

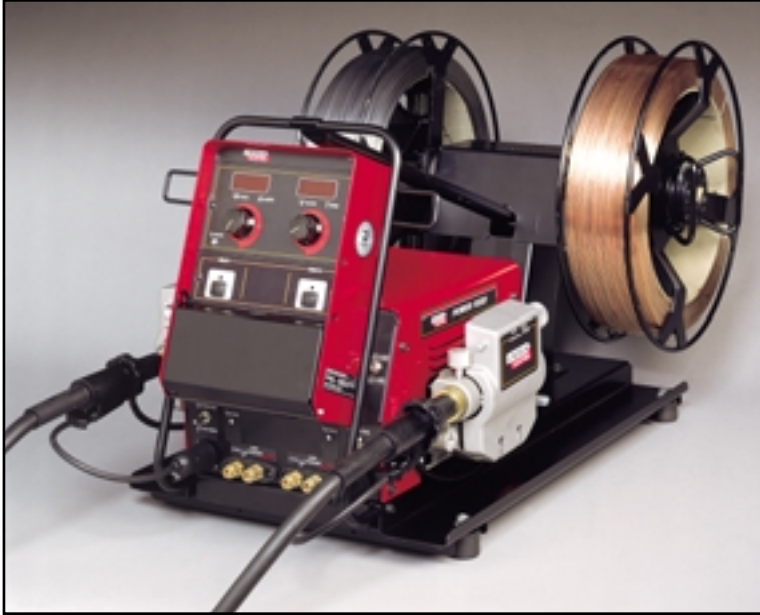
# ***POWER WAVE™ WELDING SYSTEMS***

***WITH POWER FEED™ 10 AND 10 DUAL***



**Premium MIG Welding Systems**

# POWER WAVE WELDING SYSTEMS



Simple. Innovative. Technologically Advanced. These are all words that describe the Power Wave welding systems. These next generation systems utilize Waveform Control Technology™ for the finest welding arc in the industry.

## POWER SOURCE

The Power Wave 455 is a high efficiency inverter designed for unprecedented ease of use and performance.

Sophisticated software in the unit controls the welding waveform for reduced arc spatter, fumes, and an exceptionally smooth arc.

## WIRE FEEDER

The Power Feed 10 and the Power Feed 10 Dual set the standard for easy to use, rugged wire feeders. They are perfectly matched for use with the Power Wave 455, resulting in a simple, high performance welding package that is built to last.

The Power Feed 10 and the Power Feed 10 Dual wire feeders feature easy to understand controls and the Lincoln four driven roll feed head. These wire feeders have the strength and speed for the most demanding feeding applications, whether it's for high speed or for large diameter wires.

Choose Power Feed 10 Dual when applications require two different wires to be utilized with no changeover time.

## ADVANTAGE LINCOLN

### SYSTEM WIDE

- Power Wave welding performance in a simple, easy to use system.
- Set-up flexibility with one control cable that connects any combination of equipment.

- Control cables can connect as extension cords up to 200 feet.
- Can be easily upgraded from simple to high capabilities.
- Flexible platform can be easily changed from bench to boom, CV to Pulse, etc.
- Spacious inverter design for easy service.
- 3 year warranty on parts and labor.
- Manufactured under a quality system certified to ISO9002 requirements.

### CONTROLS

- All controls are located on the wire feeder to eliminate confusion.
- Control box is removable for bench or boom mounting.
- Two large displays and knobs for gloved hands.
- Presettable wire feed speed or amps, and voltage or trim. Actual values displayed while welding, and for 5 seconds after welding has stopped.
- Capable of running from basic CV to high performance pulse programs.
- English or metric display.
- Control upgrades in less than 5 minutes.

### WIRE FEEDER

- Four driven rolls in a heavy duty drive system. No tools needed for wire size changeover.
- Split wire guide for trouble-free loading and feeding. Perfect wire alignment and support.
- Powerful drive motor for large wires and high speeds in one model.
- Tachometer feedback for precise wire feeding.
- Wire reel stand holds 10-60 lb. wire packages on a 2" spindle. Bench feeder mounts on power source. Power Feed 10 may be used with or without optional swivel platform.

