



ESP-101 PLASMARC® CUTTING & GOUGING SYSTEM

ESP-101 Plasmarc™ System

The ESP-101 is a multipurpose 100 amp plasma cutting system for mechanized cutting at 100% duty cycle. Uses ESAB's Smart Plasma concept to provide a plasma cutting console that is ideal for a variety of mechanized cutting applications.

Equipped with the patented PT-37 torch, it cuts up to 1 inch using air as the plasma and shielding gas. Utilizing a blowback start and an electronically controlled pilot arc, the PT-37 sets a new standard for starting reliability, cutting characteristics and consumable life.

- 100% Duty Cycle for enhanced productivity allowing for continuous operation even at maximum thickness.
- Utilizes a "drawn arc" to initiate the cut which eliminates high frequency interference from the starting circuits.
- Electronically controlled pilot arc provides for consistent starting and longer consumable life.
- A Gouging mode allows for higher operating voltages at a reduced current for demanding mechanized plasma gouging applications which require long arcs.
- A full CNC/Robotic interface with Arc Voltage Height Control support is standard.
- Adapter plugs to match competitive system interface cables are available.
- An optional remote starting system allows the torch to be located up to 150' (45m) away from the power supply.
- Machined torch body with 1 3/8" (35mm) metal handle, available with and without 32-pitch rack to fit industry standard torch holders.
- Robust machined torch components provide for reliability, durability and ease of maintenance.
- Metal nozzle and shield stand up to the toughest cutting conditions.
- Wear parts are available individually, in sets and in value packs which eases ordering and saves money.
- Three year warranty on console
- One year warranty on torch

Specifications

ESP-101 System

Cut capacity..... Up To 1" (25.4 mm) for Carbon Steel, Stainless Steel, Aluminum
 Output 100% duty cycle..... 100 A
 Input 3 phase, at rated load..... 20KVA, 50/60 Hz
 Input 3 phase, at rated load..... 208/230/380/400/460/475/575 Volts
 Input 3 phase, at rated load..... 54/49/29/28/25/24/20 A
 Min. Air Requirements 500 cfm @ 80 psig (236 l/min @ 5.5 bars)

ESP-101 380/400V CE and ESP-101 460V

Dimensions Length..... 26.25" (667 mm)
 Height..... 19.39" (493 mm)
 Width 15.51" (394 mm)
 Weight 125 lb (56.7 kg)

ESP-101 MultiVoltage

208/230/400/460/475/575 CSA
 Dimensions Length..... 26.25" (667mm)
 Height..... 35.00" (889mm)
 Width..... 15.51" (394mm)
 Weight 301 lb (136.5 kg)

Instruction Literature0558005965
 Sales Literature..... PAC-21169



Torch

PT-37 In-Line

The ESP-101 uses the PT-37 mechanized torch. For breakdown of parts and cut-speed charts, refer to PT-37 data page 37.

Ordering Information

Power Supplies

ESP-101 Console 380/400V CCC/CE..... 0558005215
 ESP-101 Console 460V..... 0558004880
 ESP-101 Console MultiVoltage 0558004881

PT-37 Torches

PT-37 Torch with rack 4.5' (1.3m)..... 0558004860
 PT-37 Torch with rack 17' (5.2m)..... 0558004861
 PT-37 Torch with rack 25' (7.6m)..... 0558004862
 PT-37 Torch with rack 50' (15.2m)..... 0558004863
 PT-37 Torch without rack 4.5' (1.3m)..... 0558004894
 PT-37 Torch without rack 17' (5.2m)..... 0558004895
 PT-37 Torch without rack 25' (7.6m)..... 0558004896
 PT-37 Torch without rack 50' (15.2m)..... 0558004897

Start-Up Consumable kit

Start-Up Kit, 100 amp, PT-37..... 0558004883

Control Method

CNC Cable 30ft (9.1m) 57002248
 CNC Cable 50ft (15.2m) 57002249
 Remote Hand Switch, 25' (7.6m)..... 0558005548
 Remote Hand Switch, 50' (15.2m)..... 0558005549

Optional Remote Junction Box and Extension Hoses & Cables

Remote Junction Box PT-37 0558004887
 Hose/Cable Bundle RJB 50' (15m)..... 0558004888
 Hose/Cable Bundle RJB 100' (30m)..... 0558004889

Optional Accessories

Torch holder, manually adjustable, 32 pitch rack..... 0558005926
 Plate Rider assembly..... 2238229

PT-37 Consumables & Wear parts

Electrode PT-37 0558004875
 Swirl Baffle 30-70 Amp PT-37..... 0558005217
 Swirl Baffle 100 Amp PT-37..... 0558004870
 Nozzle 30A PT-37 0558005218
 Nozzle 50A PT-37 0558004878
 Nozzle 70A PT-37 0558005219
 Nozzle 100A PT-37 0558004879
 Nozzle Retainer PT-37..... 0558004882
 Shield 100 Amp PT-37 0558006910
 Shield 30-70 Amp PT-37..... 0558005216

