



**ELECTRIC WIRE SAW**

**DSX-10A**

**DSX-10Ax**

**INSTRUCTION MANUAL**

- © Thank you for buying our products.
- © Read and understand this Instruction Manual carefully and completely for your own safety.
- © Save this Manual for future reference.

**CONSEC CORPORATION**

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## MEANING OF SIGNAL WORDS ⚠WARNING & ⚠CAUTION

The instruction manual includes three signal words ; ⚠WARNING & ⚠CAUTION which mean as follows.

**⚠WARNING** : It is assumed that if the user use the machine wrongly, it would be the risks that the user could be died or injured.

**⚠CAUTION** : It is assumed that if the user use the machine wrongly, it would be the risks that the user could remain the disabled or damage for the materials.

**POINT** : Important notices for the installation of machine, instructions, maintenance and servicing.

"CAUTION" might cause the serious accidents depending on the situations. Since we mention the important notices, please strictly follow the instruction in order to avoid the accidents.

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# 1 . WARNING AND CAUTION

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- ⊙ To avoid the risk of fire, electric shock and personal injury, follow all the instructions stated in "Safety Notice For Electric Tools" and "Notes For Usage Of Electric Wire Saw".
- ⊙ Before use, read and understand this Manual, and follow all the safety instructions for your own safety.
- ⊙ Save the Manual for future reference.

## 【1】 Safety Notice For Electric Tools

### WARNING

1. Do not use for other than specified purposes.
2. Keep bystanders away at a safe distance from work area.
  - ⊙ Never allow bystanders to contact tool or extension cord.
3. Avoid dangerous environments.
  - ⊙ Do not use hydraulic unit itself or control panel in rain, damp or wet locations.
  - ⊙ Keep work area well lit.
  - ⊙ Do not use your Machine in the presence of explosive or flammable gas or liquid.
  - ⊙ Cluttered work areas invite accidents.
4. Wear proper apparel.
  - ⊙ Do not wear loose clothing or jewelry since these may be caught in moving parts.
  - ⊙ When working outdoors, wear rubber gloves and insulated no-skid footwear.
  - ⊙ Wear a protective hair covering to contain long hair.
5. Wear safety glasses.
  - ⊙ When working, wear safety glasses. Use a dust mask for dusty operations.
6. Do not overreach and maintain control.
  - ⊙ Keep proper footing and balance at all times.
7. Stay alert.
  - ⊙ Do not come close to the rotating parts. Doing so could get entangled in it or could get injured.
  - ⊙ During operation, carefully watch the proceedings, surroundings and how the situation stands to reduce risks.
  - ⊙ Use common sense.
  - ⊙ Do not use your Machine when you are tired or distracted.
8. Guard against electric shock
  - ⊙ During use of electric tool, prevent body contact with grounded surfaces such as pipes or enclosures of air-conditions, microwave ovens or refrigerators.
  - ⊙ Use power source equipped with earth leakage breaker.

**⚠ WARNING**

9. Do not abuse cord.
  - ⊙ Never carry tool by its cord.
  - ⊙ Never disconnect it by yanking the cord from power receptacle.
  - ⊙ Keep cord from heat, oil, sharp objects, cutting edges and moving parts.
10. Use recommended Accessories and attachment only.
  - ⊙ Using tools and devices not recommended in this Manual or Consec catalog can lead to accidents and personal injuries.
11. Check parts for damages.
  - ⊙ Before each use, check carefully Guards or other parts for damages to see that they should accomplish their designed function.
  - ⊙ Check for alignment, binding of moving parts, parts damages, mounting, and any other conditions that may affect operation.
  - ⊙ For repairs or replacement of Guards or parts, follow the instruction of this Manual.
  - ⊙ Unless otherwise specified in the Manual, have them repaired or replaced by Consec's sales (service) representative.
  - ⊙ Do not use your Machine if its Switch does not turn it on or off.
  - ⊙ If Switch is damaged, have it replaced by Consec's sales (service) representative.
12. Switch off and unplug your Machine in the following cases.
  - ⊙ When not in use or before repairing.
  - ⊙ Before replacing Accessories such as cutter, grinder or Bit.
  - ⊙ When other hazardous situation could be anticipated.
13. Remove all Adjusting Keys, and Wrenches.
  - ⊙ Before plugging your Machine, make certain all the Adjusting Keys and Wrenches, etc. used for adjustment are removed from the Machine.
14. Maintain your Tool and Machine carefully.
  - ⊙ Follow the instructions in this Manual for replacement of Accessories.
  - ⊙ Always keep Grip dry, clean and free from oil or grease.
  - ⊙ Check Cord regularly. When damaged, contact its sales store or Consec's sales (service) representative for repairs or replacement.
  - ⊙ When extension cord is used, check for damages regularly. If damaged, replace it.
15. Store idle tools securely.
  - ⊙ When not in use, store tools in a dry secured place. Keep out of reach of children.
16. Avoid accidental starting.
  - ⊙ Do not carry a plugged-in tool with your finger on the switch.
  - ⊙ Make sure tool switch is in OFF position before plugging in power cord.
17. Use proper extension cord suitable for outdoor use.
  - ⊙ For outdoor use, use an extension cord such as cabtyre cord or cabtyre cable.
18. Use right tool and right Accessories.
  - ⊙ Do not force smaller tool and Accessories to do a job bigger than specified for them.

**⚠ WARNING**

19. Have your electric tool repaired by Consec's sales (service) representative.
  - ⊙ This Machine is manufactured in compliance with applicable safety standards. Do not modify your Machine and Tool.
  - ⊙ Repairs by unauthorized personnel may cause Machine failure, damages or personal injury.
  - ⊙ Have your Machine and Tool repaired by Consec's sales (service) representative.

**【2】 Notes For Usage Of Electric Wire Saw**

**⚠ WARNING**

1. Check for embedded conduit etc.
  - ⊙ Contact with live wiring during cutting can result in electric shocks.
  - ⊙ Before cutting on a wall and floor, check for embedded conduit etc.
2. In case cutting water is sprinkled, take measures for preventing water sprinkling.
  - ⊙ During cutting operation, if it sprinkles water on Main Motor Assy., stop operating immediately and take measures such as attaching Motor Cover etc.
3. For operation at a high place, comply with the relevant laws and regulations.
  - ⊙ In case of mounting on the wall, attaching and removing of Slide Block Assy. and Guide Bar Assy. should be done at a low place.
  - ⊙ In case the parts of Electric Wire Saw fall down, it is very dangerous. Take necessary measures to prevent it.
  - ⊙ For operation at a high place, set your Machine on a secured place.
4. Be sure to wear rubber gloves and rubber shoes.
  - ⊙ Since water is used for operation, be sure to wear rubber gloves and rubber shoes during operation.
5. Use a power source provided with earth leakage breaker.
  - ⊙ Since water is used for Electric Wire Saw, use a power source provided with earth leakage breaker to prevent an electric shock.
6. Use your Machine at the Nameplate voltage.
  - ⊙ Use of supply voltage higher than specified will cause Machine speed exceedingly high and can lead to damages and injuries.
7. Fix Pole Base Assy. securely.
  - ⊙ It is very important to fix Pole Base Assy. correctly. If Pole Base Assy. was not fixed securely, Pole Base Assy. could rattle during operation.
8. Always use Main Pulley Cover Assy. and Slide Block Cover Assy.
  - ⊙ Use all covers to prevent water from sprinkling, to avoid an injury by the split of Diamond Wire and to avoid getting entangled in the Machine.
9. Without Pulley Cover Assy. and Slide Block Cover Assy. or as the door of each cover opened, do not start the Machine.
  - ⊙ Do not reach the rotating Main Pulley. Doing so could cause getting injured or getting entangled in the Machine.

**⚠ WARNING**

10. Do not cover Motor Vents and do not insert objects into Motor Vents.
  - ⊙ Doing so could cause the motor burning.
11. When any irregularity is found, turn Switch off immediately.
  - ⊙ If Diamond Wire comes to a stall or irregular noises are heard during operation, turn Switch off immediately.
12. Always feed water when cutting.
  - ⊙ If Diamond Wire is heated up, the life become shorter and cutting efficiency goes down. Also this could lead to the breakage of Wire or separation of sleeve. Therefore always feed water.
13. The connection of Diamond Wire must be done carefully.
  - ⊙ As for connection of Diamond Wire, follow the method specified by each Diamond Wire Manufacturer or by this Instruction Manual.
  - ⊙ Use the Sleeve only which is appropriate for each Diamond Wire and specified by each Diamond Wire Manufacturer.
14. Always install Safety Net With Frame.
  - ⊙ When operating Electric Wire Saw, always install Safety Net With Frame. Safety Net With Frame must be installed so that they surround Electric Wire Saw and the cutting object. An operator must be able to operate safely at the outside of cutting area surrounded by Safety Net With Frame. Also install Safety Net With Frame in front of working staff.
  - ⊙ Install Safety Net With Frame so that in case the split of Diamond Wire or the flying of Diamond Wire due to the separation of Sleeve occurs, these happenings do not cause any danger to the surrounding area. Please specify "Do not enter" area and keep the strangers out of working area.
15. Take safety measures against the cutting object.
  - ⊙ If the cutting concrete object suddenly falls down during operation, it is extremely dangerous. Take safety measures against the concrete object to be separated from the main building by lifting by crane. After the separation of cut object, if this concrete object is lifted by crane, take safety measures so that the separated object does not swing.
  - ⊙ In case the concrete object being cut by Wire Saw suddenly breaks and Diamond Wire is pressed between concrete and concrete, Diamond Wire could be locked or Diamond Wire could break. Before the concrete object being cut by Wire Saw breaks, insert the number of wedge into the cutting groove.
16. In case the connecting Sleeve is worn out, use a new Sleeve and connect Diamond Wire again.
  - ⊙ If the connecting Sleeve is worn out, this could cause the separation of Sleeve and it is very dangerous. Particularly oval worn out is dangerous.
17. Do not use Vacuum Pad to fix Pole Base Assy.
  - ⊙ If Pole Base Assy. was fixed by Vacuum Pad, Pole Base Assy. could move or fall down during operation.

## ⚠ WARNING

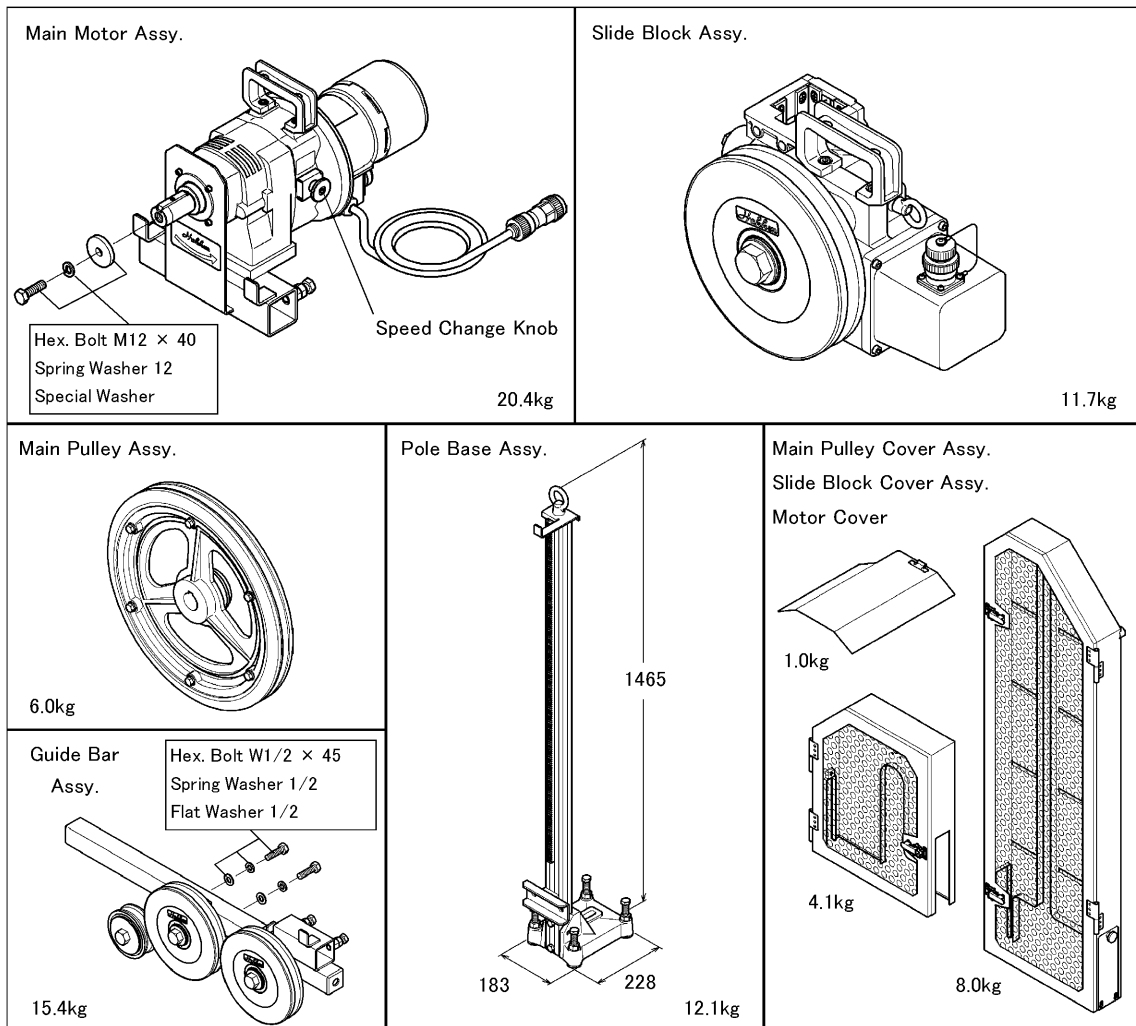
18. The asbestos is hazardous for human body. When the worker cuts including the hazardous materials, please take an action of dust control according to the applicable laws and regulation.
19. Make a copy of 「CHECK LIST」 in this Instruction Manual for each cutting operation and keep it as a record.

## ⚠ CAUTION

1. Make an adjustment of clamp of Slide Block Assy.
  - ⊙ Adjust the clamp of Slide Block Assy. and Pole Base Assy. so that there is no rattling. Please see 「Regular Servicing」 in this Instruction Manual for adjusting method.
2. Use Diamond Wire recommended by CONSEC.
  - ⊙ Use Diamond Wire specially made for Electric Wire Saw and recommended by CONSEC. Do not use other wire than Diamond Wire.