# TECHNICAL SPECIFICATIONS

## POWER SOURCE

Product Name	Ordering Information	Input AC Voltage	Rated DC Output Amps/Volts/ Duty Cycle	Input Amps at Rated DC Output						Output Range	Weight (net)	Dimensions HxWxD
				208	230	380	415	460	575			
Power Wave 455	K1517-5	208/230/460 3 Phase 50/60 Hz	60 Hz: 450/38/100%	70	65	--	--	35	--	5-570 Amps	247 lbs. (112 kg)	26 x 20 x 33 in. (660 x 508 x 838 mm)
			570/40/60%	87	82	--	--	48	--			
	50 Hz: 400/38/100%	72	67	--	--	36	--					
	K1517-2	460/575 3 Phase 60 Hz	450/38/100% 570/43/60%	--	--	--	--	36 48	30 40		254 lbs. (115 kg)	
	K1517-3	380-415 CE 3 Phase 50 Hz	400/36/100% 500/40/60%	--	--	36 48	33 44	--	--	5-520 Amps	256 lbs. (116 kg)	

## WIRE FEEDER

Power Feed 10	Ordering Information	Wire Speed Range IPM (m/min)	Wire Size Range in. (mm)		Net Weight	Dimensions H x W x D in. (mm)
			Solid	Cored		
BENCH MODEL <sup>(1)</sup>	K1541-2	Low Speed Gear 50-800 ipm (1.2 - 20.3 m/min)  High Speed Gear 75-1200 ipm (1.9 - 30.5 m/min)  (Both gears included)	.023-3/32 (0.6-2.4)	.035-1/8 (0.9-3.0)	62 lbs. (28.1 kg)	18.5 x 13.5 x 30.5 <sup>(1)</sup> (470 x 343 x 775)
BOOM READY MODELS: 16-18 ft. Generic Boom Package <sup>(2)</sup>	K1538-4					
12 ft. Zipline Ready Pkg. <sup>(4)</sup>	K1538-5					
16 ft. Zipline Ready Pkg. <sup>(4)</sup>	K1538-6					
Control Box Only <sup>(3)</sup>	K1539-2		8.5 lbs. (3.8 kg)	13 x 8.5 x 4 (330 x 216 x 102)		
Wire Drive Only <sup>(3)</sup>	K1540-2		30 lbs. (13.6 kg)	7.6 x 12.9 x 13.7 (193 x 328 x 348)		
<b>Power Feed 10 Dual</b>		Low Speed Gear 50-800 ipm (1.2 - 20.3 m/min)  High Speed Gear 75-1200 ipm (1.9 - 30.5 m/min)  (Both gears included)	.023-3/32 (0.6-2.4)	.035-1/8 (0.9-3.0)	106 lbs. (48 kg)	20 x 23 x 34 <sup>(1)</sup> (508 x 584 x 864)
BENCH MODEL <sup>(1)</sup>	K1686-1					
BOOM READY MODELS: 16-18 ft. Generic Boom Package <sup>(2)</sup>	K1683-1					
12 ft. Zipline Ready Pkg. <sup>(4)</sup>	K1683-2					
16 ft. Zipline Ready Pkg. <sup>(4)</sup>	K1683-3					
Wire Drive Only <sup>(3)</sup>	K1685-1		54 lbs. (24.5 kg)	8.8 x 10 x 16.5 (222 x 254 x 419)		

(1) Includes wire drive, control box, 8 ft. Linc-Net™ control and weld cable, and wire reel stand.

(2) Includes wire drive, control box, 8 ft. and 25 ft. Linc-Net control cables.

(3) Requires wire drive to control box Linc-Net cable:

For 8-9 ft. boom: K1543-16

For 10-18 ft. boom: K1543-25

(4) Boom ready wire feeder for installation on a Zipline boom. See bulletin E8.201.

