

SG shear wrench jinan company

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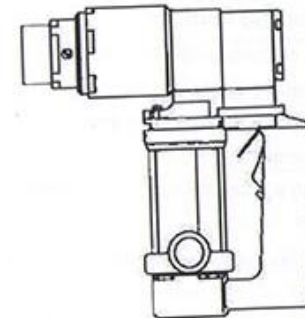
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Electric Shear Wrench

Instruction Manual



⚠ Caution

Read through this instruction manual carefully before use and operate wrench with full understanding of the manual. Preserve the manual designed place so that it could be referred to at any time upon necessary.

SG shear wrench (jinan) company

### PREFACE

This instruction manual is provided for whom obtained "SG" Electric Shear Wrench

Applicate for SG series SG-22,SG-24,SG-30,SG-36  
SGC series SG-22C,SG-24C,SG-30C

#### ■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 accessories are included
- ★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 China.No guarantee can be admitted for use in China.

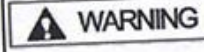
### CAUTION MARKS

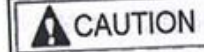
Definitions of risk degrees of:

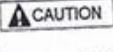


★Cautions for use are defined by the degree of risk and classified as follows:

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

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

 **CAUTION** Caution is aroused and 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 caution marks imply important contents to secure safety hence careful observation is recommended.

## SG Shear Wrench

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## 1.The General Safety Instructions



When using electric tools,basic safety precautions,including the following should always be followed to reduce the risk of fire,electric shock and personal injury

Read all these instructions before operating this product and keep these instructions

### For Safe Operation

#### 1)Keep work area clean.

Cluttered areas and benches invite injuries.

#### 2)Consider work area environment

Do not expose power tools to rain,do not use power tools in damp or wet locations.Keep work area well lit.Do not use power tools where is risk to cause fire or explosion.

#### 3)Guard against electric shock.

Avoid body contact with earthed or grounded surface.

#### 4)Keep children and visitors away

Do not let children and visitors touch the tool or extension cord.all visitors should keep away from work area.

#### 5)Store idle tools

When not in use,tools should be stored in a dry,high or locked up place,out of reach of children

#### 6)do not force the tool

It will do the job better and safer at the rate for which it was intended

#### 7)Dress Properly

Do not wear loose clothing or jewellery,they can be caught in moving parts.Rubber gloves and non-skid footwear are recommended when working outdoors,wear protecting head covering to contain long hair

**8)Use safety glasses and ear defenders**

**9)Do not abuse the cord**

Never carry the tool by the cord or yank it to disconnect it from the socket.Keep the cord away from heat,oil and sharp edge.

**10)Secure work**

Use clamps or a vice to hold the work.It is safer than using your hand and it frees both hands to operate the tools.

**11)Do not overreach**

Keep proper footing and balance at all times

**12)Maintain tools with care**

Keep clean for better and safer performance.Follow instructions for lubrication and changing accessories.Inspect tool cord periodically and if damaged have it repaired by an authorized service facility.Inspect extension cords periodically and replace,if damaged.Keep handles dry, clean and free from oil and grease

**13)Disconnect tools**

When not in use,before servicing and when changing accessories.

**14)Remove adjusting keys and wrenches**

From the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.

**15)Use outdoor extension leads**

When tool is used outdoors,use only extension cords intended for outdoor use.

**16)Stay alert**

Watch what you are doing.Use common sense.Do not operate tool when you are tired.

**17)Check damaged parts**

Before further use of the tool,a guard or other part that is damaged should be carefully checked to determine that it will operate properly.

and perform its intended function.Check for alignment of moving parts,free running of moving parts,breakage of parts,mounting nay other conditions that may effect its operation.A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated in this instruction manual.Have defective switches replaced by an authorized service facility.Do not use the tool if the switch does not turn it on and off.

**19)Warning!**

The use of any accessory or attachment,other than those recommended in this instruction manual,may present a risk of personal injury.

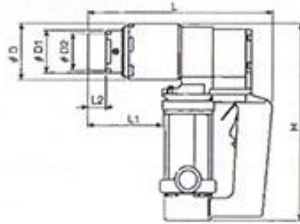
**20)Have your tool repaired by a qualified person.**

This electric tool is in accordance with the relevant safety requirements.Repairs should only be carried out by qualified persons using original spare parts,otherwise this may result in considerable danger to the user.

