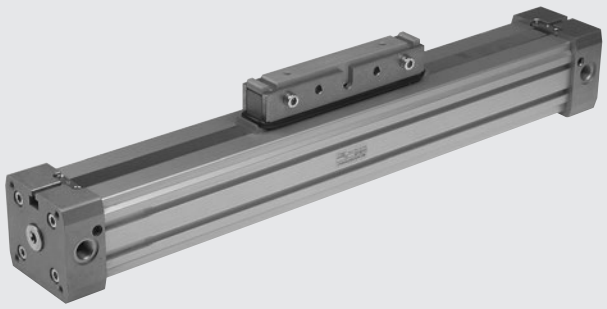
RODLESS CYLINDER SERIES STD

Rodless cylinders come in five different bores - Ø 16, 25, 32, 40 and 63 mm – and the design incorporates numerous innovations.

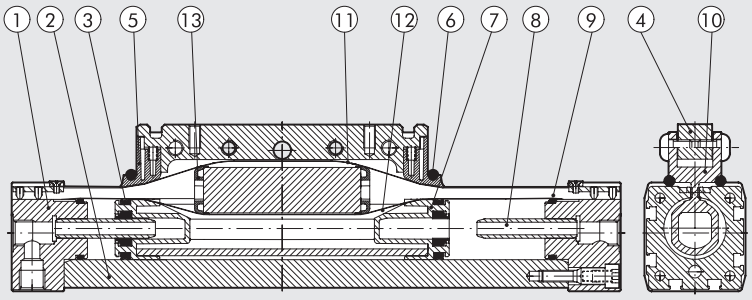
- Calibrated extruded anodized aluminium alloy barrel
- Sensor slots and accessory slots in the barrel itself
- Longitudinal seal by means of specially-shaped indeformable stainless steel strips
- Strokes 100 to 5700 mm with 1mm intervals
- Adjustable integrated pneumatic cushioning
- Adjustable limit switches and decelerations can be applied at any time
- For this type of cylinder (size 32 and upwards), the valves can be fitted directly using the retracting sensors without requiring any intermediate brackets. Refer to the table on page **A1**.62



TECHNICAL DATA			Ø16	Ø25	Ø32	Ø40	Ø63
Operating pressure		bar	1 to 8				
		MPa	0.1 to 0.8				
		psi	14.5 to 116				
Temperature range	NBR - FKM/FPM	°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 5000	100 to 5700			100 to 5500
Sensor magnet			Available magnetic and non-magnetic versions.				
Recommended speeds	NBR	m/s	<1				
	FKM/FPM	m/s	≥1				
Max. speed with decelerators	NBR	m/s	<1				
	FKM/FPM	m/s	2				
Weights			See cylinder "**General technical data**" at the beginning of the chapter				
Notes			**For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.**				

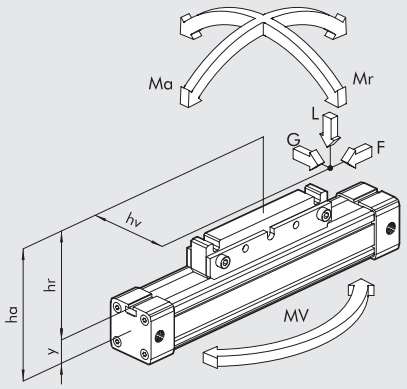
COMPONENTS

① CYLINDER HEAD: aluminium alloy
② BARREL: profiled anodized aluminium alloy
③ PISTON GASKET: NBR or FKM/FPM
④ CENTRAL ELEMENT: aluminium alloy
⑤ SCRAPER: Hostaform®
⑥ O-RING: FKM/FPM
⑦ PISTON: Hostaform®
⑧ CUSHIONING CONE: aluminium alloy
⑨ STATIC O-RINGS: NBR or FKM/FPM
⑩ SLIDE: aluminium alloy
⑪ OUTER STRIP: stainless steel
⑫ INNER STRIP: stainless steel
⑬ BAND SUPPORT: Hostaform®



METAL WORK PNEUMATIC

DIMENSIONING - FORCE AND TORQUE



Bore	Centre Distance Y	Actual Force F at 6 bar [N]	Cushioning stroke [mm]	Max. load L [N]	Ma max [Nm]	Mr max [Nm]	Mv max [Nm]
16	9	110	15	120	4	0.3	0.5
25	14	250	21	300	15	1	3
32	18	420	26	450	30	2	4
40	22	640	32	750	60	4	8
63	44	1550	40	1650	200	8	24

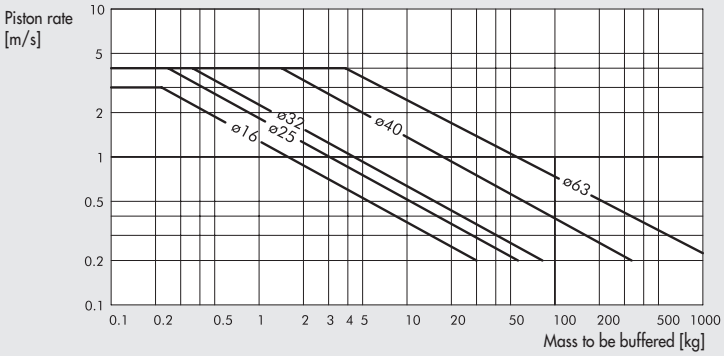
N.B.: When the cylinder is subjected simultaneously to torque and force, keep to the following equations, where the lengths have to be given in metres.

$Ma = F \times ha \qquad Mr = L \times hv + G \times hr \qquad Mv = F \times hv$

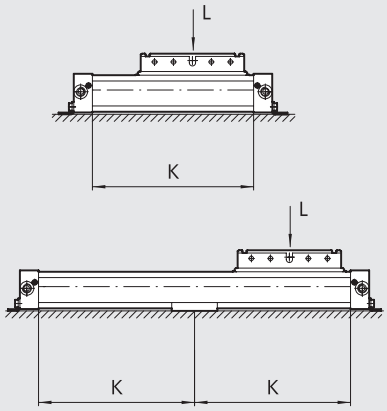
$$\frac{Mv}{Mv\ max} \leq 1; \qquad \frac{L}{L\ max} \leq 1; \qquad \frac{Ma}{Ma\ max} + \frac{Mr}{Mr\ max} + 0.22 \times \frac{Mv}{Mv\ max} + 0.4\,\frac{L}{L\ max} \leq 1$$

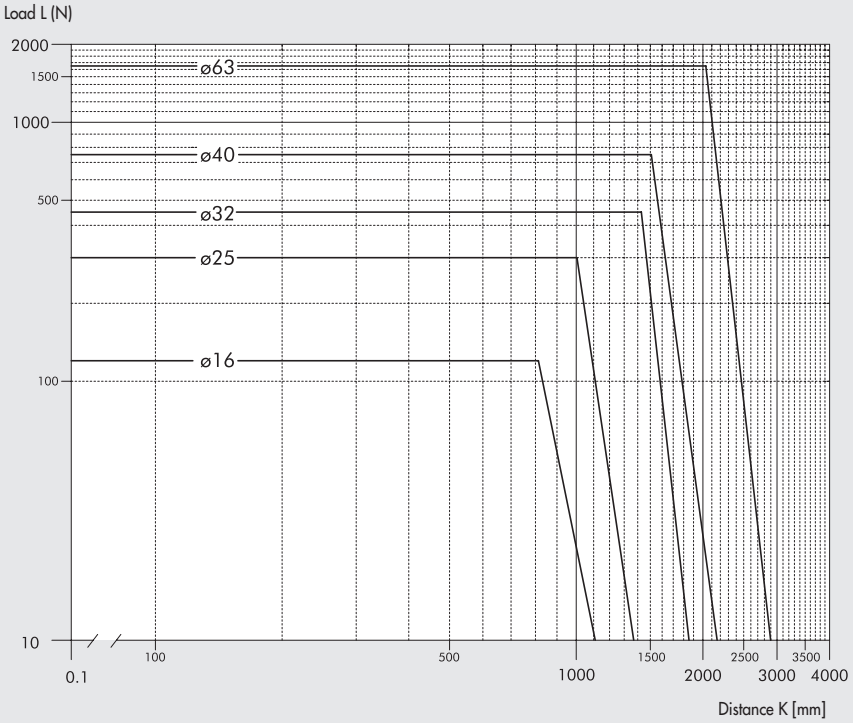
DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

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 work 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 mass for the various diameters at a pressure of 6 bar.

