



Thermal Arc
Professional



**Digital
Perfection
Simply
the Best**



PowerMaster®
SP Range

Thermal Arc® at the forefront with pulse welding technology

Thermal Arc continues to be "On the Move" bringing revolutionary new technology to you. Years ahead of products currently available in the US and Canadian markets the new Thermal Arc PowerMaster® SP range of SmartMig™, PulseMig and TwinPulse® GMAW (MIG) welding power sources will revolutionize the way you think about welding. These fully digital microprocessor based machines offer precise weld control using intelligent pulsing and synergic wave design to give precise, repeatable welds on virtually any weldable material type from thin gauge to plate. Simultaneous micro processor control of the wire feed speed, arc current and voltage ensures clean TIG like finished appearance with GMAW productivity. Digital Perfection . . . Simply The Best . . .

Simple to use, repeatable results in 320 amp through 500 amp systems, the Thermal Arc PowerMaster SP Range is available in semi automatic and fully integrated automation platforms. Pre-programmed with up to 100 market optimized filler metal and shielding gas combinations with additional capacity for 100 separate user defined programs or jobs. The Thermal Arc PowerMaster SP Range is a whole new class of welding power source. Technology On The Move from Thermal Arc.

At Thermal Arc, we know that you want improved productivity, reduced clean up time and component reworks combined with versatile multiple process capabilities from your equipment. As a result we have developed the PowerMaster SP Range with an unbeatable list of standard features including:

- Highly efficient, fast 80 kHz Inverter platform;
- Multi-Process capabilities – GMAW - (Manual MIG); GMAW - (SmartMig), GMAW-P – (PulseMig and TwinPulse), SMAW, GTAW and CAG;
- JobTool™ 100 independent, user-defined, job save programs;
- RobotTool™ A digital advanced automation interface capability;
- TipTronic™ CAN-Bus Digital control platform for remote control capability;
- EasyLink™ multi voltage 200 to 500V Single and Three Phase;
- SmartLogic™ Software protection for incorrect input voltage selection;
- HDP™ – High Definition Pulse;
- HSP™ – High Speed Pulse;
- FTT™ – Fresh Tip Treatment;
- Up to 100 SmartMig, PulseMig™ and TwinPulse programs standard;
- One Touch Synergic Control, set the material thickness, then start welding;
- User-friendly controls plus 2-line digital display, enabling easy set-up in all weld modes;
- Tweco® PulseMaster™, optimized smart gun range;
- Push / Pull gun capability;
- Lock out facility for guaranteed 100% repeatable performance;
- Easy three steps to welding operation.

Set to transform the growing automotive, aluminum/stainless steel fabrication and repair/maintenance sectors the PowerMaster SP Range is designed to meet the rigorous demands of a wide range of welding applications, including:

- General aluminum and stainless steel fabrication
- Boat building, Shipyards
- Automotive components and repairs
- Railcar manufacturing
- Custom job shops
- Aerospace



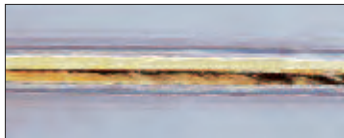
Steel



Stainless Steel



Aluminum



MIG Brazing

Intelligence: One Touch Control ... at your fingertips

Selecting a welding machine for a specialized project, or even for general welding requirements, can be a daunting task. You have to take many factors into account, such as running cost, ease of use, versatility and mobility, not to mention machine cost. Always at the forefront of your mind is the awareness that your profitability is based on weld quality, weld repeatability, power consumption, equipment flexibility, workforce flexibility, negligible rework and minimal weld clean up.

Look no further. The PowerMaster® SP Range delivers all of these attributes, plus MORE!

Our intelligent - **One Touch Control** microprocessor simultaneously links control of the wire feed speed, arc current and voltage delivering perfect welding parameters for SmartMig™ (non-pulse) welding, PulseMig™ and TwinPulse® welding over a wide range of different gas/wire/material thickness combinations. Now setting the optimum welding conditions is as simple as selecting the material thickness. Smart technology made simple . . .



Combine our intelligent One Touch Control and digital HDP™ – (High Definition Pulse) and what do you get? Perfection

- The welding pulse profile is unique to a specific wire / gas combination consisting of pulse height, pulse width, pulse frequency and background power – up to 30 of these parameters are linked via the digital microprocessor to give the correct arc energy;
- This arc energy is then matched to a wire feed speed that gives an acceptable arc length and the best welding conditions for the chosen gas mixture, wire diameter and material type combination;
- The One Touch Control knob adjusts the arc energy over the available current range of the power supply, while maintaining approximately the same arc length. An additional trim control is also provided to allow the user to tune in the arc length for the particular welding job;
- Pulsed weld current facilitates exact control over the transfer of molten metal droplets across the welding arc;
- As the weld current is pulsed, each droplet is pinched off the end of the wire and projected across the arc into the weld pool;
- Varying the pulse height and frequency allows the size and time of the transferring droplet to be perfectly controlled;
- The pulsed droplet transfer produces a spray-like arc over a very wide current range, with a smooth, stable weld current producing little or no spatter and an even weld bead shape.

