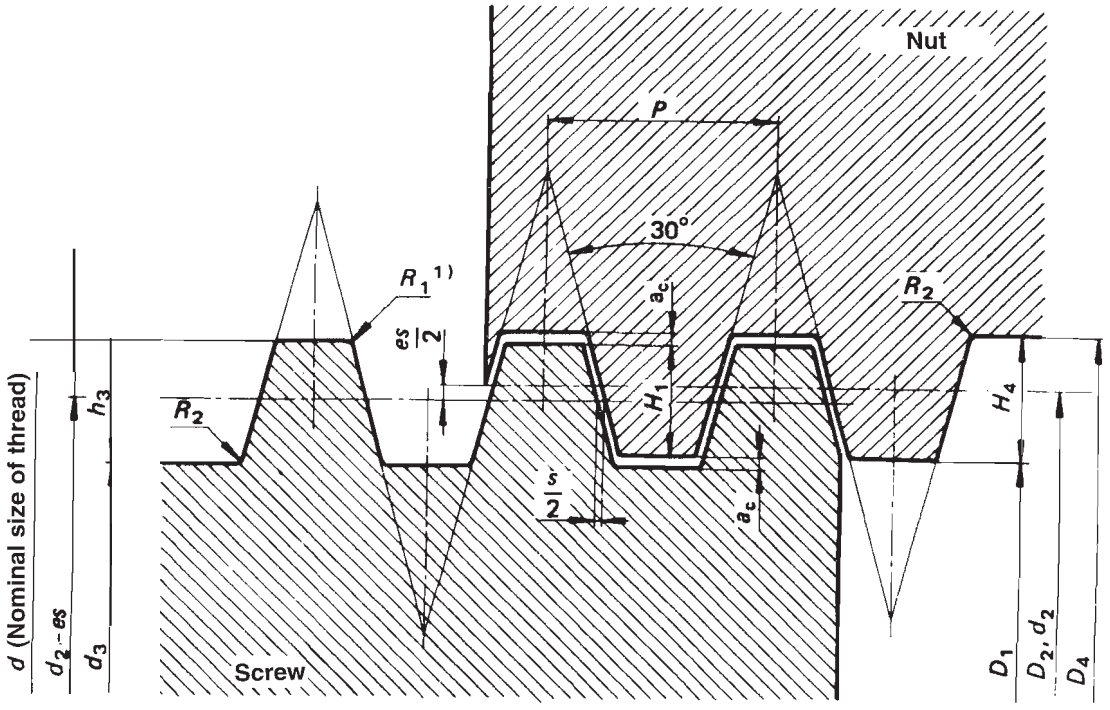
PROFILE FOR METRIC TRAPEZOIDAL THREADS TO ISO STANDARD 2901



H_1 = 0,5 P

h_3 = H_4 = H_1 + a_e = 0,5 P + ac

z = 0,25 P = $H_1/2$

d_3 = d - $2h_3$

d_2 = o_2 = d - 2 z = d - 0,5 P

o_1 = d - 2 H_1 = d - P

04 = d + 2 Be

Be = bottom play

es = top deviation for screw

s = 0,267 95 es

R_1 max. = 0,5 Be

R_2 max. = Be

We reserve the right to change sizes and features without notice.

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Screw Types	Lead Accuracy	Material	
KQX	200	C15E - EN 10084 C15E - 1.1141	12
KKA	50	1 C45 - EN 10083- 1C45 - 1.0503 -	12
KFH	100	1 C45 - EN 10083- 1C45 - 1.0503 -	13
KTS	200	1 C45 - EN 10083- 1C45 - 1.0503 -	14
KRP	200	Stainless Steel A2 - AISI 304 - EN 10088 1.4301 -	14
KAM	200	Stainless Steel A4 - AISI 316 - EN 10088 1.4401 -	14

Nut Types	Shape	Material		
MLF	cylindrical	steel	11 S Mn Pb 37 EN 10277 - 1.0737	15
MZP	cylindrical	steel	11 S Mn 30 EN 10277 - 1.0715	15
CQA	square	steel	11 S Mn Pb 37 EN 10277 - 1.0737	16
QOB	square	brass	CW614N-M UNI EN 12164	16
HSN	cylindrical	bronze	GB-Cu Sn5 Zn5 Pb DIN 17656	17
HBD	cylindrical	bronze	GB-CuSn7ZnPb DIN 17656.....	17
FTN	flanged	bronze	GB-Cu Sn5 Zn5 Pb DIN 17656	18
FXN	flanged	bronze	GB-Cu Sn12 DIN 17656	19
HDL	flanged	bronze	GB-Cu Sn12 DIN 17656	20
HDA	cylindrical	steel	stainless steelA1- AISI 303 - EN 10088 1.4305	21
BIG	cylin. big	bronze	GB-Cu Sn12 DIN 17656	21
CBC	flanged	bronze	GB-Cu Sn12 DIN 17656	22
CDF	2-flanged	bronze	GB-Cu Sn12 DIN 17656	23
HAL	flanged	Alu. bronze	G Ni Al Bz F60 DIN 1714 - UNI 5275	24
MPH	cylindrical	plastic	PA 6 + Mo S2 DIN 7728	24
FCS	flanged	plastic	PA 6 + additives and solid lubricants DIN 7728	25

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TRAPEZOIDAL SCREWS

	Carbon Steel C15 EN 10084 C15E		Carbon Steel C45 W.N. 1.0503 - AISI 1045			
	KQX Lead accuracy 200 page 12		**KFH** Lead accuracy 100 page 13		**KTS** Lead accuracy 200 page 14	
Thread	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**
Tr 10 x 3	•	•	•	•	•	•
Tr 12 x 3	•	•	•	•	•	•
Tr 12 x 6 (P3)	•					
Tr 14 x 4	•	•	•	•	•	•
Tr 16 x 4	•	•	•	•	•	•
Tr 16 x 8 (P4)	•					
Tr 18 x 4	•	•	•	•	•	•
Tr 20 x 4	•	•	•	•	•	•
Tr 20 x 8 (P4)	•		•			
Tr 20 x 20 (P5)	•					
Tr 22 x 5	•	•	•	•	•	•
Tr 24 x 5	•	•				
Tr 25 x 5	•	•	•	•	•	•
Tr 25 x 10 (P5)	•					
Tr 25 x 25 (P5)	•		•			
Tr 26 x 5	•	•				
Tr 28 x 5	•	•	•	•	•	•
Tr 28 x 10 (P5)	•		•			
Tr 30 x 3			•	•		
Tr 30 x 4			•	•		
Tr 30 x 5			•	•		
Tr 30 x 6	•	•	•	•	•	•
Tr 30 x 12 (P6)	•					
Tr 30 x 30 (P5)	•					
Tr 32 x 6	•	•				
Tr 35 x 3			•	•		
Tr 35 x 4			•	•		
Tr 35 x 5			•	•		
Tr 35 x 6	•	•	•	•	•	•
Tr 35 x 8			•			
Tr 36 x 6	•	•				
Tr 40 x 3			•	•		
Tr 40 x 4			•	•		
Tr 40 x 5			•	•		
Tr 40 x 6			•	•		
Tr 40 x 7	•	•	•	•	•	•
Tr 40 x 8			•			
Tr 40 x 10			•			
Tr 40 x 14 (P7)	•					
Tr 40 x 40 (P8)	•					
Tr 44 x 7	•	•				
Tr 45 x 8	•	•	•	•	•	•
Tr 50 x 3			•	•		
Tr 50 x 4			•	•		
Tr 50 x 5			•	•		
Tr 50 x 6			•	•		
Tr 50 x 8	•	•	•	•	•	•
Tr 50 x 10			•			
Tr 55 x 9	•		•		•	
Tr 60 x 6			•	•		
Tr 60 x 7			•	•		
Tr 60 x 9	•	•	•	•	•	•
Tr 70 x 10	•		•	•	•	
Tr 80 x 10	•		•	•	•	

We reserve the right to change sizes and features without notice.

AVAILABLE FROM STOCK

	Carbon Steel C45 W.N. 1.0503-AISI 1045		Stainless Steel INOX A2 W.N. 1.4301-AISI 304		Stainless Steel INOX A4 W.N. 1.4401-AISI 316	
	KKA Lead accuracy 50 page 12		**KRP** Lead accuracy 200 page 14		**KAM** Lead accuracy 200 page 14	
Thread	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**
Tr 10 x 3						
Tr 12 x 3			•	•		
Tr 12 x 6 (P3)						
Tr 14 x 4			•	•		
Tr 16 x 4	•		•	•		
Tr 16 x 8 (P4)						
Tr 18 x 4			•	•		
Tr 20 x 4	•		•	•	•	•
Tr 20 x 8 (P4)						
Tr 20 x 20 (P5)						
Tr 22 x 5						
Tr 24 x 5			•	•	•	•
Tr 25 x 5	•		•	•		
Tr 25 x 10 (P5)			•	•		
Tr 25 x 25 (P5)						
Tr 26 x 5						
Tr 28 x 5	•					
Tr 28 x 10 (P5)						
Tr 30 x 3						
Tr 30 x 4						
Tr 30 x 5						
Tr 30 x 6	•		•	•	•	•
Tr 30 x 12 (P6)						
Tr 30 x 30 (P5)						
Tr 32 x 6						
Tr 35 x 3						
Tr 35 x 4						
Tr 35 x 5						
Tr 35 x 6	•		•	•		
Tr 35 x 8						
Tr 36 x 6			•	•	•	•
Tr 40 x 3						
Tr 40 x 4						
Tr 40 x 5						
Tr 40 x 6						
Tr 40 x 7	•		•	•	•	•
Tr 40 x 8						
Tr 40 x 10						
Tr 40 x 14 (P7)						
Tr 40 x 40 (P8)						
Tr 44 x 7						
Tr 45 x 8						
Tr 50 x 3						
Tr 50 x 4						
Tr 50 x 5						
Tr 50 x 6						
Tr 50 x 8	•		•	•	•	•
Tr 50 x 10						
Tr 55 x 9						
Tr 60 x 6						
Tr 60 x 7						
Tr 60 x 9						
Tr 70 x 10						
Tr 80 x 10						

	MLF page 15 Steel 1.0737 EN 10277		**MZP** page 15 Steel 1.0715 EN 10277		**CQA** page 16 Steel 1.0737 EN 10277		**QOB** page 16 Brass CW614N-M	
Thread	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**
Tr 10 x 3			•	•			•	•
Tr 12 x 3			•	•	•	•	•	•
Tr 12 x 6 (P3)			•					
Tr 14 x 4	•	•	•	•	•	•	•	•
Tr 16 x 4	•	•	•	•	•	•	•	•
Tr 16 x 8 (P4)	•							
Tr 18 x 4	•	•	•	•	•	•	•	•
Tr 20 x 4	•	•	•	•	•	•	•	•
Tr 20 x 8 (P4)	•							
Tr 20 x 20 (P5)								
Tr 22 x 5	•	•	•	•				
Tr 24 x 5			•	•				
Tr 25 x 5	•	•			•	•	•	•
Tr 25 x 10 (P5)	•							
Tr 25 x 25 (P5)								
Tr 26 x 5			•	•				
Tr 28 x 5	•	•	•	•				
Tr 28 x 10 (P5)	•							
Tr 30 x 3								
Tr 30 x 4								
Tr 30 x 5								
Tr 30 x 6	•	•	•	•	•	•	•	•
Tr 30 x 12 (P6)	•							
Tr 30 x 30 (P5)								
Tr 32 x 6			•	•				
Tr 35 x 3								
Tr 35 x 4								
Tr 35 x 5								
Tr 35 x 6	•	•			•	•	•	•
Tr 35 x 8								
Tr 36 x 6			•	•	•	•	•	•
Tr 40 x 3								
Tr 40 x 4								
Tr 40 x 5								
Tr 40 x 6								
Tr 40 x 7	•	•	•	•	•	•	•	•
Tr 40 x 8								
Tr 40 x 10								
Tr 40 x 14 (P7)	•							
Tr 40 x 40 (P8)								
Tr 44 x 7			•	•				
Tr 45 x 8	•	•						
Tr 50 x 3								
Tr 50 x 4								
Tr 50 x 5								
Tr 50 x 6								
Tr 50 x 8	•	•	•	•	•	•		
Tr 50 x 10								
Tr 55 x 9	•							
Tr 60 x 6								
Tr 60 x 7								
Tr 60 x 9	•	•	•	•				
Tr 70 x 10			•	•				
Tr 80 x 10			•	•				

We reserve the right to change sizes and features without notice.

AVAILABLE FROM STOCK - Part 1

	HSN page 17 Bronze GCuSn5Zn5Pb		**HBD** page 17 Bronze GBCuSn7ZnPb		**FTN** page 18 Bronze GCuSn5Zn5Pb		**FXN** page 19 Bronze GB-CuSn12	
Thread	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**
Tr 10 x 3			•	•	•	•	•	•
Tr 12 x 3			•	•	•	•	•	•
Tr 12 x 6 (P3)			•				•	
Tr 14 x 4	•	•	•	•	•	•	•	•
Tr 16 x 4	•	•	•	•	•	•	•	•
Tr 16 x 8 (P4)	•						•	
Tr 18 x 4	•	•	•	•	•	•	•	•
Tr 20 x 4	•	•	•	•	•	•	•	•
Tr 20 x 8 (P4)	•						•	
Tr 20 x 20 (P5)							•	
Tr 22 x 5	•	•	•	•	•	•	•	•
Tr 24 x 5			•	•			•	•
Tr 25 x 5	•	•			•	•	•	•
Tr 25 x 10 (P5)	•						•	
Tr 25 x 25 (P5)							•	
Tr 26 x 5			•	•			•	•
Tr 28 x 5	•	•	•	•	•	•	•	•
Tr 28 x 10 (P5)	•						•	
Tr 30 x 3					•	•		
Tr 30 x 4					•	•		
Tr 30 x 5					•	•		
Tr 30 x 6	•	•	•	•	•	•	•	•
Tr 30 x 12 (P6)	•						•	
Tr 30 x 30 (P5)							•	
Tr 32 x 6			•	•			•	•
Tr 35 x 3					•	•		
Tr 35 x 4					•	•		
Tr 35 x 5					•	•		
Tr 35 x 6	•	•			•	•	•	•
Tr 35 x 8					•			
Tr 36 x 6			•	•			•	•
Tr 40 x 3					•	•		
Tr 40 x 4					•	•		
Tr 40 x 5					•	•		
Tr 40 x 6					•	•		
Tr 40 x 7	•	•	•	•	•	•	•	•
Tr 40 x 8					•			
Tr 40 x 10								
Tr 40 x 14 (P7)	•						•	
Tr 40 x 40 (P8)							•	
Tr 44 x 7			•	•			•	•
Tr 45 x 8	•	•			•	•	•	•
Tr 50 x 3					•	•		
Tr 50 x 4					•	•		
Tr 50 x 5					•	•		
Tr 50 x 6					•	•		
Tr 50 x 8	•	•	•	•	•	•	•	•
Tr 50 x 10								
Tr 55 x 9	•				•		•	
Tr 60 x 6					•	•		
Tr 60 x 7					•	•		
Tr 60 x 9	•	•	•	•	•	•	•	•
Tr 70 x 10			•	•				
Tr 80 x 10			•	•				

	HDL page 20 Bronze GB-CuSn12		HDA page 21 stainless steel 1.4305		BIG page 21 Bronze GB-CuSn12		CBC page 22 Bronze GB-CuSn12	
Thread	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**
Tr 10 x 3							•	•
Tr 12 x 3			•	•			•	•
Tr 12 x 6 (P3)								
Tr 14 x 4	•	•					•	•
Tr 16 x 4	•	•	•	•			•	•
Tr 16 x 8 (P4)	•							
Tr 18 x 4	•	•					•	•
Tr 20 x 4	•	•	•	•			•	•
Tr 20 x 8 (P4)	•							
Tr 20 x 20 (P5)								
Tr 22 x 5	•	•						
Tr 24 x 5			•	•				
Tr 25 x 5	•	•					•	•
Tr 25 x 10 (P5)	•							
Tr 25 x 25 (P5)	•							
Tr 26 x 5								
Tr 28 x 5	•	•					•	•
Tr 28 x 10 (P5)	•							
Tr 30 x 3					•	•		
Tr 30 x 4					•	•		
Tr 30 x 5					•	•		
Tr 30 x 6	•	•	•	•	•	•	•	•
Tr 30 x 12 (P6)	•							
Tr 30 x 30 (P5)								
Tr 32 x 6	•	•						
Tr 35 x 3					•	•		
Tr 35 x 4					•	•		
Tr 35 x 5					•	•		
Tr 35 x 6	•	•			•	•	•	•
Tr 35 x 8								
Tr 36 x 6			•	•			•	•
Tr 40 x 3					•	•		
Tr 40 x 4					•	•		
Tr 40 x 5					•	•		
Tr 40 x 6					•	•		
Tr 40 x 7	•	•	•	•	•	•	•	•
Tr 40 x 8								
Tr 40 x 10	•				•			
Tr 40 x 14 (P7)	•							
Tr 40 x 40 (P8)								
Tr 44 x 7								
Tr 45 x 8							•	•
Tr 50 x 3					•	•		
Tr 50 x 4					•	•		
Tr 50 x 5					•	•		
Tr 50 x 6					•	•		
Tr 50 x 8	•	•	•	•	•	•	•	•
Tr 50 x 10	•				•			
Tr 55 x 9							•	
Tr 60 x 6					•			
Tr 60 x 7					•			
Tr 60 x 9	•	•			•		•	•
Tr 70 x 10							•	•
Tr 80 x 10							•	•

 We reserve the right to change sizes and features without notice.

