

# Super Intelec System UA Series

## UA-MC series – Pistol Type

### SPECIFICATIONS

Model	Capacity (Nominal Bolt Size)		Overall Length (about)		Weight less Socket or Bit (about)		From Center to Outside (about)		Torque Range				Free Speed (Approx.)		SQ Drive or Hex Size	Sound Pressure Level (Lpa)	Sound Power Level (Lwa)	Vibration Total Value (Ahd)	Vibration Uncer- tainty(k)	Average Air Consumption		
	mm	in	mm	in	kg	lb	mm	in	0.5MPa		0.6MPa		rpm		mm	in	dB(A)	dB(A)	m/sec²	m/sec²	m³/min	ft³/min
									Nm	ft-lbs	Nm	ft-lbs	0.5MPa	0.6MPa								
UA40MC	6	1/4	170	6 11/16	1.10	2.42	28	1 7/64	4.9-9.3	3.6-6.8	6.8-12.0	5.0-8.8	3300	3600	9.5	3/8	78	-	<2.5	0.53	0.20	7.0
UA40DMC	6	1/4	170	6 11/16	1.10	2.42	28	1 7/64	4.9-9.3	3.6-6.8	6.8-12.0	5.0-8.8	3300	3600	6.35	1/4	78	-	<2.5	0.55	0.20	7.0
UA50MC	6-8	1/4-5/16	170	6 11/16	1.10	2.42	28	1 7/64	11.9-22.5	8.8-16.6	16.6-29.0	12.2-21.4	4100	4250	9.5	3/8	78	-	<2.5	0.54	0.25	8.8
UA50DMC	6-8	1/4-5/16	170	6 11/16	1.10	2.42	28	1 7/64	11.9-22.5	8.8-16.6	16.6-29.0	12.2-21.4	4100	4250	6.35	1/4	78	-	<2.5	0.55	0.25	8.8
UA60MC	8	5/16	175	6 57/64	1.14	2.51	28	1 7/64	18.1-34.2	13.3-25.3	25.1-44.0	18.5-32.5	4900	5000	9.5	3/8	80	-	<2.5	0.54	0.40	14.0
UA70MC	8-10	5/16-3/8	187	7 23/64	1.24	2.73	28	1 7/64	20.5-38.9	15.1-28.7	28.5-50.0	21.0-37.0	5300	5700	9.5	3/8	80	-	<2.5	0.55	0.45	15.8
UA80MC	10-12	3/8-1/2	195	7 43/64	1.55	3.41	30	1 3/16	30-50	22.2-37.0	40-60	29.6-44.4	5600	6000	9.5	3/8	80	-	<2.5	0.56	0.48	16.8
UA90MC	10-12	3/8-1/2	203	7 63/64	1.70	3.74	30	1 3/16	32.8-62.2	24.2-46.0	45.7-80.0	33.8-59.2	5200	5500	12.7	1/2	82	93	<2.5	0.58	0.53	18.6
UA100MC	12	1/2	215	8 15/32	2.05	4.51	32	1 17/64	36.9-70.0	27.3-51.8	51.4-90.0	38.0-66.6	4900	5200	12.7	1/2	82	93	<2.5	0.60	0.55	19.3
UA130MC	14	9/16	233	9 11/64	2.80	6.16	38	1 1/2	53.4-101.0	39.5-74.7	74.2-130	54.9-96.2	4000	4500	12.7	1/2	82	93	<2.5	0.63	0.73	25.6

Air Inlet size: NPT 1/4" Air Hose size: 10mm x 6.5mm x 5m for UA40MC-50MC 12mm x 8.0mm x 5m for UA60MC-100MC 16mm x 11.0mm x 5m for UA130MC  
Sound levels 3dB(A) and vibration values measured in accordance with ISO 15744 and ISO 28927-2 respectively.  
The uncertainty in the sound levels is 3dB(A). Specifications are subject to change without notice.

## UA-SMC series – Straight Type

### SPECIFICATIONS

Model	Capacity (Nominal Bolt Size)		Overall Length (about)		Weight less Socket or Bit (about)		From Center to Outside (about)		Torque Range				Free Speed (Approx.)		SQ Drive or Hex Size	Sound Pressure Level	Sound Power Level	Vibration Total Value	Vibration Uncer- tainty(k)	Average Air Consumption		
	mm	in	mm	in	kg	lb	mm	in	0.5MPa		0.6MPa		rpm		mm	in	d(BA)	d(BA)	m/sec²	m/sec²	m³/min	ft³/min
									Nm	ft.-lbs	Nm	ft.-lbs	0.5MPa	0.6MPa								
UA40SMC	6	1/4	246	9 11/16	1.22	2.68	26	1 1/32	5-11	3.7-8.1	7-13	5.2-9.6	3300	3600	9.5	3/8	78	-	<2.5	0.7	0.20	7.0
UA40SDMC	6	1/4	246	9 11/16	1.22	2.68	26	1 1/32	4.5-9.5	3.3-7.0	5-12	3.7-8.9	3300	3600	6.35	1/4	78	-	2.7	0.7	0.20	7.0
UA50SMC	6-8	1/4-5/16	246	9 11/16	1.23	2.70	26	1 1/32	9-20	6.7-14.8	11-25	8.1-18.5	4100	4250	9.5	3/8	78	-	2.7	0.7	0.25	8.8
UA50SDMC	6-8	1/4-5/16	246	9 11/16	1.23	2.70	26	1 1/32	8-18	5.9-13.3	9-23	6.7-17.0	4100	4250	6.35	1/4	78	-	3.1	0.7	0.25	8.8
UA60SMC	8	5/16	252	9 61/64	1.30	2.86	26	1 1/32	16-30	11.8-22.2	18-38	13.3-28.1	4900	5000	9.5	3/8	80	-	3.1	0.7	0.40	14.0
UA60SDMC	8	5/16	252	9 61/64	1.30	2.86	26	1 1/32	14-27	10.4-20.6	16-34	11.8-25.2	4900	5000	6.35	1/4	80	-	3.5	0.8	0.40	14.0
UA70SMC	8-10	5/16-3/8	265	10 7/16	1.39	3.05	26	1 1/32	25-40	18.8-29.6	30-50	22.2-37.0	5300	5700	9.5	3/8	80	-	3.3	0.7	0.45	15.8