Perfect starts

An amplified power level is applied to the welding arc at the start of the weld bead to ensure arc start defects such as lack of fusion are a thing of the past.



No more spatter

Digital microprocessor control of wire speed, weld current and voltage, in conjunction with SmartMig™ (non-pulse) / PulseMig programs, ensure precise control and adjustment for the duration of the welding process. This eliminates spatter, and therefore downtime for weld clean up of the workpiece. With its ability to adjust in milliseconds, the Powermaster SP Range provides clean, spatter-free operation from start to finish, every time.

HDP – Intelligent pulsing

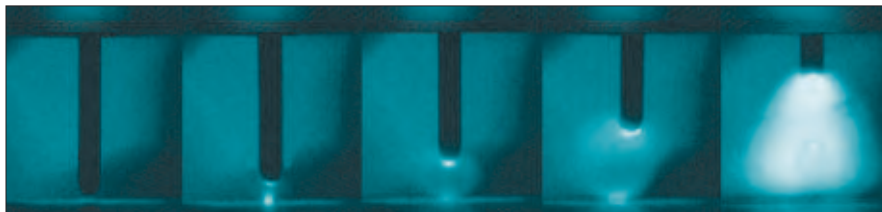
HDP – High Definition Pulse wave design is expertly tailored current pulse parameters to precisely control molten filler metal droplets across the arc to achieve spatter-free welding for the selected gas/wire/material combination. The pulse pinches the droplet off the end of the wire, projects it across the arc and into the weld pool. The program is optimized to vary the pulse height, shape and frequency, thus ensuring that the size and time of the transferring droplet is accurately controlled. This produces a spray-like arc over the entire welding power range.

Complete arc-length control

Steady, consistent arc length is crucial for quality weld deposit. Digital arc length control monitors the progress of the weld and detects any deviations within a fraction of a second. Adjustments are made instantaneously ensuring the arc length remains steady for the duration of the welding procedure.

SPATTER-FREE IGNITION SEQUENCE:

Contact	Ignition	Upslope control	Arc stabilizing	Pulsing begins
0.000 seconds	0.0001 seconds	0.050 seconds	0.200 seconds	0.300 seconds



PULSE PROFILES

Pulse profiles for different materials are created using the in-built software program.



PowerMaster® SP Range: The BENEFITS

Ranging from 320 to 500 amps, each PowerMaster SP is the ultimate fully featured power supply designed for precision high quality GMA welding of steel, aluminum, stainless steel, and other weldable materials. Just look at the benefits of choosing Thermal Arc PowerMaster SP:

- Reduction/Elimination of weld spatter reducing clean up time;
- Effortless TIG-like weld appearance up to seven times faster on aluminum and stainless steel with TwinPulse®;
- Up to 100 optimized SmartMig™, PulseMig and TwinPulse programs standard, delivering optimal performance & versatility;
- User friendly One Touch Control, set the material thickness, then start welding;
- Multi-Process capabilities: GMAW – (Manual MIG); GMAW – (SmartMig™), GMAW-P – (PulseMig™; TwinPulse), SMAW, GTAW and CAG delivering versatility;
- JobTool™ 100 independent, user-defined, job save programs accessible via Tweco PulseMaster Smart Gun providing digital reproduction of specific procedure parameters delivering maximum productivity;
- Lock out facility for guaranteed 100% repeatable performance;
- Precise control of welding power, to assure bead shape and root penetration rivaling TIG;
- High energy arc produced, that virtually eliminates the risk of lack of fusion;
- EasyLink™ multi voltage 200 to 500V, Single and Three phase versatility;
- TipTronic™ CAN-Bus Digital control platform for remote control capability;

- Improved arc control for out-of-position welding and more effective welding of thin materials, with all the advantages of spray transfer;
- Compact fully integrated liquid recirculator for high duty cycle applications (selected models);
- SmartLogic™ software protection for incorrect input voltage;
- HDPT™ – High Definition Pulse, expertly tailored wave design for perfect pulse performance;
- HSP™ – High Speed Pulse, specialized high speed, high duty-cycle wave design for maximum productivity;
- Complete Tweco® PulseMaster™ fully optimized smart gun range;
- Push / Pull gun capability;
- RobotTool™ A digital advanced automation interface capability for robotic and fixed automation applications;
- FTT™ – Fresh Tip Treatment, delivering perfect restarts and increased productivity while eliminating down time.

