

Welding Equipment ST - 160

Operator's Manual / Warranty Card

Sturdy Frame Fitted with a sturdy frame, the ST-160 welding equipment provides for strong clamping of pipes and adapting pieces.
Versatile Applicability
a mobile table for use in workshops, demountable for field use.
Quick-acting Clamping Device The ST-160 is fitted with a quick-acting clamping device of high thrust. Special inserts for the pipes of various dimensions are available.
Clamping Device for Adapting Pieces The ST-160 is provided with a clamping device suitable for all standard adapting pieces.

1. Preamble

Dear Customer,

Thank you for buying the welding equipment made by DYTRON EUROPE, the largest Czech plastic welding equipment manufacturer. We do believe our high-quality and reliable product will satisfy your requirements.

Before applying your equipment for the first time, please read this Operator's Manual carefully and familiarize yourself with the information for safe and proper use and maintenance of the equipment.

2. Description of Equipment

Designed for professional use in workshops, the ST-160 welding equipment serves for the poly-fusion and butt welding of polymeric pipes: the butt welding is applicable for pipes up to 160 mm in diameter and poly-fusion welding for pipes 40 mm to 110 mm in diameter.

An electrical plane and welding mirror are fixed on a frame. A special clamp allows for fixing the adapting pipes less than 110 mm in diameter during poly-fusion welding. The welding equipment itself is placed on a table of steel tubes, separable if necessary. The complete set includes also a metal case with reducing inserts and other accessories.

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3. Technical Characteristics

Type of welding:	Poly-fusion and butt (face-to-face)	
Range of pipes:	Poly-fusion welding: 40 mm to 110 mm	
	Butt welding: up to 160 mm	
Type of attachments:	Paired	
Welder input:	1200 W	
Electric plane input:	550 W	
Voltage:	230 V, 50 Hz	
Temperature control:	By microprocessor	
Range of welding temperatures:	180 °C – 280 °C	
Plane control:	By speed variation	
Weight of the set:	72 kg	

4. Basic Accessories

Name	Diameter	Quantity
Quick-clamping device		4
Quick-clamping device inserts	40	8
	50	8
	63	8
	75	8
	90	8
	110	8
	125	8
	140	8
Welding attachments	40	1 pair
	50	1 pair
	63	1 pair
	75	1 pair
	90	1 pair
	110	1 pair
Adapting piece clamping device, left		1
Welding attachments, flat	170	1 pair
Sheet-metal case for accessories		1
Mobile table		1
Allen wrench 4		1
Allen wrench 8		1

5. ST-160 Special Accessories

Adapting piece clamping device, right Tightening wrench

6. Welding Equipment Operation

Before connecting the ST-160 equipment to electric power supply, attach flat attachments (for butt welding) or paired attachments (for poly-fusion welding) of needed diameter onto the welder heating element.

Plug the equipment mains lead in power system 230 V, with a fuse minimum 10 A. Check that the welder mains lead is plugged in the socket-outlet on the back side of electric plane, and set up the required welder temperature.

6.1 Welder Operation

The ST-160 welding equipment includes a POLYS P-4a TW welder as a standard. See the Welder Operation Instructions attached for details on the use of welders. The welder power cable plugs in the socket-outlet situated on the back side of plane.

The temperature displayed on welder is of informative character only. We recommend checking the attachment temperatures with the help of a contact thermometer (such as Dytron DT-meter) before starting the process of welding.

6.2 Principle of Poly-fusion and Butt Welding

The principle of poly-fusion welding consists in fusing the outer surface and inner surface respectively of the pipe and adapting piece to be welded. When heated, the pipe and adapting piece join providing a strong, permanent joint after becoming cold.

The principle of butt (face-to-face) welding is also simple – the faces of pipes to be welded are heated and joined after having been planed properly, and let cool down. The process of welding is completed when the joint becomes cold.

6.3 Butt Welding

Choose the inserts of appropriate diameter (each insert has its particular diameter marked on its outer side). Place the inserts into clamps and secure them with bolts. Fix a pipe in the clamp in such a way that the pipe edge is positioned approximately 2 cm from the edge of inside clamp.

By turning a handle, draw the clamps with fixed pipes away one from the other and tilt the plane into working position. The plane can only be turned on if placed in the working position; the plane has start-up locked up while in the lift-off position.

Switch the plane on using a button on the plane handle, and, applying moderate pressure, plane the faces of the pipes to be welded. Then lift the plane off and tilt the welder to working position.

By turning the handle, move the pipe ends towards the welder heating element and set up the pressure as required for heating the pipes. As soon as the pipe faces are heated up, move the pipes away one from the other by turning handle, remove the welder and join the pipe faces. Turn the handle until the pressure needed for welding is achieved. With the proper pressure set up, fix clamps in their positions with the help of brake lever and keep them in the positions for the time of cooling down. After the weld has become cold, release the brake lever, open clamps and remove the welded pipe.

