

# FLEXTEC® 650X

MULTI-PROCESS POWER FOR HEAVY DUTY APPLICATIONS



Shown: K3425-1

## SIMPLE. RELIABLE. FLEXIBLE.

This multi-process welder delivers up to 815 amps of welding power for a variety of applications, including construction, shipbuilding and heavy fabrication. Embedded CrossLinc® Technology drives welding control at the arc without an added cable to save costs, increase quality and enhance productivity and safety on the job site.

The world-ready Flextec 650X will run on a wide range of available voltage input power and is IP23 rated for outdoor operation and storage. Broad wire feeder compatibility is not an issue – The Flextec 650X will operate with almost any Lincoln Electric® wire feeder or welding process.

Simple. Reliable. Flexible. Specify the Flextec 650X for your heavy duty applications.

### Processes »

Stick, TIG, MIG, Flux-cored, Submerged Arc, Gouging

### Input »



### Output »



### Product Number »

K3425-1 Base Model  
K3533-1 CE Model

## KEY FEATURES

### Simple

- » Easy one-knob weld process selection
- » Fast inverter arc response means smooth arc action and consistent bead appearance
- » User weld schedule memory storage allows easy recall of your critical or often repeated weld procedures with applicable feeders<sup>(1)</sup>
- » Synergic single knob control over wire feed speed and voltage with applicable feeders<sup>(2)</sup>

### Reliable

- » Components designed to run cool for long life in high temperature environments
- » Engineered for outdoor use and harsh environments (IP23 rated)
- » Desert Duty® Rated for extreme temperatures up to 55°C

### Flexible

- » Ideal for large diameter wire or stick welding on thick materials
- » Compatible with most Lincoln Electric feeders, including including older and new common bench and boom models, portable across-the-arc models and CrossLinc Technology or ArcLink®-equipped models
- » ArcLink digital communication compatibility ensures the Flextec 650X remains 'future-proof' as new wire feeders are introduced
- » Premium arc characteristics on all DC wire, stick and TIG processes
- » Large output range: 10-815A allows you to weld 20 ga stainless all the way through gouging with 1/2 in. carbons.
- » 115VAC duplex receptacle to power tools, lights, and accessories.

### CrossLinc Technology Compatibility

- » When this machine is paired with a CrossLinc technology enabled accessory, many benefits are unlocked.
- » Full functionality without control cables
- » Enables remote procedure setting at the feeder to improve weld quality
- » Increases arc time with fewer trips to the power source to adjust settings
- » Improves safety by reducing jobsite clutter

<sup>(1)</sup> User weld schedule memory settings available only with Power Feed® and Flex Feed® 84 wire feeders.  
<sup>(2)</sup> Synergic control available only with Power Feed wire feeders

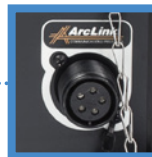
## FLEXIBILITY

Use the Flextec 650X with nearly any Lincoln Electric wire feeder or welding process.



### CrossLinc (Lincoln Electric LN-25X model)

CrossLinc Technology communicates through a standard weld cable to enable voltage or current control at the arc without a control cable.



### 5-pin (Lincoln Electric Power Feed models)

5-pin high-speed ArcLink® digital communication enables advanced wire feeder compatibility and additional operator controls. Allows compatibility with future wire feeder models.



### 14-pin (Lincoln Electric LF, LN and Flex Feed models)

14-pin analog communication allows compatibility with most existing Lincoln Electric wire feeders.



### Across-the-arc (Lincoln Electric LN-25 PRO / Activ8® models)

Across-the-arc feeders connect to the power source using the weld cables. This basic configuration does not use a control cable or CrossLinc Technology, so voltage control is only accessed at the welding power source.



## Crosslinc w/True Voltage Technology (TVT) – Improve all aspects of your operation with Crosslinc and TVT.

### Safety

- Reduce jobsite clutter by removing cumbersome control cables.
- Eliminate unnecessary movement of personnel across the jobsite.
- No need to drag heavy control cables around the site.

### Quality

- Full output control at the arc results in the correct settings for every weld.
- True Voltage Technology (TVT) accurately compensates for voltage drop across long cable runs.
- Eliminate unintentional machine adjustments by helpers or other operators.

### Productivity

- Setup faster with fewer cable connections.
- Eliminate trips to the power source to make procedure adjustments.
- Minimize rework with easy settings adjustments.

