servomold®

SERVO LINEAR ACTION

SLA | SSA

FOR ROTATING CORES

Compact linear actuators with exchangeable spindle
and high-performane servo motor

DME MOLDComponents

Servomold Linear Actuators

SLA XS/S/M/L/XL | **SSA** M

Product benefits at a glance

- 100% position and high repeat accuracy
- Continuously high forces and speeds, independent of the process state
- Movement profiles can be freely and individually defined and called up
- Clean, oil-free and therefore optimal cleanroom suitability
- Easy maintenance due to replaceable ball and roller screws
- Different power classes from 4kN to 60kN available at short notice
- Special solutions with forces up to 150kN as well as rust-proof designs can be realized

100 % control

Servomold linear actuators, together with Servomold control units, allow precise, powerful and safe linear motion.

The advantages over hydraulic or pneumatic systems are many but can be summed up in one point - 100% control.

This allows an optimal design of the sequences in the injection molding process, but also the injection mold tools benefit from controlled and careful movements.

The consequences are less wear, lower maintenance requirements, higher availability and a significantly longer mold life.

Servo control system SMC-Mini with control panel SMC-Panel

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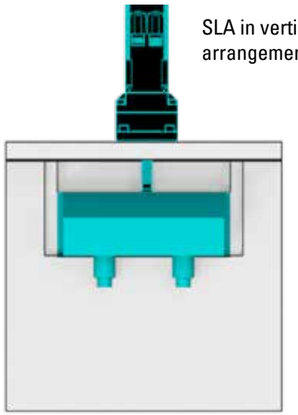
Applications

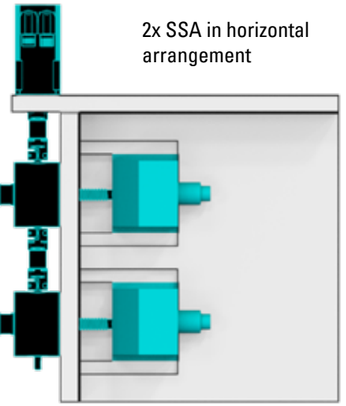
New tools and retrofit

Servomold linear actuators are the perfect alternative to hydraulic or pneumatic cylinders, both for new molds and for retrofitting existing molds.

The application possibilities and areas of use are diverse - from slider and core movements to racks and plate movements, linear actuators can be used flexibly.

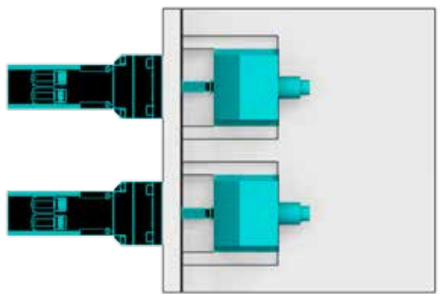


SLA in vertical arrangement



2x SSA in horizontal arrangement

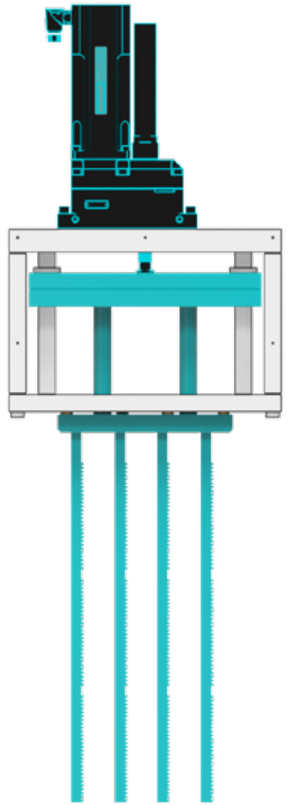
2x SLA in horizontal arrangement



Sliders

For the movement of sliders, Servomold linear actuators can be used as individually controllable actuators or in any multiple combination with a single servo drive.

