INKOMA - GROUP

# KSH Bevel gear high speed screw jack

INKOMA-GROUP

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# Product description

## Bevel gear high speed screw jack KSH-1 to KSH-3

The INKOMA-bevel gear high speed screw jack type KSH is a modular design in 3 sizes. Each size is available with two ratios; 2:1 and 3:1. All gear housings are cubic in form and are machined on all faces. They are manufactured from GG 25 grey cast iron.

INKOMA-bevel gear high speed screw jacks are distinguished from INKOMA-precision screw jacks HSG series by the use of spiral bevel gear sets. These bevel gears are of Klingelnberg form and are lapped together in pairs. High quality alloy steel is used in their manufacture and they are case hardened. Robust rolling bearings support the input shaft and the lifting spindle axis giving a long and trouble free life.

INKOMA-bevel gear high speed screw jacks provide a lifting speed of up to 30 m/min with ball screw and 13.5 m/min with trapezoidal spindle. Due to the high efficiency of the integral bevel gears a high overall efficiency is provided.(ca. 75 % for ball screw and ca. 40 % with trapezoidal spindle).

For all situations INKOMA provides a comprehensive range of accessories. All drive components are compatible with one another and with a wide range of applications. INKOMA products are our own manufacture and incorporate our very high quality standards.

If you have further questions please consult our local sales office or our factory engineers. We are always ready to assist with or advise about our products and their applications. Please make use of our wide experience.

# Accessories for rotating spindle version R

## Page references

The comprehensive range of accessories for KSH bevel gear high speed screw jack allows the designer the flexibility to tailor the use of the screw jack precisely to the application. All accessories are manufactured to the same exacting standards as the rest of the INKOMA product range.

In addition to this comprehensive selection, customers special requirements can be accommodated.

Please consult our engineering staff.

**Duplex nut - DFM**
connection of two bellows adaption for lubrication
see page 194

**Automatic lubrication device**
allows continuous grease supply
see page 200

**Safety nut - SFM**
allows wear monitoring
see page 194

**Mounting feet - BP**
provides an alternative method
see page 210

**Cardan shafts - GX/GE**
provide torsionally stiff resilient connections
see page 222

**Support bearings - SNH**
to support extended cardan shafts
see page 224

**Trunnion adaptor - KA**
allows articulating fitting of flanged nut
see page 210

**Bearing block - LB**
base mounting bearing unit for KA or SL
see page 214

**Bearing flange - LF**
base mounting bearing unit for KA or SL
see page 214

**Bearing plate - GL**
to support the free end of the spindle
see page 198

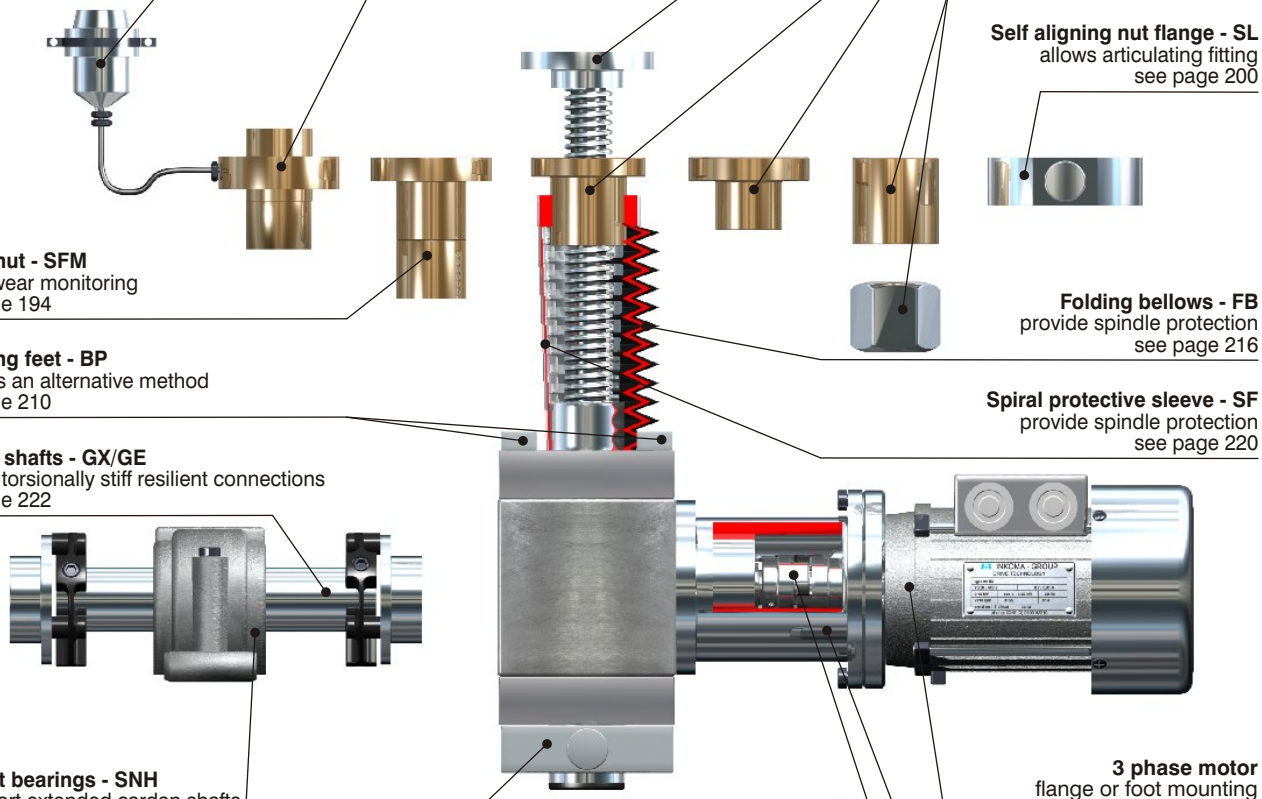
**Flanged nut - FMS/FM**
for standard applications
see page 192