AVAILABLE FROM STOCK - Part 2

	CDF page 23 Bronze GB-CuSn12		HAL page 24 Alluminium bronze		MPH page 24 Plastic		FCS page 25 Self lubricating plastic	
Thread	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**	**RH**	**LH**
Tr 10 x 3								
Tr 12 x 3					•	•	•	•
Tr 12 x 6 (P3)								
Tr 14 x 4								
Tr 16 x 4					•	•	•	•
Tr 16 x 8 (P4)								
Tr 18 x 4								
Tr 20 x 4					•	•	•	•
Tr 20 x 8 (P4)							•	
Tr 20 x 20 (P5)								
Tr 22 x 5								
Tr 24 x 5								
Tr 25 x 5					•	•	•	•
Tr 25 x 10 (P5)	•							
Tr 25 x 25 (P5)	•							
Tr 26 x 5								
Tr 28 x 5					•	•	•	•
Tr 28 x 10 (P5)	•				•		•	
Tr 30 x 3								
Tr 30 x 4								
Tr 30 x 5								
Tr 30 x 6			•	•	•	•	•	•
Tr 30 x 12 (P6)								
Tr 30 x 30 (P5)								
Tr 32 x 6								
Tr 35 x 3								
Tr 35 x 4								
Tr 35 x 5								
Tr 35 x 6			•		•	•	•	•
Tr 35 x 8								
Tr 36 x 6								
Tr 40 x 3								
Tr 40 x 4								
Tr 40 x 5								
Tr 40 x 6								
Tr 40 x 7			•	•	•	•	•	•
Tr 40 x 8								
Tr 40 x 10			•				•	
Tr 40 x 14 (P7)								
Tr 40 x 40 (P8)								
Tr 44 x 7								
Tr 45 x 8								
Tr 50 x 3								
Tr 50 x 4								
Tr 50 x 5								
Tr 50 x 6								
Tr 50 x 8			•	•	•	•	•	•
Tr 50 x 10			•					
Tr 55 x 9								
Tr 60 x 6								
Tr 60 x 7								
Tr 60 x 9			•					
Tr 70 x 10								
Tr 80 x 10								

Features of Trapezoidal Scewws and Nuts

Trapezoidal screws are pecision rolled. Continuous search for imporovement and many years of experiance in the development of the cold plastic deformation process allows us to roll trapezoidal screws with excellent features

Materials

Steel used in trapezoidal screws: after rolling

C15E - **1.1141** EN 10084 C15E	**Carbon Steel**	160/180 HB
1C45 - **1.0503** EN 10083- 1C45	**Carbon Steel**	App. 250 HB
A2 - **1.4301** - X5CrNi18-10 EN 10088	**Stainless steel**	App. 260 HB
A4 - AISI 316 - **1.4401** X5CrNiMo17-12-2 EN 10088	**Stainless steel**	App. 280 HB

C45 and A2 stainless steel were chosen because in addition to their natural qualities as good construction materials, after rolling they give very good surface hardness and finish on the thread sides. A4 stainless steel also has excellent corrosion resistance. C15 is an excellent quality-price compromise.

After rolling, the C15 has surface hardness of approximately 160/180 HB, C45 approximately 250 HB, A2 stainless approximately 260 HB and A4 stainless approximately 280 HB while roughness is less than 1 µm Ra for all.

These two features are decisive factors for qualitative appraisal of trapezoidal screws because they give very small friction coefficients, much lower than those obtainable with machined screws where other conditions such as speed, load and lubrication are equal.

Our trapezoidal screws with bronze nuts give traversing systems with efficiency, and quietness compared with couplings with machined screws.

Because of the low friction coefficient the amount of heat generated during movement is limited with resulting smaller nut heating. Nut life is also increased. We make nuts with 10 kinds of material to better meet the various requirements.

Steel used in nuts:

11 S Mn Pb 37 - **1.0737** EN 10277	**Steel** with sulphur, manganese and lead.	
11 S Mn 30 - **1.0715** EN 10277	**Steel** with sulphur and manganese.	
Stainless steel - AISI 303 **- 1.4305** EN 10088	**Stainless steel**.	

brass used in nuts:

CW614N-M UNI EN 12164	**brass**.	

Bronze used in nuts:

GB-Cu Sn5 Zn5 Pb DIN 17656	**Tin bronze** with zinc and lead.	60-70 HB
GB-Cu Sn7 Zn Pb DIN 17656	**Tin bronze** with zinc and lead.	65-75 HB
GB-Cu Sn12 DIN 17656	**Tin bronze**.	80-100 HB
G Ni Al Bz F60 DIN 1714	**Alluminium bronze**.	160-220 HB

Plastic used in nuts:

PA 6 + Mo S2 DIN 7728	**plastic**.	
PA 6 + additives & solid lubricants DIN7728	**Self-lubricating plastic**.	

The nuts we make with length 3xd: HDL, BIG and HAL deserve special attention.

These bronze nuts, thanks to their considerable length, distribute the load over a larger number of holding threads and thus limit surface contact pressure between screw and nut. This is decisive for long nut life.

By using the 3xd long nuts compared with bronze nuts with conventional length (approximately 1.5xd or 2xd), higher loads can be born for equal traversing speed.

In particular, with HAL alluminium bronze nuts very high loads can be born and it is recommended to apply continuous steady lubrication. HAL nuts are to be coupled with C45 screws made of A2 or A4 stainless steel; C15 screws are not recommended.

Where it is not desired to lubricate trapezoidal screws, self-lubricating plastic nuts are recommended.

It is not possible to couple plastic nuts with screws made by machining.

Positioning Accuracy

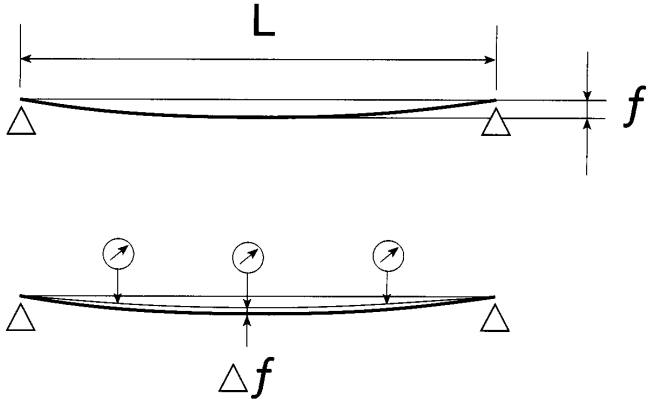
To better meet the requirements of customers using trapezoidal screws as positioning systems we produce screws with lead accuracy in accordance with class 50, +/- 0.050 mm every 300 mm of thread; in accordance with class 100, +/- 0.100 every 300 mm of thread and in accordance with class 200, +/- 0.200 mm every 300 mm of thread for C15, C45, A2 stainless steel and A4 stainless steel.

Screw Type	Lead Accuracy	Material
KQX	200	C15E - EN 10084 C15E - 1.1141
KTS	200	1 C45 - EN 10083- 1C45 - 1.0503
KFH	100	1 C45 - EN 10083- 1C45 - 1.0503
KKA	50	1 C45 - EN 10083- 1C45 - 1.0503
KRP	200	stainless steel A2 - AISI 304 - EN 10088 1.4301
KAM	200	stainless steel A4 - AISI 316 - EN 10088 1.4401

All of the above screw types are available from stock.

Straightness

Screw straightness is appraised by measuring the variation of the deflection "*f*" when the screw is supported at the ends on two constraints and rotated slightly.
For example, the screw KKA Tr 30 A (threading Tr 30 x 6 with 1 start) has straightness of 0.3 on 3.000 mm.
This means that a screw Tr 30x6 3000 mm long resting on two constraints at the ends and slightly rotated displays a camber variation "Δf " less than 0.3 mm at all points of the screw
.



f = screw weight camber

for screws Tr 30x6 with L = 3000 mm
Δf maximum: 0.3 mm

Good screw straightness gives operation with load always centred on the axis, hence uniform distribution of surface contact pressure between screw and nut with resulting smooth running, and regular rotation and traversing.

Trapezoidal screws type KQX lead accuracy 200 - steel C15 1.1141

Stock no. for screw **RIGHT**	Stock no. for screw **LEFT**	**Diameter x lead**	Thread starts	Lead accuracy µm /300 mm	Straightness mm / mm	Weight kg/mt
KQX 10 A R …	KQX 10 A L …	**Tr 10x3**	1	200	0.7 / 1000	0.42
KQX 12 A R …	KQX 12 A L …	**Tr 12x3**	1	200	0.7 / 1000	0.65
KQX 12 B R …	--	**Tr 12x6 (P3)**	2	200	0.7 / 1000	0.65
KQX 14 A R …	KQX 14 A L …	**Tr 14x4**	1	200	0.7 / 1000	0.86
KQX 16 A R …	KQX 16 A L …	**Tr 16x4**	1	200	0.7 / 1500	1.17
KQX 16 B R …	--	**Tr 16x8 (P4)**	2	200	0.7 / 1500	1.17
KQX 18 A R …	KQX 18 A L …	**Tr 18x4**	1	200	0.7 / 1500	1.53
KQX 20 A R …	KQX 20 A L …	**Tr 20x4**	1	200	0.6 / 2000	1.94
KQX 20 B R …	--	**Tr 20x8 (P4)**	2	200	0.6 / 2000	1.94
KQX 20 D R …	--	**Tr 20x20 (P5)**	4	200	0.6 / 2000	1.84
KQX 22 A R …	KQX 22 A L …	**Tr 22x5**	1	200	0.6 / 2000	2.29
KQX 24 A R …	KQX 24 A L …	**Tr 24x5**	1	200	0.4 / 2000	2.79
KQX 25 A R …	KQX 25 A L …	**Tr 25x5**	1	200	0.4 / 2000	3.05
KQX 25 B R …	--	**Tr 25x10 (P5)**	2	200	0.4 / 2000	3.05
KQX 25 E R …	--	**Tr 25x25 (P5)**	5	200	0.4 / 2000	3.05
KQX 26 A R …	KQX 26 A L …	**Tr 26x5**	1	200	0.4 / 2000	3.33
KQX 28 A R …	KQX 28 A L …	**Tr 28x5**	1	200	0.4 / 2000	3.92
KQX 28 B R …	--	**Tr 28x10 (P5)**	2	200	0.4 / 2000	3.92
KQX 30 A R …	KQX 30 A L …	**Tr 30x6**	1	200	0.4 / 3000	4.38
KQX 30 B R …	--	**Tr 30x12 (P6)**	2	200	0.4 / 3000	4.38
KQX 30 F R …	--	**Tr 30x30 (P5)**	6	200	0.4 / 3000	4.57
KQX 32 A R …	KQX 32 A L …	**Tr 32x6**	1	200	0.4 / 3000	5.06
KQX 35 A R …	KQX 35 A L …	**Tr 35x6**	1	200	0.3 / 3000	6.16
KQX 36 A R …	KQX 36 A L …	**Tr 36x6**	1	200	0.3 / 3000	6.56
KQX 40 A R …	KQX 40 A L …	**Tr 40x7**	1	200	0.3 / 3000	8.03
KQX 40 B R …	--	**Tr 40x14 (P7)**	2	200	0.3 / 3000	8.03
KQX 40 E R …	--	**Tr 40x40 (P8)**	5	200	0.3 / 3000	7.90
KQX 44 A R …	KQX 44 A L …	**Tr 44x7**	1	200	0.3 / 3000	9.90
KQX 45 A R …	KQX 45 A L …	**Tr 45x8**	1	200	0.3 / 3000	10.23
KQX 50 A R …	KQX 50 A L …	**Tr 50x8**	1	200	0.3 / 3000	12.90
KQX 55 A R …	--	**Tr 55x9**	1	200	0.3 / 3000	15.51
KQX 60 A R …	KQX 60 A L …	**Tr 60x9**	1	200	0.3 / 3000	18.74
KQX 70 A R …	--	**Tr 70x10**	1	200	0.3 / 3000	25.80
KQX 80 A R …	--	**Tr 80x10**	1	200	0.3 / 3000	34.39

Trapezoidal screws type KKA lead accuracy 50 - steel C45 1.0503

Stock no. for screw **RIGHT**	Stock no. for screw **LEFT**	**Diameter x lead**	Thread starts	Lead accuracy µm /300 mm	Straightness mm / mm	Weight kg/mt
KKA 16 A R …	--	**Tr 16x4**	1	50	0.5 / 1500	1.20
KKA 20 A R …	--	**Tr 20x4**	1	50	0.4 / 2000	2.00
KKA 25 A R …	--	**Tr 25x5**	1	50	0.3 / 2000	3.12
KKA 28 A R …	--	**Tr 28x5**	1	50	0.3 / 2000	4.00
KKA 30 A R …	--	**Tr 30x6**	1	50	0.3 / 3000	4.50
KKA 35 A R …	--	**Tr 35x6**	1	50	0.3 / 3000	6.31
KKA 40 A R …	--	**Tr 40x7**	1	50	0.3 / 3000	8.20
KKA 50 A R …	--	**Tr 50x8**	1	50	0.3 / 3000	13.04

Trapezoidal screws type KFH lead accuracy 100 - steel C45 1.0503

Stock no. for screw **RIGHT**	Stock no. for screw **LEFT**	**Diameter x lead**	Thread starts	Lead accuracy µm /300 mm	Straightness mm / mm	Weight kg/mt
KFH 10 A R …	KFH 10 A L …	**Tr 10x3**	1	100	0.5 / 1000	0.42
KFH 12 A R …	KFH 12 A L …	**Tr 12x3**	1	100	0.5 / 1000	0.65
KFH 14 A R …	KFH 14 A L …	**Tr 14x4**	1	100	0.5 / 1000	0.86
KFH 16 A R …	KFH 16 A L …	**Tr 16x4**	1	100	0.5 / 1500	1.17
KFH 18 A R …	KFH 18 A L …	**Tr 18x4**	1	100	0.5 / 1500	1.53
KFH 20 A R …	KFH 20 A L …	**Tr 20x4**	1	100	0.4 / 2000	1.94
KFH 20 B R …	--	**Tr 20x8 (P4)**	2	100	0.4 / 2000	1.94
KFH 22 A R …	KFH 22 A L …	**Tr 22x5**	1	100	0.4 / 2000	2.29
KFH 25 A R …	KFH 25 A L …	**Tr 25x5**	1	100	0.3 / 2000	3.05
KFH 25 E R …	--	**Tr 25x25 (P5)**	5	100	0.3 / 2000	3.05
KFH 28 A R …	KFH 28 A L …	**Tr 28x5**	1	100	0.3 / 2000	3.92
KFH 28 B R …	--	**Tr 28x10 (P5)**	2	100	0.3 / 2000	3.92
KFH 30 R R …	KFH 30 R L …	**Tr 30x3**	1	100	0.3 / 3000	4.88
KFH 30 Q R …	KFH 30 Q L … *	**Tr 30x4**	1	100	0.3 / 3000	4.72
KFH 30 P R …	KFH 30 P L …	**Tr 30x5**	1	100	0.3 / 3000	4.57
KFH 30 A R …	KFH 30 A L …	**Tr 30x6**	1	100	0.3 / 3000	4.38
KFH 35 R R …	KFH 35 R L …	**Tr 35x3**	1	100	0.3 / 3000	6.77
KFH 35 Q R …	KFH 35 Q L … *	**Tr 35x4**	1	100	0.3 / 3000	6.57
KFH 35 P R …	KFH 35 P L …	**Tr 35x5**	1	100	0.3 / 3000	6.40
KFH 35 A R …	KFH 35 A L …	**Tr 35x6**	1	100	0.3 / 3000	6.16
KFH 35 M R …	--	**Tr 35x8**	1	100	0.3 / 3000	5.85
KFH 40 R R …	KFH 40 R L … *	**Tr 40x3**	1	100	0.3 / 3000	8.95
KFH 40 Q R …	KFH 40 Q L … *	**Tr 40x4**	1	100	0.3 / 3000	8.71
KFH 40 P R …	KFH 40 P L … *	**Tr 40x5**	1	100	0.3 / 3000	8.51
KFH 40 O R …	KFH 40 O L … *	**Tr 40x6**	1	100	0.3 / 3000	8.26
KFH 40 A R …	KFH 40 A L …	**Tr 40x7**	1	100	0.3 / 3000	8.03
KFH 40 M R …	--	**Tr 40x8**	1	100	0.3 / 3000	7.90
KFH 40 I R …	--	**Tr 40x10**	1	100	0.3 / 3000	7.49
KFH 45 A R …	KFH 45 A L …	**Tr 45x8**	1	100	0.3 / 3000	10.23
KFH 50 R R …	KFH 50 R L … *	**Tr 50x3**	1	100	0.3 / 3000	14.26
KFH 50 Q R …	KFH 50 Q L … *	**Tr 50x4**	1	100	0.3 / 3000	13.96
KFH 50 P R …	KFH 50 P L … *	**Tr 50x5**	1	100	0.3 / 3000	13.70
KFH 50 O R …	KFH 50 O L … *	**Tr 50x6**	1	100	0.3 / 3000	13.35
KFH 50 A R …	KFH 50 A L …	**Tr 50x8**	1	100	0.3 / 3000	12.90
KFH 50 I R …	--	**Tr 50x10**	1	100	0.3 / 3000	12.37
KFH 55 A R …	--	**Tr 55x9**	1	100	0.3 / 3000	15.51
KFH 60 O R …	KFH 60 O L … *	**Tr 60x6**	1	100	0.3 / 3000	19.67
KFH 60 N R …	KFH 60 N L … *	**Tr 60x7**	1	100	0.3 / 3000	19.36
KFH 60 A R …	KFH 60 A L …	**Tr 60x9**	1	100	0.3 / 3000	18.74
KFH 70 A R …	KFH 70 A L … *	**Tr 70x10**	1	100	0.3 / 3000	25.80
KFH 80 A R …	KFH 80 A L … *	**Tr 80x10**	1	100	0.3 / 3000	34.39

* The screw may be supplied with rolled or scalped thread as we decide which is best.