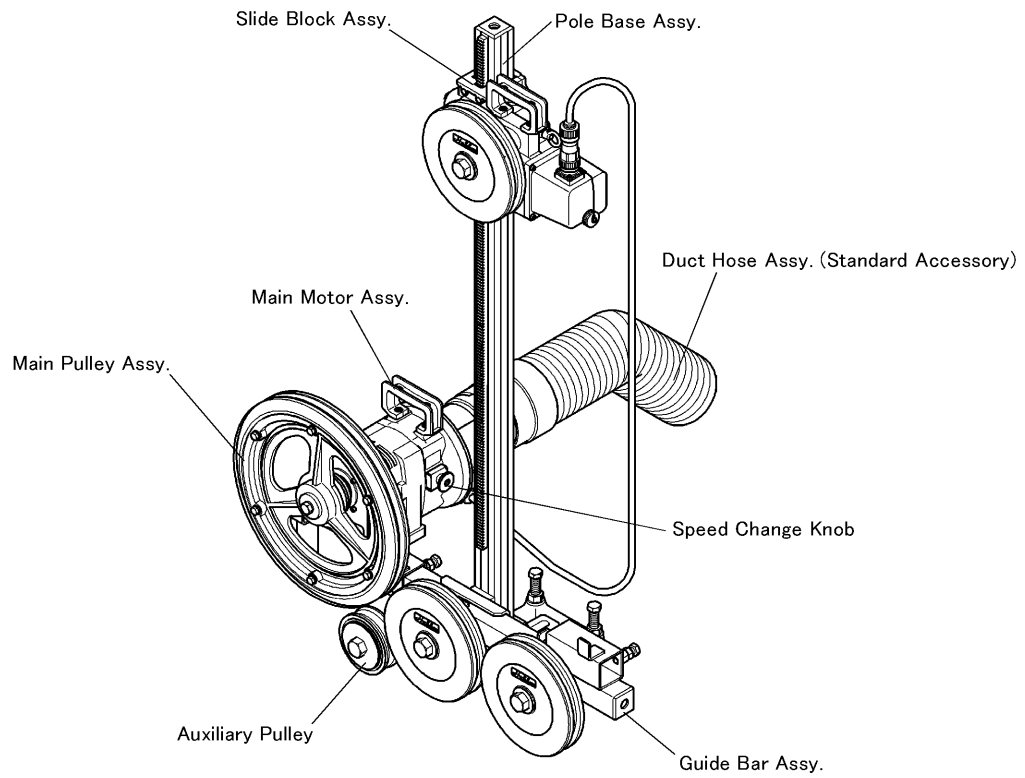
## 2 . DESCRIPTION

### 【1】 Component Units

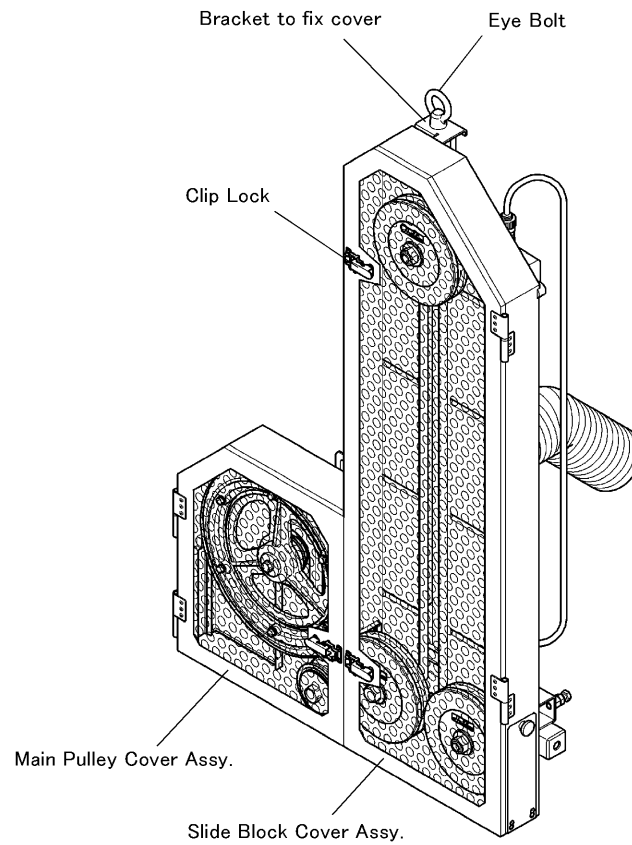




## 【2】 Before Attaching Covers



## 【3】 Electric Wire Saw Complete with Covers

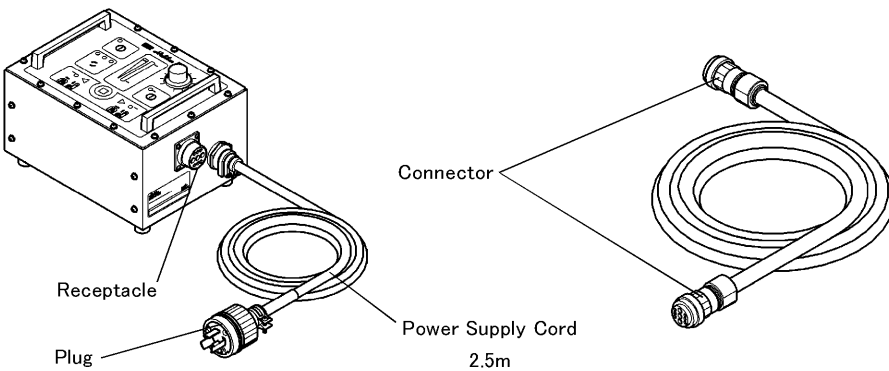


### 3 . SPECIFICATIONS

【1】 The specification of DSX-10A ・ DSX-10Ax

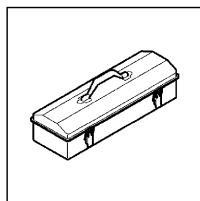
Model Name		DSX-10A	DSX-10Ax
Main Motor	Motor	Single Phase Series Commutator Motor	
	Power Supply	Single-Phase A.C. 115V 50/60Hz	Single-Phase A.C. 230V 50/60Hz
	Rated Current	30A	15.8A
	Normal Output	2400W	
	No Load Speed	1000/(420)min <sup>-1</sup> (HI/LOW)	
Feed Motor	Motor	DC Motor (Magnet Type)	
	Normal Output	23W	
Rated Feeding Speed		799mm/min	
Rated Feeding Thrust		1385N	
Effective Stroke		961mm	
Cutting Capacity	Basic Cutting Width		810mm
	Max. Cutting Thickness (One Stroke)		770mm
	Cutting Area (One Stroke)	Short Form	0.62m <sup>2</sup>
		Orbicular	0.65m <sup>2</sup> (Diameter 910mm)
Mass (Excluding Cord)		78.7kg	

【2】 Control Box BE-31A ( SEPARATELY SOLD )

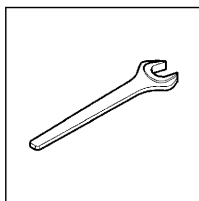


Model Name	BE-31A	
	115V specification (DSX-10A)	230V specification (DSX-10Ax)
Power Supply	Single Phase 115V 50/60Hz	Single Phase 230V 50/60Hz
Maximum Electric Power Consumption	150W	
Controlled Object Rating Power Current	30A	16A
Size W × L × H	265 × 200 × 179mm	
Mass	5.0kg	
Standard Accessories	7 Cores Connection Cord Assy. 10m	

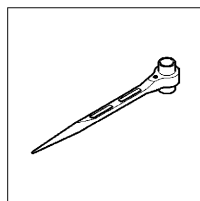
## 4 . STANDARD ACCESSORIES



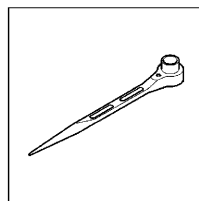
Tool Box  
H-402  
... 1 pce



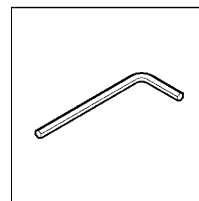
Single-ended Wrench  
13mm  
... 1 pce



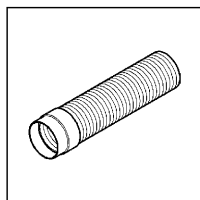
Ratchet Wrench  
19 x 21mm  
... 1 pce



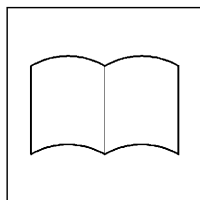
Single-ended Ratchet  
Wrench 14mm  
... 1 pce



Hex. Bar Wrench  
4mm  
... 1 pce



Duct Hose Assy.  
... 1 pce



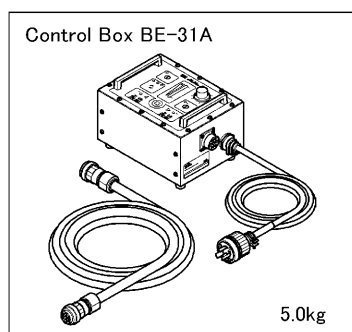
Instruction Manual  
... 1 pce

## 5 . APPLICATIONS

◎ Concrete construction, cutting for stone material, dismantlement, and making of opening part.

【Example of the enforcement】 Nuclear plant, bridge, bridge footing and subway structure.

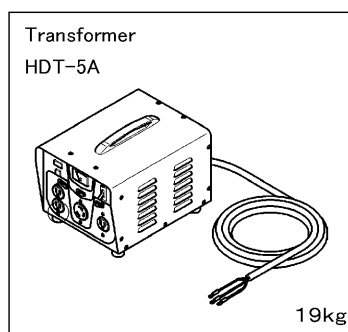
## 6 . OPTIONS (SEPARATELY SOLD)



Control Box BE-31A

5.0kg

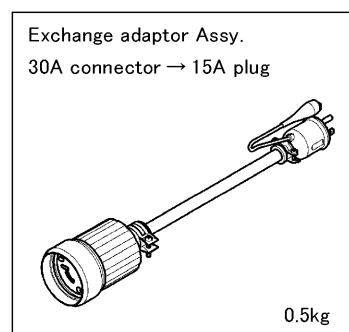
This is the machine which controls DSX-10A and DSX-10Ax, and it is possible to operate two kinds of operation "automatic & manual".



Transformer  
HDT-5A

19kg

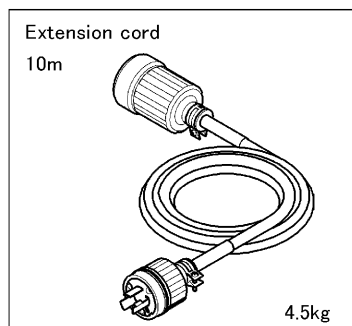
You can get the 115V 30A power supply (for the connection with American Electric Plug) from the 200V power supply. Capacity is 5kVA. You can also get 100V and 120V power supply.



Exchange adaptor Assy.  
30A connector → 15A plug

0.5kg

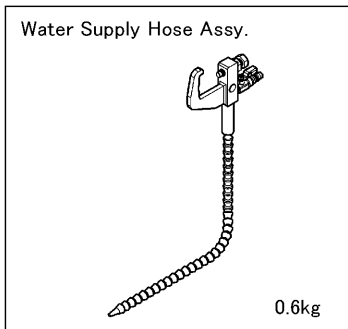
Used to transform 30A connector into 15A plug. If power supply connector is 15A type, this Exchange adaptor assy. is necessary to connect with power supply receptacle.



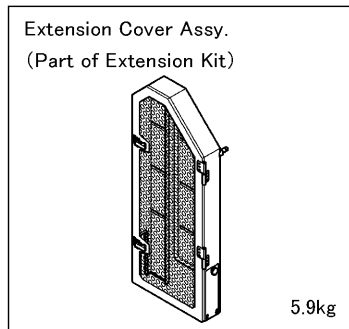
Extension cord  
10m

4.5kg

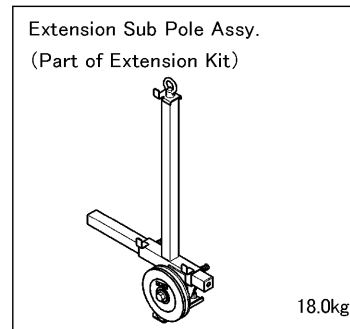
This extension cord is specially for SPX machines and BE series with American Plug (30A).



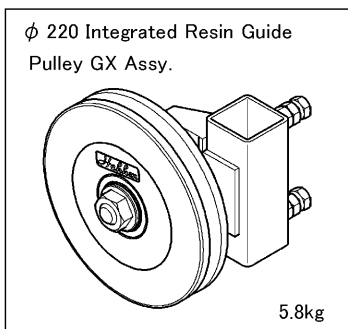
Possible to install □50 Guide Bar and single-lumen pipe and also possible to fix by anchor.



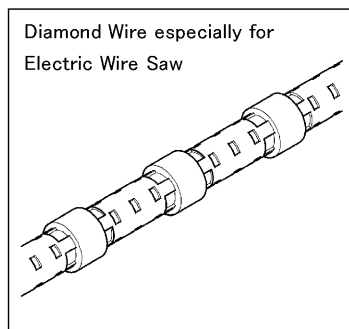
Cover for Extension Sub Pole. Its door can be removed same as the other covers.



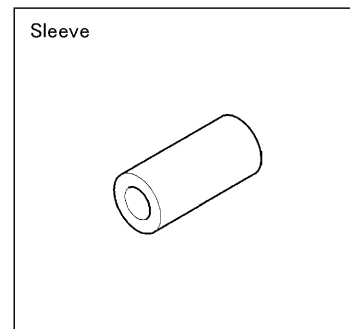
When extending the cutting square, the extended sub pole Assy is used by installing the main body of φ 220 Integrated Resin Guide Pulley GX Assy.



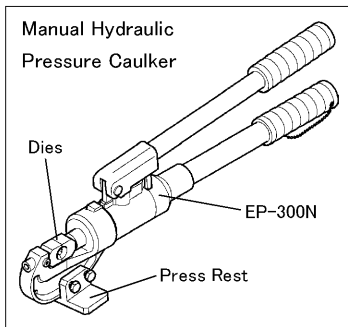
2 pcs of this Guide Pulley are used with Extension Sub Pole Assy.



