Translation of the original instructions

Module 65/15

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1 Safety

1.1 Definition or warning notes

WARNING

Indicates potential danger. Non-observance of the safety provisions may cause death or severe injury.

CAUTION

Indicates potential danger. Non-observance of the safety provisions may cause property damage or injury.

NOTE Offers additional information.

1.2 General warning notes

The module must only be commissioned by specialists who received safety-technical instruction and are able to assess potential dangers. Furthermore, all chapters of these operating instructions must have been read and understood completely.

WARNING

The system must be powered down for all assembly, disassembly or repair work. There is a high danger of injury.

WARNING OF HOT SURFACE

During operation, heating of the motor, in particular of stepper motors, can cause the burns of the skin when touching the motor. Install a protective device, if possible! Do not touch the marked areas or wait for an adequate cooling time.

CAUTION

Motor connectors must not be inserted or disconnected when live. Risk of burning of the contacts and risk of flying sparks.

CAUTION

Linear modules always have to be operated in connection with suitable safety devices (e.g., safety cell, protective room, protective housing, light curtain).

NOTE Observe the Declaration of Incorporation (see section *Declaration of incorporation, page 41*).

1.3 Special hazard warnings

In addition, this Original User's Manual also contains the following special hazard warning:

DANGER FROM CRUSHING

These places of the components pose the danger of crushing limbs in operation.

2 Intended use

The linear unit module 65/15 (see *Figure 1*) was designed for use in the commercial area. Use of a high-quality guide warrants high dynamics and good running behaviour. The internal guide system is protected from contamination by the toothed belt. Additionally, the guide elements have special seals that protect the guide tracks from gross contamination. Use of the linear unit module 65/15 under conditions with increased contamination, however, should be avoided because there are no further protective measures like bellows, etc.

Figure 1: Module 65/15

When using the linear unit module 65/15, observe that the constructive setup of the linear unit will cause increased lateral tilting of the carriage due to torque occurring. This feature is, however, an essential benefit in setup of a parallel guide system, because it avoids over-determination of the guide system.

If higher torque appears or a higher stiffness is required, in particular in boom systems, the series module 115/42 must be used.

The areas of use for the linear module 65/15 are accordingly diverse. They range from stop adjustment in the wood industry to equipment systems for SMD-components, joining and pressing processes in precision mechanics, loading and unloading stations of tool machines, to manipulators for the packaging industry.

2.1 Reasonably foreseeable misuse

The linear module 65/15 is **not** to be used for certain applications such as the transport of persons and animals or as a pressing/bending device for cold working of metal.

Use of the linear module without additional measures is also **not** possible in special fields of application, such as the chemical or food industry or in explosive atmospheres.

In case of doubt, consult the manufacturer.

3 Assembly instructions

3.1 Installation position

The installation position is optional, i.e. the linear module 65/15 can be used horizontally as well as vertically.

CAUTION

In the vertical installation position, use only motors with spring-operated brake to prevent the lowering of the drive in de-energized condition!

3.2 Overview of motor installation variants

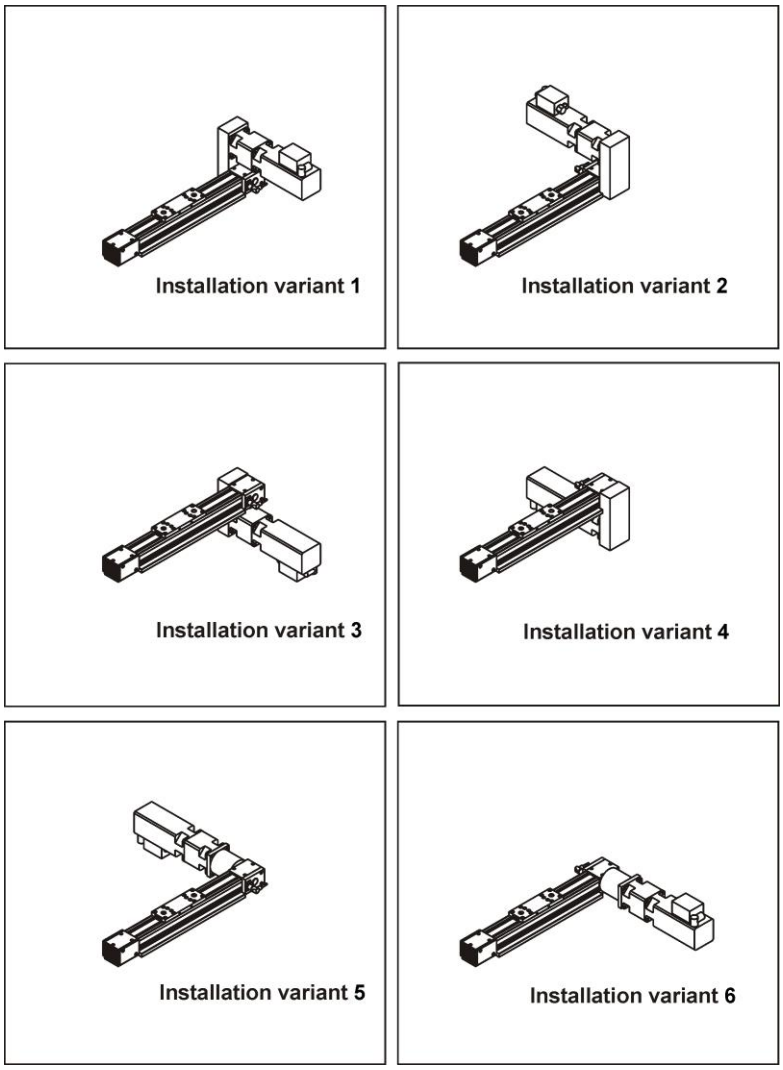

Figure 2: Installation variant module 65/15

3.2.1 Module 65/15, installation variant 1

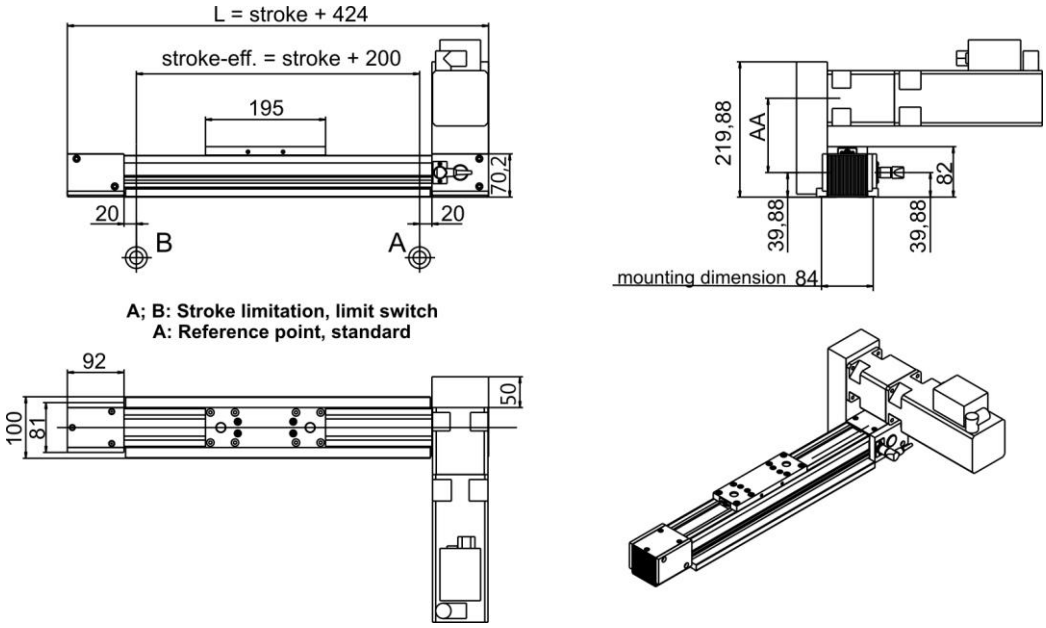

Figure 3: Module 65/15, subassembly number 1001028, installation variant 1

3.2.2 Module 65/15, installation variant 5

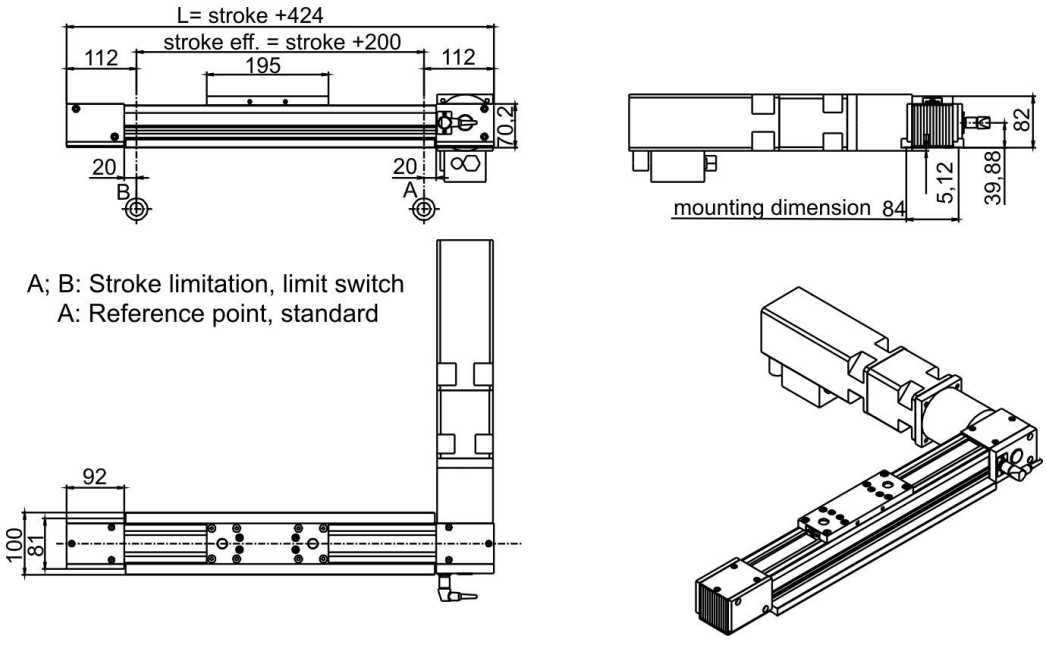

Figure 4: Module 65/15, subassembly number 1001028, installation variant 5

3.3 Attachment

In most use cases, the linear module 65/15 is attached to a level mounting surfaced with clamping profiles/
clamping elements (see *Figure 5, bottom*). The carriage moves freely.

The linear module should not be attached otherwise, e.g. by additional bores in the basic body. These bores will nearly always lead to clamping of the guide basis and damage to internal parts of the module.

CAUTION

The clamping surface should have a levelness of 0.1 mm/m².

