HDID User's Guide

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HDID 500-630
HHID 710-900

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Content

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1 Introduction

Congratulations on the purchase of a quality product. from Holm & Holm A/S.

This tool's function is to remove internal beads in plastictubes after welding. This is done by driving a knife around the welding beads. Secondary function is to remove the bead after cutting.

2 Safety instructions

This user's guide contains important instructions for the safe operation of the product. Any Person that uses the tool, must comply with the instructions in this manual.

2.1 User manual

The user's guide is presented according to the different functions of the product. All rights, in particular the right to copy or reproduce (in printed or electronic form) and disseminate and to translate, are reserved to Holm & Holm A/S and require prior written permission.

2.2 Explanatory Icons

The following terms and icons are used in this User's Guide to refer to security-related issues:

This icon indicates that non-compliance may result in a hazardous situation that may cause personal injury or material damage.

This icon indicates important messages related to the correct use of the product. Non-compliance may cause operational problems and damage to the product.

This icon provides tips and useful informationre so that use of the product becomes more efficient and more economical.

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2.3 Operator's responsibilities and actions from organisation

It is up to the operator to ensure that it is only people that:

- Know the basic rules for safety at work and accident prevention and is trained to use the product correctly
- Have read and understand the security section and safety messages in this guide.

The user's manual must always be stored at the place where the product is used. It shall be accessible and easily accessible to the operator.

2.4 Technical changes to the product

- Changes, additions or changes to the product can only be accepted with Holm & Holm A/S prior confirmation.
- Parts of the product that are not working properly must be replaced immediately.
- Only original spare parts and consumables can be used.
- When you order spare parts, enter the item number.

2.5 Warranty and liability

Our general terms and conditions for sale and delivery apply in all cases. Under no circumstances can we be held responsible or liable for any material damage or bodily injury that may have been caused by one or more of the following:

- Accidental use of the product
- Improper transport, installation, check-out, operation or maintenance of the product
- Non-compliance with the instructions in the User's Guide
- Technical modifications to the product without prior confirmation,
- Inadequate service of wear and tear parts of the product
- Incorrect repair,
- Disasters caused by forces beyond our control or force majeure

3 Product description

3.1.1 Area of use and intended use

The bead remover tool is designed specifically for use at the workplace and is designed for bead removal in plastic tubes.

3.1.2 H.I.P. mode HDID 500-630

The HDID 500-630 is designed to remove beads in tube sizes Ø500 to Ø630 (SDR 26 to SDR 9), limited by the inner diameter of pipes (Ø400<Ø580), as well as the bead width of 60mm.

3.1.3 HMIT HDID 710-900

The HDID 710-900 is designed to remove beads in tube sizes Ø710 to Ø900 (SDR 26 to SDR 9), limited by the inner diameter of pipes (Ø620<Ø840),as well as the besd width of 60mm.

Any other shall be considered unintentional. Under no circumstances can the manufacturer be held liable for such damages which may result from accidental use, which is at the user's exclusive risk.

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3.2 Technical specifications

3.2.1 Technical specifications HDID 500-630

- Ø500-Ø630mm tube up to 24 metres inset depth (standardset = 13 meters, longer on request)
- Materials:
  - Head harness is made of tool aluminium and stainless steel
  - Knives are made of special knife steel
  - Bearings and feet are done in POM
  - Bolts made in Stainless

3.2.2 Technical specifications HDID 710-900

- Ø710-Ø900mm tubes up to 24 metres in-depth(standard set = 13 metres, longer on request)
- Materials:
  - Head harness is made of tool aluminium and stainless steel
  - Knives are made of special knife steel
  - Bearings and feet are done in POM
  - Bolts made in Stainless

3.3 Components and accessories

The following parts are included in the delivery of sets:

- 14 mm allan key
- 1,5... 10mm allan key set
- Tube with special grease
- User manual