Trapezoidal screws type KTS lead accuracy 200 - steel C45 1.0503

Stock no. for screw **RIGHT**	Stock no. for screw **LEFT**	**Diameter x lead**	Thread starts	Lead accuracy µm /300 mm	Straightness mm / mm	Weight kg/mt
KTS 10 A R …	KTS 10 A L …	**Tr 10x3**	1	200	0.7 / 1000	0.42
KTS 12 A R …	KTS 12 A L …	**Tr 12x3**	1	200	0.7 / 1000	0.65
KTS 14 A R …	KTS 14 A L …	**Tr 14x4**	1	200	0.7 / 1000	0.86
KTS 16 A R …	KTS 16 A L …	**Tr 16x4**	1	200	0.7 / 1500	1.17
KTS 18 A R …	KTS 18 A L …	**Tr 18x4**	1	200	0.7 / 1500	1.53
KTS 20 A R …	KTS 20 A L …	**Tr 20x4**	1	200	0.6 / 2000	1.94
KTS 22 A R …	KTS 22 A L …	**Tr 22x5**	1	200	0.6 / 2000	2.29
KTS 25 A R …	KTS 25 A L …	**Tr 25x5**	1	200	0.4 / 2000	3.05
KTS 28 A R …	KTS 28 A L …	**Tr 28x5**	1	200	0.4 / 2000	3.92
KTS 30 A R …	KTS 30 A L …	**Tr 30x6**	1	200	0.4 / 3000	4.38
KTS 35 A R …	KTS 35 A L …	**Tr 35x6**	1	200	0.3 / 3000	6.16
KTS 40 A R …	KTS 40 A L …	**Tr 40x7**	1	200	0.3 / 3000	8.03
KTS 45 A R …	KTS 45 A L …	**Tr 45x8**	1	200	0.3 / 3000	10.23
KTS 50 A R …	KTS 50 A L …	**Tr 50x8**	1	200	0.3 / 3000	12.90
KTS 55 A R …	--	**Tr 55x9**	1	200	0.3 / 3000	15.51
KTS 60 A R …	KTS 60 A L …	**Tr 60x9**	1	200	0.3 / 3000	18.74
KTS 70 A R …	--	**Tr 70x10**	1	200	0.3 / 3000	25.80
KTS 80 A R …	--	**Tr 80x10**	1	200	0.3 / 3000	34.39

Trapez. screws KRP lead accur. 200-A2 stainless s.-AISI 304-1.4301

Stock no. for screw **RIGHT**	Stock no. for screw **LEFT**	**Diameter x lead**	Thread starts	Lead accuracy µm /300 mm	Straightness mm / mm	Weight kg/mt
KRP 12 A R …	KRP 12 A L …	**Tr 12x3**	1	200	0.7 / 1000	0.65
KRP 14 A R …	KRP 14 A L …	**Tr 14x4**	1	200	0.7 / 1000	0.86
KRP 16 A R …	KRP 16 A L …	**Tr 16x4**	1	200	0.7 / 1500	1.17
KRP 18 A R …	KRP 18 A L …	**Tr 18x4**	1	200	0.7 / 1500	1.53
KRP 20 A R …	KRP 20 A L …	**Tr 20x4**	1	200	0.6 / 2000	1.94
KRP 24 A R …	KRP 24 A L …	**Tr 24x5**	1	200	0.4 / 2000	2.79
KRP 25 A R …	KRP 25 A L …	**Tr 25x5**	1	200	0.4 / 2000	3.05
KRP 25 B R …	--	**Tr 25x10 (P5)**	2	200	0.4 / 2000	3.05
KRP 30 A R …	KRP 30 A L …	**Tr 30x6**	1	200	0.4 / 3000	4.38
KRP 35 A R …	KRP 35 A L …	**Tr 35x6**	1	200	0.3 / 3000	6.16
KRP 36 A R …	KRP 36 A L …	**Tr 36x6**	1	200	0.3 / 3000	6.56
KRP 40 A R …	KRP 40 A L …	**Tr 40x7**	1	200	0.3 / 3000	8.03
KRP 50 A R …	KRP 50 A L …	**Tr 50x8**	1	200	0.3 / 3000	12.90

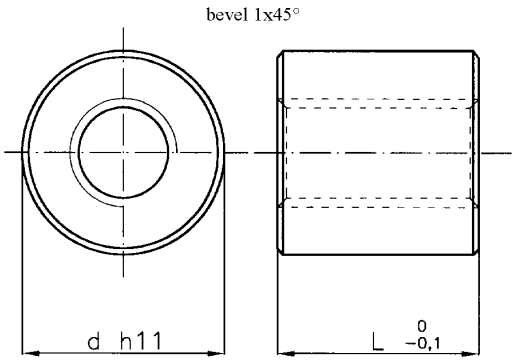
Trapez. screws KAM lead accur. 200-A4 stainless s.-AISI 316-1.4401

Stock no. for screw **RIGHT**	Stock no. for screw **LEFT**	**Diameter x lead**	Thread starts	Lead accuracy µm /300 mm	Straightness mm / mm	Weight kg/mt
KAM 20 A R …	KAM 20 A L …	**Tr 20x4**	1	200	0.6 / 2000	1.94
KAM 24 A R …	KAM 24 A L …	**Tr 24x5**	1	200	0.4 / 2000	2.79
KAM 30 A R …	KAM 30 A L …	**Tr 30x6**	1	200	0.4 / 3000	4.38
KAM 36 A R …	KAM 36 A L …	**Tr 36x6**	1	200	0.3 / 3000	6.56
KAM 40 A R …	KAM 40 A L …	**Tr 40x7**	1	200	0.3 / 3000	8.03
KAM 50 A R …	KAM 50 A L …	**Tr 50x8**	1	200	0.3 / 3000	12.90

Trapezoidal Nut Type MLF - cylindrical steel

Material: 11 S Mn Pb 37 EN 10277 - 1.0737

Nut for fastening or manual movement with small load; steel-to-steel coupling tends to seize. Can be flush welded (MIG-MAG only). Electrode welding is not recommended because of the lead.

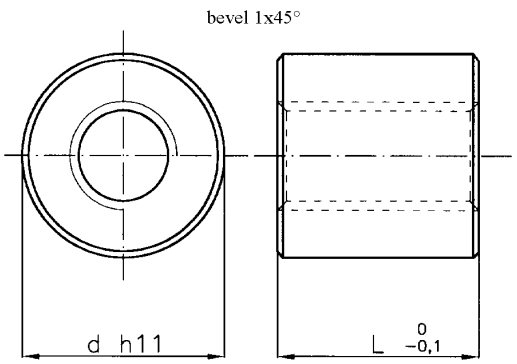


Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
MLF 12 A R	MLF 12 A L	**Tr 12x3**	1	36	36	0.258	592
MLF 14 A R	MLF 14 A L	**Tr 14x4**	1	36	36	0.250	677
MLF 16 A R	MLF 16 A L	**Tr 16x4**	1	36	36	0.238	792
MLF 16 B R	--	**Tr 16x8 (P4)**	2	36	36	0.238	792
MLF 18 A R	MLF 18 A L	**Tr 18x4**	1	36	36	0.224	905
MLF 20 A R	MLF 20 A L	**Tr 20x4**	1	40	40	0.306	1130
MLF 20 B R	--	**Tr 20x8 (P4)**	2	40	40	0.306	1130
MLF 22 A R	MLF 22 A L	**Tr 22x5**	1	40	40	0.290	1225
MLF 25 A R	MLF 25 A L	**Tr 25x5**	1	45	45	0.40	1590
MLF 25 B R	--	**Tr 25x10 (P5)**	2	45	45	0.40	1590
MLF 28 A R	MLF 28 A L	**Tr 28x5**	1	45	45	0.36	1800
MLF 28 B R	--	**Tr 28x10 (P5)**	2	45	45	0.36	1800
MLF 30 A R	MLF 30 A L	**Tr 30x6**	1	50	50	0.52	2120
MLF 30 B R	--	**Tr 30x12 (P6)**	2	50	50	0.52	2120
MLF 35 A R	MLF 35 A L	**Tr 35x6**	1	55	55	0.65	2764
MLF 40 A R	MLF 40 A L	**Tr 40x7**	1	60	60	0.79	3440
MLF 40 B R	--	**Tr 40x14 (P7)**	2	60	60	0.79	3440
MLF 45 A R	MLF 45 A L	**Tr 45x8**	1	65	65	0.95	4186
MLF 50 A R	MLF 50 A L	**Tr 50x8**	1	70	70	1.12	5057
MLF 55 A R	--	**Tr 55x9**	1	80	80	1.78	6345
MLF 60 A R	MLF 60 A L	**Tr 60x9**	1	80	80	1.51	6975

Trapezoidal Nut Type MZP - cylindrical steel

Material: 11 S Mn 30 EN 10277 - 1.0715

Used as fastening nut or for manual movement where load is negligible because steel-to-steel coupling used for moving under load tends to seize. Material is weldable.



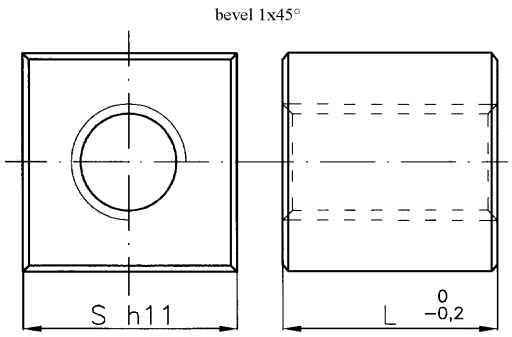
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
MZP 10 A R	MZP 10 A L	**Tr 10x3**	1	22	15	0.037	240
MZP 12 A R	MZP 12 A L	**Tr 12x3**	1	26	18	0.061	296
MZP 12 B R	--	**Tr 12x6 (P3)**	2	26	18	0.061	296
MZP 14 A R	MZP 14 A L	**Tr 14x4**	1	30	21	0.095	395
MZP 16 A R	MZP 16 A L	**Tr 16x4**	1	36	24	0.158	528
MZP 18 A R	MZP 18 A L	**Tr 18x4**	1	40	27	0.218	553
MZP 20 A R	MZP 20 A L	**Tr 20x4**	1	45	30	0.308	847
MZP 22 A R	MZP 22 A L	**Tr 22x5**	1	45	33	0.324	1010
MZP 24 A R	MZP 24 A L	**Tr 24x5**	1	50	36	0.440	1215
MZP 26 A R	MZP 26 A L	**Tr 26x5**	1	50	39	0.454	1440
MZP 28 A R	MZP 28 A L	**Tr 28x5**	1	60	42	0.747	1680
MZP 30 A R	MZP 30 A L	**Tr 30x6**	1	60	45	0.773	1908
MZP 32 A R	MZP 32 A L	**Tr 32x6**	1	60	48	0.790	2186
MZP 36 A R	MZP 36 A L	**Tr 36x6**	1	75	54	1.476	2800
MZP 40 A R	MZP 40 A L	**Tr 40x7**	1	80	60	1.826	3440
MZP 44 A R	MZP 44 A L	**Tr 44x7**	1	80	66	1.878	4200
MZP 50 A R	MZP 50 A L	**Tr 50x8**	1	90	75	2.680	5418
MZP 60 A R	MZP 60 A L	**Tr 60x9**	1	100	90	3.698	7847
MZP 70 A R	MZP 70 A L	**Tr 70x10**	1	110	105	4.884	10200
MZP 80 A R	MZP 80 A L	**Tr 80x10**	1	120	120	6.210	14137

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal nut type CQA - square steel

Material: 11 S Mn Pb 37 EN 10277 - 1.0737

Used as fastening nut or for manual movement where load is negligible because steel-to-steel coupling used for movement under load tends to seize. The material used can be flush welded with the M.I.G. - M.A.G. system only. Electrode welding is not recommended because of the lead.

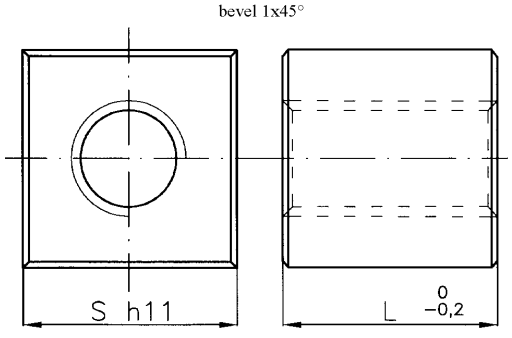


Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**S** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
CQA 12 A R	CQA 12 A L	**Tr 12x3**	1	25	30	0.123	739
CQA 14 A R	CQA 14 A L	**Tr 14x4**	1	30	35	0.211	658
CQA 16 A R	CQA 16 A L	**Tr 16x4**	1	30	35	0.199	770
CQA 18 A R	CQA 18 A L	**Tr 18x4**	1	35	45	0.353	1131
CQA 20 A R	CQA 20 A L	**Tr 20x4**	1	40	50	0.517	1412
CQA 25 A R	CQA 25 A L	**Tr 25x5**	1	45	55	0.683	1943
CQA 30 A R	CQA 30 A L	**Tr 30x6**	1	50	60	0.877	2544
CQA 35 A R	CQA 35 A L	**Tr 35x6**	1	60	70	1.494	3517
CQA 36 A R	CQA 36 A L	**Tr 36x6**	1	60	70	1.465	3630
CQA 40 A R	CQA 40 A L	**Tr 40x7**	1	60	70	1.347	4013
CQA 50 A R	CQA 50 A L	**Tr 50x8**	1	70	90	2.183	6502
CQA 60 A R	CQA 60 A L	**Tr 60x9**	1	80	100	2.990	8718

Trapezoidal nut type QOB - square brass

Material: CW614N-M EN 12164

Used as nut for movement of fairly small loads since the brass does not have great load bearing capability nor wear resistance.



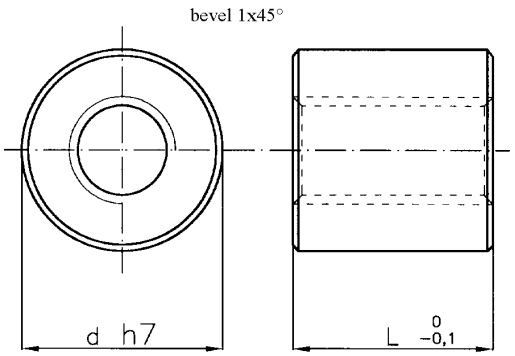
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**S** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
QOB 10 A R	QOB 10 A L	**Tr 10x3**	1	25	20	0.102	320
QOB 12 A R	QOB 12 A L	**Tr 12x3**	1	25	25	0.120	411
QOB 14 A R	QOB 14 A L	**Tr 14x4**	1	30	35	0.244	658
QOB 16 A R	QOB 16 A L	**Tr 16x4**	1	30	35	0.230	770
QOB 18 A R	QOB 18 A L	**Tr 18x4**	1	35	45	0.409	1131
QOB 20 A R	QOB 20 A L	**Tr 20x4**	1	40	50	0.599	1412
QOB 25 A R	QOB 25 A L	**Tr 25x5**	1	45	55	0.792	1943
QOB 30 A R	QOB 30 A L	**Tr 30x6**	1	50	60	1.017	2544
QOB 35 A R	QOB 35 A L	**Tr 35x6**	1	60	70	1.732	3517
QOB 36 A R	QOB 36 A L	**Tr 36x6**	1	60	70	1.698	3630
QOB 40 A R	QOB 40 A L	**Tr 40x7**	1	60	70	1.561	4013

(1) Total bearing surface between screws and nut teeth on the plane which is perpendicolar to axes.