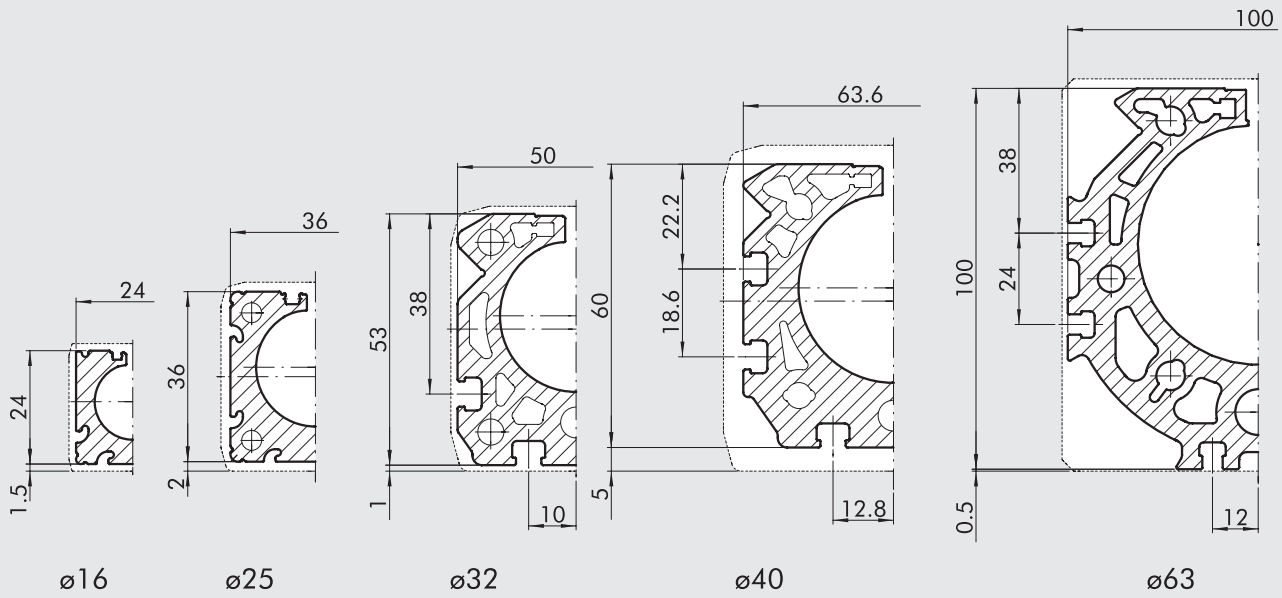


MAXIMUM LOAD ACCORDING TO THE DISTANCE BETWEEN SUPPORTS



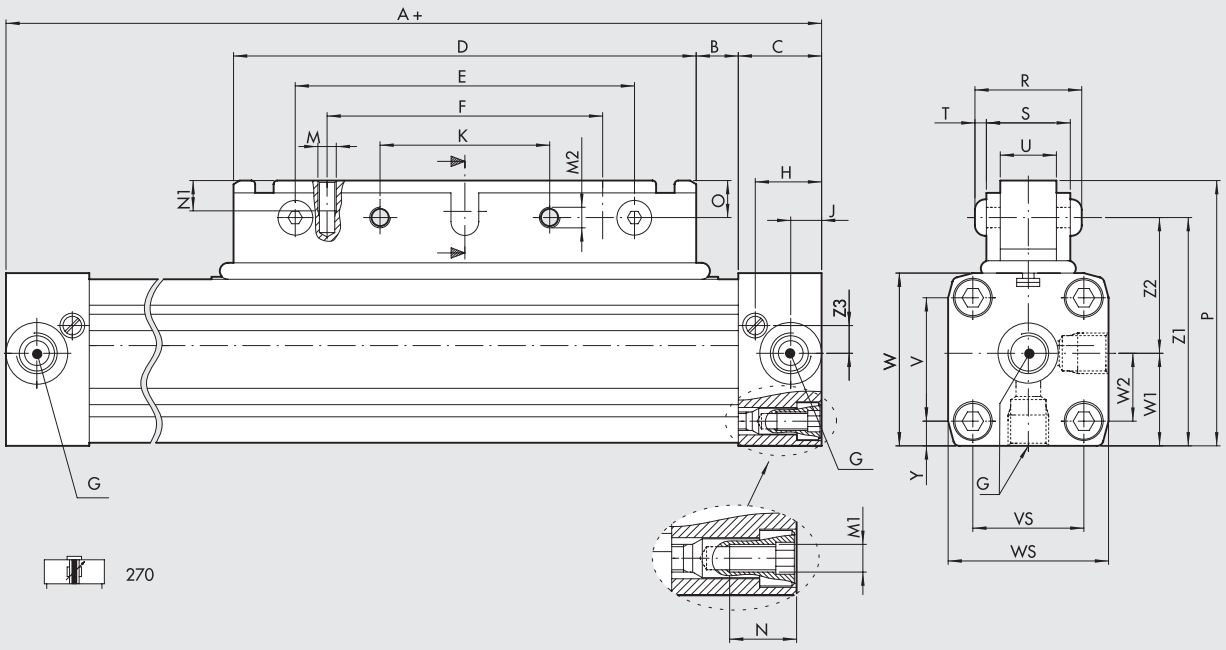


BARREL CROSS SECTION



DIMENSIONS Ø 16 to 40

+ = ADDED STROKE

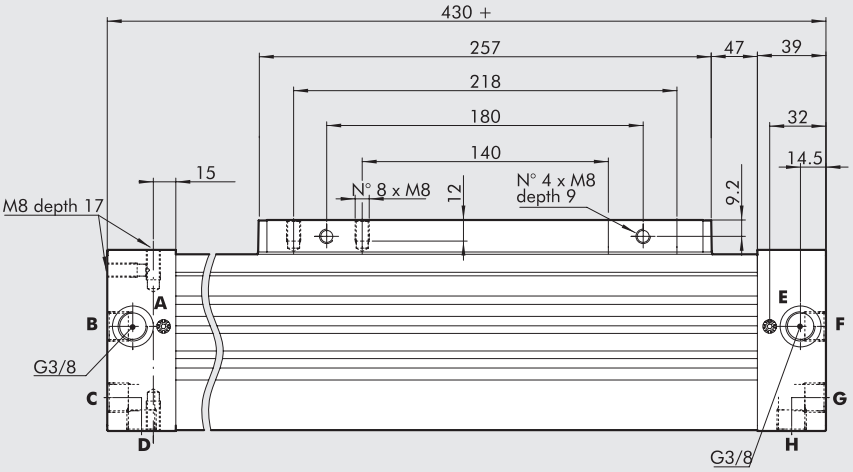


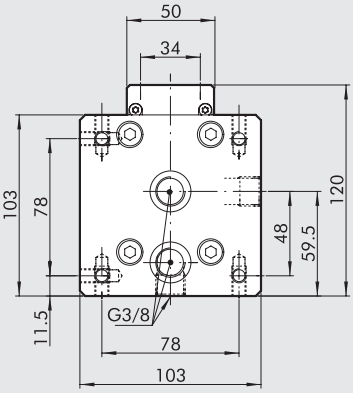
Ø	A	B	C	D	E	F	G	H	J	K	M	M1	M2	N	N1	O	P	R	S	T	U	V	VS	W	WS	W1	W2	Y	Z1	Z2	Z3	Z4
16	130	12	15	76	64	48	M5	12	6.4	32	M4	M3	M5	7	8	6	43.5	23.5	18	2.75	10	18	18	27	27	13.5	9	4.5	37.5	24	4.5	28
25	200	17	23	120	100	80	1/8	18.5	8.5	50	M5	M5	M6	12	11	13	66	29.6	23	3.3	15	27	27	40	40	20	13.5	6.5	53	33	6.5	42
32	250	23	27	150	110	90	1/4	22	10.5	55	M6	M6	M8	14	12	12	86	36	27	4.4	18	40	36	56	52	30	22	8	74	44	8	70
40	300	45	30	150	110	90	1/4	24	15	55	M6	M6	M8	17.5	12	12	97	36.8	28	4.4	18	54	54	69	72	36	27	9	85	49	11.8	70

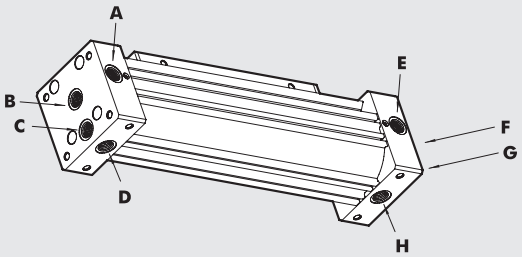
METAL WORK PNEUMATIC

DIMENSIONS Ø 63

+ = ADDED STROKE





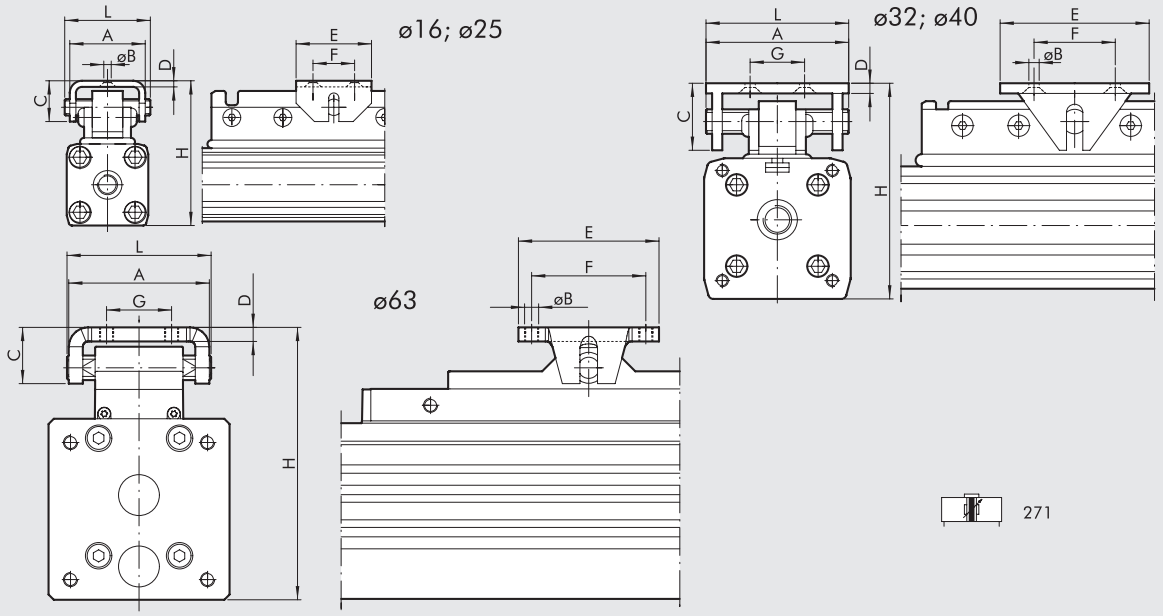


Basic supply
A, B, C, D to feed to left chambers
E, F, G, H to feed the right chambers
Note: B, C, D, F, G and H are supplied closed with threaded plugs

If you modify the position of an inner plug following the instructions provided with the cylinder, you can arrange:

all feeds from the left	**all feeds from the right**
A, B feed the left chambers	E, F feed the right chambers
C, D feed the right chambers	G, H feed the left chambers

VERSION WITH SWING CARRIAGE

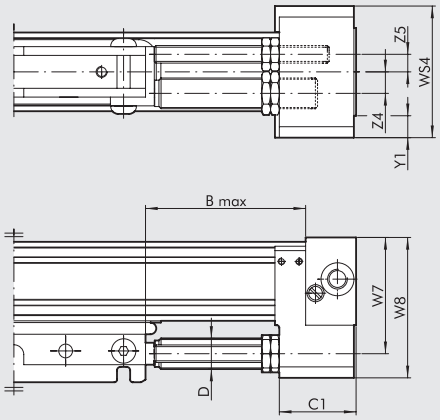


NOTE: For other dimensions see code 270

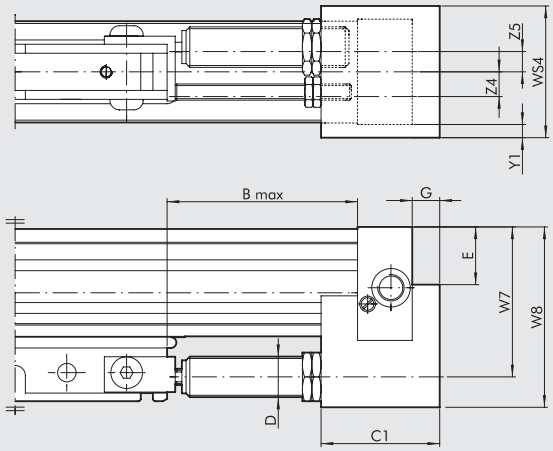
Ø	A	ØB	C	D	E	F	G	H	L
16	25	4.5	13	2	20	10	–	47-50	28
25	37	5.5	20	3	30	16	–	72-75	42
32	70	6.5	38	5	90	75	55	91-100	70
40	70	6.5	38	5	90	75	55	111-120	70
63	80	M8	32	8	80	65	37	155-162	82

DIMENSIONS VERSION WITH ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS

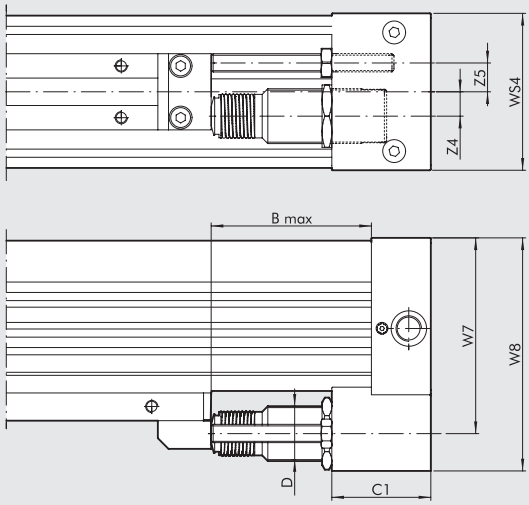
ø16



ø25÷ø40



ø63



Ø	B Max	C1	D	E	G	W7	W8	WS4	Y1	Z4	Z5	Stroke	Max. cushioned force For stroke [J]	Max. cushioned force For hour [J]	Max. impact force [N]	Max. thrust force [N]
16	42	22	M12x1	–	–	38	46	42	7.5	7	7.5	10.4	10	14125	1000	220
25	72	44	M14x1.5	17	9	53	67	50	5	8	9.8	16	26	34000	2800	530
32	90	56	M20x1.5	29	11	74	89	60	4	10	12.2	22	54	53700	3750	890
40	105	74	M25x1.5	32.8	14	89	108	75	1.5	12.5	12.7	25	90	70000	5500	1550
63	105	65	M36x1.5	–	–	128.5	153	103	–	16	19	25	160	91000	11120	2220

For graphs to help choose shock absorbers see page **A1**.195

KEY TO CODES

CYL	27 TYPE	0	0	25 BORE	0150 STROKE	C	N GASKETS
	27 Rodless cylinder	**0** Double-acting cushioned magnetic **1** Double-acting with swing carriage ✚ **2** Twin cushioned series "Double" **3** Double-acting Magnetic + adjustable limit switches and shock absorbers	**0** Magnetic **S** Non-magnetic ■ **G** No stick-slip	16 25 32 40 63	Ø 16: from 100 to 5000 mm Ø 25 to 40: from 100 to 5700 mm Ø 63 from 100 to 5500 mm		**N** NBR gasket ● **V** FKM/FPM gasket

■ **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only** ● For speed ≥ 1/m/s ✚ Available up to Ø 32

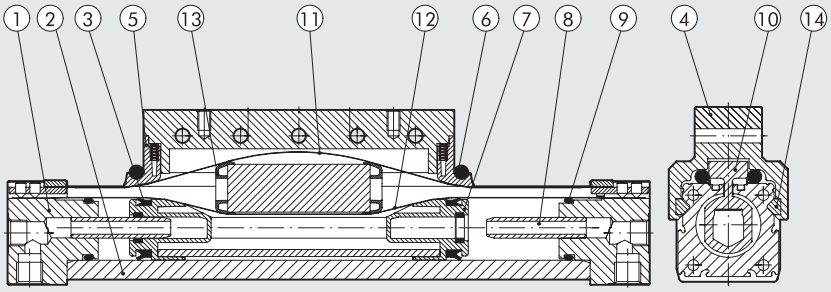
RODLESS CYLINDER WITH "V" GUIDE

Two opposed V-shaped guide units are obtained directly in the anodized aluminium cylinder liner, on which a cover with two acetalic resin wear-resistant pads slides.
The cover has a tip-up-type carriage-piston rod coupling. In this way the carriage only transfers loads axially and does not support loads and moments in other directions.
The play of the pads can be adjusted by means of side threaded grub screws. Therefore, it is possible to recover the wear of pads, which can be replaced without the need for dismantling the cylinder.
This family of rodless cylinders has the same features as the basic versions: such as an integrated adjustable pneumatic cushioning, sensor slots and accessory holding slots.
A version is available with adjustable limit switches and hydraulic decelerators. They can be purchased separately and applied at any time to the basic cylinders as well.