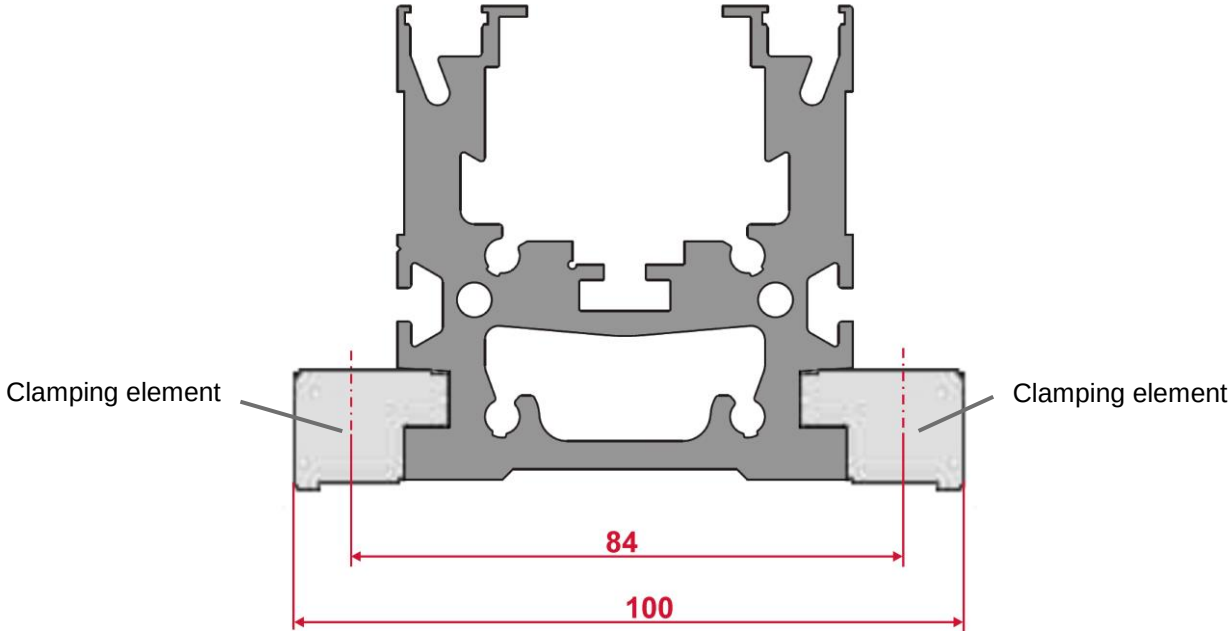

Figure 5: Attachment with clamping elements

NOTE For an overview of the different clamping elements, see the section *Overview clamping elements, Page 40*.

DANGER FROM CRUSHING

These places of the components pose the danger of crushing limbs.

There is danger of crushing at the start and end of a stroke (see *Figure 6*).

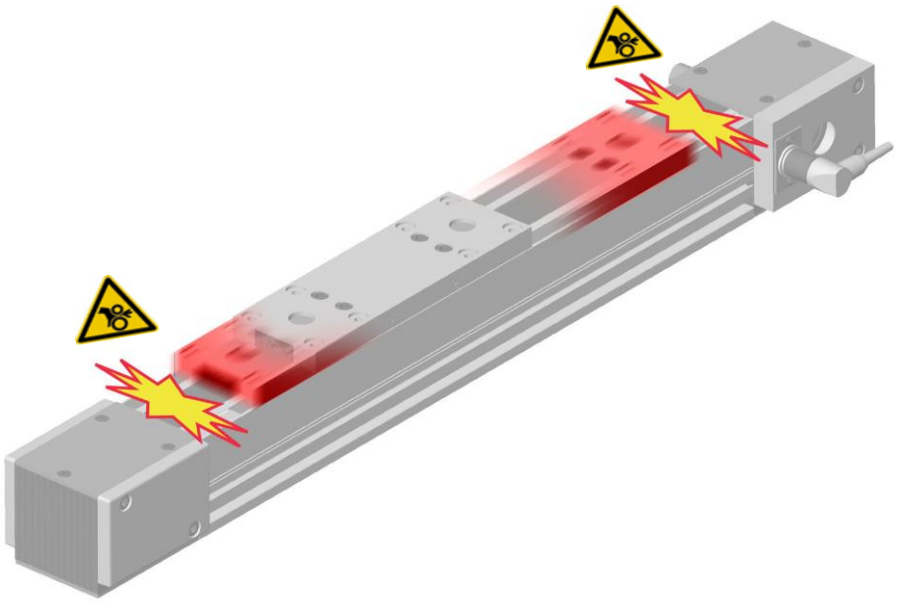

Figure 6: Possible crushing points

Figure 7 shows the drilling pattern of a standard carriage.

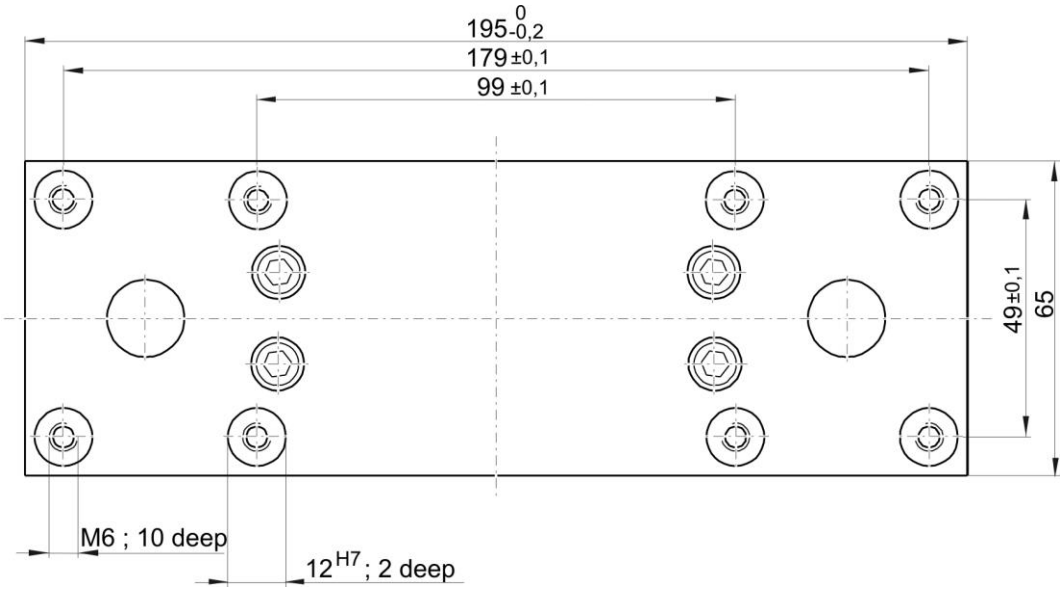

Figure 7: Drilling pattern standard carriage

Figure 8 shows the drilling pattern of a long carriage.

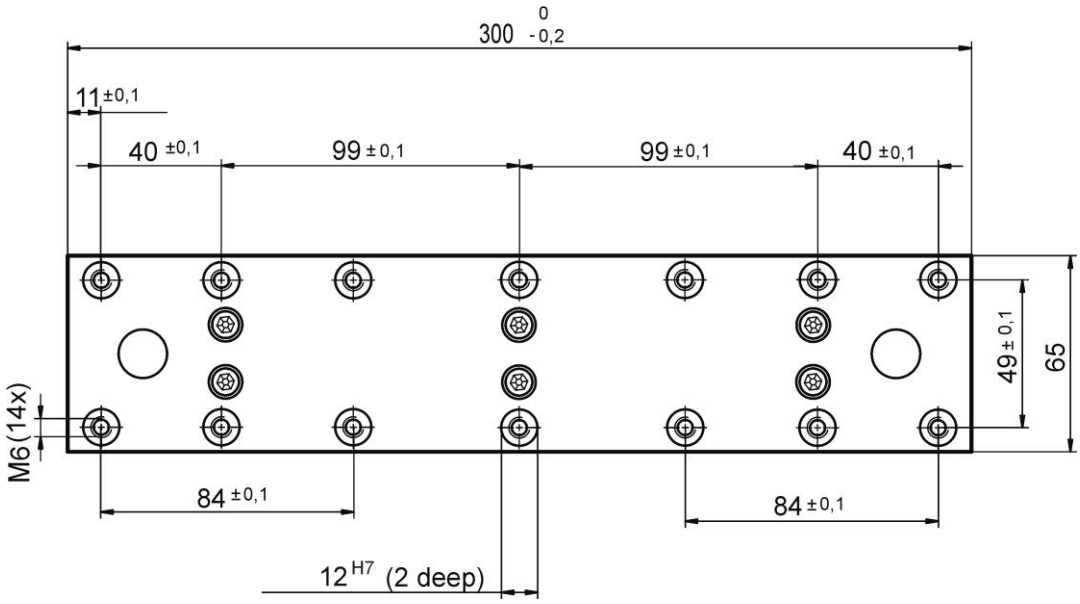

Figure 8: Drilling pattern long carriage

Figure 9 shows the drilling pattern of a short carriage.

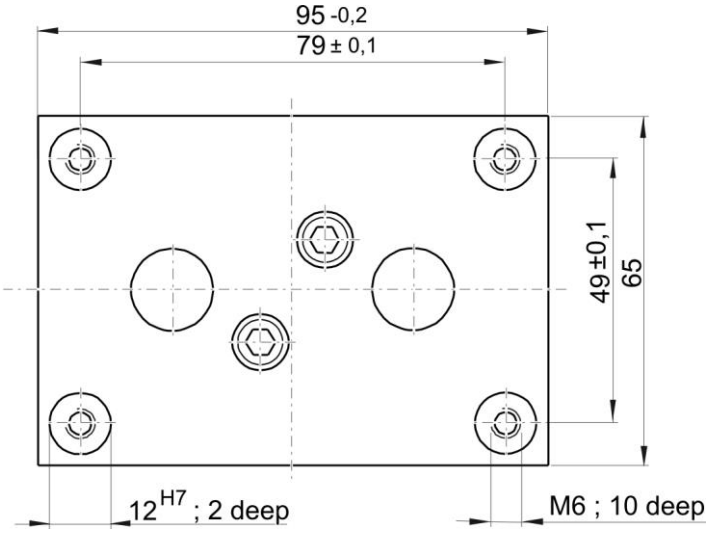

Figure 9: Drilling pattern short carriage

Figure 10 shows a centring ring to take up clamping elements:

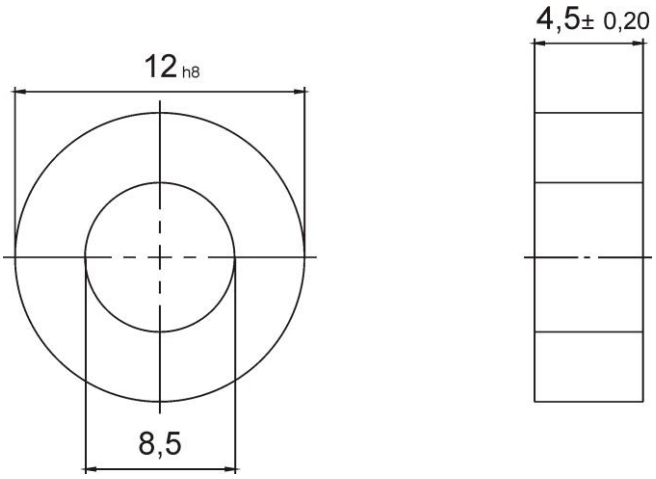

Figure 10: Centring ring (article no.: 1024021)

The threaded bores M6 make different axis configurations possible on the carriage, possibly using an adapter plate.

The recesses Ø12 serve to centre clamping elements with supply option.

3.3.1 Installation of actuators

Actuators to be installed on the linear module (pick-up modules, cylinders) are usually attached to the linear unit using the drill template on the carriage (*Figure 7, page 11* and *Figure 8, page 12*).

3.4 Wiring

3.4.1 Motors

CAUTION

The electrical connection of the motors is performed according to the motor data sheet. For customer-specific motors, the data sheet must be requested from the respective manufacturer and the motor connected accordingly.

3.4.2 Initiators

Inductive proximity switches (PNP normally closed contacts, article no.: 025165) are used as standard limit switches for the running path (see *Figure 11* and *Figure 12*). These switches are no safety limit switches pursuant to EN60204-1. Optionally, (also subsequently) an additional reference point switch (PNP normally open contact article no.: 726744), can be installed in the linear module 65/15. The active button is marked with a coloured circle. Normally closed contacts are marked with a green, normally open contacts with a red dot. The initiators and their supply lines are protected in a cable channel integrated in the basic body, and are wired to a joint plug.

A plastic strip serves to cover the cable channel. An initiator can be replaced or relocated easily after removal of this plastic strip from the cable channel.

