

..... Diesel Engine Driven Welder / Generator

FRONTIER™ 580X





Product Number
Frontier 580X: K5293-1

Forge a New Frontier

Driven from legacy, engineered for the future - the Frontier 580X diesel engine driven welder/generator breaks the boundaries of welding innovation. Designed, engineered, and tested to create the new benchmark of engine driven welder performance, this next-generation system delivers the ultimate machine for performance and versatility. So whether you're on a local construction site, or outback in the Never-Never, the Frontier 580X is the go-to choice for handling whatever the job is thrown your way.

Breaking Boundaries in Engine Driven Welders

Pioneers in Innovation

With its industry-leading, next-gen display and additional operator focused features — such as CrossLinc® Technology, Memory Settings, and Auto-Stop/Start — the Frontier 580X delivers the next frontier of engine drive innovation.

New Benchmark of Performance

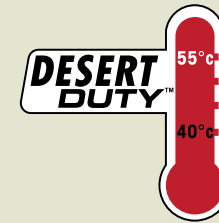
From our iconic Chopper Technology® and smooth DC arc, to our advanced multi-process functionality and embedded Pulsed TIG, the Frontier 580X is packed with optimized arc performance specifically tailored to your application — setting the new benchmark for engine driven welders.

Field Proven, Legacy Driven

Designed around the 404D-22T Perkins® diesel engine, the Frontier 580X delivers up to 580A of welding and 20 kW of auxiliary output for plenty of all-day power, providing true peace-of-mind and field-proven reliability you can count on.

Trusted Expertise & Support

When it comes to engine driven welders, no one can match Lincoln Electric's decades of trusted experience and support. With a worldwide network of distributors, sales offices, and customer support personnel — we are here to help you and keep your machine running.



OUTPUT



INPUT



Processes

SMAW (Stick), FCAW (Flux-Cored), GMAW (MIG), GTAW (TIG), CAC-A (Arc Gouging), DC TIG (GTAW) Lift, Scratch and Pulse, PIPE (SMAW) and ACTIV8X Pipe**

**Hidden mode which is automatically enabled when connected to selected device

Applications

Maintenance and Repair, Pipeline, Power Generation, Process Industries and Structural

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Pioneers in Innovationers

Next-Gen Display

The next-gen display on the Frontier 580X was designed, evaluated, and tested to deliver one thing – machine interaction that is as simple as possible.

Key Features include:

- Bright, 7 inch (178mm) high resolution display
- Anti-glare and large text to easily check settings from a distance
- Impact and weather resistant – designed and tested to withstand harsh field conditions

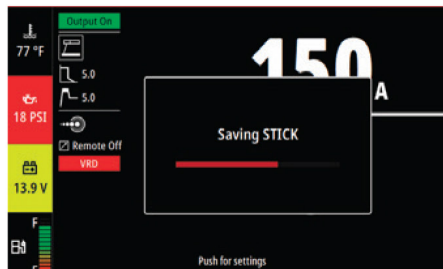
Unmatched Simplicity

The Frontier 580X helps maximise arc time and up time in the field, allowing straightforward navigation so operators can easily dial in their machine for the job at hand.

- Simple, visual process setup
- Memory buttons to save and recall preferred settings
- PIN authorisation options to prevent unintended use
- Multilingual display settings for true global compatibility – English, Spanish and French

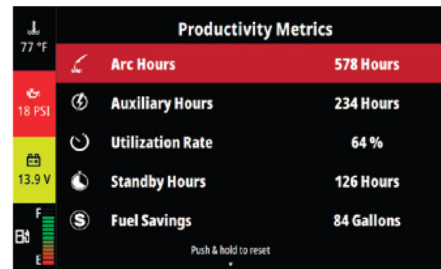


- | | |
|-------------------|----------------------------------|
| 1. USB Port | 5. Navigation Knob & Push Button |
| 2. Remote Button | 6. Help / Ready. Set. Weld® |
| 3. Home Button | 7. Back Button |
| 4. Memory Buttons | |



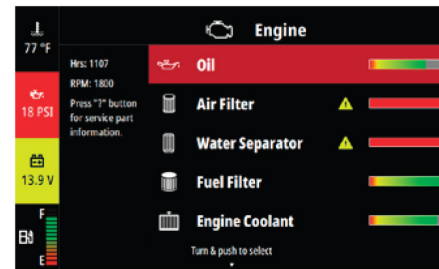
Memory Features

Save and recall up to 4 preset memories at the push of a button.