- Core pull and slider movements also possible in a closed mold
- Actuator can hold against injection pressure (calculation necessary)
- Multi-stage movements allow individual design of the demolding process
- Optional motor brakes for vertical arrangement prevent sagging of the mechanics when switching off the power



Racks

Rack and pinion driven unscrewing molds are still very popular.
With Servomold linear actuators, these can now be controlled powerfully, highly precisely and cleanly.

Permanent monitoring of the movement prevents damage to the mold and provides early indications of necessary maintenance or process changes.

This makes the linear actuators the safe and precise alternative to hydraulic cylinders.

Plates, core pulls and more

The application possibilities are nearly unlimited. Our project team will help you with the selection and implementation of the linear actuators and give you helpful suggestions - this way, even special applications can be successfully realized.

Special sizes

Multi spindle systems

The special SLA variants can also be equipped with several spindles to achieve even higher forces or uniform force distribution. The design is always customer-specific and can be adapted specifically to the requirements of the application.

Customer example:
SLA-3L with 100kN maximum thrust and 55kN nominal - Speed 50mm/sec.

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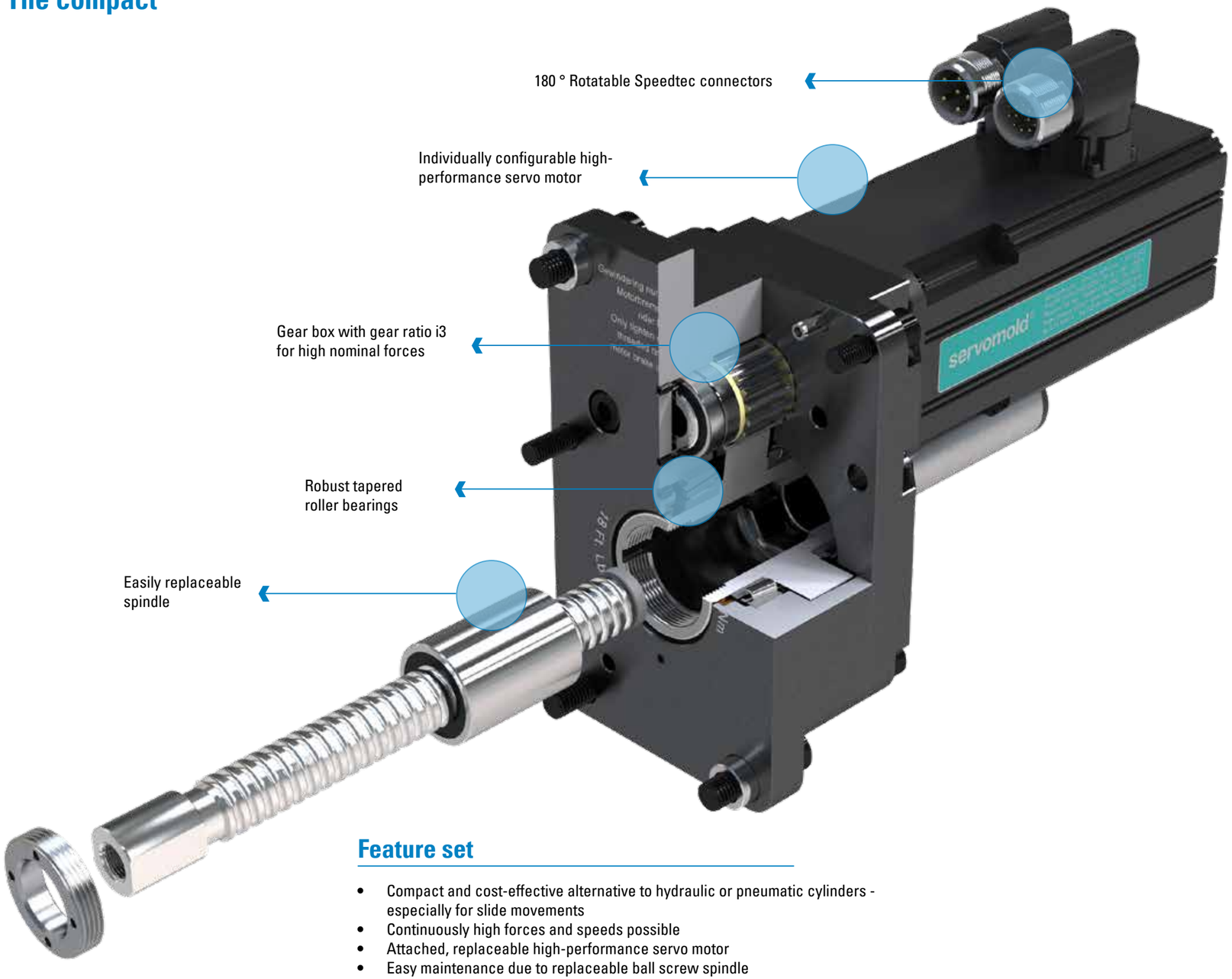
Product Highights SLA

