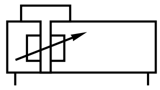
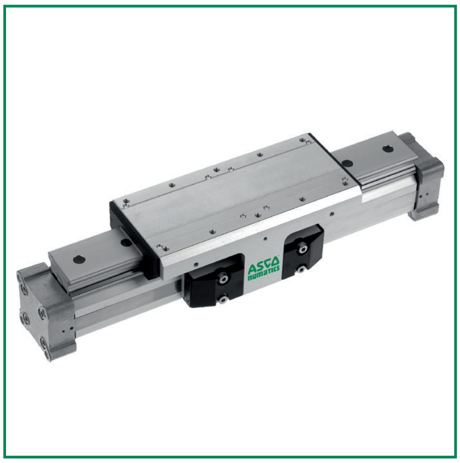
RODLESS BAND CYLINDERS
Ø 25 - 50 mm - double acting
carrier guided with rollers
equipped for magnetic detectors

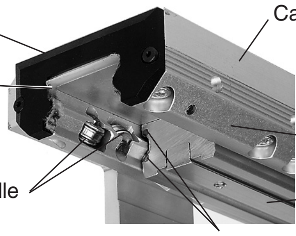


Series **448**
Type **STBB**



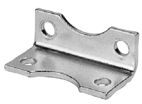
SPECIFICATIONS
FLUID	: Air or neutral gas, filtered, unlubricated
PRESSURE	: 8 bar max.
TEMPERATURE	: -10°C to +80°C
STROKE min.	: 5 mm (without detectors)
	: 100 mm (with detectors)
max. standard	: See below (contact us for longer strokes)
MAXIMUM VELOCITY	: 0,2 to 4 m/sec

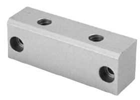
CONSTRUCTION
Tube	: Anodised aluminium
Ends	: Anodised aluminium
Carrier (piston)	: Anodised aluminium
Piston seals	: Nitrile (NBR)
Piston brackets	: High resistance stamped steel
Bands	: Stainless steel
Magnet	: Placed inside the piston
Covers, wipers	: Plastic
Screws	: Galvanised steel
Cushioning	: 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 CODE[2]	REFERENCE	Max. allowable stroke (mm)	Pipe size	Cushioning length (mm)
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, contact us.
(1) Specify stroke (in mm)
(2) Position detectors are to be ordered separately
(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)
- Shock absorbers
- Magnetic detectors: Reed switch or magneto-inductive type

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)

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).

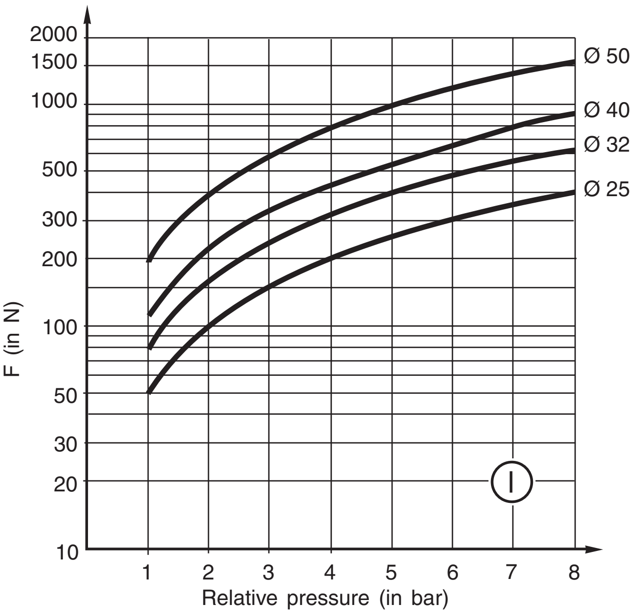
Cushioning capacity

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.