**Trapezoidal spindle nut - TM/ST**
for applications where space is critical
see page 196

**Self aligning nut flange - SL**
allows articulating fitting
see page 200

**Folding bellows - FB**
provide spindle protection
see page 216

**Spiral protective sleeve - SF**
provide spindle protection
see page 220



**3 phase motor**
flange or foot mounting
see page 234 - 237

**Motor adaptor - MG**
for positive and efficient mounting of motors
see page 230

**Elaflex coupling - EFK**
flexible shaft coupling
see page 224

**Gear coupling - M**
standard or light duty version
see page 226

# Accessories for translating spindle versions SA, SVA

## Page references

**Rod end bearing - GSK**
for simple attachment
of the spindle end
see page 202

**Clevis - GK**
for simple attachment
of the spindle end
see page 204

**Mounting flange - BF**
for simple attachment
of the spindle end
see page 202

**Spiral protective sleeve - SF**
provide spindle protection
see page 220

**Folding bellows - FB**
provide spindle protection
see page 216

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standard or light duty version
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provide torsionally stiff resilient connections
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to support extended cardan shafts
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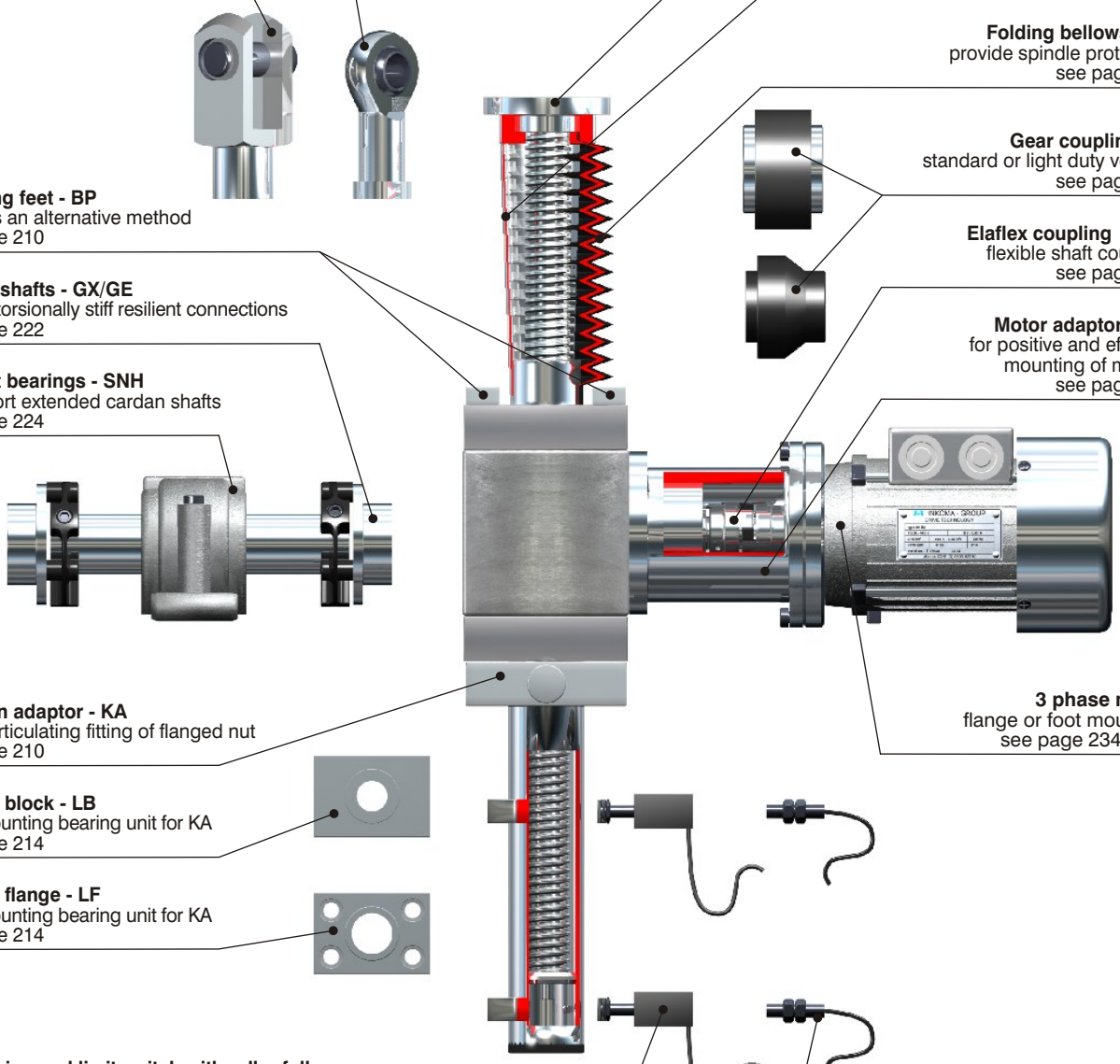


**3 phase motor**
flange or foot mounting
see page 234 - 237

**Trunnion adaptor - KA**
allows articulating fitting of flanged nut
see page 210

**Bearing block - LB**
base mounting bearing unit for KA
see page 214

**Bearing flange - LF**
base mounting bearing unit for KA
see page 214

**Setting ring and limit switch with roller follower**
for monitoring of the spindle position
see page 208

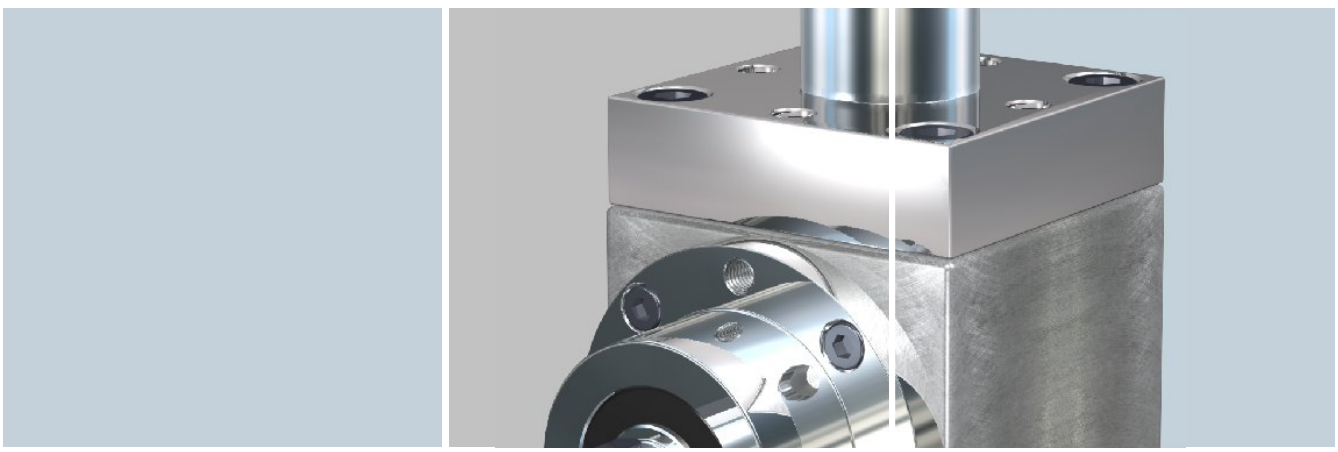
**Setting ring and inductive proximity switch**
for monitoring of the spindle position
see page 208

# KSH Bevel gear high speed screw jack

## Contents list

### KSH bevel gear high speed screw jack with rotating and translating spindles

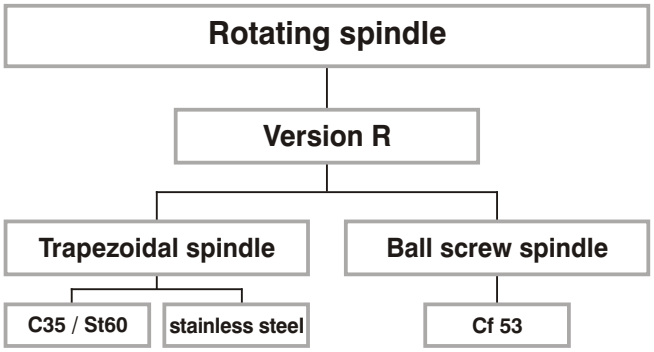




# Versions

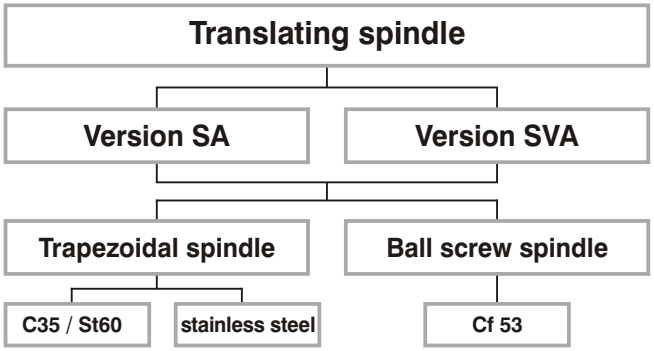
## Rotating version (R)

In rotating version (R) linear motion of the nut results from rotational motion in the spindle.
The spindle is axially fixed in the screw jack gearbox.




