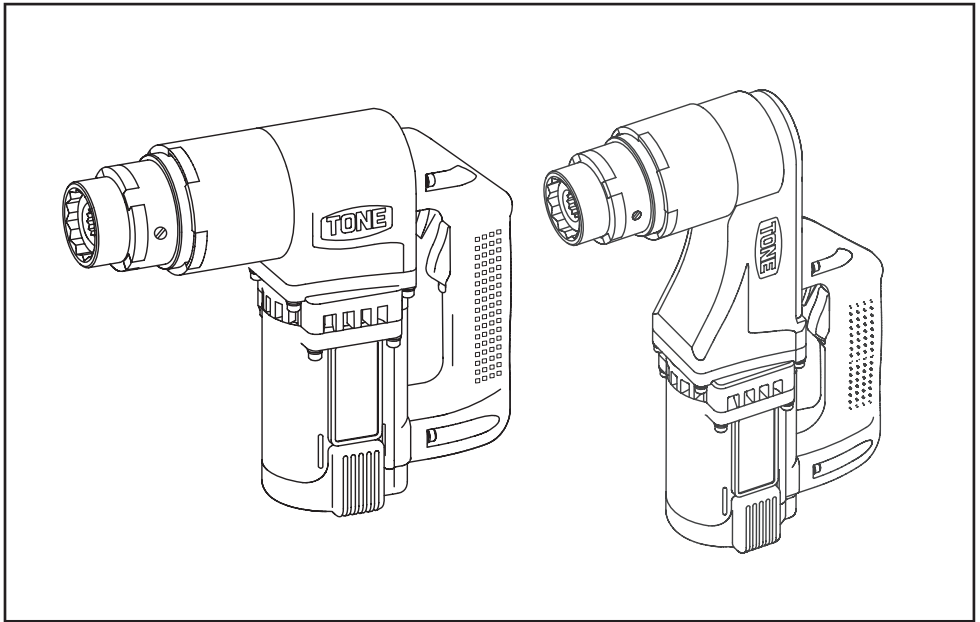


TONE® **ELECTRIC SHEAR WRENCH** **G-Z TYPE**



INSTRUCTION MANUAL **No.1911**

MODEL	GH-241ZA GH-242ZA	GV-301ZA GV-302ZA	GHN-241ZA GHN-242ZA
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CAUTION

Read through this instruction manual carefully before use and operate wrench with full understanding of the manual. Preserve the manual in designated place so that it could be referred to at any time upon necessity.
Model names described above are for use outside Japan. No guarantee can be admitted for use in Japan.

TONE CO., LTD.

PREFACE

This instruction manual is provided for users obtained
“TONE” ELECTRIC SHEAR WRENCH.

■ First of all check and confirm:

- * If there is no sign of damage during transportation.
- * If there is no loosening or omission of screws or bolts.
- * If the contents are exactly what were ordered.
- * If all contents of packing are included (ref:P6).
- * If there is anything wrong, contact your distributor.

■ Read through this instruction manual carefully.

In order to prevent failure or personal injury, operate wrench after full understanding of the manual. It is recommended even for those who have read the manual before or who have decent knowledge of operating method already to read the manual again before use.

■ Keep this manual in a bag so that it could be referred at any time upon necessity.

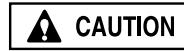
■ If the manual or warning label is lost or becomes illegible, or if required for preservation purpose, obtain those from your distributor.

Ask your distributor for anything unclear with the wrench or the contents of instruction manual.

■ The models described in this manual are for use outside Japan. No guarantee can be admitted for use in Japan.

CAUTION MARK

Definitions of risk degrees of :



* Cautions for use are defined by the degree of risk and classified as follows :



Danger is aroused as the wrong use might imminently cause danger of personal injury or death in the worst case.



Warning is aroused as the wrong use might possibly cause danger of personal injury or death in the worst occasion.



Caution is aroused as the wrong use might possibly cause danger of personal injury and/or material loss.

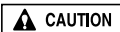
Even if the risk is defined by ,  the wrong use might cause more serious result depending on surrounding conditions. All three (3) caution marks imply important contents to secure safety, hence careful observation to any of caution marks is recommended.