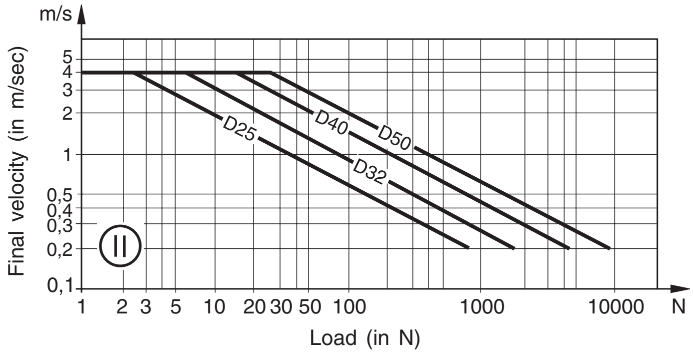
OTHER ACCESSORIES:

- 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



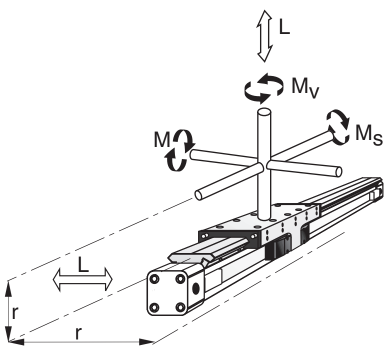
CUSHION DATA



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:

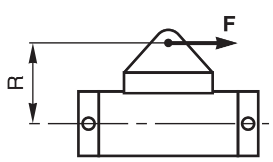
Final V = 1,5 x average velocity

ALLOWABLE BENDING/TWISTING MOMENTS

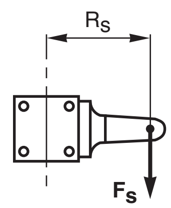


Ø Cylinder (mm)	Bending moments (in N.m)			Load (in N)	Carrier weight (in kg)
	M	M_s	M_v	L	
25	39	16	39	857	0,75
32	73	29	73	1171	1,18
40	158	57	158	2074	1,70
50	249	111	249	3111	2,50

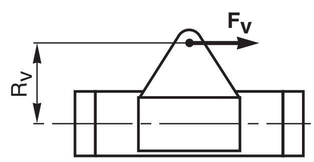
Note: When using the cushioning diagram, be sure to add the weight of the carrier (and that of the brake) to the weight of the load to be moved.