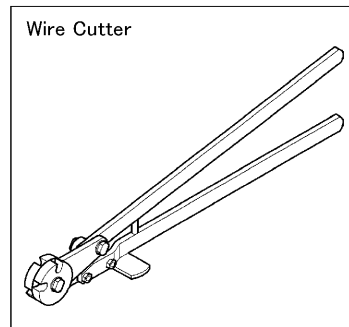
Steel Wire is lapped by resin coat (rubber coat) and Diamond Beads are attached.



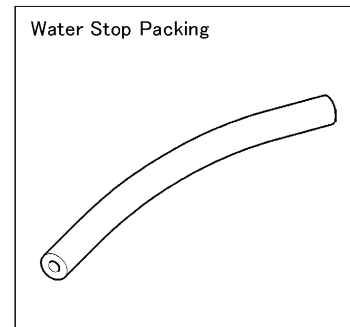
It is used to connect Diamond Wire.



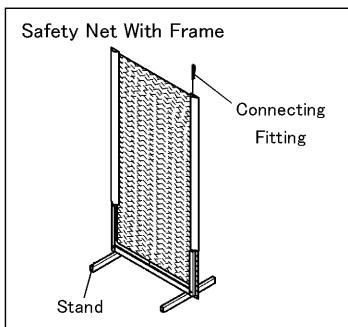
When connecting Diamond Wire with Sleeve, this is used to press the Sleeve.



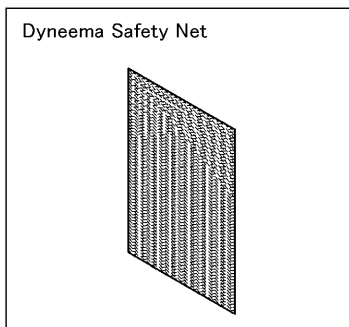
It is used to cut Diamond Wire to adjust its length.



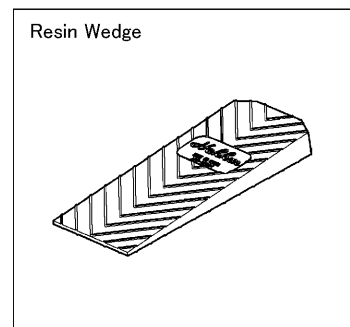
By inserting in the cutting plane, this packing can prevent the splash of cutting water and keep water way for the cutting water. So the cutting water can be saved.



Safety Net With Frame is prevent from flying around the surround area by breaking the Diamond Wire or flying the Wire in all directions by falling out of Sleeve.



There are two size of Net " 2m × 3m and 2m × 5m" for Safety Net With Frame.

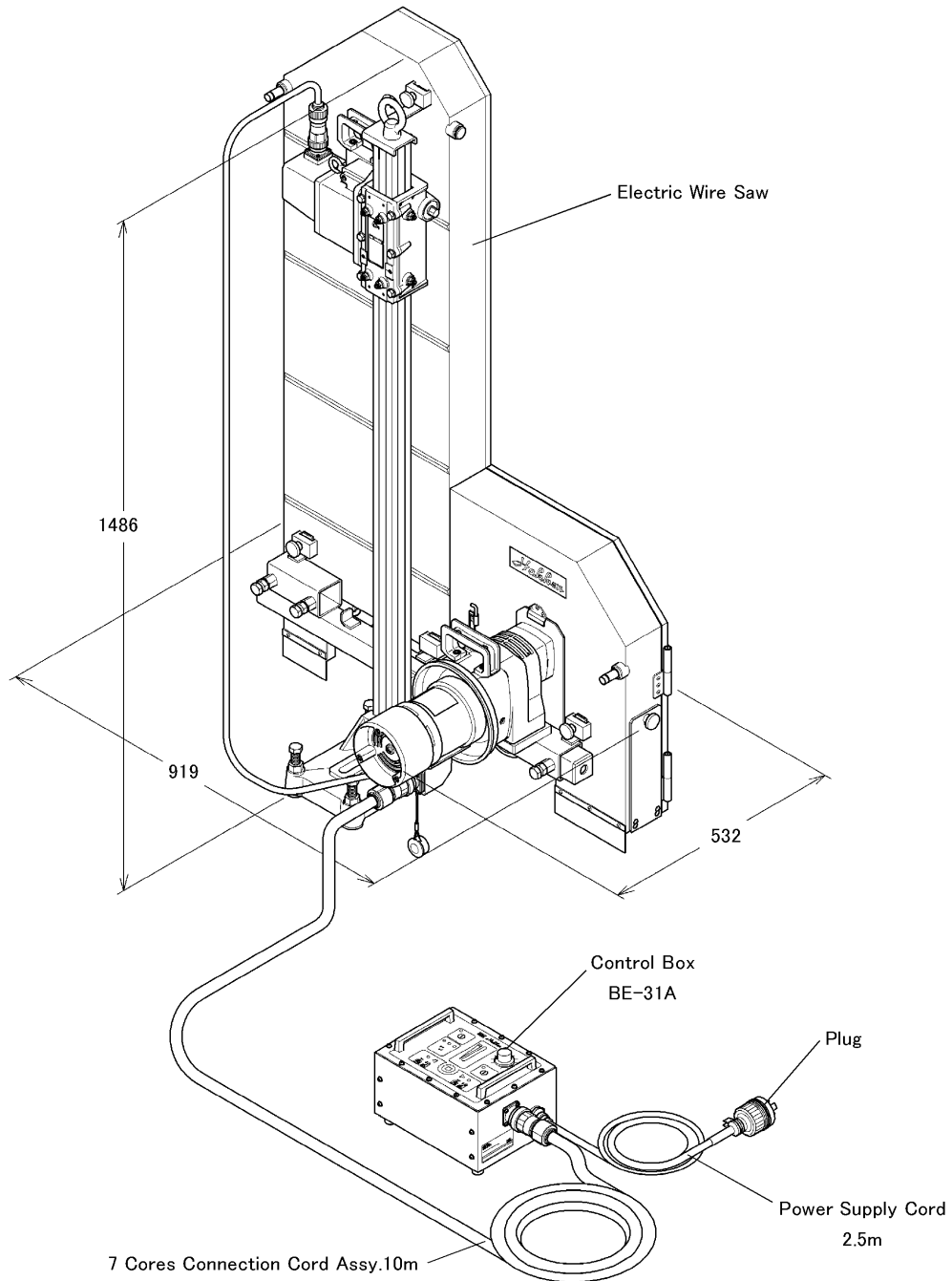


When the Wire Saw proceeds cutting to an extent, install the Resin Wedge on the cut surface of cut object which prevent from tucking of Wire Saw caused by breaking of cut objects.

# 7 . GENERAL DRAWING IN USE AND SPECIFICATIONS

## 【1】 Sketch Drawing

- ◎ DSX-10A and DSX-10Ax are same dimension and appearance (except name plate).
- ◎ This figure shows that Motor Cover and Duct Hose Assy. (standard accessories) are removed.



Max. length of Diamond Wire can be set	4797mm
Outer Diameter of Main Pulley	φ 400
Gross Assembled Weight (Excluding Cord)	81kg

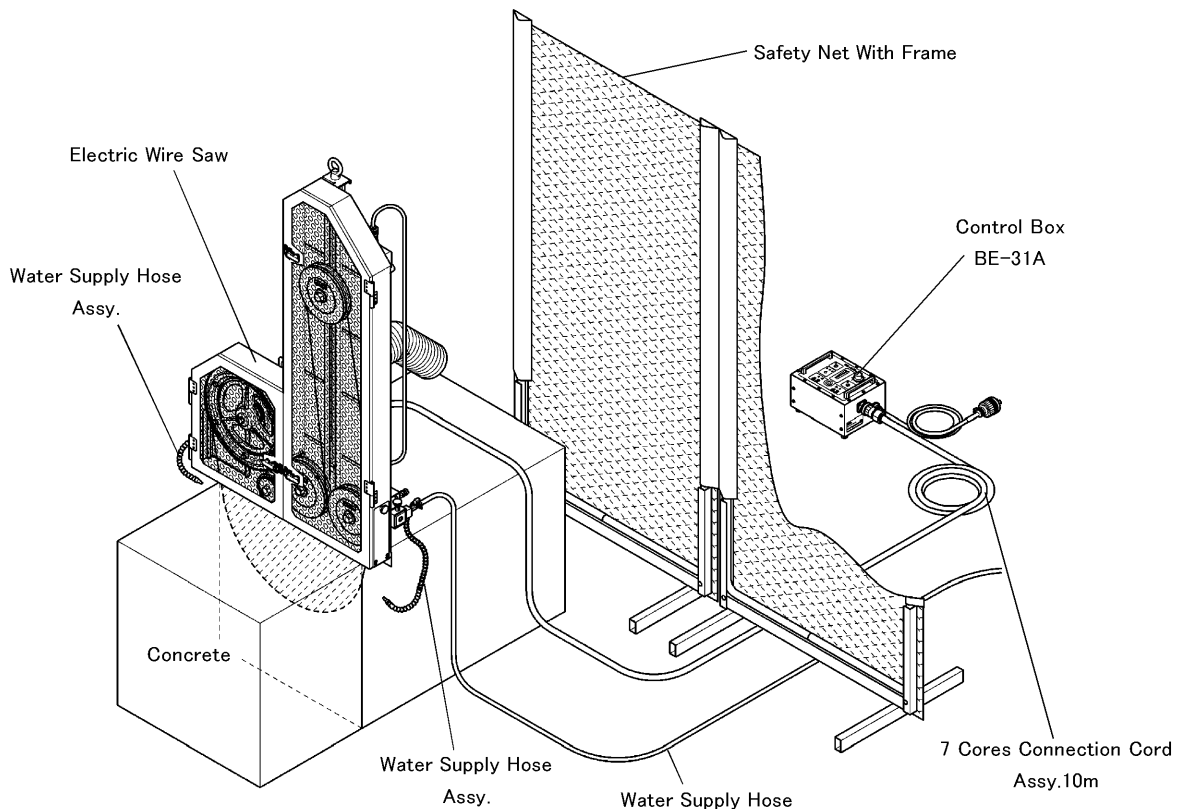
## 【2】 Standard Specification Drawing

### ⚠ WARNING

Please surround the Electric Wire Saw Diamond Wire by Safety Net With Frame in order not to spread the danger in the working area which is omitted in the figure.  
(Please take the safety measures in order not to fall Safety Net With Frame down by the wind-blown etc due to the lightweight.)

### ⚠ CAUTION

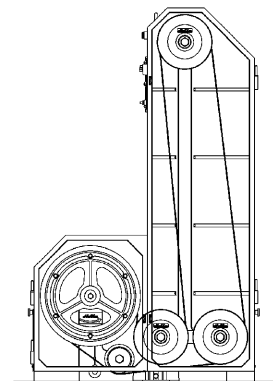
In case the cut object can not be cut by one stroke, stop cutting in the half way and replace Diamond Wire with shorter length one. Connect Diamond Wire again and start cutting again.



### POINT

If Side Covers of Main Pulley Cover and Slide Block Cover are opened or removed, the basic cutting width can be increased a little bit.

Effective Stroke		961mm
Basic Cutting Width		810mm
Max. Cutting Thickness (One Stroke)		770mm
Max. Cutting Area (One Stroke)	Short Form	0.62m <sup>2</sup>
	Orbicular	0.65m <sup>2</sup> (Diameter 910mm)



Max. length of Diamond Wire can be set to cut by one stroke : 4797mm

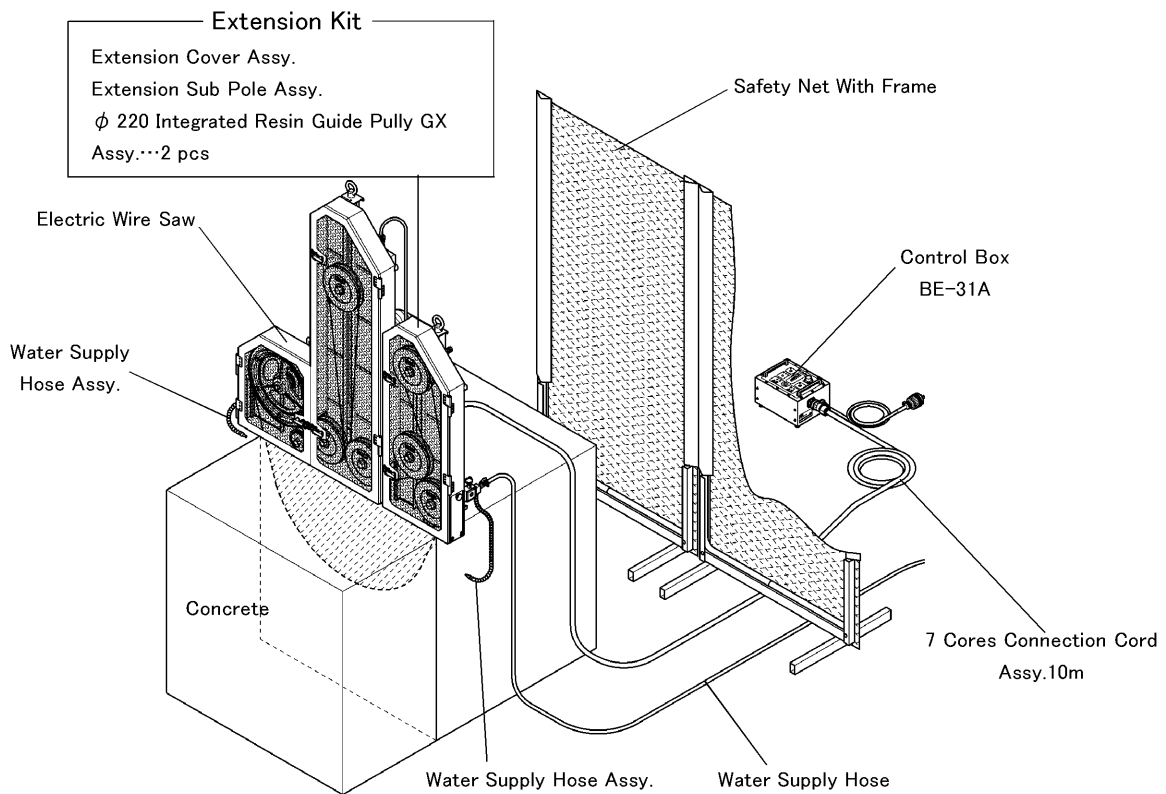
**【3】 When Extension Kit (SEPARATELY SOLD) is used**

**⚠ WARNING**

Please surround the Electric Wire Saw Diamond Wire by Safety Net With Frame in order not to spread the danger in the working area which is omitted in the figure.  
(Please take the safety measures in order not to fall Safety Net With Frame down by the wind-blown etc due to the lightweight.)

