPK-1-225-H-B V-Lock above and below
K101BH20225D____K	LEPK-1-225-H-B V-Lock above
K101BH20225U____K	LEPK-1-225-H-B V-Lock below
LEPK-1 VERTICAL	
K101AS20060000000K	LEPK-1-60-S-A without V-Lock
K101AS20060B____K	LEPK-1-60-S-A V-Lock above and below
K101AS20060D____K	LEPK-1-60-S-A V-Lock above
K101AS20060U____K	LEPK-1-60-S-A V-Lock below
K101AV20060000000K	LEPK-1-60-V-A without V-Lock
K101AV20060B____K	LEPK-1-60-V-A V-Lock above and below
K101AV20060D____K	LEPK-1-60-V-A V-Lock above
K101AV20060U____K	LEPK-1-60-V-A V-Lock below
K101BS20060000000K	LEPK-1-60-S-B without V-Lock
K101BS20060B____K	LEPK-1-60-S-B V-Lock above and below
K101BS20060D____K	LEPK-1-60-S-B V-Lock above
K101BS20060U____K	LEPK-1-60-S-B V-Lock below
K101BV20060000000K	LEPK-1-60-V-B without V-Lock
K101BV20060B____K	LEPK-1-60-V-B V-Lock above and below
K101BV20060D____K	LEPK-1-60-V-B V-Lock above
K101BV20060U____K	LEPK-1-60-V-B V-Lock below
K101AS20090000000K	LEPK-1-90-S-A without V-Lock
K101AS20090B____K	LEPK-1-90-S-A V-Lock above and below
K101AS20090D____K	LEPK-1-90-S-A V-Lock above
K101AS20090U____K	LEPK-1-90-S-A V-Lock below
K101AV20090000000K	LEPK-1-90-V-A without V-Lock
K101AV20090B____K	LEPK-1-90-V-A V-Lock above and below
K101AV20090D____K	LEPK-1-90-V-A V-Lock above
K101AV20090U____K	LEPK-1-90-V-A V-Lock below
K101BS20090000000K	LEPK-1-90-S-B without V-Lock
K101BS20090B____K	LEPK-1-90-S-B V-Lock above and below
K101BS20090D____K	LEPK-1-90-S-B V-Lock above
K101BS20090U____K	LEPK-1-90-S-B V-Lock below

ORDERING CODES

Code	Description
LEPK-1 VERTICAL	
K101BV20090000000K	LEPK-1-90-V-B without V-Lock
K101BV20090B____K	LEPK-1-90-V-B V-Lock above and below
K101BV20090D____K	LEPK-1-90-V-B V-Lock above
K101BV20090U____K	LEPK-1-90-V-B V-Lock below
K101AS20160000000K	LEPK-1-160-S-A without V-Lock
K101AS20160B____K	LEPK-1-160-S-A V-Lock above and below
K101AS20160D____K	LEPK-1-160-S-A V-Lock above
K101AS20160U____K	LEPK-1-160-S-A V-Lock below
K101AV20160000000K	LEPK-1-160-V-A without V-Lock
K101AV20160B____K	LEPK-1-160-V-A V-Lock above and below
K101AV20160D____K	LEPK-1-160-V-A V-Lock above
K101AV20160U____K	LEPK-1-160-V-A V-Lock below
K101BS20160000000K	LEPK-1-160-S-B without V-Lock
K101BS20160B____K	LEPK-1-160-S-B V-Lock above and below
K101BS20160D____K	LEPK-1-160-S-B V-Lock above
K101BS20160U____K	LEPK-1-160-S-B V-Lock below
K101BV20160000000K	LEPK-1-160-V-B without V-Lock
K101BV20160B____K	LEPK-1-160-V-B V-Lock above and below
K101BV20160D____K	LEPK-1-160-V-B V-Lock above
K101BV20160U____K	LEPK-1-160-V-B V-Lock below

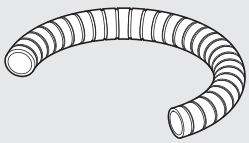
Code	Description
LEPK-2 HORIZONTAL	
K102AH00320000000K	LEPK-2-320-H-A without V-Lock
K102AH00320B____K	LEPK-2-320-H-A V-Lock above and below
K102AH00320D____K	LEPK-2-320-H-A V-Lock above
K102AH00320U____K	LEPK-2-320-H-A V-Lock below
K102AH20320000000K	LEPK-2-320-H-A without V-Lock
K102AH20320B____K	LEPK-2-320-H-A V-Lock above and below
K102AH20320D____K	LEPK-2-320-H-A V-Lock above
K102AH20320U____K	LEPK-2-320-H-A V-Lock below
K102BH00320000000K	LEPK-2-320-H-B without V-Lock
K102BH00320B____K	LEPK-2-320-H-B V-Lock above and below
K102BH00320D____K	LEPK-2-320-H-B V-Lock above
K102BH00320U____K	LEPK-2-320-H-B V-Lock below
K102BH20320000000K	LEPK-2-320-H-B without V-Lock
K102BH20320B____K	LEPK-2-320-H-B V-Lock above and below
K102BH20320D____K	LEPK-2-320-H-B V-Lock above
K102BH20320U____K	LEPK-2-320-H-B V-Lock below
K102AH00450000000K	LEPK-2-450-H-A without V-Lock
K102AH00450B____K	LEPK-2-450-H-A V-Lock above and below
K102AH00450D____K	LEPK-2-450-H-A V-Lock above
K102AH00450U____K	LEPK-2-450-H-A V-Lock below
K102AH20450000000K	LEPK-2-450-H-A without V-Lock
K102AH20450B____K	LEPK-2-450-H-A V-Lock above and below
K102AH20450D____K	LEPK-2-450-H-A V-Lock above
K102AH20450U____K	LEPK-2-450-H-A V-Lock below
K102BH00450000000K	LEPK-2-450-H-B without V-Lock
K102BH00450B____K	LEPK-2-450-H-B V-Lock above and below
K102BH00450D____K	LEPK-2-450-H-B V-Lock above
K102BH00450U____K	LEPK-2-450-H-B V-Lock below
K102BH20450000000K	LEPK-2-450-H-B without V-Lock
K102BH20450B____K	LEPK-2-450-H-B V-Lock above and below
K102BH20450D____K	LEPK-2-450-H-B V-Lock above
K102BH20450U____K	LEPK-2-450-H-B V-Lock below

ACCESSORIES

OIL

Code	Description	Volume [ml]
9910490	PARALIQ P 460	80

CABLE GUIDE



Code	Description	Length [mm]
095K2100850K	Cable guide LEPK-1-90-A/B 160-A	850
095K2100900K	Cable guide LEPK-1-160-B	900
095K2101200K	Cable guide LEPK-1-225-A/B	1200
095K2101550K	Cable guide LEPK-2-320-A/B	1550
095K2101700K	Cable guide LEPK-2-450-A/B	1700
095K2102500K	Cable guide LEPK	2500

METAL WORK PNEUMATIC

NOTES