"H" GUIDING UNIT

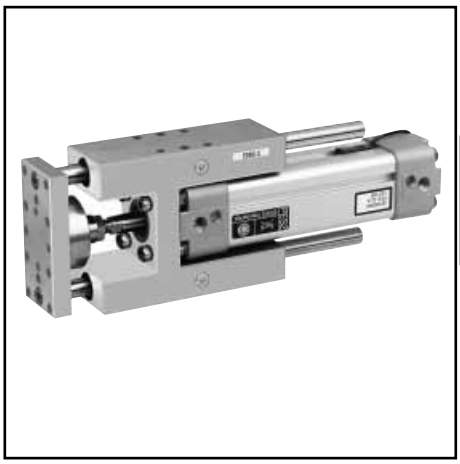
JOUCOMATIC suitable for ISO 15552-AFNOR-DIN air cylinders

Ø 32 to 100 mm

with 4 slide or ball bearings

Series **450-452 453**

Type PES-PLS



B

CONSTRUCTION

GUIDING UNIT WITH **SLIDE BEARINGS**
- Single block unit, metal body
- 4 bronze sintered self-lubricating roller bearings
- 2 chrome-plated steel guiding rods
- Lip seals on the guiding rods

GUIDING UNIT WITH **BALL BEARINGS**
- Monolithic construction
- 4 linear ball bearings
- 2 hardened guiding rods
- Lip seals on the guiding rods
- 2 type KP2K DIN 51825 grease nipples

High quality components with the following characteristics:
- High admissible loads
- Accurate guiding
- High sturdiness
- Excellent mobility, low wear and long life with the linear ball bearings
- The cylinder rod is fixed to the guiding unit by means of an alignment compensation bracket

CYLINDER ADAPTATIONS
- Double-acting PES type-Series 450, 453, PLS type Series 452 standard ISO 15552-AFNOR ISO 15552-DIN ISO 15552
- With profiled tube plate or with tie rods
- With or without pneumatic cushioning
- Ready to receive magnetic position detectors or not

For other characteristics, see leaflet P229

SPECIFICATIONS

FLUID	: Air or neutral gas, filtered, lubricated or NOT
PRESSURE	: 10 bar max.
TEMPERATURE	: -20°C, +70°C
MIN. STROKE (with detectors)	: 110 mm
MAX. STROKE	: 500 mm (other strokes on request)
MAX. SPEED	: 1 m/s
CONSTRUCTION	: as per **CNOMO E06.28.510.N** recommendation

MOUNTINGS

- Guiding unit on frame: 3 mounting options using 4 tapped holes (on the 2 smallest sides or on one of the large sides), more 2 holes for centring.
- Load on the guiding unit: 2 options, using 4 tapped holes or using 4 countersunk holes, more 2 holes for centring.

ORDERING When ordering, please specify:

■ CYLINDER + GUIDING UNIT
- Standard code or reference for the PES-PLS cylinders → **450 .. ...** (see P229-5) / **452 .. ...** (see P229-9) / **453 .. ...** (see P229-15)
- Optional code of the guiding unit → See documentation P229-14 on PES cylinders series 453 with profiled barrel to definie the position and the choice of grooves in relation to the guiding unit.

Cylinder stroke ✻ (mm)	CODE OF THE GUIDING UNIT WITH **SLIDE BEARINGS**						CODE FOR GUIDING UNIT WITH **BALL BEARINGS**					
	Ø 32 ✻✻	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100
50	**010762**	**010770**	**010778**	**010786**	**010794**	**010802**	**010653**	**010661**	**010669**	**010677**	**010685**	**010693**
80	**010844**	**010846**	**010848**	**010850**	**010852**	**010854**	**010856**	**010858**	**010860**	**010862**	**010864**	**010866**
100	**010763**	**010771**	**010779**	**010787**	**010795**	**010803**	**010654**	**010662**	**010670**	**010678**	**010686**	**010694**
125	**010845**	**010847**	**010849**	**010851**	**010853**	**010855**	**010857**	**010859**	**010861**	**010863**	**010865**	**010867**
160	**010764**	**010772**	**010780**	**010788**	**010796**	**010804**	**010655**	**010663**	**010671**	**010679**	**010687**	**010695**
200	**010765**	**010773**	**010781**	**010789**	**010797**	**010805**	**010656**	**010664**	**010672**	**010680**	**010688**	**010696**
250	**010766**	**010774**	**010782**	**010790**	**010798**	**010806**	**010657**	**010665**	**010673**	**010681**	**010689**	**010697**
320	**010767**	**010775**	**010783**	**010791**	**010799**	**010807**	**010658**	**010666**	**010674**	**010682**	**010690**	**010698**
400	**010768**	**010776**	**010784**	**010792**	**010800**	**010808**	**010659**	**010667**	**010675**	**010683**	**010691**	**010699**
500	**010769**	**010777**	**010785**	**010793**	**010801**	**010809**	**010660**	**010668**	**010676**	**010684**	**010692**	**010700**