# A CLOSER LOOK

## Power Feed 10 Dual Control Box



Large, Easy To Read Digital Meter

Large, Easy To Use Wire Feed Speed/ Control Amperage

Large, Easy To Use Voltage/ Trim Control

Dual Head Select Panel  
(Standard on Power Feed 10 Dual Models)

Optional Procedure Control Panel Area

Weld Mode Selector Switch  
(Standard on Power Feed 10 and 10 Dual)

Optional Process Control Panel Area

# SYSTEM SELECTION

Typical MIG welding systems.

### Power Wave 455/Power Feed 10 - Industry Standard

This is the ideal system for MIG and flux-cored welding.

Power Wave 455 power source	.K1517-5
Power Feed 10 wire feeder.	.K1541-2
.045 Drive Roll Kit	.KP1505-045S
Magnum 400 Gun & Cable asbly	.K471-21 <sup>(1)</sup>
Gas Regulator, Adjustable	.K586-1

### Power Wave 455/Power Feed 10 - Deluxe Pulse System

For the ultimate in pulsing performance, this system provides the options and flexibility needed for multiple processes and pulsing.

Power Wave 455 power source	.K1517-5
Power Feed 10 wire feeder	.K1541-2
Undercarriage	.K1570-1
Dual Procedure/Memory Panel	.K1542-9
MSP2 Pulse Panel	.K1542-12
Swivel Platform	.K1557-1
.045 Drive Roll Kit	.KP1505-045S
Magnum 400 Gun & Cable asbly	.K471-21 <sup>(1)</sup>
Gas Regulator, Adjustable	.K586-1

### Power Wave 455/Power Feed 10 Dual - Deluxe Pulse System

Power for those demanding jobs. A dual feeder for running two different wires from the same power source.

Power Wave 455 power source	.K1517-5
Power Feed 10 Dual wire feeder	.K1686-1
Undercarriage	.K1570-1
MSP2 Pulse Panel	.K1542-12
.045 Drive Roll Kit	.KP1505-045S
1/16" Cored Drive Roll Kit	.KP1505-1/16C
Magnum 400 Gun & Cable asbly	.K471-21 <sup>(1)</sup>
Magnum 550 Gun & Cable asbly	.K598-7
Gun Receiver Bushing for Magnum 550	.K1500-3
Gun Connector Kit for Magnum 550	.K613-7
Gas Regulator, Adjustable	.K586-1 <sup>(2)</sup>

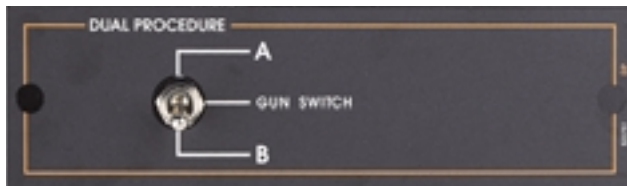
<sup>(1)</sup> Fully assembled, no gun connector required.

<sup>(2)</sup> Two required.

# OPTIONAL CONTROL PANELS

## PROCEDURE CONTROL PANELS

### POWER FEED 10



#### DUAL PROCEDURE PANEL

This panel stores two procedures in memory. The user may select procedure "A" or "B" at the switch with a separate gun mounted switch, or while welding with any welding gun.

Order K1542-5.



#### DUAL PROCEDURE / MEMORY

Six different welding procedures and processes may be stored for recall. Includes Dual Procedure. Memories 2-6 may be accessed with an "open air" trigger pull using any welding gun.

Order K1542-9.

### POWER FEED 10 DUAL



#### DUAL PROCEDURE / MEMORY

Four welding procedures and processes may be stored for recall. Includes Dual Procedure for each wire drive. Gun 1 and 2 have 2 procedures each, and each have access to 4 more from memory.

Order K1542-13.



#### DUAL HEAD SELECT PANEL

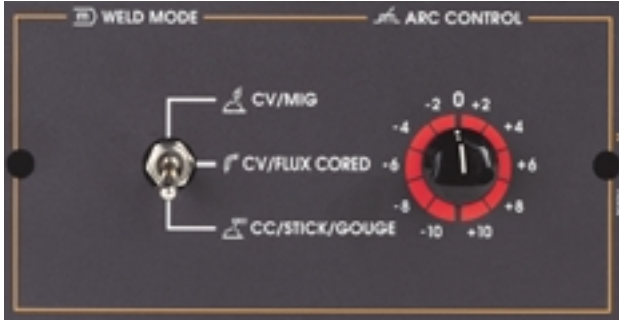
Allows control box (K1539-2) to control two separate wire drives (K1540-2). Comes standard with Power Feed 10 Dual. Optional on Power Feed 10.

