UAN series

Angle Nutrunners

Instruction Manual

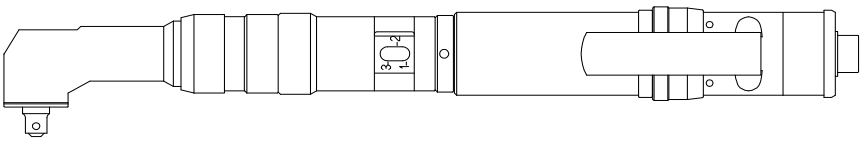
-Read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on or working near the angle nutrunner. Failure to follow the warnings and instructions in this handbook can result in serious bodily injury.
-Do not discard the safety and operating instructions. Give them to the operator. Retain these instructions for future reference.

Intended Use : The tool is designed to tighten or loosen threaded fasteners.

-The tool is intended for professional use only.

-Avoid misuse and abuse of the tool.

(e.g. Do not throw the tool on the floor, strike the housing in any way or use the tool as a hammer to knock material into place.)



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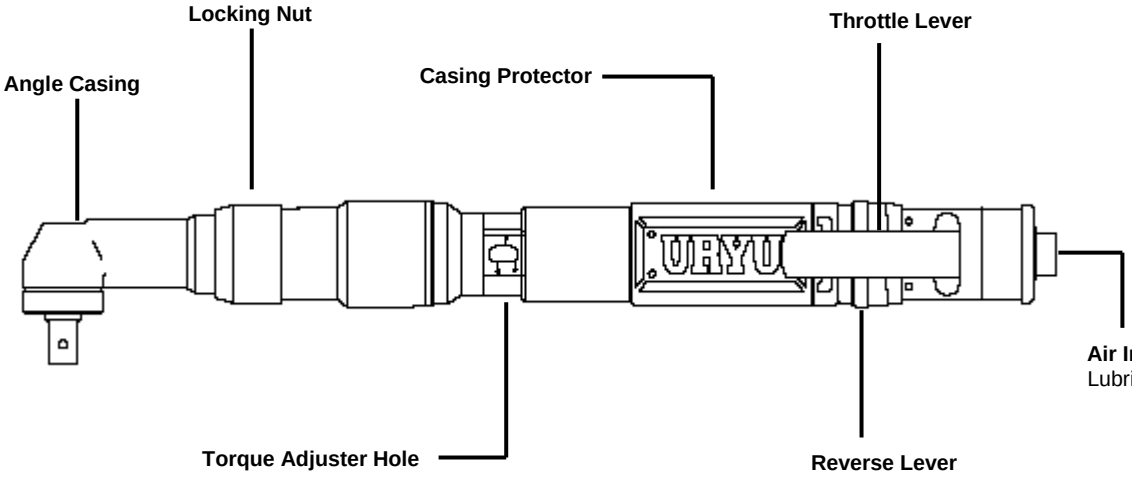
Description of Functions



Set the lever to **'R'** for clockwise operation and **'L'** for anticlockwise operation.

Safety Instructions

General Safety

-Only qualified and trained operators should install, adjust or use the tool. Operators and maintenance personnel must be physically able to handle the bulk, weight and power of the tool.
-Do not modify the tool. Modifications can reduce the effectiveness of safety measures and increase the risks to the operator.
-Stop using the tool if discomfort, tingling feeling or pain occurs.

Work Area Safety

-Keep work area clean and well lit. Cluttered or dark areas invite accidents.
-Do not use the tool in potentially explosive atmospheres, such as in the presence of flammable liquids, gases or dust. The tool is not insulated from coming into contact with electric power. Proceed with care in unfamiliar surroundings. Hidden hazards may exist.
-Always secure workpiece. Use clamps or other practical way to secure and support the workpiece to a stable platform. Holding the workpiece by hand or against your body is unstable and may lead to loss of control.
-Be aware of slippery surfaces caused by use of the tool and of trip hazards caused by the air line.
-Keep bystanders, children and visitors away while operating the tool. Distraction can cause you to lose control.

