

User manual

Hand Hydraulic Punch Driver & Knockout Punches



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Appropriate Use

The hand hydraulic punch driver used with icotek punches is intended for punching of stainless steel (V2A punches, max. 2 mm sheet thickness), mild steel, aluminum and plastics of up to 3 mm sheet thickness only. Please pay attention to the following instructions and read the user manual carefully before operating with the knockout tools.

For Your Own Safety:



Only use punches, dies, and draw studs recommended in this manual. Assembly should be done only in the stated order.

Please pay attention to the valid accident prevention regulations and adopt protective measures.

Ensure the knockout tools and punches before are in proper condition before using them. Defective parts need to be replaced before use.

Do not operate in an area where electric shock could be possible. Ensure an voltage free environment before use. Please clear area of any items (e.g. enclosure) and materials that could cause an electric shock.

Maintenance should be performed by qualified technicians. Ignoring this warning can result in severe injury.

Caution:



Offset punching (nibbling) is not possible with these knockout tools and can damage the tools.

Punching should be done only down to the punching material thickness. Avoid punching all the way to the die base. The tools can be damaged.

Do not punch through multi-layers. The tools can be damaged and cause injury.



Ensure the safety of your hands while using. Do not place your hands between punch and die while operating.



After operating, sharp edges can be formed at the cut-out and at the material slug. There is a risk of cut injuries.



Wear eye protection when operating or servicing this tool. Failure to wear eye protection can result in serious eye injury from flying debris.

Useful Tips:



The draw stud, cutting edges and fences should be lubricated or greased regularly. This allows the punching operation to be done more easily and cutting edges to be smoother. If the punch creates a blunt edge it needs to be re-sharpened.



To remove the slug on the rectangular punch is please use a tong.



Please make sure cutting the correct size hole for your cable entry component before punching.



Through marking the mounting holes the center punches can deform the punching material, if center punches jut out. It can reduce the ability to seal with the cable entry components.



The center punches can be adjusted with screws at the die. Adjust the center punches after aligning the die to avoid scratching the material.



If possible, insert the hand hydraulic punch driver from the outside. The marks for the mounting holes can be screwed much easier.

Punching of Rectangular & Square Cut-outs

Prepare Punching Material:

Drill pilot hole depending on cut-out:

Cut-out	Punch size	Pilot hole	max. sheet thickness	
			St/Al/Plast	Stainless Steel V2A
22 x 45 mm	22x45	M20 / 20.4 mm	2 mm	-
24 x 43 mm	E2	M20 / 20.4 mm	2.5 mm	-
24 x 65mm	E3	M20 / 20.4 mm	2.5 mm	-
24 x 86mm	E4	M20 / 20.4 mm	2.5 mm	-
24 x 112 mm	E5	M20 / 20.4 mm	2.5 mm	-
46 x 46 mm	B	M25 / 25.5 mm	3 mm	2 mm
36 x 65 mm	10	M25 / 25.5 mm	3 mm	2 mm
36 x 86 mm	16	M25 / 25.5 mm	3 mm	2 mm
36 x 112 mm	24	M25 / 25.5 mm	3 mm	2 mm
46 x 112 mm	24-XL	M25 / 25.5 mm	3 mm	2 mm

Prepare Hand Hydraulic Punch Driver and Punching:

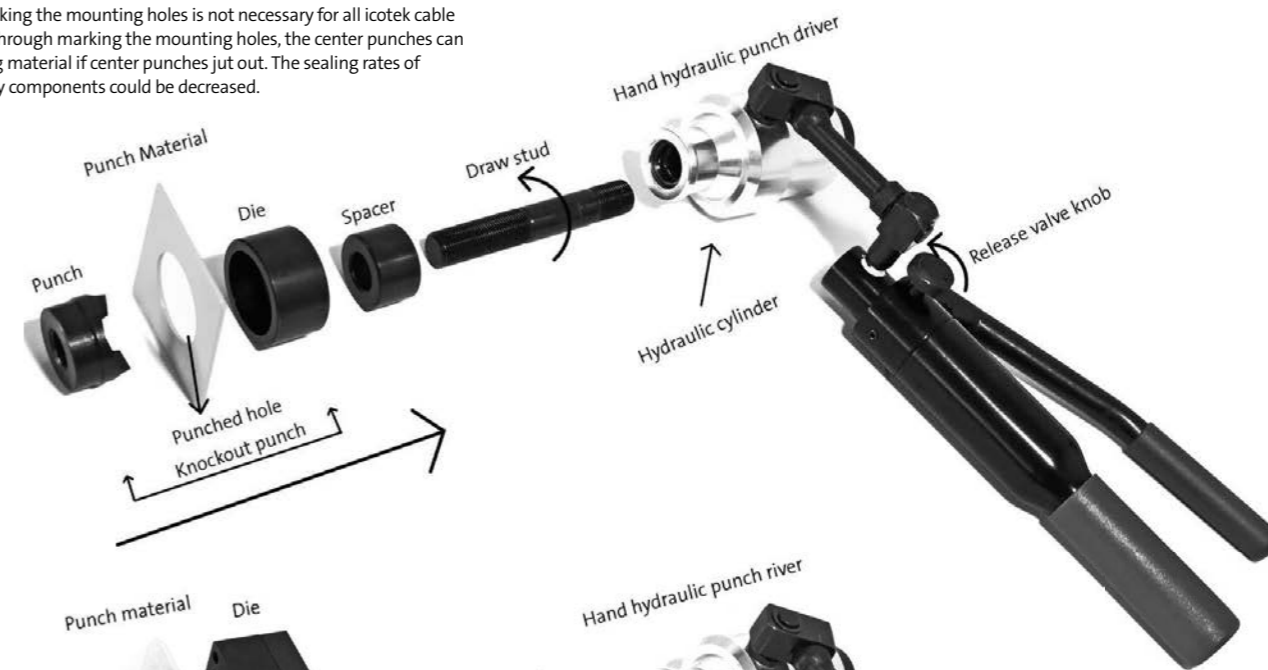
- 1 Set the release valve knob to „On“.
- 2 Screw the draw stud into the hydraulic cylinder.
- 3 Place the die onto the draw stud.

Please note that the die needs to be placed with the tooth side towards the punching material.

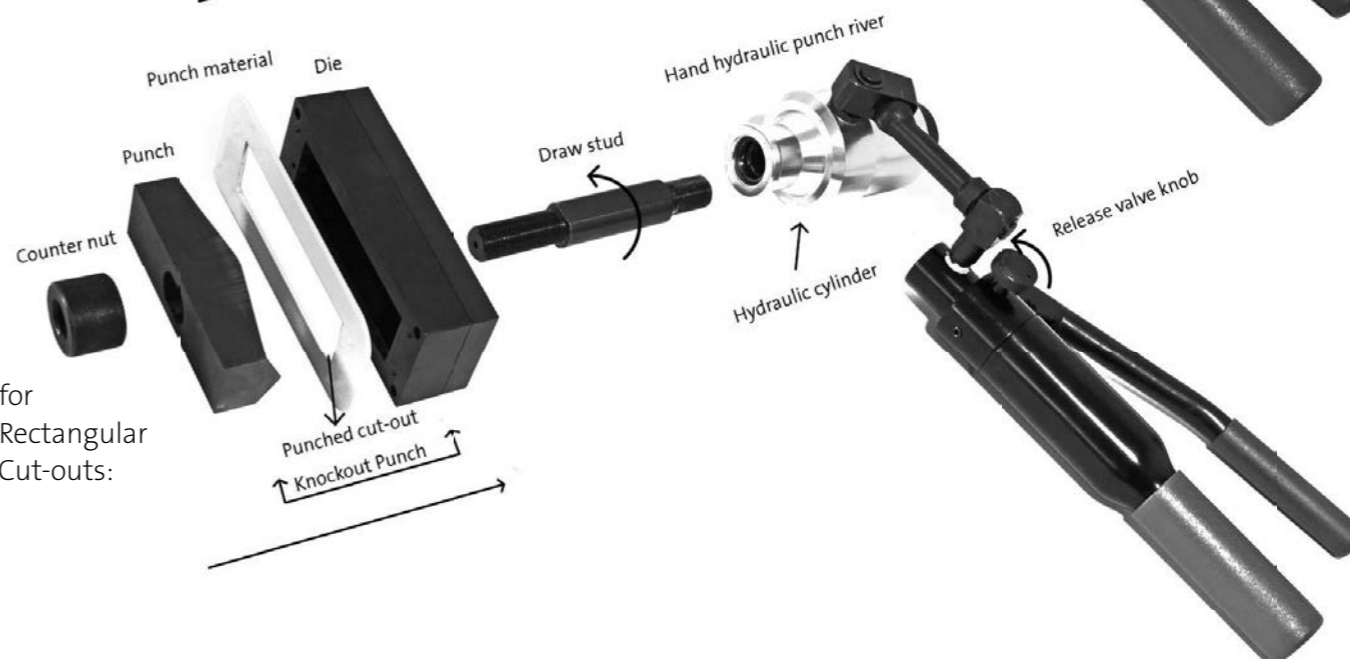
- 4 Put the draw stud through the pilot hole of the punching material.
- 5 Place die on the punching material (max. 3 mm thickness).
- 6 Put the punch on the draw stud.
- 7 Screw the counter nut towards the punch.
- 8 Align the punch using a try square.
- 9 If necessary, adjust center punches using a metric hex wrench M4.

