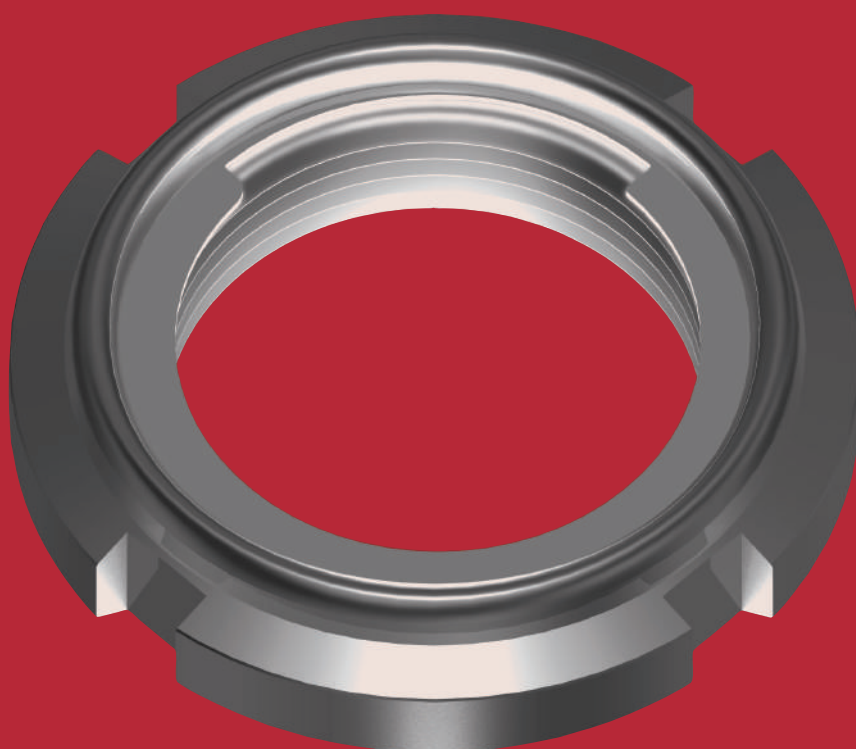


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Prevailing torque type  
FINE U-NUT



Prevailing torque type  
Locknut

***FINE U-NUT***



**Fuji Seimitsu Co., Ltd.**

# **FINE U-NUT**

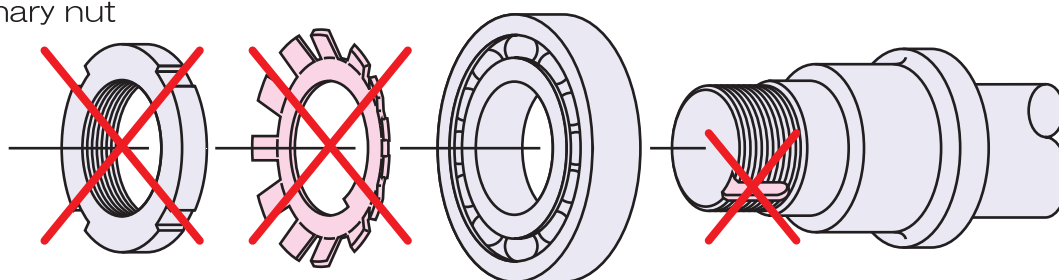
Prevailing torque type

- ✓ **Reusability**
- ✓ **Simple Adjustment**
- ✓ **Labor Saving and Simplified Assembly**
- ✓ **Shaft Balancing**
- ✓ **Weight Saving**
- ✓ **Economical Efficiency**

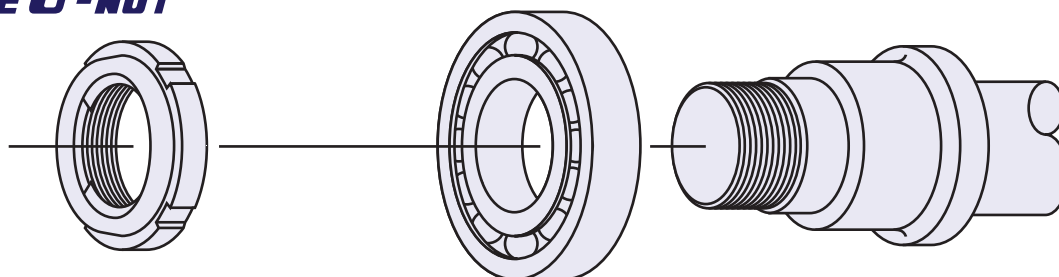


**FINE U-NUT** was developed in order to minimize the costs involved in securing bearings by **Fuji Seimitsu Co., Ltd.** a pioneer in lock nut technology. With more than 40 years experience in the manufacture of **FUJILOK U-NUT** we can supply solutions for your most difficult applications.

