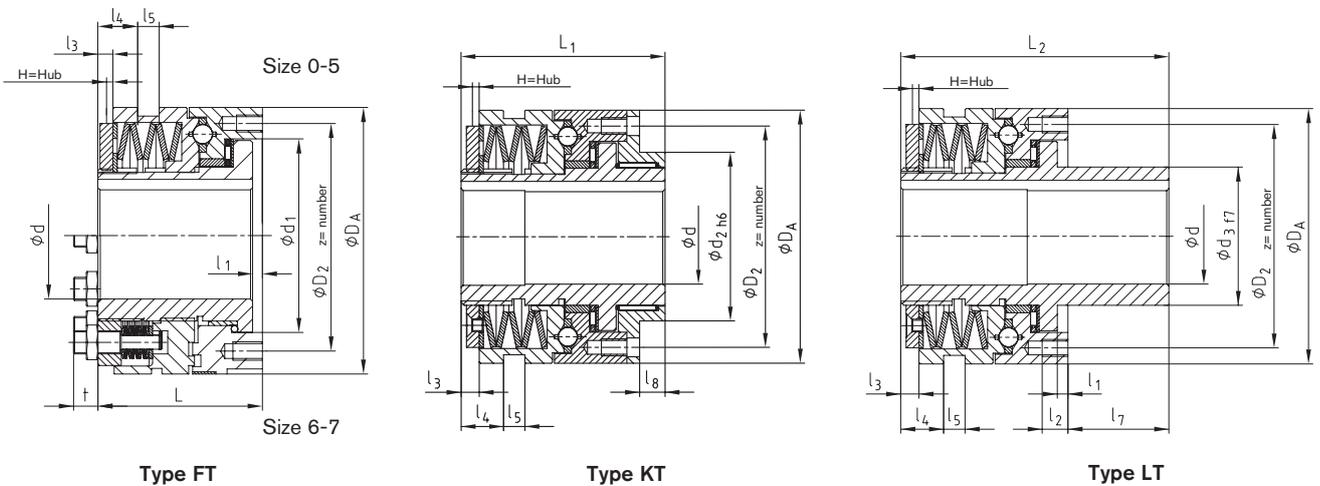


Type FT, KT and LT



- Standard KTR-SI safety clutch up to 8200 Nm
- Available ready for assembly with the torque set
- For a direct connection of customer components
- Available as a ratchet, synchronous and fail-safe design
- Torque setting possible while in place
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9.
- Surface protection by phosphating



| Technical data | | | | | | | | | |
|----------------|------------------------------|----------|-----------|-----------|--------------------------------------|-----------|-----------|-----------|----------------------------|
| Size | Torques [Nm] | | | | | | | | Weight with max. bore [kg] |
| | Disk spring layers design DK | | | | Disk spring layers design SR and SGR | | | | |
| | T1 | T2 | T3 | T4 | T1 | T2 | T3 | T4 | |
| 0 | 2,5-5 | 5-20 | - | 20-40 | 5-10 | 10-40 | - | - | 0,41 |
| 1 | 6-12 | 12-25 | 25-55 | 55-100 | 12-25 | 25-50 | 50-100 | - | 1,30 |
| 2 | 12-25 | 25-50 | 50-120 | 120-200 | 25-50 | 50-100 | 100-200 | - | 2,27 |
| 3 | 25-50 | 50-100 | 100-250 | 200-450 | 50-100 | 100-200 | 200-450 | - | 3,88 |
| 4 | 50-100 | 100-200 | 200-500 | 500-1000 | 100-200 | 200-400 | 400-800 | 800-2000 | 8,34 |
| 5 | 85-250 | 230-600 | 300-1000 | 600-2000 | 170-450 | 350-900 | 600-1800 | 1200-3400 | 13,51 |
| 6 | 180-480 | 360-960 | 720-1950 | 1600-3300 | 300-750 | 600-1500 | 1200-3000 | 2900-5800 | 21 |
| 7 | 250-520 | 500-1050 | 1000-2100 | 2000-3600 | 550-1100 | 1100-2200 | 2200-4400 | 3000-8200 | 37 |

| Dimensions [mm] | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|----------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------|----------------|---------------------|-----|-------|-----|-----|----|
| Size | Bore d | | d ₁ | D ₂ | D ₃ | d ₂ | d ₃ | l ₁ | l ₂ | l ₃ | l ₄ | l ₅ | l ₆ | l ₇ | l ₈ | L | L ₁ | L ₂ | z | H=Hub | | | |
| | pilot b. | max. | | | | | | | | | | | | | | | | | | DK | SR | SGR | FR |
| 0 | 7 | 20 | 41,0 | 48 | 55 | 38 | 28 | 4,0 | 6,5 | 3,0 | 7,5 | 9 | 27,5 | 8 | 38,5 | 51,0 | 66,0 | 6xM5 | 1,4 | 1,2 | 0,6 | 1,6 | |
| 1 | 10 | 25 | 60,0 | 70 | 82 | 50 | 38 | 4,0 | 8,0 | 6,0 | 11,5 | 9 | 33,0 | 10 | 52,0 | 70,0 | 85,0 | 6xM5 | 2,3 | 1,8 | 0,8 | 2,3 | |
| 2 | 14 | 35 | 78,0 | 89 | 100 | 60 | 52 | 5,0 | 10,0 | 5,0 | 12,0 | 9 | 39,0 | 12 | 61,0 | 78,0 | 100,0 | 6xM6 | 2,4 | 2,0 | 1,1 | 3,0 | |
| 3 | 18 | 45 | 90,5 | 105 | 120 | 80 | 65 | 5,0 | 12,0 | 8,5 | 21,0 | 10 | 47,0 | 12 | 78,0 | 96,0 | 125,0 | 6xM8 | 2,7 | 2,2 | 1,2 | 3,5 | |
| 4 | 24 | 55 | 105,0 | 125 | 146 | 100 | 78 | 6,5 | 15,0 | 11,0 | 27,0 | 9 | 52,5 | 16 | 100,0 | 124,5 | 152,5 | 6xM10 ¹⁾ | 3,7 | 2,5 | 1,2 | 3,8 | |
| 5 | 30 | 65 | 120,5 | 155 | 176 | 120 | 90 | 6,5 | 17,0 | 12,0 | 33,0 | 9 | 57,5 | 18 | 113,5 | 140,0 | 171,0 | 6xM12 ¹⁾ | 4,6 | 3,0 | 1,6 | 4,5 | |
| 6 ²⁾ | 40 | 80 | 136,0 | 160 | 200 | 130 | 108 | 7,0 | 20,0 | 14,0 | 39,0 | 9 | 64,0 | 20 | 119,0 | 150,0 | 183,0 | 6xM12 ¹⁾ | 5,0 | 3,5 | 2,5 | - | |
| 7 ²⁾ | 50 | 100 | 168,0 | 200 | 240 | 160 | 135 | 8,0 | 25,0 | 15,0 | 46,0 | 9 | 72,0 | 25 | 141,0 | 175,0 | 213,0 | 6xM16 ¹⁾ | 5,5 | 4,0 | 2,7 | - | |

Design T4, SR and SRG: tightening torques acc. to 12.9
Size 6: dimension t = 15 mm, size 7: dimension t = 21 mm

| | | | | | | | |
|-------------------|--------|------|------|------|--------------|------|------------|
| Ordering example: | KTR-SI | 2 | DK | FT | T2 | Ø20 | 40 Nm |
| | Type | Size | Type | Type | Disk springs | Bore | Torque set |

KTR-SI

Overload system

Miscellaneous types

Idle rotation coupling (load-separating)



- Idle-rotation safety clutch for a torque up to 1800 Nm
- Max. speed up to 5000 rpm (see table)
- Driving and driven side are permanently separated
- Manual re-engagement
- Optional overload recognition by limit switch or sensor
- Combination with ROTEX® coupling as shaft-to-shaft connection
- Easy assembly and torque setting

With torsionally flexible ROTEX®

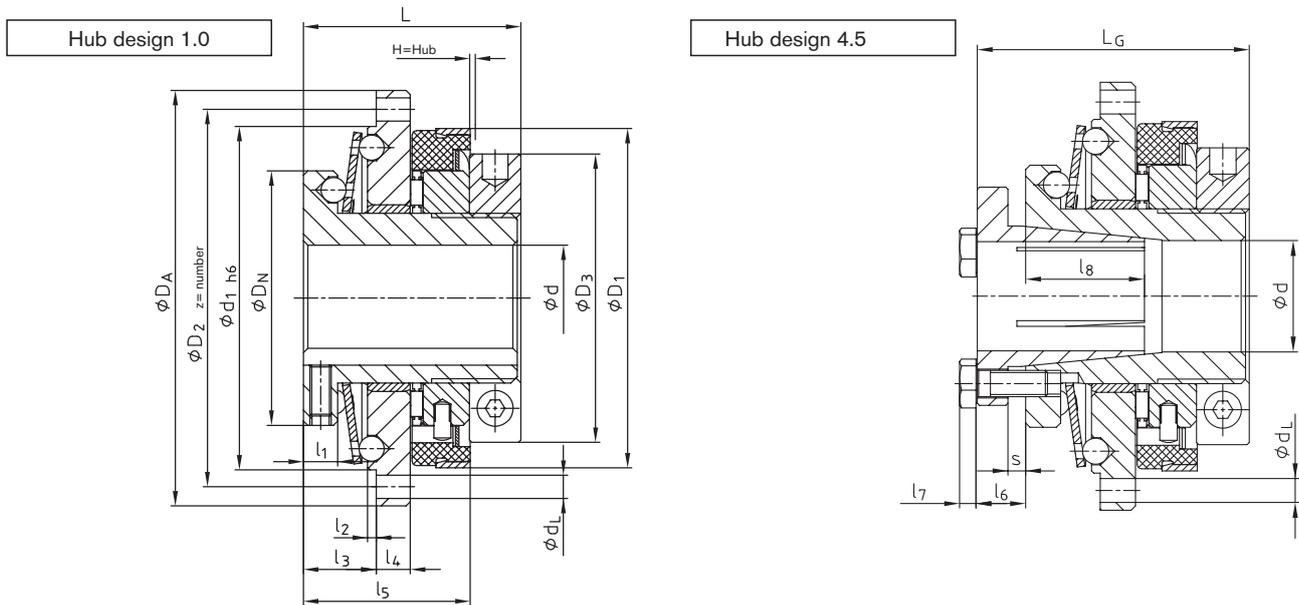


- KTR-SI safety clutch as a shaft-to-shaft connection
- Axial plug-in
- Able to compensate for misalignment
- Available as a ratchet, synchronous and fail-safe design
- Torque setting possible while in place
- Various kinds of elastomer hardness available
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9.

Standard SYNTEX® flange coupling



- Standard SYNTEX® overload system up to 400 Nm
- Flange design
- Easy mounting of customers' components
- Available both as a ratchet and synchronous design
- Torque setting possible while in place
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9.
- Also available with a frictionally engaged shaft-hub-connection (hub design 4.5)



| Technical data | | | | | | | | | | | | | | | | | | | | | | |
|----------------|-------------------|-----------------|-----------------------|-----------------|------------------|-----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----------------|----------------|----------------|----------------|----------------|----|-------|
| Size | Torques [Nm] | | | | Max. speed [rpm] | Dimensions [mm] | | | | | | | | | | | | | | | | |
| | Ratchet design DK | | Synchronous design SK | | | Bore d | | | | | | | | | | | | | | | | |
| | DK ₁ | DK ₂ | SK ₁ | SK ₂ | | pilot b. | max | D _A | D ₂ | d ₁ | D _N | D ₃ | D ₁ | d _i | L | l ₁ | l ₂ | l ₃ | l ₄ | l ₅ | z | H=Hub |
| 20 | 6-20 | 15-30 | 10-20 | 20-65 | 1500 | - | 20 | 80 | 71 | 65 | 48 | 54 | 61,5 | 4,5 | 45 | 8 | 2 | 16 | 6 | 35 | 8 | 2 |
| 25 | 20-60 | 45-90 | 25-65 | 40-100 | 1500 | - | 25 | 98 | 89 | 81 | 60 | 68 | 80 | 5,5 | 50 | 8 | 2 | 17 | 8 | 39 | 8 | 2 |
| 35 | 25-80 | 75-150 | 30-100 | 70-180 | 1000 | - | 35 | 120 | 110 | 102 | 75 | 78 | 91 | 5,5 | 60 | 10 | 2 | 21 | 10 | 42 | 12 | 2 |
| 50 | 60-180 | 175-300 | 80-280 | 160-400 | 1000 | - | 50 | 162 | 152 | 142 | 105 | 108 | 121 | 6,6 | 70 | 12 | 2 | 25 | 13 | 56 | 12 | 2 |

| Technical data - Hub design 4.5 | | | | | | | | |
|---------------------------------|------------------|----------------|----------------|----------------|----------------|---|-----------------|---------------------------------------|
| Size | Dimensions [mm] | | | | | | Clamping screws | Tightening torque T _A [Nm] |
| | d _{max} | l ₆ | l ₇ | l ₈ | L _G | s | | |
| 20 | 20 | 9 | 3,5 | 23 | 54 | 3 | 4 x M5 | 8,5 |
| 25 | 25 | 11 | 4,0 | 28 | 61 | 4 | 4 x M6 | 14 |
| 35 | 35 | 10 | 4,0 | 31 | 70 | 4 | 4 x M6 | 14 |
| 50 | 50 | 12 | 4,0 | 37 | 82 | 6 | 4 x M6 | 14 |

| Bores (fitting tolerance H7/h6) and the corresponding friction torques TR [Nm] | | | | | | | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Size | Ø12 | Ø14 | Ø15 | Ø16 | Ø17 | Ø18 | Ø19 | Ø20 | Ø22 | Ø23 | Ø24 | Ø25 | Ø28 | Ø30 | Ø32 | Ø35 | Ø38 | Ø40 | Ø42 | Ø45 | Ø48 | Ø50 |
| 20 | 45 | 62 | 71 | 81 | 92 | 103 | 115 | 127 | | | | | | | | | | | | | | |
| 25 | | 72 | 83 | 95 | 107 | 120 | 133 | 148 | 179 | 196 | 213 | 231 | | | | | | | | | | |
| 35 | | | | | | | | | 127 | 139 | 152 | 165 | 207 | 237 | 270 | 323 | | | | | | |
| 50 | | | | | | | | | | | | | | | | 238 | 281 | 311 | 343 | 394 | 448 | 486 |

| | | | | | | |
|-------------------|---------|------|------|------|------------|------------|
| Ordering example: | SYNTEX® | 25 | DK1 | Ø20 | 1.0 | 45 Nm |
| | Type | Size | Type | Bore | Hub design | Torque set |

