

Part number:

HYDROMA

HYDRAULICKÉ SYSTÉMY

**HIDROMA
SISTEMS**

UKŁADY HYDRAULICZNE

HYDROMA

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

STEERING COLUMNS TYPE KK...



The M+S Hydraulic KK Steering Columns transfer the torque from the steering wheel of the vehicle to the HKU, HKUS or other steering units of the same class. The KK steering columns consist of a pipe in which the control shaft is centred.

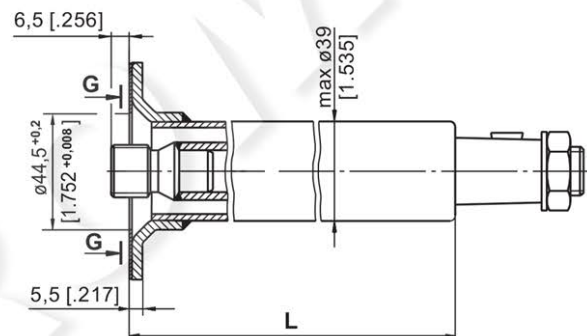
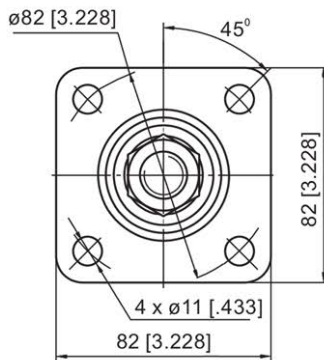
Permissible loads of the steering column are as follows:

| | |
|---|----------------------|
| Max. torque applied to the steering wheel | 24 daNm [2124 lb-in] |
| Max. bending moment | 20 daNm [1770 lb-in] |
| Max. axial load | 100 daN [225 lbs] |

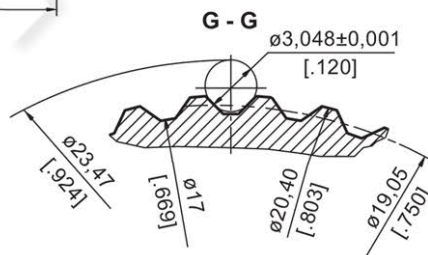
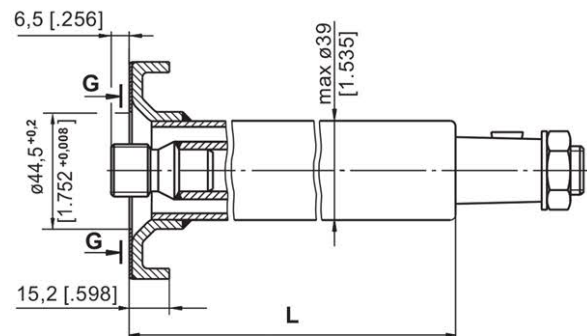
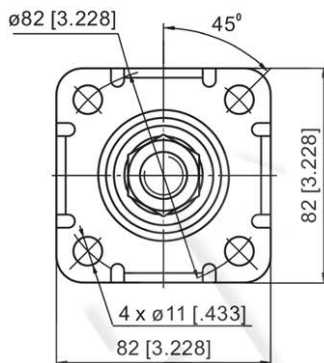
The steering column must be additionally supported when the length L exceeds 150 mm [5.91 in].

DIMENSIONS AND MOUNTING DATA

Type KK



Type KKF



SPECIFICATION DATA

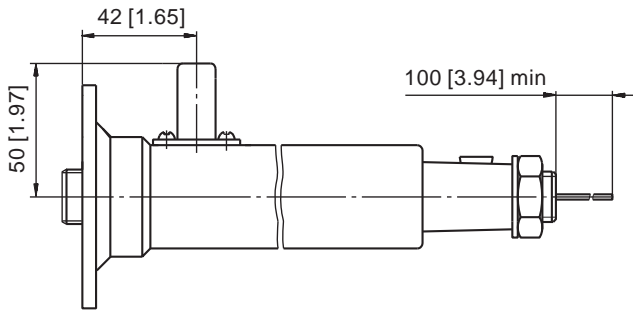
| Involute Spline Data | | |
|----------------------|----------|--------|
| Modul | m | 1.5875 |
| Number of Teeth | z | 12 |
| Pressure Angle | α | 30° |
| Diametral Pitch | DP | 16/32 |

| Parameters | | Type | | | | |
|------------|------|--------|--------|---------|---------|---------|
| | | KK 75 | KK 150 | KK 390 | KK 441 | KK 750 |
| L | mm | 78 | 168,2 | 393 | 441 | 777,8 |
| | [in] | [3.07] | [6.62] | [15.47] | [17.36] | [30.62] |
| Weight | kg | 0,75 | 1,1 | 1,9 | 5,05 | 3,3 |
| | [lb] | [1.65] | [2.43] | [4.19] | [11.13] | [7.28] |