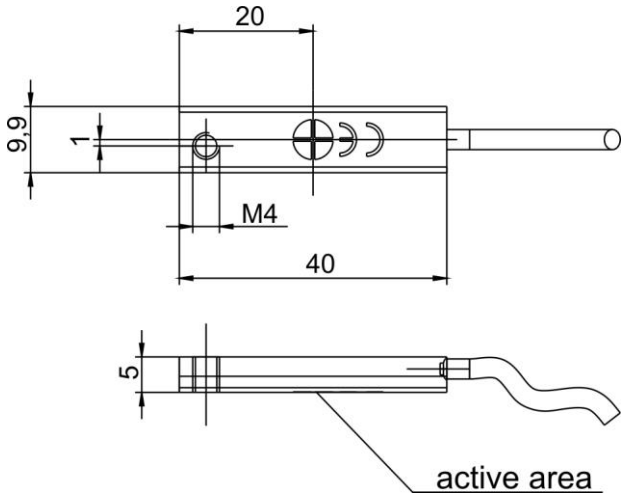

Figure 11: Scaled sketch of inductive proximity switch

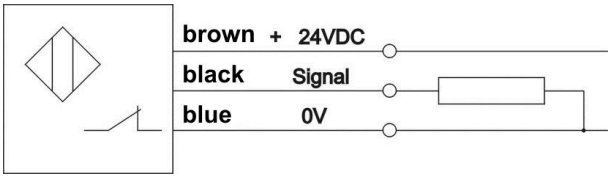

Figure 12: Connection allocation PNP normally closed contact

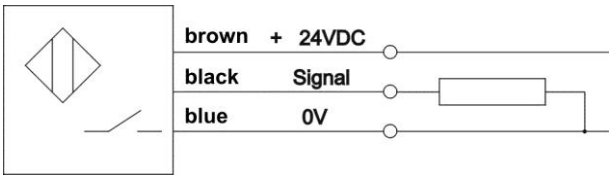

Figure 13: Connection allocation PNP normally open contact

3.4.2.1 Technical data of initiators

Parameter	Value
Operating voltage incl. residual ripple	(10 ... 30) VDC ≤ 15 %
Current load capacity	I_a ≤ 200 mA
Voltage drop at I_a max.	≤ 2.5 V
Switching frequency	≤ 1,000 Hz
Own current consumption	≤ 15 mA
Nominal switching distance on steel	1.5 mm ± 10 %
Switching hysteresis	(3 ... 20) %
Reproducibility (U = const.)	± 0.01 mm
Operating temperature	- 25 °C ... + 70 °C
Protection class	IP 65
Short-circuit proof	yes
Protected against polarity reversal	yes

Figure 14: Technical data of initiators

3.4.2.2 Plug end position switch

The end position switch is assigned as follows (see *Figure 15*):

Pin-No.	Assignment	IEF-Werner cable
1	+ 24 V	brown
2	Limit switch negative direction	green
3	0 V	white
4	Limit switch positive direction	yellow
5	Reference switch	grey

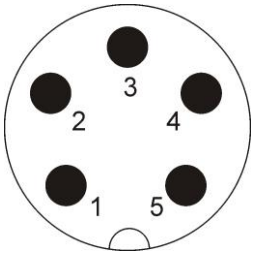

Figure 15: Connection assignment plug end position switch

3.4.3 Cable routing

For all moving cables, suitable cable routing has to be used to effectively prevent cable breaks.

The minimum radius r_{min} for cable routing chains is calculated for IEF-Werner cables according to the following formula:

$$\mathbf{r_{min} \geq 10 \times \text{cable diameter}}$$

When different cables are used, EN 60204 must be observed. In addition, it must be ensured that a space reserve of 30% is kept free within the routing chains. A strain relief for the cables has to be attached at the outlet of the cable routing chain.

3.5 Technical data

3.5.1 Tightening torques for screw connections

Screw 8.8	Tightening torque [Nm]
M3	1.1
M4	2.5
M5	5.0
M6	8.5
M8	21.0
M10	41.0
M12	71.0
Screw 12.9	**Tightening torque [Nm]**
M4 (guide rail attachment)	4.9

3.5.2 Technical data of the linear module 65/15

Parameter	Value
Repeating accuracy	+/- 0.05 mm
Weight (without motor at stroke 0 mm)	6 kg
Weight increase per 100 mm stroke	0.7 kg
Maximum movement speed	5 m/s
Maximum acceleration	40 m/s²
Max. transferable feed force at max. movement speed (5 m/s)	840 N
Guide stiffness x	See *Tilting of the carriage unit at* lateral load, *page 21*.
Torques and carrying capacity	See *Table torques and carrying* capacities, *page 20*.
Area inertias of the profile cross-section at the centre of gravity:	
I_x	595,678 mm^4
I_y	873,744 mm^4

Figure 16: Technical data

3.5.3 Type label

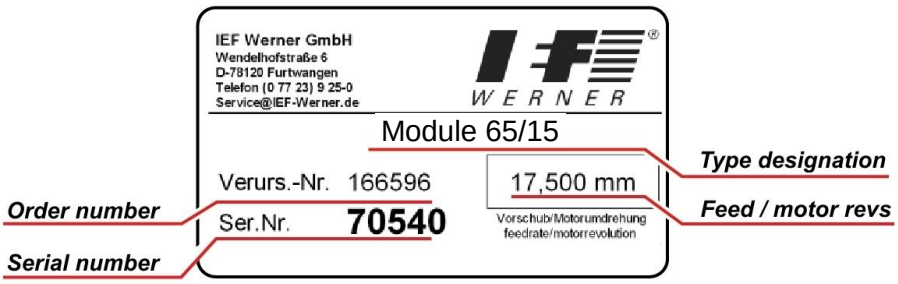

Figure 17: Type label (example)

3.5.4 Technical data when using a planetary gear

Before commissioning, observe the possible input speeds of the gear manufacturers. Too-high input speeds can lead to increased wear at the gear and/or thermal problems.

The accuracy of the linear unit is influenced by the reverse play of the gears.

Example:

The gear reverse play (S) is 9 angle minutes.

How high is the reverse play at the carriage of the linear unit?

Feed constant of the linear unit (Vk): 140 mm

Reverse play at the carriage = (Vk • S) / (360 x 60)

= (140 mm • 9) / (360 x 60)

= 0.058 mm

Consider the information of the respective gear manufacturer in any case.

e.g. www.neugart.de/index.php/gb/Produkte/Standardgetriebe

www.wittenstein-alpha.de/en/drive-systems.html

3.5.5 Axis distances and tooth numbers

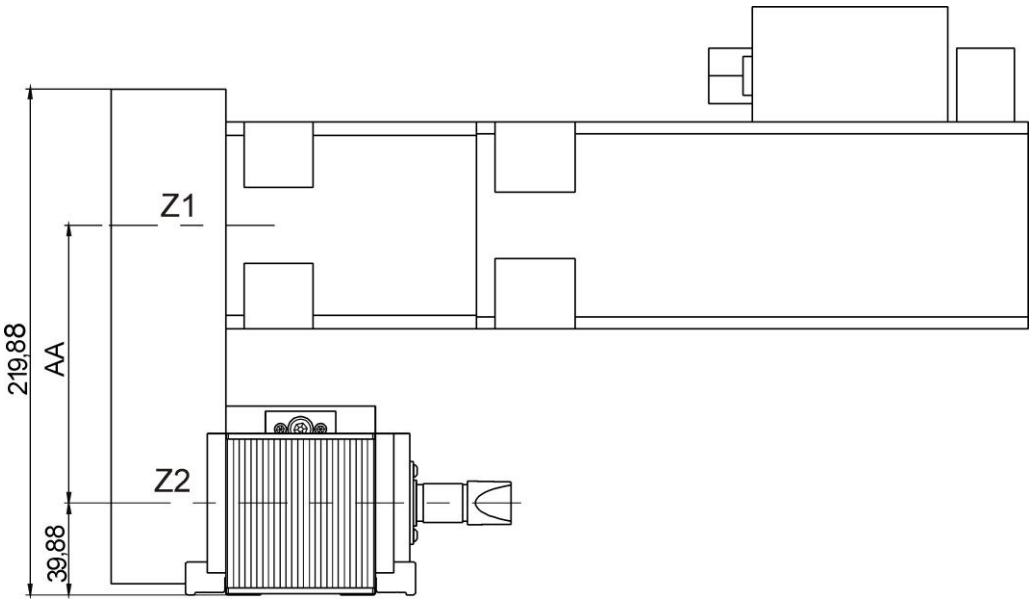

Figure 18: Explanations on the table axis distances, subassembly no.: 1000475

Comply with the following axis distances in the required standard reductions:

i	Z1 output	Z2 drive	Bore diameter of Z1	Length of toothed belt	AA [mm]	Feed constant [mm]
1:1	42	42	max. Ø 32 mm	450 mm	120	140
2.1:1	42	20	max. Ø 16 mm	390 mm	116.18	66.667
2.625:1	42	16	max. Ø 14 mm	390 mm	120.73	53.33
3:1	42	14	max. Ø 12 mm	375 mm	115.35	46.667

3.5.6 Load cases

3.5.6.1 Torques (M) and carrying capacities (C)

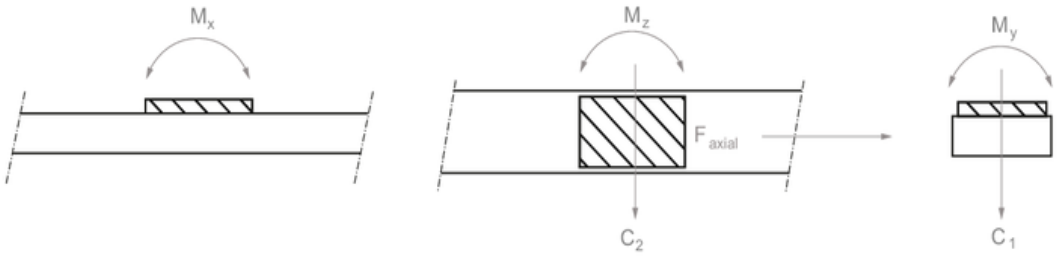

Figure 19: Torques and carrying capacities

Parameter	Standard carriage	Short carriage	Long carriage
Carriage length	195 mm	95 mm	300 mm
Max. torque Mx	80 Nm	25 Nm	120 Nm
Max. torque My	30 Nm	15 Nm	30 Nm
Max. torque Mz	100 Nm	15 Nm	150 Nm
Carrying capacity C1	1,000 N	500 N	1,000 N
Carrying capacity C2	300 N	100 N	300 N