Ordinary nut



**FINE U-NUT**

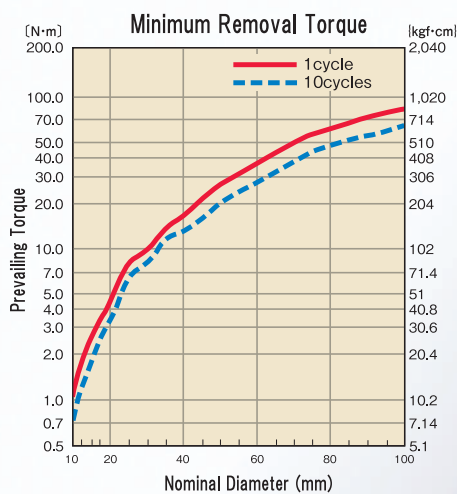
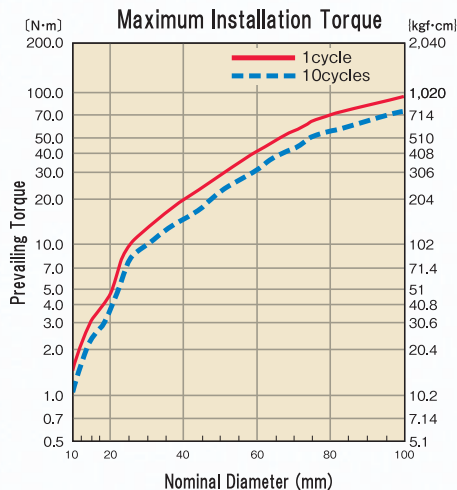


# Structure and Function

When a **FINE U-NUT** is tightened on a bolt, the friction ring touches the bolt screw threads. The friction ring then begins to bend along with the screw threads and press against the bolt screw threads. Stress produced through a spring effect and a reaction force that presses against the bolt thread are produced.

## Prevailing Torque

The prevailing torque is generated by the reaction to the spring acting on the shaft threads. (The following graphs can be used for reference when using lubricated fasteners.)

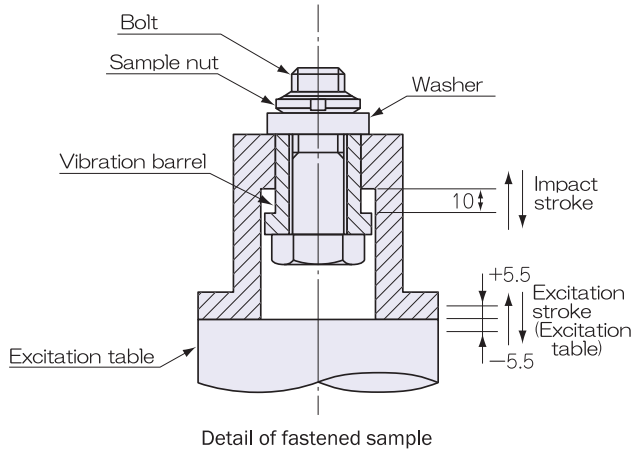




# Axial Impact Vibration Test

## ● Test Conditions

Sample size	M20 × 1
Clamping torque	53.9N·m {550kgf·cm}



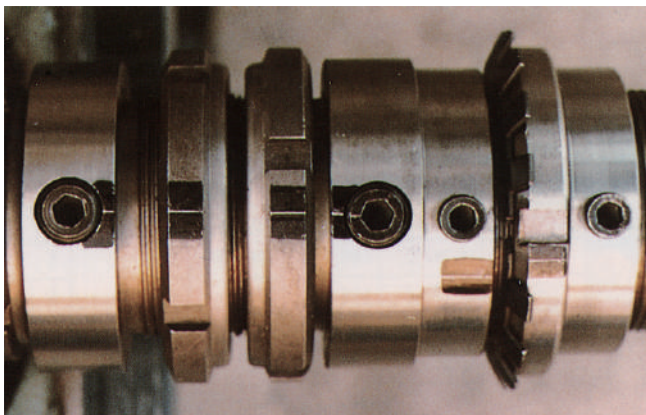
## ● Specification of testing machine

Frequency	1,278 cpm
Excitation stroke	11 mm
Impact stroke	10 mm
Vibrating acceleration of excitation table	10 G
Excitation time	60 min
Direction of impact	Bolt axis direction

