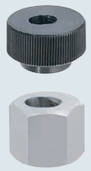
Quick-Lock Nuts / T-Nuts / Tapered Washers / Tapered Nuts

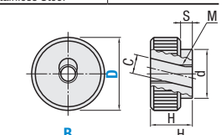
Quick-Lock Nuts



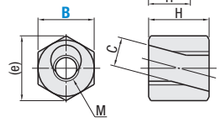
Type	Material	Surface Treatment
QCN	1035 Carbon Steel	Black Oxide
QCNS	303 Stainless Steel	—
QHN	1045 Carbon Steel or Equivalent	Black Oxide
QHNS	303 Stainless Steel	—

RoHS 10

Round Type
QCN
QCNS



Hex Type
QHN
QHNS

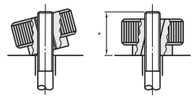


Part Number Type	D	M (Coarse)	H	S	d	C	Reference Tightening Torque N {kgf}/m
QCN QCNS	24	6	14	4	16	6.7	4.8 {0.5}
	30	8	17	5	20	8.7	9.0 {0.9}
	36	10	20	6	28	11.0	17.5 {1.8}
	40	12	24	8	32	13.7	17.5 {1.8}

Part Number Type	B	M (Coarse)	H	C	(e)	Reference Tightening Torque N {kgf}/m
QHN QHNS	17	6	14	6.7	19.6	4.9 {0.5}
	19	8	17	8.7	21.9	9.8 {1.0}
	24	10	20	11.0	27.7	15.6 {1.6}
	27	12	24	13.7	31.2	19.6 {2.0}

Features and Precautions for Use

– Long threaded screws can be tightened quickly.
– Use at below the reference tightening torque, avoid over tightening.
– Move the nut to the tightening position after inserting a screw into the straight hole. Then rotate the knob perpendicular to the screw and tighten it.
– Tightening strength is not adequate if the thread length of a screw (*) is shorter than the nut's H dimension. Design the thread length of the screw (*) to be larger than the H dimension.



Part Number Example

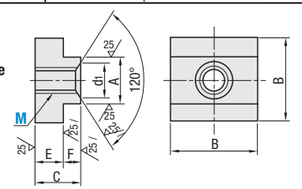
Part Number
QCN30
QHN19

T-Nuts

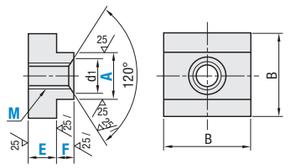
Type		Material	Surface Treatment
Standard Type	NTS	1018 Carbon Steel	Trivalent Bright Chromate Plating
Configurable Type	NTSF		Black Oxide

RoHS 10

NTS
Standard Type



NTSF
Configurable Type



Standard Type

Part Number Type	M (Coarse)	A	B	C	E	F	d_1
NTS	3	3.9	7	5	3	2.0	3.5
	4	4.8	8	6.5	4	2.5	4.5
	5	5.8	10	8	5	3	5.5
	6	7.7	13	9.5	6	3.5	7
	8	9.7	13	10.5	6	4.5	9
	10	11.7	16	12.5	7	5.5	11
	12	17.6	25	18.5	10	8.5	14
	16	21.6	32	24.5	14	10.5	18
	20	24.6	35	30.5	20	10.5	22

Part Number Example

Part Number	-	A	-	E	-	F
NTS8						
NTSF12	-	A9.5	-	E5.2	-	F4.8

Configurable

Part Number Type	M (Coarse)	0.1 mm Increment A	E	F	B	d_1
NTSF	3	3.9–17.6	3–10	2–8.5	7	3.5
	4				8	4.5
	5				10	5.5
	6				13	7
	8				13	9
	10				16	11
	12				25	14

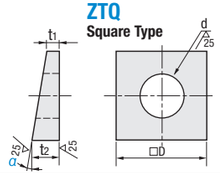
A<B

Tapered Washers

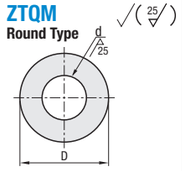
Type	Material	Surface Treatment
ZTQ	1018 Carbon Steel	Trivalent Bright Chromate Plating
ZTQM	1045 Carbon Steel or Equivalent	Trivalent Chromate