M = F x R



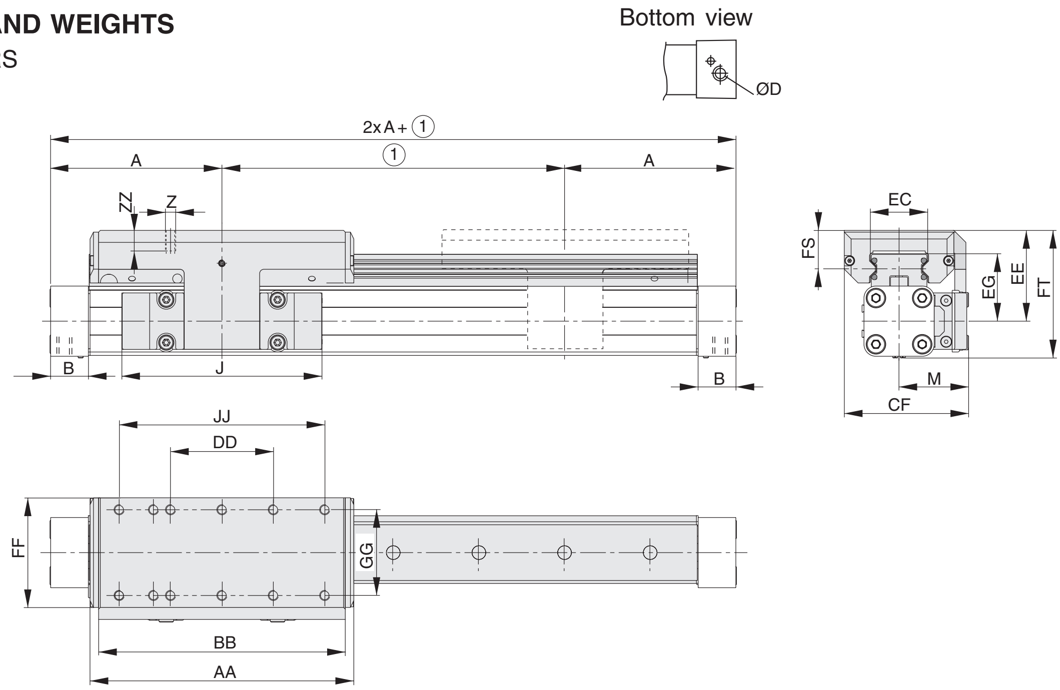
$M_s = F_s \times R_s$



$M_v = F_v \times R_v$

DIMENSIONS AND WEIGHTS

BARE CYLINDERS



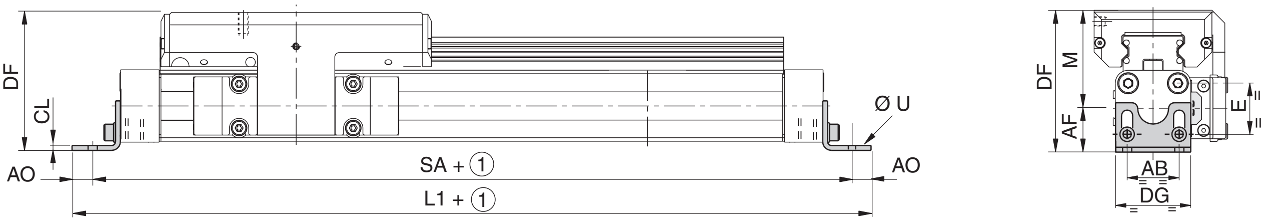
1 : stroke

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.