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1. THE GENERAL SAFETY INSTRUCTIONS



Failure to follow all instructions listed below may result in electric shock, fire and / or serious injury. The term "power tool" in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

1) Work area

- a) **Keep work area clean and well lit.** Cluttered and dark areas invite accidents.
- b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) Electrical safety

- a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

3) Personal safety

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- b) **Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- c) **Avoid accidental starting. Ensure the switch is in the off position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
- d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust related hazards.

4) Power tool use and care


- a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) **Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from intended could result in a hazardous situation.

5) Service

- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.



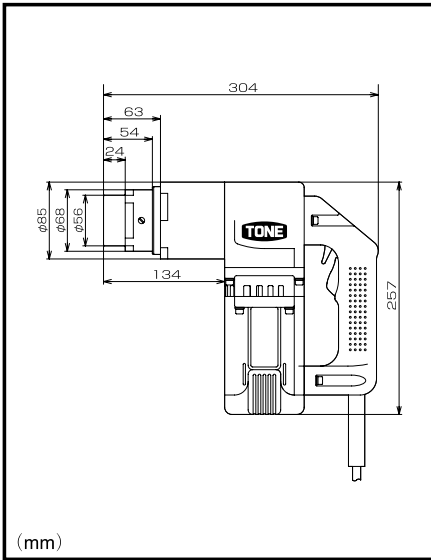
This electric wrench have double-insulation structure. The gap between electric conductor portion, within which electricity flows, and outer housing portion which operator touches by hands is insulated doubly by two insulants, contributing to enhance safety from risk of electric shock. This is double insulation structure and is indicated by  (Double-Insulation) mark.

2. CONTENTS OF PACKING

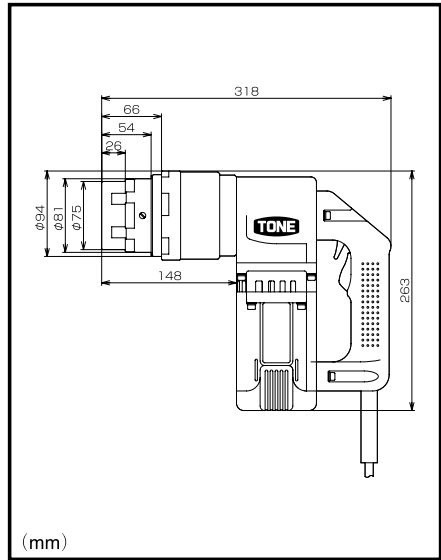
- (1) Main Body
- (2) Inner & Outer Socket Set
- (3) Screw Driver (-)
- (4) Instruction Manual
- (5) Metal Case
- (6) Connector (220-230V only)

