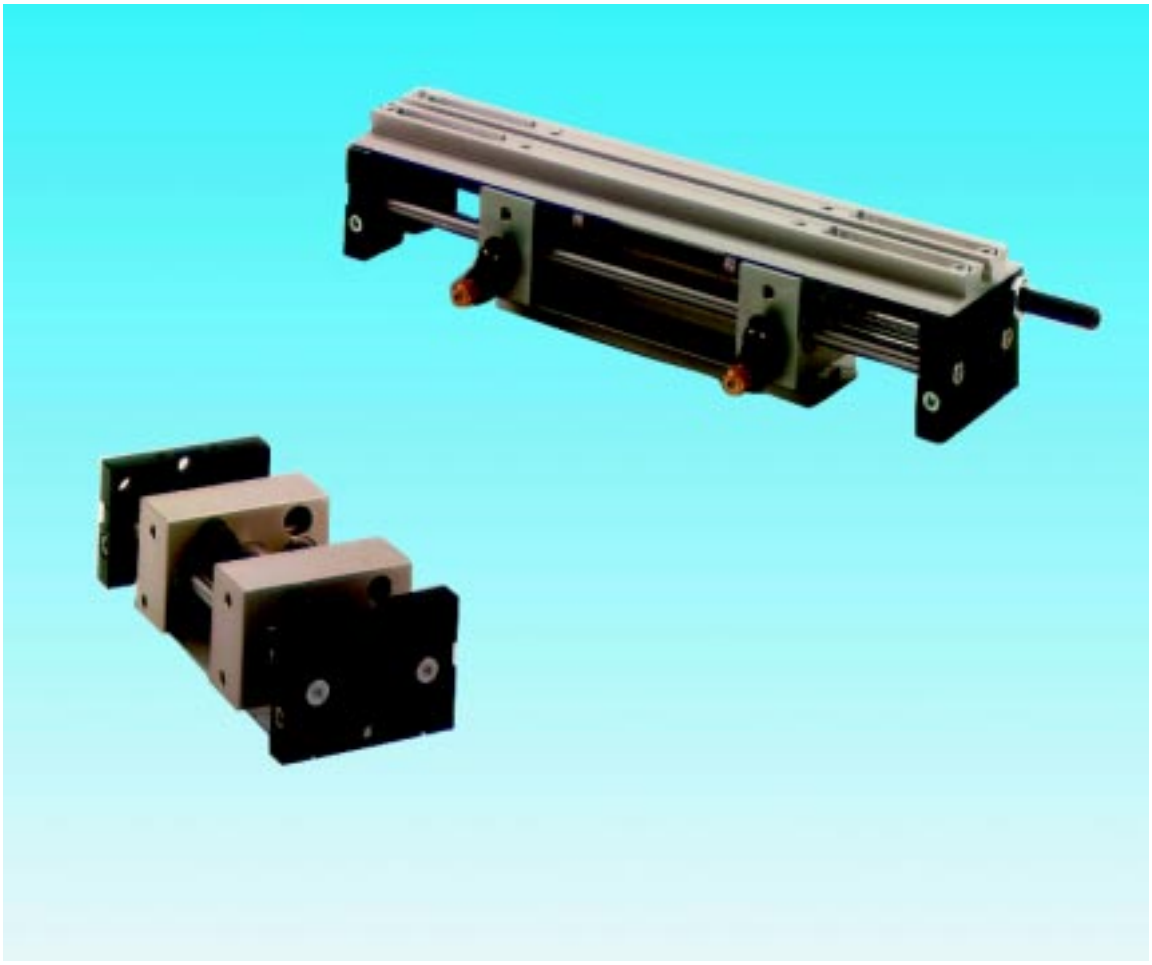
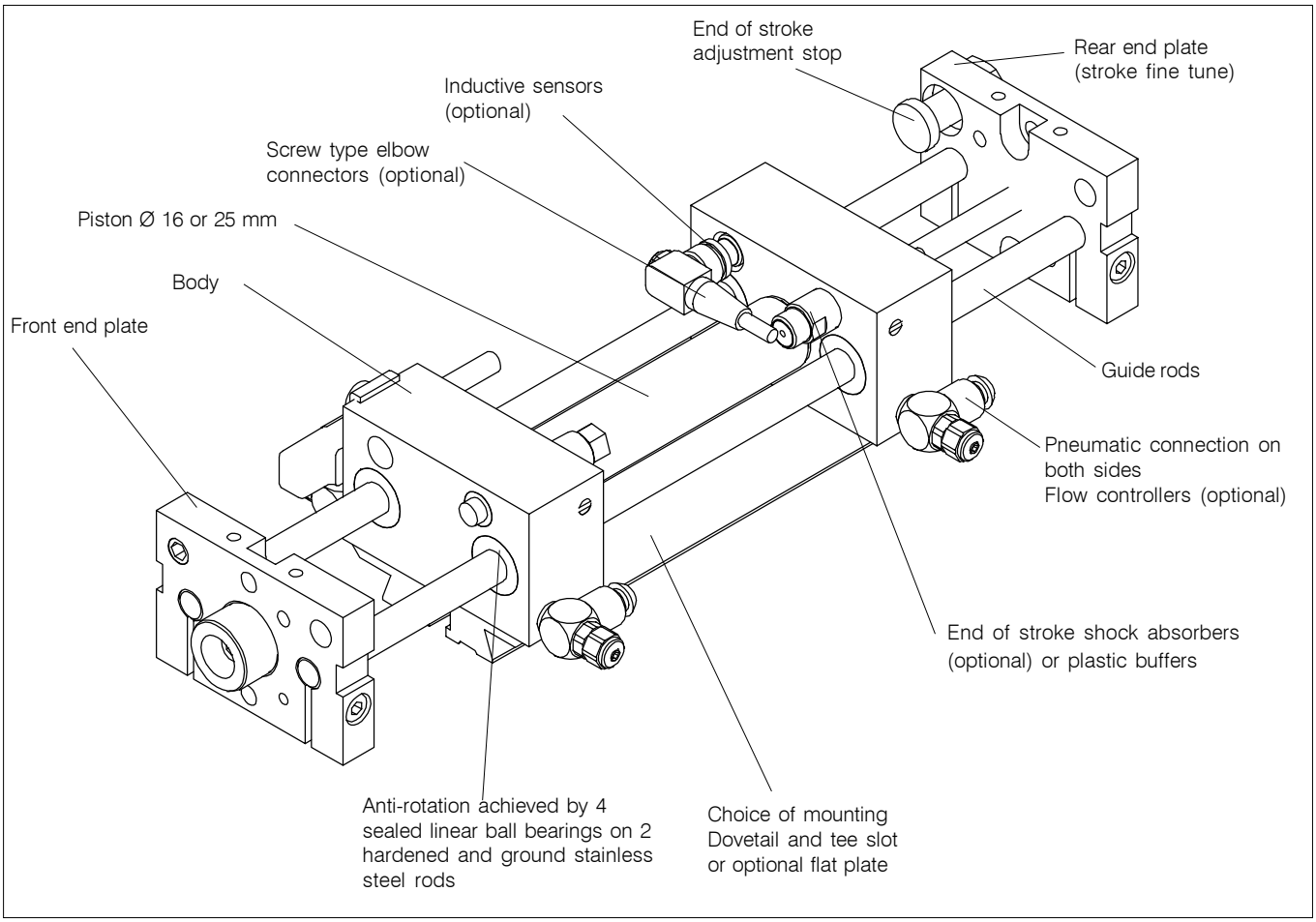




