INSTRUCTION MANUAL

PORTABLE SINGLE ACTION HYDRAULIC PUNCHERS

SELFER

models: HA05-1018/HA06-1322
HA07-1624/HA11-1624

HYDRAULIC PUMP

PUMP

models: SC-05 115V/230V

READ ALL INSTRUCTIONS BEFORE OPERATING THIS TOOL

PROFESSIONAL TOOL

SELFER Specifications

Model		HA05-1018	HA06-1322	HA07-1624	HA11-1624
Max. Throat Depth		50 mm	60 mm	70 mm	110 mm
Punching	Max. Punching Thickness	10 mm	13 mm	16 mm	16 mm
Capacity	Max. Punching Diameter	18 mm	22 mm	24 mm	24 mm
Hole Making Time*	SC-05	7 sec	10.5 sec	16.5 sec	16.5 sec
Allowable max. pressure		68.65 MPa (700kgf/cm²)			
Max. Output		216kN (22tf)	304kN (31tf)	431kN (44tf)	431kN (44tf)
Ram Stroke		17.5 mm	21 mm	25 mm	25 mm
Mass (Weight)		16 kg	21.5 kg	28.5 kg	35.5 kg
Remarks		Built-in automatic resetting device			

*The Hole Making Time may be varied by the hydraulic oil temperature at the time of operation.

PUMP Specifications

Model			SC-05 115V/230V
Output	At No Load	50 Hz	1.20 ℓ /min
		60 Hz	1.44 ℓ /min
	At 68.65 MPa	50 Hz	0.55 ℓ /min
		60 Hz	0.66 ℓ /min
Motor			0.4 kW 4P
Power Source			115V / 230V ~
Power Input	115V	50 Hz	6.7 A
		60 Hz	5.3 A
	230V	50 Hz	3.7 A
		60 Hz	2.7 A
Reservoir Capacity			4.0 ℓ
Discharge Port			Rc 3/8
Mass (Weight)			27.5 kg
Max. Output Pressure			68.65 MPa (700 kgf/cm²)
Airborne noise levels			< 70 dB (A)

The specifications and design may be changed for improvement without prior notice.

Manufactured by :

NITTO KOHKI Co., Ltd.
2-9-4, Nakaikegami, Ohta-ku,
Tokyo, 146-8555, Japan
TEL : (81)-3-3755-1111
FAX : (81)-3-3753-8791
E-mail : overseas@nitto-kohki.co.jp
URL : www.nitto-kohki.co.jp

Keep the manual handy – so you can use it whenever necessary.

TQ06573-9

Thank you for purchasing **Nitto Kohki product.**
Before using this tool, please read this manual carefully to ensure proper, efficient operation.
This instruction manual should be kept close at hand.

CONTENTS

PICTOGRAM


Warning: It might be dangerous to operate the power tool if the instructions supplied are not followed.


Before operating the tool, read and understand all instructions supplied. Keep it for future reference.


Personal protective equipment as eye and ear protection and protective gloves must always be used when operating the tool.

⚠WARNING

IMPORTANT SAFETY INSTRUCTIONS FOR ALL ELECTRIC TOOLS

When using air tools, basic safety precautions should always be followed to reduce risk of personal injury including the followings.

(1) Keep work area clean.

- Cluttered work areas and benches invite accidents and injuries.

(2) Consider work area environment.

- Do not expose tools to rain. Do not use tools in damp or wet locations.
- Keep work area well lit.
- Do not operate near flammable liquids or in gaseous or explosive atmospheres.

(3) Be cautious about electric shock.

- When using electric tools, do not touch any which is earthed. (Ex. Pipe, heating apparatus, microwave oven, outside frame of refrigerator)

(4) Keep children away.

- Also all visitors should be kept away from work area.
- Do not let visitors contact the tool, compressor or connecting hoses.

(5) Store idle tools.

- When not in use, tools should be stored in dry, and locked-up places out of reach of children.

(6) Do not force tool.

- It will do the job better and safer at the rate which it was designed.

(7) Use right tool.

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

(8) Dress properly.

- Do not wear loose clothing or accessories.

They can be caught in moving parts.

