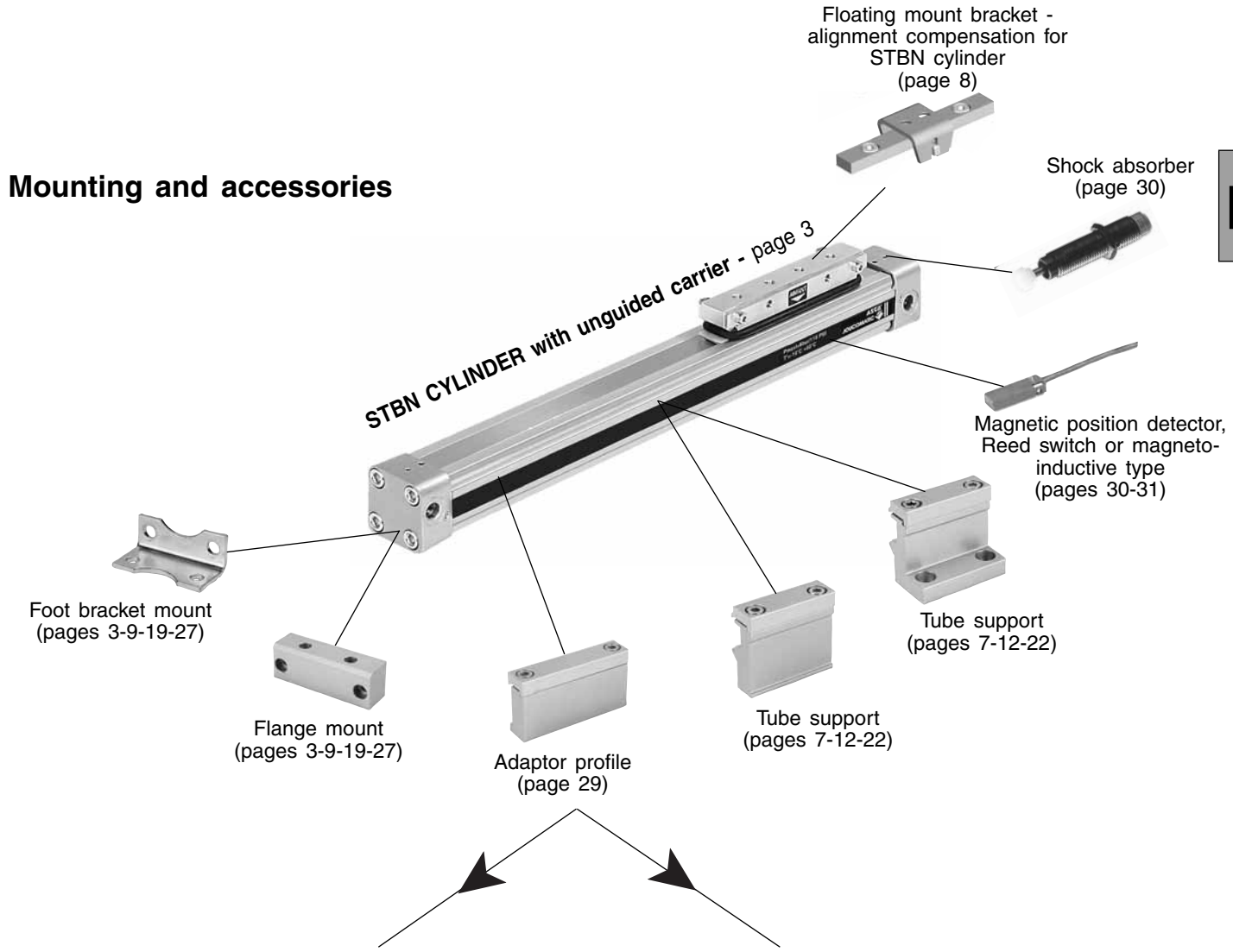
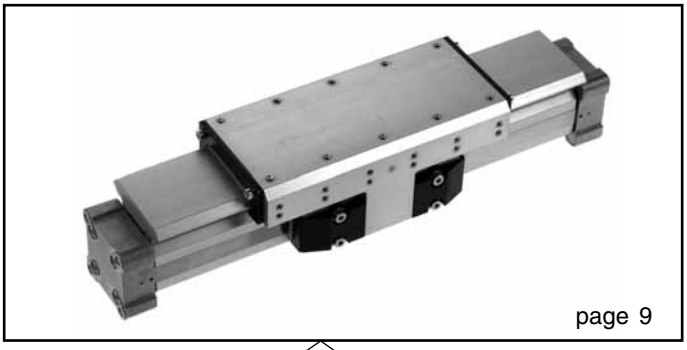
B

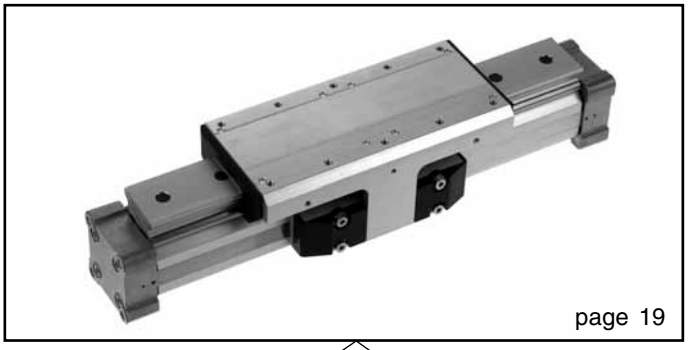
Mounting and accessories



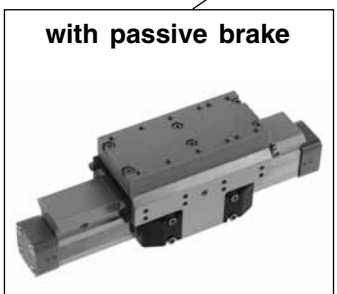
STB cylinder with guided carrier and plain bearing guide



STBB cylinder with guided carrier and cross rollers guide



with passive brake

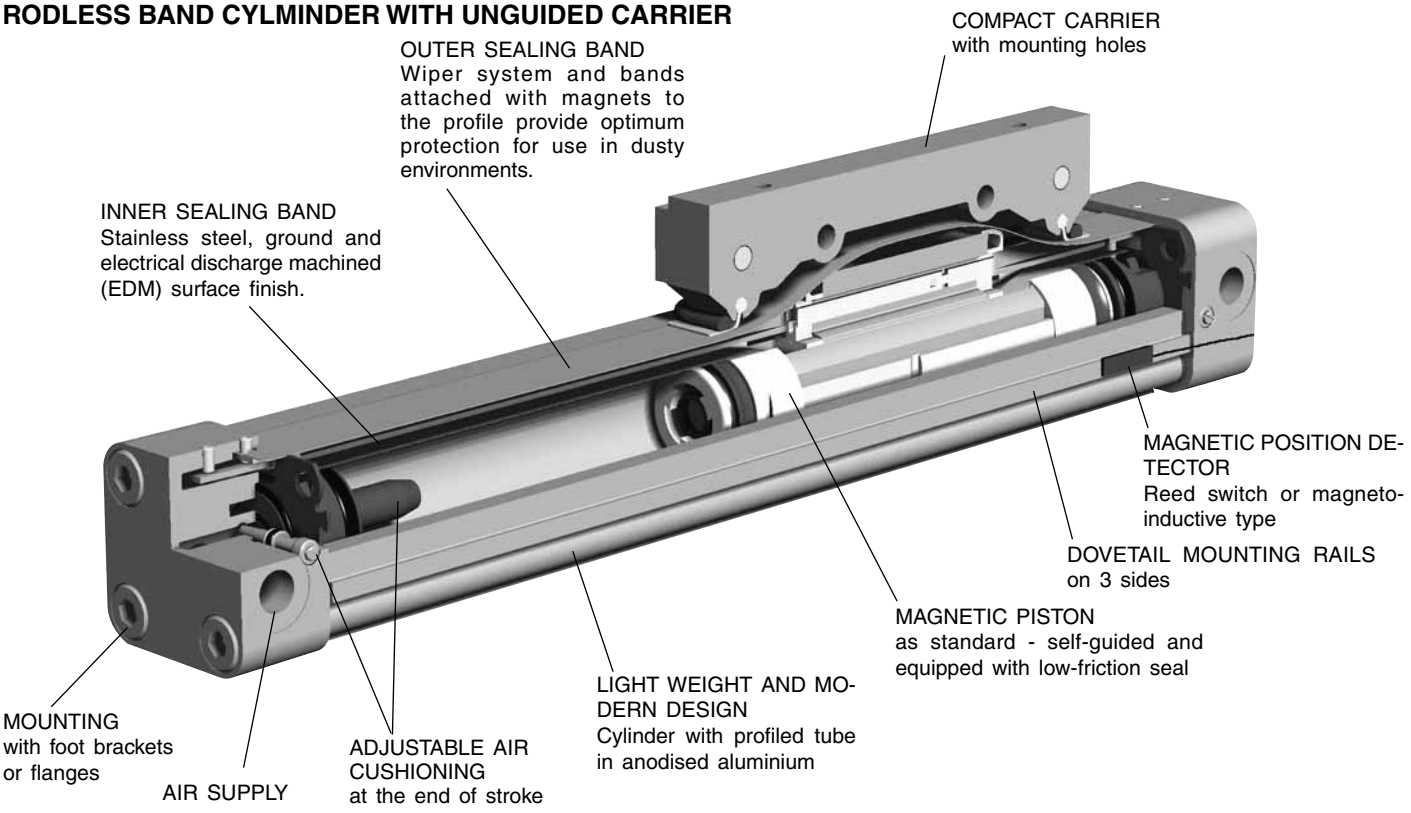


with active brake

with passive brake

with active brake

RODLESS BAND CYLMINDER WITH UNGUIDED CARRIER



ADVANTAGES

- **COMPACT INSTALLATIONS**
  As this cylinder is rodless, installation space is cut by almost half compared to a standard cylinder with a rod.
- **LONG STROKE APPLICATIONS**
  The rodless cylinder is perfectly adapted to applications requiring long linear movements, such as handling devices, lifting devices, door opening and closing, etc.
- **QUICK AND EASY ADJUSTMENT**
  The carrier can be easily adjusted without having to take it apart. For heavy duty use, we recommend regularly checking the bracket adjustment.
- **LESS MAINTENANCE**
  These cylinders operate without lubrication.
- **ADAPTATION POSSIBILITIES**
  - **Mounting choices:** Mounting directly on the cylinder ends or with foot brackets
  - **Load movement choices:** The load can be mounted directly on the carrier, or with a floating mount bracket, for applications where the cylinder is moving an externally guided and supported load, and when there is a need to compensate for non-parallelism between the cylinder and the load.
  - **Air supply:** Front, rear or side.
- **PERFORMANCE AND SECURITY**
  Adjustable air cushioning allows for smooth end of stroke and rapid start up. In case of very large and intense movement, the cylinder can be furnished with shock absorbers.
- **SEALING AND PROTECTION FOR USE IN DUSTY ENVIRONMENTS**
  Two stainless steel bands provide sealing and protection. They are held in place by a patented band retention method using seals. Wipers on the carrier protect the internal parts from the outside.
- **LARGE RANGE**
  The rodless band cylinders are available in Ø 16-25-32-40 50-63 and 80 mm, all strokes are available upon request, and equipped for magnetic detectors.

SPECIFYING THE REFERENCE OF A RODLESS CYLINDER - SERIES 448

STBN .. A 0 AB .... – DM

Cylinder type: prefix **STBN** / **STB** / **STBB**

Cylinder Bore (in mm)

Adjustable pneumatic end-of-stroke cushioning : add suffix **A**

0 = Standard grease lubrication

1 = Grease lubrication for slow speed option

AB = Version with active brake

PB = Version with passive brake

Stroke length (in mm)

Cylinder equipped for magnetic position detectors (non-magnetic tube) = add suffix **DM**

Selecting the appropriate band cylinder is simple. The information you need includes:
- the stroke,
- the force required for moving the load,
- the weight of the load,
- the position of the load (centered on the carrier or elsewhere),
- the final or average velocity.

How to select

Graph (I) represents the theoretical force at various pressures. For the most efficient use of a cylinder, it is recommended to use a load rate of 70 %: the force needed to move the load therefore corresponds to 70% of the theoretical force.

After defining the cylinder diameter, you must determine if the cylinder's internal cushions may be used.

Allowable bending moments

A bending moment will occur if the load is not centered on the carrier (see bending moment data below).

Cushioning capacity

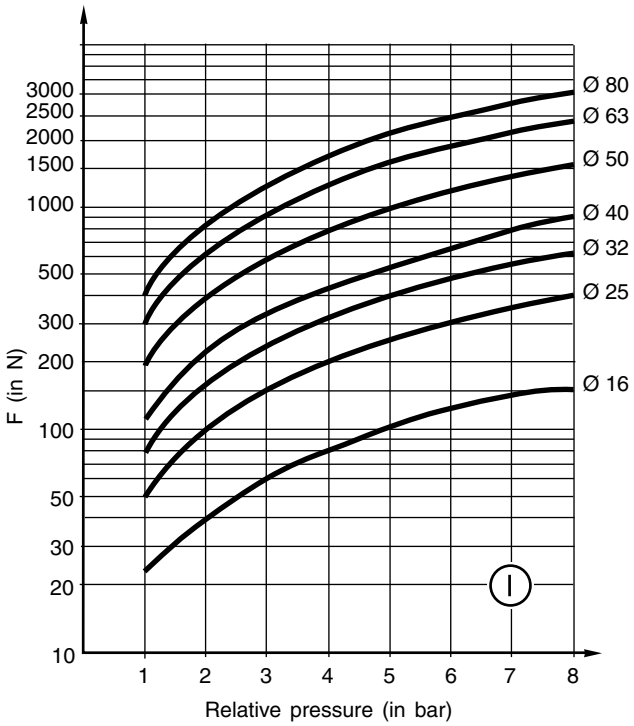
Graph (II) is used to determine the type of cushioning needed. If the intersection point of the final velocity and the load falls below the curves, the internal cushions are adequate. If this is not the case, you must either choose a larger cylinder with greater cushion capacity, or use the shock absorbers which are available as an accessory. If you have determined that the internal cushions would be used near their maximum capacity **and** there is highly intense movement, it would be wise to use the optional shock absorbers.

OTHER ACCESSORIES:

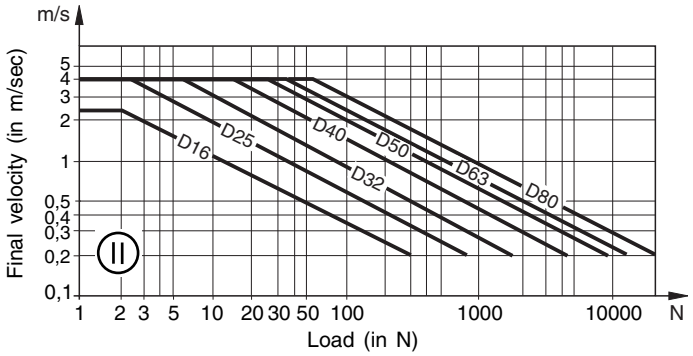
- Tube support brackets: **You must determine if intermediate tube support brackets are required**, depending on the weight of the charge and the stroke. (see chart on tube support sheet).
- **Floating carrier bracket**: for use when there is a lack of parallelism between the cylinder and a guided and supported load.
- Reed switch or magneto-inductive detectors for position control.

B

THEORETICAL FORCE AT VARIOUS PRESSURES



CUSHION DATA



The velocities indicated in graph (II) represent final velocities.

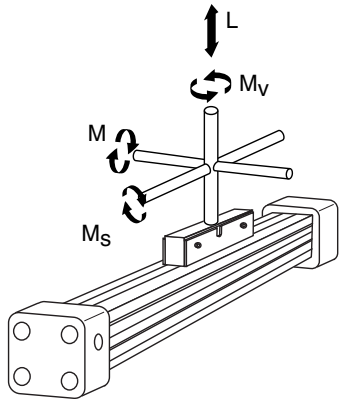
To properly determine the inertial forces for cushioning, it is important to know the **final velocity**.

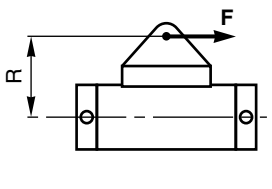
If final (or impact) velocity cannot be calculated directly, a reasonable guideline is:

Final V = 1,5 x average velocity

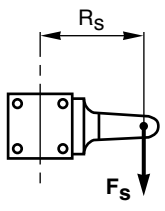
ALLOWABLE BENDING/TWISTING MOMENTS

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)
	M	**M_S**	**M_V**	**L**
16	4	0,3	0,5	120
25	15	1	3	300
32	30	2	5	450
40	60	4	8	750
50	115	7	15	1200
63	200	8	24	1650
80	360	16	48	2400

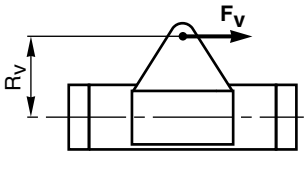




$M = F \times R$



$M_S = F_S \times R_S$



$M_V = F_V \times R_V$

RODLESS BAND CYLINDERS

Ø 16 - 80 mm - double acting

with unguided carrier

equipped for magnetic detectors

Series **448**

Type STBN

SPECIFICATIONS

FLUID	: air or neutral gas, filtered, unlubricated
PRESSURE	: 8 bar max.
TEMPERATURE	: - 10°C, + 80°C
STROKE min.	: 5 mm (without detectors)
	: 100 mm (with detectors)
max. standard	: see below (consult us for longer strokes)
MAXIMUM VELOCITY	: 0,2 to 4 m/sec

CONSTRUCTION

Tube	: Anodised aluminium
Ends	: Anodised aluminium
Carrier (piston)	: Anodised aluminium
Piston seals	: Nitrile (NBR)
Piston brackets	: High resistance stamped steel
Bands	: Stainless steel
Magnet	: Placed inside the piston
Covers, wipers	: Plastic
Screws	: Galvanised steel
Cushioning	: with air, adjustable

CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
16	**44850001** (1)	STBN 16 A - 0(3) - (1) _ _ - DM	6000	M5	11
25	**44850002** (1)	STBN 25 A - 0(3) - (1) _ _ - DM	6000	G 1/8	17
32	**44850003** (1)	STBN 32 A - 0(3) - (1) _ _ - DM	6000	G 1/4	20
40	**44850004** (1)	STBN 40 A - 0(3) - (1) _ _ - DM	6000	G 1/4	27
50	**44850005** (1)	STBN 50 A - 0(3) - (1) _ _ - DM	6000	G 1/4	30
63	**44850006** (1)	STBN 63 A - 0(3) - (1) _ _ - DM	6000	G 3/8	32
80	**44850007** (1)	STBN 80 A - 0(3) - (1) _ _ - DM	6000	G 1/2	39

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

MOUNTINGS

Ø Cylinder (mm)	**CODE**  Low foot brackets (4)
16	**43400493**
25	**43400494**
32	**43400495**

Ø Cylinder (mm)	**CODE**  Flanges
40	**43400496**
50	**43400497**
63	**43400498**
80	**43400499**

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(5) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

- **Floating carrier bracket for alignment compensation** (for guided load movement only) - (see page 8)
- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 7)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTION

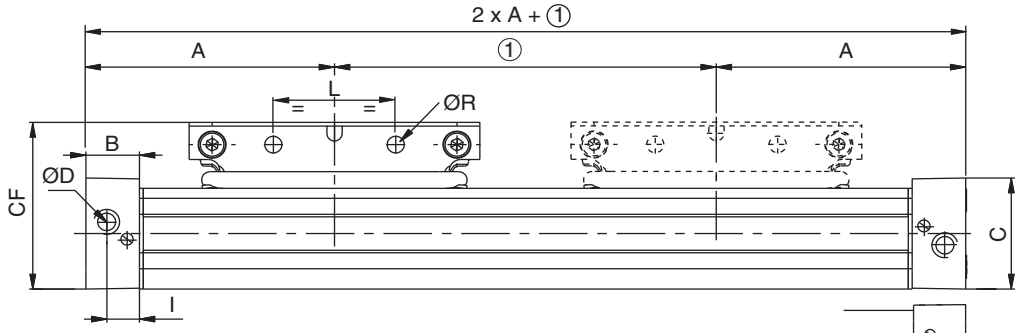
- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 16 : **995082** Ø 25 : **995083** Ø 32 : **995084** Ø 40 : **995085** Ø 50 : **995086** Ø 63 : **995087** Ø 80 : **995088**

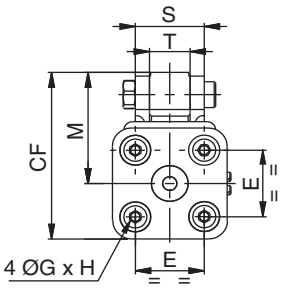
(When selecting this option, you will have to change the cylinder reference to: STBN .. A **1** ... DM)

All leaflets are available on: **www.ascojoucomatic.com**

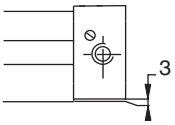
DIMENSIONS AND WEIGHTS
BARE CYLINDERS

Ø16 - 32 mm



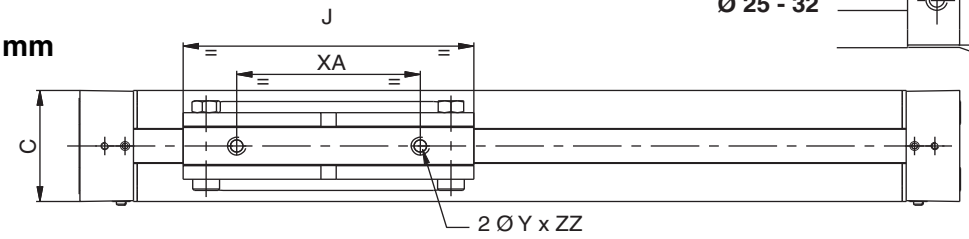


Ø 25 - 32

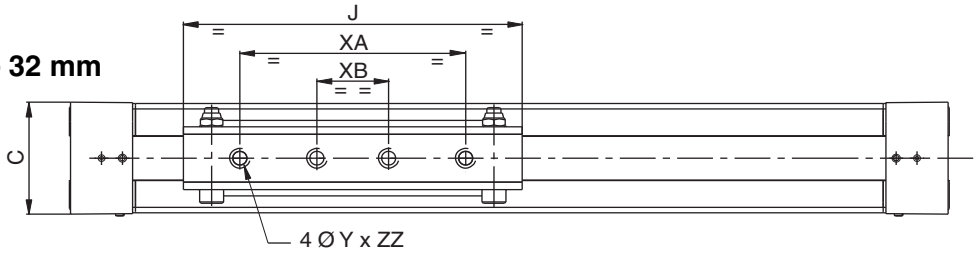


① : + stroke

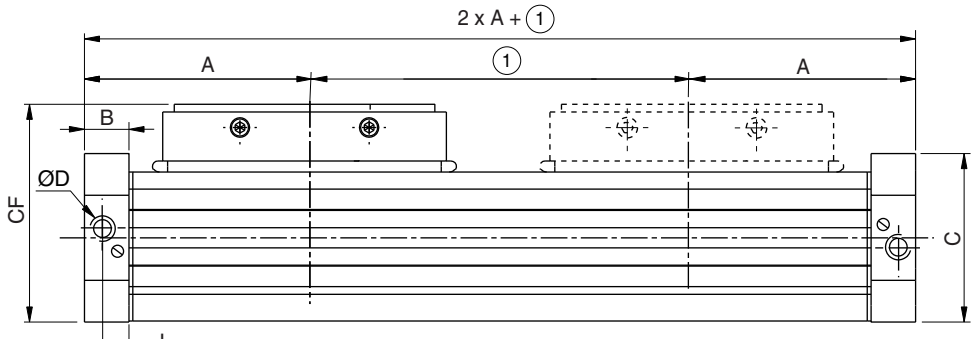
Ø16 mm

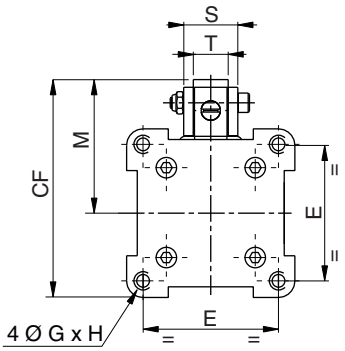


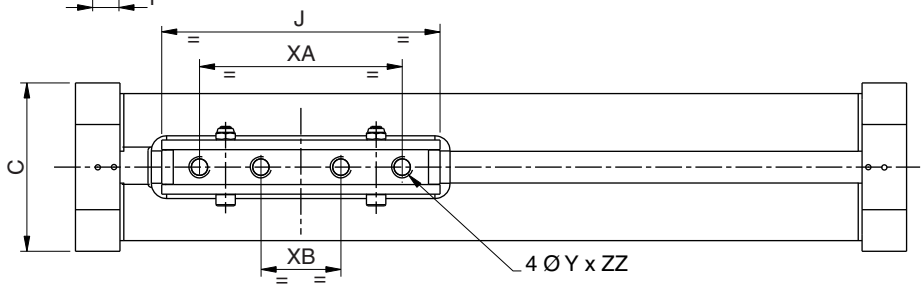
Ø25 - 32 mm



Ø 40 - 80 mm







① : + stroke

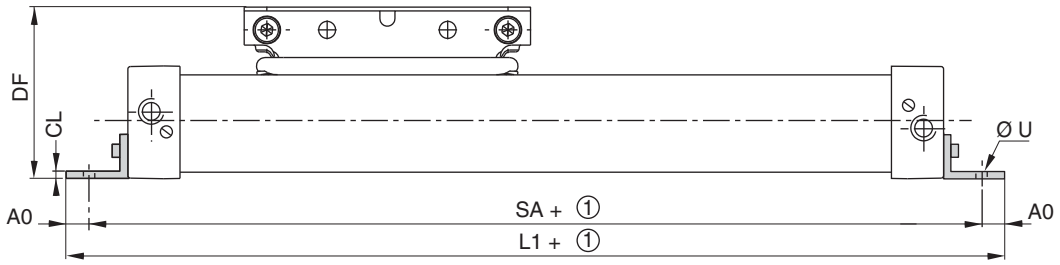
Bore (mm)	DIMENSIONS (mm)																			Weights	
	A	B	C	D	E	G	H	I	J	L	M	R	S	T	Y	CF	XA	XB	ZZ	(1)	(2)
16	65,2	14	30	M5	18	M3	9	8,5	76	16	30	16	18	10,6	M4	45	48	-	8	0,250	0,100
25	100,4	22	41	G1/8	27	M5	15	13	120	-	37	-	23	17,5	M6	58,5	80	25,4	7	0,700	0,197
32	125,2	25,5	52	G1/4	36	M6	15	14	160	-	49	-	27	18	M8	77,5	81,4	25,4	9	1,420	0,354
40	150	28	69	G1/4	54	M6	15	16	150	-	56,8	-	28	18	M8	91,3	107,7	25,4	9	2,130	0,415
50	165	23	87	G1/4	70	M6	15	14	180	-	69	-	28	18	M10	112,5	127	63,5	16	3,590	0,566
63	215	38	106	G3/8	78	M8	21	23,5	220	-	82,8	-	30	19	M10	136,8	152,4	76,2	16	6,640	0,925
80	260	47	132	G1/2	96	M10	25	25	280	-	101	-	32	20	M10	168	180	90	20	12,100	1,262

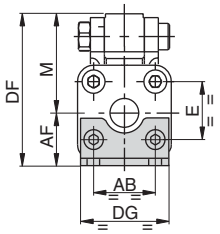
(1) Weight with 0 mm stroke
(2) Weight to be added per additional 100 mm length

DIMENSIONS AND WEIGHTS

CYLINDERS WITH MOUNTING **BRACKETS**

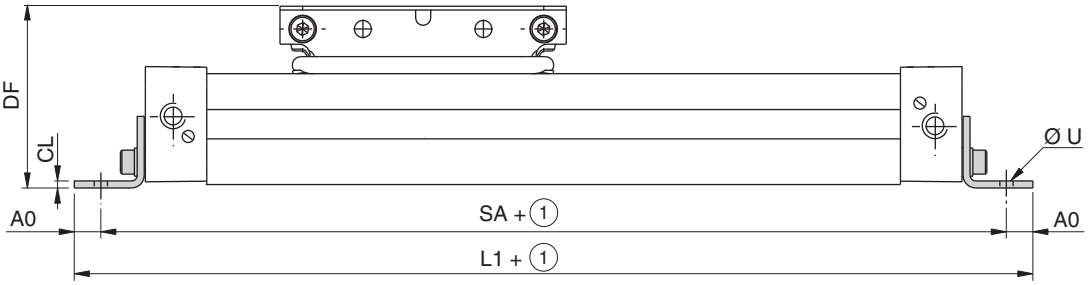
Ø 16 mm

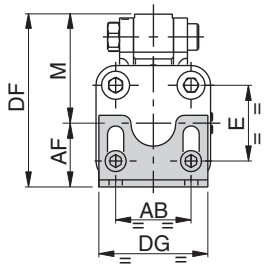




① : + stroke

Ø 25-32 mm

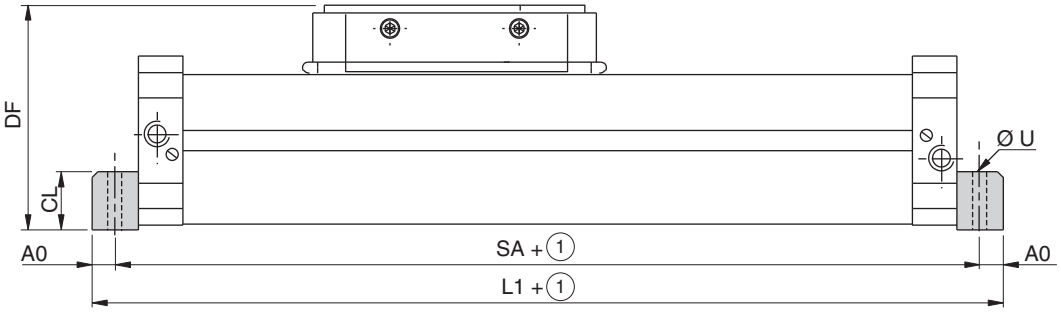


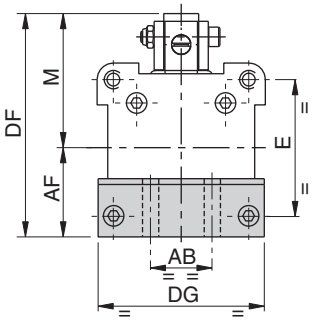


① : + stroke

Ø 40-80 mm

CYLINDERS WITH MOUNTING **FLANGES**



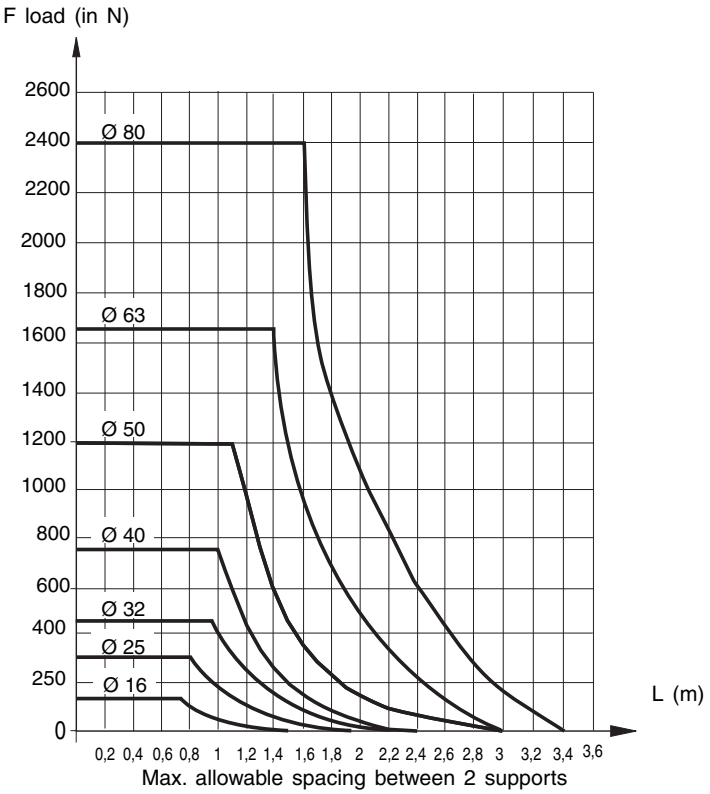


① : + stroke

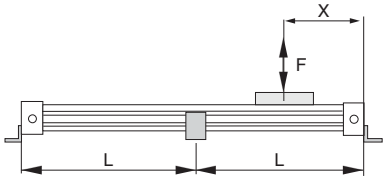
Bore (mm)	DIMENSIONS (mm)											Weights (kg)	
	AB	AF min	AF max	A0	CL	DF min	DF max	DG	E	L1	M	SA	U	Brackets	Flanges
16	18	15		4	1,6	45		26	18	158,4	30	150,4	3,6	0,017	-
25	27	22,7	32,3	9,5	2,5	59,7	69,3	39	27	250,8	37	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	81,5	94,2	50	36	292,4	49	273,8	7	0,117	-
40	30	35,2		11,3	24	92		68	54	348	56,8	325,4	9	-	0,210
50	31,8	46		16,2	30	115		86	70	378	69	345,6	10	-	0,308
63	48	60,7		15	40	143,5		104	78	490	82,8	460	11	-	0,674
80	60	72		17,5	50	173		130	96	590	101	555	14	-	1,218

B

For certain strokes and loads, it is necessary to use tube support brackets for intermediate support. The graph below is used to determine the maximum allowable support spacings depending on the load and the number of supports required.
These supports are made of treated light alloy and are designed to fit into the dovetail grooves which run the length of the cylinder tube.



Max. allowable spacing between 2 supports



Number of supports needed (n) given that the cylinder is fixed on the ends.

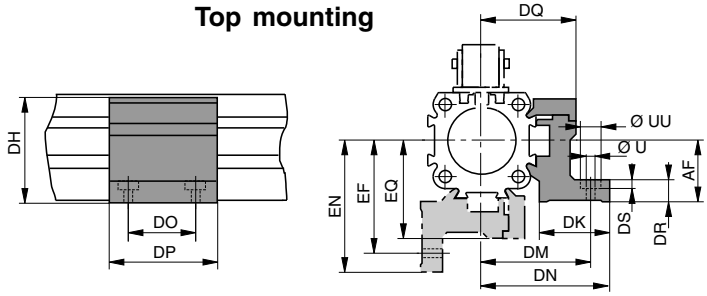
$$n = \left(\frac{\text{Stroke} + 2\ X}{L}\right) - 1$$

n = whole number, rounded up.
X = value in mm, mentioned with general cylinder dimensions
L = max. distance defined in the adjacent graph.

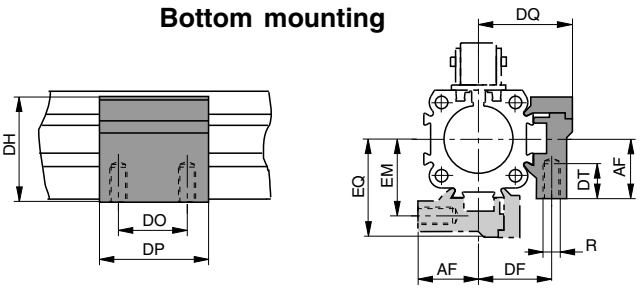
CHOICE OF EQUIPMENT

The tube supports must be mounted into the dovetailrails on the cylinder as shown below.

Top mounting



Bottom mounting



Bore (mm)	CODE	Weights (kg)
16	**43400500**	0,029
25	**43400501**	0,130
32	**43400502**	0,160
40	**43400503**	0,161
50	**43400504**	0,189
63	**43400505**	0,300
80	**43400506**	0,650

Bore (mm)	CODE	Weights (kg)
16	**43400507**	0,026
25	**43400508**	0,061
32	**43400509**	0,073
40	**43400510**	0,140
50	**43400511**	0,169
63	**43400512**	0,236
80	**43400513**	0,552

DIMENSIONS

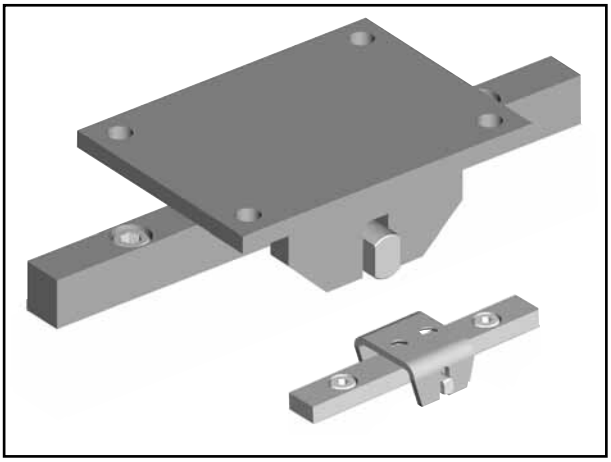
Bore (mm)	DIMENSIONS (mm)																		
	R	**U**	**UU**	**AF**	**DF**	**DH**	**DK**	**DM**	**DN**	**DO**	**DP**	**DQ**	**DR**	**DS**	**DT**	**EF**	**EM**	**EN**	**EQ**
16	M3	3,4	6	15	20	29,2	24	32	36,4	18	30	27	6	3,4	6,5	32	20	36,4	27
25	M5	5,5	10	25	27	41	26	40	47,5	36	50	34,5	11	5,7	10	41,5	28,5	49	36
32	M5	5,5	10	33	33	49	27	46	54,5	36	50	40,5	13	5,7	10	48,5	35,5	57	43
40	M6	7	-	35,2	35	58,2	34	53	60	45	60	45	7,2	-	11	56	38	63	48
50	M6	7	-	46	40	69	34	59	67	45	60	52	8	-	11	64	45	72	57
63	M8	9	-	60,7	47,5	94,7	44	73	83	45	65	63	15,7	-	16	79	53,5	89	69
80	M10	11	-	72	60	111,5	63	97	112	55	80	81	15	-	25	103	66	118	87

FLOATING CARRIER BRACKET - ALIGNMENT COMPENSATION FOR STBN

For applications where a band cylinder moves a load that is externally guided and supported, a floating carrier bracket is necessary to compensate for non-parallelism and friction losses between the cylinder and the independent guiding member.
This flexible fastening compensates for the following alignment errors:

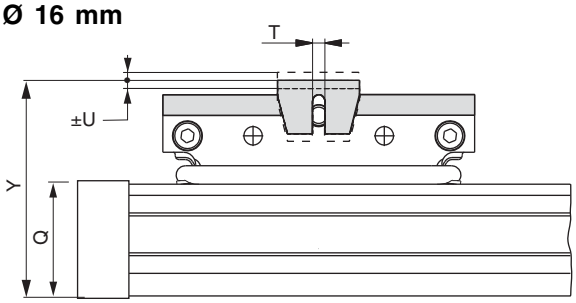
- **Lateral**
- **Vertical**
- **Horizontal**
- **Longitudinal**

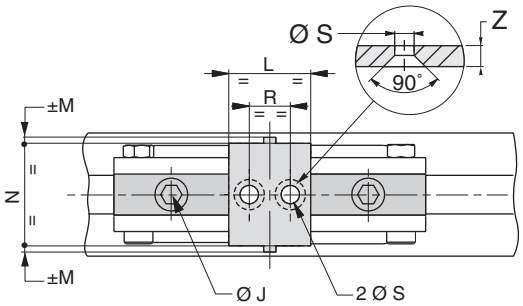
Alignment compensation : **± U**
: **± M**



