

2. Screw jacks, non-rotating



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The worm wheel is provided with a female thread and converts the rotational movement into an axial movement of the spindle, when the latter is prevented from rotating (through its design or by means of an anti-rotation protection in the protection tube).

The innovative Nozag screw jack kit makes possible, perfect drive solutions from cost-effective standard components. The kit is subject to the highest standards of functionality, quality and design. A lot can be moved with very little expense and the investment, maintenance and operating costs remain within limits.

Screw jacks developed and manufactured by Nozag solve this task in a simple, inexpensive manner.

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Screw Jacks «Gold» – For Extreme Environmental and Operational Conditions

The shiny casing, mounting flange and cover indicate the highest degree of corrosion resistance. In simple terms, the conventional aluminum components as well as the external parts have been replaced by components made of the aluminum bronze material CuAl10Fe5Ni5. All the spindles and shafts as well as the internal elements are manufactured from stainless steel or synthetic material (seals).

- High corrosion stability combined with a high degree of wearing resistance and cavitation protection through CuAl10Fe5Ni5
- Resistance against mechanical damages due to an oxide protection film (basically Al₂O₃) that immediately forms on the material surface
- Excellent performance in applications with gases, fluids and solid materials

The CuAl10Fe5Ni5 material

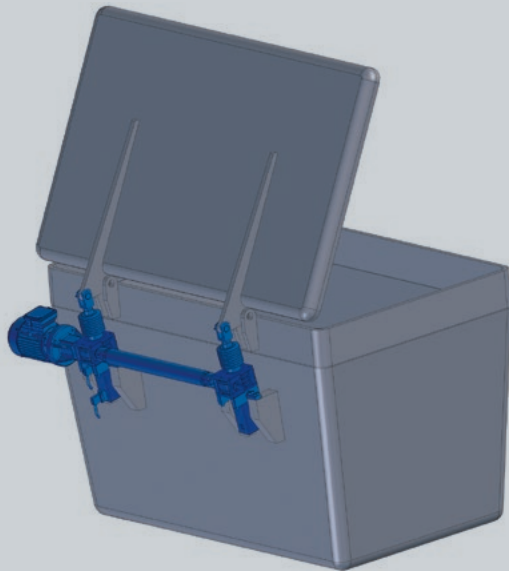
- features high scaling resistance (up to 800°)
- has a lower degree of corrosion resistance to strongly acidic media with high oxidation potential (such as nitric acid) as well as alkaline materials, because these will dissolve the oxide coating and prevent its formation.
- has a lower tendency to selective corrosion (dealumination)



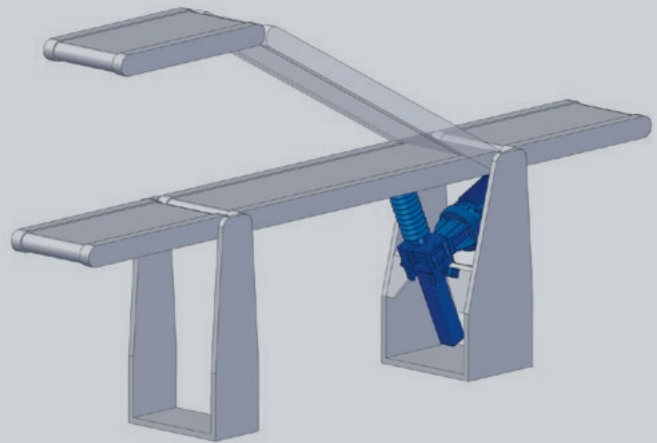
Areas of Application

Screw jacks of this design may be used for instance in industrial applications in the vicinity of saline water or sulfuric oxide, in slightly oxidizing and weak alkaline areas, in brackish water, in organic acids (acetate) and in reducing as well as slightly oxidizing mineral acids (diluted hydrochloric, hydrofluoric or phosphoric acid), in environments containing sulfuric acid at room temperature or at elevated temperatures.

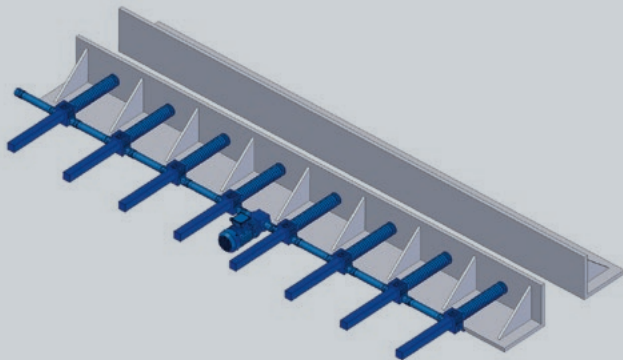
Tank opening



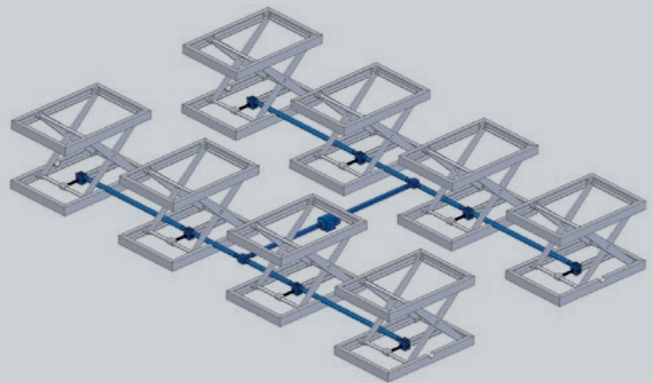
Conveyor belt height adjustment



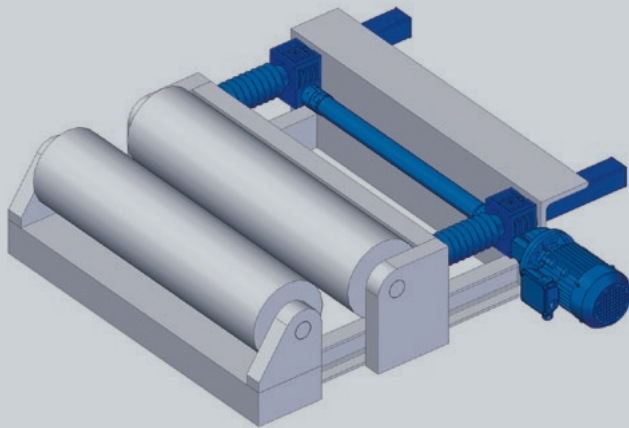
Synchronous concrete shuttering adjustment



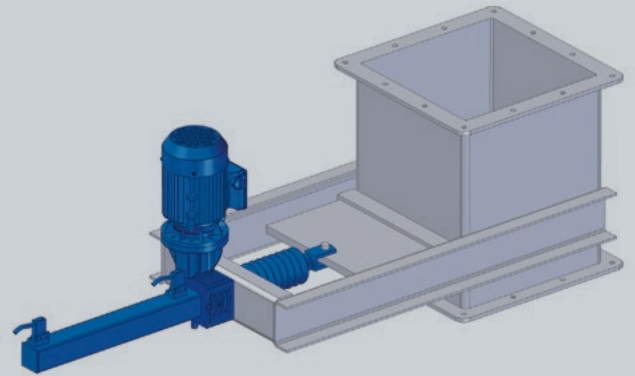
Scissor lifting tables



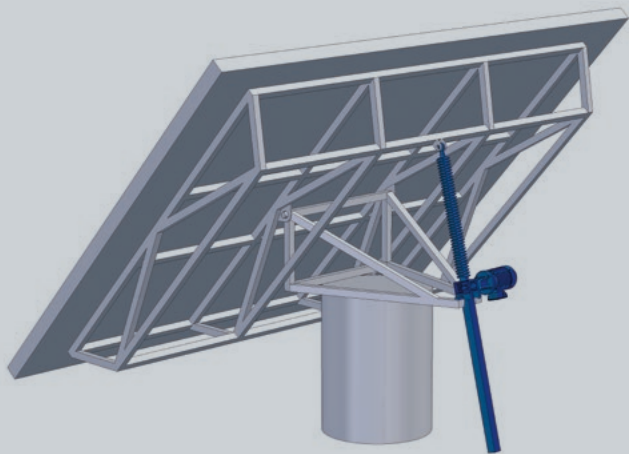
Precise roller setting



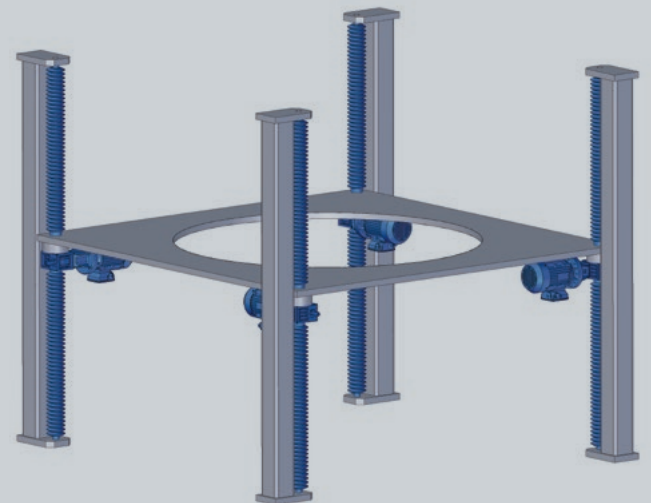
Slider adjustment in silo



Solar panel



Lifting platforms



Non-rotating version

Mail
FAX-Nozag CH

info@nozag.ch
+41 (0)44 805 17 18

Company: _____ Date: _____
Address: _____ Tel.: _____
Contact person: _____ Fax: _____
Mail: _____

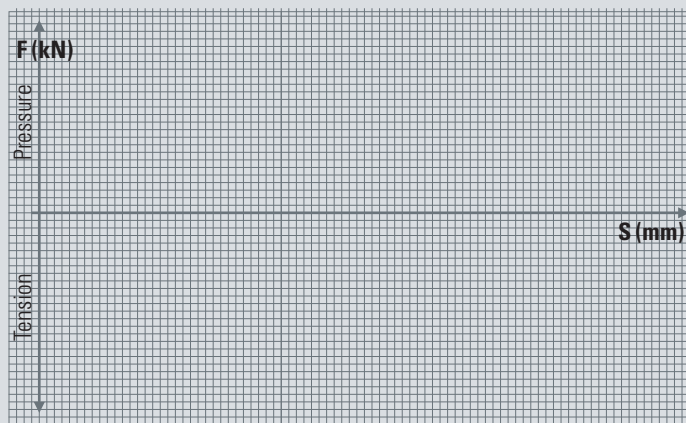
Lifting force in kN

_____ kN per gearbox _____ kN entire installation
_____ kN under tensile load _____ kN under compressive load
_____ kN static load _____ kN dynamic load

Installation position

☐ vertical ☐ horizontal

Force flow

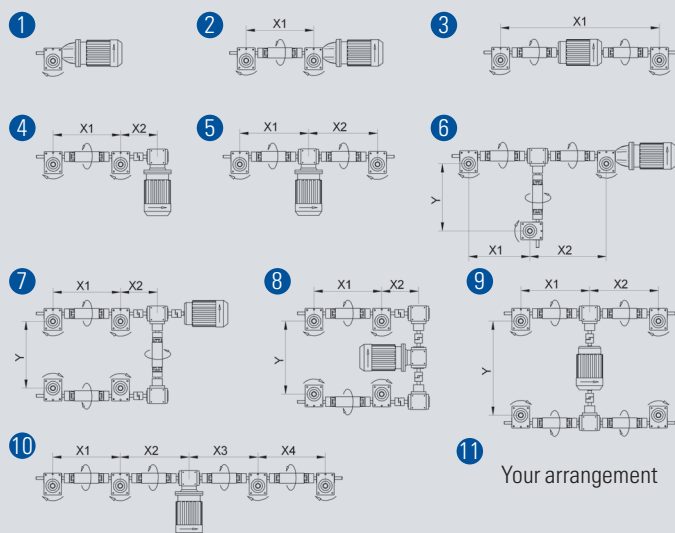


(F=force, S=stroke)

Conditions (operational demands)

☐ steady (constant) ☐ impact loading (swelling)
☐ vibrations (alternating) ☐ _____

Arrangement



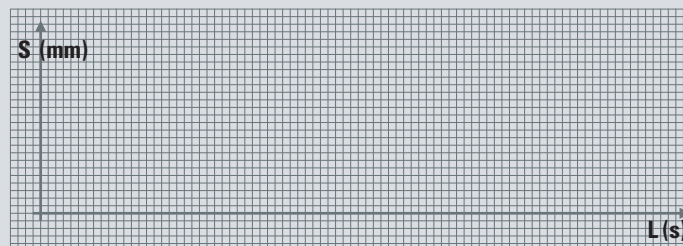
Stroke

_____ mm stroke _____ mm spindle length

Lifting speed (in case of a drive with 1500 min⁻¹)

☐ Type = 25 mm/s (NSE2-SN = 20 mm/s) ☐ Type = 6.25 mm/s (NSE2-SL = 5.00 mm/s)

Working cycle



(S=stroke, L=time)