- Non-skid footwear is recommended.
- Wear protective hair covering to contain long hair.

(9) Always wear eye protection.

- Everyday eyeglasses only have impact resistant lenses. They do NOT protect eyes. Also use face or dust mask, if operations create dust.

(10) Do not abuse cable.

- Never carry tool by connecting cable or yank on hose to disconnect.
- Do not place a cable near a place with high heat, oil, and sharp edge.

(11) Secure work.

- Use clamps or a vise to hold workpieces when practical. It is safer than using your hand and it frees both hands to operate tool.

(12) Do not overreach.

- Keep proper footing and balance at all times.

(13) Cautious maintenance is necessary for electric tools.

- Always maintain blades and keep it work well so that safe and efficient work can be done.
- Follow the instruction manual for oiling or change of accessories.
- Check the cable regularly. Contact the sales agents to repair it when it is defective.
- When an extension cable is used, check regularly and change it when it is damaged.
- The grip should be kept dry and clean. Maintain it so well that it does not carry oil or grease.

(14) Switch off and take off the plug for the following:

- Not in use.
- When you change blades, grinding stone and bit.
- Any danger is anticipated.

(15) Remove spanners, wrenches etc., after adjustment.

- Make sure that spanners, wrenches etc., which are used for adjustment are removed before switching on.

(16) Always avoid unexpected start.

- Do not carry the tool with a finger on the switch when the power supply is on.
- Make sure that the switch is off before plugging in.

(17) Use a cabtyre cable or a cabtyre extension cable when it is used outside.

(18) Stay alert.

- Watch what you are doing.
- Bear in mind the way of handling/operation and the circumstances of the surrounding area.
- Use common sense.
- Do not operate tool when you are tired.

(19) Check damaged parts.

- Before further use of the tool, an accessory or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended functions.
- Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation.
- An accessory or other part that is damaged or inoperable should be properly repaired or replaced. When a switch becomes out of order, repairs should be performed only by the sales agent from whom you purchased the tool or an authorized dealer.
- Do not use electric tools which cannot be activated or stopped with a switch.

(20) Use recommended accessories.

- Consult this manual or the sales agent from whom you purchased the tool or an authorized dealer for recommended accessories. The use of improper accessories may cause risk of injury to persons.

(21) Repairs by authorized personnel.

- This tool should not be modified as it meets safety requirements.
- Any repairs to the tool or installation of replacement parts should be performed only by the sales agent from whom you purchased the tool or an authorized dealer.
- Failure to utilize the expertise of the sales agent from whom you purchased the tool or an authorized dealer or, failure to use genuine replacement parts, may result in an increased risk of injury to the user and may invalidate your warranty.

⚠WARNING

IMPORTANT SAFETY INSTRUCTIONS FOR PORTABLE SINGLE ACTION HYDRAULIC PUNCHERS AND HYDRAULIC PUMP

- **Use the Nitto Kohki Pump, model SC-05, for Selfer.**

- **Ear protection must be used.**

- **Some tools will emit a loud noise.**
  Be sure to check whether you are complying with local noise regulations.

- **Some tools generate substantial vibrations.**
  If discomfort or pain is encountered during use, you should cease operations and check with your physician prior to further use.

- **Never touch the moving parts.**

- **Do not leave the tool while it is operating.**
  If you leave the workplace, switch off the tool and remove the power plug from the supply. Do not leave the area until the tool comes to a complete stop.

- **Do not remove any labels or name plates from the tool.**
  If a label or name plate has been damaged or is missing, contact the sales agent from whom you purchased the tool or an authorized dealer to obtain a replacement.

- **Do not make a hole which exceeds the capacity of the tool.**
  A punching diameter or punching plate thickness greater than the rated capacity of the tool not only causes a breakdown but may cause injury if the Punch or Die is broken.

- **Use a Punch and Die with the same nominal diameter.**
  Using a Punch and Die with different nominal diameters may cause damage and injury.

- **Fit the Punch and Die properly.**
  Incorrect orientation or failure to fit the Punch and Die securely may cause damage and injury.

- **Never remove the cover.**
  Never remove the cover from the Selfer. Before starting to work, check that all four mounting screws are firmly secured in position.

