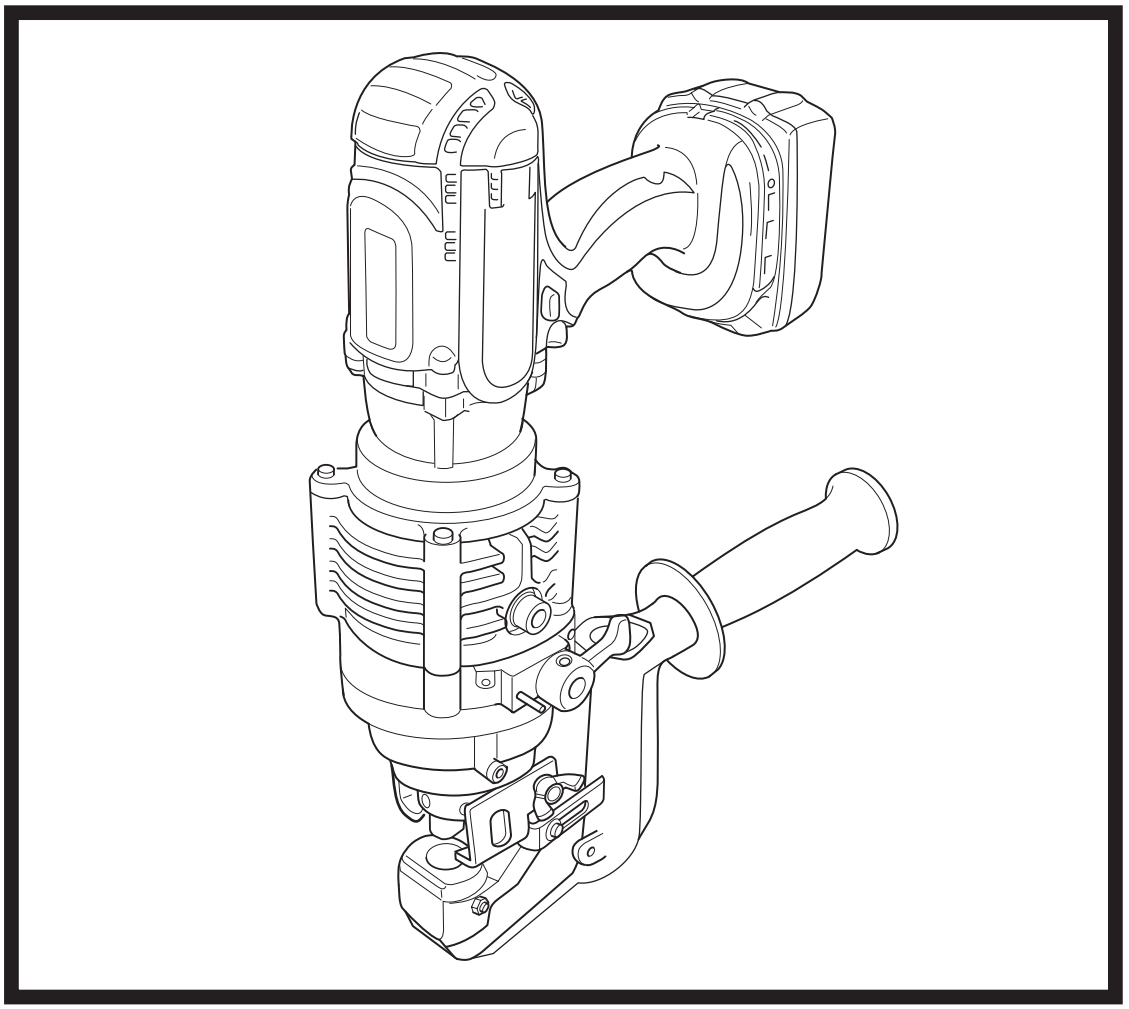
Ogura ELECTRO-HYDRAULIC HOLE PUNCHER

N series Model: HPC-N208WDF
HPC-N209WDF
Model: HPC-156WDF

Instruction Manual



Before installing and operating this machine, read, understand and follow all instructions and operating procedures. Keep this Instruction Manual with the machine.

-Original Instruction-

Read, understand and follow all safety instructions and operating procedures. If you do not understand the instructions, or if conditions are not correct for proper operation, DO NOT OPERATE THE MACHINE. Consult your supervisor or other responsible person.

TABLE OF CONTENTS

⚠ WARNING

	Read and understand this instruction manual before operating this machine. Failure to follow operation instructions could result in death or serious injury.
	Flying debris and loud noise hazards. Wear ear and eye protection.
	Hazardous voltage. Disconnect all power before working on this equipment. Failure to observe this instruction will result in death or serious injury.
	Moving blade. Keep hands clear while machine is operating. Turn power off before servicing.

SAVE THESE INSTRUCTIONS

Meaning of "caution" and "warning" indications

Caution: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. This is also used to alert against unsafe practices associated with events that could lead to personal injury.

Warning: Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

*** **Ogura & Co., Ltd. shall not be responsible for any incidental damages or personal injuries resulting from negligence of Warnings and Safety Instructions contained in the Instruction Manual.**

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING

1. Before use, read this Instruction Manual thoroughly.
- Do not expose the charger and battery to rain or use them in damp or wet locations, as this may cause overheating or electric shock.

2. Keep Work Area Clean.
- Cluttered areas and benches invite injuries.

3. Keep the work area well lighted.
- Working where there is insufficient light may cause an accident.

4. Keep Children Away.
- Do not allow children or unauthorised personnel to handle tool.
- All visitors should be kept away from work area.

5. Store Idle Tools.
- When not in use, tools should be stored in a dry and secure place - out of reach of children.

6. Do Not Force Tool.
- It will do the job better and safer at the rate for which it was intended.
- Do not force tool to work beyond its ability. Excessive load will cause seizure of the motor, overheating, smoke and fire.

7. Use Right Tool.
- Do not force small tool or attachment to do the job of a heavy-duty tool.
- Do not use tool for purpose not intended.

8. Wear Safety Glasses and Protective Clothing.
- Always wear safety glasses, safety footwear, safety gloves, and any other mandated or necessary protective clothing while using this equipment. Failure to do so may result in injury.

9. Dress Properly.
- Do not wear loose clothing or jewellery as they can be caught in moving parts.
- Rubber gloves and non-skid footwear are recommended when working outdoors.
- Wear protective hair covering to contain long hair.

10. Hold Tool Securely.
- A tool that is not held securely may injure you.
- Use clamps or a vice to hold the work. This frees both hands to properly hold, control, and operate the tool. Failure to properly secure the work may result in injury.

11. Disconnect the tools power supply, by removing the Battery and engaging the Trigger Switch Lock, whenever one of the following situations occur.
- The tool is not in use or is being serviced.
- Any parts, such as a blade, are being replaced.
- There is a recognised hazard. Failure to do so may result in unexpected operation and damage or injury.

12. Avoid unexpected operation.
- Do not carry the tool by the Trigger Switch as this may cause unexpected operation and damage or injury.

13. Do Not Abuse Power Cord.
- Never carry battery charger by its power cord or pull on the cord to disconnect it.
- Keep cord away from heat, oil and sharp edges.
- Place cord so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- If the tool is dropped or struck check carefully that body is not damaged, cracked, or deformed.

14. Do Not Overreach.
- Keep proper footing and balance at all times.

15. Maintain Tools Carefully.
- Keep tools sharp and clean for better and safer performance.
- Follow instructions for lubricating and changing accessories.
- Inspect battery charger power cord periodically and, if damaged, have them repaired by authorized service facility.
- Keep handles dry, clean, and free from oil and grease.