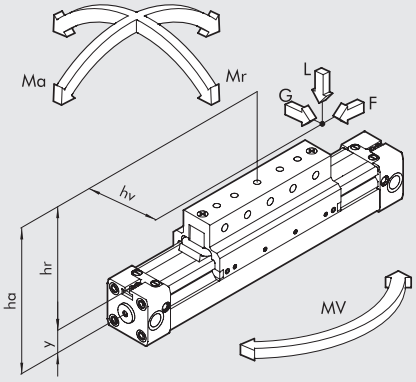
TECHNICAL DATA			Ø25	Ø32	Ø40	Ø63
Operating pressure		bar	1.5 to 8			
		MPa	0.15 to 0.8			
		psi	21.8 to 116			
Temperature range	NBR - FKM/FPM	°C	−10 to +80			
Design			Double-acting rodless cylinder with direct transmission system			
Fluid			50 µm unlubricated filtered air Lubrication, if used, must be continuous			
Standard strokes		mm	100 to 5700			100 to 5500
Sensor magnet			Available magnetic and non-magnetic versions.			
Recommended speeds	NBR	m/s	<1			
	FKM/FPM	m/s	≥1			
Max. speed with decelerators	NBR	m/s	<1			
	FKM/FPM	m/s	2			
Weights			See cylinder "**General technical data**" at the beginning of the chapter			
Notes			**For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.**			

COMPONENTS

① CYLINDER HEAD: aluminium alloy
② BARREL: profiled anodized aluminium alloy
③ PISTON GASKET: NBR or FKM/FPM
④ CENTRAL ELEMENT: aluminium alloy
⑤ SCRAPER: Hostaform®
⑥ O-RING: FKM/FPM
⑦ PISTON: Hostaform®
⑧ CUSHIONING CONE: aluminium alloy
⑨ STATIC O-RINGS: NBR or FKM/FPM
⑩ SLIDE: aluminium alloy
⑪ OUTER STRIP: stainless steel
⑫ INNER STRIP: stainless steel
⑬ BAND SUPPORT: Hostaform®
⑭ "V" GUIDE PLATE: Hostaform®



DIMENSIONING - FORCE AND TORQUE



Bore	Centre Distance Y	Actual Force F at 6 bar [N]	Cushioning stroke [mm]	Max. load L [N]	Ma max [Nm]	Mr max [Nm]	Mv max [Nm]
25	14	200	21	350	22	5	22
32	18	300	26	400	40	10	40
40	22	490	32	700	70	26	70
63	44	1300	40	1800	250	80	250

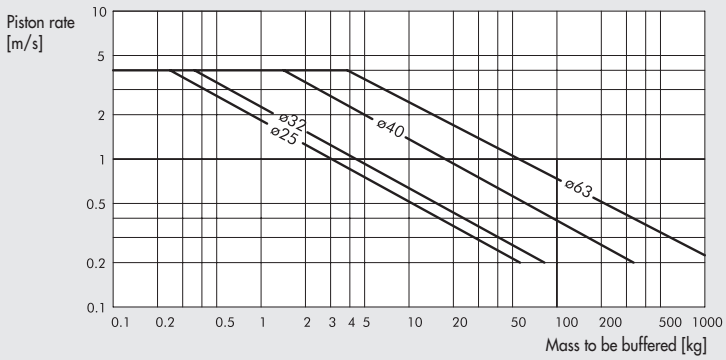
N.B.: The loads can be applied for speeds below 0.2 m/s. For higher speeds, it is advisable not to exceed 1 m/s
N.B.: When the cylinder is subjected simultaneously to torque and force, keep to the following equations, where the lengths have to be given in metres.

$Ma = F \times ha \qquad Mr = L \times hv + G \times hr \qquad Mv = F \times hv$

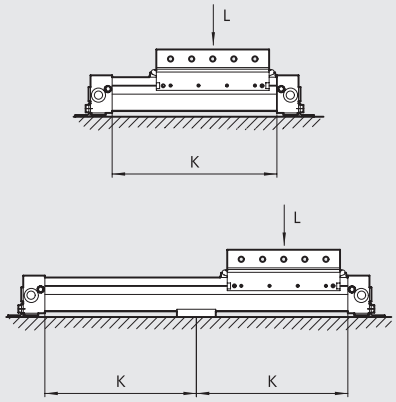
$$\frac{Mv}{Mv\ max} \leq 1; \qquad \frac{L}{L\ max} \leq 1; \qquad \frac{Ma}{Ma\ max} + \frac{Mr}{Mr\ max} + 0.22 \times \frac{Mv}{Mv\ max} + 0.4\,\frac{L}{L\ max} \leq 1$$

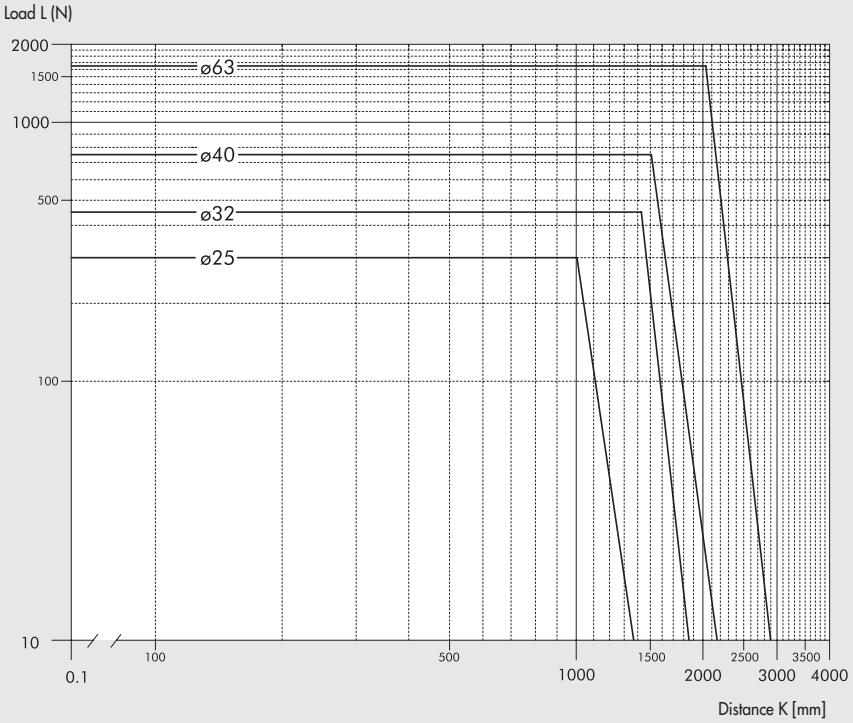
DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

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 work 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 mass for the various diameters at a pressure of 6 bar.