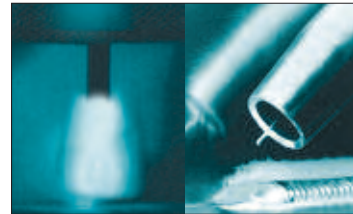
When compared to conventional MIG equipment

PowerMaster SP additionally delivers:

- Superior out-of-position arc transfer delivering smoother, more consistent welding of steel, stainless steel and aluminum;
- Superior, deeper weld penetration;
- Accurate penetration on sheet-metal;
- Superior welding characteristics for hard-facing and high-alloy steels;
- The ability to use larger-than-normal diameter wires on thin base material, providing a cost savings on wire and superior feed-ability;
- Superior feed-ability with normal push guns reducing the need for push/pull systems.

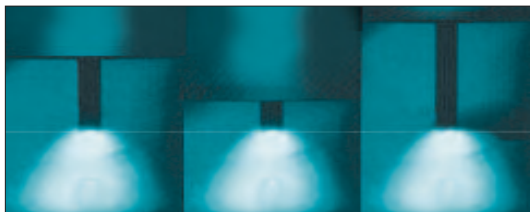
No more end craters!

Automatic reduction of welding energy (down slope) at the completion of the weld eliminates any crater that could potentially cause weld defects. The addition of FTT™ (Fresh Tip Treatment) ensures a sharp wire end, and a perfect re-start for the next weld sequence.

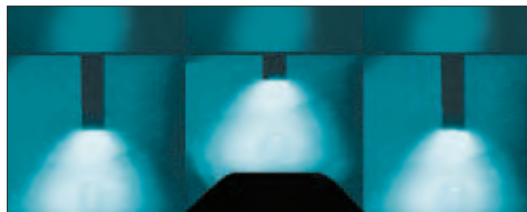


ARC LENGTH CONTROL EXAMPLES

Constant arc length due to change in stick-out.



Constant arc length due to change in material height.



Leave it to us
you don't have to remember – we'll do it for you



Remote control on torch

Welding voltage and wire speed are controlled directly from the Tweco® PulseMaster™ Smart gun ensuring fast and flexible control.



Automation ease

Both the PowerMaster® 400SP and 500SP Automation are easily connected to automation systems. Simply access stored jobs directly from a pendant or controller to obtain a clear, efficient automation solution.



Select your personalized jobs

The JobTool™ and TipTronic™ stores and accesses the exact welding parameters for each application in their correct sequence. With just the touch of a button you can call up 100 personalized welding procedures.



Robot compatible

Analog or digital interface is set via RobotTool™. The internal CAN-Bus can also be docked to common Bus-systems. Robot interface is supported via software and no hardware changes required.



Remote control

All welding parameters can be remotely controlled and operated from a distance of 16 feet (5 metres) from the power supply. Ideal for fixed or robotic automation.



Computer connectable

The range is fully digital for ease of future upgrades and service. Connection to a PC allows the use of JobTool Software to manage welding jobs data and to monitor electronic diagnostics and service status.

The Smart Choice for the future

Expert welding intelligence and experience is designed into all our welding programs to provide the optimal welding solution:

- The pre-requisite for perfect welding is finely tuned pulsing programs. The PowerMaster SP range comes with advanced digital software knowledge as standard, guaranteeing the pulsing performance;
- There are up to 100 pre-programmed wire gas combinations as standard;
- You can save an additional 100 user-define personalized welding procedures;
- Lack of fusion weld defects at the start of the welding seam are history with the exact amount of arc energy delivered to the wire for instant fusion into the base material;
- Absolute perfection in the welding process and 100% reproducibility of any weld result are achieved by the software program and digital microprocessor control;
- The PulseMig mode turns the filler metal into the finest droplets, then projects them across the arc and into the molten weld pool for spatter-free welding. It also offers the

best visual welding results, out-of-position capabilities and smaller fillet weld beads when compared to conventional MIG welding;

- The droplet formation, detachment and transition into the molten weld pool takes place in intervals of 100th of a second;
- The arc length is a crucial factor for the best welding result. Digital arc length control keeps the arc length steady at all times. Wire stick-out and distance changes from wire to workpiece are detected within fractions of a second and are adjusted to achieve faultless results;
- Weld defects in the weld crater are eliminated automatically by pulsing the arc energy (down slope), to slowly cool the weld pool;
- TwinPulse® is supplied as standard with this range.

The TwinPulse controls the melting and cooling tasks in the weld pool systematically and separately. It provides an appearance similar to TIG welding, but at a welding speed approximately seven times faster than conventional TIG and is ideal for use with aluminum.