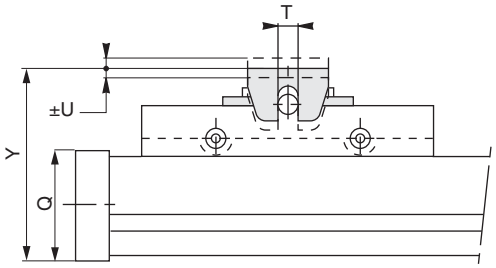
DIMENSIONS AND WEIGHTS

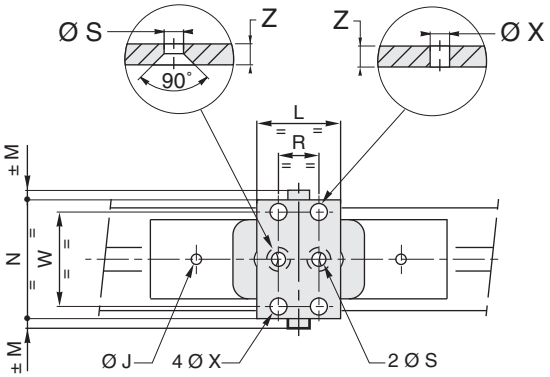
Ø 16 mm



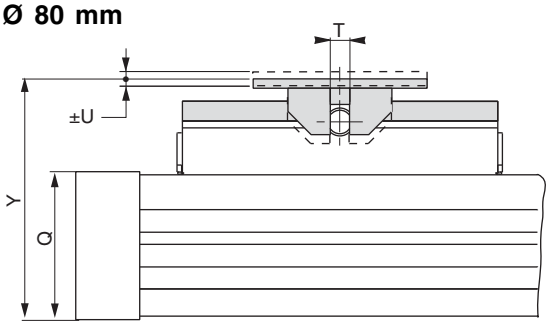


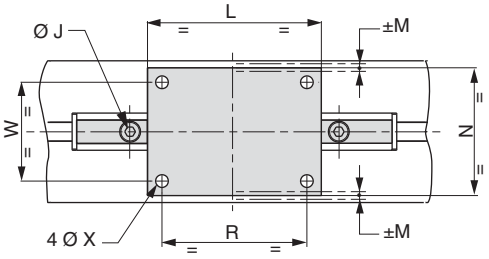
Ø 25 to 63 mm





Ø 80 mm





Ø Cylin. (mm)	MOUNT BRACKET CODE	DIMENSIONS (mm)													Weights (kg)
		Ø J	L	± M	N	R	Ø S	T	± U	W	Ø X	Y	Q	Z	
16	**43400526**	M4	20	1,5	25	10	4,5	3	1,5	-	-	52,5	30	2	0,432
25	**43400232**	M6	32	3,3	46	15,7	5,6	8	3,8	-	-	71	41	3	0,110
32	**43400233**	M8	70	4	56	50	7	8	4	-	-	94,5	52	4	0,250
40	**43400234**	M8	90	7	75	75	-	11	6	55	7	108	69	7	0,540
50	**43400235**	M10	100	7	82	80	8,6	16	6,4	-	-	139	87	5	0,610
63	**43400236**	M10	120	12	98	100	-	16	7	70	8,6	156	106	5	0,730
80	**43400532**	M10	150	4	110	125	-	13	4	85	11	203,2	132	8	1,320

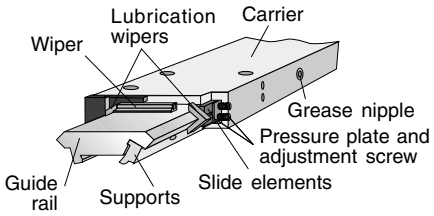
Floating mount bracket mounting screws are supplied.
The fastening screws for the carrier and the load must be secured with LOCTITE 241.

ASCO JOUCOMATIC

RODLESS BAND CYLINDERS

Ø 16 - 80 mm - double acting
with carrier and plain bearing guide
equipped for magnetic detectors

Series **448**
Type STB



SPECIFICATIONS

FLUID	: air or neutral gas, filtered, unlubricated
PRESSURE	: 8 bar max.
TEMPERATURE	: - 10°C, + 80°C
STROKE min.	: 5 mm (without detectors)
	: 100 mm (with detectors)
max. standard	: see below (consult us for longer strokes)
MAXIMUM VELOCITY	: 0,2 to 4 m/sec

CONSTRUCTION

Tube	: Anodised aluminium
Ends	: Anodised aluminium
Carrier (piston)	: Anodised aluminium
Piston seals	: Nitrile (NBR)
Piston brackets	: High resistance stamped steel
Bands	: Stainless steel
Magnet	: Placed inside the piston
Covers, wipers	: Plastic
Screws	: Galvanised steel
Cushioning	: with air, adjustable
Slide elements	: adjustable, sintered material
Guide rail	: Anodised aluminium, prism shaped

CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
16	**448 50 008** (1)	STB 16 A - 0(3) -_(1)_- DM	5500	M5	11
25	**448 50 009** (1)	STB 25 A - 0(3) -_(1)_- DM	5500	G 1/8	17
32	**448 50 010** (1)	STB 32 A - 0(3) -_(1)_- DM	5500	G 1/4	20
40	**448 50 011** (1)	STB 40 A - 0(3) -_(1)_- DM	5500	G 1/4	27
50	**448 50 012** (1)	STB 50 A - 0(3) -_(1)_- DM	5500	G 1/4	30
63	**448 50 013** (1)	STB 63 A - 0(3) -_(1)_- DM	5500	G 3/8	32
80	**448 50 014** (1)	STB 80 A - 0(3) -_(1)_- DM	5500	G 1/2	39

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

MOUNTINGS

Ø Cylinder (mm)	CODE  Low foot brackets (4)
16	**43400493**
25	**43400494**
32	**43400495**

Ø Cylinder (mm)	CODE  Flanges
40	**43400496**
50	**43400497**
63	**43400498**
80	**43400499**

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(4) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 12)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTIONS

- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 16 : **995082** Ø 25 : **995083** Ø 32 : **995084** Ø 40 : **995085** Ø 50 : **995086** Ø 63 : **995087** Ø 80 : **995088**

(When selecting this option, you will have to change the cylinder reference to: STB .. A **1** ... DM)

- Pressure supply ports on same side as guide rail (consult us)

Selecting the appropriate band cylinder is simple. The information you need includes:
- the stroke,
- the force required for moving the load,
- the weight of the load,
- the position of the load (centered on the carrier or elsewhere),
- the final or average velocity.

How to select

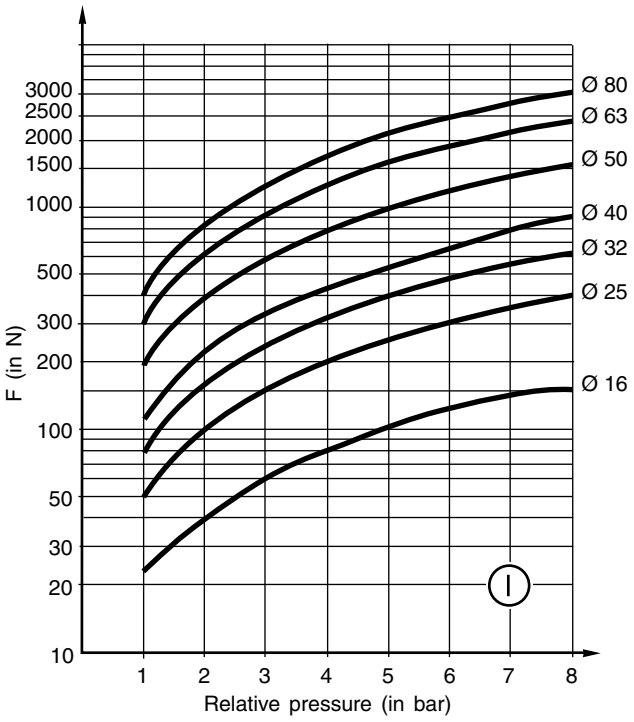
Graph (I) represents the theoretical force at various pressures. For the most efficient use of a cylinder, it is recommended to use a load rate of 70 %: the force needed to move the load therefore corresponds to 70% of the theoretical force.

After defining the cylinder diameter, you must determine if the cylinder's internal cushions may be used.

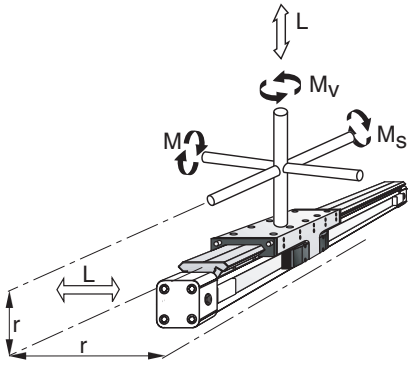
Allowable bending moments

A bending moment will occur if the load is not centered on the carrier (see bending moment data below).

THEORETICAL FORCE AT VARIOUS PRESSURES



ALLOWABLE BENDING/TWISTING MOMENTS

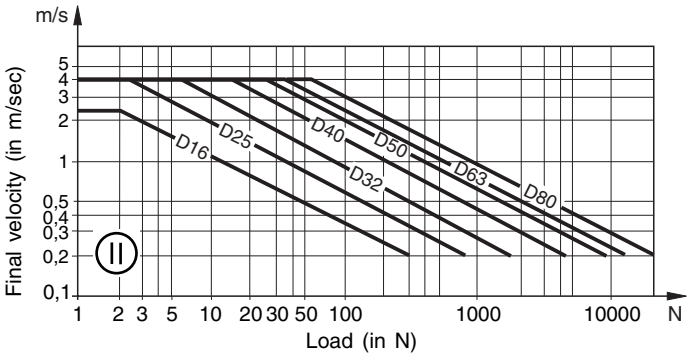


Cushioning capacity

Graph (II) is used to determine the type of cushioning needed. If the intersection point of the final velocity and the load falls below the curves, the internal cushions are adequate. If this is not the case, you must either choose a larger cylinder with greater cushion capacity, or use the shock absorbers which are available as an accessory. If you have determined that the internal cushions would be used near their maximum capacity **and** there is highly intense movement, it would be wise to use the optional shock absorbers.

OTHER ACCESSORIES:
- Tube support brackets: **You must determine if intermediate tube support brackets are required**, depending on the weight of the charge and the stroke. (see chart on tube support sheet).
- Reed switch or magneto-inductive detectors for position control.

CUSHION DATA



The velocities indicated in graph (II) represent **final velocities**.

To properly determine the inertial forces for cushioning, it is important to know the **final velocity**.

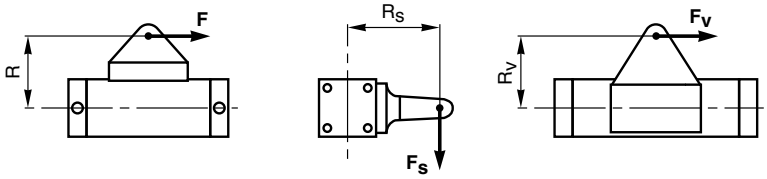
If final (or impact) velocity cannot be calculated directly, a reasonable guideline is:

Final V = 1,5 x average velocity

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)
	M	**M_S**	**M_V**	**L**
16	11	6	11	325
25	34	14	34	675
32	60	29	60	925
40	110	50	110	1500
50	180	77	180	2000
63	260	120	260	2500
80	260	120	260	2500

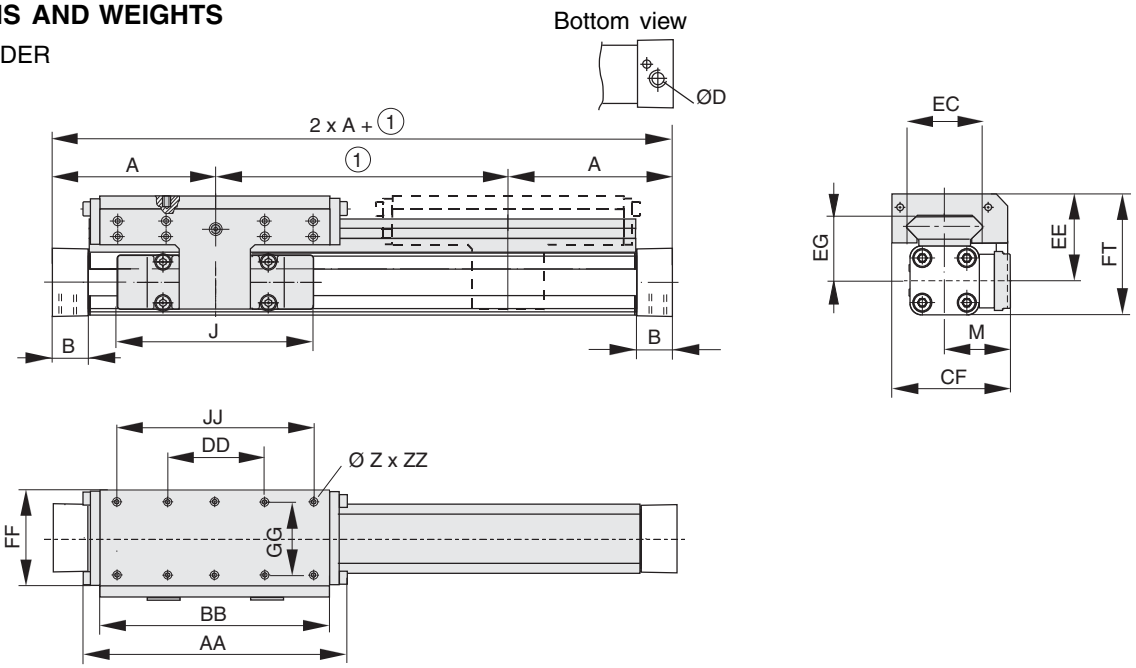
Note: When using the cushioning diagram, be sure to add the weight of the carrier (and that of the brake) to the weight of the load to be moved.

The maximum allowable values for loads, forces and moments are shown in the adjacent table. No dynamic calculation is needed for speeds up to 0,2 m/s.



DIMENSIONS AND WEIGHTS

BARE CYLINDER



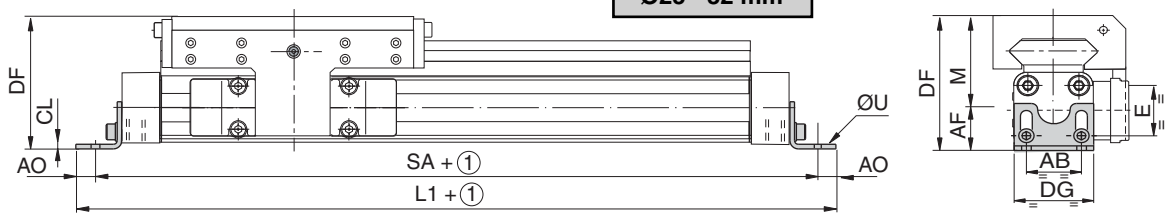
① : stroke

Bore (mm)	DIMENSIONS (mm)																		Weights (kg)		
	A	B	D	J	M	Z	AA	BB	DD	CF	EC	EE	EG	FF	FT	GG	JJ	ZZ	(1)	(2)	carrier
16	65,2	14	M5	69	31	M4	106	88	30	55	36	40	30	48	55	36	70	8	0,57	0,22	0,23
25	100,4	22	G1/8	117	40,5	M6	162	142	60	72,5	47	53	39	64	73,5	50	120	12	1,55	0,39	0,61
32	125,2	25,5	G1/4	152	49	M6	205	185	80	91	67	62	48	84	88	64	160	12	2,98	0,65	0,95
40	150	28	G1/4	152	55	M6	240	220	100	102	77	64,3	50	94	98,8	78	200	12	4,05	0,78	1,22
50	175	33	G1/4	200	62	M6	284	264	120	117	94	75	56	110	118,5	90	240	16	6,72	0,97	2,06
63	215	38	G3/8	256	79	M8	312	292	130	152	116	86	66	152	139	120	260	14	11,66	1,47	3,32
80	260	47	G1/2	348	96	M8	312	292	130	168	116	99	79	152	165	120	260	13	15,71	1,81	3,32

(1) Weight with 0 mm stroke
(2) Weight to be added per additional 100 mm length

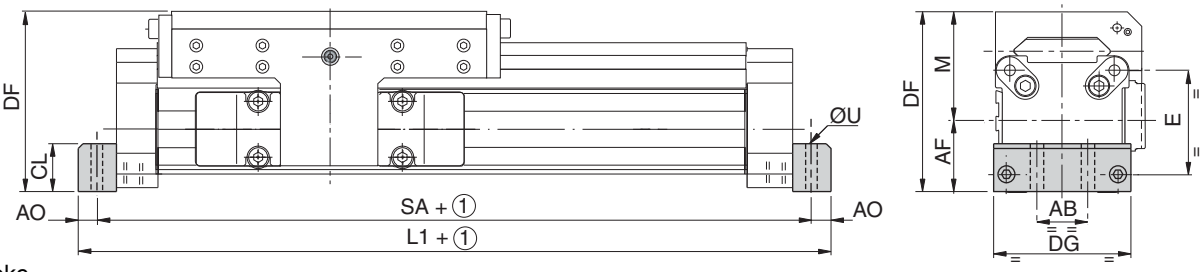
CYLINDER WITH MOUNTING **BRACKETS**

Ø25 - 32 mm



CYLINDER WITH MOUNTING **FLANGES**

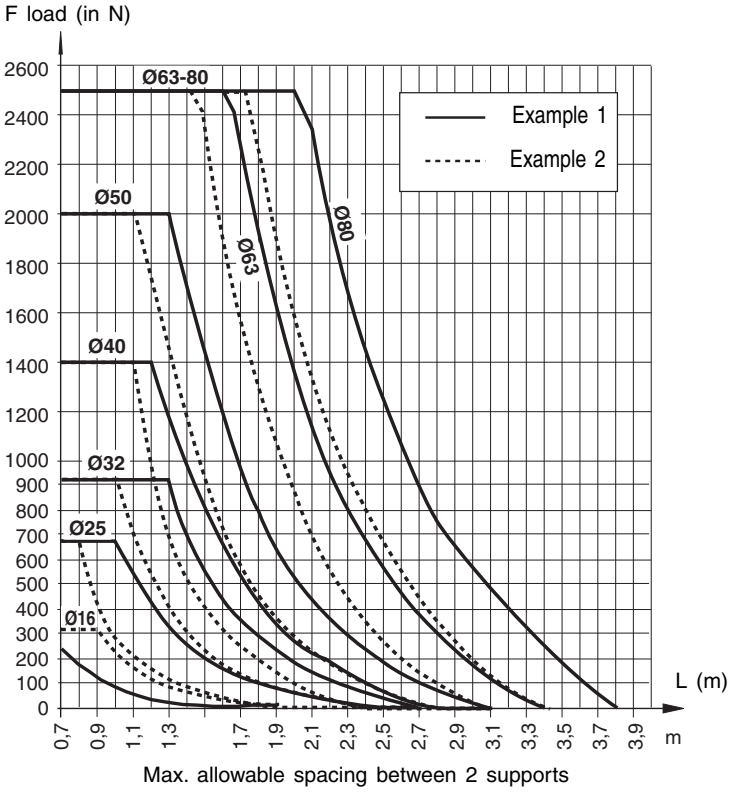
Ø40 - 50 mm



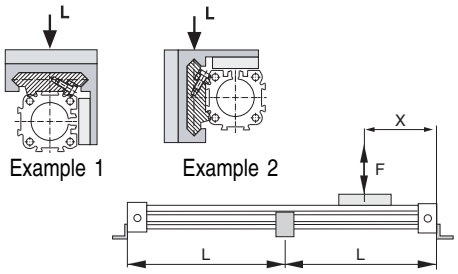
① : stroke

Bore (mm)	DIMENSIONS (mm)											Weights (kg)	
	AB	AF min	AF max	A0	CL	DF min	DF max	DG	E	L1	M	SA	U	Brackets	Flanges
16	18	15		4	1,6	55		26	18	158,4	40	150,4	3,6	0,017	-
25	27	22,7	32,3	9,5	2,5	75,7	85,3	39	27	250,8	53	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	94,5	107,2	50	36	292,4	62	273,8	7	0,117	-
40	30	35,2		11,3	24	99,9		68	54	348	64,3	325,4	9	-	0,210
50	31,8	46		16,2	30	121		86	70	398	75	365,6	10	-	0,308
63	48	60,7		15	40	146,7		104	78	490	86	460	11	-	0,674
80	60	72		17,5	50	171		130	96	590	99	555	14	-	1,218

For certain strokes and loads, it is necessary to use tube support brackets for intermediate support. The graph below is used to determine the maximum allowable support spacings depending on the load and the number of supports required.
These supports are made of treated light alloy and are designed to fit into the dovetail grooves which run the length of the cylinder tube.