16. Remove Keys and Wrenches.
- Form habit of checking to see that keys and wrenches are removed from tool before starting operation.

17. Stay Alert When using electric tools.
- Consider safety of others.
- Operate tool with care.
- Watch what you are doing.
- Use common sense.
- Do not operate tool when you are tired.

18. Check For Damaged Parts.
- Before using the tool, carefully check all parts for damage, including guards, to ensure that they will operate properly and perform their intended function.
- Check for any misalignment or binding of moving parts; damaged or broken parts and mountings; and any other conditions that may affect its operation.
- Do not use battery charger if electric plug or cord is damaged or if it was dropped or damaged in any way.
- A guard or other part that is damaged should be properly repaired or replaced by an authorized service centre unless otherwise indicated in this instruction manual.
- Do not use tool if switch does not turn it on and off. Have damaged or defective switch replaced by an authorised service centre.

19. Service at Factory Authorized Repair Centre Only.
- Service this electric appliance in accordance with the relevant safety regulations.
- Repairs to electric appliances should only be done by a qualified person. Repairs by others may endanger the user.
- Contact your dealer to arrange servicing.

20. Only use the specified accessories or attachment.
- Use only the accessories or attachment described in this Instruction Manual and the Ogura catalog. Use of any other accessories or attachments may result in an accident or injury.

SAFETY INSTRUCTION FOR ELECTRO HYDRAULIC HOLE PUNCHER

⚠WARNING

1. Proper selection of the Punch and the Die is essential. Select the correct Punch and Die according to the hole shape, size of hole, material thickness and material type.
2. Ensure that any Punch with stepped edge to prevent free rotation is installed correctly in the Punch Piston before tightening the Punch Retaining Nut.
3. For punching channel and stainless steel, use the Die provided exclusively for these materials. Only select a suitable punch & die combination that is correct for the material thickness.
4. Ensure the Punch and the Die are firmly fixed in position with the Nut or the Bolt. Failure to do so may cause serious damage to your tool and serious personal injury. Regularly check and tighten the Punch and Die.
5. The tool is electro-hydraulic. When the temperature is cold it should be run for a few minutes at idle before starting operations.
6. Keep face, hands and other parts of the body away from the punching area during operation.
7. Remove battery before changing the Punch and the Die or when servicing or making adjustments.
8. The Punch and the Die that become worn, deformed, nicked, broken or damaged in any way may cause a tool breakdown and a serious accident. Replace them immediately with new ones supplied from Ogura.
9. When punching stainless steel, the Punch and Die may wear earlier than would be the case with softer materials. Ensure that the Punch and Die are in good condition, free from wear and are not deformed, nicked, broken or damaged in any way. Check with your dealer before punching any material not listed in the specifications.
10. Remove and check the Carbon Brushes regularly. Replace them after 200 times of use. Carbon Brushes with a length of about 6 mm or less may cause damage to the Motor.
11. When using the tool continuously its temperature can exceed 70 degrees which may cause lower performance. In this case, stop operating for about 1 hour to allow the tool to cool down before using it again.

⚠ CAUTION

1. Do not cover or clog the motor air vents as this may cause the motor to overheat, resulting in smoke, fire and explosion.

2.This tool is a hydraulic tool powered by electricity. When the temperature is low, hydraulic oil may become solid and tool cannot perform well. Idle tool for a few minutes before use.

3. As the oil reservoir was filled before delivery, do not add oil unless the tool works abnormally.

4. When using an extension cord with the charger, it is recommended to use a cord with the cross section below and with a length as short as possible. For charging outdoors, use a cab tyre extension cord.

Relation between usable cord thickness and maximum length

Cord size (Nominal cross sectional area of conductor)	Maximum cord length
0.75mm^2	20m
1.25mm^2	30m

SPECIFICATIONS

SPECIFICATIONS

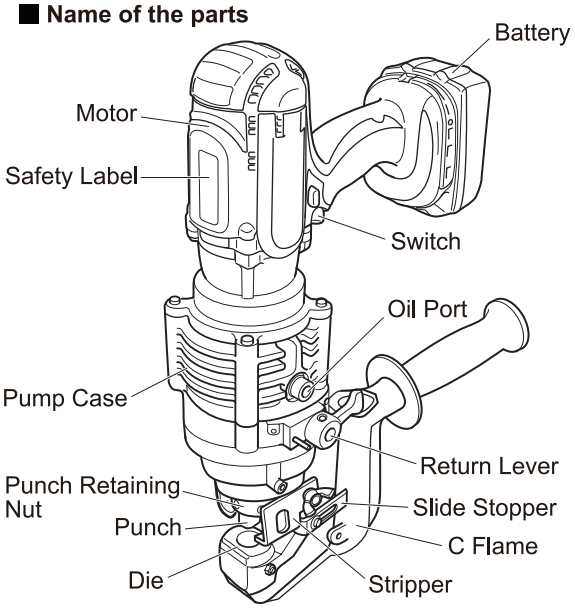
Model		HPC-156WDF	HPC-N208WDF	HPC-N209WDF
Motor		DC magnet motor		
Battery		Lithium-ion battery BL1830 3.0Ah		
Voltage		18V D.C.		
Max throat depth		25 mm (0.98")	40 mm (1.57")	
Shape of holes		Round/Oblong		
Max hole size & Thickness size	For mild steel of 65,000 psi tensil strength	15 mm(Dia) 6 mm(Thick)	20 mm(Dia) 8 mm(Thick)	20 mm(Dia) 9 mm(Thick)
	For stainless steel of 89,000 psi tensil strength	15 mm(Dia) 6 mm(Thick)	20 mm(Dia) 6 mm(Thick)	20 mm(Dia) 6 mm(Thick)
Dimensions (L) x (W) x (H) (including a grip)		391 mm x 115 mm x 293 mm 15.4" x 4.5" x 11.5"	417 mm x 127 mm x 315 mm 16.4" x 5.0" x 12.4"	430 mm x 127 mm x 315 mm 16.9" x 5.0" x 12.4"
Weight (including a battery)		7.9 kg (17.4 lbs)	10.7 kg (23.6 lbs)	11.3 kg (24.9 lbs)

BATTERY CHARGER

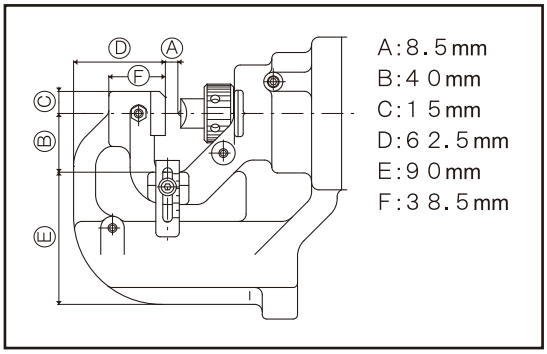
Input voltage	110-115V / 220-240V single phase
Input frequency	50-60 Hz
Input capacity	490 VA / 75W
Output voltage	7.2~18 V D.C.
Output current	9 A D.C.