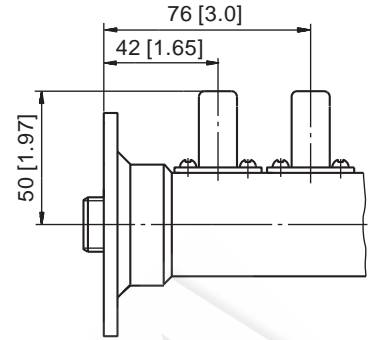
Note: The length L depends on the transport vehicle construction. For more information regarding other lengths and shaft versions, please refer to M+S Hydraulic.

SOUND SIGNAL CONNECTION

E Option



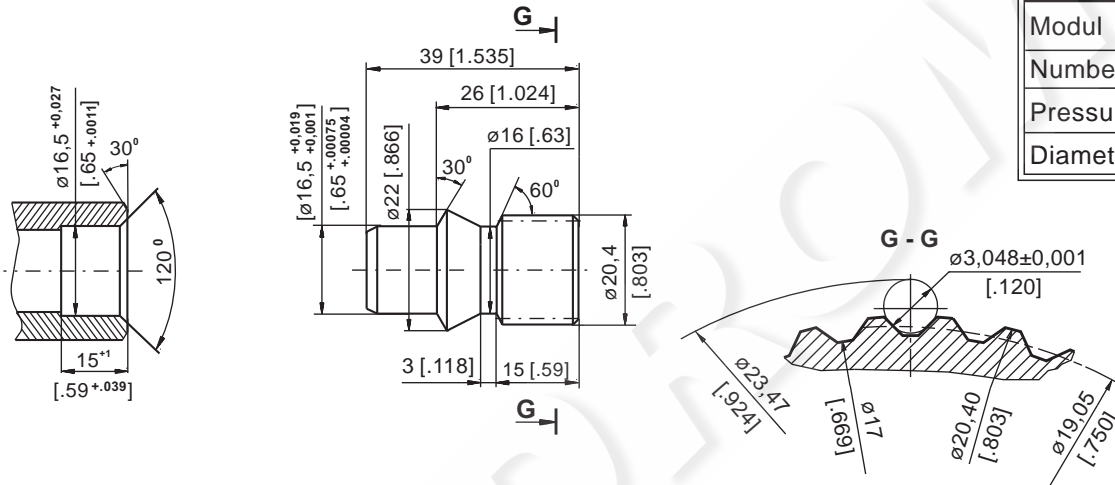
EE Option



Shaft End Part

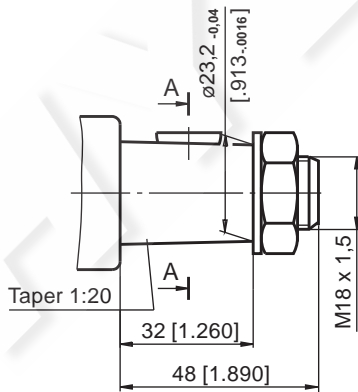
Order No: 46415 001 00

| Involute Spline Data | | |
|----------------------|----------|--------|
| Modul | m | 1.5875 |
| Number of Teeth | z | 12 |
| Pressure Angle | α | 30° |
| Diametral Pitch | DP | 16/32 |