Duty cycle, working cycle

_____ Strokes per day
_____ Strokes per hour

Hours per day

☐ 8 ☐ 16 ☐ 24 ☐ _____
_____ % duty cycle (ED) referred to 10 min

Motor

☐ Three-phase Motor ☐ Braking motor
☐ Manual drive ☐ _____

Operating conditions

☐ Dryness ☐ Dust
☐ Humidity ☐ Swarf

Ambient temperature

_____ °C min. _____ °C max.

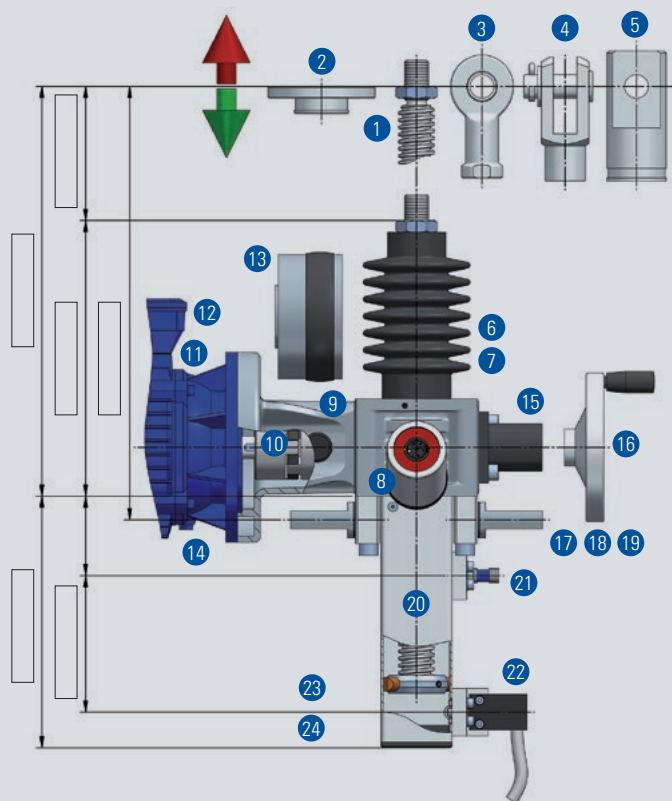
Quantity

_____ pieces ☐ prototype first

Desired delivery dates

_____ for quote _____ for delivery

Non-rotating version



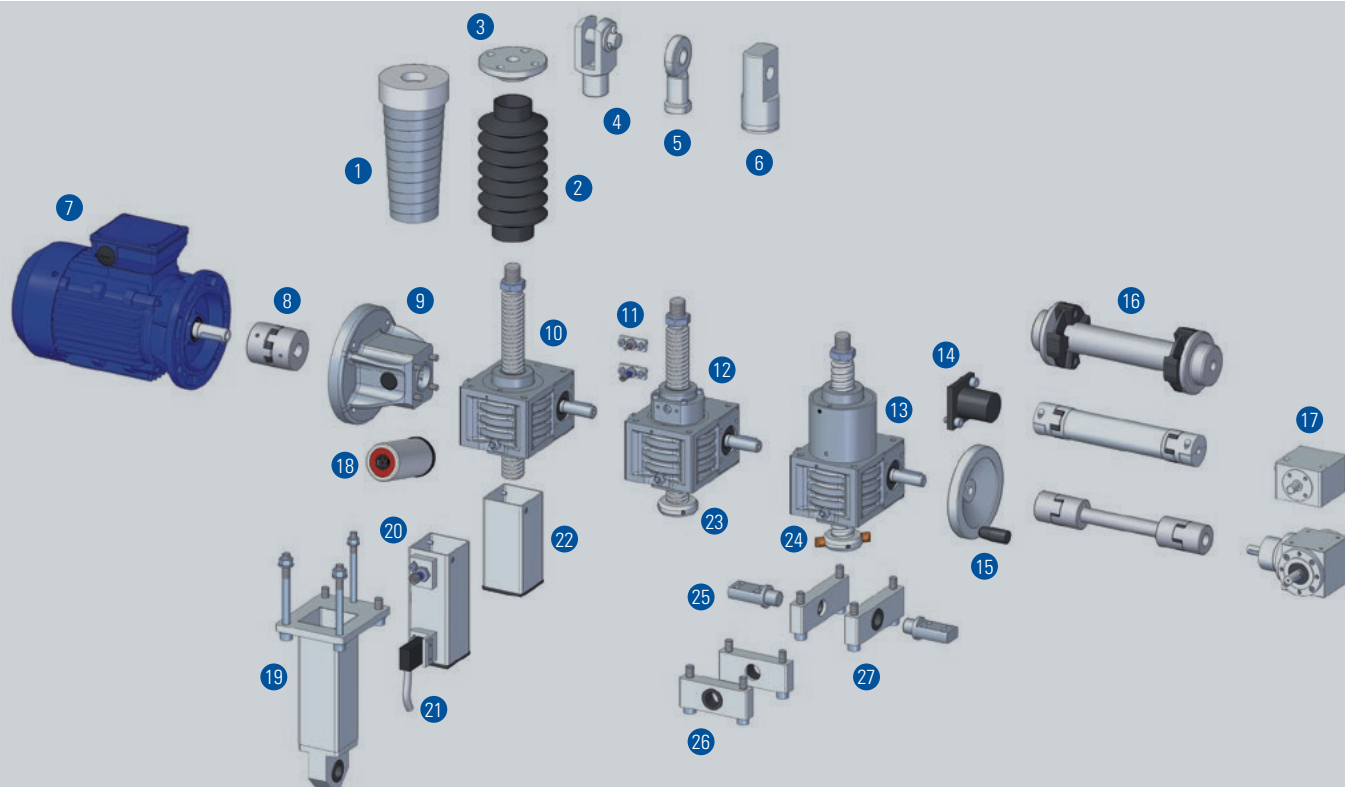
- 1 Spindle ☐
- 2 Mounting flange ☐
- 3 Ball joint head ☐
- 4 Fork head ☐
- 5 Swivel bearing head ☐
- 6 Bellows ☐
- 7 Spiral spring cover ☐
- 8 Lubricant dispenser ☐
- 9 Motor adapter ☐
- 10 Flexible coupling ☐
- 11 Motor ☐
- 12 Brake motor ☐
- 13 Spring brake ☐
- 14 Rotary pulse encoder ☐
- 15 Protection cap ☐
- 16 Hand wheel ☐
- 17 Suspension adapter long ☐
- 18 Suspension adapter short ☐
- 19 Suspension bolt ☐
- 20 Protection tube ☐
- 21 Limit switch inductive ☐
- 22 Limit switch mechanical ☐
- 23 Screw out protection ☐
- 24 Anti rotation lock ☐

Operation description / comments / assembles drawing

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

2.3 Sizes/System overview

Screw jacks, non-rotating



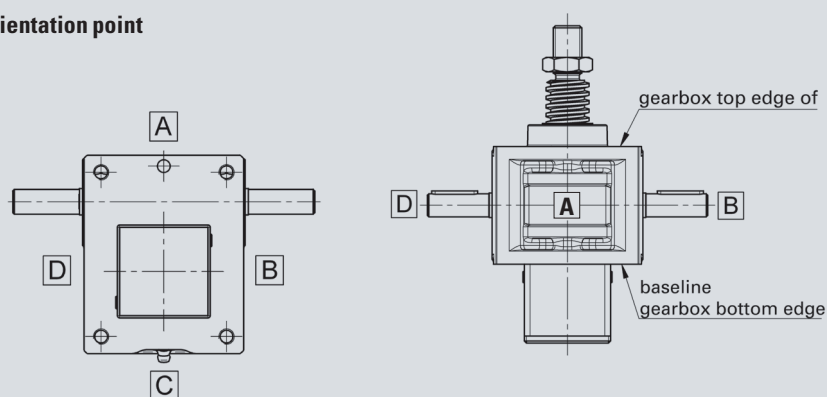
- | | | | |
|----|---|----|--------------------------|
| 1 | Spiral spring cover | 14 | Protection cap |
| 2 | Bellows | 15 | Hand wheel |
| 3 | Mounting flange | 16 | Connecting shafts |
| 4 | Fork head | 17 | Bevel gearboxes |
| 5 | Ball joint head | 18 | Lubricant dispenser |
| 6 | Swivel bearing head | 19 | Support tube |
| 7 | Motor/brake motor | 20 | Limit switch inductive |
| 8 | Flexible coupling | 21 | Limit switch mechanical |
| 9 | Motor adapter | 22 | Protection tube |
| 10 | Screw jacks, non-rotating | 23 | Unscrew protection |
| 11 | Wear control | 24 | Anti rotation lock |
| 12 | Screw jacks, non-rotating
with safety trap nut | 25 | Suspension bolt |
| 13 | Screw jacks, non-rotating
with ball screw | 26 | Suspension adapter short |
| | | 27 | Suspension adapter long |

2.3 Sizes/System overview

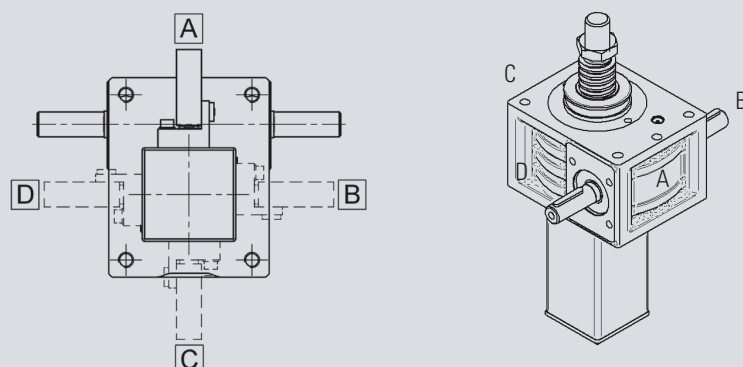
Screw jacks, non-rotating

Size		NSE2	NSE5	NSE10	NSE25	NSE50	NSE100
maximum lifting capacity (kN)		2	5	10	25	50	100
Standard spindle		TR14x4	TR18x4	TR20x4	TR30x6	TR40x7	TR60x9
Ratio (i)	N	5:1	4:1	4:1	6:1	7:1	9:1
	L	20:1	16:1	16:1	24:1	28:1	36:1
Maximum driveshaft speed (min ⁻¹) (higher on request)		1800	1800	1800	1800	1800	1800
Max. driving torque (Nm) (based on 1500 min ⁻¹)	N	2.50	5.60	10.50	22.50	51.00	60.20
	L	0.80	2.00	4.20	7.80	18.00	20.20
Stroke per revolution (mm)	N	0.80	1.00	1.00	1.00	1.00	1.00
	L	0.20	0.25	0.25	0.25	0.25	0.25
Efficiency gearbox (grease)	N	0.76	0.84	0.86	0.87	0.89	0.85
	L	0.45	0.62	0.69	0.69	0.74	0.65
Efficiency gearbox (oil)	N	0.86	0.87	0.96	0.98	0.94	0.95
	L	0.64	0.66	0.77	0.75	0.81	0.72
Efficiency spindle		0.50	0.42	0.40	0.40	0.36	0.32
Lubrication		Grease	Grease	Grease	Grease	Grease	Grease
Screw jack weight without spindle (kg)		0.64	1.06	1.98	3.62	10.02	16.80
Spindle weight (kg/m)		1.05	1.58	2.00	4.50	8.00	19.00

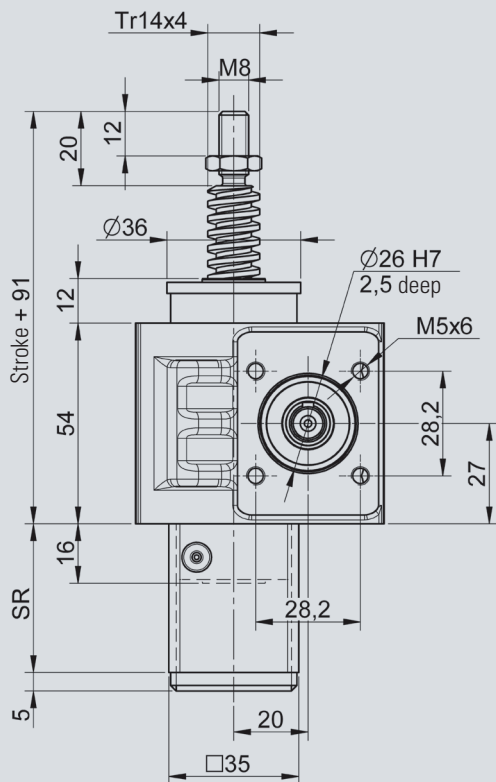
Orientation point



Limit switch position



NSE 2-SN/SL



Maximum lifting capacity: 2 kN (200 kg)
 Maximum driveshaft speed: 1800 min⁻¹ (higher on request)
 Spindle: TR 14x4 (standard)

Material

Material (housing): Aluminium, option CuAL10Fe5Ni5
 Lubrication: Grease, option oil

Weight

Screw jack weight: 0.64 kg (with grease/without spindle)
 Spindle weight: 1.05 kg/m

Features

	Ratio	Stroke per revolution	Drive-torque ¹	Max. torque	Drive through torque ²
	i	mm	Nm	Nm	Nm
NSE2-SN	5:1	0.80	F(kN) x 0.34 + 0.21	2.50	12
NSE2-SL	20:1	0.20	F(kN) x 0.14 + 0.11	0.80	12

1) Factor includes efficiency, ratio and safety 1

2) With more than six gearboxes in series, please contact our technicians

Attachments > chapter 2.5



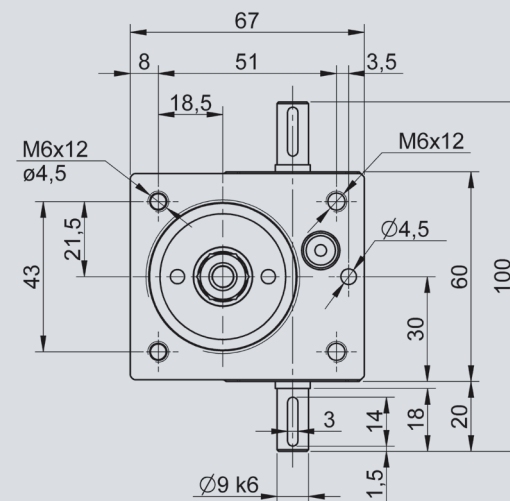
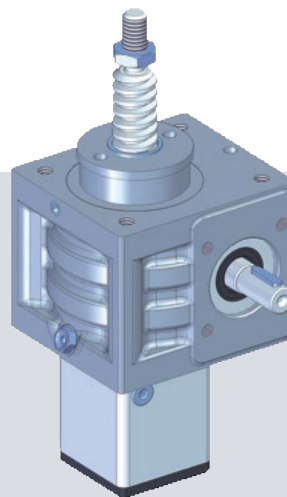
Drive components > chapter 4



Motor mounting > chapter 5



Rotating vers. > chapter 3



Versions

Safety trap nut (SFM) see page 43
 Ball screw (KGT) see page 44

Available on request:

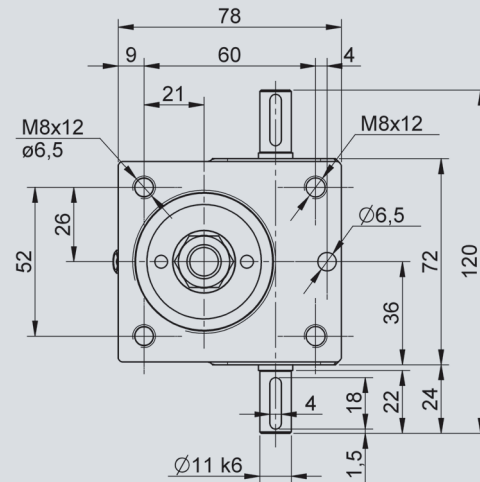
- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch



NSE 5-SN/SL



Maximum lifting capacity:	5 kN (500 kg)
Max. Maximum driveshaft speed:	1800 min ⁻¹ (higher on request)
Spindle:	TR 18x4 (standard)

Material

Material (housing): Aluminium, option CuAL10Fe5Ni5
 Lubrication: Grease, option oil

Weight

Screw jack weight: 1.06 kg (with grease/without spindle)
Spindle weight: 1.58 kg/m

Versions

Safety trap nut (SFM)	see page 43
Ball screw (KGT)	see page 44

Available on request:

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More Informations

Please find CAD - Data and productdatasheets under www.nozag.ch

Features

	Ratio	Stroke per revolution	Drive-torque ¹	Max. torque	Drive through torque ²
	i	mm	Nm	Nm	Nm
NSE5-SN	4:1	1.00	F(kN) x 0.45 + 0.10	5.60	23
NSE5-SL	16:1	0.25	F(kN) x 0.15 + 0.08	2.00	23

1) Factor includes efficiency, ratio and safety 1

2) With more than six gearboxes in series, please contact our technicians

Attachments > chapter 2.5



Drive components > chapter 4



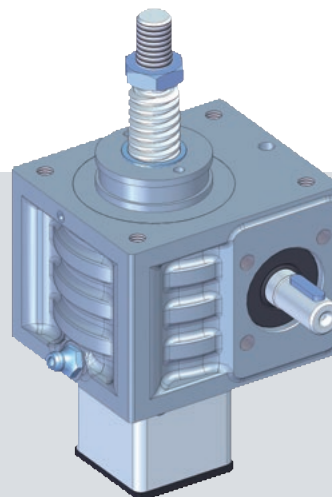
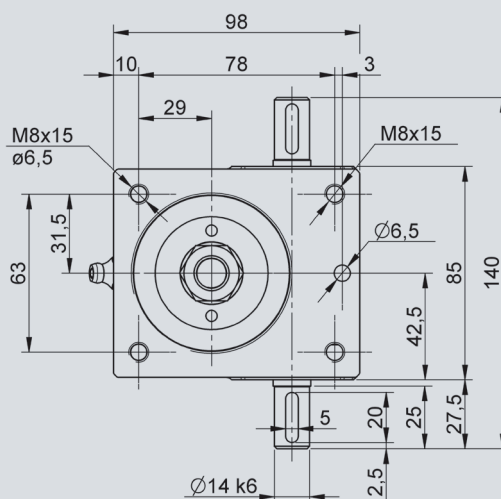
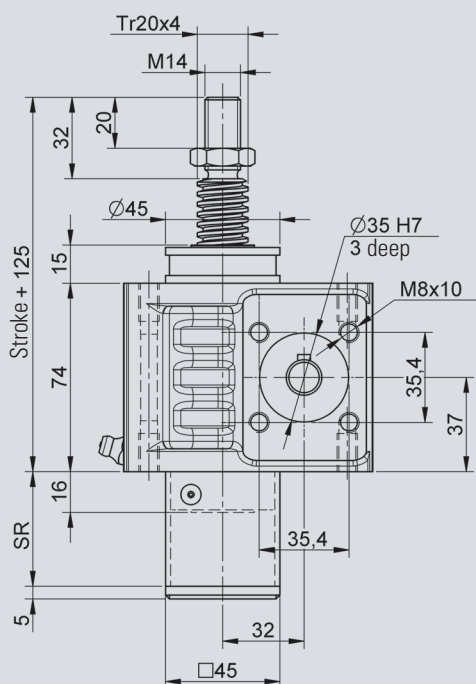
Motor mounting > chapter 5



Rotating vers. > chapter 3



NSE 10-SN/SL



Maximum lifting capacity:	10 kN (1000 kg)
Maximum driveshaft speed:	1800 min ⁻¹ (higher on request)
Spindle:	TR 20x4 (standard)

Material

Material (housing): Aluminium, option CuAL10Fe5Ni5
Lubrication: Grease, option oil

Weight

Screw jack weight: 1.98 kg (with grease/without spindle)
Spindle weight: 2.00 kg/m

Versions

Safety trap nut (SFM)	see page 43
Ball screw (KGT)	see page 44

Available on request:

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch

Features

	Ratio	Stroke per revolution	Driving torque ¹	Max torque	Drive through torque ²
	i	mm	Nm	Nm	Nm
NSE10-SN	4:1	1.00	F(kN) x 0.46 + 0.26	10.50	42
NSE10-SL	16:1	0.25	F(kN) x 0.14 + 0.16	4.20	42

1) Factor includes efficiency, ratio and safety 1

2) With more than six gearboxes in series, please contact our technicians

Attachments > chapter 2.5



Drive components > chapter 4



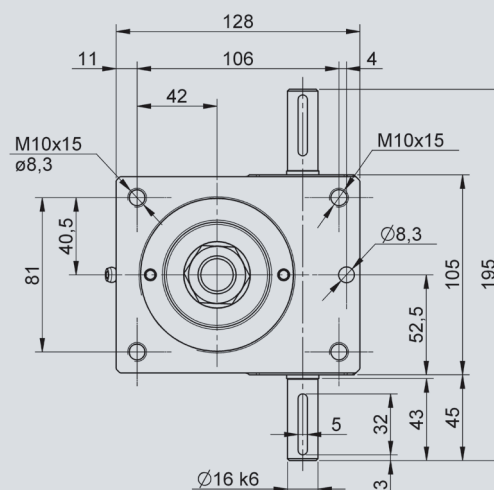
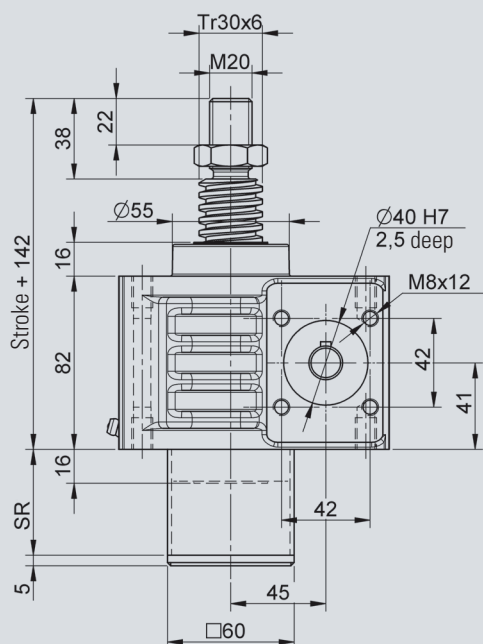
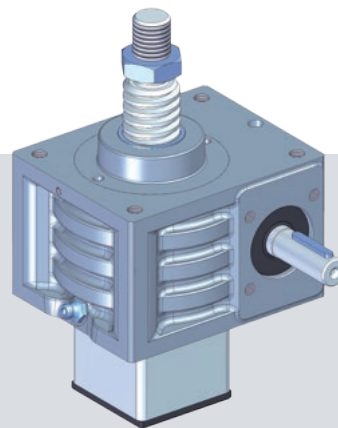
Motor mounting > chapter 5



Rotating vers. > chapter 3



NSE 25-SN/SL



Maximum lifting capacity: 25 kN (2500 kg)
 Maximum driveshaft speed: 1800 min⁻¹ (higher on request)
 Spindle: TR 30x6 (standard)

Material

Material (housing): Aluminium, option CuAl10Fe5Ni5
 Lubrication: Grease, option oil

Weight

Screw jack weight: 3.62 kg (with grease/without spindle)
 Spindle weight: 4.50 kg/m

Versions

Safety trap nut (SFM) see page 43
 Ball screw (KGT) see page 44

Available on request:

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch

Features

	Ratio	Stroke per revolution	Driving torque ¹	Max torque	Drive through torque ²
	i	mm	Nm	Nm	Nm
NSE25-SN	6:1	1.00	F(kN) x 0.46 + 0.36	22.50	86
NSE25-SL	24:1	0.25	F(kN) x 0.14 + 0.26	7.80	86

1) Factor includes efficiency, ratio and safety 1

2) With more than six gearboxes in series, please contact our technicians

Attachments > chapter 2.5



Drive components > chapter 4



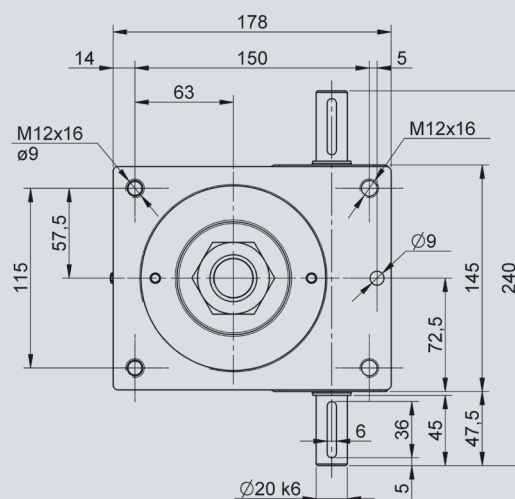
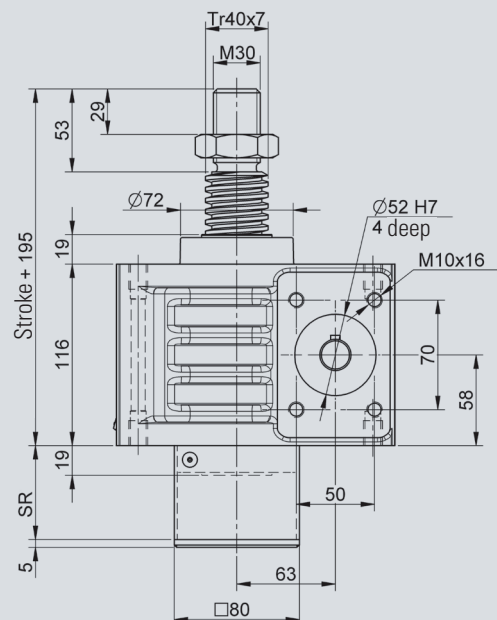
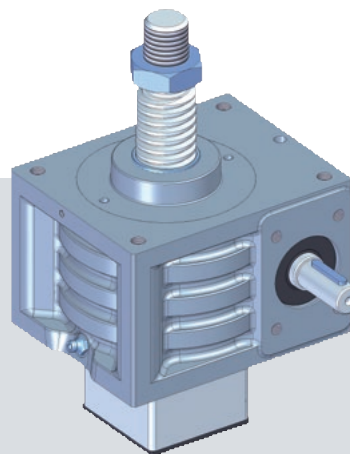
Motor mounting > chapter 5



Rotating vers. > chapter 3



NSE 50-SN/SL



Maximum lifting capacity: 50 kN (5000 kg)
 Maximum driveshaft speed: 1800 min⁻¹ (higher on request)
 Spindle: TR 40x7 (standard)

Material

Material (housing): Aluminium, option CuAL10Fe5Ni5
 Lubrication: Grease, option oil

Weight

Screw jack weight: 10.02 kg (with grease/without spindle)
 Spindle weight: 8.00 kg/m

Versions

Safety trap nut (SFM) see page 43
 Ball screw (KGT) see page 44

Available on request:

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch

Features

	Ratio	Stroke per revolution	Driving torque ¹	Max. torque	Drive through torque ²
	i	mm	Nm	Nm	Nm
NSE50-SN	7:1	1.00	F(kN) x 0.50 + 0.76	51.00	150
NSE50-SL	28:1	0.25	F(kN) x 0.15 + 0.54	18.00	150

1) Factor includes efficiency, ratio and safety 1

2) With more than six gearboxes in series, please contact our technicians

Attachments > chapter 2.5



Drive components > chapter 4



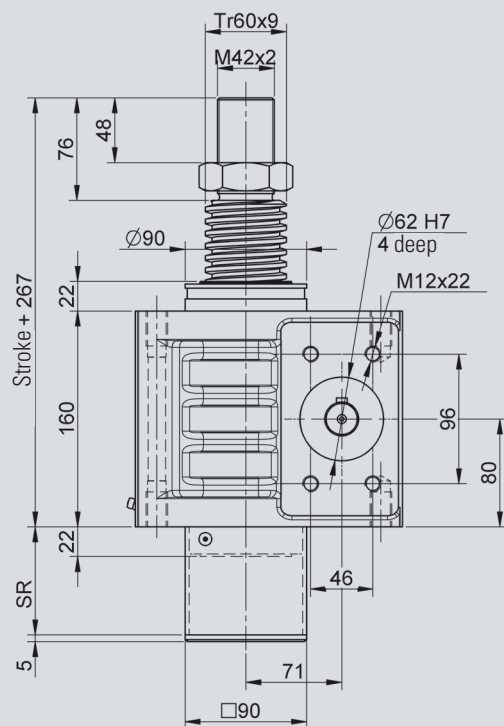
Motor mounting > chapter 5



Rotating vers. > chapter 3



NSE 100-SN/SL



Maximum lifting capacity: 100 kN (10000 kg)
 Maximum driveshaft speed: 1800 min⁻¹ (higher on request)
 Spindle: TR 60x9 (standard)

Material

Material (housing): Aluminium, option CuAl10Fe5Ni5
 Lubrication: Grease, option oil

Weight

Screw jack weight: 16.80 kg (with grease/without spindle)
 Spindle weight: 19.00 kg/m

Features

	Ratio	Stroke per revolution	Driving-torque ¹	Max. torque	Drive through torque ²
	i	mm	Nm	Nm	Nm
NSE100-SN	9:1	1.00	F(kN) x 0.59 + 1.68	60.20	315
NSE100-SL	36:1	0.25	F(kN) x 0.19 + 1.02	20.20	315

1) Factor includes efficiency, ratio and safety 1

2) With more than six gearboxes in series, please contact our technicians

Attachments > chapter 2.5



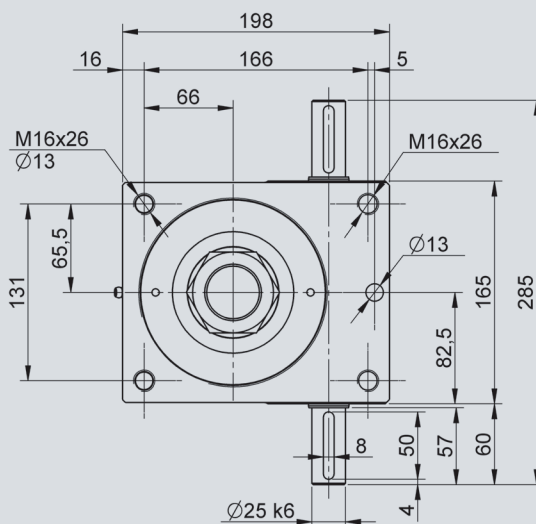
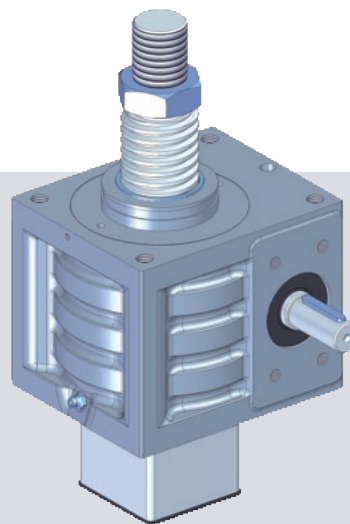
Drive components > chapter 4



Motor mounting > chapter 5



Rotating vers. > chapter 3



Versions

Safety trap nut (SFM) see page 43
 Ball screw (KGT) see page 44

Available on request:

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch

NSE 150–1000-SN/SL

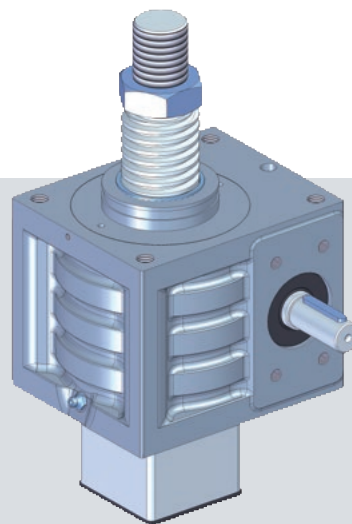
Individual and needs-oriented design

Screw jacks from size 150kN usually are used for complex tasks. We develop, manufacture or combine these dimensions individually for your needs. Take advantage of our experience and expertise in simple and complex projects with power requirements over 100kN. We provide very economical solutions, thanks to the modular system, yet also custom-made screw jacks for your needs.