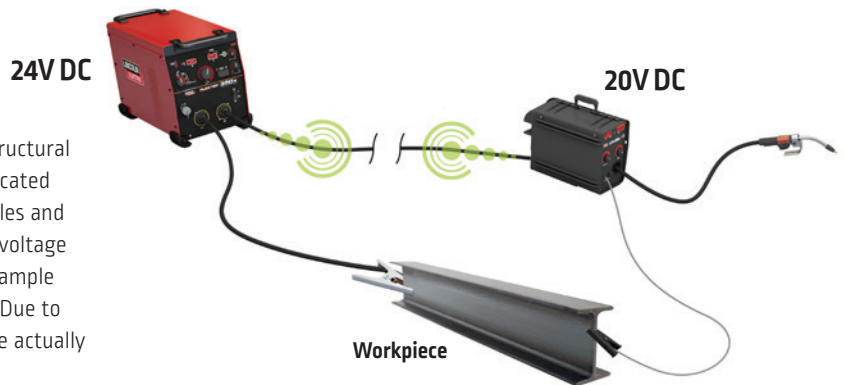
### Crosslinc Technology Communicates Settings Directly Over The Weld Cables.

- No additional control cable is needed.
- Pre-set the desired voltage on the feeder.
- The feeder sends the signal to the CrossLinc enabled power source.
- The CrossLinc compatible power source puts out the desired voltage.
- The Activ8X receives the voltage and lets you know the actual voltage at the arc.

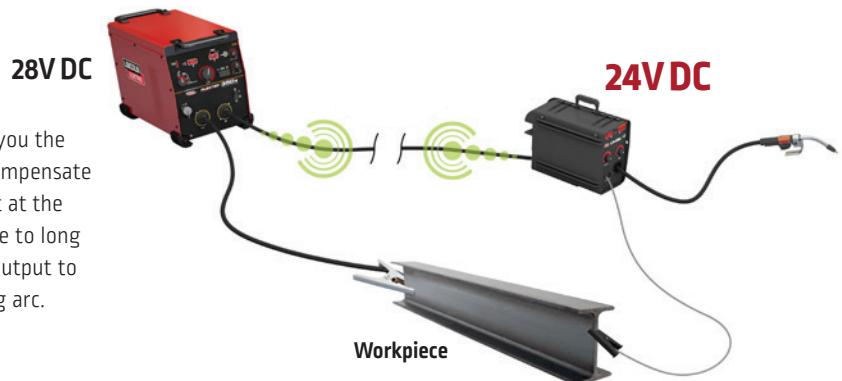
## TRUE VOLTAGE TECHNOLOGY™ (TVT)™



As is common in many outdoor welding applications: (Structural steel, Shipbuilding, Offshore, etc.) the operator can be located hundreds of feet away from the power source. Long cables and multiple connections can create a difference in voltage (voltage drop) between the power source and the weld. In the example to the right, 24volts is set on the welding power source. Due to electrical resistance through long cables, only 20volts are actually available at the arc. This may result in a cold weld.

