

93 years with you
Long tradition-customers trust



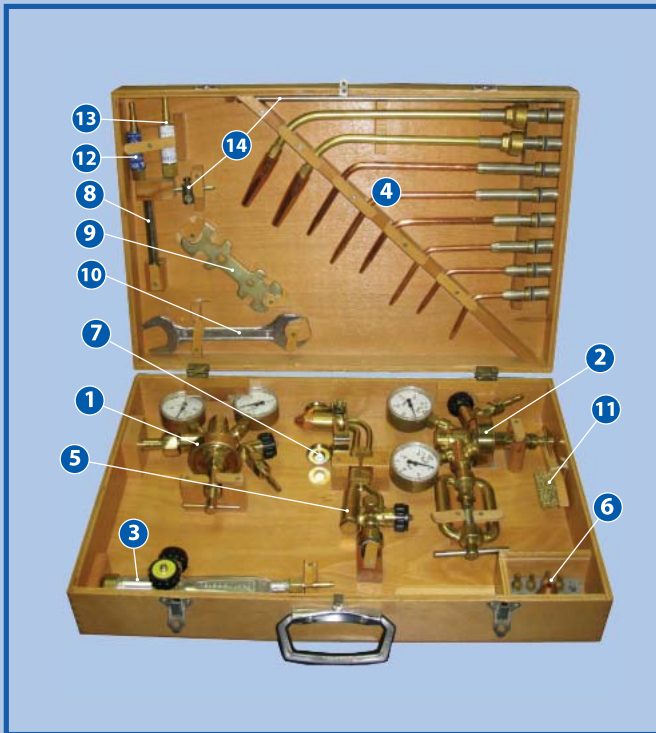
Teleoptik

GAS EQUIPMENT



The firm "Teleoptik gas equipment" Ltd. was founded in 1922 in Zemun, as the company for producing the telephone, optic and precise mechanic equipment. Over the years the company developed a wide production range. Among different accessories the production of gas equipment for gas welding and cutting was included. Production of the gas welding and cutting equipment had become a fundamental activity of our company. Nowadays, TELEOPTIK is esteemed leader in producing gas equipment on the whole, in this part of Europe. Owing to the long tradition, good quality and both human and technological resources, our equipment has been proved as the most reliable in all exploitation conditions and has been used in many private and state enterprises. Our production processes comply with ISO standards and products are tested by the reliable institutions. Constant checking during the production process as well as the final tests guarantee high quality of our products. Users of our equipment are all branches of industries and above all shipbuilders, miners, railroad enterprises, construction building firms and forgeries as well as all other branches with maintenance services. Our main target includes constant development in cutting and welding technologies, adaptable to the modern market demands as well as implementation of innovative solutions for our production processes.





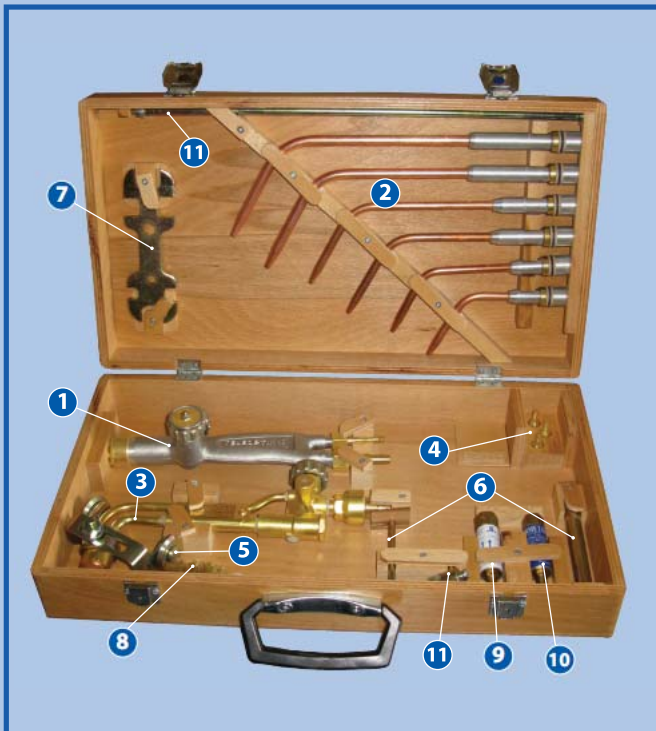
Gas welding and cutting set GZV-35.1

Gas welding and cutting set GZV-35.1 is used for:

- Cutting steel tins up to 300 mm
- Welding steel tins up to 30 mm
- The work principle : injector- under high pressure
- Burning gas: **acetylene**
- Performance to SRPS K.M6.02
- Weight sets: 12,5 kg

Integral parts of the set GZV-35.1 are:

- 1) Oxygen regulation valve type 311
- 2) Acetylene regulation valve type 436.6
- 3) Universal handrail burner for welding and cutting torch type 146-1
- 4) Set of 8 welding torches type 147.5. (6 burners) plus welding torches 147-7 and 147-8 for welding tins from 0.5 to 30 mm.
- 5) Burner cutter type 148.2.1
- 6) Kit of 2 external and 6 internal nozzles type 859 for cutting steel material thickness from 3 to 300 mm
- 7) Trolley type 148-4 to run torch cutting
- 8) Pipe key type 308-07
- 9) Combined key type 308-06
- 10) Fork key OK 30
- 11) Metal brush for cleaning
- 12) Flashback arrestor R-1 for acetylene
- 13) Flashback arrestor R-2 for oxygen
- 14) Radius bar for circular cuts type 308-1



Gas welding and cutting set GZV-25

Gas welding and cutting set GZV-25 is used for:

- Cutting steel tins up to 100 mm
- Welding steel tins up to 14 mm
- The work principle: injector-under high pressure
- Burning gas: **acetylene**
- Performance to SRPS K.M6.02
- Weight sets: 5.35 kg

Integral parts of the set GZV-25 are:

- 1) Universal handrail burner for welding and cutting torch type 146-1
- 2) Set of 6 welding torches type 147.5.1...6
- 3) Burning cutter type 148.2.1
- 4) Kit of 1 external and 4 internal nozzles type 859 for cutting steel material thickness from 3 to 100 mm
- 5) Trolley type 148-4 to run burner cutter
- 6) Pipe key type 308-07
- 7) Combined key type 308-06
- 8) Metal brush for cleaning
- 9) Flashback arrestor R-1 for acetylene
- 10) Flashback arrestor R-2 for oxygen
- 11) Radius bar for circular cuts type 308-1