- **Do not touch the Punch or Die while the tool is operating.**

- **Use of power is limited to the power source specified by the rating plate.**

- **Check the earth leakage breaker.**
  Prior to use, check whether the power source is provided with earth leakage breakers to prevent electric shocks as prescribed in industrial safety and health regulations and electrical installations technical standards.

- **The earth lead must not be connected to a gas pipe. This may cause an explosion.**

- **Make sure the Earth Clip and earth lead are not faulty.**
  If you have a tester or insulation resistance meter, check for continuity between the Earth Clip and the metal part of the body. Burying an earth rod or earth plate in the ground and connecting the earth lead is a job for a qualified electrician so you should consult a nearby electrical contractor.

- **Do not modify the power plug.**
  If the power plug does not suit the power outlet, have a qualified electrician install a suitable outlet. Never modify the power plug which is connected to the tool. Mistaking the earth lead to electrocution. With or without yellow stripes, a lead with green insulation is an earth lead.
  If the cord or power plug is replaced, do not connect the earth lead to a terminal which is carrying an electric current.
  If you do not understand this explanation, or if you do not know whether your tool is properly earthed, please consult a qualified electrician.

- **Extension cord should be selected after ensuring the diameter is compatible with the length of the extension.**
  Beware of extremely long power cord (particularly wound up thin cords) as they may cause drops in voltage which weaken the magnetism, adversely affecting the performance and function of the tool. Do not share the extension cord with any other electric machine tools.

- **115V**

Extension Cable	
Max. Length	Nominal cross-sectional areas
10 m	2.0mm² or more
20 m	3.5mm² or more
35 m	5.5mm² or more
50 m	8.0mm² or more

- **230V**

Extension Cable	
Max. Length	Nominal cross-sectional areas
20 m	2.0mm² or more
40 m	3.5mm² or more
50 m	5.5mm² or more

1 USAGE

Selfer is a tool which uses a Nitto Kohki Hydraulic Pump to make holes for bolts or rivets, etc. in shape steel, flat plates, etc.
The pump model which suits this application is SC-05.

2 CHECK THE CONTENTS OF THE PACKAGE

Check the contents and make sure that the tool does not have any damage due to an accident during the transportation, if any. The contents should correspond to the list as follows. Just in case there are some damages or missing parts, contact the sales agent from whom you purchased the tool or an authorized dealer.

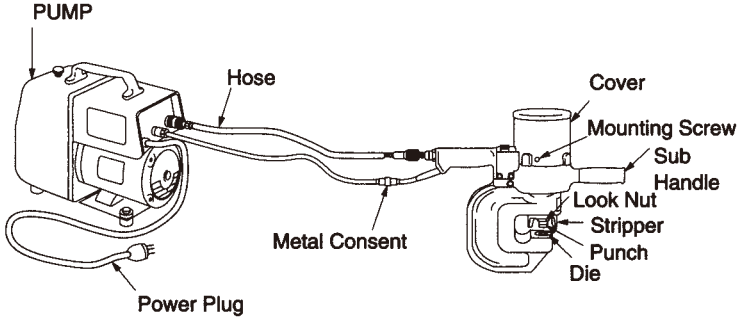
SELFER

Package contents and accessories	HA05-1018	Check	HA06-1322 HA07-1624 HA11-1624	Check
Unit				
Hose Cord Ass'y				
Sub Handle Ass'y (Side Handle Ass'y)				
D Punch 18				
M Die 18				
D Punch 22				
D Die 22				
Tool Box				
Spanner				
Hex. Socket Screw Key 4				
Instruction Manual				

PUMP

Package contents and accessories	Q'ty	Check
Hex. Socket Screw Key 8	1	
Oil Cap	1	
Auxiliary Oil Can Ass'y	1 set	

3 NAME OF PARTS



(Fig.1)

4 PUNCHING CAPACITY

4-1 MAXIMUM PUNCHING DIAMETER

Maximum punching diameters are standardized on material equivalent to mild steel (tensile strength:400 ~510 N/mm²). If other materials are to be used, the following formula can be used to calculate W, the power required to make the hole, which must not exceed the maximum output.

$$W \geq \frac{\pi \times D \times t \times \sigma \times 0.8}{1000}$$

W: Power required to make the hole (kN)
π : 3.14
D : Punching diameter (mm)
t : Plate thickness (mm)
σ : Material tensile strength (N/mm²)

Model	W
HA05-1018	216kN
HA06-1322	304kN
HA07-1624	431kN
HA11-1624	431kN

4-2 MAXIMUM PUNCHING PLATE THICKNESS FOR VARIOUS PUNCHING DIAMETERS

The following limitations apply to punching plate thickness based on punching diameters. These should not be exceeded.