Standard SYNTEX® with integrated sprocket



- Standard SYNTEX® with integrated sprocket
- Available ready for assembly with the torque set
- Reduction of number of components by integration of components
- Available both as a ratchet and synchronous design
- Torque setting possible while in place
- Fertigbohrung nach ISO-Passung H7, Passfedernute nach DIN 6885 Bl. 1 - JS9
- Also available with a frictionally engaged shaft-hub-connection (hub design 4.5)

Standard SYNTEX® with belt drive



- Standard SYNTEX® with integrated belt drive
- Available ready for assembly with the torque set
- Reduction of number of components by integration of components
- Available both as a ratchet and synchronous design
- Torque setting possible while in place
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9.
- Also available with a frictionally engaged shaft-hub-connection (hub design 4.5)

SYNTEX® with shaft coupling ROTEX® GS



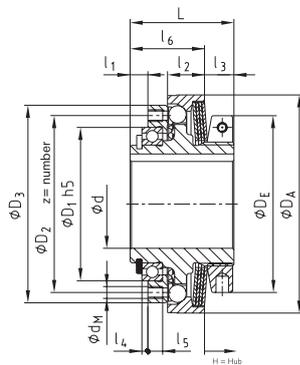
- Backlash-free, torsionally stiff safety clutch
- Axial plug-in
- Low mass moments of inertia by using aluminium components
- Available both as a ratchet and synchronous design
- Torque setting possible while in place
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9.
- Also available with a frictionally engaged shaft-hub-connection (hub design 4.5)

SYNTEX®-NC

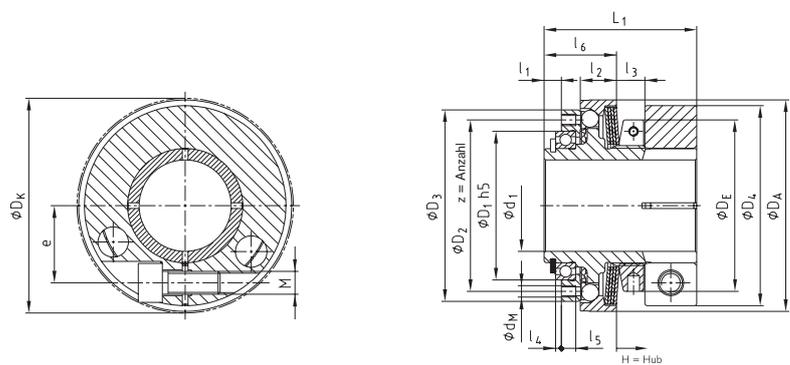


- Safety clutch up to 280 Nm
- Backlash-free, torsionally stiff
- Lower mass moment of inertia
- Available as a synchronous and ratchet design
- Easy assembly
- Compact design
- See company catalogue

Hub design 1.0



Hub design 6.1



Technical data

| Size | Speed [rpm] | Torques [Nm] | | | Dimensions [mm] | | | | | | | | | | | | | | |
|------|-------------|----------------|----------------|----------------|------------------|-------------------------------|----------------|----------------|----------------|----------------|--------------------|----|----------------|----------------|----------------|----------------|----------------|----------------|-------|
| | | T ₁ | T ₂ | T ₃ | d _{max} | D ₁ h ₅ | D ₂ | D ₃ | D _A | D _E | z x d _M | L | l ₁ | l ₂ | l ₃ | l ₄ | l ₅ | l ₆ | H-Hub |
| 25 | 3000 | 8 - 15 | 17 - 30 | 35 - 65 | 22 ¹⁾ | 42 | 48 | 56 | 61 | 50 | 8xM4 | 33 | 5,5 | 11,5 | 9,1 | 2 | 5 | 23,9 | 1,2 |
| 32 | 3000 | 20 - 35 | 40 - 70 | 80 - 145 | 30 ¹⁾ | 52 | 60 | 67 | 74 | 60 | 8xM4 | 35 | 6 | 12,5 | 9,9 | 2 | 5 | 25,1 | 1,5 |
| 42 | 2500 | 30 - 70 | 55 - 140 | 105 - 280 | 38 ¹⁾ | 65 | 75 | 83 | 90 | 72 | 8xM5 | 43 | 7 | 16 | 11,2 | 2 | 6 | 31,8 | 1,5 |

Dimensions with clamping ring type 6.1

| Size | Bore d ₁ | | Dimensions [mm] | | | | | | | | | |
|------|---------------------|------|-----------------|----------------|----------------|----|-----|---------------------|---------------------------|---|--|--|
| | Pilot bore | max. | D ₁ | D _K | L ₁ | e | M | T _A [Nm] | Weight ²⁾ [kg] | Mass moment of inertia ²⁾ J _{Ges} [kgm ²] | | |
| 25 | 9,5 | 25 | 55 | - | 45 | 21 | M6 | 14 | 0,282 | 0,00014 | | |
| 32 | 13,5 | 32 | 70 | - | 53 | 27 | M8 | 34 | 0,471 | 0,00035 | | |
| 42 | 18,5 | 42 | 86 | 91,2 | 63 | 33 | M10 | 67 | 0,815 | 0,00095 | | |

Transmittable friction torques T_R [Nm] of clamping ring 6.1 (without feather keyway)

| Size | Ø10 | Ø11 | Ø12 | Ø14 | Ø15 | Ø16 | Ø18 | Ø19 | Ø20 | Ø22 | Ø24 | Ø25 | Ø28 | Ø30 | Ø32 | Ø35 | Ø36 | Ø38 | Ø40 | Ø42 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 25 | 34 | 41 | 48 | 63 | 71 | 79 | 55 | 61 | 67 | 79 | 92 | 98 | | | | | | | | |
| 32 | | | | | 87 | 95 | 118 | 130 | 143 | 169 | 132 | 143 | 174 | 197 | 220 | | | | | |
| 42 | | | | | | | | | 170 | 203 | 238 | 257 | 314 | 354 | 293 | 344 | 361 | 397 | 433 | 470 |

¹⁾ max. bore, feather keyway acc. to DIN 6885 sheet 3

²⁾ with max. bore

Ordering example:

| | | | | | | |
|------------|------|--------------|--------------|------|------------|------------|
| SYNTEX®-NC | 32 | SK | T3 | Ø25 | 6.1 | 120 |
| Type | Size | Type [DK/SK] | Disk springs | Bore | Hub design | Torque set |

SYNTEX®-NC with ROTEX® GS



- Safety clutch as a shaft-to-shaft connection
- Combination with the backlash-free Rotex® GS
- Torsionally flexible, able to compensate for misalignment
- Axial plug-in
- See company catalogue

SYNTEX®-NC with RADEX®-NC



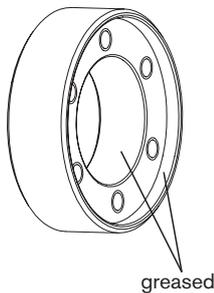
- Combination with the torsionally stiff RADEX®-NC coupling
- Backlash-free torque transmission
- Able to compensate for misalignment
- Compact dimensions
- Finish bores with feather keyway or available as a clamping design

KTR 620

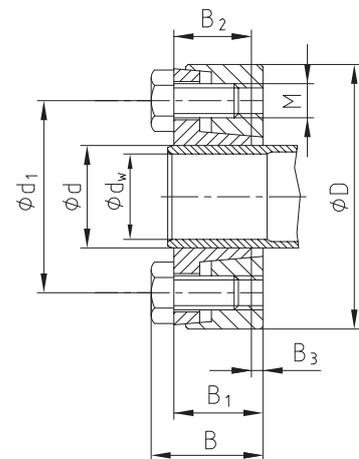
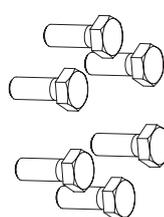
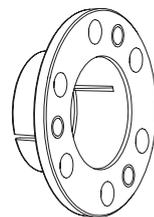


- Applications on hollow shafts, slip-on gears, couplings, mechanical shrink connections
- Suitable for high torque loads
- Easy assembly by visual mounting groove
- Corrosion-resistant outer ring (phosphated)
- Good centering and concentricity characteristics
- KTR 620 FK flange coupling
(Please order dimension sheet M494133.)
- KTR 625 for higher torques
(Please order dimension sheet M462972.)
- Mounting instructions at www.ktr.com

Outer ring phosphated and taper contact surfaces greased



Inner ring



Assembly

Clean and degrease the contact surfaces of shaft and hub (internal hollow shaft). Slightly unscrew the clamping screws and put the clamping set externally onto the hub/hollow shaft. Before tightening the clamping screws please assemble the shaft. Evenly tighten the diametrically opposite clamping screws until the front surfaces of the outer and inner rings are flush. The max. screw tightening torque indicated must not be exceeded. The values for T and Fax indicated in the table relate to an assembly with greased external clamping set. The external clamping sets are delivered in greased condition. When assembling grease-free external clamping sets the values shown in the table and the values calculated are different. In case of questions, please feel free to contact us.

Note: Contact surfaces of shaft and hub bore (internal hollow shaft) must not be greased or oiled.

Disassembly

All clamping screws must be unscrewed evenly and one after another. Do not completely unscrew the clamping screws off the thread. Loosen the external taper ring in the inner ring with the forcing thread.

Tolerances, surfaces

One accurate turning process is sufficient:

$RZ \leq 16\mu\text{m}$

Maximum permissible tolerances:

d = f7 for the hub (external hollow shaft)

$d_w = h6/H7$

$d_w > \varnothing 160 - g6/H7$

Axial displacement

During the tightening of the screws there is no axial displacement of the hub towards the shaft.

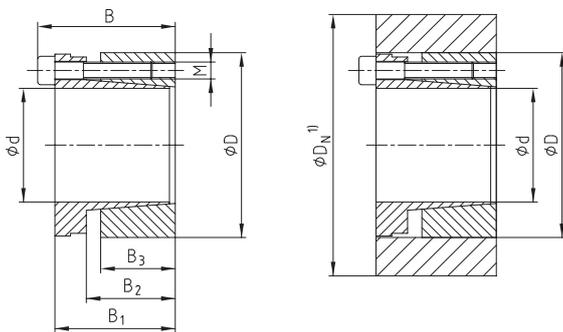
| | | | | |
|--------------------------|---------|---------------------------|---|----------------------------|
| Ordering example: | KTR 620 | 20 | x | 47 |
| | Type | Size of inside diameter d | | Size of outside diameter D |

KTR 200 and KTR 201 (self-centering)



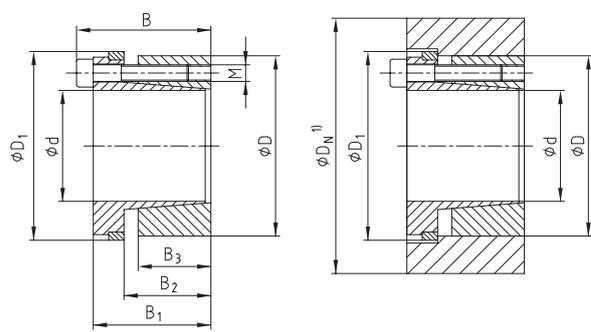
- Clamping element for universal use
- Wide range of applications
- Low-cost solution with average to high torques
- Mounting instructions at www.ktr.com

KTR 200



Considerably higher transmittable torque than KTR 201, slight axial displacement of the hub

KTR 201



No axial displacement of the hub, but lower transmittable torque than with KTR 200

¹⁾ Dimension DN: For details of calculation see comp. catalogue.

Assembly

Clean the contact surfaces of the clamping set as well as the shaft and the hub and afterwards apply thin-fluid oil. Insert the clamping set into the hub fit and push it onto the shaft. Tighten the clamping screws crosswise, evenly and by degrees to the tightening torque T_A mentioned by means of the torque wrench. Check the tightening torque of all clamping screws in the order of arrangement. The figures T and F_{ax} mentioned in the table were calculated for an assembly with oil.