RoHS 10

ZTQ
Square Type



ZTQM
Round Type



Part Number Type	No.	Angle α	d	D	Angle 3° t_1	Angle 3° t_2	Angle 5° t_1	Angle 5° t_2	Angle 8° t_1	Angle 8° t_2
ZTQ ZTQM	6	3°	7	16	1.2	2	1.6	3	1.7	4
	8		9	18	1.1		1.4		1.5	
	10	5°	11	22	1.8	3	2	4	1.9	5
	12		14	26	1.6		1.7		2.3	6
	16		18	32	3.3	5	3.2	6	3.5	8
	20	8°	21	40	2.9		2.5		3.4	9
	24		27	52	3.3	6	3.5	8	3.7	11

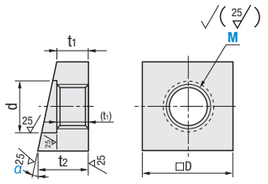
Part Number Example

Part Number	-	α
ZT06	-	5

Tapered Nuts

RoHS 10

ZTN



Material: 1018 Carbon Steel
Surface Treatment: Trivalent Bright Chromate Plating

Part Number Type	M (Coarse)	Angle α	D	Angle 3° t_1	Angle 3° t_2	Angle 5° t_1	Angle 5° t_2	Angle 8° t_1	Angle 8° t_2	d
ZTN	6	3° 5° 8°	16	5	5.8	5	6.4	5	7.2	7
	8		18	6.5	7.4	6.5	8.1	6.5	9	9
	10		22	8	9.2	8	9.9	8	11.1	11
	12		26	10	11.3	10	12.2	10	13.5	13
	16		32	13	14.7	13	15.8	13	17.5	17

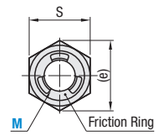
MiSUMi

U-Nuts® / Double Locking Nuts

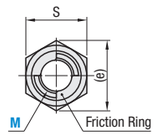
U-Nuts®

Type		Main Material	Friction Ring Material	Surface Treatment	Screw Precision
Single Item	Pack				
UNUTZ	PACK-UNUT	1018 Carbon Steel or Equivalent	301 Stainless Steel	Bright Chromate Plating	JIS6H Class
UNUTKZ	PACK-UNUTK	1018 Carbon Steel or Equivalent	301 Stainless Steel	Trivalent Chromate	JIS6H Class
UNUTSZ	PACK-UNUTS	304 Stainless Steel or Equivalent	301 Stainless Steel	—	JIS6H Class

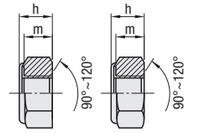
M6 or Less



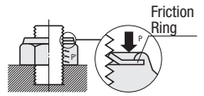
M8 or More



UNUT / UNUTZ16
UNUTK / UNUTKZ16
UNUTS / UNUTSZ4–16
UNUT / UNUTZ4–12
UNUTK / UNUTKZ4–12



When the friction ring makes a contact with the thread as shown in the figure below, spring action generates a reaction force P. A friction torque (prevailing torque) that prevents the nut from rotating is then generated by the nut due to another reaction force P'.



U-Nuts® is a trademark of Fuji Seimitsu Co. Ltd.

Part Number Type	M	Pitch	S Reference Dim.	S Tolerance	h Reference Dim.	h Tolerance	m	(e)	Tightening Torque N•m (kg/cm) UNUT / UNUTK	Tightening Torque N•m (kg/cm) UNUTS
UNUTZ UNUTKZ UNUTSZ PACK-UNUT PACK-UNUTK PACK-UNUTS	4	0.7	7	0 -0.2	3.8	±0.3	3	8.1	2.2 (22)	1.9 (19)
	5	0.8	8		4.6		3.9	9.2	4.4 (45)	3.8 (39)
	6	1.0	10		5.1		4.2	11.5	7.4 (75)	6.5 (66)
	8	1.25	13	0 -0.25	7.3	±0.4	6.1	15	18 (180)	16 (160)
	10	1.5	17		8.3		7.1	19.6	36 (370)	31 (320)
	12	1.75	19	0 -0.35	10.5		9	21.9	62 (630)	55 (560)
	16	2.0	24		14.5	±0.5	13	27.7	155 (1600)	135 (1400)