Figure 20: Table torques and carrying capacities

3.5.6.2 Tilting of the carriage unit at lateral load

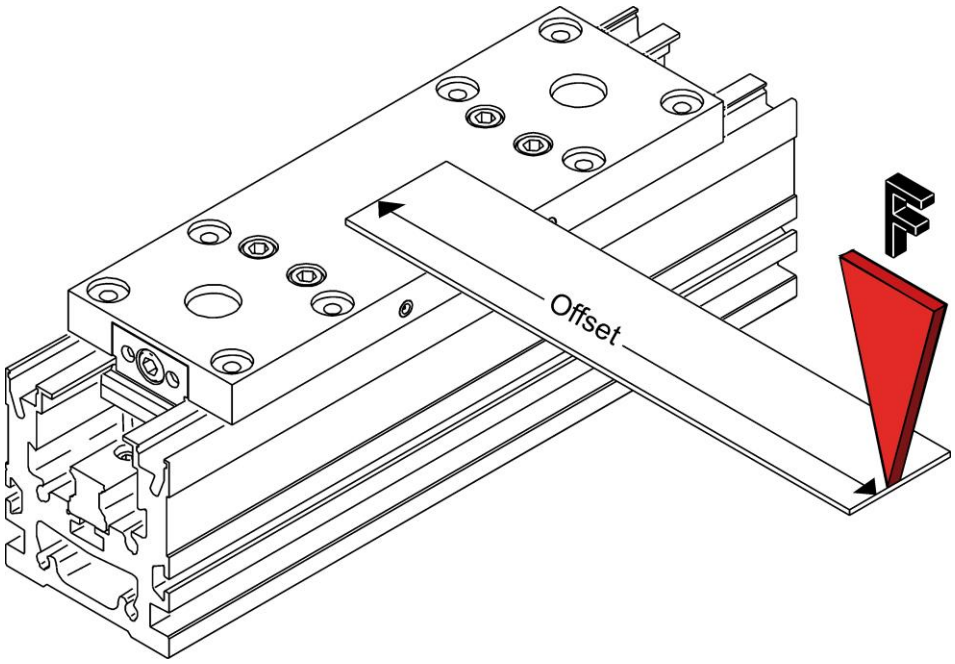

Figure 21: Tilting of the carriage

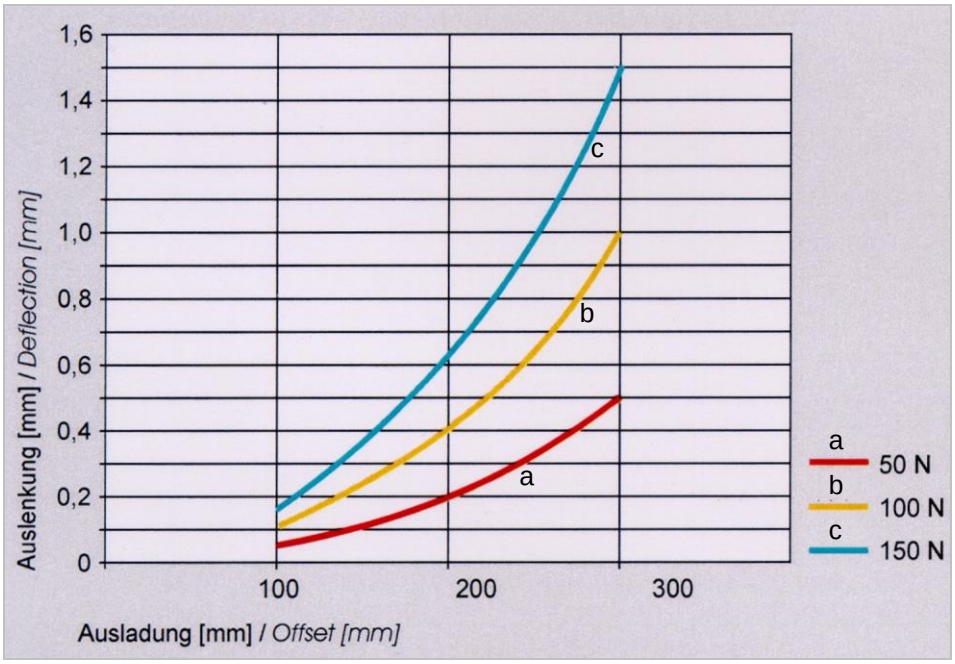

Figure 22: Deflection at lateral load (valid for standard carriages)

4 Maintenance

During the design of the linear module 65/15, importance was placed on the use of low-maintenance components. All roller elements were provided with lifetime lubrication in the factory.

The guide carriages are equipped with attached lubrication elements. This makes it possible to achieve a running performance of 10,000 km with initial lubrication. In single-shift operation, this corresponds to nearly 5 years at a stroke of 500 mm and 20 cycles per minute.

Once the indicated running output is reached, the guide carriage can be re-lubricated with a special grease press (IEF-item no.: 1055123) (see *Figure 23 below*). The grease gun is filled with the high-performance lubricant Dynalub.

NOTE Never use any grease that contains ester oils.

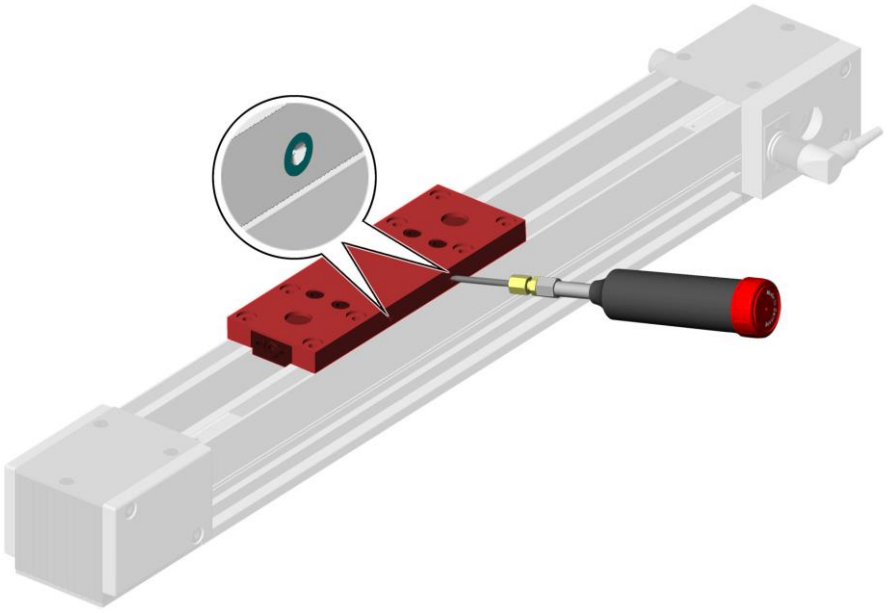

Figure 23: Lubrication of the guide carriage (carriage with external lubrication)

5 Troubleshooting

Interference	Reason	Correction
Increased running noise	Nominal service life of guide carriage exceeded	Replace all guide carriages
	Guide carriage worn due to overload (too-high torque, etc.)	Replace all guide carriages, reduce load
	Guide carriage worn from strong contamination	Replace all guide carriages, clean guide rails and relubricate
	Guide rails worn	Replace guide rails, replace all guide carriages, check load, protect linear module from strong contamination
	Guide rails corroded	Replace all guide rails, replace guide carriages if required
	Deflection unit worn	Replace deflection unit
	Drive unit worn	Replace drive unit
	Toothed belt runs dry	Slightly lubricate toothed belt on the toothed inner side
	Toothed belt tension too high	Re-set toothed belt tension at the carriage part
	Toothed belt runs diagonally	Align toothed belt with belt fastener (pressure piece and tooth segment), tighten cylindrical screws M6 evenly!
	Toothed belt strongly contaminated on the toothed inner side	Replace toothed belt, protect linear module from strong contamination
	Toothed belt defective	Replace toothed belt
	Motor (motor bearing) defective	Replace motor
	For motor with brake: Brake does not disengage	Apply current to the brake, if the brake still does not open, replace motor
Linear drive unit does not move	Limit switch cable not connected	Connect the cable
	Limit switch defective	Replace limit switch
	Limit switch cable defective	Check limit switch cable
	Solder connection on socket has come loose	Solder on wires
	Motor connected incorrectly	Check and change connector assignment, if required
	Motor defective	Replace motor
	Error in power electronics or control unit	Check the power electronics or the control unit

Troubleshooting, continued

Interference	Reason	Correction
Linear drive unit does not move	Motor cable defective	Check motor cable, replace cable, if required
	For belt gear: Toothed disc slips through	Engage clamp set tightly and secure screws with threadlocker
	For planetary gear: Clutch between motor and planetary gear slips	Engage clutch tightly and secure screws with threadlocker
	For motor with brake: Brake does not disengage	Apply current to the brake, if the brake still does not open, replace motor
Play on reversal	Gearbox toothed belt not tensioned	Tension gear toothed belt
	Motor toothed disk has play (key connection)	Replace motor toothed disc if motor shaft keyway is damaged, replace motor
	Tension drive toothed belt	
Linear drive unit moves mechanically against the stop during the reference run	Incorrect direction of rotation	Change motor direction of rotation
	Broken motor cable	Replace cable

6 Repair instructions

WARNING

Always power down the system before starting repairs.

WARNING

Any repairs must only be performed by specialist personnel who have read and understood the operating instructions.

CAUTION

Only use original replacement parts, otherwise IEF-Werner GmbH will not accept any warranty.

6.1 Factory-setting of the toothed belt tension

The toothed belt tension of the axial toothed belt is set via adjustment screws (see *Figure 24*). It is correctly set at delivery.

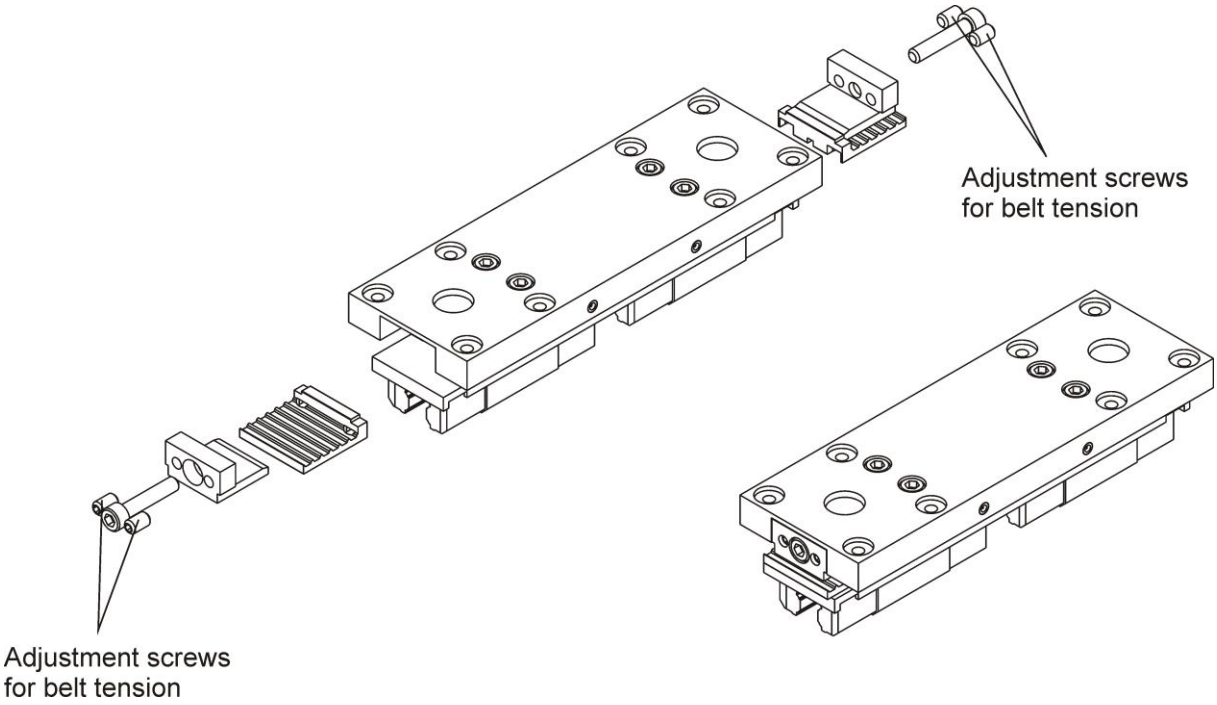

Figure 24: Adjustment screws for belt tension

NOTE Do not remove the threadlocker from the adjustment screws.

6.2 Gear toothed belt

The belt tension of the gear toothed belt (motor installation variants 1-4) is 150 N (see *Figure 25*).

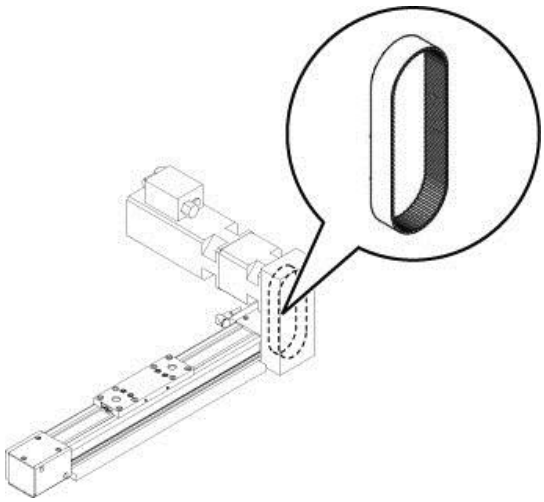

Figure 25: Gear toothed belt

6.3 Replace toothed belt

Proceed as follows to replace the toothed belt:

NOTE Toothed belt replacement is generally performed the same for the standard and long carriage. The following sections deal with toothed belt replacement at the standard carriage.