Description

Short Stroke Units can be operated as individual units for applications requiring simple linear movement or in conjunction with each other for more complex patterns of movement.

Cushioning

End of stroke cushioning is provided by a plastic buffer for absorbing impacts and controlling deceleration.

Detection

End of stroke sensing is by plug in Inductive Sensors.

Options

The following are available for increasing unit options:

- Auto compensating hydraulic shock absorbers

- PNP Inductive Sensors NC

- NPN Inductive Sensors NC

- LED fitted magnetic sensors

- Adjustable threaded stops.

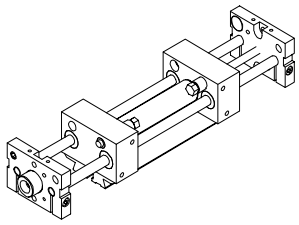
- Flow controllers

- Dovetail top plate or flat plate

Range

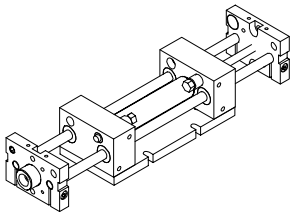
Short Stroke Unit with dovetail mounting plate

There are 2 sizes in the range: piston bore ∅ 16 or 25 mm. Short Stroke Units can easily be mounted on other products in the 3D® range with mounting kits.



Short Stroke Unit with flat mounting plate

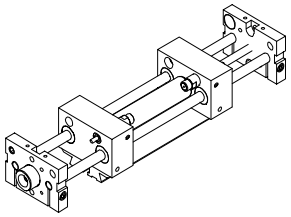
There are 2 sizes in the range: piston bore ∅ 16 or 25 mm. Short Stroke Units can easily be mounted on other products in the 3D® range with mounting kits.



Options

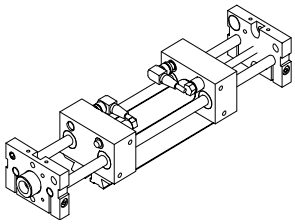
Auto compensating shock absorbers

Auto compensating shock absorbers may replace standard version plastic buffers giving better end of stroke cushioning.
They are strongly recommended for heavy use.



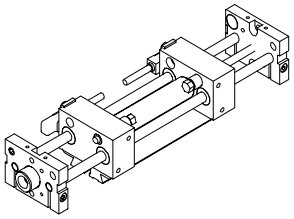
Inductive Sensors

Inductive Sensors send data to each end of stroke. They are plug in type fitted with LED, making maintenance easier. They are fitted with screw type elbow connectors. They may be mounted on the centre body or end plates.



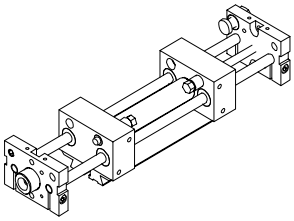
Magnetic sensors

For light work and cost savings, magnetic sensors can replace inductive sensors. They are fitted with LED or not.



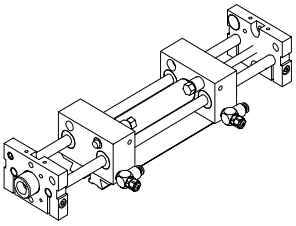
Adjustable threaded stop

The adjustable threaded stop fitted on the rear end plate is for precise stroke adjustment.
A second adjustable threaded stop may be fitted on the front end plate for linear unit use.



Flow controllers

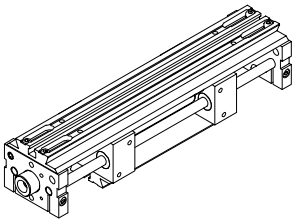
Flow controllers may be fitted on one side of the centre body or the other. They provide accurate flow control.



Dovetail top plate

A top plate may be mounted on a Short Stroke Unit for mounting interface. It may therefore be mounted in 2 ways:

- by the body (linear table operation)
- by the top plate (linear unit operation)



General information

Ø	Ø 16	Ø 25
Stroke (mm)	15 to 200	15 to 300
Max load (Kg)	3,5	5
Max torque (Nm)	5,3	10
Piston rod Ø	6	8
Repeatability (mm)	0,03	0,03
Operation	Dry air lubricated, unlubricated	Dry air lubricated, unlubricated
Theoretical thrust effect*		
Extending (N)	120	294
Retracting (N)	100	264
Operating pressure (bar)	2 to 8	2 to 8

Stroke	15	25	40	50	80	100	150	200	15	25	40	50	80	100	150	200	250	300
Mass of unit (Kg)	0,46	0,50	0,58	0,63	0,75	0,82	0,95	1,08	1,10	1,15	1,20	1,30	1,47	1,52	1,83	2,15	2,46	2,78
Mass options																		
(2) Hydraulic shock absorbers (g)	28								40									
(2) Inductive sensors (g)	190								190									
(2) Magnetic sensors (g)	46								46									
(1) Adjustable threaded stop (g)	16								16									
(2) Flow controllers (g)	30								78									
(1) Top plate dovetail (g)	196								196									
Operating temperature (°C)	0 to 65								0 to 65									