Max. allowable spacing between 2 supports



Number of supports needed (n) given that the cylinder is fixed on the ends.

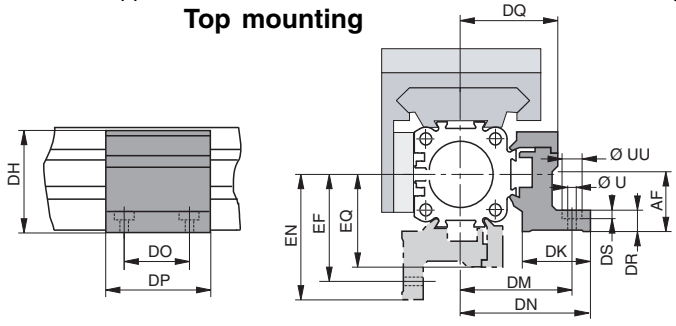
$$n = \left(\frac{\text{Stroke} + 2\ X}{L}\right) - 1$$

n = whole number, rounded up.
X = value in mm, mentioned with general cylinder dimensions
L = max. distance defined in the adjacent graph.

CHOICE OF EQUIPMENT

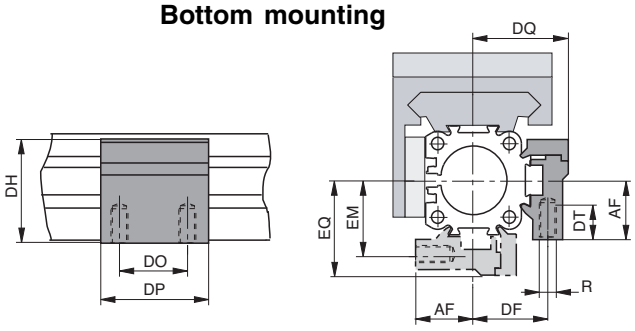
The tube supports must be mounted into the dovetail rails on the cylinder as shown below.

Top mounting



Bore (mm)	CODE	Weights (kg)
16	**43400500**	0,029
25	**43400501**	0,130
32	**43400502**	0,160
40	**43400503**	0,161
50	**43400504**	0,189
63	**43400505**	0,300
80	**43400506**	0,650

Bottom mounting



Bore (mm)	CODE	Weights (kg)
16	**43400507**	0,026
25	**43400508**	0,061
32	**43400509**	0,073
40	**43400510**	0,140
50	**43400511**	0,169
63	**43400512**	0,236
80	**43400513**	0,552

DIMENSIONS

Bore (mm)	DIMENSIONS (mm)																			
	R	**U**	**UU**	**AF**	**DF**	**DH**	**DK**	**DM**	**DN**	**DO**	**DP**	**DQ**	**DR**	**DS**	**DT**	**EF**	**EM**	**EN**	**EQ**
16	M3	3,4	6	15	20	29,2	24	32	36,4	18	30	27	6	3,4	6,5	32	20	36,4	**27**
25	M5	5,5	10	25	27	41	26	40	47,5	36	50	34,5	11	5,7	10	41,5	28,5	49	36
32	M5	5,5	10	33	33	49	27	46	54,5	36	50	40,5	13	5,7	10	48,5	35,5	57	43
40	M6	7	-	35,2	35	58,2	34	53	60	45	60	45	7,2	-	11	56	38	63	48
50	M6	7	-	46	40	69	34	59	67	45	60	52	8	-	11	64	45	72	57
63	M8	9	-	60,7	47,5	94,7	44	73	83	45	65	63	15,7	-	16	79	53,5	89	69
80	M10	11	-	72	60	111,5	63	97	112	55	80	81	15	-	25	103	66	118	87

RODLESS BAND CYLINDERS

Ø 25 - 80 mm - double acting
with guided carrier and plain bearing guide
with passive brake
equipped for magnetic detectors

Series **448**
Type STB

B

APPLICATION PRINCIPLE

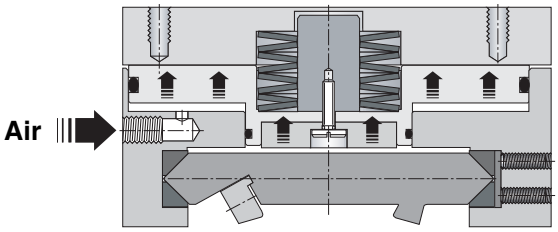
The brake is designed to stop the loaded cylinder carrier and hold it in the end-of-stroke position in case of power or pressure failure.
The brake is a mechanical device that acts on the carrier's guide rail.
It is released by pressurisation.

Advantages

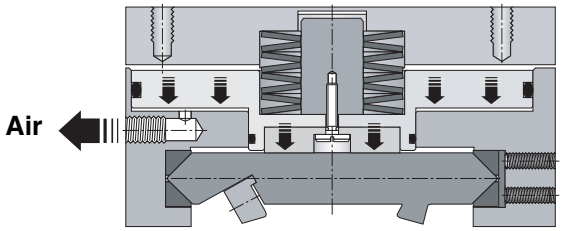
- Stops and holds carrier in the end-of-stroke position.
- Intermediate stops possible.
- **Blocks in case of pressure loss**.
- Two-directional action.
- Any mounting position.

OPERATING PRINCIPLE

Pressure applied



No pressure applied



SPECIFICATIONS

CYLINDER: see page 15

PASSIVE BRAKE

FLUID : air or neutral gas, unlubricated
RELEASE PRESSURE : > 4,5 bar
ALLOWABLE PRESSURE : 8 bar max.
AMBIENT TEMPERATURE : - 10°C, + 80°C
MOUNTING POSITION : any

Loads, moments and forces :

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)	**Holding force** (in N)
	M	**M_s**	**M_v**	**L**	
25	34	14	34	675	**470**
32	60	29	60	925	**790**
40	110	50	110	1500	**1200**
50	180	77	180	2000	**1870**
63	260	120	260	2500	**2900**
80	260	120	260	2500	**2900**

MECHANICAL CHARACTERISTICS: see page 10

CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
25	**44850024** (1)	STB 25 A - 0(3) - **PB** - _(1)_ - DM	5500	G 1/8	17
32	**44850025** (1)	STB 32 A - 0(3) - **PB** - _(1)_ - DM	5500	G 1/4	20
40	**44850026** (1)	STB 40 A - 0(3) - **PB** - _(1)_ - DM	5500	G 1/4	27
50	**44850027** (1)	STB 50 A - 0(3) - **PB** - _(1)_ - DM	5500	G 1/4	30
63	**44850028** (1)	STB 63 A - 0(3) - **PB** - _(1)_ - DM	5500	G 3/8	32
80	**44850029** (1)	STB 80 A - 0(3) - **PB** - _(1)_ - DM	5500	G 1/2	39

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

When ordering, please specify the code of the STB cylinder with passive brake, its stroke, reference and any accessories you may require.
Example:
Cylinder Ø 25 mm, 200 mm stroke, with passive brake, without slow speed option: code **44850024200 - STB 25 A 0 PB 200 DM**

MOUNTINGS

Ø Cylinder (mm)	CODE  Low foot brackets (4)
25 **32**	**43400494** **43400495**

	CODE  Flanges
40 **50** **63** **80**	**43400496** **43400497** **43400498** **43400499**

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(4) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

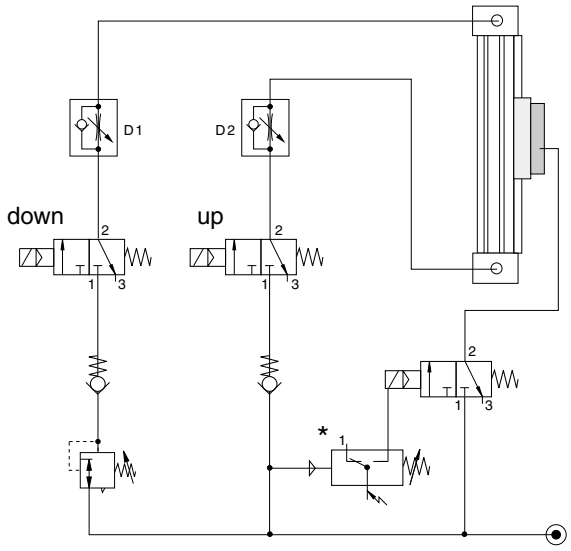
- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 12)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTION

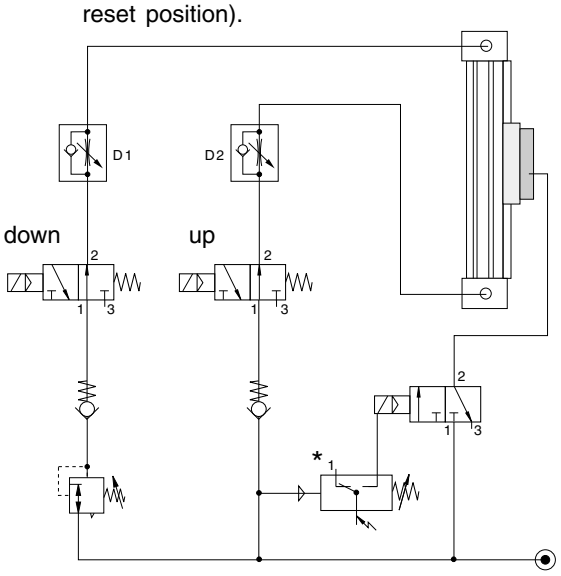
- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 25 : **995083** Ø 50 : **995086**
  Ø 32 : **995084** Ø 63 : **995087**
  Ø 40 : **995085** Ø 80 : **995088**
  (When selecting this option, you will have to change the cylinder reference to: STB .. A **1** ... DM)
- Pressure supply ports on same side as guide rail (consult us)

WIRING DIAGRAM VERTICAL APPLICATION

Control of a cylinder with normally closed (NC) 3/2 spool valves (the cylinder chambers are exhausted when in the reset position).



Control of a cylinder with normally open (NO) 3/2 spool valves (the cylinder chambers are pressurised when in the reset position).



DESCRIPTION

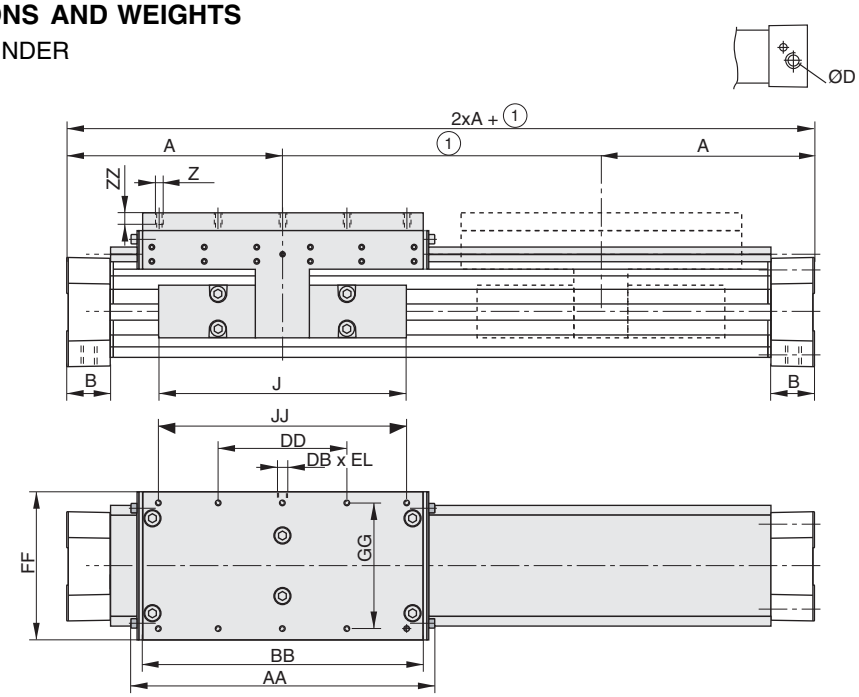
Under normal operating conditions, the pressure switch is closed. The 3/2 spool valve supplies air to the brake to release it and allow the cylinder to move. In the event of loss of pressure or pressure failure, the pressure switch activates the cylinder valve and locks the movement of the cylinder. When pressure is restored to the two cylinder chambers, the brake is once again released.
The flow reducers D1 and D2 do not have any influence on the brake. The two non-return valves enhance the stability of the system.
The pressure regulator is used to compensate the force of the load in vertical applications.

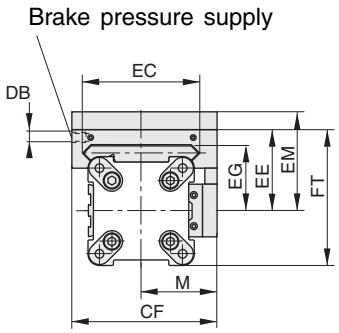
NOTE: Before releasing the brake, make sure both air chambers are pressurised. Pipe lengths and connection diameters have an influence on the reaction time of the brake. We recommend reducing piping lengths and using adequately sized fittings.

❇ An adjustable pressure switch locks the brake when the pressure drops below a pre-set value.

DIMENSIONS AND WEIGHTS

BARE CYLINDER





① : stroke

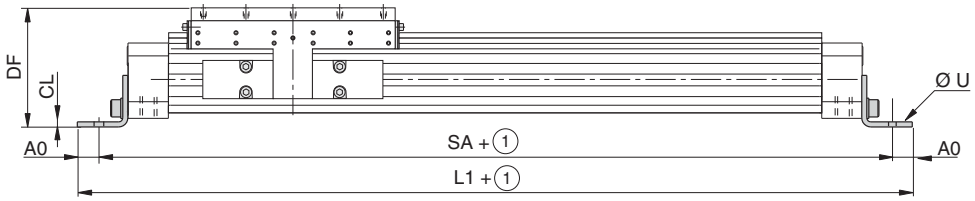
Bore (mm)	DIMENSIONS (mm)																				Cylinder weight (kg)		Carrier weight (kg)
	A	B	D	J	M	Z	AA	BB	DB	DD	CF	EC	EE	EG	EL	EM	FF	FT	GG	JJ	ZZ	(1)	(2)	
25	100,4	22	G1/8	117	40,5	M6	162	142	M5	60	72,5	47	53	39	5	73	64	73,5	50	120	12	2,04	0,39	1,10
32	125,2	25,5	G1/4	152	49	M6	205	185	G1/8	80	91	67	62	48	10	82	84	88	64	160	12	3,82	0,65	1,79
40	150	28	G1/4	152	55	M6	240	220	G1/8	100	102	77	64,3	50	10	84,3	94	98,8	78	200	12	5,16	0,78	2,34
50	175	33	G1/4	200	62	M6	284	264	G1/8	120	117	94	75	56	12	95	110	118,5	90	240	12	8,29	0,97	3,63
63	215	38	G3/8	256	79	M8	312	292	G1/8	130	152	116	86	66	12	106	152	139	120	260	13	13,31	1,47	4,97
80	260	47	G1/2	348	96	M8	312	292	G1/8	130	168	116	99	79	12	119	152	165	120	260	13	17,36	1,81	4,97

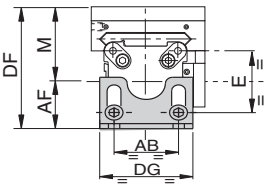
(1) Weight with 0 mm stroke

(2) Weight to be added per additional 100 mm length

CYLINDER WITH MOUNTING **BRACKETS**

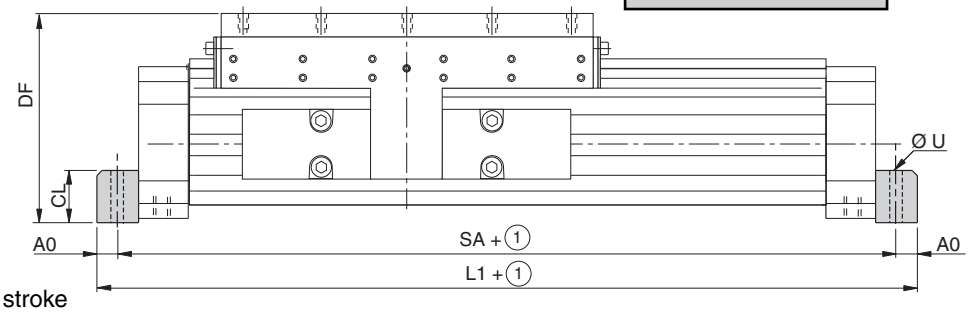
Ø25 - 32 mm

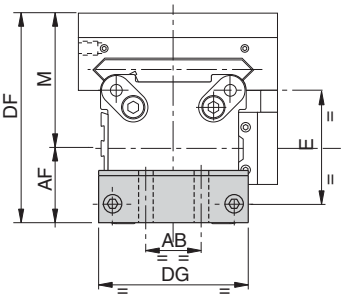




CYLINDER WITH MOUNTING **FLANGES**

Ø40 - 80 mm





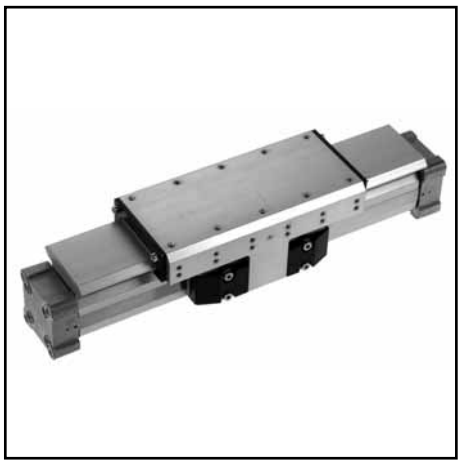
① : stroke

Bore (mm)	DIMENSIONS (mm)												Weights (kg)	
	AB	AF min	AF max	A0	CL	DF min	DF max	DG	E	L1	M	SA	U	Brackets	Flanges
25	27	22,7	32,3	9,5	2,5	95,7	105,3	39	27	250,8	73	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	114,5	127,2	50	36	292,4	82	273,8	7	0,117	-
40	30	35,2		11,3	24	119,5		68	54	348	84,3	325,4	9	-	0,210
50	31,8	46		16,2	30	141		86	70	398	95	365,6	10	-	0,308
63	48	60,7		15	40	166,7		104	78	490	106	460	11	-	0,674
80	60	72		17,5	50	191		130	96	590	119	555	14	-	1,218

RODLESS BAND CYLINDERS

Ø 25 - 50 mm - double acting
with guided carrier and plain bearing guide
with active brake
equipped for magnetic detectors

Series **448**
Type STB



APPLICATION PRINCIPLE

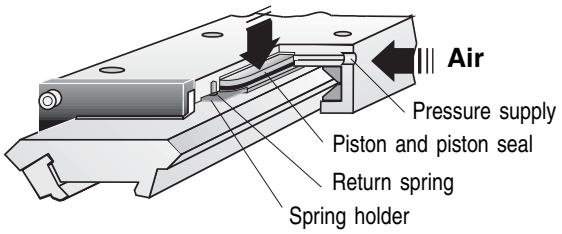
The brake is designed to stop the loaded cylinder carrier and hold it in the end-of-stroke position when it is supplied with pressure during machine operation.
The brake is a mechanical device which acts on the carrier's guide rail. It is released by spring actuation when the air pressure is removed.