Order K1542-14

# OPTIONAL CONTROL PANELS

## PROCESS CONTROL PANELS

### POWER FEED 10 & 10 DUAL



#### M PANEL

This optional control panel allows the user to select the type of output desired: CV-MIG/CV Gas-Shielded, Flux-Cored (Outershield, Metal-Cored), Flux-Cored (Innershield), or CC-Stick (Soft)/Gouge. The "Arc Control" varies inductance in the CV modes and arc force in the CC-Stick mode.

**Order K1542-6.**



#### MX2 PANEL

This optional control panel adds CC-Stick (crisp) mode and a flexible welding setup.

*Shielding gas preflow:* 0.1 to 2.5 seconds or OFF.

*Run-in wire feed speed:* Adjustable for optimum start 75 to 150 inches per minute or OFF.

*Arc Control:* Inductance control adjusts arc characteristics to operators preference.

*Burnback:* Time the arc stays on after the wire feed stops. 0.1 to 0.25 seconds or OFF.

*Post Flow:* Time the shielding gas flows after the weld stops. 0.1 to 10.0 seconds or OFF.

*Crater Fill:* Allows a second procedure used in the 4-step trigger mode. Use for aluminum crater fill welding or a second procedure.

**Order K1542-11.**



#### MSP2 PANEL

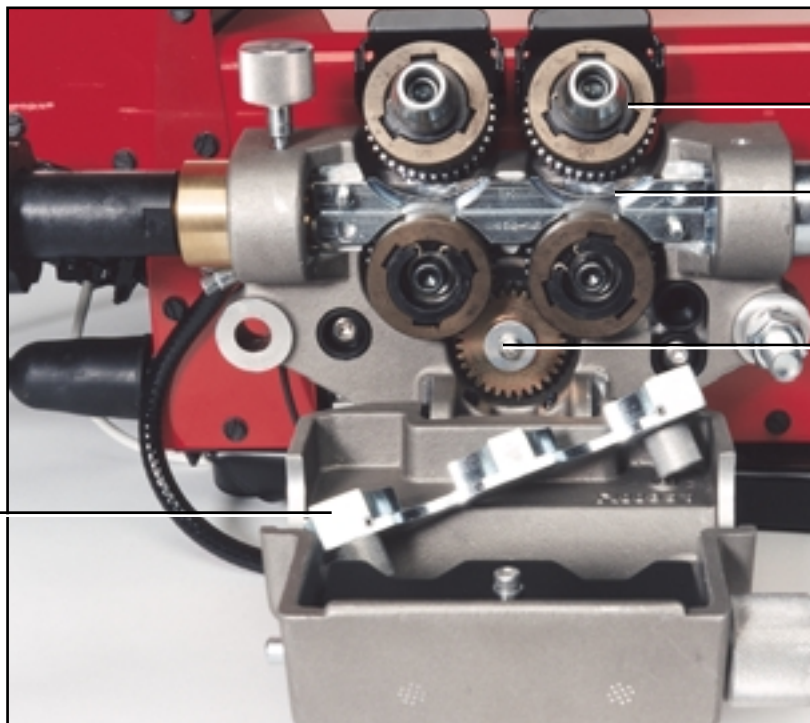
This optional control panel has the complete setup selections of the MX panel. This panel also adds synergic CV and pulse welding programs. Required to use Wave Designer software.