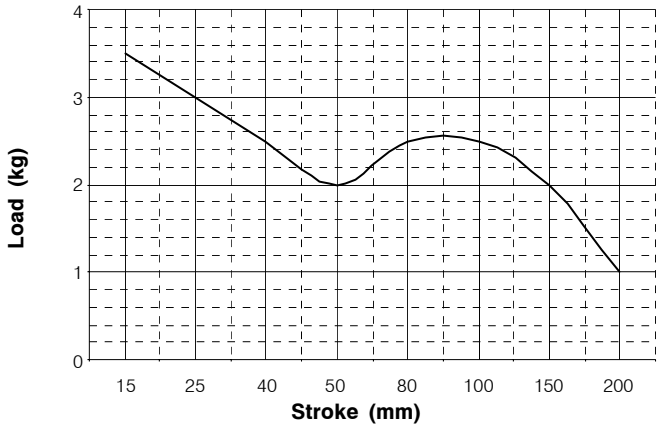
* At 6 bar pressure

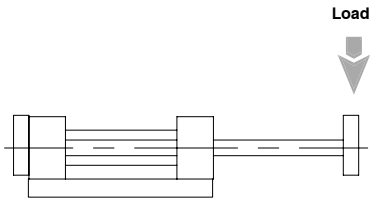
Technical information

Features	
Guides	4 linear ball bearings on 2 hardened and ground stainless steel rods
Plastic buffer	End of stroke cushioning is with plastic buffer These buffers can be replaced with hydraulic shock absorbers (see options)
Pneumatic connections	On each side of unit
End plates	Gripped on guide columns, the rear end plate is for pre-setting the stroke
Unit mounting	Dovetail on standard kit, or single plate with 4 tapped holes and 2 pin holes
Options	
Cushioning	Auto compensating hydraulic shock absorbers at end positions
Detection	Inductive sensors (DPI) M8 x 30, 3 wire, PNP NO with LED Screw type plug in elbow connectors (cable 3 m) Supply voltage 10-30 VDC Max switching current 200 mA Sensors can be mounted on the body or end plates Magnetic sensors NO with or without LED Supply voltage 10-240 AC/300 DC Max switching current : With LED 380 mA Without LED 500 mA Cable length : 3 m
Flow controllers	Plug in adjustable elbow connections at 90° intervals
End of stroke adjustment stop	Fine tune adjustable end of stroke stop, fixed on rear end plate Option for adding the same stop on the front end plate
Top plate	Dovetail mounting Rectangular holes favour end plate movement for adjusting the stroke

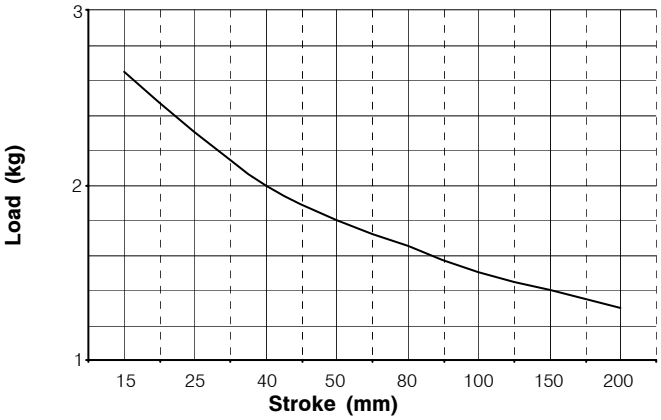
Short stroke unit ∅ 16 mm curves

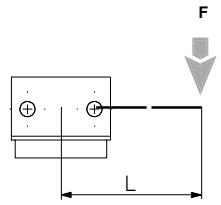
Permissible loads





Permissible torque

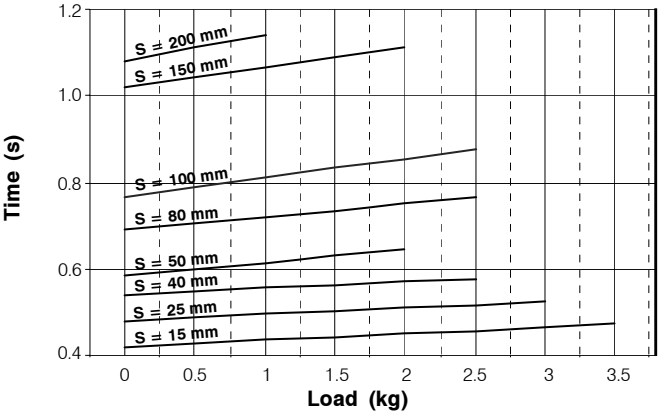


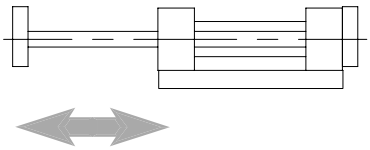


C (Nm) = F (N) x L (m)

Horizontal position cycle time

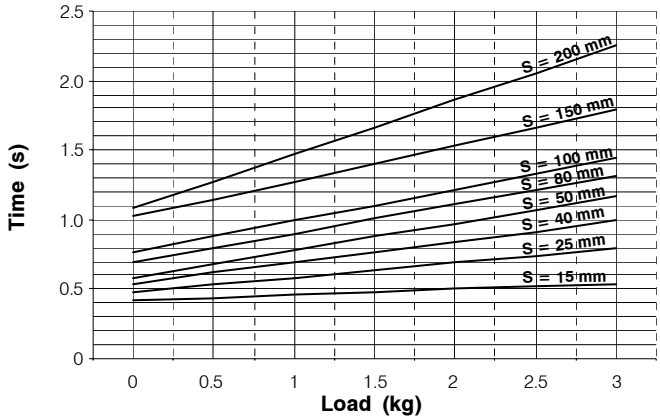
(P = 6 bar, cycle = extend + retract)

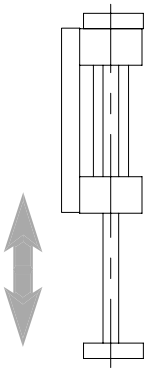




Vertical position cycle time

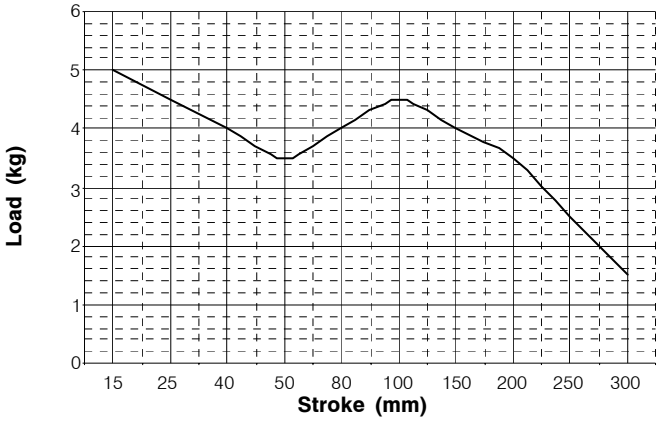
(P = 6 bar, cycle = extend + retract)