Air Inlet size: NPT 1/4" Air Hose size: 10mm x 6.5mm x 5m for UA40SMC-50SMC 12mm x 8.0mm x 5m for UA60SMC-70SMC  
Sound levels 3dB(A) and vibration values measured in accordance with ISO 15744 and ISO 28927-2 respectively.  
The uncertainty in the sound levels is 3dB(A). Specifications are subject to change without notice.

## UA-AMC series – Pistol Type

### SPECIFICATIONS

Model	Capacity (Nominal Bolt Size)		Overall Length (about)		Weight less Socket or Bit (about)		From Center to Outside (about)		Torque Range				Free Speed (Approx.)		SQ Drive or Hex Size	Sound Pressure Level (Lpa)	Sound Power Level (Lwa)	Vibration Total Value (Ahd)	Vibration Uncer- tainty(k)	Average Air Consumption		
	mm	in	mm	in	kg	lb	mm	in	0.5MPa		0.6MPa		rpm									
									Nm	ft.-lbs	Nm	ft.-lbs	0.5MPa	0.6MPa								mm
UA400AMC	6	1/4	193	7 19/32	1.35	2.97	28.0	1 7/64	5-11	3.7-8.1	7-13	5.2-9.6	3300	3600	9.5	3/8	78	-	<2.5	0.54	0.20	7.0
UA500AMC	6-8	1/4-5/16	193	7 19/32	1.35	2.97	28.0	1 7/64	9-20	6.6-14.8	11-25	8.1-18.4	4100	4250	9.5	3/8	78	-	<2.5	0.55	0.25	8.8
UA600AMC	8	5/16	198.5	7 13/16	1.4	3.08	28.0	1 7/64	16-30	11.8-22.1	18-38	13.3-28.0	4900	5000	9.5	3/8	80	-	<2.5	0.55	0.40	14.0
UA700AMC	8-10	5/16-3/8	207.5	8 11/64	1.5	3.3	28.5	1 1/8	25-40	18.4-29.5	30-50	22.1-36.9	5300	5700	9.5	3/8	80	-	<2.5	0.56	0.45	15.8
UA800AMC	10	3/8	215.5	8 31/64	1.7	3.74	29.0	1 9/64	35-50	25.8-36.9	40-60	29.5-44.3	5600	6000	9.5	3/8	80	-	<2.5	0.57	0.48	16.8
UA900AMC	10-12	3/8-1/2	227.5	8 61/64	2.15	4.73	28.0	1 7/64	35-65	25.8-47.9	40-80	29.5-59.0	5200	5500	12.7	1/2	82	93	<2.5	0.57	0.53	18.6
UA1000AMC	12	1/2	235.0	9 1/4	2.45	5.39	30.0	1 3/16	45-75	33.2-55.3	50-90	36.9-66.4	4900	5200	12.7	1/2	82	93	<2.5	0.60	0.55	19.3
UA1300AMC	14	9/16	256.5	10 3/32	3.25	7.15	36.0	1 27/64	70-110	51.6-81.1	85-130	62.7-95.9	4000	4500	12.7	1/2	82	93	<2.5	0.60	0.73	25.6

Air Inlet Size: NPT 1/4" Air Hose Size: 10mm x 6.5mm x 5m for UA400AMC and UA500AMC 12mm x 8.0mm x 5m for UA600AMC-UA1000AMC 16mm x 11.0mm x 5m for UA1300AMC  
Sound levels 3dB(A) and vibration values measured in accordance with ISO 15744 and ISO 28927-2 respectively.  
The uncertainty in the sound levels is 3dB(A). Specifications are subject to change without notice.

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Distributed by :

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For further information, please contact at any time your nearest URYU distributor.