**Order K1542-12.**

# NEW WIRE DRIVE

## ADVANTAGES

- Four gear driven rolls. No tools needed to snap rolls on or off. Each roll has two grooves of the same size to double feed life.
- Revolutionary Split Wire Guide precisely aligns and supports wire through the entire system. Maximizes support and minimizes problems.
- Two piece split wire guide construction provides easy access for inspection, cleaning or changing to different wire sizes.
- User can change external speed range gear quickly. Feeder can be low speed/high torque or high speed.
- Entire feed head can be removed for fast, easy servicing. Ideal for production shops where downtime must be minimized.
- Simple, symmetric design of feed heads allows for quick removal and replacement.
- Feed head assembly can rotate to minimize gun cable kinks and bends. Reduces gun stresses and improves feedability.
- Incoming bushings are available to accept guide bushings and conduits often used with larger pay-off wire packages.
- Simple wire drive roll pressure adjustment knob with indicator bar.
- Rugged electrically insulated door protects drive system with simple positive locking.
- Gun receiver bushing provides low cost adapters for Magnum or competitive guns, along with easy interchangeability, better mechanical support and reliable electrical current transfer.



Removable outer wire guide for easy access to wire.

Drive rolls flip up for easy access.

Entire wire path is visible for easy access.

Changeable external gear for quick speed range change.

# FEED PLATE GUN RECEIVER BUSHINGS

One of the following Gun Receiver Bushings is required for connecting gun and cable assemblies to the feed plate.

K1500-1 Gun Receiver Bushing (Optional)	K1500-2 Gun Receiver Bushing <sup>(1)</sup> (Standard)	K1500-3 Gun Receiver Bushing (Optional)	K1500-4 Gun Receiver Bushing (Optional)	K489-7 Fast Mate Gun Receiver Bushing
<ul style="list-style-type: none"> <li>Magnum 200, 300 and 400 gun and cable assemblies with K466-1 connector kit.</li> <li>Lincoln Innershield® gun and cable assembly.</li> <li>Fast-Mate™ gun and cable assembly with K489-2 Fast-Mate Adapter Kit.</li> <li>Magnum 550 gun and cable assembly with K613-1.</li> </ul>	<ul style="list-style-type: none"> <li>Magnum 200 and 400 fully assembled guns (K497-2X and K471-2X). See below.</li> <li>Magnum 200, 300 and 400 gun and cable assemblies with K466-10 connector kit.</li> <li>Guns with Tweco® #2, #3 and #4 connectors.</li> </ul> <p><sup>(1)</sup> This gun receiver bushing comes standard with each feed head.</p>	<ul style="list-style-type: none"> <li>Magnum 550 gun and cable assembly with K613-7 connection.</li> <li>Guns with Tweco #5 connectors.</li> </ul>	<ul style="list-style-type: none"> <li>Magnum 200, 300 and 400 gun and cable assemblies with K466-3 connector kit.</li> <li>Guns with Miller® connectors (for new, longer connectors).</li> </ul>	<ul style="list-style-type: none"> <li>Magnum gun and cable assemblies with Fast Mate connectors.</li> </ul>

K1500-1



K1500-2



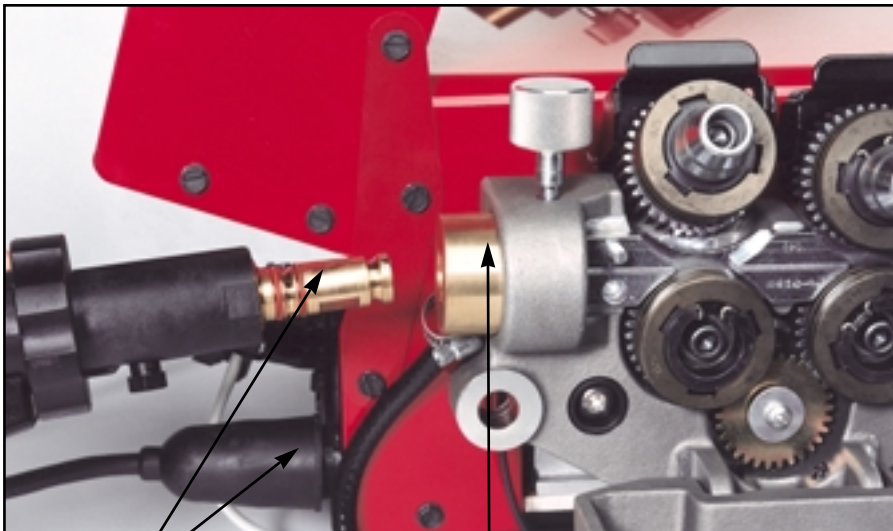
K1500-3



K1500-4



K489-7



Connector Kit for Magnum Guns (K466-10 or K613-7)

Feed Plate Gun Receiver Bushing K1500-X.

