

## CAS24 - Telescopic axis

The telescope axis **CAS24** is suitable for applications to load parts into working areas and to unload parts from working areas under the following conditions:

- The available space is limited
- And/or the handling system must be removed from the working area.

E.g. this is a requirement for loading / unloading machines or to handle products stored in shelves, where a cartesian robot, that is placed between should have access to both sides.

The most significant advantage of the telescope axis is that it is very **compact** and that the overall length can be shorter, than the effective stroke-length.

A variety of versions allow customizing the **CAS24** for individual application requirements such as single axis applications or in combination with multiple axes as an element for flexible robotics solutions.

The axis can be driven by **Schneider Electric Motion** motors or with customer specified motors.



### Features

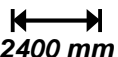
- Roller or circulating ball bearings for optimized running characteristics.
- The guides can be lubricated from the outside, and require no further maintenance.
- Extruded aluminum profile with high torsional and flexural strength.
- Versatile mounting possibilities due to the plain underside and „item“ compatible grooves on three sides of the profile.
- Standard motors are directly mounted to the drive pulley. As a result no motor couplings are required and weight, space and costs are reduced.
- Axis available in corrosion resistant material.
- Stroke length up to 2400 mm. Cut to length.

Maximum load



35 kg

Maximum stroke



2400 mm

Maximum speed



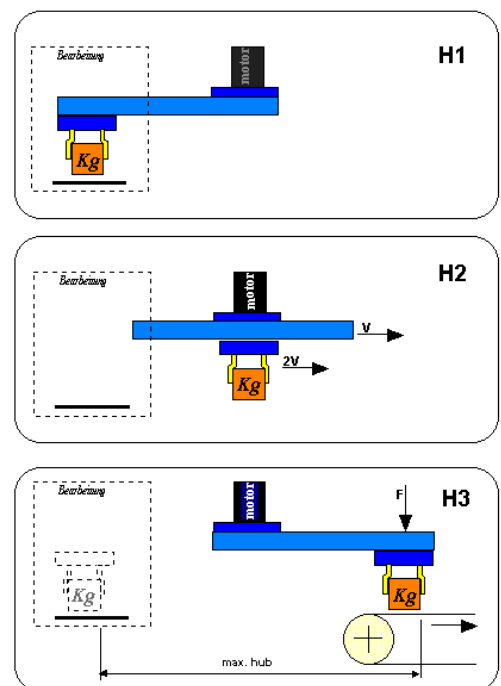
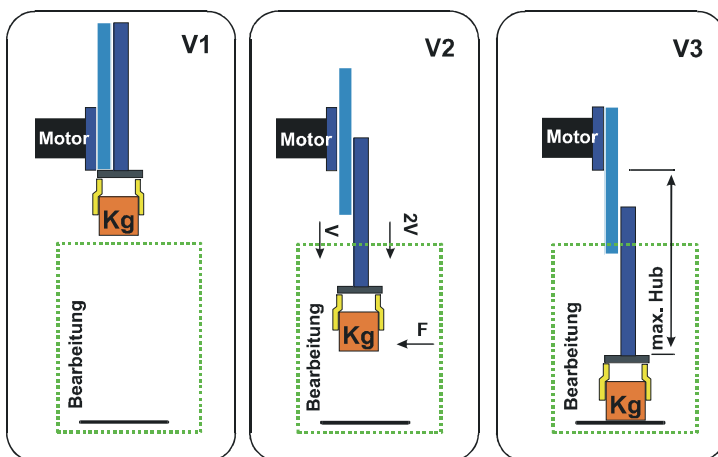
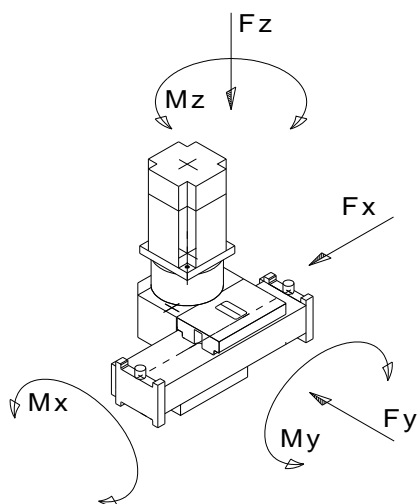
5 m/s

