

# 2011 *Field Service School Schedule*



*Courses Conducted by  
The Lincoln Electric Company*

## **Course Offerings/Prerequisites —**

All courses are conducted on a lecture-lab basis. Course capacity is limited, early registration is advised. Students attending are expected to have an electrical background. **Each course concludes with a final examination.** A score of 70% or higher is required to pass each course and receive a certificate. Transportation will be furnished to and from Lincoln each day only to the Lincoln authorized hotel (Cleveland schools only). If you are staying in another location you will be responsible for your own transportation.

If you are attending our class for the first time, we suggest that you take the Entry Level Standard Course Exam found at the Lincoln Electric website. This exam will evaluate your electrical skill level necessary to pass the course. Go to [www.lincolnelectric.com](http://www.lincolnelectric.com) then under Quick Links, select Service and Warranty. Under the Service School Schedule, click Entry Level Standard Course Exam.

**Standard Service Training Course - 4 days (Tues.-Fri.)** Class hours are 8:00 AM to 4:45 PM except Friday class ends at 2:30 PM. **(If flying out of Cleveland, plan on 5:30 PM flight or later.)** Repair technicians will learn the fundamentals of welder operation and the most efficient methods of repairing and troubleshooting the Lincoln machines normally serviced by Lincoln Authorized Service Facilities. This 4-day course is based on Lincoln's standard product lines. Lunch will be provided by Lincoln Electric.

**Advanced Service Training Course - 4 days (Mon.-Thurs.)** Class hours are 8:00 AM to 4:45 PM except Thursday class ends at 2:30 PM. **(If flying out of Cleveland, plan on 5:30 PM flight or later.)** This course is designed to teach repair procedures on the more complex Lincoln machines. Technicians attending are expected to be experienced in the field of welder repair. Lunch will be provided by Lincoln Electric.

**LASF Product Update Course - 3 days (Tues.-Thurs.)** Class hours are 8:00 AM to 4:45 PM except Thursday class ends at 12:00 PM. Repair technicians will be trained on many of the latest Lincoln products that have been recently released to the market. All Lincoln Authorized Service Facilities (LASF) are required to attend once every 2 years to keep their service contracts up-to-date. Lunch will be provided by Lincoln Electric on Tuesday & Wednesday. Lincoln now offers an on-line training class for the LASF Product Update. Students can take this on-line course every other time training is due (every other two years). For further information regarding this on-line course, please contact the Service School Coordinator at 216-383-2310.

**Power Wave Technology (Wed.-Fri. in Cleveland only Tues.-Thurs. at other locations)** Class hours are 8:00 AM to 4:45 PM everyday **(If flying out of Cleveland, plan on 7:00 PM flight or later.)** This course focuses on Power Wave welding systems. A strong electronics and/or electrical background are recommended. The course is open to service shops and Lincoln customers. Lunch will be provided by Lincoln Electric. Attendance in this course will count as your 2 year update.

**Robotic Service Shop Course - 5 days** Attending this course along with the Power Wave Technology Course (see above) are necessary to meet Lincoln's Robotic Service Shop (RSS) contract requirements. Go to [www.lincolnelectric.com](http://www.lincolnelectric.com) or call (TollFree) (888) 935-3878 for all necessary information including costs and schedule of courses.

**Engine Drive Service Training Course - 2 days (Tues.-Wed.)** Class hours are 8:00 AM to 4:45 PM This class is offered only to active Lincoln authorized service facilities. There is no charge for the class but it will not count as your required 2 year update on new products. This course covers the following operations: theory of operation, use of the SVM manual, alternating current generators and DC generators. A portion of this class will include "hands on " trouble shooting. Engine repairs are not covered in this class at this time. Lunch will be provided by Lincoln Electric.

## **Registration —**

All registrations for Service Schools are now done online at [www.lincolnelectric.com](http://www.lincolnelectric.com). A confirmation email will be sent once registration is completed. Please note that the classes fill up quickly. Register at least 6 weeks in advance of the course in order to assure the best chance of getting into the class of your choice. Online class registration will be closed 4 days prior to their start date. Courses will be held if three or more students enroll. All cancellations must be done via email at least 10 days prior to the class start date. Any cancellation done in less than 10 days from the course will still be charged the course fee.