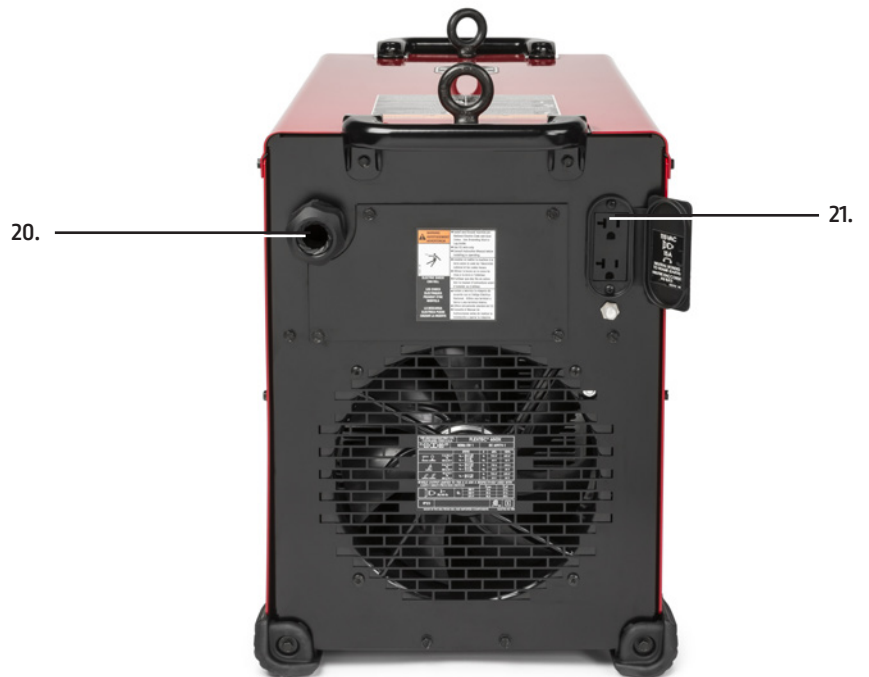


True Voltage Technology (TVT) sees this drop and gives you the true voltage you set by adjusting the power source to compensate for the voltage drop. In the example below, 24v is preset at the Activ8X wire feeder. TVT senses there is a 4 volt drop due to long weld cables and compensates by increasing the welder output to 28V. The result is the desired 24v available at the welding arc.



## KEY CONTROLS

1. Amperage Display Meter
2. Thermal LED
3. Output Control Dial
4. Hot Start Control Dial
5. Weld Process Selector Switch
6. Positive and Negative Welding Output Studs
7. VRD (Voltage Reduction Device) Indicator Light
8. Voltage Display Meter
9. CrossLinc Indicator Light
10. Power Switch
11. Arc Force Control Dial
12. Local/Remote Output Selector Switch
13. Weld Terminals On/Remote Selector Switch
14. Wire Feeder Voltmeter Polarity Selection Switch
15. Circuit Breaker Reset Buttons for 42V feeders and ArLink peripherals
16. 42V or 115V Wire Feeder Selector Switch
17. Remote Output Control 12-pin Universal Connector
18. 14-pin Wire Feeder Connector
19. 5-pin ArLink Connector
20. Input cord strain relief
21. 115VAC duplex receptacle



## WHAT'S INCLUDED – PACKAGES

Description	Product Number	READY-PAKS		ONE-PAKS	
		LF-74 Heavy Duty [K3512-1]	LF-74 Heavy Duty [K3513-1]	Flex Feed 84 Heavy Duty [K3514-1]	
Flextec 650X	K3425-1	•	•	•	
<b>WIRE FEEDERS</b>					
Flex Feed 84 Single Bench Model, Heavy Duty Wire Reel Stand	K5000-2			•	
LF-72 Bench Model, Heavy Duty Wire Reel Stand	K2327-7				
LF-74 Bench Model, Heavy Duty Wire Reel Stand	K2426-5	•	•		
<b>DRIVE ROLLS</b>					
4 Roll Drive and Wire Guide Kit 1/16 in. (1.6 mm) Cored Wire	KP1505-1/16C	•	•	•	
2 Roll Drive and Wire Guide Combination Kit 0.035-0.045 in. (0.9-1.1 mm) Solid Wire	KP1696-1				
<b>GUNS</b>					
Magnum PRO Curve™ 400 Gun and Cable Ready-Pak, 15 ft (4.5 m) See Bulletin E12.05	K2952-2-10-45				
Magnum PRO Curve 400, 15ft (4.5 m)	K2952-2	•	•	•	
Liner, 052/1/16, 15 ft (4.5 m)	KP44-116-15	•	•	•	
<b>MISC.</b>					
Harris Flowmeter Regulator and Hose	3100211	•	•	•	
Control Cable Extension, Male 14 Pin to Female 14 Pin, 10 ft. (3m)	K1797-10	•	•	•	
3/0 Welding Cable (10 ft lug to lug)	K1842-10	•	•	•	
Work Lead Package, 15 ft (4.5 m) Cable with GC500 Ground Clamp	K2149-1	•	•	•	
GC-500 Work Clamp, 500A, 60% Duty Cycle	K910-2				
Inverter and Wire Feeder Cart	K3059-4	•			



**K3510-1** Flextec 650X 4-Pack Rack



**K3512-1** Flextec 650X/LF-74 Heavy Duty Ready-Pak®



**K3514-1** Flextec 650X/Flex Feed 84 Heavy Duty One-Pak®

*Note: Ready-Pak all components including undercarriage are assembled and shipped on one pallet. One-Pak all components are shipped together on one pallet. User must assemble components.*

## RECOMMENDED ACCESSORIES

### GENERAL OPTIONS



#### Multi-Process Switch

Easily change welding process and polarity without changing cables at the machine  
**Order K3091-1**



#### Weld Cable Package

2, 10ft. 2/0 cables with Tweco plug and lug. Also includes GC500 work clamp.  
**Order K1803-2**