Gas cutting set PBS-1



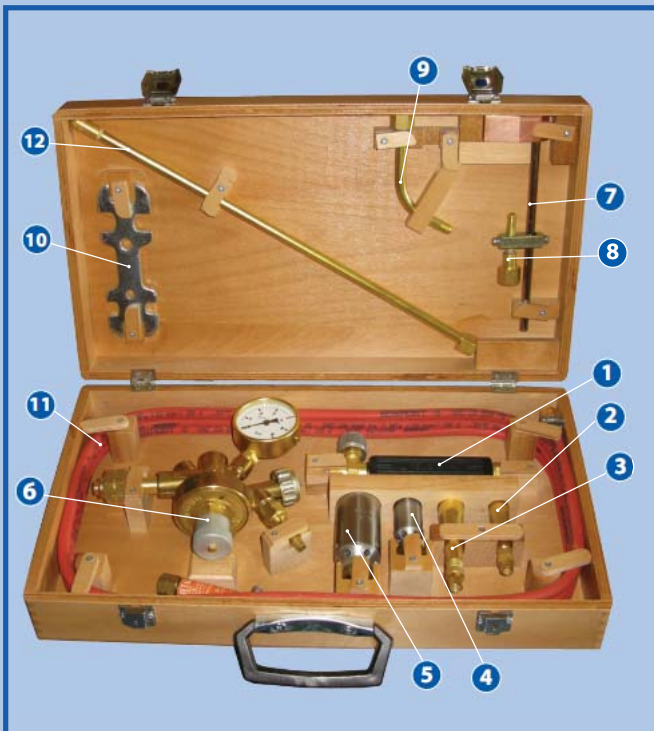
Gas cutting set PBS - 1 is used for:

- Cutting steel tins up to 300 mm
- The work principle: injector - under high pressure
- Burning gas: propane-butane
- Performance to SRPS K.M6.0
- Weight sets: 5.8 kg

Integral parts of the set PBS - 1 are:

- 1) Universal handrail burner for welding and cutting torch type 146-1
- 2) Burner cutter type 852.1.1
- 3) Set of 2 external and 6 internal nozzle type 852 for cutting steel material thickness from 3 to 300 mm
- 4) Trolley type 148-4 PB for the conduct of torch cutting
- 5) Pipe key type 308-07
- 6) Combined key type 308-06
- 7) Metal brush for cleaning
- 8) Radius bar for circular cuts type 308-1
- 9) Propane-butane regulation valve type 851

Gas warming and hard soldering set GZL-15



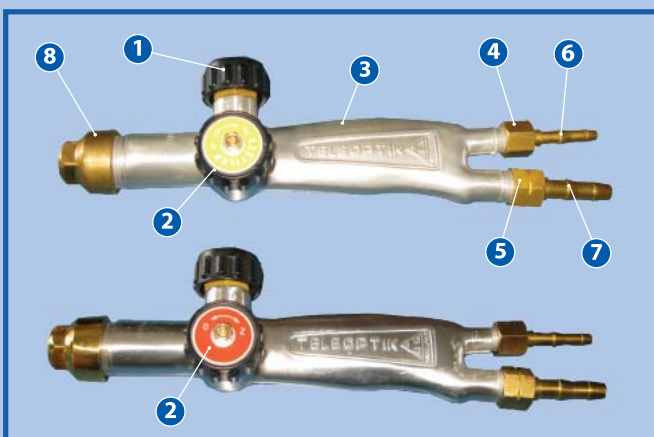
Gas warming and hard soldering GZL-15 is used for:

- Warming steel tins
- Hard soldering steel tins
- The work principle injector: At the outing of the injector, burning gas withdraws surrounding air, to obtain burning mixture
- Burning gas: propane-butane
- Performance to SRPS K.M6.020
- Weight sets: 5.5 kg

Integral parts of the set GZL- 15 are:

- 1) Universal handrail burner
- 2) Welding torch for hard soldering L1
- 3) Welding torch for hard soldering L2
- 4) Welding torch for warming 1
- 5) Welding torch for warming 2
- 6) Propane-butane regulation valve type 851.1
- 7) Soldering iron
- 8) Soldering iron connection for hard soldering L1
- 9) Soldering iron connection
- 10) Combined key type 308-06
- 11) Welding hose $\varnothing 4 \times 3$, with flashback arrestor and nut at the end with coil connection G1/4" left
- 12) Welding torch connection pipe for warming 1 and 2

Universal holder for welding torches and cutting burners



Universal holder components:

- 1) Valve for oxygen (blue sign plate)
- 2) Valve for burning gas (acetylene - yellow sign plate, other gases - red sign plate)
- 3) Universal body holder
- 4) Nut connection for oxygen coil R1 / 4"
- 5) Nut connection for burning gas coil R3 / 8"left
- 6) Oxygen inlet connection, inner diameter 6 mm
- 7) Burning gas inlet connection, inner diameter 8 mm
- 8) Welding torch nut connection

THERMAL PROCESSING SET GZG- 1



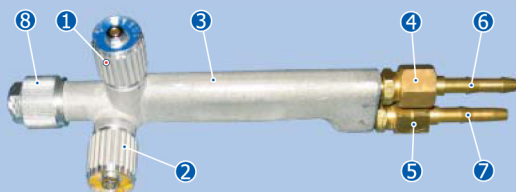
Thermal processing set GZG-1 is used for:

- Hard and light soldering
 - Preheating and warming during welding and cutting
 - Preheating material during deformation processing (bending, embossing)
 - Warming up material during setting up insulation , plastic floors and tiles
 - Metal surface cleaning
- 1-5 Torches tips of stainless steel pipe diameter Ø25(1), Ø40(2), Ø50.8(3), Ø60.3(4), Ø70.1(5)
 6) Connection pipe 500mm length
 7) Handrail with spring lever type 970-4.1
 8) Welding hose inner opening Ø8 with connection thread coil G1/4" left (for connecting at handrail with spring lever) and G3/8" left (for connecting at the outlet of the regulation valve)
 9) Combined key type 308-06

UNIVERSAL HANDRAIL TYPE 146-10 UND 146-11



Universal handles type 146-10 and 146-11 are used for gas welding and cutting and related processes, which require a higher consumption of the gas at work. The design is adapted to the conditions of exploitations, allows fine tuning of the gases flow and full safety at work. Connections measures: coil G3/8" for connection of oxygen line coil G1/2" left, for connection of fuel gas line (propane-butane, natural gas).
 Coil M33x1,5, for connection of consumer (universal handrail type 146-10)
 Coil M27x1,5, for connection of consumer (universal handrail type 146-11)



Universal small handrail type 144

Universal small handrail serves to bring the burning gas (acetylene, propane-butane, natural gas, methane and hydrogen) and oxidant (oxygen and earth under pressure) to the user who welds, solders, warms and melts.

The following flashback arrestors should be used at work: for oxygen type R2, for acetylene R1, for propane-butane R1A

Elements of the small universal handrail:

1. Oxygen valve
2. Burning gas valve
3. Small universal handrail body
4. Connection thread for oxygen coil G1/4"
5. Connection thread for burning gas coil G1/4" left
6. The connection for bringing oxygen inside the inner opening Ø6
7. The connection for bringing burning gas inside the inner opening Ø6
8. Welding torch thread

PRESSURE REDUCING VALVES WITH INDICATORS

Note:

Reducing valves with pressure indicators are installed on the bottles with technical gases and are used for pressure reduction gas, in the bottle for operating pressure, required for cutting, welding and other purposes. Reducing valves function on the principle of reversible activity. Safe from pressure growing in the low pressure chamber by the security valve.



