

# W-Series

## Portable MPI Equipment Kits & Accesories

### YOKES



### FEATURES

- Compact
- Light Weight
- Comfortable to Handle
- High Quality Power Cord
- Rugged Strain Relief / Cord Protector
- Sealed Switch
- Urethane Rubber Housing
- CE / UL / CSA Approval

### ACCESSORIES

- Inspection Booths
- Pocket Magnetometers
- Pull Test Bars
- Pie Gauges
- QQI's
- Castrol Strips
- Centrifuge Tubes
- MTU Blocks

### COILS



### KITS



# Western Instruments

Established 1965

Phone: (780) 459-6720 Fax: (780) 459-7837

E-Mail: [info@westerninstruments.com](mailto:info@westerninstruments.com) • Web: [www.westerninstruments.com](http://www.westerninstruments.com)

The W-Series of Portable Magnetic Particle Inspection Equipment is manufactured by Western Instruments. These portable tools consist of 14 models of Yokes, 10 Models of Coils, Mobile Inspection Stations, and Accessories.

## **INTRODUCTION TO W-SERIES YOKES**

Virtually all of our Yokes are Compact in size, making them lighter and more comfortable to hold than other competitive models, but still meeting industry specifications. Our Yokes are offered in 2 Basic Design Types, the WC and WE-Series. Construction materials and techniques used in the manufacture of W-Series Yokes ensure they outlast any competitive products.

WC-Series Yokes are not like traditional designs of Yokes. Switching the power load is done with an easily replaceable electronic Power Module, housed between the Power Cord and the Yoke's internal coil. As the Module handles the load, the finger activation switch only handles half a watt of power and is why we warranty this switch for 2 years.

WE-Series Yokes are only similar to traditional designs of Yokes in that we use a typical switch found in most competitive Yokes. Unlike competitive designs, WE-Series Yokes use Western's superior Power Cord Strain Relief assembly. This same series of Yoke has resulted in our WE-3LT, which is the Worlds Lightest and most comfortable Yoke.

## **AC YOKES**

### **WC-6 AC Safety Yoke**

The WC-6 is the W-Series AC Safety Yoke, as it is totally grounded (Switch, Module, Frame, and Coil), giving the operator confidence in his electrical protection.

Western offers models similar to the WC-6, but designed for low voltage operation common in Europe (42 and 48 VAC). The success of the WC-6 lead to the development of Western's WC-6x2, designed for testing coated workpieces, as it lifts over 20 pounds (9kg). The WC-6 is available in Water Resistant and Underwater versions.



Models: WC-6 (115V)  
WC-6K (230V)  
Current: 4 Amps (115V/60Hz), 2 Amps  
(230V/50Hz)  
Weight: WC-6 - 6.5 Pounds (3Kg)  
Voltage: 115 (WC-6) and 230 (WC-6K)  
Frequency: 50 or 60 Hz  
Lift: 10 Pounds (4.6Kg) Minimum  
Capacity: 0-11" (280mm)  
Cord: 8', 3-18 SOOW  
Finish: Red Urethane Rubber



**WE-3HD**  
Heavy Duty  
AC Yoke

Voltage: 115 and 230 VAC Nominal (12VDC)  
Models: WE-3HD (115 Volt)  
WE-3HDK (230 Volt)  
Current: 4.0 Amps (115V), 2 Amps (230V)  
Frequency: 50 or 60Hz



**WE-3**  
Economy  
AC Yoke

Cord Length: 8'(2.5m), AWG3-16 SOW  
Lift: 10 pounds (4.6kg) minimum  
Capacity: 0 to 11" (280mm)  
Finish: Black Urethane Rubber  
Weight: 7.2 pounds (3.3kg)

The WE-3HD is not our lowest price Yoke, that position is held by the WE-3, which uses the same low cost power cord and strain relieve as competitive Yokes.

### WE-3LT

Light Weight AC Yoke



Voltage: 115 or 230 VAC Nominal  
Models: WE-3LT (115 Volt)  
WE-3LTK (230 Volt)  
Current: 4.0 Amps (115V), 2 Amps (230V)  
Weight: 5.2 Pounds (2.4Kg)  
Cord Length: 8' (2.5m), 3-18 SOOW  
Frequency: 50-60 Hz  
Lift: 10 pounds (4.6Kg) minimum  
Capacity: 0 to 11" (280mm)

The WE-3LT lifts over 5kg (10 Pounds), but is far more compact than any other AC Yoke. This model uses Grain Oriented Iron Laminations, so there is 40 less weight and size than any other AC Yoke.