Advantages

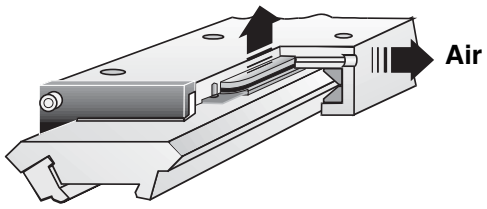
- Stops and holds carrier in the end-of-stroke position.
- Holds maximum allowable cylinder load without slipping.
- Intermediate stops possible.
- **Blocks by pressurisation**.
- Two-directional action.
- Any mounting position.

OPERATING PRINCIPLE

Pressure applied



No pressure applied



SPECIFICATIONS

CYLINDER: see page 15

ACTIVE BRAKE

FLUID : air or neutral gas, unlubricated
ALLOWABLE PRESSURE : 8 bar max.
AMBIENT TEMPERATURE : - 10°C, + 80°C
MOUNTING POSITION : any
Loads, moments and forces :

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)	**Holding force** at 6 bar (in N)
	M	**M_s**	**M_v**	**L**	
25	34	14	34	675	**325**
32	60	29	60	925	**545**
40	110	50	110	1500	**835**
50	180	77	180	2000	**1200**

MECHANICAL CHARACTERISTICS: see page 10

CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
25	**44850020** (1)	STB 25 A - 0(3) - **AB** -_(1)_ - DM	5500	G 1/8	17
32	**44850021** (1)	STB 32 A - 0(3) - **AB** -_(1)_ - DM	5500	G 1/4	20
40	**44850022** (1)	STB 40 A - 0(3) - **AB** -_(1)_ - DM	5500	G 1/4	27
50	**44850023** (1)	STB 50 A - 0(3) - **AB** -_(1)_ - DM	5500	G 1/4	30

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

When ordering, please specify the code of the STB cylinder with active brake, its stroke, reference and any accessories you may require.
Example:
Cylinder Ø 25 mm, 200 mm stroke, with active brake, without slow speed option: code **44850020200 - STB 25 A 0 AB 200 DM**

MOUNTINGS

Ø Cylinder (mm)	CODE  Low foot brackets (4)
25 **32**	**43400494** **43400495**

Ø Cylinder (mm)	CODE  Flanges
40 **50**	**43400496** **43400497**

B

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(4) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

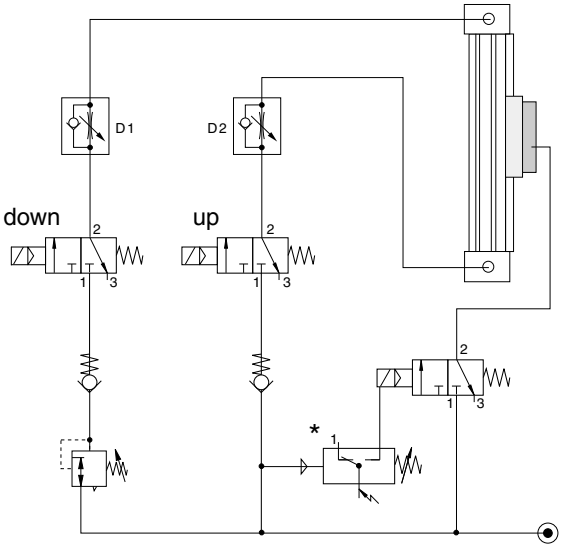
- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 12)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTIONS

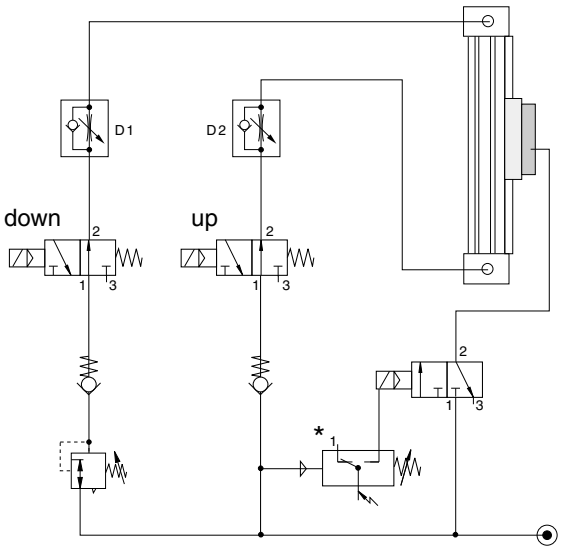
- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 25 : **995083** Ø 50 : **995086**
  Ø 32 : **995084** Ø 63 : **995087**
  Ø 40 : **995085** Ø 80 : **995088**
  (When selecting this option, you will have to change the cylinder reference to: STB .. A **1** ... DM)
- Pressure supply ports on same side as guide rail (consult us)

WIRING DIAGRAM VERTICAL APPLICATION

Control of a cylinder with normally closed (NC) 3/2 spool valves (the cylinder chambers are exhausted when in the reset position).



Control of a cylinder with normally open (NO) 3/2 spool valves (the cylinder chambers are pressurised when in the reset position).



DESCRIPTION

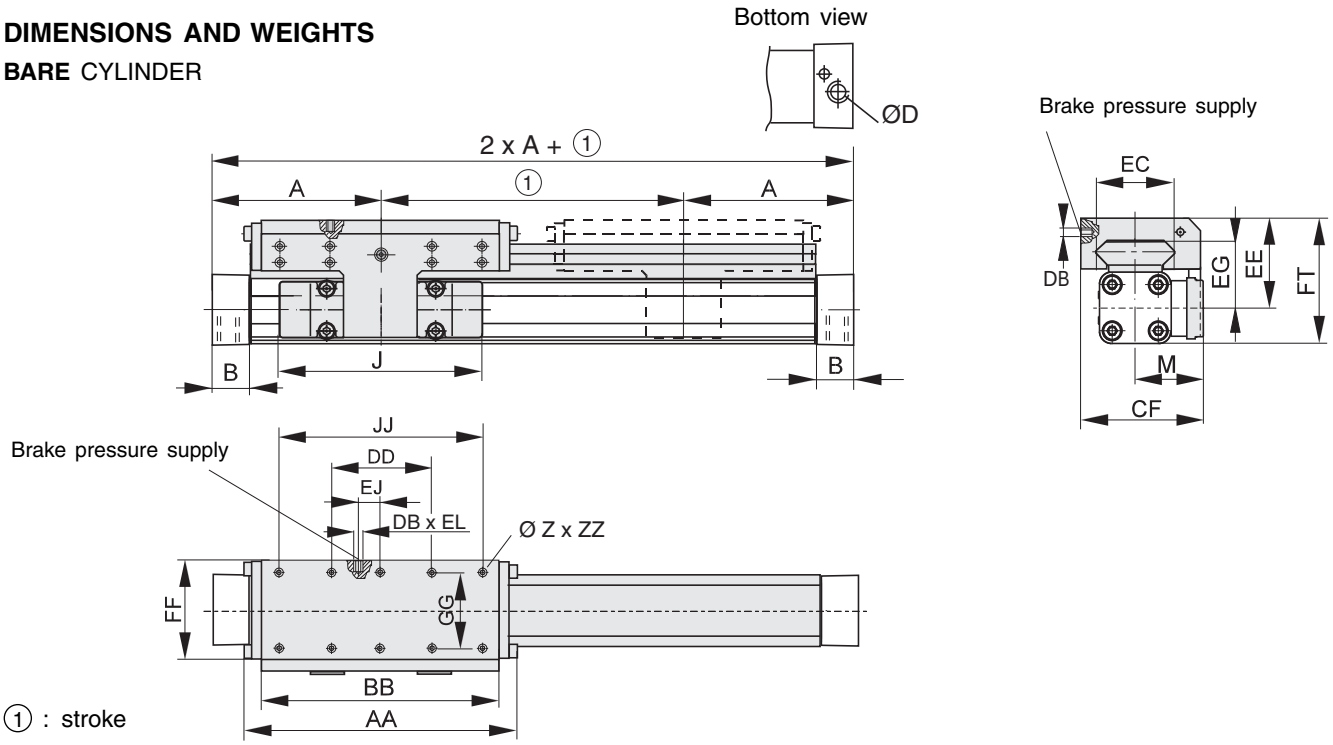
Under normal operating conditions, the pressure switch is closed. The 3/2 spool valve supplies air to the brake to release it and allow the cylinder to move. In the event of loss of pressure or pressure failure, the pressure switch activates the cylinder valve and locks the movement of the cylinder. When pressure is restored to the two cylinder chambers, the brake is once again released.
The flow reducers D1 and D2 do not have any influence on the brake. The two non-return valves enhance the stability of the system.
The pressure regulator is used to compensate the force of the load in vertical applications.

NOTE: Before releasing the brake, make sure both air chambers are pressurised. Pipe lengths and connection diameters have an influence on the reaction time of the brake. We recommend reducing piping lengths and using adequately sized fittings.

❇ An adjustable pressure switch locks the brake when the pressure drops below a pre-set value.

DIMENSIONS AND WEIGHTS

BARE CYLINDER



① : stroke

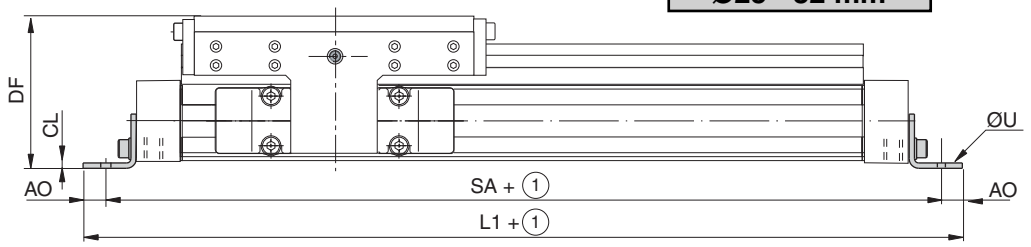
Bore (mm)	DIMENSIONS (mm)																					Weights (kg)		
	A	B	D	J	M	Z	AA	BB	DB	DD	CF	EC	EE	EG	EJ	EK	FF	FT	GG	JJ	ZZ	(1)	(2)	carrier
25	100,4	22	G1/8	117	40,5	M6	162	142	M5	60	72,5	47	53	39	22	6	64	73,5	50	120	12	1,55	0,39	0,61
32	125,2	25,5	G1/4	152	49	M6	205	185	M5	80	91	67	62	48	32	6	84	88	64	160	12	2,98	0,65	0,95
40	150	28	G1/4	152	55	M6	240	220	M5	100	102	77	64,3	50	58	6	94	98,8	78	200	12	4,05	0,78	1,22
50	175	33	G1/4	200	62	M6	284	264	M5	120	117	94	75	56	81	6	110	118,5	90	240	16	6,72	0,97	2,06

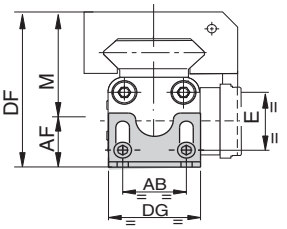
(1) Weight with 0 mm stroke

(2) Weight to be added per additional 100 mm length

CYLINDER WITH MOUNTING **BRACKETS**

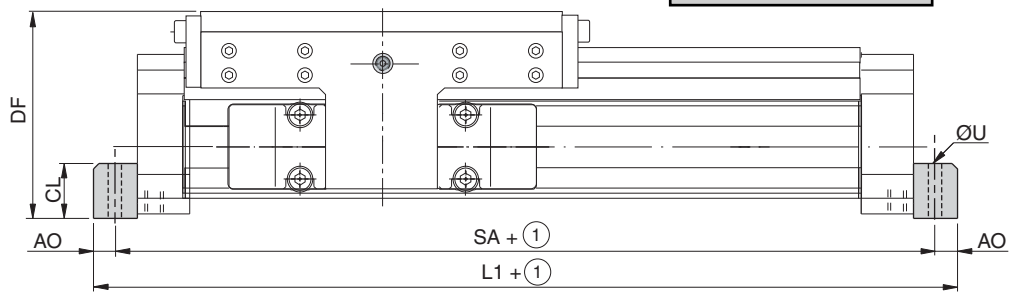
Ø25 - 32 mm

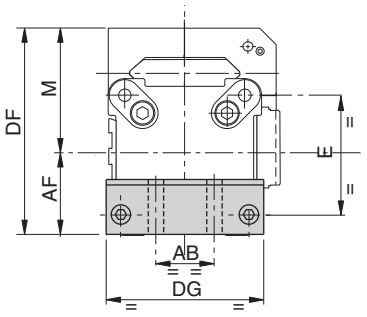




CYLINDER WITH MOUNTING **FLANGES**

Ø40 - 50 mm





① : stroke

Bore (mm)	DIMENSIONS (mm)												Weights (kg)	
	AB	AF min	AF max	A0	CL	DF min	DF max	DG	E	L1	M	SA	U	Brackets	Flanges
25	27	22,7	32,3	9,5	2,5	75,7	85,3	39	27	250,8	53	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	94,5	107,2	50	36	292,4	62	273,8	7	0,117	-
40	30	35,2		11,3	24	99,5		68	54	348	64,3	325,4	9	-	0,210
50	31,8	46		16,2	30	121		86	70	398	75	365,6	10	-	0,308

RODLESS BAND CYLINDERS

Ø 25 - 50 mm - double acting

carrier guided with rollers

equipped for magnetic detectors

Series **448**

Type STBB

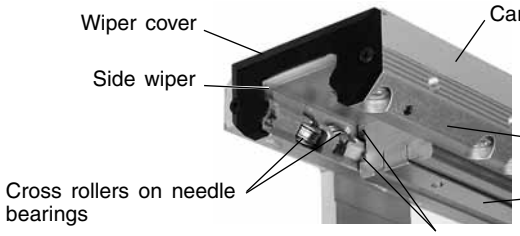
B

SPECIFICATIONS

FLUID	: air or neutral gas, filtered, unlubricated
PRESSURE	: 8 bar max.
TEMPERATURE	: - 10°C, + 80°C
STROKE min.	: 5 mm (without detectors)
	: 100 mm (with detectors)
max. standard	: see below (consult us for longer strokes)
MAXIMUM VELOCITY	: 0,2 to 4 m/sec

CONSTRUCTION

Tube	: Anodised aluminium
Ends	: Anodised aluminium
Carrier (piston)	: Anodised aluminium
Piston seals	: Nitrile (NBR)
Piston brackets	: High resistance stamped steel
Bands	: Stainless steel
Magnet	: Placed inside the piston
Covers, wipers	: Plastic
Screws	: Galvanised steel
Cushioning	: with air, adjustable
Guide rail	: Aluminium with hardened and polished steel guideway
Guidance :	: 8 rollers arranged crosswise



CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
25	**44850016** (1)	STBB 25 A - 0(3) -_(1)_- DM	3750	G 1/8	17
32	**44850017** (1)	STBB 32 A - 0(3) -_(1)_- DM	3750	G 1/4	20
40	**44850018** (1)	STBB 40 A - 0(3) -_(1)_- DM	3750	G 1/4	27
50	**44850019** (1)	STBB 50 A - 0(3) -_(1)_- DM	3750	G 1/4	30

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

MOUNTINGS

Ø Cylinder (mm)	**CODE**  Low foot brackets (4)
25	**43400494**
32	**43400495**

Ø Cylinder (mm)	**CODE**  Flanges
40	**43400496**
50	**43400497**

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(4) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 22)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTIONS

- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 25 : **995083** Ø 40 : **995085**
  Ø 32 : **995084** Ø 50 : **995086**
  (When selecting this option, you will have to change the cylinder reference to: STBB .. A **1** ... DM)

- Pressure supply ports on same side as guide rail (consult us)

Selecting the appropriate band cylinder is simple. The information you need includes:
- the stroke,
- the force required for moving the load,
- the weight of the load,
- the position of the load (centered on the carrier or elsewhere),
- the final or average velocity.

How to select

Graph (I) represents the theoretical force at various pressures. For the most efficient use of a cylinder, it is recommended to use a load rate of 70 %: the force needed to move the load therefore corresponds to 70% of the theoretical force.

After defining the cylinder diameter, you must determine if the cylinder's internal cushions may be used.

Allowable bending moments

A bending moment will occur if the load is not centered on the carrier (see bending moment data below).

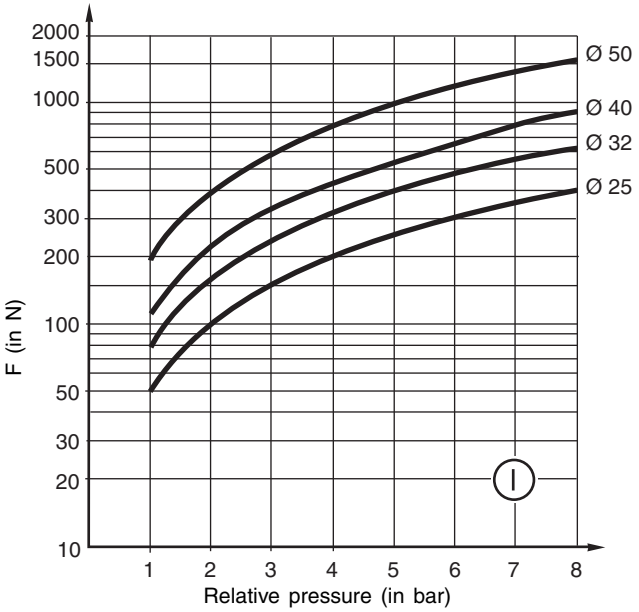
Cushioning capacity

Graph (II) is used to determine the type of cushioning needed. If the intersection point of the final velocity and the load falls below the curves, the internal cushions are adequate. If this is not the case, you must either choose a larger cylinder with greater cushion capacity, or use the shock absorbers which are available as an accessory. If you have determined that the internal cushions would be used near their maximum capacity **and** there is highly intense movement, it would be wise to use the optional shock absorbers.

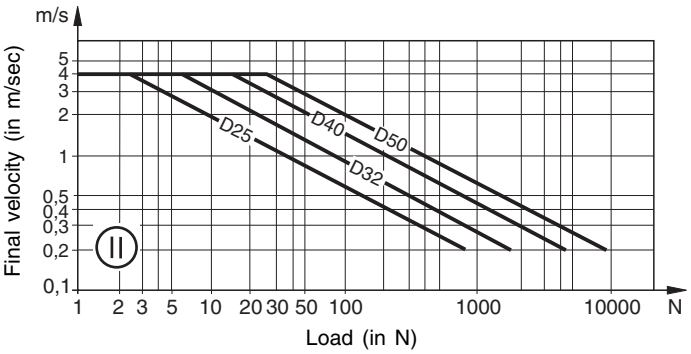
OTHER ACCESSORIES:

- Tube support brackets: **You must determine if intermediate tube support brackets are required**, depending on the weight of the charge and the stroke. (see chart on tube support sheet).
- Reed switch or magneto-inductive detectors for position control.

THEORETICAL FORCE AT VARIOUS PRESSURES



CUSHION DATA



The velocities indicated in graph (II) represent **final velocities**.

To properly determine the inertial forces for cushioning, it is important to know the **final velocity**.