These screw jacks are available in different versions, for example,

- Material (housing): cast Iron / steel
- Double-threaded trapezoidal screws
- Stainless steel screws (INOX)
- Surface-treated screws
- Ball screws (KGT)
- Safety trap nut (SFM)

	Maximum lifting capacity
NSE150-SN	150kN
NSE150-SL	150kN
NSE250-SN	250kN
NSE250-SL	250kN
NSE350-SN	350kN
NSE350-SL	350kN
NSE500-SN	500kN
NSE500-SL	500kN
NSE750-SN	750kN
NSE750-SL	750kN
NSE1000-SN	1000kN
NSE1000-SL	1000kN



Standard Sizes

The screw jacks are available with the following lifting forces.

Details and advice on request

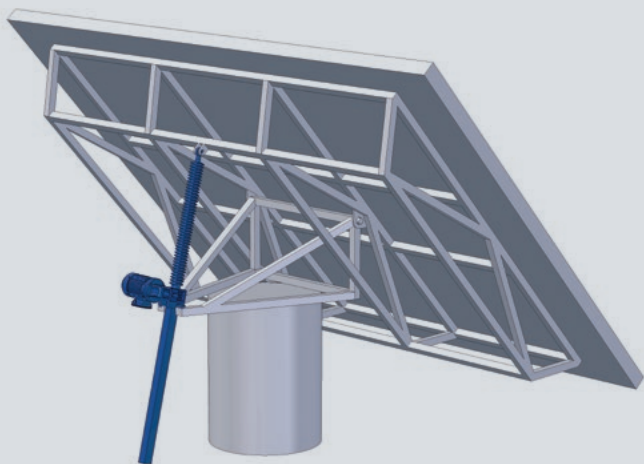
We are happy to help and assist you in details, design and calculation. CAD data or a checklist are available. Please contact us or send us your requirements.

2.4 Size 150-1000kN
Screw jacks, non-rotating



2.4 Long stroke screw jack

Screw jacks, non-rotating



Large spindles for long hubs

With longer strokes, usually the spindle diameter is the determining factor for dimensioning and consequently the gearbox will be over dimensioned the NSE25-SN/SL and the NSE50-SN/SL have been specially designed with larger spindles (buckling) – for applications with long strokes.

Therefore a compact gearbox can be used, In spite of longer strokes.
Other sizes on request.

Maximum lifting capacity: 25 kN (2500 kg)
Maximum driveshaft speed: 1800 min⁻¹ (higher on request))
Spindle: TR 36x6

Material

Material (housing): Aluminium
Lubrication: Grease

Weight

Screw jack weight: 3.62 kg (with grease / without spindle)
Spindle weight: 6.55 kg/m

Available on request

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch

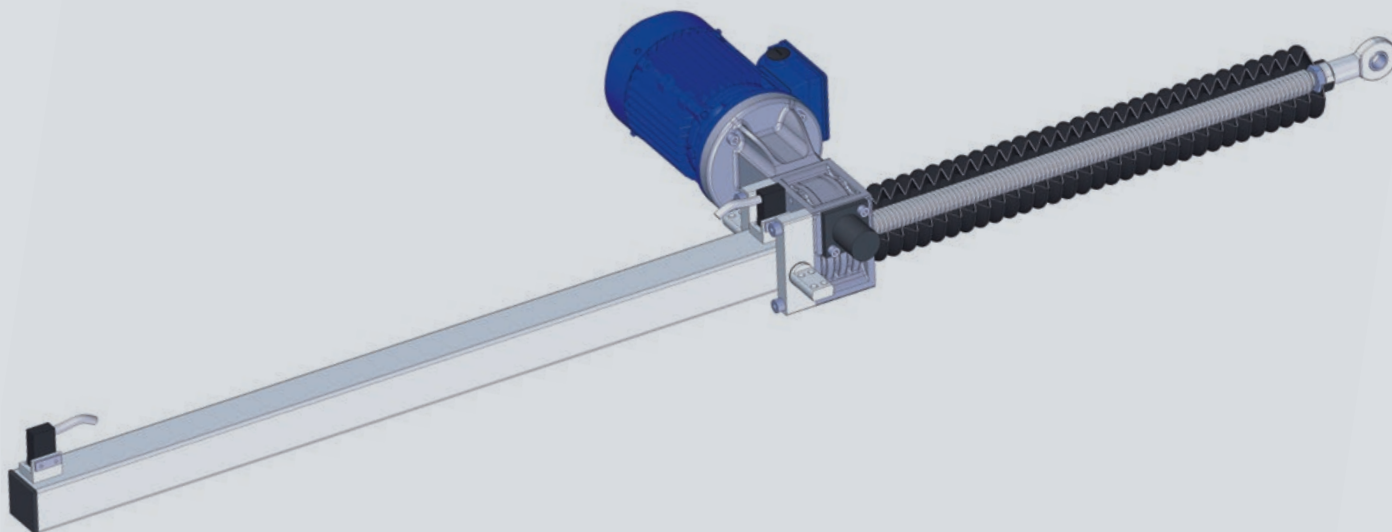
Features

	Ratio	Stroke per revolution	Driving torque ¹	Max torque
	i	mm	Nm	Nm
NSE25-SN-LH	6:1	1.00	F(kN) x 0.46 + 0.36	22.50
NSE25-SL-LH	24:1	0.25	F(kN) x 0.14 + 0.26	7.80

1) Factor includes efficiency, ratio and safety 1

2.4 Long stroke screw jack

Screw jacks, non-rotating



Maximum lifting capacity: 50 kN (5000 kg)
Maximum driveshaft speed: 1800 min⁻¹ (higher on request)
Spindle: TR 50x8

Material

Material (housing): Aluminium
Lubrication: Grease

Weight

Screw jack weight: 10.02 kg (with grease/without spindle)
Spindle weight: 13.00 kg/m

Available on request

- Double-threaded trapezoidal screw
- Stainlesssteel spindle (INOX)
- Surface-treated spindle

More informations

Please find CAD - Data and productdatasheets under www.nozag.ch

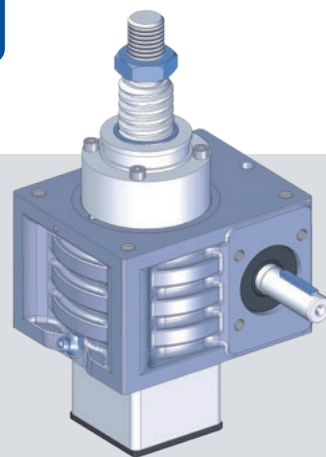
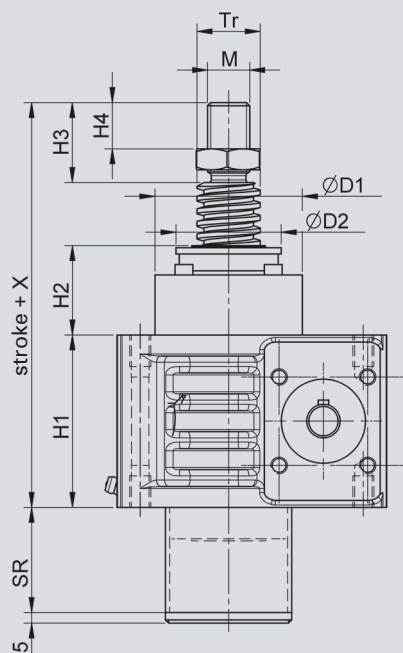
Features

	Ratio	Stroke per revolution	Driving torque ¹	Max torque
	i	mm	Nm	Nm
NSE50-SN-LH	7:1	1.14	$F(\text{kN}) \times 0.60 + 0.76$	51.00
NSE50-SL-LH	28:1	0.29	$F(\text{kN}) \times 0.18 + 0.54$	18.00

1) Factor includes efficiency, ratio and safety 1

2.4 Safety trap nut (SFM)

Screw jacks, non-rotating



Ordering example

Size	Version	Model	Sensor
NSE5	SN	SFM	INM

Function

The safety trap nut protects the load in one direction only. If the main nut should fail the safety trap nut will carry the full load.

As soon as the thread of the worm wheel has worn more than 20% of the thread pitch (= 40% of tooth dimension), the worm wheel (or the whole gearbox, most cost effective for gearbox sizes up to NSE50) should be replaced.

Direction of load

Carefully check the direction of load (tension or compression)! A drawing with an application view is necessary to ensure correct specification. For a combination of SFM in tension with protection against rotation VS please contact our technical department.

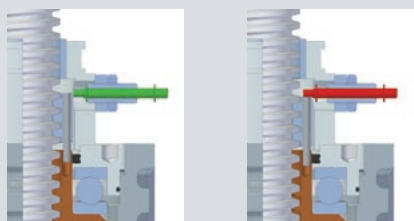
Rotation sensor

The rotation sensor is mounted on the last gearbox of each drive chain and detects possible failure of all the transmission components (coupling, ...).

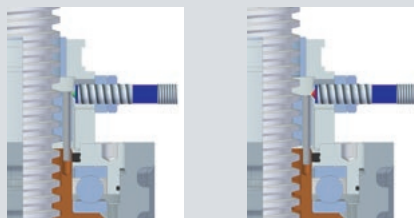
Wear control

The wear of the nut, causes a corresponding reduction of the air gap which has to be monitored, this gap must not reduce more than 20%. During operation, the customer has provide a solution to monitor this air gap. We can optionally provide either a mechanical or inductive alternative.

Mechanical wear control (NSE-INM)



Inductive wear control (NSE-INI)

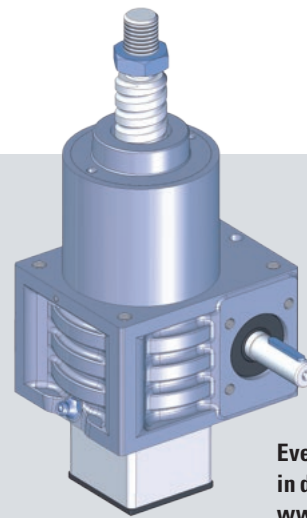
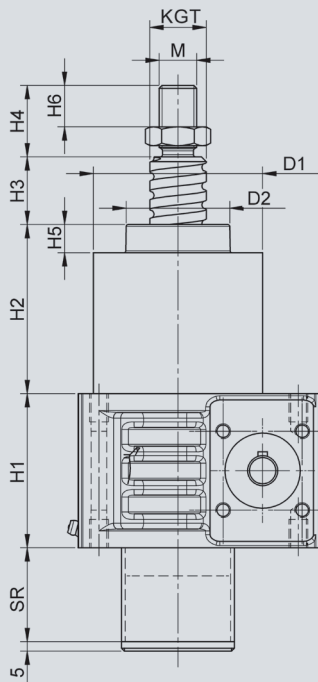


	SN	SL	TR	D1	D2	H1	H2 (min.)	H3	H4	M
NSE5	4:1	16:1	18x4	54	40	62	32.0	29	19	M12
NSE10	4:1	16:1	20x4	60	45	74	34.0	32	20	M14
NSE25	6:1	24:1	30x6	70	50	82	42.5	38	22	M20
NSE50	7:1	28:1	40x7	100	70	116	38.5	53	29	M30
NSE100	9:1	36:1	60x9	128	90	160	42.0	76	48	M42x2

NSE2 on request

2.4 Ball screw (KGT)

Screw jacks, non-rotating



Even more compact designs
in development; current status
www.nozag.ch

Ordering example

Size	Version	Model
NSE10-	SL	- 25x10

Accuracy of pitch

0.05mm/300mm

Self-locking

None! Therefore, braking motor or spring-loaded brake FDB necessary

Fouling

Nuts are always fitted with scrapers. In case of serious fouling and fine dust/chips, we recommend preferably installing bellows or a spiral spring cover.

Lubrication

Adequate lubrication is an important factor to insure the life of the system, reducing friction and ensuring smooth running. For KGT we use the same lubricants as for ball bearings.

Protection

The spindle nut must not be removed from the spindle. Screw out protection should be used with the S version.

System starting and braking

Especially with high pitches and large gearboxes we recommend the use of a frequency inverter for a soft start for acceleration and deceleration. This provides protection for the whole system. Subject to a suitable control system being used the safety distance may be reduced. Please contact the technical department for more information.

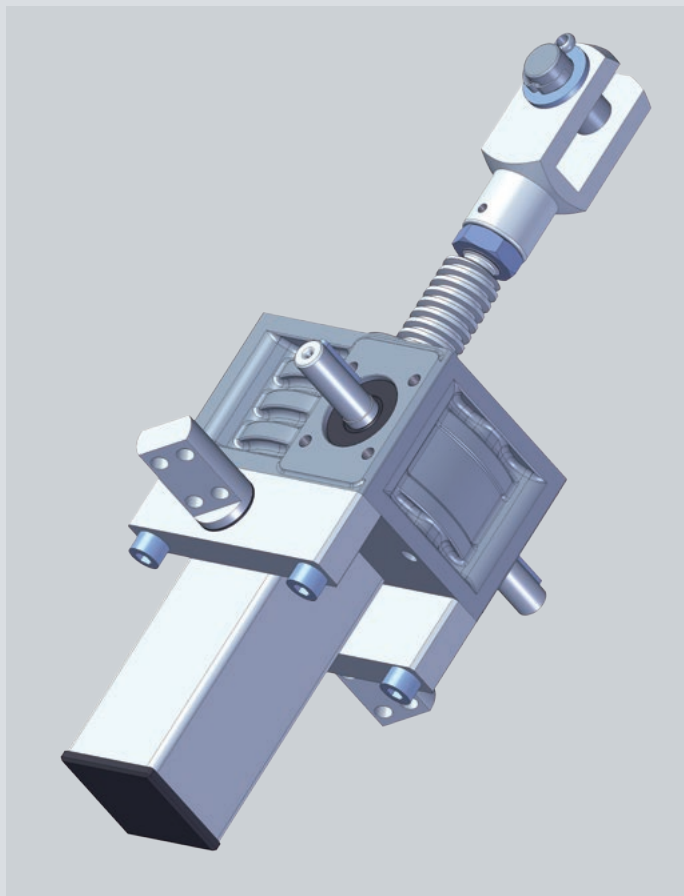
Switching-on time

Owing to the lower heat generation with ball screws, you can multiply the switching-on times (ED in % per 10') by a factor of 2. Please contact us regarding applications with a switching-on time greater than 40 % (4 min per 10 min).