**PowerMaster® 320SP:
Pulse on the move**

Compact 320 Amp with built-in wirefeeder

WELDING DC – GMAW

Output range	5-320 Amps, 14.3-30 Volt (1 Phase)	
Rated output @ Duty Cycle at 104°F	320A at 30V @ 40% Duty Cycle (1 Phase)	
Output @ 100% duty cycle	250 Amp at 26.5V (1 Phase)	
Maximum OCV	79V	
Voltage/Amperage control	Infinitely variable	
Wire diameter range	Mild steel	.023"-.045" (0.6-1.2mm)
	Stainless steel	.023"-.045" (0.6-1.2mm)
	Aluminum	.030"-.3/64" (0.8-1.2mm)
	Flux cored	.030"-.045" (0.8-1.2mm)

Fitted feed rolls suit solid MIG wires (V groove) .035"-.045" (0.9-1.2mm)

WELDING DC – SMAW

Output range	10-300 Amps, 20.4-32 Volt (1 Phase)	
Rated output @ Duty Cycle at 104°F	300A at 32V @ 40% Duty Cycle (1 Phase)	
Output @ 100% duty cycle	230 Amp at 29.2V (1 Phase)	
Maximum OCV	79V	
Voltage/Amperage control	Infinitely variable	
SMAW electrode range	3/32"-.1/4" (2.4-6.4mm)	
CAG Carbon arc gouging electrode	1/8"-1/4" (3.2-6.4mm)	

Dimensions (HxWxD)	29.3"x13.4"x19.6" (745x340x498mm)
Weight	77lb (35kg)

Primary Power

Primary voltage	208/230/400/460 Volt
Primary frequency	50/60 Hz
Approvals	CSA

Primary Ratings

Primary Voltage	Primary Current	Output Power
208 Volt 1 phase	69.5 Amp	320 A at 32 V
230 Volt 1 phase	57.5 Amp	320 A at 32 V
400 Volt 1 phase	37.5 Amp	320 A at 32 V
460 Volt 1 phase	32.0 Amp	320 A at 32 V

The PowerMaster 320SP is in a league of its own as a state of the art, fully featured, fully integrated, portable, digital PulseMig and TwinPulse® power supply.

Complete with 320 amp maximum output, a 4-roll wire feed system, 33 / 44lb spool capacity and a weight of only 77lb enables a high degree of portability. This system is the ideal choice for welding non-ferrous materials up to 1/4" plate; typical applications include:

- General fabrication of aluminum and stainless steel;
- Aluminum boat fabrication or repair;
- Stainless steel tank and pipe fabrication;
- Maintenance repair;
- Automotive repair;
- Technical schools;
- Applications requiring stringent welding procedure adherence.



**PowerMaster® 400SP Integrated:
The accomplished all-rounder**

Remote 400 Amp with integrated wirefeeder

WELDING DC – GMAW

Output range	5-400 Amps, 14.3-34 Volt (3 Phase) 5-400 Amps, 14.3-34 Volt (1 Phase)
Rated output @ Duty Cycle at 104°F	400A at 34V @ 50% Duty Cycle (3 Phase) 400A at 34V @ 50% Duty Cycle (1 Phase)
Output @ 100% duty cycle	320 Amp at 30.0V (1 or 3 Phase)
Maximum OCV	79V
Voltage/Amperage control	Infinitely variable
Wire diameter range	Mild steel .023" -1/16" (0.6-1.6mm) Stainless steel .023" -1/16" (0.6-1.6mm) Aluminum .030" -1/16" (0.8-1.6mm) Flux cored .030" -1/16" (0.8-1.6mm)
Fitted feed rolls suit solid MIG wires (V groove)†	.035"-.045" (0.9-1.2mm)

WELDING DC – SMAW

Output range	10-380 Amps, 20.4-35.2 Volt (3 Phase) 10-380 Amps, 20.4-35.2 Volt (1 Phase)
Rated output @ Duty Cycle at 104°F	380A at 35.2V @ 50% Duty Cycle (3 Phase) 380A at 35.2V @ 50% Duty Cycle (1 Phase)
Output @ 100% duty cycle	300 Amp at 32V (1 or 3 Phase)
Maximum OCV	79V
Voltage/Amperage control	Infinitely variable
SMAW electrode range	3/32" -1/4" (2.4-6.4mm)
CAG Carbon arc gouging electrode	1/8" -5/16" (3.2-8.0mm)
Dimensions (HxWxD)	43.9"x17.5"x33.7" (1116x445x855mm)
Weight	215lb (97.3kg)

†Feed rolls fitted to PowerMaster 400SP Compact with integrated wirefeeders.