## Translating version (SA, SVA)

In translating version (SA, SVA) the linear motion results from movement of the spindle. In the translating spindle version the spindle moves axially through the screw jack gearbox. It is necessary to ensure that the spindle is fixed against rotation. Over-travel of the spindle is limited by a travel limiter (SA). Use of the rotation prevention device prevents potential spindle rotation (SVA).



# Dimensions KSH-1 to KSH-3

## Trapezoidal spindle - rotating and translating versions (R, SA, SVA)

INKOMA-bevel gear high speed screw jacks with trapezoidal spindles are normally supplied filled with oil. The oil level glass, oil filler and drain plug are normally on face D. Deviations from standard can be specified when ordering. The output is usually at face B. Additional input and output shafts can be provided on faces D, E and F.

**Versions:**

**R:** Rotating spindle

**SA:** Translating spindle with travel limiter

**SVA:** Translating spindle with rotation prevention and travel limiter

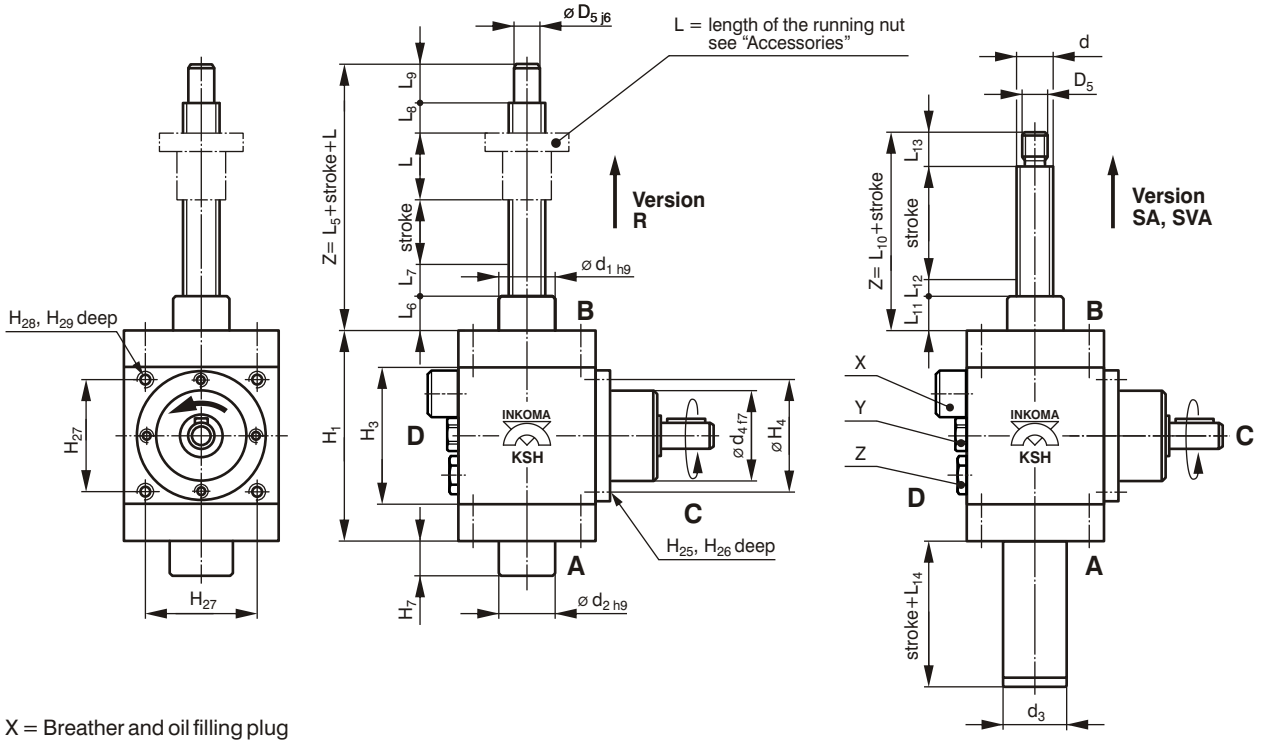
**Ratio:** 2:1, 3:1

**Lubrication:** Oil

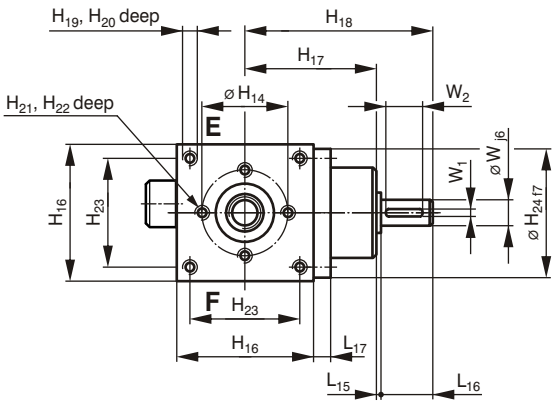
**Material:** GG-25

**Accessories:** see "Accessories" page 185 - 238

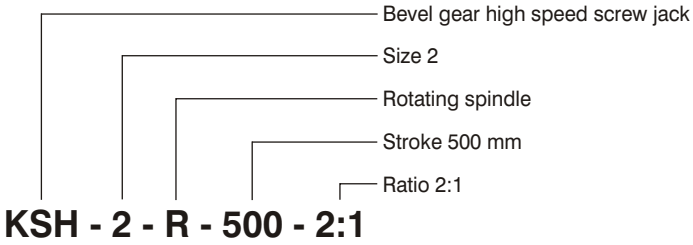
**Questionnaire:** see "HSG" page 140 - 142