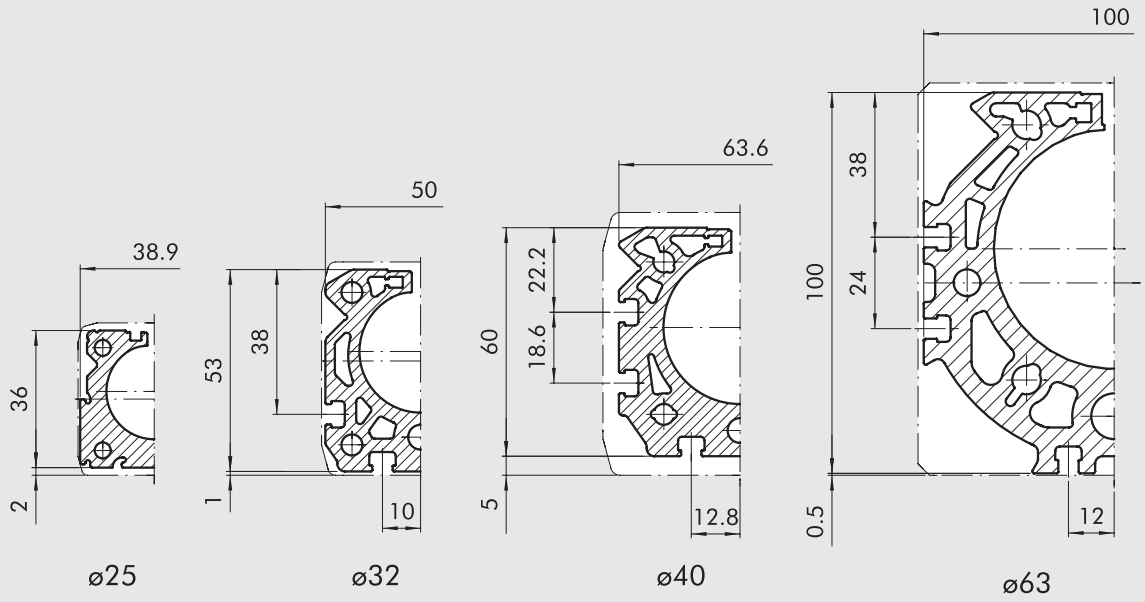
MAXIMUM LOAD ACCORDING TO THE DISTANCE BETWEEN SUPPORTS





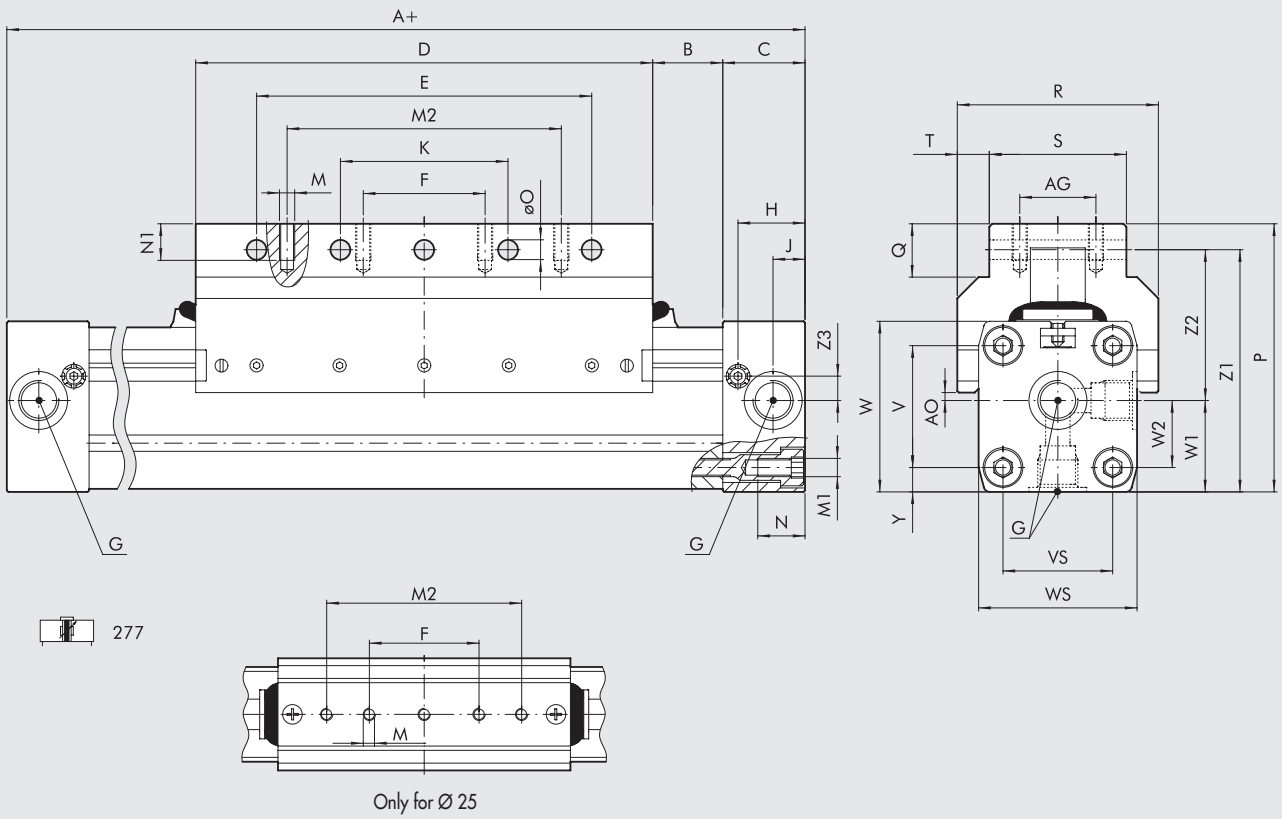
METAL WORK PNEUMATIC

BARREL CROSS SECTION



DIMENSIONS Ø 25 to 40

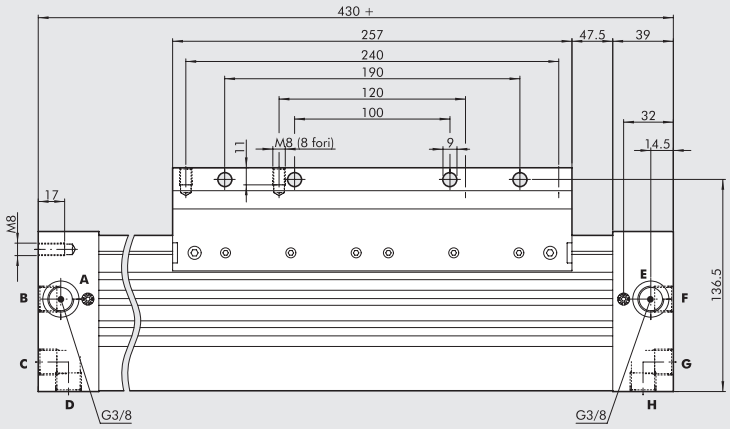
+ = ADDED STROKE

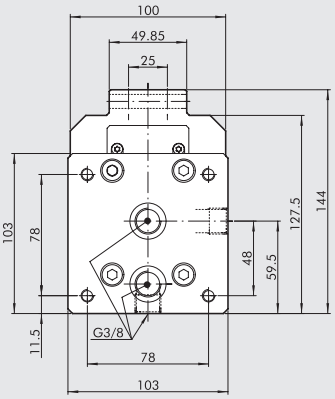


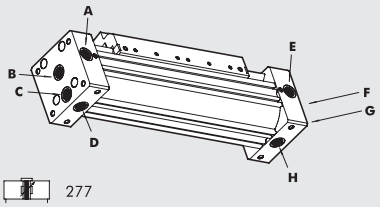
Ø	A	AG	AO	B	C	D	E	F	G	H	J	K	M	M1	M2	N	N1	øO	P	Q	R	S	T	V	VS	W	WS	W1	W2	Y	Z1	Z2	Z3
25	200	-	2	17	23	120	90	45	1/8	18.5	8.5	45	M5	M5	80	12	8	5.5	67.5	21	46	26	10	27	27	40	40	20	13.5	6.5	57.5	37.5	6.5
32	250	25	2.6	23	27	150	110	40	1/4	22	10.5	55	M5	M6	90	15	12	6.4	88	17.5	66	45	10.5	40	36	56	52	30	22	8	79.5	49.5	8
40	300	25	9.4	45	30	150	110	40	1/4	24	15	55	M6	M6	90	17.5	12	6.4	98.5	17.5	80	45	17.5	54	54	69	72	36	27	9	89.9	53.9	11.8

DIMENSIONS Ø 63

+ = ADDED STROKE







277

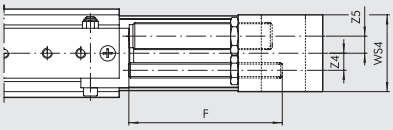
Basic supply
A, B, C, D to feed to left chambers
E, F, G, H to feed the right chambers
Note: B, C, D, F, G and H are supplied closed with threaded plugs

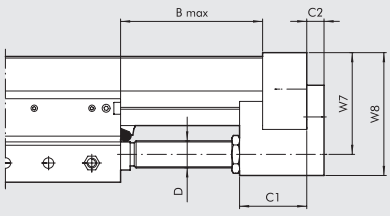
If you modify the position of an inner plug following the instructions provided with the cylinder, you can arrange:

all feeds from the left	**all feeds from the right**
A, B feed the left chambers	E, F feed the right chambers
C, D feed the right chambers	G, H feed the left chambers

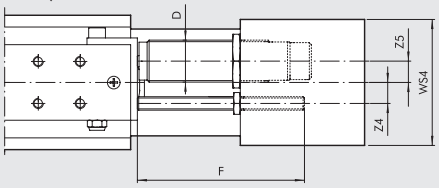
DIMENSIONS VERSION WITH ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS

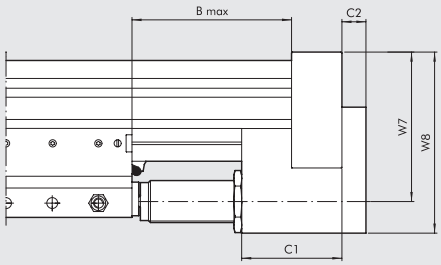
Ø 25



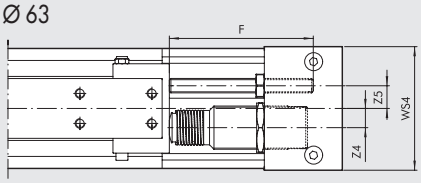


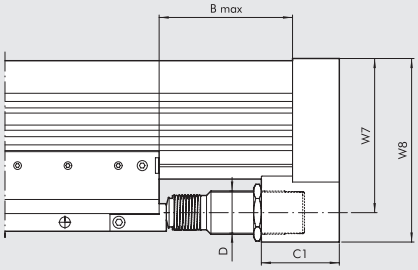
Ø 32; Ø 40





Ø 63





278

Ø	B Max	C1	C2	D	F	W7	W8	WS4	Z4	Z5	Stroke	Max. cushioned force For stroke [J]	Max. cushioned force For hour [J]	Max. impact force [N]	Max. thrust force [N]
25	84	35	9	M14x1.5	80	53	67	50	8	9.8	16	26	34000	2800	530
32	110	45	11	M20x1.5	100	74	89	60	10	12.2	22	54	53700	3750	890
40	120	60	14	M25x1.5	100	89	108	75	12.5	12.7	25	90	70000	5500	1550
63	122	65	-	M36x1.5	120	128.5	153	103	16	19	25	160	91000	11120	2220

For graphs to help choose shock absorbers see page **A1**.195

KEY TO CODES

CYL	27	7	0	25	0150	C	N
	TYPE			**BORE**	**STROKE**		**GASKETS**
	27 Rodless cylinder	**7** Double-acting cushioned Magnetic with "V" guide **8** Double-acting cushioned Magnetic with "V" guide + adjustable limit switches and decelerator	**0** Magnetic **S** Non-magnetic ✱ **G** No stick-slip	25 32 40 63	Ø 25 to 40: from 100 to 5700 mm Ø 63 from 100 to 5500 mm		**N** NBR gasket ● **V** FKM/FPM gasket

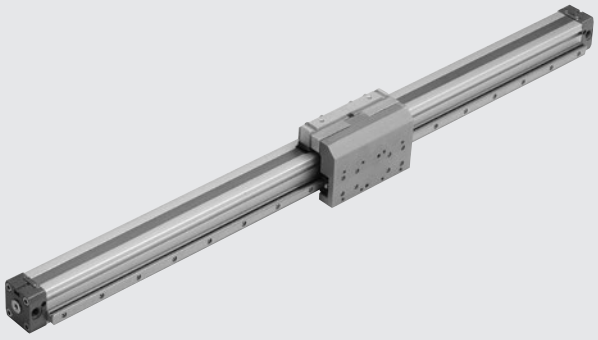
✱ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only ● For speed ≥ 1/m/s

RODLESS CYLINDER WITH BALL RECIRCULATING GUIDE

The range of rodless cylinders with ball circulation guides is available with five different bores Ø 16, 25, 32, 40 and 63. The bore 63 can be supplied in two versions: the "standard" one for intermediate loads and the "heavy" one for considerably weighty loads. Besides the general features specified for standard rodless cylinders, the other main features are:

- Very high load capacity, acting in all directions without discharging onto the cylinder slide.
- Hardened steel guide connected firmly to the cylinder barrel.
- Ball circulation pads constructed using special technology that make them very silent when the guide slides, with very long maintenance intervals. For example, they only need lubricating every 2000 km or once a year, using type 2 grease, preferably containing lithium soap.
- Extra sturdy slide support with various holes for fixing the loads. Holes for centring pins are also provided.
- 100 to 2650 stroke at intervals of 1 mm.
- Integrated pneumatic adjustable cushioning.
- Adjustable limit switches and decelerations can be applied at any time.

For this type of cylinder (size 32 and upwards), the valves can be fitted directly using the retracting sensors without requiring any intermediate brackets.
Refer to the table on page **A1**.62



TECHNICAL DATA			Ø16	Ø25	Ø32	Ø40	Ø63	Ø63 heavy
Operating pressure		bar	1 to 8					
		MPa	0.1 to 0.8					
		psi	14.5 to 116					
Temperature range	NBR - FKM/FPM	°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		100 to 2250	100 to 2100	100 to 2650
Sensor magnet			Available magnetic and non-magnetic versions.					
Recommended speed	NBR	m/s	<1					
	FKM/FPM	m/s	≥1					
Max. speed with decelerators	NBR	m/s	<1					
	FKM/FPM	m/s	2					
Weights			See cylinder "**General technical data**" at the beginning of the chapter					
Notes			**For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air.**					

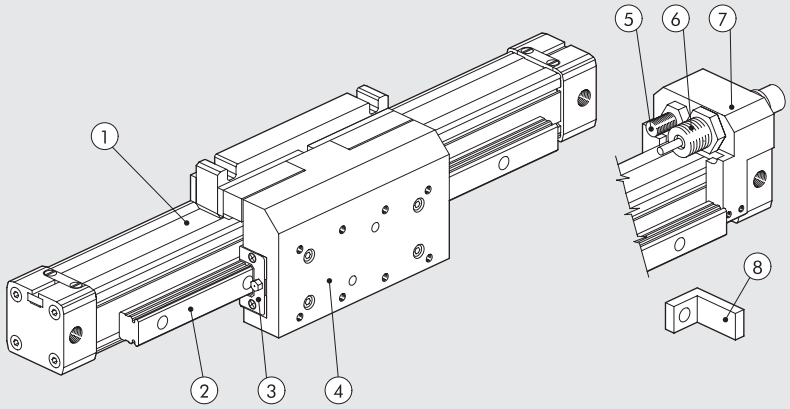
COMPONENTS

For version 275

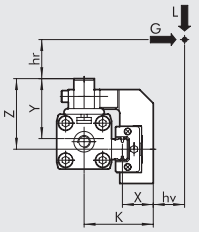
① CYLINDER: see components of **rodless cylinders - series STD**
② GUIDE: hardened steel
③ PAD: steel with hardened ball circulation
④ SLIDE SUPPORT: anodized aluminium

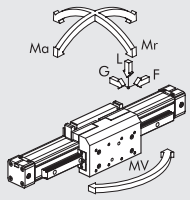
For version 276

Besides the details specified above:
⑤ END-OF-STROKE STUD PIN: zinc-plated steel, complete with 2 zinc-plated nuts for fixing
⑥ DECELERATOR: burnished steel, complete with 2 zinc-plated or burnished nuts for fixing
⑦ DECELERATOR SUPPORT: anodized aluminium
⑧ BRACKET: hardened-and-tempered and zinc-plated steel



DIMENSIONING - FORCES AND MOMENTS





Ø	Version	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
40	–	640	32	68	24.7	58	73	4000	4000	200	140	200
63	standard	1550	40	84	23.1	79	100	6000	6000	400	140	400
63	heavy	1550	40	91	29.2	79	88	10000	10000	600	400	600

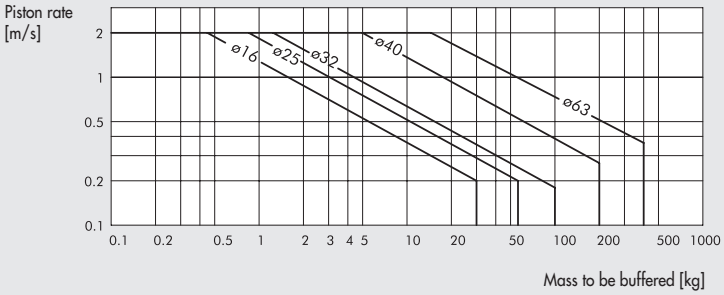
N.B.: When the cylinder is subjected simultaneously to torque and force, keep to the following equations, where the lengths have to be given in metres.