Primary Power

Primary voltage	208/230/400/460 Volt
Primary frequency	50/60 Hz
Approvals	CSA

Primary Ratings

Primary Voltage	Primary Current	Output Power
208 Volt 1 phase	92.0 Amp	400 A at 34 V
230 Volt 1 phase	85.2 Amp	400 A at 34 V
400 Volt 1 phase	49.5 Amp	400 A at 34 V
460 Volt 1 phase	42.7 Amp	400 A at 34 V
208 Volt 3 phase	46.1 Amp	400 A at 34 V
230 Volt 3 phase	41.0 Amp	400 A at 34 V
400 Volt 3 phase	24.0 Amp	400 A at 34 V
460 Volt 3 phase	21.4 Amp	400 A at 34 V

The PowerMaster 400SP has a maximum output of 400 amps and is available in two configurations, as a fully integrated version or a separate remote feeder system. The integrated variant has a 4-roll wire drive system and is supplied standard with running gear. This is the ideal digital SmartMig™, PulseMig™ and TwinPulse® power supply to run push / pull systems for production welding with 3/64" aluminum wires, typical applications include:

- General fabrication or aluminum, stainless steel;
- Aluminum boat fabrication;
- Wine tanks;
- Automotive components;
- Machinery, including construction machinery;
- Pipe welding;
- Custom job shops;
- Maintenance repairs;
- Stainless steel tank and pipe fabrication;
- Applications requiring stringent welding procedure adherence.



PowerMaster 400SP
Power Source
Part No: W1000304

PowerMaster® 400SP Remote:
The accomplished all-rounder

Remote 400 Amp with separate wirefeeder

WELDING DC – GMAW

Output range		5-400 Amps, 14.3-34 Volt (3 Phase) 5-400 Amps, 14.3-34 Volt (1 Phase)
Rated output @ Duty Cycle at 104°F		400A at 34V @ 50% Duty Cycle (3 Phase) 400A at 34V @ 50% Duty Cycle (1 Phase)
Output @ 100% duty cycle		320 Amp at 30.0V (1 or 3 Phase)
Maximum OCV		79V
Voltage/Amperage control		Infinitely variable
Wire diameter range	Mild steel	.023" -1/16" (0.6-1.6mm)
	Stainless steel	.023" -1/16" (0.6-1.6mm)
	Aluminum	.030" -1/16" (0.8-1.6mm)
	Flux cored	.030" -1/16" (0.8-1.6mm)
Fitted feed rolls suit solid MIG wires (V groove)† .035" -.045" (0.9-1.2mm)		

WELDING DC – SMAW

Output range		10-380 Amps, 20.4-35.2 Volt (3 Phase) 10-380 Amps, 20.4-35.2 Volt (1 Phase)
Rated output @ Duty Cycle at 104°F		380A at 35.2V @ 50% Duty Cycle (3 Phase) 380A at 35.2V @ 50% Duty Cycle (1 Phase)
Output @ 100% duty cycle		300 Amp at 32V (1 or 3 Phase)
Maximum OCV		79V
Voltage/Amperage control		Infinitely variable
SMAW electrode range		3/32" -1/4" (2.4-6.4mm)
CAG Carbon arc gouging electrode		1/8" -5/16" (3.2-8.0mm)
Dimensions (HxWxD)		43.9"x17.5"x33.7" (1116x445x855mm)
Weight		201lb (91.3kg)

†Feed rolls fitted to SP4000W & SP4000R wirefeeders.

Primary Power

Primary voltage	208/230/400/460 Volt
Primary frequency	50/60 Hz
Approvals	CSA

Primary Ratings

Primary Voltage	Primary Current	Output Power
208 Volt 1 phase	92.0 Amp	400 A at 34 V
230 Volt 1 phase	85.2 Amp	400 A at 34 V
400 Volt 1 phase	49.5 Amp	400 A at 34 V
460 Volt 1 phase	42.7 Amp	400 A at 34 V
208 Volt 3 phase	46.1 Amp	400 A at 34 V
230 Volt 3 phase	41.0 Amp	400 A at 34 V
400 Volt 3 phase	24.0 Amp	400 A at 34 V
460 Volt 3 phase	21.4 Amp	400 A at 34 V

The PowerMaster 400SP Remote has a maximum output of 400 amps and is supplied with a fully integrated liquid cooling system and up to 32 ft of interconnection cable. This is also the ideal digital PulseMig™ and TwinPulse® power supply to run push / pull gun systems for production welding with 3/64" aluminum wires, typical applications include:

- General fabrication or aluminum, stainless steel;
- Aluminum boat fabrication;
- Wine tanks;
- Automotive components;
- Machinery, including construction machinery;
- Pipe welding;
- Custom job shops;
- Maintenance repairs;
- Stainless steel tank and pipe fabrication;
- Applications requiring stringent welding procedure adherence.