	KGT	SN*	SL*	D1	D2	H1	H2	H3 (min.)	H4	H5	H6	M	Axial play [max.]	Load rating [kN] dynamic static
NSE5	16x05	1.25	0.31	55	40	62	66	10	29	12	19	M12	0.08	9.3 13.1
	16x10	2.50	0.63	55	40	62	66	20	29	12	19	M12	0.08	15.4 26.5
NSE10	25x05	1.25	0.31	70	45	74	76	10	32	14	20	M14	0.08	12.3 22.5
	25x10	2.50	0.63	70	45	74	76	20	32	14	20	M14	0.08	13.2 25.3
	25x25	6.25	1.56	70	45	74	76	50	32	14	20	M14	0.08	16.7 32.2
	25x50	12.50	3.13	70	45	74	76	100	32	14	20	M14	0.15	15.4 31.7
NSE25	32x05	0.83	0.21	90	55	82	90	10	38	15	22	M20	0.08	21.5 49.3
	32x10	1.67	0.42	90	55	82	90	20	38	15	22	M20	0.08	33.4 54.5
	32x20	3.33	0.83	90	55	82	90	40	38	15	22	M20	0.08	29.7 59.8
	32x40	6.67	1.67	90	55	82	90	80	38	15	22	M20	0.08	14.9 32.4
NSE50	40x05	0.71	0.18	130	72	116	84	10	53	19	29	M30	0.08	23.8 63.1
	40x10	1.43	0.36	130	72	116	84	20	53	19	29	M30	0.08	38.0 69.1
	40x20	2.86	0.72	130	72	116	84	40	53	19	29	M30	0.08	33.3 76.1
	40x40	5.71	1.43	130	72	116	84	80	53	19	29	M30	0.08	35.0 101.9
NSE100	50x10	1.11	0.28	150	90	160	92	20	76	22	48	M42x2	0.08	68.7 155.8
	50x20	2.22	0.56	150	90	160	92	40	76	22	48	M42x2	0.08	60.0 136.3

* Stroke per revolution (mm)

Actuator with hinged bearing plate



Actuators are designed for tension and compression loads with «eye to eye» function.

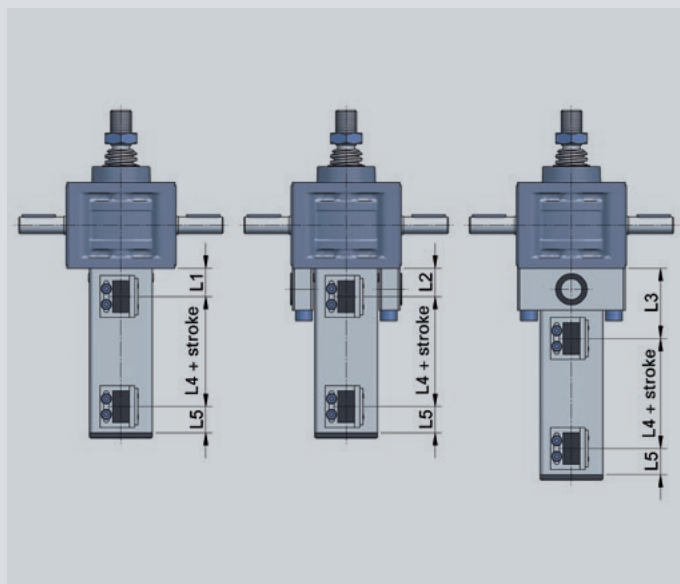
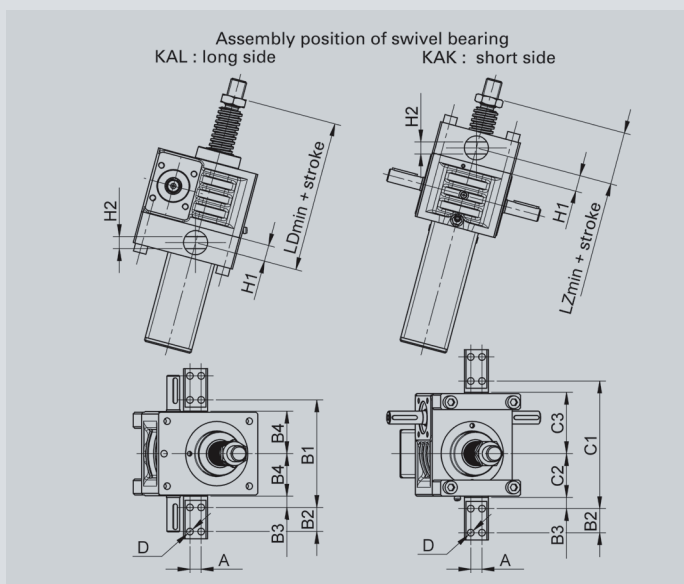
Max. stroke: buckling calculation (dimension: eye to eye)!

When using a hinged bearing plate please consider moments caused by motor weight etc. Support is necessary!

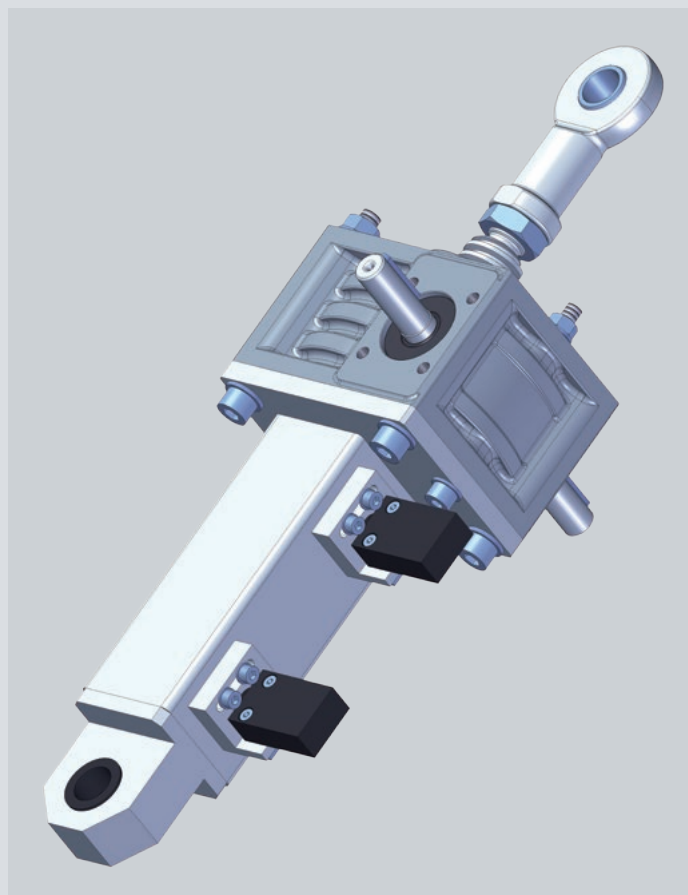
If the main load direction is in tension it is recommended to mount the hinged bearing plate on the spindle side to avoid tension load on the mounting screws.

«A» is the standard position of limit switch and lubrication strip (with anti rotation lock VS). Please specify if another position is required!

	A	B1	B2	B3	B4	C1	C2	C3	D	H1	H2	L1	L2	L3	L4	L5
NSE2	10	79	15	9	30.5	87	27.5	41.5	5.5	12.5	9	25	50	50	5	25
NSE5	12	98	20	13	36.0	106	31.0	49.0	6.5	15.0	12	25	55	55	5	25
NSE10	12	111	20	13	42.5	126	40.0	60.0	6.5	15.0	12	25	25	55	5	25
NSE25	14	134	30	14	53.0	159	54.5	76.5	8.5	20.0	15	27	27	65	5	25
NSE50	18	177	35	15	73.5	212	79.0	103.0	10.5	30.0	20	33	33	85	10	31
NSE100	20	199	50	17	82.5	234	83.0	117.0	12.5	37.5	30	38	38	100	10	37



Actuator with support tube for pivot bearing STR



Max. stroke for actuators STR 500 mm

When using a support tube for pivot bearing please consider moments caused by motor weight etc. Support is necessary!

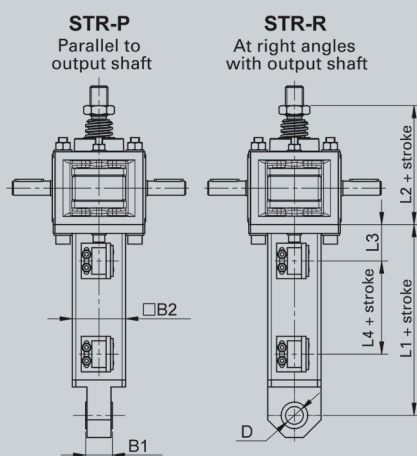
It is recommended to use the hinged bearing plate KAL/KAK option where possible: with this version the weight of the gearbox and motor is directly at the pivot point.

«A» is the standard position of limit switch and lubrication strip (with anti rotation lock VS). Please specify if another position is required!

Ordering example

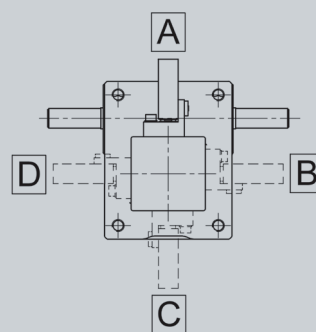
Size	Version	Model
NSE25-	SN	- STR

	B1	B2	D	L1	L2	L3	L4
NSE2	20	35	12	100	79	38	5
NSE5	20	35	12	100	88	38	5
NSE10	30	45	20	106	105	38	5
NSE25	30	60	20	113	120	41	5
NSE50	50	80	40	143	166	46	10
NSE100	50	90	40	146	219	49	10

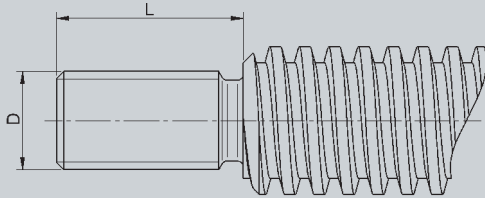


Limit switch position

A = standard

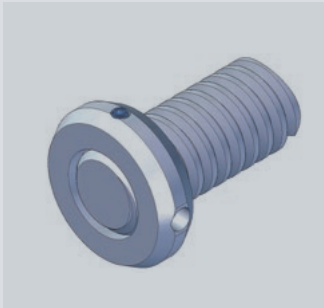


Spindle end, non-rotating



	TR	D	L
NSE2-TS	TR14x4	M 8	20
NSE5-TS	TR18x4	M 12	29
NSE10-TS	TR20x4	M 14	32
NSE25-TS	TR30x6	M 20	38
NSE50-TS	TR40x7	M 30	53
NSE100-TS	TR60x9	M 42x2	76

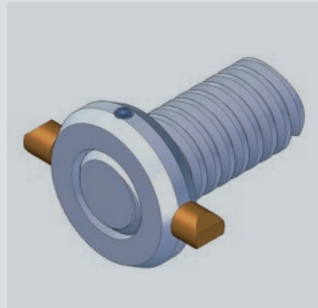
Screw out protection AS



The screw out protection prevents the screw from being screwed out of the gearbox. Especially recommended for ball screws. Do not use the screw out protection as a mechanical stop.

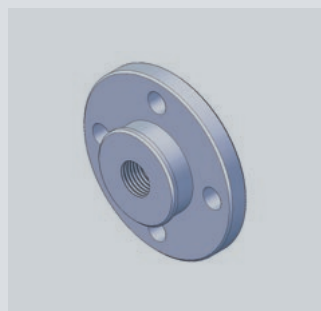
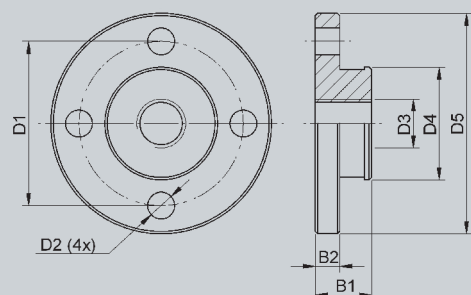
The screw out protection is required when used in combination with limit switches.

Anti rotation lock VS



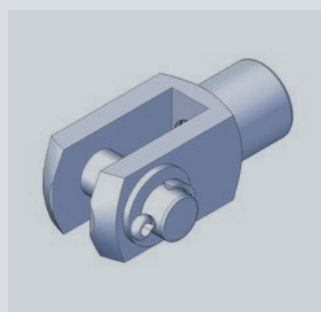
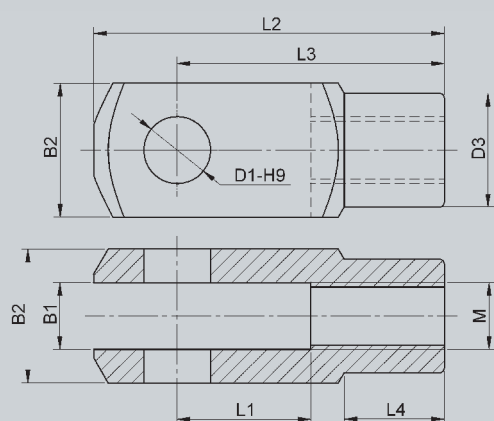
Anti rotation lock is required to prevent the screw from rotating or when used in combination with limit switches or ball joint head KGK.