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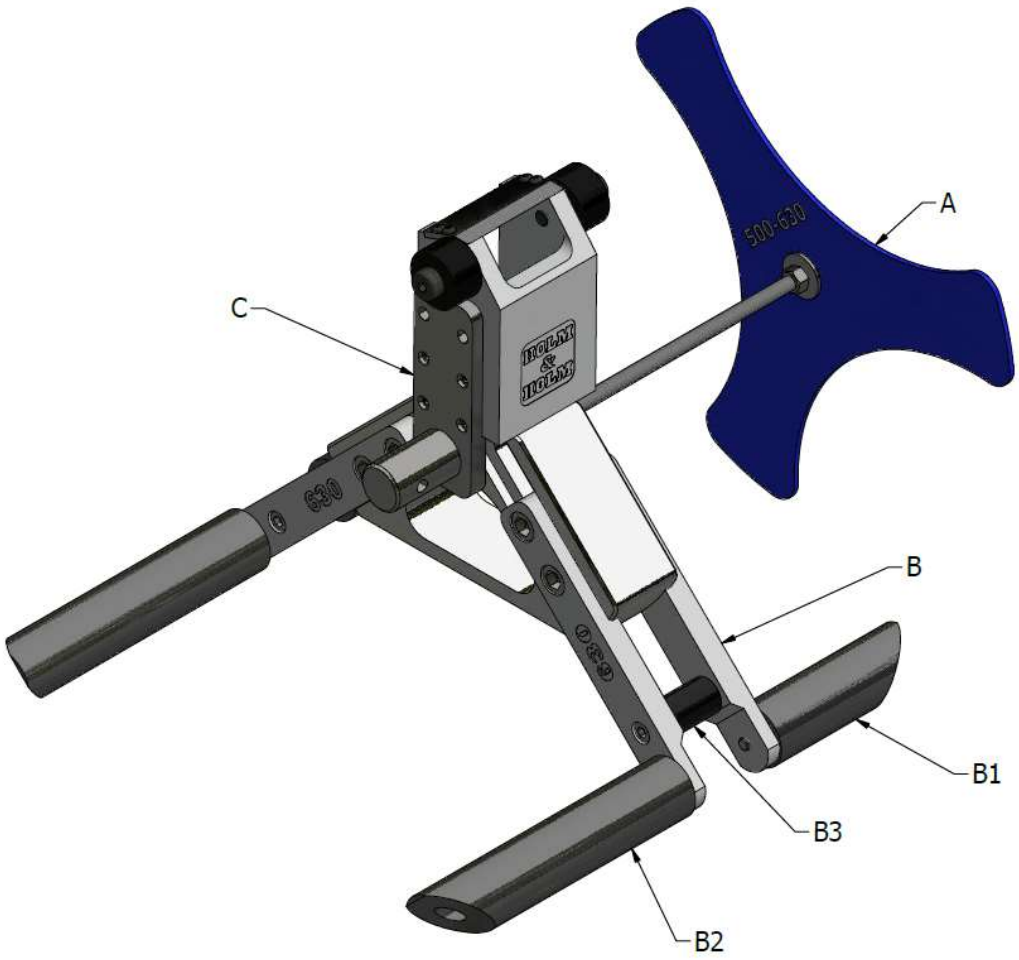
3.4 Assembly and customization

HHID 500-630 is used as illustration

3.4.1 Mounting the cutting head



- Mount threaded rod and bead catcher (A)
- Mount leg sets in the correct size (B)
  - Feet have different lengths Short = B1 ; Long = B2
  - Center support B3 is not used on the short leg sets.
- Mount the Torque arm (C) so that the centre axisl is placed as far as possible in the centre of the plastic tube.

The included special greases can be used during assembly – even on already installed parts – these are not lubricated when delivered as there are different restrictions on usable grease types from region to region when used in e.g. drinking water.. Your equipment lasts longer and is easier to separate when using grease when installing)

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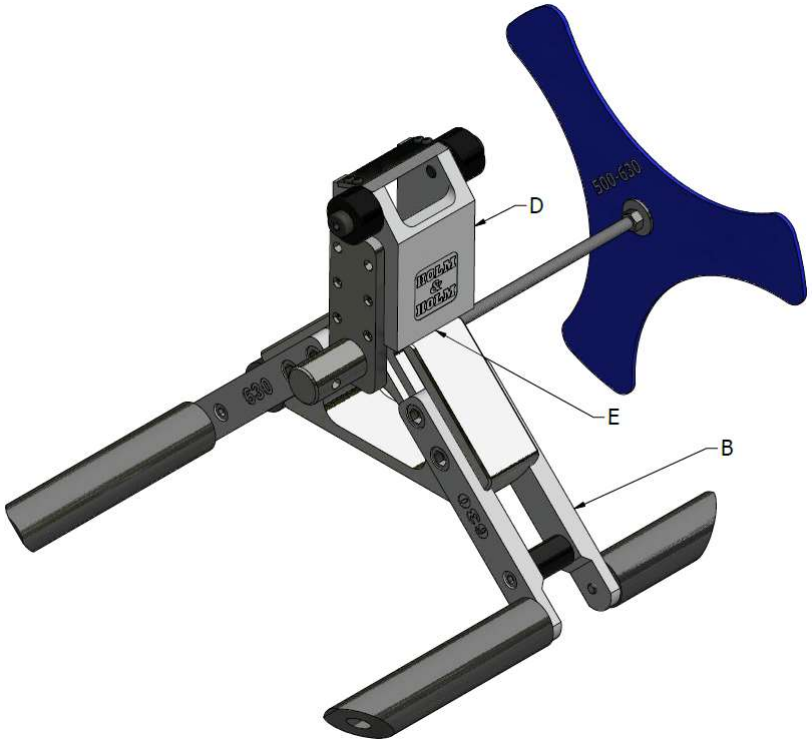
3.4.2 Cutting head customization

