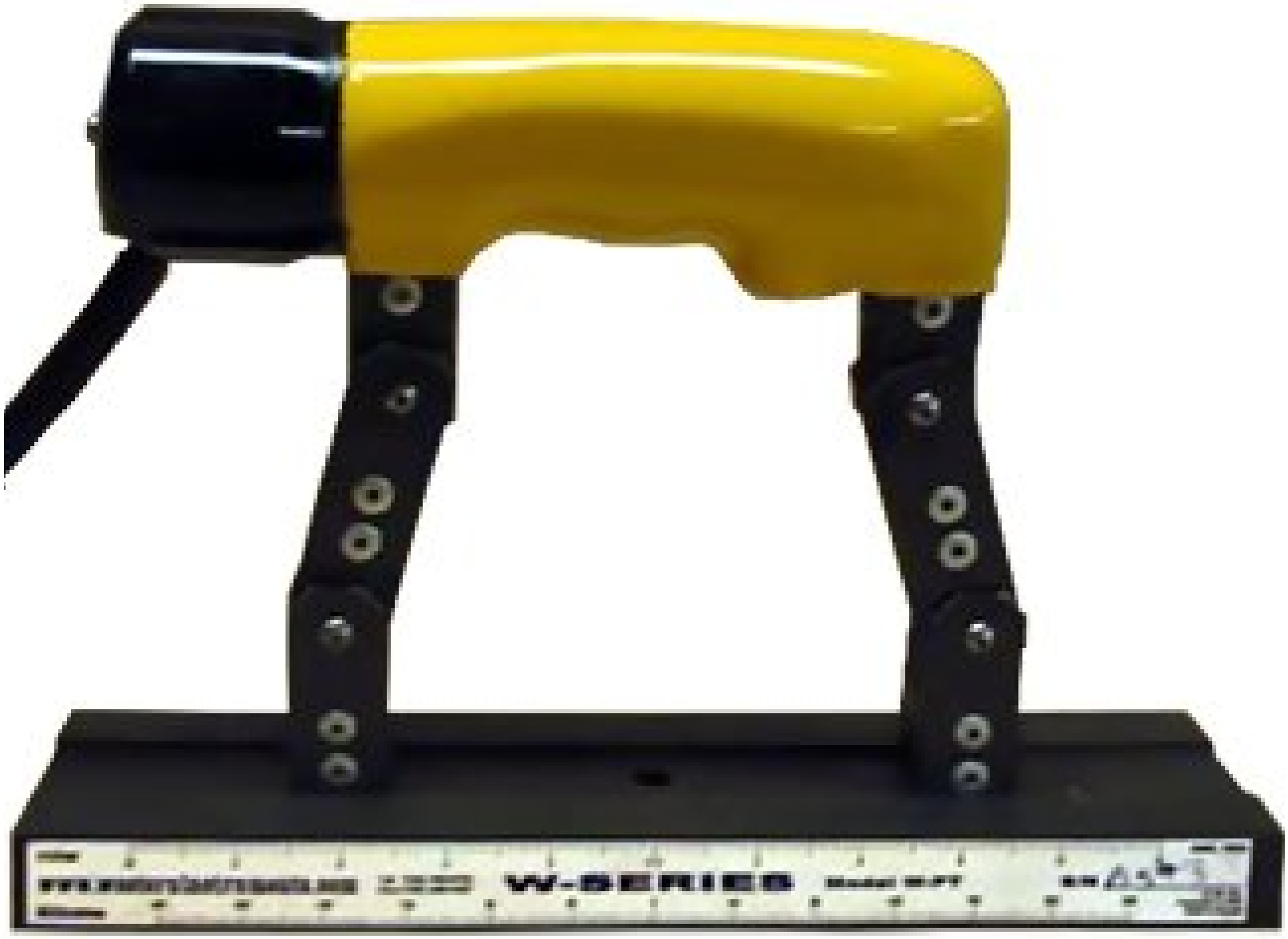
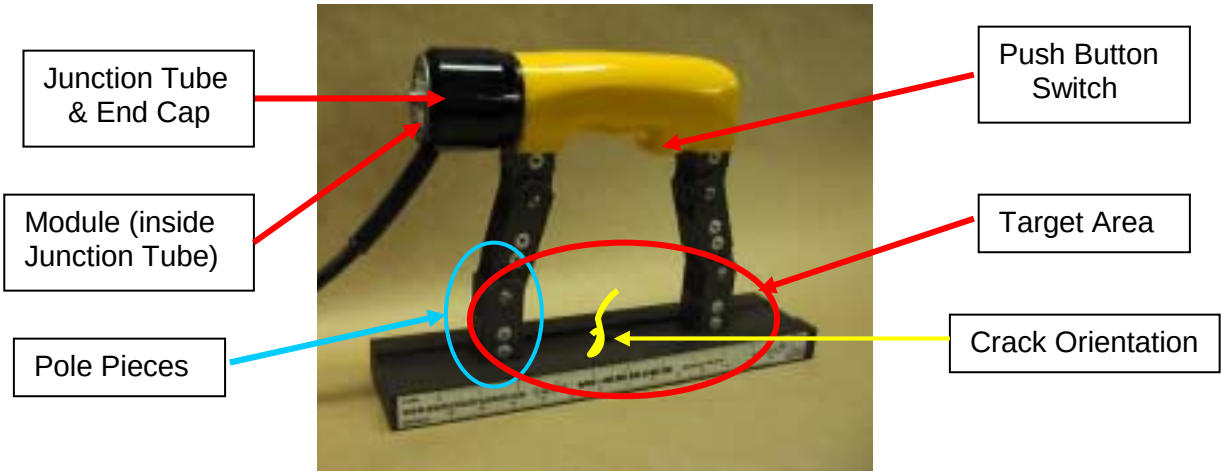
Western Instruments Yoke WC-42 - Instruction Manual



The WC-42 is an AC Yoke which induces a magnetic field into the ferrous material being tested. The unit should be used within the parameters as set out in the specifications within this guide. This Manual also applies to similar Low Voltage Models such as the WC-48.