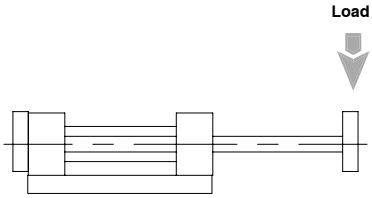




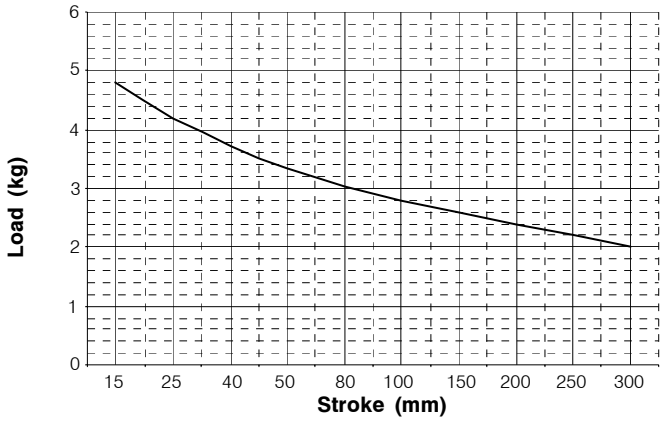
Short stroke unit ∅ 25 mm curves

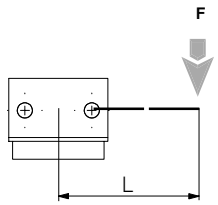
Permissible loads





Permissible torque

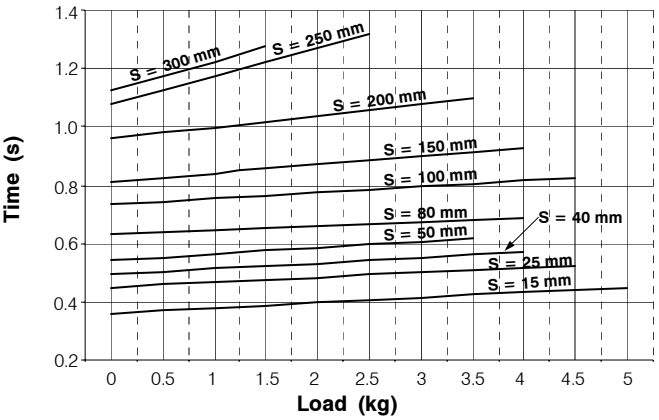


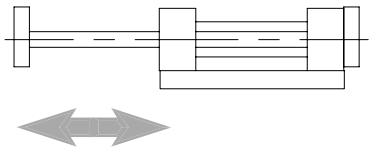


C (Nm) = F (N) x L (m)

Horizontal position cycle time

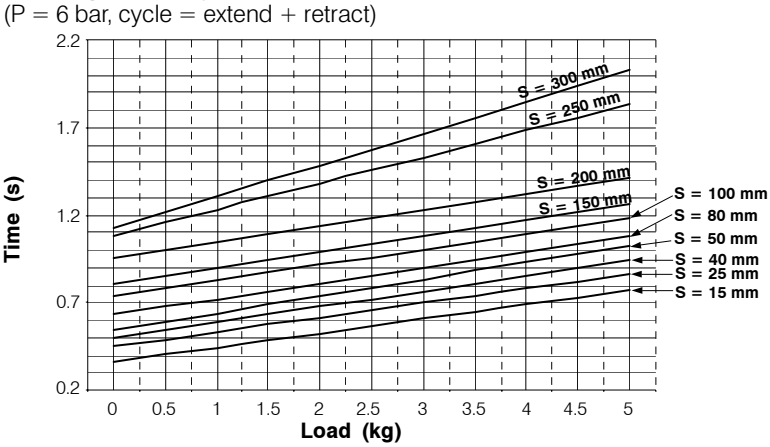
(P = 6 bar, cycle = extend + retract)