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

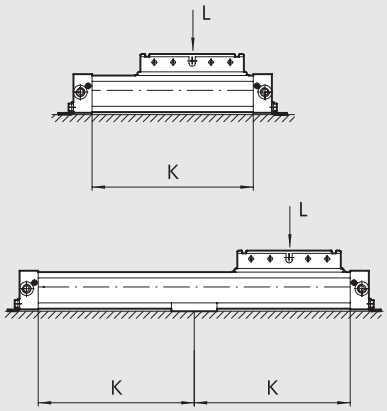
$$\frac{Ma}{Ma\ max} + \frac{Mr}{Mr\ max} + \frac{Mv}{Mv\ max} + \frac{L}{L\ max} + \frac{G}{G\ max} \leq 1$$

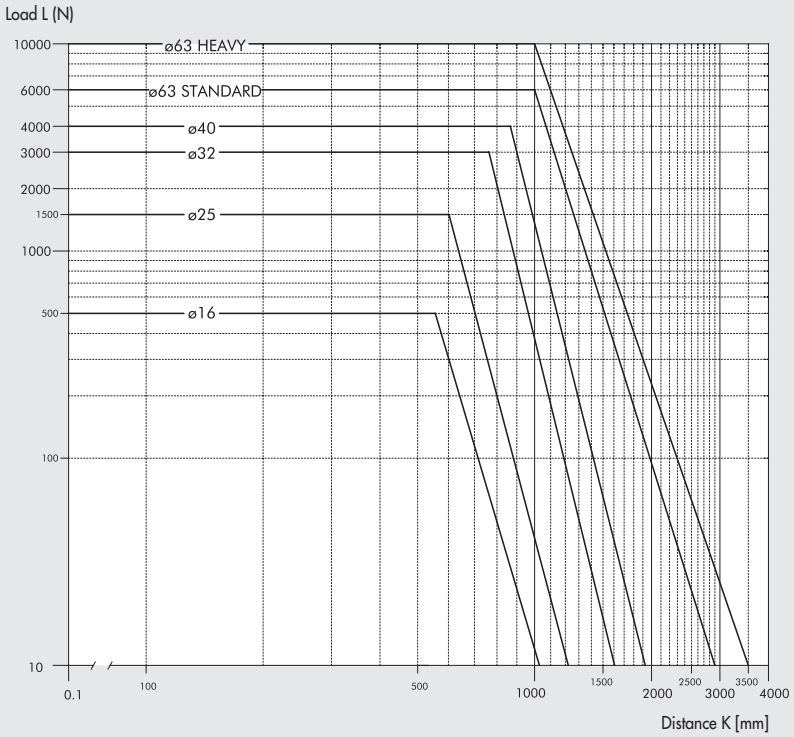
DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD

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 work 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 mass for the various diameters at a pressure of 6 bar.



MAXIMUM LOAD ACCORDING TO THE DISTANCE BETWEEN SUPPORTS

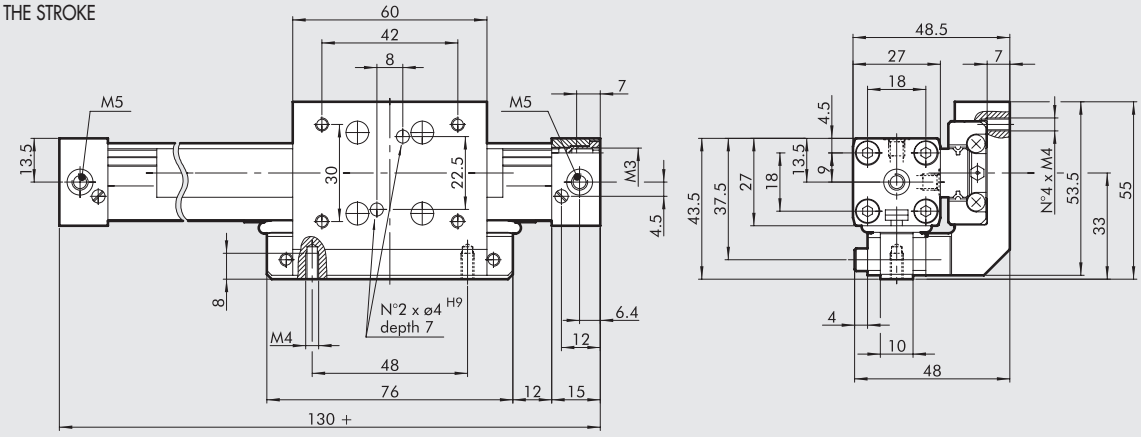




METAL WORK PNEUMATIC

DIMENSIONS Ø 16

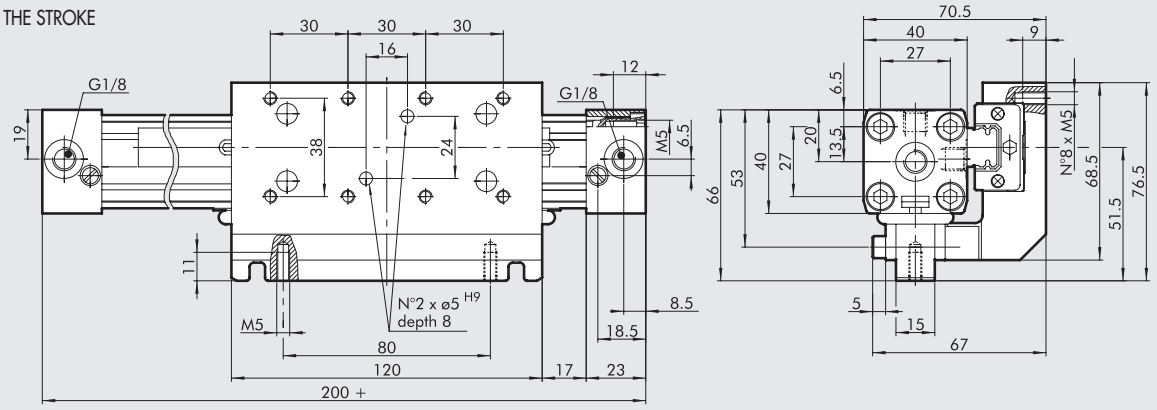
+ = ADD THE STROKE



275

DIMENSIONS Ø 25

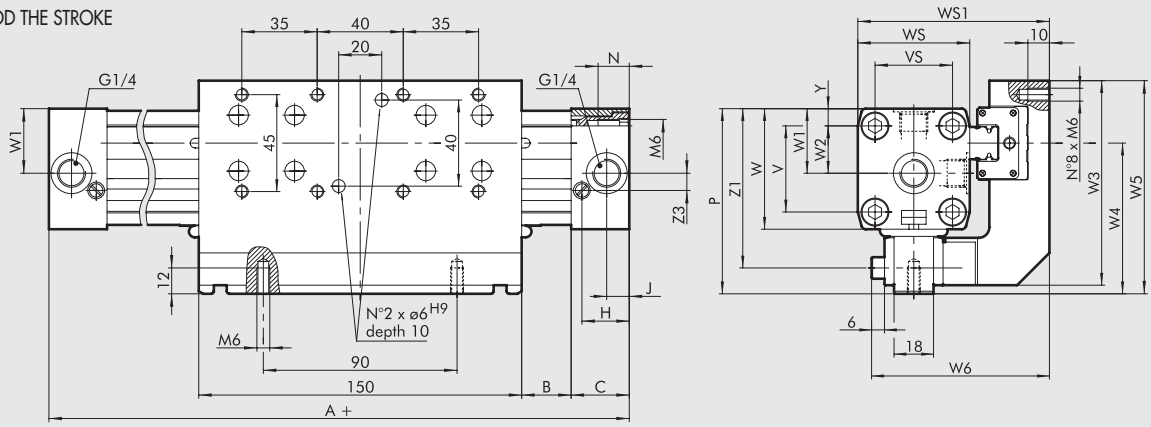
+ = ADD THE STROKE



275

DIMENSIONS Ø 32; Ø 40

+ = ADD THE STROKE

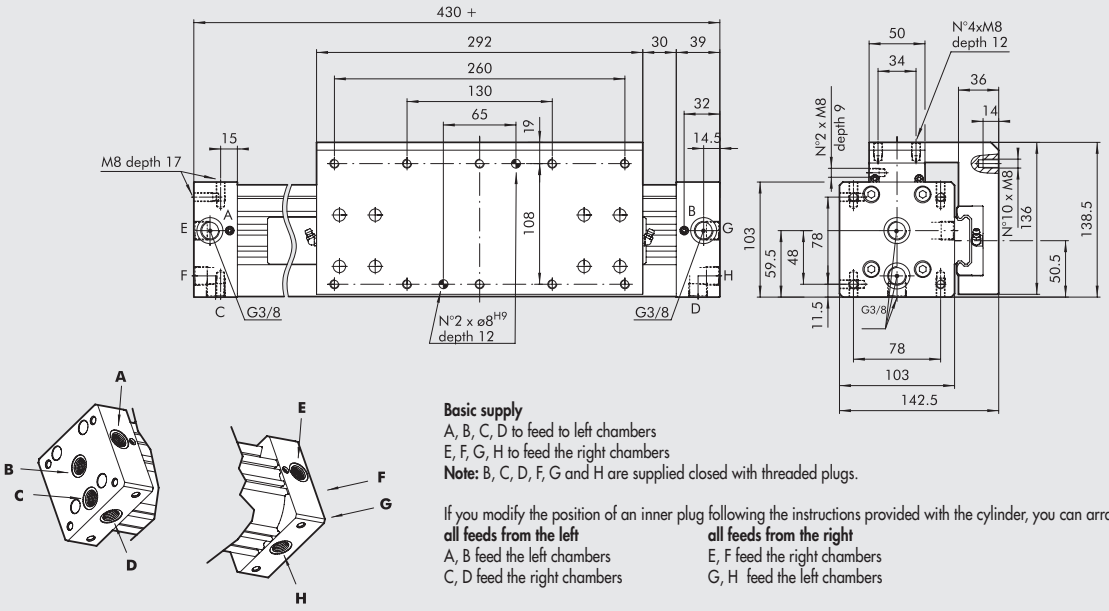


275

Ø	A	B	C	H	J	N	P	V	VS	W	WS	WS1	W1	W2	W3	W4	W5	W6	Y	Z1	Z3
32	250	23	27	22	10.5	14	86	40	36	56	52	85	30	22	95	70	99	78.5	8	74	8
40	300	45	30	24	15	17.5	97	54	54	69	72	104	36	27	98	73	102	88	9	85	11.8

DIMENSIONS Ø 63

HEAVY

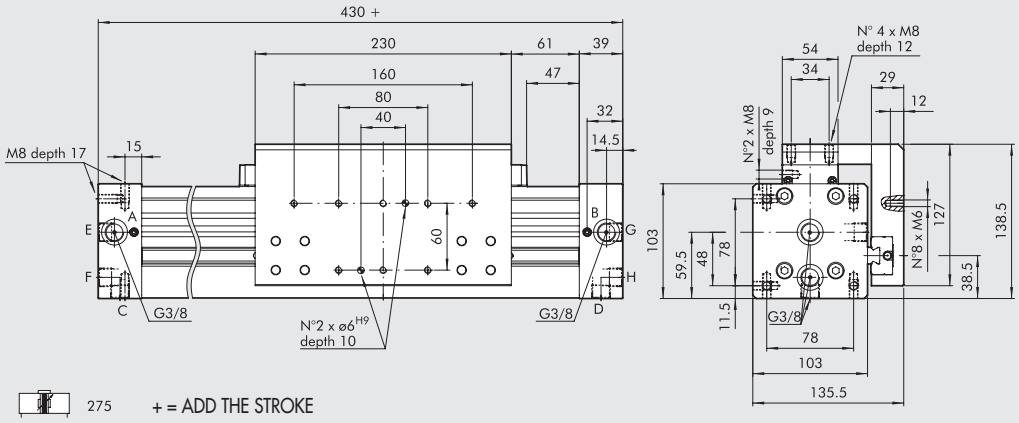


Basic supply
A, B, C, D to feed to left chambers
E, F, G, H to feed the right chambers
Note: B, C, D, F, G and H are supplied closed with threaded plugs.