Mild Steel : Max. plate thickness
≤ 0.8×punching diameter

4-3 MINIMUM PUNCHING PITCH

Accurate holes can not be made if the punching pitch is too small. The minimum pitch is given by the following formula.

P=1.5×t+D P : Pitch (mm)
D : Punching diameter (mm)
t : Plate thickness (mm)

4-4 HOLE PRECISION

Holes made with this tool are mechanically rough, deformed and distorted. Where precision is required, use the Nitto Kohki Atra Ace Series.

4-5 APPLY OIL FOR EXTENDED PUNCH LIFE

A little oil (machine oil, spindle oil, turbine oil) applied to the Punch will improve its release and extend its life.

5 PREPARATION

5-1 ATTACHING ACCESSORIES (SELFER)

Attach the Sub Handle Ass'y to the Selfer. (Fig. 1)

5-2 PUMP

(1) Attaching Accessories

Disconnect the plug Rc3/8 from the Pump oiling port, and replace the Oil Cap with the new one supplied as an accessory.

Negligence of this procedure will cause abnormal heat, noise and other accidents, and the specified performance will not be obtained.(Fig. 2)

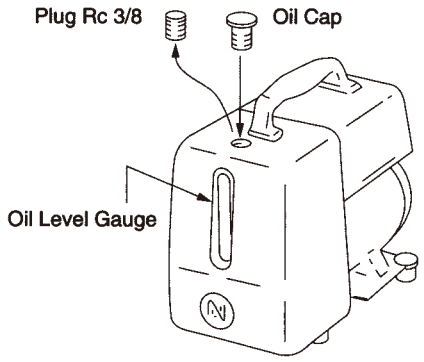
The plug Rc3/8 should be set to the original position during transportation.

(2) Installation

Install the Pump in a well-ventilated level position, with low humidity and little dust.

(3) Check the oil level

Check that the oil level is above the center on the Oil Level Gauge. If there is insufficient oil, top up to the "H" level with the Oil: ISO V.G. 32 (equivalent to #90 turbine oil)



(Fig.2)

5-3 HOSE CONNECTIONS

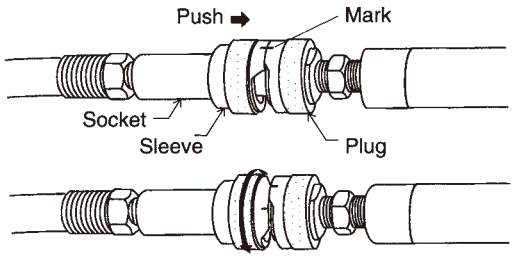
(1) Connect the hoses between the Selfer and the Pump. Make the connections as follows. (Fig. 3)

To Prevent Malfunction

—Before connecting the Cuplas, ensure they are well cleaned and free of dust and foreign matter.
—After disconnecting the Cupla always fit the supplied dust caps.

◎Connection : Align the two - - marks of both sleeves of Cupla, force inwards and once fully depressed rotate Cupla sleeve 90 degrees. This will fully lock the Cupla in position.

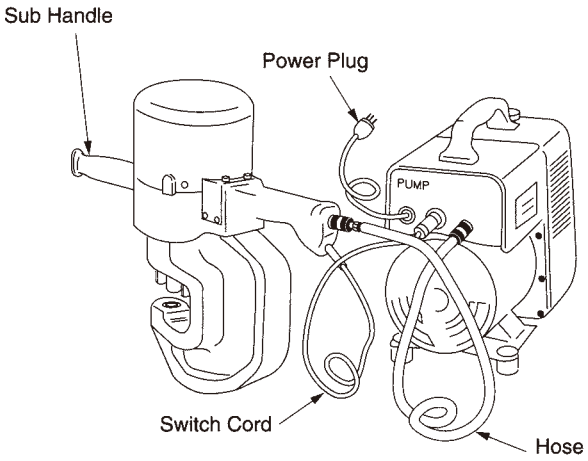
◎Disconnection : To disconnect re-align the two - - marks on the Cupla sleeves and the Cupla will disconnect.