Please note: Oils and greases containing molybdenum disulphide or high-pressure additives, additives of teflon and silicone as well as sliding grease paste reducing the coefficient of friction considerably must not be used. For assembly of the clamping set tapers without oil, the figures mentioned in the table deviate from the calculated figures.

Disassembly

Unscrew the clamping screws. Screw the screws into the pull-off thread, tighten them crosswise by degrees and evenly until the rear taper ring is released. For repeated application oil the screws and threads.

Tolerances, surfaces

One accurate turning process is sufficient:

$RZ \leq 16\mu m$

Maximum permissible tolerances:

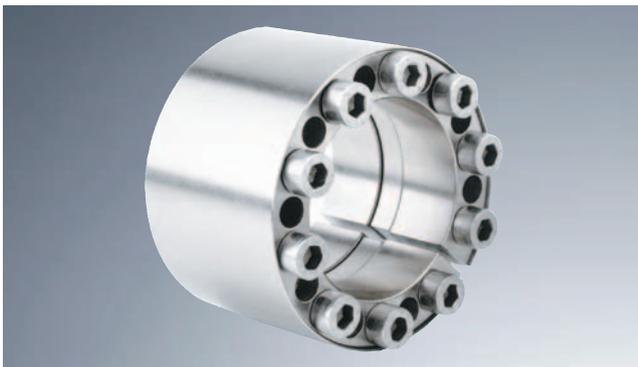
h8 for the shaft - H8 for the hub

Centering

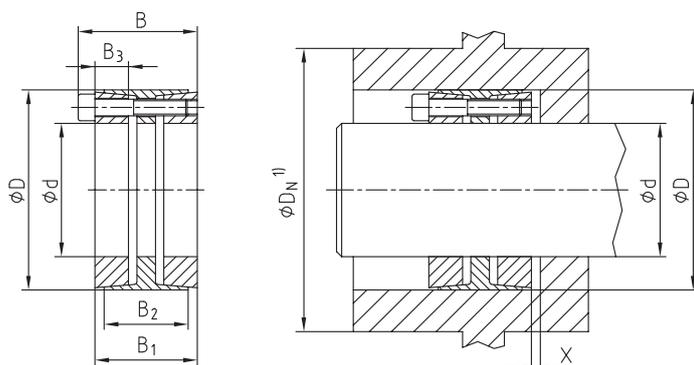
The clamping elements KTR 200 and KTR 201 are self-centering. The concentricity of the clamping set between shaft and hub is between 0,02 and 0,08 mm.

| | | | | |
|--------------------------|---------|---------------------------|---|----------------------------|
| Ordering example: | KTR 200 | 40 | x | 65 |
| | Type | Size of inside diameter d | | Size of outside diameter D |

KTR 400 (self-centering)



- Clamping set suitable for high loads
- Specifically suitable for vibratory torques
- Typical applications: flywheels, belt drums
- Torque factor
 - 1 off 1 x T
 - 2 off 1,9 x T
 - 3 off 2,7 x T
 - 4 off 3,6 x T
- KTR 402 for shaft Ø 320 mm to Ø 560 mm and high torques, please order dimension sheet M483041.
- Mounting instructions at www.ktr.com



Formula to calculate space x left for disassembly:

$$x = (B1 - B2) / 2$$

¹⁾ Dimension D_N: For details of calculation see comp. catalogue.

Assembly

Clean the contact surfaces of the clamping set as well as the shaft and the hub and afterwards apply thin-fluid oil. Insert the clamping set into the hub fit and push it onto the shaft. Tighten the clamping screws evenly and crosswise. Here please increase the tightening torque step by step. This must be repeated until reaching the indicated tightening torque with all clamping screws.

Please note: Oils and greases containing molybdenum disulphide or high-pressure additives, additives of teflon and silicone as well as sliding grease paste reducing the coefficient of friction considerably must not be used. For assembly of the clamping set tapers without oil, the figures mentioned in the table deviate from the calculated figures.

Disassembly

Unscrew all clamping screws and screw them into the pull-off threads of the front taper ring. Tighten the screws crosswise by degrees and evenly to half the tightening torque T_A. Afterwards repeat this process to the full tightening torque. As soon as the front taper ring is released, screw the clamping screws into the pull-off threads of the spacer ring in order to release the rear taper ring.

Please note: If the clamping element KTR 400 is reused it has to be made sure that the pull-off threads of the front taper ring and the spacer are in their original position. Here the slots of the front and the back pressure ring and those of the external ring must be flush.

Tolerances, surfaces

One accurate turning process is sufficient:

$$RZ \leq 16\mu\text{m}$$

Maximum permissible tolerances:

h8 for the shaft - H8 for the hub

Axial displacement

During the assembly a slight axial displacement of the hub towards the shaft may arise.

Centering

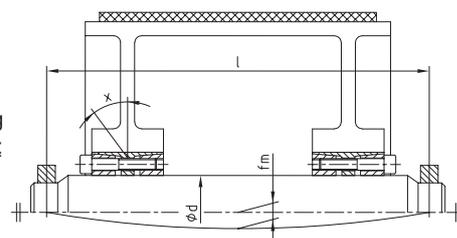
The clamping element KTR 400 is self-centering. The concentricity of the clamping set between shaft and hub is between 0,02 and 0,08 mm.

Example of installation

Drive of conveyor belt drum

The following conditions should be adhered to as limiting values for CLAMPEX® clamping sets with load by bending: Direction angles x on the contact position shaft-clamping set ≤ 6° or maximum shaft bending f_m in the bearing area:

$$f_m \leq l (1/2000 - 1/3000)$$



| | | | | |
|-------------------|---------|---------------------------|---|----------------------------|
| Ordering example: | KTR 400 | 100 | x | 145 |
| | Type | Size of inside diameter d | | Size of outside diameter D |

KTR 203 and KTR 206 (self-centering)



- Clamping set for universal applications
- Short mounting dimensions
- Operation as with KTR 200/201
- Mounting instructions at www.ktr.com

KTR 250 (self-centering)



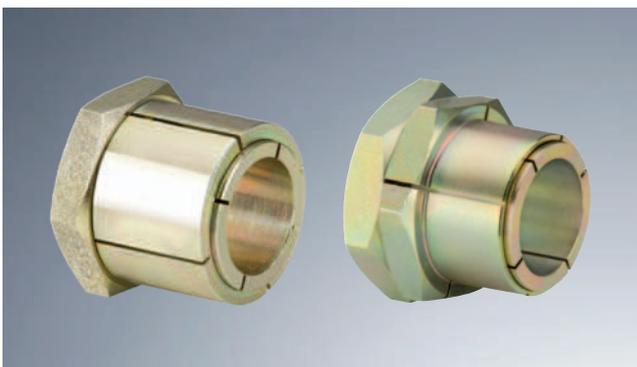
- Clamping set specifically suitable for hubs with a small wall thickness
- Reduction of costs by saving material
- Short assembly times
- Small radial mounting dimensions
- Clamping sets "stainless steel" on request (Please order dimension sheet M367697.)
- Mounting instructions at www.ktr.com

KTR 225 for disk and flange shape drive components (self-centering)



- For the same diameter of the external ring various bore diameters are available
- Only one bore for each size necessary for the hub
- Reduction of components and costs
- Short assembly times
- Mounting instructions at www.ktr.com

KTR 130 and KTR 131 (self-centering)



- Corrosion-protected surface
- Assembly and disassembly by means of central clamping nut
- Self-centering
- Shaft diameters from 5 mm to 50 mm
- Tolerance h8/H8 for shaft and hub
- KTR 131: Hexagon locking nuts for clamping on easily torsionable shafts
- Mounting instructions at www.ktr.com

DATAFLEX® 16 and 32 – High precision with each revolution

With the new series of DATAFLEX® 32 KTR extend their range of precision measuring shafts for average torques. Along with the well-established size DATAFLEX® 16 measuring ranges from 10 to 500 Nm are now covered.

With the new series DATAFLEX® 16 or DATAFLEX® 32 the torque is measured using the approved technology of wire strain gauges DMS while processing without contact at a resolution of 24 bit. Thus, the torque measurement achieves an accuracy of 0,1% of the final value.

Supplementary to torque measuring the measuring shafts size 16 and 32 have a speed encoder providing two offset signals with a resolution of 360 or 720 pulses per revolution. The speed display in practice is not an optional extra feature, but already included in the serial scope.



DATAFLEX® 22, 42, 85, 140 – Patented technology at top prices

The DATAFLEX® torque measuring shafts sizes 22 to 140 measure the torques without contact and free from wear. Their secret is a patented measuring method acquiring the twisting of the torsion shaft by measuring the quantity of light. For that purpose the light is directed through two disks the transparency of which is amended proportionally to the torque. The overall electronics are situated in a stationary housing to make sure that no signals have to be transmitted by the rotating shaft and the torque is available accurately with a high band width of 16 kHz. This can measure and analyze highly dynamic processes accurately.

The analog output values are available both as a voltage signal from 0 – 10 V and as a current signal from 4 – 20 mA. In addition a speed encoder is integrated providing a signal at a resolution of 60 impulses per revolution.



Connection housing DF2 – All Inclusive

The connection housing DF2 can easily be combined with all DATAFLEX® torque measuring shafts disposing of a retainer for top hat rail assembly as well as terminal screws for an easy connection of external devices.

The following features save the purchase of expensive measuring amplifiers and converters:

- The torque output can be filtered over 5 steps so that short torque peaks in the display can be reduced.
- The pulse signal of the speed output can be configured both for 5V (TTL) and 24V (HTL). This makes the speed signal compatible for data logging boards and SPS controls.
- In parallel with the pulse signal an integrated frequency voltage converter supplies a DC voltage from 0 – 10 V proportionally to the speed, the scaling of which can be changed individually. This makes an expensive counter superfluous so that the signal can either be processed as a voltage or can be displayed.
- A directional signal indicates the rotational direction of the drive (with DATAFLEX® 16 and 32).



Couplings adjusted to every application

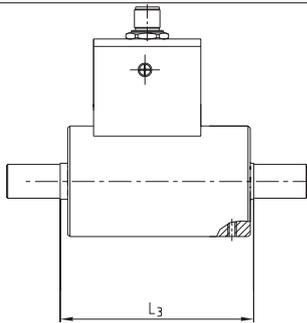
With all DATAFLEX® sizes we recommend the servo lamina coupling RADEX®-NC and the steel lamina coupling RADEX®-N, a compact solution which can be quickly integrated having a high stiffness. In general it is also possible to use backlash-free plug-in couplings such as ROTEX® GS or to integrate an overload coupling.



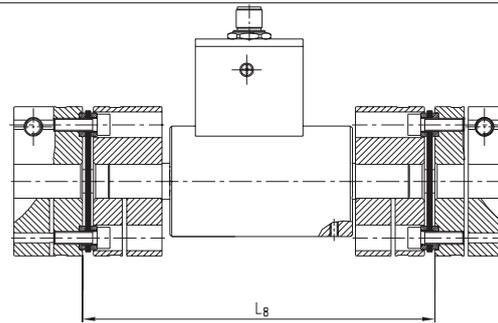
DATAFLEX® Torque measuring shafts



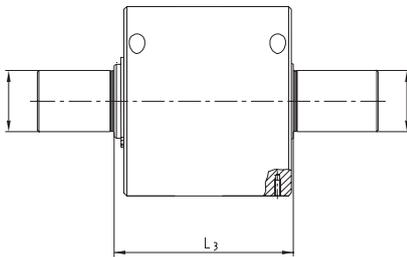
- Measuring ranges from 10 bis 50.000 Nm
- Inaccuracy: 0,1% and 0,5% of the terminal value
- Low-cost overall solution
- Integrated speed measurement
- Additional direct voltage output for speed
- Reliable measurement values in
 - machine monitoring
 - process control
 - test bench technology