3. EXTERNAL DIMENSIONS

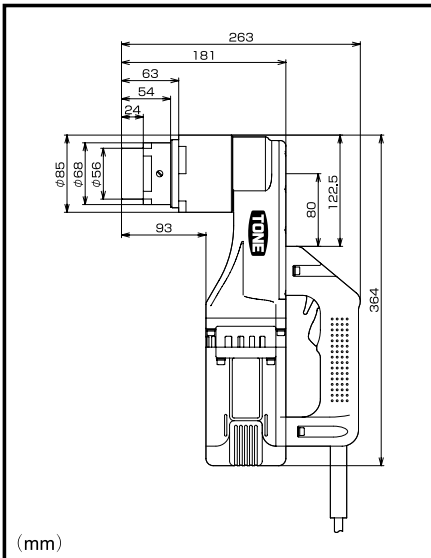
GH-241ZA
GH-242ZA



GV-301ZA
GV-302ZA



GHN-241Z
GHN-242Z



4. SPECIFICATIONS

Model	GH-241ZA	GH-242ZA	GV-301ZA	GV-302ZA	GHN-241Z	GHN-242Z
Frequency	50-60Hz		50-60Hz		50-60Hz	
Rated Voltage (Single Phase)	110-120V	220-230V	110-120V	220-230V	110-120V	220-230V
Max.Current	16A	9.5A	14A	8.5A	16A	8A
Rated Input Power	1650W	2000W	1450W	1800W	1750W	
Intermittent Operation (rated operating time / rated resting time)	2s / 3s		2s / 3s		2s / 3s	
Rated Max. Torque	1250N.m(922lbf.ft)		2150N.m(1586lbf.ft)		1100N.m(811lbf.ft)	
No-Load Speed	14min ⁻¹ (rpm)	17min ⁻¹ (rpm)	6min ⁻¹ (rpm)	8min ⁻¹ (rpm)	14min ⁻¹ (rpm)	
Sound Pressure Level	84dB(A)		84dB(A)		84dB(A)	
Acoustic Power Level	95dB(A)		95dB(A)		95dB(A)	
Vibration Level	2.5m/s ² or below		2.5m/s ² or below		2.5m/s ² or below	
Adaptable Bolts Dia.	S10T	M16, M20, M22, M24	M27, M30		M16, M20, M22, M24	
	A325	5/8", 3/4", 7/8", 1"	1", 1-1/8"		5/8", 3/4", 7/8", 1"	
	A490	5/8", 3/4", 7/8", 1"	1", 1-1/8"		5/8", 3/4", 7/8", 1"	
Weight (Main Body)	7.1kg(15.7lbs)		8.2kg(18.1bs)		7.9kg(17.4lbs)	
Protection Class	☐ (class II tool)		☐ (class II tool)		☐ (class II tool)	

5. APPLICATION OF SHEAR WRENCH

- Application of shear wrench is for tightening Torque Shear type High Tension Bolt (TC bolt or Shear-Bolt)

6. CAUTIONS FOR USE

- In order to prevent accidents such as fire, electric-shock or any kind of injury, observe cautions as mentioned below:
- Read cautions before use and operate wrench by following instructions.



- **Beware of electric shock at high working place.**
 - * Very dangerous as fall-down accident might be caused.



- **Beware of electric-shock !**
 - * Never use wrench in damp or wet place or in rainy or snowy condition.
 - * Might cause electric-shock, fire or electricity leakage.



● **Confirm if leakage breaker, as well as earth, is provided to prevent electric-shock.**

- * Avail current-acting type leakage breaker with rated current sensibility below 15 mA and acting time below 0.1 sec.
- * Wrong use may cause electric-shock, fire or electricity leakage.
- * For the capacity or characteristics of leakage breaker or earth, please refer local rules or standards stipulated in your country.

● **Electric cord has to be regularly inspected.**

- * If there is damage on electric cord, please ask your distributor for repair. Otherwise electric-shock, fire or electricity leakage might be caused.

● **Do not use wrench in a place where stands flammable items such as gasoline, gas, thinner or benzene.**

- * On-off actions of switch or rotations of commutator motor incorporated in the wrench give rise to sparks.
- * Do not use wrench where flammable material exists.
- * Negligence might cause explosion or fire.



● **Beware of fall-down accident when working at a high place.**

- * Put on safety belt without fail.
- * Provide net and / or campus cloth at working site to protect person(s) from falling material.
- * Confirm there is no person underneath working site before operation. Beware of fall-down of Pintail.
- * Do not operate when physically or mentality tired. Otherwise becomes cause of fall-down accident.

● **Avoid over-capacity use.**

- * Avail electric shear wrench or accessories within rated capacity. Over-capacity operation might not only causes trouble to wrench but also becomes cause of injury.

● **Mount socket(s) securely on the wrench body.**

- * If socket are not fitted securely, injury might be caused.
ref.: P18 Methods of changing sockets

● **Avoid unintended start.**

- * Do not bring about wrench with finger(s) touching Trigger-Switch. Wrench might mistakenly start up and cause injury.

● **In following occasion, disconnect cord plug from power source.**

- * When wrench is out of operation.
- * While replacing accessories.
- * During inspection and maintenance.
- * When danger is foreseen.
- * At the time of black-out
Unintended start might cause injury.



● **Do not dismantle the wrench.**

Do not re-model or modify the wrench.