Trapezoidal Nut Type HSN - Cylindrical Bronze

Material: GB-Cu Sn5 Zn5 Pb DIN 17656

Cylindrical bronze nut for movement with modest loads compared with FXN, HDL and HAL.
Good lubrication is recommended.

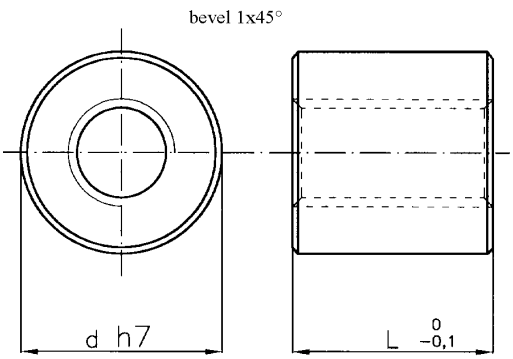


Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
HSN 12 A R	HSN 12 A L	**Tr 12x3**	1	36	36	0.302	594
HSN 14 A R	HSN 14 A L	**Tr 14x4**	1	36	36	0.290	677
HSN 16 A R	HSN 16 A L	**Tr 16x4**	1	36	36	0.276	792
HSN 16 B R	--	**Tr 16x8 (P4)**	2	36	36	0.276	792
HSN 18 A R	HSN 18 A L	**Tr 18x4**	1	36	36	0.259	905
HSN 20 A R	HSN 20 A L	**Tr 20x4**	1	40	40	0.354	1130
HSN 20 B R	--	**Tr 20x8 (P4)**	2	40	40	0.354	1130
HSN 22 A R	HSN 22 A L	**Tr 22x5**	1	40	40	0.33	1225
HSN 25 A R	HSN 25 A L	**Tr 25x5**	1	45	45	0.47	1590
HSN 25 B R	--	**Tr 25x10 (P5)**	2	45	45	0.47	1590
HSN 28 A R	HSN 28 A L	**Tr 28x5**	1	45	45	0.42	1800
HSN 28 B R	--	**Tr 28x10 (P5)**	2	45	45	0.42	1800
HSN 30 A R	HSN 30 A L	**Tr 30x6**	1	50	50	0.60	2120
HSN 30 B R	--	**Tr 30x12 (P6)**	2	50	50	0.60	2120
HSN 35 A R	HSN 35 A L	**Tr 35x6**	1	55	55	0.75	2764
HSN 40 A R	HSN 40 A L	**Tr 40x7**	1	60	60	0.92	3440
HSN 40 B R	--	**Tr 40x14 (P7)**	2	60	60	0.92	3440
HSN 45 A R	HSN 45 A L	**Tr 45x8**	1	65	65	1.10	4186
HSN 50 A R	HSN 50 A L	**Tr 50x8**	1	70	70	1.30	5057
HSN 55 A R	--	**Tr 55x9**	1	80	80	2.07	6345
HSN 60 A R	HSN 60 A L	**Tr 60x9**	1	80	80	1.75	6975

Trapezoidal Nut Type HBD - Cylindrical Bronze

Material: GB-CuSn7ZnPb DIN 17656

Cylindrical bronze nut for movement with modest loads compared with FXN. HDL and HAL. Good lubrication is recommended.

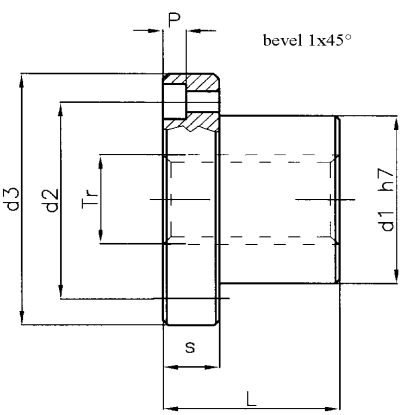


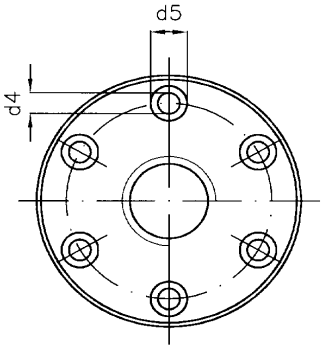
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
HBD 10 A R	HBD 10 A L	**Tr 10x3**	1	22	20	0.057	320
HBD 12 A R	HBD 12 A L	**Tr 12x3**	1	26	24	0.094	396
HBD 12 B R	--	**Tr 12x6 (P3)**	2	26	24	0.094	396
HBD 14 A R	HBD 14 A L	**Tr 14x4**	1	30	28	0.146	526
HBD 16 A R	HBD 16 A L	**Tr 16x4**	1	36	32	0.245	704
HBD 18 A R	HBD 18 A L	**Tr 18x4**	1	40	36	0.337	905
HBD 20 A R	HBD 20 A L	**Tr 20x4**	1	45	40	0.476	1130
HBD 22 A R	HBD 22 A L	**Tr 22x5**	1	45	40	0.456	1225
HBD 24 A R	HBD 24 A L	**Tr 24x5**	1	50	48	0.680	1620
HBD 26 A R	HBD 26 A L	**Tr 26x5**	1	50	48	0.648	1770
HBD 28 A R	HBD 28 A L	**Tr 28x5**	1	60	60	1.237	2400
HBD 30 A R	HBD 30 A L	**Tr 30x6**	1	60	60	1.195	2544
HBD 32 A R	HBD 32 A L	**Tr 32x6**	1	60	60	1.145	2733
HBD 36 A R	HBD 36 A L	**Tr 36x6**	1	75	72	2.282	3732
HBD 40 A R	HBD 40 A L	**Tr 40x7**	1	80	80	2.823	4587
HBD 44 A R	HBD 44 A L	**Tr 44x7**	1	80	80	2.639	5090
HBD 50 A R	HBD 50 A L	**Tr 50x8**	1	90	100	4.142	7224
HBD 60 A R	HBD 60 A L	**Tr 60x9**	1	100	120	5.716	10462
HBD 70 A R	HBD 70 A L	**Tr 70x10**	1	110	140	7.548	10200
HBD 80 A R	HBD 80 A L	**Tr 80x10**	1	120	160	9.60	18850

Trapezoidal Nut Type FTN - Flanged Bronze

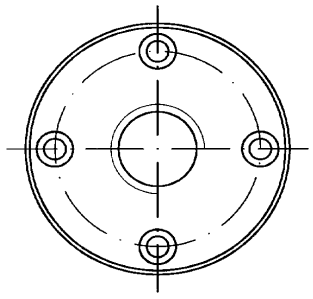
Material: GB-Cu Sn5 Zn5 Pb DIN 17656

Flanged bronze nut for movement of modest loads as compared with FXN, HDL and HAL. Good lubrication is recommended. Flange dimensions make them fully interchangeable with FXN, HDL, HAL and FCS (total length and flange thickness change).





From Tr 24x5 to Tr 60x9
6 holes



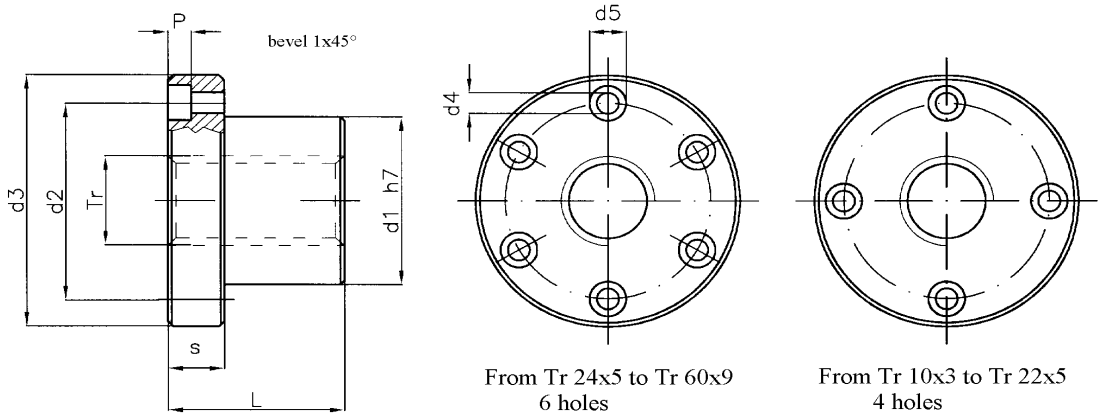
From Tr 10x3 to Tr 22x5
4 holes

Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
FTN 10 A R	FTN 10 A L	**Tr 10x3**	1	18	26	37	4.5	7.5	4.2	22	8	4	M4	0.088	294
FTN 12 A R	FTN 12 A L	**Tr 12x3**	1	18	26	37	4.5	7.5	4.2	22	8	4	M4	0.082	362
FTN 14 A R	FTN 14 A L	**Tr 14x4**	1	20	30	42	5.5	9	5.2	25	10	4	M5	0.123	470
FTN 16 A R	FTN 16 A L	**Tr 16x4**	1	22	32	45	5.5	9	5.2	30	10	4	M5	0.149	660
FTN 18 A R	FTN 18 A L	**Tr 18x4**	1	25	35	48	5.5	9	5.2	35	10	4	M5	0.188	880
FTN 20 A R	FTN 20 A L	**Tr 20x4**	1	30	40	52	5.5	9	5.2	40	10	4	M5	0.267	1130
FTN 22 A R	FTN 22 A L	**Tr 22x5**	1	30	40	52	5.5	9	5.2	40	10	4	M5	0.247	1225
FTN 25 A R	FTN 25 A L	**Tr 25x5**	1	35	48	62	6.5	11	6.5	45	12	6	M6	0.393	1590
FTN 28 A R	FTN 28 A L	**Tr 28x5**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.532	2000
FTN 30 R R	FTN 30 R L	**Tr 30x3**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.482	2238
FTN 30 Q R	FTN 30 Q L	**Tr 30x4**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.487	2200
FTN 30 P R	FTN 30 P L	**Tr 30x5**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.492	2160
FTN 30 A R	FTN 30 A L	**Tr 30x6**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.497	2120
FTN 35 R R	FTN 35 R L	**Tr 35x3**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.862	3160
FTN 35 Q R	FTN 35 Q L	**Tr 35x4**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.869	3110
FTN 35 P R	FTN 35 P L	**Tr 35x5**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.876	3060
FTN 35 A R	FTN 35 A L	**Tr 35x6**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.883	3015
FTN 35 M R	--	**Tr 35x8**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.898	2920
FTN 40 R R	FTN 40 R L	**Tr 40x3**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.030	3930
FTN 40 Q R	FTN 40 Q L	**Tr 40x4**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.039	3880
FTN 40 P R	FTN 40 P L	**Tr 40x5**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.048	3828
FTN 40 O R	FTN 40 O L	**Tr 40x6**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.057	3778
FTN 40 A R	FTN 40 A L	**Tr 40x7**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.066	3727
FTN 40 M R	--	**Tr 40x8**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.075	3675
FTN 45 A R	FTN 45 A L	**Tr 45x8**	1	55	72	90	8.5	14	8.5	65	15	6	M8	0.999	4186
FTN 50 R R	FTN 50 R L	**Tr 50x3**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.679	6095
FTN 50 Q R	FTN 50 Q L	**Tr 50x4**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.693	6030
FTN 50 P R	FTN 50 P L	**Tr 50x5**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.707	5970
FTN 50 O R	FTN 50 O L	**Tr 50x6**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.721	5905
FTN 50 A R	FTN 50 A L	**Tr 50x8**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.749	5780
FTN 55 A R	--	**Tr 55x9**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.475	6345
FTN 60 O R	FTN 60 O L	**Tr 60x6**	1	75	95	120	12.5	19	12.5	100	25	6	M12	2.865	8950
FTN 60 N R	FTN 60 N L	**Tr 60x7**	1	75	95	120	12.5	19	12.5	100	25	6	M12	2.886	8875
FTN 60 A R	FTN 60 A L	**Tr 60x9**	1	75	95	120	12.5	19	12.5	100	25	6	M12	2.927	8718

Trapezoidal nut Type FXN - Flanged Bronze

Material: GB-Cu Sn12 DIN 17656

Tin bronze nut especially designed for continuous movement with good wear resistance. Good lubrication is recommended. Flange dimensions make them fully interchangeable with FTN, HDL, HAL and FCS (total length and flange thickness change).



From Tr 24x5 to Tr 60x9
6 holes

From Tr 10x3 to Tr 22x5
4 holes

Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
FXN 10 A R	FXN 10 A L	**Tr 10x3**	1	18	26	37	4.5	7.5	4.2	22	8	4	M4	0.088	294
FXN 12 A R	FXN 12 A L	**Tr 12x3**	1	18	26	37	4.5	7.5	4.2	22	8	4	M4	0.082	362
FXN 12 B R	--	**Tr 12x6 (P3)**	2	18	26	37	4.5	7.5	4.2	22	8	4	M4	0.082	362
FXN 14 A R	FXN 14 A L	**Tr 14x4**	1	20	30	42	5.5	9	5.2	25	10	4	M5	0.123	470
FXN 16 A R	FXN 16 A L	**Tr 16x4**	1	22	32	45	5.5	9	5.2	30	10	4	M5	0.149	660
FXN 16 B R	--	**Tr 16x8 (P4)**	2	22	32	45	5.5	9	5.2	30	10	4	M5	0.149	660
FXN 18 A R	FXN 18 A L	**Tr 18x4**	1	25	35	48	5.5	9	5.2	35	10	4	M5	0.188	880
FXN 20 A R	FXN 20 A L	**Tr 20x4**	1	30	40	52	5.5	9	5.2	40	10	4	M5	0.267	1130
FXN 20 B R	--	**Tr 20x8 (P4)**	2	30	40	52	5.5	9	5.2	40	10	4	M5	0.267	1130
FXN 20 D R	--	**Tr 20x20 (P5)**	4	30	40	52	5.5	9	5.2	40	10	4	M5	0.270	1100
FXN 22 A R	FXN 22 A L	**Tr 22x5**	1	30	40	52	5.5	9	5.2	40	10	4	M5	0.247	1225
FXN 24 A R	FXN 24 A L	**Tr 24x5**	1	35	48	62	6.5	11	6.5	45	12	6	M6	0.408	1520
FXN 25 A R	FXN 25 A L	**Tr 25x5**	1	35	48	62	6.5	11	6.5	45	12	6	M6	0.393	1590
FXN 25 B R	--	**Tr 25x10 (P5)**	2	35	48	62	6.5	11	6.5	45	12	6	M6	0.393	1590
FXN 25 E R	--	**Tr 25x25 (P5)**	5	35	48	62	6.5	11	6.5	45	12	6	M6	0.393	1590
FXN 26 A R	FXN 26 A L	**Tr 26x5**	1	35	48	62	6.5	11	6.5	45	12	6	M6	0.378	1660
FXN 28 A R	FXN 28 A L	**Tr 28x5**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.532	2000
FXN 28 B R	--	**Tr 28x10 (P5)**	2	40	53	68	6.5	11	6.5	50	12	6	M6	0.532	2000
FXN 30 A R	FXN 30 A L	**Tr 30x6**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.497	2120
FXN 30 B R	--	**Tr 30x12 (P6)**	2	40	53	68	6.5	11	6.5	50	12	6	M6	0.497	2120
FXN 30 F R	--	**Tr 30x30 (P5)**	6	40	53	68	6.5	11	6.5	50	12	6	M6	0.492	2590
FXN 32 A R	FXN 32 A L	**Tr 32x6**	1	40	53	68	6.5	11	6.5	50	12	6	M6	0.455	2277
FXN 35 A R	FXN 35 A L	**Tr 35x6**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.883	3015
FXN 36 A R	FXN 36 A L	**Tr 36x6**	1	50	63	78	8.5	14	8.5	60	15	6	M8	0.854	3110
FXN 40 A R	FXN 40 A L	**Tr 40x7**	1	55	68	84	8.5	14	8.5	65	15	6	M8	1.066	3727
FXN 40 B R	--	**Tr 40x14 (P7)**	2	55	68	84	8.5	14	8.5	65	15	6	M8	1.066	3727
FXN 40 E R	--	**Tr 40x40 (P8)**	5	55	68	84	8.5	14	8.5	65	15	6	M8	1.075	3675
FXN 44 A R	FXN 44 A L	**Tr 44x7**	1	55	72	90	8.5	14	8.5	65	15	6	M8	1.029	4135
FXN 45 A R	FXN 45 A L	**Tr 45x8**	1	55	72	90	8.5	14	8.5	65	15	6	M8	0.999	4186
FXN 50 A R	FXN 50 A L	**Tr 50x8**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.749	5780
FXN 55 A R	--	**Tr 55x9**	1	65	80	100	10.5	17	10.5	80	20	6	M10	1.475	6345
FXN 60 A R	FXN 60 A L	**Tr 60x9**	1	75	95	120	12.5	19	12.5	100	25	6	M12	2.927	8718

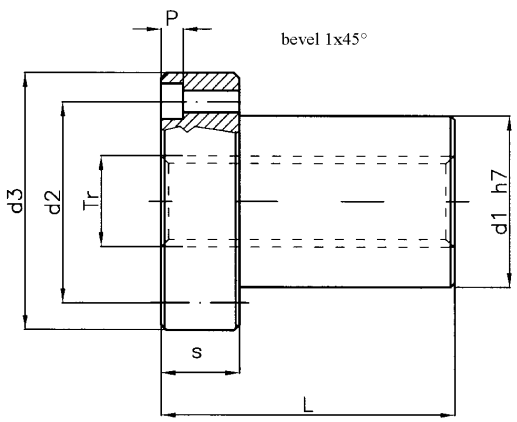
(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

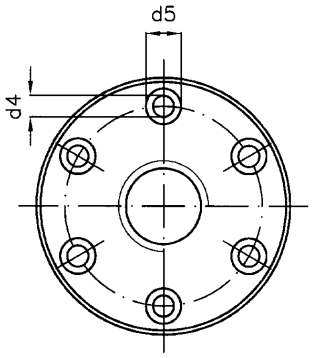
Trapezoidal Nut Type HDL - Flanged Bronze

Material: GB-Cu Sn12 DIN 17656

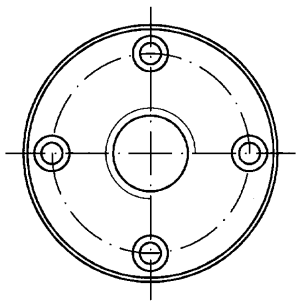
Flanged Bronze Nut of considerable length 3 x d suitable for operation under load with high loads and/or high movement speed. The special length of 3 x d greatly limits wear. Good lubrication is recommended.