If you modify the position of an inner plug following the instructions provided with the cylinder, you can arrange:

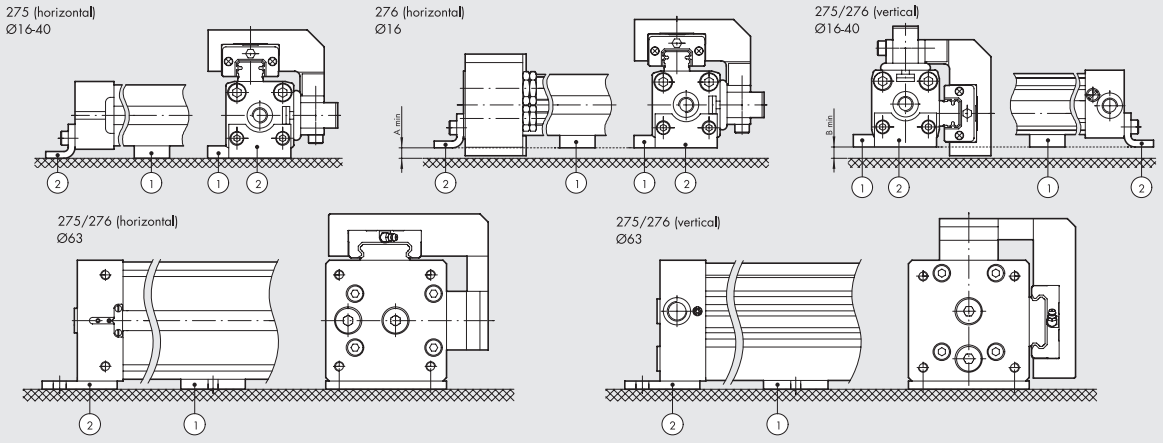
all feeds from the left	**all feeds from the right**
A, B feed the left chambers	E, F feed the right chambers
C, D feed the right chambers	G, H feed the left chambers

STANDARD



275 + = ADD THE STROKE

ASSEMBLY DIAGRAMS

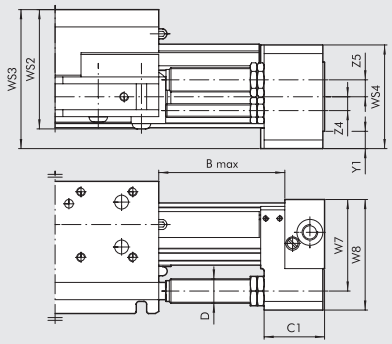


Ø	A min	Horizontal layout Interm. support code (1)	Leg code (2)	B min	Vertical layout Interm. support code (1)	Leg code (2)
16	8	W0950164004	W0950167001	12	W0950164004	W0950167001
25	10	W0950254004	W0950257001	10	W0950254004	W0950257001
32	4	W0950324004	W0950328035	11	W0950324004	W0950327001
40	3	W0950404004	W0950407001	5	W0950404004	W0950407001
63	–	W0950637036	W0950637001	–	W0950637033	W0950637001

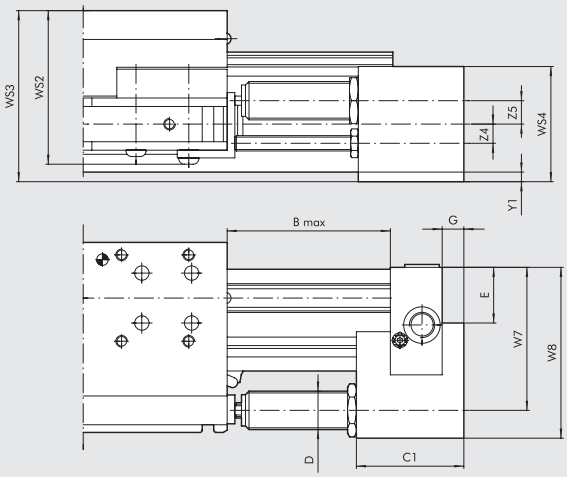
METAL WORK PNEUMATIC

DIMENSION VERSION WITH ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS Ø 16 to 63

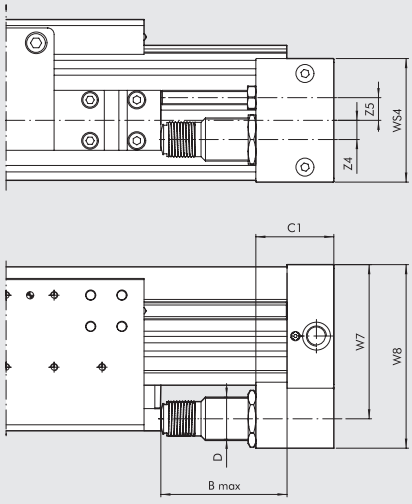
ø16



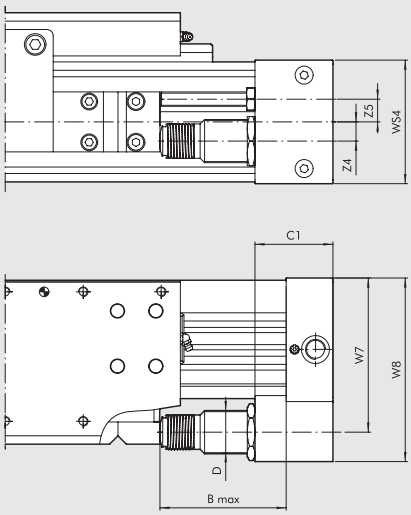
ø25; ø32; ø40



ø63 STD



ø63 HEAVY



276

Ø	Version	B max	C1	D	E	G	W7	W8	WS2	WS3	WS4	Y1	Z4	Z5	Stroke	Max. cushioned force Per stroke [J]	Max. cushioned force Per hour [J]	Max. impact force [N]	Max. thrust force [N]
16	–	50	22	M12x1	–	–	38	46	52	56	42	7.5	7	7.5	10.4	10	14125	1000	220
25	–	72	44	M14x1.5	17	9	53	67	71	80.5	50	5	8	9.8	16	26	34000	2800	530
32	–	90	56	M20x1.5	29	11	74	89	82.5	91	60	4	10	12.2	22	54	53700	3750	890
40	–	105	74	M25x1.5	32.8	14	89	108	92	108	75	1.5	12.5	12.7	25	90	70000	5500	1550
63	standard	105	65	M36x1.5	–	–	128.5	153	–	–	103	–	16	19	25	160	91000	11120	2220
63	heavy	105	65	M36x1.5	–	–	128.5	153	–	–	103	–	16	19	25	160	91000	11120	2220

For graphs to help choose shock absorbers see page **A1**.195

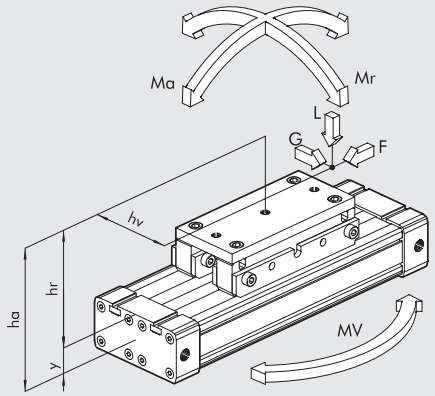
KEY TO CODES

CYL	2 7	5	0	2 5	0 1 5 0	C	N
	TYPE			**BORE**	**STROKE**		**GASKETS**
	27 Rodless cylinder	**5** Double-acting cushioned magnetic with ball circulation guides **6** Double-acting cushioned magnetic with ball circulation guides + adjustable limit switch and shock absorbers	**0** STD Magnetic **S** STD Non-magnetic ■ **G** STD No stick-slip **A** HEAVY Magnetic ■ **B** HEAVY No stick-slip **C** HEAVY Non-magnetic	16 25 32 40 63	Ø 16: 100 to 1350 mm Ø 25 - 32: 100 to 2300 mm Ø 40: 100 to 2250 mm Ø 63 std: 100 to 2100 mm Ø 63 heavy: 100 to 2650 mm		**N** NBR gasket ● **V** FKM/FPM gasket

■ **For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only** ● For speed ≥ 1/m/s

RODLESS CYLINDER SERIES DOUBLE

DIMENSIONING – FORCES AND MOMENTS



Bore	Actual force F at 6 bar [N]	Cushioning stroke [mm]	Max load L [N]	Ma max [Nm]	Mr max [Nm]	Mv max [Nm]
2x16	200	15	240	8	2.4	1
2x25	480	21	600	30	8	6
2x32	820	26	900	60	16.5	10

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.

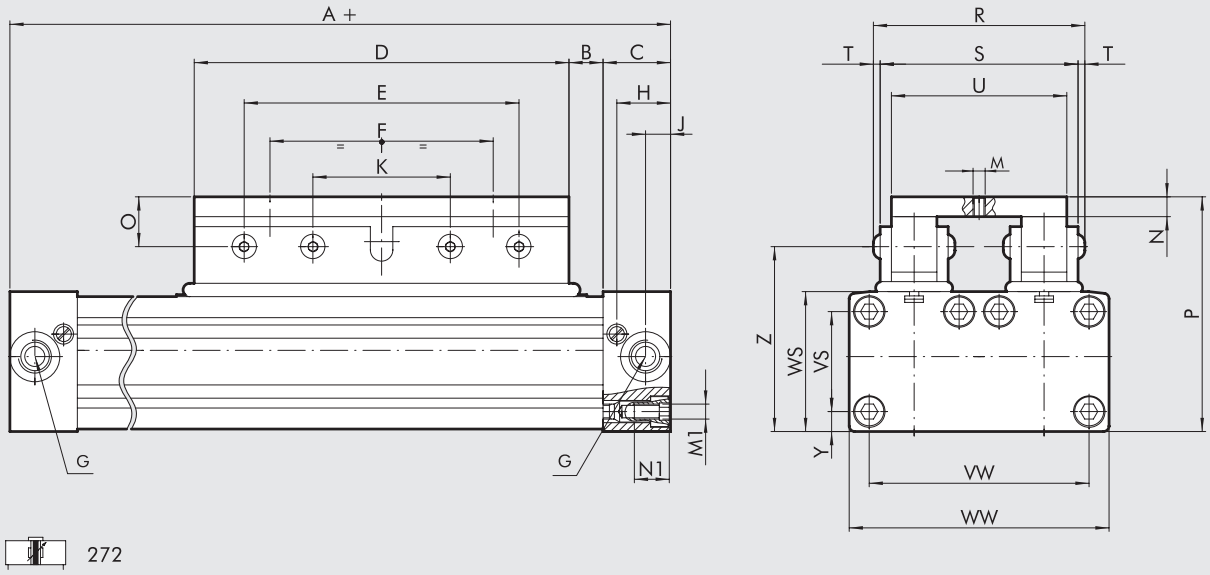
$Ma = F \times ha \qquad Mr = L \times hv + G \times hr \qquad Mv = F \times hv$

$$\frac{Mv}{Mv\ max} \leq 1; \quad \frac{L}{L\ max} \leq 1; \quad \frac{Ma}{Ma\ max} + \frac{Mr}{Mr\ max} + 0.22 \times \frac{Mv}{Mv\ max} + 0.4\,\frac{L}{L\ max} \leq 1$$

For technical data, see **rodless cylinders - series STD**.
For weights, see cylinder "**General technical data**" at the beginning of the chapter.