Mounting flange BF



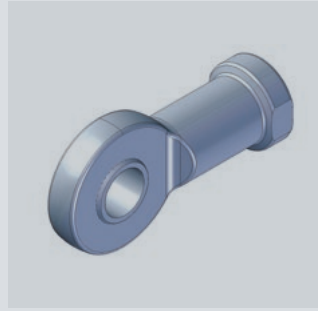
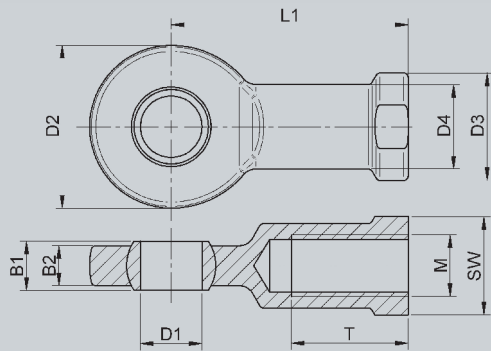
	B1	B2	D1	D2	D3	D4	D5
NSE2-BF	20	6	36	5.8	M 8	20	46
NSE5-BF	20	7	48	9.0	M 12	29	65
NSE10-BF	21	8	60	11.0	M 14	38	80
NSE25-BF	23	10	67	11.0	M 20	46	90
NSE50-BF	30	15	85	13.0	M 30	60	110
NSE100-BF	50	20	117	17.0	M 42x2	85	150

Fork head GK



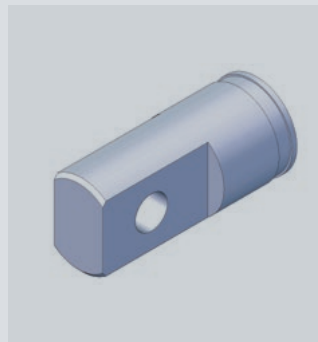
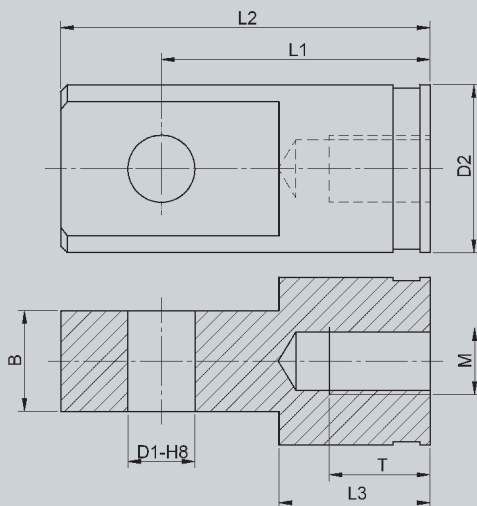
	B1	B2	D1	D3	L1	L2	L3	L4	M
NSE2-GK	8	16	8	14	16	42	32	12.0	M 8
NSE5-GK	12	24	12	20	24	61	48	18.0	M 12
NSE10-GK	14	28	14	24	28	72	56	22.5	M 14
NSE25-GK	20	40	20	34	40	105	80	30.0	M 20
NSE50-GK	30	60	30	52	60	160	120	42.0	M 30
NSE100-GK	40	85	40	70	84	232	168	63.5	M 42x2

Ball joint head KGK



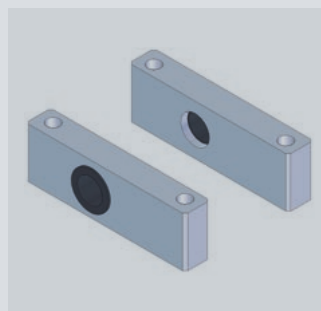
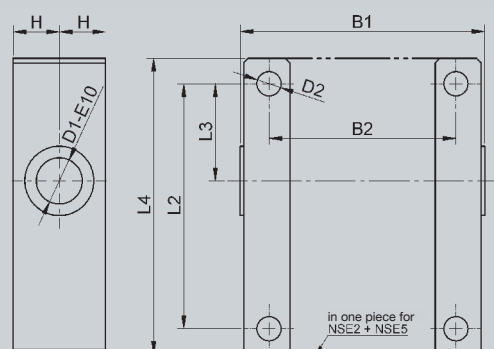
	B1	B2	D1	D2	D3	D4	L1	M	SW	T
NSE2-KGK	8	6	8	24	16	12.5	36	M 8	14	16
NSE5-KGK	10	8	12	34	22	17.5	50	M 12	19	22
NSE10-KGK	12	10	15	40	26	21.0	61	M 14	22	29
NSE25-KGK	16	13	20	53	35	27.5	77	M 20	32	35
NSE50-KGK	22	19	30	73	43	40.0	110	M 30	41	56
NSE100-KGK	23	28	40	92	65	52.0	142	M 42x2	55	60

Swivel bearing head SLK



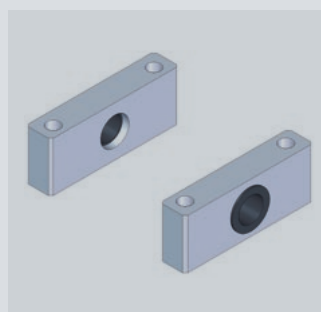
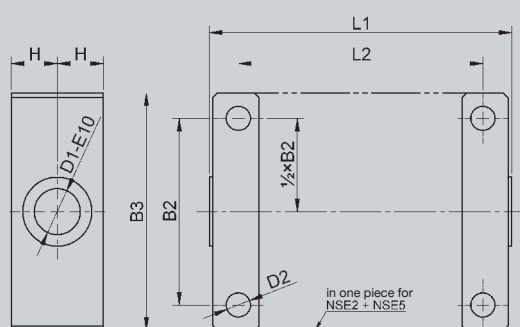
	B	D1	D2	L1	L2	L3	M	T
NSE5-SLK	18	12	30	48	65	25	M 12	22
NSE10-SLK	24	14	40	56	80	25	M 14	25
NSE25-SLK	30	20	50	80	110	45	M 20	25
NSE50-SLK	35	30	60	92	130	50	M 30	33
NSE100-SLK	57	50	100	155	210	90	M 42x2	70

Suspension adapter plate long KAL



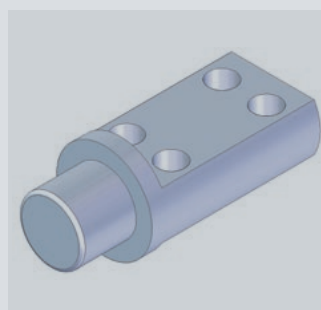
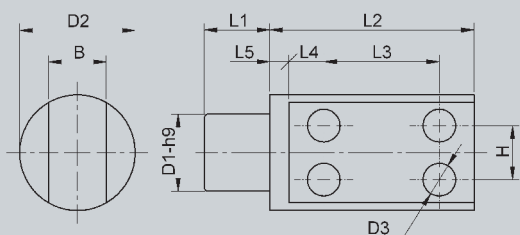
	B1	B2	D1	D2	H	L2	L3	L4
NSE2-KAL	61	43	10	6.5	12.5	51	18.5	67
NSE5-KAL	72	52	15	8.5	15.0	60	21.0	78
NSE10-KAL	85	63	15	8.5	15.0	78	29.0	98
NSE25-KAL	106	81	20	10.5	20.0	106	42.0	128
NSE50-KAL	147	115	30	13.0	30.0	150	63.0	178
NSE100-KAL	165	131	40	17.0	37.5	166	66.0	196

Suspension adapter plate short KAK



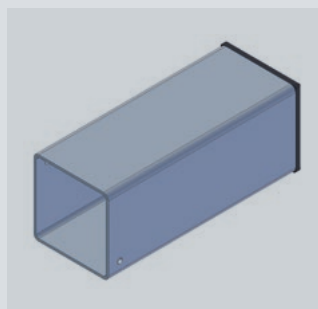
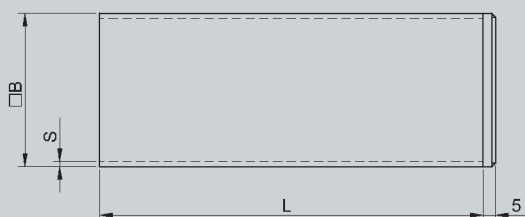
	B2	B3	D1	D2	H	L1	L2
NSE2-KAK	43	59	10	6.5	12.5	69	51
NSE5-KAK	52	70	15	8.5	15.0	80	60
NSE10-KAK	63	83	15	8.5	15.0	100	78
NSE25-KAK	81	103	20	10.5	20.0	131	106
NSE50-KAK	115	143	30	13.0	30.0	182	150
NSE100-KAK	131	161	40	17.0	37.5	200	166

Suspension adapter bolt KB



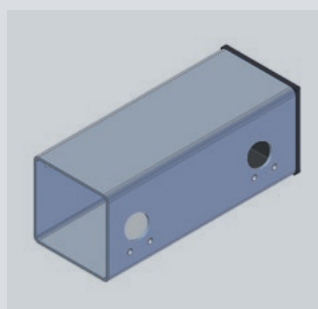
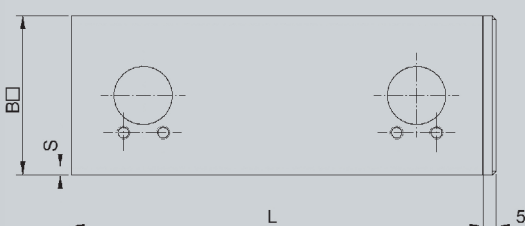
	B	D1	D2	D3	H	L1	L2	L3	L4	L5
NSE2-KB	9	10	20	5.5	10	10	30	15	6	3
NSE5-KB	12	15	25	6.5	12	10	40	20	8	5
NSE10-KB	12	15	25	6.5	12	10	40	20	8	5
NSE25-KB	15	20	30	8.5	14	16	53	30	9	5
NSE50-KB	20	30	40	10.5	18	21	60	35	10	5
NSE100-KB	30	40	50	12.5	20	31	80	50	12	5

Protection tube SR



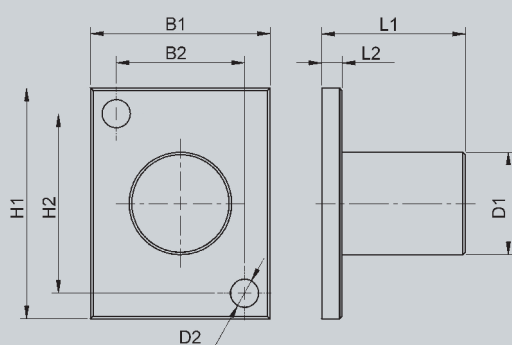
	B	S
NSE2-SR	35	2
NSE5-SR	35	2
NSE10-SR	45	2
NSE25-SR	60	3
NSE50-SR	80	3
NSE100-SR	90	4

Protection tube for limit switch SR-ES



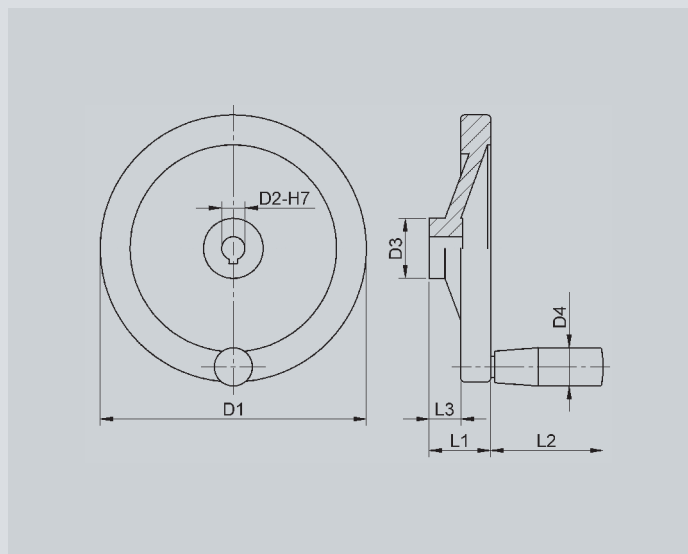
	B	S
NSE2-SR-ES	35	2
NSE5-SR-ES	35	2
NSE10-SR-ES	45	2
NSE25-SR-ES	60	3
NSE50-SR-ES	80	3
NSE100-SR-ES	90	4

Protection cap SK



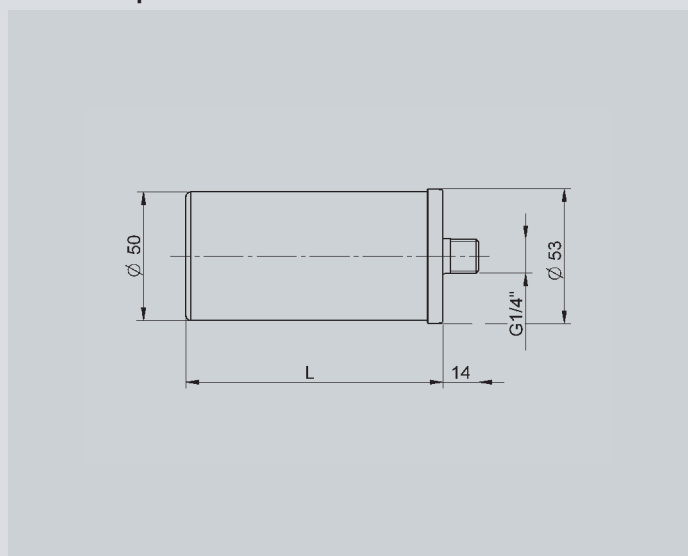
	B1	B2	D1	D2	H1	H2	L1	L2
NSE2-SK	38	28.2	30	5.5	49	28.2	25	6
NSE5-SK	45	32.5	30	7.0	45	32.5	32	8
NSE10-SK	50	35.4	30	9.0	50	35.4	35	8
NSE25-SK	60	42.0	40	9.0	60	42.0	53	8
NSE50-SK	70	50.0	40	11.0	90	70.0	56	8
NSE100-SK	70	46.0	50	13.5	120	96.0	70	8

Hand wheel HR

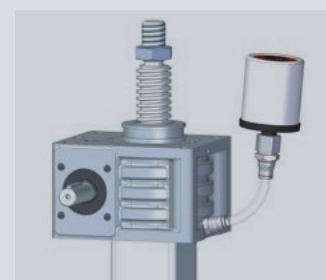


	D1	D2 with keyway	D3	D4	L1	L2	L3
HR-60	60	09/11	18	21	22	52.5	15
HR-80	80	11	26	18	26	42.5	16
HR-125	125	11/14	31	23	33	67.5	18
HR-160	160	14/16	36	26	39	82.5	20
HR-200	200	16/20	42	26	45	82.5	24
HR-250	250	20/25	48	28	51	92.5	28

Lubricant dispenser SSG



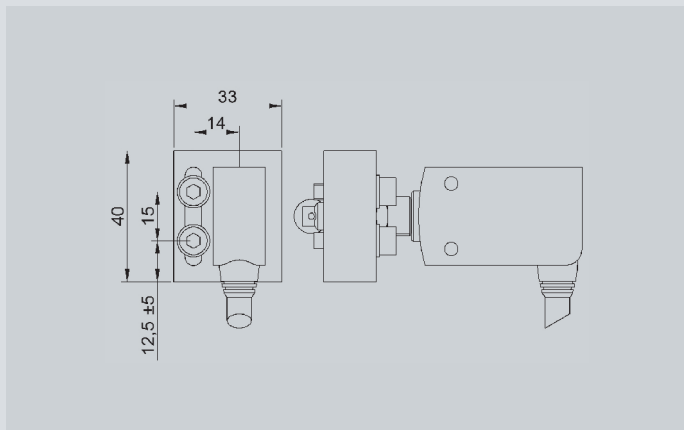
Depending on the required amount of lubrication, the dispensers last for 1 up to 12 months.
We would gladly supply you with accessories (tube, bushing, etc.)