- * Modification or dis-assembling might cause electric-shock, fire, accident or injury.
- * Dis-assembling can be done only when changing:
Inner-Socket, Outer-Socket, Screws, Inner-Socket-Spring, Ejector-Pin, Ejector-Spring and Carbon-Brush

● **If the wrench is not in use, put it in metal case and keep in designated place.**

- * In dry place and keep children away.
- * To be securely locked.
- * To prevent wrench from mal-function and accidents.

● **In case of strange sound, vibration or smell is felt, stop operation immediately and disconnect wrench**

- * Contact your distributor.
- * Negligence might cause electric shock, fire and/ or injury.

● **Ask your distributor for repair.**

- * If wrench is repaired by an ignorant or unskilled person, wrench cannot only work efficiently but also might cause accident or injury.

● **Inspection before use.**

- * Check following components and points.
- * If there is no sign of deterioration or crack with:
sockets, main body, parts, cord wires, plug, connector, etc.
- * If there is no loose screw for fixing socket to main body.
Negligence might cause electric shock, fire, burn or injury.

WARNING

● **Apply right power source as described on the rated plate.**

* Negligence might cause fire, burn, breakage or injury.

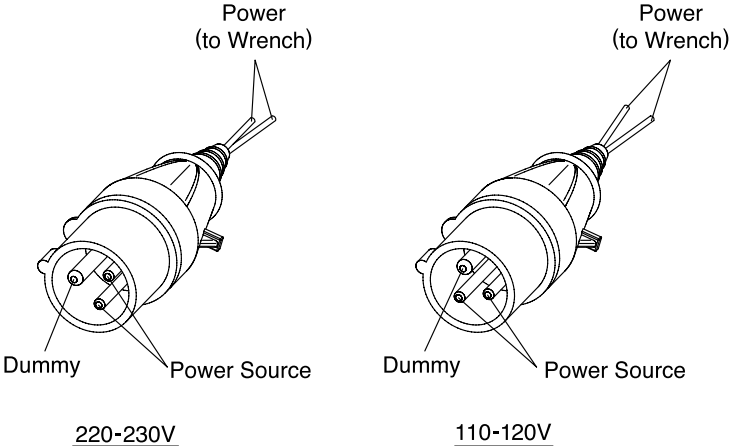
● **Never dismantle power supply plug attached to wrench body.**

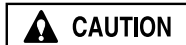
* When using extension cord or, in case it is necessary to use power plug of different configuration at work-site, avail attached connector wiring to separate power-cord (ref:sketch).

See Page 15 for recommended power-cord.

* In case the cord-plug attached to wrench body is damaged, have it repaired/ replaced by your distributor.

* If for any reason the plug is cut off of the cable of this machine, it must be disposed of safety and not left unattended.





● **Select right wrench for the job.**

- * Avoid using wrench beyond its capacity.
- * Avoid using wrench beyond designated application.

● **Be suitably dressed.**

- * Wear safety glasses and ear defenders.
- * For outdoor operation, put on rubber glove and skidproof shoes.
- * Put on helmet or cap.

● **Use genuine parts and accessories.**

- * When replacing accessories and parts, avail genuine ones.
- * Negligence might cause accident or failure.

● **Do not handle electric cord violently.**

- * Avoid bring wrench by electric cable.
- * Do not pull cable when disconnecting from power source.
- * Keep electric cord away from heat, oil or wherever may damage.

● **Keep electric motor always well ventilated.**

- * Do not put foreign material into the vent.
- * Do not cover the vent.

● **Keep wrench clean.**

- * Keep hands and grip portion dry and free from oil, grease etc.

● **Keep working site always clean and neat.**

- * Cluttered areas and benches invite injuries.

● **Use hearing protection or earplugs.**



- **Keep children away from working site.**
 - * Do not let anybody other than operator use or touch electric shear wrench.

- **Confirm safety of working environment.**
 - * Always Secure footing and keep good balance.
 - * Do not coil cable around neighboring material.
 - * Beware foot might not be entangled round by cable.
 - * Secure sufficient lighting.

- **Avoid connecting multiple plugs from a power source.**
 - * Might cause fire.