#### Harris® Model 355 Flowmeter Regulator and Hose

Includes 10 ft. (3.0 m) hose  
**Order: 3100211**



#### Single Cylinder Inverter and Wire Feeder Cart

Requires K4068-1 mounting bracket for LF, Flex Feed and Power Feed Feeders. Requires locking foot kit for Flexsecs  
**Order K3059-4**



#### Dual Cylinder Inverter and Wire Feeder Cart

Requires K4068-1 mounting bracket for LF, Flex Feed and Power Feed Feeders. Requires locking foot kit for Flexsecs  
**Order K3059-5**



#### Inverter Cart Mounting Bracket Kit

Use for mounting Flex Feed or Power Feed (to the K3059-4 inverter cart)  
**Order K4068-1**



#### 12-pin to 6-pin Adapter

Allows 6-pin remote controls (K870, K963-3, K857, K4986-1) to be used with 12-pin Universal Connection  
**Order K2909-1**



### STICK OPTIONS

#### CrossLinc Remote

Adjust voltage or current at the arc. For CrossLinc-equipped welders. See publication MC16-137  
**Order K4345-1**



#### Remote Output Control with 12-pin Universal Connector

Permits remote adjustment of output  
**Order K857-2 (25 ft.)**  
**Order K857-3 (100 ft.)**



### TIG OPTIONS

#### Wireless Foot Pedal with 6-pin Amphenol®

Permits remote adjustment of output(1)  
**Order K4986-1**



#### Foot Amptrol with 12-pin Amphenol Connector (25 ft)

Remote current control for TIG welding  
**Order K870-2**



#### Hand Amptrol Rotary Track Style, 12-pin Amphenol (25 ft)

Remote current control for TIG welding  
**Order K963-4**



### WIRE FEEDER OPTIONS

#### LN-25X

Includes CrossLinc communication technology  
**Order K4267-1**



#### Activ8X

Compact, lightweight, portable feeder with CrossLinc Technology  
**Order K3519-1**



#### LF-74 Bench Model

Four drive roll feeder designed for MIG and cored wire welding in job shop and manufacturing environments  
**See Publication E8.11**



#### Flex Feed 74 HT

Four drive-roll, high-torque, industrial semiautomatic wire feeder for general/structural fabrication  
**See Publication E8.203**



#### Flex Feed 84 Single Bench

Four drive roll feeder with heavy duty wire reel stand for general/ structural fabrication  
**See Publication E8.205**



#### Flex Feed 84 Dual Bench

Four drive roll feeder with heavy duty wire reel stand and contactor for general/structural fabrication  
**See Publication E8.206**



#### Power Feed 84, Heavy Duty Wire Reel Stand, U/I, USB

Four drive roll, digital ArcLink semiautomatic industrial wire feeder built on a modular platform to be used in a variety of applications  
**See Publication E8.268**



### SUBMERGED ARC

#### MaxSA 10 Controller

The Maxsa 10 is a digital Submerged arc controller with digital meters and 8 memories. The Maxsa operates with the Flextec 650X in CV only.  
**Order K2814-4**



#### NA-3S Controller

Improve productivity NA-3s automatic submerged arc controller. The NA-3s has been specially designed to deposit more weld metal at fast travel speeds. Operates on CC or CV.  
**Order K210-2**



#### NA-5 Controller

The NA-5 automatic CV submerged arc controller is designed to deposit significant amounts of weld metal while holding the voltage to very tight specifications.  
**Order K356-2**



#### LT-7 Tractor

The LT-7 tractor is a self propelled automatic submerged arc wire feeder is ideal for shipbuilding, tank erection, and any place where there are long seams on heavy weldments. Operates on CC or CV.  
**Order K227-1**

(1) Requires the K2909-1 12-pin to 6-pin adapter if used with Flextec 500X

## SPECIFICATIONS

Product Name	Product Number	Input Power Voltage/Phase/Hertz	Rated Output Current/Voltage/Duty Cycle	Input Current @ Rated Output	Output Range	H x W x L in (mm)	Net Wt. lb (kg)
<b>Flextec 650X</b>							
Base Model	K3425-1	380/460/575/3/50/60	750A/44V/60%	61/50/40	10-815A	21.8 x 16.1 x 29.3 (554 x 410 x 745)	165 (74.8)
			650A/44V/100%	57/47/38			
CE Model	K3533-1		750A/44V/60%	61/50/40			
			650A/44V/100%	57/47/38			



The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

#### 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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