Oxygen regulation valves

Regulation valve type	311	311.1	311.1S	311.3	311.4
Maximal inlet pressure (bar)	200	-----	-----	200	200
Maximal working pressure (bar)	10	10	10	20	30
Bottle valve connection	W21,8x1/14"		G3/8"	W21,8x1/14"	
Coil outlet connection	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"
Hose connection, opening (mm)	Ø6	Ø6	Ø6	Ø6	Ø6
Identification colour	blue	blue	blue	blue	blue
Note		No inlet pressure gauge	No inlet pressure gauge		



Nitrogen regulation valves

Regulation valve type	311.4N	311.11	311.12	311.13	311.14	311.12AS
Maximal inlet pressure (bar)	200	200	200	200	200	200
Maximal working pressure (bar)	40	1,5	10	20	36l/min	10
Bottle valve connection	W24,32x1/14"					G3/8"
Coil outlet connection	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"
Hose connection, opening (mm)	Ø6	Ø6	Ø6	Ø6	Ø6	Ø6
Identification colour	dark grey	dark grey	dark grey	dark grey	dark grey	dark grey
Note					Outlet pressure gauge replaced by flowmeter	Nitrous oxide



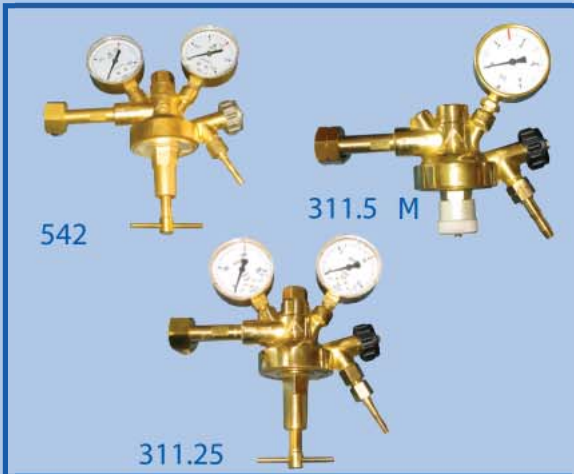
Air regulation valves

Regulation valve type	311.21	311.22	311.23	311.21M
Maximal inlet pressure (bar)	200	200	200	10
Maximal working pressure (bar)	1,5	10	20	2
Bottle valve connection	W21,8x1/14"			G3/4"
Coil outlet connection	G1/4"	G1/4"	G1/4"	G1/4"
Hose connection, opening (mm)	Ø6	Ø6	Ø6	Ø6
Identification colour	dark grey	dark grey	dark grey	dark grey
Note				



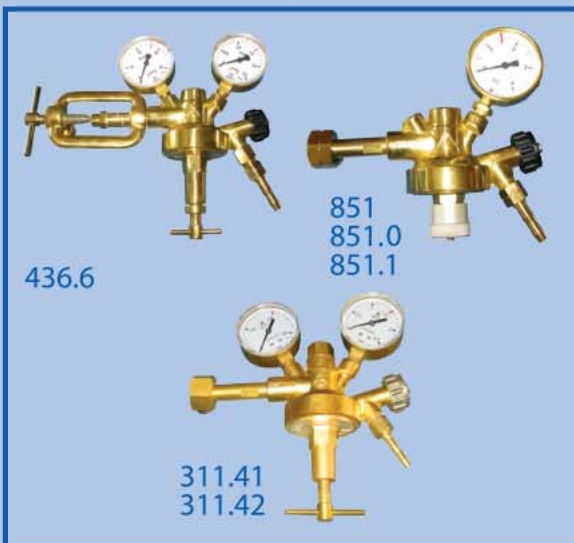
Carbon dioxide regulation valves (CO₂)

Regulation valve type	311.30	311.31	311.32	311.33	311.30M
Maximal inlet pressure (bar)	200	200	200	200	-----
Maximal working pressure (bar)	36l/min	1,5	10	20	36l/min
Bottle valve connection	W21,8x1/14"				G1/2"
Coil outlet connection	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"
Hose connection, opening (mm)	Ø6	Ø6	Ø6	Ø6	Ø6
Identification colour	dark grey	dark grey	dark grey	dark grey	dark grey
Note	Outlet pressure gauge replaced by flowmeter				Outlet pressure gauge replaced by flowmeter



Argon and mixtures regulation valves

Regulation valve type	311.25	311.40	311.50M	542
Type gas	sulfur hexafluoride	formir	Ferromix	Argon
Maximal inlet pressure (bar)	200	200	-----	200
Maximal working pressure (bar)	10	36l/min	36l/min	36l/min
Bottle valve connection	W21,8x1/14"	W21,8x1/14" left	G5/8"	W21,8x1/14"
Coil outlet connection	G1/4"	G1/4"	G1/4"	G1/4"
Hose connection, opening (mm)	Ø6	Ø6	Ø6	Ø6
Identification colour	dark grey	dark grey	dark grey	dark grey
Note		Outlet pressure gauge replaced by flowmeter	Outlet pressure gauge replaced by flowmeter	Outlet pressure gauge replaced by flowmeter



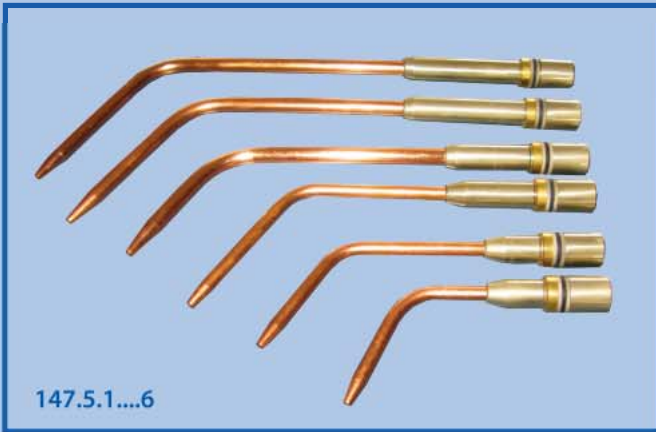
Burning gases regulation valves

Regulation valve type	311.41	311.42	436.6	851	851.0	851.1
Type gas	Hydrogen	Hydrogen	Acetylene	Propane-butane	Propane-butane	Propane-butane
Maximal inlet pressure (bar)	200	200	15	----	----	----
Maximal working pressure (bar)	1,5	10	1,5	1,5	2,5	4
Bottle valve connection	W21,8x1/4" left		hand vice	W21,8x1/4" left		
Coil outlet connection	G3/8" left	G3/8" left	G3/8" left	G3/8" left	G3/8" left	G3/8" left
Hose connection, opening (mm)	Ø8	Ø8	Ø8	Ø8	Ø8	Ø8
Identification colour	red	red	yellow	red	red	red
Note				No inlet pressure gauge	No inlet pressure gauge	No inlet pressure gauge



Network and bottle battery regulation valves

Regulation valve type	K-2	I-2	964.1	964.4	964.6
Type gas	oxygen	argon	oxygen	argon	CO ₂
Maximal inlet pressure (bar)	200	200	200	200	200
Maximal working pressure (bar)	10	10	10	10	10
Bottle valve connection	W21,8x1/14"		G1/2" (inner coil)		
Coil outlet connection	M20x1,5	M20x1,5	G1/2" (inner coil)		
Hose connection, opening (mm)	Ø8	Ø8	Ø8	Ø8	Ø8
Flow (mm ³ /h)	370	370	80	80	80
Note			No inlet pressure gauge	No inlet pressure gauge	No inlet pressure gauge



147.5.1...6

Welding torches type 147.5.1...6

Welding torches type 147.5.1...6 are used for classical welding, hard soldering and warming. Welding torches function on the injector principle and use **acetylene** and oxygen mixture. They are used only with universal handrail 146-1.