HPC-N208WDF (N series)

■ Name of the parts



■ Punching Throat



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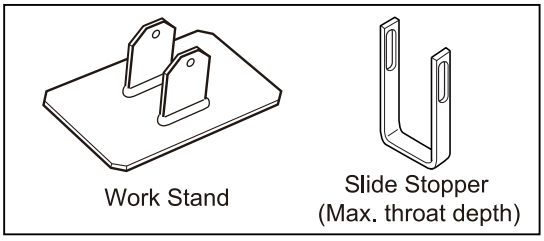


■ Standard accessories

Battery Charger 1
Battery 1
Punch ϕ12 mm 1
Die SB 12 1
Grip 1
Carrying Case 1
Hydraulic oil #46 1
Spanner (8 mm×10 mm) 1
Hex Wrenches (3, 4, 8 mm) ..... 1 each
Nut Retaining Bar 1

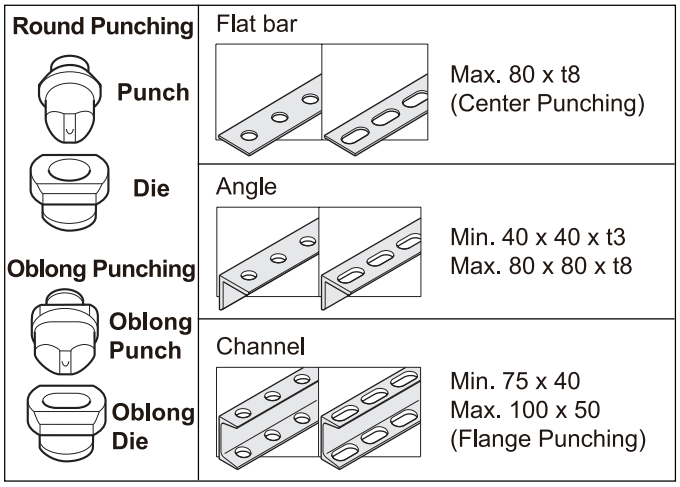
■ **Round Punch** [Unit: mm]

Round Punch	Round Die	Tensile Mild Steel (65,000 psi)	Channel	Tensile Stainless Steel (89,000 psi)
6	SB6	t2～t4		t3～t4
6. 5	SB6. 5	t2～t6		t3～t4
8	SB8	t2～t6		t3～t4
8. 5	SB8. 5	t2～t6		t3～t4
10	SB10	t2～t6	t7. 5	t3～t4
11	SB11	t2～t8	t7. 5	t3～t6
12	SB12	t2～t8	t7. 5	t3～t6
13	SB13	t2～t8	t7. 5	t3～t6
14	SB14	t2～t8	t7. 5	t3～t6
15	SB15	t2～t8	t7. 5	t3～t6
16	SB16	t2～t8	t7. 5	t3～t6
18	SB18	t2～t8	t7. 5	t3～t6
19	SB19	t2～t8	t7. 5	t3～t6
20	SB20	t2～t8	t7. 5	t3～t6

■ **Oblong Punch** [Unit: mm]

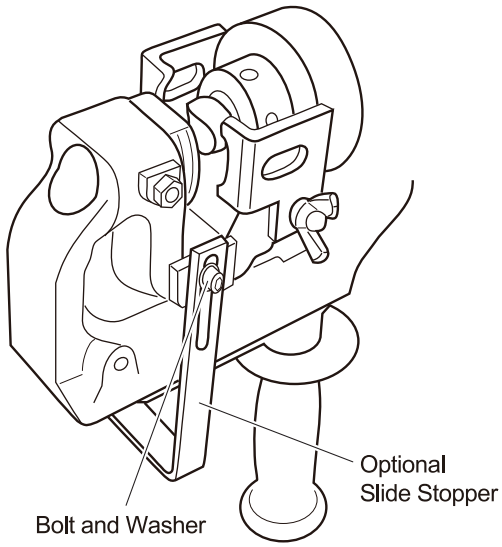
Oblong Punch	Oblong Die	Tensile Mild Steel (65,000 psi)	Channel	Tensile Stainless Steel (89,000 psi)
6. 5×10	6. 5×10B	t2～t6		t3～t4
6. 5×13	6. 5×13B	t2～t6		t3～t4
8. 5×13	8. 5×13B	t2～t6		t3～t4
8. 5×17	8. 5×17B	t2～t6		t3～t4
9×13. 5	9×13. 5B	t2～t6		t3～t4
9×18	9×18B	t2～t6		t3～t4
10×15	10×15B	t2～t8	t7. 5	t3～t6
10×20	10×20B	t2～t8	t7. 5	t3～t6
11×16. 5	11×16. 5B	t2～t8	t7. 5	t3～t6
12×18	12×18B	t2～t8	t7. 5	t3～t6
13×19. 5	13×19. 5B	t2～t8	t7. 5	t3～t6
14×21	14×21B	t2～t8	t7. 5	t3～t6

■**HPC-N208WDF** [Unit: mm]



How to use optional Slide Stopper for maximum depth

Punching up to 40 mm depth, from the edge of the material, can be done using the optional Slide Stopper.



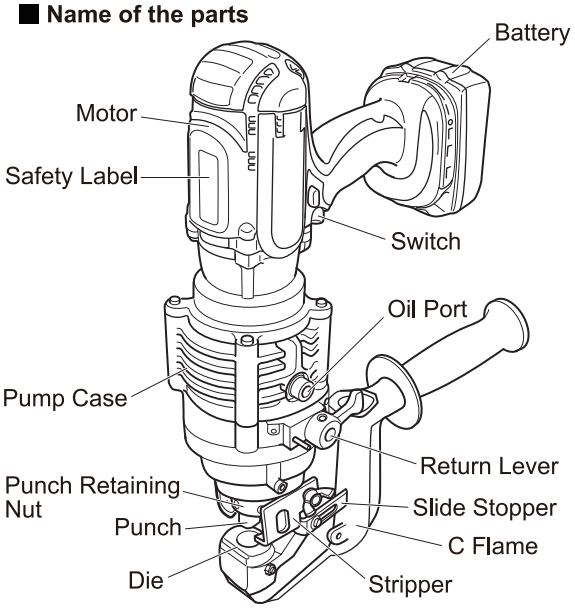
⚠ CAUTION

Before attaching or removing the Slide Stopper, ensure that the machine is disconnected from its power source to prevent accidental operation and personal injury.

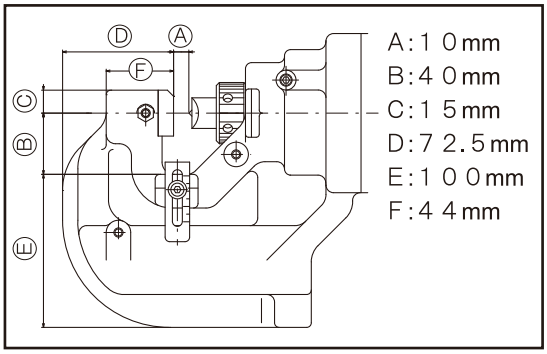
1. Loosen the set bolt and nut to remove the Die.
2. Remove the bolt and washer fixing the Slide Stopper.
3. Remove the Slide Stopper by pulling it to the upper side of the C Frame.
4. Insert the optional Slide Stopper for maximum depth from the bottom side of the C Flame.
5. Fix the optional Slide Stopper with the Bolt and Washer removed in the procedure 2 above.
6. Install the Die with the set bolt and nut removed in the procedure 1 above.