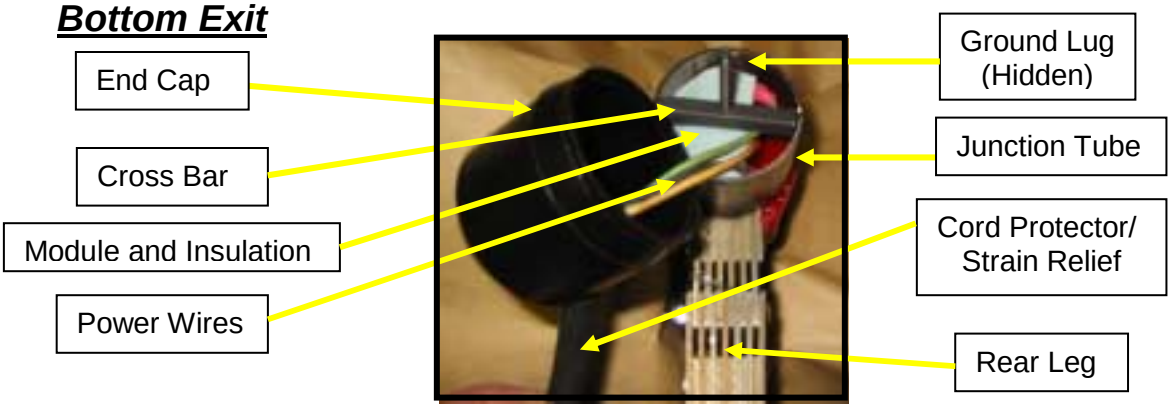
1. **Solid State Push Button Switch –** The Solid State Push Button Switch was designed for comfort and safety. While depressed, the switch delivers a ½ Watt control signal to the electronic controls (semiconductors) sealed in the Output Module. The Module connected to a receptacle plug in the Junction Tube of the Yoke, and supplies the necessary power (AC) to the coil encapsulated in the Yoke housing.

   If the Yoke fails to turn on when the switch is depressed, check the following items in this order; AC Power, Power Plug, Power Cord, connection of the Output Module, and lastly the switch via the internal receptacle, if these connections are all fine, replace the Output Module. Removing the rubber switch cover voids the 2 year warranty on this item.

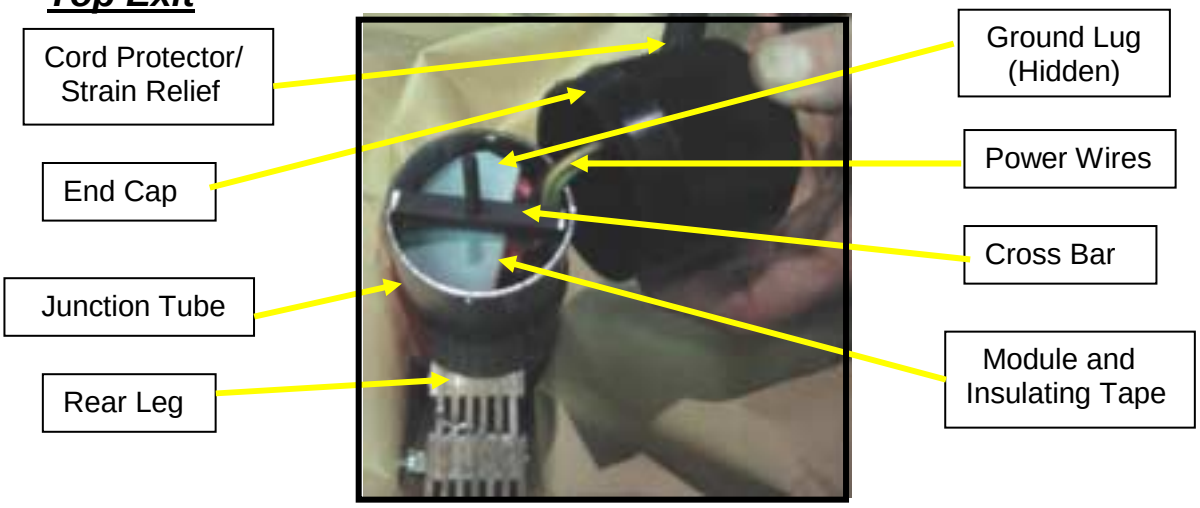
   Do not hold the Push Button Switch on when plugging the Yoke into power.

2. **End Cap Rotation –** The End Cap may be rotated to reposition the Cord Protector (Strain Relief), for operator convenience, within the Bottom 120º or Top 120º of the Junction tube. Carefully remove the End Cap, followed by the internal Cross Bar, and reposition the power wires. Replace the cross bar, ensuring the insulation disk (or tape) is in place and carefully reinstall the End Cap. Care must be taken not to twist or 'pinch' wires, on either the mounting bar or End Cap.

Bottom Exit



Top Exit



3. **Operational Parameters** – The Operational Parameters or Duty Cycle for the operation is set to avoid damage to the internal coil or the Output Module, and must be observed.

   AC Operation: It is recommended that the operator does not keep the Yoke on for more than 5 minutes at a time, as the Yoke housing may get to warm to hold. However, the basic design of any Yoke inherently produces heat. Typical operation is 5 - 15 seconds on, while applying inspection media, followed by 5 - 15 seconds off for inspection and repositioning the Yoke to the target area.

   If the Yoke is used for prolonged periods of time such as 2 to 3 hours of continuous cycling, as outline above, the Yoke will get warm. If the WC-42 is used in this manner the operator must provide time for a sufficient cooling period, or components in the Electronic Control Module may fail.

4. **Field Characteristics**

   AC Field – AC Magnetic Fields are sensitive to surface and near surface defects due to the 'Skin Effect' as the magnetic field travels from one Pole Piece to another. The Inspection Media (Dry Powder or Wet Method Particles) has a tendency to migrate toward interruptions (or defects) in the magnetic field. The direction and intensity of an AC Field, by it's nature, alternates causing high particle mobility, so defects tend to be revealed immediately when the Media is applied.