X = Breather and oil filling plug
Y = Oil sight glass
Z = Oil drain plug



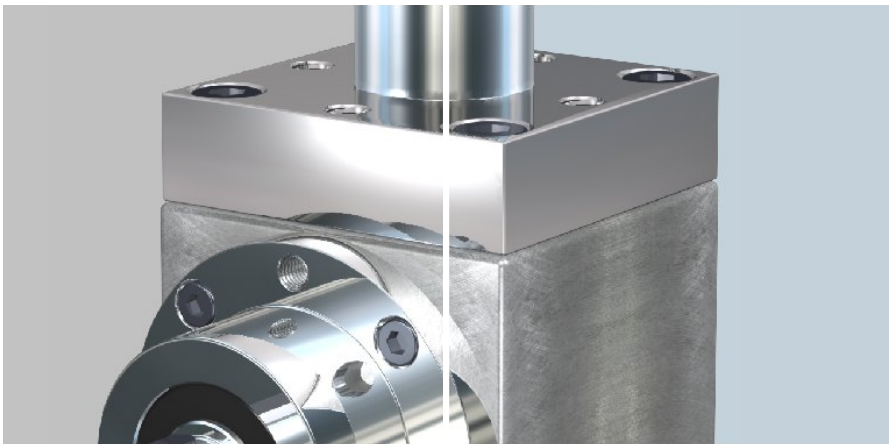

## Ordering example:



# KSH Bevel gear high speed screw jack

| Order code | max. static lifting force [1] [kN] | Lift per revolution 2:1 / 3:1 [mm] | Ratio i | Mass [kg] | Dimensions [mm] d | $D_5$ | $d_1$ | $d_2$ | SA ⌀ $d_3$ | SVA □$d_3$ | $d_4$ 2:1 / 3:1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KSH-1-R-stroke | 15 | 2,5 / 1,66 | 2:1 / 3:1 | 9 | Tr 24x5 | 17 | 46 | 46 | - | - | 60 |
| KSH-1-SA-stroke | 15 | 2,5 / 1,66 | 2:1 / 3:1 | 9 | Tr 24x5 | M18 | 39 | - | 42 | - | 60 |
| KSH-1-SVA-stroke | 15 | 2,5 / 1,66 | 2:1 / 3:1 | 9 | Tr 24x5 | M18 | 39 | - | - | 45 | 60 |
| | | | | | | | | | | | |
| KSH-2-R-stroke | 40 | 3,5 / 2,33 | 2:1 / 3:1 | 23 | Tr 40x7 | 25 | 60 | 60 | - | - | 90 |
| KSH-2-SA-stroke | 40 | 3,5 / 2,33 | 2:1 / 3:1 | 23 | Tr 40x7 | M30 | 60 | - | 65 | - | 90 |
| KSH-2-SVA-stroke | 40 | 3,5 / 2,33 | 2:1 / 3:1 | 23 | Tr 40x7 | M30 | 60 | - | - | 70 | 90 |
| | | | | | | | | | | | |
| KSH-3-R-stroke | 90 | 4,5 / 3,0 | 2:1 / 3:1 | 85 | Tr 60x9 | 45 | 90 | 90 | - | - | 150 / 140 |
| KSH-3-SA-stroke | 90 | 4,5 / 3,0 | 2:1 / 3:1 | 85 | Tr 60x9 | M48x2 | 90 | - | 95 | - | 150 / 140 |
| KSH-3-SVA-stroke | 90 | 4,5 / 3,0 | 2:1 / 3:1 | 85 | Tr 60x9 | M48x2 | 90 | - | - | 90 | 150 / 140 |

[1] The values for max. load apply only for initial jack selection. The actual permitted lifting force depends on the version of the jack and the operating conditions.



| Order code | Dimensions [mm] $H_1$ | $H_3$ | $H_4$ | $H_7$ | $H_{14}$ | $H_{16}$ | $H_{17}$ 2:1 / 3:1 | $H_{18}$ 2:1 / 3:1 | $H_{19}$ | $H_{20}$ | $H_{21}$ | $H_{22}$ | $H_{23}$ | $H_{24}$ | $H_{25}$ | $H_{26}$ | $H_{27}$ | $H_{28}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KSH-1-R-stroke | 140 | 90 | 75 | 23 | 72 | 90 | 85 | 122 | - | - | M10 | 15 | - | 89 | M8 | 10 | - | - |
| KSH-1-SA-stroke | 140 | 90 | 75 | - | 72 | 90 | 85 | 122 | - | - | M10 | 15 | - | 89 | M8 | 10 | - | - |
| KSH-1-SVA-stroke | 140 | 90 | 75 | - | 72 | 90 | 85 | 122 | - | - | M10 | 15 | - | 89 | M8 | 10 | - | - |
| | | | | | | | | | | | | | | | | | | |
| KSH-2-R-stroke | 190 | 140 | 115 | 32 | - | 140 | 128 | 180 | M12 | 20 | - | - | 113 | 135 | M10 | 15 | 110 | M10 |
| KSH-2-SA-stroke | 190 | 140 | 115 | - | - | 140 | 128 | 180 | M12 | 20 | - | - | 113 | 135 | M10 | 15 | 110 | M10 |
| KSH-2-SVA-stroke | 190 | 140 | 115 | - | - | 140 | 128 | 180 | M12 | 20 | - | - | 113 | 135 | M10 | 15 | 110 | M10 |
| | | | | | | | | | | | | | | | | | | |
| KSH-3-R-stroke | 295 | 230 | 200 | 40 | - | 230 | 213 / 228 | 305 / 310 | M20 | 30 | - | - | 180 | 225 | M16 | 20 | - | - |
| KSH-3-SA-stroke | 295 | 230 | 200 | - | - | 230 | 213 / 228 | 305 / 310 | M20 | 30 | - | - | 180 | 225 | M16 | 20 | - | - |
| KSH-3-SVA-stroke | 295 | 230 | 200 | - | - | 230 | 213 / 228 | 305 / 310 | M20 | 30 | - | - | 180 | 225 | M16 | 20 | - | - |

| Order code | Dimensions [mm] $H_{29}$ | $L_5$ | $L_6$ | $L_7$ | $L_8$ | $L_9$ | $L_{10}$ | $L_{11}$ | $L_{12}$ | $L_{13}$ | $L_{14}$ | $L_{15}$ | $L_{16}$ 2:1 / 3:1 | $L_{17}$ | W 2:1 / 3:1 | $W_1$ 2:1 / 3:1 | $W_2$ 2:1 / 3:1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KSH-1-R-stroke | - | 90 | 25 | 20 | 20 | 25 | - | - | - | - | - | 2 | 35 | 10 | 18 / 12 | 6 / 4 | 28 |
| KSH-1-SA-stroke | - | - | - | - | - | - | 50 | 23 | 5 | 22 | 60 | 2 | 35 | 10 | 18 / 12 | 6 / 4 | 28 |
| KSH-1-SVA-stroke | - | - | - | - | - | - | 50 | 23 | 5 | 22 | 70 | 2 | 35 | 10 | 18 / 12 | 6 / 4 | 28 |
| | | | | | | | | | | | | | | | | | |
| KSH-2-R-stroke | 20 | 105,5 | 25,5 | 25 | 25 | 30 | - | - | - | - | - | 2 | 50 | 15 | 32 / 28 | 10 / 8 | 45 |
| KSH-2-SA-stroke | 20 | - | - | - | - | - | 65 | 32 | 4 | 29 | 70 | 2 | 50 | 15 | 32 / 28 | 10 / 8 | 45 |
| KSH-2-SVA-stroke | 20 | - | - | - | - | - | 65 | 32 | 4 | 29 | 90 | 2 | 50 | 15 | 32 / 28 | 10 / 8 | 45 |
| | | | | | | | | | | | | | | | | | |
| KSH-3-R-stroke | - | 145 | 40 | 25 | 25 | 55 | - | - | - | - | - | 2 | 90 / 80 | 20 | 55 / 40 | 16 / 12 | 80 / 60 |
| KSH-3-SA-stroke | - | - | - | - | - | - | 95 | 40 | 7 | 48 | 105 | 2 | 90 / 80 | 20 | 55 / 40 | 16 / 12 | 80 / 60 |
| KSH-3-SVA-stroke | - | - | - | - | - | - | 95 | 40 | 7 | 48 | 105 | 2 | 90 / 80 | 20 | 55 / 40 | 16 / 12 | 80 / 60 |

# Dimensions KSH-1 to KSH-3

## Ball screw spindle - translating version (SA, SVA)

INKOMA-bevel gear high speed screw jack with ball screw spindle are normally supplied filled with oil. The oil level glass, oil filler and drain plug are on face D. Deviations from standard can be specified when ordering. The output is usually on face B. Additional input and output shafts can be provided on faces D, E and F.