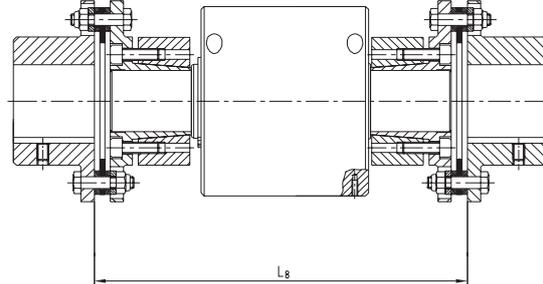
DATAFLEX® 16



Combination of DATAFLEX® 16 with RADEX®-NC



DATAFLEX® 42

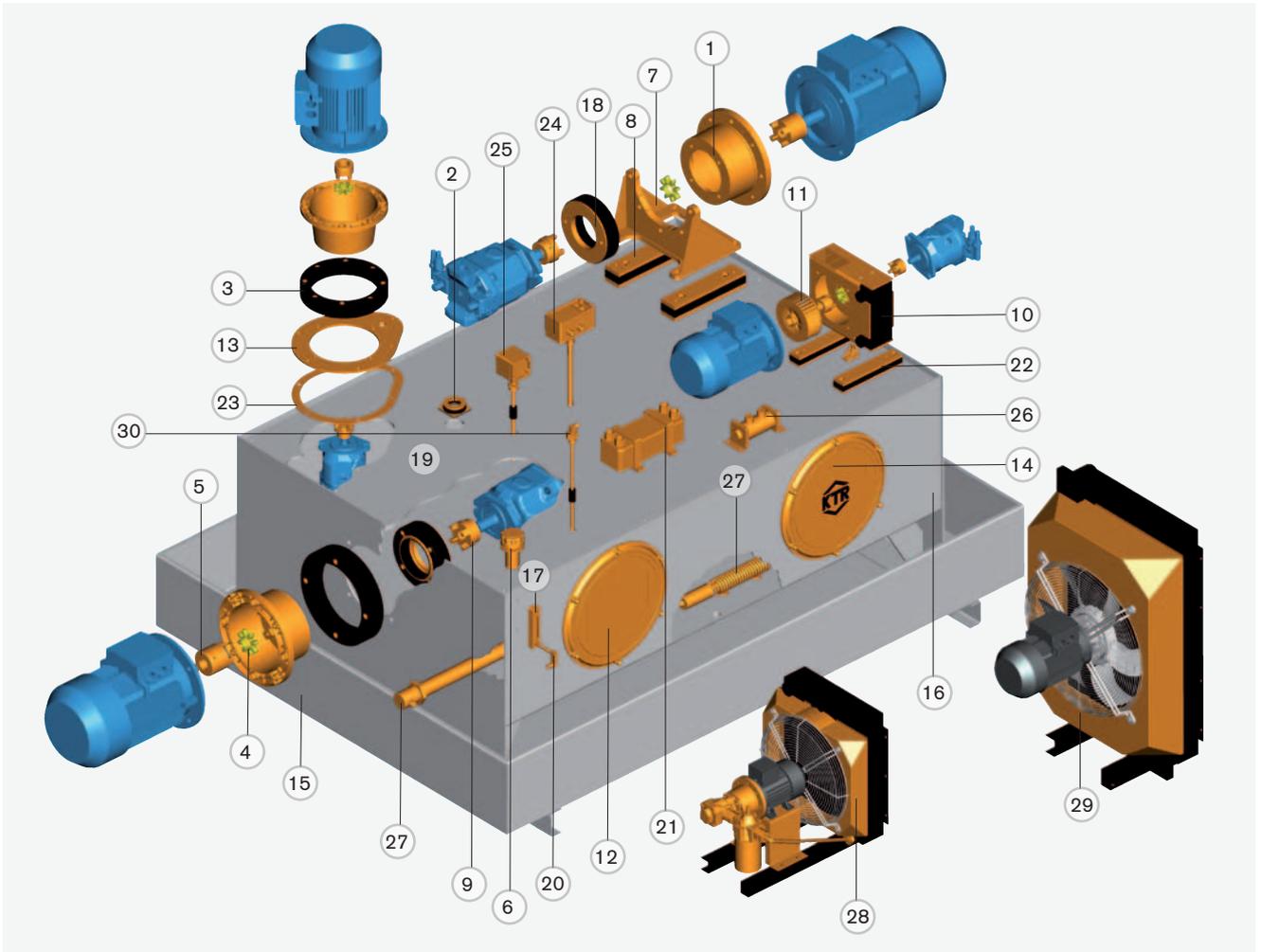


Combination of DATAFLEX® 42 with RADEX®-N

| General features | | | | | | | | | | |
|------------------------------|--|-------------------------------|------------------|------------------|--------------------------|--------------------------|-------------------|-------------------------------------|---------------------------------|--------------------|
| DATAFLEX® Typ | Torque | | | | Speed: | | | Coupling ³⁾ | Dimensions | |
| | Measurement range ¹⁾ T _{KN} [Nm] | Measurement accuracy 1,2) [%] | Band width [kHz] | Output of torque | Resolution (pulses/rev.) | Square wave signal [Vss] | DC-Signal 0...10V | | Distance dimension | Distance dimension |
| | | | | | | | | Measuring shaft L ₃ [mm] | Combination L ₃ [mm] | |
| Series with strain gauges | | | | | | | | | | |
| 16/10 | ±10 | 0,1 | 2 | -10V ... +10V | 2x360 | 5/24 | ja | RADEX®-NC 20 | | 146 |
| 16/30 | ±30 | 0,1 | 2 | -10V ... +10V | 2x360 | 5/24 | ja | RADEX®-NC 25 | 90 | 164 |
| 16/50 | ±50 | 0,1 | 2 | -10V ... +10V | 2x360 | 5/24 | ja | RADEX®-NC 25 | | 164 |
| 32/100 | ±100 | 0,1 | 2 | -10V ... +10V | 2x720 | 5/24 | ja | RADEX®-N 42 | | 205 |
| 32/300 | ±300 | 0,1 | 2 | -10V ... +10V | 2x720 | 5/24 | ja | RADEX®-N 60 | 95 | 227 |
| 32/500 | ±500 | 0,1 | 2 | -10V ... +10V | 2x720 | 5/24 | ja | RADEX®-N 60 | | 227 |
| Series with KTR light sensor | | | | | | | | | | |
| 22/20 | ±20 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-NC 25 | | 164 |
| 22/50 | ±50 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-NC 35 | 90 | 174 |
| 22/100 | ±100 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-NC 35 | | 174 |
| 42/200 | ±200 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-N 60 | | 254 |
| 42/500 | ±500 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-N 60 | 122 | 270 |
| 42/1000 | ±1000 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-N 80 | | 270 |
| 85/2000 | ±2000 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-N 105 | | 384 |
| 85/5000 | ±5000 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-N 115 | 164 | 410 |
| 85/10000 | ±10000 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | RADEX®-N 135 | | 488 |
| 140/20000 | ±20000 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | | | |
| 140/50000 | ±50000 | ±0,5 | 16 | 0-10 V, 4-20 mA | 1x60 | 5/24 | ja | | 206 | |

¹⁾ referring to nominal value T_{KN}
²⁾ errors in linearity incl. hysteresis
³⁾ standard coupling recommended

Summary



- | | |
|--|--|
| ① Bellhousing type PK/PL | ⑩ Bellhousing type PIK with integrated oil cooler |
| ② Elastic flange | ⑪ Fan for PIK |
| ③ Damping ring design DT | ⑫ Standard cleaning cover |
| ④ ROTEX® spider | ⑬ Additional flange type ZO |
| ⑤ ROTEX® coupling hub, motor side | ⑭ Cleaning cover with logo according to customer specification |
| ⑥ Filler breather (with ventilation filter) | ⑮ Oil sump pan |
| ⑦ Foot flange type PTFS (VDMA 24 561 part 1) | ⑯ IRDN digital industrial control with level switch |
| ⑧ Damping rod design DSFS for foot flange type PTFS | ⑰ PHE plate heat exchanger |
| ⑨ ROTEX® coupling hub, pump side | ⑱ Horizontally mounted cooler TAK |
| ⑩ Bellhousing type PIK with integrated oil cooler | ⑲ Tank heaters |
| ⑪ Fan for PIK | ⑳ OPC Cooling-pump-unit with hydraulic pump filter |
| ⑫ Standard cleaning cover | ㉑ OAC-Oil/air coller |
| ⑬ Additional flange type ZO | ㉒ Level-temperature-switch type NVT |
| ⑭ Cleaning cover with logo according to customer specification | |
| ⑮ Oil sump pan | |
| | ⑳ Steel tanks type BSK/BNK/BEK |
| | ㉑ Oil-level indicator type KO |
| | ㉒ Damping ring type D |
| | ㉓ Machining of tank according to customer specification |
| | ㉔ Temperature switch type TS |
| | ㉕ Damping rod design DSK for PIK |
| | ㉖ Gasket type DZ for additional flange type ZO |
| | ㉗ Industrial controller IR |
| | ㉘ IRDN digital industrial control with level switch |
| | ㉙ Horizontally mounted cooler TAK |
| | ㉚ Tank heaters |
| | ㉛ OPC Cooling-pump-unit with hydraulic pump filter |
| | ㉜ OAC-Oil/air coller |
| | ㉝ Level-temperature-switch type NVT |

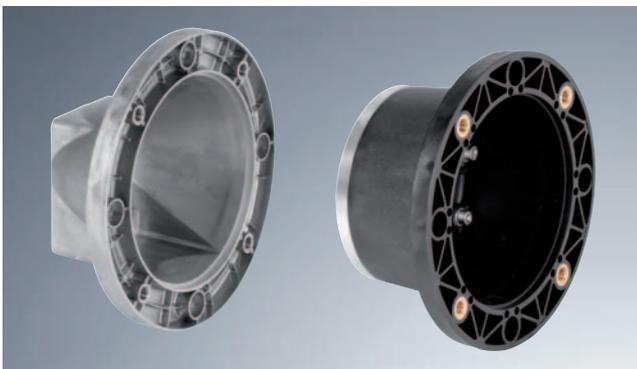
The customer has to protect rotating parts from accidental contact (Safety of Machines DIN EN 292 part 2).
The fastening screws should be protected from unscrewing by the customer (e. g. by anaerobic bonding agents like Loctite®).

Bellhousings made of aluminium



- Connecting components between IEC motor and hydraulic pump
- For almost every hydraulic pump from stock or in short term
- Both flange sides are finish machined
- Motor and pump shaft centered
- KTR bellhousings are made of aluminium, type made of steel on request
- In many cases KTR bellhousings can be piled up
- Designed for high loads
- For the bellhousing selection you require please see our selection programme at www.ktr.com
- Operating temperature: -40 °C to 100 °C
- Please note our mounting instructions

Bellhousings made of nylon



- Motor and pump shaft centered; designed for high loads
- Both flange sides are finish machined
- Type KPT: Bellhousing made of special nylon material
 - Accurate to size with higher temperatures and moisture
 - Stiffness is similar to aluminium bellhousings
 - Excellent damping properties
 - Flange side for pump adapter from aluminium
- Low-cost alternative to bellhousings with damping ring
- Operating temperature: -10 °C to +60 °C
- For almost every hydraulic pump available from stock or in short term
- For the bellhousing selection you require please see our selection programme at www.ktr.com

Bellhousings made of cast iron



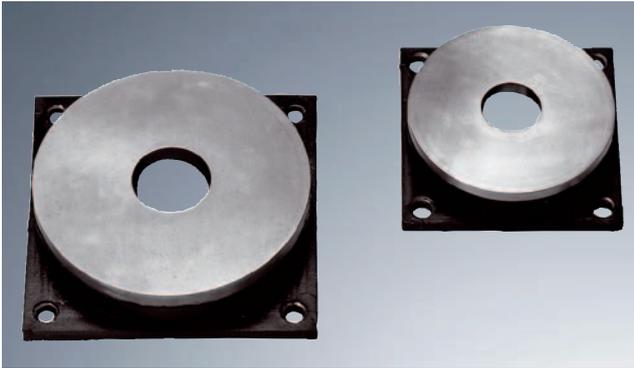
- Bellhousings made of cast iron
- PSG types particularly for servo motor drives with square flange
- Bellhousing suitable for high loads
- Suitable for mining, offshore applications and servo drives
- Resistant to almost every hydraulic oil and salt water
- Both flange sides are finish machined
- The bellhousings are primed, machined surfaces are preserved
- Good damping properties due to the relatively big mass
- For almost every hydraulic pump available from stock or in short term
- Please note our mounting instructions

Damping rings in combination with bellhousings



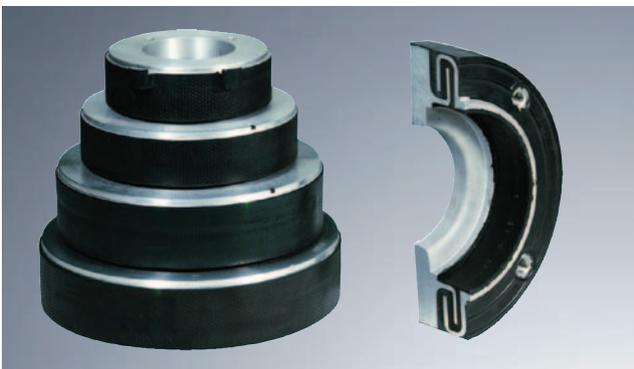
- The damping ring forms a centering unit with the bellhousing
- Combination also available for multiple pumps
- For the mounting of the damping ring special bellhousings are available to realize a short design
- For the bellhousing selection you require please see our selection programme at www.ktr.com
- Please note our mounting instructions

Damping elements



- For structure-borne noise separation of the pressure and suction lines to the tank
- Suitable for bulkhead pipe fitting SV6 - SV42
- Sealing surface is moulded on
- Made of oil-resistant buna N
- Larger types on request

Damping elements



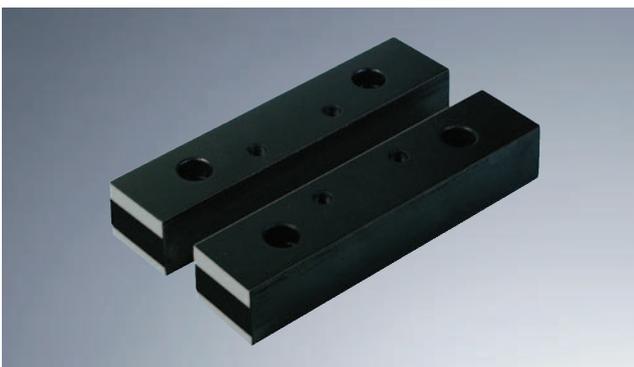
- Vulcanized and failsafe (up to D 330, patent pending)
- High weight loading permissible (e. g. multiple pumps)
- Excellent damping properties
- Excellent resistance to hydraulic oils
- Sealing lips are moulded on (up to size 330) – no additional sealing required
- For the bellhousing selection you require please see our selection programme at www.ktr.com