(1) Loosen the two attachment screws M6 x 30 (see item 120 *Figure 26* below*)*

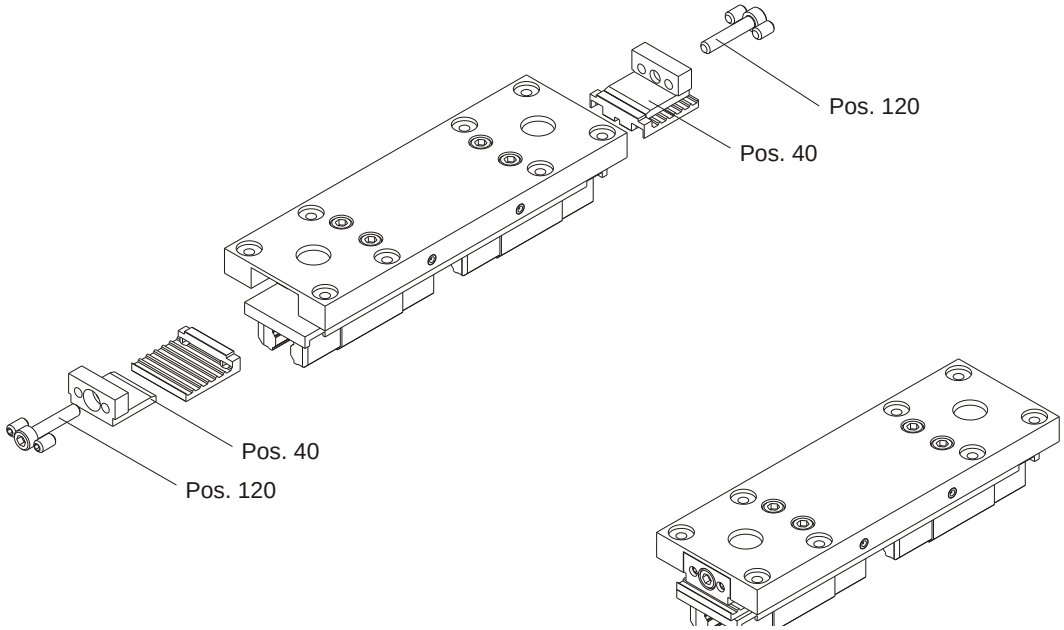

Figure 26: Loosen attachment screws

(2) Remove the pressure pieces (see item 40, *Figure 26*).

(3) Remove the covers (see item 100, *Figure 27*).

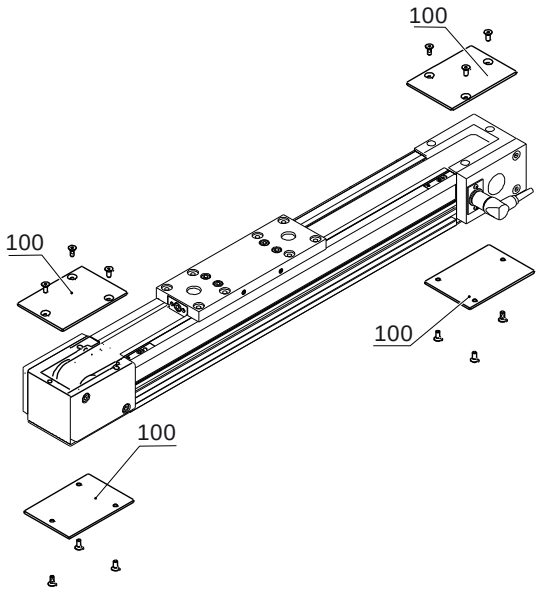

Figure 27: Remove the covers

(4) Remove the defective toothed belt and insert a new one.

(5) Insert the toothed belt into the tooth segment (see item 30, *Figure 28*).

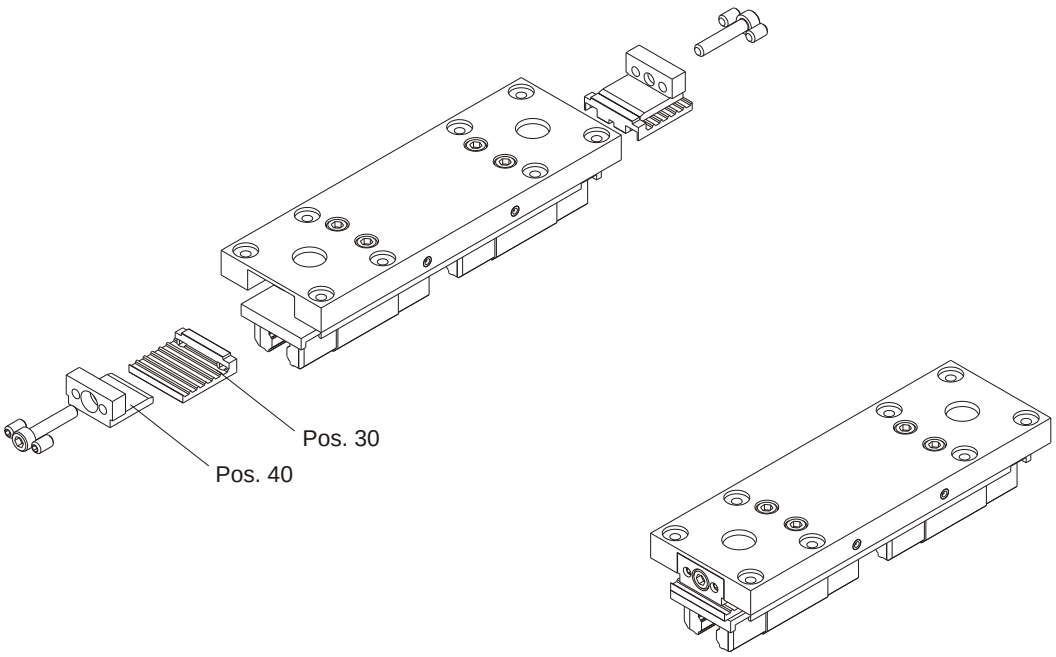

Figure 28: Tooth segment

(6) Screw the pressure piece tightly on both sides "to block" (see item 40, *Figure 28*).

(7) Install the covers again.

NOTE The belt tension is pre-set in the factors. Do not remove the threadlocker from the retention screws!

6.4 Reference side of the guide system

The guide rail is aligned on the reference side of the basic body (marked by the 90° groove) (see *Figure 30*). The reference side of the guide carriage is the ground side (see *Figure 29, below*).

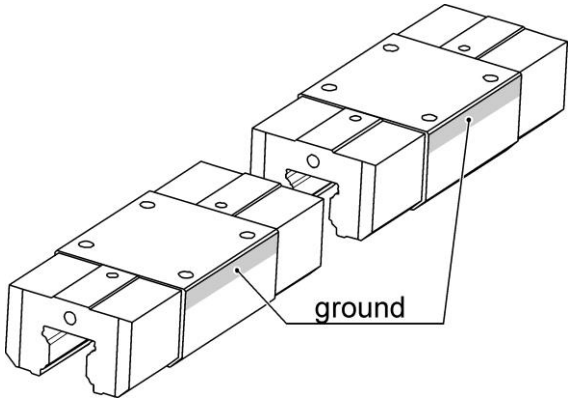

Figure 29: Reference side

The adapter plate is applied to the two guide carriages on the reference side. In the new condition, the guide carriages are harder to push. After a brief run-in time (1-2 days), the pushing resistance reduces to its regular amount.

NOTE Carriage plate and adapter plate must **not** be swapped with the carriage plate and adapter plate of other linear units of module 65/15!

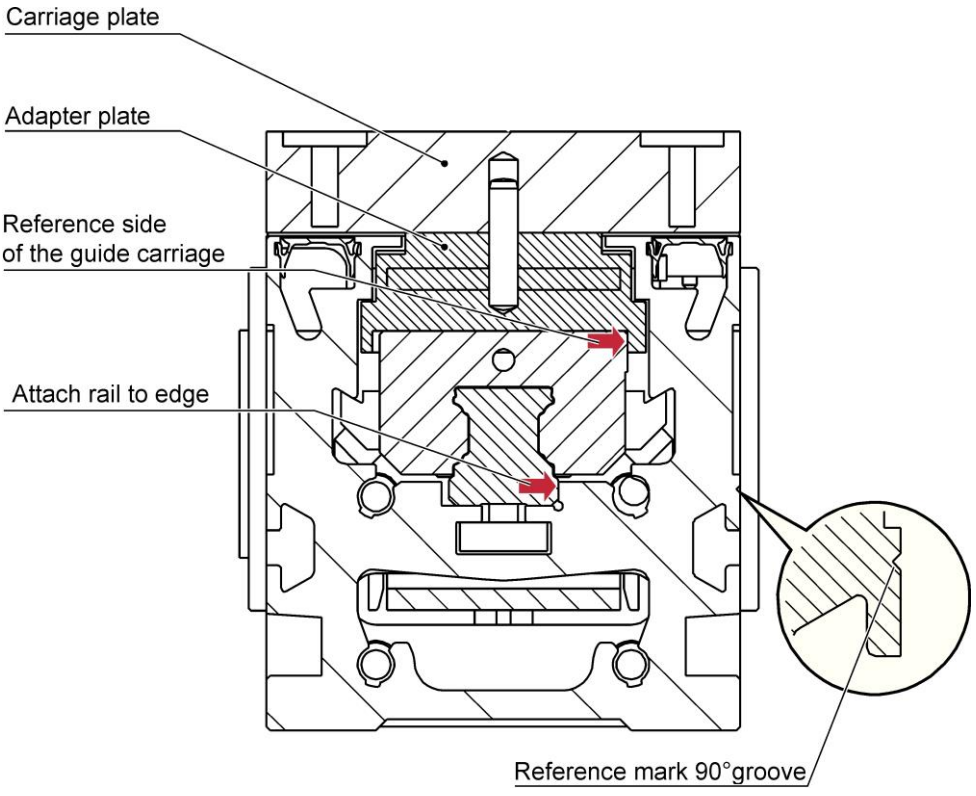

Figure 30: Installation of guide system

7 Parts lists and drawings

7.1 Module 65/15

Subassembly No.: 1001028; see *Figure 31* and *Figure 32, page 31*.