## ● Test results

Sample nut	Excitation time (min.)						Test results
	10	20	30	40	50	60	
Standard nut with Washer	Looseness 20°	×	Damaged Washer	(1 min.)			Nut came off
<b>FINE U-NUT</b>							Acceptable

# Rotational Life Test



## ● Test conditions

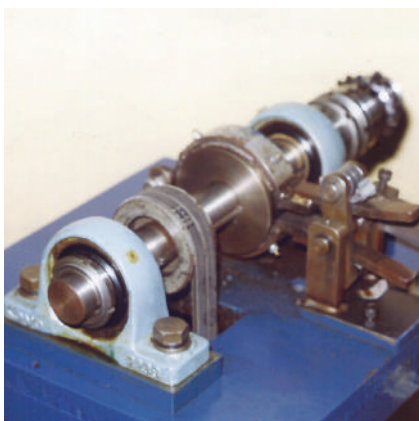
Sample size	M55x2
Speed of revolution	2,300 rpm
Testing cycles	One cycle (forward rotation, stop, reverse rotation, stop) 10 sec.
Stopping time	For forward rotation 0.30 sec For reverse rotation 0.27 sec

## ● Inertial force applied to the nut during stopping

Sample	Inertial force N·m {kgf·cm}	
	For forward rotation	For reverse rotation
Standard bearing nut	0.14 {1.42}	0.15 {1.57}
<b>FINE U-NUT</b>	0.15 {1.52}	0.17 {1.69}