Maximum driving torque

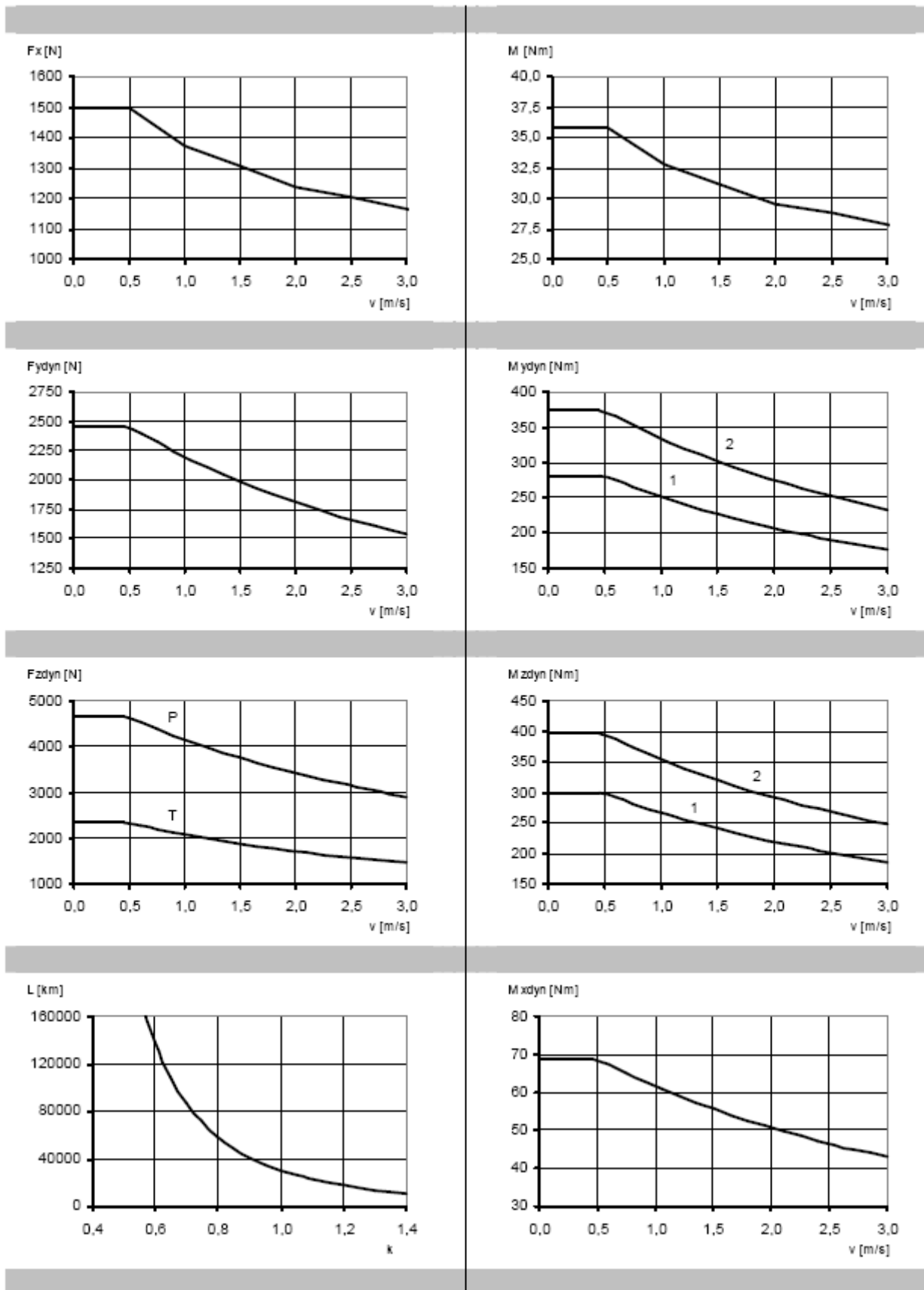


30 Nm

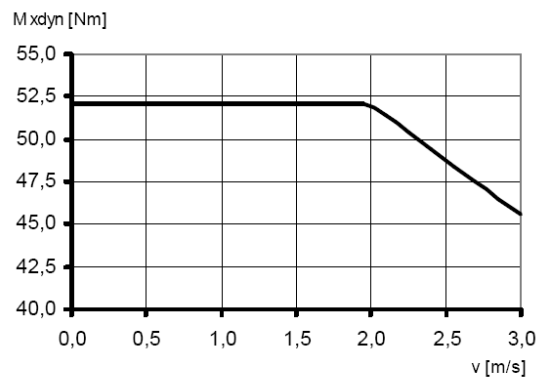
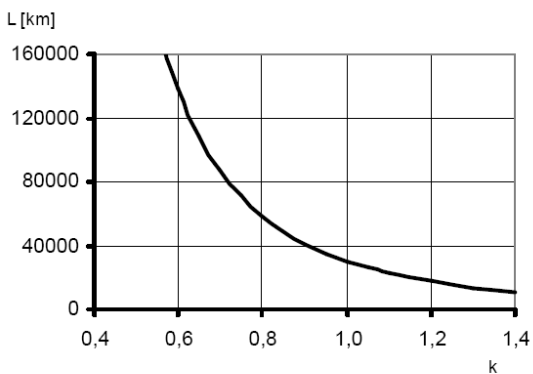
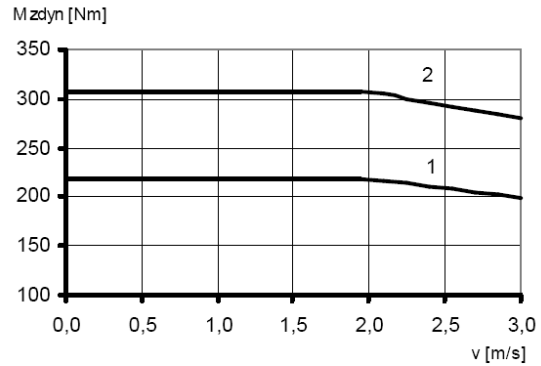
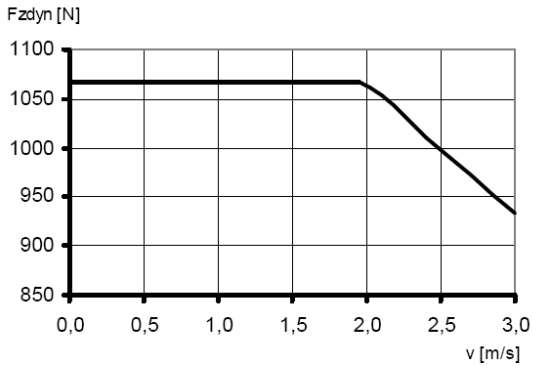
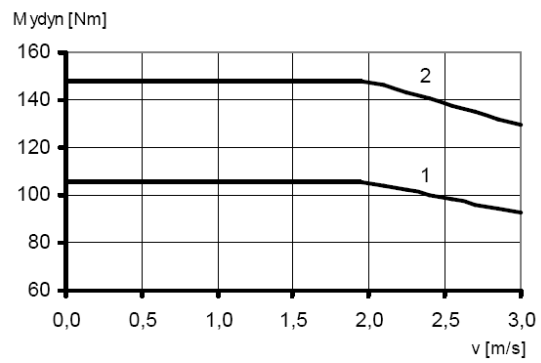
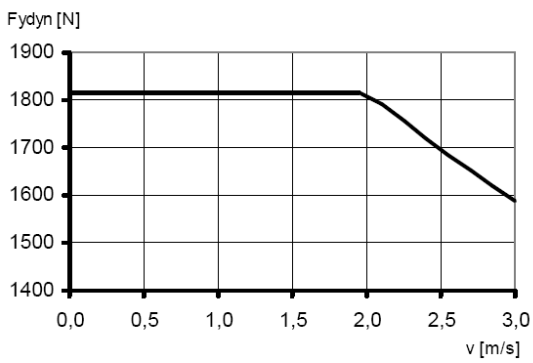
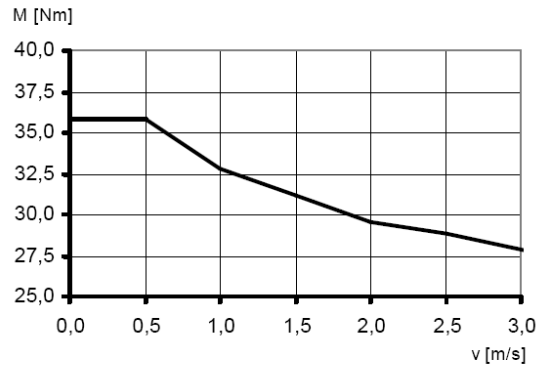
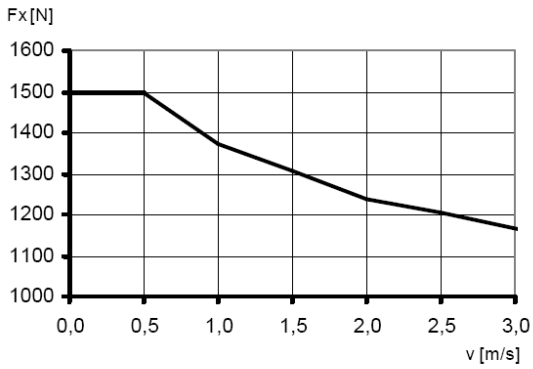
Technical Data					
Type designation portalaxis		CAS24BR		CAS24BB	
Drive system		toothed belt 50T10		toothed belt 50T10	
Guide type		rollers (W10)		ball-rail (SSR15XW)	
Typical payload	kg	25		35	
Carriage type		Type 1	Type 2	Type 1	Type 2
Max. force $F_{xmax}$ 4)	N	1500		1500	
Max. speed 3)	m/s	3		3	
Max. acceleration 3)	$m/s^2$	20		20	
Max. drive torque $M_{max}$ 4)	Nm	36		36	
Max. force $F_{ydynmax}$ 4)	N	1810		2460	
Max. force $F_{zdynmax}$ 4)	N	1070 / 1070		4650 / 2320	
Max. torque $M_{ydynmax}$ 4)	Nm	106	148	281	374
Max. torque $M_{zdynmax}$ 4)	Nm	219	308	298	397
Max. torque $M_{xdynmax}$ 4)	Nm	52		70	
Max. stroke 1)	mm	2400		2400	
Repeat accuracy 3)	mm	$\pm 0,1$		$\pm 0,1$	
Profile cross section (W x H)	mm	120 x 95		120 x 95	
Lifetime reference value	km	30000		30000	