HPC-N209WDF (N series)

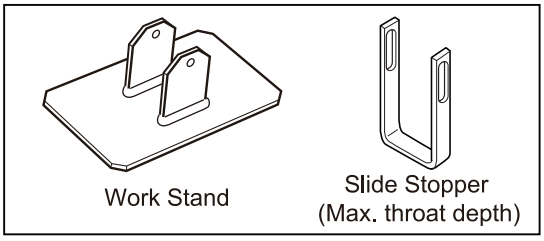
■ Name of the parts



■ Punching Throat



■ Option



■ Standard accessories

Battery Charger 1
Battery 1
Punch ϕ14 mm 1
Die SB 14 1
Grip 1
Carrying Case 1
Hydraulic oil #46 1
Spanner (8 mm×10 mm) 1
Hex Wrenches (3, 4, 8 mm) ..... 1 each
Nut Retaining Bar 1

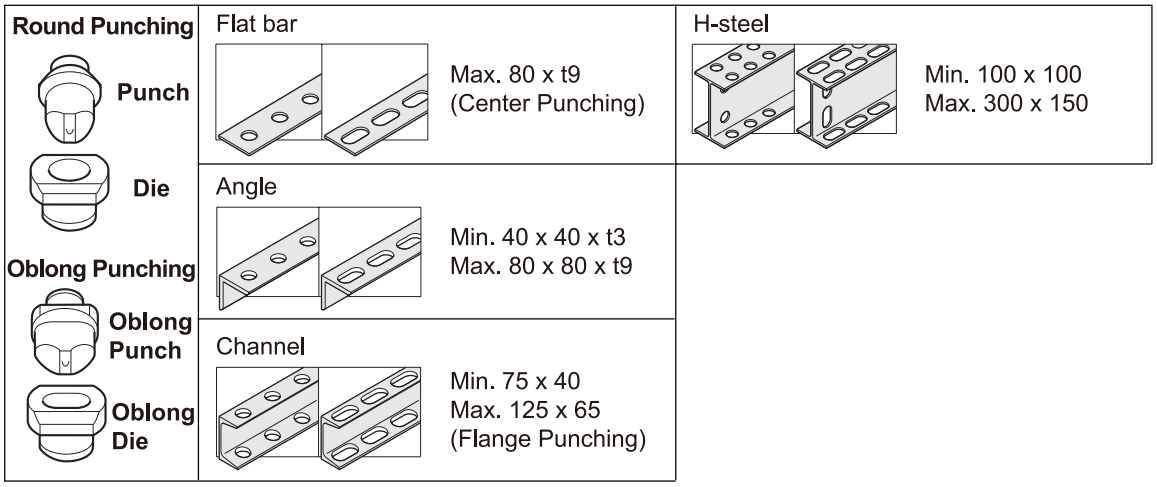
■ **Round Punch** [Unit: mm]

Round Punch	Round Die	Tensile Mild Steel (65,000 psi)	Channel	Tensile Stainless Steel (89,000 psi)
6	SB6	t2～t4		t3～t4
6. 5	SB6. 5	t2～t6		t3～t4
8	SB8	t2～t6		t3～t4
8. 5	SB8. 5	t2～t6		t3～t4
10	SB10	t2～t6	t8	t3～t4
11	SB11	t2～t9	t8	t3～t6
12	SB12	t2～t9	t8	t3～t6
13	SB13	t2～t9	t8	t3～t6
14	SB14	t2～t9	t8	t3～t6
15	SB15	t2～t9	t8	t3～t6
16	SB16	t2～t9	t8	t3～t6
18	SB18	t2～t9	t8	t3～t6
19	SB19	t2～t9	t8	t3～t6
20	SB20	t2～t9	t8	t3～t6

■ **Oblong Punch** [Unit: mm]

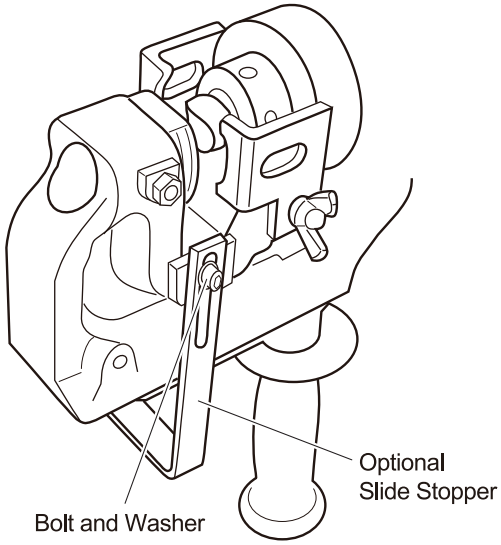
Oblong Punch	Oblong Die	Tensile Mild Steel (65,000 psi)	Channel	Tensile Stainless Steel (89,000 psi)
6. 5×10	6. 5×10B	t2～t6		t3～t4
6. 5×13	6. 5×13B	t2～t6		t3～t4
8. 5×13	8. 5×13B	t2～t6		t3～t4
8. 5×17	8. 5×17B	t2～t6		t3～t4
9×13. 5	9×13. 5B	t2～t6		t3～t4
9×18	9×18B	t2～t6		t3～t4
10×15	10×15B	t2～t8	t8	t3～t6
10×20	10×20B	t2～t8	t8	t3～t6
11×16. 5	11×16. 5B	t2～t9	t8	t3～t6
12×18	12×18B	t2～t9	t8	t3～t6
13×19. 5	13×19. 5B	t2～t9	t8	t3～t6
14×21	14×21B	t2～t9	t8	t3～t6

■**HPC-N209WDF** [Unit: mm]



How to use optional Slide Stopper for maximum depth

Punching up to 40 mm depth, from the edge of the material, can be done using the optional Slide Stopper.



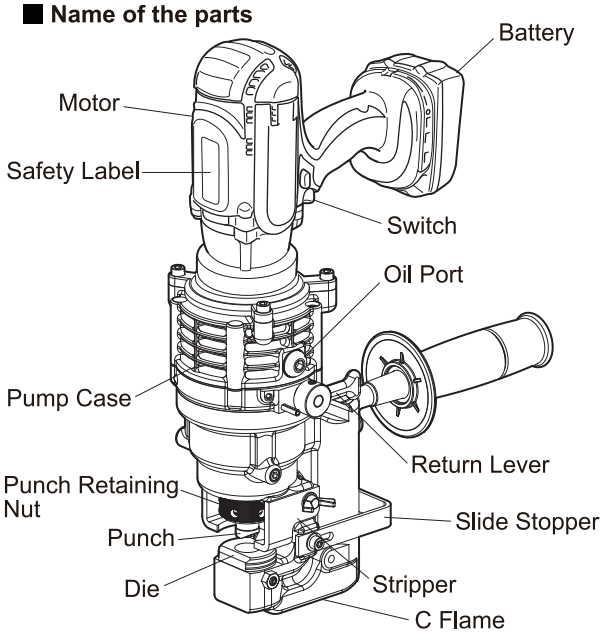
⚠ CAUTION

Before attaching or removing the Slide Stopper, ensure that the machine is disconnected from its power source to prevent accidental operation and personal injury.

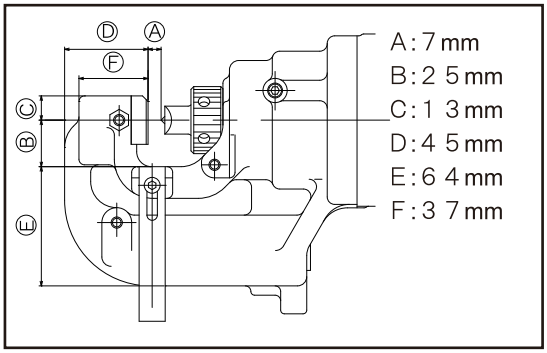
1. Loosen the set bolt and nut to remove the Die.
2. Remove the bolt and washer fixing the Slide Stopper.
3. Remove the Slide Stopper by pulling it to the upper side of the C Frame.
4. Insert the optional Slide Stopper for maximum depth from the bottom side of the C Flame.
5. Fix the optional Slide Stopper with the Bolt and Washer removed in the procedure 2 above.
6. Install the Die with the set bolt and nut removed in the procedure 1 above.