The cutting head must have free movement when removing the bead, so the feet and the cirrhaged circle of the blade wheel must not be larger than the smallest inscribed circle in the plastic tube. In practice, the plastic tube creeps invards after welding so that the reeds in the welds contract together, resulting in less diamter in tubes. Plastic pipes are usually not 100% round, just as the thickness of the wall can vary. To achieve a good bead removal, the cutting head must normally be relatively loose inside the tube - it pulls itself when circling.
(Remember to make et attempt on a short piece of pipe) .

- Insert the cutting head into the tube in which to remove the beads.
- With the knife head (D) folded out (B) uniformly adjusts out (B) so that the knife wheel almost hits against the tube inside. (There MUST be a gap)
- At the land of the head (E), there are pinol screws that define the blade angle and determine how aggressive it should be. (Only tests on the actual tube can determine precicely how aggressive the knife should be set)



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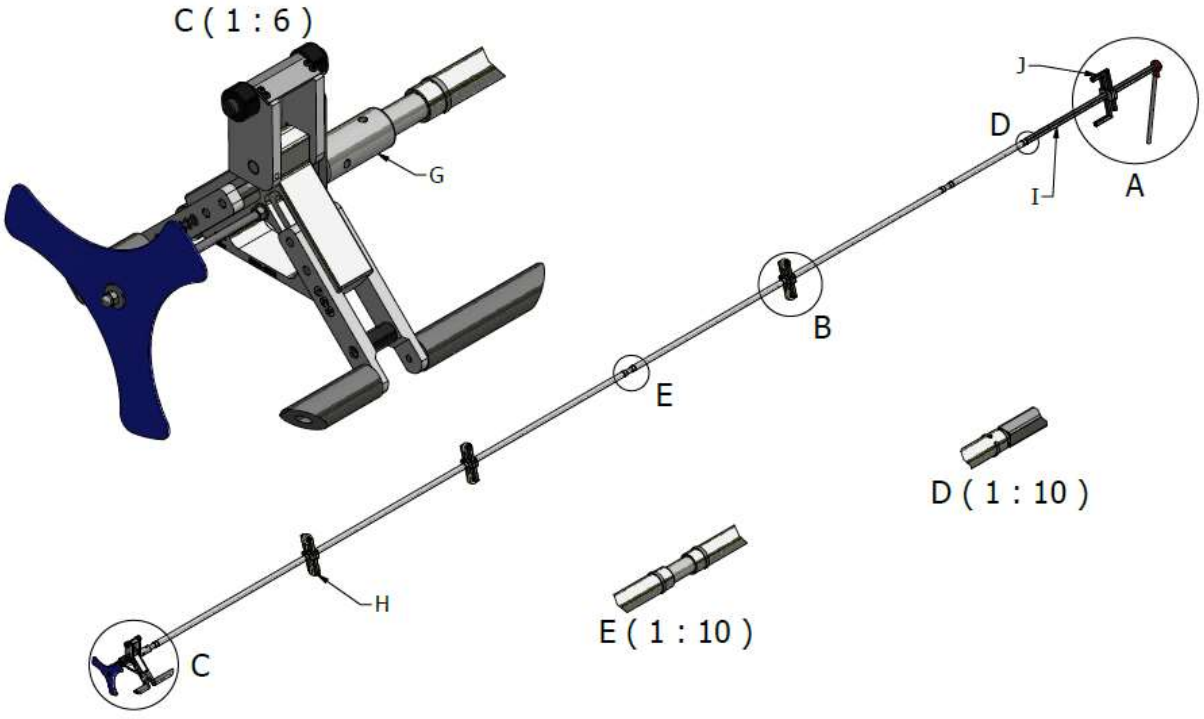
3.4.3 Mounting rod sets

When the rod set is mounted, it can be done incrementally while the cutting head is scuttled into pipes – this minimizes internal contamination of pipes. It is recommended to tape all joints as an added security to the clip does not fall out. Experientially, it works best with a 2-metre piece closest to the cutting head (after flex piece (G), followed by a set of support wheels (H). Other support wheels are evenly spaced. All joints can be carried out with included clips, these can in some cases be replaced with bolts with loose nuts. (not included) . Up to 42 meters of insert depth has been tested.