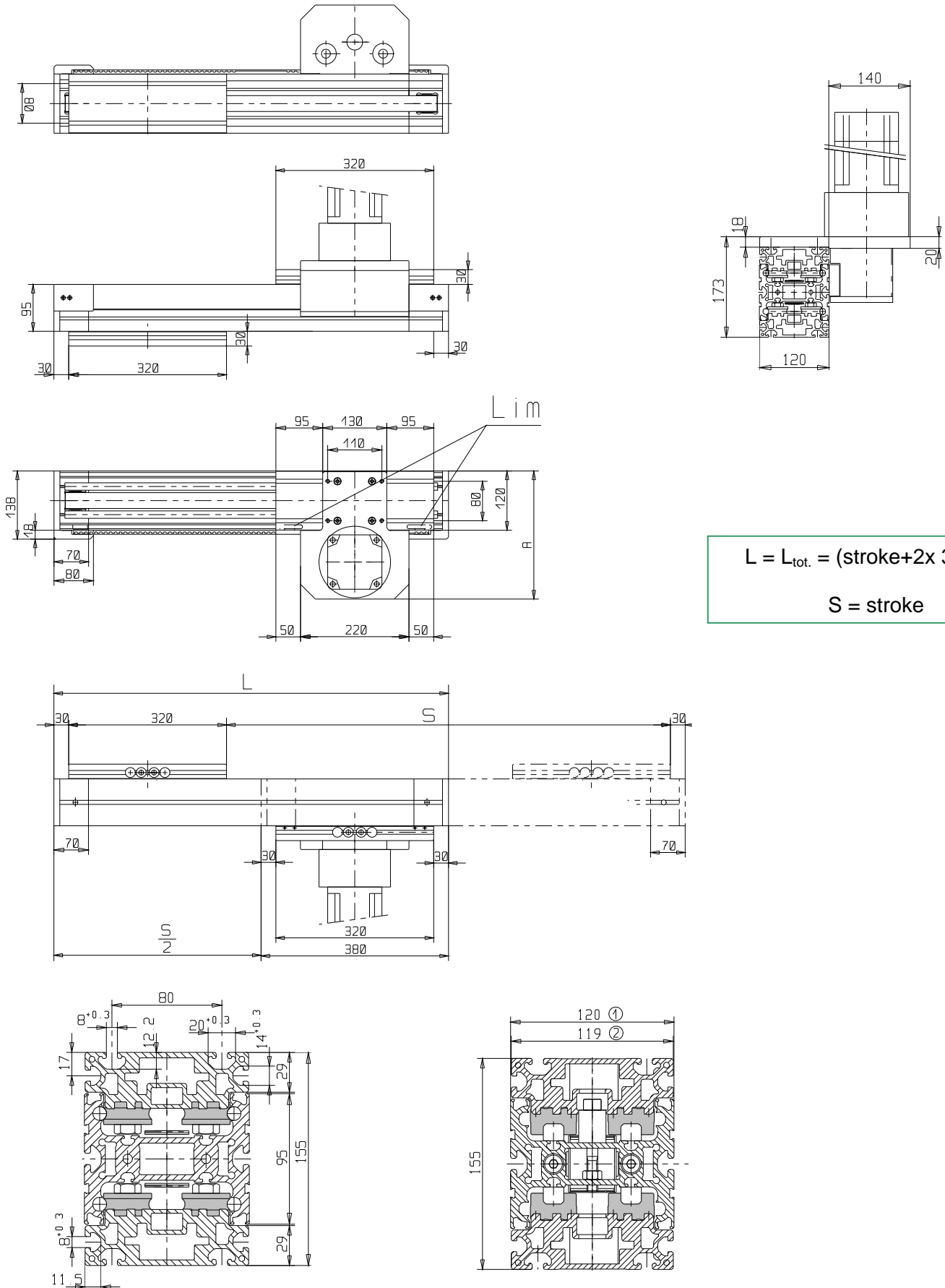
## CAS42BB characteristic curves (ball guide)