**2.CONTENTS OF PACKING**

- 1)Main Body
- 2)Inner&outer socket set
- 3)In Six sides spanners
- 4)Instruction Manual
- 5)Plastic Case

3.1)EXTERNAL DIMENSIONSG Series

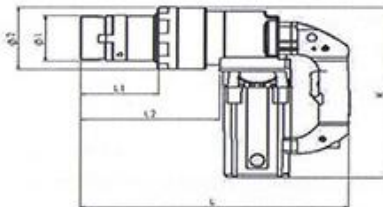


| Model | L   | H   | Φ2 | Φ1 | L1  | L2   |
|-------|-----|-----|----|----|-----|------|
| SG-22 | 220 | 260 | 49 | 58 | 80  | 24   |
| SG-24 | 254 | 280 | 56 | 68 | 105 | 24   |
| SG-30 | 290 | 280 | 67 | 93 | 115 | 34.5 |

4.1)SPECIFICATIONS SG Series

| model | voltage | Max current | Max power consumption | Max torque | rpm | weight |
|-------|---------|-------------|-----------------------|------------|-----|--------|
| SG-22 | 220V    | 4           | 1200                  | 700        | 16  | 4.9    |
| SG-24 | 220V    | 5           | 1200                  | 1100       | 12  | 6.3    |
| SG-30 | 220V    | 5           | 1200                  | 2100       | 5   | 7.5    |

3.2)EXTERNAL DIMENSION SGC Series



| Model  | L   | H   | Φ2  | Φ1  | L1  | L2  |
|--------|-----|-----|-----|-----|-----|-----|
| SG-22C | 248 | 251 | 79  | 57  | 70  | 105 |
| SG-24C | 354 | 267 | 87  | 62  | 120 | 178 |
| SG-30C | 367 | 274 | 100 | 74  | 106 | 190 |
| SG-36C | 360 | 290 | 118 | 100 | 78  | 189 |

4.2)SPECIFICATIONS SGC Series

| model  | voltage | Max current | Max power consumption | Max torque | rpm | weight |
|--------|---------|-------------|-----------------------|------------|-----|--------|
| SG-22C | 220V    | 4           | 800                   | 700        | 18  | 5.5    |
| SG-24C | 220V    | 5           | 1100                  | 1100       | 14  | 8.4    |
| SG-30C | 220V    | 5           | 1100                  | 2000       | 5   | 10.5   |
| SG-36C | 220V    | 12          | 2300                  | 2800       | 5   | 11     |

APPLICATION OF SHEAR WRENCH

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

5.CAUTIONS FOR USE

In order to prevent accidents such as fire,electric-shock or any kind of injury,observe cautions as mentioned below

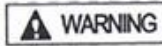
Read cautions before use and operate wrench following instructions.



- Be aware of electric shock at high working place
- very dangerous as fall-down accident might be caused



- Be aware 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 15ma 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 to repair. Otherwise electric shock, fire or electric leakage might be caused.

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

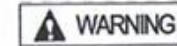
★ On-off actions of switch or rotations of commutator motor incorporated in the wrench give rise to sparks.

Do not use wrench where flammable material exists

Negligence might cause explosion or fire.

● **Do not connect earth leads to gas pipe.**

Negligence might cause explosion or fire which might lead to serious injury or death.



● **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 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 all-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 sockets securely on the wrench body**

★ If socket are not fitted securely, injury might be caused. Ref. methods of changing sockets

● **Avoid unintended start**

★ Do not bring about wrench with fingers 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**

**WARNING**

- 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 case and keep 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, earth lead, earth clip, etc.

★If there is no loose screw for fixing socket to main body

Negligence might cause electric shock, fire, burn or injury.

**WARNING**

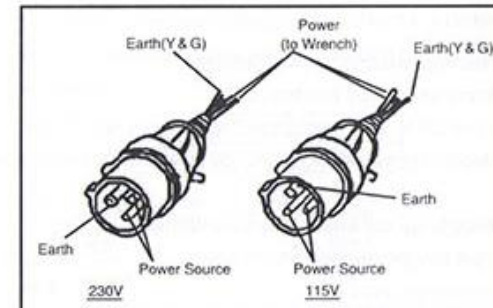
- Apply right power source as described on the rated plate. Negligence might cause fire, burn, breakage or injury.

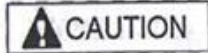
- Earth the wrench without fail

★Wrench is not double-insulated, so earth is absolutely necessary. Negligence might cause electric shock or leakage

- If extension cable is used, apply those with earth and 3-P cable.

★Use one of leads for earth and connect to earth on shear wrench side.