HPC-156WDF

■ Name of the parts



■ Punching Throat



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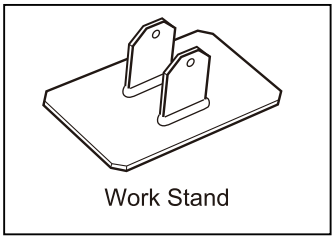


■ Standard accessories

Battery Charger 1
Battery 1
Punch ϕ 12 mm 1
Die SB 12 1
Grip 1
Carrying Case 1
Hydraulic oil #46 1
Spanner (8 mm × 10 mm) 1
Hex Wrenches (3, 4, 6 mm) ..... 1 each
Nut Retaining Bar 1

■ **Round Punch** **[Unit: mm]**

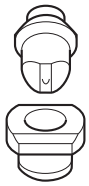
Round Punch	Round Die	Tensile Mild Steel (65,000 psi)	Aluminium Copper	Tensile Stainless Steel (89,000 psi)
4	4A	t2	t2～t3	
5	5A	t2～t3	t2～t4	
5. 5	5. 5A	t2～t3	t2～t4	
6	6A	t2～t4	t2～t5	
6. 5	SB6. 5	t2～t6	t2～t6	t3～t4
8	SB8	t2～t6	t2～t6	t3～t4
8. 5	SB8. 5	t2～t6	t2～t6	t3～t4
10	SB10	t2～t6	t2～t6	t3～t4
11	SB11	t2～t8	t2～t6	t3～t6
12	SB12	t2～t8	t2～t6	t3～t6
13	SB13	t2～t8	t2～t6	t3～t6
14	SB14	t2～t8	t2～t6	t3～t6
15	SB15	t2～t8	t2～t6	t3～t6

■ **Oblong Punch** **[Unit: mm]**

Oblong Punch	Oblong Die	Tensile Mild Steel (65,000 psi)	Aluminium Copper	Tensile Stainless Steel (89,000 psi)
6. 5×10	6. 5×10B	t2～t6	t3～t6	t3～t4
6. 5×13	6. 5×13B	t2～t6	t3～t6	t3～t4
8. 5×13	8. 5×13B	t2～t6	t3～t6	t3～t4
9×13. 5	9×13. 5B	t2～t6	t3～t6	t3～t4
10×15	10×15B	t2～t6	t3～t6	t3～t6
11×16. 5	11×16. 5B	t2～t6	t3～t6	t3～t6

■**HPC-156WDF** **[Unit: mm]**

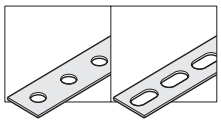
Round Punching



Punch

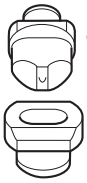
Die

Flat bar



Max. 50 x t6
(Center Punching)

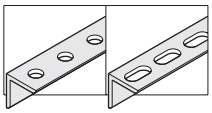
Oblong Punching



Oblong Punch

Oblong Die

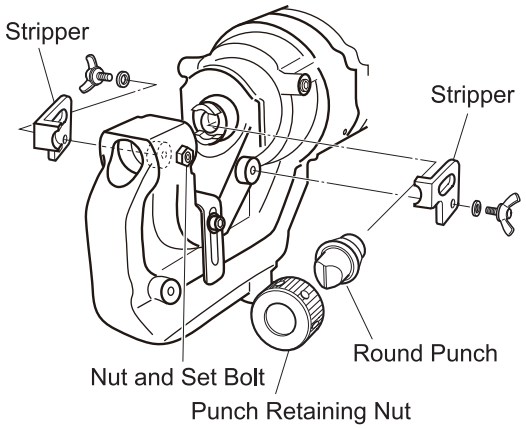
Angle



Min. 25 x 25 x t3
Max. 50 x 50 x t6

PUNCH AND DIE REPLACEMENT PROCEDURE

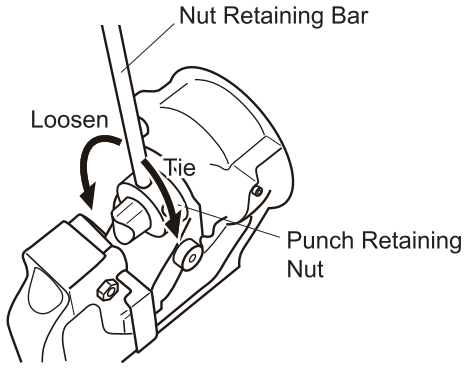
For Round Punch



⚠ CAUTION

Before replacing the Punch and Die, ensure that the machine is disconnected from its power source to prevent accidental operation and personal injury.

1. Be sure that the Punch Piston is fully retracted and remove the Strippers to make access to the parts easier.
2. The Punch must be removed first and then the Die. Unscrew the Punch Retaining Nut to remove the Punch and remove the Set Bolt and the Nut to remove the Die.
   Note: When replacing the Punch and the Die, make sure that the correct size, thickness and hole shape is selected. Shaped Punches and Dies must be properly aligned with each other.
3. Place the Die in the C-frame in the proper orientation. Secure firmly with the Set Bolt and tighten the Nut.
4. Place the Punch in the Punch Retaining Nut, then insert the Punch with the Nut into the Punch Piston and hand tighten the Nut.
   Note: When installing a Punch with a stepped edge (anti rotation), make sure the orientation is correct and that the stepped edge is correctly positioned in the Punch Piston.
5. Make sure the Punch is correctly positioned in the Punch Rod and tighten the Punch Retaining Nut firmly with the Tommy Bar supplied.
6. Replace the Strippers.



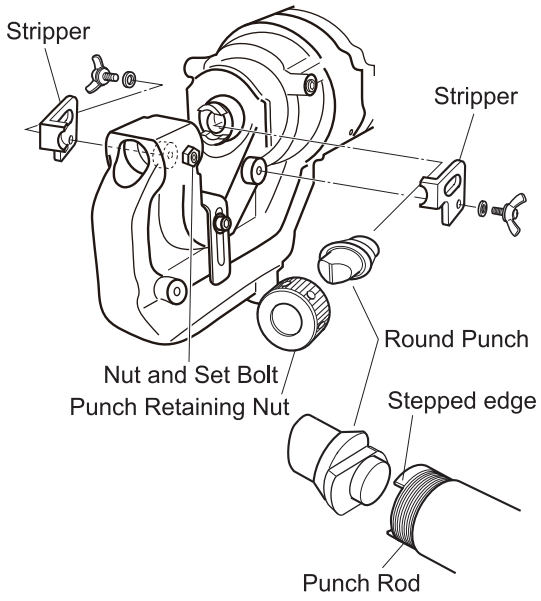
⚠ CAUTION

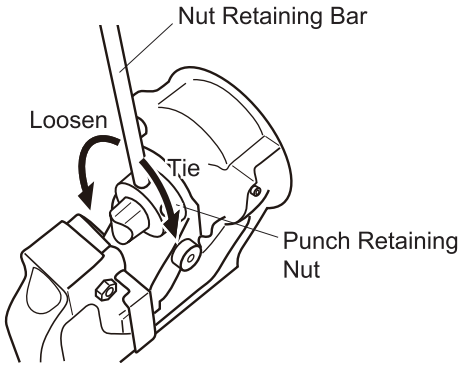
Check the Butterfly Bolts, holding the stripper, regularly to ensure that they are tight. Loose bolts may cause the Stripper to detach and damage the tool.