- **To protect electric shock, provide leakage breaker for each wrench.**
 - * Otherwise, electric shock, leakage or fire might be caused.

- **When applying extension cord, select shorter extension units than specified below depending on the cross section.**

Nominal conducting cable cross section		Max. Length	
		110-120V	220-230V
H07RN-F	1.5mm ²	10 m	20 m
	2.5mm ²	20m	40m
	4.0mm ²	30m	60m
AWG 14		50ft	100ft
AWG 12		80ft	160ft
AWG 10		130ft	260ft

- **Use attached connector when using extension cord.**

- **Observe local laws and rules concerning noise level.**

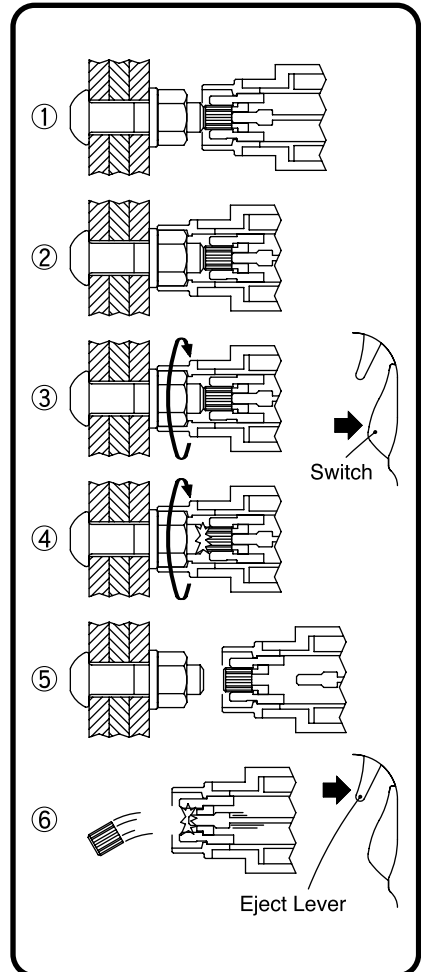
7. OUTSTANDING FEATURES

- **Dual Insulation structure.**
- **Anti-Defacement mechanism.**
- **Sockets for H-series wrenches are commonly available.**

8. OPERATING METHODS

8.1 Tightening method

- (1) Insert pintail (splined-tip) into Inner-Socket completely.
- (2) Adapt nut into Outer-Socket completely.
- (3) Squeeze trigger switch to start.
- (4) As the tightening proceeds, rotating speed gradually slows down, and when the designated torque is reached, pintail is sheared off the bolt at shearing(TC) groove.
- (5) Separate wrench from nut straight on. Sheared tip remains in Inner-Socket.
- (6) Operate Eject-Lever to exhaust Pintail.



**WARNING****● Confirm that there is nobody underneath work place during operation.**

- * Never eject Pintail (Splined Tip) against human body, as it rushes out when operate eject-lever.
- * Do not throw away Pintail. Collect Pintail in a bag during operation. Fall down of Pintail might cause personal injury.

**CAUTION**

Socket system has anti-erosion mechanism. In case that remaining length of bolt-threads is insufficient, this mechanism can be spoiled, resulting in early wear of Inner-Socket or incomplete fastening.

9. METHOD OF CHANGING SOCKETS



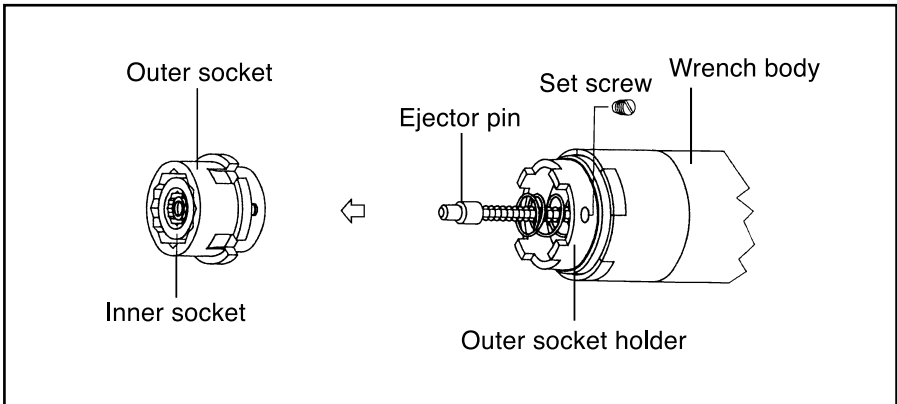
Before commencing changing operation, check if Ejector-Pin head is projecting into Inner-Socket. If not, operate Eject-Lever so to project. Then proceed changing operation.