Flange dimensions make them fully interchangeable with FTN, HDL, HAL and FCS (total length and flange thickness change).





From Tr 24x5 to Tr 60x9
6 holes



From Tr 10x3 to Tr 22x5
4 holes

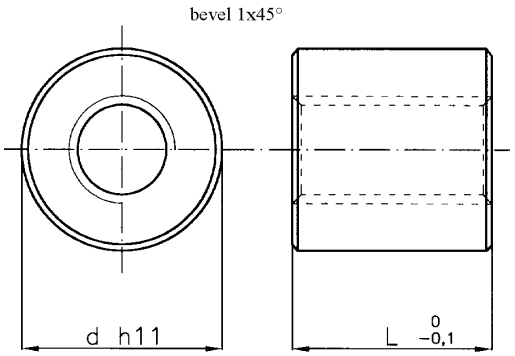
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
HDL 14 A R	HDL 14 A L	**Tr 14x4**	1	20	30	42	5.5	9	5.2	42	10	4	M5	0.151	790
HDL 16 A R	HDL 16 A L	**Tr 16x4**	1	22	32	45	5.5	9	5.2	48	10	4	M5	0.183	1056
HDL 16 B R	--	**Tr 16x8 (P4)**	2	22	32	45	5.5	9	5.2	48	10	4	M5	0.183	1056
HDL 18 A R	HDL 18 A L	**Tr 18x4**	1	25	35	48	5.5	9	5.2	54	10	4	M5	0.233	1356
HDL 20 A R	HDL 20 A L	**Tr 20x4**	1	30	40	52	5.5	9	5.2	60	12	4	M5	0.368	1696
HDL 20 B R	--	**Tr 20x8 (P4)**	2	30	40	52	5.5	9	5.2	60	12	4	M5	0.368	1696
HDL 22 A R	HDL 22 A L	**Tr 22x5**	1	30	40	52	5.5	9	5.2	60	12	4	M5	0.338	1838
HDL 25 A R	HDL 25 A L	**Tr 25x5**	1	35	48	62	6.5	11	6.5	75	15	6	M6	0.586	2650
HDL 25 B R	--	**Tr 25x10 (P5)**	2	35	48	62	6.5	11	6.5	75	15	6	M6	0.586	2650
HDL 25 E R	--	**Tr 25x25 (P5)**	5	35	48	62	6.5	11	6.5	75	15	6	M6	0.586	2650
HDL 28 A R	HDL 28 A L	**Tr 28x5**	1	40	53	68	6.5	11	6.5	90	18	6	M6	0.903	3600
HDL 28 B R	--	**Tr 28x10 (P5)**	2	40	53	68	6.5	11	6.5	90	18	6	M6	0.903	3600
HDL 30 A R	HDL 30 A L	**Tr 30x6**	1	40	53	68	6.5	11	6.5	90	18	6	M6	0.841	3816
HDL 30 B R	--	**Tr 30x12 (P6)**	2	40	53	68	6.5	11	6.5	90	18	6	M6	0.841	3816
HDL 32 A R	HDL 32 A L	**Tr 32x6**	1	40	53	68	6.5	11	6.5	90	18	6	M6	0.765	4100
HDL 35 A R	HDL 35 A L	**Tr 35x6**	1	50	63	78	8.5	14	8.5	105	20	6	M8	1.439	5277
HDL 40 A R	HDL 40 A L	**Tr 40x7**	1	55	68	84	8.5	14	8.5	120	25	6	M8	1.937	6880
HDL 40 I R	--	**Tr 40x10**	1	55	68	84	8.5	14	8.5	120	25	6	M8	1.986	6597
HDL 40 B R	--	**Tr 40x14 (P7)**	2	55	68	84	8.5	14	8.5	120	25	6	M8	1.937	6597
HDL 50 A R	HDL 50 A L	**Tr 50x8**	1	65	80	100	10.5	17	10.5	150	30	6	M10	3.075	10840
HDL 50 I R	--	**Tr 50x10**	1	65	80	100	10.5	17	10.5	150	30	6	M10	3.127	10600
HDL 60 A R	HDL 60 A L	**Tr 60x9**	1	75	95	120	12.5	19	12.5	180	35	6	M12	4.797	15700

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type HDA - Cylindrical Stainless Steel

Material: Stainless Steel AISI 303 - 1.4305

Nut of AISI 303 stainless steel especially designed to withstand corrosive chemical agents.



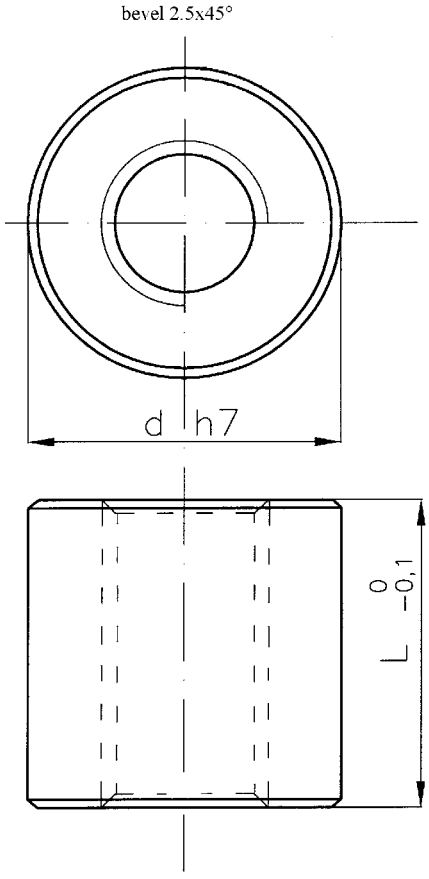
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
HDA 12 A R	HDA 12 A L	**Tr 12x3**	1	26	18	0.060	297
HDA 16 A R	HDA 16 A L	**Tr 16x4**	1	36	24	0.157	528
HDA 20 A R	HDA 20 A L	**Tr 20x4**	1	45	30	0.305	847
HDA 24 A R	HDA 24 A L	**Tr 24x5**	1	50	36	0.436	1215
HDA 30 A R	HDA 30 A L	**Tr 30x6**	1	60	45	0.766	1908
HDA 36 A R	HDA 36 A L	**Tr 36x6**	1	75	54	1.462	2799
HDA 40 A R	HDA 40 A L	**Tr 40x7**	1	80	60	1.808	3440
HDA 50 A R	HDA 50 A L	**Tr 50x8**	1	90	75	2.653	5418

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type BIG - Cylindrical Bronze

Material: GB-Cu Sn12 DIN 17656

Large cylindrical nut with nonstandard pitches especially designed for replacement.



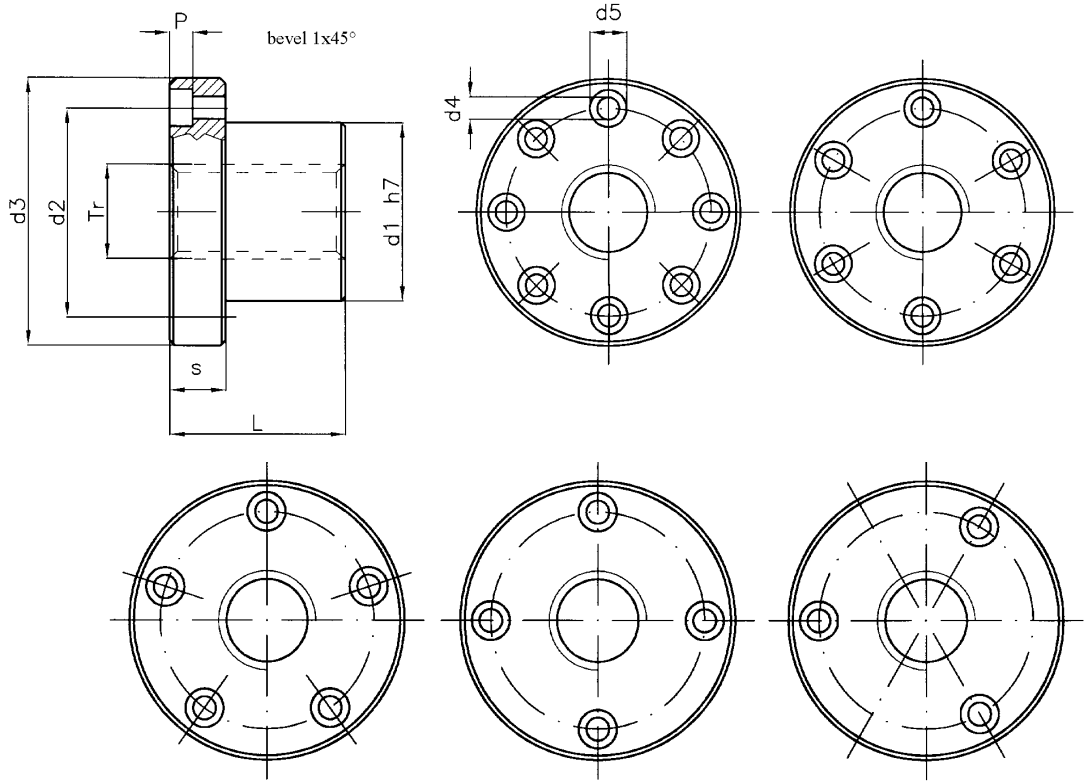
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
BIG 30 R R	BIG 30 R L	**Tr 30x3**	1	78	90	3.31	1600
BIG 30 Q R	BIG 30 Q L	**Tr 30x4**	1	78	90	3.32	3560
BIG 30 P R	BIG 30 P L	**Tr 30x5**	1	78	90	3.33	3500
BIG 30 A R	BIG 30 A L	**Tr 30x6**	1	78	90	3.33	3435
BIG 35 R R	BIG 35 R L	**Tr 35x3**	1	88	105	4.85	5000
BIG 35 Q R	BIG 35 Q L	**Tr 35x4**	1	88	105	4.86	4900
BIG 35 P R	BIG 35 P L	**Tr 35x5**	1	88	105	4.87	4820
BIG 35 A R	BIG 35 A L	**Tr 35x6**	1	88	105	4.89	4750
BIG 40 R R	BIG 40 R L	**Tr 40x3**	1	98	120	6.80	6530
BIG 40 Q R	BIG 40 Q L	**Tr 40x4**	1	98	120	6.82	6447
BIG 40 P R	BIG 40 P L	**Tr 40x5**	1	98	120	6.83	6360
BIG 40 O R	BIG 40 O L	**Tr 40x6**	1	98	120	6.85	6277
BIG 40 A R	BIG 40 A L	**Tr 40x7**	1	98	120	6.87	6200
BIG 40 I R	--	**Tr 40x10**	1	98	120	6.91	6597
BIG 50 R R	BIG 50 R L	**Tr 50x3**	1	108	150	9.74	10300
BIG 50 Q R	BIG 50 Q L	**Tr 50x4**	1	108	150	9.77	10180
BIG 50 P R	BIG 50 P L	**Tr 50x5**	1	108	150	9.79	10070
BIG 50 O R	BIG 50 O L	**Tr 50x6**	1	108	150	9.82	9965
BIG 50 A R	BIG 50 A L	**Tr 50x8**	1	108	150	9.87	9750
BIG 50 I R	--	**Tr 50x10**	1	108	150	9.92	10600
BIG 60 O R	--	**Tr 60x6**	1	118	180	13.29	14500
BIG 60 N R	--	**Tr 60x7**	1	118	180	13.32	14380
BIG 60 A R	--	**Tr 60x9**	1	118	180	13.36	14130

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type CBC - Flanged Bronze

Material: GB-Cu Sn12 DIN 17656

Flanged Bronze Nut designed for movement with modest loads as compared with FXN, HDL and HAL.
Good lubrication is recommended. Caution: These nuts have flange and fastening hole dimensions which make them NON- INTERCHANGEABLE with other flanged nuts (FTN, FXN, HDL, HAL, FCS).



PAY ATTENTION TO THE NUMBER OF FASTENING SCREW HOLES SPECIFIED IN THE TABLE

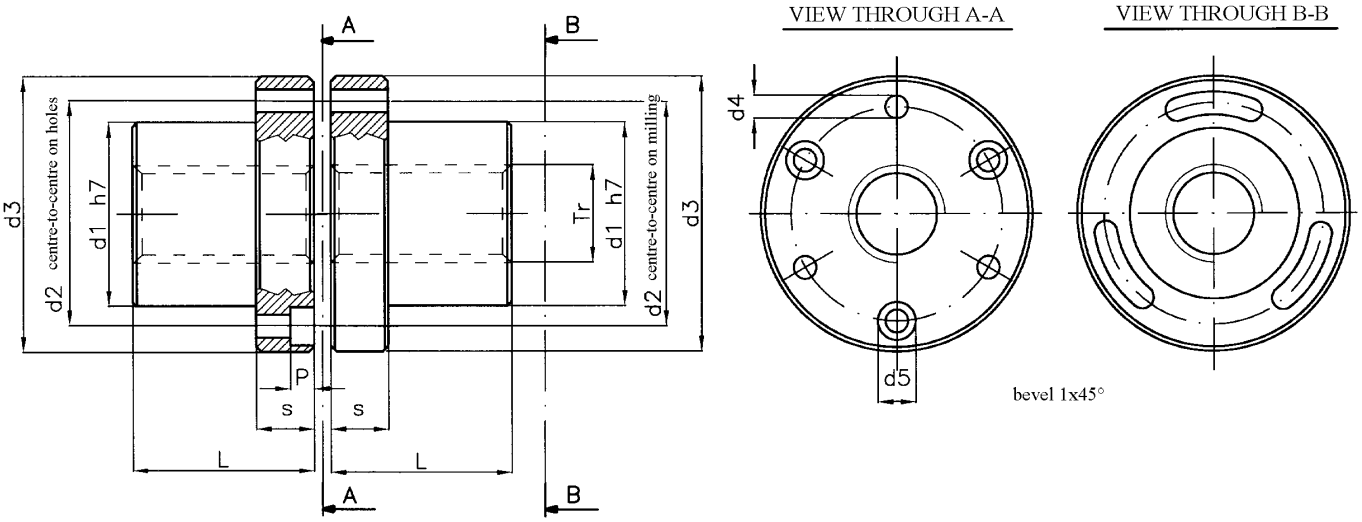
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
CBC 10 A R	CBC 10 A L	**Tr 10x3**	1	16	24	32	4.5	7.5	4.2	20	8	3	M4	0.062	267
CBC 12 A R	CBC 12 A L	**Tr 12x3**	1	18	26	35	4.5	7.5	4.2	22	8	4	M4	0.074	362
CBC 14 A R	CBC 14 A L	**Tr 14x4**	1	20	30	40	5.5	9	5.2	25	10	4	M5	0.111	470
CBC 16 A R	CBC 16 A L	**Tr 16x4**	1	22	32	42	5.5	9	5.2	30	10	4	M5	0.131	660
CBC 18 A R	CBC 18 A L	**Tr 18x4**	1	25	35	45	5.5	9	5.2	35	10	4	M5	0.168	880
CBC 20 A R	CBC 20 A L	**Tr 20x4**	1	30	40	50	5.5	9	5.2	40	10	5	M5	0.248	1130
CBC 25 A R	CBC 25 A L	**Tr 25x5**	1	35	48	60	6.5	11	6.5	45	12	5	M6	0.380	1590
CBC 28 A R	CBC 28 A L	**Tr 28x5**	1	40	53	65	6.5	11	6.5	50	12	5	M6	0.505	2000
CBC 30 A R	CBC 30 A L	**Tr 30x6**	1	40	53	65	6.5	11	6.5	50	12	5	M6	0.470	2120
CBC 35 A R	CBC 35 A L	**Tr 35x6**	1	50	63	75	6.5	11	6.5	60	12	6	M6	0.815	3015
CBC 36 A R	CBC 36 A L	**Tr 36x6**	1	50	63	75	6.5	11	6.5	60	12	6	M6	0.786	3110
CBC 40 A R	CBC 40 A L	**Tr 40x7**	1	55	68	80	6.5	11	6.5	65	12	6	M6	0.971	3727
CBC 45 A R	CBC 45 A L	**Tr 45x8**	1	60	73	85	6.5	11	6.5	80	12	8	M6	1.254	5152
CBC 50 A R	CBC 50 A L	**Tr 50x8**	1	65	78	90	6.5	11	6.5	80	12	8	M6	1.372	5780
CBC 55 A R	--	**Tr 55x9**	1	70	85	100	8.5	14	8.5	95	15	6	M8	1.893	7534
CBC 60 A R	CBC 60 A L	**Tr 60x9**	1	75	90	105	8.5	14	8.5	95	15	6	M8	2.042	8282
CBC 70 A R	CBC 70 A L	**Tr 70x10**	1	90	105	120	8.5	14	8.5	120	18	8	M8	3.715	8742
CBC 80 A R	CBC 80 A L	**Tr 80x10**	1	100	115	130	8.5	14	8.5	120	18	8	M8	4.178	14137

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type CDF - Double Flanged Bronze

Material: GB-Cu Sn12 DIN 17656

Tin bronze nut especially designed for continuous movement with good wear resistance. CDF nuts allow play adjustment between screw and nut. Working with preloaded nuts is only possible when using ball screws. Good lubrication is recommended.



Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
CDF 25 B R	--	**Tr 25x10 (P5)**	2	35	48	62	6.5	11	6.5	45	12	6	M6	0.786	1590
CDF 25 E R	--	**Tr 25x25 (P5)**	5	35	48	62	6.5	11	6.5	45	12	6	M6	0.786	1590
CDF 28 B R	--	**Tr 28x10 (P5)**	2	40	53	68	6.5	11	6.5	50	12	6	M6	1.064	2000

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

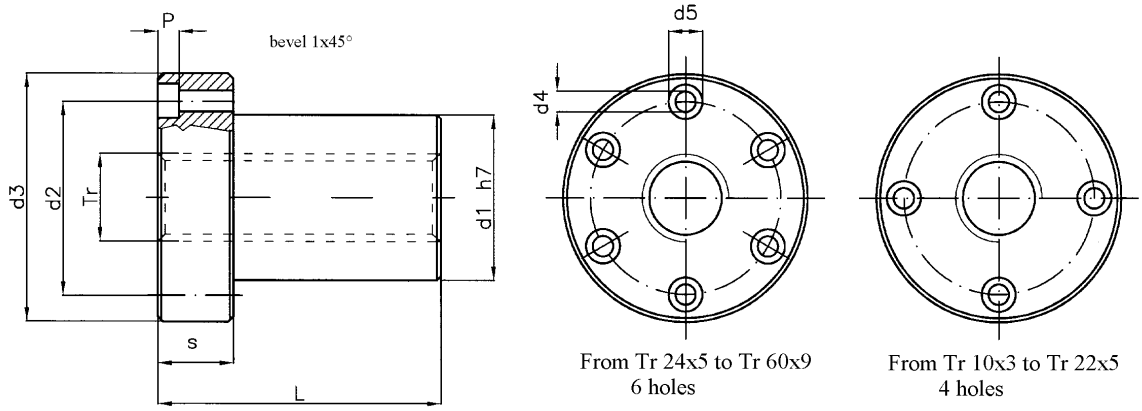
Installation Instructions:

1) Nuts are supplied in pairs tied together. The pairs should be kept together when installed. Each nut pair has a notch cut on the external cylindrical part of the flange for correct installation. This notch should be identified immediately and referred to when installing as set forth below.
2) Identify the nut to be fastened first; it is the nut with six holes in the flange and of which only three have seats for the cylindrical head screws with recessed hexagon (socket head screw). The second nut is the one with grooves on the flange and is to be fastened later.
3) Fastening of the first nut to the structure which is to house it; fit the socket head screws in the three holes with seats for these screws. Insert the nut in its housing and fastened the three screws well; now the first nut is completely tightened in its seat.
4) Fastening the second nut, the one which permits play adjustment. Identify the correct-assembly notch on both the nuts. Bring the second nut to the first nut flange-to-flange. Align the assembly notches on the flanges of the two nuts and fit in the three flange grooves the three screws which will be used for assembly of the second nut on the machine frame. Turn in the three screws just inserted in such a way that the two nuts rest against each other but do not tighten the screws yet. The nuts must rotate together.
5) Screw assembly; assemble the screw by screwing it into the two nuts.
6) Play adjustment. Rotate the second nut against the first nut so as to have the desired play and then tighten the three nuts locking the second nut to the frame.

Trapezoidal Nut Type HAL - Flanged Alluminium Bronze

Material: G Ni Al Bz F60 DIN 1714

Long flanged bronze nut 3 x d designed for operation with heavy loads thanks to the extreme hardness of alluminium bronze. The special 3 x d length greatly limits wear. The dimensions of the flange make them fully interchangeaable with FTN, FXN, HDL and FCS (total length and flange thickness change).
Generous and continuous lubrication of the HAL is recommended during use.

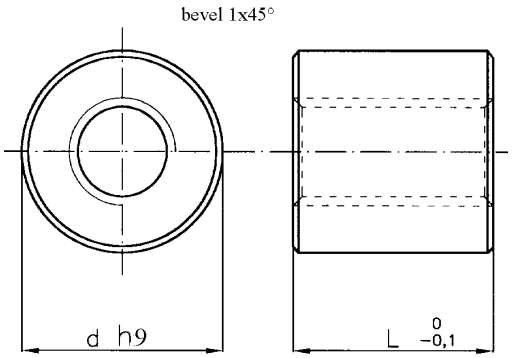


Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
HAL 30 A R	HAL 30 A L	**Tr 30x6**	1	40	53	68	6.5	11	6.5	90	18	6	M6	0.758	3816
HAL 35 A R	--	**Tr 35x6**	1	50	63	78	8.5	14	8.5	105	20	6	M8	1.297	5277
HAL 40 A R	HAL 40 A L	**Tr 40x7**	1	55	68	84	8.5	14	8.5	120	25	6	M8	1.746	6880
HAL 40 I R	--	**Tr 40x10**	1	55	68	84	8.5	14	8.5	120	25	6	M8	1.790	6597
HAL 50 A R	HAL 50 A L	**Tr 50x8**	1	65	80	100	10.5	17	10.5	150	30	6	M10	2.771	10840
HAL 50 I R	--	**Tr 50x10**	1	65	80	100	10.5	17	10.5	150	30	6	M10	2.817	10600
HAL 60 A R	--	**Tr 60x9**	1	75	95	120	12.5	19	12.5	180	35	6	M12	4.322	15700

Trapezoidal Nut Type MPH - Cylindrical Plastic

Materiale: PA 6 + Mo S2 DIN 7728

Highly wear resistant cylindrical plastic nut. Designed for low to medium loads. Lubricate MPH nuts occasionally with grease or oil to improve life. Do not use molybdenum disulfide MoS2 lubricants or graphite.
These nuts are to be assembled only on our precision rolled screws which have suitable surface roughness and hardness. It is not possible to assemble MPHs on screws made by machining . Be careful of the water-absorption of this material; it is not recommended for precision coupling due to the considerable dimensional variation resulting from relative humidity of the environment. Before selecting the plastic nut type it is recomended to consult our engineering department.



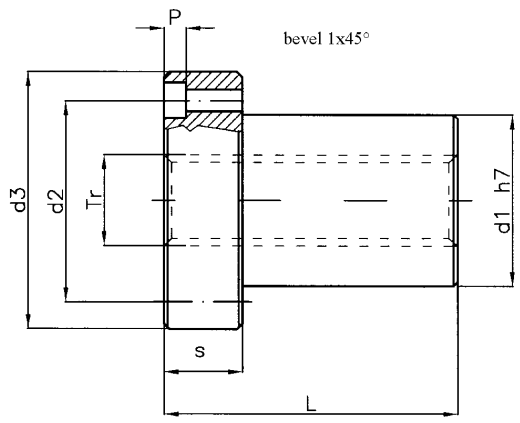
Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d** mm	**L** mm	**Wt.** kg/cad.	**At** mm^2 (1)
MPH 12 A R	MPH 12 A L	**Tr 12x3**	1	26	24	0.012	396
MPH 16 A R	MPH 16 A L	**Tr 16x4**	1	36	32	0.030	704
MPH 20 A R	MPH 20 A L	**Tr 20x4**	1	45	40	0.060	1130
MPH 25 A R	MPH 25 A L	**Tr 25x5**	1	50	48	0.083	1696
MPH 28 A R	MPH 28 A L	**Tr 28x5**	1	60	60	0.154	2400
MPH 28 B R	--	**Tr 28x10 (P5)**	2	60	60	0.154	2400
MPH 30 A R	MPH 30 A L	**Tr 30x6**	1	60	60	0.150	2544
MPH 35 A R	MPH 35 A L	**Tr 35x6**	1	75	72	0.290	3618
MPH 40 A R	MPH 40 A L	**Tr 40x7**	1	80	80	0.355	4587
MPH 50 A R	MPH 50 A L	**Tr 50x8**	1	90	100	0.523	7225

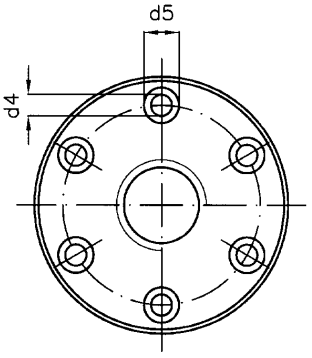
Trapezoidal Nut Type FCS - Flanged Self-lubricating Plastic

Material: PA 6 + additives and solid lubricants DIN 7728

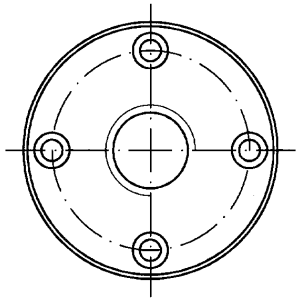
This Type of nut is made of a very wear-resistant perfectly self-lubricating plastic. It doesn't require any other lubrication as long as it is in use. The 3 x d length gives better load distribution and limits wear. The flange dimensions make them fully interchangeable with The FTN, FXN, HDL and HAL (total length and flange thickness are variable).

These nuts are to be assembled only on our precision rolled screws which have suitable surface finish and hardness. It is not possible to assemble the FCS on screws made by machining. Be careful of water absorbtion of this material; it is not recommended for precision coupling due to the considerable dimensional variation resulting from relative environmental humidity. Before selecting the plastic nut type it is recommended to consult our engineering department.





From Tr 24x5 to Tr 60x9
6 holes



From Tr 10x3 to Tr 22x5
4 holes

Nut stock no. **RIGHT**	Nut stock no. **LEFT**	**Diameter x lead**	Thread starts	**d1** mm	**d2** mm	**d3** mm	**d4** mm	**d5** mm	**p** mm	**L** mm	**s** mm	**no.** screw holes	Fastening screws (class 8.8)	**Wt.** kg/cad.	**At** mm^2 (1)
FCS 12 A R	FCS 12 A L	**Tr 12x3**	1	18	26	37	4.5	7.5	4.2	36	12	4	M4	0.016	594
FCS 16 A R	FCS 16 A L	**Tr 16x4**	1	22	32	45	5.5	9	5.2	48	16	4	M5	0.030	1056
FCS 20 A R	FCS 20 A L	**Tr 20x4**	1	30	40	52	5.5	9	5.2	60	20	4	M5	0.057	1696
FCS 20 B R	--	**Tr 20x8 (P4)**	2	30	40	52	5.5	9	5.2	60	20	4	M5	0.057	1696
FCS 25 A R	FCS 25 A L	**Tr 25x5**	1	35	48	62	6.5	11	6.5	75	25	6	M6	0.094	2650
FCS 28 A R	FCS 28 A L	**Tr 28x5**	1	40	53	68	6.5	11	6.5	90	30	6	M6	0.142	3600
FCS 28 B R	--	**Tr 28x10 (P5)**	2	40	53	68	6.5	11	6.5	90	30	6	M6	0.142	3600
FCS 30 A R	FCS 30 A L	**Tr 30x6**	1	40	53	68	6.5	11	6.5	90	30	6	M6	0.135	3816
FCS 35 A R	FCS 35 A L	**Tr 35x6**	1	50	63	78	8.5	14	8.5	105	35	6	M8	0.221	5277
FCS 40 A R	FCS 40 A L	**Tr 40x7**	1	55	68	84	8.5	14	8.5	120	40	6	M8	0.289	6880
FCS 40 I R	--	**Tr 40x10**	1	55	68	84	8.5	14	8.5	120	40	6	M8	0.252	6597
FCS 50 A R	FCS 50 A L	**Tr 50x8**	1	65	80	100	10.5	17	10.5	150	50	6	M10	0.476	10840

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal screw specifications Also see pages for each screw type