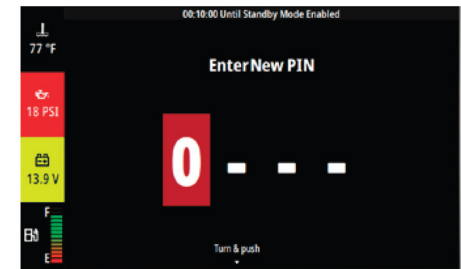
Productivity Metrics

Check performance at a glance and better understand how your machine is utilised.



Maintenance Reminders

Easily see machine and component statuses and receive reminders to perform maintenance along with a recommended parts list.



Pin Authorisation

Add a PIN lockout to prevent unauthorised machine use on crowded jobsites with multiple shifts.

Pioneers in Innovation

CrossLinc® - Precise Output Control at the Arc

The Frontier 580X comes with CrossLinc Technology – enabling precise voltage and amperage control at the arc without the use of an extra control cable. Maximise productivity by easily dialing-in the right parameters without making repetitive trips back to the power source.

PRODUCTIVITY Work faster, reduce setup time, and minimise rework

SAFETY Helps to lower the chance for injury by reducing jobsite movement and the number of cables underfoot

QUALITY Meet WPS specifications more easily with greater operator control

Auto Stop/Start

Featuring Auto-Stop/Start Technology, the Frontier 580X can be set to automatically turn off the engine due to inactivity and then remotely restart it as needed to save on fuel and avoid excessive idling and engine wear.

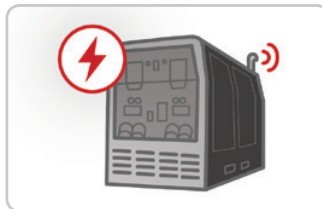
- Easily set auto-stop time frame (5-120 mins of engine idle)
- Engine automatically restarts when arc initiates
- Increase fuel savings and avoid frequent maintenance
- Extend engine life by reducing engine wear and tear
- Reduce carbon footprint
- Extended warranty timeframe by preventing non-use engine hours



Set a period of non-use
(5-120 min)



When reached, engine will shut
down, and machine will go into
a stand-by mode



To restart engine, tap the
electrode and start welding



New Benchmark in Performance – Multi-Process Versatility

Optimised Arc Performance and Versatility

When you see Lincoln Electric on the side of an engine drive, you know you are getting the best arc performance on the market. Now we've taken that to the next step in the Frontier 580X, optimising our weld modes to deliver smooth, stable arc performance specifically tailored for your application.

Embedded Weld Modes Optimised for:

- SMAW
- GMAW⁽¹⁾
- FCAW-S⁽¹⁾
- FCAW-G⁽¹⁾
- Touch-Start TIG
- Scratch-Start TIG
- Pulsed TIG
- Carbon Arc Gouging
- PIPE (SMAW)
- ACTIV8X Pipe⁽²⁾

(1) GMAW, FCAW-S, and FCAW-G all require the use of an optional portable wire feeder.

(2) Hidden mode which is automatically enabled when connected to selected device.



Dedicated Pipe Mode

Designed and tested specifically for cellulosic root downhill pipe welding – the Pipe Mode produces the iconic, smooth DC Generator arc that has been loved by the cross-country pipe industry.

- Optimised to produce a smooth DC-style arc
- Designed and field-tested by pipeline welders
- DigFX™ Technology allows users to dial in the arc for ideal puddle control
- Consistent arc performance from root-to-cap
- Dynamic shorting response allows machine to automatically adjust output to overcome shorts from pipe variability for more puddle control and less spatter
- Only available on the Frontier 580X Model



Perfectly Tuned For Field Welding

With embedded CrossLinc capabilities, the Frontier 580X provides the ultimate versatility in the field – allowing you to easily tap into Lincoln Electric's rugged portable wire feeders to bring our industry-leading wire weld processes to the field.