### W-6CS

Cavity Access AC Yoke (WE-Series)



Model: W-6CS or W-6CSK  
Voltage: 115VAC @ 60Hz or 230VAC @ 50Hz(K)  
Current: 4 Amps(115VAC) or 2 Amps(230VAC)  
Lift: 10 Pounds (4.6kg) minimum  
Pole Spacing: 0 - 15" (0 - 380mm)  
Weight: 8 Pounds (3.6kg)  
Power Cord: 8 feet, 3-16 SOW  
Housing: Urethane Rubber

This Yoke was developed was due to customer requests for safer and faster Wet Method Inspection in tight spaces or unusual work piece configurations, such as inside pump housings, castings, etc.

## PERMANENT MAGNET YOKES

The W-Series product line includes 3 different models of Permanent Magnet Yokes. These models consist of two traditional hinged frame models and a Cable type configuration, for high performance needs. All 3 models use Rare Earth Magnets, that lift 60 pounds (27kg), so recharging isn't required.

### WM-5



Capacity: All are >50 Pounds (23 Kg)	
Field Strength with Tips in Contact:	
WM-5	9200 Gauss
WM-5LT	8500 Gauss
Field Strength with 2" (50mm) Air Gap:	
WM-5	510 Gauss
WM-5LT	380 Gauss
Pole Spacing:	
WM-5	0-14" (0-350mm)
WM-5LT	0-14" (0-350mm)
Weight:	
WM-5	5 Pounds (2.3 Kg)
WM-5LT	3 Pounds (1.4 Kg)

The Hinged Frame Models have exclusive Dual Contact Surface contact feet, that rotate to ensure a maximized contact field. The WM-5 is of a similar size to competitive models, with the WM-5LT being far lighter and smaller.



This cable configuration allows a great deal of flexibility to conform to many different workpieces, with the ergonomic hand grips ensure easy removal from the workpiece.

Capacity: >50 Pounds (23 Kg)	
Field Strength with Tips in Contact:	
WM-5C	10900 Gauss 2mm (0.80") Air Gap
Field Strength with 2" (50mm) Air Gap:	
WM-5C	5700 Gauss (Single Pole Only)
Pole Spacing:	
WM-5C	0-24" (0-610mm)
Weight	
WM-5C	2 Pounds (0.9 Kg)

## Portable MPI Kits

Wetern Instruments offers 6 different MPI Kits, which are available in 4 different sizes of cases. Kits consists of; case, consumables, and accessories.



Basic Dry Method, (W-DMB)



Basic Wet Method (W-WMB)



Wet Visible (W-WM)



Deluxe Dry Method (W-DM)



Wet/Dry Method (W-WD)



Wet Fluorescent (W-WF)

## AC/DC Yokes WE-7 • AC/DC Yoke



Models:	WE-7 (115V) WE-7K (230V)
Voltage:	115V/60Hz or 230V/50Hz
Current:	4.0 Amps (WE-7) 2.0 Amps (WE-7K)
Cord Length:	12'(3.7m), 3-18 SOOW
Lift:	AC-10 pounds (4.6kg) DC-50 pounds (23kg)
Capacity:	0 to 11" (0-280mm)
Finish:	Black Urethane Rubber
Weight:	7.5 pounds (3.5kg)

The WE-7 is Western's 5th generation of AC/DC Yoke, and finally the industries most rugged and reliable unit. The output field is changed from AC to DC with a simple toggle switch, however DC intensity can be infinitely adjustable for operator convenience.

## DC Yokes

### WC-8 • 12 Volt DC Yoke



Weight:	6.5 pounds (3kg)
Voltage:	12 Volts DC
Current:	1 Amps
Capacity:	0 to 11" (280mm)
Lift:	50 Pounds minimum (23kg)
Cord:	2' Coil, extends to 6'
Finish:	Red Urethane Rubber
Charger (Gel Cells):	100 to 250VAC, 50 to 60 Hz
Batteries:	3, 7, & 12 Amp Hour

Offered with 3 different models of Battery Packs, and a universal 100 to 240VAC Charger. The WC-8 draws less than 1 Amp, so even the smallest battery pack gives an inspector a full day of testing capability. A dual output battery pack allows the connection of a 12 Volt UV Lamp.

### WC-9 Cordless DC Yoke



Models:	WC-9
Voltage:	Battery - 13.2 VDC
Charger:	100 to 250 VAC, 50 to 60 Hz
Amperage:	Yoke - 0.5 Amps @ 13.2 VDC
Battery:	3 AMP Hour, NiMH
Capacity:	0-11" (280mm)
Lift:	50 Pounds (23Kg) Min
Weight:	7.8 Pounds (3.5Kg)

The WC-9 draws 1 Amp, so the 13.2 Volt Battery (3 Amp Hours) provides a full 3 hours of continuous operation, or a full working day for most inspectors. The individual cells of the WC-9's Battery Pack are not 'potted', so the Pack can be rebuilt. The universal 100 to 240VAC Charger allows the WC-9 to be used anywhere in the World.