Welding torch type	147.5.1	147.5.2	147.5.3	147.5.4	147.5.5	147.5.6
Oxygen working pressure (bar)	2,5÷3					
Acetylene working pressure (bar)	0,1÷0,2	0,1÷0,2	0,2÷0,3	0,2÷0,3	0,3÷0,4	0,3÷0,4
Material thickness (mm)	0,5÷1	1÷2	2÷4	4÷6	6÷9	9÷14



147-7...-8

Welding torches type 147-7...-8

Welding torches type 147-7...-8 are used for classical welding, hard soldering and warming. Welding torches function on the injector principle and use **acetylene** and oxygen mixture. They are used only with universal handrail 146-1.

Welding torch type	147-7	147-8
Oxygen working pressure (bar)	3÷4	
Acetylene working pressure (bar)	0,4÷0,5	0,5÷0,7
Material thickness (mm)	14÷20	20÷30



147.3B.1...5

Welding torches type 147.3B.1...5

Welding torches type 147-3B.1...5 are used for classical welding, hard soldering and warming on inaccessible places, both in the corners and pipes. The size and shape of the welding torch tip enable work in very narrow space. By bending the welding torches can be easily put in the necessary position to work. The welding torches function on the basis of injector principle, using **acetylene** and oxygen mixture. They are used only with universal handrail 146-1.

Welding torch type	147.3B.1	147.3B.2	147.3B.3	147.3B.4	147.3B.5
Oxygen working pressure (bar)	2,5÷3				
Acetylene working pressure (bar)	0,1÷0,2	0,1÷0,2	0,2÷0,3	0,2÷0,3	0,3÷0,4
Material thickness (mm)	0,5÷1	1÷2	2÷4	4÷6	6÷9



147.4B.1...5

Welding torches type 147.4B.1...5

Welding torches type 147-4B.1...5 are used for classical welding, hard soldering and warming on inaccessible places, both in the corners and pipes. The size and shape of the welding torch tip enable work in very narrow space. By bending the welding torches can be easily put in the necessary position to work. The welding torches function on the basis of injector principle, using **acetylene** and oxygen mixture. They are used only with universal handrail 146-1.

Welding torch type	147.4B.1	147.4B.2	147.4B.3	147.4B.4	147.4B.5
Oxygen working pressure (bar)	2,5÷3				
Acetylene working pressure (bar)	0,1÷0,2	0,1÷0,2	0,2÷0,3	0,2÷0,3	0,3÷0,4
Material thickness (mm)	0,5÷1	1÷2	2÷4	4÷6	6÷9



147.11.2;4;6

Warming torch type 147.11.2;4;6

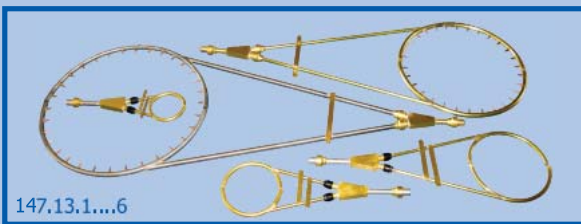
- Warming torch type 147.11.2;4;6 is used for:
- hard soldering and preheating when welding
 - the work principle: injector - under high pressure
 - burning gas: **Acetylene**
 - work only with universal handrail type 146-1
 - warming torch tip diameter: 147.11.2-1 Ø11 mm;
147.11.4-1 Ø19 mm;
147.11.6-1 Ø25 mm



147.12.2;3;4

Warming torch type 147.12.2;3;4

- Warming torch type 147.12.2;3;4 is used for:
- hard soldering and preheating when welding
 - the work principle: injector - under high pressure
 - burning gas: **Propane-butane**
 - work only with universal handrail 146-1
 - warming torch tip diameter: 147.12.2-1 Ø11 mm;
147.12.3-1 Ø19 mm;
147.12.4-1 Ø25 mm



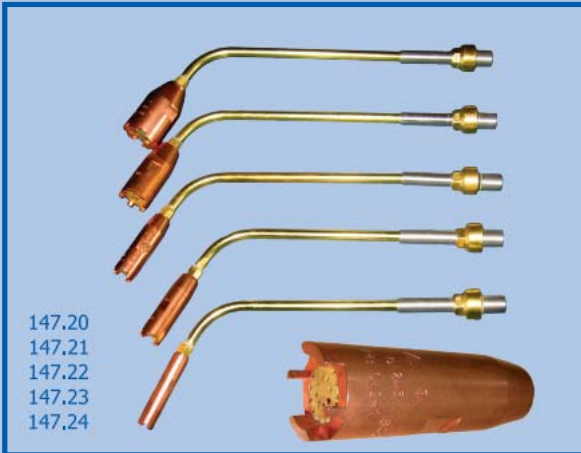
147.13.1...6

Round – warming torch type 147.13.1...4

Burning gas: **Propane-butane** which mixed with oxygen obtains the flame which is used for these activities:

- preheating of the pipes outer diameter 50-400 mm when welding
- releasing welding seams
- soldering and hard soldering
- bending and shaping
- preheating molds during smithing

Round-warming torch functions only with universal handrail 146-1



147.20
147.21
147.22
147.23
147.24

Intensive warming torch type 147.20...24

Intensive warming torch type 147.20...24 are used for intensive warming material by obtaining oxygen and **propane-butane** mixture. The tip of welding torch consists of two interior nozzles made of brass and an outer nozzle made of copper. The flame is formed in two concentric circles. The value of the pressures both of oxygen and propane-butane which are used during the torch in function as well as the work of the torch tip are presented in the table.

Warming torch type	Pressure (bar)		Torch tip	Warming torch tip diameter
	of oxygen	of propane-butane		
147.20	1÷2	0,5	147-20-1	Ø 18
147.21	2÷3	0,5	147-21-1	Ø 20
147.22	2÷5	0,5÷1	147-22-1	Ø 25
147.23	3÷6	0,5÷1	147-23-1	Ø 35
147.24	4÷8	1÷2	147-24-1	Ø 45



147.60.21
147.60.22
147.60.23

Warming torch type 147.60.21...22...23

Warming torches type 147.60.21 are used for intensive warming material. Construction of the torch tip obtains long working life of the torch as well as directed and controlled warming. Burning gas: **Acetylene**

Warming torch type	Torch tip	Warming torch tip diameter	Note
147.60.21	147.60.1	Ø 17	Warming torches function only with universal handrail 146-1
147.60.22	147.60.2	Ø 20	
147.60.23	147.60.3	Ø 22	



147.52
147.53

The flame straightening attachment type 147.52 and 147.53

The flames straightening attachment type 147.52 and 147.53 are used for gas warming and straightening of the steel tins. These flames straightening are used only with universal handrail 146-1. As burning gas uses **acetylene (type 147.53)**, respectively **propane-butane (type 147.52)**. The length of the flame is changeable, according to buyer's demands.



147.60 A

146.60.33A

Aluminothermic welding torch type 147.60

Aluminothermic welding torch type 147.60 is used for aluminothermic rail welding and functions only in a set with universal handrail 146-1. Warming both rails and molds is obtained with oxygen and **propane-butane** mixtures, through **22** or **23** flame sources. The work principle of the aluminothermic welding torch is by injector.