**•Select right wrench for the job**

- ★Avoid using wrench beyond its capacity
- ★Avoid using wrench beyond designated application

**•Be suitabl dressed**

- ★For outdoor operation,put on rubber glove and skidproof shoes
- ★Put on helmet or cap

**•Use genuine parts and accessores**

- ★when replacing accessories and parts,avail genuine ones
- Negligence might cause accident or failure

**•Do not handle electric cord violently**

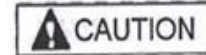
- ★Avoid bring wrench by electric cable
- ★Do not pull cable when disconnecting from power source
- ★keep electric cord away from heat,oil or whatever may damage

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



**•Confirm safety of working environment**

- ★secure footing always and keep good balance
- ★do not coil cable round neighboring material
- ★beware foot might not be entangled round by cable.
- ★secure sufficient lighting

**•Avoid connection multiple plugs from a power source**

Might cause fire

**•To protect electric shock from occuring,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 section**

**Less than 1650W**

| Nominal conducting cable cross section | Max.Length |      |
|--|------------|------|
|  | 230V       | 115V |
| 1.25mm <sup>2</sup>                    | 15m        | 10m  |
| 2.0mm <sup>2</sup>                     | 25m        | 15m  |
| 3.5mm <sup>2</sup>                     | 40m        | 20m  |

**Bigger than 1650W**

| Nominal conducting cable cross section | Max.Length |      |
|--|------------|------|
|  | 230V       | 115V |
| 2.0mm <sup>2</sup>                     | 15m        | 10m  |
| 3.5mm <sup>2</sup>                     | 25m        | 15m  |
| 4.0mm <sup>2</sup>                     | 40m        | 20m  |

**•Recommended connector when using extension cord**

**•Observe local laws and rules concerning noise level**



## 7. OUTSTANDING FEATURES

### All Models

Anti-adhesion Mechanism free from Pintail/Inner-socket adhesion

## 8. OPERATING METHODS

### Tightening method

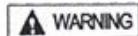
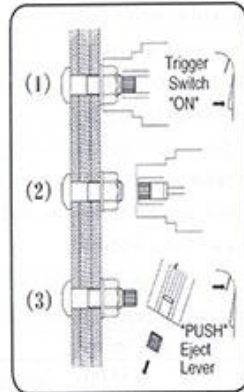
Insert pintail(splined-tip) into inner-socket completely. And adapt nut into Outer-socket completely

★ Operations take place simultaneously

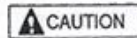
1) squeeze trigger switch to start. As the tightening proceeds, rotating speed gradually slows down, and when the designated torque is reached, pintail is sheared off the bolt at shearing (TC) groove

2) Separate wrench from nut straight on, sheared tip remains in inner socket.

3) Operate eject-level to exhaust pintail.

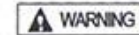


- Confirm that there is nobody underneath work place during operation
- Do not throw away pintail. Contact pintail in a bag during operation. Fall down of pintail might cause personal injury.



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.

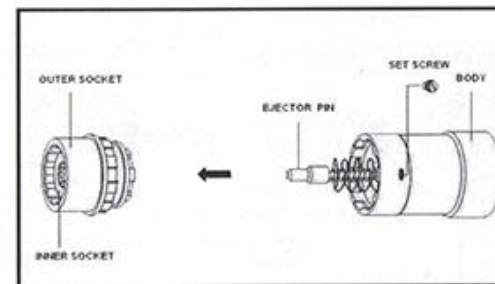
## 9. METHOD TO CHANGING SOCKETS



Before commencing changing operation, check if ejector-pin head is projecting into inner-socket. If not, operate eject-level so to project. Then proceed changing operation.

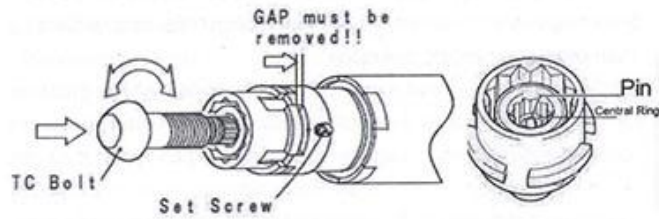
**Neglection might cause a person to lose one's sight or get injured.** While dismantling socket withdrawn Eject-Pin, it might come out suddenly when eject-lever is mistakenly touched

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

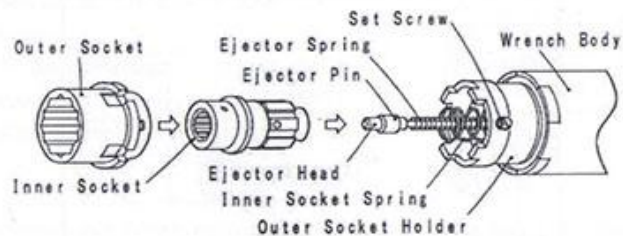


2. Prepare outer and inner sockets suitable for bolt size to be tightened. Example: Use out standard socket for 3/4" to 3/4" bolts. (socket M20 for M20 bolts)

3. Using the same size bolt to check the wrench sockets, put the bolt using two threads out into the inner sockets, then eject pin go down, operate eject lever, if the eject pin comes up, it will be ok.