   Demagnetization – Small Parts may be demagnetized by positioning the contact surfaces of the Pole Pieces together, activating an AC Field and pass the part through the opening formed between the Legs and Yoke Housing. Larger Work Pieces can be demagnetized by placing the Yoke on the surface, in a similar manner as used during inspection, activating an AC Field and pull the Yoke off the surface. The work piece can be tested with a Magnetic Field Indicator, such as the W-Series W-FI®, to ensure it is fully demagnetized.

5. **Operation:**

   Position the Pole Pieces (Feet) on the work piece. The area between the pole pieces is your target area, which also extends laterally out, approximately 1.5" (38mm), from either edge of the pole pieces. The Field will expose defects that are transverse to the centerline between the Pole Pieces. The Pole Pieces should be positioned so that as

much of their contact surfaces as possible, are on the work piece. The Yoke is then energized, by pressing Push Button Switch, and Magnetic particles are applied. Dry Method Particles are dusted between the Pole Pieces and over the target area, while Wet Method Particles are sprayed in a similar manner.

The Target Area is then inspected visually for a collection of Particles around defects. A Black Light is used to aid visual inspection when Fluorescent Particles are used. Indications found with Dry Powder will tend to form immediately, and will take slightly longer with Wet Method Particles. If the typical direction of defects is not known, rotate the Yoke through 90º and repeat the inspection of the target area.

The WC-42 produces a standard amount of Field Blow as other AC Yokes. Field Blow is a collection of Inspection Media between the Pole Pieces, transverse to the centerline between the Pole Pieces, and may case a masking of indications. Field Blow can be minimized by extending the Pole Pieces farther apart, If work piece configuration does not permit extending Pole Pieces, reduce the contact area of the Pole Pieces on the work piece. Follow the Operational Parameters outlined in these instructions.

6. Maintenance:

After extended use the Yoke should be cleaned with a mild soap solution and thoroughly dried. The unit should be visually inspected for any damage that could cause harm to the operator, or the material being inspected. Special attention should be paid to the Push Button Switch Cover, to ensure it is fully adhered to the body of the Yoke. Furthermore, the Power Plug, Power Cord, and the End Cap/Cord Protector should be in a good state of repair. Before performing maintenance, cleaning, or repositioning the End Cap, the Yoke should be disconnected from any power source, with safe industrial practices employed. Any potential problems to these assemblies must be reported to the Distributor or Western Instruments for instructions on corrective action.

Whether industrial specifications are being observed or not, the Yoke should be tested periodically, using a certified Pull Test Bar such as the W-Series W-PT®, to ensure it continues to lift the specified amount of weight. If the unit fails such a test, first inspect the Pole Pieces to ensure they fully contact the test weight. If the unit continues to fail, contact the Distributor or Western Instruments for instructions on corrective action.

Wiring:

The WC-42 is supplied from a 42 Volt Power Supply, which in turn is supplied with 230 Volts and 50 hertz power. Commercially available 42 Volt Power Supplies are fitted with an appropriate output plug (or terminals), which the WC-42 is connected to. Western offers the PD-42 AC Power Supply, which is supplied from 230VAC/50Hz input, and provides 42VAC/50Hz output. When in operation with interconnection cable (Yoke to Power Supply) of 5 meters, a WC-42 will lift over 4.6kg (10 Pounds).

The power supply should be used in accordance with the manufactures instructions. When installing a Power Plug or connecting the WC-42's AWG 18-3 Power Cord, the following is the identity of the 3 Color Coded Conductors;

- Green – Ground
- White - Neutral
- Black – Live

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Care must be taken to insure the proper installation of an AC Power Plug, and if there is any question, contact your distributor or Western Instruments. If an fully grounded AC Plug in not installed, before use, any warranty is void.

7. Pull Test / Calibration

When performing a 10 Pound (4.5Kg) Pull Test, ensure the contact feet are flat as possible to the Pull Test Bar (W-PT®), which ensures as much magnetic attraction as possible. If a Yoke fails a pull test, it should be sent to an authorized repair facility for Contact Foot Dressing.

Warranty

Western Instruments warrants its products, against defects in materials and workmanship for a period of 1year from receipt by the end user. If Western Instruments receives notice of such defects during the warranty period, Western Instruments will either, at it's option, repair, replace, or condemn products that prove to be defective. Consumable items, such as Batteries are warranted for 30 days, from receipt by the end user.

Any warranty is void if the unit has been modified in any way, or if it has been repaired by an unauthorized agency. The end user agrees that any equipment's disposition, when returned for warranty work, is at the full discretion of Western Instruments as to whether a claim is under warranty, or due to misuse. Western Instruments warranty shall overlook normal wear, however does not include operation outside the environmental specification of the product. All warranty work is FOB Western Instruments, and any returned units shall include a written description, by the end user, of the fault.

Western Instruments makes no other warranty, either expressed or implied, with respect to this product. Western Instruments specifically disclaims any liability arising form the use of this equipment. For the correct use of the product, refer to the Operating Instructions, furthermore we recommend instructional training to CGSB, ASNT, or other regulatory authority qualifications. Western Instruments highly recommends the end user exercise all possible safety precautions, including use of protective equipment, while operating this or other industrial equipment.

Specifications:

Model: WC-42 (WC-48)
Voltage: 42VAC (48VAC)
Frequency: 50 Hz
Current: 6.5 Amps 'In Air', 5.5 Amps on work piece.
WC-48 is 6 Amps in Air and 5 Amps on work piece
Controls: Solid State (Thyristor)
Capacity: <10 Pounds (4.5 Kg)
Pole Spacing: 0 – 11" (0 – 280mm)
Pole Cross Section 1" (25mm)
Weight: 6.5 Pounds (3.0 Kg)

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March, 2008

Low Voltage Yokes

Western Instruments manufactures several models of Low Voltage Yokes, to comply with safety regulations in different parts of the World. These models are not used in North America due to the use of lower voltages (nominally 115 Volts), with excellent grounding systems on convenience ("Mains") outlets. To ensure even greater safety, GFCI's (Ground Fault Current Interrupters) are installed on Outdoor and in most Industrial Outlets, to further protect workers and the general public.