Pneumatic Safety

-Do not exceed the rated air pressure of 0.6MPa marked as (max.) stated on the tool.
-Always shut off air supply, drain hose of air pressure and disconnect the tool from air supply when not in use, before changing accessories or when making repairs. Plug the air inlet when not in use.
-Use correct hoses and always check for damaged or loose hoses and fittings. Whipping hoses can cause severe injury.
-An accessible means to shut off air supply should be provided at each tool station.
-Do not use quick-disconnect couplings at tool inlet. Use hardened steel (or material with comparable shock resistance) threaded hose fittings.
-Whenever universal twist couplings (claw couplings) are used, install lock pins and use whip check safety cables to safeguard against possible hose-to-tool and hose-and-hose connection failure.
-Do not abuse the hose. Never use the hose for carrying, pulling or hanging the tool.
-Keep the hose away from heat, oil, sharp edges or moving parts. Damaged or entangled hoses increase the risk.
-Release the throttle trigger / lever in the case of an interruption of the air supply.
-Never direct air at yourself or anyone else.

Personal Safety

-Stay alert, watch what you are doing and use common sense when operating the tool. Do not use any tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating a tool may result in serious personal injury.
-Maintain a balanced body position and secure footing. Avoid awkward or off-balanced postures. Change the posture during extended tasks, which may help to avoid discomfort and fatigue. If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensation or stiffness, the operator should tell the employer and consult a qualified health professional immediately.
-Prevent unintentional or inadvertent start. Ensure that the throttle trigger / lever is in the OFF-position before connecting the tool to air supply, picking up or carrying the tool. Carry the tool only by the handle. Carrying the tool with your finger on the throttle trigger / lever or energising the tool that has the throttle trigger / lever on invites accidents.
-Never hold the drive socket / bit or drive extension. Keep hands away from rotating drives.
-Dress properly. Do not wear loose clothing, jewellery and neck ware. Keep your hair, clothing and gloves away from all moving parts.
-Use personal protective equipments such as dust mask, non-skid safety shoes and hard hat as instructed by the employer and as required by occupational health and safety regulations.
-Wear suitable gloves to protect hands against hazards such as crushing, impacts, cuts and abrasions and heat. Do not wear loose fitting gloves or gloves with cut or frayed fingers. When using gloves, always be sure that the gloves will not prevent the throttle mechanism from being released.

-Always wear impact-resistant eye protection during the operation of the tool. The grade of protection required should be assessed for each use.
-Remove any adjusting wrench before turning the tool on. A wrench that is left attached to a rotating part of the tool may result in personal injury.
-Ensure that the workpiece is securely fixed.

-Do not use the tool in confined spaces. Beware of crushing hands between the tool and workpiece, especially when unscrewing.

Noise

Unprotected exposure to high noise levels can cause permanent, disabling, hearing loss and other problems such as tinnitus (ringing, buzzing, whistling or humming in the ears). Risk assessment and implementation of appropriate controls for these hazards are essential.

-Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.

-Always ensure that the silencer is in place and in good working order when the tool is operating.

Vibration

Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms. If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the tool, tell the employer and consult a physician immediately.

-Support the weight of the tool in a stand, tensioner or balancer if possible.

-Hold the tool with a light but safe grip taking account of the required hand reaction forces. The risk from vibration is generally greater when the grip force is higher.

-Wear warm clothing when working in cold conditions and keep your hands warm and dry. Direct cold air away from the hands.

-Use sleeve fittings where practicable.

Dust and Fumes

Dust and fumes generated when using the tool can cause ill health (e.g. cancer, birth defects, asthma and/or dermatitis). Risk assessment and implementation of appropriate controls for these hazards are essential.

-Direct the exhaust so as to minimise disturbance of dust in a dust-filled environment. Where dusts or fumes are created, the priority shall be to control them at the point of emission.

Residual Risks

-Gloves can become entangled with the rotating drive, causing severed or broken fingers. Rotating drive sockets and drive extensions can easily entangle rubber coated or metal reinforced gloves.

-Additional residual risks may arise when using the tool which may not be included in the safety warnings. These risks can arise from misuse, prolonged use and so on. Even with the application of the relevant safety regulations and the implementation of safety devices, certain residual risks cannot be avoided. (e.g. injuries caused when changing any parts, blades or accessories)

Tool Use and Care

-Hold the tool correctly: be ready to counteract normal or sudden movements – have both hands available.

-Keep the tool dry and clean – free from oil and grease for better control of the tool.

-Do not force the tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.

-Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the tool operation. If damaged, have the tool repaired before use.

-Select and maintain and replace the socket / bit properly to prevent an unnecessary increase in noise / vibration level(s).

-Store the tool out of the reach of children and do not allow persons unfamiliar with these instructions to operate the tool. Tools are dangerous in the hands of untrained users.