PT-37 Consumable Kits & Sets

Consumable Set 50A PT-37 (1 nozzle, 1 electrode).... 0558004884
 Consumable Set 100A PT-37 (1 nozzle, 1 electrode)... 0558004885
 Value Pack 100A PT-37 (12 nozzles, 8 electrodes) 0558004886

Mechanized ESP



Plasmarc™ Package Selection Guide

Model	See Page	Output Current	Cycle	Torch Compatibility											Cut Capacity Carbon Steel	
				Duty PT-34	PT-31 XL	PT-31 XLPC	PT-32 EH	PT-37	PT-38	PT-251	PT-26	PT-35	PT-20AMX PT-21AMX	PT-19XLS PT600		
Handy Plasma® 125	8	11 A	30%	●												1/8 inch 3.18 mm
Handy Plasma® 250	9	18 A	20%		●											1/4 inch 6.35 mm
Handy Plasma® 380	10	15-30 A	35%		●											3/8 inch 9.5 mm
Handy Plasma® 550	11	15-35 A	40%		●											1/2 inch 12.7mm
PowerCut® 650	13	22-40 A	100%			●										5/8 inch 15.9 mm
PowerCut® 875	15	10-60 A	60%				●									7/8 inch 22 mm
PowerCut® 1300	17	20-70 A	60%					●	●							1 1/4 inch 32 mm
PowerCut® 1600	19	20-90 A	40%					●	●							1 1/2 inch 38 mm
ESP-50	21	20-50 A	100%									●				1/2 inch 12.7 mm
ESP-101	23	25-100 A	100%					●								1 1/4 inch 32 mm
ESP-150	24	30-150 A	90%								●			●		2 inch 50.8 mm
ESP-200	28	50-200 A	100%									●		●		2 inch 50.8 mm
Deuce Pack 150	26	30-300 A	90%							●	●				Special Order	4 inch 101.6mm

Plasmarc™ Torch Selection Guide

Torch	See Page	Output	Torch Type	Cutting Gas	Shielding Gas	Cooling Method	Torch Head Angle	Lengths Available	Power Supply Compatibility
PT-34	8	11 A	Man	Air	N/A	Gas	75°	15 ft.	HandyPlasma® 125
PT-31XL	32	50 A	Man	Air	N/A	Gas	75°	25 & 50 ft.	PCM-500i HandyPlasma® 550, HandyPlasma® 380
PT-31XLPC	32	50 A	Man	Air	N/A	Gas	75°	25 & 50 ft.	PowerCut® 650
PT-27	41	80 A	Man	Air	N/A	Gas	75°	25 & 50 ft.	PCM-875, PCM-1125
PT-32EH	34	90 A	Man	Air	N/A	Gas	90°	25 & 50 ft.	PowerCut® 875, PowerCut® 1125, PowerCut® 1250, PowerCut® 1500
PT-37	37	100	Mech	Air	N/A	Gas	In Line	4-1/2, 17, 25, 50 ft.	PowerCut® 1300, PowerCut® 1600, ESP-101
PT-38	39	90	Man	Air	N/A	Gas	90°	25, 50 ft.	PowerCut® 1300, PowerCut® 1600, ESP101
PT-25	45	100 A Air 150 A N ₂ ,H-35	Man	Air, N ₂ , H-35	Air, N ₂ ,CO ₂	Gas	90°	25 & 50 ft.	ESP-100i
PT-251		300 A	Man &	H-35 Mech	N/A	Water	70° & 90°	25 & 50 ft.	Deuce Pack 150
PT-26	47	300 A	Man & Mech	Air, N ₂ , H-35	Air, N ₂ , CO ₂	Water	70°, 90° & 180°	25 & 50 ft.	Deuce Pack 150, ESP-150, ESP-200
PT-20AMX PT-21AMX	51	100 A	Mech	Air	N/A	Gas	Inline	4-1/2, 17, 50 ft.	ESP-100i, PCM-150, (w/adaptor): PCM-875, PCM-1125, (PC-1250, PC-1500 w/PT-2 AMX only)
PT-35	21	50 A	Mech	Air	N/A	Gas	Inline	25 & 50 ft.	ESP-50

Recommended Cutting Gases

Compressed Air is the most commonly used gas for lower current plasma cutting and works well for most metals from gauge thickness to 1 in. (25.4 mm). It leaves an oxidized cut surface. Compressed air can also be used for plasma gouging on carbon steel.

Nitrogen is often used for higher current plasma systems and for cutting materials up to 3 in. (76.2 mm) thick. It produces excellent quality cuts on most materials.

Oxygen is used when the highest quality mechanized cuts are desired on carbon steel up to 1-1/4 in. (31.75 mm) thick. The cut face is smooth, and dross is easy to remove. Oxygen can also be used on stainless steel and aluminum, but it produces a rougher cut face.

Argon-Hydrogen Mixtures are generally used for cutting stainless steel and aluminum. They produce a clean, high quality cut face. Argon-Hydrogen is required for mechanized cutting of any material more than 3 in. (76.2 mm) thick. This mixture also provides an excellent gas for plasma gouging on all materials.

Plasmarc™ Cutting Package Capabilities