(Fig.3)

(2) Connect the Switch Cord to the Selfer and Pump. (Fig. 4)

(3) Connect the Power Plug which is coming from the Pump to the power source. (Fig.4)



(Fig.4)

6 HOW TO OPERATE THE TOOL

⚠WARNING

• Don't pressurize the Pump independently.
If the Pump is by itself, or the hoses are not connected to the Selfer, the Pump must not be started. Otherwise the valves may be forced out of the Cuplas.

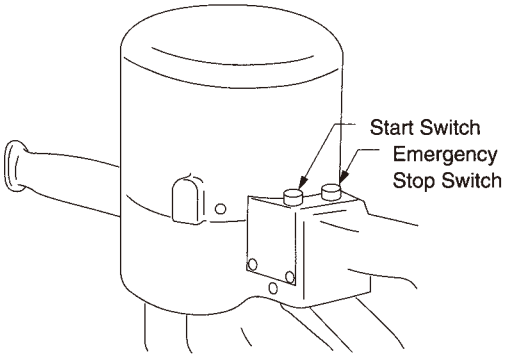
6-1 PUMP

Turn on the Power Supply Switch.

6-2 START AND STOP (FIG. 5)

(1) When the Start Switch is pressed, the Pump starts and the Ram (Punch) descends. When the punching is finished, the Pump will stop and the Ram will return automatically.

(2) If you wish to stop working at any time, press the Emergency Stop Switch. The Pump will stop and the Ram will return.



(Fig.5)

6-3 PUNCHING PROCEDURE

⚠WARNING

Wear eye protection while working. If much dust is produced, wear a dust mask also.

(1) Make a Punch Mark

Make a large punch mark in the workpiece at the position where the hole is to be made.

(2) Stripper Position

Adjust the Stripper so that its lower edge is level with or slightly lower than the bottom of the cutting face of the Punch. Make sure the Stripper is above the workpiece. (Fig.6)

(Fig. 6)

(3) Align the Punch

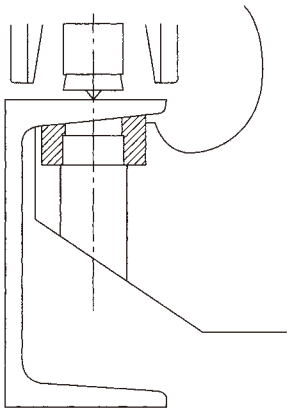
Align the leading edge of the Punch with the punch mark.

(4) Make the Hole

Press the Start Switch and start punching the hole.

(5) Making Holes in Tapered Materials

The Stripper may be damaged if tapered workpieces such as I-steel, channel steel, etc., are punched in the normal way. Tapered dies, as shown in Figure 7, are available for this purpose and should be ordered separately.



(Fig.7)

7 MAINTENANCE AND INSPECTION

⚠WARNING

- The Power Plug must be removed from the power supply during maintenance and inspection.
- All attached parts should be checked periodically for loose screws, etc. Any loose screws should be tightened securely.

7-1 OIL CHANGE

Initial oil replacement should be done after operation for fifty hours. Subsequent replacement should be made at intervals of five hundred hours.

7-2 AIR PURGING

Oil will not be supplied in the hose Hose Code Ass'y when the machine is used for the first time. So purge air according to the following procedure. (Fig.8)

(1) Disconnect the Hex. Socket Set Screw M8 from the bottom of the Cover Ass'y.