✻ Other strokes on request

■ GUIDING UNIT ALONE :

Cylinder stroke ✻ (mm)	CODE OF THE GUIDING UNIT WITH **SLIDE BEARINGS**						CODE FOR GUIDING UNIT WITH **BALL BEARINGS**					
	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100
50	**88145176**	**88145184**	**88145192**	**88145201**	**88145209**	**88145217**	**88145062**	**88145070**	**88145078**	**88145086**	**88145094**	**88145103**
80	**88145282**	**88145284**	**88145286**	**88145288**	**88145290**	**88145292**	**88145294**	**88145296**	**88145298**	**88145300**	**88145302**	**88145304**
100	**88145177**	**88145185**	**88145193**	**88145202**	**88145210**	**88145218**	**88145063**	**88145071**	**88145079**	**88145087**	**88145095**	**88145104**
125	**88145283**	**88145285**	**88145287**	**88145289**	**88145291**	**88145293**	**88145295**	**88145297**	**88145299**	**88145301**	**88145303**	**88145305**
160	**88145178**	**88145186**	**88145194**	**88145203**	**88145211**	**88145219**	**88145064**	**88145072**	**88145080**	**88145088**	**88145096**	**88145105**
200	**88145179**	**88145187**	**88145195**	**88145204**	**88145212**	**88145220**	**88145065**	**88145073**	**88145081**	**88145089**	**88145097**	**88145106**
250	**88145180**	**88145188**	**88145196**	**88145205**	**88145213**	**88145221**	**88145066**	**88145074**	**88145082**	**88145090**	**88145098**	**88145107**
320	**88145181**	**88145189**	**88145197**	**88145206**	**88145214**	**88145222**	**88145067**	**88145075**	**88145083**	**88145091**	**88145099**	**88145108**
400	**88145182**	**88145190**	**88145198**	**88145207**	**88145215**	**88145223**	**88145068**	**88145076**	**88145084**	**88145092**	**88145101**	**88145109**
500	**88145183**	**88145191**	**88145199**	**88145208**	**88145216**	**88145224**	**88145069**	**88145077**	**88145085**	**88145093**	**88145102**	**88145110**

✻ Other strokes on request

■ MINIATURE MAGNETIC POSITIONS DETECTORS

The magnetic position detectors are ordered separately:
- "T" model (see page P291), reed switch or magneto-resistive type
- "BIM" model, magneto-inductive (see page P297)

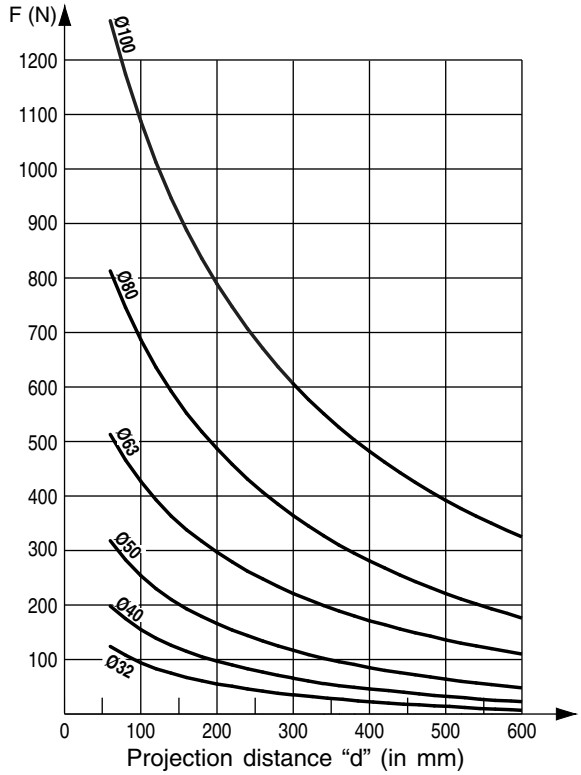
❄❄In the case of use of a BIM magnetic detector on PES series 450 Ø 32, it is necessary to add the option code = 995125

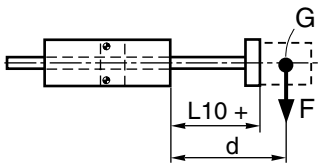
- **Front position** control (rod out): Its mounting excepted, the magnetic position detector and its electrical characteristics are identical to the detector used for the PES cylinders.
- **Rear position** control (rod in): Detector and support are identical to those used for PES cylinders.