**⚠ CAUTION**

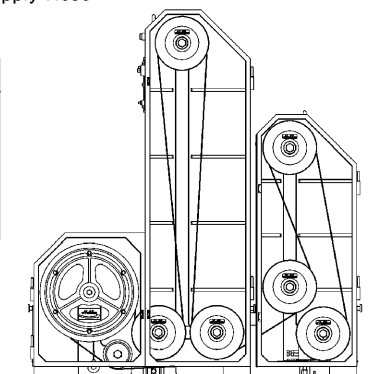
1. In case the cut object can not be cut by one stroke, stop cutting in the half way and replace Diamond Wire with shorter length one. Connect Diamond Wire again and start cutting again.
2. In case Extension Kit is used, Extension Sub Pole Assy. can not be fixed on the Column Object. Therefore Column Object can not be cut when Extension Kit is used.



**POINT**

If Side Covers of Main Pulley Cover and Slide Block Cover are opened or removed, the basic cutting width can be increased a little bit.

Effective Stroke	961+338mm
Basic Cutting Width	1240~1310mm
Max. Cutting Thickness (One Stroke)	1540mm
Max. Cutting Area (One Stroke)	Short Form 1.90m <sup>2</sup>

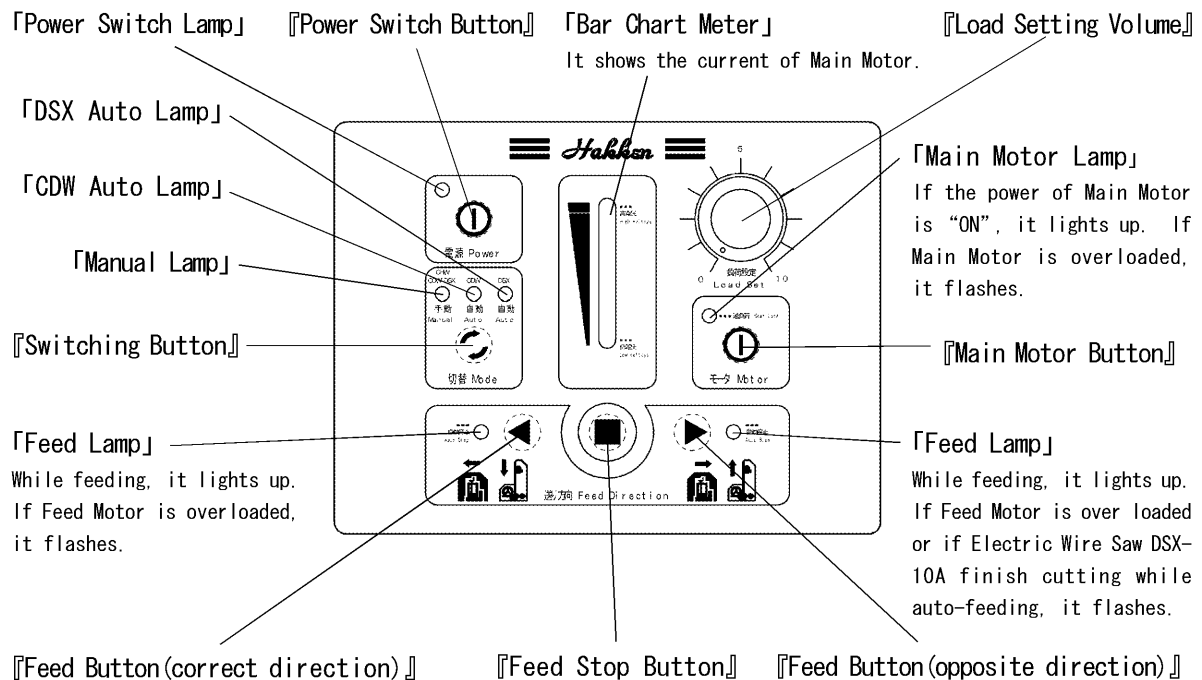


Max. length of Diamond Wire can be set to cut by one stroke : 7578mm

## 8 . OPERATIONAL INSTRUCTIONS FOR CONTROL BOX BE-31A (SEPARATELY SOLD)

◎ The difference between spec 115V and spec 230V of the Control Box (BE -31A) is only setting current value of 『Load Setting Volume』 . Other usage are common.

### 【1】 Control Panel of Control Box BE-31A



### 【2】 Operational Instructions for Electric Wire Saw DSX-10A using Control Box BE-31A

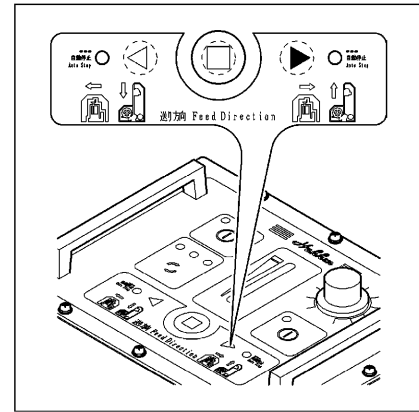
#### ⚠ WARNING

Control Box BE-31A must be operated by the same operator who uses Electric Wire Saw.

1. "ON" and "OFF" of Main Motor of Electric Wire Saw
  - 1) Press the Power Switch Button of Control Box BE-31A and make it "ON". (Power Switch Lamp comes on.)
  - 2) Press the Main Motor Button and make it "ON". (Main Motor Lamp comes on.) Main Motor of Electric Wire Saw slowly starts up. Speed becomes maximum at 2 seconds.
  - 3) To stop Main Motor, press the Main Motor Button and make it "OFF". (Main Motor Lamp lights off.) Also you can press Power Switch Button to stop Main Motor. (Power Switch Lamp lights off.)
2. Automatic Feeding of Electric Wire Saw
  - 1) Press the Power Switch Button of Control Box BE-31A and make it "ON".
  - 2) Press the Switching Button and make DSX Auto Lamp "ON".
  - 3) Set the preferred cutting load with the Load Setting Volume.



- 4) Press the Feed Button (correct direction). Control Box will automatically adjust the feeding speed so that the load current of Main Motor is kept constant. (It will automatically adjust for the cutting of no rebar concrete or concrete with steel rebar etc.)



- 5) Looking at the bar chart meter, adjust cutting load with the Load Setting Volume. At the position of 10, the Set Current is 30A. As you can see in the below table, the difference between spec 115V and spec 230V of the Control Box (BE -31A) is Load Setting Volume.

The relation of Load Setting Volume and setting current value

Unit (A)

The position of Load Setting Volume	0	1	2	3	4	5	6	7	8	9	10
115V specification	15	16.5	18	19.5	21	22.5	24	25.5	27	28.5	30
230V specification	8	8.8	9.6	10.4	11.2	12	12.8	13.6	14.4	15.2	16

**⚠ CAUTION**

1. If the bar chart meter reaches to the top (orange color), Main Motor is overloaded. In this case, lower the setting by Load Setting Volume.
2. If Main Motor is off, regardless of setting the feeding speed becomes maximum.

- 6) To stop the feeding only, press the feed stop button. To stop both the feeding and Main Motor, press Power Switch Button. (Power Switch Lamp lights off.)

**⚠ CAUTION**

Only when Automatic Feeding of Electric Wire Saw is used, at the time of finish cutting, Main Motor and Feeding Motor will stop automatically.

### 3. Manual Feeding of Electric Wire Saw

- 1) Press the Power Switch Button of Control Box BE-31A.
- 2) Press the Switching Button and make Manual Lamp "ON".
- 3) Set the cutting load at "0" with the Load Setting Volume.
- 4) Press the Feed Button (correct direction).
- 5) Looking at the bar chart meter, adjust the feeding speed with the Load Setting Volume so that the load current of Main Motor is kept constant. The feeding speed is in proportion to the scale of the Load Setting Volume. (At the position of 0, the feeding stops and at the position of 10, the feeding speed is at maximum.)
- 6) To stop the feeding only, press the Feed Stop Button. To stop both the feeding and Main Motor, press Power Switch Button. (Power Switch Lamp lights off.)

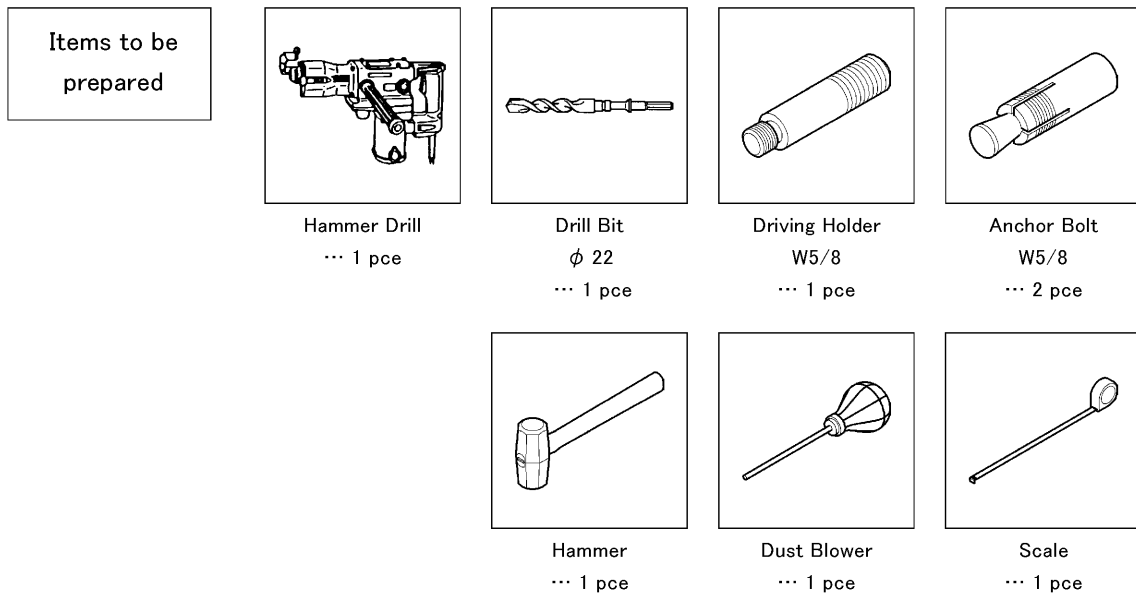
# 9 . OPERATIONAL INSTRUCTIONS

## ⚠ WARNING

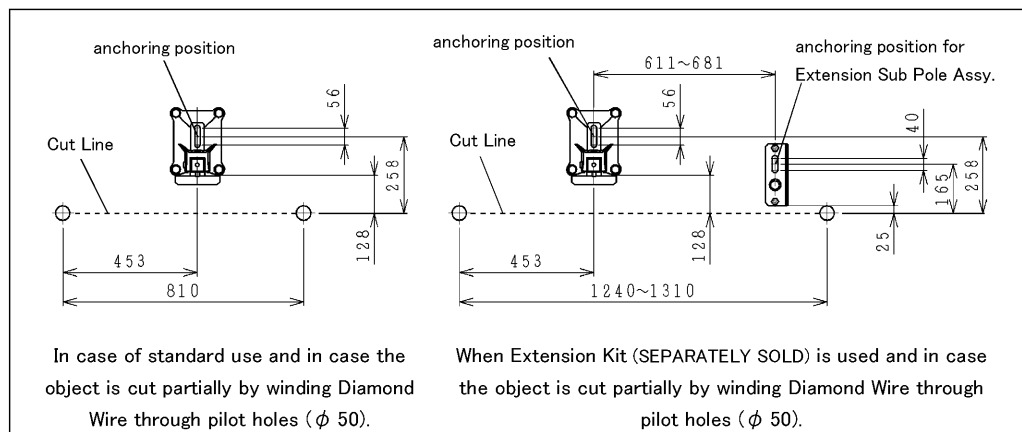
1. During cutting operation, take safety measures such as prevention of falling object, which is being cut, or other failsafe actions.
2. Except the time of cutting, plug off Control Box BE-31A from the power socket.

### 【1】 Anchor Fixing

© Work according to instruction manual of each Hammer Drills.



1) Mark the anchoring position.



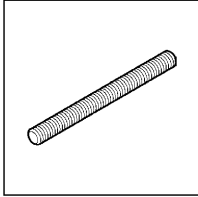
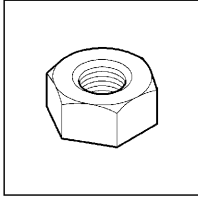
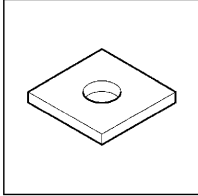
2) Open an anchor hole referring above drawing.

3) Clean the hole by Dust Blower and Insert the Anchor.

- 4) Drive the Anchor securely by Driving Holder and hitting by Hammer.

<b>⚠ WARNING</b>
<p>1. Take care so that chips are completely blown out of the hole. Otherwise, anchors could come loose.</p> <p>2. If it is not driven deep enough, the anchor could come loose.</p> <p>3. Use concrete anchors specified by CONSEC.</p>

## 【2】 Installation of Electric Wire Saw

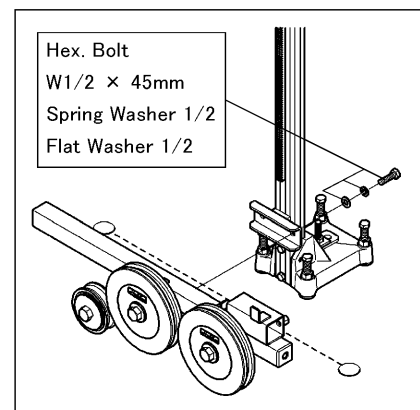
Items to be prepared			
	<p>Stud Bolt W5/8 × 160mm ... 2 pce each</p>	<p>Hex. Nut W5/8 ... 2 pce each</p>	<p>Square Washer W5/8 × □ 50 × t6 ... 2 pce each</p>

- 1) Screw the Stud Bolt into the anchor and place Pole Base Assy. Temporarily fix Pole Base Assy. by fastening Hex. Nut using Ratchet Wrench.