Compatible Wire Feeders:

- LN-25X®
- Activ8X®
- Activ8X® Pipe™

Advanced Processes

- Pulsed MIG – Pulse optimized for field welding applications
- STT® Field – Industry-proven root pass process – now tailored for the field⁽¹⁾

(1) Advanced process MIG modes (Pulse and STT Field) available with use of Activ8X Pipe Wire Feeder

Activ8X Pipe Wire Feeder



Rugged Design for Rugged Work



Removable slide-access door for easy access to the engine and oil drain valve for quick oil changes



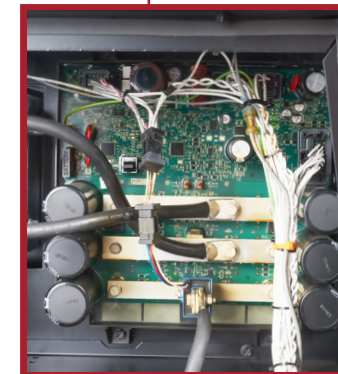
Stainless steel and painted external sheet metal provides extra protection and corrosion resistance



Impact and weather resistance design with anti-glare screen to stand up to harsh field conditions



Sliding battery tray enables easy access to the battery



Printer Circuit boards are installed with a backing tray and fully encapsulated, providing a complete environmentally shield



Reduced leads and less connections resulting in a neat and organised cable management system.

Field-Proven. Legacy-Drive

Reliability You Can Count On

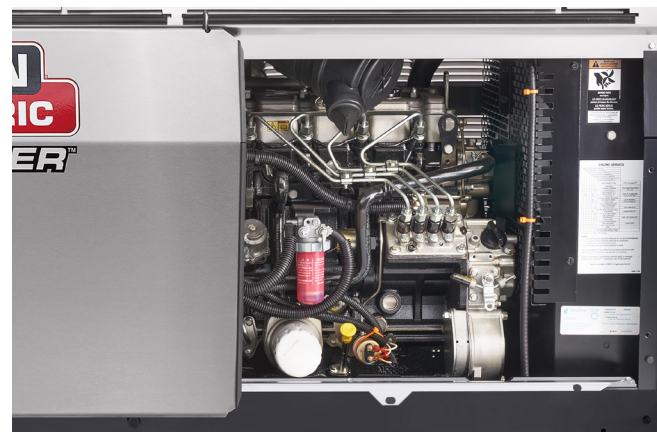
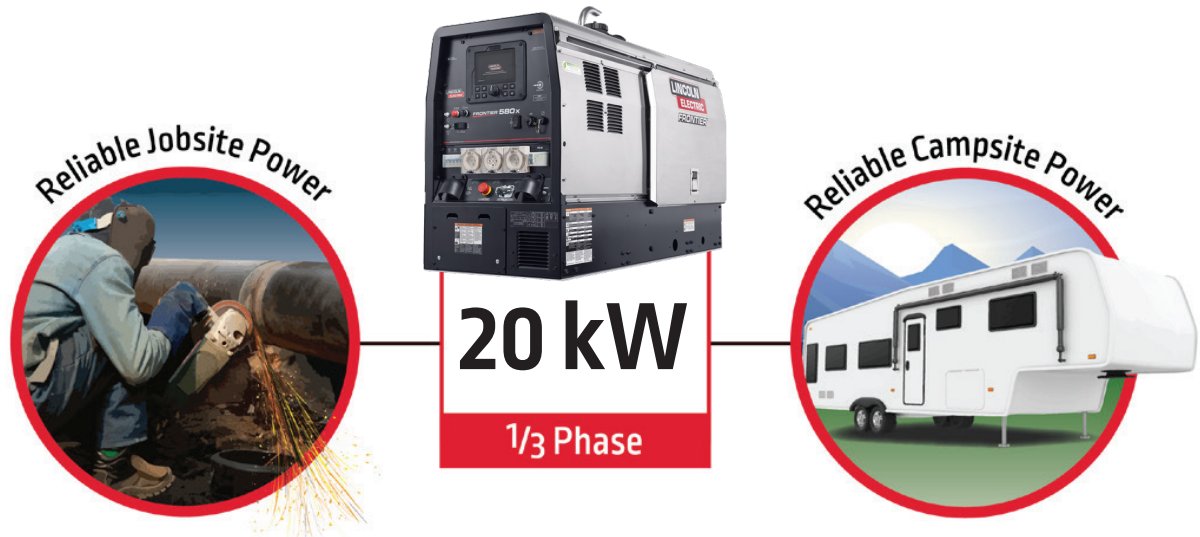
Engine driven welders start up first thing in the morning, and they don't stop until the day ends. That's why the Frontier 580X was engineered to fire up and run day-in and day-out.