Operating Instructions

Air Pressure

-The tool is designed to be operated at the air pressure of 0.6MPa. The air pressure at the tool air inlet shall not exceed the maximum air pressure of 0.6MPa.

Air Hose and Fitting

-Use the correct hoses and fittings for safety operation and optimum performance. See technical specifications for air hose sizes and air inlet threaded.

-Blow out the air hose before connecting a tool.

Dry and Clean Air

-Air filter and oil-fog lubricator should be preferably installed in a position within 3 metres from the tool.

-Dust, wear particles, corrosive fumes, excessive moisture cause rust and sticking of vanes and ruin the motor.

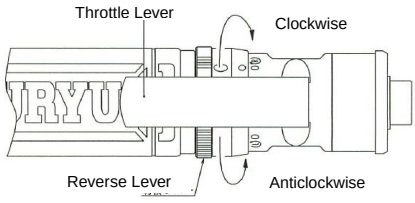
Socket

-To prevent sockets breakage, use impact sockets in good condition. Worn or ill fitting sockets / bits reduce power. Replace worn sockets to prevent vibration, loss in torque output, poor accuracy and damage to the output drive. Poor condition or hand sockets and accessories can shatter and become a projectile.

-Connect 3/8" female square drive socket and anvil by depressing retainer pin. For UAN-701R-30C series, 1/2" female square drive socket.

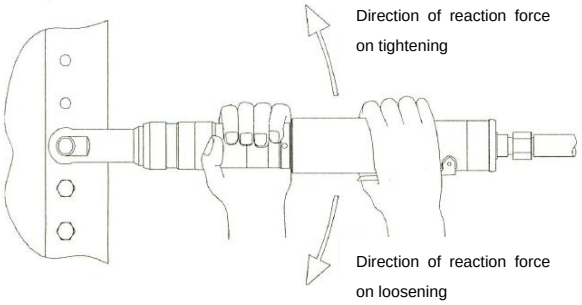
Reverse Lever

-Set the reverse lever to 'R' for clockwise operation and to 'L' for anticlockwise operation.

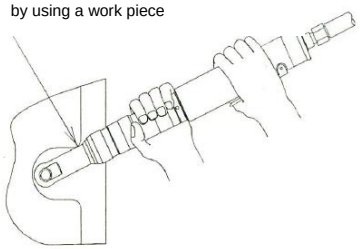


Reaction

-Hold the tool with both hands, then push the throttle lever, so that the tool starts to run. When the torque reaches setting torque, the tool shuts off automatically. When the tool shuts off, reaction force occurs. When you feel the reaction force greater, please use a reaction receiver. The reaction receiver absorbs the reaction force.



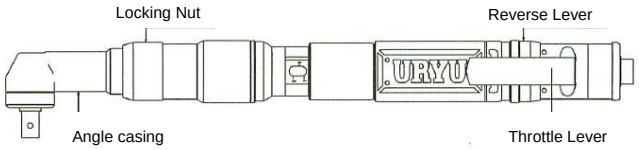
This is example on a reaction receiver by using a work piece



Direction of Angle Casing

-According to access for a work piece or conditions of usage, it is possible to change relative positions of angle casing and throttle lever with the following procedures.

-Loosen the locking nut,
-Pull the angle casing to front.
-Turn the angle casing to a required direction and set the position by checking engagement of spline on the driving gear.
-Tighten the locking nut again (Put adhesive #1401, tighten the locking nut at 43-58Nm)



-Note:) Set the angle casing position where air supply can be stopped immediately when any trouble happens. (Reaction force must be received firmly, to release the throttle lever only)

Torque Adjustment

-Disconnect the tool from air supply before torque adjustment.
-Rotate the protective band until the slot of the clutch adjustment gauge is visible.
-Turn the 3/8" square drive of the angle head so that the clutch adjustment hole is visible within the clutch adjustments lot.
-Put the Phillips driver (No. 1 or No. 2) into the clutch hole and adjust the torque output as follows:
-Turn the Phillips driver clockwise (adjustment indicator on the clutch towards '3') to increase the torque output and anticlockwise (adjustment indicator on the clutch towards '1') to decrease the torque output.
-Use a suitable UFT (URYU Fastening Tester) for torque adjustment.
-After achieving the desired torque output level, turn the protective band back to the original position.