## CAS42BR characteristic curves (roller guide)

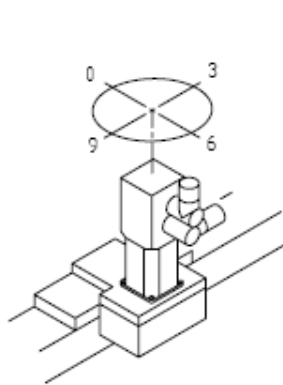


# CAS24 - Telescopic axis

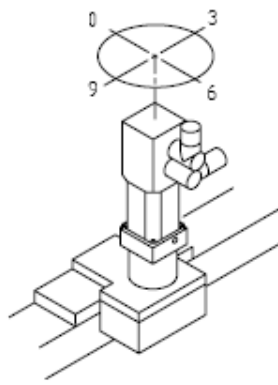


Typecode CAS2xB telescope																	
<b>Example</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
<b>Product</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
CAS= cantilever axes (teleskopic axis)																	
<b>Product family</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
2 = basic line																	
<b>Size</b> (cross-section of section)	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
4 = 120; (120 x 95 mm)																	
<b>Carriage drive element</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
B = toothed belt																	
<b>Type of guide</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
R = roller																	
B = ball chain																	
<b>Feed per revolution</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
M = 150 mm profile, 300 mm carriage																	
Z = customised product (only for internal use not in catalogue)																	
<b>Stroke length</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
xxxx = in mm (max. stroke per size see data sheet)																	
<b>Limit switches</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
A = 2 x PNP sensors as normally closed with 0,2 m cable incl. connector																	
B = 2 x PNP sensors as normally closed with 5 m cable and open end																	
N = no, no damper plates																	
<b>Carriage</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
1 = type 1																	
2 = type 2																	
<b>Options</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
N = without																	
C = corrosion resistant																	
<b>Axis drive interface</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
R = right																	
<b>Gear / Motor interface</b>																	
(see drawings 1 till 3)																	
1 = with motor, without gear (select motor type)																	
2 = with motor, with gear (select motor/gear type)																	
3 = without motor, with gear (select motor/gear type)																	
<b>Gear</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
0G = planetary gear (Neugart) - PLE 40																	
1G = planetary gear (Neugart) - PLE 60																	
3G = planetary gear (Neugart) - PLE 80																	
5G = planetary gear (Neugart) - PLE 120																	
0A = planetary gear (Neugart) - WPLE 40																	
1A = planetary gear (Neugart) - WPLE 60																	
3A = planetary gear (Neugart) - WPLE 80																	
5A = planetary gear (Neugart) - WPLE 120																	
7G = planetary gear (Neugart) - PLS 70																	
8G = planetary gear (Neugart) - PLS 90																	
9G = planetary gear (Neugart) - PLS 115																	
YY = third party gear without attachment by Schneider Electric Motion (gear drawing requirement)																	
ZZ = third party gear with attachment by Schneider Electric Motion (gear drawing requirement; provide gear)																	
XX = no gear																	
<b>Direction of the gear</b>	CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
(incl. the fixing screw of the adapterplate for the clamping hub)																	
0 = 0 o'clock																	
3 = 3 o'clock																	
6 = 6 o'clock																	
9 = 9 o'clock																	
X = without gear																	

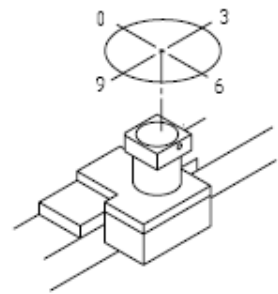
Typecode CAS2xB telescope		CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
<b>Example</b>		CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
<b>Motor</b>		CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
V6 =	stepper motors BRS 364 / BRS 366																	
V8 =	stepper motors BRS 368																	
V9 =	stepper motors BRS 397 / BRS 39A																	
V0 =	stepper motors BRS 39B																	
V1 =	stepper motors BRS 3AC / BRS 3AD																	
I6 =	ILS..571; ILS..572 with stepper motor																	
I7 =	ILS..573 with stepper motor																	
I9 =	ILS..851; ILS..852 with stepper motor																	
I8 =	ILS..853 with stepper motor																	
E7 =	DC-brushless ILExx66																	
S6 =	servomotors SER 36* / BRH 057																	
S9 =	servomotors SER 39* / BRH 058																	
S1 =	servomotors SER 311* / BRH 110																	
A6 =	ILA..57 with servo motor																	
H5 =	servomotors BSH 055*																	
H7 =	servomotors BSH 0701 / BSH 0702 / BMH 0701 / BMH 0702																	
H8 =	servomotors BSH 0703																	
H1 =	servomotors BSH 1001/ BSH 1002 / BSH 1003 BMH1001 / BMH 1002 / BMH 1003																	
H4 =	servomotors BSH 1004																	
H2 =	servomotors BSH 1401 / BSH 1402 / BSH 1403 / BSH 1404 BMH 1401 / BMH 1402 / BMH 1403																	
YY =	third party motor without attachemend by Schneider Electric Motion. (motor drawing requirement)																	
ZZ =	third party motor with attachement by Schneider Electric Motion (motor drawing requirement; provide motor)																	
XX =	without motor attachment																	
<b>Direction of the motor</b> with the reference to the power conection (incl. the fixing screw of the adapterplate for the clamping hub)		CAS	2	4	B	R	M	1000	A	1	N	R	/	2	3G	0	V0	9
0 =	0 o'clock																	
3 =	3 o'clock																	
6 =	6 o'clock																	
9 =	9 o'clock																	
X =	without motor attachment																	