## **Hotel Reservations —**

**It is necessary for you** to contact the hotel, make and confirm your reservation, as well as provide payment. Information pertaining to the hotel will be provided with your confirmation letter when you finish your on-line registration.

## **No Smoking Policy —**

The Lincoln Electric Co. provides a healthy, non-smoking environment for all our employees and visitors, therefore smoking is not permitted on the premises (includes parking lot).

## **Clothing —**

Casual clothes are acceptable. Please wear a shirt with sleeves and long pants. No open toed shoes.

## **Cost —**

Your cost will include the registration fee as listed on page 6, plus other items such as your hotel bill, meals and transportation to the city where the class is being held.

# ***STANDARD SERVICE TRAINING COURSE (4 Days)***

## **DAY 1**

Registration & Welcome  
Service Navigator Training  
DC-400 Welder  
Transformer Technology  
Rectification Principles  
CC, CVI, CVS processes  
Circuits & Troubleshooting

## **DAY 2**

Oscilloscope  
Class room instruction with  
Hands-On Waveform Measurement Lab  
LN-7, LN-7 GMA 115 VAC Wire Feeders  
LF-72 24/42 VAC Wire Feeder  
Power Mig 140/180 Wire Feeders  
Circuits & Troubleshooting  
LN-25 Across the Arc Wire Feeder  
Circuits & Troubleshooting

## **DAY 3**

Invertec V350 PRO  
Introduction to Inverter Technology  
Circuits & Troubleshooting  
Power MIG 255 Welder / Wire Feeder  
Circuits & Troubleshooting

## **DAY 4**

Warranty Review & Discussion  
Pipeliner 200D Engine Driven Welder  
Generator Design Technology  
Circuits & Troubleshooting Tips  
Ranger 250 Engine Driven Welder  
Chopper Technology Fundamentals  
Circuits & Troubleshooting

## **Final Examination**

# ***ADVANCED SERVICE TRAINING COURSE (4 Days)***

## **DAY 1**

Registration & Welcome  
DC-600 Welder  
Circuits & Troubleshooting  
LED Troubleshooting  
LN-9 Wire Feeder  
115 VAC Wire Feeder  
Voltage Control Wire Feeder  
Circuits & Troubleshooting

## **DAY 2**

LN-10 Wire Feeder  
42VAC Wire Feeder  
Voltage Control Wire Feeder  
Circuits & Troubleshooting  
Power Wave 455M  
System Configurations  
Welder / Feeder Digital Communications  
Use of Diagnostic Software  
Circuits & Troubleshooting

## **DAY 3**

Power Feed 10M  
Circuits & Troubleshooting  
Power MIG 350MP Welder / Wire Feeder  
Chopper Technology Fundamentals  
Circuits & Troubleshooting

## **DAY 4**

Precision TIG 275 & 375  
Circuits & Troubleshooting  
Vantage 500 Engine Driven Welder  
Alternator Design Technology  
Circuits & Troubleshooting Tips

## **Final Examination**

# ***LASF PRODUCT UPDATE COURSE (3 Days)***

## **DAY 1**

Registration & Welcome  
Power Wave AC/DC 1000SD  
Inverter Technology  
Circuitry & Troubleshooting  
MAXsa 10 Wire Feeder  
Circuitry & Troubleshooting  
Diagnostic Software  
\*Power Wave S350/STT  
Inverter Technology  
Circuitry & Troubleshooting

## **DAY 2**

\*Flextec 450  
Inverter Technology  
Circuitry & Troubleshooting  
Power MIG 216 Welder/Wire Feeder  
Circuitry & Troubleshooting  
\*Square Wave TIG 175  
Circuitry & Troubleshooting  
Ranger 250 GXT  
Theory of Alternator Machines  
Circuitry & Troubleshooting

## **DAY 3**

Troubleshooting  
Product Update Information  
**Final Exam**

\* Denotes initial introduction into the course

# ***POWER WAVE TECHNOLOGY COURSE (3 Days)***

## **DAY 1**

Registration & Welcome  
Power Wave 455M/STT  
Inverter Technology  
Circuitry & Troubleshooting  
Power Feed 10M  
Circuitry & Troubleshooting