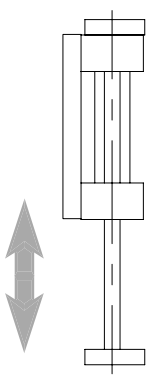




Vertical position cycle time

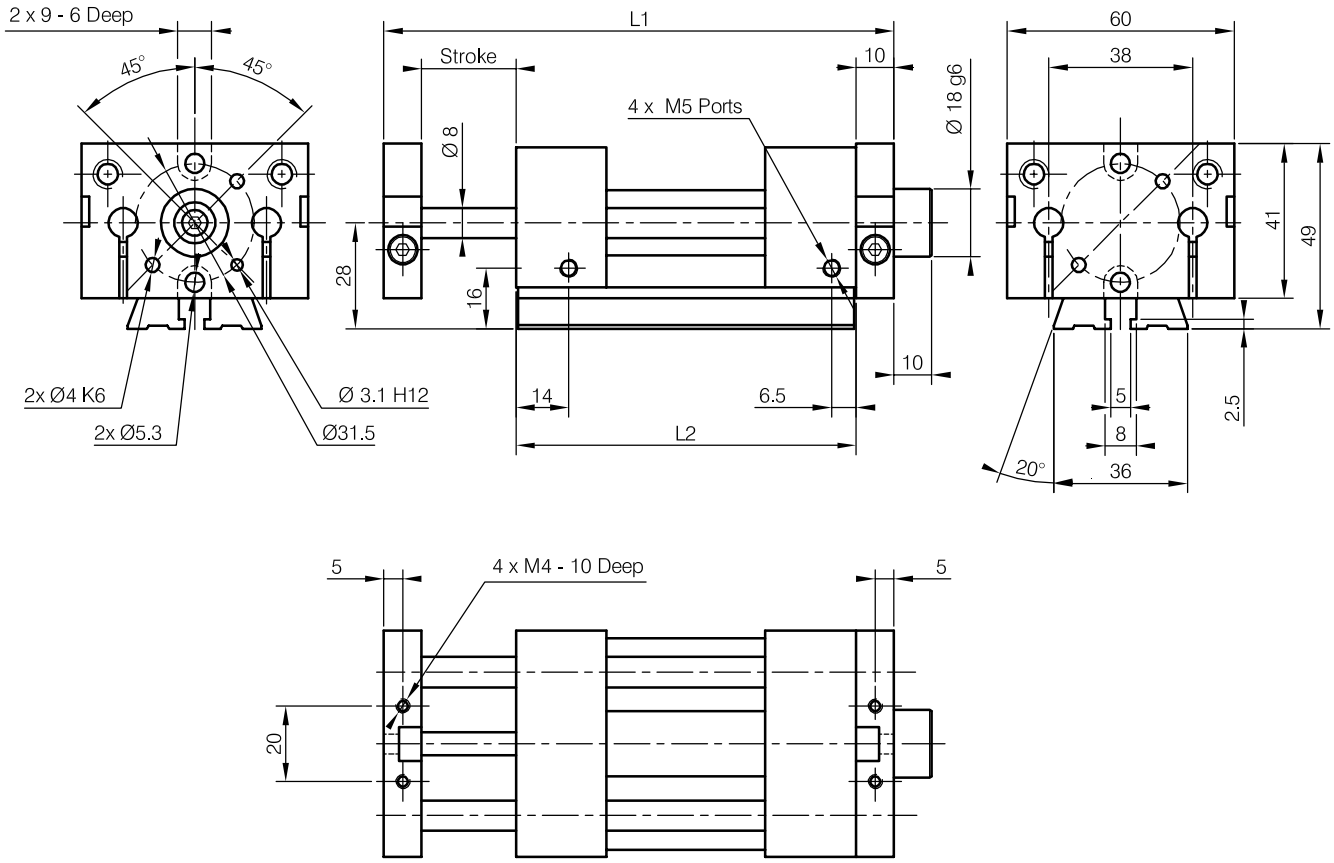
(P = 6 bar, cycle = extend + retract)





Dovetail mounting plate ∅ 16 mm

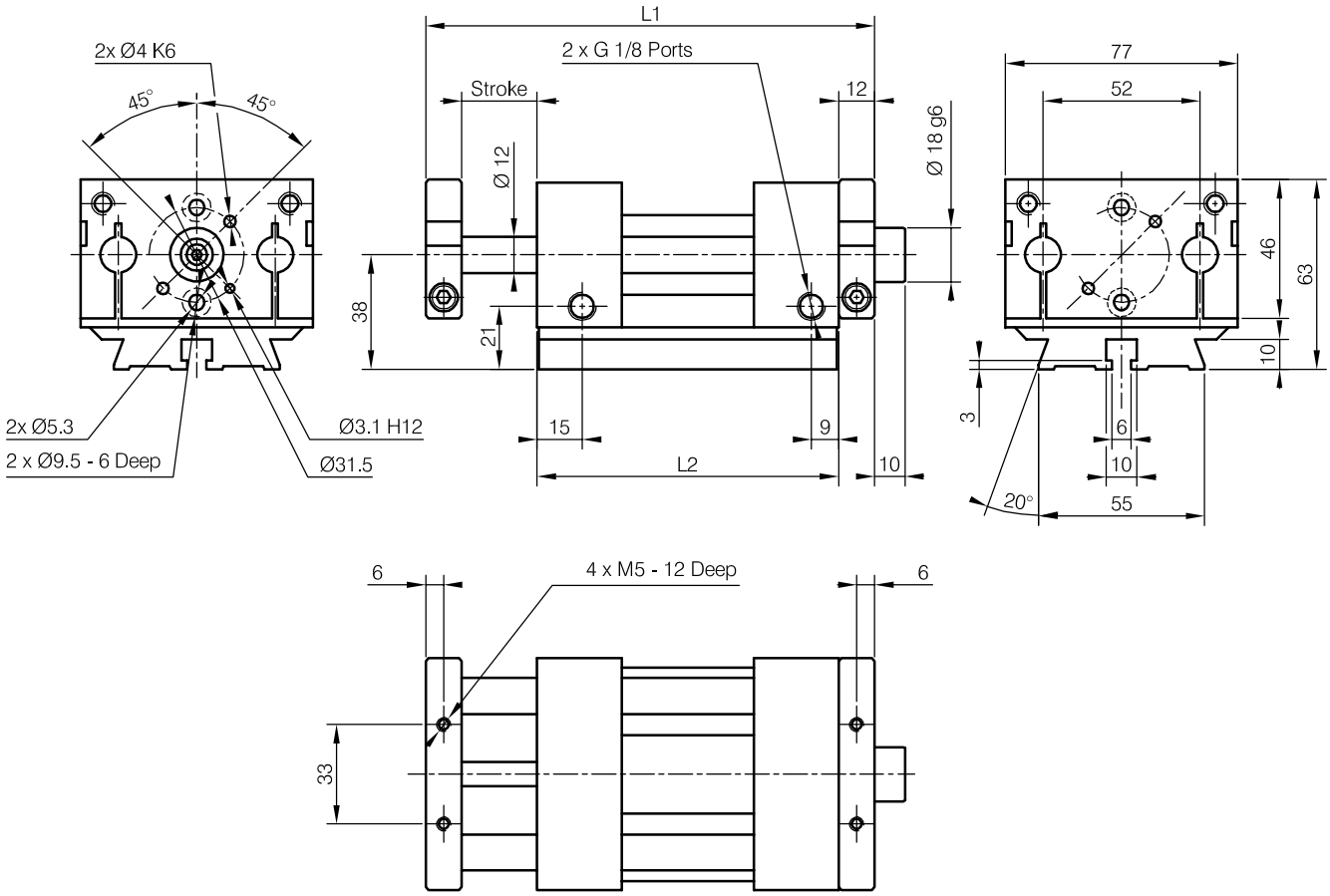
Dimensions (mm)



Stroke	15	25	40	50	80	100	150	200
L1	125	135	150	160	216	256	356	456
L2	90	90	90	90	116	136	186	236

