


# FRONTIER®

## Diesel Engine Driven Welder Generators

LINCOLN® ELECTRIC




Show Left to Right:

K3485-4 - Frontier 400X Pipe Model
K3484-4 - Frontier 400X Construction Model
K5350-2 - Frontier 500X All-in-One

# The New Frontier of Performance

Driven from legacy, engineered for the future - the Frontier 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 the construction site, or miles out on the right-of-way, the Frontier is the go-to choice for handling whatever the job throws your way.

Note: The front panel includes an ArcLink® connector provision designed for integration with Lincoln Electric mechanized welding solutions. Future functionality may expand as additional capabilities are developed.




# Breaking Boundaries in Engine Driven Welders

## Faster Starts. Smarter Controls

A rotary start switch allows operators to start the engine immediately without waiting for the display to boot up. Combined with CrossLinc® Technology, Auto-Stop/Start, and a bright next-generation display featuring memory settings, productivity metrics, and more, the Frontier is engineered to maximize productivity on every jobsite.

## Expanded Capability

From Lincoln Electric's renowned arc performance and multi-process welding functionality to dedicated application modes and spool gun capability, the Frontier delivers the versatility to tackle more jobs with a single machine.

## Field Proven. Built to Perform

Powered by reliable Kubota® diesel engines, the Frontier delivers smooth, quiet operation and dependable performance in demanding environments. With 400-hour oil change intervals, the Frontier helps reduce maintenance and maximize uptime.

## Trusted Expertise & Support

Backed by Lincoln Electric's industry-leading expertise, global support network, and proven reliability, the Frontier is built to keep crews working and businesses productive.

**Processes »**
SMAW (Stick), FCAW (Flux-Cored), GMAW (MIG), GTAW (TIG), CAC-A (Arc Gouging)

**Output »**
CC CV | DC | 10 kW | 20 kW

**Input »**

**Product Number »**
K3484-4
Frontier 400X

K3485-4
Frontier 400X Pipe

K5350-2
Frontier 500X

**Industries Served »**
Maintenance & Repair
Pipeline
Power Generation
Process Industries
Structural

# Pioneers in Innovation

## Next-Gen Display

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

Key Features include:

- Bright, 7 in. 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

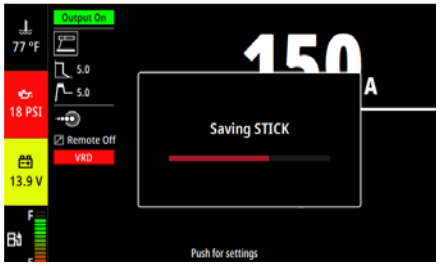
## Unmatched Simplicity

The Frontier helps maximize 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 authorization options to prevent unintended use
- Multilingual display settings for true global compatibility - English, Spanish, and French

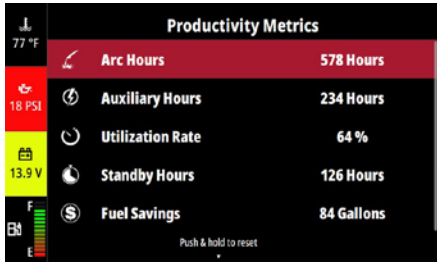



1. USB Port
2. Remote Button
3. Home Button
4. Memory Buttons
5. Navigation Knob & Push Button
6. Help / Ready. Set. Weld®
7. Back Button



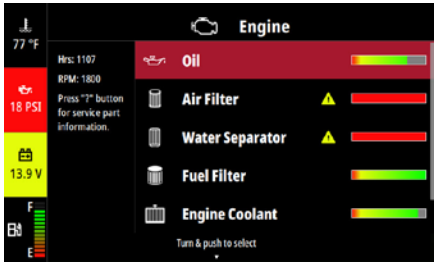

### Memory Features

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



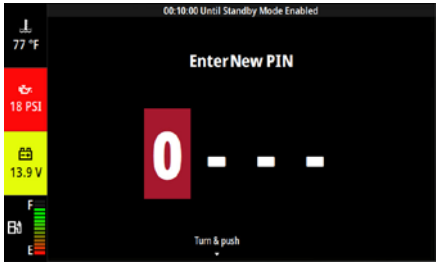

### Productivity Metrics

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




### Maintenance Reminders

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




### Pin Authorization

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

# Pioneers in Innovation

## CrossLinc® - Precise Output Control at the Arc

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

**PRODUCTIVITY** Work faster, reduce setup time, and minimize 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 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.