The compact



Patent pending

Feature set

- Compact and cost-effective alternative to hydraulic or pneumatic cylinders - especially for slide movements
- Continuously high forces and speeds possible
- Attached, replaceable high-performance servo motor
- Easy maintenance due to replaceable ball screw spindle
- Compact overall length due to offset motor arrangement
- Different position encoder systems and optional holding brakes possible

SLA

The compact servo linear actuator SLA allows translational movements with stroke lengths up to 1000 mm and more. The linear actuator with exchangeable ball or roller screw and high-performance servo motor is a compact, powerful, energy-efficient and clean alternative to hydraulic or pneumatic cylinders for slider, core or plate movements.

› Gear ratio i3 for high nominal forces

› Ball or roller screw with pitch 2, 5, 10 or 20mm, configurable in any length and easily removable for maintenance.

› Servo motor with position encoder type resolver or absolute encoder as well as with additional holding brake available.
Optional:
- Other brands adaptable
- Can be combined with additional planetary gear

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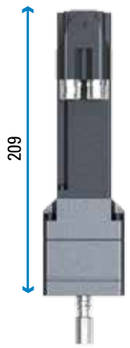
SLA Varients

The sizes in comparison

- Length depending on motor configuration and spindle length
- Maximum force depending on motor configuration, spindle pitch and motion profile

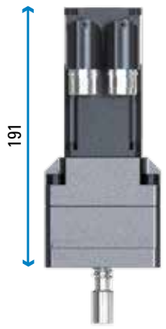
XS
4kN



Spindle

KGT-12 / RGT-8
Spindle head Ø15mm
Thread M8x1

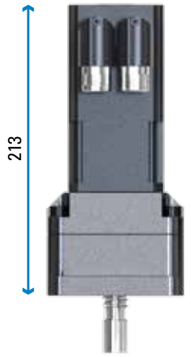
S
7kN



Spindle

KGT-16 / RGT-12
Spindle head Ø20mm
Thread M10x1

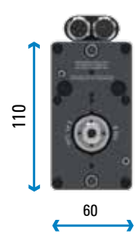
M
12kN



Spindle

KGT-20 / RGT-15
Spindle head Ø21,5mm
Thread M12x1,5

- KGT = Ball screw - for standard loads
- RGT = Roller screw - for higher loads and longer longevity



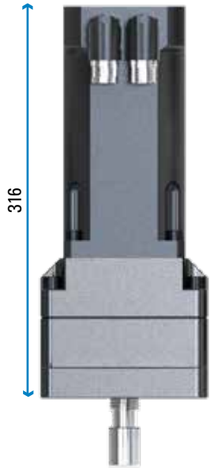
- Variants L and XL available with roller screw only