Dovetail mounting plate ∅ 25 mm

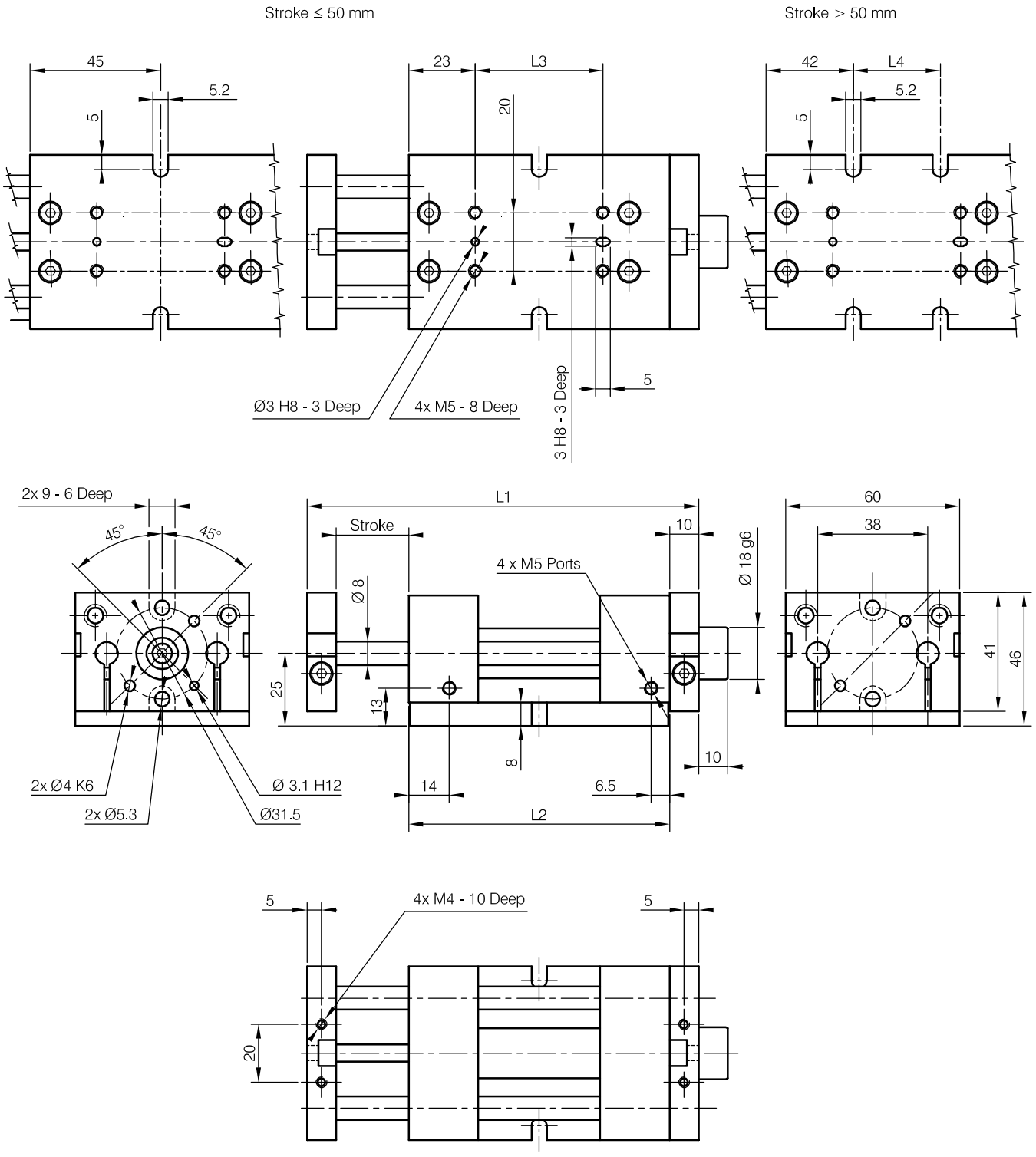
Dimensions (mm)



Stroke	15	25	40	50	80	100	150	200	250	300
L1	139	149	164	174	226	266	366	466	566	666
L2	100	100	100	100	122	142	192	242	292	342

Flat mounting plate ∅ 16 mm

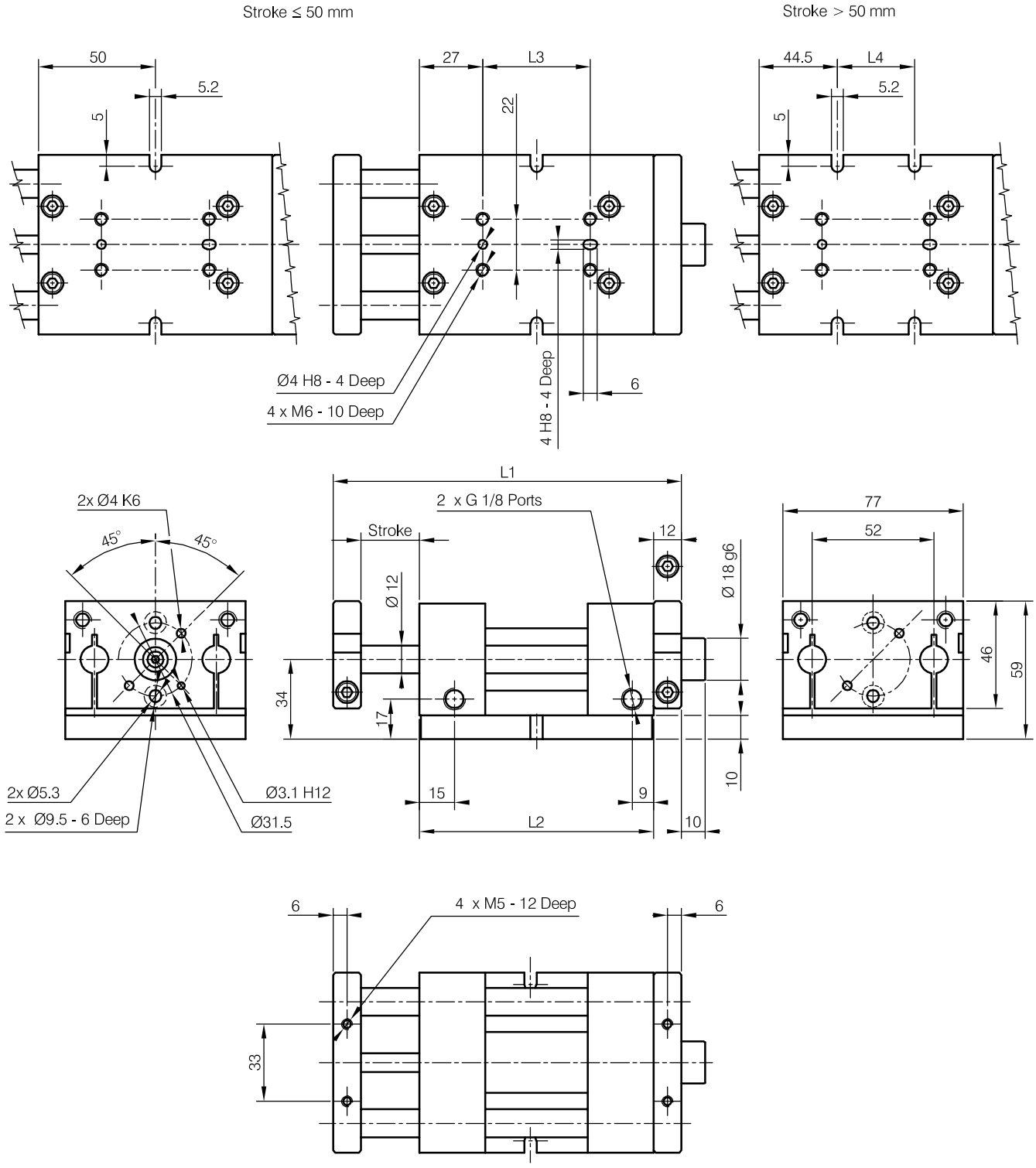
Dimensions (mm)



