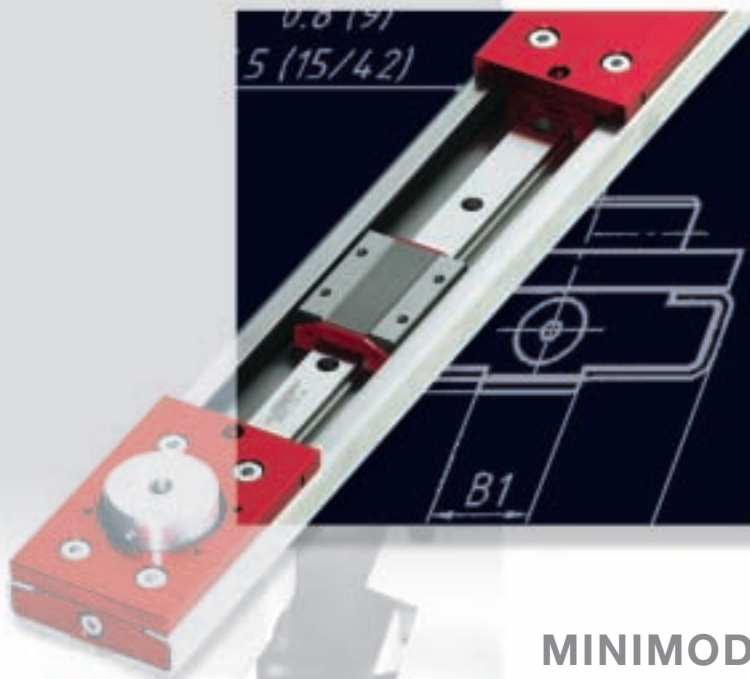
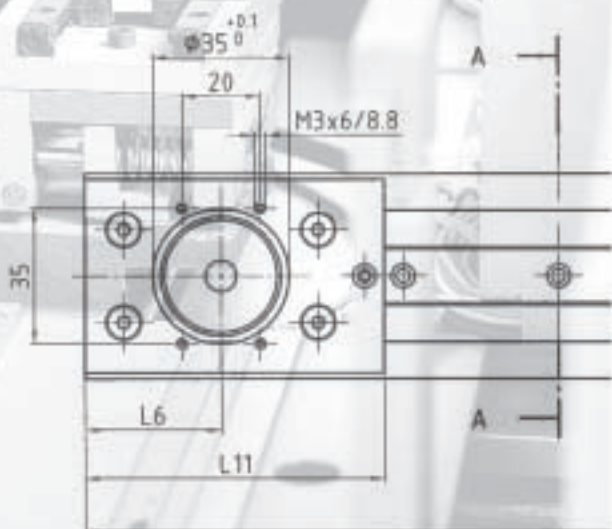


SCHNEEBERGER
LINEAR TECHNOLOGY



MINIMODULE

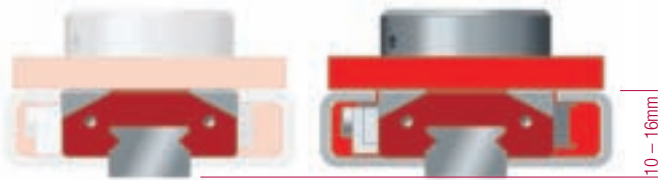
the highly precise, compact
positioning solution
with integrated actuation



All the features of MINIRAIL... but with integrated actuation

Based on SCHNEEBERGER MINIRAIL

Small profile with the **lowest overall height available on the market**



Simple integration.

MINIMODULE is constructed around our Miniature Guide-way - MINIRAIL – for ease of installation the fixing holes of the MINIRAIL carriage and rail are used for attaching to your machine structure.



MINIMODULE: Plug & play precision

With an integrated tooth belt drive, MINIMODULE is a precise and compact solution for positioning and motion challenges.

Based on our MINIRAIL sizes 9, 15 and 42, the MINIMODULE excels with its unique, compact design and minimum number of component parts.