## INTRODUCTION TO W-SERIES COILS

The W-Series includes 3 general groups of Coils, WA-Series of light duty Coils, WP-Series of medium duty coils, and the WD-Series of powerful heavy duty Coils. WA and WP-Series Coils share a common coil platform for there 4 size ranges. WD-Series Coils are powerful DC Coils offered in 6 ID Sizes, that out power even the largest Power Packs.

### WA-SERIES

WA-Series can best be described as Light Duty or a Utility Grade Coil. No matter which ID Size, WA-Series Coils have an AC Output of over 4000 Amp Turns on 115 Volt / 60 Hertz Power and over 5000 Amp Turns with 230 Volt / 50 Hertz Power. The 4 models of WA-Series Coils are the WA-8, WA-10, WA-12, and WA-14, with respective ID sizes of 8" (203mm), 10" (254mm), 12" (305mm), and 14" (356mm).

As an entry level Coil, WA-Series Coils are very economically priced. This economy is a result of our consistency in assembly, and limiting the choices to Size and activation by a Foot Switch or an intermittent Energize Button. AC Coils are effective for finding surface breaking defects on work pieces with little wear, but where stress results in the highest cause of component failure. An AC Coil will only affect the surface of a workpiece, and the Eddy Currents that form just below the surface act as a shield to any magnetism in the body of the workpiece. Thus AC only offers a Surface Following Demagnetization field.



MODEL	ID SIZE	115V/60Hz	230V/50HZ	OUTPUT
WA-8	8" /201 mm	13 Amps	6.5 Amps	4,250
WA-10	10" /254 mm	15 Amps	8 Amps	4,150
WA-12	12" /305 mm	16 Amps	9 Amps	4,050
WA-14	14" /355 mm	16 Amps	9 Amps	3,875

### WP-SERIES



Western Instruments new WP-Series of Portable MPI Coils is a completely new platform, not based on any existing type of Coil, but developed from Customer input and our advanced Electro-Mechanical Engineering. WP-Series Coils are being offered in 4 different ID Sizes; 8"/203mm, 10"/254mm, 12"/305mm and 14"/355mm, and have been appropriately named; WP-8, WP-10, WP-12, WP-14.

Base models of WP-Series Coils are AC, but offer a Specially Designed Half Wave (Pulsed) DC output, with similar DC characteristics as an AC/DC Yoke. WP-Series Coils are being offered with 4 different Control Packages;

AC

Models: WP-8, WP-10, and WP-12

Output: 4,000 Amp Turns AC

AC/DC

Models: WP-8D, WP-10D, and WP-12D

Output: 4,000 Amp Turns AC

6,000 Amp Turns DC Output.

**AC/Variable DC**

Models: WP-8DV, WP-10DV, and WP-12DV  
 Output: 4,000 Amp Turns AC  
 0 to 6,000 Amp Turns DC Output

**AC/Variable and Reversing DC**

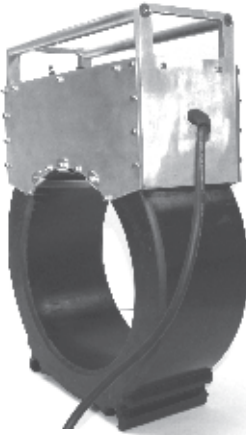
Models: WP-8DVR, WP-10DVR, and WP-12DVR  
 Output: 4,000 Amp Turns AC  
 0 to 6,000 Amp Turns DC Output.  
 Reversible Polarity (Positive / Negative)

Like all of Western's Portable MPI Equipment, the WP-Series are being manufactured in both North American Domestic Voltages (115VAC/60Hz), as well as European Standards (230VAC/50Hz). Like all of Western's new MPI developments, we do initial design and testing on Export Voltages. No matter the Control Options chosen on a WP-Series Coil, Western offers an optional foot switch. This allows the Coil to be instantaneously activated by either the Energize Button or the Foot Switch.