- Mount Flex piece (G) with clips and assembly piece.
- Install 2 meter pipes and support wheels (H) at the first assembly..
    - Support wheels are positioned so they almost hit the pipe wall
- Install the number of tubes required with support wheels (H).
- Mount Square Rod (I)
- Mount End support (J) straightened out against pipe wall (Do you want to sit tight).

- Mount ratchet with square rod.



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4 Use

4.1 General use

It is recommended to perform welding and bead removal on a short piece of pipe as the first in each task/dimension shift – this to allow the operator to see the correct setting/function of the bead remover tool. In the same way as a hand saw, the quality of work performed depends to a large extent on the operator.

When cutting the bead, it is important to ensure that the maximum torque does not exceed 300 Nm, if this torque is exceeded there is a risk of breaking the knife and/or damaging the bead remover equipment. A sharp knife is fitted to the bead remover when gripped in this, damage to the person may occur – always cover it when not in use.

For the best and most problem-free bead removal, the nature of the plastic tube and weld is an important factor. And there are the following factors:

- The temperature of the weld.
  - The colder the weld, the harder the plastic material that needs to be cut, and thus the forces needed to pull the knife through.
    - Normally, it is a good starting point to remove the bead about halfway through the cooling time (short pipe test).
- Ovality of the pipe.
  - In very oval tubes, the inscribed circle becomes too small for the cutting head to rotate while the knife can cut into the weld.
    - It is recommended to leave the tube in the butt welder during the bead removal (during cooling time)
- Offset in wall thickness.
  - The quality of plastic pipes fluctuates a lot and there can be a great variety in the material in the circumference of the individual pipe. If there is excessive edge lining inside, it will result in the knife gnawing down on one side, but at the same time it leaves the bead on the opposite side of the weld
    - It is recommended to check the inner edge disreactely before butt welding)
- Crawling in pipe ends.
  - Depending on pipe quality, storage time and temperature, plastic pipes usually become conical at the ends over time, which can cause the knife to cut into the pipe wall in the middle.
    - To a certain limit, it is possible to set the knife to be more or less aggressive in depth. It is even possible to angle the cutting head itself slightly by adjusting the legs out. If there is a very large conicality on the supplied pipes, it may be necessary to saw ends of unmissable before welding.

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4.2 Specific workflow.

With properly mounted and adjusted bead remover sets, the workflow will initially be as follows:

1. During the cooling time of the current welding, the bead remover is introduced to about 1/2 meter before the welding site.
    a. Assembled possibly along the way if space conditions require it.
    b. The knife head must be laid down (counterclockwise from the operator side).

2. Approximately halfway through the cooling time of the weld, the bead remover equipment is fed the last 1/2 meter into the pipe until you can sense that the leg of the cutter is standing over the weld.
    a. You can usually clearly feel when the weld is in the middle. (it is difficult to pull up over the weld on that side.
3. Drive handles are mounted and a little over a full circle is turned clockwise until the resistance becomes less.
    a. If the resistance becomes too large it is typically due to incorrect setting of the cutting head and/or the size of the pipe.
    b. The bead is taken in one incision and gets stuck under the knife or in the bead, dragging it out at the end of surgery.
4. Drive handles are removed and the bead remover equipment is pulled out along with the cut bead.
    a. Depending on the documentation demands, the cutout beads are marked together with the individual welding. (On welding machines with datalogging, an additional label dedicated to the removed bead may be printed)
    b. You can pull the bead remover set directly into the next pipe to be welded(1/2 meter from the welding site) toavoid external contamination in pipes..

5 Maintenance and storage

5.1 Generally

Replace damaged parts immediately. Always use original spare parts when servicing the product.

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Mandatory service and maintenance work must be carried out at the right intervals. According to DVS 2208-1, a service check is required per year. According to the applicable standard, Holm & Holm A/S or its authorized service partners perform this check and document it by means of a controlrappor

- Store in a dry place.
- Protect against powerful vibrations and shocks
- When using the product, handle it with caution.

5.2 Before use

It is recommended to use included grease to assemble all components where it is allowed , even on already installed parts. (Restrictions on permitted grease types may apply to, for example, drinking water - requirements differ from country to country.)

5.3 Maintenance

- Keep the equipment as dry and clean as possible. Allow to dry before packing if wet.
- Can be cleaned in e.g. kerosene.
- Be sure to keep all parts lubricated so that they cannot get stuck.

5.4 Storage

- When not using the equipment, keep it dry.

5.5 Spare parts and service:

All spare parts and service canbe requisized by contacting:

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Common spare parts:

Description	Item number
Knife including 4 screws	551.305
Extra rod (1 meter)	551.307
Extra rod (2 meters)	551.308
Extra rod(3 meters)	551.309
Extra rod joint	551.310
Clips 60xØ10	551.306
Special Grease	581.001
Distance wheel at Knife (Ø48)	551.320

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