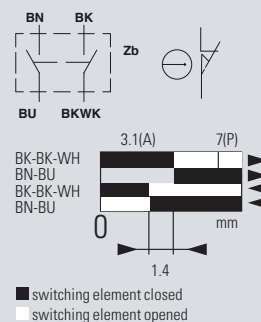
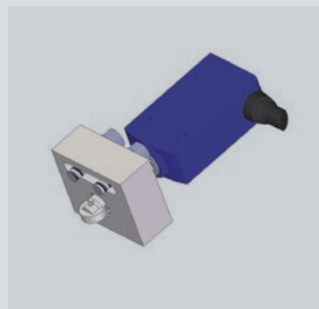
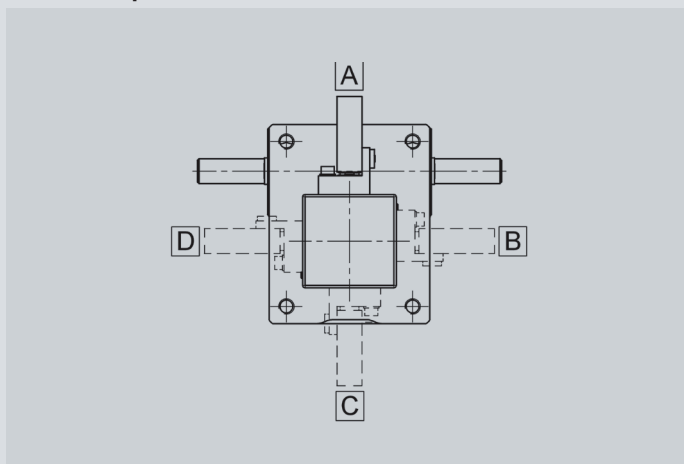
	L	Filling
SSG-60-UM	62	60 ml Universal grease with MoS2
SSG-125-UM	100	125 ml Universal grease with MoS2
SSG-125-L	100	125 ml Food fat

	SSG	SSG with flexible tube
NSE2	SSG-RED-M6/-G1/8	SSG-RED-M6 + SSG-S
NSE5	SSG-RED-M6/-G1/8	SSG-RED-M6 + SSG-S
NSE10-SN/SL*	SSG-RED-G1/8	SSG-S
NSE25	SSG-RED-G1/8	SSG-S
NSE50	SSG-RED-G1/8	SSG-S
NSE100	SSG-RED-G1/8	SSG-S

Limit switch mechanical ESM



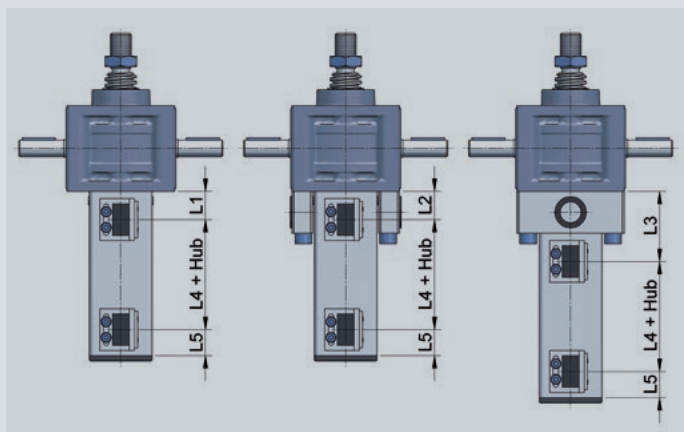
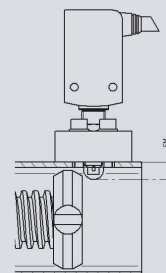
Limit switch position



Limit switch with 4-pole cable, mounting plate and 2 screws

- 240V
- IP 65
- Technology: «closer» (NC) and «opener» (NO)
- Opener (NO): Cable color BK (black) and BK-WH (black / white)
- Closer (NC): Cable color BU (blue) and BN (brown)
- IEC / EN 60947-5-1
- Cable length ~ 1 m

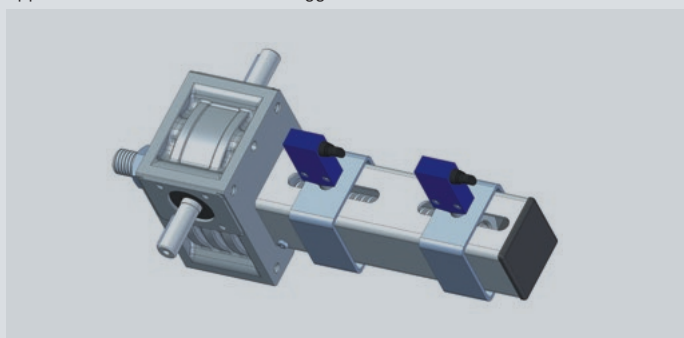
EM	EM (mm)
NSE2	6.0
NSE5	6.0
NSE10	6.5
NSE25	7.5
NSE50	8.0
NSE100	8.5



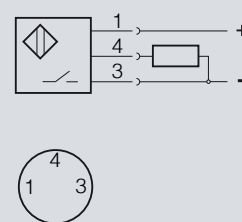
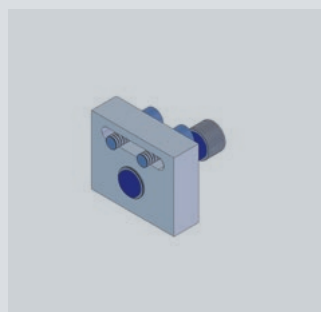
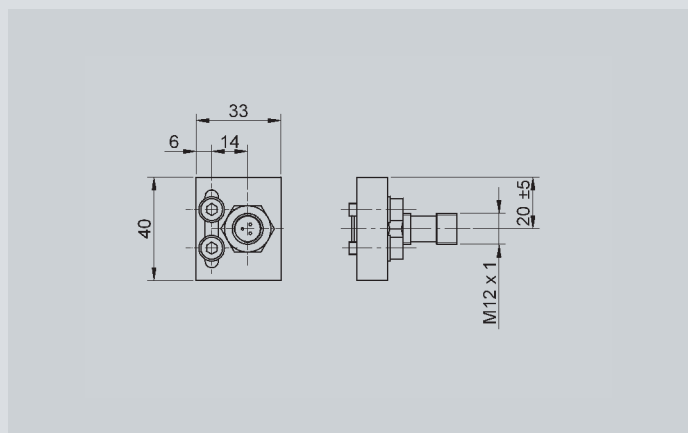
	TR	L1	L2	L3	L4	L5
NSE2	TR14x4	25	50	50	5	25
NSE5	TR18x4	25	55	55	5	25
NSE10	TR20x4	25	25	55	5	25
NSE25	TR30x6	27	27	65	5	25
NSE50	TR40x7	33	33	85	10	31
NSE100	TR60x9	38	38	100	10	37

Mechanical limitswitch, shiftable ESMV

approach for limitswitches with bigger movable distance

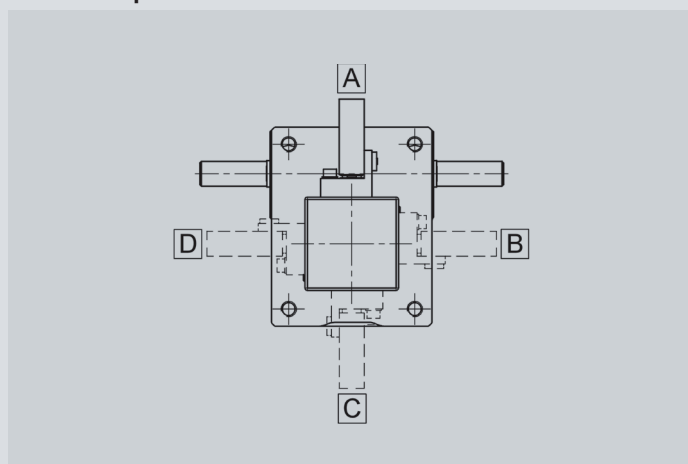


Limit switch inductive ESI



The inductive proximity switches are mounted on the square end protection tube with a bracket. The desired positions of the proximity switches can be exactly fixed in alignment.

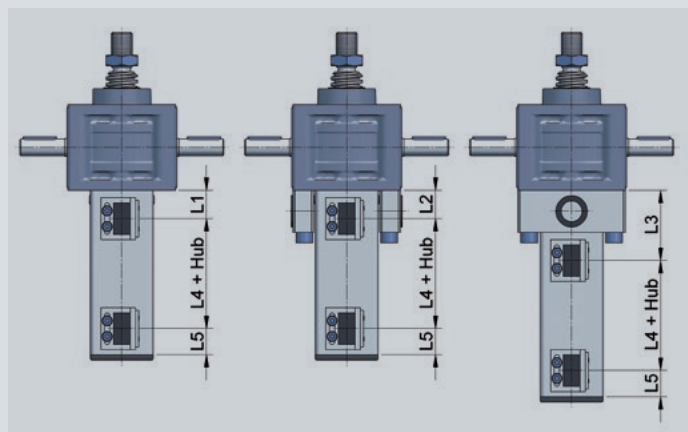
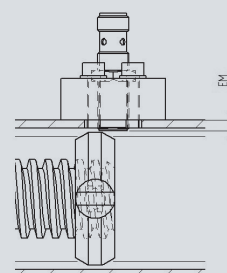
Limit switch position



The following standard types are available and can be supplied:

- DC from 10 V to 30 V, max. 200 mA
- PNP
- Switching distance: 2mm
- Output function: «Normally closed» (NC), option «Normally open» (NO) on request

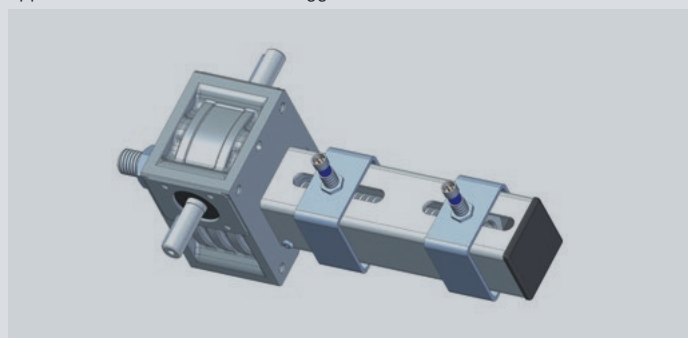
EM	EM (mm)
NSE2	2.0
NSE5	2.0
NSE10	2.0
NSE25	3.0
NSE50	3.0
NSE100	4.0



	TR	L1	L2	L3	L4	L5
NSE2	TR14x4	25	50	50	5	25
NSE5	TR18x4	25	55	55	5	25
NSE10	TR20x4	25	25	55	5	25
NSE25	TR30x6	27	27	65	5	25
NSE50	TR40x7	33	33	85	10	31
NSE100	TR60x9	38	38	100	10	37

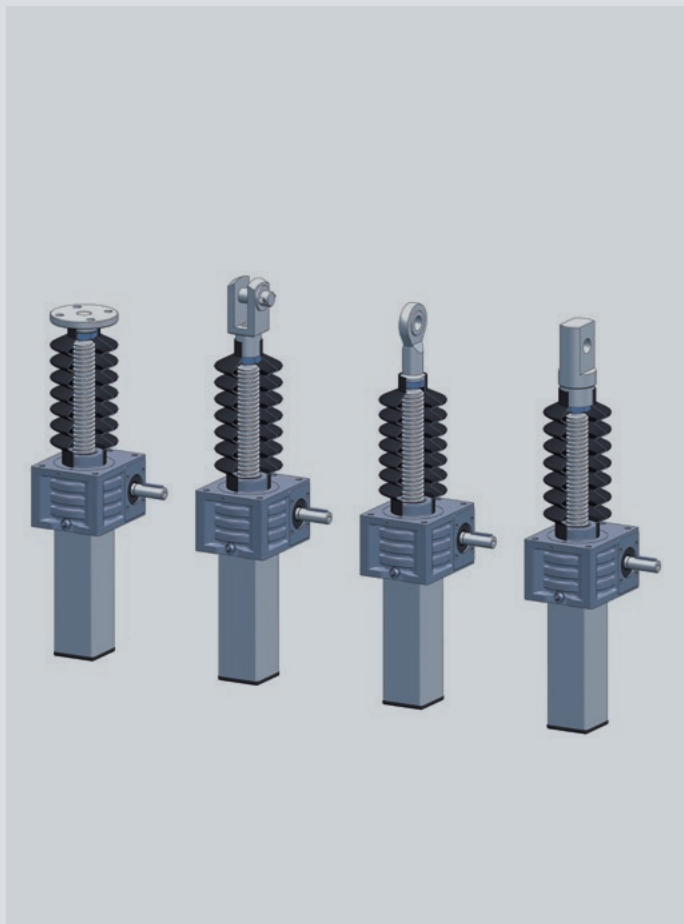
Inductive limitswitch, shiftable ESIV

approach for limitswitches with bigger movable distance



2.5 Bellows

Screw jacks, non-rotating



Bellows protect the screw against dirt and moisture.

Particularly in the case of on-site assembly, they protect the spindles from: construction dust, grinding dust from angle grinders, welding spatters, etc. Protect the bellows from direct sunlight. Please note also that the maximum duration of switching on of the lifting jacks is reduced by the heat-insulating action of bellows.

Attention:

The bellows must not be compressed below the dimension ZD or extended beyond the dimension AZ. (For strokes greater than 1000 mm, use the bellows with support rings.) Take into consideration that, for horizontal installation of the bellows, it must not come into contact with screw: Serious wear will occur! This can be avoided by the use of support rings.



Air holes must be made by the customer, depending on the speed.