Neglection might cause a person to lose one's sight or get injured.

While dismantling socket withdrawn Ejector-Pin, it might come out suddenly when Eject-Lever is mistakenly touched.

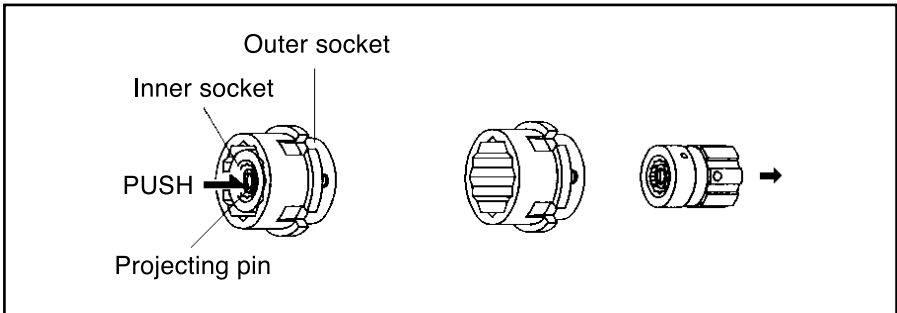
1. Unscrew Set-Screws in 2 positions at the top of wrench body, using screw driver provided as standard accessory, and take out a set of Outer & Inner-Sockets.

Take care not to lose screws. Better not unscrew completely.



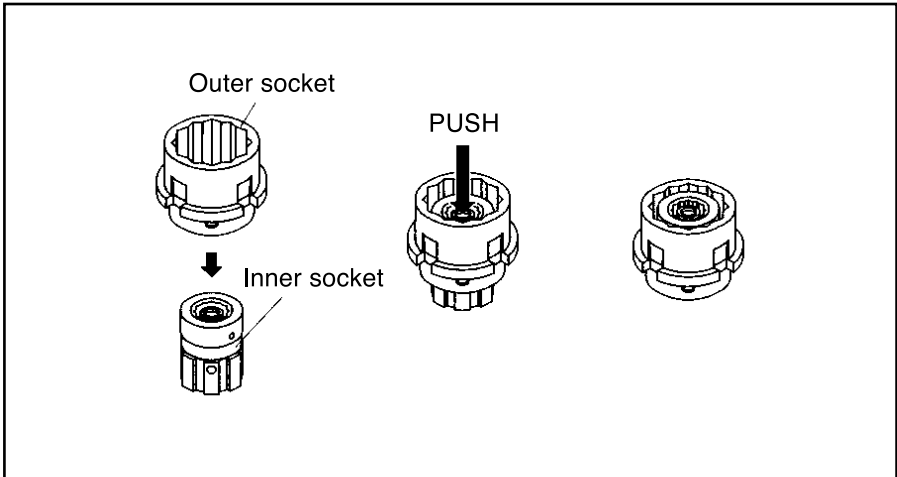
2. Prepare Outer and Inner-Sockets suitable for bolt size to be tightened.
Example: Use socket for 7/8" to 7/8" bolts.
(socket for M24 to M24 bolts.)

3. To separate Inner-Socket from Outer-Socket, push Projecting-Pin with attached screw driver or Pintail of TC Bolt.



4. Assembly Outer and Inner-Sockets.

Place Inner-Socket first and put Outer-Socket upon it. Install attached screw driver or Pintail of same size shear bolt into Inner-Socket. Now Outer-Socket and Inner-Socket are put together.



5. Install a set of Outer and Inner-Sockets into Outer-Socket-Holder of mainbody so that convex /concave of Outer-Socket and Outer-Socket-Holder mutually fit.