SSA-M
12kN

Spindle

KGT-20 / RGT-15
Spindle head Ø21,5mm
Thread M12x1,5

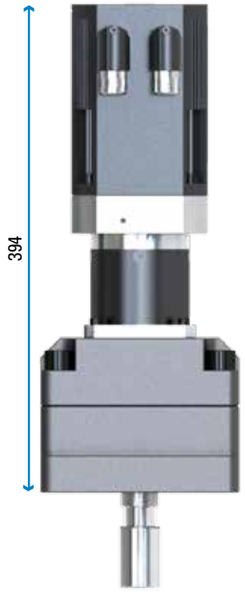
L
30kN



Spindle

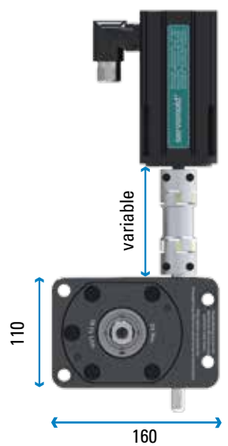
RGT-25
Spindle head Ø30mm
Thread M16x1,5

XL
50kN



Spindle

RGT-30
Spindle head Ø40mm
Thread M20x1,5



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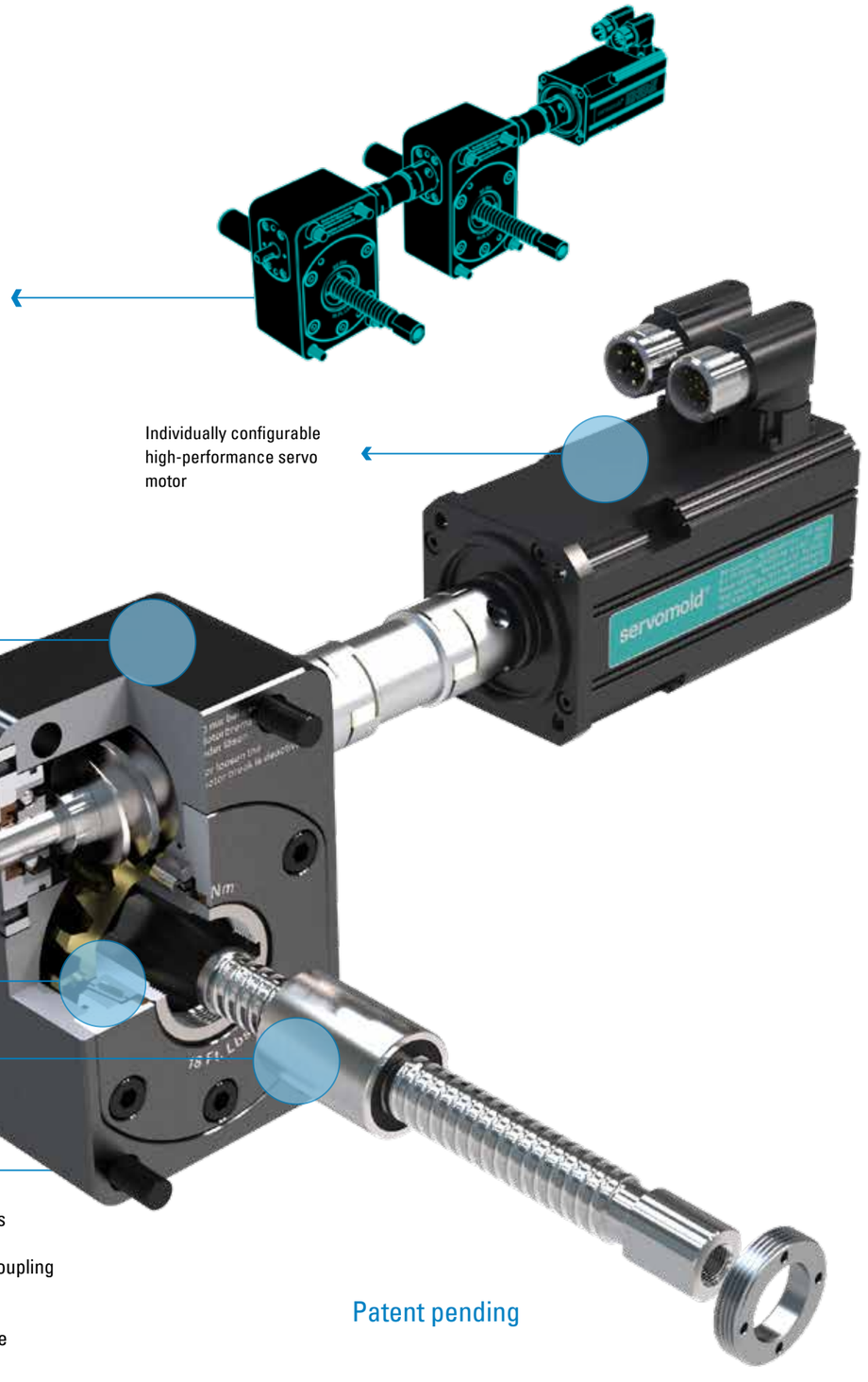
Product Highlights SSA