⚠ WARNING

If the Punch and Die are not the same size of the Punch and the Die are not positioned properly, the Punch may strike the Die causing both parts to break. In such a case, pieces flying off from the broken parts may cause personal injury.

For Oblong Punch





⚠ CAUTION

Before replacing the Punch and Die, ensure that the machine is disconnected from its power source to prevent accidental operation and personal injury.

1. Be sure that the Punch Piston is fully retracted and remove the Strippers to make access to the parts easier.
2. The Punch must be removed first and then the Die. Unscrew the Punch Retaining Nut to remove the Punch and remove the Set Bolt and the Nut to remove the Die.
   Note: When replacing the Punch and the Die, make sure that the correct size, thickness and hole shape is selected. Shaped Punches and Dies must be properly aligned with each other.
3. Secure the Oblong Die firmly with the Set Bolt and tighten the Nut.
4. Place the Oblong Punch into the Punch Retaining Nut. Position the stepped edge of the Oblong Punch properly in the Punch Piston and hand tighten the Punch Retaining Nut.
   Note: If the stepped edge of the Oblong Punch is not properly inserted into the Punch Piston, the Punch Retaining Nut cannot be fastened. Make sure the Oblong Punch is positioned correctly in the Punch Rod.
5. Push the Oblong Punch against the Punch Rod and tighten the Punch Retaining Nut firmly with the Nut firmly with the Tommy Bar supplied.
6. Replace the Strippers.

⚠ CAUTION

Check the Butterfly Bolts, holding the Stripper, regularly to ensure that they are tight. Loose bolts may cause the Stripper to detach and damage the tool.

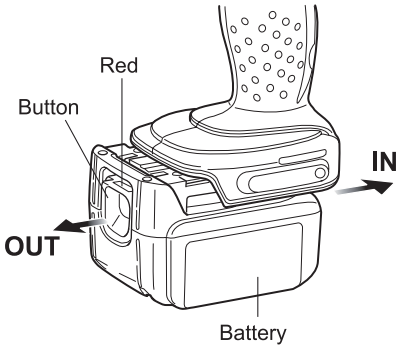
⚠ CAUTION

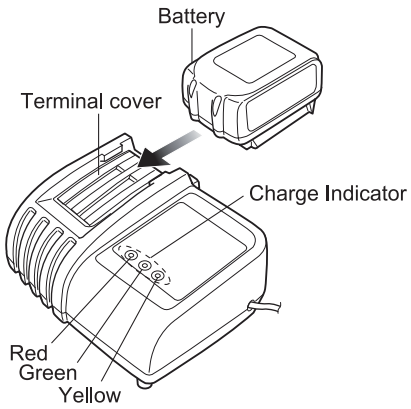
Make sure the stepped edge of the Oblong Punch is positioned correctly in the Punch Rod and that the Punch Retaining Nut is properly fastened.

⚠ WARNING

If the Punch and Die are not the same size or the Punch and the Die are not positioned properly, the Punch may strike the Die causing both parts to break. In such a case, pieces flying off the broken parts may cause personal injury.

BATTERY CHARGE



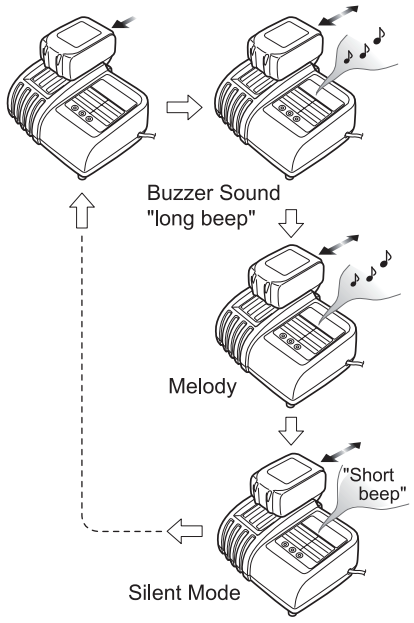


1. Plug the battery charger into the proper AC voltage source. Charging light will flash in green color repeatedly.
2. Insert the battery cartage into charger until stops adjusting to the guide of charger. Terminal cover of charger can be opened with inserting and closed with pulling out the battery cartridge.
3. When the battery cartridge is inserted, the red charging light will light up and charging will begin with a preset brief melody sound coming out for assurance as to which sound will come out to notify the completion of charging.
4. With finish of charge, the charging light will charge from red one to green one and the melody sound or buzzer sound (a long deep) comes out to notify completion of charge.
5. If you leave the battery cartridge in the charger after the charging cycle is complete, the charger will switch into its “trickle charge (maintenance charge)” mode which will last approximately 24 hours.
6. Charging time varies by temperature (10°C (50°F) - 40°C (104°F)) that battery cartridge is charged at and conditions of the battery cartridge, such as a battery cartridge which is new or has not been used for a long period of time.
7. After charging, remove the battery cartridge from the charger and unplug the charger from the power source.

Notes

- The battery charger is for charging OGURA-battery cartridge. Never use it for other purposes or for other manufacturer’s batteries.
- If you charge a battery cartridge from a just-operated tool or battery cartridge which has been left in a location exposed to direct sunlight for a long time, the charging light may flash in red color. If this occurs, wait for a while. Charging will begin after the battery cartridge is cooled by the cooling fan installed in the charger.
- If the charging light flashes alternately in green and red color, charging is not possible. The terminals on the charger or battery cartridge are clogged with dust or the battery cartridge is worn out or damaged.

Changing the Preset Melody for “Charging completed”



1. Inserting the battery cartridge into charger brings out last preset brief melody sound of completed charging.
2. Removing and re-inserting it within five seconds after this action makes the melody sound change.
3. Every time removing and re-inserting it within another five seconds after this, the melody sound changes inorder.
4. When the desired melody sound comes out, leave the battery cartridge being inserted and the charge will begin. When a "short beep" mode is selected, no completed charging signals come out. (Silent mode)
5. With finish of charge, the green light remains lit with the red light going out and the melody sound preset at the insertion of battery cartridge or buzzer sound (a long beep) comes out to notify completion of charge. (In selected silent mode, no sounds come out.)
6. Preset melody sound remains stored even when the charger is unplugged.

Trickle charge (Maintenance charge)

If you leave the battery cartridge in the charger to prevent spontaneous discharging after full charge, the charger will switch into its “trickle charge (maintenance charge)” mode and keep the battery cartridge fresh and fully charged. To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by OGURA Authorized Service Centers, always using OGURA replacement parts.