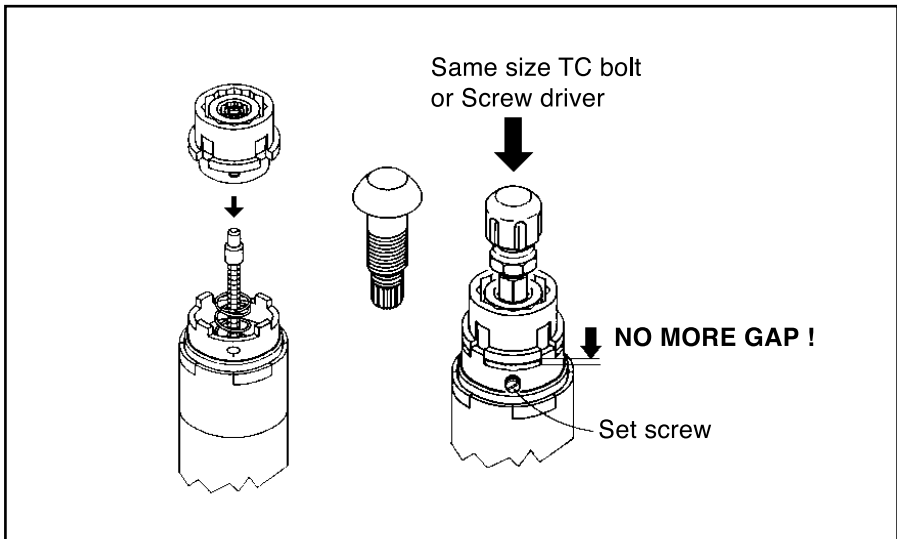
There may be the case that the gap between Outer-Socket and mainbody prevents complete connection.

In such case insert attached screw driver or Pintail of same size TC bolt into Inner-Socket, make minute adjustment turning to and install Inner and then Outer-Sockets.

Confirm that there is no more gap, and tighten slotted head screws securely.

WARNING

- * Assemble after removing gap completely.
- * Negligence might cause injury or damage to the wrench.



10. MAINTENANCE AND INSPECTION



- * At maintenance and inspection, shut-off switch and disconnect wrench from power source.
- * After use or in case of black out, too, disconnect wrench from power source.

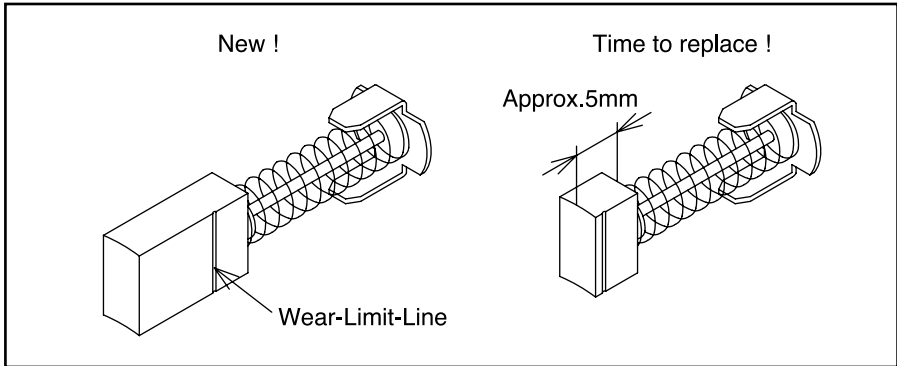
Unexpected start of wrench might cause injury.

1. Socket portion often has to be dismantled and wiped up, as foreign material such as dust or sand is apt to get in this portion.
2. When wipe up dusts etc., never use organic soluble such as benzene, thinner or gasoline as these might become the causes of cracks or change of color.
3. Do not hurt motor (coil) or let oil or organic soluble stick to motor-coil.
4. After use, place wrench in the metal case and preserve in a dry place.
5. If the Ejector-Pin gets worn out, the ejecting mechanism lose function and ejection of pintail becomes no more possible.
Worn out pin has to be replaced by a new one.