Damping elements



- DTV for vertical assembly only!
- To reduce noise between drive unit and tank by means of rubber-elastic separation
- Type DT for horizontal and vertical assembly
- Type DT is protected against separation (failsafe) by means of a special design (registered design of the interconnected parts)
- Pressure-loaded elastomer due to the interconnected part
- High permissible radial, angular and axial load
- Sealing lips are moulded on - no additional sealings required

Damping elements



- Damping rods reduce the noise level and dampen vibrations
- Finish machined for motors IMB 35 (DSM), PTFL foot flanges (DSFL) or PTFS foot flanges (DSFS) and PIK oil coolers (DSK)
- Available from stock
- Special lengths or types available on request
- Also suitable for Nema motors
- Damping rods are made of natural rubber (NR)
- All damping rods are adapted to the weight load that is produced
- Thrust loading (V1) not permissible

Oil/air cooler — Type OAC



- High-performance cooler core for a maximum static operating pressure of 26 bar in aluminium (Al)
- Suitable for hydraulic oil, gear lubricant oil, lubricating oil, motor oil and water-glycine
- Fan drive in 12 V, 24 V, 230 V/400 V and hydraulic drive
- Easy maintenance and good options for cleaning
- Low sound pressure level
- CE certification
- Marine design for use in a corrosive atmosphere
- Alternative type with OAC 200 to 1000 available:
 - ⊗ Approved according to EC standard 94/9/EC

Oil/air cooler — Type OPC (cooling-pump-unit)



- High-performance cooler for a maximum static operating pressure of 26 bar
- Driving motor 230 V/400 V IP55
- Suitable for hydraulic oil, gear lubricant oil and lubricating oil
- Easy maintenance and good options for cleaning
- Available with filter
- Low sound pressure level
- CE certification
- Short delivery period
- Alternative type with OPC 200 to 600 available:
 - ⊗ Approved according to EC standard 94/9/EC

Oil/air cooler - Type PIK



- Suitable to cool the entire oil volume (return pass)
- Constant air flow rate of the heat exchanger due to a low pressure principle (patent pending)
- Optimum utilization of the high-performance heat exchanger
- Optimum matching of housing and fan wheel
- Direct suction of cold ambient air by the heat exchanger
- Heat exchanger can easily be cleaned externally (without any disassembly)
- For the bellhousing selection you require please see our selection programme at www.ktr.com

Oil/water cooler — Type TAK/T



- Oil cooler as tube bundle heat exchanger
- Type TAK/T
- The cooler series 20 have been designed specifically for hydraulic systems
- Highly efficient up to 340 kW
- Available in marine version (seawater)
- Easy cleaning by dismountable tube stacks
- Please note our mounting instructions (www.ktr.com)

Tank heaters - Type EHP



- Inserted heating cartridges to preheat hydraulic oil
- Temperature control by internal or external setting single-pole control 0 - 85 °C, 16 A
- Replaceable ceramic heating cartridges (assembly without oil drain)
- Steel cap from bright zinc coating/cover from stainless steel
- Suitable for horizontal assembly below oil level
- Material: steel (other materials on request)
- Surface load 1.5 W/cm² for hydraulic oils
- Protection class IP 65 (excluding design EHP (TA) IP 54)
- Further designs available on request
- The connector pin assignment is enclosed to the unit

Tank heaters - Type EH and Type TEHM



- Inserted tubular heating element to preheat hydraulic oil
- Suitable for horizontal assembly below oil level
- With or without temperature control for internal or external setting with single-pole control 0 - 85 °C, 16 Ampere
- Surface load 1.5 W/cm² for hydraulic oils
- Steel cap from bright zinc coating/cover from stainless steel
- Material: stainless steel (1.4541)/brassy nipple (other material on request)
- Protection class IP 65 (excluding design EH (TA) IP 54)
- Further designs available on request
- The connector pin assignment is enclosed to the unit
- Please note our mounting instructions (www.ktr.com)

Inserted tank heaters with magnetic clamp type TEHM



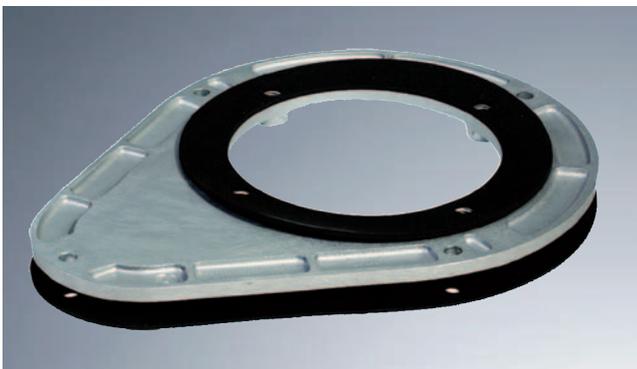
- To preheat hydraulic oil
- Inserted tank heater to be fixed either horizontally to the tank ground or vertically to the tank wall by means of magnetic clamps
- Ideal solution to retrofit existing machines and plants
- Assembly without oil drain
- Internal control with preset cut-in or cut-off temperature (standard 20 °C, switching precision 3 °C)
- If requested, it is possible for the manufacturer to set switching temperatures to the details specified by the customer
- Other media/operating fluids available on request
- The connector pin assignment is enclosed to the unit
- Please note our mounting instructions (www.ktr.com)

Foot flanges



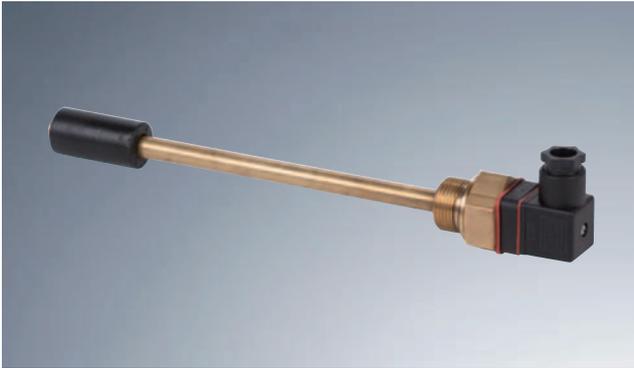
- The designing of PTFL by means of the finite element method permits very high loading capacity with minimum weight
- PTFL as a compact, space-saving design in combination with KTR bellhousing and damping ring
- Storage of only one electric motor type both for horizontal and vertical construction
- PTFL preferably for mobile applications
- All types available from stock - other sizes on request
- Please note our mounting instructions

Accessories for bellhousings



- Assembly and disassembly of the fully mounted drive unit outside the tank is possible
- Facilitates cleaning and maintenance
- Penstock connections via mounting flange
- Material aluminium
- Suitable for bellhousings up to size P 350
- Gaskets type DP and DZ made of buna N (NBR) available from stock
- Gaskets type DP are used between bellhousing and tank cover and also between bellhousing and ZO mounting flange
- Gaskets type DZ are used between ZO mounting flange and tank cover

Accessories for oil tanks



- Electrical level and temperature control
- Suitable for mineral oils
- Available either with 2 level contacts or 1 level contacts and 1 temperature probe
- Electrical switch:
decreasing level „break contact“
increasing temperature „break contact“
- Further lengths on request
- Type in accordance with ATEX on request

Temperature control and monitoring



- Up to 4 programmable switching terminals to be selected either as level or temperature signal
- Combined continuous control of level and temperature
- Perfectly visible LED display, swinging by 270°
- Easy to program
- 2 x M12 plug bases 4 poles
- Programmable analogue output as 4-20 mA, 0-5V, 0-10V or 2-10V
- PNP switching terminal to be programmed as frequency terminal
- Min./max. memory, log-book operation
- Available from stock

Temperature control and monitoring



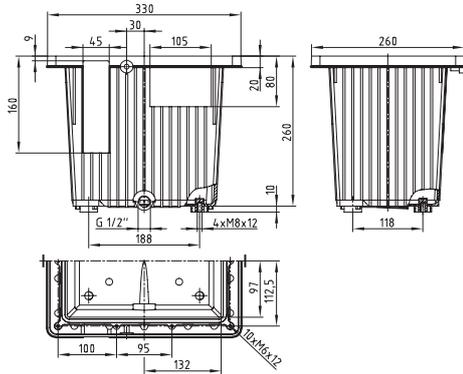
- Control of the operating temperature of the medium
- Value of resistance proportionally changeable to temperature
- Continuous signal change
- Flexible seal on the screwed thread head
- Optionally available with transmitter
- Type in accordance with ATEX on request

Aluminium tank



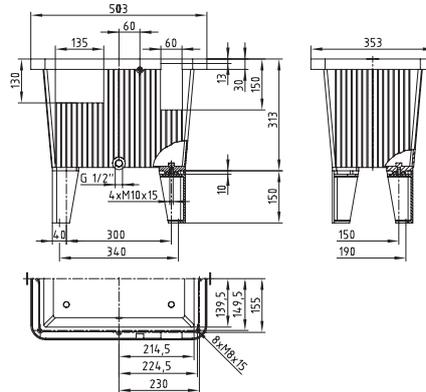
- Made of aluminium for depressurized operation (0,5 bar at the maximum)
- With oil collecting groove moulded on periphery for collection of leakage oil (Water Resources Act)
- O-ring seal for all tank sizes, ready to use
- No painting or priming of the tank required
- Good heat loss capacity due to high caloric conductivity and large heat dissipating surfaces
- All tanks are 100 % tight and may be stacked without jamming
- All sizes available from stock
- All tanks including drain plug similar to DIN 908
- Temperature resistant up to + 100 °C

BAK 13



| | |
|---------------------------|-----------------------|
| Effective volume [Litres] | Gasket |
| 11,5 | O-ring seal RS 13 NBR |

BAK 30



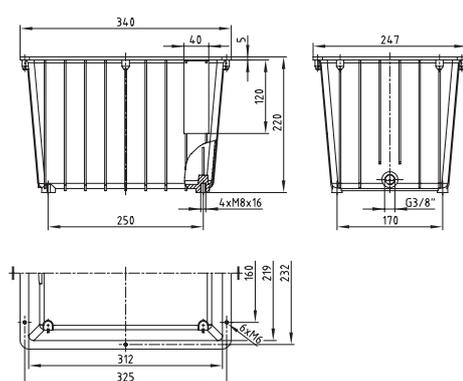
| | |
|---------------------------|-----------------------|
| Effective volume [Litres] | Gasket |
| 27,0 | O-ring seal RS 30 NBR |

Aluminium tank



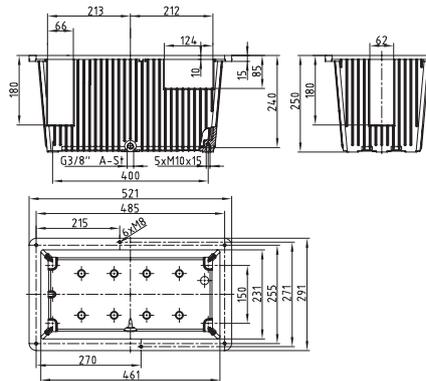
- Made of aluminium for depressurized operation (0,5 bar at the maximum)
- Without oil collecting groove
- O-ring seal or flat seal for all tank sizes, ready to use
- No painting or priming of the tank required
- Good heat loss capacity due to high caloric conductivity and large heat dissipating surfaces
- All tanks are 100 % tight and may be stacked without jamming
- All sizes available from stock
- All tanks including drain plug similar to DIN 908
- Temperature resistant up to + 100 °C

BAK 10



| | |
|---------------------------|-----------------------|
| Effective volume [Litres] | Gasket |
| 9,5 | Flat seal FD 20 FD 10 |

BAK 20



| | |
|---------------------------|-----------------|
| Effective volume [Litres] | Gasket |
| 18,0 | Flat seal FD 20 |

Series BSK



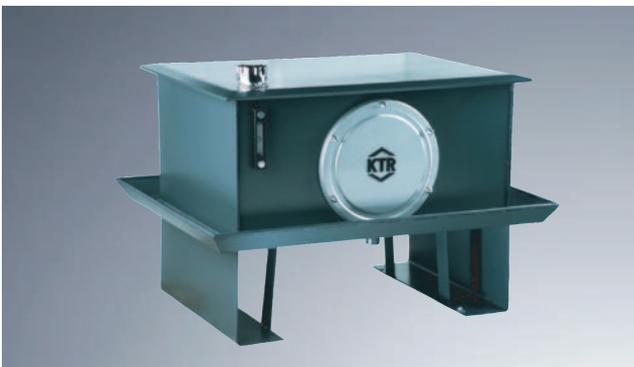
- Tanks made of high-grade steel
- Tanks sand-blasted, with high-quality internal and external coating resistant to hydraulic oils on a mineral oil basis
- Priming is compatible with other varnish paints
- All tanks are subject to 100 % tightness test
- Subsequent assembly of KTR standard separation sheet metals possible for all tank sizes (assembly of separation sheet metals across cleaning hole)
- Cover machining as per customer's request
- Transport eyes on request of customer