Torch type	Holes number at the welding torch head	Note
147.60A	22	no sequel
147.60.33A	33	no sequel
147.60	22	with sequel
147.60.33	33	with sequel



147.60

146.60.33

Warming torch for preheating and flame cleaning grease type 147.200

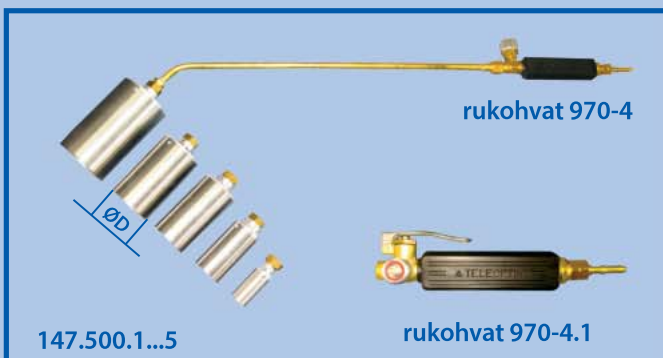
Warming torch type 147.200 is used for warming, preheating as well as flame cleaning grease from plastic sources before printing. All listed procedures are performed with **air** and **propane-butane** flame mixtures. The air working pressure is 3 -3,5 bar, and propane-butane is 0,3-0,35 bar. Warming torch functions only with universal handrail type 146-1.



147.200

Warming torch for preheating and flame cleaning grease type 147.500.1...5

Torch type	Burning gas	Diameter (mm)	Usage
147.500.1	Propane-butane p= 1,5 ÷ 4 бар and surrounding air mixture performs in the nozzle	25	- light and hard soldering - preheating at flame welding and cutting - preheating material during deformation processing (bending, embossing and molding) - metal surface tinning - combustion - the pipe length is 350, 500, 750 and 1000mm - the standard pipe length is 500mm
147.500.2		40	
147.500.3		50,8	
147.500.4		60,3	
147.500.5		76,1	



rukohvat 970-4

147.500.1...5

rukohvat 970-4.1

Thermal processing warming and soldering torch set type 970.1

Thermal processing warming and soldering torch set by using concentrated narrow flame could be used for:

- light and hard soldering
- warming
- cooling
- household needs
- burning gas: propane-butane
- connection measure: coil G1/4"



rukohvat 970-4

970.1

rukohvat 970-4.1

Warming torch type 147.800.46

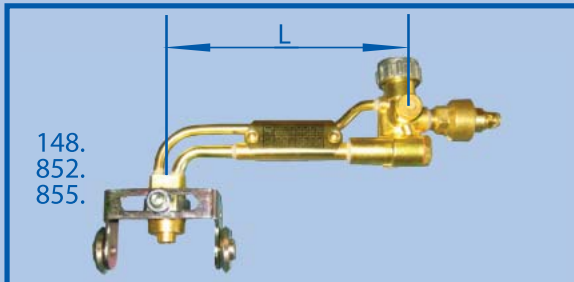
Warming torch type 147.800.46 is used for:

- preheating and warming up when flame welding and cutting
- to ease the tension in melded seams
- During bending and shaping
- burning gas: propane-butane
- oxidant: compressed air
- warming torch width is 800mm*
- the curvature radius of the carrier nozzle is 3.200mm*
- the nozzles number type 951.1-5 is 46 (forty six) pieces

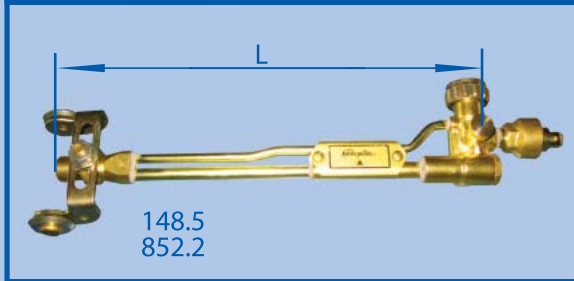
* These measures could be the order subject under special conditions



147.800.46



148.
852.
855.

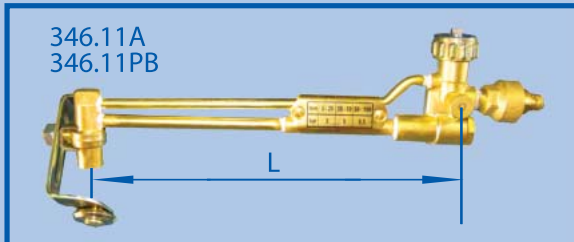


148.5
852.2

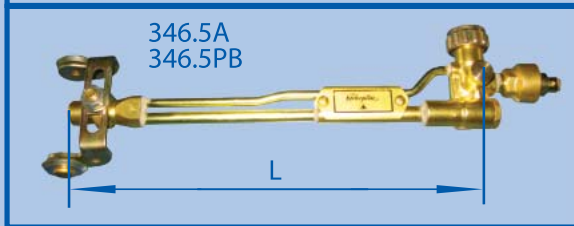
Cutting burners type 148; 852 and 855

Cutting burners are used only in a set with universal handrail type 146-1. The work principle is by injector.

Torch type	Length L *** (mm)	Cutting range (mm)	Burning gas	Cutting nozzles included	Note
148.2R	173	3÷300	Acetylene	859	* Cutting nozzles are not integral part of the cutting burner and they should be separately ordered **Cutting burner is delivered with no carts *** Cutting burner length could be the order subject under special conditions
148.2.1 **	173				
148.3	367				
148.4	487				
148.5	286				
852.1R	173				
822.1.1**	173		Propane-butane	852	
852.2	367				
852.3	487				
852.5	286				
855.5	173				
855.6	367				
855.7	487	Natural gas	855		



346.11A
346.11PB



346.5A
346.5PB

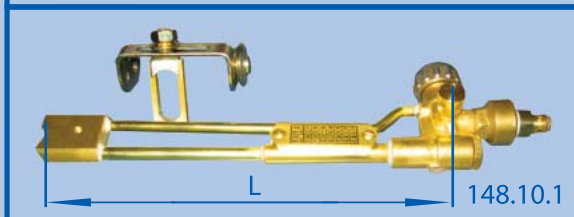
Cutting burners type 346

Cutting burners type 346 are used for cutting steel tins up to 300 mm. They are used for cutting at places where cutting burners types 148, 852 and 855 cannot be used near because of their size and perform cutting. They are used only in a set with universal handrail type 146-1. The work principle is by injector.