The flat



SSA

Due to the 90° arrangement of the drive unit, the servo worm actuator SSA allows a particularly compact and flat design of translatory movements with stroke lengths up to 1000 mm and more. The linear actuator with exchangeable ball or roller screw provides a powerful, energy-efficient and clean alternative to hydraulic or pneumatic cylinders for slider, core or plate movements

› Gear ratio i4 for high nominal forces

› Ball or roller screw with pitch 2, 5 or 10mm, configurable in any length and easily removable for maintenance.

› Servo motor with position encoder type resolver or absolute encoder as well as with additional holding brake available.
Optional:
- Other brands adaptable
- Can be combined with additional planetary gear

Feature set

› Compact and low-profile alternative to hydraulic or pneumatic cylinders
› Continuously high forces and speeds with extreme precision possible
› Replaceable high-performance servo drive, connected via elastomer coupling
› Easy maintenance due to replaceable ball screw spindle
› Particularly flat build up due to 90° arrangement of the drive unit
› Different position encoder systems and optional holding brakes possible

Patent pending

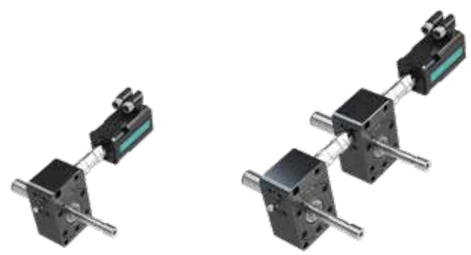
DME MOLDComponents

SLA / SSA Variants

Linear actuators - technical details

- The technical data are based on the standard configuration (spindle pitch 5mm).
- All data dependent on linear actuator configuration and load profile
- L and XL versions available with roller screw only

Variant	XS	S	M	L	XL
Possible spindle variants	KGT-12/RGT-8	KGT-16/RGT-12	KGT-20/RGT-15	RGT-25	RGT-30
Servo motor flange dimension in mm and motor shaft Ø in mm	40x40 (42x42) - Ø8	57x57 (58x58) - Ø9	70x70 (72x72) - Ø11	100x100 - Ø19	Planetary gearbox 80x80 gearbox shaft Ø20
Maximum / nominal **force** in N - **KGT**	**4000** / 1500	**7000** / 3000	**12000** / 8000	---	---
Maximum / nominal **force** in N - **RGT**	**6000** / 1500	**9000** / 3000	**15000** / 8000	**30000** / 20000	**50000** / 30000-40000
Gearbox ratio	3	3	3	3	3
Max. speed mm/sec.	400 (motor-dependent)	360 (motor-dependent)	240 (motor-dependent)	190 (motor-dependent)	110 (10mm pitch)
Weight in kg - motor variant resolver without brake	3.4	7.6	10.7	28	72.9
Load capacity of spindle bearing dynamic / static in N	18700/24900	27500/38000	34500/52000	103000/127000	162000/212000