K1500-2 comes standard with feed head (as shown).

## MAGNUM GUNS

The following guns come pre-assembled with liner and gun connector that is compatible with the Tweco #2-#4 gun receiver bushing (K1500-2). They connect directly to the standard Power Feed 10 and 10 Dual. Gun cables are 15 ft. length:

K471-21	Magnum 400	.035-.045
K471-22	Magnum 400	.052-1/16"
K471-23	Magnum 400	1/16-5/64"
K497-20	Magnum 200	.025-.030
K497-21	Magnum 200	.035-.045



# ***DRIVE ROLLS AND SPLIT WIRE GUIDE KITS***

<b>4 Roll, and Split Wire Guide</b>	
<b>Solid Steel Wire, Smooth V Groove</b> .023-.030 (0.6-0.8mm) Solid .035 (0.9mm) Solid .040-.045 (1.0-1.2mm) Solid .052 (1.4mm) Solid 1/16" (1.6mm) Solid	KP1505-030S KP1505-035S KP1505-045S KP1505-052S KP1505-1/16S
<b>Cored Steel Wire, Knurled V Groove</b> .030-.035 (0.8-0.9mm) Cored .040-.045 (1.0-1.2mm) Cored .052 (1.4mm) Cored 1/16" (1.6mm) Cored 7/64" (2.8mm) Hardfacing (Smooth U Groove)	KP1505-035C KP1505-045C KP1505-052C KP1505-1/16C KP1505-7/64H
<b>Cored or Solid Steel Wire, Knurled V Groove</b> .068-.072 (1.8mm) 5/64" (2.0mm) 3/32" (2.4mm) 7/64" (2.8mm) cored only .120-1/8" (3.2mm) cored only	KP1505-068 KP1505-5/64 KP1505-3/32 KP1505-7/64 KP1505-120
<b>Aluminum Wire, Smooth U Groove</b> .035 (0.9mm) .040 (1.0mm) 3/64" (1.2mm) 1/16" (1.6mm) 3/32" (2.4mm)	KP1507-035A KP1507-040A KP1507-3/64A KP1507-1/16A KP1507-3/32A

## **For Aluminum Wires**



KP1507

## **For Solid and Cored Wires**



KP1505

# LINC-NET™ CONTROL CABLES

These come standard with both bench and boom versions of the Power Feed 10 and Power Feed 10 Dual wire feeders. The Linc-Net control cable has several advantages over existing control cables:

- **Common cable for all parts** - The same cable can be used between the power source and wire feeder in a bench system and between the power source, control box and wire drive in a boom system.

- **Extension cord flexibility** - These control cables can be connected end-to-end for length flexibility. A single, custom length cable is no longer needed.
- **Extended lengths** - These cables can be connected up to 200 ft. between any 2 components. This allows more flexibility in locating the power source and wire feeder.

## Ordering Information:

### Linc-Net Receptacles

Provides Linc-Net receptacles for converting a Power Feed 10 bench model to a boom model.

**Order K1548-1.**

### Control Cable Only

K1543-8	8 ft. cable length
K1543-16	16 ft. cable length
K1543-25	25 ft. cable length
K1543-50	50 ft. cable length
K1543-100	100 ft. cable length

### Control and Weld Cables (4/0 size)

K1544-8	8 ft. cable length
K1544-16	16 ft. cable length
K1544-25	25 ft. cable length
K1544-50	50 ft. cable length

## RECOMMENDED OPTIONS

### SPINDLE ADAPTER

**For 14 lb. (6 kg) Innershield Coils**  
Permits 14 lb. (6 kg) Innershield electrode coils to be mounted on 2" (51mm) O.D. spindles. **Order K435.**