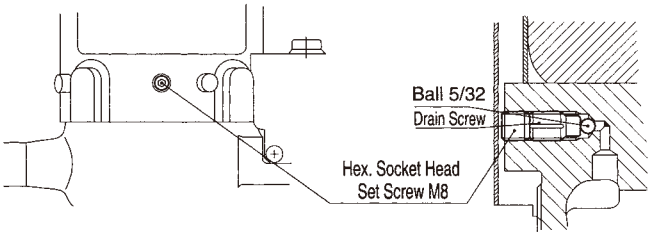
(2) Turn the Drain Screw located at the deeper position by one rotation, and loosen it.

Note: Never remove the Drain Screw. If it should be removed, the Ball 5/32 located at the deeper position would be lost and the pressure will not be maintained.

(3) Press the red button 2 to 3 seconds after pressing the black button. Repeat this operation two or three times, and air will be purged completely and only oil will come out.

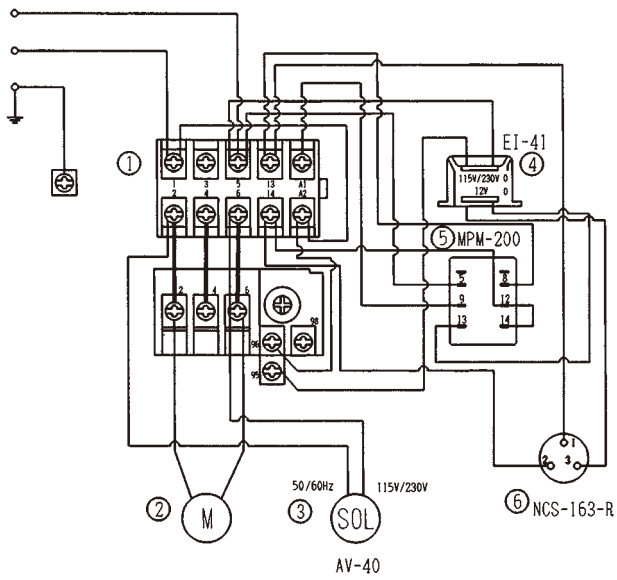
(4) After purging air, firmly tighten the Drain Screw, and tighten the Hex. Socket Set Screw M8.

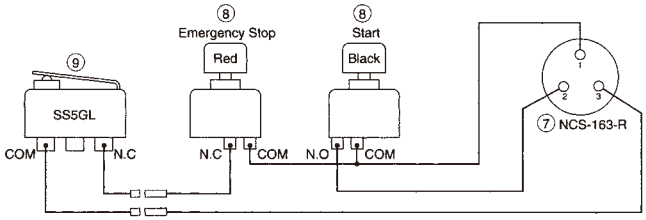
Note: These screw must be tightened after replacing the hose and Cuplas



(Fig. 8)

7-3 WIRING DIAGRAM AND OIL CIRCUIT DIAGRAM





①Magnet Switch
②Motor
③Solenoid
④Transformer
⑤Relay
⑥Metal Receptacle
⑦Metal Concent Adaptor
⑧Push Switch
⑨Limit Switch

(Fig.9)

8 REPLACING THE PUNCH AND DIE

⚠WARNING

- When replacing the Punch and Die, be sure to disconnect the Power Plug from power supply.
- Use a Punch and Die with the same nominal diameter.
- Mount the Punch and Die precisely.

8-1 MOUNTING

Notes on mounting

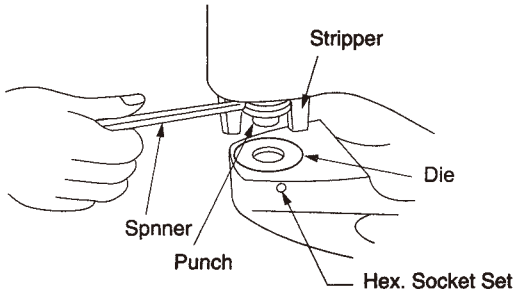
HA05 : Mount the Die, then the Punch in that order.

HA06/07/11 : Mount the Punch, then the Die in that order.

—Lock Nut S Ass'y which is sold separately is required for punches with a punching diameter of more than 24 mm.