Cooling system

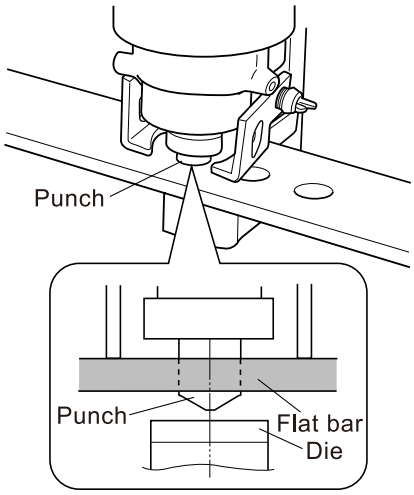
- This charger is equipped with cooling fan heated battery in order to enable the battery to prove its own performance. Sound of cooling air comes out during, which means no trouble on the charger.
- Yellow light will flash for warning in the following cases.
  - Trouble on cooling fan
  - Incomplete cool down of battery, such as, being clogged with dust

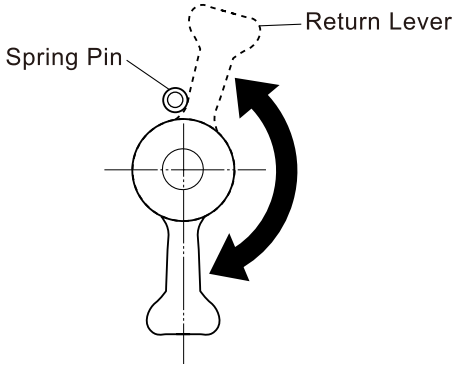
  The battery can be charged in spite of the yellow warning light. But the charging time will be longer than usual in this case.

  Check the sound of cooling fan, vent on the charger and battery, which can be sometime clogged with dust.
- The cooling system is in order although no sound of cooling fan comes out, if the yellow warning light will not flash.
- Always keep clean the vent on charger and battery for cooling.
- The products should be sent to repair or maintenance, if the yellow warning light will frequently flash.

OPERATING PROCEDURE

1. Before making any adjustment, turn off the power supply and unplug the power cord.
2. Check the position for punching and adjust the Slide Stopper to the required distance. The Slide Stopper, which is set to hold the Hole Puncher at a constant distance from the edge of the work piece, is held in place by one or two socket head caps screws. Loosen the cap screw(s) and tap the Slide Stopper into the desired position. Retighten the cap screw(s).
3. Plug the power cord into a power outlet, ensuring that the voltage of the tool is the same as the supply.
4. Check that the Return Lever is fully closed in the clockwise direction.
5. Make sure that the Punch Piston is fully retracted.
6. Make sure that the proper Punch and Die are selected and that they are installed correctly.
7. Place the Puncher in the required position on the work piece, using the Slide Stopper as a guide and lining up the point of the Punch with the center mark of the hole to be punched.
8. Pull the Trigger Switch. The Punch Rod will extend and push the Punch through the material. Keep the Switch on until the Punch has reached the end of its stroke and returns to its starting position. If the Punch doesn't return after punching finishes, release the Switch to turn the motor off. Pull the Switch again to run the motor and to return the Punch. (See further explanation below for procedure when Punch becomes stuck in the material.)
   To aid accurate and easy positioning of the Punch, the Switch can be operated on and off to jog the Punch down to the work piece. If the position is not satisfactory, open the manual Return Lever to retract the Punch for another attempt. If the Punch doesn't return to its starting position with manual Return Lever open, pull the Trigger Switch to return the Punch.





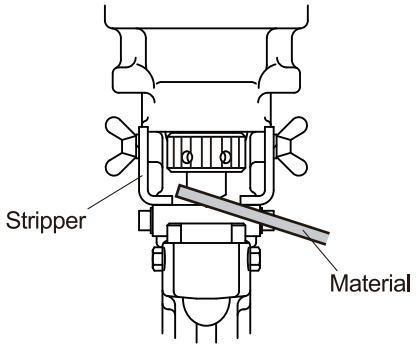
<u>When the Punch fails to come out of the material after the punching:</u>

1. Pull the trigger switch to run the motor and to return the Punch to its starting position by hydraulic power.
2. Release the Switch, when the Punch is fully returned to its starting position.
3. Proceed with the next punching operation according to the normal operating procedure.

<u>When the Punch fails to come out of the material after punching or when it is necessary to stop the operation before punching is finished.</u>

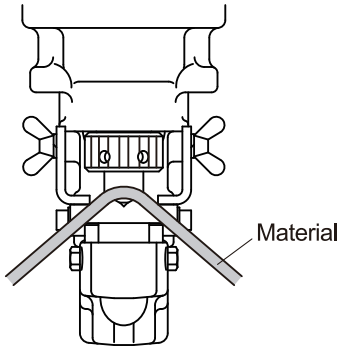
1. Turn the Return Lever counterclockwise until it hits The Spring Pin and then immediately back to its starting to release the internal pressure.
   Note: If at this stage the Punch retracts from the material under its own power, allow the Punch to completely return and then turn the Return Lever back to its starting position. In this case it is not necessary to complete the stages 2 and 3.
2. Pull the trigger Switch to run the motor and to return the Punch to its starting position by hydraulic power.
3. Release the Switch when the Punch is fully returned to its starting position.
4. Proceed with the next punching operation according to the normal operating procedure.

Caution when using the Stripper



Do not position the material with one end or both ends unsupported by the Stripper.
If the material is not properly supported, it will move when the Punch tries to return causing the Punch to jam and damaging the tool.

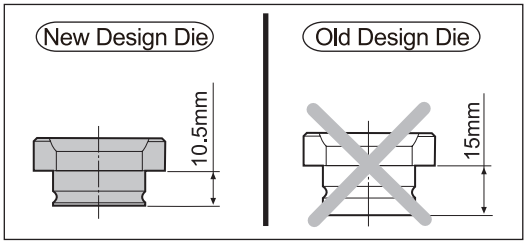
Caution when selecting the Die



It is important that the Die selected is correct for the thickness of the material to be punched.
Punching material of thickness 4 mm to 8 mm using a Die for thinner material can cause the Punch to jam in the material. This is due to the smaller clearance between the Die and Punch. In such a case the material will be pulled up by the retracting Punch as shown in the drawing on the left. Special care should be taken when punching flat bar of mild steel, aluminum and copper.

The difference between the old and new Die (HPC-N208WDF, N209WDF)

The Dies used with the N series are a new design and are not interchangeable with the older style Dies.

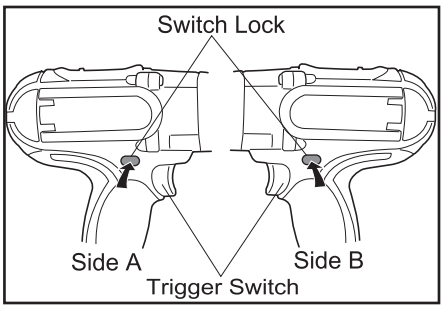


⚠ WARNING

The old design Dies cannnot be used with the N series. Using the older style Dies with the N series may result in serious injury.
Use only the correct Dies installed according to the instructions in this manual.

OPERATING PROCEDURE

How to operate the Trigger Switch and the Switch Lock



⚠ WARNING

Before the Battery is inserted into the Motor, pull and release the Trigger Switch to ensure that the Trigger returns when released.

- If the Trigger Switch does not work correctly it may cause an accident.
- The motor is on when the Trigger Switch is pulled and off when the Trigger Switch is released.

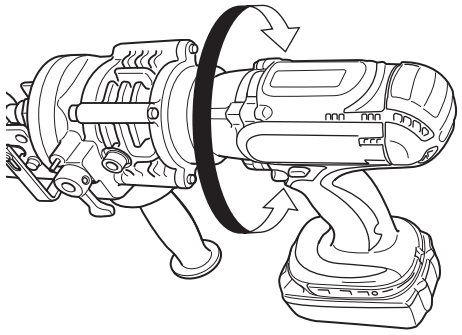
How to use the Switch Lock

- Push in the Switch Lock on side A. The Switch is un-locked and the Trigger can be pulled.
- Push in the Switch Lock on side B. The Switch is locked and the Trigger cannot be pulled.