Diameter x lead	d 1 Major diameter tollerance 4 h min. mm	d 1 max. mm	d 2 Effective or pitch dia. tollerance 7 e min. mm	d 2 max. mm	d 3 Minor diameter tollerance 7 h min. mm	d 3 max. mm	Thread starts	Lead angle	(1) Efficiency η f=0.1	Efficiency η f=0.2	(2) H 1 mm	I Moment of inertia
Tr 10 x 3	9.764	10.000	8.203	8.415	6.150	6.500	1	6°25’	0.52	0.35	1.5	70
Tr 12 x 3	11.764	12.000	10.191	10.415	8.135	8.500	1	5°12’	0.47	0.31	1.5	215
Tr 12 x 6 (P3)	11.764	12.000	10.191	10.415	8.135	8.500	2	10°19’	0.63	0.46	1.5	215
Tr 14 x 4	13.700	14.000	11.640	11.905	9.074	9.500	1	6°03’	0.51	0.34	2.0	333
Tr 16 x 4	15.700	16.000	13.640	13.905	11.074	11.500	1	5°12’	0.47	0.31	2.0	738
Tr 16 x 8 (P4)	15.700	16.000	13.640	13.905	11.074	11.500	2	10°19’	0.63	0.46	2.0	738
Tr 18 x 4	17.700	18.000	15.640	15.905	13.074	13.500	1	4°33’	0.44	0.28	2.0	1434
Tr 20 x 4	19.700	20.000	17.640	17.905	15.074	15.500	1	4°03’	0.41	0.26	2.0	2534
Tr 20 x 8 (P4)	19.700	20.000	17.640	17.905	15.074	15.500	2	8°03’	0.58	0.40	2.0	2534
Tr 20 x 20 (P5)	19.665	20.000	17.114	17.394	14.044	14.500	4	20°00’	0.76	0.60	2.5	1910
Tr 22 x 5	21.665	22.000	19.114	19.394	16.044	16.500	1	4°40’	0.45	0.28	2.5	3232
Tr 24 x 5	23.665	24.000	21.094	21.394	18.019	18.500	1	4°14’	0.42	0.27	2.5	5175
Tr 25 x 5	24.665	25.000	22.094	22.394	19.019	19.500	1	4°03’	0.41	0.26	2.5	6423
Tr 25 x 10 (P5)	24.665	25.000	22.094	22.394	19.019	19.500	2	8°03’	0.58	0.40	2.5	6423
Tr 25 x 25 (P5)	24.665	25.000	22.094	22.394	19.019	19.500	5	19°30’	0.75	0.60	2.5	6423
Tr 26 x 5	25.665	26.000	23.094	23.394	20.019	20.500	1	3°52’	0.40	0.25	2.5	7884
Tr 28 x 5	27.665	28.000	25.094	25.394	22.019	22.500	1	3°34’	0.38	0.23	2.5	11539
Tr 28 x 10 (P5)	27.665	28.000	25.094	25.394	22.019	22.500	2	7°07’	0.55	0.37	2.5	11539
Tr 30 x 3	29.764	30.000	28.165	28.415	26.135	26.500	1	1°55’	0.25	0.14	1.5	22900
Tr 30 x 4	29.700	30.000	27.640	27.905	25.074	25.500	1	2°36’	0.31	0.18	2.0	19400
Tr 30 x 5	29.665	30.000	27.094	27.394	24.019	24.500	1	3°19’	0.36	0.22	2.5	16340
Tr 30 x 6	29.625	30.000	26.547	26.882	22.463	23.000	1	4°03’	0.41	0.26	3.0	13650
Tr 30 x 12 (P6)	29.625	30.000	26.547	26.882	22.463	23.000	2	8°03’	0.58	0.40	3.0	13650
Tr 30 x 30 (P5)	29.665	30.000	27.094	27.394	24.019	24.500	6	19°09’	0.75	0.59	2.5	16340
Tr 32 x 6	31.625	32.000	28.547	28.882	24.463	25.000	1	3°46’	0.39	0.24	3.0	17580
Tr 35 x 3	34.764	35.000	33.165	33.415	31.135	31.500	1	1°38’	0.22	0.12	1.5	46128
Tr 35 x 4	34.700	35.000	32.640	32.905	30.074	30.500	1	2°13’	0.28	0.16	2.0	40150
Tr 35 x 5	34.665	35.000	32.094	32.394	29.019	29.500	1	2°48’	0.33	0.19	2.5	34810
Tr 35 x 6	34.625	35.000	31.547	31.882	27.463	28.000	1	3°25’	0.37	0.23	3.0	30000
Tr 35 x 8	34.550	35.000	30.493	30.868	25.399	26.000	1	4°42’	0.45	0.29	4.0	21980
Tr 36 x 6	35.625	36.000	32.547	32.882	28.463	29.000	1	3°19’	0.36	0.22	3.0	34540
Tr 40 x 3	39.764	40.000	38.165	38.415	36.103	36.500	1	1°25’	0.20	0.11	1.5	83395
Tr 40 x 4	39.700	40.000	37.640	37.905	35.074	35.500	1	1°55’	0.25	0.14	2.0	74290
Tr 40 x 5	39.665	40.000	37.094	37.394	34.019	34.500	1	2°26’	0.30	0.17	2.5	65740
Tr 40 x 6	39.625	40.000	36.547	36.882	32.463	33.000	1	2°57’	0.34	0.20	3.0	57950
Tr 40 x 7	39.575	40.000	36.020	36.375	31.431	32.000	1	3°30’	0.38	0.23	3.5	51030
Tr 40 x 8	39.550	40.000	35.493	35.868	30.399	31.000	1	4°03’	0.41	0.26	4.0	44560
Tr 40 x 10	39.470	40.000	34.450	34.850	28.350	29.000	1	5°12’	0.47	0.31	5.0	31700
Tr 40 x 14 (P7)	39.575	40.000	36.020	36.375	31.431	32.000	2	6°58’	0.54	0.37	3.5	51030
Tr 40 x 40 (P8)	39.550	40.000	35.493	35.868	30.399	31.000	5	19°30’	0.75	0.60	4.0	44560
Tr 44 x 7	43.575	44.000	40.020	40.375	35.431	36.000	1	3°09’	0.35	0.21	3.5	81820
Tr 45 x 8	44.550	45.000	40.493	40.868	35.399	36.000	1	3°33’	0.38	0.23	4.0	81245
Tr 50 x 3	49.764	50.000	48.150	48.415	46.084	46.500	1	1°08’	0.16	0.09	1.5	121400
Tr 50 x 4	49.700	50.000	47.605	47.905	45.074	45.500	1	1°31’	0.21	0.12	2.0	202600
Tr 50 x 5	49.665	50.000	47.094	47.394	44.019	44.500	1	1°55’	0.25	0.14	2.5	184300
Tr 50 x 6	49.625	50.000	46.547	46.882	42.463	43.000	1	2°20’	0.29	0.17	3.0	167240
Tr 50 x 8	49.550	50.000	45.468	45.868	40.368	41.000	1	3°10’	0.35	0.21	4.0	136930
Tr 50 x 10	49.470	50.000	44.425	44.850	38.319	39.000	1	4°03’	0.41	0.26	5.0	105834
Tr 55 x 9	54.500	55.000	49.935	50.360	44.329	45.000	1	3°15’	0.36	0.22	4.5	189550
Tr 60 x 6	59.625	60.000	56.547	56.882	52.463	53.000	1	1°55’	0.25	0.14	3.0	386240
Tr 60 x 7	59.575	60.000	56.020	56.375	51.431	52.000	1	2°16’	0.28	0.16	3.5	343450
Tr 60 x 9	59.500	60.000	54.935	55.360	49.329	50.000	1	2°57’	0.34	0.20	4.5	302600
Tr 70 x 10	69.470	70.000	64.425	64.850	58.319	59.000	1	2°48’	0.33	0.19	5.0	587540
Tr 80 x 10	79.470	80.000	74.425	74.850	68.319	69.000	1	2°26’	0.30	0.17	5.0	1069390

(1) Useful effect for conversion of rotary movement to linear movement with friction coefficient f =0.1 and f =0.2.

(2) Radial support dimension between screw and nut teeth.

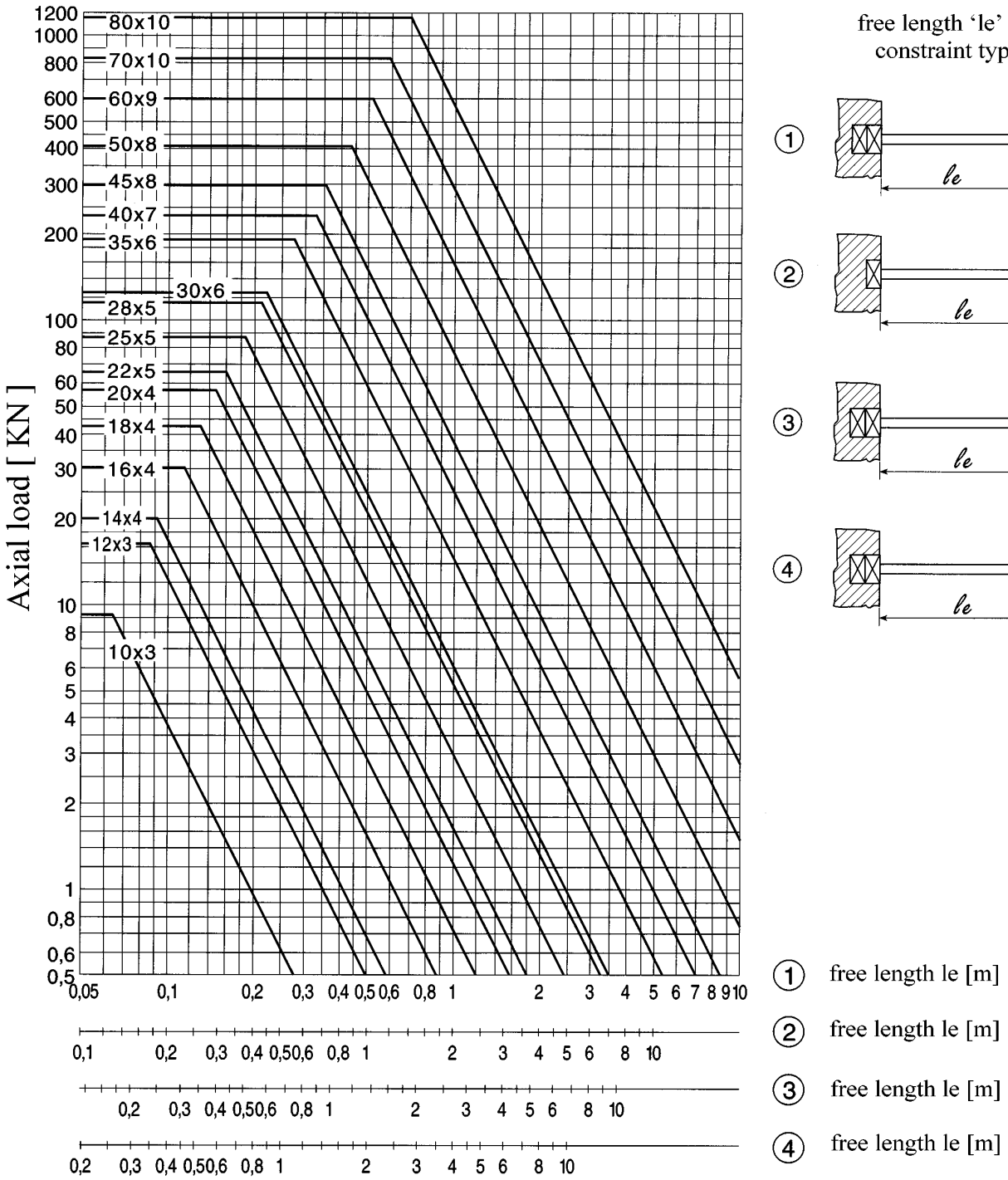
Trapezoidal nut specifications **Also see pages for each nut type**

Diameter x lead	D 4 Major diameter tollerance H		D 2 Effective or pitch dia. tollerance 7 H		D 1 Minor diameter tollerance 4 H		Thread starts	Radial play betweeen screw & nut		Axial play betweeen screw & nut	
	min.	max.	min.	max.	min.	max.		min.	max.	min.	max.
	mm		mm		mm						
Tr 10 x 3	10.500		8.500	8.780	7.000	7.315	1	0.085	0.577	0.023	0.155
Tr 12 x 3	12.500		10.500	10.800	9.000	9.315	1	0.085	0.609	0.023	0.163
Tr 12 x 6 (P3)	12.500		10.500	10.800	9.000	9.315	2	0.085	0.609	0.023	0.163
Tr 14 x 4	14.500		12.000	12.355	10.000	10.375	1	0.095	0.715	0.025	0.192
Tr 16 x 4	16.500		14.000	14.355	12.000	12.375	1	0.095	0.715	0.025	0.192
Tr 16 x 8 (P4)	16.500		14.000	14.355	12.000	12.375	2	0.095	0.715	0.025	0.192
Tr 18 x 4	18.500		16.000	16.355	14.000	14.375	1	0.095	0.715	0.025	0.192
Tr 20 x 4	20.500		18.000	18.355	16.000	16.375	1	0.095	0.715	0.025	0.192
Tr 20 x 8 (P4)	20.500		18.000	18.355	16.000	16.375	2	0.095	0.715	0.025	0.192
Tr 20 x 20 (P5)	20.500		17.500	17.875	15.000	15.450	4	0.106	0.761	0.028	0.204
Tr 22 x 5	22.500		19.500	19.875	17.000	17.450	1	0.106	0.761	0.028	0.204
Tr 24 x 5	24.400		21.500	21.900	19.000	19.450	1	0.106	0.806	0.028	0.216
Tr 25 x 5	25.500		22.500	22.900	20.000	20.450	1	0.106	0.806	0.028	0.216
Tr 25 x 10 (P5)	25.500		22.500	22.900	20.000	20.450	2	0.106	0.806	0.028	0.216
Tr 25 x 25 (P5)	25.500		22.500	22.900	20.000	20.450	5	0.106	0.806	0.028	0.216
Tr 26 x 5	26.500		23.500	23.900	21.000	21.450	1	0.106	0.806	0.028	0.216
Tr 28 x 5	28.500		25.500	25.900	23.000	23.450	1	0.106	0.806	0.028	0.216
Tr 28 x 10 (P5)	28.500		25.500	25.900	23.000	23.450	2	0.106	0.806	0.028	0.216
Tr 30 x 3	30.500		28.500	28.835	27.000	27.315	1	0.085	0.670	0.023	0.180
Tr 30 x 4	30.500		28.000	28.855	26.000	26.375	1	0.095	1.215	0.025	0.326
Tr 30 x 5	30.500		27.500	27.900	25.000	25.450	1	0.106	0.806	0.028	0.216
Tr 30 x 6	31.000		27.000	27.450	24.000	24.500	1	0.118	0.903	0.032	0.242
Tr 30 x 12 (P6)	31.000		27.000	27.450	24.000	24.500	2	0.118	0.903	0.032	0.242
Tr 30 x 30 (P5)	30.500		27.500	27.900	25.000	25.450	6	0.106	0.806	0.028	0.216
Tr 32 x 6	33.000		29.000	29.450	26.000	26.500	1	0.118	0.903	0.032	0.242
Tr 35 x 3	35.500		33.500	33.835	32.000	32.315	1	0.085	0.670	0.023	0.180
Tr 35 x 4	35.500		33.000	33.355	31.000	31.375	1	0.095	0.715	0.025	0.192
Tr 35 x 5	25.500		32.500	32.900	30.000	30.450	1	0.106	0.806	0.028	0.216
Tr 35 x 6	36.000		32.000	32.450	29.000	29.500	1	0.118	0.903	0.032	0.242
Tr 35 x 8	36.000		31.000	31.500	27.000	27.630	1	0.132	1.007	0.035	0.270
Tr 36 x 6	37.000		33.000	33.450	30.000	30.500	1	0.118	0.903	0.032	0.242
Tr 40 x 3	40.500		38.500	38.835	37.000	37.315	1	0.085	0.670	0.023	0.180
Tr 40 x 4	40.500		38.000	38.355	36.000	36.375	1	0.095	0.715	0.025	0.192
Tr 40 x 5	40.500		37.500	37.900	35.000	35.450	1	0.106	0.806	0.028	0.216
Tr 40 x 6	41.000		37.000	37.450	34.000	34.500	1	0.118	0.903	0.032	0.242
Tr 40 x 7	41.000		36.500	36.975	33.000	33.560	1	0.125	0.955	0.033	0.256
Tr 40 x 8	41.000		36.000	36.500	32.000	32.630	1	0.132	1.007	0.035	0.270
Tr 40 x 10	41.000		35.000	35.530	30.000	30.710	1	0.150	1.080	0.040	0.289
Tr 40 x 14 (P7)	41.000		36.500	36.975	33.000	33.560	2	0.125	0.955	0.033	0.256
Tr 40 x 40 (P8)	41.000		36.000	36.500	32.000	32.630	5	0.132	1.007	0.035	0.270
Tr 44 x 7	45.000		40.500	40.975	37.000	37.560	1	0.125	0.955	0.033	0.256
Tr 45 x 8	46.000		41.000	41.500	37.000	37.630	1	0.132	1.007	0.035	0.270
Tr 50 x 3	50.500		48.500	48.855	47.000	47.315	1	0.085	0.705	0.023	0.189
Tr 50 x 4	50.500		48.000	48.400	46.000	46.375	1	0.095	0.795	0.025	0.213
Tr 50 x 5	50.500		47.500	47.900	45.000	45.450	1	0.106	0.806	0.028	0.216
Tr 50 x 6	51.000		47.000	47.450	44.000	44.500	1	0.118	0.903	0.032	0.242
Tr 50 x 8	51.000		46.000	46.530	42.000	42.630	1	0.132	1.062	0.035	0.285
Tr 50 x 10	51.000		45.000	45.560	40.000	40.710	1	0.150	1.135	0.040	0.304
Tr 55 x 9	56.000		50.500	51.060	46.000	46.670	1	0.140	1.125	0.038	0.301
Tr 60 x 6	61.000		57.000	57.450	54.000	54.500	1	0.118	0.903	0.032	0.242
Tr 60 x 7	61.000		56.500	56.975	53.000	53.560	1	0.125	0.955	0.033	0.256
Tr 60 x 9	61.000		55.500	56.060	51.000	51.670	1	0.140	1.125	0.038	0.301
Tr 70 x 10	71.000		65.000	65.560	60.000	60.710	1	0.150	1.135	0.040	0.304
Tr 80 x 10	81.000		75.000	75.560	70.000	70.710	1	0.150	1.135	0.040	0.304

Critical Axial Load (Peak Load)

When there are compression loaded screws allowance must be made for limitations due to peak load to avoid screw bending due to excessive axial compression load. Admissible axial load depends on the core diameter (d3) of the screw, end constraints (bearings) and free length 'le'.
As regards the values given in graph no. 6, allow a minimum safety factor = 2.