Torch type	Length L** (mm)	Angle between the axis head and tubes of the cutting burner	Burning gas	Cutting nozzles included	Note
346.11A	276	90°	Acetylene	346.2	* Cutting nozzles are not integral part of the cutting burner and they should be separately ordered ** The cutting burner length could be the order subject under special conditions
346.11PB	276	90°	Propane-butane	346.5	
346.5A	286	180°	Acetylene	346.2	
346.5PB	286	180°	Propane-butane	346.5	



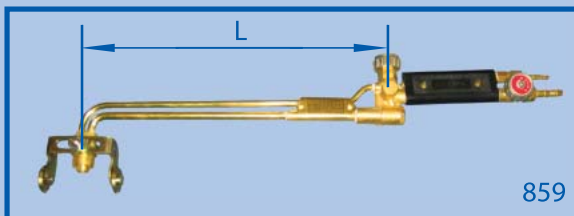
148.10



148.10.1

Cutting burners type 148.10 and 148.10.1

Cutting burners type 148.10 and 148.11 are used for cutting steel tins up to 100 mm. They are used for cutting at places where other cutting burners cannot be used near because of their size and perform cutting. This is most often in shipbuilding. They are used only in a set with universal handrail type 146-1. The work principle is by injector. As burning gas is used **acetylene**. Angle between the axis head and tubes of the cutter burner is 90° degrees (type 148.10) or 180° degrees (type 148.10.1). Cutting is performed by nozzles type 148.10-004...007 (for oxygen) and 148.10-008 (for oxygen and acetylene mixture). Depending of the material thickness in cutting, the oxygen nozzle is being chosen while the mixture nozzle remains one and the same for all cutting ranges.

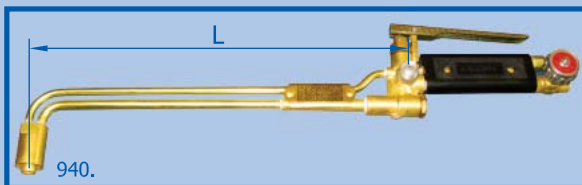


859

Cutting burners with handrail type 859

Cutting burners with handrail type 859 are used for gas steel cutting up to 300 mm and they function by the injector principle. Cutting is performed by oxygen jet under pressure, as burning gas is used **acetylene, propane-butane or natural gas**. Cutting burners are produced in various shapes and length, depending of the usage and exploitation conditions.

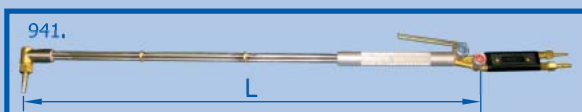
Torch type	Burning gas	Cutting range (mm)	Length L ** (mm)	Usage	Cutting nozzles included	Note			
859.1.1	Acetylene	3÷300	173	without carts	859	* Cutting nozzles are not integral part of the burner cutter and they should be separately ordered ** The cutting burner length could be the order subject under special conditions			
859.1.2			173	with carts					
859.1.3			367	with carts					
859.1.4			286	with flat head					
859.1.5			487	with carts					
859.1.6			173	with head type 346 and carts					
859.2.1			250						
859.2.2			350						
859.3.1			Propane-butane	3÷300			173	without carts	852
859.3.2							173	with carts	
859.3.3							1200	with carts	
859.3.4							367	with carts	
859.3.1.950	950	with carts							
859.4.1	Natural gas	3÷300			367	without carts	855		
859.4.2			487	with carts					



Cutting burners with handrail type 940

Cutting burners with handrail type 940. are used for gas steel cutting up to 300 mm and they function by the injector principle. Cutting is performed by oxygen jet under high pressure, and as burning gas is used **acetylene, propane-butane or natural gas**. Cutting burners are equipped with quick opening oxygen valve for cutting. Cutting burners are produced in various shapes and length, depending of the usage and exploitation conditions.

Torch type	Burning gas	Cutting range (mm)	Length L ** (mm)	Usage	Cutting nozzles included *	Note
940.1.1	Acetylene	3÷300	173	without carts	859	* Cutting nozzles are not integral part of the burner cutter and they should be separately ordered ** The cutting burner length could be the order subject under special conditions
940.1.2			173	with carts		
940.1.3			286	with flat head and carts		
940.1.4			367	with carts		
940.1.5			487	with carts		
940.1.6	Propane-butane	3÷300	173	with head type 346 and carts	346.2	
940.3.1			173	without carts		
940.3.2			173	with carts		
940.3.3			286	with flat head and carts	852	
940.3.4			367	with carts		
940.3.5	487	with carts				
940.4.1	Natural gas		367	with carts	855	



Cutting burners with handrail type 941

Cutting burners with handrail type 941. are used for gas steel cutting up to 300 mm. Cutting burners are equipped with quick opening valve for oxygen in cutting which enable fast and easy material cutting beginning. Burning gas is **acetylene or propane-butane**. The burner cutter length could be changed under special conditions.

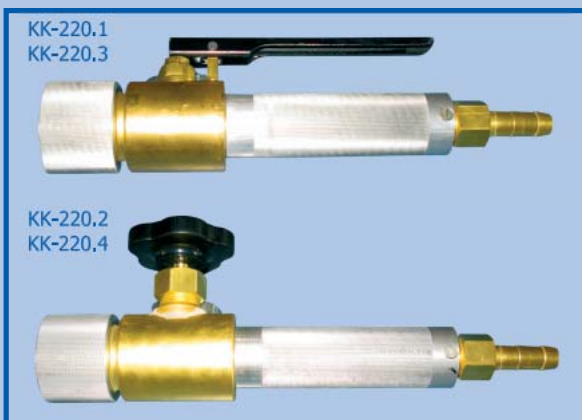
Torch type	Burning gas	Cutting range (mm)	Length L (mm)	Note
941.1	Acetylene	3÷300	500	The cutting burners in its work use the nozzles with flat shutting surface
941.2	Acetylene		800	
941.2.1	Propane-butane		500	
941.2.2	Propane-butane		800	



Cutting burners type 950

The work principle is by injector. Oxygen connecting coil is G3/8", but for burning gas G3/8" left. Nozzles are not compound part of the burner cutter and they should be separately ordered.

Torch type	Usage	Burning gas	Nozzles	Length L (mm)
950.1	cleaning	natural gas	inner 950-030	1100
950.2		propane-butane	outer 950-040	
950.3	cutting	natural gas	300-400 950-051	770
950.4		propane-butane	400-500 950-052	
950.5		propane-butane	966	1000

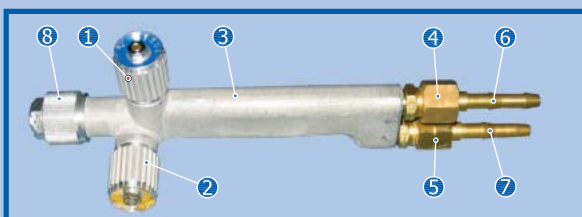


Cutting handrail by oxygen type KK-220

Cutting handrail by oxygen type KK-220 is used to regulate the oxygen flow during the rough cutting of the hardened founded iron or aluminum great big (thickness) and distorted shapes.

Note: At the inlet of the universal handle the flashback arrestor type T8"0" must be plugged in.

Handrail type	opening mode	Outing diameter connection coil	Connection coil
KK-220.1	with handle (fast opening valve)	Ø3/8"	G1/2"
KK-220.2	with wheel (gradually opening valve)	Ø3/8"	
KK-220.3	with handle (quickly opening valve)	Ø6	
KK-220.4	with wheel (gradually opening valve)	Ø6	



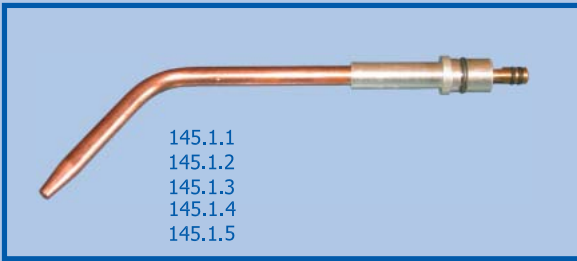
Universal small handrail type 144

Elements of the small universal handrail:

Universal small handrail serves to bring the burning gas (acetylene, propane-butane, natural gas, methane and hydrogen) and oxidant (oxygen and earth under pressure) to the user who welds, solders, warms and melts.