Series BNK type A



- DIN tanks made of high-grade steel
- Tanks sand-blasted, with high-quality internal and external coating resistant to hydraulic oils on a mineral oil basis
- Priming is compatible with other varnish paints
- All tanks are subject to 100 % tightness test
- Subsequent assembly of KTR standard separation sheet metals possible for all tank sizes (assembly of separation sheet metals across cleaning hole)
- Cover machining as per customer's request
- Transport eyes on request of customer

Series BNK type B



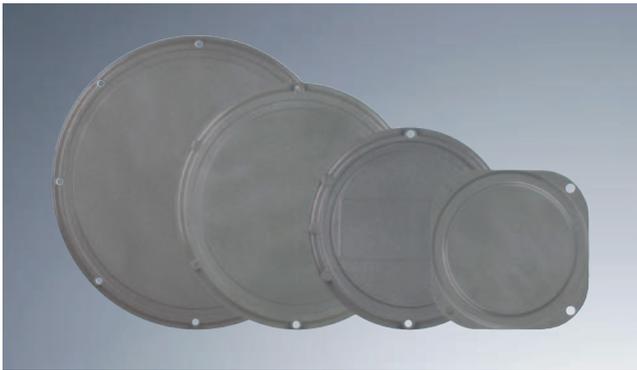
- DIN tanks made of high-grade steel
- Tanks sand-blasted, with high-quality internal and external coating resistant to hydraulic oils on a mineral oil basis
- Priming is compatible with other varnish paints
- All tanks are subject to 100 % tightness test
- Cover machining as per customer's request
- Transport eyes on request of customer

Series BEK



- Tanks made of high-grade steel
- Tanks sand-blasted, with high-quality internal and external coating resistant to hydraulic oils on a mineral oil basis
- Priming is compatible with other varnish paints
- All tanks are subject to 100 % tightness test
- Cover machining as per customer's request

Accessories for oil tanks

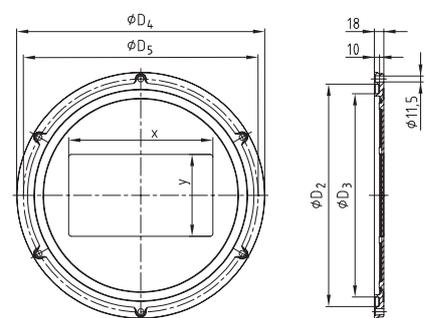
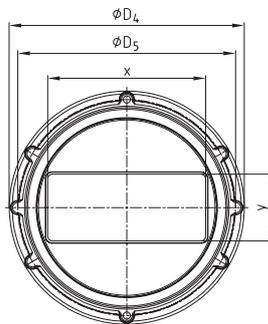
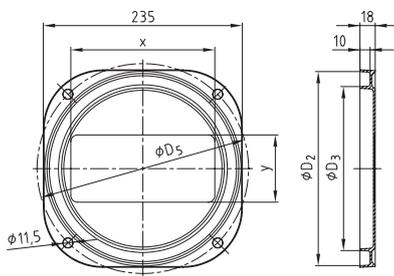


- Cleaning covers V324 and V449 according to DIN 24339
- Material aluminium
- Screw tightening torque for all cleaning cover sizes 10 Nm at the maximum
- Cleaning cover V324-6/HFC, V449-6/HFC and V580-8/HFC are resistant to HFC fluids
- Gaskets type PRD made of buna N (NBR), made of material Viton on request
- Available with logo on request
- Max. permissible pressure = 0,5 bar

Cleaning cover type
V250-4 PRD

Cleaning cover type
DIN 24339

Cleaning cover type

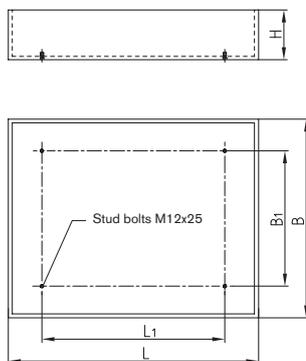


Oil Sump Pans

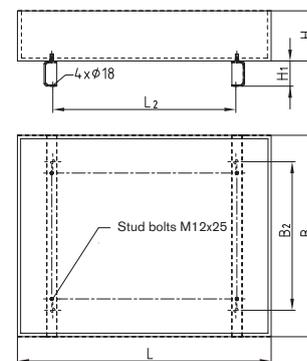


- Oil sump pans made of high-grade steel
- Collection volume corresponds to the full load volume of the tank
- Oil sump pans are sand-blasted, with high-quality internal and external coating resistant to hydraulic oils on a mineral oil basis
- Priming is compatible with other varnish paints
- All oil sump pans are subject to 100 % tightness test
- Oil sump pans meet with the standards of WHG

Oil sump pans
without feet

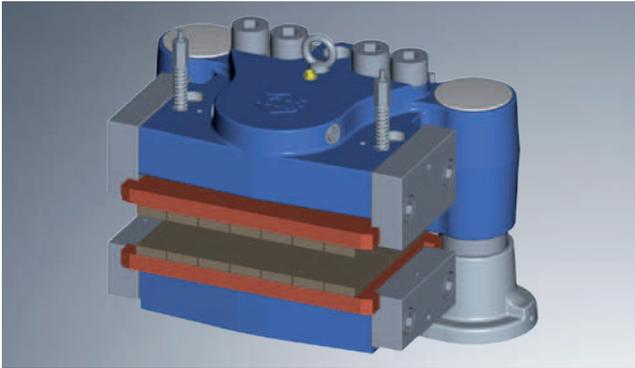


Oil sump pans
with feet

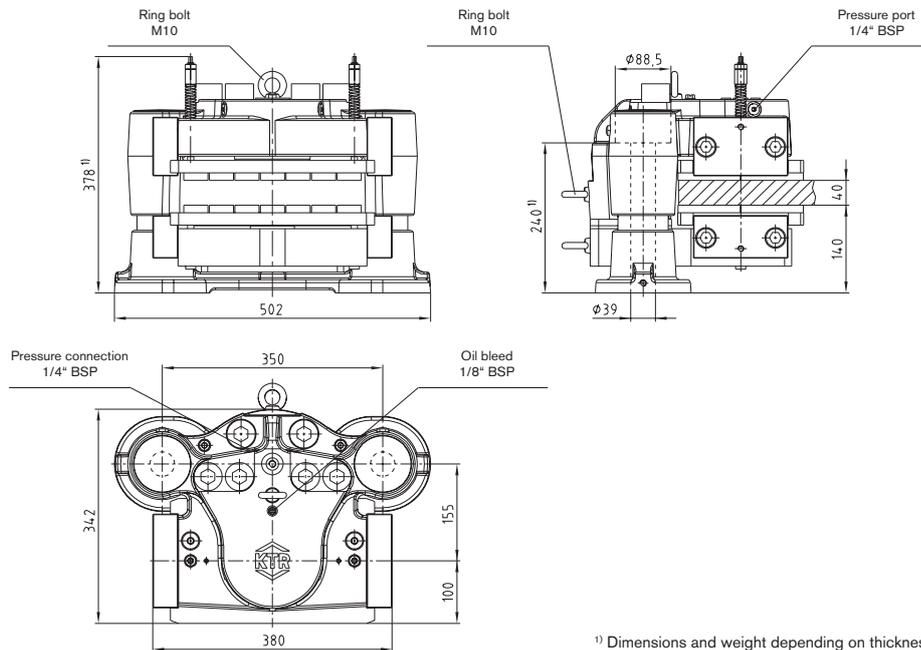


For distance dimensions
of stud bolts see company
catalogue

KTR-STOP® M-A-F



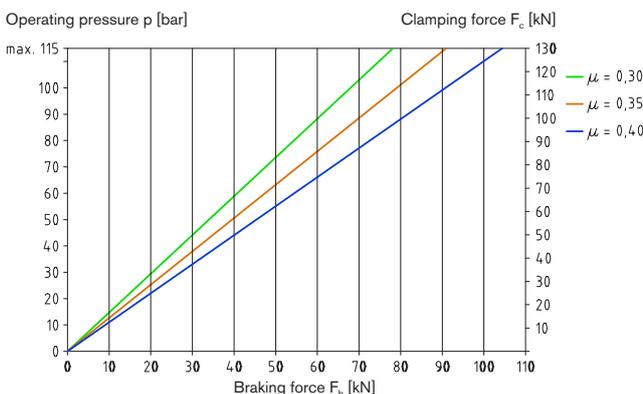
- Short reaction times due to the small distance between brake pad and brake disk as well as the low oil volume
- Large surface of pad results in a low surface pressure, low wear of pads and low temperature
- Low maintenance effort because of few mobile components only
- Drain ports avoid leakages on the brake pads
- Brake pads made of various materials available
- Brake pads easy to replace
- Suitable for rough ambient conditions
- Easy assembly of brake by means of two screws



¹⁾ Dimensions and weight depending on thickness of brake disk.

| KTR-STOP® M-A-F | | | |
|---|--------------------------|--|------------------|
| Total weight | ca. 172 kg ¹⁾ | Max. clamping force | 130 kN |
| Width of brake pad | 200 mm | Max. operating pressure | 115 bar |
| Surface area of each brake pad - organic | 57.900 mm ² | Thickness of brake disk | 25 mm - 50 mm |
| Surface area of each brake pad - powder metal | 53.500 mm ² | Pressure port | 1/4" BSP |
| Max. wear of each brake pad | 10 mm | Oil bleed | 1/8" BSP |
| Nominal coefficient of friction ²⁾ | $\mu = 0,4$ | Backlash on axles - towards mounting surface | 5 mm |
| Total brake piston area - complete brake | 113 cm ² | Backlash on axles - away from mounting surface | 10 mm |
| Volume with 1 mm stroke - complete brake | 11,3 cm ³ | Min. diameter of brake disk $\varnothing D_A$ | 800 mm |
| | | Operating temperature | -30 °C to +40 °C |

²⁾ The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.



$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot D_{av}/2$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

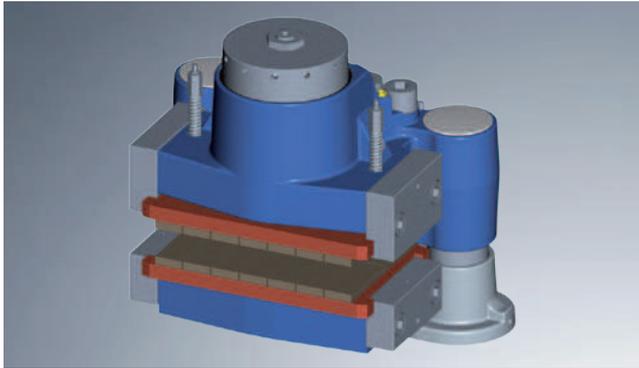
z = Number of brakes

D_{av} = Effective diameter of brake [m]

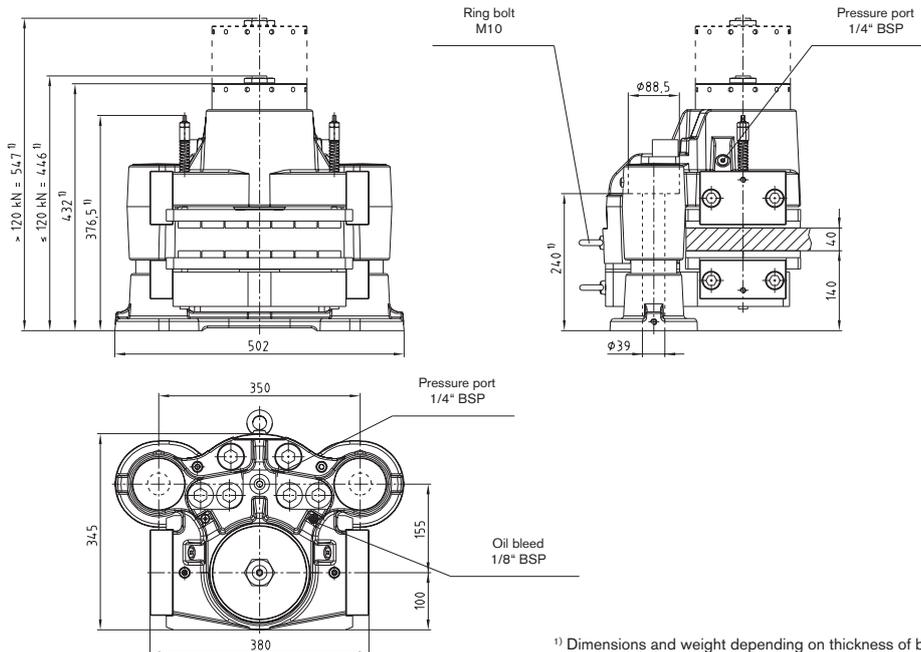
Ordering example:

| | | | | | | | | |
|-----------|---------------|---|--------|---|---------|--------|---|-------------------------|
| KTR-STOP® | M | - | A | - | F | A | - | 40 |
| KTR brake | Size of brake | | Active | | Floator | Option | | Thickness of brake disk |

