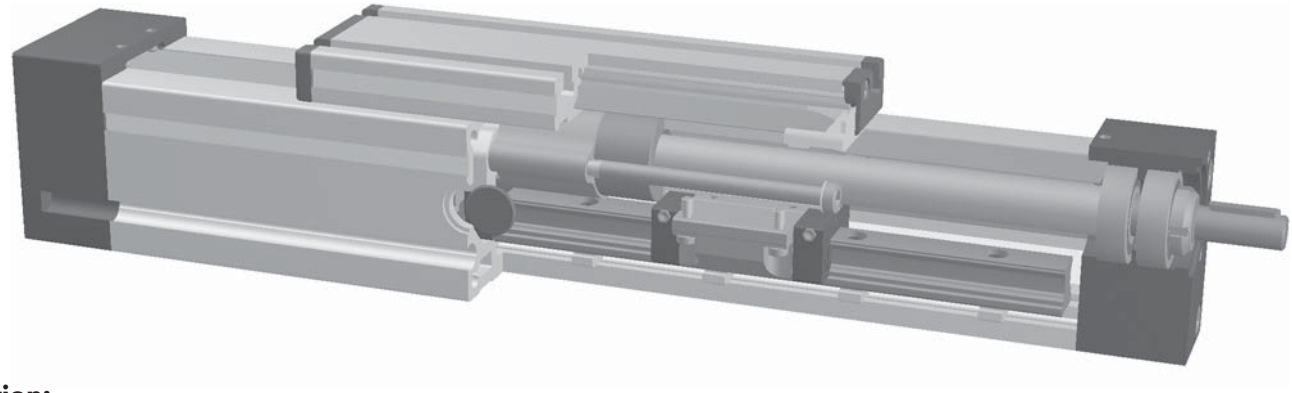
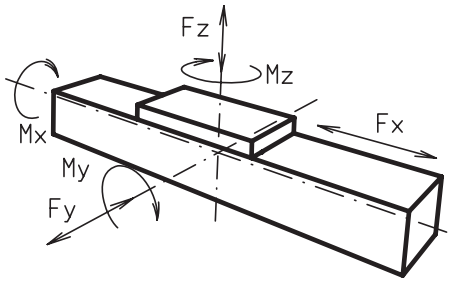


Function:
This unit consists of a square aluminium profile with an integrated profile rail. The carriage is driven by means of an acme threaded lead screw or ball screw. The openings of the guide body are sealed by a stainless steel cover band to protect the drive from splash water and dust.

Fitting length: As required. Max. length 3,000 mm
Carriage mounting: T-slots
Unit mounting: Half round slots and tapped holes in the bearing blocks, mounting sets

Forces and torques



Size	QST/QSK 60		QST/QSK 80		QST/QSK 100	
permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km	5000 km	10000 km
F_x (N)	900	800	2500	2000	5000	4000
F_y (N)	274	218	567	450	1288	1023
F_z (N)	2991	2374	4955	3933	7146	5671
M_x (Nm)	18	14	41	33	70	56
$M_y = M_z$ (Nm)	54	43	121	96	197	157
All forces and torques related to the following: existing values / values of table	$\frac{Fy}{Fy_{dyn}} + \frac{Fz}{Fz_{dyn}} + \frac{Mx}{Mx_{dyn}} + \frac{My}{My_{dyn}} + \frac{Mz}{Mz_{dyn}} \leq 1$					
No-load torque						
acme screw	18x4/18x8		24x5/24x10		32x6/32x12	
Nm	0,6/0,7		0,6/0,8		1,5/1,7	
ball screw	16x5/16x10		25x5/20x20/25x10		32x5/32x10	
Nm	0,4/0,6		0,4/0,7/0,6		1,3/1,6	
Geometrical moments of inertia of aluminium profile						
I_x mm^4	4,3x10^5		14x10^5		43,0x10^5	
I_y mm^4	4,8x10^5		16,6x10^5		48,8x10^5	
E-Modulus N/mm^2	70000		70000		70000	

* referred to lifetime

Formula: QST/QSK

Driving torque:

$$M_a = \frac{F*P*S_i}{2000*\pi*\mu} + M_{leer}$$

$$P_a = \frac{M_a*n}{9550}$$

F	= force	(N)
P	= thread pitch	(mm)
S_i	= safety factor 1,2 ... 2	
M_{leer}	= no-load torque	(Nm)
n	= rpm of screw	(min^{-1})
M_a	= driving torque	(Nm)
μ	= screw efficiency	
P_a	= motor power	(KW)

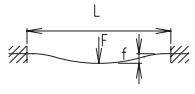
Efficiency of lead screws:

Ball screws = 0.900

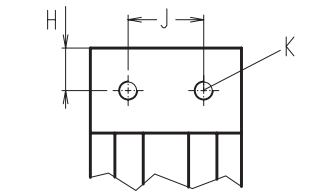
Acme screws

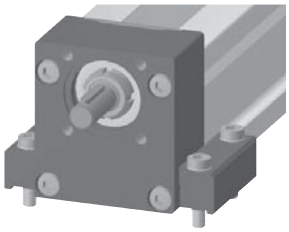
Tr 18x4	0,399
Tr 18x8	0,565
Tr 24x5	0,384
Tr 24x10	0,550
Tr 32x6	0,360
Tr 32x12	0,524

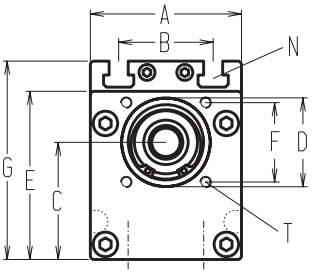
$$f = \frac{F*L^3}{E*I*192}$$

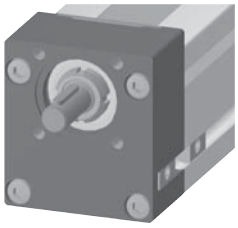


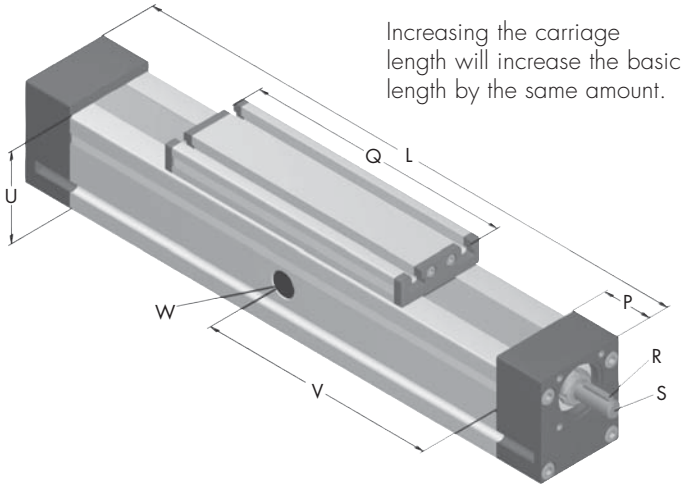
f = deflection	(mm)
F = load	(N)
L = free length	(mm)
E = elastic modulus 70000	(N/mm^2)
I = second moment of area	(mm^4)











Increasing the carriage length will increase the basic length by the same amount.

*For T-nuts refer to the accessory section W = servicing position

Size	Basic length L	A	B	C	D Ø	E	F	G	H	J	K	N	P	Q	Shaft R Key	Shaft S Ø x length	T	U	Basic weight	Additional Weight per 100 mm
QS 60	270	60	36	45	37	67	32	79	19	18	M6	M6	38	188	3x3x25	10h6x27	M5	60	4,09 kg	0,52 kg
QS 80	350	80	50	62	47	89	42	106	22,5	40	M10	M8	45	250	5x5x28	14h6x35	M6	80	7,48 kg	0,92 kg
QS100	410	100	66	75	68	112	60	129	28,5	50	M10	M10	57	288	6x6x40	22h6x45	M8	100	14,79 kg	1,26 kg

K **Screw type:**
(T) Acme Screw **(K)** Ball Screw

1 **Selection of screw:**
(1) right hand (standard) **(2)** left hand (ball screw by inquiry)

0 **Choice of carriage**
(0)

0 **Choice of journal:**
(0) one shaft (locating bearing side) **(1)** one shaft (non-locating bearing side) **(2)** shaft on both sides

0 **Selection of screw:**

Size	Standard Acme Screw	Multistart-screw Acme Screw	Standard Ball Screw	Multistart-screw Ball Screw	
60	**(0)** Tr 18x4	**(1)** Tr 18x8	**(0)** kg 16x5	**(1)** kg 16x10	
80	**(0)** Tr 24x5	**(1)** Tr 24x10	**(0)** kg 25x5	**(1)** kg 20x20	**(2)** kg 25x10
100	**(0)** Tr 32x6	**(1)** Tr 32x12	**(0)** kg 32x5	**(1)** kg 32x10	

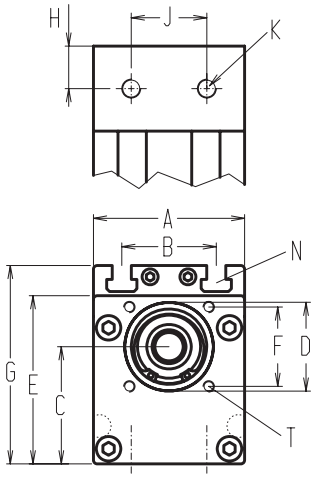
0 **Ball Screw pitch accuracy:**
(0) 0,1 mm / 300 mm (Standard) **(1)** 0,05 mm / 300 mm **(2)** 0,025 mm / 300 mm