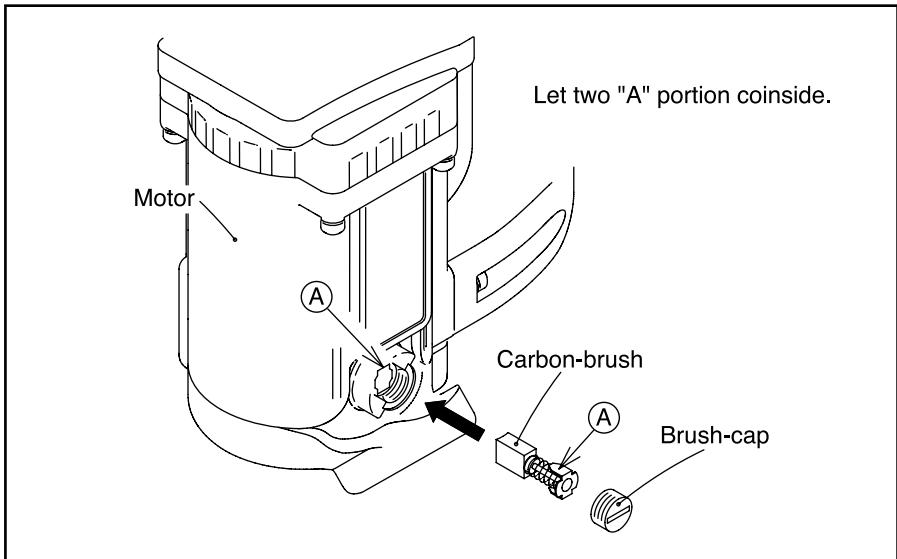


- * If pintail comes off Inner-Socket without operating Eject-Lever, Inner-Socket has to be changed into a new one.
- * If the inside of Inner-Socket is worn out too much, Pintail is apt to come off.
Such situation implies danger.

6. Examine carbon brushes periodically and replace before they get worn out to the wear-limit line.
- * Wrench uses two (2) carbon brushes. Replace both brushes without fail.
 - * Depending on some wrench model, different brush might be used. Designate wrench model when purchasing spare brush.



7. Insert Carbon-Brush correctly.

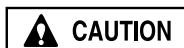


8. Carry out overhaul every **6 months** or **30,000 tightening**, whichever comes first.

- * Ask your distributor for overhaul.

11. SERVICES

- * Please contact your distributor for the kinds of services available.
- * In case of failure of the wrenches, please provide information such as model name, serial number, date, month and year of the purchase, voltage and details of failure.
- * Minimum retention period for the repairing parts for the products described in this instruction manual is seven (7) years after discontinuation of manufacturing of relative item.



- * In case a serious loss is predicted due to downtime caused by failure or insufficient performance of the wrench, take necessary precautions such as preparing stand-by wrenches.

12. EC DECLARATION OF CONFORMITY

We hereby declare that the following our product conform to the essential health and safety requirements of EC Directives.

Directives:	Machinery Directive,	2006/42/EC
	EMC Directive,	2004/108/EC
	RoHS Directive,	2011/ 65/E U

The above product has been evaluated for conformity with above directives using the following European standards. The technical documentation for this product is retained at the above manufacturer's location.

Machinery Directive:

EN 62841-1:2015, EN 62841-2-2:2014

EMC Directive:

EMI EN 55014 - 1:2006 + A2:2011

EN 61000 - 3- 2:2006 + A2:2009

EN 61000 - 3- 3:2008

EMS EN 55014 - 2:1997 + A2:2008

Name : Motohiro Hirao

Title General ManagerDevelopment Dept.

Address 6- 25, Kotobukicho, Kawachinagano - shi,

Osaka, 586 - 0026, Japan

Signature : MOTOHIRO HIRAO

Date : 12 - Nov - 2019

TONE® **TONE CO., LTD.**



1-57, MINATOMACHI 2-CHOME, NANIWA-KU,
OSAKA 556-0017, JAPAN,

Web Site: <http://www.tonetool.co.jp>

e-mail: overseas@tonetool.co.jp

● Specifications and the design are subject to change without notice. ●