KTR-STOP® M-xxx-F



- Sealed shafts for difficult ambient conditions
- Large surface of pad results in a low surface pressure, low wear of pads and low temperature
- Low wear of pistons due to arrangement of the pistons in guide rings
- High power density
- Brake pads made of various materials available
- Dirt is prevented by strippers in the shaft guidance
- Easy assembly of brake by means of two screws



¹⁾ Dimensions and weight depending on thickness of brake disk.

| KTR-STOP® M-xxx-F | | | |
|---|-----------------------------------|--|--------------------------|
| Total weight | ca. 193 kg - 212 kg ¹⁾ | Max. operating pressure | 200 bar |
| Width of brake pad | 200 mm | Thickness of brake disk | 25 mm - 50 mm |
| Surface area of each brake pad - organic | 57.900 mm ² | Pressure port | 1/4" BSP |
| Surface area of each brake pad - powder metal | 53.500 mm ² | Oil bleed | 1/8" BSP |
| Max. wear of each brake pad | 10 mm | Backlash on axles - towards mounting surface | 5 mm |
| Nominal coefficient of friction ²⁾ | $\mu = 0,4$ | Backlash on axles - away from mounting surface | less than 120 kN = 10 mm |
| Total brake piston area - complete brake | 137,4 cm ² | | more than 120 kN = 5 mm |
| Volume with 1 mm stroke - complete brake | 13,74 cm ³ | Min. diameter of brake disk ØDA | 800 mm |
| | | Operation temperature | -30 °C to +40 °C |

| Types of brakes | | | | |
|-----------------------------|---------------------------|-------------------------------------|------------------------|---------------------------|
| Type of brake ³⁾ | Clamping force F_c [kN] | Loss of prestress ⁴⁾ [%] | Opening pressure [bar] | Weight ¹⁾ [kg] |
| KTR-STOP® M-100-F | 100 | 7,0 | 110 | 200 |
| KTR-STOP® M-120-F | 120 | 8,5 | 130 | 200 |
| KTR-STOP® M-140-F | 140 | 4,5 | 150 | 212 |
| KTR-STOP® M-160-F | 160 | 7,0 | 180 | 212 |
| KTR-STOP® M-180-F | 180 | 6,0 | 190 | 212 |

²⁾ The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.

³⁾ Other types of brakes on request

⁴⁾ With 1 mm stroke (0,5 mm wear of pad on each side)

$$F_b = F_c \cdot 2 \cdot \mu$$

F_b = Braking force [kN]

z = Number of brakes

$$M_b = z \cdot F_b \cdot D_{av} / 2$$

F_c = Clamping force [kN]

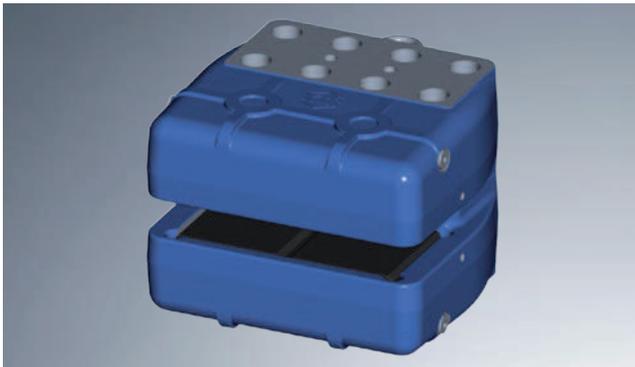
D_{av} = Effective diameter of brake [m]

M_b = Braking torque [kNm]

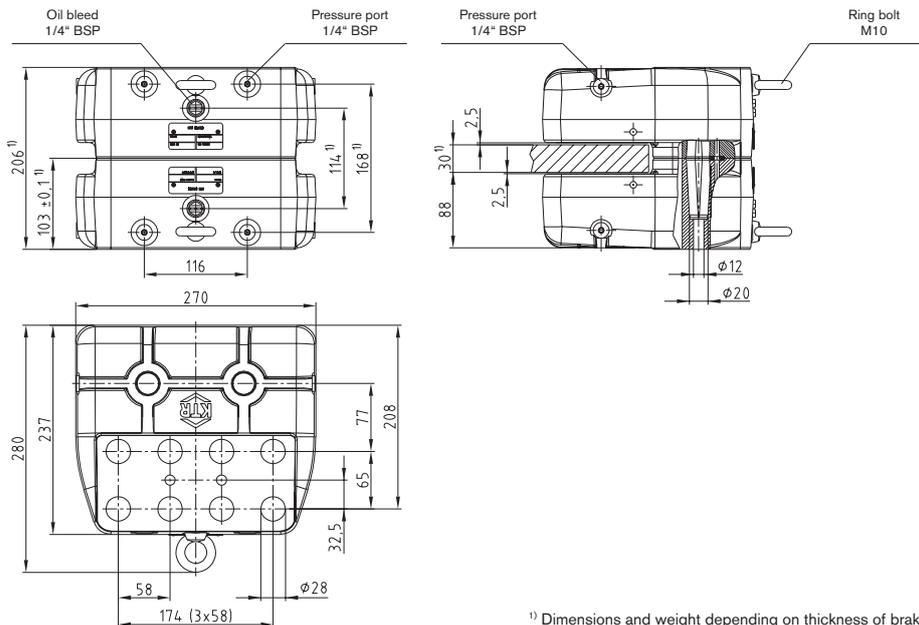
Ordering example:

| | | | | | |
|-----------|---------------|----------------|---------|--------|-------------------------|
| KTR-STOP® | M | 100 | F | A | 40 |
| KTR brake | Size of brake | Clamping force | Floater | Option | Thickness of brake disk |

KTR-STOP® YAW M



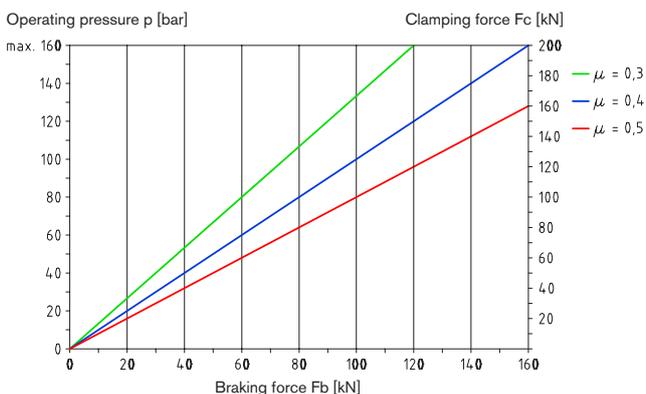
- Short reaction times due to the small distance between brake pad and brake disk as well as the low oil volume
- Large surface of pad results in a low surface pressure, low wear of pads and low temperature
- Low maintenance effort because of few mobile components only
- Drain ports avoid leakages on the brake pads
- Brake pads made of various materials available
- Brake pads easy to replace
- Suitable for rough ambient conditions



¹⁾ Dimensions and weight depending on thickness of brake disk.

| KTR-STOP® YAW M | | | |
|---|--------------------------|---|------------------|
| Total weight | ca. 63 kg ¹⁾ | Max. clamping force | 203 kN |
| Width of brake pad | 108 mm | Max. operating pressure (bis $\mu = 0,4$) | 160 bar |
| Surface of each brake pad | 20.300 mm ² | Thickness of brake disk | 20 mm - 70 mm |
| Max. wear of each brake pad | 7 mm (Material: Organic) | Assembly of brake externally | 400 mm |
| Nominal coefficient of friction ²⁾ | $\mu = 0,4$ | Min. diameter of brake disk $\varnothing D_A$ | 900 mm |
| Total brake piston area - complete brake | 254 cm ² | Assembly of brake internally | 900 mm |
| Volume with 1 mm stroke - complete brake | 25,4 cm ³ | Min. diameter of brake disk $\varnothing D_I$ | 900 mm |
| Pressure port | 1/4" BSP | Operating temperature | -30 °C to +40 °C |
| Oil bleed | 1/4" BSP | | |

²⁾ The coefficient of friction each depends on the application or material of the brake pad, respectively. Please consult with KTR.



$$F_b = F_c \cdot 2 \cdot \mu$$

$$M_b = z \cdot F_b \cdot D_{av} / 2$$

F_b = Braking force [kN]

F_c = Clamping force [kN]

M_b = Braking torque [kNm]

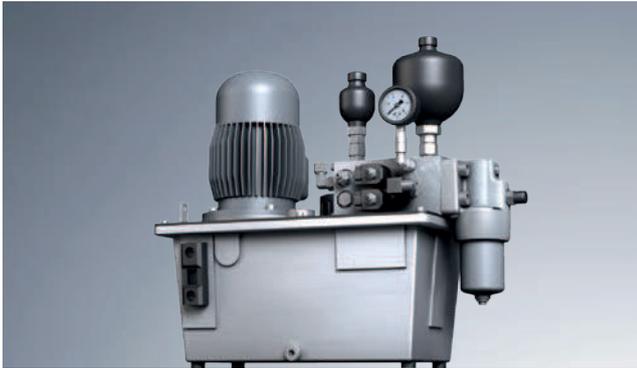
z = Number of brakes

D_{av} = Effective diameter of brake [m]

Ordering example:

| | | | |
|-----------|---------------|--------|-------------------------|
| KTR-STOP® | YAW M | A | 30 |
| KTR brake | Size of brake | Option | Thickness of brake disk |

Hydraulic power pack



The hydraulic power pack activates the brake calipers of KTR-STOP®. For that purpose we provide for power packs with rough components for reliable operation with hardest conditions.

IntelliRamp®



IntelliRamp® is the recently developed control system performing braking processes reproducibly with the variables speed versus time.

Stand



The steel structure serves for mounting KTR-STOP® brake systems and is each adjusted to the application individually by KTR.



KTR Germany:

Headquarters:

KTR Kupplungstechnik GmbH

Postfach 1763

D-48407 Rheine

Phone: +49(0)5971 798-0

Fax: +49(0)5971 798-698 and 798-450

E-Mail: mail@ktr.com

Internet: www.ktr.com

Schleswig-Holstein, Nord-Niedersachsen, Hamburg, Bremen

Martin Lau

staatl. gepr. Techniker Maschinenbau

KTR Kupplungstechnik GmbH

Ingenieurbüro Hamburg

Geschwister-Scholl-Allee 44

25524 Itzehoe

Phone: +49(0)4821 4050812

Fax: +49(0)4821 4050814

Mobile: +49(0)172 5310014

E-Mail: m.lau@ktr.com

NRW: Reg.-Bez.: Düsseldorf

Günter Enk

Dipl.-Ing.

KTR Kupplungstechnik GmbH

Ingenieurbüro Bocholt

Stormstraße 35

46397 Bocholt

Phone: +49(0)2871 227488

Fax: +49(0)2871 227489

Mobile: +49(0)172 5355704

E-Mail: g.enk@ktr.com

Hessen, Rheinland-Pfalz, Saarland

Martin Dietrich

Ingenieur

KTR Kupplungstechnik GmbH

Ingenieurbüro Frankfurt

Im Mühlahl 6

61203 Reichelsheim

Phone: +49(0)6035 2077284

Fax: +49(0)6035 2077285

Mobile: +49(0)172 5329968

E-Mail: m.dietrich@ktr.com

Mitte- und Süd-Niedersachsen, Ostwestfalen, Nord-Hessen

Rainer Lüttmann

KTR Kupplungstechnik GmbH

Rodder Damm 170

48432 Rheine

Phone: +49(0)5971 798-340

Fax: +49(0)5971 798-6340

Mobile: +49(0)172 5322164

E-Mail: r.luettmann@ktr.com

Bayern-Süd

Peter Benkard

Dipl.-Ing. (FH)

KTR Kupplungstechnik GmbH

Ingenieurbüro Adelsried

Am Mittelfeld 13

86477 Adelsried

Phone: +49(0)8293 960504

Fax: +49(0)8293 960505

Mobile: +49(0)172 5313059

E-Mail: p.benkard@ktr.com

Emsland, Ruhrgebiet, Siegerland

Rainer Lüttmann

staatl. geprüfter Techniker Maschinenbau

KTR Kupplungstechnik GmbH

Ingenieurbüro Kamen

Südfeld 7b

59174 Kamen

Phone: +49(0)2307 4385020

Fax: +49(0)2307 4385021

Mobile: +49(0)162 2186045

E-Mail: r.pottmann@ktr.com

Berlin, Mecklenburg-Vorpommern

Südost, Sachsen-Anhalt, Brandenburg

Thüringen Nord, Sachsen

Harald Scholze

Dipl.-Ing. (TU)