## **DAY 2**

Power Wave 355M  
Circuitry & Troubleshooting  
Power Wave AC/DC 1000SD  
Inverter Technology  
Circuitry & Troubleshooting  
Diagnostic Software  
Updating Software

## **DAY 3**

MAXsa 10 Wire Feeder  
Circuitry & Troubleshooting  
Power Wave i400  
Circuitry & Troubleshooting  
Power Wave S350/STT  
Inverter Technology  
Circuitry & Troubleshooting

# ***ENGINE DRIVE SERVICE TRAINING COURSE (2 Days)***

## **DAY 1**

Registration & Welcome  
Outback 145  
Circuitry & Troubleshooting  
Ranger 250 GXT  
Circuitry & Troubleshooting  
Pipliner 200D  
Circuitry & Troubleshooting

## **DAY 2**

Vantage 500  
Circuitry & Troubleshooting  
Big Red 500  
Circuitry & Troubleshooting  
SAE 500  
Circuitry & Troubleshooting

Machines covered in this class are subject to change due to availability



## 2011 COURSE DATES (COURSE CONTENT ON PAGES 3 & 4)

Course Name	Date	Training Location	Class Days	Course Name	Date	Training Location	Class Days
<b>Standard</b> (4 Days)	Jan. 11-14	Cleveland, OH	Tues. thru Fri.	<b>LASF PRODUCT UPDATE</b> (3 Days)	Feb. 1-3	Atlanta, GA	Tues. thru Thurs.
	April 5-8	Cleveland, OH	Tues. thru Fri.		Mar. 1-3	Tulsa, OK	Tues. thru Thurs.
	Aug. 23-26	Cleveland, OH	Tues. thru Fri.		Mar. 15-17	Cleveland, OH	Tues. thru Thurs.
	Oct. 25-28	Cleveland, OH	Tues. thru Fri.		Mar. 22-24	Houston, TX	Tues. thru Thurs.
<b>Advanced</b> (4 Days)	Jan. 17-20	Cleveland, OH	Mon. thru Thurs.		May 24-26	Exton, PA	Tues. thru Thurs.
	April 11-14	Cleveland, OH	Mon. thru Thurs.		June 7-9	Portland, OR	Tues. thru Thurs.
	Aug. 29-Sept 1	Cleveland, OH	Mon. thru Thurs.		June 21-23	Toronto, CAN	Tues. thru Thurs.
	Oct. 31-Nov 3	Cleveland, OH	Mon. thru Thurs.		July 12-14	Cleveland, OH	Tues. thru Thurs.
<b>Robotics</b> (5 Days)	<b>See Page 2 for Details</b>				July 19-21	Denver, CO	Tues. thru Thurs.
	<b>Power Wave Technology</b> (3 Days)	Mar 30-Apr 1	Cleveland, OH		Weds. thru Fri.	Aug. 9-11	Bolingbrook, IL
Apr 26-28		Dallas, TX.	Tues. thru Thurs.		Sept. 13-15	Minneapolis, MN	Tues. thru Thurs.
June 28-30		Calgary, CAN	Tues. thru Thurs.		Oct. 11-13	Los Angeles, CA	Tues. thru Thurs.
Aug. 17-19	Cleveland, OH	Weds. thru Fri.	<b>Engine Drives</b> (2 Days)		Dec. 6-8	Cleveland, OH	Tues. thru Thurs.
				Oct. 4,5	Dallas, TX	Tues. & Wed.	

## 2011 COURSE FEES

Standard (4 Days) . . . . .	\$225.00
Advanced (4 Days) . . . . .	\$225.00
Robotics (5 Days) <b>See Page 2 for Details</b>	
LASF Product Update (3 Days) Cleveland . . . . .	\$200.00
LASF Product Update (3 Days) All Other Cities . . .	\$250.00
Power Wave Technology (3 Days) . . . . .	\$200.00
Engine Drives (2 Days) . . . . .	No Charge

**FOR ANY QUESTIONS PLEASE CONTACT OUR SERVICE SCHOOL  
COORDINATOR AT (216) 383-2310 or (Toll Free) (888) 935-3877**