Min. stroke (mm) of series 450 type PES cylinders with tie-rods and magnetic position detection

	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
detectors on one tie-rod	65	60	85	85	100	100
detectors on different tie-rods	50	50	75	65	80	75

• MAXIMUM ADMISSIBLE LOAD "F" ON THE ROD END





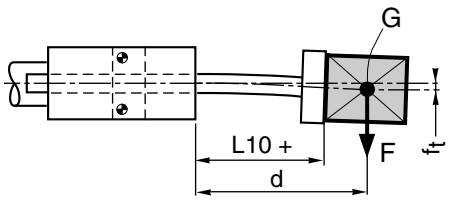
d = the projection distance (in mm) corresponding to the dimension L10 + the stroke length + the distance from the load centre of gravity (G) to the mating surface of the cylinder flange

Note:
The values in the opposite chart correspond to those in regular horizontal movement of the guiding unit with the rods in the same horizontal plane. In the case of vibration or jerky movement, **halve** the maximum allowable load values.

• DETERMINING THE DEFLEXION

Deflection under load as a function of projection distance "d", corresponds to the sum of no-load deflection f_0 and flection f_{10} under load, the latter being proportional to the deflection caused by 10 N.

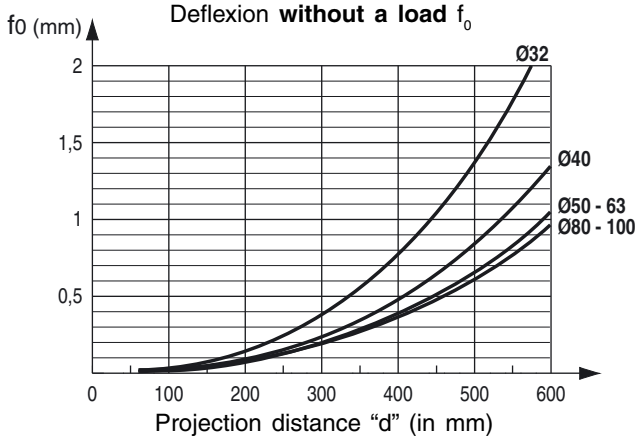
d = projection distance (in mm) as defined above.



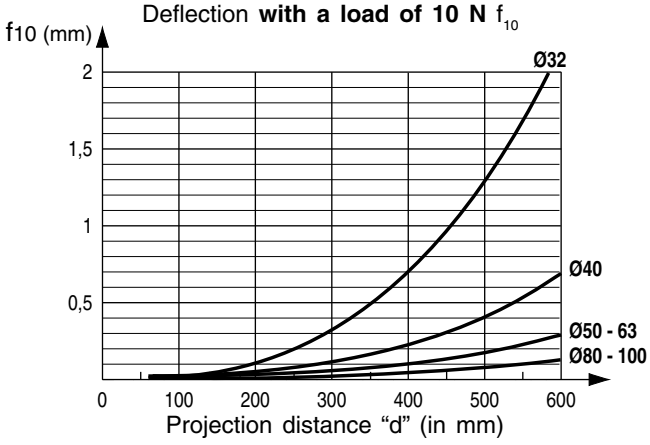
$$f_t = f_0 + (f_{10} \times \frac{F}{10})$$

f_t = Total deflexion (in mm)
f_0 = Deflexion without a load (in mm)
f_{10} = Deflexion with a load of 10 N (in mm)
F = Load on the rod ends (in N)