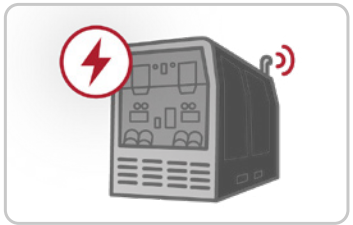
- Easily set auto-stop time frame (5-120 mins of engine idle)
- Engine automatically restarts when arc initiates
- Increase fuel savings and avoid frequent maintenance
- Extend engine life by reducing engine wear and tear
- Reduce carbon footprint
- Extended warranty timeframe by preventing non-use engine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

## Optimized Arc Performance & 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, optimizing our weld modes to deliver smooth, stable arc performance specifically tailored for your application.

**Embedded Weld Modes Optimized for:**

- SMAW
- GMAW[1]
- FCAW-S[1]
- FCAW-G[1]
- Touch-Start TIG
- Scratch-Start TIG
- Pulsed TIG
- Carbon Arc Gouging

## 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.

- Optimize 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 500X and 400X Pipe Model**



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

# Multi-Process Versatility

## Perfectly Tuned For Field Welding

With embedded CrossLinc capabilities, the Frontier 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™

**Compatible Spool Gun:**

- Magnum® PRO 250LX GT

**Advanced Processes**

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





## Field Mechanized Capabilities

Designed to easily support field mechanized solutions, Frontier engine drives easily communicate with Lincoln Electric's APEX® and HELIX® mechanized components for unparalleled performance and quality in orbital and flat track applications.

**Compatible Mechanized Solutions :**

- APEX 30 Series Control Systems
- HELIX M85 Weld Head
- HELIX M45 Weld Head

**Mechanized Processes:**

- Orbital and Flat Track
- GMAW
- FCAW

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

# 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 was engineered to fire up and run day-in and day-out.

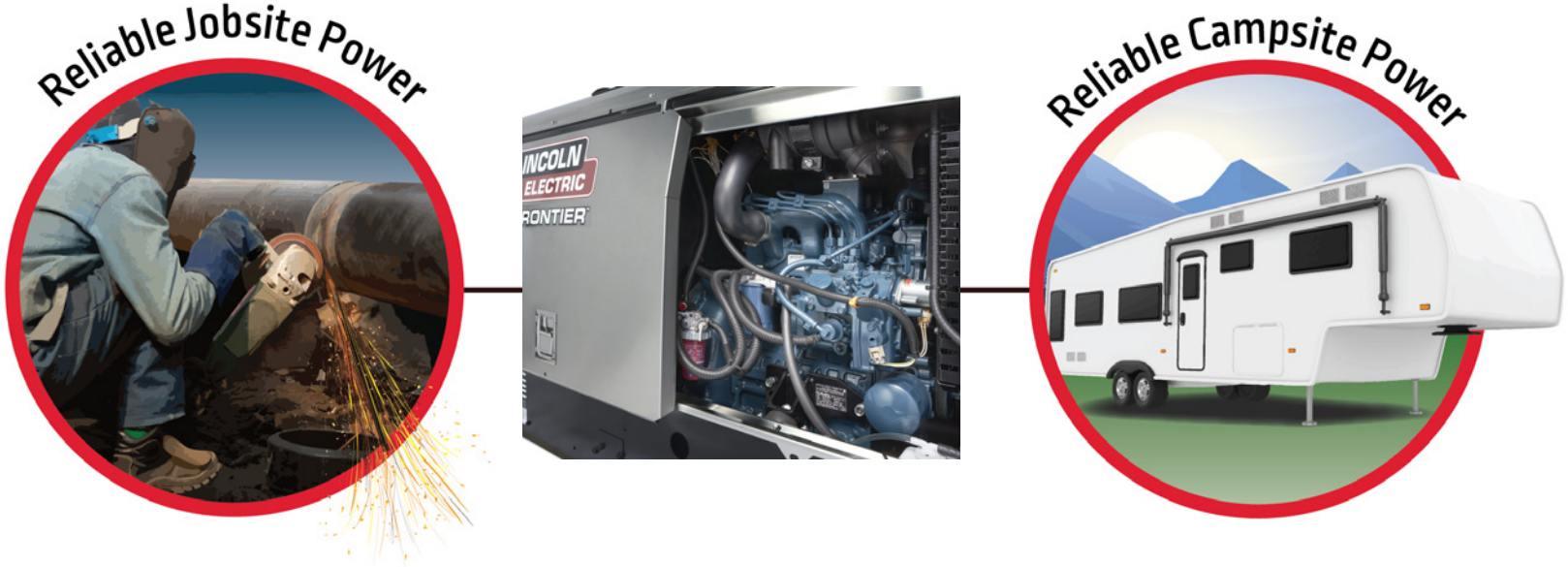
- Field-proven Kubota diesel engine
- Oil change interval extended to 400 Hours
- Start the engine without waiting for the display to boot up.
- Smooth and quiet operation with low vibration
- Reliable cold-weather starting and high altitude performance
- Trusted Industry Support
- Built in maintenance schedule alerts on UI with easy-to-order service kits available.