## ● Test result

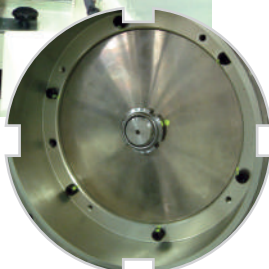
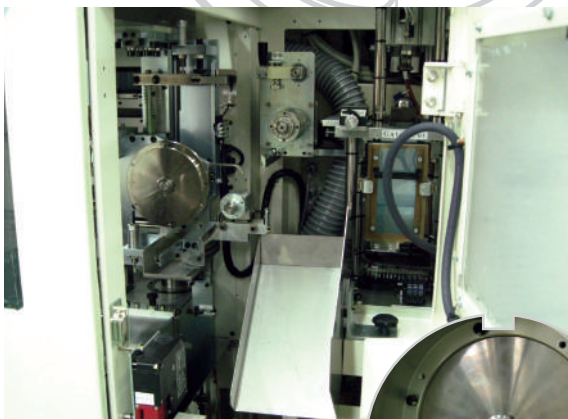
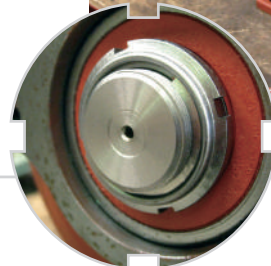
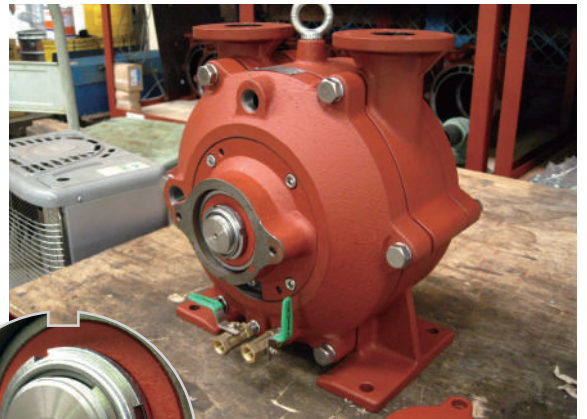
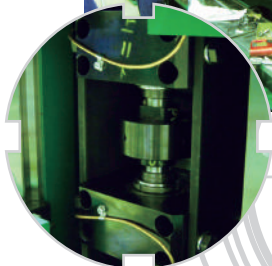
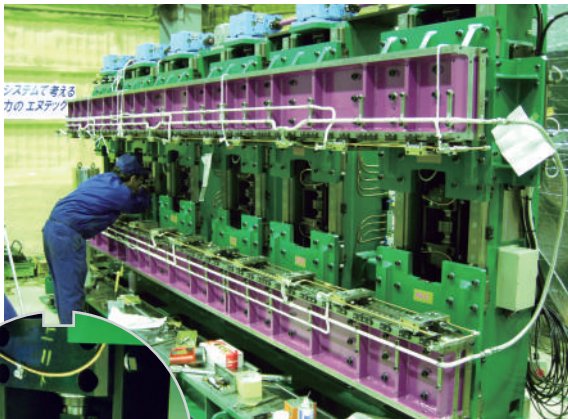
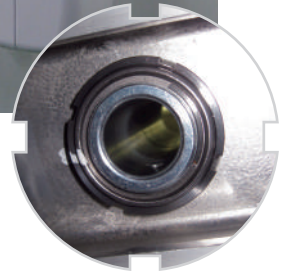
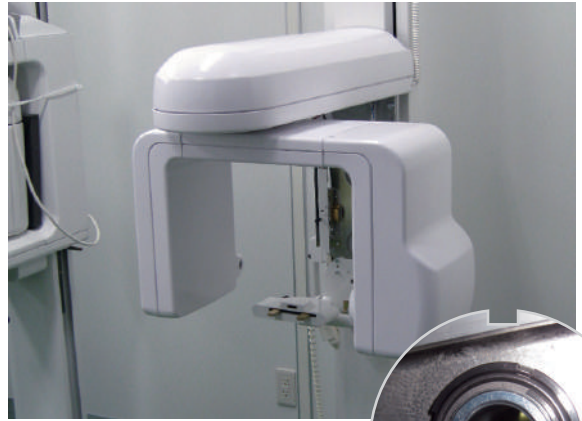
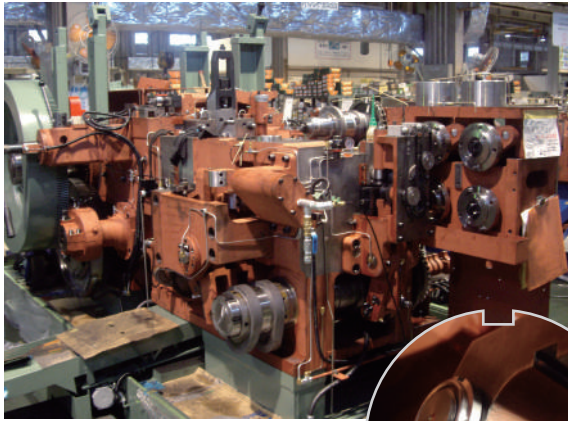
Sample	Sample No.	Result of endurance test
Standard nut with Washer	1	Washer damaged and nut came off at approx. 110,000 cycles.
	2	Washer damaged and nut came off at approx. 330,000 cycles.
<b>FINE U-NUT</b>	3	No change after 500,000 cycles
	4	