**UPT** URYU Power Tools

# Super Intelec System UA Series



**URYU SEISAKU, LTD.**  
Osaka, Japan



In terms of fastening

## Operation efficiency is improved

### 1. Accuracy improved

### 2. Speed-up of tightening time

Torque spike reduced at bolt seating

- > Accuracy is improved at low torque target and hard joint application

Reaching torque stability range faster

- > Speed-up of tightening time

No relief valve adjustment required

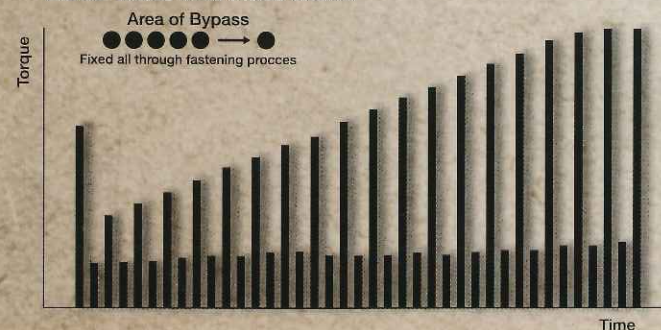
- > Easier tool setting

#### Magnetostrictive Sensor

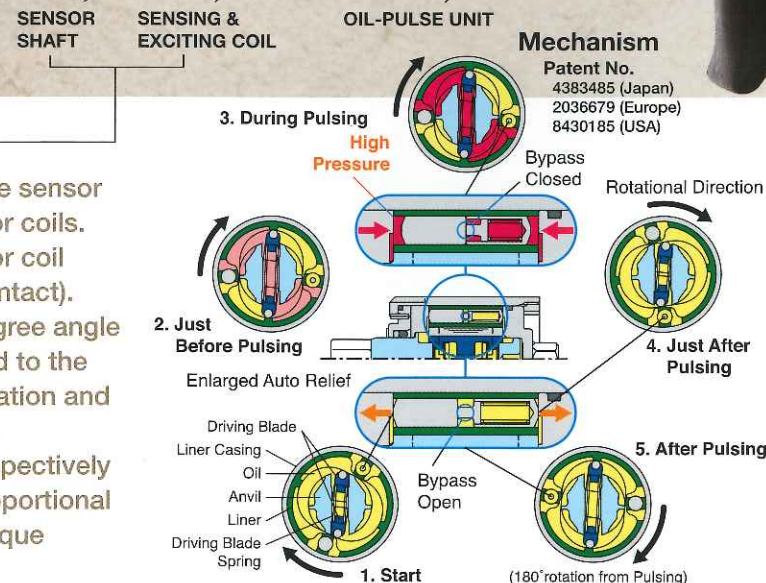
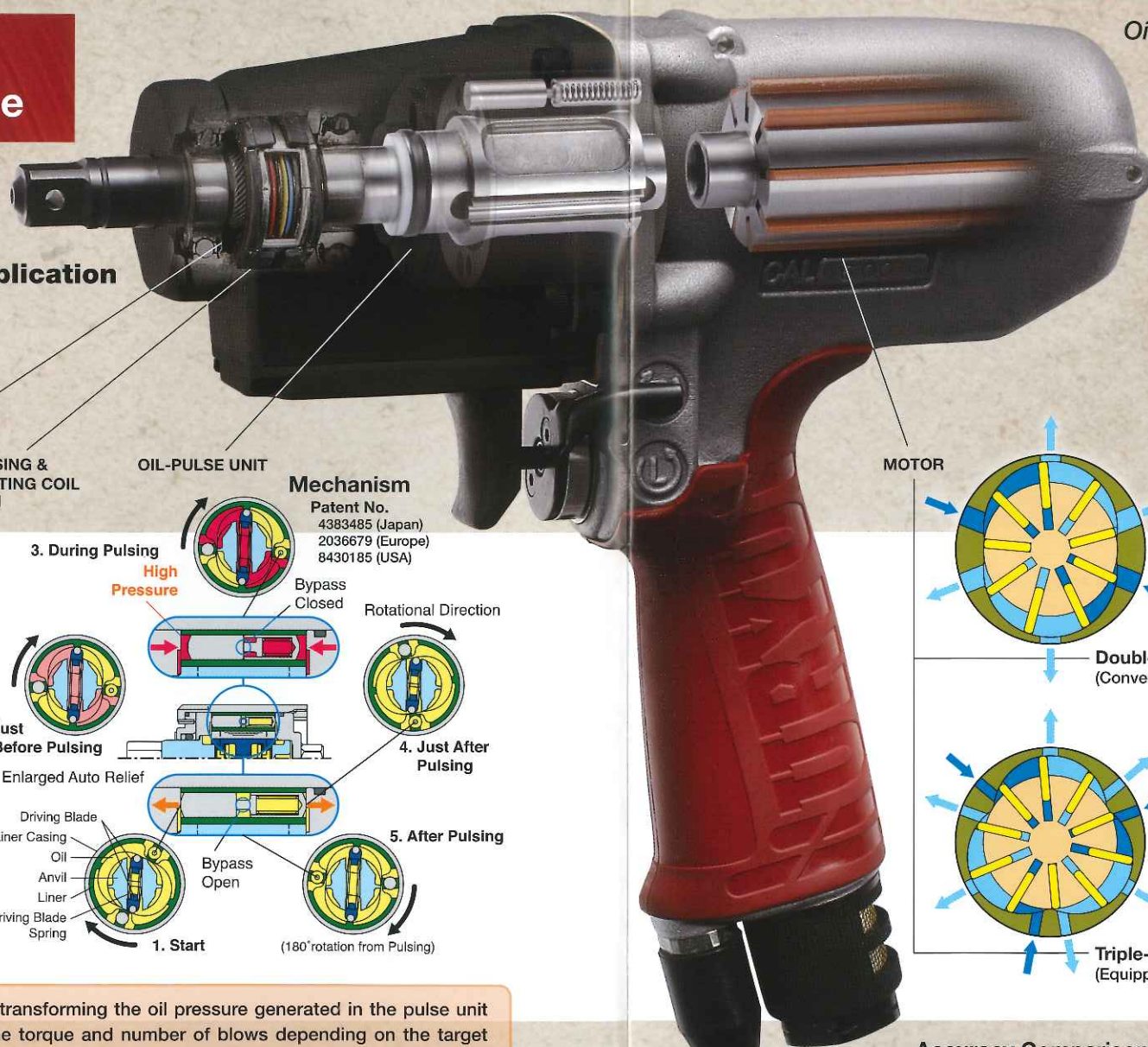
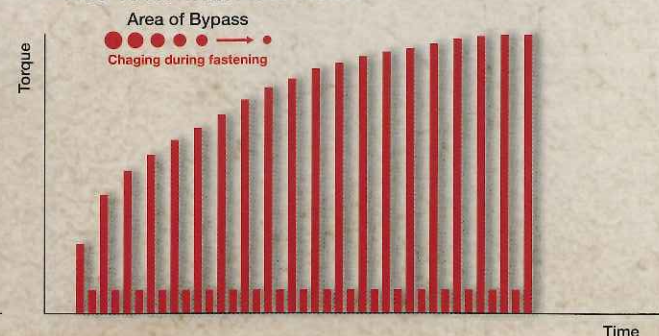
Uryu brushless Magnetostrictive Torque sensor consists of an Anvil and a pair of sensor coils. Without contacting the Anvil, the sensor coil detects load given to the Anvil (non-contact). The grooves in the Anvil are at a 45 degree angle in one location. When torque is applied to the Anvil, tensile stress appears on the location and magnet permeability increases. These permeability changes are detected, respectively transformed to the voltage change (proportional to applied torque) and converted to torque signals to control tool.