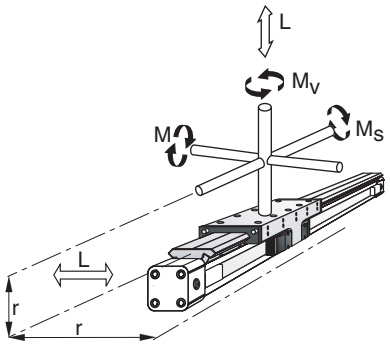
If final (or impact) velocity cannot be calculated directly, a reasonable guideline is:

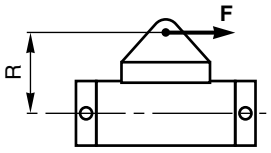
Final V = 1,5 x average velocity

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)	Carrier weight (in kg)
	M	**M_S**	**M_V**	**L**	
25	39	16	39	857	0,75
32	73	29	73	1171	1,18
40	158	57	158	2074	1,70
50	249	111	249	3111	2,50

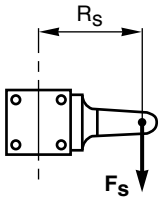
Note: When using the cushioning diagram, be sure to add the weight of the carrier (and that of the brake) to the weight of the load to be moved.

ALLOWABLE BENDING/TWISTING MOMENTS

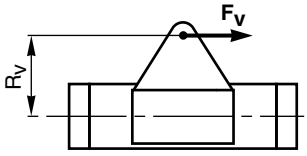




$M = F \times R$



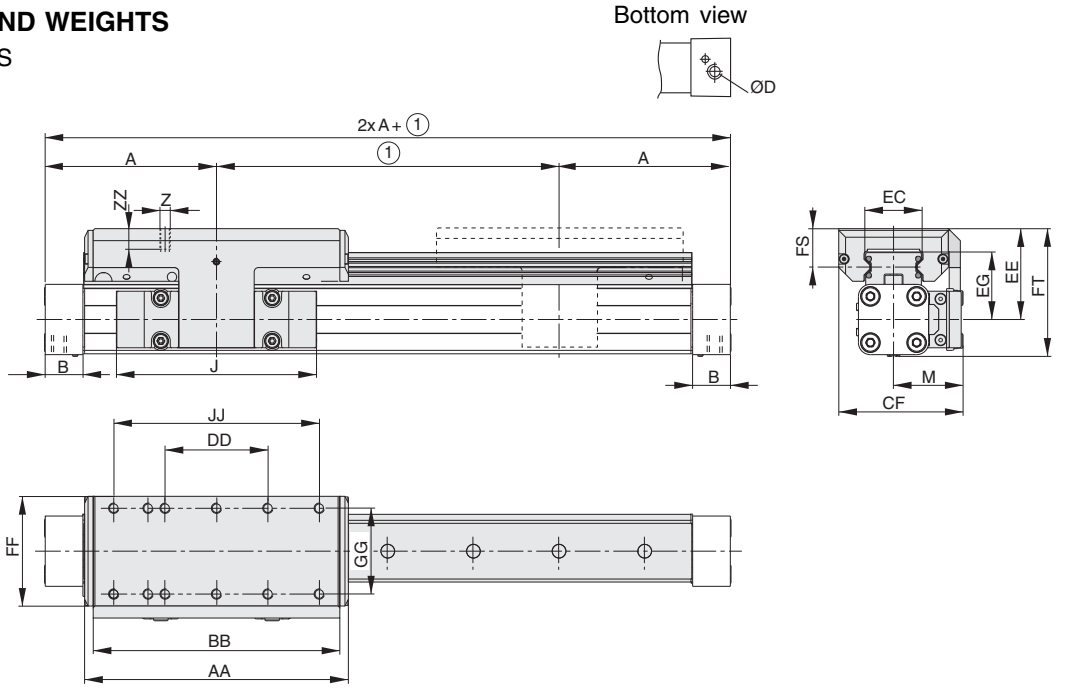
$M_S = F_S \times R_S$



$M_V = F_V \times R_V$

DIMENSIONS AND WEIGHTS

BARE CYLINDERS



① : stroke

Bore (mm)	DIMENSIONS (mm)																			Cylinder weight (kg)		Carrier weight (kg)
	A	B	D	J	M	Z	AA	BB	DD	CF	EC	EE	EG	FF	FS	FT	GG	JJ	ZZ	(1)	(2)	(3)
25	100,4	22	G1/8	117	40,5	M6	154	144	60	72,5	32,5	53	39	64	23	73,5	50	120	12	1,65	0,40	0,75
32	125,2	25,5	G1/4	152	49	M6	197	187	80	91	42	62	48	84	25	88	64	160	12	3,24	0,62	1,18
40	150	28	G1/4	152	55	M6	232	222	100	102	47	64	50,5	94	23,5	98,5	78	200	12	4,35	0,70	1,70
50	175	33	G1/4	200	62	M6	276	266	120	117	63	75	57	110	29	118,5	90	240	16	7,03	0,95	2,50

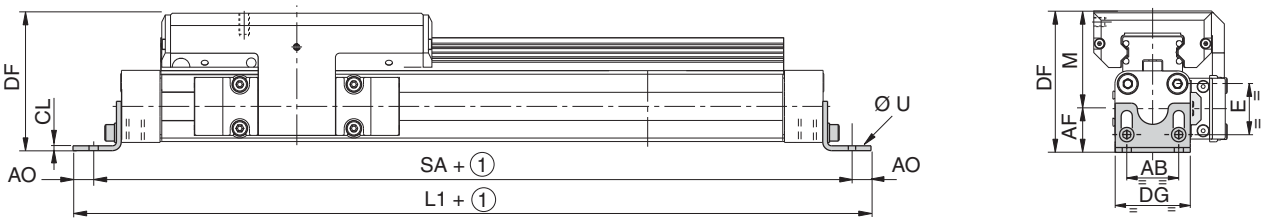
(1) Weight with 0 mm stroke

(2) Weight to be added per additional 100 mm length

(3) When using the cushioning diagram, be sure to add the weight of the carrier to the weight of the load to be moved.

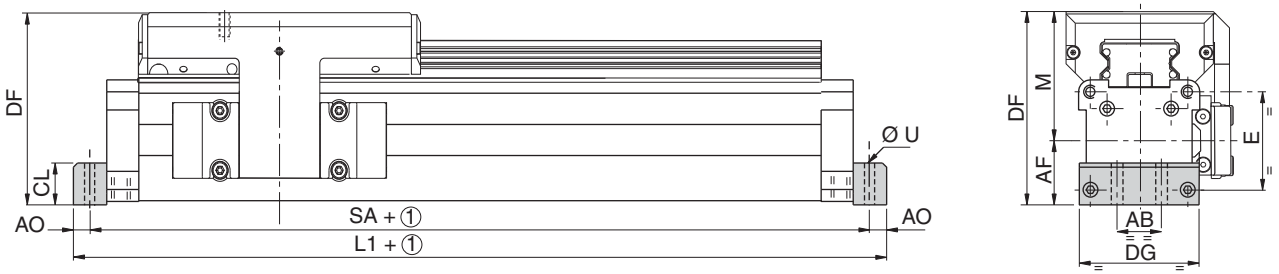
CYLINDER WITH MOUNTING **BRACKETS**

Ø25 - 32 mm



CYLINDER WITH MOUNTING **FLANGES**

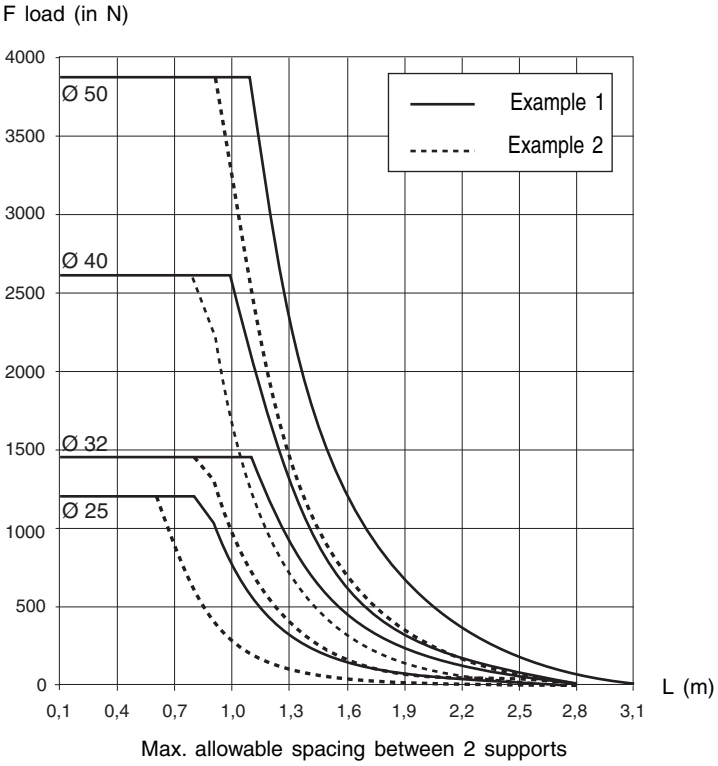
Ø40 - 50 mm



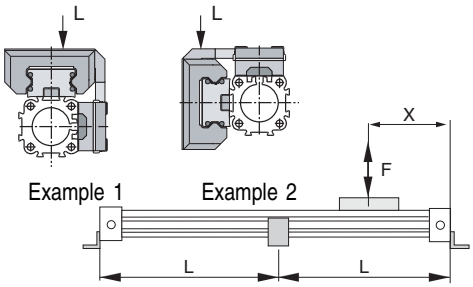
① : stroke

Bore (mm)	DIMENSIONS (mm)												Weights (kg)	
	AB	AF min	AF max	A0	CL	DF min	DF max	DG	E	L1	M	SA	U	Brackets	Flanges
25	27	22,7	32,3	9,5	2,5	75,7	85,3	39	27	250,8	53	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	94,5	107,2	50	36	292,4	62	273,8	7	0,117	-
40	30	35,2		11,3	24	99,2		68	54	348	64	325,4	9	-	0,210
50	31,8	46		16,2	30	121		86	70	398	75	365,6	10	-	0,308

For certain strokes and loads, it is necessary to use tube support brackets for intermediate support. The graph below is used to determine the maximum allowable support spacings depending on the load and the number of supports required.
These supports are made of treated light alloy and are designed to fit into the dovetail grooves which run the length of the cylinder tube.



Max. allowable spacing between 2 supports



Number of supports needed (n) given that the cylinder is fixed on the ends.

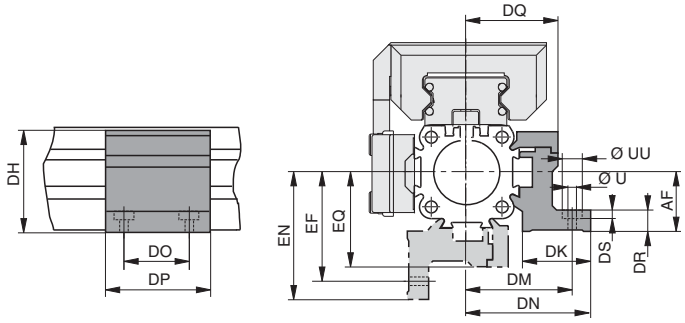
$$n = \left(\frac{\text{Stroke} + 2\ X}{L} \right) - 1$$

n = whole number, rounded up.
X = A dimension in mm, mentioned with general cylinder dimensions
L = max. distance defined in the adjacent graph.

CHOICE OF EQUIPMENT

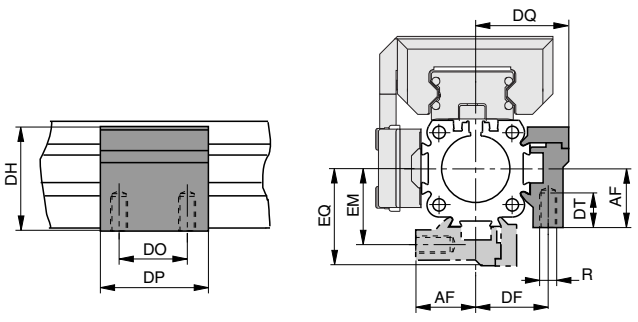
The tube supports must be mounted into the dovetailrails on the cylinder as shown below.

Top mounting



Bore (mm)	CODE	Weights (kg)
25	**43400501**	0,130
32	**43400502**	0,160
40	**43400503**	0,161
50	**43400504**	0,189

Bottom mounting



Bore (mm)	CODE	Weights (kg)
25	**43400508**	0,061
32	**43400509**	0,073
40	**43400510**	0,140
50	**43400511**	0,169

DIMENSIONS

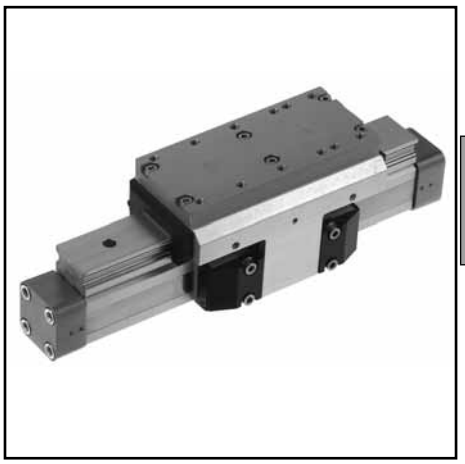
Bore (mm)	DIMENSIONS (mm)																		
	R	**U**	**UU**	**AF**	**DF**	**DH**	**DK**	**DM**	**DN**	**DO**	**DP**	**DQ**	**DR**	**DS**	**DT**	**EF**	**EM**	**EN**	**EQ**
25	M5	5,5	10	25	27	41	26	40	47,5	36	50	34,5	11	5,7	10	41,5	28,5	49	36
32	M5	5,5	10	33	33	49	27	46	54,5	36	50	40,5	13	5,7	10	48,5	35,5	57	43
40	M6	7	-	35,2	35	58,2	34	53	60	45	60	45	7,2	-	11	56	38	63	48
50	M6	7	-	46	40	69	34	59	67	45	60	52	8	-	11	64	45	72	57

ASCO JOUCOMATIC

RODLESS BAND CYLINDERS

Ø 25 - 50 mm - double acting
with carrier guided with rollers
with passive brake
equipped for magnetic detectors

Series **448**
Type STBB



B

APPLICATION PRINCIPLE

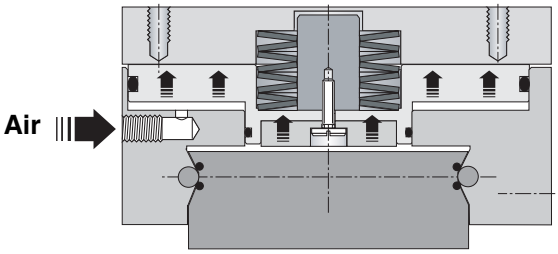
The brake is designed to stop the loaded cylinder carrier and hold it in the end-of-stroke position in case of power or pressure failure.
The brake is a mechanical device that acts on the carrier's guide rail.
It is released by pressurisation.

Advantages

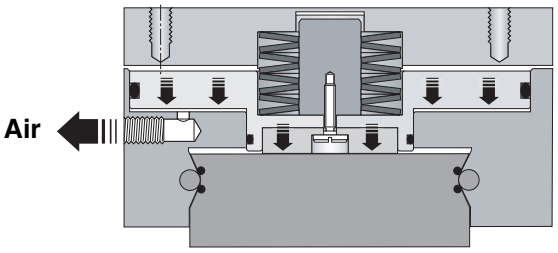
- Stops and holds carrier in the end-of-stroke position.
- Intermediate stops possible.
- **Blocks in case of pressure loss**.
- Two-directional action.
- Any mounting position.

OPERATING PRINCIPLE

Pressure applied



No pressure applied



SPECIFICATIONS

CYLINDER: see page 25

PASSIVE BRAKE

FLUID : air or neutral gas, unlubricated
RELEASE PRESSURE : > 4,5 bar
ALLOWABLE PRESSURE : 8 bar max.
AMBIENT TEMPERATURE : - 10°C, + 80°C
MOUNTING POSITION : any

Loads, moments and forces :

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)	**Holding force** (in N)
	M	**M_s**	**M_v**	**L**	
25	39	16	39	857	**315**
32	73	29	73	1171	**490**
40	158	57	158	2074	**715**
50	249	111	249	3111	**1100**

MECHANICAL CHARACTERISTICS: see page 20

CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
25	**44850034** (1)	STBB 25 A - 0(3) - **PB** - _ _ _(1) - DM	3750	G 1/8	17
32	**44850035** (1)	STBB 32 A - 0(3) - **PB** - _ _ _(1) - DM	3750	G 1/4	20
40	**44850036** (1)	STBB 40 A - 0(3) - **PB** - _ _ _(1) - DM	3750	G 1/4	27
50	**44850037** (1)	STBB 50 A - 0(3) - **PB** - _ _ _(1) - DM	3750	G 1/4	30

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

When ordering, please specify the code of the STBB cylinder with passive brake, its stroke, reference and any accessories you may require.
Example:
Cylinder Ø 25 mm, 200 mm stroke, with passive brake, without slow speed option: code **44850034200 - STBB 25 A 0 PB 200 DM**

MOUNTINGS

Ø Cylinder (mm)	CODE  Low foot brackets (4)
25 **32**	**434 00 494** **434 00 495**

Ø Cylinder (mm)	CODE  Flanges
40 **50**	**434 00 496** **434 00 497**

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(4) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

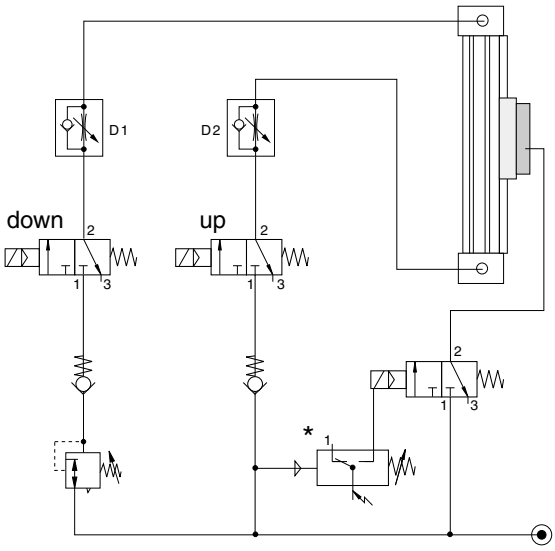
- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 22)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTIONS

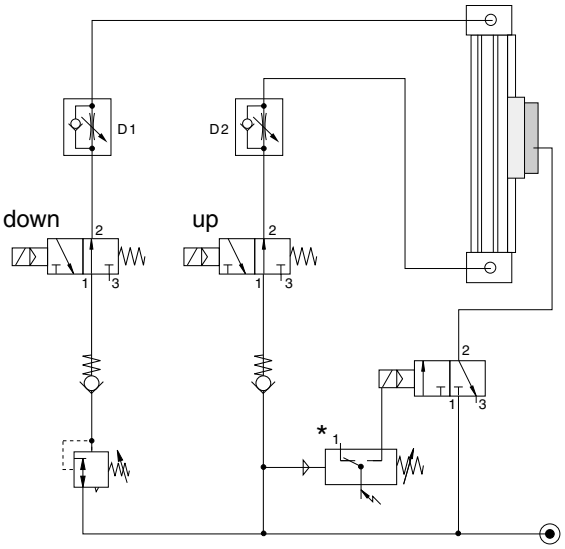
- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 25 : **995 083** Ø 40 : **995 085**
  Ø 32 : **995 084** Ø 50 : **995 086**
  (When selecting this option, you will have to change the cylinder reference to: STBB .. A **1** ... DM)
- Pressure supply ports on same side as guide rail (consult us)

WIRING DIAGRAM VERTICAL APPLICATION

Control of a cylinder with normally closed (NC) 3/2 spool valves (the cylinder chambers are exhausted when in the reset position).



Control of a cylinder with normally open (NO) 3/2 spool valves (the cylinder chambers are pressurised when in the reset position).