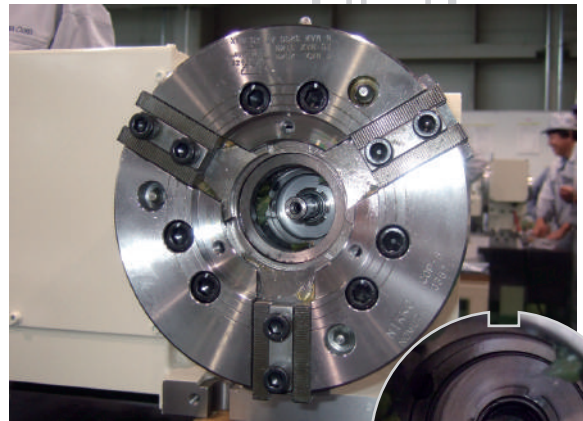
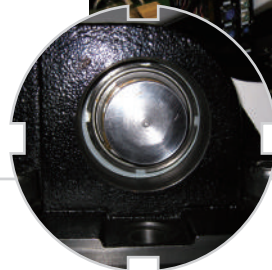
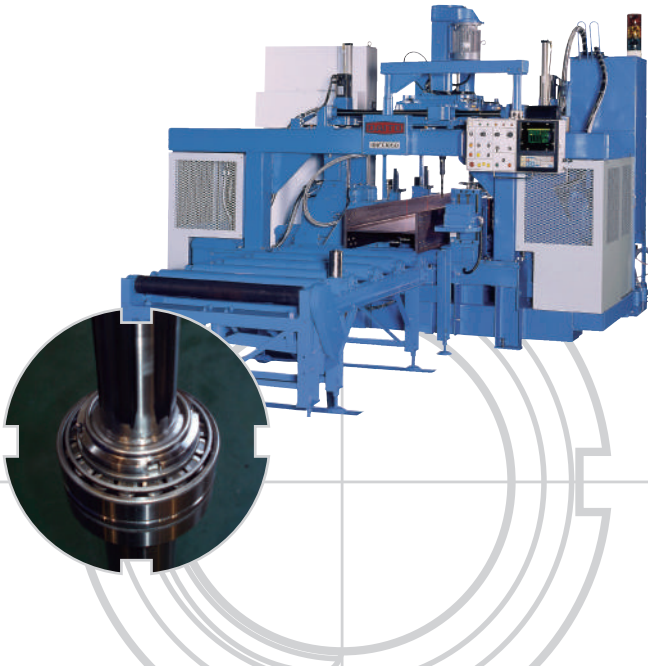
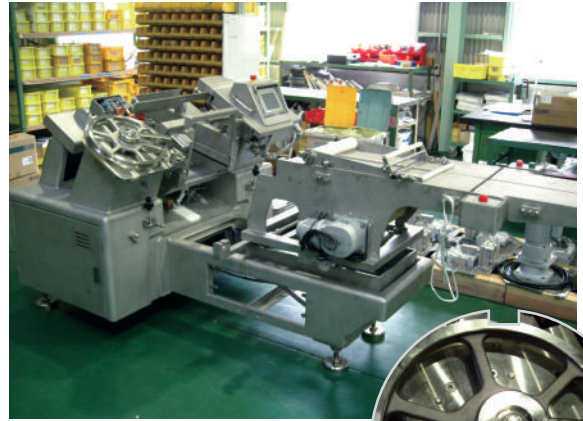
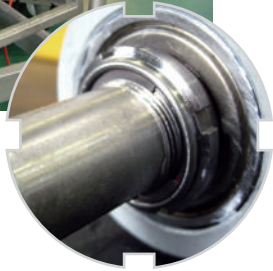
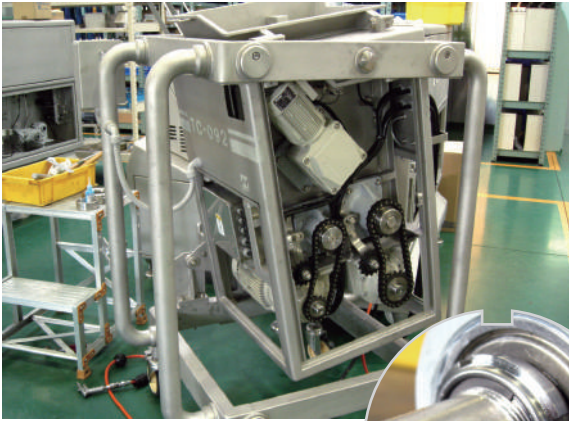




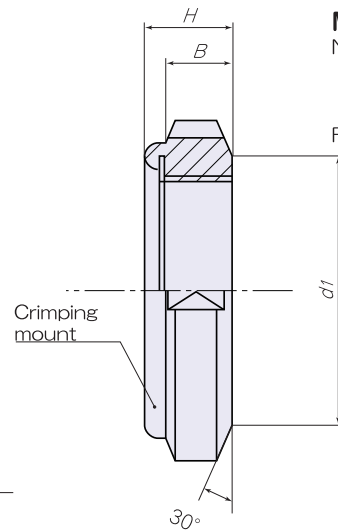
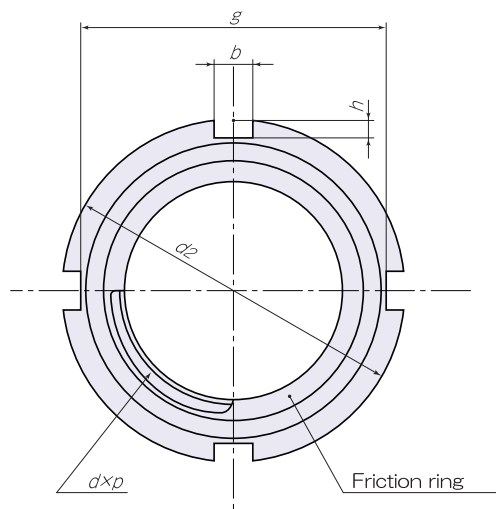
# Typical Application Examples