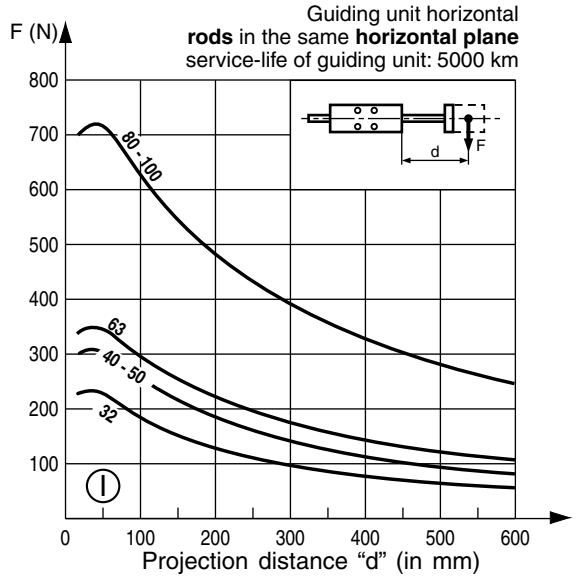
Deflexion **without a load** f_0

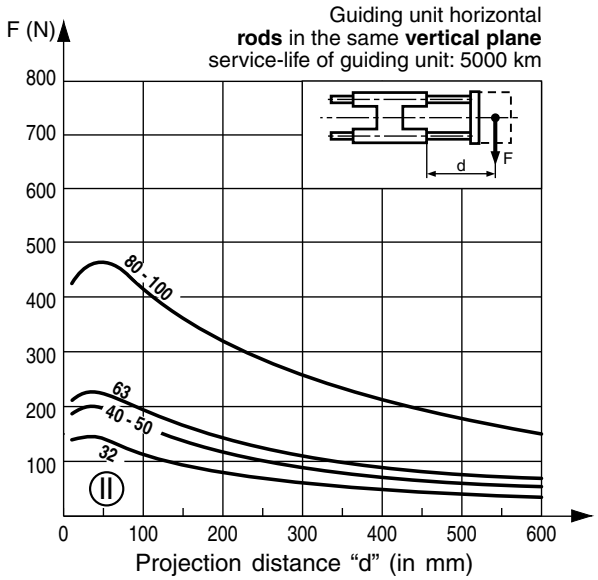


Deflection **with a load of 10 N** f_{10}

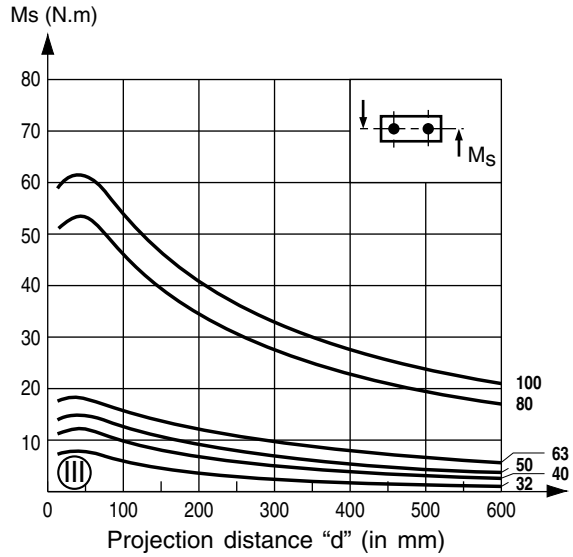


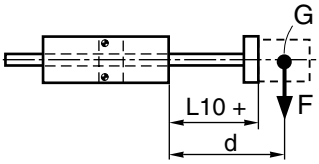
• MAXIMUM ADMISSIBLE LOAD "F" ON THE ROD END





• MAXIMUM ALLOWABLE MOMENTS "Ms" AT ROD END

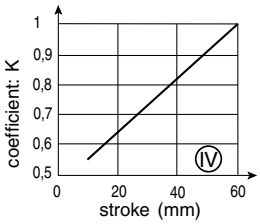




d = the projection distance (in mm) corresponding to the dimension L10 + the stroke length + the distance from the load centre of gravity (G) to the mating surface of the cylinder flange

Note: the values in charts (I), (II) and (III) correspond to those in regular horizontal movement. In the event of vibration or jerky movement, **halve** the maximum allowable values.

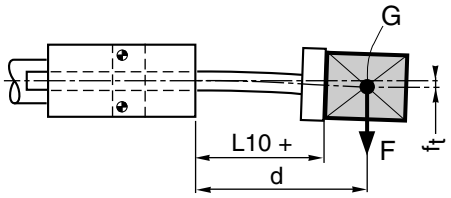
Whatever the stroke of the cylinder, its movement is only a small proportion of the travel (not more than 60 mm), it is necessary to reduce the maximum allowable torques and loads by multiplying the values taken from charts (I), (II) and (III) by coefficient K from chart (IV). For short travels which do not exceed 60 mm, the curves allow for this reduction in performance.