DESCRIPTION

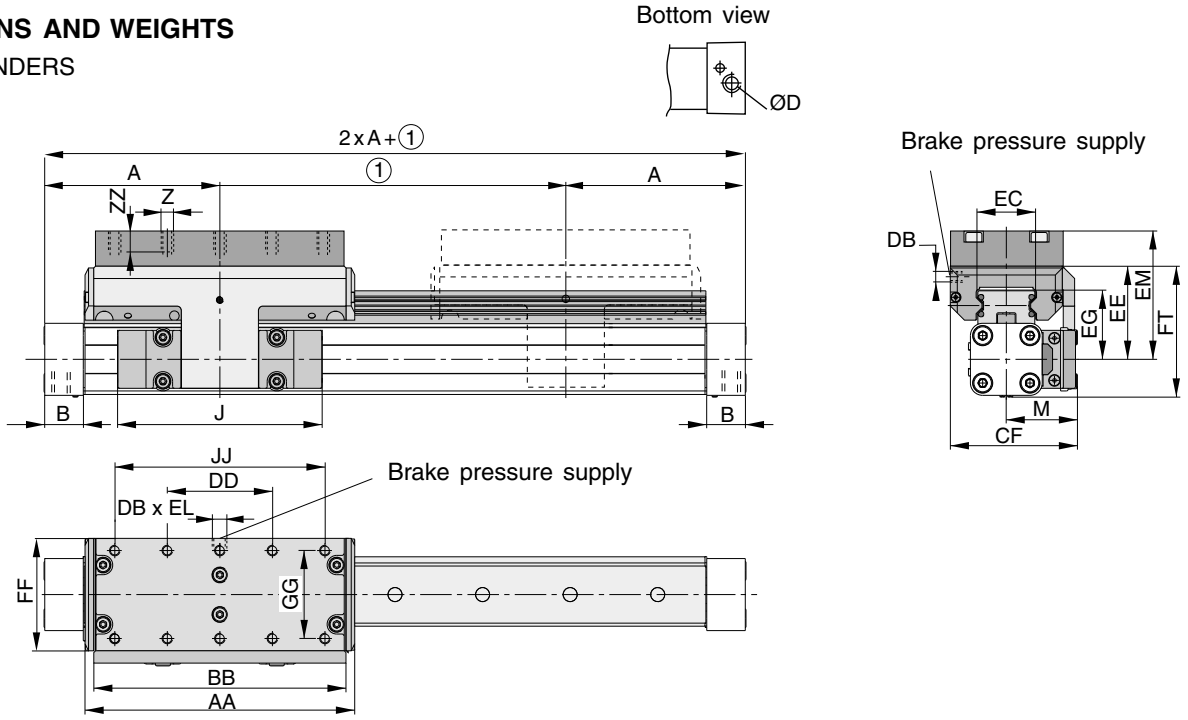
Under normal operating conditions, the pressure switch is closed. The 3/2 spool valve supplies air to the brake to release it and allow the cylinder to move. In the event of loss of pressure or pressure failure, the pressure switch activates the cylinder valve and locks the movement of the cylinder. When pressure is restored to the two cylinder chambers, the brake is once again released.
The flow reducers D1 and D2 do not have any influence on the brake. The two non-return valves enhance the stability of the system.
The pressure regulator is used to compensate the force of the load in vertical applications.

NOTE: Before releasing the brake, make sure both air chambers are pressurised. Pipe lengths and connection diameters have an influence on the reaction time of the brake. We recommend reducing piping lengths and using adequately sized fittings.

❇ An adjustable pressure switch locks the brake when the pressure drops below a pre-set value.

DIMENSIONS AND WEIGHTS

BARE CYLINDERS



① : stroke

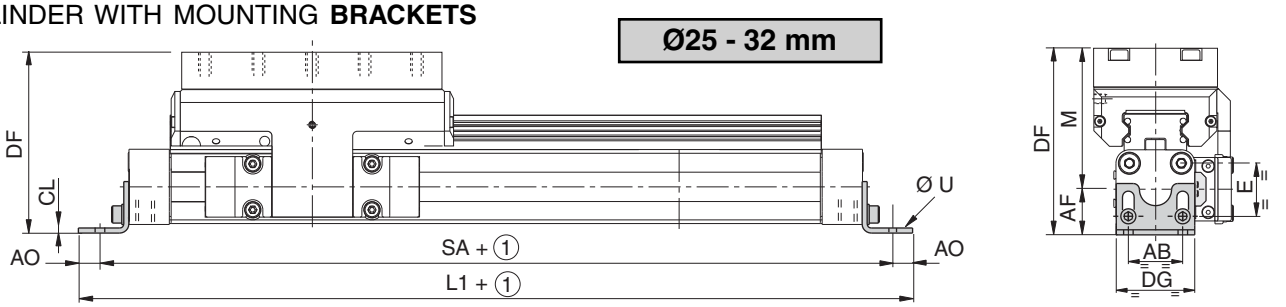
Bore (mm)	DIMENSIONS (mm)																				Cylinder weight (kg)		Carrier weight (kg)
	A	B	D	J	M	Z	AA	BB	DB	DD	CF	EC	EE	EG	EL	EM	FF	FT	GG	JJ	ZZ	(1)	(2)	
25	100,4	22	G1/8	117	40,5	M6	154	144	M5	60	72,5	32,5	53	39	5	73	64	73,5	50	120	12	2,14	0,40	1,24
32	125,2	25,5	G1/4	152	49	M6	197	187	G1/8	80	91	42	62	48	10	82	84	88	64	160	12	4,08	0,62	2,02
40	150	28	G1/4	152	55	M6	232	222	G1/8	100	102	47	64	50,5	10	84	94	98,5	78	200	12	5,46	0,70	2,82
50	175	33	G1/4	200	62	M6	276	266	G1/8	120	117	63	75	57	12	95	110	118,5	90	240	16	8,60	0,95	4,07

(1) Weight with 0 mm stroke

(2) Weight to be added per 100 mm length

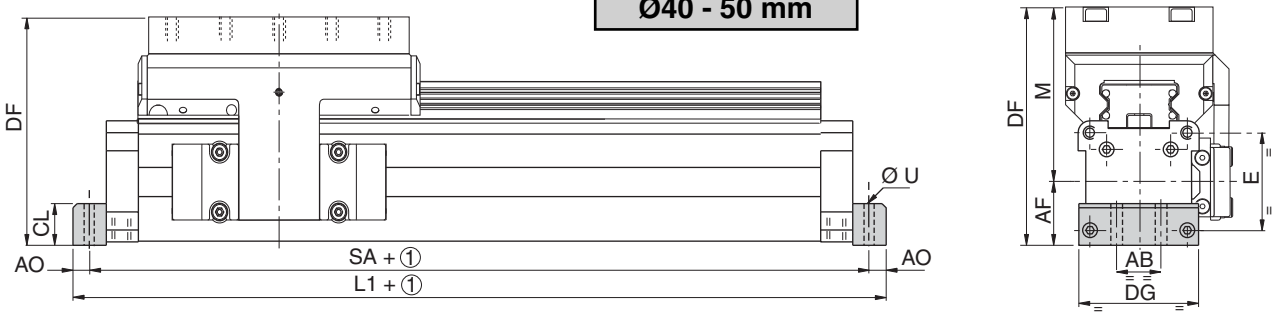
CYLINDER WITH MOUNTING **BRACKETS**

Ø25 - 32 mm



CYLINDER WITH MOUNTING **FLANGES**

Ø40 - 50 mm



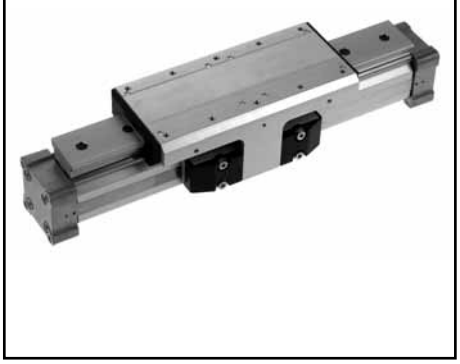
① : stroke

Bore (mm)	DIMENSIONS (mm)												Weights (kg)	
	AB	AF min	AF max	A0	CL	DF min	DF max	DG	E	L1	M	SA	U	Brackets	Flanges
25	27	22,7	32,3	9,5	2,5	95,7	105,3	39	27	250,8	73	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	114,5	127,2	50	36	292,4	82	273,8	7	0,117	-
40	30	35,2		11,3	24	119,2		68	54	348	84	325,4	9	-	0,210
50	31,8	46		16,2	30	141		86	70	398	95	365,6	10	-	0,308

RODLESS BAND CYLINDERS

Ø 25 - 50 mm - double acting
with carrier guided with rollers
with active brake
equipped for magnetic detectors

Series **448**
Type STBB



APPLICATION PRINCIPLE

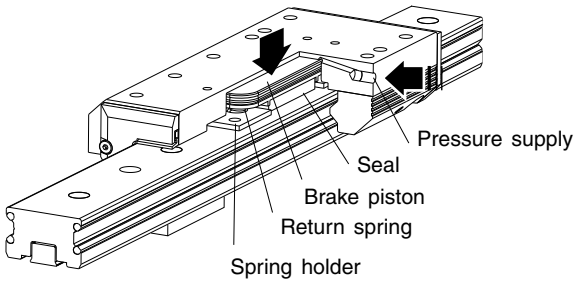
The brake is designed to stop the loaded cylinder carrier and hold it in the end-of-stroke position when it is supplied with pressure during machine operation.
The brake is a mechanical device which acts on the carrier's guide rail. It is released by spring actuation when the air pressure is removed.

Advantages

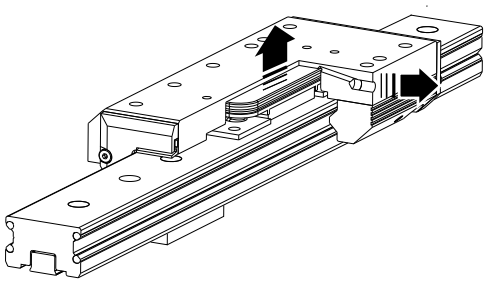
- Stops and holds carrier in the end-of-stroke position.
- Holds maximum allowable cylinder load without slipping.
- Intermediate stops possible.
- **Blocks by pressurisation**.
- Two-directional action.
- Any mounting position.

OPERATING PRINCIPLE

Pressure applied



No pressure applied



SPECIFICATIONS

CYLINDER: see page 21

ACTIVE BRAKE

FLUID : air or neutral gas, unlubricated
ALLOWABLE PRESSURE : 8 bar max.
AMBIENT TEMPERATURE : - 10°C, + 80°C
MOUNTING POSITION : any

Loads, moments and forces :

Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)	**Holding force** at 6 bar (in N)
	M	**M_s**	**M_v**	**L**	
25	39	16	39	857	consult us
32	73	29	73	1171	
40	158	57	158	2074	
50	249	111	249	3111	

MECHANICAL CHARACTERISTICS: see page 20

CHOICE OF EQUIPMENT

Ø Cylinder (mm)	CYLINDER EQUIPPED FOR DETECTOR		Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
	CODE(2)	REFERENCE			
25	**44850030** (1)	STBB 25 A - 0(3) - **AB** -_(1)_- DM	3750	G 1/8	17
32	**44850031** (1)	STBB 32 A - 0(3) - **AB** -_(1)_- DM	3750	G 1/4	20
40	**44850032** (1)	STBB 40 A - 0(3) - **AB** -_(1)_- DM	3750	G 1/4	27
50	**44850033** (1)	STBB 50 A - 0(3) - **AB** -_(1)_- DM	3750	G 1/4	30

For other strokes, consult us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately (see page 31)
(3) 1 for slow speed option

When ordering, please specify the code of the STTB cylinder with active brake, its stroke, reference and any accessories you may require.
Example:
Cylinder Ø 25 mm, 200 mm stroke, with active brake, without slow speed option: code **44850030200 - STB 25 A 0 AB 200 DM**

MOUNTINGS

Ø Cylinder (mm)	CODE  Low foot brackets (4)
25 **32**	**43400494** **43400495**

Ø Cylinder (mm)	CODE  Flanges
40 **50**	**43400496** **43400497**

Delivered with 2 foot brackets or 2 flanges plus cylinder mounting screws.
The mountings are delivered non assembled.
(4) Foot brackets for cylinders Ø 25 and 32 allow height adjustment.

ACCESSORIES

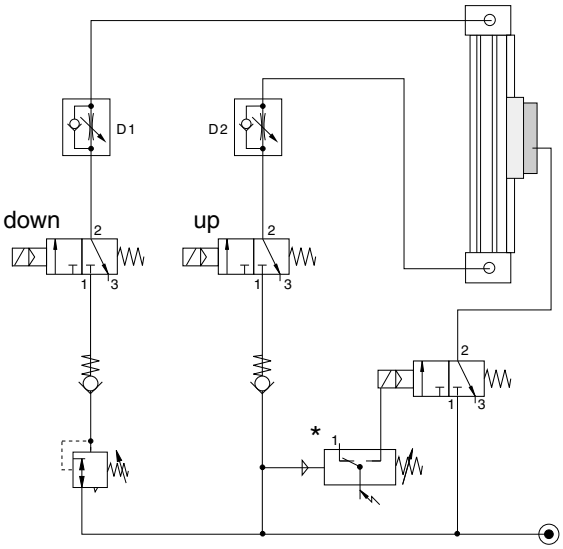
- **Tube support** (recommended to avoid buckling, depending on the stroke and load) - (see page 22)
- Shock absorbers (see page 30)
- Adaptor profile to enable valves or peripheral components to be fitted to the cylinder (see page 29)
- Magnetic detectors: Reed switch or magneto-inductive type (see page 31)

OPTIONS

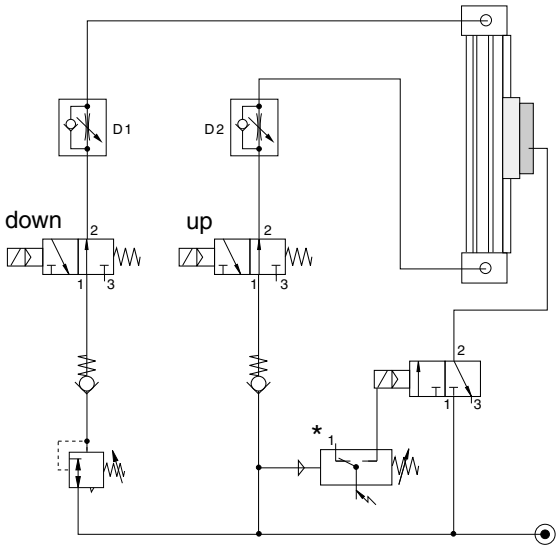
- Slow speeds from 5 mm/s to 0,2 m/s - code: Ø 25 : **995083** Ø 40 : **995085**
  Ø 32 : **995084** Ø 50 : **995086**
  (When selecting this option, you will have to change the cylinder reference to: STBB .. A **1** ... DM)
- Pressure supply ports on same side as guide rail (consult us)

WIRING DIAGRAM VERTICAL APPLICATION

Control of a cylinder with normally closed (NC) 3/2 spool valves (the cylinder chambers are exhausted when in the reset position).



Control of a cylinder with normally open (NO) 3/2 spool valves (the cylinder chambers are pressurised when in the reset position).



APPLICATION PRINCIPLE

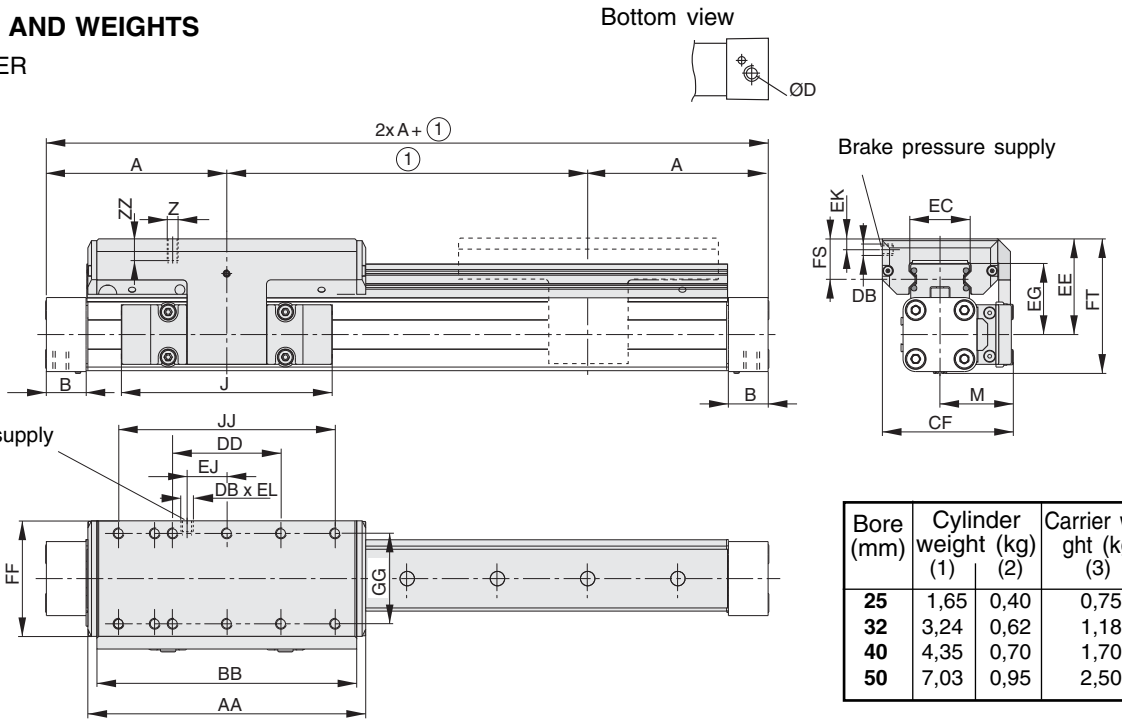
Under normal operating conditions, the pressure switch is closed. The 3/2 spool valve supplies air to the brake to release it and allow the cylinder to move. In the event of loss of pressure or pressure failure, the pressure switch activates the cylinder valve and locks the movement of the cylinder. When pressure is restored to the two cylinder chambers, the brake is once again released.
The flow reducers D1 and D2 do not have any influence on the brake. The two non-return valves enhance the stability of the system.
The pressure regulator is used to compensate the force of the load in vertical applications.

NOTE: Before releasing the brake, make sure both air chambers are pressurised. Tube length and size as well as the size of the fittings influence the reaction time of the brake. We recommend reducing tubing lengths and using adequately sized fittings.

❇ An adjustable pressure switch locks the brake when the pressure drops below a pre-set value.