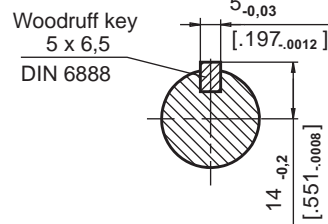


SHAFT VERSIONS

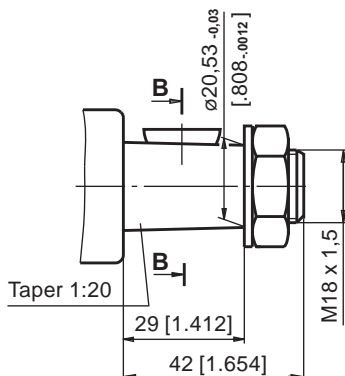
TYPE I



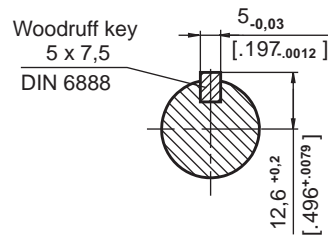
A - A



TYPE II

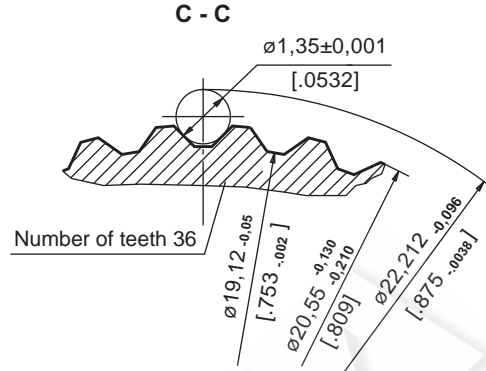
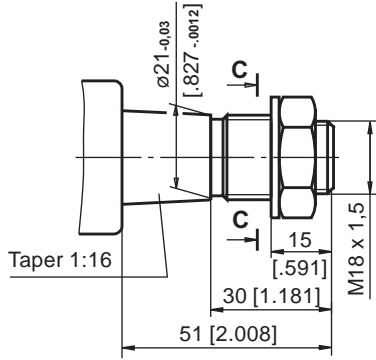


B - B

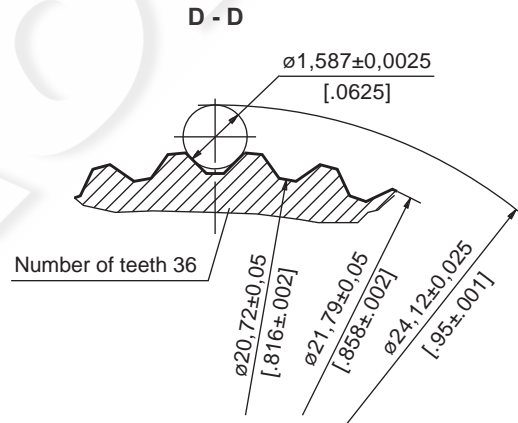
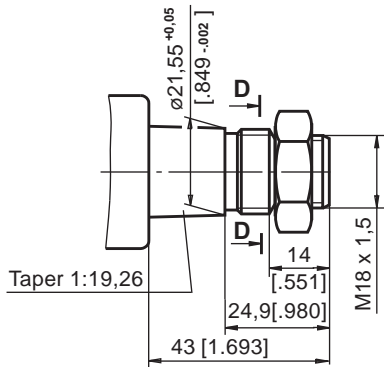


SHAFT EXTENSIONS

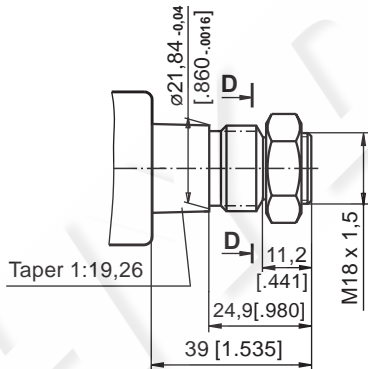
TYPE III



TYPE IV

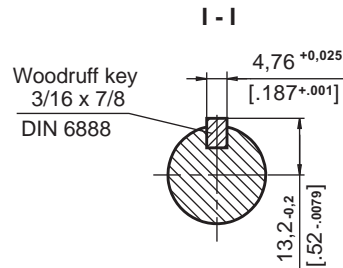
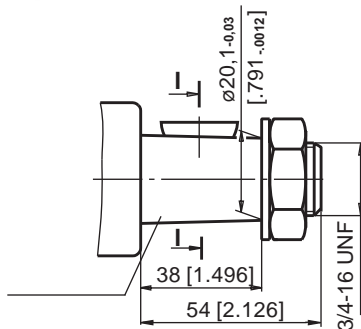