Drawing item	Article no.	Part (1) / subassembly (0)	+	Designation
10	1001030	0		Basic body module 65/15
20	1000688	0		Ball rail guide type 1605-103-31
30	1061034	1		Toothed belt 32ATL5
40	1028964	1		Cylindrical screw DIN 912-M4x16-12.9
50	1023994	1		Slot nut, 1xM4 flat
60	1044009	1		Slot nut, flat
70	1062198	1		Housing with damper
80	626036	1		Cylindrical pin, tin-plated, DIN 912 - M6x25
90	626330	1		Cylindrical pin, DIN 6325 5m6x24
100	1061206	1		Cover
110	626124	1		Recessed-head screw, zinc-plated, DIN 7991,
120	1019278	1		Bearing cover
130	1043375	1		Bearing cover plastic
140	028585	1		Limit switch holder
150	025165	1		Induction switch PNP normally closed contact
160	726744	1	+	Induction switch PNP normally open contact
170	030887	1		Special screw M4 x 7 with inner hexagon
180	025626	1		Retaining plate
190	725164	1		Angle coupling WKV 50/6
200	725163	1		Installation plug, round
210	626038	1		Fillister head screw, zinc-plated, ISO 7380-M3x8
220	1044440	1	+	Plastic clip
230	1044440	1	+	Plastic clip
240	1061254	1	+	Deflection unit
250-270	1061246	1	+	Drive set 65/15
“	1067741	1	+	Drive set 65/15 FLG
“	1066042	1	+	Drive set 65/15/FLG/PA
“	1061250	1	+	Drive set 65/15/PA/MI
“	1061252	1	+	Drive set 65/15/PA/MA
280	1061261	1	+	Stopper module 65/15
290	1061264	1	+	Carriage unit cpl.
	1061314	1	+	Long carriage cpl.
	1084724	1	+	Short carriage L=95
	1000041	0	+	Motors
310	1000475	0	+	Gear
	1000476	0	+	Flange
330	1064600	1	+	Balancer coupling
340	730889	1	+	Aluminium pipe
	1001261	0	+	Connection plate
	0626056	1	+	Cylindrical screw DIN 912-M6x16
	1024734	1	+	Recessed sleeve

+ use depending on design

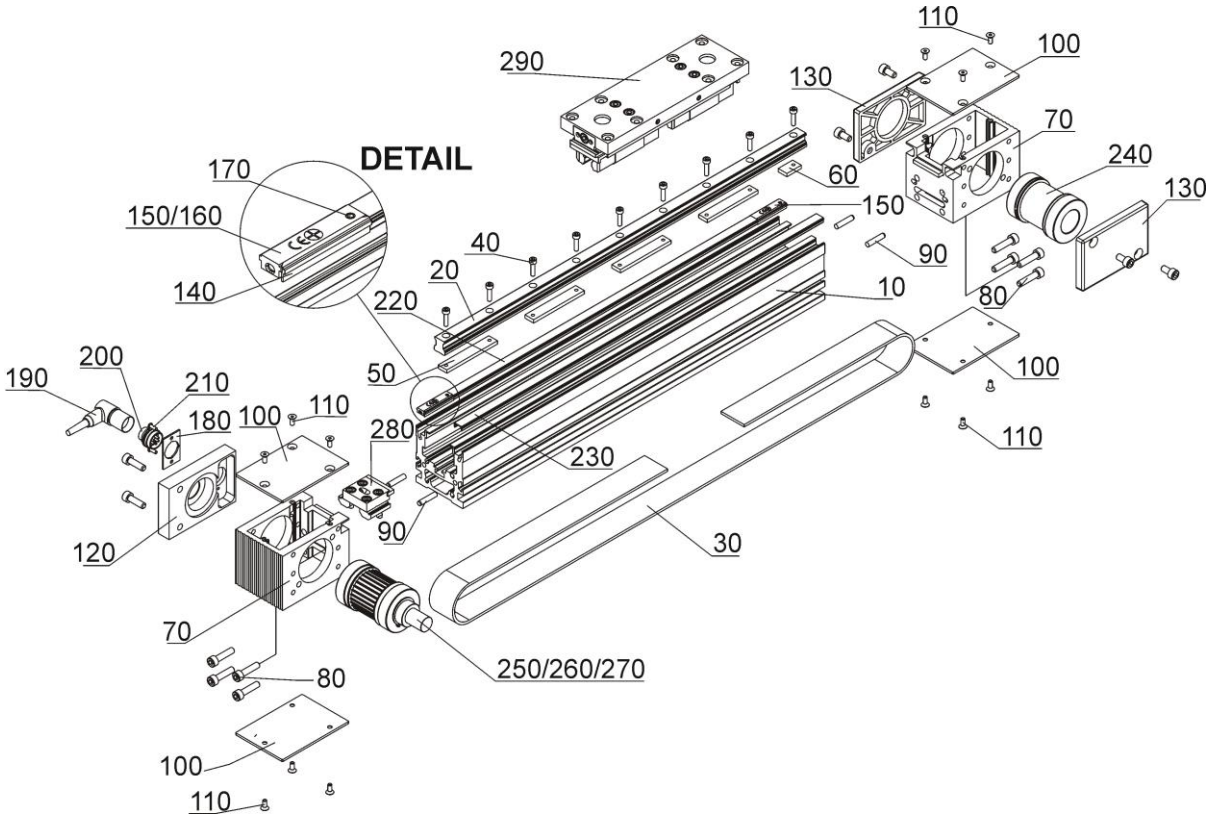

Figure 31: Module 65/15, exploded drawing, subassembly no.: 1001028

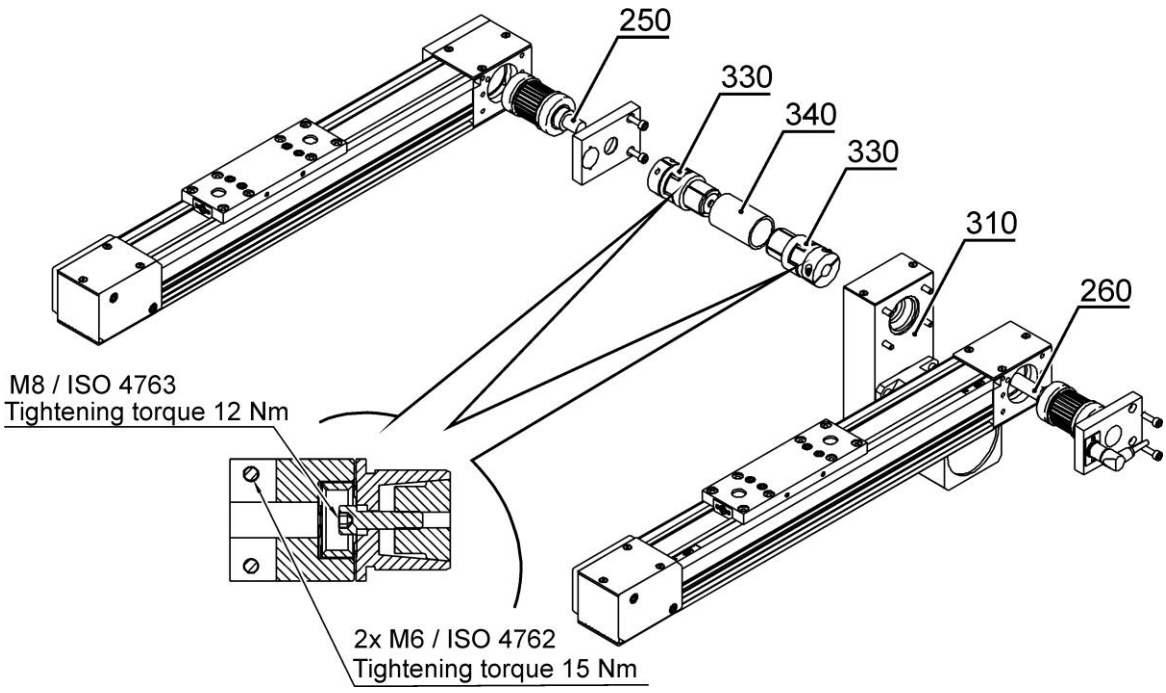

Figure 32: Modul 65/15, parallel, exploded drawing, subassembly no.: 1001028

7.2 Carriage module 65/15/195 PS complete

Article no.: 1061264; see *Figure 33, bottom*.

Drawing item	Article no.	Part (1) / subassembly (0)	Designation
10	1061198	1	Carriage plate
20	1061176	1	Adapter plate
30	1061205	1	Tooth segment, complete
40	1061203	1	Pressure piece
50	1023942	1	Threaded sleeve
60	1046583	1	Guide carriage size 15
70	1028704	1	T. lubrication nipple, DIN 3405, type D4
80	1031602	1	O-Ring, type: 1,80-1,80
90	626506	1	Cylinder pin
100	626062	1	Cylindrical screw DIN 912- M4 x 12-8.8
110	626056	1	Cylindrical screw DIN 912- M6 x 16-8.8
120	627158	1	Cylindrical screw DIN 912- M6 x 30-8.8
130	626190	1	Cylindrical screw DIN 912- M6 x 10-8.8
140	626303	1	Recessed-head screw ISO 10642-3m6 x 6-8.8

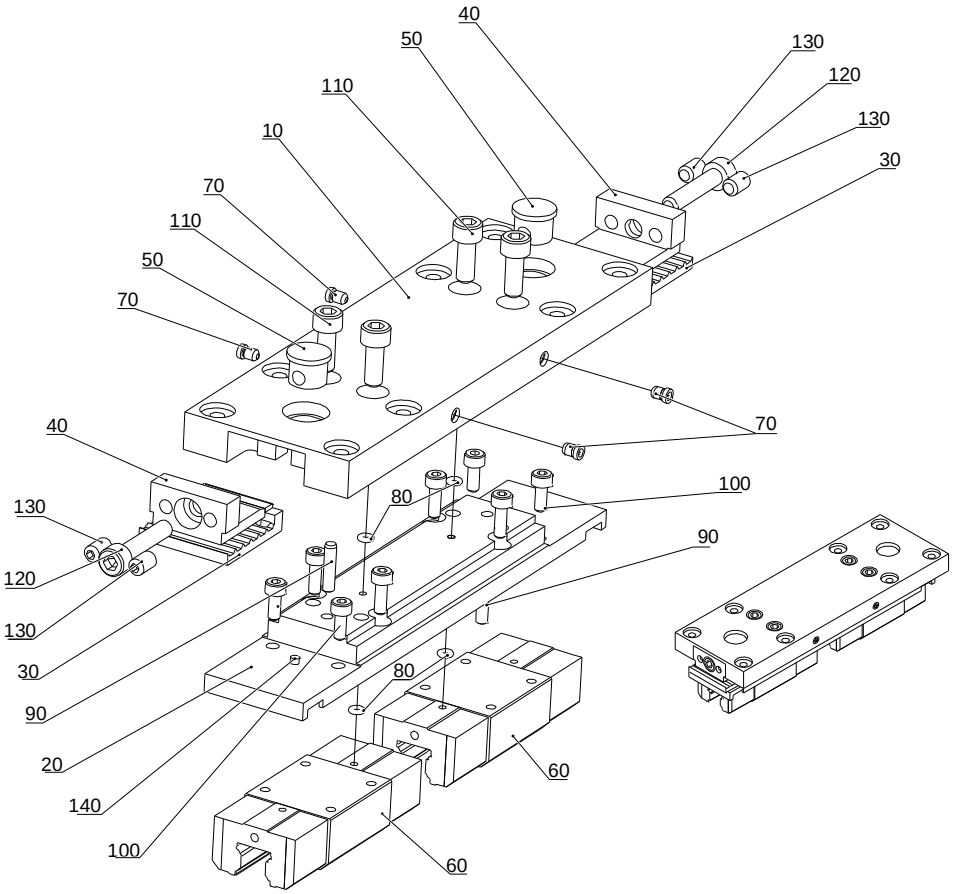

Figure 33: Modul 65/15 carriage complete art. no.: 1061264

7.3 Long carriage module 65/15/300 PS complete

Article no.: 1061314; see *Figure 34, bottom*.