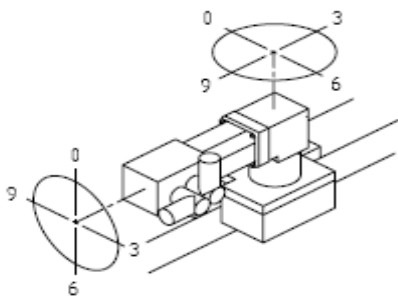
CAS2 with motor



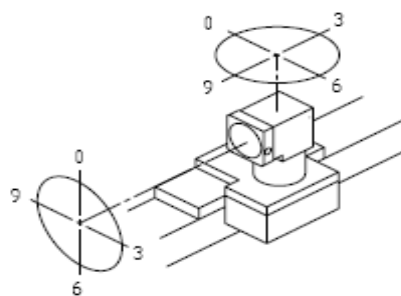
CAS2 with gearbox and motor



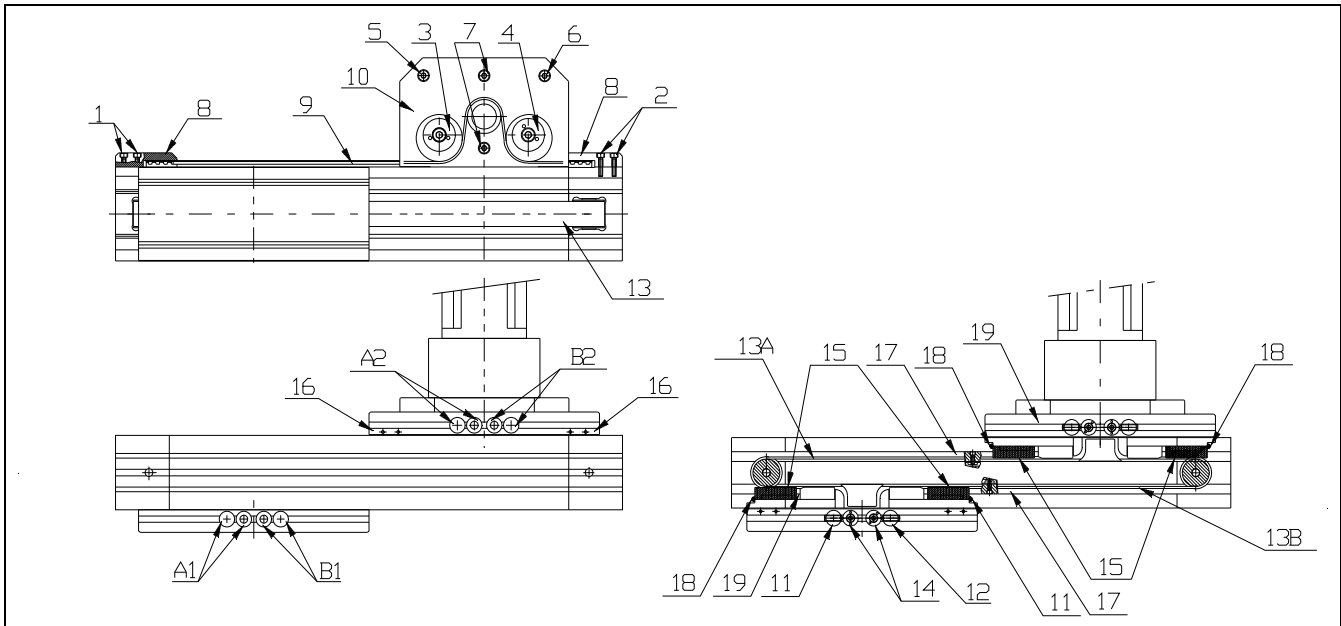
CAS2 with gearbox



CAS2 with angle-gearbox and motor



CAS2 with angle-gearbox



## General

Due to the design of the cantilever axis, it is protected against dust and foreign particles. The guide system is internal. The utilised drive and guide elements have low maintenance requirements.

## Lubrication

The internally mounted guide rails (17) and re-circulating ball bearing carriage (15) are lubricated with grease through grease nipples (18). The lubrication interval depends on the load, speed, cycle time and environment conditions. For normal ambient conditions we recommend to lubricate the carriage at the latest after half a year (e.g. Klüberplex BEM34-132 or lubrication grease according to DIN 51825 type KP HC 2 N-30).

The grease nipples (27) are accessible on both sides of the carriage (23). For the lubrication, we recommend 2-3 compressions with a grease gun. (ball type grease nipple DIN71412).

## Belt Replacement T10 (9)

The timing belt requires basically low maintenance. Should, in spite of this, a belt change be necessary, the following procedure has to be performed:

1. Loosen eccentrics (3/4). Then remove bolts (5/6/7) and bearing plate (10) from the motor block.
2. Disassemble the belt take ups (8) and remove the belt (9).
3. Put in new timing belt with same numbers of teeth. Pay attention, that the ends of timing belt are flush with the belt take ups (8).
4. Fix the timing belt in the belt take ups (8) with the bolts (1/2).
5. Mount the bearing plate (10) and tighten up with bolts (5/6/7).
6. Tension timing belt with eccentric rollers (3/4). The correct timing belt tension is 1% of the belt length. Mark the timing belt!