SP4000W Wirefeeder
Part No: W3000202

PowerMaster 400SP
Power Source
Part No: W1000202

PowerMaster® 500SP:
The logical heavy-duty choice

Remote 500 Amp with separate wirefeeder

WELDING DC – GMAW

Output range	5-500 Amps, 14.3-39 Volt (3 Phase) 5-400 Amps, 14.3-34 Volt (1 Phase)
Rated output @ Duty Cycle at 104°F	500A at 39V @ 60% Duty Cycle (3 Phase) 400A at 34V @ 50% Duty Cycle (1 Phase)
Output @ 100% duty cycle	400 Amp at 34.0V (3 Phase) 320 Amp at 30.0V (1 Phase)
Maximum OCV	79V
Voltage/Amperage control	Infinitely variable
Wire diameter range	Mild steel .023" -1/16" (0.6-1.6mm) Stainless steel .023" -1/16" (0.6-1.6mm) Aluminum .030" -1/16" (0.8-1.6mm) Flux cored .030" -1/16" (0.8-1.6mm)

Fitted feed rolls suit solid MIG wires (V groove)† .035"-.045" (0.9-1.2mm)

WELDING DC – SMAW

Output range	10-480 Amps, 20.4-39.2 Volt (3 Phase) 10-380 Amps, 20.4-35.2 Volt (1 Phase)
Rated output @ Duty Cycle at 104°F	480A at 39.2V @ 60% Duty Cycle (3 Phase) 380A at 35.2V @ 50% Duty Cycle (1 Phase)
Output @ 100% duty cycle	380 Amp at 35.2V (3 Phase) 300 Amp at 32.0V (1 Phase)
Maximum OCV	79V
Voltage/Amperage control	Infinitely variable
SMAW electrode range	3/32" -1/4" (2.4-6.4mm)
CAG Carbon arc gouging electrode	1/8" -3/8" (3.2-9.5mm)
Dimensions (HxWxD)	43.9"x17.5"x33.7" (1116x445x855mm)
Weight	222lb (108.8kg)

†Feed rolls fitted to SP4000W & SP4000R wirefeeders.

SP4000W Wirefeeder
Part No: W3000202

The PowerMaster 500SP Remote with a separate 4-roll wire feeder system has a maximum output of 500 amps and is supplied with a fully integrated liquid cooling system and up to 32 ft of interconnection cable. This is the ideal digital PulseMig™ and TwinPulse® power supply for heavy-duty, high duty-cycle, high-quality welding applications running push or push / pull gun systems for production welding with 1/16" aluminum wires, typical applications include:

- General fabrication or aluminum, stainless steel;
- Aluminum boat fabrication;
- Wine tanks;
- Automotive components;
- Construction machinery;
- Pipe welding;
- Custom job shops;
- Maintenance repairs;
- Mining;
- Stainless steel tank and pipe fabrication;
- Applications requiring stringent welding procedure adherence.



Primary Power		
Primary voltage	208/230/400/460 Volt	
Primary frequency	50/60 Hz	
Approvals	CSA	
Primary Ratings		
Primary Voltage	Primary Current	Output Power
208 Volt 1 phase	92.0 Amp	400 A at 34 V
230 Volt 1 phase	85.2 Amp	400 A at 34 V
400 Volt 1 phase	49.5 Amp	400 A at 34 V
460 Volt 1 phase	42.7 Amp	400 A at 34 V
208 Volt 3 phase	66.0 Amp	500 A at 39 V
230 Volt 3 phase	58.9 Amp	500 A at 39 V
400 Volt 3 phase	33.5 Amp	500 A at 39 V
460 Volt 3 phase	29.6 Amp	500 A at 39 V

PowerMaster 500SP Power Source
Part No: W1000502
With optional Pivot Mount fitted
Part No: W4001000

It's your choice

Thermal Arc's PowerMaster® SP is the definitive, digital microprocessor controlled, multi-process, PulseMig™ and TwinPulse® power source range. With a market leading collection of features, standard in every model, Thermal Arc offers you the ultimate in high performance welding systems:

- Perfectly tailored SmartMig™, PulseMig and Twinpulse performance optimized for the US and Canadian markets;
- Perfect digitally repeatable welding performance;
- Effortless TIG-like weld appearance up to seven times faster on aluminum and stainless steel with TwinPulse;
- One Touch Control - set the material thickness, then start welding;
- Optimized arc starting and crater fill modes;
- Programmable capabilities to store specific user defined jobs;
- Microprocessor control of wire speed, current and voltage - adjusts in milliseconds;
- Virtual elimination of fusion defects;
- Digital arc length control;
- Reduction/Elimination of weld spatter.

Transform your business today.

Contact your Thermal Arc District Manager to discuss the system that best suits your individual needs, or to arrange a demonstration that will show you just why Thermal Arc is the only choice.



Ordering details

PowerMaster® 320SP & PowerMaster 400SP Gas Cooled SmartMig™, PulseMig™ & TwinPulse® Equipment



Description	Part No.	Features
PowerMaster 320SP Compact	W1000102	Power source only – gas cooled
PowerMaster 320SP Standard gun package	W1000104	320A power source – gas cooled Tweco® PulseMaster™ MIG gun 12 ft (3.6 m), heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, 12 ft (3.6 m) 2/0 work lead with clamp, Victor gas regulator/flowmeter, 6 ft (1.8 m) gas hose.
PowerMaster 320SP Smart gun package	W1000105	320A power source – gas cooled Tweco PulseMaster Smart MIG gun 12 ft (3.6 m), heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, 12 ft (3.6 m) 2/0 work lead with clamp, Victor gas regulator/flowmeter, 6 ft (1.8 m) gas hose.
PowerMaster 320SP Push/pull gun package	W1000106	320A power source – gas cooled Python® Push/Pull MIG gun 25 ft (7.6 m), heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, 12 ft (3.6 m) 2/0 work lead with clamp, Victor gas regulator/flowmeter, 6 ft (1.8 m) gas hose.