**Versions:**

**SA:** Translating spindle with travel limiter

**SVA:** Translating spindle with rotation prevention and travel limiter

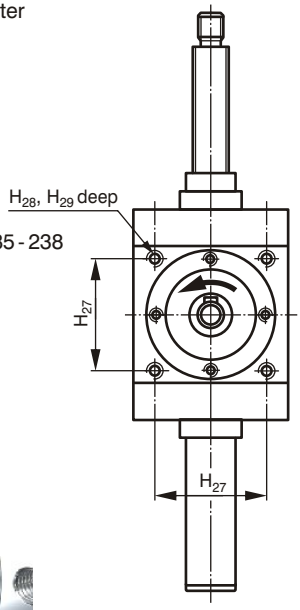
**Ratio:** 2:1, 3:1

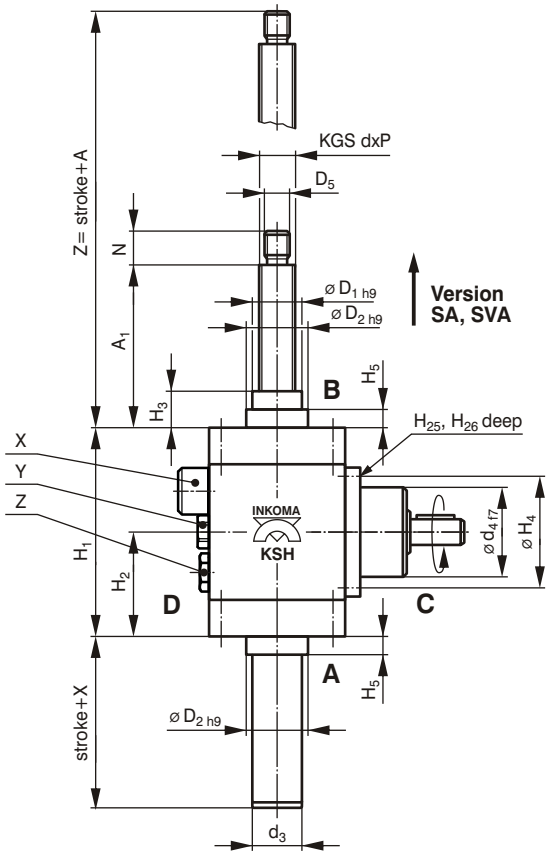
**Lubrication:** Oil

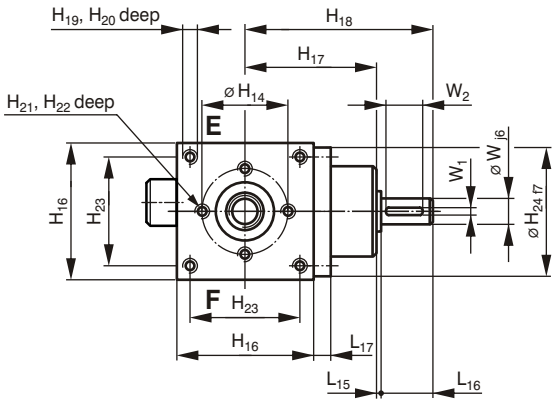
**Material:** GG-25

**Accessories:** see “Accessories” page 185 - 238

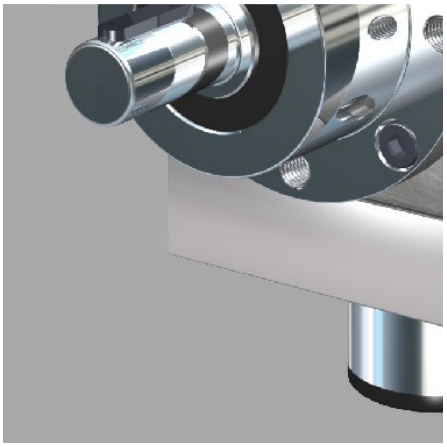
**Questionnaire:** see “HSG” page 140 - 142




X = Breather and oil filling plug
Y = Oil sight glass
Z = Oil drain plug

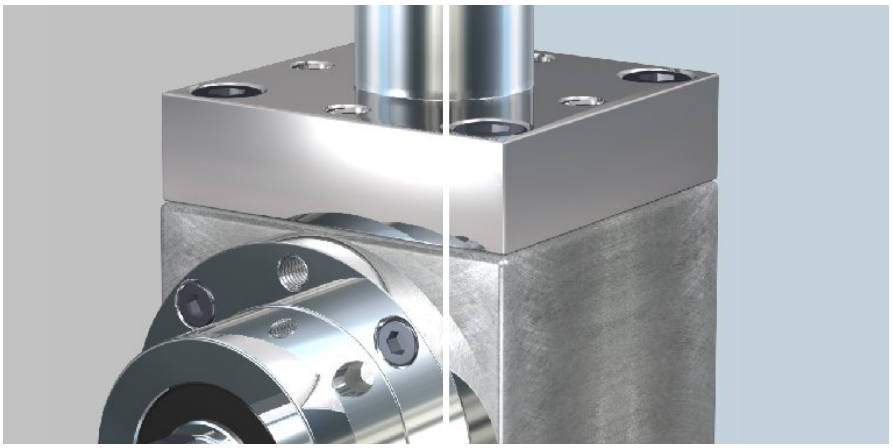


## Ordering example:

# KSH Bevel gear high speed screw jack

| Order code | Lifting force $F_{dyn.}$ [kN] | max. static lifting force [1] $F_{stat.}$ [kN] | Lift per revolution [mm] | Ratio i | Dimensions [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | KGS dxP | $D_5$ | SA ⌀ $d_3$ | SVA □$d_3$ | $d_4$ 2:1 / 3:1 | SA X | SVA X |
| KSH-1-SA/SVA-stroke-KGS-25x5 | 14,9 | 15 | 2,5 / 1,66 | 2:1 / 3:1 | 25x5 | M14 | 42 | 45 | 60 | 70 | 70 |
| KSH-1-SA/SVA-stroke-KGS-25x10 | 13,2 | 15 | 5 / 3,33 | 2:1 / 3:1 | 25x10 | M14 | 42 | 45 | 60 | 75 | 75 |
| | | | | | | | | | | | |
| KSH-2-SA/SVA-stroke-KGS-40x5 | 23,4 | 40 | 2,5 / 1,66 | 2:1 / 3:1 | 40x5 | M30 | 65 | 70 | 90 | 85 | 95 |
| KSH-2-SA/SVA-stroke-KGS-32x10 | 33,4 | 40 | 5 / 3,33 | 2:1 / 3:1 | 32x10 | M20 | 65 | 70 | 90 | 100 | 110 |
| KSH-2-SA/SVA-stroke-KGS-32x20 | 29,7 | 40 | 10 / 6,66 | 2:1 / 3:1 | 32x20 | M20 | 65 | 70 | 90 | 110 | 120 |
| | | | | | | | | | | | |
| KSH-3-SA/SVA-stroke-KGS-63x10 | 76 | 90 | 5 / 3,33 | 2:1 / 3:1 | 63x10 | M48x2 | 95 | 90 | 150 / 140 | 105 | 115 |
| KSH-3-SA/SVA-stroke-KGS-63x20 | 90 | 90 | 10 / 6,66 | 2:1 / 3:1 | 63x20 | M48x2 | 95 | 90 | 150 / 140 | 105 | 115 |

[1] The values for max. load apply only for initial jack selection. The actual permitted lifting force depends on the version of the jack and the operating conditions.