TYPE V

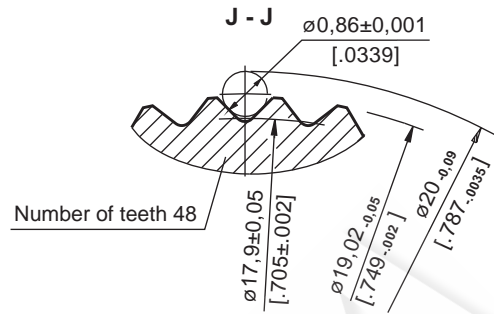
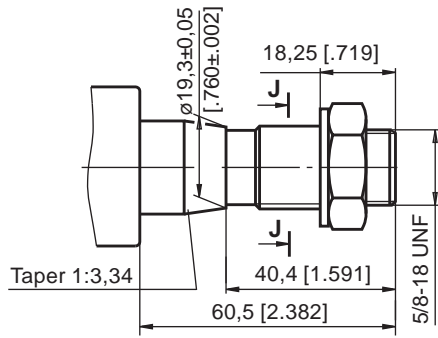


mm [in]

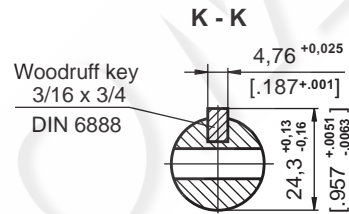
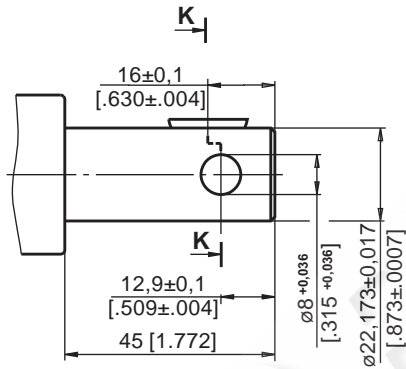
TYPE VI



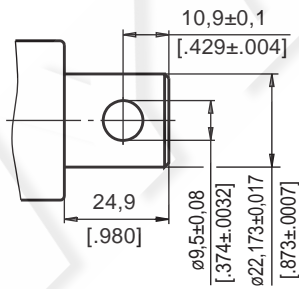
TYPE VII



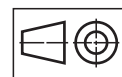
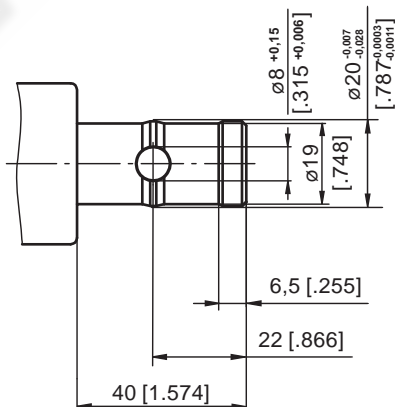
TYPE VIII