Relief Valve changes the area of bypass which plays its role in transforming the oil pressure generated in the pulse unit from high pressured area to low pressured area and adjusts the torque and number of blows depending on the target torque. However, the area of bypass in the existing relief valve system is decided at a proper adjustment position of final target torque, thus it was not possible to change the area of bypass while fastening. Newly developed "Auto Relief Function" changes the area of bypass depending on the process of fastening, which the existing relief valve does not. The new function offers you more ideal fastening than the conventional relief valve.

#### Pulse Tools w/o Auto Relief



#### Pulse Tools with Auto Relief



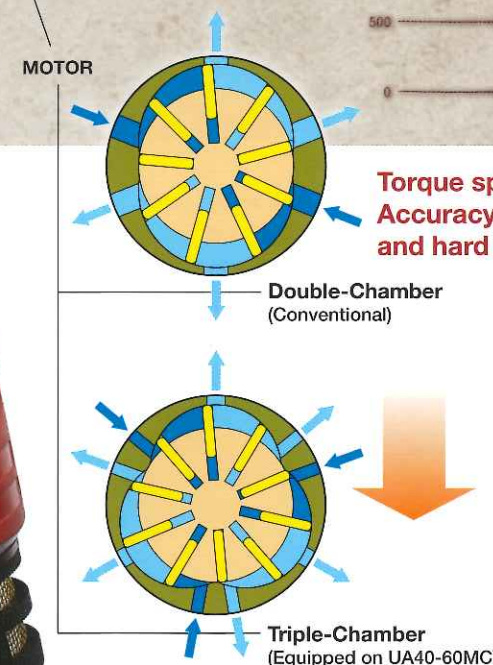
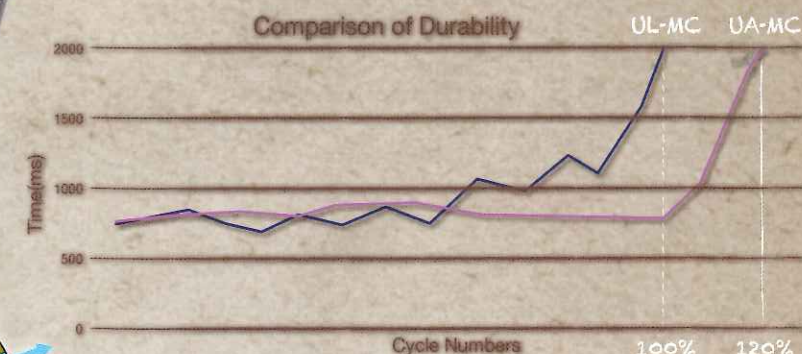
In terms of durability