SSA-1M	SSA-2M
KGT-20 / RGT-15	KGT-20 / RGT-15
Servo motors + coupling of different size	Servo motors + coupling of different size
12000 / 8000	12000/8000
15000 / 8000	**15000** / 8000
4	4
230 (motor-dependent)	230 (motor-dependent)
13.7	23.4
34500 / 52000	34500 / 52000

KGT spindle

Ball screw spindle - technical details

Variant **	Spindle Ø (mm)	Pitch (mm)	Dyn Last Cdyn (N)	Spindle nut Ø x L (mm)	Spindle head*	Head plate
KGT-12x5	12	5	8660	Ø21x47	Ø15x20//13-M8x1	Ø22x6-M8x1
KGT-12x10**	12	10	5999	Ø21x47	Ø15x20//13-M8x1	Ø22x6-M8x1
KGT-16x5	16	5	14800	Ø28x35	Ø20x25//17-M10x1	Ø27x8-M10x1
KGT-16x10**	16	10	11500	Ø28x45	Ø20x25//17-M10x1	Ø27x8-M10x1
KGT-20x5	20	5	24700	Ø34x55	Ø21.5x25//20-M12x1.5	Ø30x10-M12x1.5
KGT-20x10**	20	10	16900	Ø34x55	Ø21.5x25//20-M12x1.5	Ø30x10-M12x1.5

* Spindle head - Ø outer diameter x length // width lateral flattening - mounting thread
** Variant - not standard - delivery time and price on request

IMPORTANT

- The longevity of the spindle must be calculated for the specific application!
- The basis of the calculation is the load profile as well as the temperature and quality of the lubrication!
- No lateral forces may act on the spindle!
- The spindle must be secured against rotation!
- The spindle must not be removed from the spindle nut!

RGT spindle

Roller screw spindle - technical details

Variant **	Spindle Ø (mm)	Pitch (mm)	Dyn Load Cdyn (N)	Spindle nut Ø x L (mm)	Spindle head*	Head plate
RGT-8x2**	8	2	14000	Ø21x47	Ø15x20//13-M8x1	Ø22x6-M8x1
RGT-8x5**	8	5	16600	Ø21x47	Ø15x20//13-M8x1	Ø22x6-M8x1
RGT-12x2**	12	2	24000	Ø28x51	Ø20x25//17-M10x1	Ø27x8-M10x1
RGT-12x5**	12	5	29100	Ø28x51	Ø20x25//17-M10x1	Ø27x8-M10x1
RGT-15x2**	15	2	25400	Ø34x55	Ø24x25//21.5-M12x1.5	Ø30x10-M12x1.5
RGT-15x5**	15	5	30800	Ø34x55	Ø24x25//21.5-M12x1.5	Ø30x10-M12x1.5
RGT-15x10**	15	10	32300	Ø34x55	Ø24x25//21.5-M12x1.5	Ø30x10-M12x1.5
RGT-25x2**	25	2	62300	Ø53x78	Ø30x31//25 - M16x1.5	Ø42x12-M16x1.5
RGT-25x5	25	5	65000	Ø53x78	Ø30x31//25 - M16x1.5	Ø42x12-M16x1.5
RGT-25x10	25	10	74000	Ø53x78	Ø30x31//25 - M16x1.5	Ø42x12-M16x1.5
RGT-25x20**	25	10	72800	Ø53x78	Ø30x31//25 - M16x1.5	Ø42x12-M16x1.5
RGT-30x2**	30	2	79700	Ø64x85	Ø40x50//32 - M20x1.5	Ø55x16-M20x1.5
RGT-30x5	30	5	87000	Ø64x85	Ø40x50//32 - M20x1.5	Ø55x16-M20x1.5
RGT-30x10	30	10	101000	Ø64x85	Ø40x50//32 - M20x1.5	Ø55x16-M20x1.5
RGT-30x20**	30	10	123900	Ø64x85	Ø40x50//32 - M20x1.5	Ø55x16-M20x1.5