TYPE IX

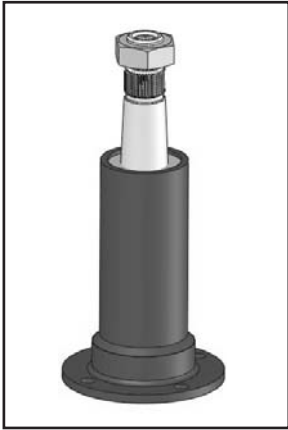


TYPE XIII



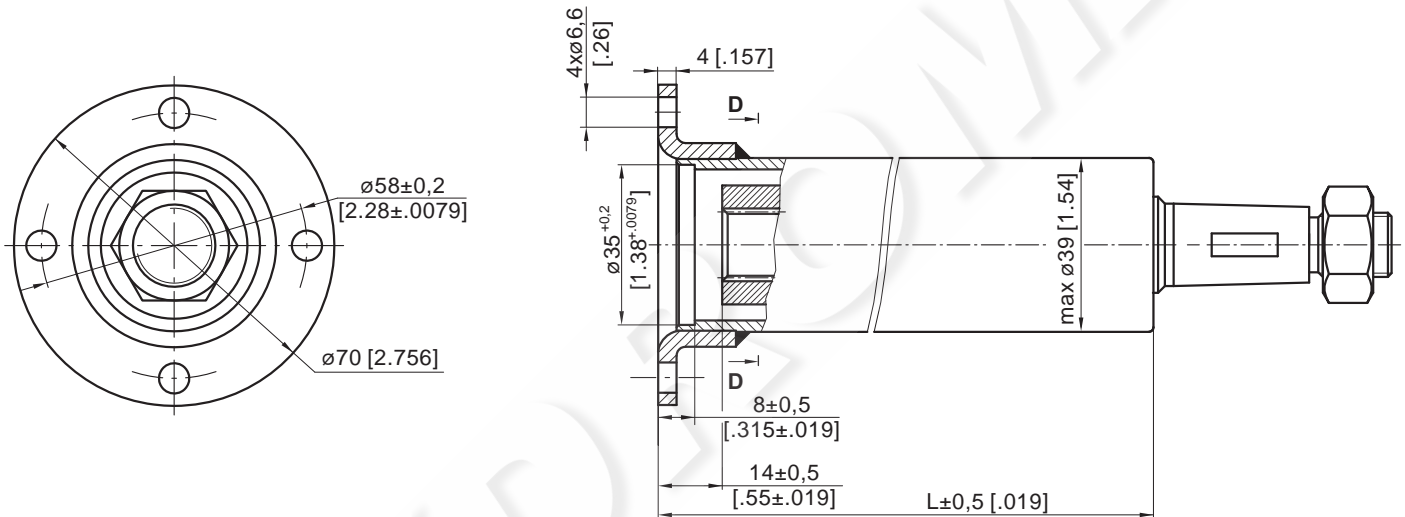
mm [in]

STEERING COLUMNS TYPE KKM...



The M+S Hydraulic KKM Steering Columns transfer the torque from the steering wheel of the vehicle to the HKUM or other steering units of the same class. The KKM steering columns consist of a pipe in which the control shaft is centred.

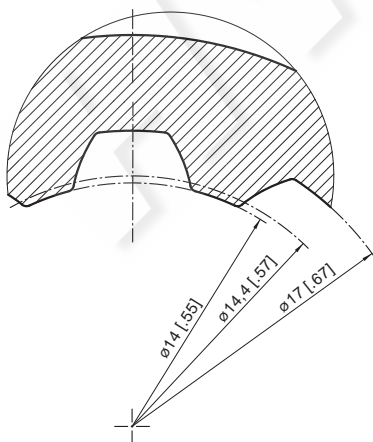
DIMENSIONS AND MOUNTING DATA



D-D

5:1

Involute spline data
A17x14 DIN5482



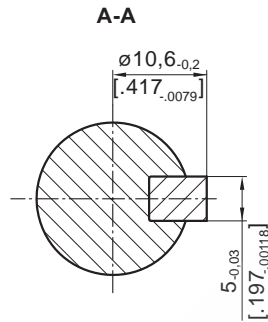
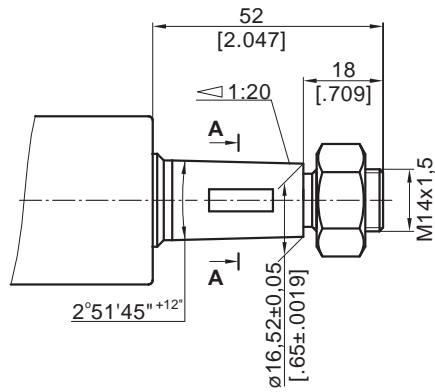
SPECIFICATION DATA

| Length | Type | |
|---------------|----------------|-----------------|
| | KKM 165 | KKM 355 |
| L, mm [in] | 165 [6.496] | 355 [13.976] |

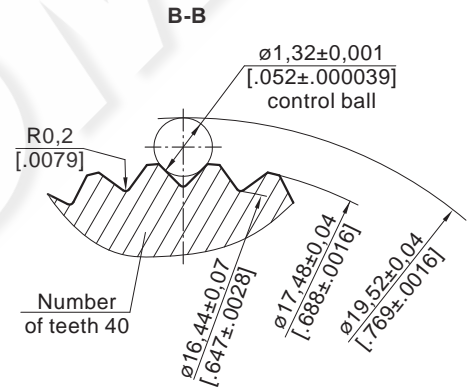
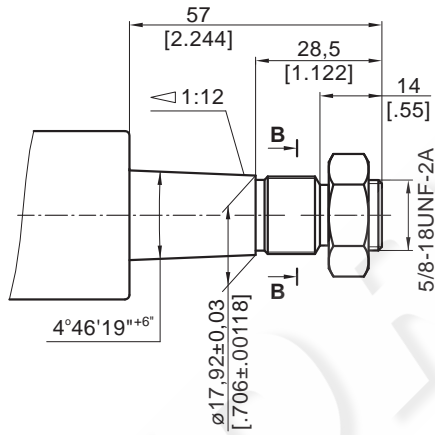
Note: The length L depends on the transport vehicle construction. For more information regarding other lengths and shaft versions, please refer to M+S Hydraulic.