PowerMaster 400SP Compact	W1000304	Power source only – gas cooled
PowerMaster 400SP Standard gun package	W1000305	400A power source – gas cooled Tweco PulseMaster MIG gun 12 ft (3.6 m), heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter, 6 ft (1.8 m) gas hose, wheels & single cylinder rack.
PowerMaster 400SP Smart gun package	W1000306	400A power source – gas cooled Tweco PulseMaster Smart MIG gun 12 ft (3.6 m), heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter, 6 ft (1.8 m) gas hose, wheels & single cylinder rack.
PowerMaster 400SP Push/pull gun package	W1000307	400A power source – gas cooled Python Push/Pull MIG gun 25 ft (7.6 m), heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter, 6 ft (1.8 m) gas hose, wheels & single cylinder rack.

PowerMaster 400SP Liquid Cooled SmartMig, PulseMig & TwinPulse Equipment



Description	Part No.	Features
PowerMaster 400SP Remote	W1000202	Power source only – liquid cooled
PowerMaster 400SP Remote	W1000204	400A power source – liquid cooled Tweco PulseMaster MIG gun 12 ft (3.6 m), SP4000W wirefeeder, heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, pivot mount for wirefeeder, 3 ft (1 m) inter-connection cables, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter.

Ordering details

PowerMaster® 400SP Liquid Cooled SmartMig™, PulseMig™ & TwinPulse® Equipment cont.

Description	Part No.	Features
PowerMaster 400SP Remote Smart gun package	W1000205	400A power source - liquid cooled Tweco® PulseMaster™ Smart MIG gun 12 ft (3.6 m), SP4000W wirefeeder, heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, pivot mount for wirefeeder, 3 ft (1 m) inter-connencting cables, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter.
PowerMaster 400SP Remote Push/pull gun package	W1000206	400A power source - liquid cooled Python® Push/Pull MIG gun 25 ft (7.6 m), SP4000W wirefeeder, heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, pivot mount for wirefeeder, 3 ft (1 m) inter-connencting cables, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter.

PowerMaster 500SP Liquid Cooled SmartMig, PulseMIG, TwinPulse Equipment



Description	Part No.	Features
PowerMaster 500SP Remote	W1000502	Power source only – integrated liquid cooler
PowerMaster 500SP Remote Standard gun package	W1000504	500A power source - liquid cooled Tweco PulseMaster MIG gun 12 ft (3.6 m), SP4000W wirefeeder, heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, pivot mount for wirefeeder, 3 ft (1 m) inter-connection cables, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter.
PowerMaster 500SP Remote Smart gun package	W1000505	500A power source - liquid cooled Tweco PulseMaster Smart MIG gun 12 ft (3.6 m), SP4000W wirefeeder, heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, pivot mount for wirefeeder, 3 ft (1 m) inter-connencting cables, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter.
PowerMaster 500SP Remote Push/pull gun package	W1000506	500A power source - liquid cooled Python Push/Pull MIG gun 25 ft (7.6 m), SP4000W wirefeeder, heavy duty 4-roll wire feed system, .035"-.045" V groove drive rolls fitted, pivot mount for wirefeeder, 3 ft (1 m) inter-connencting cables, 12 ft (3.6 m) 3/0 work lead with clamp, Victor gas regulator/flowmeter.

Ordering details

Accessories

	Description	Part No.	Features
	SP4000W Wirefeeder	W3000202	Suits 400SP/500SP, liquid or air cooled MIG guns
	3 ft (1 m) Inter-connection assembly	W4000603	Suits 400SP/500SP, liquid or air cooled MIG gun setups
	16 ft (5 m) Inter-connection assembly	W4000604	Suits 400SP/500SP, liquid or air cooled MIG gun setups
	32 ft (10 m) Inter-connection assembly	W4000605	Suits 400SP/500SP, liquid or air cooled MIG gun setups
	Remote control RC20, pocket pendant	W4000000	Suits 320SP, hand pocket pendant
	Remote Control HR911, pendant	W4000101	Suits 320SP/400SP/500SP, full control panel
	Mobile cart with cylinder rack	W4000300	Suits 320SP
	Pivot mount for SP4000W	W4001000	Suits 400SP/500SP
	MIG/TIG Coolant 1 Quart (1L)	W4001402	Suits 400SP/500SP
	MIG/TIG coolant 5 Quart (5L)	W4001400	Suits 400SP/500SP
	MIG/TIG coolant 5 Gal (20L)	W4001401	Suits 400SP/500SP
	Push/pull interface kit	W4010300	Suits 320SP/400SP/SP4000W to Python® push/pull gun
	JobTool™ software	W4010400	Suits 320SP/400SP/500SP and includes cables with hardware interface and software