If an unusual situation arises, where a standard 115 Volt AC Yoke, or a Permanent Magnet Yoke (WM-Series) can not be used, the senior inspector will choose a 12 Volt DC Yoke, such as a WC-8. However, that same inspector will investigate a portable generator or DC Power Inverter (Simulated Sign Wave), simply due to the effortless and reliable surface inspection that an AC field offers.

In the balance of the World, the common mains voltage is nominally 230, thus when working in confined or hazardous areas, industry has adopted 24, 42, & 48 VAC. To address this need Western Instruments has developed 5 different models of Low Voltage AC Yokes;

WE-24	Based on the WE-3HD platform, and supplied from our dedicated PD-24 Power Supply. Western offers two models of power supplies; the PD-24 offers an AC output, While the PD-24U provides a selectable AC or DC output. PD-24 Power Supplies have an output of over 20 Amps, with the WE-24 typically used underwater, thus Western recommends the WC-6UW or WC-9UW as a more economic alternative.
WC-48	Based on the WC-6, and supplied from a standard 48 Volt Power Supply (7.5 Amps Minimum), or Western Instruments PD-48, with an input Voltage of 230/50.
WC-42	Again, based on the WC-6, and supplied from a standard 42 Volt Power Supply (7.5 Amps Minimum), or Western Instruments PD-42,with an input Voltage of 230/50.
WE-48	Based on the WE-3HD, and supplied from either of our dedicated 230 VAC x 50Hz power supplies; the PD-48 has an AC output, while the PD 48U provides a selectable AC or DC output.
WE-42	Again, based on the WE-3HD, and supplied from either of our dedicated 230 VAC x 50Hz power supplies; the PD-42 has AC output, while the PD 42U provide a selectable AC or DC output.

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The difference between the WC-42/48 and the WE-42/48 is how the units are switched on and off. Standard Yoke Switches (Licon Series 11), used in the WE-42/48 Yokes, are rated at a maximum load of 10 Amps, and will not provide long term reliable switching near their maximum rating (see write-up on *Yoke Switches*). To increase the switching reliability, extra wiring is manufactured into the WE-42/48, which turns this standard Yoke Switch into a signal for turning On/Off the PD-42/48/U Power Supply, with a Solid State Relay.

Conversely, the Switching System of the WC-42/48 (see write-up on *Yoke Switches*) is designed to handle these higher amperages, with a greater degree of reliability. There are modestly price commercial Power Supplies that can be used on the WC-42/48's, as opposed to our PD-42 or PD-48. The electronic module used in the WC-42/48 is only able to operate from an AC power supply, thus DC is not an option. Here again, due to the nature of the intended environment, a confined space, the AC Field provides an ease of use and maximum particle mobility.

The PD-Series Power Supplies permit a minimum 4.5kg (10 pound) lift when supplying a low voltage AC current to the corresponding WC-42/48 or WE-42/48 Yoke. Furthermore, a WE-42/48 connected to the corresponding PD-U Series Power Supply, permits a 23 kg (50 pound) lift when switched to the DC mode. These lifting parameters comply with ASME, ASTM, NAVSEA, and ISO Yoke method MPI testing specifications.

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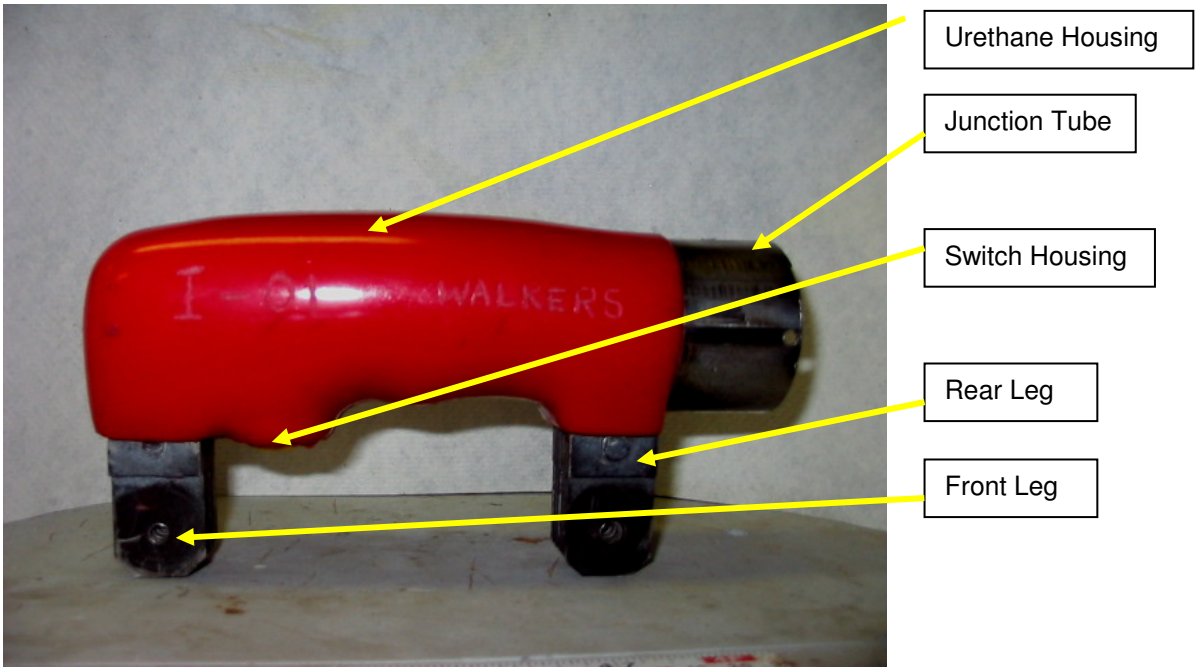
Western Instruments Yoke WC-42 - Trouble Shooting

WC-Series Yoke Frames are manufactured in 2 styles; 115 Volt; and 230 Volt. The only identification distinguishing the styles, is from the Serial Number; 230 Volt frames have a “K” at the end. As an example, a 230 Volt frame might have a Serial Number 491CK, while a 115 Volt would be 491C. Serial Numbers are stamped into the Name Plate, as well as on the Front or Rear Leg, where they extend from the cast housing/handgrip.