- 4 Cylinder 43 Hp, Turbocharged Perkins® diesel engine
- Smooth and quiet operation with low vibration
- Reliable cold-weather starting and high altitude performance
- Trusted Industry Support
- Built in maintenance schedule alerts on UI to remind you when and what is required to be serviced.

Plenty of All Day Power

With 20 Kw of continuous AC auxiliary power, the Frontier 580X has all the power you need to keep your running at the jobsite, or the campsite.

- Three Phase Power – 20 kW Continuous 1 x 32A Receptacle.
- Single Phase Power – 7.2 kW Continuous 2 x 15A Receptacle.



Welding Experts

High-quality products and great customer service are important aspects of the Lincoln Electric story, but it's our unmatched welding expertise, from the construction site to the right of way, that truly sets us apart. If there's a better way for you to weld, we'll help you find it.

Trusted Protection

Purchase with peace-of-mind. All engine drive welder/generators come backed by our standard, industrial 3 year warranty on parts and labour.

Global Support

With a worldwide network of distributor and sales offices reaching over 160 countries, and 36 global technical application facilities, Lincoln Electric can provide trusted global support you can count on.



Pipeline Solution

The Frontier 580x diesel engine driven welder/generator is designed to be the go-to system for the pipeline industry. By combining the latest technology and innovation with the iconic arc performance of our legacy machines, the Frontier 580x delivers the ideal solution to tackle whatever job is thrown at you. So whether you are looking to run the perfect SMAW cellulosic bead pass, put down a high speed cap or want to run GMAW, STT Root Pass and a Fill and Cap the Frontier 580x delivers the performance and versatility you need to get the job done.

Optimised Pipe Modes



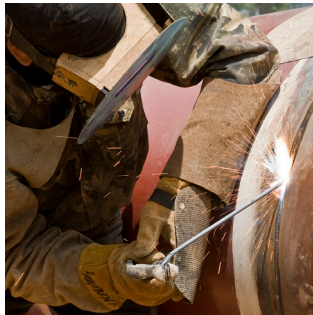
Cellulosic SMAW

Optimised for downhill pipe to deliver the classic DC arc pipeliners expect from Lincoln Electric.



Frontier 580X

Advanced GMAW Modes



Low Hydrogen SMAW

400A output provides plenty of amperage to run Pipeliner® LH-D stick electrodes all day long.



Activ8X Pipe



Pulse and STT Field GMAW

Simple connection to advanced, portable GMAW wire feeders for high productivity and low hydrogen weld deposits.



Pipeliner Consumables

Machine Packages

Machine Packages

Perfect for the construction site or the rental fleet, Frontier 580X Mine-Pak® options are shipped fully preassembled right from the factory floor.

Mine-Pak Options

- Mine-Pak 1 – K5293-1v-0001 – Roll and Spill Frame with integrated cable rack, Active VRD and Reflective Tape.
- Mine-Pak 2 – K5293-1v-0002 – As above plus, Fire Extinguisher and Bracket.



Control at a Distance

The Frontier 580X offers an optional wireless remote for full control of the machine in the palm of your hand. With a working range of 200M. line of sight and a long-lasting rechargeable battery, users can avoid unnecessary trips back to the machine for welding adjustments and can remotely turn the machine on and off.

Operators have the ability to:

- Start / Stop the Engine
- Change Weld Modes
- Adjust Welding Output
- Adjust Weld Settings – Such as Arc Force, Pinch, and Hot Start
- Check Fuel Level
- Recall Saved Memories

Order: **K5265-1**



Remote Controls



Remote Output Control

Portable control provides same dial range as the output control on the welder. Features a convenient 12-pin plug for easy connection to the welder. Order:

K857-2 (25 ft / 7.6 m)

K857-3 (100 ft / 30.4 m)



12-pin to 6-pin Adaptor

Used to connect 6-pin remotes into the 12-pin connector on the front of the welder. Order:

K2909-1

CrossLinc Accessories



LN-25X®

The LN-25X portable wire feeder delivers a simple, reliable and easy-to-service industrial wire feeder solution. Includes CrossLinc and True Voltage Technology® (TVT®) capability to remotely set voltage from the feeder without a control cable and to ensure the set voltage regardless of power cable lengths. Order:

K4267-4



Activ8X®

Rugged, light-weight, portable across-the-arc wire feeder that fits up to an 8 in. dia. spool. Includes CrossLinc and TVT capability to remotely set voltage from the feeder without a control cable and to ensure the set voltage regardless of power cable lengths. Order:

K3519-2



Activ8X® Pipe™

Built on the rugged and proven Activ8X design to deliver it ideal pipeline solution for GMAW and FCAW applications. Features advanced weld modes optimized for root-to-cap applications including STT Field and pulse welding capabilities. Order:

K4717-1



CrossLinc Remote

Utilised with CrossLinc compatible equipment to control output for CC-processes like stick or TIG welding. Remote control is added in-line with the welding power cable to allow for remote output control of the power source through the weld cable without additional control cables. Order:

K4345-1

General Accessories



User Interface Protective Cover

Installed over the UI to provide extra protection against accidental impacts while on the jobsite or transporting the machine.

Order:
K5226-1



Storage Cover

A flame retardant, mildew resistant, and water repellent cover to protect the engine drive when not in use.

Order:
K5292-1



MACHINE SPECIFICATIONS

Product Number	Product Number	Rated Output @ 40° C	Output Range	Open Circuit Voltage	AC Generator Auxiliary Power ⁽¹⁾	Auxiliary Receptacles ⁽²⁾	Dimensions ⁽³⁾ HxWxD (mm)	Weight (kg)
Frontier 580X	K5293-1	IEC Rating: 500A / 40V / 100% 525A / 36V / 60% Max Rating: 580A / 35V / 40% Desert Rating: @ 55°C 400A / 36V / 100%	Stick / Pipe: 30-580 Amps DC TIG: 5-580 Amps MIG / FCAW: 10-45 Volts Arc Gouging: 60-580 Amps	71 Peak OCV >30 Peak OCV with VRD Active	Single Phase: 7.2 kW Continuous, 11.5 kW Peak, 240V @ 60 Hz Three Phase: 20 kW Continuous, 25 kW Peak 240V @ 60 Hz	Clipsal IP66 (240V / 15A / 1-) [Auto Switch] Clipsal IP66 (415V / 32A / 3-)	Machine Only: 913 x 643 ⁽³⁾ x 1,524 To Top of Exhaust Pipe: 1,113	586 ⁽⁵⁾

ENGINE SPECIFICATIONS

Engine Model	Engine Description	Operating Speed (RPM) @ 24.7 HP	Displacement	Capacities
Perkins 404D-22-T(5) Tier 4i Compliant	4 Cylinder 43 HP (32 kW) Turbocharged Water Cooled Diesel Engine	High Idle: 1800 Low Idle: 1440	Bore: 2.2L Stroke: 87.1 mm x 92.5 mm	Fuel: 76L Oil: 8.0 L Cooling System: 6.8L

SIMULTANEOUS WELDING AND POWER LOADS

Welding Output	Permissible Power-Watts (Unity Power Factor)	Permissible Auxiliary Current in Amperes	
		240V ±10%*	415V ±10%
500A/40V	0	0	0
350A/34V	8,100	30*	14.0 amp/phase
200A/30V	12,000	30*	18.5 amp/phase
150A/26V	16,000	30*	23.6 amp/phase
90A/24V	18,000	30*	26.4 amp/phase
0	20,000	30*	28.0 amp/phase

* Each receptacle is limited to 15 amps.

- (1) When welding, available auxiliary power will be reduced. Output voltage is within +/- 10% at all loads up to rated capacity.
- (2) Circuits cannot be wired in parallel to operate the same device.
- (3) Includes width of door. Base width is 610 mm (24.0 in.)
- (4) Machine only – Does not include fuel.
- (5) Engine warranted separately by engine manufacturer.

CUSTOMER ASSISTANCE POLICY

Lincoln Electric® business is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric® for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric® is not in a position to warrant or guarantee such advice and to the extent permitted by law assumes no liability, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given. The provision of information or advice does not create, expand or alter this warranty. Lincoln Electric® is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric® is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric® affect the results obtained in applying this type of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing.

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