## Plenty of All Day Power

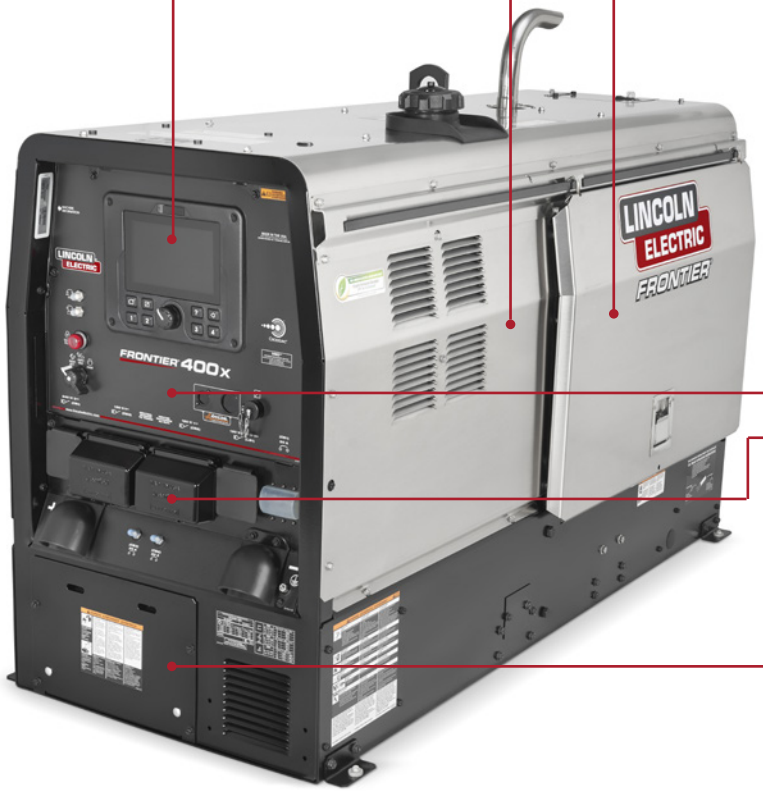
**400X**:
- Three Phase Power: 11 kW Continuous / 12.5 kW Peak
- Single Phase Power: 10 kW Continuous / 11.5 kW Peak

**500X**:
- Three Phase Power: 20 kW Continuous / 21 kW Peak
- Single Phase Power: 12 kW Continuous / 15 kW Peak

With up to 20 kW of continuous AC auxiliary power, the Frontier ensures you have the energy you need—whether at the jobsite or campsite.



# 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



Integrated GFCIs encapsulated design improves reliability, reduces nuisance tripping and allows quick replacement in the field



Coated, strain-relief wiring harnesses help connections last longer

## CoreLinc™ Wireless Remote

**Compatible with**: Frontier, Vantage® and Flextec® with 12-pin connectors
**Power**: 3x AA batteries
**Control Capabilities**:

- Adjust Weld Output (Amps/Volts)
- Modify Weld Settings (Arc Force, Pinch, Hot Start)

**Installation**: Tool-less, easily transferable
**Best For**: General fabrication, maintenance, and portable applications

## Frontier® Wireless Remote

**Compatible with**: Frontier® 400X (All Models)
**Power**: Rechargeable battery
**Control Capabilities**:

- Start/Stop Engine
- Switch Weld Modes
- Adjust Weld Output (Amps/Volts)
- Modify Weld Settings (Arc Force, Pinch, Hot Start)
- Recall Saved Memories
- Check Fuel Level