Please note that marking the mounting holes is not necessary for all icotek cable entry components. Through marking the mounting holes, the center punches can deform the punching material if center punches jut out. The sealing rates of pluggable cable entry components could be decreased.

Structure for Punching Round Cut-outs:



Structure for Punching Rectangular & Square Cut-outs:



Punching of Round Cut-outs

Prepare Punching Material: Drill pilot hole depending on cut-out:

Cut-out	Pilot hole	Draw stud Ø	max. sheet thickness	
			St/Al/Plast	Stainless Steel V2A
M16 - M25	10 mm	9,5 mm (3/8")	2 mm	2 mm
M32 - M63	M20 / 20.3 mm	19 mm (3/4")	3 mm	2 mm
M75 - M85	M20 / 20.3 mm	19 mm (3/4")	2 mm	-
PG 16 / 22.5 mm	10 mm	9,5 mm (3/8")	2 mm	- / 2 mm

Prepare Hand Hydraulic Punch Driver and Punching:

- 1 Set the release valve knob to „On“.
- 2 Screw the corresponding draw stud into the hydraulic cylinder.
- 3 Place spacer on screwed draw stud. **It is absolutely necessary to use a spacer!**
- 4 Place the die onto the draw stud so that it is not wedged in.

Please note that the die needs to be placed with the tooth side to the punching material.

- 5 Put the draw stud through the pilot hole of the punching material.
- 6 Place die on the punching material (max. 2 or 3 mm thickness).
- 7 Screw the punch in tightly.

Punch the Cut-out

Pump with the hand hydraulic punch driver until the punch is through the punching material.

Do not use any force. If there is high effort needed for punching, check the tool.

The die must be punched completely through the material. The punch driver has to be released easily.

Release the Punch Driver After Punching:

- 10 Unscrew the punch.
- 11 For releasing the punch driver, set the release valve knob to „Off“.
- 12 Remove the die.
- 13 Material slug is split into three parts and can be removed easily.

Punch the Cut-out:

Pump with the hand hydraulic punch driver until the punch is through the punching material.

No force is needed. If the punch requires a lot of effort please check the tool.

The die must be punched completely through the material. The punch driver needs to be released easily.

Release the Punch Driver After Punching:

- 12 Unscrew counter nut, release punch.
- 13 For releasing the punch driver, set the release valve knob to „Off“.
- 14 Remove the die.
- 15 Material slug can be found inside the die (remove after use).