3. Press inner socket Central Ring to separate inner-socket from outer-socket, push Project-Pin with attached screw driver or pintail of TC bolt.



**4. Assembly outer and inner sockets.**

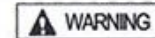
Place inner-socket first and put outer-socket upon it. Install attached screw driver or pintail of same size shear bolt into inner socket. Now Outer-socket and inner-socket is put together.

5. Intall 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.

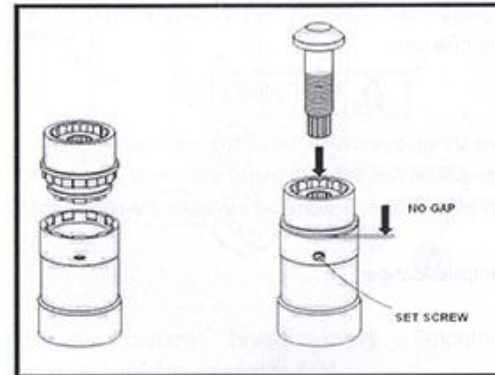
There may be the case that the gap between outer-socket and mainbody prevents complete connection.

In Such case insert attached screw driver or pintail of same size Tc bolt into inner-socket, make minute adjustmet turning to and install inner and then outer-socket.

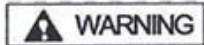
Confirm that there is no more gap, and tighten slotted head screws securely.



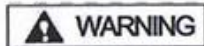
- ★ Assemble after removing gap completely
- ★ Negligence might cause injury or damage to the wrench



### 10.MAINTENANCE AND INSPECTION



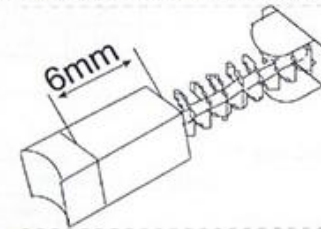
- ★At maintenance and inspection,shut-off switch and disconnect wrench from power source.
  - ★After use or in case of black out,too,disconnect wrench from power source
- Unexpected start of wrench might cause injury
- 1.Socket portion often has to be dismantled and wiped up.As foreign material such 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(Oil)or let oil or organic soluble stick to motor-coil
  - 4.After use,place wrench in the steel case and preserve in a dry place
  - 5.If the Eject-pin gets worn out,the ejecting mechanism lose function and ejection of paintail becomes no more possible,Worn out pin has to be replaced by a new one.



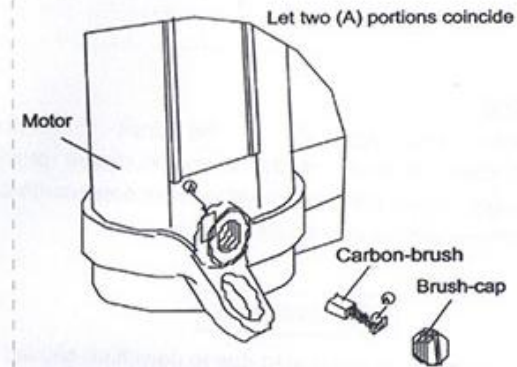
- ★If pintail comes off inner-socket without operation
- Eject-Level,inner-socket has to be changed into a new one.
- ★If the inside of inner-socket is worn out too much,Paintail is apt to come off
- Such situation implies danger

### 6.Maintenance &Inspection

The length of carbon brush needs to be more than 6mm,if shorter than it,brush should be replace.Brush is so designed that,below 6mm,insulation-pin extrudes,disabling further operation of wrench in order to protect armature etc.from being damaged.



### 7.Replace carbon brush



8.Check carbon brush every 6months or 20000 tightening,whichever comes first

**11.1 OPTION SG series**

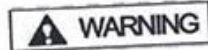
|       | Extension Sockets |     |     |     |     |     |     |     |     |
|-------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|       | M12               | M16 | M20 | M22 | M24 | M27 | M30 | M33 | M36 |
| SG-22 | √                 | √   | √   | √   |     |     |     |     |     |
| SG-24 |                   | √   | √   | √   | √   |     |     |     |     |
| SG-30 |                   |     |     |     |     | √   | √   |     |     |
| SG-36 |                   |     |     |     |     |     |     | √   | √   |

**11.2 OPTION SGC series**

|        | Extension Sockets |     |     |     |     |     |     |     |     |
|--------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|        | M12               | M16 | M20 | M22 | M24 | M27 | M30 | M33 | M36 |
| SG-22C | √                 | √   | √   | √   |     |     |     |     |     |
| SG-24C |                   | √   | √   | √   | √   |     |     |     |     |
| SG-30C |                   |     |     |     |     | √   | √   |     |     |

**12.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 purchase, voltage and details of failure.



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