DIMENSIONS AND WEIGHTS

BARE CYLINDER



Bore (mm)	Cylinder weight (kg) (1)	(2)	Carrier weight (kg) (3)
25	1,65	0,40	0,75
32	3,24	0,62	1,18
40	4,35	0,70	1,70
50	7,03	0,95	2,50

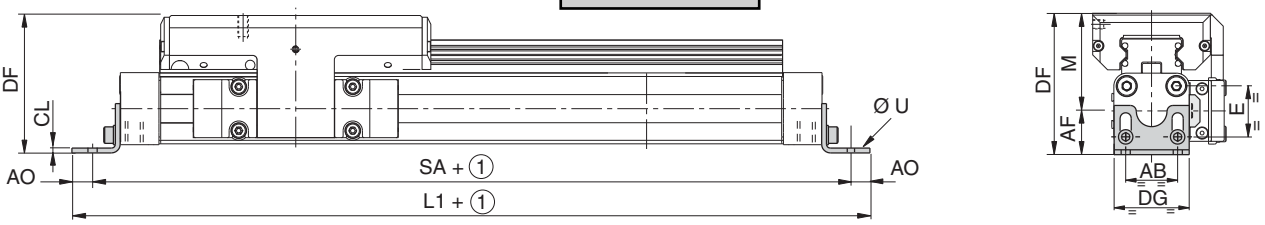
① : stroke

Bore (mm)	DIMENSIONS (mm)																					
	A	**B**	**D**	**J**	**M**	**Z**	**AA**	**BB**	**DD**	**DB**	**CF**	**EC**	**EE**	**EG**	**EJ**	**EK**	**EL**	**FF**	**FS**	**FT**	**GG**	**JJ**	**ZZ**
25	100,4	22	G1/8	117	40,5	M6	154	144	60	M5	72,5	32,5	53	39	22	6	6	64	23	73,5	50	120	12
32	125,2	25,5	G1/4	152	49	M6	197	187	80	M5	91	42	62	48	32	6	6	84	25	88	64	160	12
40	150	28	G1/4	152	55	M6	232	222	100	M5	102	47	64	50,5	58	9	6	94	23,5	98,5	78	200	12
50	175	33	G1/4	200	62	M6	276	266	120	M5	117	63	75	57	81	6	6	110	29	118,5	90	240	16

(1) Weight with 0 mm stroke
(2) Weight to be added per additional 100 mm length
(3) When using the cushioning diagram, be sure to add the weight of the carrier to the weight of the load to be moved.

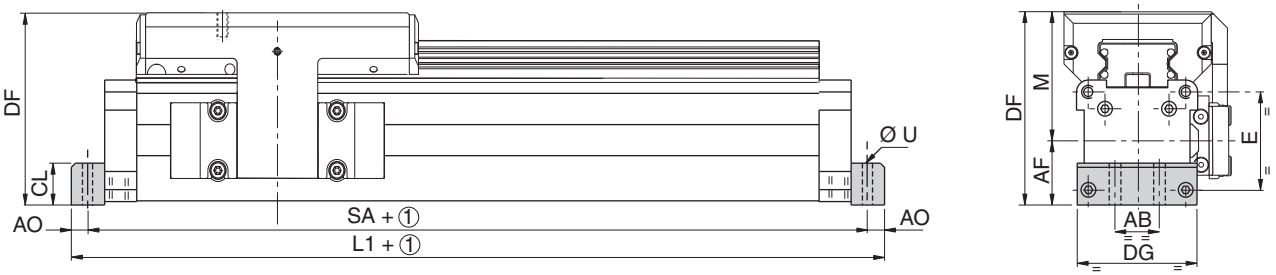
CYLINDER WITH MOUNTING **BRACKETS**

Ø25 - 32 mm



CYLINDER WITH MOUNTING **FLANGES**

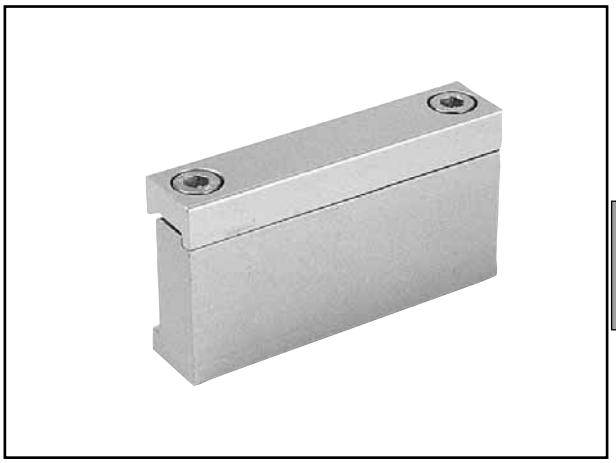
Ø40 - 50 mm



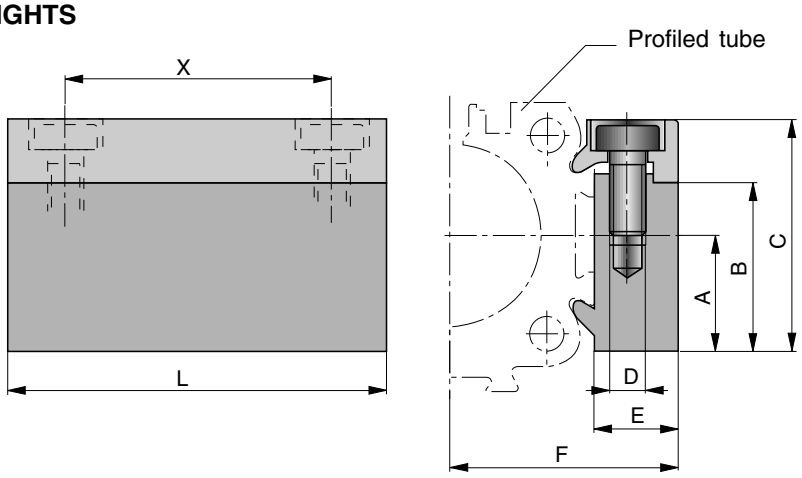
① : stroke

Bore (mm)	DIMENSIONS (mm)												Weights (kg)	
	AB	**AF min**	**AF max**	**A0**	**CL**	**DF min**	**DF max**	**DG**	**E**	**L1**	**M**	**SA**	**U**	**Brackets**	**Flanges**
25	27	22,7	32,3	9,5	2,5	75,7	85,3	39	27	250,8	53	231,8	6,6	0,072	-
32	36	32,5	45,2	9,3	3	94,5	107,2	50	36	292,4	62	273,8	7	0,117	-
40	30	35,2		11,3	24	99,2		68	54	348	64	325,4	9	-	0,210
50	31,8	46		16,2	30	121		86	70	398	75	365,6	10	-	0,308

The adaptor profile, which is directly fitted to the cylinder tube, is supplied as an accessory for the attachment of components such as:
- Spool valves
- Peripheral application components
- Cylinders



DIMENSIONS AND WEIGHTS



Ø Cylinder (mm)	CODE	DIMENSIONS (mm)								Weights (kg)
		A	B	C	D	E	F	L	X	
16	Consult us	14	20,5	28	M3	12	27	50	38	0,045
25		16	23	32	M5	10,5	30,5	50	36	0,050
32		16	23	32	M5	10,5	36,5	50	36	0,050
40		20	33	43	M6	14	45	80	65	0,145
50		20	33	43	M6	14	52	80	65	0,145

The standard rodless band cylinder are equipped with internal pneumatic cushioning. However, the band cylinder can bear heavier loads at higher velocities than that of which the cylinder cushion can absorb. Shock absorbers are used to increase the cylinder's service life and broaden the application range for the chosen cylinder.

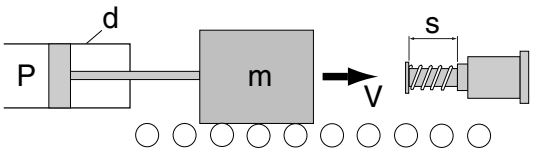
Selecting the neccessary absorber :

1- Define the following values:
- Weight of the load **m** to be moved (in kg)
- Final velocity **V** (in m/s)
- Cylinder diameter **d** (mm)
- Pressure **P** (bar)
- Cycles per hour **C**
- Cushioning length **s** (m)

2- Calculate to determine the shock absorber for your application.

Example: Moving load with proportional force

m = 80 kg	**P** = 6 bar
V = 1 m/s	**C** = 100/h
d = 50 mm	**s** = 0,02 m



Kinetic energy to be absorbed

$$W1 = \frac{m \times V^2}{2} = \frac{80 \times 1^2}{2} = 40 \text{ Nm}$$

$$Fp = 0{,}078 \times d^2 \times P$$
$$= 0{,}078 \times 50^2 \times 6$$
$$= 1170 \text{ Nm}$$

Propelling force to be absorbed

$$W2 = Fp \times s$$
$$= 1170 \times 0{,}02 = 23{,}4 \text{ Nm}$$

Total energy to be absorbed

$$W3 = W1 + W2 = 40 + 23{,}4 = 63{,}4 \text{ Nm}$$

Total energy to be absorbed per hour

$$W4 = W3 \times C = 63{,}4 \times 100 = 6340 \text{ Nm/h}$$

Effective weight

$$m.\,eff = \frac{2 \times W3}{V^2} = \frac{2 \times 63{,}4}{1^2} = 126{,}8 \text{ Nm}$$

Selected type = **SAI 25 - code 881 44 810**

CHOICE OF EQUIPMENT

NON-ADJUSTABLE SHOCK ABSORBER							
Type	Stroke (mm)	Effective weight **Me** (kg)		Max. energy absorbed (Nm)		Ø Thread (mm)	**CODE**
		min.	max.	par course **W3**	par heure **W4**		
SA 14	12,5	0,9	10	17	34000	M14 x 1,5	**88144804**
SA 14 S	12,5	8,6	86	17	34000	M14 x 1,5	**88144805**
SA 14 S2	12,5	68	205	17	34000	M14 x 1,5	**88144806**
SA 20	12,5	2,3	25	25	45000	M20 x 1,5	**88144807**
SA 20 S	12,5	23	230	25	45000	M20 x 1,5	**88144808**
SA 20 S2	12,5	182	910	25	45000	M20 x 1,5	**88144809**
SAI 25	25,4	9	136	68	68000	M25 x 1,5	**88144810**
SAI 25 S	25,4	113	1130	68	68000	M25 x 1,5	**88144811**
SAI 25 S2	25,4	400	2273	68	68000	M25 x 1,5	**88144812**
		ADJUSTABLE SHOCK ABSORBER					
SA 1/4 x 1/2	12,7	2,3	182	17	23000	M20 x 1,5	**88144813**
SA 3/8 x 1D	25,4	4,5	546	70	23000	M25 x 1,5	**88144814**

ACCESSORIES

Designation	Type	Type of absorber	**CODE**
Fastening nut	M14 x 1,5	SA14	**43400514**
	M20 x 1,5	SA20 - SA1/4	**43400515**
	M25 x 1,5	SAI25 - SA3/8	**43400516**
Flexible stop for :	SP14	SA14	**43400517**
	SP 20	SA20 - SA1/4	**43400518**
	SP 25	SAI25 - SA3/8	**43400519**

MAGNETIC POSITION DETECTOR

reed switch

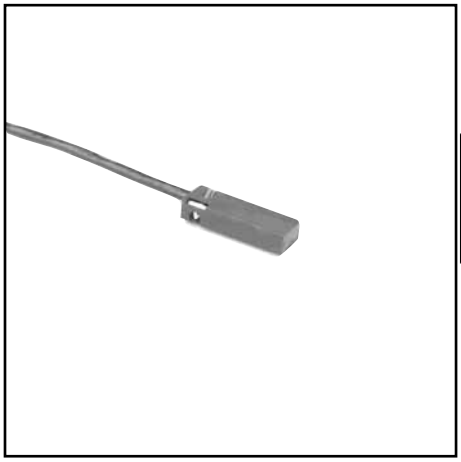
for series 448 rodless cylinders
types STBN - STB - STBB

Series
881
Type
2 wires

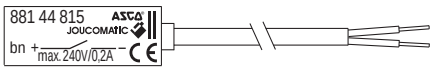
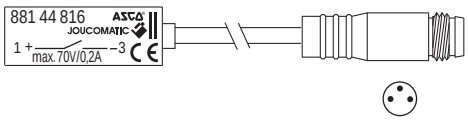
B

OPERATING PRINCIPLE

A permanent magnet (M) which is mounted on the piston of the air cylinder activates the reed switch of the non-contact magnetic position detector fastened in one of the dovetail rails in the non-magnetic cylinder body. One or more detectors can be mounted to control the cylinder's end-of-stroke or intermediate positions.



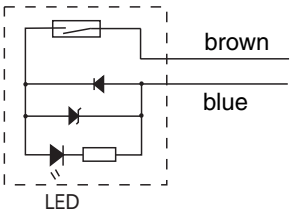
DETECTOR CHARACTERISTICS

MAX. SWITCHING CAPACITY	10 VA	
SWITCHING VOLTAGE	**10 to 240 V DC and AC**	**10 to 70 V DC and AC**
MAX. NOMINAL CURRENT	200 mA	
RESIDUAL VOLTAGE AT I_{Lmax}	< 3 v	
SWITCHING TIME	< 2 ms	
POLARITY REVERSAL	Led does not work	
SWITCHABLE CAPACITY	0,1µF at 100 Ω, 24 V DC	
SWITCHING DISTANCE	approx. 15 mm	
HYSTERESIS	< 2 mm	
LIFE	3 x 10^6 operations	
WORKING TEMPERATURE	- 25°C , + 80°C	
HOUSING	PEI	
DEGREE OF PROTECTION (CEI 529)	IP67	
SIGNAL INDICATION	Yellow diode (LED) which lights up when the contact is established	
CONNECTION (2 possibilities / 2 types at option)	5 m PVC lead, 2 wires 0,14 mm², stripped ends 	0,1 m PVC lead + 3-pin screw-type male connector, Ø M8 
Weight (g)	57,4	6,3
CODE DETECTOR + MOUNTING KIT (1)	**88144815**	**88144816**

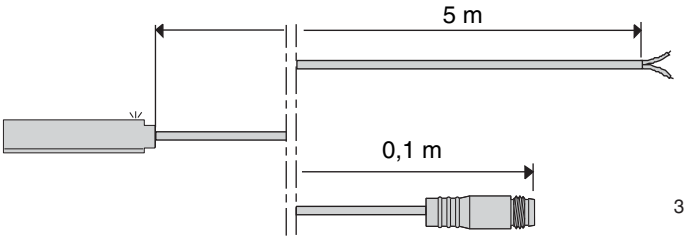
(1) Detector supplied with mounting kit for direct fitting into one of the dovetail rails on the rodless cylinder.

WIRING DIAGRAM OF REED-SWITCH TYPE POSITION DETECTOR

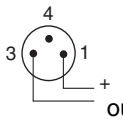
Detectors **88144815 - 88144816**
normally open (NO)



DETECTOR CONNECTION : 2 possibilities



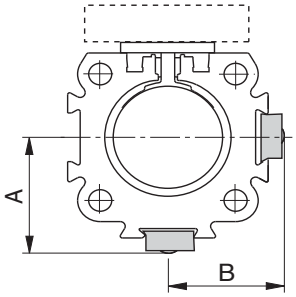
PVC lead outlet Ø 3 mm with stripped ends
2 wires 0,14 mm² . brown = +
blue = output



PVC lead outlet Ø 3 mm with 3-pin screw-type male connector Ø M8 (2 pins connected)

View on pin side of male connector

DIMENSIONS

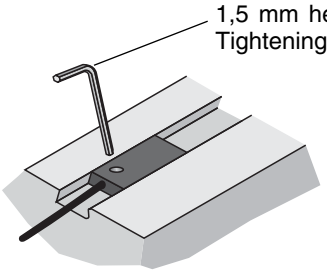


Bore (mm)	A	B
16	20,5	20
25	27	25
32	34	31
40	39	36
50	48	43
63	59	53
80	72	66

DETECTOR MOUNTING

The detector is directly fitted into one of the dovetail rails on the rodless cylinder using a hex key wrench. It is fastened with a locking screw after having been positioned at the point of detection.

1,5 mm hex key wrench
Tightening torque = 0,25 Nm

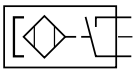


MAGNETIC POSITION DETECTOR

magneto-inductive type

for series 448 rodless cylinders
types STBN - STB - STBB

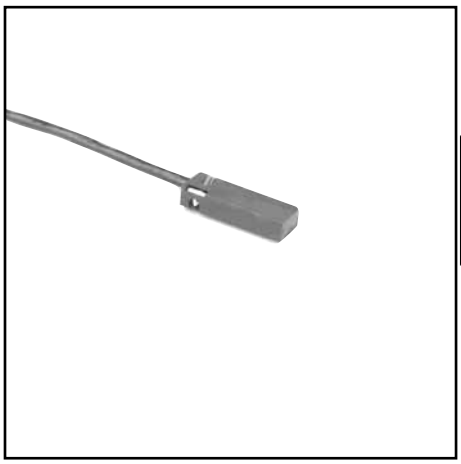
Series
881



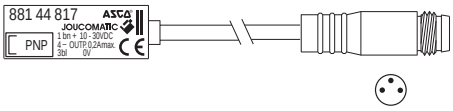
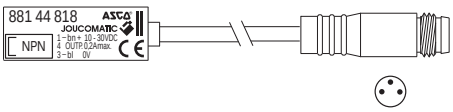
B

OPERATING PRINCIPLE

The permanent magnet is mounted to the piston. When the magnet approaches the detector, its own magnetic field generates variations of the current within the detector oscillator. An amplifier converts them into switch signals.



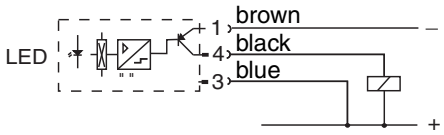
DETECTOR CHARACTERISTICS

MAX. SWITCHING CAPACITY	10 VA	
SWITCHING VOLTAGE	**10 to 30 V DC**	
FUNCTION	PNP or NPN on closing	
MAX. NOMINAL CURRENT	200 mA	
RESIDUAL VOLTAGE AT I_{Lmax}	< 3 v	
SWITCHING TIME	< 2 ms	
REVERSE POLARITY PROTECTION	integrated	
SHORT-CIRCUIT PROTECTION	integrated	
SWITCHABLE CAPACITY	0,1µF at 100 Ω, 24 V DC	
SWITCHING DISTANCE	approx. 15 mm	
HYSTERESIS	< 2 mm	
LIFE	practically unlimited	
WORKING TEMPERATURE	- 25°C , + 80°C	
HOUSING	PEI	
DEGREE OF PROTECTION(CEI 529)	IP67	
SIGNAL INDICATION	Yellow diode (LED) which lights up when the contact is established	
CONNECTION (2 possibilities / 2 types at option)	0,1 m PUR lead + 3-pin screw-type male connector, Ø M8 **PNP** function 	0,145 m PUR lead + 3-pin screw-type male connector, Ø M8 **NPN** function 
Weight (g)	5,4	6
CODE DETECTOR + MOUNTING KIT (1)	**88144817**	**88144818**

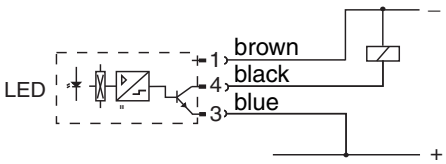
(1) Detector supplied with mounting kit for direct fitting into one of the dovetail rails on the rodless cylinder.

WIRING DIAGRAM OF MAGNETO-INDUCTIVE POSITION DETECTOR

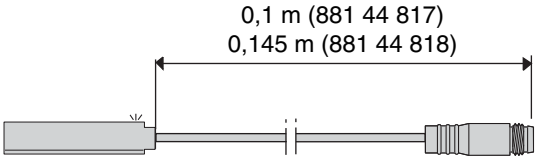
Detector **88144817**
PNP functin on closing

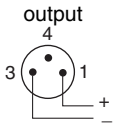


Detector **88144818**
NPN function on closing



MAGNETO-INDUCTIVE DETECTOR CONNECTION: 1 possibility

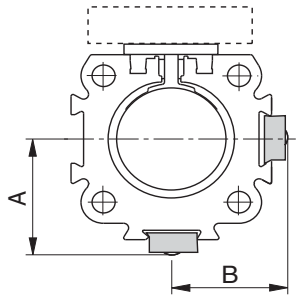




PUR lead outlet Ø 3 mm with 3-pin screw-type male connector Ø M8

View on pin side of male connector

DIMENSIONS



Bore (mm)	A	B
16	20,5	20
25	27	25
32	34	31
40	39	36
50	48	43
63	59	53
80	72	66

DETECTOR MOUNTING

The detector is directly fitted into one of the dovetail rails on the rodless cylinder using a hex key wrench. It is fastened with a locking screw after having been positioned at the point of detection.

1,5 mm hex key wrench
Tightening torque = 0,25 Nm