Graph no. 6 – Peak Load



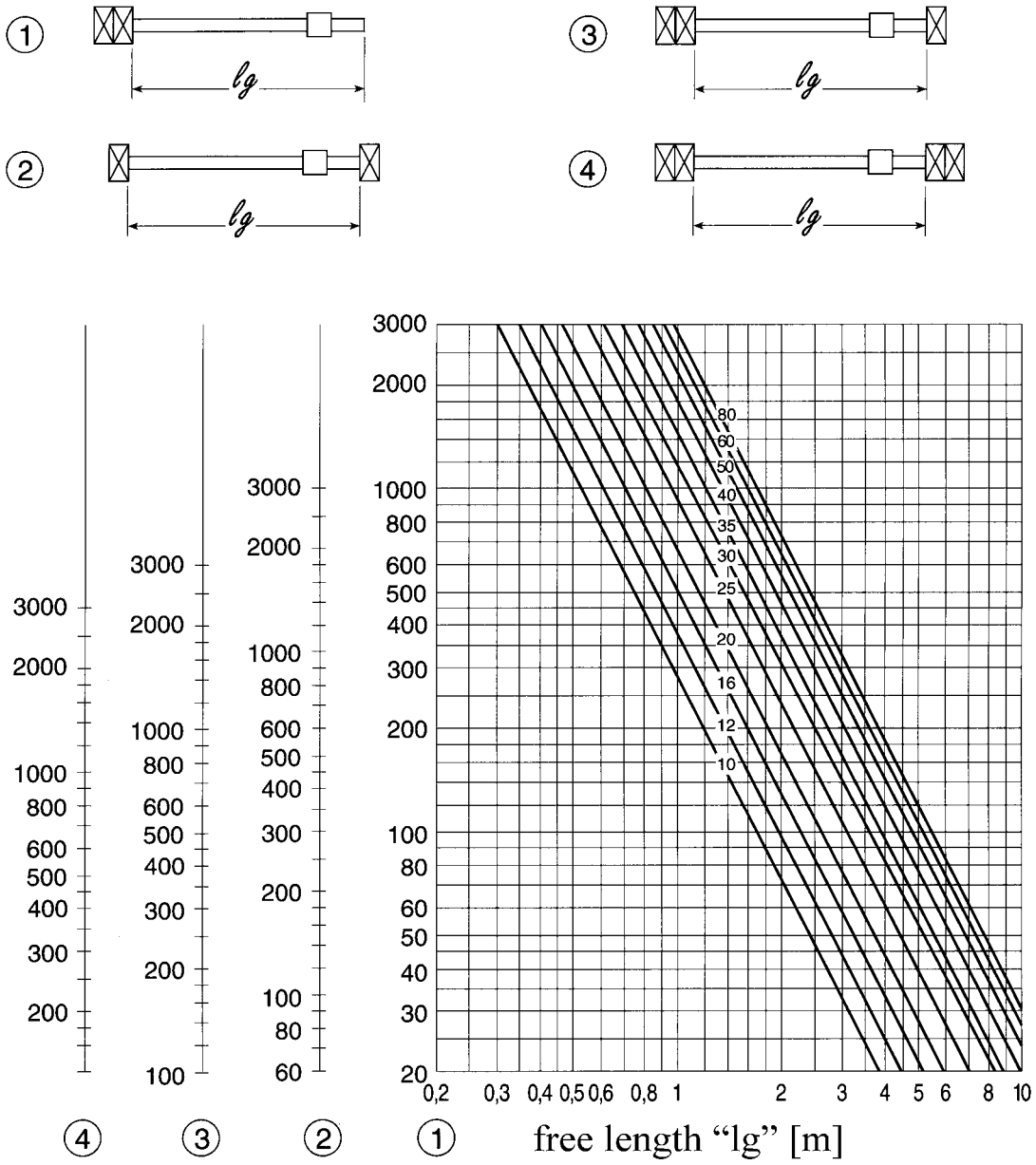
Example: find the admissible axial load of a TR30X6 screw 3000 mm long with constraint conditions as in drawing 4. From graph 6 Take Fmax = 11 KN with safety factor of 2 and assume Fadm = 11/2 = 5.5 KN.

Critical RPM

The critical revolutions per minute is the rotating speed at which screw vibrations appear. This rotation speed must never be reached because the vibrations cause serious operating irregularities. Critical rpm depend on screw diameter, end constraints (bearings) and free length 'lg'.

For values shown in Graph 7 assume a minimum safety factor = 1.25.

Graph no. 7 – Critical rpm



Example: find the critical rpm of a screw TR40x7 length 3000 mm with constraint conditions as in drawing 3.
Graph 7 gives critical rotation speed = 1000 rpm
Under working conditions we can reach a maximum rpm of max = 1000/1.25 = 800 rpm.

Efficiency

By efficiency is meant the ability of a screw & nut system to convert rotary motion into rectilinear motion. This parameter allows apparisal of how much rotation energy is converted to useful energy for linear movement, hence how much energy is dissipated as heat.
The following formula can be used for calculation.

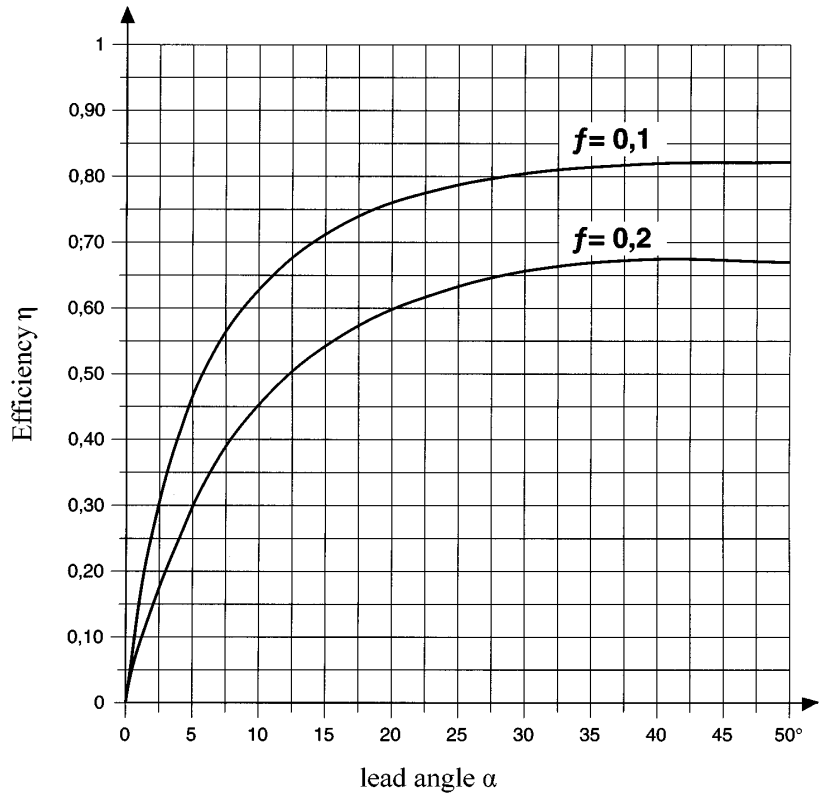
$$⑨\ \eta = \frac{1 - f \bullet \mathrm{tg}\alpha}{1 + \frac{f}{\mathrm{tg}\alpha}}$$

η = Efficiency
f = Dynamic friction factor between scew and nut materials

α = Lead angle of threads

The numerical efficiency values of each limit are shown in TheTable 'Screw Specifications' on page 26.

Graph 8 - Efficiency



Graph no. 8 shows that efficiency is greater if the lead angle of the screw thread is greater, hence to dissipate less energy as heat, it is recommended to use screws with lead angle as high as possible for the type of work (Caution: the system is irreversible). Efficiency is inversely proportionate to the dynamic friction factor, i.e. using material with a lower friction factor there is less waste of energy. For this reason we make precision rolled trapezoidal screws with minimal roughness on the side of the tooth and always less than 1 µm Ra (usually 0.2 to 0.7 µm). We also make wear-resistant self-lubricating plastic flanged nuts which ensure very low friction factors with no need for lubrication. Dynamic friction factor f = 0.1, first breakaway = 0.15.

Torque

The Torque necessary for moving a screw & nut system is calculated by the following equation.

$$(10)\ C = \frac{F \bullet P}{2\,\pi\,\eta\,1000}$$

C: Torque (input) [N•m]
F: Axial force on nut [N]
P: True lead of screw [mm]
η: Efficiency (assume efficiency with first breakaway friction factor $f = 0.2$) Table on page 26.

Example of calculation.

Find torque necessary for movement of a screw Tr30x6 coupled with a nut HCL TR30x6.

Resistant axial force: 10,000 N
Screw lead: 6 mm
η: 0.26

$$\text{Torque} = \frac{F \bullet P}{2\,\pi\,\eta\,1000} = \frac{10{,}000\ [N] \bullet 6\ [mm]}{2\ \ \pi\ \ 0.26\ \ 1{,}000} = 36.7\ \ N \bullet m$$

This torque does not allow for the efficiency of members moving with the screw such as bearings, belts or other transmission members. When designing assume an increase of 20 to 30% of theoretical value. If electric motors with low static torque are used assume another increase of 50% to find nominal torque.

C = 36.7 [Nm] • 1.3 • 1.5 = 71.6 [Nm]

Power

The power necessary for moving a trapezoidal screw & nut system is calculated with the following equation.

$$(11)\ P = \frac{C \bullet n}{9550}$$

P: power (kW)
C: torque [N • m]
n: rpm

Esample of calculation.

Calculate the power necessary for moving the screw TR30x6 of the above example at 600 rpm.

$$P = \frac{C \bullet n}{9550} = \frac{71.6\ [Nm] \bullet 600\ [rpm]}{9550} = 4.5\ Kw$$

This is the minimum useful power necessary.

Stock Number For Ordering Trapezoidal Screws

SCREW	K	Q	X	3	0	A	R	2345
	1			2		3	4	5

1 - Trapezoidal Screw type	Lead accuracy	Material	Page
KQX	200	C15E - EN 10084 C15E - 1.1141	12
KTS	200	1 C45 - EN 10083- 1C45 - 1.0503	14
KFH	100	1 C45 - EN 10083- 1C45 - 1.0503	13
KKA	50	1 C45 - EN 10083- 1C45 - 1.0503	12
KRP	200	stainless steel A2 - AISI 304 - EN 10088 1.4301	14
KAM	200	stainless steel A4 - AISI 316 - EN 10088 1.4401	14

2 - Nominal size of screw thread: numerical value from table.
3 - Identifying letter of actual lead and number of threads. See page for Screw Type and the Ordering Stock Number corresponding to the diameter and lead to order.
4 - R = right-hand; L = left-hand.
5 - Screw length, specify in millimeters: 2000 = 2.000 mm; 2345 = 2.345 mm; 4560 = 4.560 mm

Examples of orders:

-- Trapezoidal screw, lead accuracy 200, C15E Tr 50 lead 8 with 1 thread start.
RH Thread, length 2000 mm entirely threaded:

SCREW	K	Q	X	5	0	A	R	2000
	1			2		3	4	5

-- Trapezoidal screw, lead accuracy 100, 1C45 Tr 50 lead 40 with 5 thread starts.
RH thread, length 2500 mm entirely threaded:

SCREW	K	F	H	4	0	E	R	2500
	1			2		3	4	5

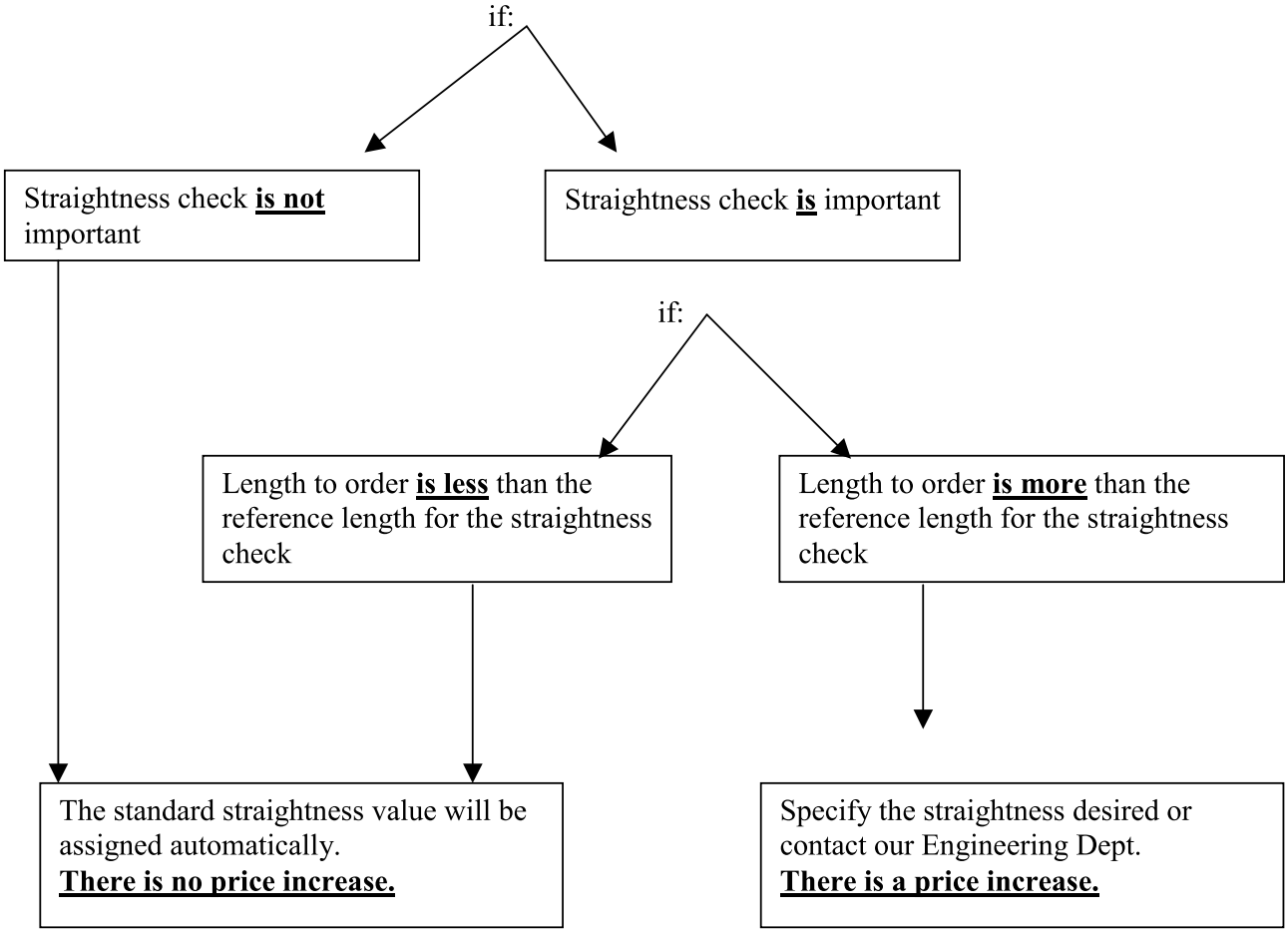
Ordering screws with completely finished ends:

Send a drawing by fax or email to our offices. A stock number will be assigned to each individual drawing. For screws completely finished on the ends the straightness value should be specified on the drawing.

PAY ATTENTION TO **STRAIGHTNESS** WHEN PREPARING ORDER:

Screws are made with length of 6 metres and their straightness is checked for a lesser length which is specified in the 'straightness' column of the table for the type of screw chosen.

To order completely threaded screws:



The terms set forth above apply to completedly threaded screws.

Ordering screws with fully finished ends:

For screws with fully finished ends the straightness value should always be specified in the drawing.

Stock Number For Ordering Trapezoidal Nuts

NUT	F	T	N	2	0	A	R
	1			2		3	4

1 - Nut type	Shape	Material		Page
MLF	cylindrical	steel	11 S Mn Pb 37 EN 10277 - 1.0737	15
MZP	cylindrical	steel	11 S Mn 30 EN 10277 - 1.0715	15
CQA	square	steel	11 S Mn Pb 37 EN 10277 - 1.0737	16
QOB	square	brass	CW614N-M UNI EN 12164	16
HSN	cylindrical	bronze	GB-Cu Sn5 Zn5 Pb DIN 17656	17
HBD	cylindrical	bronze	GB-CuSn7ZnPb DIN 17656	17
FTN	flanged	bronze	GB-Cu Sn5 Zn5 Pb DIN 17656	18
FXN	flanged	bronze	GB-Cu Sn12 DIN 17656	19
HDL	flanged	bronze	GB-Cu Sn12 DIN 17656	20
HDA	cylindrical	steel	stainless steelA1- AISI 303 - EN 10088 1.4305	21
BIG	cylindrical big	bronze	GB-Cu Sn12 DIN 17656	21
CBC	flanged	bronze	GB-Cu Sn12 DIN 17656	22
CDF	2-flanged	bronze	GB-Cu Sn12 DIN 17656	23
HAL	flanged	Alu. bronze	G Ni Al Bz F60 DIN 1714 - UNI 5275	24
MPH	cylindrical	plastic	PA 6 + Mo S2 DIN 7728	24
FCS	flanged	plastic	PA 6 + additives and solid lubricants DIN 7728	25

2 - Nominal size of nut thread: Numerical value from table.
3 - Identifying letter of actual lead and number of thread starts. See page for Nut Type. The letter of the ordering stock number corresponding to the diameter and lead to order.
4 - R = right-hand; L = left-hand.

Examples of orders:

-- Flanged trapezoidal nut with length 3xD bronze GB-Cu Sn12 Tr 40 lead 10 with 1 thread start, RH thread:

NUT	H	D	L	4	0	I	R
	1			2		3	4

-- Cylindrical Trapezoidal Nut bronze GB-CuSn7ZnPb Tr 20 lead 4 with 1 Thread start, RH thread:

NUT	H	B	D	2	0	A	R
	1			2		3	4

-- Cylindrical Trapezoidal Nut, Bronze GB-Cu Sn12, Tr 50 lead 3 with 1 start.
LH thread:

NUT	B	I	G	5	0	R	L
	1			2		3	4

-- Cylindrical Trapezoidal Nut, Steel 11 S Mn 30, Tr 60 lead 9 with 1 start.
RH thread:

NUT	M	Z	P	6	0	A	R
	1			2		3	4

For nuts finished to your drawing:

Send a drawing by fax or email to our offices. A stock number will be assigned to each individual drawing.