DIMENSIONS OF RODLESS CYLINDER, DOUBLE SERIES

+ = ADD THE STROKE

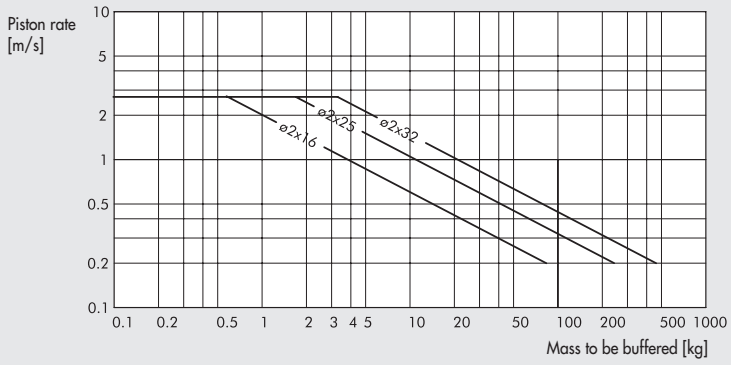


272

Ø	A	B	C	D	E	F	G	H	J	K	M	N	M1	N1	O	P	R	S	T	U	VW	VS	WW	WS	Y	Z
2x16	130	12	15	76	64	48	M5	12	6.4	32	M5	10	M3	7	16	53.5	48	42	3	34	42	18	51	27	4.5	37.5
2x25	200	17	23	120	100	80	1/8	18.5	8.5	50	M6	15	M5	12	20	74	66	59	3.5	50	63	27	72	41	7	53.5
2x32	250	23	27	150	110	90	1/4	22.5	10.5	55	M6	12	M6	14	20	95	86.5	77.5	4.5	70	86	40	100	56	8	74

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 work 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 mass for the various diameters at a pressure of 6 bar.

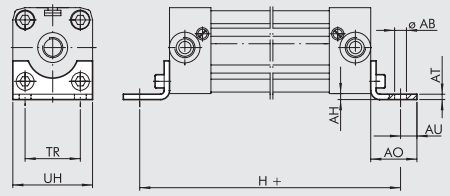


ACCESSORIES AND SPARE PARTS FOR RODLESS CYLINDERS

FIXINGS FOR RODLESS STD, "V" GUIDE, WITH BALL RECIRCULATING GUIDE CYLINDERS

FOOT Ø 16; 25

+ = ADDED STROKE

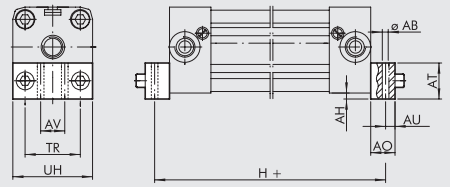


Code	Ø	ØAB	AH	AO	AT	AU	TR	UH	H	Weight [g]
W0950167001	16	3.6	1.5	14	1.6	4	18	26	150	10
W0950257001	25	5.5	2	22	2.5	6	27	40	232	32

Note: Individually packed with 2 screws

FOOT Ø 32; 40

+ = ADDED STROKE

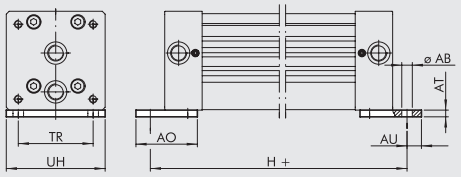


Code	Ø	ØAB	AH	AO	AT	AU	AV	TR	UH	H	Weight [g]
W0950327001	32	6.6	4	25	20	8	20	36	51	284	88
W0950407001	40	9	2	25	20	11.5	30	54	71	327	112

Note: Individually packed with 2 screws

FOOT Ø 63

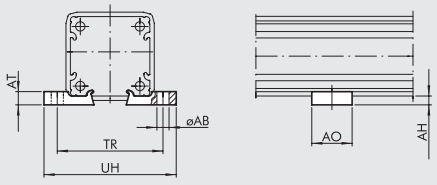
+ = ADDED STROKE



Code	Ø	ØAB	AT	AO	AU	TR	UH	H	Weight [g]
W0950637001	63	11	7	64	15	78	103	460	360

Note: Individually packed with 2 screws

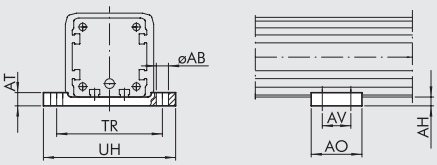
INTERMEDIATE FOOT Ø 16; 25 FOR STD AND "V" GUIDE



Code	Ø	ØAB	AH	AO	AT	TR	UH	Weight [g]
W0950167031	16	5.5	3	20	5	41	53	4
0950254094	25	5.5	4	20	6	48	60	6

Note: Individually packed.

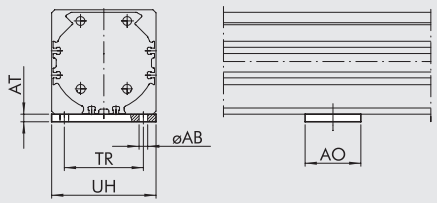
INTERMEDIATE FOOT Ø 32; 40 FOR STD AND "V" GUIDE



Code	Ø	ØAB	AH	AO	AT	AV	TR	UH	Weight [g]
W0950327032	32	6.5	5	55	8	40	61.5	73	72
W0950407032	40	6.5	7	60	8	45	70-75	85	104

Note: plate supplied complete with 4 screws, 4 fixing plates

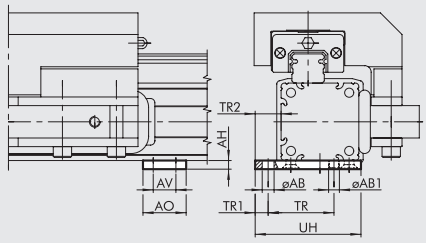
INTERMEDIATE SUPPORT Ø 63 FOR VERSION STD, "V" GUIDE AND VERTICAL POSITION BALL RECIRCULATING



Code	Ø	ØAB	AO	AT	TR	UH	Weight [g]
W0950637032	63	8.5	55	7.5	78	103	330

Note: plate supplied complete with 4 screws, 4 fixing plates

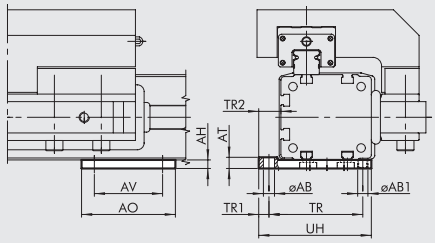
INTERMEDIATE SUPPORT Ø 16 to 25 FOR BALL RECIRCULATING



Code	Ø	ØAB	ØAB1	AH	AO	AV	TR	TR1	TR2	UH
W0950164004	16	3.5	M3	3	12	6	20	4	8	32.5
W0950254004	25	5.5	M5	4	20	10.5	30.5	6	12	49

Note: Supplied complete with 4 screws

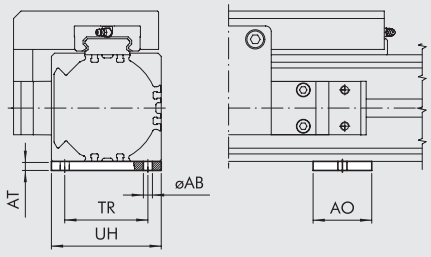
INTERMEDIATE SUPPORT Ø 32 to 40 FOR BALL RECIRCULATING



Code	Ø	ØAB	ØAB1	AH	AO	AT	AV	TR	TR1	TR2	UH
W0950324004	32	6.5	M6	5	55	5	40	55	6	13	66
W0950404004	40	6.5	M6	6.6	60	8	45	63	7.5	15	77

Note: Supplied complete with 4 screws, 4 plates.

INTERMEDIATE SUPPORT KIT Ø 63 FOR HORIZONTAL POSITION BALL RECIRCULATING



Code	Ø	ØAB	AH	AO	AT	TR	UH
W0950637036	63	8.5	7.5	55	8.5	78	103

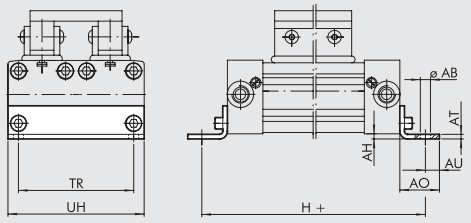
Note: Supplied complete with 4 screws, 4 plates.

NOTES

FIXINGS FOR RODLESS CYLINDER SERIE DOUBLE

FOOT Ø 16; 25

+ = ADD STROKE

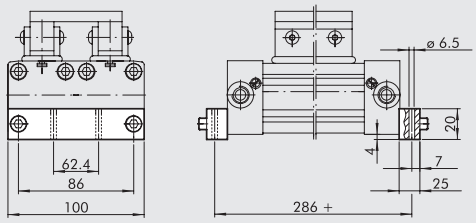


Code	Ø	ØAB	AH	AO	AT	AU	TR	UH	H	Weight [g]
W0950168001	2x16	3.6	1.5	14	1.6	4	42	51	150	18
W0950258001	2x25	5.5	2	22	2.5	6	63	72	232	54

Note: Individually packed complete with 2 screws

FOOT Ø 32

+ = ADD STROKE

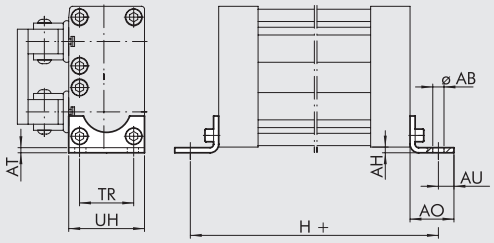


Code	Description	Weight [g]
W0950328036	Foot DOUBLE Ø 32	156

Note: Individually packed complete with 2 screws

VERTICAL FOOT Ø 16; 25

+ = ADD STROKE

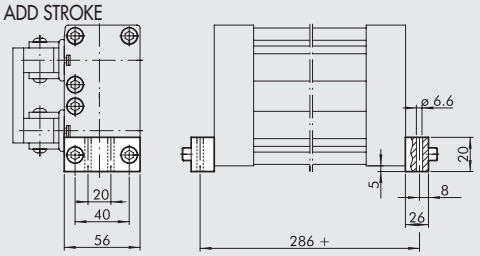


Code	Ø	ØAB	AH	AO	AT	AU	TR	UH	H	Weight [g]
W0950167001	2x16	3.6	1.5	14	1.6	4	18	26	150	10
W0950257001	2x25	5.5	4	22	2.5	6	27	40	232	32

Note: Individually packed complete with 2 screws

VERTICAL FOOT Ø 32

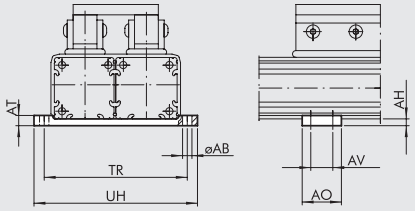
+ = ADD STROKE



Code	Description	Weight [g]
W0950328035	Vertical foot Ø 32	92

Note: Individually packed complete with 2 screws

INTERMEDIATE FOOT Ø 16 to 32



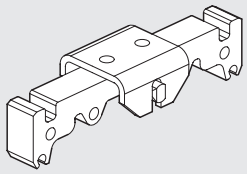
Code	Ø	ØAB	AH	AO	AT	AV	TR	UH	Weight [g]
W0950168037	2x16	3.5	3	12	6	6	60.5	64	16
W0950258037	2x25	5.5	4	20	6	10.5	84.5	96	34
W0950328037	2x32	6.5	5	55	8	40	111.5	123	96

Note: Supplied complete with 8 screws, 8 fixing plates (plates for Ø 32 only)