### COIL ADAPTER

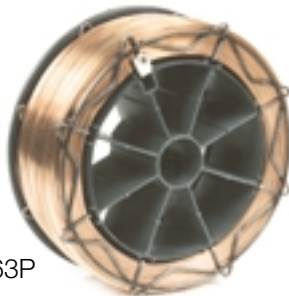
**60 lb. Coil Adapter**  
Adapts 60 lb. Lincoln coils of electrode to 2" (51mm) spindle. **Order K1504-1.**



K1504-1

### READI-REEL ADAPTERS

**30 lb. (14 kg) Read-Reel Adapter**  
Adapts 22-30 lb. (10-14 kg) Lincoln Read-Reel coils of electrode to 2" (51mm) spindle. **Order K363P.**



K363P

**60 lb. (27.2 kg) Adapter**  
Adapts 50-60 lb. (22.7-27.2 kg) Lincoln Read-Reel coils of electrode to 2" (51mm) spindle. **Order K438.**



K438

### Plastic Wire Cover

Protects wire from dust and dirt and provides electrical isolation.

**For up to 44 lb. wire packages, Order K1634-1.**

**For up to 60 lb. wire packages, Order K1634-2.**

### Water Connection Kit

Includes quick connect fittings on front and back of wire drive for use with water-cooled guns and Magnum Coolers. Kit provides for one gun.

**Order K590-6.**

### Swivel Platform

Mounts to the lift bail on the power source and bottom of the Power Feed 10. Wire feeder may be lifted off if needed. Compatible with Light Duty Caster Kit. Includes "lazy susan" parts tray. **Order K1557-1. (Power Feed 10 only.)**



K1557-1

# RECOMMENDED OPTIONS

## Caster Kit - Light Duty

Mounts to the wire reel stand on the Power Feed 10 and Power Feed 10 Dual. Allows for easy movement of wire feeder. **Order K1556-1.**



K1556-1

## Insulated Lift Bail

Allows the entire wire feeder to be hung from a crane or hook.

**Order K1555-1.**  
**(Power Feed 10 only.)**



## Gas Guard Regulator

For CO<sub>2</sub> and Argon blend gases.

Reduces surge caused by excess pressure in supply hose. Includes adjustable flow regulator with removable adjuster key. Used with standard regulator. Kit provides for one gun.

**Order K659-1.**



## Dual Procedure Switch

Allows the use of two welding procedures with one Lincoln Magnum gun. 15 ft. (7.6m). Must be used with optional Dual Procedure Panel or Dual Procedure with Memory Panel.

**Order K683-3.**



K683-3

## Feed Plate Incoming Bushing

Connects directly to Magnum plastic conduit (not included), for use in boom systems, long distances, or large pay-off packages.

**For .025-1/16" wire, Order K1546-1.**

**For 1/16-1/8" wire, Order K1546-2.**

K1546-1



## Undercarriage

Includes mounting frame, front casters, rear wheels and handle for hand towing. **Order K163.**



## Undercarriage

Platform undercarriage for mounting two gas cylinders at rear of welder.

**Order K1570-1.**



## Wire Straightener

For use with 10-Series wire drives or separately mounted. Straightens cored wire up to 1/8" (3.2mm) and solid wire up to 3/32" (2.4mm).

Incoming and outgoing bushings are compatible with existing incoming and gun receiver bushings.

**Order K1733-1.**



K1733-1

# SOFTWARE

## Wave Designer Software

Wave Designer software allows you to program your own waveforms. It puts the power of waveform control in your hands, allowing you to customize Lincoln's highly successful welding waveforms to meet your exact needs. Once you have made the simple connection from your PC to your Power Wave 455, designing a waveform is easy.

Two software packages are available:

## Wave Designer Software

Permits manipulation of several wave shape parameters including peak current, background current, peak pulse width and pulse. Allows for optimization of arc length.

Order K1705-1.

## Wave Designer Pro Software

All the features of Wave Designer, plus Arc Scope™, the arc analysis tool for those who need to monitor more than voltage and current. Arc Scope also

tracks arc power, arc resistance and energy input. Order K1705-2.

For more information, request literature S2.20.



### 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 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 assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, 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, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

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