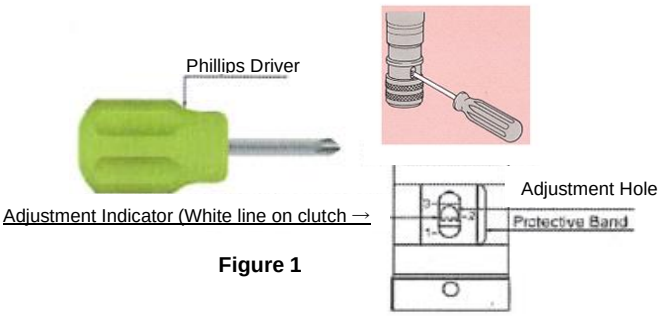


Figure 1

Throttle Lever

-Grip the handle firmly and depress the throttle lever slowly to start tightening operation.

Exhaust Air

-The direction of the exhaust air is adjustable for eye and ear protection.
-Exhaust air can be directed away by the black nylon tube (standard accessory).

Maintenance Instructions

-Continuous satisfactory operation depends upon proper tool care and regular maintenance.
-Have the tool serviced by a qualified repair person.
-Use URYU genuine parts for replacement. This will ensure that the safety and the optimum performance of the tool are maintained.

Table 1

Models	A. Volume of Lubrication from Air Inlet per 3000 fasteners	B. Fastener Qty per 0.02mL-drop from Oil-Fog Lubricator
UAN-611R series – UAN701R series	about 1.3mL - 1.5mL	about 40 - 46 fasteners

Lubrication

-It is important to lubricate regularly to get maximum performance and trouble-free operation.
-Do not lubricate the tool with flammable or volatile liquids such as kerosene, diesel or jet fuel.
-For air motor, supply light turbine oil, ISO VG32 properly through air inlet or line lubricator before and after daily operation.
-For bearings, coat one-third of the bearing with good quality grease Nigtite M (see table 2) or equivalent.
- For gears, coat three-fourth of the gear surface with good quality grease, Nigtite M (see table 2) or equivalent.

Table 2

Grease	Quantity	Part Number
Nigtite M	250 g	998-708-0
	18 L	998-709-0

Overhaul

-It is recommended to inspect the tool especially the clutch and the air motor regularly. Periodical preventative maintenance at least once every three month is recommended. If the tool is in heavy duty operation or running improperly, it is also recommended to inspect the tool more frequently. If the presence of water is noted, it is recommended that a small amount of oil should be run through the air motor to wash out any rust residue in the motor.
-Ensure that any labels on the tool are kept in legible condition. Replace any damaged label.

Disposal of Tool

-Separate collection of used tools and packaging allows materials to be recycled and used again. Re-use of recycled materials helps to prevent environmental pollution and reduces the demand for raw materials. The tool is made of human being and the environment. Follow your local laws and regulations relating to disposal.

Service Manual

-Refer to the parts list supplied along with the tool.

General Instructions

-Use correct jigs for proper service. Contact the nearest URYU distributor or URYU Japan for jigs.
-When grasping a tool or part in a vice, always use leather-covered or copper-covered vice jaws to protect the surface of the part and help to prevent distortion. This is particularly true of threaded parts and housings.
-Use a sheet of P320 or finer grit sandpaper to resurface parts.

Angle Head Section

Dis-assembly:

1. Fixing the angle casing with a jig, loosen the locking nut (right-hand thread) and remove the angle head casing from the tool.
2. Use jig to remove the angle head casing cover.
3. Use jig to remover the driving gear.

Assembly:

1. Install the needle roller into the driving gear.
2. Press the need roller fitted with driving gear into the angle casing.
3. Press another needle roller into the angle casing.
4. Install the busing, spacer, adjusting spacer, ball bearing, ball bearing gear screw. (Note: The adjustment spacers are used to adjust the gear lash.) (See figure 2.)

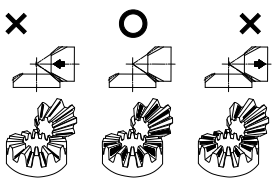


Figure 2

5. Install the ball bearing and roller pin into the driven gear.
6. Install the above driven gear into the angle casing.
7. Install the O-ring into the driven gear.
8. Install the adjusting spacer into the angle casing cover. (Note: The adjustment spacers are used to adjust the gear lash.) (See figure 2.)
9. Install the angle casing cover into the angle casing.