6.4 Poly-fusion Welding

Remove the inside clamp mounted in the right section of frame after you have loosened the clamp bolt. Replace it with a clamp for fixing adapting pieces and secure the clamp with bolt.

Fix the pipe and adapting piece to be welded in clamps. Put paired attachments of adequate diameter on the welder heating element and heat them up. Tilt the welder into working position and, by turning handle, push the pipe and adapting piece onto attachments. Upon heating the pipe and adapting piece up, turn the handle until both the pipe and adapting piece slide from attachments; then lift the welder off and, by turning the handle quickly, join the pipe and adapting piece together. Tighten the brake lever to fix the joint for the time period of welding and cooling down. Release the brake lever after the joint has become cool, open clamps and remove welded pipe.

Important: The pipes (for butt welding) or pipe and adapting piece (for poly-fusion welding) intended to be welded must be of identical materials. Pressure and process intervals are specified by the pipe manufacturers.

7. Health and Safety

All products manufactured by DYTRON EUROPE s. r. o. have been manufactured in compliance with requirements of respective European technical standards and Declarations of Conformity have been issued. The technical requirements used to assess conformance are defined by 2014/35/EU and 2014/30/EU directives. The products are safe if used in a common way and in accordance with the instructions for use.

The following safety instructions shall be adhered to while working with welding equipment:

1. The equipment shall only be used for the purpose of which it was designed.

- 2. Welding shall be carried out in the environment which is free of aggressive gases, combustible substances or explosives.
- 3. The welding equipment must not:
 - come into contact with water,
 - be used in wet environment, or
 - be let turned on unattended.
- 4. Bringing any object or part of body close to any cutter irons, or slowing them down while running out must be avoided when planing is carried out.
- 5. Plane shall not be operated by an operator having his/her hand bandaged or finger protected with leather finger.
- 6. Operator shall wear undamaged clothing with close-fitting sleeves and no loosely flowing parts. The smock which is not close-fitting at the waist must be tucked in working suit trousers. Wearing an overall coat is inadmissible while operating a plane.
- 7. Operator shall have his/her hair protected with appropriate headgear as necessary while working with plane. The headgear must have no loose ends. A headscarf must be so tied that all hairs are covered.
- 8. Fusing attachments shall always be changed with the welder turned off.
- 9. Wearing protection gloves is recommended when changing fusing attachments.
- 10. After application, hot fusing attachments shall only be placed into a welding case or on fire-resistant mat.
- 11. Hot functional parts of the welder must be kept away from inflammable objects.
- 12. The welder heating element must not become in contact with power supply cable.
- 13. After the work has been completed, the welder shall be switched off by turning the switcher into OFF position, and supply cable shall be unplugged.
- 14. The supply cable shall be unplugged before carrying out lubrication, setting up or cleaning of the welding equipment, and before leaving the workplace.
- 15. Any repairs shall only be made by a qualified staff member of authorized service firm.
- 16. If any mechanical damage to the welder or supply cable appears, the supply cable shall be unplugged and welder not used until repair has been made by an authorized service firm.

8. Inspections

The product is delivered factory inspected. The user is obliged to arrange for the equipment inspections by an authorized organization pursuant to the legal regulations applicable in the particular country of use. At least once a year, inspection of the welder temperature control shall be carried out.

9. Disposal

A label with a crossed-out dustbin symbol, placed on the product or product packing, means that the product should not be disposed as common waste when the product service life is over. Such product should be taken to a collecting point destined for the recycling of electronic products and equipment. For more information about the product recycling, please contact local authorities, local collecting and waste disposal centre, or the company through which you have purchased the product.

10. Maintenance

No metal objects shall be used for cleaning the welder fusion surfaces to avoid damaging Teflon layers which are applied on fusing attachments. Clean the surfaces up using a wooden spatula or rag of natural material.

11. Warranty Conditions

- The manufacturer is responsible for the welding equipment standard of quality and defects, if any, for the period of time as stated in the Warranty Card attached, on condition that the equipment is used, operated and stored in the manner as is usual for the equipment of this kind, and especially that the requirements described in this Operator's Manual are conformed to.
- During the warranty period, any defect proved as having been caused by defective design, workmanship or material shall be made good free of charge.
- The warranty period shall be extended for the period of warranty repair.
- In no case DYTRON EUROPE s.r.o. assumes any liability for either the loss of profit, reputation or orders, or any accidental, special or consequential damages that have arisen in connection with the use of, or, on the contrary, impossibility to use this product.
- The defects caused by or associated with the following are not covered by the warranty:
 - improper operation of the equipment,
 - failure to comply with technical specifications for the operation of equipment,
 - ordinary wear and tear,
 - intentional damage,
 - damaged lead seals present on the equipment, and/or

- damage caused to the equipment by unavoidable event or natural disaster (such as fire, flooding, -theft, violent damage, etc.).
 No warranty may be applied without presenting the Warranty Card properly completed by a dealer.
 The Warranty Card forms an inseparable part of the equipment.
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