KTR Kupplungstechnik GmbH

Ingenieurbüro Wittenberg

August-Bebel-Straße 7

06886 Lutherstadt-Wittenberg

Phone: +49(0)3491 663526

Fax: +49(0)3491 610060

Mobile: +49(0)172 5329887

E-Mail: h.scholze@ktr.com

Baden-Württemberg Nord

Reiner Till

Ingenieur

KTR Kupplungstechnik GmbH

Ingenieurbüro Bietigheim-Bissingen

Stuttgarter Str. 59

74321 Bietigheim-Bissingen

Phone: T+49(0)7142 7707979

Fax: +49(0)7142 7739221

Mobile: +49(0)172 5355056

E-Mail: r.till@ktr.com

Baden-Württemberg Süd

Jochen Glöckler

staatl. gepr. Techniker Maschinenbau

KTR Kupplungstechnik GmbH

Ingenieurbüro Balingen

Hölzlestraße 44

72336 Balingen

Phone: +49(0)7433 91381

Fax: +49(0)7433 91382

Mobile: +49(0)172 5310049

E-Mail: j.gloeckler@ktr.com

Bayern-Nord, Thüringen Süd

Eduard Schadly

Ingenieur

KTR Kupplungstechnik GmbH

Ingenieurbüro Prebitz

In der Heide 27

95473 Prebitz-Engelmannsreuth

Phone: +49(0)9270 9666

Fax: +49(0)9270 9667

Mobile: +49(0)172 5329967

E-Mail: e.schadly@ktr.com

Sales Manager Brake Systems

Leitung Vertrieb Bremsen

Thomas Wienkotte

Dipl.-Ing. (FH)

Peter-Schumacher-Straße 102

50171 Kerpen

Phone: +49(0)2237 971796

Fax: +49(0)2237 971795

Mobile: +49(0)172 5859448

E-Mail: t.wienkotte@ktr.com

KTR worldwide:

- **Algeria**
 - KTR Alger
 - Algeria Business Center - Pins Maritimes
 - DZ-16130 Alger Mohammadia
 - Phone: +213 661 92 24 00
 - E-mail: ktr-dz@ktr.com
- **Australia**
 - Deanquip PowerTrans Hydraulics & Tools Pty. Ltd.,
 - 2 / 1570-1572 Centre Road Springvale, VIC 3171
 - Phone: +61 1800 338 171
 - Fax: +61 1800 638 171
 - E-mail: sales@deanquip.com
 - Internet: www.deanquip.com
- **Austria**
 - Lenze Verbindungstechnik GmbH
 - lpf-Landesstr. 1
 - A-4481 Asten
 - Phone: 43 7224 210 0
 - Fax: +43 7224 210 998
 - E-mail: sale@lenze-verbinding.com
- **Belgium/Luxemburg**
 - KTR Benelux B. V. (Bureau Belgian)
 - Blancefloerlaan 167/22
 - B-2050 Antwerpen
 - Phone: +32 3 2110567
 - Fax: +32 3 2110568
 - E-mail: ktr-be@ktr.com
- **Brazil**
 - KTR do Brasil Ltda.
 - Rua Jandaia do Sul 471 - Bairro Emiliano Pernetá
 - Pinhais - PR - Cep: 83321-040
 - Brasil
 - Phone: +55 41 36 69 57 13
 - Fax: +55 41 36 69 57 13
 - E-mail: ktr-br@ktr.com
- **China**
 - KTR Power Transmission Technology (Shanghai) Co. Ltd.
 - Building 1005, ZOBON Business Park
 - 999 Wangqiao Road Pudong
 - Shanghai 201201
 - China
 - Phone: +86 21 58 38 18 00
 - Fax: +86 21 58 38 19 00
 - E-mail: ktr-cn@ktr.com
- **Czech Republic**
 - KTR CR, spol. s. r. o.
 - Olomoucká 226
 - CZ-569 43 Jevicko
 - Phone: +420 461 325 162
 - Fax: +420 461 325 162
 - E-mail: ktr-cz@ktr.com
- **Denmark**
 - Manicus ApS
 - Høsten Teglværksvej 98
 - 4690 Haslev, Denmark
 - Phone: +45 45 82 09 00
 - Fax: +45 45 82 09 03
 - E-mail: man@manicus.dk
- **Finland**
 - KTR Finland OY
 - Tiistiniityntie 4
 - SF-02230 Espoo
 - PL 23
 - SF-02231 Espoo
 - Phone: +358 2 07 41 46 10
 - Fax: +358 2 07 41 46 19
 - E-mail: ktr-fi@ktr.com
- **France**
 - KTR France S.A.R.L.
 - 46 - 48 Chemin de la Bruyère
 - F-69570 Dardilly
 - Phone: +33 478 64 54 66
 - Fax: +33 478 64 54 31
 - E-mail: ktr-fr@ktr.com
- **Great Britain**
 - KTR Couplings Ltd.
 - Robert House
 - Unit 7, Acorn Business Park
 - Woodseats Close
 - Sheffield
 - England, S8 0TB
 - Phone: +44 11 42 58 77 57
 - Fax: +44 11 42 58 77 40
 - E-mail: ktr-uk@ktr.com
- **Indonesia**
 - PT. Duta Rantai Mas
 - Jl. Mangga Besar Raya No. 107
 - Block C3
 - RI - Jakarta 11170
 - P. O. Box 4597
 - RI - Jakarta 11045
 - Phone: +62 21 6 59 41 80
 - Fax: +62 21 6 59 45 94
 - E-mail: drm@bit.net.id
- **Iran**
 - Paralog Engineering Co., Ltd.
 - P. O. Box 19 395-7366
 - No. 35, Shangarf St.
 - Mirdamad Blvd.,
 - Phone: +98 21 22 90 55 51
 - Fax: +98 21 22 90 55 50
 - E-mail: info@paralog.ir
- **India**
 - KTR Couplings (India) Pvt. Ltd.,
 - T-36 / 37 / 38, MIDC Bhosari
 - Pune 411026
 - India
 - Phone: +91 20 27 12 73 22
 - Fax: +91 20 27 12 73 23
 - E-mail: ktr-in@ktr.com
- **Israel**
 - G - G Yarom Getter Ltd.
 - Rolling & Conveying Ltd.
 - 6, Hamaktesh Street
 - Industrial Zone
 - IL - Holon 58810
 - Phone: +972 3 5 57 01 11
 - Fax: +972 3 5 59 32 46
 - E-mail: gginfo@gg.co.il
- **Italy**
 - KTR Kupplungstechnik GmbH
 - Sede senza rappresentanza stabile sul
 - Territorio Nazionale
 - Via Fermi, 25
 - I-40033 Casalecchio di Reno (BO)
 - Phone: +39 051 613 32 32
 - Fax: +39 02 700 37 570
 - E-mail: ktr-it@ktr.com
- **Japan**
 - KTR Japan Co., Ltd.
 - 3-1-23 Daikaidori
 - Hyogo-ku, Kobe-shi
 - 652-0803 Japan
 - Phone: +81 7 85 74 03 13
 - Fax: +81 7 85 74 03 10
 - E-mail: ktr-jp@ktr.com
- **KTR Japan - Tokyo Office**
 - 1-11-6, Higashi-Ueno, Taito-Ku,
 - Tokyo 110-0015 Japan
 - (Takeno-building, 5F)
 - Japan
 - Phone: +81 3 58 18 32 07
 - Fax: +81 3 58 18 32 08
- **Korea**
 - KTR Korea Ltd.
 - # 101, 978-10, Topyung-Dong
 - Guri-City, Gyeonggi-Do
 - 471-060 Korea
 - Phone: +82 3 15 69 45 10
 - Fax: +82 3 15 69 45 25
 - E-mail: ktr-kr@ktr.com
- **Malaysia**
 - Wellcotech Sdn Bhd
 - NO: 6, Jalan Tabla 33/21
 - Shah Alam Technology Park
 - Seksyen 33, 40400 Shah Alam
 - Selangor Darul Ehsan, Malaysia
 - Phone: +60 351218722
 - Fax: +60 351218692
 - E-mail: wctsb@wellcotech.my
 - Internet: www.wellcotech.my
- **Netherlands**
 - KTR Benelux B. V.
 - Postbus 87
 - NL-7550 AB Hengelo (O)
 - Adam Smithstraat 37
 - NL-7559 SW Hengelo (O)
 - Tel.: +31 74 2553680
 - Fax: +31 74 2553689
 - E-Mail: ktr-nl@ktr.com
- **Norway**
 - KTR Kupplungstechnik Norge AS
 - Fjellbovegen 13
 - N-2016 Frogner
 - Phone: +47 64 83 54 90
 - Fax: +47 64 83 54 95
 - E-mail: ktr-no@ktr.com
- **Poland**
 - KTR Polska SP. Z. O. O.
 - ul. Czerwone Maki 65
 - PL - 30-392 Kraków
 - Phone: +48 12 267 28 83
 - Fax: +48 12 267 07 66
 - E-mail: ktr-pl@ktr.com
- **Portugal**
 - KTR Kupplungstechnik GmbH
 - c) Estartetxe, nº 5 - Oficina 218
 - E-48940 Leioa (Vizcaya)
 - Phone: +34 9 44 80 39 09
 - Fax: +34 9 44 31 68 07
 - E-mail: ktr-es@ktr.com
- **Russia**
 - KTR Privodnaya tehnika, LLC
 - 6 Verhnii Pereulok 12
 - Litera A, Office 229
 - 194292 St. Petersburg
 - Russia
 - Phone: +7 812 383 51 20
 - Fax: +7 812 383 51 25
 - E-mail: ktr-ru@ktr.com
 - Internet: www.ktr.ru
- **Saudi Arabia**
 - Petroengineering est.
 - P. O. Box: 3937
 - Al Khobar 31952
 - Kingdom of Saudi Arabia
 - Phone: +966 38 67 74 00
 - Fax: +966 38 67 73 00
 - E-mail: sales@petroengineering.net
 - Internet: www.petroengineering.net
- **Singapore**
 - Drives & Control (S.E.A.) Pte. Ltd.
 - 47L Tuas South Avenue 1
 - Singapore 637249
 - Phone: + 65 67 77 57 77
 - Fax: + 65 67 78 43 26
 - E-mail: sales@drivescontrol.com.sg
- **Slovenia**
 - Bell d.o.o.
 - Pltjska Cesta 13
 - 2204 Miklavž na Dravskem polju
 - Phone: +38 6 26 29 69 20
 - Fax: +38 6 26 29 21 20
 - E-mail: info@bell.si
- **Spain**
 - KTR Kupplungstechnik GmbH
 - c) Estartetxe, nº 5 - Oficina 218
 - E-48940 Leioa (Vizcaya)
 - Phone: +34 9 44 80 39 09
 - Fax: +34 9 44 31 68 07
 - E-mail: ktr-es@ktr.com
- **Aguirrezabal Hnos., S. A.**
 - Iruna 3
 - E - 48014 Bilbao
 - Phone: +34 9 44 47 33 58
 - Fax: +34 9 44 47 63 20
 - E-mail: aguirrezabal@aguirrezabal.com
- **Brammer Iberia S. A.**
 - Plataforma D-152, Pab. 1
 - Poligono Ind. Erletxe
 - E-48960 Galdácano (Vizcaya)
 - Phone: +34 94 457 94 00
 - Fax: +34 94 457 94 20
 - E-mail: es@brammer.biz
- **South Africa**
 - Hytec Coupling Technology
 - A division of Hydraulic & Automation
 - Warehouse
 - P. O. Box 2272
 - Kempton Park, 1620
 - 28 Spartan Road, Spartan Ext 21
 - South Africa
 - Phone: +27 11 281 3800
 - Fax: +27 11 281 3812
 - E-mail: info@hytec.co.za
- **Sweden**
 - KTR Sverige AB
 - Box 742
 - S - 191 27 Sollentuna
 - Phone: +46 86 25 02 90
 - Fax: +46 86 25 02 99
 - E-mail: info.se@ktr.com
- **Switzerland**
 - KTR Kupplungstechnik AG
 - Bahnstr. 60
 - CH - 8105 Regensdorf
 - Phone: +41 4 33 11 15 55
 - Fax: +41 4 33 11 15 56
 - E-mail: ktr-ch@ktr.com
- **Taiwan**
 - KTR Taiwan Ltd.
 - 1 F, No.: 17, Industry 38 Road
 - Taichung Industry Zone
 - Taichung
 - Taiwan, R. O. C.
 - Phone: +886 4 23 59 32 78
 - Fax: +886 4 23 59 75 78
 - E-mail: ktr-tw@ktr.com
- **Turkey**
 - KTR Turkey
 - Güç Aktarma Sistemleri San. ve Tic. Ltd. Sti.
 - Kayışdağı Cad. No: 117/2
 - 34758 Atasehir -İstanbul
 - Phone: +90 216 574 37 80
 - Fax: +90 216 574 34 45
 - E-mail: ktr-tr@ktr.com
- **HİDROPAR KOCAELİ**
 - Hidrolik Otomasyon ve Elektronik San. ve Tic. Ltd. Şti.
 - Osman Yılmaz Mah. İstanbul Cd. No: 80/A
 - 41400 Gebze / Kocaeli
 - Turkey
 - Phone: +90 262 643 84 11
 - Fax: +90 262 643 84 14
 - E-mail: info@hktm.com.tr
 - Internet: www.hidroparkocaeli.com.tr
- **USA**
 - KTR Corporation
 - 122 Anchor Road
 - Michigan City, Indiana 46360
 - USA
 - Phone: +1 2 19 8 72 91 00
 - Fax: +1 2 19 8 72 91 50
 - E-mail: ktr-us@ktr.com



KTR Kupplungstechnik GmbH

P.O. Box 1763

D-48407 Rheine

Phone: +49(0)5971 798-0

Fax: +49(0)5971 798-698 u. 798-450

E-mail: mail@ktr.com

Internet: www.ktr.com

Made for Motion