## Maintenance cost is reduced

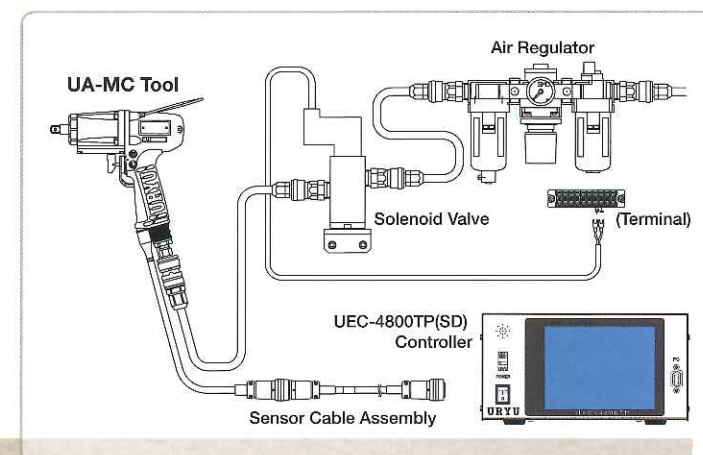
### 3. Durability improved

Oil-flow resistance is minimized (free running when not pulsing)

- > Heat generation of pulse unit is reduced.
- > Pressure on sealing components on the Anvil is reduced.

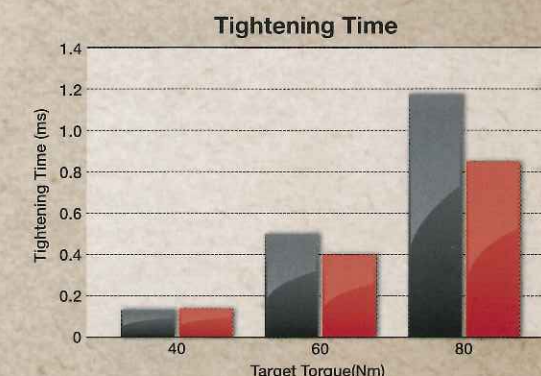
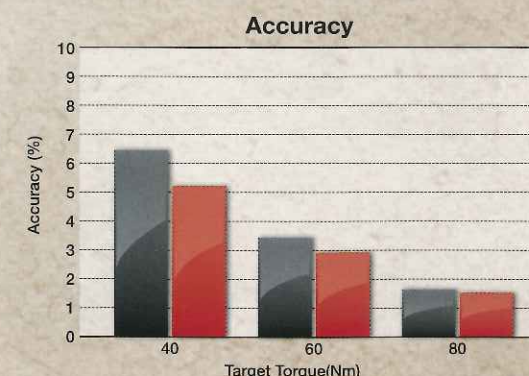


Torque spike reduced at bolt seating  
Accuracy is improved at low torque target and hard joint application



#### Accuracy Comparison

UL90MC × UA90MC Data Q'ty UFT-16 (M12) H (Hard-joint): 25, Air Pressure: 0.6MPa, Inside diameter of air hose: ø8mm



Note: UA-MC series are designed to produce fastening accuracy as the priority. Therefore, the tightening time of UA-MC series may increase more than the one of UL-MC series depending on models and work conditions.

UA-MC Series



# UA-SMC Series Straight Type

**We now have four UA-SMC models available for sales to cover 5 - 50 Nm.**

## Features

Triple chamber motor equipped for UA40, UA50, and UA60SMC for better accuracy

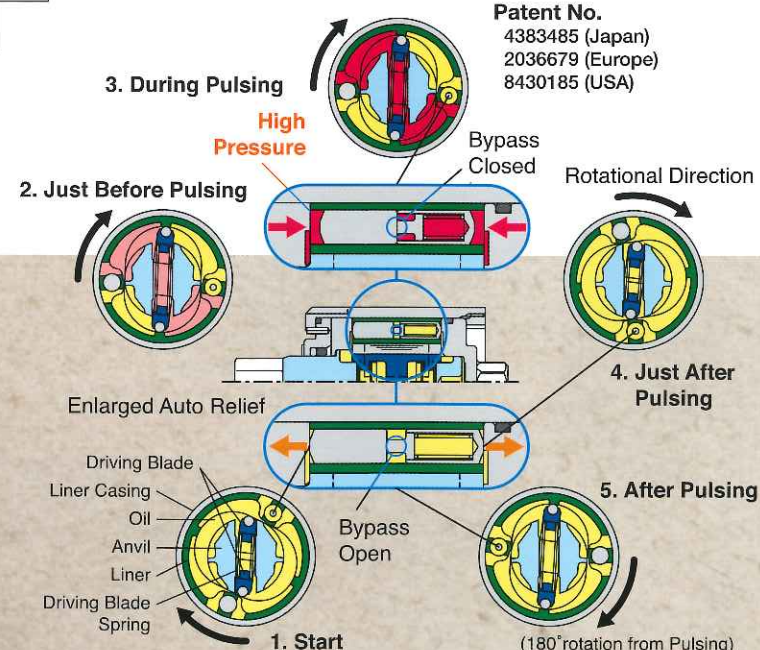
Pulse Unit with Auto Relief Mechanism

OK / NOK LED Indicator Equipped



## Mechanism

Patent No.  
4383485 (Japan)  
2036679 (Europe)  
8430185 (USA)