<b>⚠ WARNING</b>
<p>1. Screw the Stud Bolt more than five screw threads. In case this can not be done, it is possible that screw threads are damaged. In this case, replace Stud Bolt or install another anchor.</p> <p>2. While doing this, make sure that Pole Base Assy. does not fall down. While fixing Pole Base Assy., securely hold Pole Base Assy.</p>

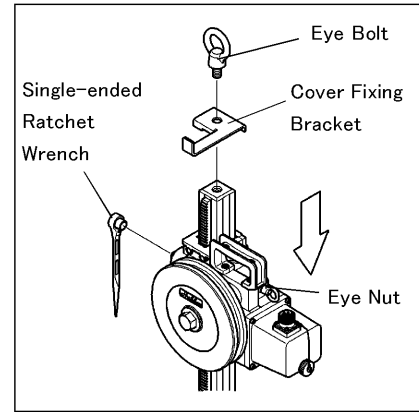
- 2) Fixing Pole Base Assy.

- ① As shown to the right, attach Guide Bar Assy. with Hex. Bolt (W1/2 × 45mm), Spring Washer and Flat Washer to Pole Base Assy. and fix it using Ratchet Wrench.
- ② Match the position of  $\phi$  220 Integrated Resin Pulley GX Assy. mounted on Guide Bar Assy. and Cut Line.
- ③ Adjust Leveling Bolts of Pole Base Assy. so that Pole Base Assy. does not rattle. After adjusting the level, securely fix Pole Base Assy. clamping Hex. Nut using Ratchet Wrench.



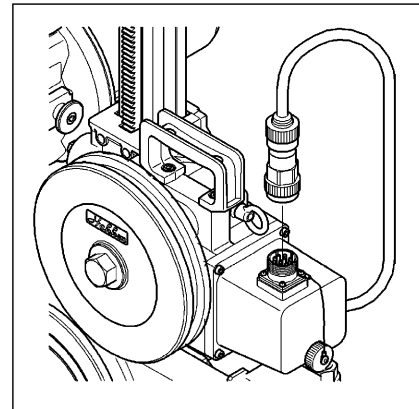
3) Mount Slide Block Assy. on Pole Base Assy. Make it FREE by pulling Eye Nut and move Slide Block Assy. using Single-ended Ratchet Wrench 14mm to the bottom of Pole Base Assy. Then push Eye Nut and make it LOCK.

4) Attach Cover Fixing Bracket to the tip of Pole Base Assy. and fix it with Eye Bolt.



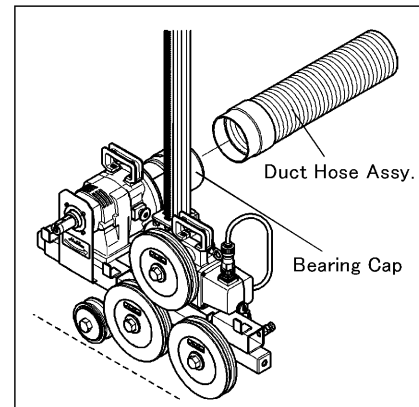
5) Mount Main Motor Assy. on Guide Bar Assy. and fix it using Ratchet Wrench.

6) Connect the Plug of Main Motor Assy. with the receptacle of Slide Block Assy.



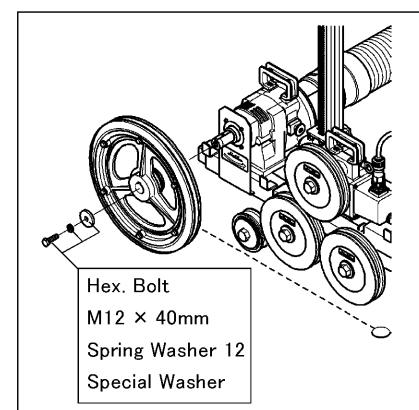
7) Attach Duct Hose Assy. to the side of Bearing Cap of Main Motor Assy. After attaching it, set the Duct Hose Assy. in the direction (downward) where cutting water can be avoided.

<b>⚠ WARNING</b>
To prevent the cutting water from entering into Main Motor, always attach Duct Hose Assy.



8) Attach Main Pulley Assy. to the Main Shaft. Securely fix it with Hex. Bolt (M12 × 40mm), Spring Washer and Special Washer.

<b>⚠ CAUTION</b>
Pay attention to the front side and back side of Main Pulley Assy. The side which the head of Hex. Bolt can be seen is the front side.



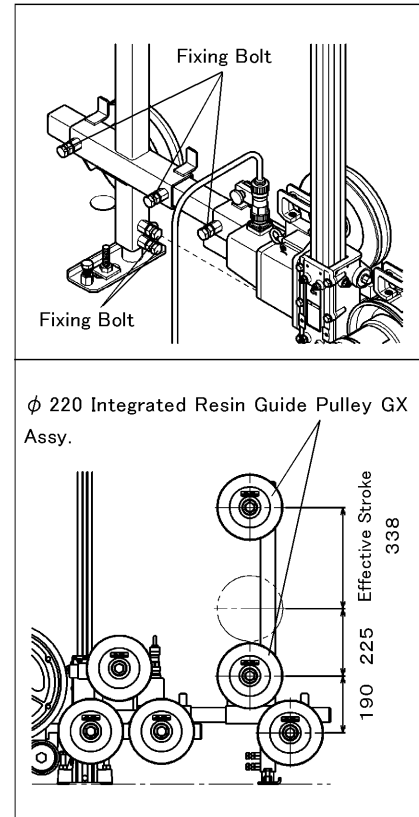
9) When Extension Kit (SEPARATELY SOLD) is used.

- ① Attach Extension Guide Bar and adjust the position of Extension Sub Pole Assy.
- ② Fix the Fixing Bolts of Extension Sub Pole Assy. using Ratchet Wrench. Then fix it by a concrete anchor same as Pole Base Assy.

**⚠ CAUTION**

If the position of Extension Sub Pole Assy. is too close to Guide Bar Assy., Extension Cover Assy. can not be installed. Pay attention to this.

- ③ Please refer to the right figure, install 2 pcs of  $\phi$  220 Integrated Resin Guide Pulley GX Assy. by using Ratchet Wrench.



10) After attaching Main Pulley Assy. make sure if Cut Line and each Guide Pulley are in alignment.

**【3】 Setting Speed of Main Motor Assy.**

- ⊙ Set the speed of Main Motor by Speed Change Knob.

By pulling Speed Change Knob, slide it in LOW or HI. Until Diamond Wire get easy about the cut object, use LOW speed. After that, use HI speed.

**⚠ WARNING**

In case you are changing the speed of Main Motor during cutting operation, change it just before Main Motor stops. If you change the speed of Main Motor while the motor is running full speed, doing so could lead to the damage or breakage of Main Motor Assy.

**POINT**

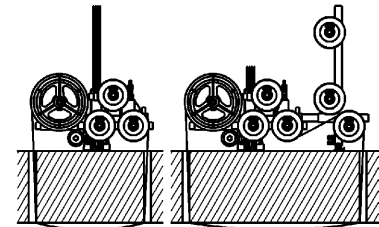
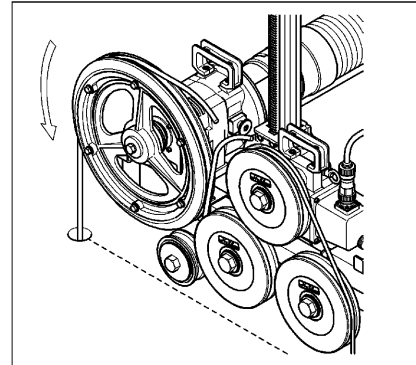
If Speed Change Knob is difficult to move, by gradually moving Main Pulley Assy. by hand, pull Speed Change Knob.

## 【4】 Jointing of Diamond Wire

- 1) Wind Diamond Wire around Main Pulley, each Guide Pulley and the concrete object to be cut. In case of using pilot holes for opening cut etc., make sure that Diamond Wire also goes through these pilot holes.

### ⚠ WARNING

1. If the corners of object to be cut are sharp, Diamond Wire could be locked or Main Pulley Assy. could not be moved when start cutting or Main Pulley Assy. could rotate without Diamond Wire rotating. Before winding Diamond Wire, file the sharp corners and round the corners.
2. When winding Diamond Wire, match the cutting direction of arrow on the Diamond Wire with the rotating direction (anti-clockwise looking at Main Pulley Assy. from Main Pulley Assy. side or the direction of arrow sticker) of Main Pulley Assy.



Standard  
Use

When Extension Kit  
(SEPARATELY  
SOLD) is used.

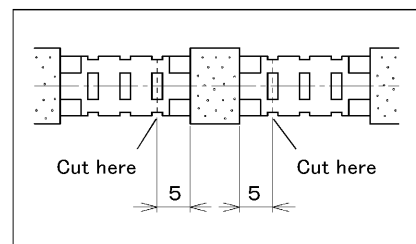
### ⚠ CAUTION

Each Diamond Wire has its minimum bend radius. So pay attention to this when winding Diamond Wire. If winding of Diamond Wire is not proper, Diamond Wire could be locked or Diamond Wire is unevenly worn out. Normally the minimum bend radius of Diamond Wire is R100.

- 2) Take the actual measure of necessary length of Diamond Wire by applying Diamond Wire and cut it a little longer than this measurement.

### ⚠ CAUTION

In case of using pilot holes and cutting the similar object again and again, once finishing the first cut, Diamond Wire must be cut. And if this same wire is used for the second cut, after jointing Diamond Wire, it is little shorter than when used for the first cut. In this way, if every time the same Diamond Wire is used, it becomes shorter and shorter. Therefore if Diamond Wire is cut a little longer in the beginning, this same wire can be used for several times.



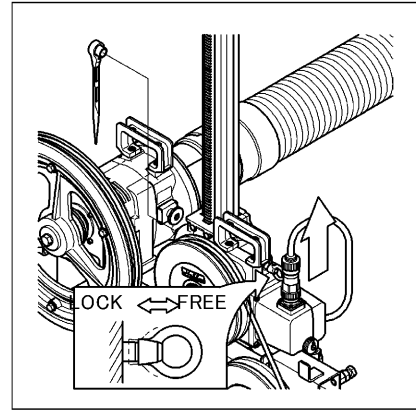
- 3) Joint Diamond Wire.

### ⚠ CAUTION

Regarding jointing of Diamond Wire, follow the instruction of Diamond Wire manufacturer or follow the instruction in 「HOW TO JOINT DIAMOND WIRE」 in page 28.

- 4) Make sure that Diamond Wire runs the ditch of Main Pulley Assy. and each Guide Pulley.
- 5) Make the Slide Block Assy. FREE by pulling Eye Nut and move it using Single-ended Ratchet Wrench 14mm to make Diamond Wire tense. Then push Eye Nut and make it LOCK.

<b>⚠ WARNING</b>
When tightening Diamond Wire or making Diamond Wire easy go around the concrete object to be cut, be careful not to press your hands between Diamond Wire and each Guide Pulley.

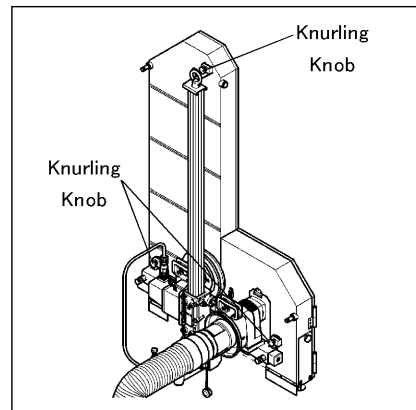


- 6) Turn Main Pulley by hand to make Diamond Wire easy go around.

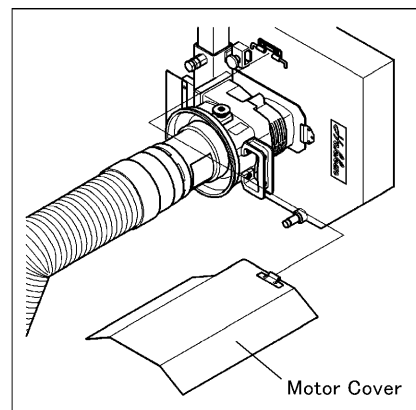
<b>⚠ WARNING</b>
If Diamond Wire is not get used around the concrete object, at the beginning of cutting, Diamond Wire could be locked.

### 【5】 Mounting Main Pulley Cover Assy., Slide Block Cover Assy. and Motor Cover

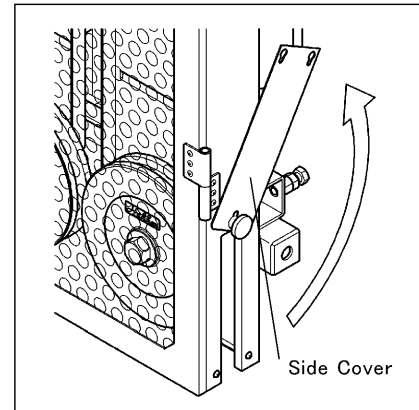
- 1) Attach Main Pulley Cover Assy. and Slide Block Cover Assy. Securely fix them by Knurling Knob.



- 2) Considering the way Electric Wire Saw is installed, if position of Main Motor Assy. comes at the lowest, also attach Motor Cover.

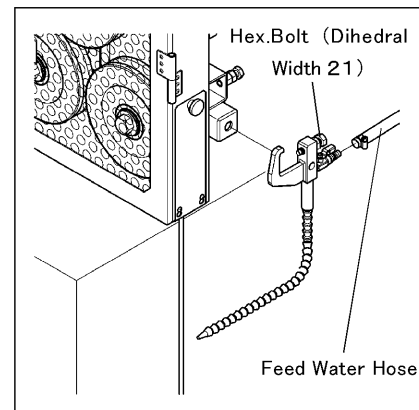


- 3) When the Extension Cover Assy. (SEPARATELY SOLD) is installed, first open (or remove) the Side Cover of Slide Block Cover, then install the Extension Cover Assy.



**【6】 Preparation for Feeding Water** (In case Water Supply Hose Assy., which is separately sold, is used.)

- 1) Attach Water Supply Hose Assy. to the each side of Guide Bar Assy. and securely fix them by Hex.Bolt and fix. Close Water Cock. Connect Feed Water Coupler on it or Feed Water Hose by fixing by hose band on it.
- 2) Direct the nozzle of Water Supply Hose Assy. to the Diamond Wire.



**⚠ CAUTION**

Arrange the feeding water so that all the cutting plane is covered.