Stroke	15	25	40	50	80	100	150	200
L1	125	135	150	160	216	256	356	456
L2	90	90	90	90	116	136	186	236
L3	44	44	44	44	70	90	140	190
L4					33	53	103	153

Flat mounting plate ∅ 25 mm

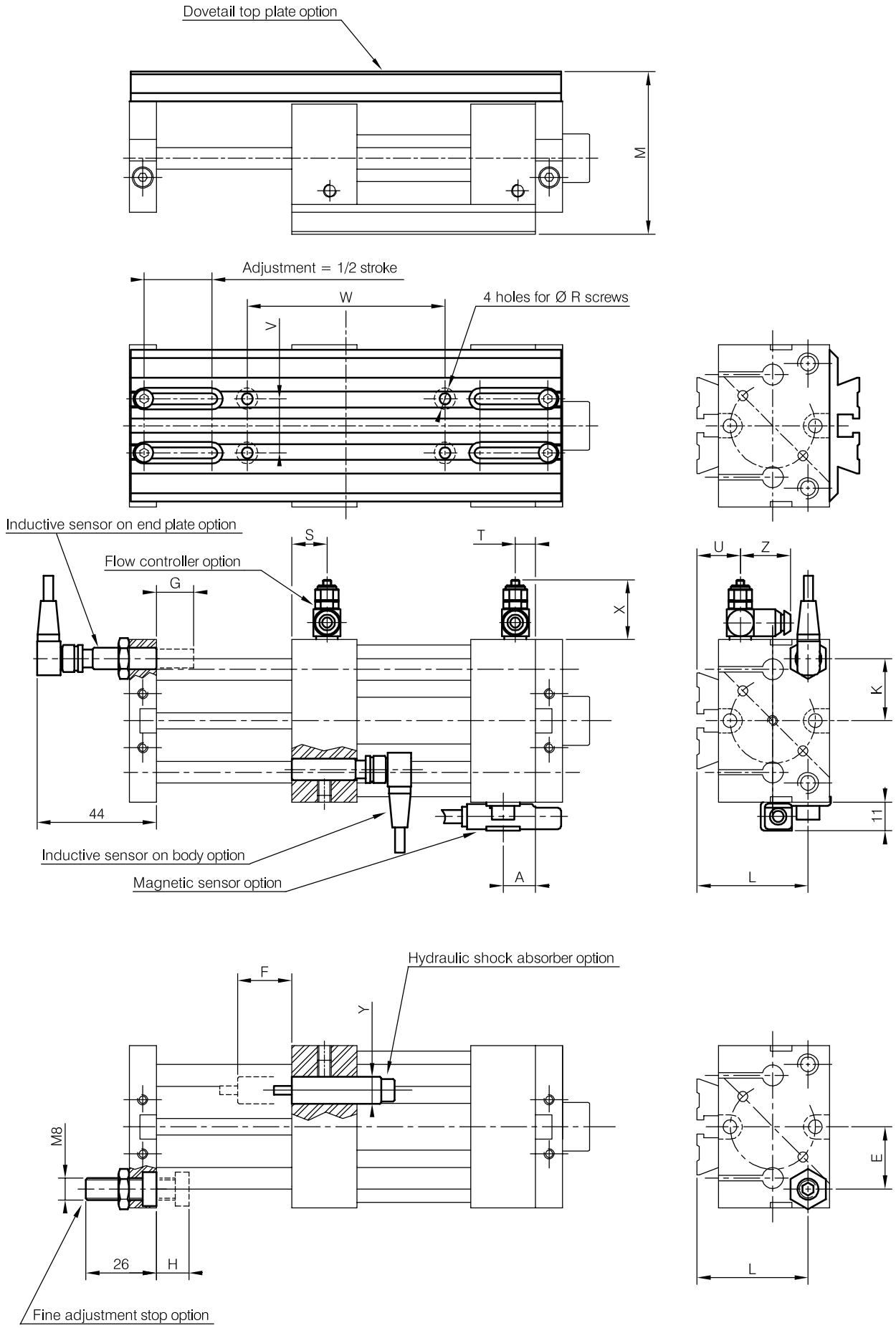
Dimensions (mm)



stroke	15	25	40	50	80	100	150	200	250	300
L1	139	149	164	174	226	266	366	466	566	666
L2	100	100	100	100	122	142	192	242	292	342
L3	46	46	46	46	68	88	138	188	238	288
L4					33	53	103	153	203	253

Options ∅ 16 and 25 mm

Dimensions (mm)



Options Ø 16 mm and 25 mm

Inductive Sensors

Type	Kit part No.
PNP	M01-3AKP
NPN	M01-3AKN

Magnetic sensors

Description	Kit part No.
Without LED Contact NO Voltage 240VAC 300V DC max 500mA current	M00-3AKM
With LED 300mA current	M00-3AKR

Auto compensating shock absorbers

Ø	Part No.
16	9876004
25	9876005

Adjustable threaded stop

Ø	Allen key size	Kit part No.
16 and 25	4	M00-3AK3

Dovetail top plate

Ø	Kit part No.
16	M16-3AKA XXXX
25	M25-3AKA XXXX

The elongated holes are allow for adjustement of stroke. Adjustment = 1/2 of stroke.