End users are often familiar with Switches failing on ‘Standard’ Economy Yokes, using a Lycon Type 11 Snap Action Switch (Micro Switch), due to arcing of the contacts. WC-Series Yokes use our Solid State Switching Module, which is Plugged into a 4 Pin Connector located inside the Junction Tube. The Semiconductors in the Module do the switching, without arcing, while the Low Profile activation switch only provides a low amperage signal to the Module. WC-Series switches conduct less than ½ Watt of Power, where the Lycon Switch on ‘Standard’ Economy Yokes conduct 400 to 700 Watts of Power.



WC-Series Frame

While the End Cap and power cord are removed from the Yoke for testing, the Electrical cord must be visually inspected for possible damage (internal or external) and tested for continuity, as this assembly is typically the first to fail. First ensure the ground has continuity from the Mains Plug to the Green wire at the End Cap end of the Power Cord. Secondly test the continuity on the Neutral (white) and Live (Black) wires also from the Mains Plug to the Green wire at the End Cap end of the Power Cord. Third,

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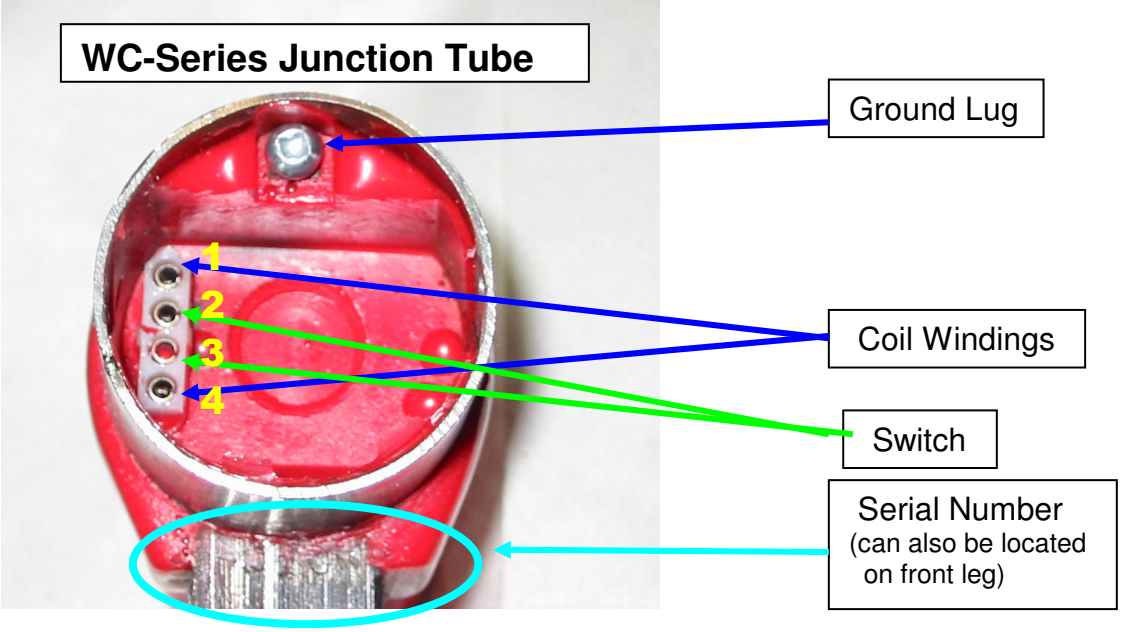
make sure all 3 connections are isolated from one another. For further information, review the operating instructions and the technical guide on *Yoke Wiring*.



To test the Frame, the two circuits (Windings & Switch) must be evaluated with a Multimeter or some other continuity tester. To ensure the Windings on the Core are Serviceable, place one test lead from your meter on the Upper most pin (**1**) of the connector, and the second one on the lowest connector (**4**). If the Windings are serviceable, you will have continuity immediately. For extra insurance test either Winding Connector (**1** or **4**) against the ground, such as the ground lug or junction Tube. The ground must be isolated from Windings.

If there is a concern about the internal wire Coil of the Yoke, it is easily identified with a Digital Multimeter. The resistance for a 115 Volt frame (Across Terminals 1 and 4) should be approximately 1.5Ω, while a 230 Volt Frame should be 5.5Ω

To test the switch, place your test leads on the middle two connectors (**2** and **3**), if the switch is **not** pressed the circuit will be open, and if the switch is pressed, you should have continuity. For extra insurance test either Switch Connector (**2** or **3**) against the ground, such as the ground lug or junction Tube. The Switch must be isolated from both the Ground and the Coil. W-Series Switches, for reasons outlined above, are very reliable, rarely requiring replacement….thus the Switching Module protects the switch and internal connections.

Note: Modules for 115 Volt / 60 Hz are potted in a Black Epoxy, while 230 Volt / 50 Hz modules are potted in a Red Epoxy.

Modules for the WC-8 and WC-9 are dark blue (or purple), but are larger than those used on the AC WC-6. A modified WC-6 Frame (115 volt) is used for these models of DC Yokes.

Modules for the older W-6 Yokes use the same color scheme. However, W 6's have a reversed connector, where the Yoke Frame utilizes a Male Type Connector and the Module utilizes the Female Type Connector.