The following flashback arrestors should be used at work: for oxygen type R2, for acetylene R1, for propane-butane R1A

1. Oxygen valve
2. Burning gas valve
3. Small universal handrail body
4. Connection thread for oxygen coil G1/4"
5. Connection thread for burning gas coil G1/4" left
6. The connection for bringing oxygen inside the inner opening Ø6
7. The connection for bringing burning gas inside the inner opening Ø6
8. Welding torch thread



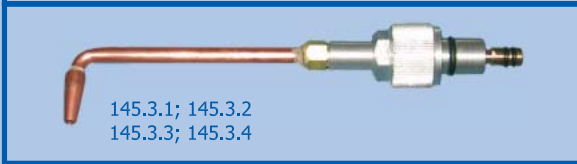
Welding torches type 145 (they are used only with universal small handrail type 144)

Welding torches type 145 function by injection principle, and as burning gas is used **acetylene**. They are used only in a set with universal small handrail type 144.

Welding torch type	145.1.1	145.1.2	145.1.3	145.1.4	145.1.5
Oxygen working pressure (bar)	2,5÷3				
Acetylene working pressure (bar)	0,1÷0,2	0,1÷0,2	0,1÷0,2	0,2÷0,3	0,2÷0,3
Material thickness (mm)	0,2÷0,5	0,5÷1	1÷2	2÷4	4÷6



Welding torch type	145.2.1	145.2.2	145.2.3	145.2.4
Oxygen working pressure (bar)	2,5÷3			
Acetylene working pressure (bar)	0,1÷0,2	0,1÷0,2	0,2÷0,3	0,2÷0,3
Material thickness (mm)	0,5÷1	1÷2	2÷4	4÷6



Welding torch type	145.3.1	145.3.2	145.3.3	145.3.4
Oxygen working pressure (bar)	2,5÷3			
Acetylene working pressure (bar)	0,1÷0,2	0,1÷0,2	0,2÷0,3	0,2÷0,3
Material thickness (mm)	0,5÷1	1÷2	2÷4	4÷6



Warming torches type 145.4 and 145.5 are used for: (they are used only with universal small handrail type 144)

Warming torches type 145.4 and 145.5 are used for:

- hard soldering and preheating when welding
 - warming material
 - the work principle: injector
 - burning gas: **acetylene (145.4)**
propane-butane (145.5)
 - they are used only in a set with universal small handrail type 144
- Heating torch tip diameter \varnothing 11mm



Hand cutting nozzles

Tables representing nozzles for hand cutting depending on the burning gas which is used

	Nozzle type			Cutting range (mm)
	852	855	859	
inner	852.003	855.003	859-010	3÷10
	852.004	855.004	859-011	10÷30
	852.005	855.005	859-012	30÷60
	852.006	855.006	859-013	60÷100
	852.007	855.007	859-014	100÷200
	852.008	855.008	859-015	200÷300
outer	852.009	855.009	859-016	3÷100
	852.010	855.010	859-017	100÷300
burning gas	propane-butane	natural gas	acetylene	
function in a set with burner cutter	852	855	148 and 859	



Hand cutting nozzles type 148.10-004...-008

Tables representing nozzles for hand cutting type 148.10-004...-008

Nozzle type	Nozzle mark	For gas	Cutting range (mm)
148.10-004	M1	oxygen	3÷10
148.10-005	M2	oxygen	10÷30
148.10-006	M3	oxygen	30÷60
148.10-007	M4	oxygen	60÷100
148.10-008	M5	oxygen and acetylene mixture	3÷100
acetylene (A)			

Nozzles type 148.10-004...-008 are used for hand cutting by cutting burners type 148.10 and 148.10.1. Burning gas: **acetylene**. Nozzles marked M1, M2, M3, M4 should be installed at the burner cutter head on the vertical hole and nozzle marked M5, should be installed at the oblique hole.



Hand cutting nozzles are used only in a set with burner cutter type 346

Tables representing hand **cutting** nozzles type 346.2 and 346.5

Nozzle type		Nozzle mark	Cutting range (mm)
346.2.1	346.5.1	0,5	5÷20
346.2.2	346.5.2	1	20÷50
346.2.3	346.5.3	1,5	50÷100
346.2.4	346.5.4	2	100÷200
346.2.5	346.5.5	2,5	200÷300
acetylene (A)	propane-butane (PB)		



Tables representing nozzles for hand **blowing out-gouge** type 346-3 and 346-7

Nozzle type		Nozzle mark	Blowing out-gouge range (mm)
346-3-1	346-7-1	0	5÷7
346-3-2	346-7-2	1	7÷10
346-3-3	346-7-3	2	10÷15
346-3-4	346-7-4	3	15÷20
acetylene (A)	propane-butane (PB)		



Nozzles for hand blowing out-gouge type 853

Nozzles assembly 853-1 and 853-1-5 are used for blowing out-gouge . As burning gas these nozzles use acetylene and oxygen is oxidant. These nozzles are used only in a set with burner cutters type 148; 859 and 940

Nozzles assembly 853-2 and 853-2-5 are used for blowing out-gouge . As burning gas these nozzles use propane-butane and oxygen is oxidant. These nozzles are used only in a set with burner cutters type 852; 859 and 940



Machine cutting nozzles type 960 and 966

Tables representing machine cutting nozzles type 960 and 966

	Nozzle type		Cutting range (mm)
	960	966	
inner	960-015	966-015	3÷10
	960-016	966-016	10÷25
	960-017	966-017	25÷40
	960-018	966-018	40÷60
	960-019	966-019	60÷100
	960-020	966-020	100÷200
outer	960-021	966-021	200÷300
	960-022	966-022	3÷100
	960-023	966-023	100÷300
burning gas	acetylene (A)	propane-butane (PB)	
burner cutter included	960	966	



Machine cutting nozzles type 346.11.1....7

Machine cutting nozzles type 346.11.1....7 are used for cutting steel tins up to 300 mm at automatic or semi automatic machines. As burning gas machine cutting nozzles use **acetylene** which is marked "A" at the nozzle body. Outer surfaces are nickel layer protected and it greatly extends nozzle lasting and improve cutting quality.

Nozzle type	Cutting range marked on the nozzle	Nozzle number
346.11.1	3÷15	1
346.11.2	15÷35	2
346.11.3	35÷60	3
346.11.4	60÷100	4
346.11.5	100÷150	5
346.11.6	150÷200	6
346.11.7	200÷300	7





951.1-5

Warming nozzle type 951.1-5

Warming nozzle type 951.1-5 are used for both hard and light soldering, preheating at flame welding and cutting, warming, bending, molding, tinning and etc. Outer nozzle is external diameter steel 15 mm, and interior one is of coiled brass, connection coil is M10x1 mm. Nozzles use earth under pressure and **propane-butane** mixture at work. Warming flame consist of central and concentric stabilising flame.