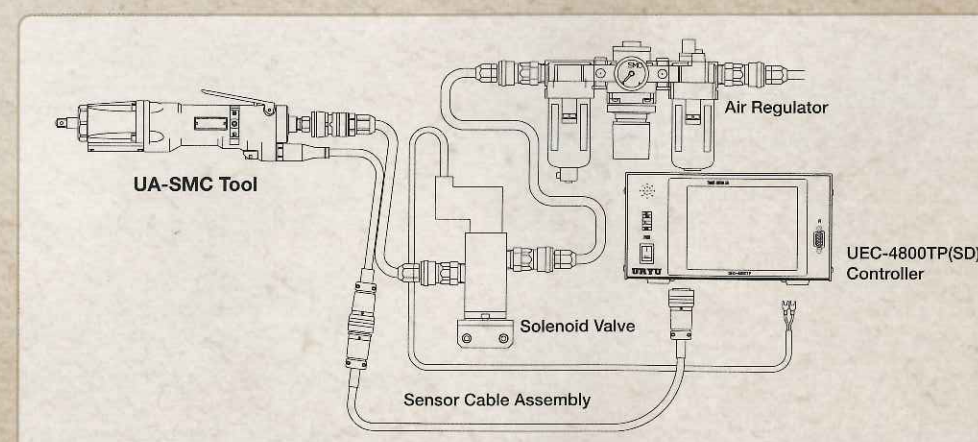
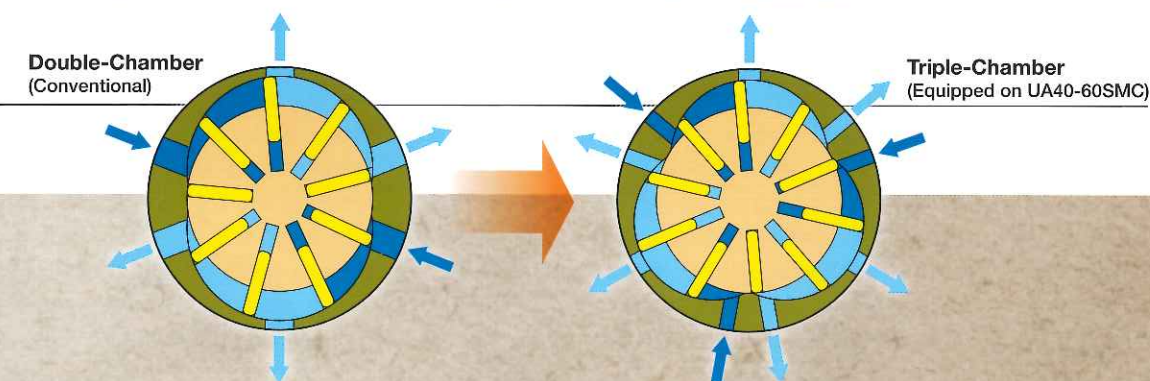


## Magnetostrictive Sensor

Uryu brushless Magnetostrictive Torque sensor consists of an Anvil and a pair of sensor coils. Without contacting the Anvil, the sensor coil detects load given to the Anvil (non-contact). The grooves in the Anvil are at a 45 degree angle in one location. When torque is applied to the Anvil, tensile stress appears on the location and magnet permeability increases. These permeability changes are detected, respectively transformed to the voltage change (proportional to applied torque) and converted to torque signals to control tool.

Relief Valve changes the area of bypass which plays its role in transforming the oil pressure generated in the pulse unit from high pressured area to low pressured area and adjusts the torque and number of blows depending on the target torque. However, the area of bypass in the existing relief valve system is decided at a proper adjustment position of final target torque, thus it was not possible to change the area of bypass while fastening. Newly developed "Auto Relief Function" changes the area of bypass depending on the process of fastening, which the existing relief valve does not. The new function offers you more ideal fastening than the conventional relief valve.

Torque spike reduced at bolt seating  
Accuracy is improved at low torque target and hard joint application