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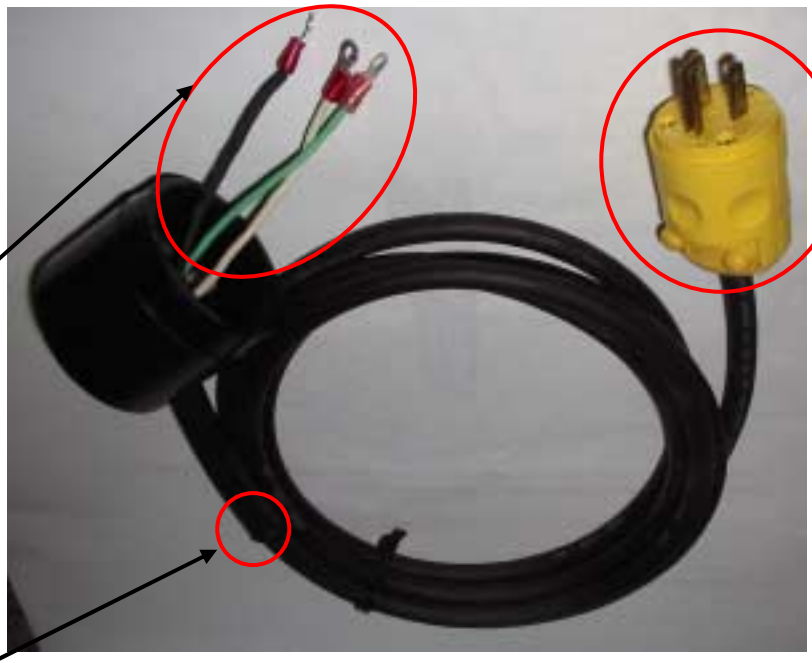
Western Instruments Yoke WC-42 - Power Cord

1. The first item to check on a Power Cord is the AC Plug (Yellow), to ensure it is in reasonable condition, and that all internal connections are tight and don't interfere with one another (mechanically or electrically).



2. If the AC Plug is OK, proceed with removing the End Cap, by first removing the Nylok Nut and Name Plate. Then gently pull on the end cap with a slight twisting motion. With the End Cap removed, check continuity between the internal connections (Ground, Neutral, and Live) and the AC Plug. If a Yoke has been in service for along period of time or used very often, flexing of the cord, immediately adjacent to the Cord Protector / Strain Relief, can cause breakage in the wires. The Power Cord my look fine, but needs to be checked for continuity.

3. A Cross-Bar is used to retain the End Cap onto the Yoke. The Cross-Bar is steel, that is insulated with Heat Shrink. Sometimes, the internal wires can get pinched against the Cross-Bar, causing a short. Check these wires for damage, which will indicate either a short or breakage in the wire. Repair as necessary, either by re-preparing the end of the Electrical cord or purchasing a new 'Cord Set'.

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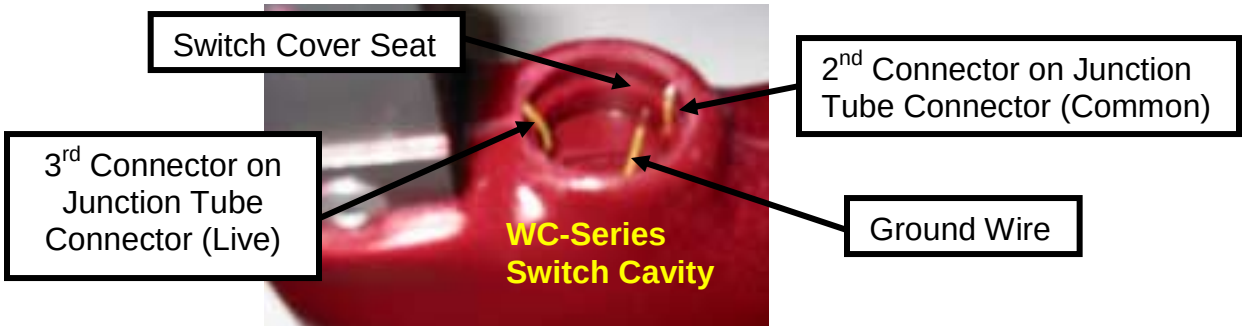
Western Instruments Yoke WC-42 - Power Cord Trouble Shooting

WC-Series Yokes use the Omron B3F Series switch. These switches have a ground provision, are designed for rugged use, and are sealed. Additionally, these switches conduct less than ½ Watt of power, and are connected to our solid state switching module. WC switches are therefore unlikely to fail. There is, however, the chance that an electrical overload or mechanical damage may occur. These instructions can be used for all manufactured products that use the Omron B3F series switch.

1. Remove the switch cover. WC series yoke switch covers are glued in position to create a water resistant seal. Prying the switch cover off will damage the material, but it is prudent to replace the switch cover when repairing the switch.

   Using whatever tools at your disposal, the old switch cover must be removed, without damaging the switch cavity or the cast in Cover Seat that the switch cover sits on. Furthermore, it is better to remove the old glue as well.

   Note: If the underside of the switch cover is burned, it is a telltale sign that the yoke has been connected to 110 volts DC. This power is found on old engine driven portable welders and some merchant ships.



2. Using a pair of tweezers or small pliers, gently lift the switch up out of the cavity without damaging the 3 wires that are soldered to it. Note the positions of the wires on the switch. When replacing the switch, the wires must be soldered in the same positions. Refer to *Testing WC-Series Frame* write up for the identification of wires on the Junction Tubes Connector.

3. Using the tweezers or pliers, hold the switch, then apply heat with your soldering iron. The switch is then easily removed and the switch wires are pre-tinned. Take care not to touch the encapsulant with the soldering iron.