Part Number Example

Part Number
UNUTZ4
PACK-UNUT12

Features of U-Nuts®

– Capable of stable anti-loosening effect. Prevents screws from falling off despite decline in axial tension.
– Being a solid metal product, the nuts are highly resistive to heat and cold.
– Simplified fastening task makes work management easier.
– Easy parts management prevents inappropriate installation.
– Reusable

Cautions

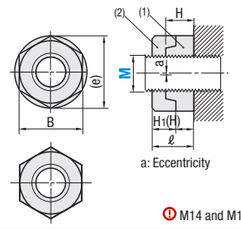
At least two thread pitches should protrude from the friction ring.

1. When tightening the nut refer to the Tightening Torque Chart.
2. Use chamfered tipped screws of JIS6g (Class 2) in thread precision.
3. Use appropriate lubricant if seizure or scuffing occurs when screwing or unscrewing the nut onto threads.
4. Cannot be screwed in from the friction ring side.
5. Discontinue use if abnormal deformation occurs in the friction ring or the clamp.

Double Locking Nuts

Type	Material	Surface Treatment
HLN	1018 Carbon Steel or Equivalent	Trivalent Chromate
HLNS	304 Stainless Steel or Equivalent	—

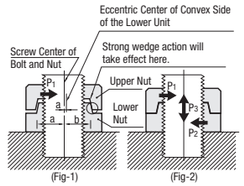
RoHS 10



M14 and M16 are not Flanged.

Part Number Type	M	M x Pitch	B	(e)	(1) Lower Nut H	(1) Lower Nut Tolerance	(2) Upper Nut H_1	(2) Upper Nut Tolerance	Pair Height I Tolerance	(h)	Weight per Set (g)
HLN HLNS Stainless Steel	6	6 x 1.0	10	11.5	5	±0.3	5	0 -0.3	8	3	4
	8	8 x 1.25	13	15	6.5	0 -0.58	6.5	0 -0.58	10.6	4.1	8.9
	10	10 x 1.5	17	19.6	8		8		13.2	5.2	18
	12	12 x 1.75	19	21.9	10		9.3		16	7.0	26
	14	14 x 2.0	22	25.4	11	0 -0.7	11	0 -0.7	18.5	7.5	39
	16	16 x 2.0	24	27.7	13		13		20	9	52.8

Structure & Function of Hard Lock Nut®



Hard Lock Nuts® is a registered trademark of Hard Lock Industry Co., Ltd.

Cautions

Screws or shafts should be made to JIS6g (Grade 2) in thread precision, or Hard Lock Nuts may not fit well. Although outer diameter of the upper nut and the lower nut may become eccentric or clearance may occur during assembling caused by its structure, it does not affect the operation.

*Fig. 1: When upper nut is tightened, stress is automatically applied in P_1 arrow direction. Horizontal stress continues to increase with tightening until upper nut closely contacts lower nut as shown in Fig. 2. The nuts are fully locked by the wedge effect.

*Fig. 2: After nuts are tightened, internal stress remains distributed as composite stress of $P_1+P_2+P_3$ to resist external impact.

Tightening Torque Chart Reference Value

M	(1) Lower Nut By Material: Tightening Torque Reference Value Chart (N • m) 1018 Carbon Steel or Equivalent 4.8 (320N/mm²)	1045 Carbon Steel or Equivalent 8.8 (640N/mm²)	4137 Alloy Steel or Equivalent 10.9 (900N/mm²)	304 Stainless Steel or 316 or Equivalent 50 (210N/mm²)	304 Stainless Steel or 316 or Equivalent 70 (450N/mm²)	(2) Upper Nut All Materials Tightening Torque (N • m)
6	2.3–6	—	—	1.5–4	3.3–9	4–5
8	5.6–15	11.2–30	15.8–42	3.7–10	7.9–21	9–13
10	11–30	22–59	31–84	7–20	16–42	18–24
12	19–52	39–104	55–146	13–34	27–73	27–39
14	31–82	62–165	87–232	20–54	44–116	40–58
16	48–129	97–257	136–362	32–84	68–181	70–100

Part Number Example

Part Number
HLN8