**【7】 Treatment of Splashing Water**

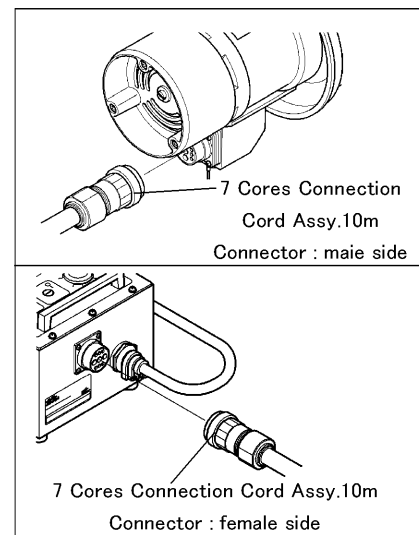
- ◎ Cutting water splashes. Take measures such as surrounding the scene by sheet.

**⚠ WARNING**

Take measures also at the opposite side of wall where to be cut.

**【8】 Connection of Control Box BE-31A**

- 1) Connect Electric Wire Saw and Control Box BE-31A by 7 Cores Connection Cord Assy.10m.





2) Insert the plug of Control Box BE-31A in the power socket.

○ In case Transformer HDT-5A is used, plug in 115V socket.

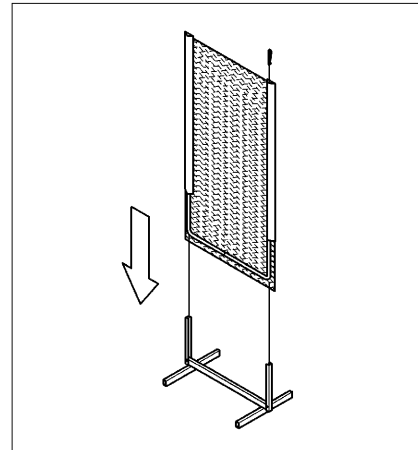
○ When the standard socket is used, use a separately sold item, Exchange adaptor assy.

**⚠ WARNING**

If other than original American Plug 30A is used, please make sure the capacity of the plug you use. If the capacity of the plug you use is less than 30A, operate Electric Wire Saw accordingly.

**【9】 Installation of Safety Net With Frame ( SEPARATELY SOLD )**

Please install Safety Net With Frame at the working area in that the Electric Wire Saw and Diamond Wire needs to be surrounded. Please also install Safety Net With Frame in front of the working staff who are in the outside of the working area.



**⚠ WARNING**

1. Please install the necessary number of Safety Net With Frame by surrounding the working area in order to prevent from spreading the danger in the surround area by breaking of Diamond Wire or flying the Wire in all directions by falling out of Sleeve.
2. Place Control Box BE-31A at the out side of Working area by surrounding Safety Net With Frame. Please also place Safety Net With Frame in front of the working staff who is in the outside of working are.
3. Please specify “Do not enter” area and keep the strangers away from working area.
4. Please take the safety measures in order not to fall Safety Net With Frame down by the wind-blown etc due to the lightweight by fixing the wire or annealing wire on the scaffold.

**【10】 Cutting Operation (when Automatic Feeding of Electric Wire Saw is used.)**

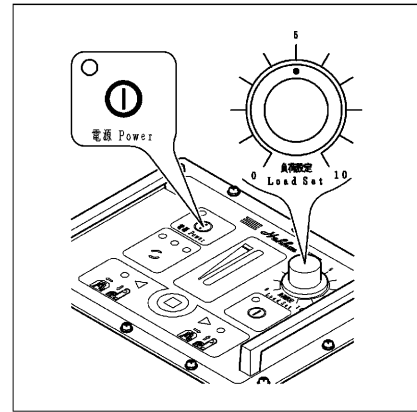
**⚠ WARNING**

1. During cutting operation, if abnormality occurs in Electric Wire Saw itself, immediately stop the operation.
2. Please do not enter the working area by surrounding Safety Net With Frame during cutting operation. This area is only allowed AUTHORIZED PERSONNEL ONLY.

1) Open the faucet of running water and gradually open Water Cock. Adjust amount of water.

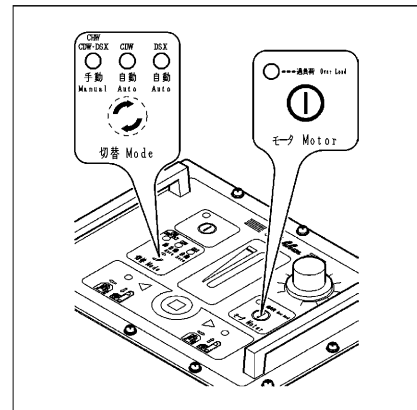
- 2) Set the preferred cutting load with the Load Setting Volume of Control Box BE-31A and press the Power Switch Button and make it "ON".

<b>⚠ CAUTION</b>
<p>If the top portion of the Bar Chart Meter (orange color) or the bottom portion of the Bar Chart Meter (green color) flashes and Electric Wire Saw can not be controlled by pressing any of buttons, power source has a problem. Please see TROUBLE-SHOOTING DURING OPERATION in this manual. Arrange the feeding water so that all the cutting plane is covered.</p>

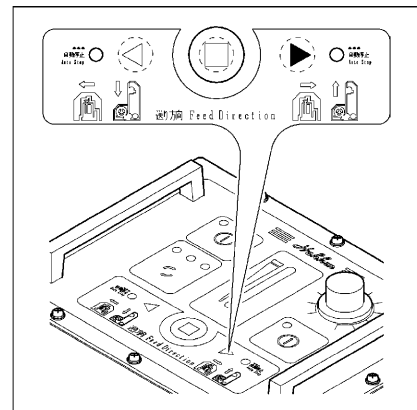


- 3) Press Switching Button of Control Box BE-31A and make DSX Auto Lamp "ON".
- 4) Press Main Motor Button of Control Box BE-31A to rotate Diamond Wire.

<b>⚠ CAUTION</b>
<p>If Main Pulley Assy. rotates without Diamond Wire rotating, Wire Retaining Rubber is worn out. (Please refer to page 34.) Pay enough attention to this.</p>



- 5) Press Feed Button (correct direction) of Control Box BE-31A to run Slide Block Assy.



- 6) Listening to the sound of Main Motor, looking at the appearance of Diamond Wire and the speed of feeding, and looking at the Bar Chart Meter, adjust cutting load with the Load Setting Volume.

<b>⚠ CAUTION</b>
<p>When adjusting it, adjust the cutting load in the range that the Bar Chart Meter will not reach the top portion (orange color).</p>

- 7) As cutting progress, the feeding water from original position over the cutting plane becomes more and more difficult. Change the feeding position. Using Water Stop Packing is one way. (Please refer to page 31.)

① Press Power Switch Button of Control Box BE-31A and make it "ON" to stop the rotation of Main Pulley Assy. and the movement of Slide Block Assy.

② Place the Water Supply Hose Assy. so that the water covers all cutting plane.

③ Continue the work by repeating the procedure since 1) in page 23.

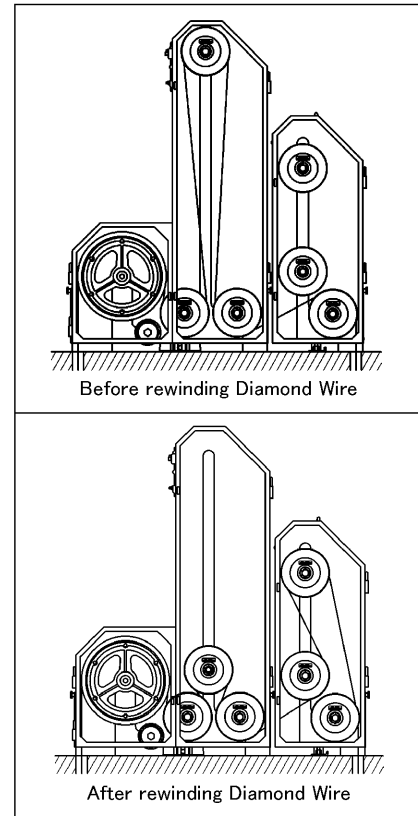
8) In case Extension Kit (SERARATELY SOLD) is used, when Slide Block Assy. reaches the top of Pole Base Assy., stop cutting operation. Change Diamond Wire with a shorter one.

① Press Power Switch Button of Control Box BE-31A and make it "ON" to stop the rotation of Main Pulley Assy. and the movement of Slide Block

② Stop feeding water. Press Feed Button (correct direction) of Control Box BE-31A to move Slide Block Assy. to the bottom of Pole Base Assy.

③ Move  $\phi$  220 Integrated Resin Guide Pulley GX Assy. and rewind Diamond Wire.

④ Continue the work by repeating the procedure since 1) in page 23.



9) As the cutting of concrete object almost comes to the end, this concrete object might suddenly break because of its own weight. If this happens, Diamond Wire is pressed between concrete and concrete and further cutting is prevented. Take necessary measures such as inserting the number of wedge into the cutting groove.

① Press Power Switch Button of Control Box BE-31A and make it "ON" to stop the rotation of Main Pulley Assy. and the movement of Slide Block Assy.

② Stop feeding water and insert the number of wedge into the cutting plane.

③ Continue the work by repeating the procedure since 1) in page 23.

10) In case the concrete object can not be cut by one stroke, by cutting the currently wound Diamond Wire or by using the shorter Diamond Wire, start cutting again.

Ⓞ As for re-jointing of Diamond Wire, first press Feed Button (correct direction) of Control Box BE-31A to move Slide Block Assy. to the bottom of Pole Base Assy. Then re-joint the Diamond Wire.

Ⓞ As for re-jointing of Diamond Wire, refer to 「HOW TO JOINT DIAMOND WIRE」 in page 28.

- 11) When cutting is finished, Main Motor and Feed Motor stop automatically.

**⚠ CAUTION**

When Electric Wire Saw stops automatically, if Slide Block Assy. moves in the correct direction, Diamond Wire could be disengaged. If this happens, the clamp adjustment of Slide Block Assy. is necessary. Referring 「Inspection and Adjustment of clamp adjusting portion of Slide Block Assy.」 in page 33, adjust it.

- 12) Press the Power Switch Button of Control Box BE-31A and make it "OFF" to stop all the functions.

### 【11】 Dismantling of Electric Wire Saw

- 1) Plug off Control Box BE-31A from the power socket.  
2) Disconnect 7 Cores Connection Cord Assy.10m .

**⚠ CAUTION**

1. Before disconnecting 7 Cores Connection Cord Assy.10m, wipe the water off on and around the Receptacle.
2. Do not disconnect 7 Cores Connection Cord Assy.10m, by yanking the cord.
3. After disconnecting 7 Cores Connection Cord Assy.10m, always use the Cap on the Receptacle of Electric Wire Saw.

- 3) Remove Motor Cover, Main Pulley Cover Assy. and Slide Block Cover Assy.

**⚠ CAUTION**

Be careful that the cutting water and sludge remained inside of each cover do not come out.

- 4) Make Slide Block Assy. FREE by pulling Eye Nut and move it using Single-ended Ratchet Wrench 14mm to remove Diamond Wire.  
5) Remove the Main Pulley Assy.  
6) Disconnect the Plug of Main Motor Assy. from the receptacle of Slide Block Assy. Remove the Main Motor Assy. from the Guide Bar Assy.  
7) Remove the Guide Bar Assy. from the Pole Base Assy.  
8) Remove the Eye Bolt and the Cover Fixing Bracket at the tip of Pole Base Assy. and remove the Slide Block Assy. As for moving of Slide Block Assy., make it FREE by pulling the Eye Nut and use the Single-ended Ratchet Wrench 14mm. Then detach the Pole Base Assy.

**⚠ WARNING**

As for the removing of Slide Block Assy. and the detachment of Pole Base Assy., the work must be done by more than two persons. Be careful not to drop Slide Block Assy. and Pole Base Assy.

- 9) Clean the cutting areas.

# 10 . TROUBLESHOOTING DURING OPERATION

The troubles could occur during operation and their solution.

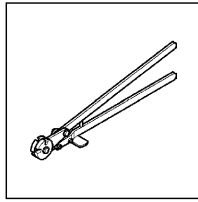
If a problem becomes apparent during operation, immediately stop the operation.  
Under the safe circumstances, investigate the cause of trouble using the following

Problem	Cause		Solution	
	DSX-10A	DSX-10Ax	DSX-10A	DSX-10Ax
The top portion of the bar chart meter (orange color) of Control Box BE-31A flashes.	The power supply voltage is too high. (above 140V)	The power supply voltage is too high. (above 260V)	Connect with the correct power supply source.(115V)	Connect with the correct power supply source.(230V)
The bottom portion of the bar chart meter (green color) of Control Box BE-31A flashes.	The power supply voltage is too low. (below 78V)	The power supply voltage is too low. (below 160V)	Connect with the correct power supply source.(115V)	Connect with the correct power supply source.(230V)
Main Motor Lamp of Control Box BE-31A flashes.	Main Motor is overloaded. Overload protection is working.		Press Main Motor Button or Power Switch Button to release the flashing. Solve the cause of overloading.	
Feed Lamp of Control Box BE-30A flashes.	Feed Motor is overloaded. Overload protection is working.		Press Feed Stop Button or Power Switch Button to release the flashing. Solve the cause of overloading.	
	Auto-Stop function at the end of cutting is working. (Only when feeding was in the correct direction, this could happen.)		Press Feed Stop Button or Power Switch Button to release the flashing.	
Slide Block Assy. does not move.	The setting of Load Setting Volume of Control Box BE-31A is too low.		Make the setting of Load Setting Volume of Control Box BE-31A higher.	
	Connection of cords is not correct or the wires inside of cords are broken.		Make sure the proper connection of cords. In case the wires inside of cords are broken, repair them.	
	The dust or debris are accumulated on the rack gear or pole of Pole Base Assy.		Clean it up.	
	The pole of Pole Base Assy. is damaged or deformed.		Repair it or replace it.	
	The rack gear or pinion gear is damaged.		Replace it with new one.	
	Eye Nut of Slide Block Assy. is not inserted.		Insert Eye Nut of Slide Block Assy.	
	Feed Motor is overloaded. Overload protection is working.		Press Feed Stop Button or Power Switch Button to release the flashing. Solve the cause of overloading.	
	Auto-Stop function at the end of cutting is working. (Only when feeding was in the correct direction, this could happen.)		Press Feed Stop Button or Power Switch Button to release the flashing.	
	Slide Block Assy. is damaged.		Repair it.	
Main Pulley does not rotate.	Connection of cords is not correct or the wires inside of cords are broken.		Make sure the proper connection of cords. In case the wires inside of cords are broken, repair them.	
	Main Motor is overloaded. Overload protection is working.		Press Main Motor Button or Power Switch Button to release the flashing. Solve the cause of overloading.	
Clutch of Main Motor is working.	Diamond Wire is locked on the corners of concrete object.		File the sharp corners and round the corners so that Diamond Wire rotates smoothly.	
	The setting of Load Setting Volume of Control Box BE-31A is too high.		Make the setting of Load Setting Volume of Control Box BE-31A lower.	
Main Pulley rotates without Diamond Wire rotating.	Diamond Wire is locked on the corners of concrete object.		File the sharp corners and round the corners so that Diamond Wire rotates smoothly.	
	The setting of Load Setting Volume of Control Box BE-31A is too low.		Make the setting of Load Setting Volume of Control Box BE-31A higher.	
	Diamond Wire is pressed between concrete object and separated concrete block.		Insert the number of wedge into the cutting plane to make a space.	
Cutting speed is slow.	Speed of rotation is not proper.		Change Speed Change Knob into "HI".	
	Cutting the steel bar.		Wait until finish cutting it without forcing it.	
	Diamond Wire is worn out.		Replace Diamond Wire with new one.	
	Not using Diamond Wire especially for electric wire saw.		Use Diamond Wire especially for electric wire saw.	
	The amount of feeding water is small.		Increase the amount of feeding water.	