With MINIMODULE, you receive the same advantages of the SCHNEEBERGER MINIRAIL in the form of a module: high stiffness, corrosion resistant materials as standard and the lowest overall height on the market. MINIMODULE also offers a superior cost- performance ratio.

Advantages at a glance:

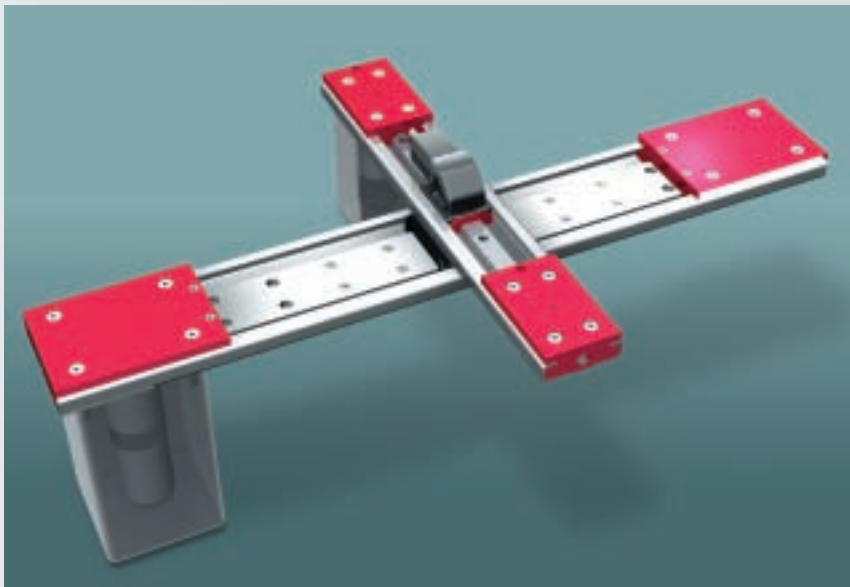
- » The proven technology and precision of SCHNEEBERGER MINIRAIL Guideways
- » Reliable tooth belt drive
- » Highly compact design with open construction
- » Small profile with the lowest overall height in the market (10 – 16mm)
- » High stiffness of the MINIRAIL Guideways
- » Corrosion resistant components
- » Minimal assembly cost as an intermediate adapter is not required between the machine structure and the MINIRAIL Guideways; leading to greater accuracy of the overall machine
- » Clean room compatible up to class 10'000
- » Constructed for direct motor assembly



MINIMODULE: Smart motion solutions

MINIMODULE is ideal for applications where installation space is limited and a high precision, modular and economic construction is required.

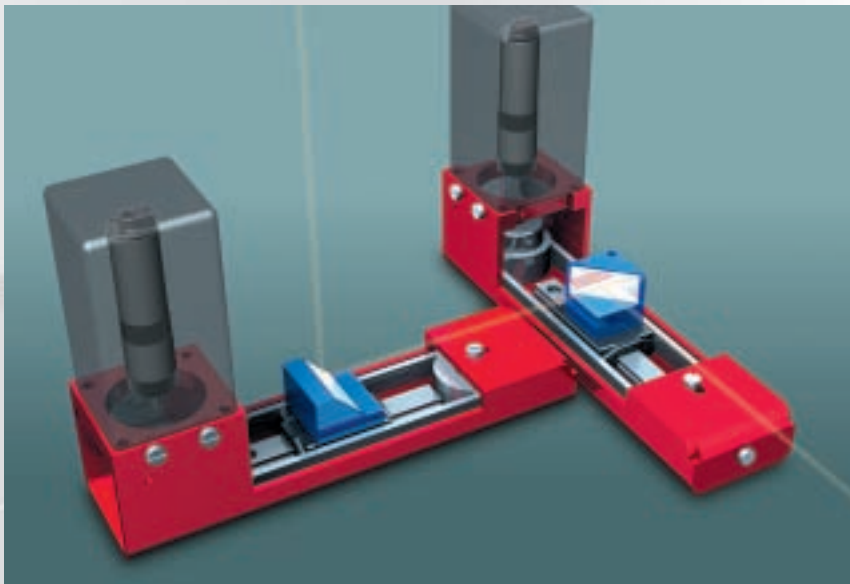
The advantages of MINIMODULE come into their own in Handling and Automation applications.