**Installation**: Minimal tools required (field install kit included)
**Best For**: Pipe welding and applications needing full remote control

| Feature | CoreLinc™ Remote | Frontier® Remote |
|---|---|---|
| Range | 350 ft | 800 ft |
| Power Source | 3x AA Batteries | Rechargeable Battery |
| Tool-less Install | Yes | No |
| Process Control | No | Yes |
| Memory Recall | No | Yes |
| Fuel Level Check | No | Yes |
| Ideal For | General Fabrication | Pipe Welding |


K5728-1


K5265-1



## Machine Packages

Perfect for the construction site or the rental fleet, Frontier Ready-Pak® options are shipped fully preassembled right from the factory floor. Ready-Pak options include a combination of welder, trailer, fender & lighting kits, welding cables/clamps, and cable racks. Additional, customer-installed options include spare tire kit and 2-in-1 fire extinguisher bracket / document holder kit.

- **Ready-Pak 1 –** Includes trailer, fender kit, cable rack, cables, and clamp
  Example: K5350-2-RP1
- **Ready-Pak 2 –** Includes trailer only
  Example: K5350-2-RP2
- **Ready-Pak 3 –** Includes trailer, fender kit, and cable rack
  Example: K5350-2-RP3



# Trusted Expertise & Support

## 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 & labor.

## 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.






## 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: K4267-2**



### 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: K3519-1**



### Activ8X® Pipe™

Built on the rugged and proven Activ8X design to deliver it ideal pipeline solution for GMAW and FACW applications. Features advanced weld modes optimized for root-to-cap applications including STT Field and pulse welding capabilities.
**Order: K4717-1**



### CrossLinc Remote

Utilized 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**



### Magnum PRO 250LX GT Spool Gun

Heavy-duty, 25-foot MIG welding gun designed for smooth aluminum wire feeding
**Order: K3569-2**

## TRAILER ACCESSORIES



### Compact Medium Welder Trailer

Two-wheeled trailer with a standard Duo-Hitch™ (2 in. ball hitch, integrated LED lights, and forklift pockets) for heavy-duty road, off-road, plant, and yard use. For highway use, consult applicable federal, state, and local laws regarding possible additional requirements.
**Order: K2636-1 Medium Trailer**
**K5276-1 Fender Kit**
**K5278-1 Spare Tire Kit**
**K5279-1 Fire Extinguisher Bracket / Document Holder**
**K2640-2 Cable Rack**



### Four-Wheeled Steerable Trailer

Four-wheeled trailer with a standard Duo-Hitch™ (2 in. Ball and Lunette Eye combination hitch) for plant and yard towing. Includes 13 in. wheels and an automatically engaging drawbar lock.
**Order: K2641-2**

## GENERAL ACCESSORIES



### Full KVA Power Plug Kit

Provides four 115V plugs rated at 20 amps each, and one dual voltage, full KVA plug rated at 115/230V, 50 amps .
**Order: K802N**



### Full KVA Adaptor

Provides convenient connection through the full-KVA receptacle on engine-driven welders for portable power sources needing 240V AC 1-phase power (NEMA 6-50P).
**Order: K1816-1**



### APEX® System Connector

A field install kit to add 5-pin and 4-pin to the front panel of the machine. Allows for capability with APEX systems for mechanized welding solutions.
**Order: K5171-1**



### 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**



### Cold Weather Kit

For improved engine starting and operation in extreme cold weather conditions with the use of 0W-40 synthetic oil and arctic diesel fuel. Includes engine block heater, oil pan heater, and radiator grill tarp.
**Order: K2735-1 (Kubota)**



### Storage Cover

A flame retardant, mildew resistant, and water repellent cover to protect the engine drive when not in use.
**Order: K5292-1**



### CoreLinc™ Wireless Remote

A tough, battery-powered remote that gives workers the ability to control machine from a distance. Tool-less field install; easily move between machines.
**Order: K5728-1**

## SERVICE KITS



### Engine Service Kits

One easy-to-purchase kit including all the needed engine filters to maintain peak welder performance. Includes air filter, fuel filter, oil filter, and fuel water separator.
**Order: K3599-5 (400X)**
**K3599-6 (500X)**