* Spindle head - Ø outer diameter x length // width lateral flattening - mounting thread.
** Variant - not standard - delivery time and price on request

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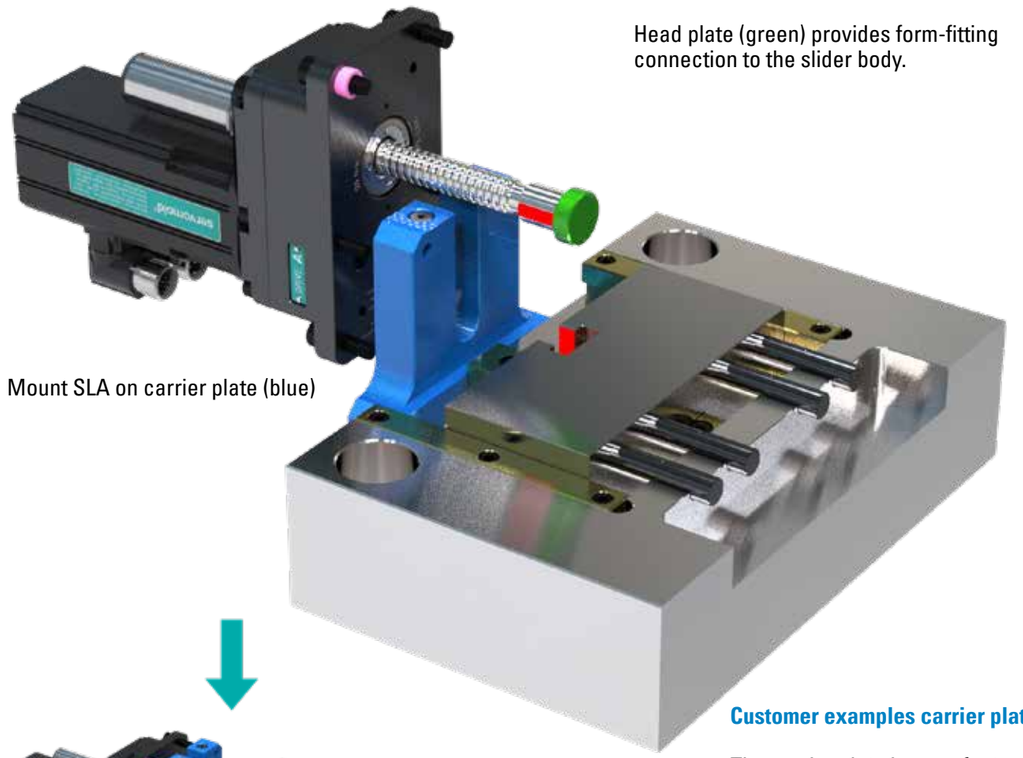
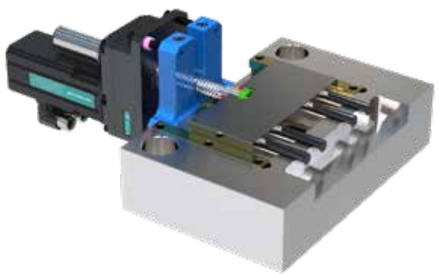
Installation Examples

Centering sleeves (pink) for centering the SLA to the carrier plate (blue)



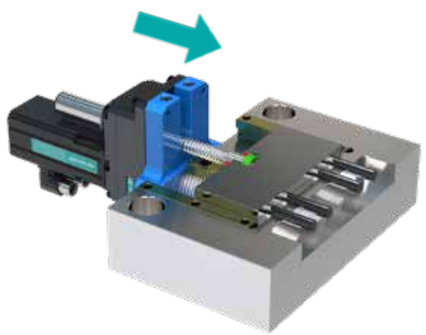
Mount SLA on carrier plate (blue)



Insert spindle head with head plate (green) into slider body

Push the SLA together with the slider body to the front and insert the centering sleeves.