Automation solution.

More and more automation solutions require compact precise linear modules that can be installed quickly and easily. Our approach to this is to supply the actuator with a motor mounting flange, enabling you to integrate your own motor / drive system. An additional coupling is normally not necessary due to the damping feature of the tooth belt drive.

The repeatability of the MINIMODULE depends on the drive solution, $\pm 0.03\text{mm}$ can typically be achieved. The unit is capable of speeds of up to 5m/s with accelerations of up to $5g$.



Ideal for Medical Industry applications.

MINIMODULE is a reasonably priced and highly reliable positioning solution, which can be utilized in diagnostic equipment. As the modules are made of corrosion resistant materials, the MINIMODULE meets the regulations for equipment used in the production of medical instruments. Thanks to the modular construction, it is possible to produce low cost, efficient and accurate X-Y positioning and motion solutions.



MINIMODULE – the basic version – all in



The MINIMODULE's striking features are:

- » open design
- » constructed for direct motor assembly

MINIMODULE – Optional accessories & Added value

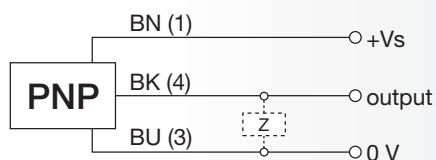
Thanks to various options, MINIMODULE can be adapted to meet your requirements. We would be pleased to discuss specific solutions with you.

Built in limit switches (-LS) simplify the integration.

- » Inductive limit switches are integrated into the end plates to prevent excessive travel.
- » The limit switches are installed internally within the unit and have no influence on the external dimensions of the complete module. The limit switches detect the start and end of travel positions.
- » The switch is fixed to the tooth belt which gives easy adjustment of the limit position.



Connection diagram



Hysteresis	2 ... 20% of Sr	Voltage drop Vd	< 2 VDC
Switching frequency	< 3 kHz	Output current	< 100 mA
Voltage supply range +Vs	10 ... 30 VDC	Working temperature	-25 ... +75° C
Current consumption max.	12 mA	Protection class	IP 67
Break function	NC	Short circuit protection	Yes
Output circuit	PNP	Reverse polarity protection	Yes

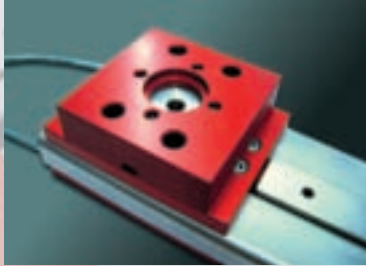


An optimized cover strip (-CS) for protection of the guide system.

- » A polyester cover strip provides excellent protection of the MINIRAIL guide against contamination.

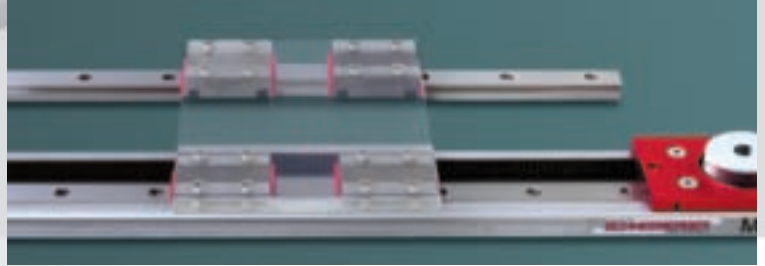
The use of the cover strip reduces the stroke by 9 – 18mm and the mounting surface of the carriage is raised by 10 – 12mm.