SHAFT VERSIONS

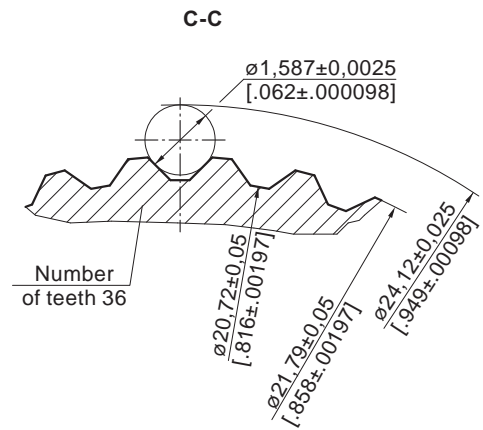
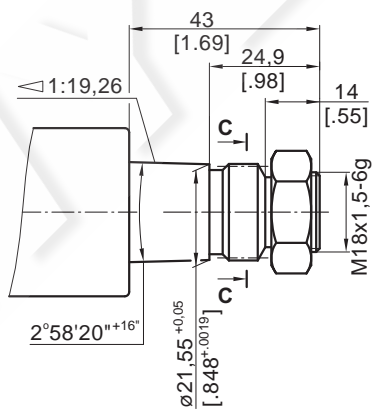
TYPE S1



TYPE S2



TYPE S3



ORDER CODE KK

| | | | | | | |
|-----------|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| KK | | | | | | |

Pos.1 - Mounting Flange

omit - Flange without Tabs

F - Flange with Tabs

Pos.2 - Length, mm (acc. to table)

Pos.3 - Shaft Extensions

I, II, III, IV, V, VI, VII, VIII, IX

Pos.4 - Signal Connection (Option)

omit - without electric signal connection

E - with one electric signal connection

EE* - with two electric signal connection

Pos.5 - Option (Paint)**

omit - No Paint

P - Painted Low Gloss Color

PC - Corrosion Protected Paint

Pos.6 - Design Series

omit - Factory specified

Notes: * For steering column's length $L > 150$ mm [5.9 in] only.

** Colour at customer's request.

The steering columns are yellow galvanized as standard.

ORDER CODE KKM

| | | | | |
|------------|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| KKM | | | | |

Pos.1 - Length, mm [in] (acc. to table)

Pos.2 - Shaft Extensions

S1, S2, S3

Pos.3 - Option (Paint)*

omit - No Paint

P - Painted Low Gloss Color

PC - Corrosion Protected Paint

Pos.4 - Design Series

omit - Factory specified

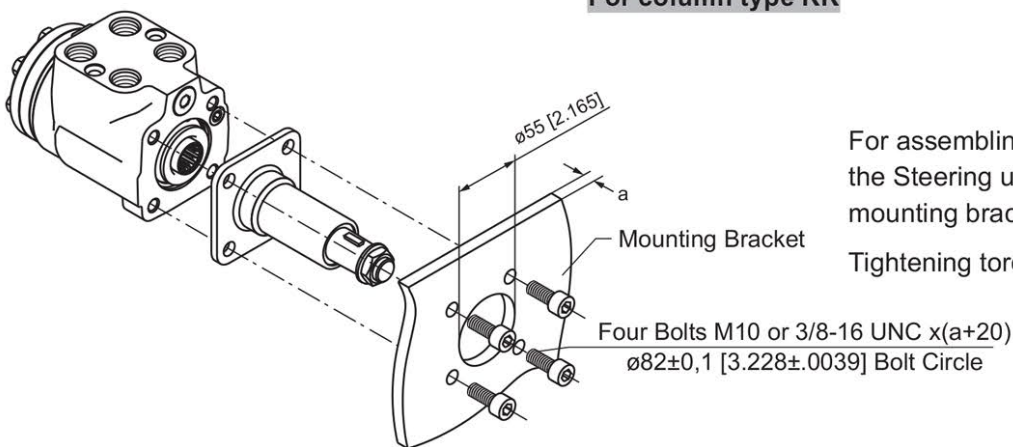
Notes: * Colour at customer's request.