Flow controllers

Ø	Part No.	Port
16	PTFL8PB4M5	Ø 4 plug in
25	PTFL4PB6-1/8	Ø 6 plug in
25	PTFL4-1/8	G1/8

Dimensions (mm)

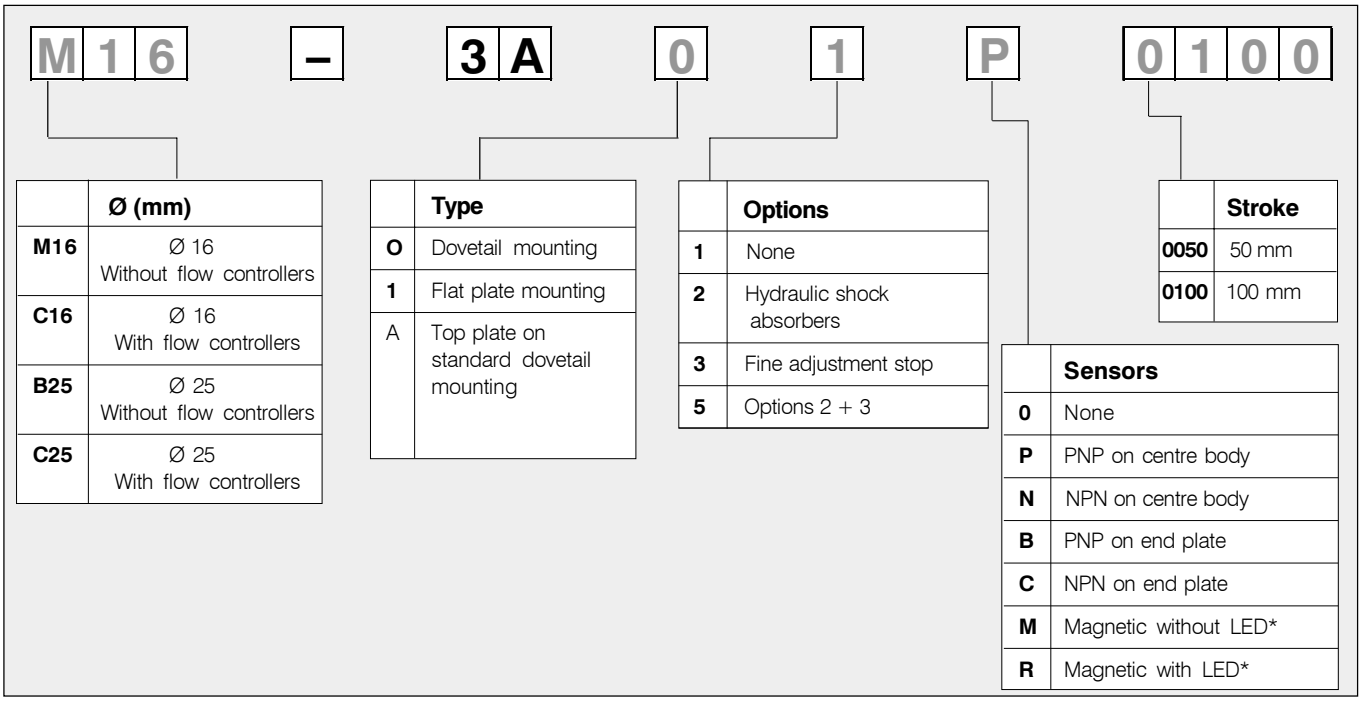
Options Ø 16 mm

Stroke	A	E	F	G	H	K	L	M	R	S	T	U	V	W	X	Y	Z
15	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	73	24	M10 x 1	19,5
25	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	73	24	M10 x 1	19,5
40	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	73	24	M10 x 1	19,5
50	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	73	24	M10 x 1	19,5
80	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	99	24	M10 x 1	19,5
100	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	119	24	M10 x 1	19,5
150	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	169	24	M10 x 1	19,5
200	12	23	22	14	12	23	41	60	M4	14	6,5	16	20	219	24	M10 x 1	19,5

Options Ø 25 mm

Stroke	A	E	F	G	H	K	L	M	R	S	T	U	V	W	X	Y	Z
15	14	31	22	12	10	31	55	77	M5	15	9	21	22	83	37	M12 x 1	23,5
25	14	31	22	12	10	31	55	77	M5	15	9	21	22	83	37	M12 x 1	23,5
40	14	31	22	12	10	31	55	77	M5	15	9	21	22	83	37	M12 x 1	23,5
50	14	31	22	12	10	31	55	77	M5	15	9	21	22	83	37	M12 x 1	23,5
80	14	31	22	12	10	31	55	77	M5	15	9	21	22	105	37	M12 x 1	23,5
100	14	31	22	12	10	31	55	77	M5	15	9	21	22	125	37	M12 x 1	23,5
150	14	31	22	12	10	31	55	77	M5	15	9	21	22	175	37	M12 x 1	23,5
200	14	31	22	12	10	31	55	77	M5	15	9	21	22	225	37	M12 x 1	23,5
250	14	31	22	12	10	31	55	77	M5	15	9	21	22	275	37	M12 x 1	23,5
300	14	31	22	12	10	31	55	77	M5	15	9	21	22	325	37	M12 x 1	23,5

Order key



	Ø (mm)
M16	Ø 16 Without flow controllers
C16	Ø 16 With flow controllers
B25	Ø 25 Without flow controllers
C25	Ø 25 With flow controllers

	Type
O	Dovetail mounting
1	Flat plate mounting
A	Top plate on standard dovetail mounting

	Options
1	None
2	Hydraulic shock absorbers
3	Fine adjustment stop
5	Options 2 + 3

	Sensors
0	None
P	PNP on centre body
N	NPN on centre body
B	PNP on end plate
C	NPN on end plate
M	Magnetic without LED*
R	Magnetic with LED*

	Stroke
0050	50 mm
0100	100 mm

* The threaded stop shall only be adjustable over 2 to 3 mm where magnetic sensors are used with options 3 or 5.

Standard stroke

Ø	Stroke (mm)									
	15	25	40	50	80	100	150	200	250	300
16	●	●	●	●	●	●	●	●		
25	●	●	●	●	●	●	●	●	●	●