| Order code | Dimensions [mm] | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | $A_1$ | $D_1$ | $D_2$ | $H_1$ | $H_2$ | $H_3$ | $H_4$ | $H_5$ | $H_{14}$ | $H_{16}$ | $H_{17}$ 2:1 / 3:1 | $H_{18}$ 2:1 / 3:1 | $H_{19}$ | $H_{20}$ | $H_{21}$ |
| KSH-1-SA/SVA-stroke-KGS-25x5 | 50 | 30 | 39 | 50 | 140 | 70 | 23 | 75 | 10 | 72 | 90 | 85 | 122 | - | - | M10 |
| KSH-1-SA/SVA-stroke-KGS-25x10 | 65 | 45 | 39 | 50 | 140 | 70 | 30 | 75 | 18 | 72 | 90 | 85 | 122 | - | - | M10 |
| | | | | | | | | | | | | | | | | |
| KSH-2-SA/SVA-stroke-KGS-40x5 | 80 | 51 | 60 | - | 190 | 95 | 32 | 115 | - | - | 140 | 128 | 180 | M12 | 20 | - |
| KSH-2-SA/SVA-stroke-KGS-32x10 | 95 | 73 | 60 | - | 190 | 95 | 32 | 115 | - | - | 140 | 128 | 180 | M12 | 20 | - |
| KSH-2-SA/SVA-stroke-KGS-32x20 | 105 | 83 | 60 | 78 | 190 | 95 | 32 | 115 | 10 | - | 140 | 128 | 180 | M12 | 20 | - |
| | | | | | | | | | | | | | | | | |
| KSH-3-SA/SVA-stroke-KGS-63x10 | 95 | 47 | 90 | - | 295 | 147,5 | 40 | 200 | - | - | 230 | 213 / 228 | 305 / 310 | M20 | 30 | - |
| KSH-3-SA/SVA-stroke-KGS-63x20 | 95 | 47 | 90 | - | 295 | 147,5 | 40 | 200 | - | - | 230 | 213 / 228 | 305 / 310 | M20 | 30 | - |

| Order code | Dimensions [mm] | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $H_{22}$ | $H_{23}$ | $H_{24}$ | $H_{25}$ | $H_{26}$ | $H_{27}$ | $H_{28}$ | $H_{29}$ | $L_{15}$ | $L_{16}$ 2:1 / 3:1 | $L_{17}$ | N | W 2:1 / 3:1 | $W_1$ 2:1 / 3:1 | $W_2$ 2:1 / 3:1 |
| KSH-1-SA/SVA-stroke-KGS-25x5 | 15 | - | 89 | M8 | 10 | - | - | - | 2 | 35 | 10 | 20 | 18 / 12 | 6 / 4 | 28 |
| KSH-1-SA/SVA-stroke-KGS-25x10 | 15 | - | 89 | M8 | 10 | - | - | - | 2 | 35 | 10 | 20 | 18 / 12 | 6 / 4 | 28 |
| | | | | | | | | | | | | | | | |
| KSH-2-SA/SVA-stroke-KGS-40x5 | - | 113 | 135 | M10 | 15 | 110 | M10 | 20 | 2 | 50 | 15 | 29 | 32 / 28 | 10 / 8 | 45 |
| KSH-2-SA/SVA-stroke-KGS-32x10 | - | 113 | 135 | M10 | 15 | 110 | M10 | 20 | 2 | 50 | 15 | 22 | 32 / 28 | 10 / 8 | 45 |
| KSH-2-SA/SVA-stroke-KGS-32x20 | - | 113 | 135 | M10 | 15 | 110 | M10 | 20 | 2 | 50 | 15 | 22 | 32 / 28 | 10 / 8 | 45 |
| | | | | | | | | | | | | | | | |
| KSH-3-SA/SVA-stroke-KGS-63x10 | - | 180 | 225 | M16 | 20 | - | - | - | 2 | 90 / 80 | 20 | 48 | 55 / 40 | 16 / 12 | 80 / 60 |
| KSH-3-SA/SVA-stroke-KGS-63x20 | - | 180 | 225 | M16 | 20 | - | - | - | 2 | 90 / 80 | 20 | 48 | 55 / 40 | 16 / 12 | 80 / 60 |

# Dimensions KSH-1 to KSH-3

## Ball screw spindle - rotating version (R)

INKOMA-bevel gear high speed screw jack with ball screw spindle are normally supplied filled with oil. The oil level glass, oil filler and drain plug are on face D. Deviations from standard can be specified when ordering. The output is usually on face B. Additional input and output shafts can be provided on faces D, E and F.

**Versions:**

**R:** Rotating spindle

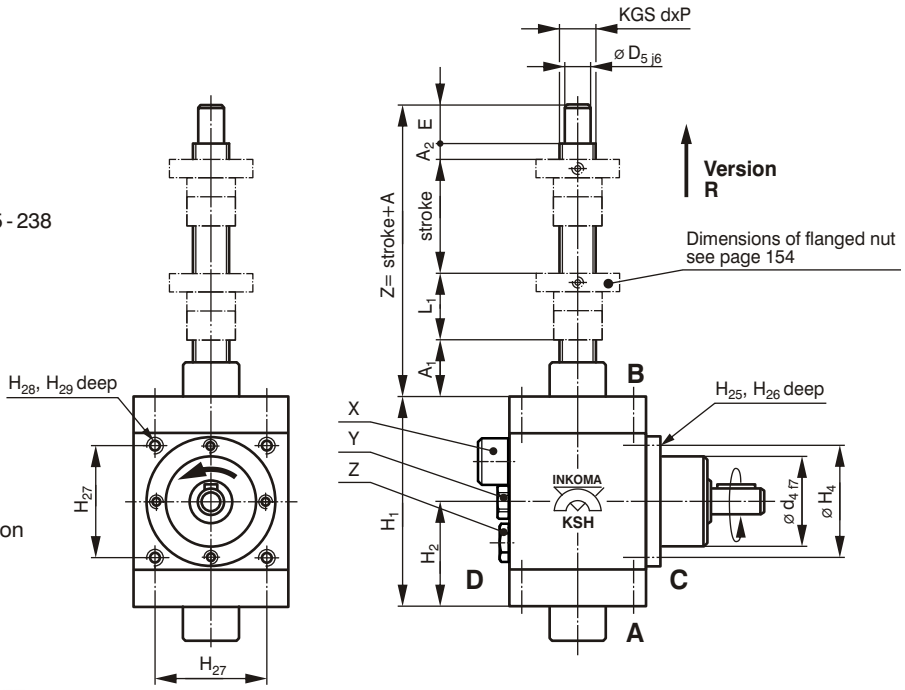
**Ratio:** 2:1, 3:1

**Lubrication:** Oil

**Material:** GG-25

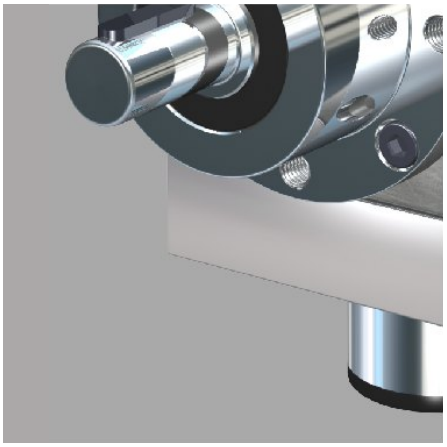
**Accessories:** see “Accessories” page 185 - 238

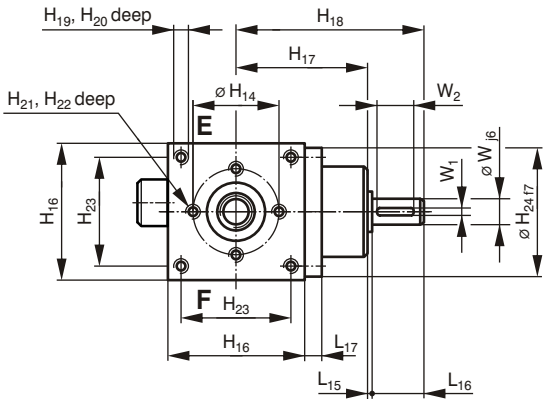
**Questionnaire:** see “HSG” page 140 - 142



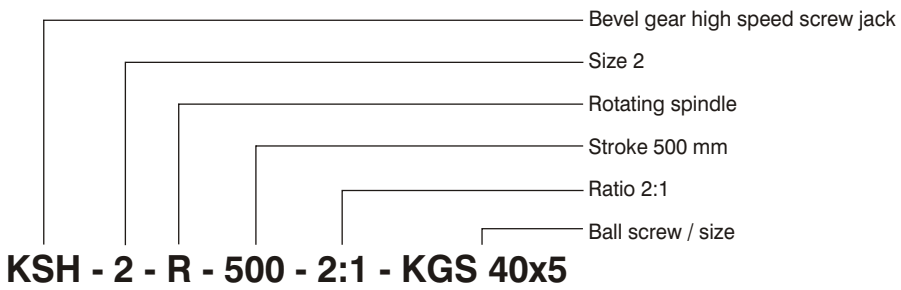

For all un-dimensioned parts see KSH version with trapezoidal spindle.