Punch

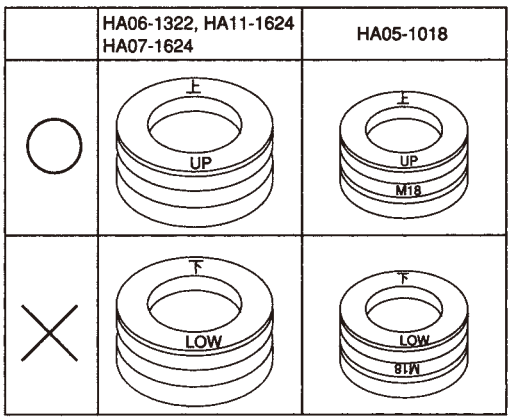
Insert the Punch in the Lock Nut and tighten it securely to the Ram. Tighten the Lock Nut securely so that it can not be turned or shaken by hand. (Fig. 10)



(Fig.10)

Die

(1) Insert the Die in the Frame so that the inscription "Up" is visible. (Fig.11)



(Fig.11)

(2) If a Die with no Up or Low inscription is used, insert it into the Frame with the cutting edge up.

(3) Tighten the Hex. Socket Set Screws on both sides of the Frame and fix them with nuts.

8-2 REMOVAL

HA05 : Remove the Punch, then the Die in that order.

HA06/07/11 : Remove the Die, then the Punch in that order.

8-3 REPLACING SPECIAL-FORMED PUNCH AND DIE

Punch

Insert the Punch so that the pin on the head of the Punch enters the pin hole in the ram. As shown in Figure 12, the pin hole is on the right side of the Ram. There is also a pinhole 90° around in the clockwise direction.

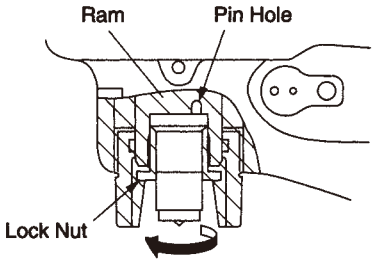
Die

(1) Insert the Die in the Frame so that the inscription "Up" is visible.(Fig. 13)

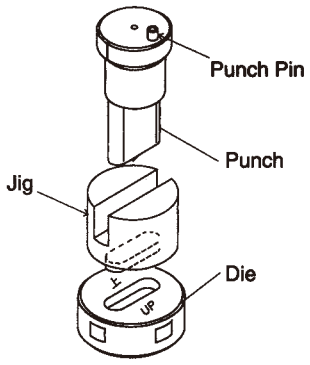
(2) If a Die with no Up or Low inscription is used, insert it into the Frame with the cutting edge up.

(3) Align the cavity in the Alignment Jig with the punch cutter then turn the Die so that it aligns with the protruding part of the Alignment Jig.

(4) When the position has been determined, replace the fastening screws on both sides of the unit with Hex. Socket Set Screws with Ball M8×14 (TQ01279) which are sold separately, and fix them with nuts. If a Round Hole Die is to be used, the accessory Hex. Socket Set Screws should be restored.



(Fig.12)



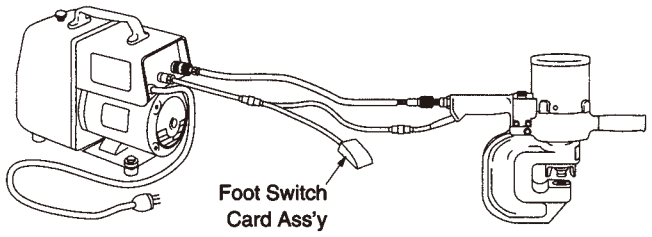
(Fig.13)

9 ORDERING SERVICE PARTS

9-1 OPTIONAL EXTRAS

9-1-1 FOOT SWITCH CORD ASS'Y (TA94386)

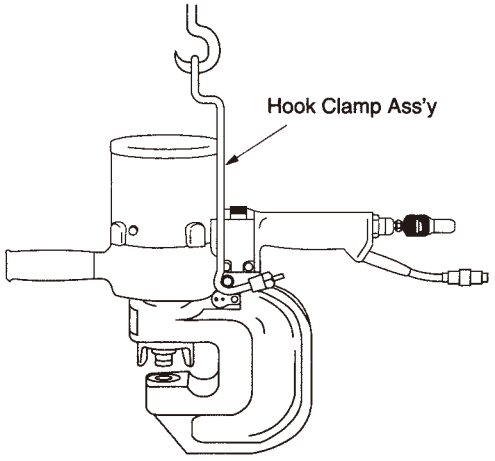
A foot switch is available and can be ordered separately. This enables the tool to be operated by foot. (Fig. 14)