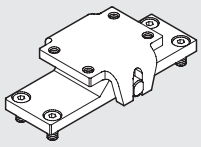
ACCESSORIES FOR CONVERTING STD RODLESS CYLINDERS INTO SWING CYLINDERS

KIT TO TRANSFORM INTO SWING VERSION

Ø16 to 40



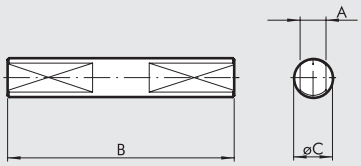
Ø63



Code	Ø	Weight [g]
W0950167035	16	34
W0950257035	25	118
W0950327035	32	450
W0950327035	40	450
W0950637035	63	810

Note: Ø 16 to 40: Supplied complete with 1 adaptor, 1 support, 1 pin, 1 bushing
Ø 63: Supplied complete with 1 plate, 1 support, 1 pin, 2 bushings, 4 screws

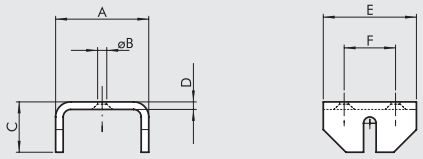
DRIVE PIN



Code	Ø	A	B	ØC	Weight [g]
W0950167034	16	2.9	28	5	6
W0950257034	25	5	42	8	16
W0950327034	32	8	70	12	52
W0950327034	40	8	70	12	52
W0950637034	63	10	82	14	100

Note: Individually packed

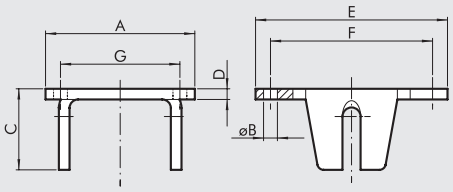
SWING SUPPORT Ø 16; 25



Code	Ø	A	ØB	C	D	E	F	Weight [g]
W0950167033	16	25	4.5	13	2	20	10	14
W0950257033	25	37	5.5	20	3	30	16	40

Note: Individually packed

SWING SUPPORT Ø 32; 40; 63



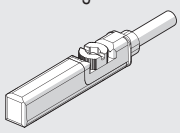
Code	Ø	A	ØB	C	D	E	F	G	Weight [g]
W0950327033	32	70	6.5	38	5	90	75	55	274
W0950327033	40	70	6.5	38	5	90	75	55	274
W0950637033	63	80	M8	32	8	80	65	37	400

Note: Individually packed

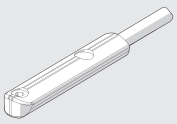
SENSOR MAGNETIC

RETRACTABLE SENSOR

SENSOR, SQUARE TYPE
Latest generation,
secure fixing



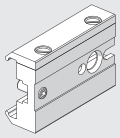
SENSOR, OVAL TYPE
Traditional



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

Note: For rodless cylinders Ø25 having "V" guide use only the HS version of the oval type.

SENSOR SUPPORT Ø 16; 25

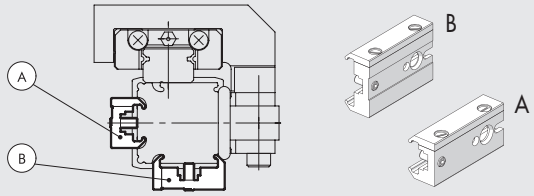


Code	Description
0950164001	Sensor support STD

Note: Supplied with 1 stud pin, 2 screws

METAL WORK PNEUMATIC

SENSOR SUPPORT Ø 16 FOR RODLESS CYLINDER WITH BALL RECIRCULATING

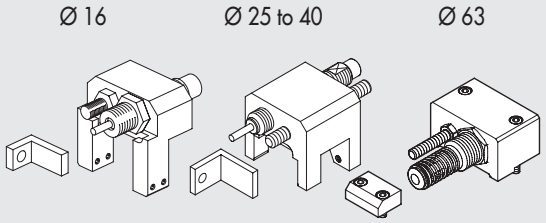


Code sensor support	Description sensor support	Type sensor support	Mounting on the carriage opposite side	Mounting on the guide opposite side
0950164003	Sensor support short	A	•	
0950164001	Sensor support std	B		•

Note: Supplied complete with 2 screws, 1 pin

SHOCK ABSORBERS

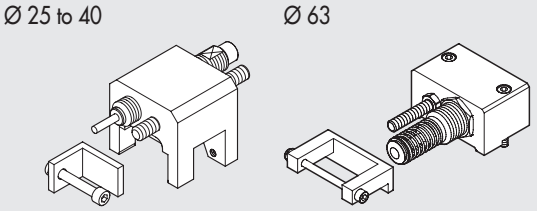
ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS KIT



Code	Description	Weight [g]
0950164002	Rodless cylinder limit switch and shock absorbers Ø 16	125
0950254002	Rodless cylinder limit switch and shock absorbers Ø 25	260
0950324002	Rodless cylinder limit switch and shock absorbers Ø 32	460
0950404002	Rodless cylinder limit switch and shock absorbers Ø 40	730
0950634002	Rodless cylinder limit switch and shock absorbers Ø 63	1620

Note: Supplied complete with 1 shock absorber support, 1 standard shock absorber, 1 shock absorber nut, 1 limit switch grub screw, 1 grub screw nut (2 for Ø 63), 1 bracket, 1 bracket screw, 4 locking grub screws (for Ø 16 and Ø 25), 4 locking plates and 4 screws (for Ø 32 and Ø 40)

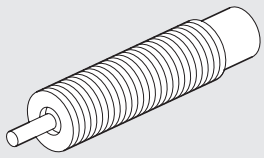
ADJUSTABLE LIMIT SWITCH AND SHOCK ABSORBERS KIT FOR RODLESS CYLINDER WITH "V" GUIDE



Code	Description	Weight [g]
0950254004	Rodless cylinder limit switch and shock absorbers Ø 25	260
0950324004	Rodless cylinder limit switch and shock absorbers Ø 32	460
0950404004	Rodless cylinder limit switch and shock absorbers Ø 40	730
0950634004	Rodless cylinder limit switch and shock absorbers Ø 63	1620

Note: Supplied complete with 1 shock absorber support, 1 standard shock absorber, 1 shock absorber nut, 1 limit switch grub screw, 1 grub screw nut (2 for Ø 63) , 1 bracket, 1 bracket screw, 4 locking grub screws (for Ø 25), 4 locking plates and 4 screws (for Ø 32 and Ø 40)

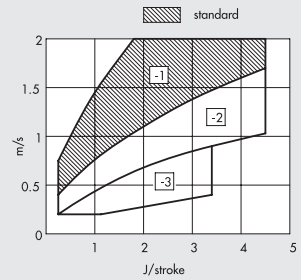
SHOCK ABSORBERS



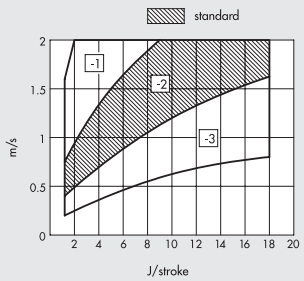
Code	Description	Ø
0950004003	Shock absorbers ECO15 MF1 + nut M12x1	16
0950004004	Shock absorbers ECO25 MC2 + nut M14x1.5	25
0950004005	Shock absorbers ECO50 MC2 + nut M20x1.5	32
0950004006	Shock absorbers ECO100 MF2 + nut M25x1.5	40
0950004007	Shock absorbers ECO125 MF3 + nut M36x1.5	63

GRAPHS TO HELP CHOOSE THE RIGHT SHOCK ABSORBERS

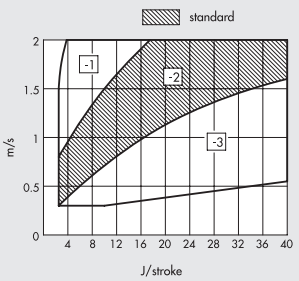
Ø 16



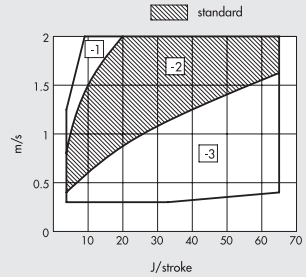
Ø 25



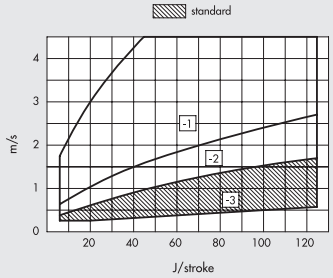
Ø 32



Ø 40



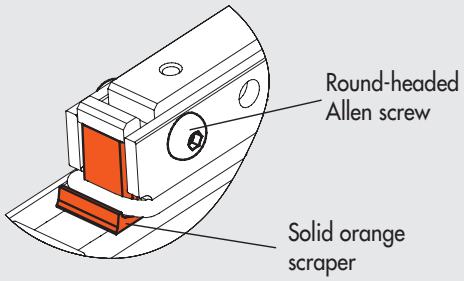
Ø 63

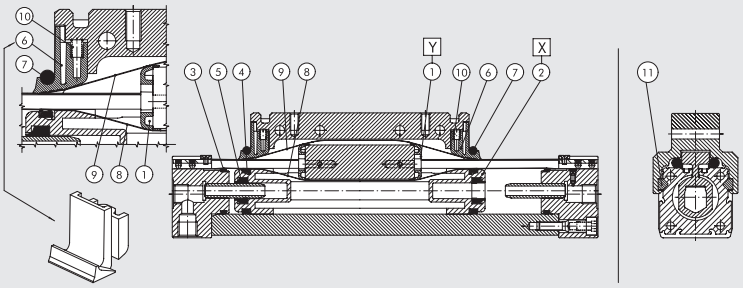


The dotted areas indicate that the SHOCK ABSORBERS is supplied standard. Other options can be selected depending on the speed [m/sec] and the maximum work force [J/stroke] to dissipate at each stroke. Refer to the diagrams above to select the correct option.

SPARE PARTS FOR STD RODLESS CYLINDERS, "V" GUIDE, BALL RECIRCULATING GUIDE, DOUBLE

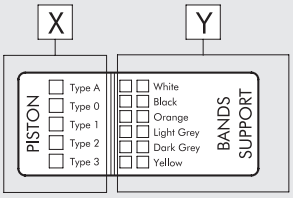
"LAST RELEASE" CYLINDER





① Bands support Kit
② Piston kit
③ ④ ⑤ ⑥ ⑦ ⑩ NBR gaskets Kit (FKM/FPM for ⑦)
③ ④ ⑤ ⑥ ⑦ ⑩ FKM/FPM gaskets Kit
⑧ ⑨ Bands Kit (inner/outer)
⑪ "V" guide plate kit

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
40	0090405080	0090405081	0090405082	0090405083	0090405084	0090405085
63	0090635080	0090635081	0090635082	0090635083	0090635084	0090635085

BANDS KIT (INNER AND OUTER) POS 8-9

Ø	Code
16	0090166...
25	0090256...
32	0090326...
40	0090406...
63	0090636...

Complete the code with the 4 figure cylinder stroke

"V" GUIDE PLATE KIT POS 11

Ø	Code
25	0090255060
32	0090325060
40	0090325060
63	0090635060

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)
16	0090165015	0090165016	0090165017	0090165018	–
25	0090255015	0090255016	0090255017	0090255018	0090255019
32	0090325015	0090325016	0090325017	0090325018	0090325019
40	0090405015	0090405016	0090405017	0090405018	–
63	0090635015	0090635016	0090635017	0090635018	–

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

Ø	Code
16	0090165022
25	0090255022
32	0090325022
40	0090405022
63	0090635022

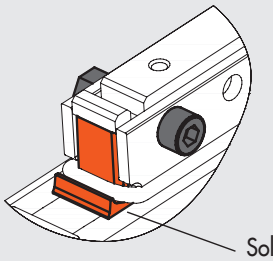
FKM/FPM GASKET KIT POS 3-4-5-6-7-10

Ø	Code
16	0090165023
25	0090255023
32	0090325023
40	0090405023
63	0090635023

NOTES

If the ends of the carriage appear as below indicated, please contact our commercial department for the spare parts

"INTERMEDIATE RELEASE"



"OLD RELEASE"