950-051
950-052

Hand cutting nozzles type 950-051 and 950-052

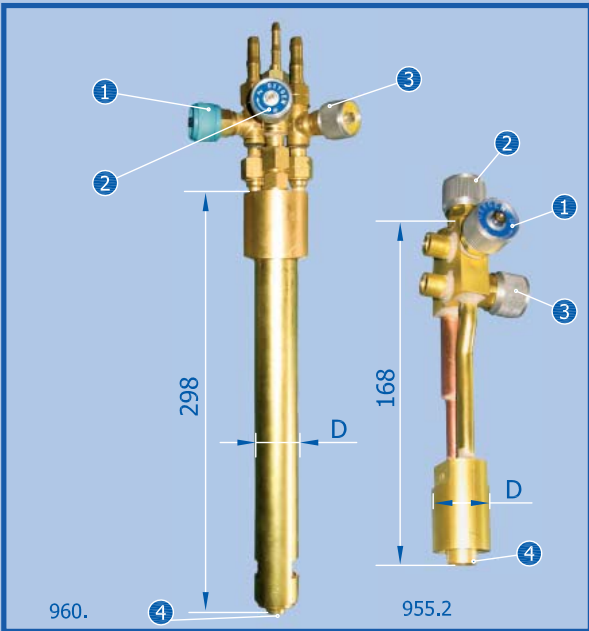
Hand cutting nozzles type 950-051 and 950-052 are used for hand cutting non alloyed steel. Nozzles type 950-051 are used for cutting steel thickness from 300 to 400 mm and nozzles type 950-052 for cutting steel from 400 to 500 mm. As burning gas these nozzles use **natural gas, coke gas or propane-butane**. Nozzles are used only in a set with burner cutter type 950.3 and 950.4



950-030
950-040

Surface cleaning nozzles type 950-039 and 950-040

Nozzles type 950-030 and 950-040 are used for surface cleaning (flaming) steel ingots. These two nozzles together make one whole, so they are used as such. As burning gas they use: **natural gas, coke gas or propane-butane**. Nozzles are used only in a set with cutting burners type 950.1 and 950.2



960.

955.2

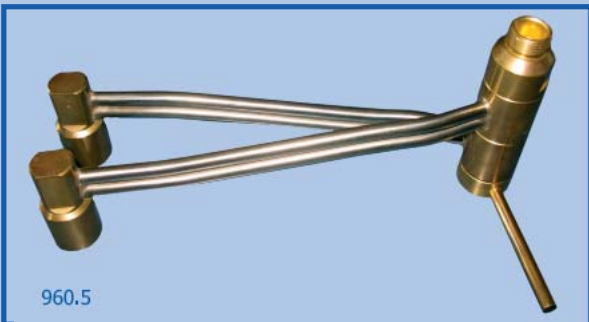
Machine cutting burner type 960 and 955.2

Machine cutting burners are constructed and intended for cutting steel tins up to 300 mm. They are built on the cutting machines (machine and semi automatic machines).

	Machine cutter type			
	960.1	960.2	960.11A **	955.2
cutting range (mm)	3÷300			3÷100
Burning gas	Acetylene	propane-butane, natural gas	Acetylene, propane-butane	Acetylene, propane-butane
Bolt valves and connection coil	* 1) Cutting oxygen valve type 961.2 (R3/8") 2) Warming oxygen valve type 961.5 (R3/8") 3) Burning gas valve type 961.3 (R3/8")			1) Cutting oxygen valve 2) Warming oxygen valve 3) Burning gas valve
Connection measures (mm)	D = Ø32			D = Ø37
Nozzles *	4) 960	4) 966	4) 346.11	4) 960 and 966

* Not compound elements of machine cutting burner and they are separately ordered

** The burner cutter head is constructed so as in function using nozzles in the family of 346.11 all other measures are identical with the measures of the burner cutter type 960.1 and 960.2



960.5

The strip cutting torch type 960.5 and 960.5.1

The strip cutting torch type 960.5 is settled at the machine burner cutter type 960 and is used for cutting steel plates. As burning gas is used acetylene or propane-butane, and cutting nozzles are of the families of 960 and 966

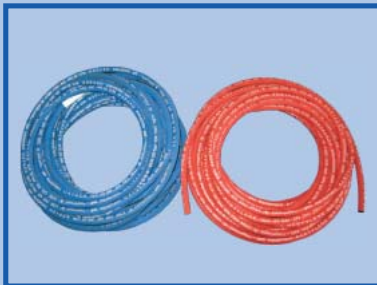
The strip cutting torch type 960.5.1 is settled at the machine burner cutter type 960 and is used for cutting steel plates. As burning gas is used acetylene or propane-butane, and cutting nozzles are in the family of 346.11.



Propane-butane cylinders valves type 973.1 and 973.2

Propane-butane cylinders valves type 973.1 is settled at the bottle filling amount from 5 to 15 kg. The valve corresponds to the standard SRPS M.C5.350
 Propane-butane cylinders valves type 973.2 is settled at the bottle filling amount 1,2 and 3 kg. The valve corresponds to the standard SRPS M.C5.352
 We have been producing the protecting stopper type 973.4 which protects the valve from the tiniest specks and at the same time enable easier bottle transport. Both of the valves and the stopper are tested according to the standard SRPS M.C5.390

Additional equipment



Welding hoses

- For oxygen (blue) inner opening Ø4 and Ø6
- For burning gases (red) inner opening Ø4, Ø6, Ø8 and Ø10 mm



Usage of the flashback arrestors:

1. Type R – Installation at the universal handrail and at the regulation valves
2. Type M – Installation at the machine cutting torches:
3. Type T8 – Installation at the handrail type KK-22 T8“0“ and at the network bottle



Radius bar for cutting torches

Radius bar serves for cutting circles of maximal diameter 878mm. Radius bar type 308-1 is settled at the trolley type 148-4 and radius bar type 308.2 functions without trolley.



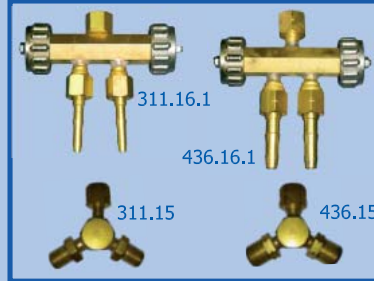
Trolley to run torch cutting

Torch cutter trolley serves to run torch during cutting, and constantly keeps the distance between the nozzle and the material as well as the constant cutting speed. The trolley type 148-4 is used for acetylene cutting torches and the type 148-4PB is used for other burning gases cutting torches. The trolley type 148-4 serves for cutting large diameter pipes



Connection thread and hose nipples

Connection thread coil: G1/4“; G1/4“ levi, G3/8“; G3/8“levi; G1/2“; G1/2“left;
 Hoses linkers - small pipes for welding hoses named opening Ø4, Ø6, Ø8, Ø10, and Ø12 mm
 Hose nipples for growing length of the welding hoses named opening Ø4, Ø6, Ø8, Ø10, and Ø12 mm



Pitchfork

Pitchfork (adapter) which enable more hose lines to be connected at the regulation valve outlet.



Clamps and rings

Clamps and rings for all welding hoses dimensions.



Cleaning equipment

Cleaning equipment for burners and nozzle tips. This equipment make quality flame much better. During welding and cutting the danger from the reverse flame is much lesser.

Teleoptik gas equipment products at work



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