• DETERMINING THE DEFLEXION

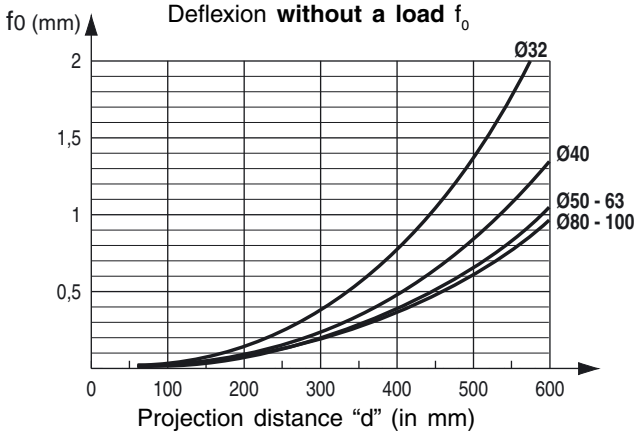
Deflection under load as a function of projection distance "d", corresponds to the sum of no-load deflection f_0 and flection f_{10} under load, the latter being proportional to the deflection caused by 10 N.

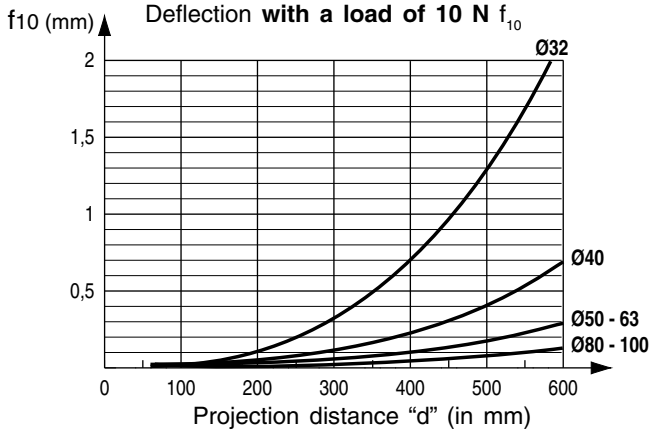
d = projection distance (in mm) as defined above.



$$f_t = f_0 + (f_{10} \times \frac{F}{10})$$

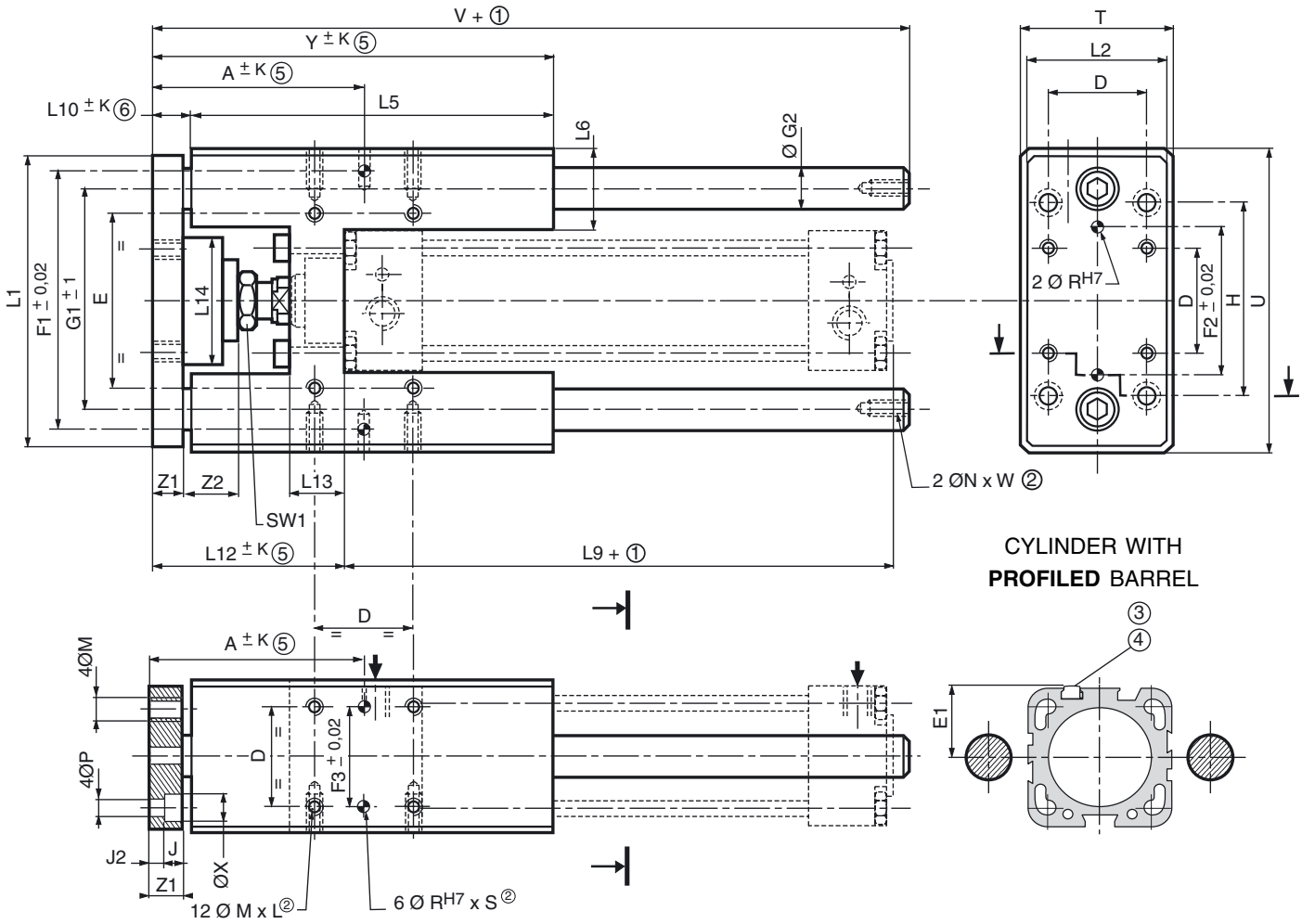
f_t = Total deflexion (in mm)
f_0 = Deflexion without a load (in mm)
f_{10} = Deflexion with a load of 10 N (in mm)
F = Load on the rod ends (in N)