> ... even more Added Value



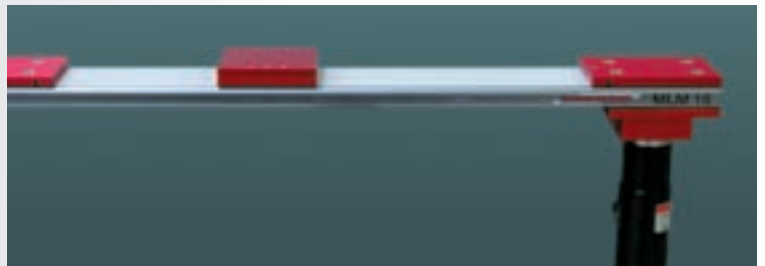
We can provide the appropriate flange (-MF) for any motor type.

- » Application and customer specific flanges are available.



MINIMODULE with additional carriages (-AC) – the best all-round motion solution.

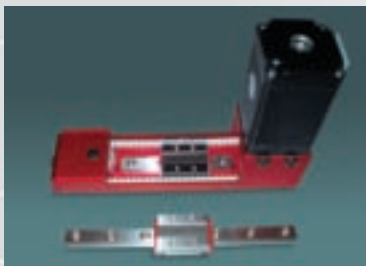
- » MINIMODULE can also be provided with additional carriages. (Basic version has a single carriage connected directly to the tooth belt). Motion of carriages in opposite directions (e.g. for a clamping mechanism), can be achieved by fixing the two carriages to opposite sides of the tooth belt. The connection to a parallel MINIRAIL guide provides yet another possible variation.



Flexibility in motor mounting (-U).

- » Our open design allows motor mounting from the underside.

> Applications and specific solutions



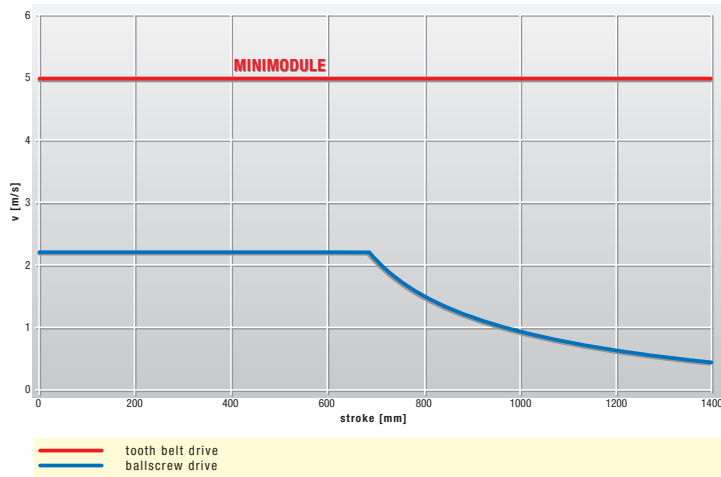
We strive to fulfil your requirements.

- » The compact design of the MINIMODULE coupled with SCHNEEBERGER's comprehensive engineering know how, puts us in a strong position to realize specific solutions to the most demanding applications.





Constant speed - even for long strokes

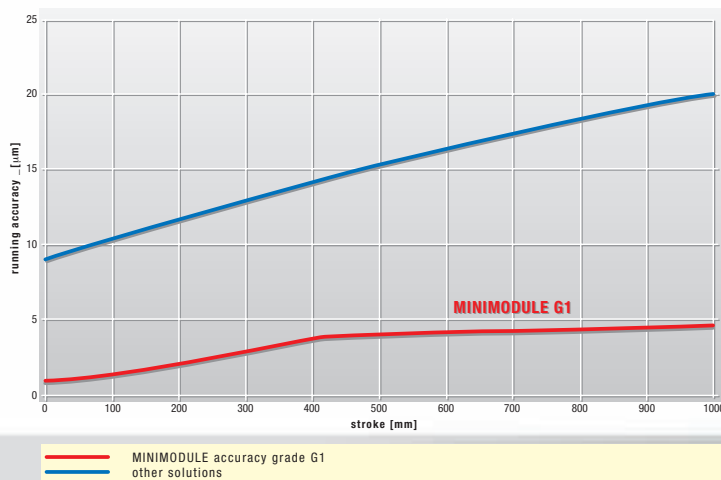


«No limits» for long strokes.