4. Examine the switch cavity. Note any burns that would indicate a use of DC voltage.

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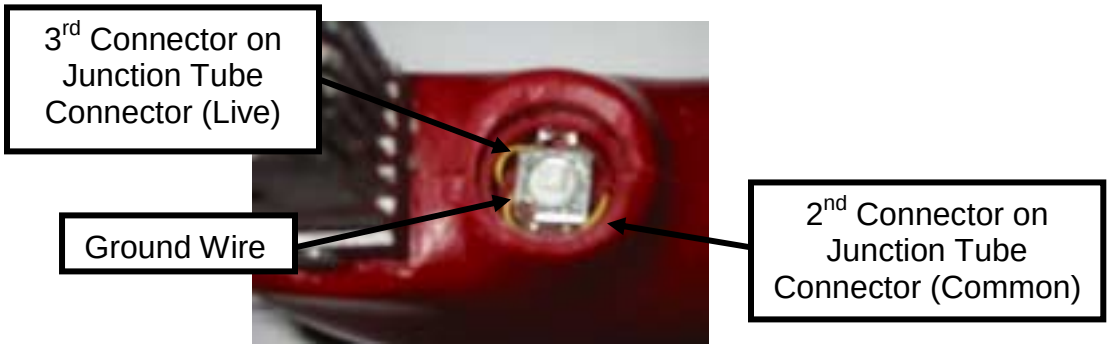
5. Using a small brush, clean the switch cavity with electrical contact cleaner. Using the area inside the Junction Tube of the Yoke, test to ensure your contact cleaner does not affect the Urethane Encapsulant. If chemicals at your disposal are limited, first clean the cavity with 100% Stoddard Solvent (paint thinner), followed by 99% Isopropanol (Isopropyl alcohol).

6. Prepare the replacement Omron B3F series switch. The B3F is manufactured for PCB mount, so the 4 leads must be reshaped for use on the W-series products. Bend the leads to a 45 degree angle upward. Remove the 2 locating tabs on the underside of the housing. This will help the switch to lie flat in the bottom of the switch cavity.

7. Pre-solder the leads and ground on the switch . Only 2 leads need soldering. The ground solder is applied to the top of the switch. See the picture below.



8. Carefully establish which wire is the ground wire. If you were unable to take note of this when removing the damaged switch, use a continuity tester by placing one lead at the end of one of the wires, and the other lead on the ground lug or junction tube.

9. Solder the two switch wires to the 2 soldered leads and the ground wire to the top of the switch. Take care not to touch the encapsulant with your soldering iron.

   Note: The switch has 4 solder leads, but only two are used. Ensure that the 2 leads that are used are diagonal to each other.

10. Position the newly soldered switch in the switch cavity, ensuring that the switch wire insulation is not pressed up against the leads. This may cause the insulation to be cut.

11. Care must also be taken to ensure that the switch wires do not protrude up above the seat to which the switch cover is affixed. If the wires are too high, they will be subject to wear during the operation of the switch. The repeated depression of the switch cover to operate the yoke may cause the wires to move, and eventually erode and disengage.

12. Once the switch is in position, press firmly on it so that it lies flat on the bottom of the switch cavity.

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Note: Push all the switch solder leads into the wall of the switch cavity to secure the position of the switch.

13. Test the switch again using the continuity tester. Place the leads from you meter in the middle two connectors of the 4 pin module connector located in the junction tube. When the switch is pressed you should have continuity.

14. Clean the new switch cover using the chemicals used to clean the switch cavity.

Switch Installed

Applying glue carefully on switch cover Seat

15. Run a thin bead of Gap Filling Cyano-Acrylate Glue around the Seat for the switch cover. Reinsert the switch cover, and apply pressure for the time specified by the manufacturer. Ensure that the cover is glued continuously around the Seat. A water-resistant seal is required.

Note: Fabricating a tube out of a nonstick plastic, slightly smaller in diameter than the switch cover, will help in applying pressure where needed while the glue is setting. Applying pressure to the entire switch cover may cause the switch to stick in the on position.

Note: Do not use an excessive amount of glue, as you don't want it to flow down into the switch cavity. To much glue may case the switch to glue into the on position. Avoid gluing the Switch cover to the sides of the switch cavity, as will make future repairs difficult.

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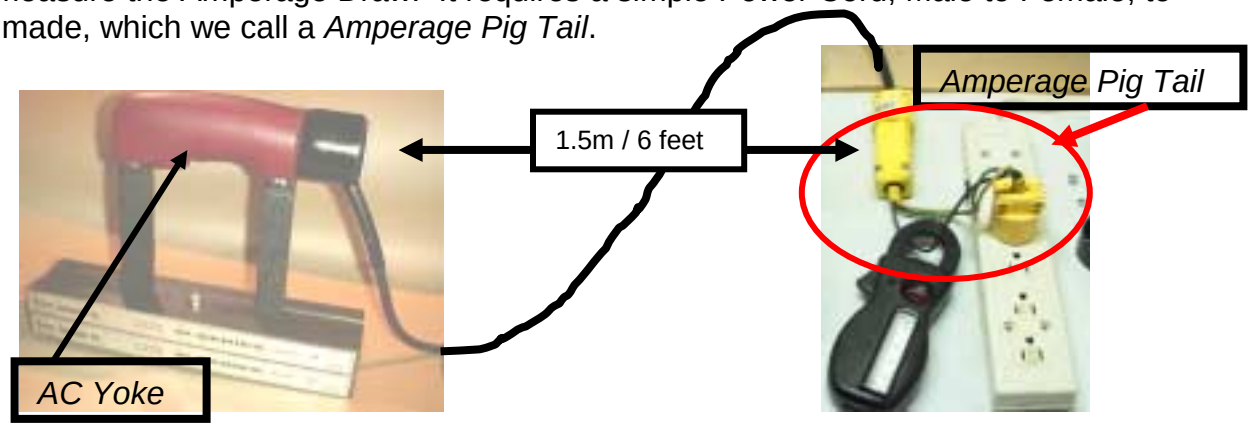
Measuring Amperage Draw on Yokes

If problems are encountered during Pull Testing of a Yoke, a quick way to test them is to measure the Amperage Draw. It requires a simple Power Cord, Male to Female, to be made, which we call a *Amperage Pig Tail*.