DIMENSIONS (mm), **WEIGHT** (kg)

(Dimensions conforming with CNOMO E06.28.510.N)



(1) : + stroke
(2) : Depth
(3) : Position detector mounting
(4) : For small stroke cylinders, the standard detector for rear position control must be mounted on the profiled tube plate or tie rod opposite to the tie rod of the front position detector.
(5) : Dimension variable: ± K .End play: 0,1 mm
(6) : Weights of cylinders: see leaflet P229 or P232
(7) : Weight to be added per additional 100 mm length
◔ : 6 + 2 holes ØR H7 for centering pins

NOTE: The guiding units with a linear ball bearings must be lubricated every 3000 km, and more frequently if they are used in dusty surroundings

Ø	A	D	E	E1	F1 ± 0,02	F2 ± 0,02	F3 ± 0,02	G1	G2	H	J	J2	K	L	L1	L2	L5	L6	L9
32	78,5	32,5	61	42	81	50	32,5	74	12	78	6,5	5,5	2,5	12	90	45	130	23,2	98
40	85	38	69	45	99	54	38	86,7	16	84	6,5	5,5	3	12	110	54	140	28,3	109
50	97	46,5	85	51	119	72	46,5	103,7	20	100	9	6	4	16	130	63	150	33,3	110
63	106	56,5	100	55	132	82	56,5	118,7	20	105	9	6	4	16	145	80	182	33,3	125
80	130	72	130	64	166	106	72	147	25	130	11	9	5	20	180	100	215	40,5	132
100	140,5	89	150	71	190	131	89	173	25	150	11	9	5	20	200	120	220	40,8	142

Ø	L10	L12	L13	L14	M	N	P	R (H7)	S	SW1	T	U	V	W	X	Y	Z1	Z2	weight guiding unit slide bearings (6)	ball bearings (6)	(7)
32	17,5	71,5	17	45	M6	M6	6,6	6	10	16	50	97	182	11	11	147,5	12	25	1,450	1,500	0,180
40	18	77	21	46	M6	M6	6,6	6	10	18	58	115	192	11	11	158	12	25	2,205	2,300	0,315
50	22	92,5	25	55	M8	M8	9	6	10	24	70	137	237	16	15	172	15	28	3,700	3,790	0,490
63	22	93	25	68	M8	M8	9	6	10	24	85	152	237	16	15	204	15	28	5,070	5,170	0,490
80	28	115	34	90	M10	M10	11	6	10	30	105	188	280	16	18	243	20	33	9,260	9,430	0,770
100	28,5	120,5	39	90	M10	M10	11	6	10	30	130	214	280	16	18	248,5	20	33	11,540	11,710	0,770