MODEL	FEATURES	SIZE	115V/60Hz	OUTPUT
WP-8	AC only Coil	8"/201 mm	13 Amps	6.5 Amps 4250 AC
WP-8D	AC and DC Coil	8"/201 mm	13 Amps	6.5 Amps 4150 AC / 6000 DC
WP-8DV	AC with Variable DC Coil	8"/201 mm	13 Amps	6.5 Amps 4150 AC / 0 to 6000DC
WP-8DVR	AC with Variable and Reversing DC Coil	8"/201 mm	13 Amps	6.5 Amps 4150 AC / +/- 0 to 6000DC
WP-10	AC only Coil	10"/254 mm	15 Amps	8 Amps 4150 AC
WP-10D	AC and DC Coil	10"/254 mm	15 Amps	8 Amps 4150 AC / 6000 DC
WP-10DV	AC with Variable DC Coil	10"/254 mm	15 Amps	8 Amps 4150 AC / 6000 DC
WP-10DVR	AC with Variable and Reversing DC Coil	10"/254 mm	15 Amps	8 Amps 4150 AC +/- 0 to 6000 DC
WP-12	AC only Coil	12"/305 mm	16 Amps	9 Amps 4050 AC
WP-12D	AC and DC Coil	12"/305 mm	16 Amps	9 Amps 4050 AC / 6000 DC
WP-12DV	AC with Variable DC Coil	12"/305 mm	16 Amps	9 Amps 4050 AC / 0 to 6000 DC
WP-12DVR	AC with Variable and Reversing DC Coil	12"/305 mm	16 Amps	9 Amps 4050 AC / +/- 0 to 6000 DC
WP-14	AC only Coil	14"/355 mm	18 Amps	10 Amps 3875 AC
WP-14D	AC and DC Coil	14"/355 mm	18 Amps	10 Amps 3875 AC / 6000 DC
WP-14DV	AC with Variable DC Coil	14"/355 mm	18 Amps	10 Amps 4050 AC / 0 to 6000 DC
WP-14DVR	AC with Variable and Reversing DC Coil	14"/355 mm	18 Amps	10 Amps 3875 AC / +/- 0 to 6000 DC

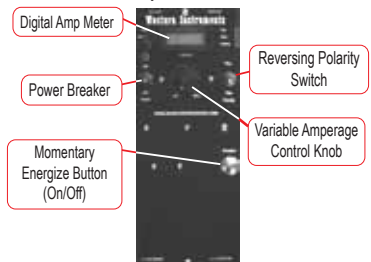
**WD-SERIES**

WD-Series Coils are Western's premier products, that have gained a World Wide reputation. The WD-Series Power Supply, mounted to the top of the Coil, offers the operator Infinite Variable Control on the DC Output of the Coil. All WD-Series Coils have a DC output greater than 1,000 Amp Turns per inch of ID, meeting the most stringent specifications. WDV-Series Coils have gained a very favorable reputation for their manual Reversing DC Demagnetization capability.



Reversing DC Demag is accomplished by Reversing the Polarity Switch, Reducing the Amperage followed by a brief shot, by Energizing the Coil. This Reducing - Reversing step is repeated, until the Field is reduced to a desirable level. The AC Option can be selected if the operator wants to Demag small parts, or must inspect in an active AC Field. The AC Option is also variable and provides an output of 0 to over 5000 Amp Turns. The output from WD-Series Coil might be referred to as Rectified DC, but as the current passes through over 1000 Turns of wire, the field is virtually Full Wave DC. To aid particle mobility, WD-Series Coils are also offered with a Pulsed DC Option, for a true Active Field inspection, When set on Pulsed, the Coil is turned off and on at over 80 times per minute, again with a fully variable output. These powerful WD-Series Coils operate from just 230/50 or 115/60 AC power.

Model	ID Size	115/60	230/50	Output
WDV-8	8.5"/216 mm	13 Amps	6.5 Amps	11,500
WDV-10	10.5" / 267 mm	13 Amps	6.5 Amps	12,000
WDV-14	14"/368 mm	13 Amps	6.5 Amps	14,000
WDV-16	16"/406 mm	8 Amps	8.5 Amps	16,000
WDV-18	18"/457 mm	10 Amps	11 Amps	18,000
WDV-25	25"/635 mm	12 Amps	14 Amps	24,000



## MPI Accessories

The W-Series Product Line offers numerous Magnetic Particle Operating Accessories, to evaluate magnetism, equipment performance, defect sensitivity, etc.



W-FI, Pocket Magnetometers  
W-FI-10, W-FI-20, W-FI-50



W-PT, Pull Test Bars  
10 Pounds (4.6kg), Stack of 4 or 5 w/Fastener  
W-PT-DB, 10 Pound Bar w/Artificial Defects



W-PG, Pie Gauges



W-CT, Centrifuge  
Tubes  
and Stands



MTU No. 3,  
ISO 9934-2 Type 1



QQI's (all 5 types)



Castrol Strips (Type I & II)



W-KT, Ketos Ring

Distributed By



# Western Instruments

Established 1965

Portable MPI Equipment - Pit Gauges - UT Systems - NDT Accessories