## 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)**



### Remote Output Control

12-pin, portable remote control with a detachable control box that can be stowed in a truck or job box to deter job site theft. The control box has a 120V duplex receptacle to power lights, grinders, and other tools right at the arc – 125 ft. (38.1 m) of cable length.
**Order: K5312-1**



### 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**



### Wireless Remote Control

Field installed kit to allow operators to add a wireless remote to the machine to switch between welding processes, adjust welding parameters, recall saved memories, and start/stop the machine from a distance.
**Order: K5265-1**

## MACHINE SPECIFICATIONS

| Product Name | Product Number | Rated Output @104°F (40°C) | Output Range | Open Circuit Voltage | AC Generator Auxiliary Power[1] | Auxiliary Receptacles[2] | Dimensions[3] H x W x L in (mm) | Weight lb (kg)[4] |
|---|---|---|---|---|---|---|---|---|
| Frontier 400X | K3484-4 | IEC Rating – 325A / 33V / 100%<br><br>Max Rating – 400A / 26V / 60% | Stick / Pipe: 30 – 400 Amps<br><br>DC TIG: 5 – 400 Amps<br><br>MIG / FCAW: 10 – 45 Volts<br><br>Arc Gouging: 60 – 400 Amps | 71 Peak OCV @ 1800 RPM | Single Phase: 10 kW Continuous, 11.5 kW Peak, 120V/240V @ 60 Hz<br><br>Three Phase: 11 kW Continuous, 12.5 kW Peak, 240V @ 60 Hz | NEMA 5-20R (120V / 20A / 1~)<br><br>NEMA 14-50R (120/240V / 50A / 1~)<br><br>NEMA 15-50R (240V / 50A / 3~) | Machine Only: 35.9 x 25.3[3] x 60.0 (913 x 643 x 1524)<br><br>To Top of Exhaust Pipe:43.8 (1113) | 1035 (469) |
| Frontier 400X Pipe | K3485-4 | | | | | | | |
| Frontier 500X | K5350-2 | IEC Rating – 500A / 40V / 100% | Stick / Pipe: 30 – 525 Amps<br><br>DC TIG: 5 – 400 Amps<br><br>MIG / FCAW: 10 – 45 Volts<br><br>Arc Gouging: 60 – 525 Amps | | Single Phase: 12 kW Continuous, 15 kW Peak, 120V/240V @ 60 Hz<br><br>Three Phase: 20 kW Continuous, 21 kW Peak, 240V @ 60 Hz | | Machine Only: 40.4 x 28.4(3) x 65.0 (1027 x 721 x 1651) To Top of Exhaust Pipe: 48.9 (1242) | 1462 (663) |

## ENGINE SPECIFICATIONS

| Product Name | Engine Model | Engine Description | Operating Speed (RPM) @ Full Load | Displacement | Capacities |
|---|---|---|---|---|---|
| Frontier 400X<br>Frontier 400X Pipe | Kubota D1503-M[5]<br>Tier 4 Final Compliant | 3 Cylinder 24.8 hp (18.5 kW)<br>Naturally Aspirated Water Cooled Diesel Engine | High Idle: 1800<br>Low Idle: 1500 | 91 cu. in (1.5 L)<br>Bore x Stroke<br>3.27 in x 3.64 in<br>(83 mm x 92.4 mm) | Fuel: 20 US gal. (75.7 L)<br>Oil: 5.9 qts. (5.6 L)<br>Cooling System: 1.8 US gal. (6.8 L) |
| Frontier 500X | Kubota V2403-CR-T E4<br>Tier 4 Final Compliant | 4 Cylinder 48.9 hp (36.5kW)<br>Turbocharged Water Cooled Diesel Engine | | 148.5 cu. in (2.43 L)<br>Bore x Stroke<br>3.43 in x 4.031 in<br>(87 mm x 102.4 mm) | Fuel: 20 US gal. (75.7 L)<br>Oil: 10 qts. (9.5L)<br>Cooling System: 9 qts. (8.5 L) |

(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 24.0 in. (610 mm).

(4) Machine only – Does not include fuel.

(5) Engine warranted separately by engine manufacturer.

**For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit www.lincolnelectric.com for more details.**

**Manufactured at a facility with certified ISO Quality and Environmental Management Systems.**

CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company® 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 information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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