Ordering example for bellows

Type
Number of bellows
Gait diameter 1/2
FB90-15-30/40

Screw jack NSE2–NSE5

	L	ZD*	AZ*	D1	D2	D3	D4
FB52	10	2.1	10.5	26	34	30	52

* per fold

Standard is FB52-29-26/34-300 mit ZD = 60mm

Material: NBR

Temperature range: -20 ... +80 °C

Screw jack NSE10–NSE50 (NSE5)

	L	ZD*	AZ*	D1	D2	D3	D4
FB90	20	3.5	24.5	30/40/50	30/40/50	50	90

* per fold

Material: Nitril, black

Temperature range: -20 ... +80 °C

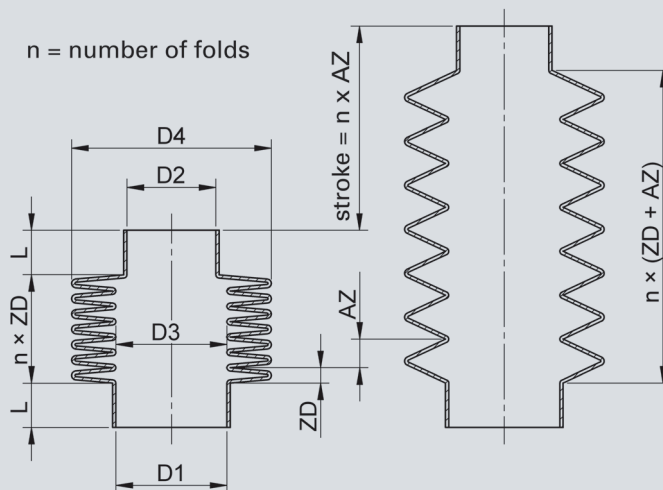
Screw jack NSE100

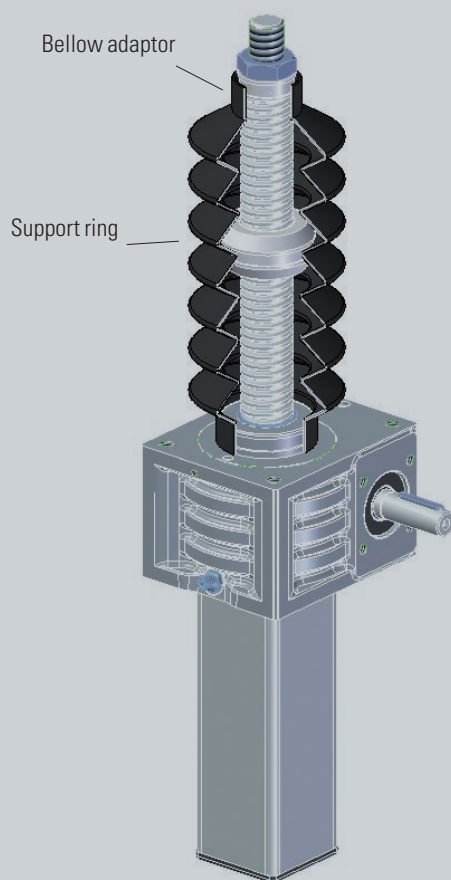
	L	ZD*	AZ*	D1	D2	D3	D4
FB130	20	2.0	26.0	68/88	68/88	70	130

* per fold

Material: NBR

Temperature range: -20 ... +80 °C





Depending on accessory, a bellows adaptor must be used. Depending on the travel of support rings yet to be built.

Bellow adaptor for spindle end

	D
NSE 2-FBAS	30
NSE 5-FBAS	30
NSE 10-FBAS	40
NSE 25-FBAS	40

Internal support ring fitting FB52

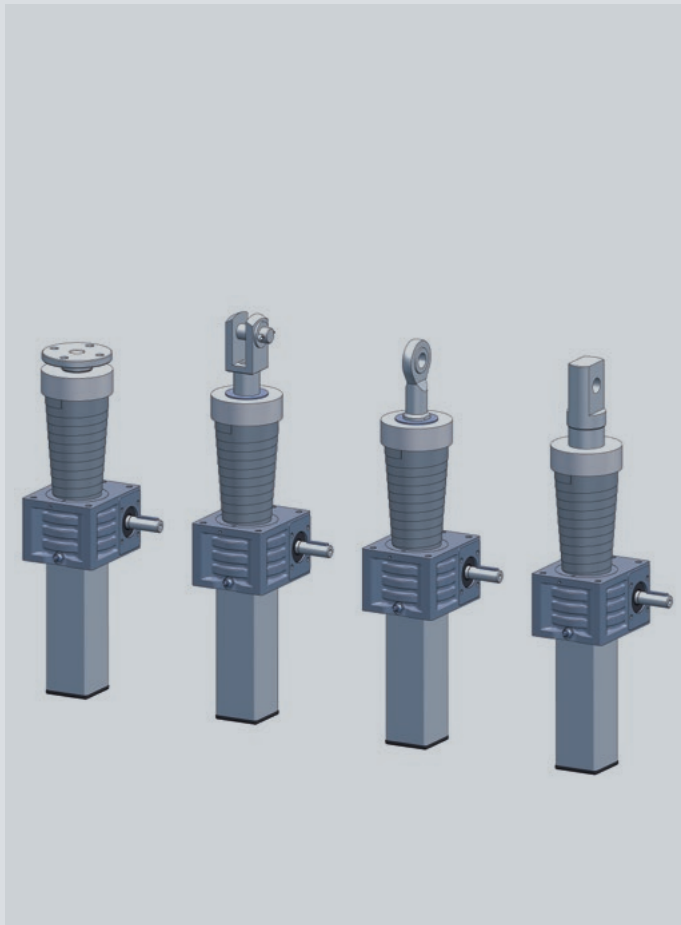
NSE2-FB52-STR
NSE5-FB52-STR

Internal support ring fitting FB90

NSE5-FB90-STR
NSE10-FB90-STR
NSE25-FB90-STR
NSE50-FB90-STR

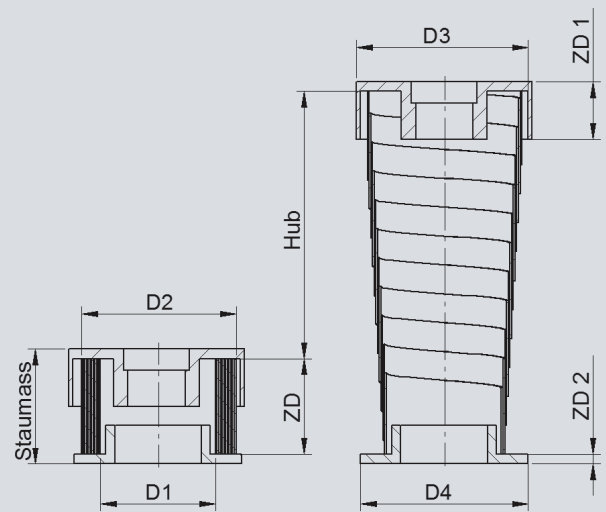
2.5 Bellows

Screw jacks, non-rotating



Spiral spring covers can be used for different applications. If you want to combine different add-on components, centering sleeves are required, which we would be happy to supply.

Important: The spiral spring cover must not be allowed to uncoil. Please specify if the spiral spring cover SF is to be installed vertically or horizontally. We recommend placing the large diameter facing up for vertical installation, and for horizontal installation the large diameter in the direction of the swarf. A light film of oil improves operation and increases the operating life.



2.5 Spiral spring cover

Screw jacks, non-rotating

Screw jack NSE5

	D1	D2	ZD	Stroke horizontal	Stroke vertical
045/350/030	45	65	30	260	320
045/550/050	45	68	50	400	500

Screw jack NSE10

	D1	D2	ZD	Stroke horizontal	Stroke vertical
050/350/030	50	73	30	260	320
050/550/050	50	73	50	400	500
050/750/060	50	80	60	570	690
050/1100/100	50	77	100	800	1000

Screw jack NSE25

	D1	D2	ZD	Stroke horizontal	Stroke vertical
060/350/050	60	78	50	200	300
060/550/060	60	81	60	370	490
060/750/075	60	89	75	525	675
060/1100/075	60	102	75	875	1025

Screw jack NSE50

	D1	D2	ZD	Stroke horizontal	Stroke vertical
075/350/050	75	95	50	200	300
075/750/060	75	109	60	570	690
075/1100/100	75	108	100	800	1000
075/1500/100	75	120	100	1200	1400

Screw jack NSE100

	D1	D2	ZD	Stroke horizontal	Stroke vertical
100/350/060	100	126	60	170	290
100/800/075	100	138	75	575	725
100/1200/100	100	137	100	900	1100
100/1800/150	100	151	150	1350	1650

Ordering example

Spiral spring
Smallest diameter D1
Longest length AZ
Smallest length ZD
Mounting H/V
(horizontal/vertical)

SF-050-0550-050-V

2.6 Length determination

Screw jacks, non-rotating

By means of the following table, you can determine the required spindle and protection tube lengths. So that you can quickly calculate the installation dimensions of your screw jack. These allowances are the minimum required. For special installation situations, please make a drawing or contact us.

Explanation

Spindle length = stroke + basic length + attachments

Calculation example

NSE25-SN with 210 mm stroke, anti rotation lock and bellow

Spindle length

$210 + 164 + 15 + 31.5 = 420.5$ mm spindle length

Smallest length bellow

$210/24.5 = 8.57 > 9 \times 3.5 = 31.5$

Protective tube length

$210 + 25 + 32 = 267$

Spindle length

	NSE2	NSE5	NSE10	NSE25	NSE50	NSE100
TR-basic length*	110	127	145	164	221	298
KGT-basic length**		193 16x05	217 25x05	245 32x05	292 40x05	390 50x10
		213 16x10	237 25x10	265 32x10	312 40x10	430 50x20
			297 25x25	305 32x20	352 40x20	
			397 25x50	385 32x40	432 40x40	
Basic lengths without protection	102	119	137	152	207	280
Anti rotation lock (VS) / Screw out protection (AS)	15	15	15	15	24	24
bellows adapter***	8	8	7	6	7	9
Smallest length bellow	$\text{Stroke}/_{10.5} = \dots \times 2.1$ round number	$\text{Stroke}/_{10.5} = \dots \times 2.1$ round number	$\text{Stroke}/_{24.5} = \dots \times 3.5$ round number	$\text{Stroke}/_{24.5} = \dots \times 3.5$ round number	$\text{Stroke}/_{24.5} = \dots \times 3.5$ round number	$\text{Stroke}/_{26.0} = \dots \times 2.0$ round number

* Contains 2 x the safety distance (spindle pitch)

** Contains 4 x the safety distance (spindle pitch)

Subject to dimension changes

*** depending on accessory, a bellows adapter must be used

Protective tube length SR

	NSE2	NSE5	NSE10	NSE25	NSE50	NSE100
TR-basic length	21	21	21	25	30	37
KGT-basic length*		65 16x05	65 25x05	65 32x05	80 40x05	103 50x05
		85 16x10	85 25x10	85 32x10	100 40x10	143 50x10
			145 25x25	125 32x20	140 40x20	
			245 25x50	205 32x40	220 40x40	
Anti rotation lock (VS) / Screw out protection (AS)	34	34	34	32	44	48

* KGT requires anti-rotation lock VS as being absolutely essential; > included in basic length

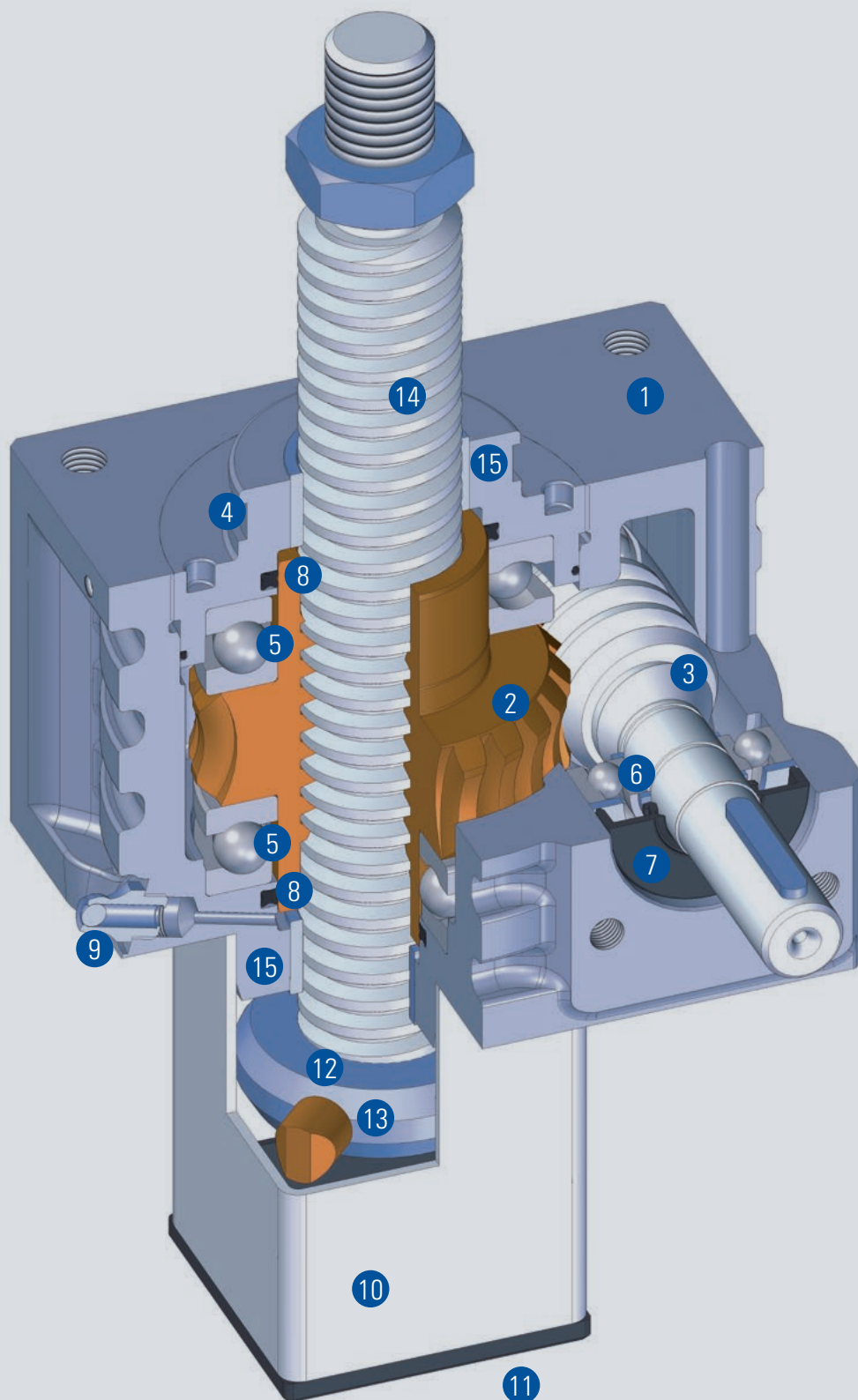
Subject to dimension changes

- Limit switches ESI/ESM are always in combination with anti rotation lock VS or screw out protection AS
- Spiral spring covers SF: As the extension of the spiral spring covering differs depending on the attachment, this option has to be calculated graphically. If necessary we would be pleased to generate this drawing.

CAD-Datas please look at www.nozag.ch

2.7 Section drawing

Screw jacks, non-rotating



- 1 Housing
- 2 Worm wheel
- 3 Worm
- 4 Bearing cap
- 5 Deep groove ball thrust bearing
- 6 Deep groove ball bearing
- 7 oil seal
- 8 x-ring / o-ring
- 9 Grease nipple for spindle
- 10 Protection tube
- 11 Sealing cover
- 12 Screw out protection
- 13 Anti rotation lock
- 14 Spindle
- 15 Spindle guide