Screw the SLA to the carrier plate



Spindle head and slider body with lateral flats (red) to lock the spindle against rotation

Head plate (green) provides form-fitting connection to the slider body.

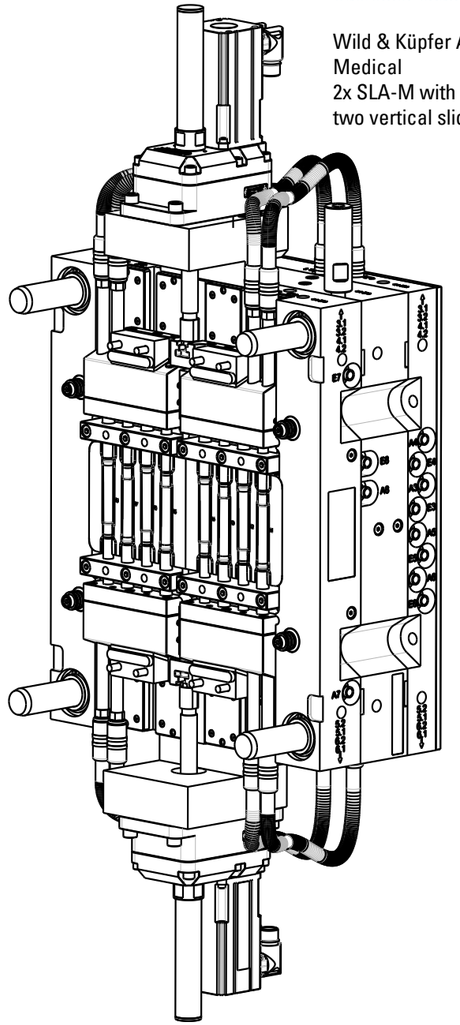
Customer examples carrier plate

The carrier plate is manufactured by the customer and must be cooled at mold temperatures >60°C.

WILD & KÜPFER

Customer example

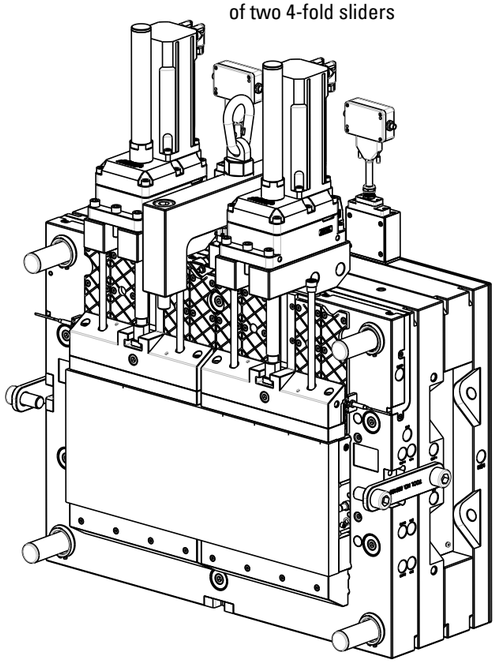
Wild & Küpfer AG
Medical
2x SLA-M with 12kN for moving two vertical sliders



Avenue
A Nolato Company

Customer example

Avenue - A Nolato Company
Medical
2x SLA-L with 30kN for the movement of two 4-fold sliders



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World Headquarters
DME Company LLC
29111 Stephenson Highway
Madison Heights, MI 48071
800-626-6653 *toll-free tel*
248-398-6000 *tel*
www.DME.net *web*
DME@DME.net *e-mail*

DME of Canada Ltd.
5345 Outer Drive Unit 3
Windsor, Ontario
Canada N9G 0C4
800-387-6600 *toll-free tel*
905-677-6370 *tel*
DME_Canada@DME.net *e-mail*

DME Mexico / South America
Circuito el Marques Notre, No.55
Parque Industrial El Marqués
El Marqués, Querétaro, CP 76246
52.442.713.5666 *tel*
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