Ordering details

Accessories

Air Cooled PulseMaster™ Guns

Description	Part No.	Stock No.	Rating	Torch Connection	16 Series - Tip Size	Flush Tip Nozzle ID	Welding Application
Tweco® PulseMaster Gun 12 ft	PMA312-3545	1038-1150	300A@100%	Tweco No.4	.035" (0.9mm)	5/8" (16mm)	Aluminum
Tweco® PulseMaster Gun 12 ft	PMA412-3545	1041-1500	450A@80%	Tweco No.4	3/64" (1.2mm)	5/8" (16mm)	Aluminum
Tweco® PulseMaster Gun 15 ft	PMA415-3545	1041-1501	450A@80%	Tweco No.4	.045" (1.2mm)	5/8" (16mm)	Stainless/Steel/Flux Cored

Air Cooled PulseMaster Smart Guns with Advanced Digital Controls

Description	Part No.	Stock No.	Rating	Torch Connection	16 Series - Tip Size	Flush Tip Nozzle ID	Welding Application
Tweco® PulseMaster Smart Gun 12 ft	PMA312-3545	1038-1152	300A@100%	Tweco No.4	.035" (0.9mm)	5/8" (16mm)	Aluminum
Tweco® PulseMaster Smart Gun 12 ft	PMA412-3545	1041-1510	450A@80%	Tweco No.4	3/64" (1.2mm)	5/8" (16mm)	Aluminum
Tweco® PulseMaster Smart Gun 15 ft	PMA415-3545	1041-1511	450A@80%	Tweco No.4	.045" (1.2mm)	5/8" (16mm)	Stainless/Steel/Flux Cored

Liquid Cooled PulseMaster Guns

Description	Part No.	Stock No.	Rating	Torch Connection	16 Series - Tip Size	Flush Tip Nozzle ID	Welding Application
Tweco® PulseMaster Gun 12 ft	PMW412-3545	1042-1500	500A@100%	Tweco No.4	3/64" (1.2mm)	5/8" (16mm)	Aluminum
Tweco® PulseMaster Gun 15 ft	PMW415-3545	1042-1501	500A@100%	Tweco No.4	.045" (1.2mm)	5/8" (16mm)	Stainless/Steel/Flux Cored

Liquid Cooled PulseMaster Smart Guns with Advanced Digital Controls

Description	Part No.	Stock No.	Rating	Torch Connection	16 Series - Tip Size	Flush Tip Nozzle ID	Welding Application
Tweco® PulseMaster Smart Gun 12 ft	PMWS412-3545	1042-1510	500A@100%	Tweco No.4	3/64" (1.2mm)	5/8" (16mm)	Aluminum
Tweco® PulseMaster Smart Gun 15 ft	PMWS415-3545	1042-1511	500A@100%	Tweco No.4	.045" (1.2mm)	5/8" (16mm)	Stainless/Steel/Flux Cored

Drive Roll Kits – 4 Rolls

Description	Style 1	Style 2	Style 3
<p>Provides less wire friction in the MIG torch due to the straightening effect of the feed rolls system</p>			
Top Drive Roll	Flat	Flat	Flat
Bottom Drive Roll	Double 'U'	Double 'V'	Double Knurled 'V'
Wire Type	Aluminum (Soft) Wire	Solid (Hard) Wire	Flux Cored Wire
Wire Size			
.023", .030" / 0.6, 0.8mm	–	W6000500	–
.035" / 0.9mm	–	W6000501	–
.035", .045" / 0.9, 1.2mm	–	W6000502	–
.045" / 1.2mm	–	W6000503	–
.052", 1/16" / 1.4, 1.6mm	–	W6000504	–
.030", .035" / 0.8, 0.9mm	–	–	W6000505
.035", .045" / 0.9, 1.2mm	–	–	W6000506
.045" – .052", 1/16" / 1.2 – 1.4, 1.6mm	–	–	W6000507
.030", .035" / 0.8, 0.9mm	W6000508	–	–
.035", 3/64" / 0.9, 1.2mm	W6000509	–	–
3/64", 1/16" / 1.2, 1.6mm	W6000510	–	–

NOTE: 1. Kit W6000502 is supplied as standard. 2. Drive roll kits include: two drive rolls; input, output & centre guides.

For further information on this range contact your Thermal Arc® District Manager.

International Customer Care: 905-827-9777 / FAX 905-827-9797

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