The steering columns are yellow galvanized as standard.

The main technical features correspond to the standard steering columns type KK.

INSTALLING

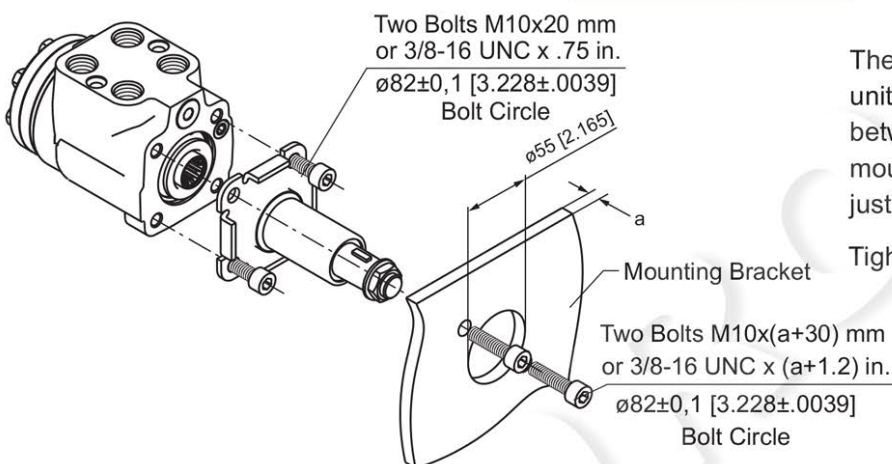
For column type KK



For assembling the Steering column to the Steering units use four bolts through mounting bracket.

Tightening torque for bolts 3 daNm [266 lb-in]

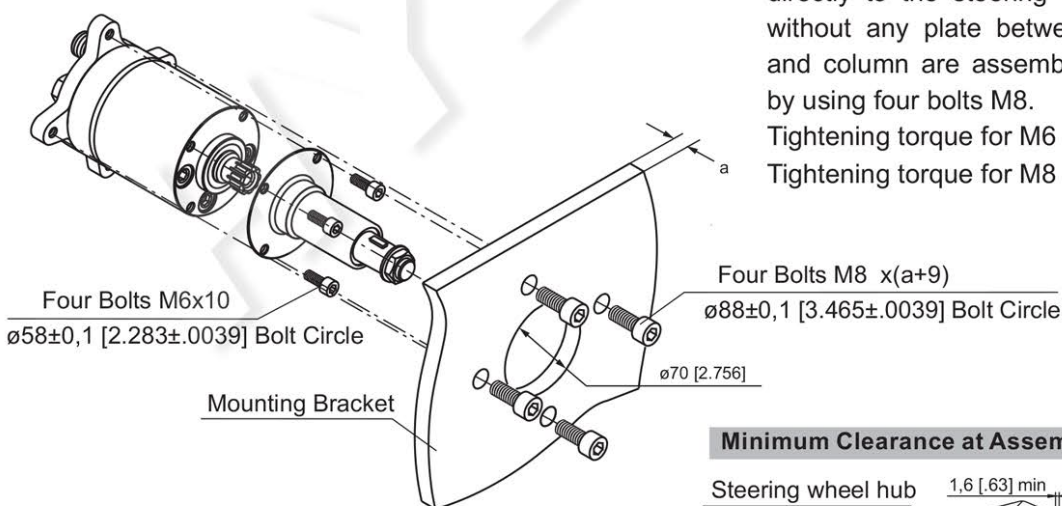
For column type KKF



The steering column type KKF and the steering unit must be assembled with nothing standing between them. Use two bolts through mounting bracket and two bolts through just the steering column.

Tightening torque for bolts 3 daNm [266 lb-in]

For column type KKM



The steering column type KKM must be assembled directly to the steering unit by using four bolts M6 without any plate between them. The steering unit and column are assembled to the mounting bracket by using four bolts M8.

Tightening torque for M6 bolts 1,5 daNm [133 lb-in]

Tightening torque for M8 bolts 2,0 daNm [177 lb-in]

Minimum Clearance at Assembly