7. Tighten the eccentric rollers (3/4). Control timing belt tension again



## Belt Replacement AT5 (13)

This timing belt is made up of 2 parts (13A & 13B). One end of each belt is attached to the moving carriages (A1 & B1) and the other end is attached to the drive carriages (A2 & B2). Basically the timing belts are maintenance free. Should, in spite of this, a belt change be necessary, the following procedure has to be performed:

1. Loosen the bolts (11) and / or (12)
2. Loosen tensioning shafts (14) (one or both)
3. Do the same with the corresponding bolts and tensioning shafts at the drive carriage A2 and/or B2
4. Remove old belt
5. Put in new timing belt (13) with same number of teeth.
6. Tension the belt with tensioning shafts (14)
7. The belt tension is 1‰ of the belt length.
8. Tighten the safety bolts (11/12) in order to secure the tensioning shafts (14)
9. Do the same with the corresponding bolts and tensioning shafts at the drive carriage: A2 and/or B2

**Note:** Control and if necessary correct the positioning of the carriages.

If during operation, the belt is noisy, a standard PTFE spray can be used in order to reduce the noise.

## Service

In case of spare part orders or service, please advise material and order number (located on axis name plate) of the axis or the axis system.

## Spare Parts List

Pos.	Description	Quantity	Material No.
16	Limit switch	1 Stck / pc.	00052060006
4	Toothed belt b50 T10, L= 500 + (stroke / 2)mm	1 Stck / pc.	00033550026
13	Toothed belt b32 AT5, L= 540 + (Hub / 2) mm	1 Stck / pc.	00033550006
1/2	Belt clamping bolts	1 Stck / pc.	00030600102
8	Belt clamping collar	1 Stck / pc.	00019510016
4	Eccentric bolt	1 Stck / pc.	00019530016
3	Eccentric cam	1 Stck / pc.	00019530008
11/12	Securing bolt	1 Stck / pc.	00074730055
14	Tensioning shaft	1 Stck / pc.	00019570004