Inspection of Parts:
1. Inspect the driver and driving gear for pitting and grooving.
2. Inspect all bearings for side play and knocking.

Clutch Section

Dis-assembly:
1. Remove the clutch casing (left-hand thread) from the gear casing and remove the clutch assembly.
2. Remove the regulator screw by inserting a Phillips driver between the screw and the stopper and turn the Phillips driver anticlockwise to remove the regulator screw.
3. Being careful not to lose the pin that locks the stopper to the cam guide, remove the stopper.
4. Remove the torque spring and spring setter from the cam guide.
5. Remove the cam rollers, cam ring, balls and cam from the cam guide.
6. Remove the ball and spring from the cam.
7. Lift the hooked end of the notch pin band out of the hole in the cam guide and slide it around the cam guide until the end of the notch pin is exposed. Remove the notch pin and pilot pin from the cam guide.

Assembly:
1. If having replaced the pilot pin, press the new E pin (969-470-0) into the pilot pin equally on both sides. (See figure 3.) Install the pilot pin fitted with E pin into the cam guide.
2. Install the notch pin and notch pin band. If you have replaced the band, slide jig down over the cam guide and install the new band. (See figure 4.)
3. Install the spring and ball into the cam in order.
4. Install the cam into the cam guide. Rotate the cam. The lobe on the pilot pin should appear in the hole that the notch pin goes into at the same time that the lobe comes up in the slot of the cam guide. If it does not pull the cam out halfway and rotate 180° , push it back into the cam guide and try again. (Note: The lobe on the pilot pin and the lobe on the cam need to line up.) (See figure 5.)
5. Holding the cam and cam guide together, put grease into each of the slots in the cam guide.
6. Install two of the (for UAN-701R series larger) balls into the slot of the cam guide and put a shot of grease on top of the balls.
7. For UAN-701R series, install the three smaller balls. For UAN-611R series, install the three balls of the same size.
8. Install the torque spring, stopper, pin and regulator screw.

○ **Figure 3** ×

○ **Figure 4** ×

Inspection:
1. Inspect the cam lobes for grooving where they push the balls out against the cam ring.
2. Inspect the pilot pin's shoulder that is pushed up against the notch pin for rounding.
3. Inspect the notch pin ends for rounding.
4. Inspect the band. The band should set down in the groove of the cam guide so that space from the band to the outside of the cam guide is the same all the way round.
5. Inspect the balls for pitting.
6. Inspect springs for tension.

○ **Figure 5** ×

Gear Section

Dis-assembly:
1. Using the flats on the angle casing to put your crescent wrench on, remove the second gear section (left-hand thread).
2. Remove the clutch casing (left-hand thread) and then remove the first gear section (right-hand thread).
3. Remove the snap rings, bearings, gear cases, roller pin and planet gears from the gear casing.

Assembly:
1. Coat one-third of the surfaces of all the bearings with good quality grease. (e.g. Nigtite M)
2. Grease planet gears, gear casing and internal gears.
3. Install snap rings, bearings, planet gears, needle rollers and gear cages into gear casings and internal gears.
4. Install gear casings and internal gears on the casing and clutch casing. (Note: Use a good service removable thread locker e.g. screw lock #1401, on all threaded parts.)

Inspection:
1. Inspect the teeth of the gear casing, internal gear and planet gears for pitting and grooving.
2. Inspect the needle rollers for wear.
3. Inspect the bearings for side play and knocking.
4. Inspect the positioning hole on gears (See figure 6.)

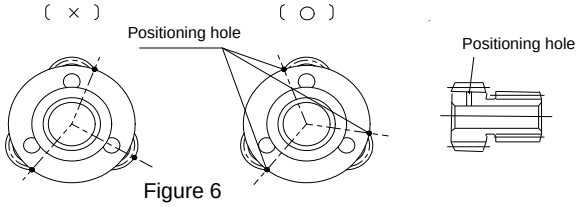


Figure 6

Air Motor

Dis-assembly:
1. Separate the air motor casing and the first internal gear.
2. Taking a hold of the spline part of the rotor, pull the air motor out of the casing.
3. Pull the front plate off and remove the front plate bearing from the front plate.
4. Remove the cylinder.
5. Remove the blades from the rotor.
6. Press the rotor out of the rear plate bearing and remove the bearing from the rear plate.