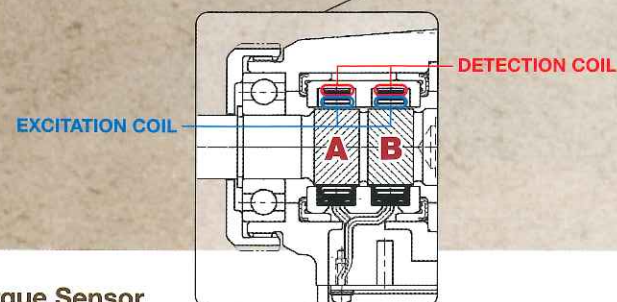
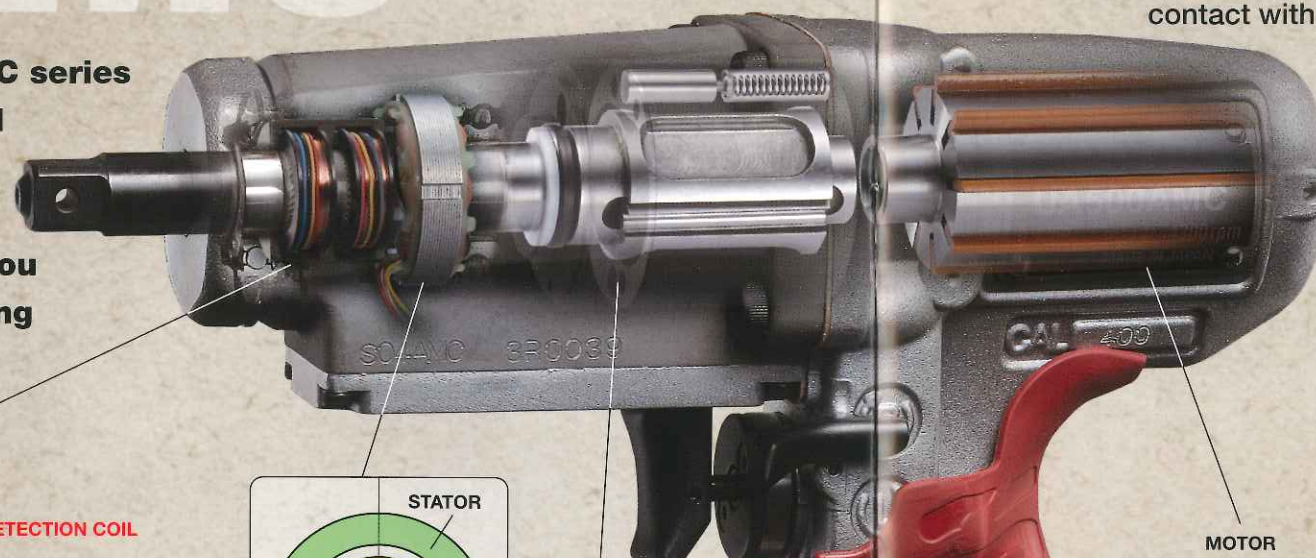


# UA-AMC Series

## Pistol Type

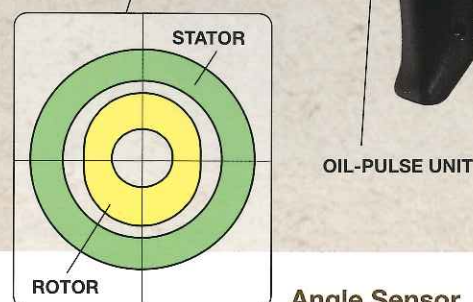
We have developed the UA-AMC series by incorporating a resolver and Magnetostrictive Sensor into the UA-MC series.

This UA-AMC series can help you to increase the level of fastening quality by measuring both angle and torque.



**Torque Sensor**

When the torque is applied to the shaft, tensile stress appears on the grooved area, the region **A** in the left figure, and on the other hand compressive stress on the **B**. Then, the magnetic permeability on the region **A** and **B** will be changed. Excitation coil, inside, and Detection coil, outside, surround the shaft. When excitation coil is excited at high frequency by the amplifier, detection coil detects the magnetic permeability change and respectively transform to the output voltage change, which is proportional to the applied torque. The output voltage is rectified, filtered and amplified up to max. 2V.



**Angle Sensor**

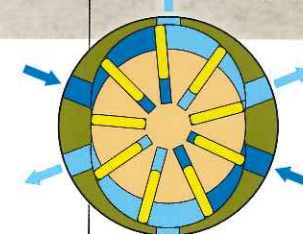
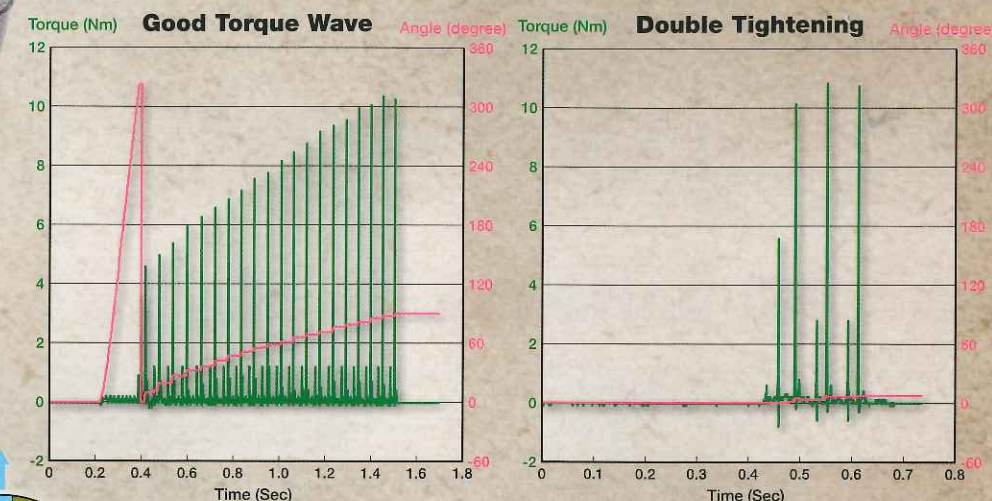
Rotor has a unique curve outer diameter, which makes the gap permeance between the stator and the rotor in angle with the sine waveform pattern. Two output coils surround the stator. These coils detect the gap change between the rotor and the stator, and output the two output voltages which change in the sine and cosine waveforms. These output voltages are transformed into the angle by the resolver/digital converter.