(Fig. 14)

9-1-2 HOOK CLAMP ASS'Y (TA96342) for HA07-1624/HA11-1624

A Hook Clamp Ass'y is available for the Selfer and can be ordered separately. (Fig. 15)



(Fig.15)

9-1-3 PUNCHES AND DIES

Consult the sales agent from whom you purchased the tool or an authorized dealer for sizes other than those shown below.

Round Holes

Part No.	Part Name	Part No.	Part Name
TJ10778	D Punch 8	TJ10779	D Die 8
TJ11088	D Punch 9	TJ11089	D Die 9
TJ06700	D Punch 10	TJ06701	D Die 10
TJ06698	D Punch 11	TJ06699	D Die 11
TJ06696	D Punch 12	TJ06697	D Die 12
TJ06694	D Punch 13	TJ06695	D Die 13
TJ06692	D Punch 14	TJ06693	D Die 14
TJ06611	D Punch 14.5	TJ06612	D Die 14.5
TJ06690	D Punch 15	TJ06691	D Die 15
TJ06688	D Punch 16	TJ06689	D Die 16
TJ06686	D Punch 17	TJ06687	D Die 17
TJ06609	D Punch 17.5	TJ06610	D Die 17.5
TJ06684	D Punch 18	TJ06685	D Die 18
TJ06682	D Punch 19	TJ06683	D Die 19
TJ06680	D Punch 20	TJ06681	D Die 20
TJ06607	D Punch 20.5	TJ06608	D Die 20.5
TJ06678	D Punch 21	TJ06679	D Die 21
TJ07979	D Punch 21.5	TJ07980	D Die 21.5
TJ06676	D Punch 22	TJ06677	D Die 22
TJ06674	D Punch 23	TJ06675	D Die 23
TJ06566	D Punch 23.5	TJ06569	D Die 23.5
TJ07748	D Punch 24	TJ07749	D Die 24
TJ10061	D Punch 25	TJ10062	D Die 25

Part No.	Part Name
TJ12194	M Die 8
TJ12206	M Die 9
TJ12192	M Die 10
TJ11005	M Die 11
TJ12190	M Die 12
TJ12294	M Die 13
TJ11003	M Die 14
TJ12188	M Die 15
TJ12186	M Die 16
TJ12292	M Die 17
TJ11001	M Die 18

Elongated Holes

Part No.	Part Name	Part No.	Part Name	Part No.	Part Name
TJ13229	D Punch 16 × 8	TJ13238	D Die 16 × 8	TK00455	Alignment Jig 16 × 8
TJ13230	D Punch 18 × 9	TJ13239	D Die 18 × 9	TK00456	Alignment Jig 18 × 9
TJ13231	D Punch 20 ×10	TJ13240	D Die 20 ×10	TK00457	Alignment Jig 20 ×10
TJ13232	D Punch 22 ×11	TJ13241	D Die 22 ×11	TK00458	Alignment Jig 22 ×11
TJ13233	D Punch 24 ×12	TJ13242	D Die 24 ×12	TK00459	Alignment Jig 24 ×12
TJ13234	D Punch 25 × 9	TJ13243	D Die 25 × 9	TK00460	Alignment Jig 25 × 9
TJ13235	D Punch 25 ×12	TJ13244	D Die 25 ×12	TK00461	Alignment Jig 25 ×12
TJ13236	D Punch 25 ×14	TJ13245	D Die 25 ×14	TK00462	Alignment Jig 25 ×14
TJ13237	D Punch 25 ×18	TJ13246	D Die 25 ×18	TK00463	Alignment Jig 25 ×18

Lock Nut S Ass'y (TA99037) is required for Punches with 25 mm punching diameter.

9-2 ORDERING PARTS

In ordering parts and components from the sales agent from whom you purchased the tool or an authorized dealer, give each part number, part name and quantity required.