# FINE U-NUT Dimension Table



**Materials (standard items)**  
 Nut body ... S45C-H  
 or equivalent  
 SS 400 or equivalent  
 SUS304 or equivalent  
 Friction ring SUS301

Thread accuracy: ISO6H Unit: mm

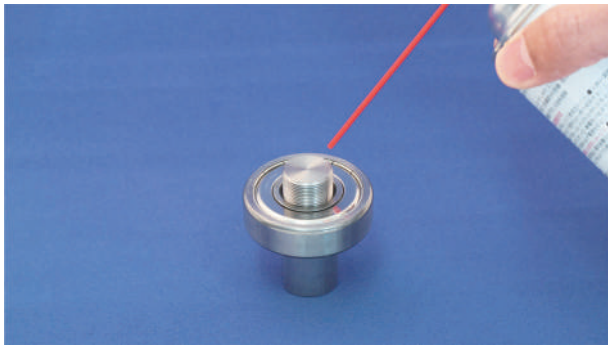
Part No.			Designation of Thread	$d_1$		$d_2$	$H$		$B$	$b$	$h$	$g$	Perpendicularity of Bearing Surface (max.)	Unit Weight [g]
SC Series (Material S45C-H)	SS Series (Material SS400)	SUS Series (Material SUS304)	$d \times p$											
-	FUNM8SS	-	M 8×0.75	12		16	5.3		4.3	3	1.5	13		4.1
FUN00SC	FUN00SS	FUN00SUS	M10×0.75	13.5		18	5.2 ±0.3		4	3	1.8	14.4		4.5
FUN01SC	FUN01SS	FUN01SUS	M12×1	17		22	5.4		4	3	1.8	18.4		8
FUN02SC	FUN02SS	FUN02SUS	M15×1	21		25	6.5		5	4	1.8	21.4		12
FUN03SC	FUN03SS	FUN03SUS	M17×1	24		28	6.4 ±0.5		5	4	1.9	24.2		13
FUN04SC	FUN04SS	FUN04SUS	M20×1	26		32	7.7		6	4	1.8	28.4	0.05	23
FUN05SC	FUN05SS	FUN05SUS	M25×1.5	32		38	9.1		7	5	2	34		36
FUN06SC	FUN06SS	FUN06SUS	M30×1.5	38		45	9.1		7	5	2	41		45
FUN07SC	FUN07SS	FUN07SUS	M35×1.5	44	0	52	10.2 ±0.8		8	5	2	48		70
FUN08SC	FUN08SS	FUN08SUS	M40×1.5	50	-0.5	58	11.2		9	6	2.5	53		95
FUN09SC	FUN09SS	FUN09SUS	M45×1.5	56		65	12.5		10	6	2.5	60		130
FUN10SC	FUN10SS	FUN10SUS	M50×1.5	61		70	13.5 ±1.0		11	6	2.5	65		160
FUN11SC	FUN11SS	FUN11SUS	M55×2	67		75	13.5		11	7	3	69		185
FUN12SC	FUN12SS	FUN12SUS	M60×2	73		80	13.5		11	7	3	74		190
FUN13SC	FUN13SS	FUN13SUS	M65×2	79		85	15		12	7	3	79		235
FUN14SC	FUN14SS	FUN14SUS	M70×2	85	0	92	15		12	8	3.5	85	0	265
FUN15SC	FUN15SS	FUN15SUS	M75×2	90		98	-0.5 15.8		13	8	3.5	91	-0.5	320
FUN16SC	FUN16SS	FUN16SUS	M80×2	95		105	18.6		15	8	3.5	98		430
FUN17SC	FUN17SS	FUN17SUS	M85×2	102		110	19.2		16	8	3.5	103		495
FUN18SC	FUN18SS	FUN18SUS	M90×2	108		120	20.3		16	10	4	112	0.07	630
FUN19SC	FUN19SS	FUN19SUS	M95×2	113		125	21.3 ±1.5		17	10	4	117		725
FUN20SC	FUN20SS	FUN20SUS	M100×2	120		130	22.3		18	10	4	122		770
FUN21SC	-	-	M105×2	126		140	22.3		18	12	5	130		904
FUN22SC	-	-	M110×2	133		145	23.3		19	12	5	135		954
FUN23SC	-	-	M115×2	137	0	150	23.3		19	12	±0.3 5	140		1030
FUN24SC	-	-	M120×2	138	-0.75	155	24.3		20	12	5	145		1080
FUN25SC	-	-	M125×2	148		160	25.4		21	12	5	150		1170
FUN26SC	-	-	M130×2	149		165	25.4		21	12	5	155		1250
FUN27SC	-	-	M135×2	160		175	26.6		22	14	6	163	0.10	1586
FUN28SC	-	-	M140×2	160		180	26.6 ±2.0		22	14	6	168		1748
FUN29SC	-	-	M145×2	171		190	28.6		24	14	6	178		2000
FUN30SC	-	-	M150×2	171		195	28.3		24	14	6	183		2050