⚠ CAUTION

The Trigger Switch should be locked at all times when not in use.

Rotating Function of Motor



The Motor Body can be rotated though 360 degrees, in either direction, during operation. This feature is particularly useful when working in awkward or narrow areas as it allows the operator to position the tool in the best position for easy operation.

CARBON BRUSHES REPLACEMENT PROCEDURE

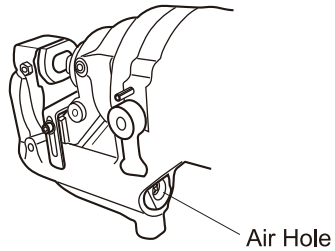
When the carbon brushes become less than 6mm the motor force deteriorates because of low rectification. Carbon brushes need to be replaced.

1. Remove the carbon brush cap of the motor outer frame using the standard screwdriver.
2. Replace the carbon brushes with new ones.
3. Put back the caps.

Carbon Brush Size

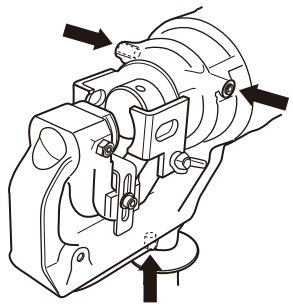
Part Number	Size
6411980	10 (Width) X 3 (Thickness) X 13 (Length) mm

MAINTENANCE



CAUTION

Keep the air hole at the end of the C Frame clear of dirt and obstructions. The air hole has to be open in order to control the hydraulic pressure.



CAUTION

Do not undo or remove the three screws in the drawing on the left. Doing so will cause oil to leak from the tool.

ADDING OIL

This Hole Puncher is electro-hydraulic. When shipped from the factory, it was filled with the oil. Do not attempt to add oil as long as the tool performs well. When the oil-pressure is not enough for proper operation add oil as follows. Make sure that the work area and all equipment is clean so that no dirt, dust or other foreign material can get into the hydraulic oil or pump area.

1. Locate the socket head cap screw that plugs the oil port. It is just above the manual return lever on the right hand side of the Hole Puncher.
2. Lay the Hole Puncher on its left side so that the oil port is facing up.
3. Operate the tool to move the punch position almost to the bottom of its stroke. If necessary, cycle the punch several times to determine where the bottom of stroke is, and to correctly position the punch piston. In this position, the maximum amount of oil has been drawn from the pump and the correct fill can be obtained. Disconnect the tool from its power source.
4. Carefully open the oil port by removing the socket head cap screw.
5. Using the small squeeze bottle supplied with the Hole Puncher, carefully add hydraulic oil to completely fill the reservoir. Rock the Hole Puncher back and forth slightly several times to free any trapped air bubbles, then add additional oil as necessary.
6. Replace the cap screw and wipe up any excess oil.
7. Cycle the Hole Puncher several times with the Manual Return Valve open, and again with the valve closed, to work any trapped air out of the system, then repeat the above procedure, making sure that the punch piston is almost at the bottom of its stroke before removing the cap screw from the oil port.
8. Add additional oil as necessary. If the unit was extremely low on oil, it may be necessary to repeat the procedure several times.

⚠ CAUTION

Only pure hydraulic oil as recommended by Ogura & Company Ltd., should be used in this tool. Recommended oils include the Ogura supplied hydraulic oil, Super Hyrando #46 (JX Nippon Oil & Energy Corp.); Shell Tellus Plus #46 (U.S. Shell); or equivalent spec anti-wear hydraulic oil, ISO Viscosity Grade 46. Do not use other oils as these may cause damage to the seals and other internal machine parts.

TROUBLE SHOOTING

Problem	Cause	Solution
Punch piston will not come out.	Oil is insufficient	Refill oil. (Refer to “Adding Oil”)
	Punch piston has not returned completely due to rebar chips, iron powder and dirt presentin the sliding portion of punch piston and C frame.	Push back punch piston. Clean punch piston.
	Punch piston has not returned completely due to the distortion or swelling of punch piston.	Replace punch piston.
	Punch piston has not returned completely due to weak return spring.	Replace return spring.
Although punch piston comes out, cutting power is too weak to hole punching.	Oil is insufficient.	Refill oil.
	Contact between cylinder and release valve is improper.	There are scratches at chimney of cylinder or iron powder or dirt are sticking there. Polish chimney and replace release valve if it is damaged.
	Breakage of release valve.	Replace release valve.
	Improper clearance between cylinder and piston.	Replace piston adjusting the clearance.
	Improper contact between cylinder and check valve.	Replace check valve.
	Breakage of urethane packing of cylinder.	Replace urethane packings.
Oil leaks.	Scratches on or breakage of oil leveler sack.	Replace oil leveler sack.
	Scratches at sliding portion of C frame and punch piston and at back-up ring.	Replace back-up ring and O-ring.
	Breakage of O-ring at joint of C frame and cylinder.	Replace O-ring G70.
	Breakage of liner at joint of cylinder and pump case.	Replace liner B.
	Insufficient tightening of bolts at respective parts.	Tighten bolts.
Motor does not move. Poor motor rotation.	Insufficient charge of battery.	Charge battery.
	Battery life cycle worn off.	Replace battery.
	Breakage of DC motor by over-heat.	Replace DC motor.
	Deformation or breakage of bearings and gear connected to DC motor.	Replace bearings or gear.

NOTE: The internal components of the pump have very close clearances and are sensitive to damage from dust, dirt, contamination of the hydraulic fluid or improper handling. The disassembly of the pump housing requires special tools and training, and should only be attempted by repair personnel who have been properly trained and have the proper equipment. The improper servicing of electrical components can lead to conditions that could cause serious injury. The pump and piston components and all electrical components should be serviced only by authorized repair shop, dealer or distributor.

Any attempt by unauthorized personnel to service the internal components of the pump area will void the warranty.

PUNCH & DIE INTERCHANGEABILITY

	Punch	Long Punch (LP)	Die		Long Die (LD)	Stainless Die		Stainless Long Die (LD)	Die for Channel		Die for Duct Line
			new	old		new	old		new	old	
HPC-11											
HPC-615 HPC-615DF	◎		□			□			□		
HPC-156W HPC-156WDF			□			□			□		
HPC-6150 HPC-86150	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
HPC-18N HPC-20	◎		◎	◎		◎	◎		◎	◎	
HPC-206W HPC-206WDF	◎		◎			◎			◎		
HPC-618 HPC-8618	◎		◎	◎		◎	◎		◎	◎	
HPC-620N HPC-8620	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
HPC-920DI HPC-8920 HPC-8920W	△		△			△			△		
HPC-22											
HPC-1322 HPC-1322DA			●								
HPC-N186W HPC-N208W HPC-N209W HPC-N208WDF HPC-N209WDF			◎			◎			◎		

※ Marks ◎, ●, △, □ shows the punch and die that can be used commonly.
※ Blanks show exclusive punch and die.
※ HPC-615, 615DF, 6150 and 86150 have only round die for channel steel.
※ Combination of punch and die for HPC-8150, 86150, 620N and 8620 is as follows;
1. Standard punch with Long die (LD)
2. Long punch (LP) with standard die

※ Exclusive die for duct-line punching is long die (LD) only.

MEMO

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