X = Breather and oil filling plug
Y = Oil sight glass
Z = Oil drain plug





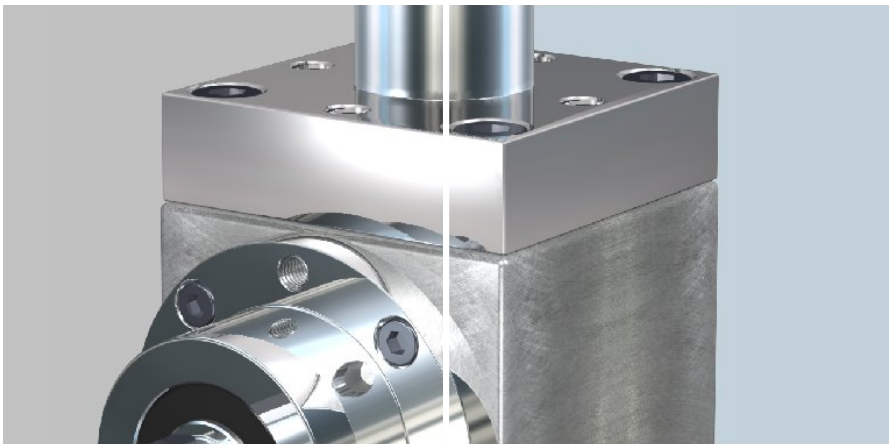

## Ordering example:



# KSH Bevel gear high speed screw jack

| Order code | Lifting force $F_{dyn.}$ [kN] | max. static lifting force [1] $F_{stat.}$ [kN] | Lift per revolution [mm] | Ratio i | Dimensions [mm] KGS dxP | $d_4$ 2:1 / 3:1 | $D_5$ |
|---|---|---|---|---|---|---|---|
| KSH-1-R-stroke-KGS-25x5 | 14,9 | 15 | 2,5 / 1,66 | 2:1 / 3:1 | 25x5 | 60 | 15 |
| KSH-1-R-stroke-KGS-25x10 | 15 | 15 | 5 / 3,33 | 2:1 / 3:1 | 25x10 | 60 | 15 |
| | | | | | | | |
| KSH-2-R-stroke-KGS-40x5 | 25,9 | 40 | 2,5 / 1,66 | 2:1 / 3:1 | 40x5 | 90 | 25 |
| KSH-2-R-stroke-KGS-40x10 | 39,8 | 40 | 5 / 3,33 | 2:1 / 3:1 | 40x10 | 90 | 25 |
| KSH-2-R-stroke-KGS-40x20 | 23,8 | 36 | 10 / 6,66 | 2:1 / 3:1 | 40x20 | 90 | 25 |
| | | | | | | | |
| KSH-3-R-stroke-KGS-63x10 | 84,7 | 90 | 5 / 3,33 | 2:1 / 3:1 | 63x10 | 150 / 140 | 40 |
| KSH-3-R-stroke-KGS-63x20 | 90 | 90 | 10 / 6,66 | 2:1 / 3:1 | 63x20 | 150 / 140 | 40 |

[1] The values for max. load apply only for initial jack selection. The actual permitted lifting force depends on the version of the jack and the operating conditions.



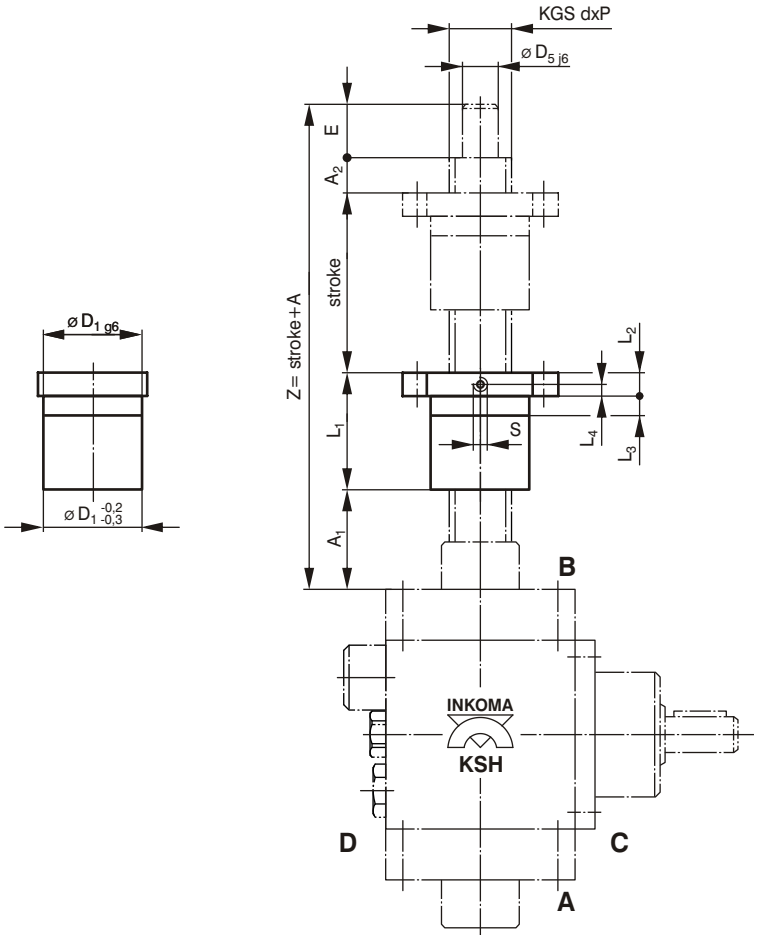
| Order code | Dimensions [mm] A | $A_1$ | $A_2$ | E | $H_1$ | $H_2$ | $H_4$ | $H_{14}$ | $H_{16}$ | $H_{17}$ 2:1 / 3:1 | $H_{18}$ 2:1 / 3:1 | $H_{19}$ | $H_{20}$ | $H_{21}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KSH-1-R-stroke-KGS-25x5 | 133 | 45 | 25 | 20 | 140 | 70 | 75 | 72 | 90 | 85 | 122 | - | - | M10 |
| KSH-1-R-stroke-KGS-25x10 | 155 | 47 | 27 | 20 | 140 | 70 | 75 | 72 | 90 | 85 | 122 | - | - | M10 |
| | | | | | | | | | | | | | | |
| KSH-2-R-stroke-KGS-40x5 | 171,5 | 58,5 | 33 | 30 | 190 | 95 | 115 | - | 140 | 128 | 180 | M12 | 20 | - |
| KSH-2-R-stroke-KGS-40x10 | 192,5 | 67,5 | 25 | 30 | 190 | 95 | 115 | - | 140 | 128 | 180 | M12 | 20 | - |
| KSH-2-R-stroke-KGS-40x20 | 193,5 | 50,5 | 25 | 30 | 190 | 95 | 115 | - | 140 | 128 | 180 | M12 | 20 | - |
| | | | | | | | | | | | | | | |
| KSH-3-R-stroke-KGS-63x10 | 265 | 65 | 35 | 45 | 295 | 147,5 | 200 | - | 230 | 213 / 228 | 305 / 310 | M10 | 30 | - |
| KSH-3-R-stroke-KGS-63x20 | 295 | 65 | 35 | 45 | 295 | 147,5 | 200 | - | 230 | 213 / 228 | 305 / 310 | M20 | 30 | - |