The critical speed of a ball screw drive restricts the speed of a linear axis - values can be as low as 40% of those of a tooth belt drive.

With the SCHNEEBERGER technique, the speeds up to 5m/s can be realised over the whole travel range.

Much more accurate than conventional solutions



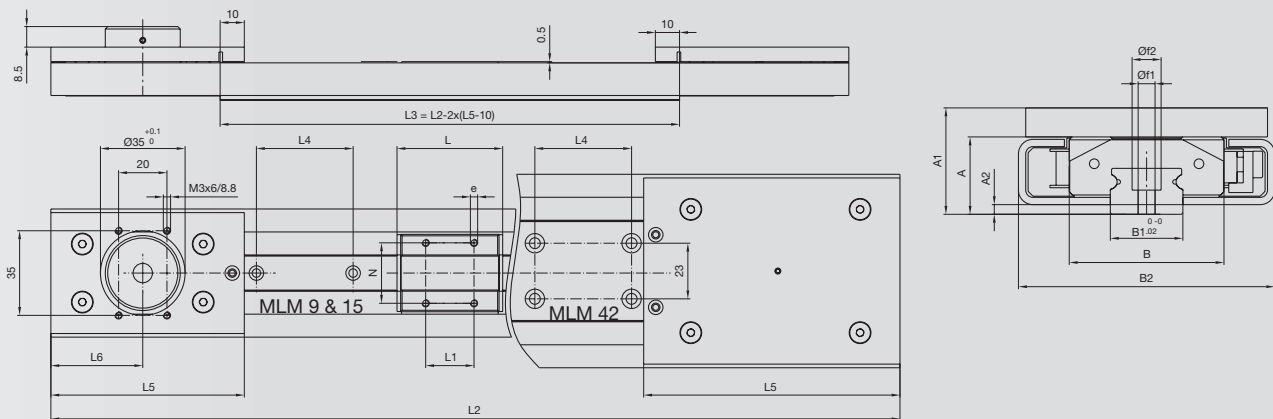
THE SCHNEEBERGER standard.

Because the MINIMODULE is based on the high precision MINIRAIL, exceptional running tolerances better than 5µm per 1m are achieved.

Conformity

SCHNEEBERGER products conform to EU directives 2002/95/EC (RoHS)

Dimensions and technical Data



Type	Height			Width			Lengths						Stroke			Others					
	A	A1	A2	B	B1	B2	L	L1	L2	L2	L2	L4	L5	L6	H	H	X	N	e	f1	f2
	mm	mm	mm	mm	mm	mm			from mm	in steps of mm	to max. mm	mm	mm	mm	from mm	to mm	H=L2-X mm	mm		mm	mm
9	10	16	0.8	20	9	42	32	10	275	20	1055	20	70	33	103	883	172	15	M3	3,5	6
15	16	22	2	32	15	53	44	20	330	40	1090	40	80	38	126	886	204	25	M3	3,5	6
42	16	22	2	60	42	80	56	20	422	40	1142	40	106	51.5	154	874	268	45	M4	4,5	8

Order Information

MLM 9 – 275.103 MINIMODUL Size 9 – Length L2 = 275 mm. Stroke L2-X = 103 mm

Type	Driving force	Stroke p. revolution	Loading capacities (according catalogue MINIRAIL)		Moments			
			Co N	C N	MoQ Nm	MoL Nm	MQ Nm	ML Nm
	max.N	mm						
9	50	81	2770	1690	12.9	10.2	7.9	6.2
15	100	120	5620	3680	42.7	28.1	27.9	18.4
42	100	204	8110	4750	171.2	56.8	100.3	33.3

Options:

Limit switches (-LS), cover strip (-CS), motor flange (-MF), additional carriages (-AC), special motor mounting (-U)

Free downloads, easy and efficient

To make your design process easier, 2D- and 3D CAD drawings are available in all formats on the parts server from Cadenas. The required download location is on the SCHNEEBERGER homepage (www.schneeberger.com) under the category PRODUCTS / MINIMODULE.

www.schneeberger.com

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