(Specify Part No. when placing an order.)  
 ※Consult us if left handed screw is needed.

※ Consult us if surface treatment is needed.  
 ※ Materials include equivalent of each materials.  
 ※ Dimensions may change for improvement.



# Installation Procedure



Position nut on shaft. Apply lubricant after checking that the tip of the thread portion of the shaft has a chamfer that is equivalent to the distance of 1 pitch. When the shaft has low hardness, use lubricant with especially high lubricating properties.



Manually screw the nut on until the friction ring touches the tip of the threaded portion of the shaft.

※ The nut cannot be used if the shaft thread is machined with a keyway or other processing.



Use a tightening tool made especially for **FINE U-NUT**.

※ Using a hook wrench is also OK.  
※ High-speed rotation impact wrenches cannot be used.



Press down on the axis portion of the ratchet handle and tighten by lightly turning the ratchet.



Check that bearing inner ring and **FINE U-NUT** bearing surface are closely adhered to each other and check that two full shaft threads protrude beyond the friction ring at the top of the nut.

When removing, unscrew the nut with a tightening tool until the friction ring detaches the tip of the threaded portion of the bolt. After that, unscrew the nut manually.

# FINE U-NUT TOOL SET 00-10

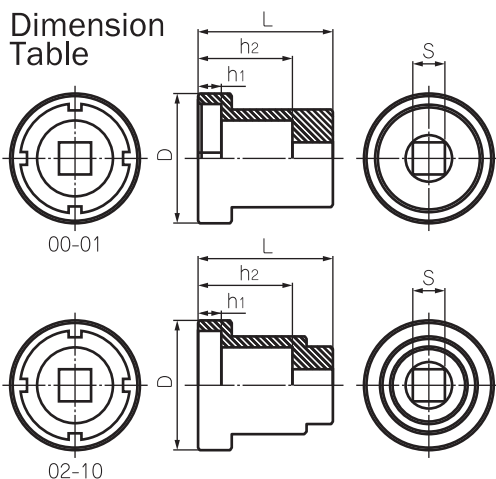
FINE U-NUT / M10 - M50 Tightenig Tool Set Made Especially for **FINE U-NUT**

## Set Contents

Sockets (for sizes M10 to M20)	5(9.52mm socket size)
Sockets (for sizes M25 to M50)	6(12.7mm socket size)
Ratchet handle (3/8")	1(9.52 x 225mm)
Ratchet handle (1/2")	1(12.7 x 390mm)
Extension bar (3/8")	1(9.52 x 75mm)
Extension bar (1/2")	1(12.7 x 150mm)
Steel case	1(400 x 150 x 70 mm)



## Dimension Table



Ratchet Handle			
Part No.	Total Length	Socket Size	Maximum Torque
FUTR-3/8	225mm	9.52(3/8")	176N·m
FUTR-1/2	390mm	12.70(1/2")	490N·m

Extension Bar			
Part No.	Total Length	Socket Size	Maximum Torque
FUTE-3/8	75mm	9.52(3/8")	137N·m
FUTE-1/2	150mm	12.70(1/2")	382N·m