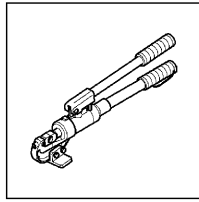
# 11 . HOW TO JOINT DIAMOND WIRE

## 1. The necessary items to joint Diamond Wire

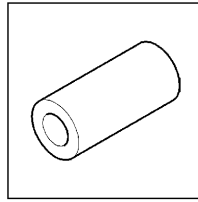
Items to be prepared



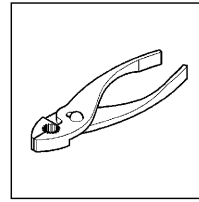
Wire Cutter  
... 1 pce



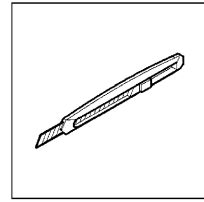
Manual Hydraulic  
Pressure Caulker Set  
... 1 pce



Sleeve  
... 1 pce



Pliers  
... 1 pce



Cutter Knife  
... 1 pce

## 2. Proper sleeve to joint Diamond Wire

◎ Jointing sleeve, which can be used by Manual Hydraulic Pressure Caulker EP-300N, is as follows.

Outer Diameter	$\phi 9 \sim \phi 9.5$
Length	20 ~ 23 mm
Material	The equivalent of SS 400
Remark	Use only those specified by the manufacturer of Diamond Wire.

## 3. Cautions regarding jointing Diamond Wire

### ⚠ WARNING

1. The work must be done after reading Instruction Manual of Diamond Wire carefully.
2. Always use those jointing sleeves, which are specified and flying prevention type.
3. Do not joint Diamond Wire at more than one place. (As for one round, the jointing must be at only one position.) During operation, repeatedly check the jointing position and if abnormality is found, first disconnect the jointed sleeve and joint it again.
4. When cutting concrete object, install Safety Net With Frame or Protection Sheets in case that the split of Diamond Wire or the flying of Diamond Wire due to the separation of sleeve occurs, the surrounding area is without danger.
5. If abnormality is found in Manual Hydraulic Pressure Caulker, never use it.
6. As for the adjusting pressure, conduct it after reading Instruction Manual of Manual Hydraulic Pressure Caulker EP-300N carefully. The pressure must be adjusted between 8 ~ 8.5 tons.
7. If Dies of Manual Hydraulic Pressure Caulker EP-300N are damaged or worn out, never use them.

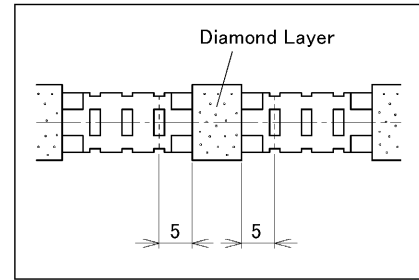
### ⚠ CAUTION

When handling Diamond Wire, use gloves. Be careful not to be injured.

#### 4. How to joint Diamond Wire

1) Attach Press Rest to the Manual Hydraulic Pressure Caulker EP-300N with Hex. Bolts.

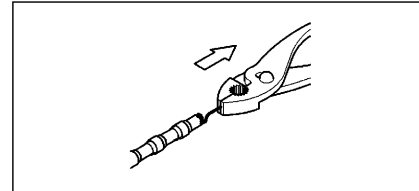
2) As shown to the right, cut wire at about 5 mm from the end of the Diamond Layer by a Wire Cutter.



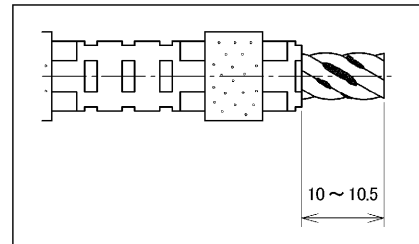
**POINT**

When cutting wire, cut it so that cut plane is flat and 90 degrees vertical to the wire.

3) Catch the end of spring by Pliers and pull it out of the cut plane of Diamond Wire.



4) Remove coating material by Cutter Knife. As for removal of coating material, it must be done so that wire goes into the Sleeve smoothly.



**⚠ WARNING**

When removing coating material, be careful so that element wires do not separate. If element wires are separated, the wire does not go into the Sleeve smoothly.

**⚠ CAUTION**

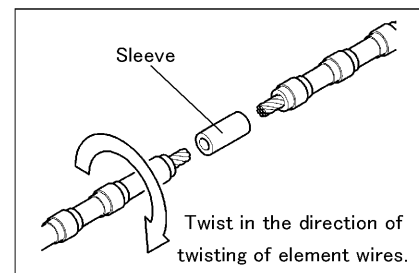
1. The length of removal of coating material must be always 10 ~ 10.5 mm. If the length is shorter than 10 mm, the contact area between wire and Sleeve becomes smaller and the jointing strength becomes smaller. If the length is longer than 10.5 mm, there is a space between Sleeve and coating material. This makes wire and Sleeve rub each other and could cause the split of Diamond Wire.

2. When removing coating material, be careful not to be injured.

5) Twist Diamond Wire in the direction of arrow based on the rule of thumb of one turn every 2 m and insert the wire into the Sleeve.

**⚠ WARNING**

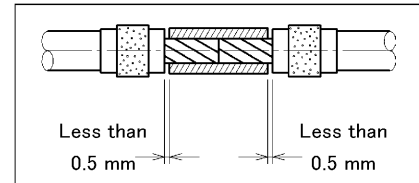
If Sleeve has a marking of direction to be used, follow the Instruction Manual of the Sleeve.



**⚠ CAUTION**

To prevent Diamond Wire from being unevenly worn out during cutting, always twist Diamond Wire.

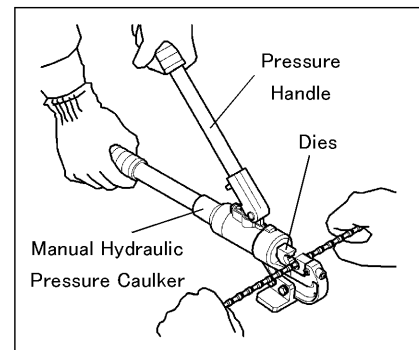
- 6) After inserting both ends of wire into the Sleeve, make sure that if both ends contact inside the Sleeve. At the same time, make sure that the clearance between Sleeve and Coating Material is less than 0.5 mm.



**⚠ WARNING**

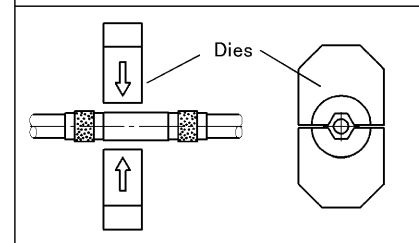
When inserting the wire into the Sleeve, if there is attachment such as debris on the surface of wire and inside of Sleeve, it is very dangerous because of less jointing strength. Repeat the procedures since 2).

- 7) Set the Sleeve on the Dies of Manual Hydraulic Pressure Caulker. Press the Sleeve by reciprocating motion of Pressure Handle. Dies move by reciprocating motion of Pressure Handle and if Dies click, it is complete.

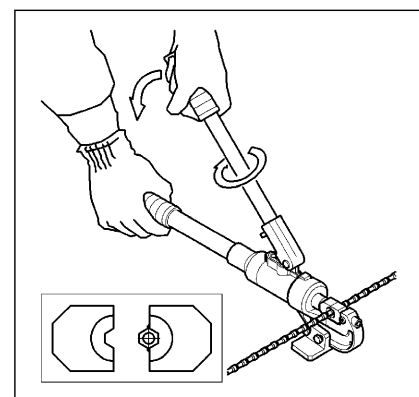


**⚠ CAUTION**

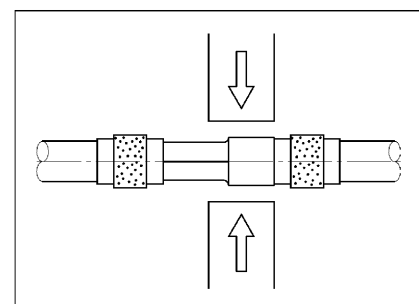
When pressing the Sleeve, be careful not to injure your hands being pressed by Manual Hydraulic Pressure Caulker.



- 8) Open Pressure Handle and turn to the right. Once again press Pressure Handle by reciprocating motion to open the Dies.



- 9) Press the other side of Sleeve in the same way that the procedure 7) is done. When doing this, pay attention to the position of Sleeve so that Hexagonal plane of first half (already pressed half) comes to the complete opposite of second half.

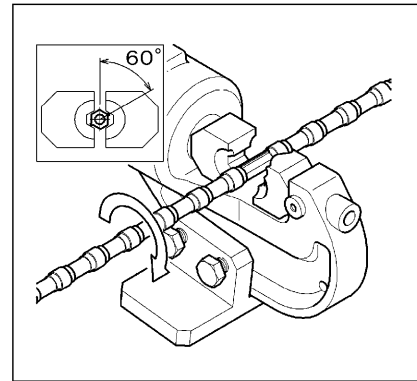




- 10) Turn Sleeve 60° and press it by the procedure 7)~9). After repeating this twice (the total of three times of pressing), it is complete.

**⚠ WARNING**

1. When turning the Sleeve, match the Hexagonal plane and the Dies. If they don't match when pressing, the Sleeve could crack or the Dies could be damaged.
2. When caulking the Sleeve, pay attention to the sound. When the Sleeve cracks, you could hear the crack of breakage. If this happens, never use this Sleeve. Sleeve has a marking of direction to be used, follow the Instruction Manual of the Sleeve.



- 11) After caulking, always fill up 「Check List for Jointing Diamond Wire」 in page 37 after making a photocopy of it and keep it.

## 12 . HOW TO USE WATER STOP PACKING (SEPARATELY SOLD)

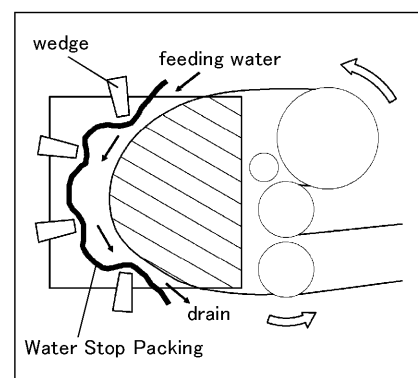
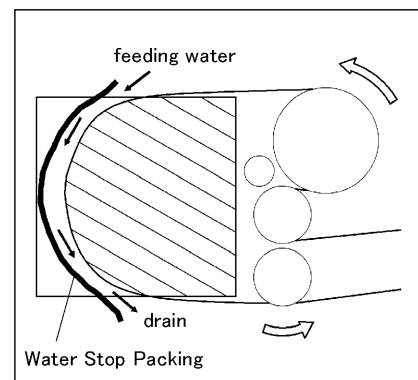
**⚠ WARNING**

Before installing Water Stop Packing, make sure that cutting operation is stopped and the power of Control Box BE-31A is cut off.

- 1) Until the cutting reaches the depth of which Water Stop Packing can be pushed in, keep cutting by normally feeding water.
- 2) Stop the cutting operation. Push Water Stop Packing into the groove of cutting and make a water way inside the groove by blocking water. Match the direction of rotation of Diamond Wire and the direction of feeding water.

**POINT**

1. As the cutting advances, the number of wedge must be inserted into the cutting plane. Insertion of wedges must be done after Water Stop Packing is pushed in deep into the cutting plane.
2. Do not pull Water Stop Packing. If Water Stop Packing is pulled, the outer diameter of Water Stop Packing becomes smaller. If this happened, water stopping efficiency decreases.



- 3) As the cutting advances, periodically stop the cutting operation and push Water Stop Packing in deeper and deeper.

# 13 . MAINTENANCE AND SERVICING

## 【1】 Maintenance

◎ Clean and Maintain after the operation.

**⚠ CAUTION**

When cleaning, always attach the Cap to the Receptacle before cleaning.

- 1) After the operation, clean up the surface. Aluminum or Steel is used as frame of Electric Wire Saw. When cleaning the outer surface, wipe them out with a dry cloth.
- 2) After entire operation is over, as Pole Base Assy. and Guide Bar Assy. are assembled, mount Main Motor Assy. on the Guide Bar Assy. and run Main Motor with non-load and drive dirt and dust out of Motor interior.
- 3) Apply rust preventing grease to Main Shaft (Main Pulley mounting portion) after the cleaning.
- 4) The inside of Slide Block Assy. (where the Pole goes through), dust or debris is likely to accumulate. Clean up the inside of Slide Block Assy. with special care.
- 5) Regarding Main Pulley Cover Assy. and Slide Block Cover Assy., clean them up after removing the Cover Door. Clean up the clogging up of drain port if necessary.

## 【2】 Checking Before Operation

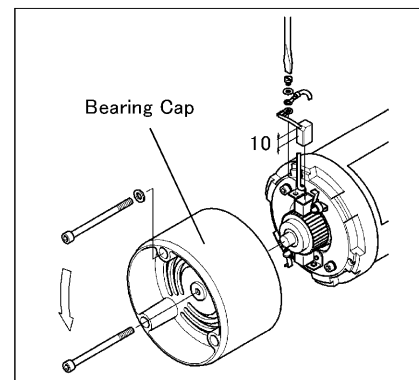
◎ Before cutting operation, always fill up 「Before Operation Check List for Electric Wire Saw」 in page 36 in this Instruction Manual after making a photocopy of it and keep it. If any abnormality is found, contact your nearest dealer or CONSEC's distributor.