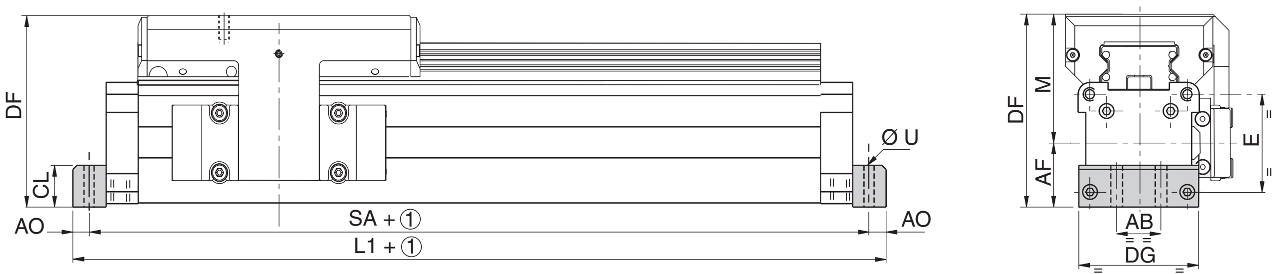
CYLINDER WITH MOUNTING **BRACKETS**

Ø25 - 32 mm



CYLINDER WITH MOUNTING **FLANGES**

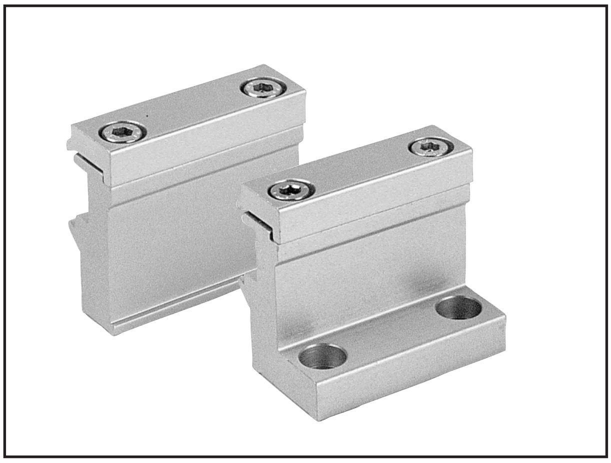
Ø40 - 50 mm

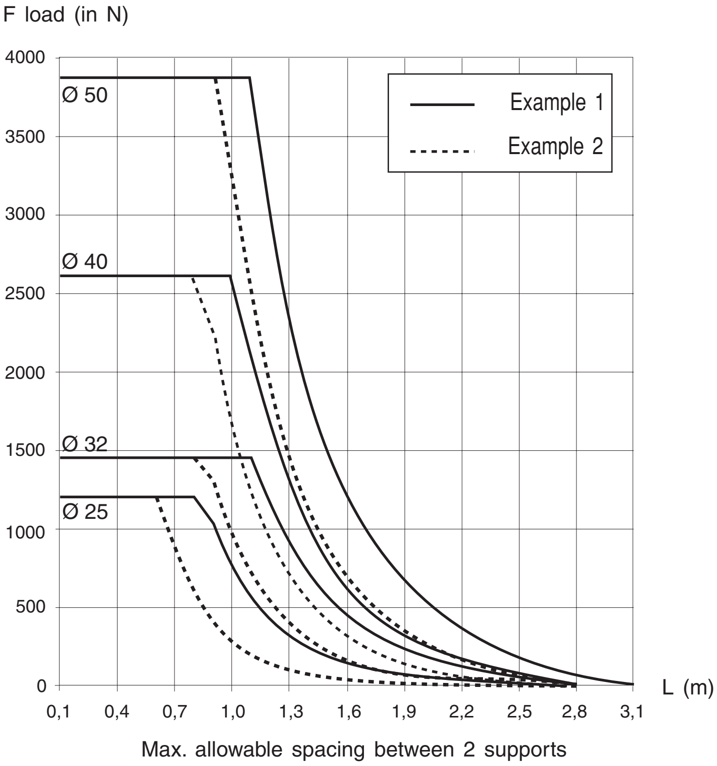


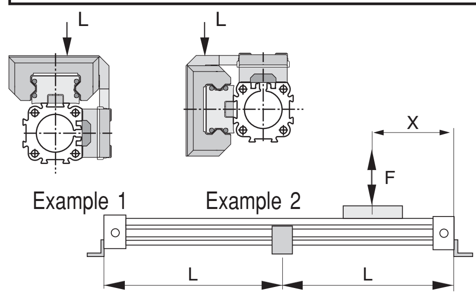
1 : stroke

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.







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

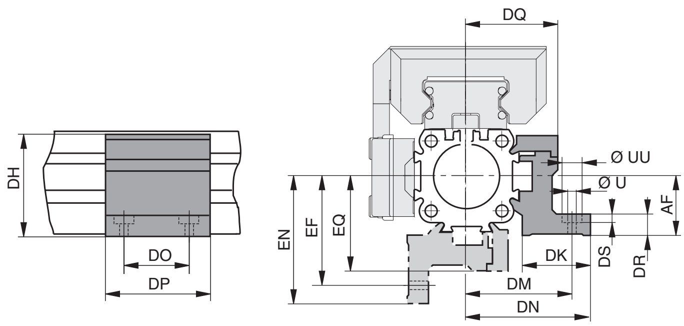
$$n = \left(\frac{\text{Stroke} + 2\ X}{L}\right) - 1$$

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

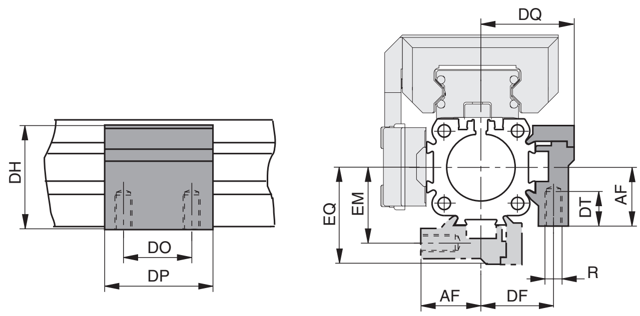
The tube supports must be mounted into the dovetailrails on the cylinder as shown below.

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