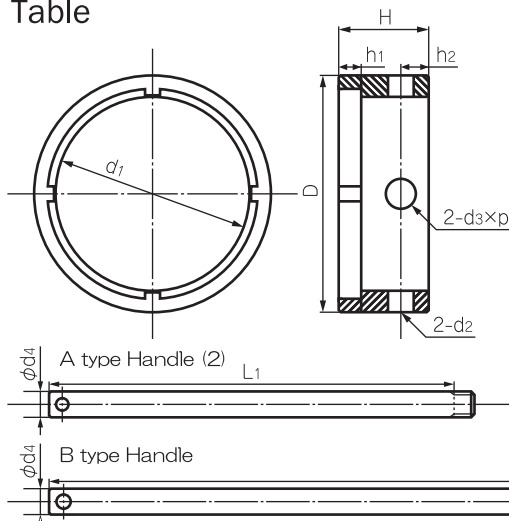
Socket Part No.	FINE U-NUT Applicable Size	D	L	h <sub>1</sub>	h <sub>2</sub>	S
FUT#00	M10×P0.75	23.0	36.0	4.4	24.0	
FUT#01	M12×P1.0	27.0	37.0	4.6	25.0	
FUT#02	M15×P1.0	31.0	38.0	5.7	26.0	9.52
FUT#03	M17×P1.0	34.0	39.0	5.6	27.0	
FUT#04	M20×P1.0	38.5	40.0	6.9	28.0	
FUT#05	M25×P1.5	45.5	46.5	8.1	30.5	
FUT#06	M30×P1.5	53.0	50.0		34.0	
FUT#07	M35×P1.5	60.5	53.5	9.2	37.5	12.70
FUT#08	M40×P1.5	67.0	57.0	10.2	41.0	
FUT#09	M45×P1.5	74.5	60.5	11.2	44.5	
FUT#10	M50×P1.5	80.0	64.0	12.2	48.0	

Unit: mm

# FINE U-NUT Clamping Socket Handle (11-20)

Clamping tool available for each size of **FINE U-NUT** M55 - M100

## Dimension Table



Socket Part No.	FINE U-NUT Applicable Size	Socket							A type Handle (Part No.)	B type Handle (Part No.)
		D	d <sub>1</sub>	H	h <sub>1</sub>	h <sub>2</sub>	d <sub>2</sub>	d <sub>3</sub> ×p	φd <sub>4</sub> ×L <sub>1</sub>	φd <sub>4</sub> ×L <sub>2</sub>
FUT#11	M55×2	85.5	69.0	36	8.5					
FUT#12	M60×2	91.0	74.0			11	12	M12×1.75	φ12×200 (FUTA-12)	φ12×500 (FUTB-12)
FUT#13	M65×2	96.5	79.0	38	9.5					
FUT#14	M70×2	104.0	85.0	41						
FUT#15	M75×2	110.5	90.5	42	10.5					
FUT#16	M80×2	118.0	97.5	44	12.5	13	14	M14×2.0	φ14×250 (FUTA-14)	φ14×650 (FUTB-14)
FUT#17	M85×2	123.5	102.5	46						
FUT#18	M90×2	134.0	111.0	50	13.0					
FUT#19	M95×2	139.5	116.0	51	14.0	15	16	M16×2.0	φ16×300 (FUTA-16)	φ16×750 (FUTB-16)
FUT#20	M100×2	145.0	121.0	52	15.0					

Specify Part No. when placing an order.

Unit: mm



**FINE U-NUT** Size Table





# Precaution for Use

**FINE U-NUT** series is especially used in critical and extremely important applications.



- The thread portion tip should have a chamfer equivalent to the distance of 1 pitch and the thread accuracy should be ISO6g(JIS6g).



- Use lubricant when installing and removing a nut. When the shaft has low hardness, use lubricant with especially high lubricating properties.



- For full locking, ensure that two full bolt threads protrude beyond the friction ring at the top of the **FINE U-NUT**.



- Face runout values listed in the size table are valid only for when tightening is performed to at least twice the prevailing torque.



- The nut cannot be used if the shaft thread is machined with a keyway or other processing.



- The nut cannot be installed from the friction ring side.



- Stop using the nut if excessive deformation or another fault is found on the friction ring and the clamp.
- High-speed rotation impact wrenches cannot be used.



- If use under severe conditions or with low axial tension, consult us.

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"Customer support center"

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