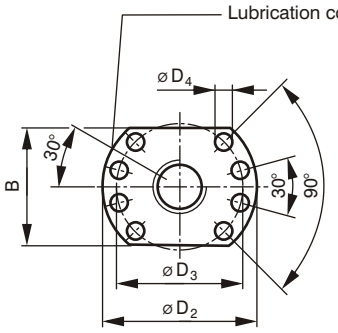
| Order code | Dimensions [mm] $H_{22}$ | $H_{23}$ | $H_{24}$ | $H_{25}$ | $H_{26}$ | $H_{27}$ | $H_{28}$ | $H_{29}$ | $L_{15}$ | $L_{16}$ 2:1 / 3:1 | $L_{17}$ | W 2:1 / 3:1 | $W_1$ 2:1 / 3:1 | $W_2$ 2:1 / 3:1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KSH-1-R-stroke-KGS-25x5 | 15 | - | 89 | M8 | 10 | - | - | - | 2 | 35 | 10 | 18 / 12 | 6 / 4 | 28 |
| KSH-1-R-stroke-KGS-25x10 | 15 | - | 89 | M8 | 10 | - | - | - | 2 | 35 | 10 | 18 / 12 | 6 / 4 | 28 |
| | | | | | | | | | | | | | | |
| KSH-2-R-stroke-KGS-40x5 | - | 113 | 135 | M10 | 15 | 110 | M10 | 20 | 2 | 50 | 15 | 32 / 28 | 10 / 8 | 45 |
| KSH-2-R-stroke-KGS-40x10 | - | 113 | 135 | M10 | 15 | 110 | M10 | 20 | 2 | 50 | 15 | 32 / 28 | 10 / 8 | 45 |
| KSH-2-R-stroke-KGS-40x20 | - | 113 | 135 | M10 | 15 | 110 | M10 | 20 | 2 | 50 | 15 | 32 / 28 | 10 / 8 | 45 |
| | | | | | | | | | | | | | | |
| KSH-3-R-stroke-KGS-63x10 | - | 180 | 225 | M16 | 20 | - | - | - | 2 | 90 / 80 | 20 | 55 / 40 | 16 / 12 | 80 / 60 |
| KSH-3-R-stroke-KGS-63x20 | - | 180 | 225 | M16 | 20 | | - | - | 2 | 90 / 80 | 20 | 55 / 40 | 16 / 12 | 80 / 60 |

# Flanged nut dimensions

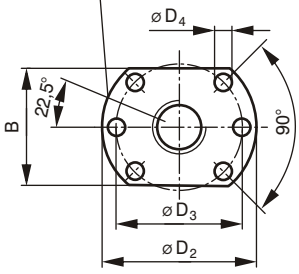
## Ball screw spindle - rotating version (R)

INKOMA-flanged nut to DIN 69051 is the standard connection method from the screw jack to the moving component.




Flanged nut DIN 69051
(hole pattern 1)



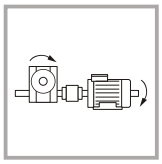

Flanged nut DIN 69051
(hole pattern 2)

# KSH Bevel gear high speed screw jack

| Order code | Hole pattern | Dimensions [mm] | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | KGS dxP | A | $A_1$ | $A_2$ | B | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | E | $L_1$ | $L_2$ | $L_3$ | $L_4$ | S |
| KSH-1-R-stroke-KGS-25x5 | 2 | 25x5 | 133 | 45 | 25 | 48 | 40 | 62 | 51 | 6,6 | 15 | 20 | 43 | 10 | 10 | 5 | M6 |
| KSH-1-R-stroke-KGS-25x10 | 2 | 25x10 | 155 | 47 | 27 | 48 | 40 | 62 | 51 | 6,6 | 15 | 20 | 61 | 10 | 16 | 5 | M6 |
| | | | | | | | | | | | | | | | | | |
| KSH-2-R-stroke-KGS-40x5 | 1 | 40x5 | 171,5 | 58,5 | 33 | 70 | 63 | 93 | 78 | 9 | 25 | 30 | 50 | 14 | 10 | 7 | M8x1 |
| KSH-2-R-stroke-KGS-40x10 | 1 | 40x10 | 192,5 | 67,5 | 25 | 70 | 63 | 93 | 78 | 9 | 25 | 30 | 70 | 14 | 16 | 7 | M8x1 |
| KSH-2-R-stroke-KGS-40x20 | 1 | 40x20 | 193,5 | 50,5 | 25 | 70 | 63 | 93 | 78 | 9 | 25 | 30 | 88 | 14 | 16 | 7 | M8x1 |
| | | | | | | | | | | | | | | | | | |
| KSH-3-R-stroke-KGS-63x10 | 1 | 63x10 | 265 | 65 | 35 | 95 | 90 | 125 | 108 | 11 | 40 | 45 | 120 | 18 | 16 | 9 | M8x1 |
| KSH-3-R-stroke-KGS-63x20 | 1 | 63x20 | 295 | 65 | 35 | 100 | 95 | 135 | 115 | 13,5 | 40 | 45 | 150 | 20 | 25 | 10 | M8x1 |

# Calculations

## see category HSG (for HSG and KSH) pages 128 - 142



### Selection of screw jacks

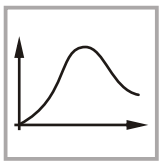
page 128 - 129

notes about the design arrangements of screw jack systems,
arrangement examples

### HSG - KSH definitions / calculations

page 130 - 131

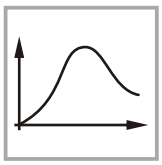
definition of the applied loads, torques and speeds
calculation of the duty
maximum duty ED [%/h]



### HSG - KSH calculations

page 132 - 133

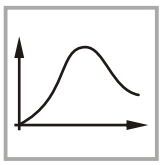
critical buckling loads on the lifting spindle $F_{crit.}$ [kN]
critical spindle speed $n_{crit.}$ (only for rotating spindle version R)



### HSG - KSH calculations

page 134 - 135

torque in the lifting spindle $M_{sp.}$ [Nm]
braking torque $M_{br.}$ [Nm]
input torque $M_{in.}$ [Nm] for each screw jack



### HSG - KSH calculations

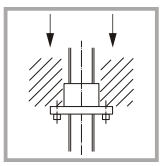
page 136 - 137

total input torque $M_{tot.}$ [Nm]
input speed $n_{in.}$ [1/min], input power $P_{in.}$ [kW]
actual lifting speed $V_{lift\ act.}$ [m/min]

### HSG - KSH gear housing material

page 138

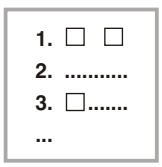
selection table



### Installation and maintenance

page 139

assembly, maintenance of HSG-0 to HSG-5




### HSG - KSH questionnaire / accessories

page 140 - 142

for quotation purposes
accessories for version R (rotating spindle)
accessories for version S, SA, SV, SVA (translating spindle)