Drawing item	Article no.	Part (1) / subassembly (0)	Designation
10	1061308	1	Carriage plate
20	1061294	1	Adapter plate
30	1061205	1	Tooth segment, complete
40	1061203	1	Pressure piece
50	1023942	1	Threaded sleeve
60	1046583	1	Guide carriage size 15
70	1028704	1	T. lubrication nipple, DIN 3405, type D4
80	1031602	1	O-Ring, type: 1,80-1,80
90	626506	1	Cylindrical pin ISO 8734-4m6x18
100	626062	1	Cylindrical screw DIN 912-M4x12-8.8
110	626056	1	Cylindrical screw DIN 912-M6x16-8.8
120	627158	1	Cylindrical screw DIN 912-M6x30-8.8
130	626190	1	Threaded pin DIN 9123-M6x10-8.8
140	626303	1	Recessed head screw 3m6x6

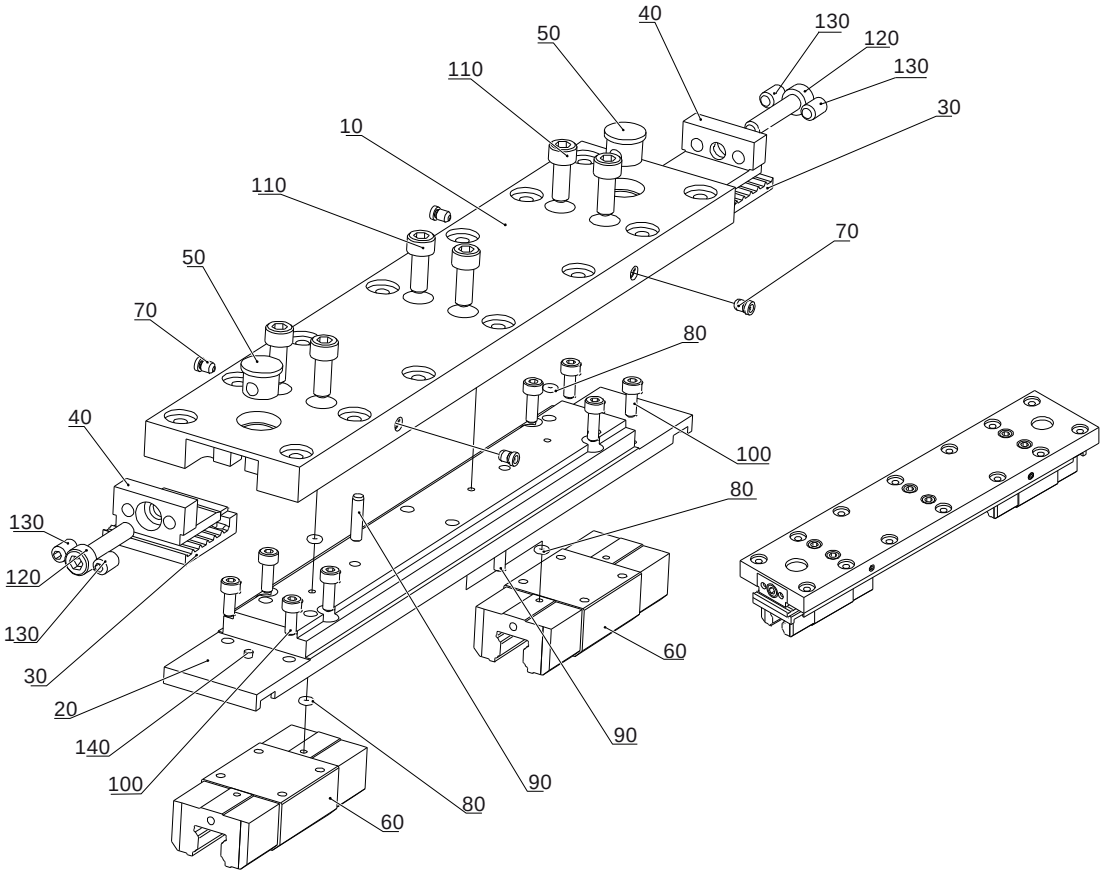

Figure 34: Modul 65/15 long carriage complete art. no.: 1061314

7.4 Short carriage L=95 mm

Article no.: 1084724; see *Figure 35, bottom*.

Drawing item	Article no.	Part (1) / subassembly (0)	Designation
10	1084723	1	Carriage plate L=95
20	1084725	1	Adapter plate short carriage
30	1061205	1	Tooth segment, rework
40	1061203	1	Pressure piece, rework
50	1023942	1	Threaded sleeve
60	1046583	1	Guide carriage size 15
70	1028704	1	T. lubrication nipple, DIN 3405, type D4
80	1031602	1	O-Ring, type: 1,80-1,80
90	626506	1	Cylindrical pin, DIN 6325-4m6x18
100	626062	1	Cylindrical screw DIN 912-M4x12-8.8
110	1027030	1	Cylindrical screw stainless steel DIN 912-M6x16 / V2A
120	1019272	1	Cylindrical screw stainless steel DIN 912-M6x30 / V2A
130	58044	1	Threaded pin stainless steel DIN 912 3M6x10 / V2A
140	626305	1	Cylindrical pin, DIN 6325 3M6x10
150	1084735	1	Insertion element lubrication
160	1021053	1	O-Ring NBR 70 Shore A 2.5-1.00

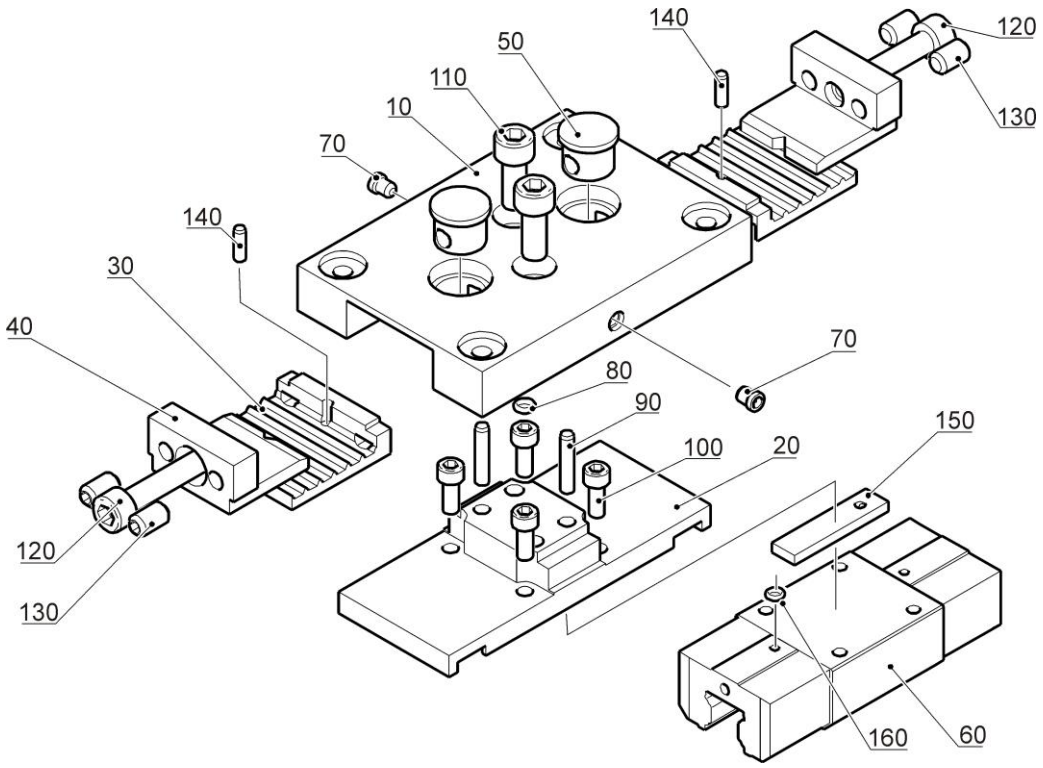

Figure 35: Module 65/15 short carriage L=95 mm, art.-no.: 1084724

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7.5 (Belt) Gearbox module 65/15

Subassembly No.: 1000475; see *Figure 36, page 37*.

Drawing item	Article no.	Part (1) / subassembly (0)	+	Designation
10	1021557	1	+	Housing
20	029690	1		Toothed disc AT5/42-0
30	1007376	1	+	Toothed disc AT5/42-2, Ø=32mm
40	028722	1	+	Toothed disc AT5/42-2, Ø=38mm
50	1006664	1	+	Toothed disc AT5/42-2, Ø=40mm
60	732770	1		Clamping set 16/32
70	732770	1	+	Clamping set 16/32
80	732294	1	+	Clamping set 20/38
90	734168	1	+	Clamping set 22/40
95	526735	1	+	Toothed disc AT5/20-2, incl. Clamping set Ø=12mm
98	525983	1	+	Toothed disc AT5/20-2, incl. Clamping set Ø=14mm
100	525984	1	+	Toothed disc AT5/20-2, incl. Clamping set Ø=16mm
110	1005790	1	+	Toothed disc AT5/14-2, incl. Clamping set Ø=10mm
120	1005756	1	+	Toothed disc AT5/14-2, incl. Clamping set Ø=12mm
130	1025513	1		Belt gearbox lid
140	1042097	1		Motion link
150	626072	1		Fillister head screw ISO 7380-M4x8-8.8
160	1004001	1		Insertion cover
170	730353	1	+	Toothed belt 25AT5/390
180	732286	1	+	Toothed belt 25AT5/375
190	908243	1	+	Toothed belt 25AT5/450

+ use depending on design

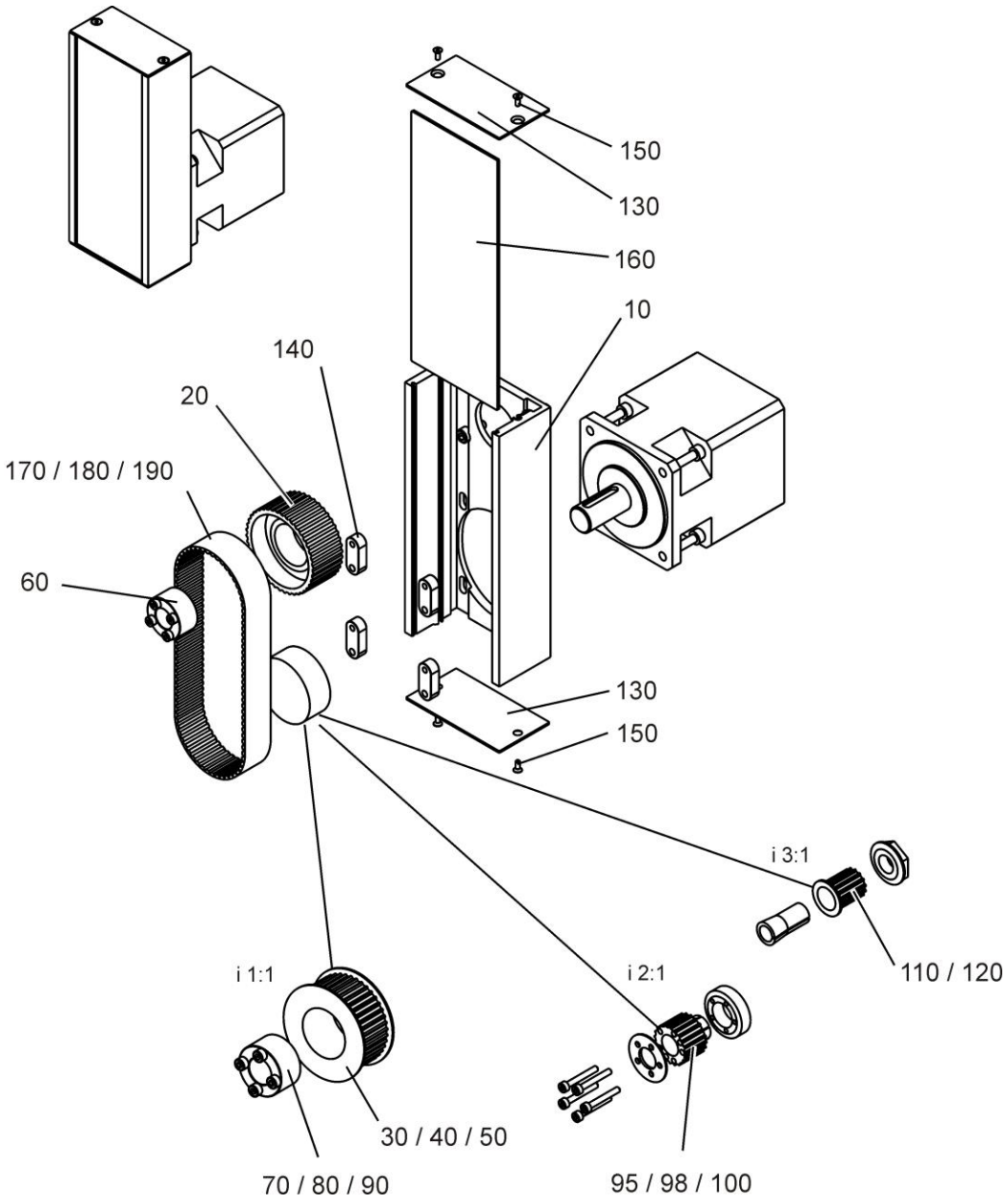


Figure 36: Belt gearbox module 65/15, subassembly no.: 1000475

7.6 Flange

Subassembly No.: 1000476; see *Figure 37, bottom*.