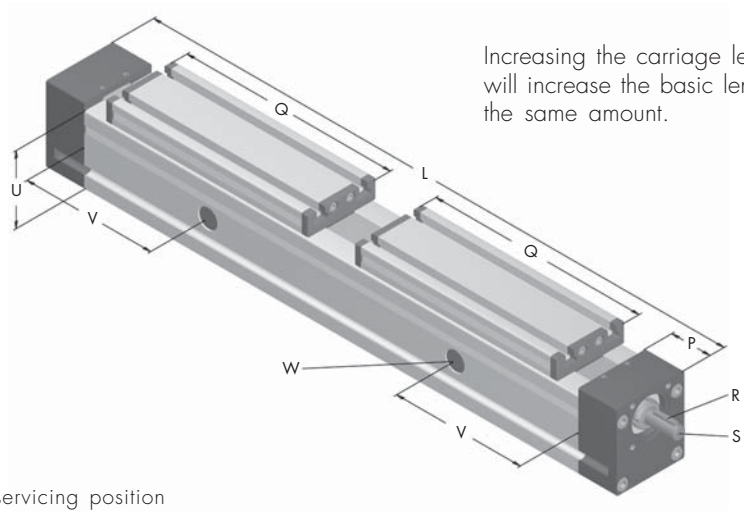
0 **End play of ball nut:**
(0) 0,04 mm (Standard) **(1)*** < 0,02 mm **(2)*** 2% apply prestress
* only in combination with **pitch accuracy (1)** or **(2)**

1500 Basic length + stroke = total length

QS	K	80	1	0	0	0	0	0	0	01500
		Pos.	1	2	3	4	5	6	7	

Sample ordering code:
QSK80 ball screw, right hand, standard carriage, shaft on one side, screw 25x5, 1150 mm stroke.





Increasing the carriage length will increase the basic length by the same amount.

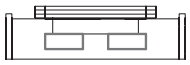
*For T-nuts refer to the acessory section W = servicing position

Size	Basic length L	A	B	C	D Ø	E	F	G	H	J	K	N	P	Q	Shaft R Key	Shaft S x length	T	U	Basic weight	Additional Weight per 100 mm
QS 60	500	60	36	45	37	67	32	79	19	18	M6	M6	38	188	3x3x25	10h6x27	M5	60	5,36 kg	0,52 kg
QS 80	640	80	50	62	47	89	42	106	22,5	40	M10	M8	45	250	5x5x28	14h6x35	M6	80	9,78 kg	0,92 kg
QS100	740	100	66	75	68	112	60	129	28,5	50	M10	M10	57	288	6x6x40	22h6x45	M8	100	18,55 kg	1,26 kg

K **Screw Type:**
(T) Acme Screw **(K)** Ball Screw

3 **Selection of screw:**
(3) right - left hand **(4)** divided screw

0 **Choice of carriage**
(0)



0 **Choice of journal:**
(0) shaft right hand thread **(1)** shaft left hand thread **(2)** shaft on both sides

0 **Selection of screw:**

	Size	Standard	Multistart-screw
Ball Screw right hand	60	**(0)** 16x5	**(1)** 16x10* **(2)** 16x16* **(3)** 20x20* **(4)** 25x5* **(5)** 25x10*
	80	**(0)** 25x5	**(1)** 20x20* **(2)** 25x10* **(3)** 25x25*
	100	**(0)** 32x5	**(1)** 32x10* **(2)** 32x20* **(3)** 32x32*
Ball Screw left hand	upon request		
Acme Screw right hand thread	60	**(0)** 18x4	**(1)** 18x8
	80	**(0)** 24x5	**(1)** 24x10
	100	**(0)** 32x6	**(1)** 32x12
Acme Sarew left hand thread	60	**(0)** 18x4	**(1)** 18x8
	80	**(0)** 24x5	**(1)** 24x10
	100	**(0)** 32x6	**(1)** 32x12

* = only for selection of divided screw

0 **Ball Screw pitch accuracy:**
(0) 0,1 mm / 300 mm (Standard) **(1)** 0,05 mm / 300 mm **(2)** 0,025 mm / 300 mm

0 **End play of ball nut:**
(0) 0,04 mm (Standard) **(1)*** < 0,02 mm **(2)*** 2% apply prestress
* only in combination with **pitch accuracy (1)** or **(2)**

1500 Basic length + stroke = total length

QS	K	80	3	0	0	0	0	0	0	01500
		Pos.	1	2	3	4	5	6	7	

Sample ordering code:
QSK80 ball screw, right - left hand, standard carriage, shaft on right hand thread, screw 25x5, 860 mm stroke.