Assembly:
1. Coat one-third of the surfaces of all the bearings with good quality grease. (e.g. Nigtite M)
2. Press the bearing into the rear plate and over the rotor.
3. Lightly lubricate the blades and install into the rotor with the flat side out.
4. Slide the cylinder down over the rotor, lining up the roll pin with the hole in the rear plate.
5. Press the bearing into the front plate.
6. Install the front plate onto the rotor with the bearing side up. (Note: The cylinder should be tight between the plates, but the rotor should turn freely.)

7. Slide the air motor into the casing. Line up the pin on the side of the front plate with the notch in the casing.
8. Install the gear casing onto the air motor casing.

Inspection:

1. Inspect the bearings for knocking and side play.
2. Inspect the cylinder for waviness.
3. Inspect the plates for grooving.
4. Inspect the blades for splitting and grooving on the sides and ends.
5. Inspect the exhaust filter for dirt.

Test:

-Test the tool according to Uryu Inspection Standard.

EC DECLARATION OF CONFORMITY MACHINERY DIRECTIVE

CE

WE, URYU SEISAKU, LTD., DECLARE UNDER OUR SOLE RESPONSIBILITY THAT UAN SERIES ANGLE DRIVE NUTRUNNERS CONFORM WITH THE HARMONISED INTERNATIONAL STANDARD, ISO 11148-6:2012 AND THEREFORE COMPLY WITH THE ESSENTIAL REQUIREMENTS OF THE EUROPEAN PARLIAMENT AND THE COUNCIL DIRECTIVE, 2006/42/EC (17 MAY 2006) ON MACHINERY.

Kazumasa. Uryu

KAZUMASA URYU
EXECUTIVE DIRECTOR
OSAKA, JAPAN
5 JANUARY 2024

TECHNICAL DATA Specifications subject to change without prior notice

Model	Bolt Capacity	Free Speed	Max. Torque	Overall Length	Weight w/o socket	From Centre to Outside	Angle Height	Drive Shank Sq./Hex.	Average Air Consumption	Sound Pressure Level	Sound Power Level	Vibration Level	Vibration Uncertainty *K*
	mm	r/min.	Nm	mm	kg	mm	mm	mm	m^3/min.	dB(A)	dB(A)	m/sec^2	m/sec^2
UAN series													
UAN-611R-60C	6	620	6.5-12.0	383	1.6	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-611R-50C	6-8	470	8.5-15.0	373	1.6	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-611R-40C	6-8	400	10.0-18.0	373	1.6	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-611R-30C	8	270	13.0-25.0	373	1.6	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-701R-60C	8	600	20.0-31.0	445	2.4	14.0	47	9.5	0.9	85	96	< 2.5	0.51
UAN-701R-40C	8-10	400	28.0-45.0	455	2.4	18.0	51	9.5	0.9	85	96	< 2.5	0.50
UAN-701R-30C	10-12	300	37.0-60.0	455	2.4	18.0	58	12.7	0.9	85	96	< 2.5	0.50
UAN-RM series													
UAN-611RM-60C	6	620	6.5-12.0	419	2.0	14.0	47	9.5	0.6	80	-	< 2.5	0.49
UAN-611RM-50C	6-8	470	8.5-15.0	409	2.0	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-611RM-40C	6-8	400	10.0-18.0	409	2.0	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-611RM-30C	8	270	13.0-25.0	409	2.0	14.0	47	9.5	0.6	80	-	< 2.5	0.48
UAN-701RM-60C	8	600	20.0-31.0	480	2.7	14.0	47	9.5	0.9	85	96	< 2.5	0.51
UAN-701RM-40C	8-10	400	28.0-45.0	492	2.9	18.0	51	9.5	0.9	85	96	< 2.5	0.50
UAN-701RM-30C	10-12	300	37.0-60.0	492	2.9	18.0	58	12.7	0.9	85	96	< 2.5	0.50

Air Inlet Thread (Pipe Type) : N.P.T. 1/4”

These declared values were obtained by laboratory type testing in accordance with **ISO15744 for sound levels** and I**SO28927-2 for vibration levels.** These declared values are not adequate for use in risk assessments and values measured in individual work places may be higher. The actual exposure values and risk of harm experienced by an individual user are unique and depend upon the way the user works, the workpiece and the workstation design as well upon the exposure time and the physical condition of the user.

We, URYU SEISAKU, LTD., cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation over which we have no control.

Air Hose Size (Inside Diameter) : ϕ 9.5 x 5m