Drawing item	Article no.	Part (1) / subassembly (0)	+	Designation
10	1022105	1		Flange axial
20	1022129	1		Flange plate axial
30	734161	1		Plastic cover
40	626037	1		Cylindrical screw DIN 912 - M6x20-8.8
50	626244	1		Cylindrical screw DIN 912-M6x60-8.8
60	627215	1		Retention ring
70	1022199	1	+	Coupling Ø=16mm
75	1022203	1		Ring gear red
80	1022201	1	+	Coupling Ø=20mm
90	1022202	1	+	Coupling Ø=22mm
100	1006530	1	+	Sleeve 12/16
110	1007310	1	+	Sleeve 15/20
120	1008886	1	+	Sleeve 14/16
130	1022206	1	+	Sleeve 19/22

+ use depending on design

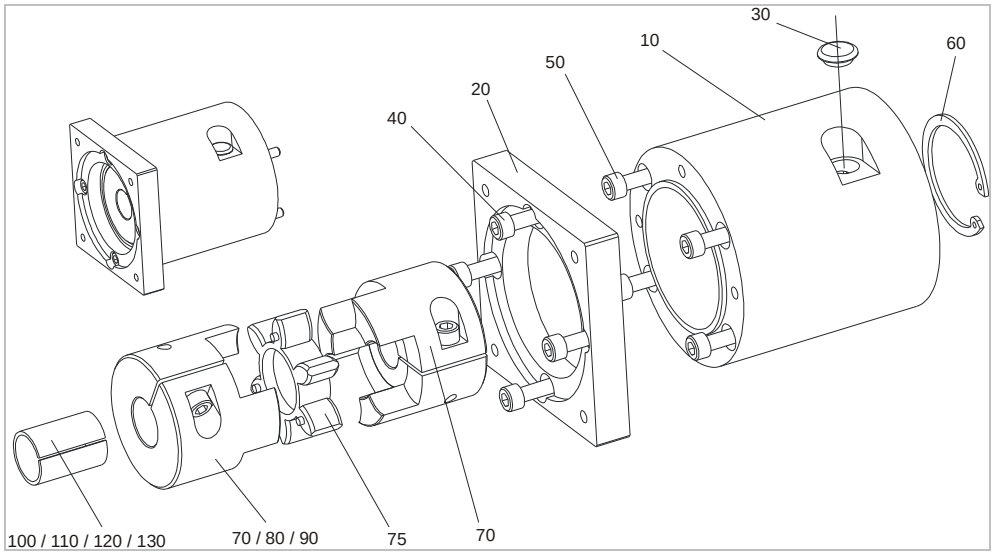


Figure 37: Flange module 65/15; i = 1:1, subassembly no.: 1000476

CAUTION

Please additionally observe the wear parts list included with the delivery according to the order

7.7 Design-specific assemblies/components

7.7.1 Installation flange gearbox (e.g. planetary gear type PLFE64)

The following different drive sets for flange gearboxes may be used:

Designation	Part No.:
Drive set 65/15 FLG	1067741
Drive set 65/15/FLG/PA	1066042

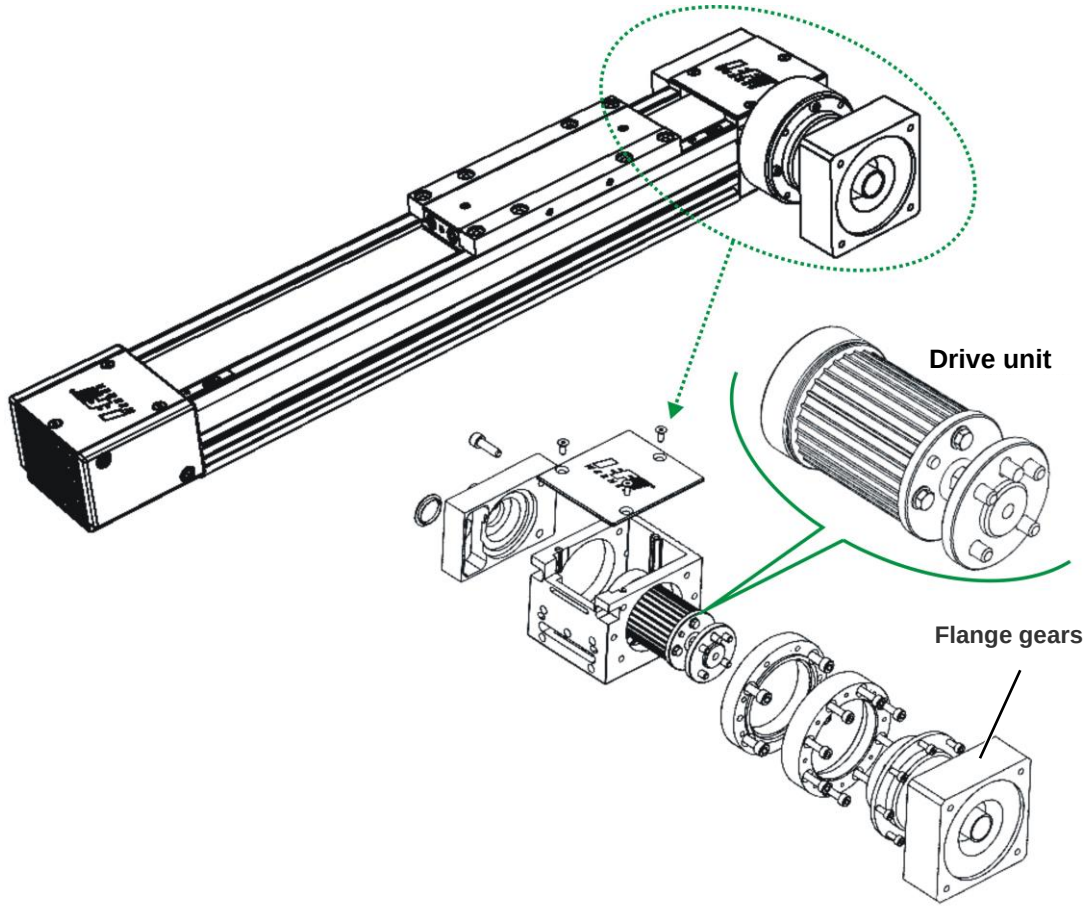
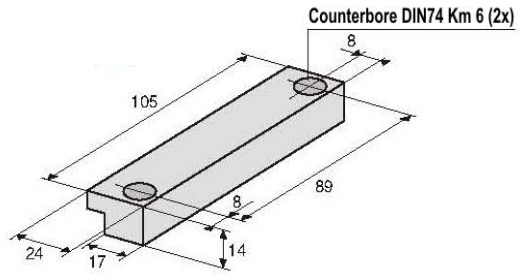
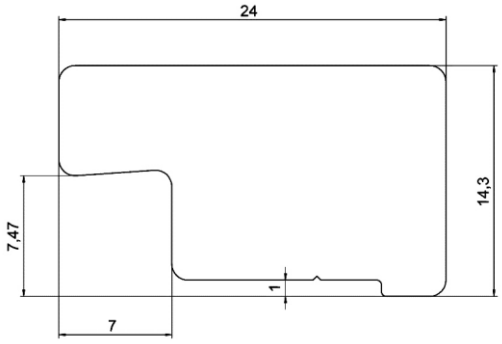


Figure 38: Installation flange gear (example with drive set 1067741)

7.7.2 Overview clamping elements



Clamping element, example type 105



Scaled drawing clamping element

Clamping element Type:	L1 in mm	L2 in mm	Article number:
16	0	16	220701
65	49	65	1062169
80	64	80	1021641
105	89	105	28674
115	99	115	1054491
140	124	140	220702
160	64	160	1039032
undrilled		customer-specific	1019192

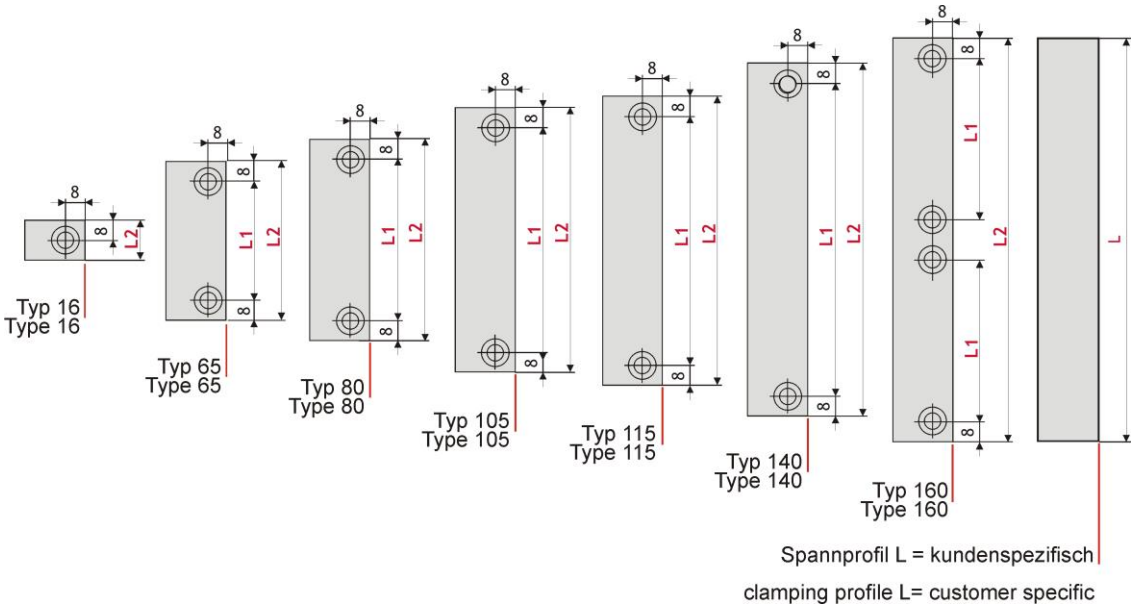


Figure 39: Overview clamping elements

8 Declaration of incorporation

EC declaration of incorporation in the sense of the EC directive 2006/42/EC (machinery), Annex II B

The manufacturer:

IEF-Werner GmbH

Wendelhofstraße 6

78120 Furtwangen - Germany

hereby declares that the following products (the incomplete machine/partial machine):

Designation	IEF-Werner parts group number
Module 65/15	TG1001028

where possible based on the scope of delivery, corresponds to the following basic requirements of the directive on **Machinery (2006/42/EC)**:

- Annex I, item: **1.1.2**; **1.1.3**; **1.1.5**; **1.3.2**; **1.3.4**; **1.5.1**; **1.7.3**.

The incomplete machine also corresponds to the following further directives:

Directive **2004/108/EC** of the council, dated 15 December 2004, for harmonisation of the legal provisions of the member states on electromagnetic compatibility.

Directive **2006/95/EC** of the council, dated 12 December 2006, for harmonisation of the legislation of the member states regarding electrical equipment for use within specified voltage thresholds.

The technical documents were generated according to Annex VII part B and may be electronically submitted to the national authorities upon justified request.

List of some applied harmonised standards:
EN ISO 12100-1,-2 / EN ISO 13857 / EN ISO 13850 / EN 60201-1

Commissioning of the incomplete machine delivered by us is not permitted until it has been determined that the overall system into which the incomplete machine is installed meets the basic safety and health protection requirements according to Annex I of the above EC directive 2006/42/EC.

Name of the documentation officer: Frank Reichelt, technical editor

Address of the documentation officer: see manufacturer's address

Furtwangen, 06.02.10

Manfred Bär (manager)