## Double Tightening on the Rundown Zone

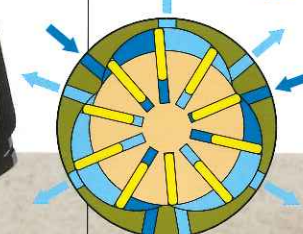
The "Rundown Zone" is the angle of rotation before the fastener bearing surface makes contact with the bearing surface of the joints components.

If the fastener is already tightened, the fastener is unable to make further rotation.

The angle detection in the Rundown Zone helps you better detect the double tightening.

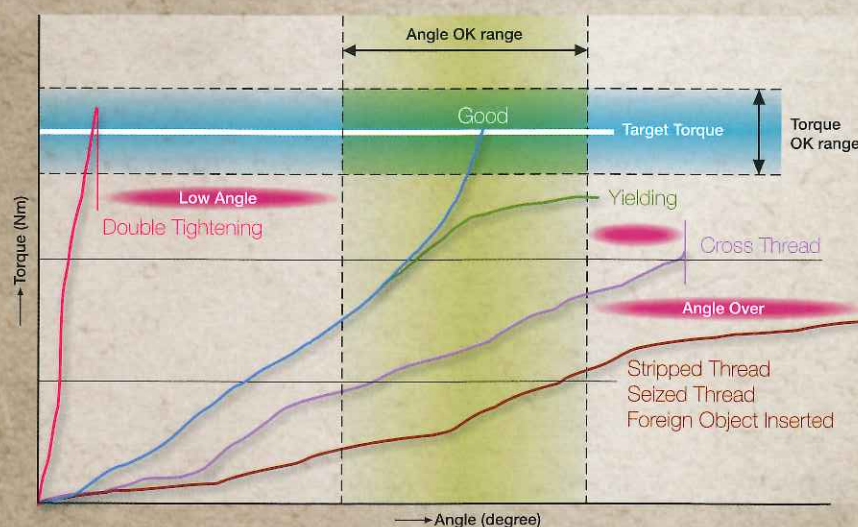
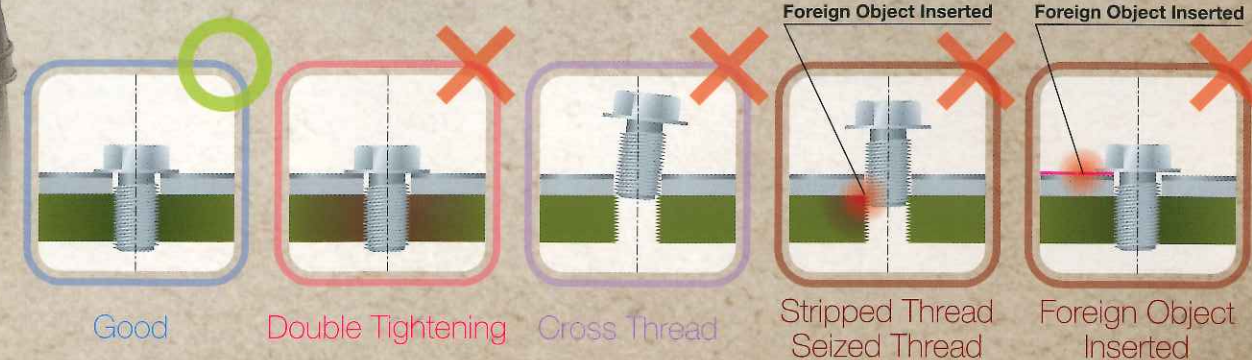
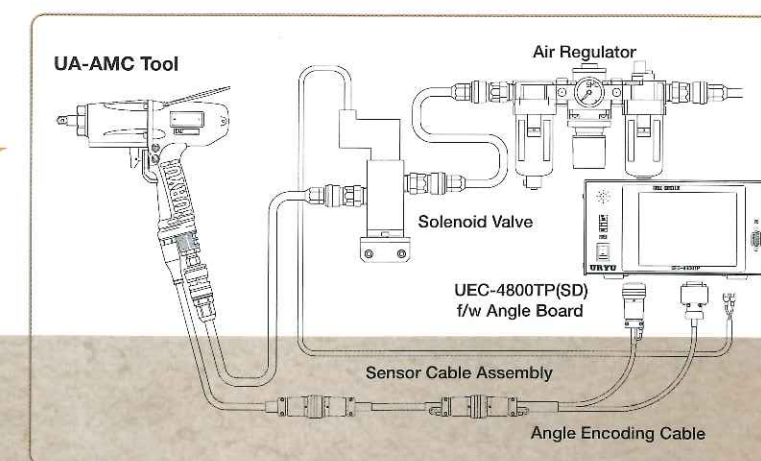


**Double-Chamber (Conventional)**



**Triple-Chamber (Equipped on UA400-600AMC)**

Torque spike reduced at bolt seating  
Accuracy is improved at low torque target and hard joint application



- **Double Tightening:**  
Detectable as the torque increases, while the free run angle lacks.  
>>>> **Free Run Angle NG**
- **Cross Thread:**  
Detectable as the fastening angle gets too high  
>>>> **Angle NG**
- **Stripped Thread/Seized Thread:**  
Detectable as the torque does not increase and the fastening angle gets too high  
>>>> **Angle NG**
- **Foreign Object Inserted:**  
Detectable as the torque does not increase and the fastening angle gets too high  
>>>> **Angle NG**