## 【3】 Regular Servicing

### 1. Checking and Replacement of Carbon Brush

1) How to check it.

- By removing Bearing Cap Attaching Screw by Hex. bar wrench 5mm and by inserting this Attaching Screw in the center of Bearing Cap, removing Bearing Cap becomes easier. Then take Carbon Brushes out. After the checking, securely attach Bearing Cap.



2) Checking Points

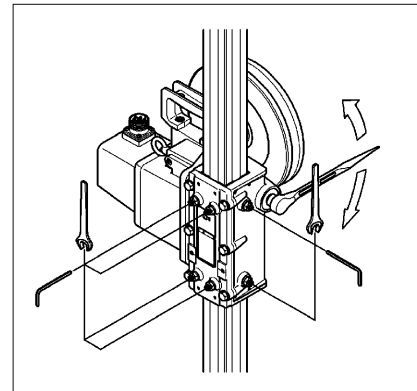
- The excessive abrasion of Carbon Brushes causes Motor failure. Check regularly and when they are worn up to the wear limit line (10mm), replace them with new ones.
- Keep them clean for free sliding in Brush Holder.

**⚠ CAUTION**

Insist on identical Carbon Brushes in replacement.

2. Inspection and Adjustment of clamp adjusting portion of Slide Block Assy.

◎ By moving Slide Block Assy. by using Single-ended Ratchet Wrench 14mm, slowly tighten 6 pcs of clamp adjusting screw by Hex. bar wrench (4mm) in a balance to adjust the clearance between the pole and Slide Block Assy. As for the rule of thumb for the adjusting, after tightening the screw until there is no more rattling, loosen it back by the quarter of one turn. After the adjusting is finished, tighten the Lock Nut by Single-ended Wrench 13mm to securely fix 6 pcs of clamp adjusting screw.



**⚠ CAUTION**

After the sliding plane is worn out, when Electric Wire Saw stops automatically, Slide Block Assy. moves back in the correct direction. If this happens, the clamp adjustment of Slide Block Assy. is necessary.

3. Inspection and maintenance for rotation of  $\phi$  220 Resin Pulley.

1) Rotate Pulley by hand. When rotation is heavy or not smooth, change Ball Bearing.

4. Checking of attaching screws and wear out

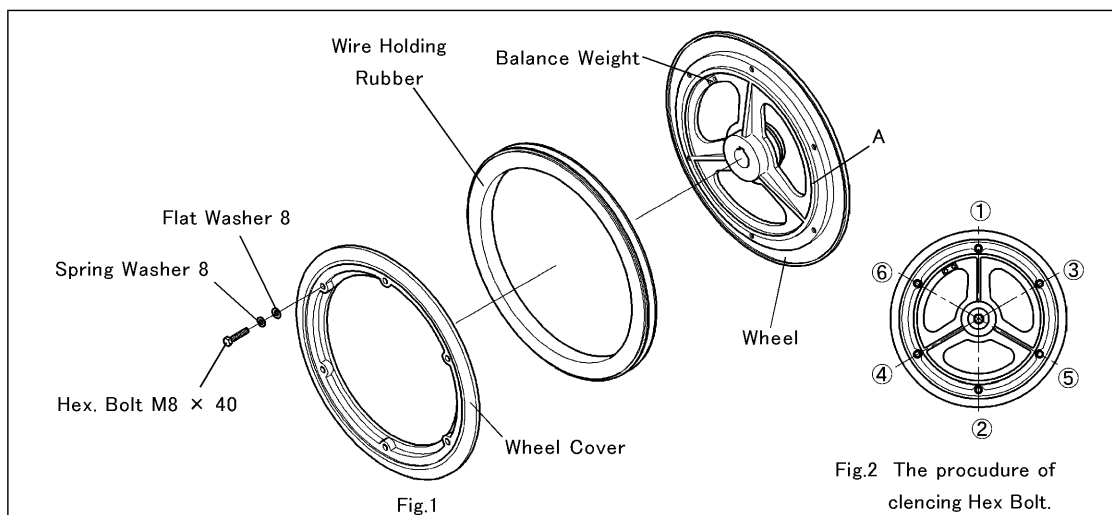
- 1) Check every attaching screw for loosening periodically. If found loose, tighten it.
- 2) Inspect the degree of worn out of Wire Retainer Rubber of Main Pulley,  $\phi$  220 Integrated Resin Guide Pulley GX Assy. and Auxiliary Pulley. Also inspect run out of those pulleys.

**⚠ CAUTION**

Particularly if Wire Retainer Rubber of Auxiliary Pulley is severely worn out, at the finish of cutting, a part of Diamond Wire and another part of Diamond Wire could contact each other.

**【4】 Repairs**

1. Replacement of Wire Retainer Rubber of Main Pulley Assy.



**⚠ WARNING**

Main Pulley Assy. is balanced in order not to move by revolving at high speed, and the Balance Weight is installed when assembling. Therefore, please do not remove the Balance Weight. If you remove it, the balance will be loosen or the vibration will be occurred during the revolving which might cause the breaking the Main Pulley Assy. Moreover, the Diamond Wire will come off, or the Wire Holding Rubber could be wear abnormally.

◎ The exchange procedure for the Wire Holding Rubber of Main Pulley Assy.

- 1) Please clean up before taking apart. After you remove the concrete cutting water, please markup the alignment toward the Wheel Cover and Wheel for sure. You must assemble it at the same position before taking apart. If you do not, the balance will be loosen, and the vibration could be occurred during revolving. ( In case that the Balance Weight comes off, please exchange it by Main Pulley Assy. )
- 2) Please loosen the Hex bolt, remove the Wheel Cover and the Wire Holding Rubber.

**⚠ CAUTION**

If you try to remove the Wheel Cover by force, it would be possible to break.

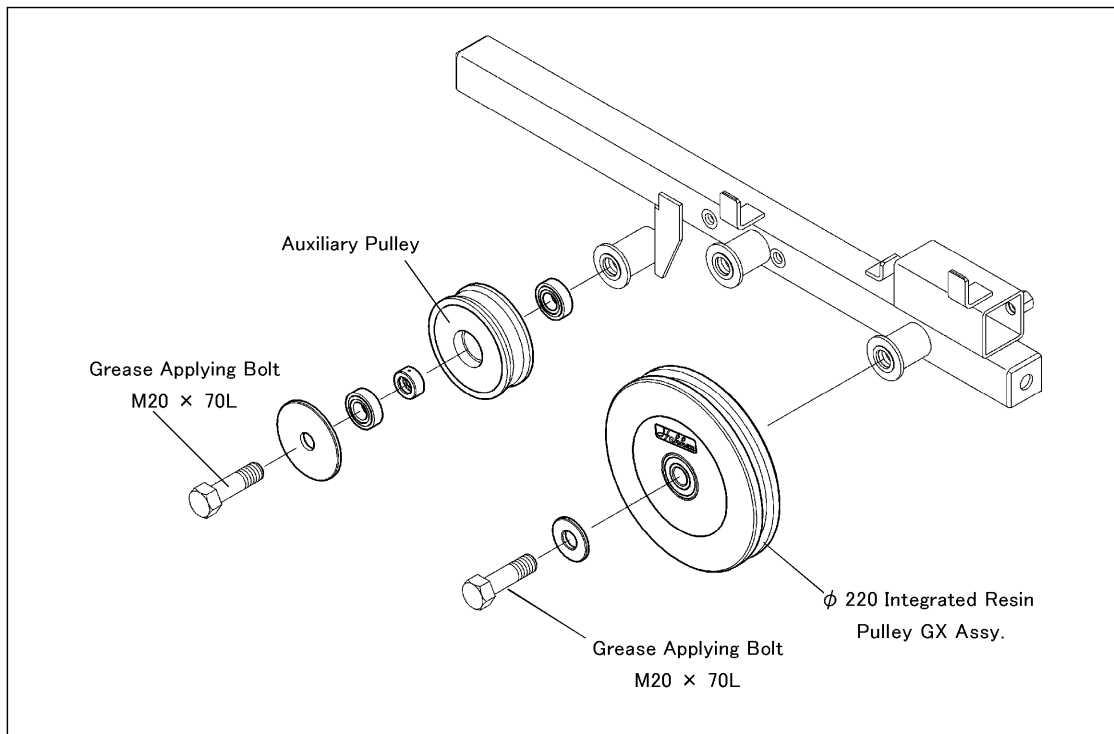
- 3) Please clean up the Wheel Cover and Wire Holding Rubber of Wheel. After confirming that there are no dirty, scratch, bent, burr, and crack, then, please install the Wire Holding Rubber into the Wheel.
- 4) Please press together the Wheel and Wheel Cover evenly along the circle. In such case, please align the mark which is marked for the alignment, and please make sure that Wire Holding Rubber is not run off the edge and make sure that the inner circumference of Wheel Cover is installed into the Wheel A (Fig. 1) of the outer circumference.
- 5) Please clench the Hex. Bolt on the diagonal temporally by referring (Fig. 2). After confirming the Wire Holding Rubber does not run off the edge, clench the Hex Bolt fully on the diagonal evenly.

**⚠ CAUTION**

If you clench the Hex Bolt one by one fully etc such as clenching by force, it will cause the cracks. Therefore, please clench by several times according to the clenching procedure Fig. 2).

- 6) After clenching the Hex Bolt, please make sure as follows once again.
  1. No cracks on the Wheel Cover and the Wheel.
  2. No running off the edge for Wire Holding Rubber.
  3. Not to forget to clench for the Hex Bolt fully.

## 2. Replacement for $\phi$ 220 Integrated Resin Pulley GX Assy. and Auxiliary Pulley.



## 3. Other

- ⊙ In case that the clutch slips easily by fraction of the friction plate of the motor, please contact to your distributor and request the adjustment.
- ⊙ The unit is manufactured to precise dimensions. If it does not operate properly, contact your nearest dealer or CONSEC's distributor. Do not repair it yourself.
- ⊙ Do not hesitate to contact your nearest dealer or CONSEC's distributor if you have any questions regarding use or handling of the unit.

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# 14 . MAINTENANCE INSTRUCTIONS

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## Storing the Product and Accessories

**When the Product and accessories are not in use, ensure that they are stored safely in a dry location, and under the following conditions.**

- ◇ Store the unit out of reach of children.
- ◇ Store away from rain and humidity.
- ◇ Do not store in locations subject to rapid changes in temperature.
- ◇ Store the unit out of direct sunlight.
- ◇ Do not store in locations where inflammable, explosive substances are present.

Specifications of the Product described in this manual are subject to change without prior notice.

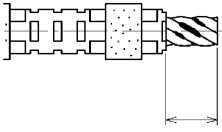
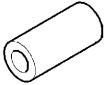
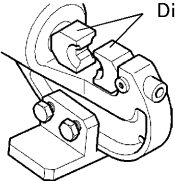

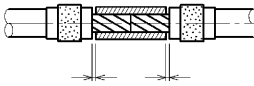
# 15 . CHECK LIST FOR ELECTRIC WIRE SAW

## 【1】 Before Operation Check List for Electric Wire Saw

Before Operation Check List for Electric Wire Saw						
Name of Working Site						
Name of Inspector						
Serial Number of DSX-10A, DSX-10Ax						
Check Point	Check Item	Inspection Date				
		/	/	/	/	/
Pole Base Assy.	Are Pole and Base damaged or deformed or do they have a crack?					
	Is Rack damaged or deformed? Does Rack have a crack or debris?					
	Are all attaching screws securely tightened?					
Guide Bar Assy.	Is Guide Bar deformed or does it have a crack?					
	Are $\phi$ 220 Integrated Resin Pulley GX Assy. and Auxiliary Pulley extremely worn out?					
	Is the rotation of the Pulley smooth?					
	Is every attaching screw of Pulley securely tightened?					
	Is any of Pulleys deformed or do they have a crack or debris?					
Main Motor Assy.	Are all attaching screws securely tightened?					
	Is Main Shaft damaged and is the Key attached?					
	Are Carbon Brushes worn out?					
	Are Cord, Plug and Receptacle damaged?					
Main Pulley Assy.	Is Wire Retainer Rubber extremely worn out?					
	Is Main Pulley deformed or does it have a crack or debris?					
	Are all attaching screws securely tightened?					
Slide Block Assy.	Is Slide Block Assy. damaged or does it have a crack?					
	Is $\phi$ 220 Integrated Resin Pulley GX Assy. extremely worn out?					
	Is the rotation of the Pulley smooth?					
	Is every attaching screw of Pulley securely tightened?					
	Is any of Pulleys deformed or do they have a crack or debris?					
	Is Receptacle damaged?					
Is Clamp Adjustment correctly done?						
Main Pulley Cover Assy. Slide Block Cover Assy.	Are Body and Cover Door damaged or deformed? Do they have a crack or debris?					
Control Box BE-31A	Is Control Box BE-31A damaged or deformed or does it have a crack?					
	Are Cord and Receptacle damaged?					
	Are Cord and Plug of 7 core cord 10m damaged?					
Safety Net With Frame	Please make sure that there are no expanding of the mesh and breaking of Safety Net?					
	Is every attaching screw of Stand for Safety Fence securely tightened?					

Make a photocopy of this Check List and keep it after filling it up.

**【2】 Check List for Jointing Diamond Wire**

Check List for Jointing Diamond Wire						
Name of Working Site						
Date of Jointing						
Name of person jointing wire						
Name of Inspector						
Serial Number of Hydraulic Pressure Caulker						
Time of inspection	Type	Check Item	Tolerance / Acceptance Range	Acceptance	Others	
Before caulking	Dimensions Check	Coating material removal length		10.0 ~10.5 mm	Accept / Reject	
		Coating material removal				Rubber still remains between rope strands, but on the surface of element wires, Rubber has been removed as much as possible.
	Visual inspection	Sleeve check		No dust or oil on internal surface. Flying prevention type .	Accept / Reject	Store carefully.
		Hydraulic pressure caulker		Is it Manual Hydraulic Pressure Caulker EP-300N?	Accept / Reject	
				No flaw or burr on caulking dies.	Accept / Reject	
		After caulking	Visual inspection	Shape of cross section		Each hexagonal plane is almost even.
Gap between sleeve and coating material				Less than 0.5mm on one side	Accept / Reject	Element wires must not be coming out of Sleeve.

Make a photocopy of this Check List and keep it after filling it up.



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