The *Amperage Pig Tail* is a short length of power cord (18-3), that has a Male Plug installed on one end and a Female Plug installed on the other end (Illustrated above). After the Plugs are connected, and the clamp type Strain Relief's on the Plugs are tightened, the Rubber Jacket is stripped off the Cord to within about 1" (25mm) of each plug. This exposes the 3 colored wires, which should be connected to the plugs and labeled as follows;

- Green – Ground
- White - Neutral
- Black – Live

For convenience, the *Amperage Pig Tail* is plug into a Power Bar with an On/Off Switch. The Yoke to be tested is plugged into the Female Plug. A Clamp on style Ammeter is Clamp around the Black or Live wire. The Yoke and Pull Test Bar are moved approximately 1 ½ meters (5 feet) from the Power Bar and Ammeter.

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When you are ready to test, turn on the Power Bar. Activate the Yoke while it is on the pull test bar, and measure the Amperage. The Chart below is your guide for what the Amperage Draw should be for a given Model of Yoke.

Model	WE-3/3HD	WE-3K/#HDK	WC-6	WC-6K	WE-3LT	WE-3LTK
Amps	4	12	4	2	4	2

When the Yoke is removed from the Pull Test Bar and activated, the amperage will be slightly higher (20% to 30%), and we use the term “Amps In Air”. The Amperage Draw published and marked on the Yoke are slightly higher than the draw *in air*.

If the amperage of the Yoke follows the values shown in this guide, then one can simply conclude that the Yoke is Serviceable, but the Contact Feet need to be ground flat. If the amperage draw is drastically lower or higher than those shown, contact Western Instruments for your next action.

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Western Instruments Yoke WC-42 - Cleaning Yokes

Yokes need to be maintained to ensure their long term use. This just doesn't mean replacing a power cord when it is broken or replacing a switch cover or switch when it is unusable. This guide will address the 4 main areas of concern;

Electric Power Cord and mains plug

Yoke Housing (Rubber Encapsulate).

Activation Switch and Switch Cover (membrane).

Yoke Legs and feet.

Power Cord

The mains plug is usually the first item to fail, ensure the jacket as it exits the Plug is not damaged. Most Plugs are fitted with a clamp that can cause damage if it is tightened too much. Inspected at the end of every shift, and Repair or replace as necessary.

The power cord jacket is typically made of rubber (higher quality cord) or vinyl (on low quality cord), Both Cord types are affected by oil or grease and UV radiation (sun light or UV Lamps). Power Cords should be inspected at the end of every shift and cleaned with a mild soap solution when necessary.

All power cords enter the Yoke housing with some type of Strain Relief (also called a Cord Protector). Good quality strain reliefs provide a thickening of
the Power Cord over about a 7cm (or 3") length. These good quality devices are a tight fit over the power Cord, and may also have a cullet type clamp on them. Low quality Straight Reliefs use a crimp connector to lock the power cord to the Yoke housing. These crimp connectors tend to yield the Cord Jacket so they have a very short life. The Power Cord Strain Relief needs to be inspected at the end of every shift, and Repair or replace as necessary.

Yoke Housing

Western's Yoke Housing (Hand Grip) is encapsulated from Urethane Rubber, and is resilient from many oils and grease. Like any other electrical power tools keeping them clean allows any issues (wear and tear) to be obvious. Yokes should be inspected at the end of every shift and cleaned with a mild soap solution when necessary.

Any lifting of urethane or surface damage should be treated in such a manner that it will not lead to further damage. This may include cutting (smoothing) of small tears that might lead to further peeling. This may also include using a fine jeweler's file to dress damaged areas.

Do not remove excessive amounts of material as the Urethane Rubber Encapsulant is only so thick and protects any wire in the Yokes internal Coil and any internal interconnection wiring.

Activation Switch and Switch Cover

Great effort has gone into the engineering and development of Western's Yoke
Switch Housings and Switch Covers. There is a great deal of information on this that can be obtained through you local distributor.

Western has 2 different switching designs WC-Series and WE-Series. The 'E' in WE-Series stands for Economy. While the WC-Series uses a unique solid state design with high reliability. Documents are posted on our Web Site for trouble shooting (diagnostics) and Replacement of our 2 types of Yoke Switches and Switch Covers (Membraines).

WE-Switch Membranes are of a very inexpensive Slip In design. When installing a new or cleaned WE-Series switch membrane, clean the switch housing and membrane receptacle with a dry nylon brush and use compressed air to remove the dust. A very small amount of Lubrication (Mild Soap and Water) helps slipping the switch cover in place. Do not glue in WE Series Switch Covers!

Legs and Feet

Great effort goes into the assembly of Western's Universal Yoke Legs and Feet, to ensure their smooth manipulation and free hinging. When Wet and ry Method media are used with the same Yoke, each of the 4 hinged assemblies (Upper legs and lower feet) should be cleaned with carrier and a brass brush followed by blasts of compressed air.

If a water carrier is used, these hinges need to be flushed regularly. Then at the end of the shift these hinges should be flushed and dried with compressed air. After drying the hinges should be treated with a water repelling corrosion inhibitor.

All yokes must pass a lift test before and after testing. This requires the contact portion of the feet to be made flat and parallel on at least an annual basis. This requires the compression of the splayed foot, followed by grinding of the feet in a special fixture than most distributors have for there ongoing service work.

Notes

Yokes should not be soaked in a mild soap solution. Typically, for cleaning, personnel should use sparring amounts of dish soap and water and an old tooth brush. Personnel should avoid getting this soap solution on the Yoke Legs/ Foot Assemblies. Avoid the ingress of the soap solution into the Mains Plug, and the Power Cord Strain Relief. Again the soap solution should not be left to dwell on the Power Switch Cavities or Switch Membranes. While scrubbing with the old tooth brush, one wants only to produce a lather, and not wet suds. Yokes should not be soaked in a carrier (Mineral Spirits / Varsol / Stoddard Solvent) to clean the hinge assemblies. Prolonged exposure will affect the Rubbers used on power cords and the Urethane Rubber used to cast the body.

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