



**OPERATING INSTRUCTIONS  
UW-115 AND UW-12  
UNDERWATER CONTOUR PROBES**

**BULLETIN 265  
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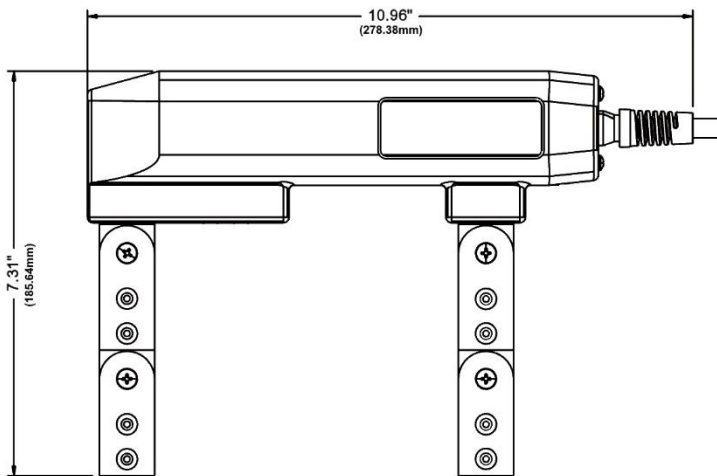
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The UW-115 and UW-12 Contour Probes are rugged high performance instruments for Magnetic Particle inspection to accepted Nondestructive testing standards. Certain operating procedures and safety precautions should be observed.

**INSTRUMENT DESCRIPTION:** Basically, the Contour Probe is an electromagnet producing a strong magnetic field. Placement of the two poles (legs) upon ferrous metal provides a path for the intense magnetic field to pass from one pole to the other. The part completes the flux path and becomes highly magnetized. The model UW-115 produces a strong constant AC field. The model UW-12 produces a DC field. All Parker Contour Probes are designed with flexible legs that allow the field to be "focused" at a precise area of inspection. The maximum leg spacing is 12 in. (304.8mm). The UW-115 and UW-12 are provided with a 4 ft.(1219.2mm) Neoprene, #16/3 power cable. This pig tail/cable is to be used in conjunction with the users approved underwater connector or spliced to a #16/3 conductor underwater cable.

**SPECIFICATIONS**



MODEL	POWER REQUIREMENTS	FIELD	WEIGHT
UW115	115 VAC 60 Hz 6 AMPS	AC	7 lbs. (3.18 kg)
UW12	12 VDC 2.5 AMPS	DC	7 lbs. (3.18 kg)

**The UW-115 and UW-12 have an IP68 rating.**

**OPERATION UW-115:** The UW-115 Underwater Contour Probe must be operated from a grounded, 115VAC, 6 amps, 60 Hz power source. The power source must be protected with a Ground Fault Interrupter (GFI) device. Failure to do so may result in electrical shock hazard. Power supplied to the units must be controlled by "top side" switching or by an approved underwater switching device provided in line with the power cable. No switch is provided on the UW-115. A check should be made to determine that adequate field strength is maintained due to voltage/current drop through the supply cable.

**OPERATION UW-12:** The UW-12 Underwater Contour Probe is designed to operate from a 12V portable battery or from a 12VDC, 2.5 amp power supply. The DC power supply should have (primary) AC circuit isolation protection to preclude any electrical hazard. Power supplied to the unit must be controlled by "top side" switching or by an approved underwater switching device provided in line with the power cable. No switch is provided on the UW-12. A check should be made to determine that adequate field strength is maintained due to voltage/current drop through the supply cable.


## GENERAL SAFETY RULES

Please read all instructions. Failure to follow all instructions listed below may result in injury. If the equipment is used in a manner other than as specified in these operating instructions, the protection provided by the equipment may be impaired.

Do not abuse the power cords. Never carry the instrument by the cord or attempt to unplug the instrument using the cord. Always operate the instrument with the standard installed cord. Changing or using a damaged cord can increase the risk of electrical shock. The cord should be checked periodically for any damage.

Do not position the instrument such that it would be difficult to operate the disconnect device (plug) on the end of the power cord.

The outside housing should remain intact and solid. Any damage, chipping, or separating exposing internal wires is a hazard. Instruments should not be used in this condition. The outside housing should be periodically checked for damage.

 **Duty Cycle:** The UW series are designed for a 100% duty cycle.

**Operating Environment:** Temperature: 32° to 104°F (0° to 40°C).

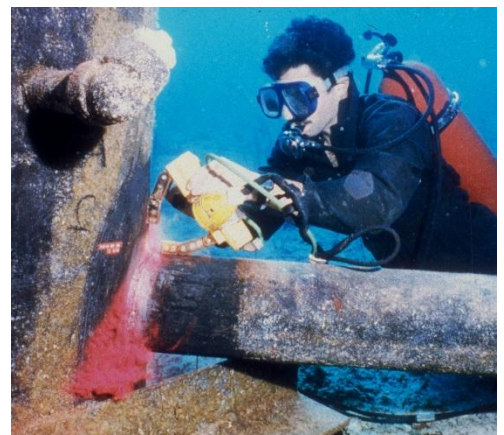
**Shipping and Storage Environment:** Temperature: 40° to 140°F (4.44° to 60°C). Relative humidity: 5% to 95%. Vibration and shock: As encountered in normal shipping and handling with no degradation.

### General Cleaning

The outside surface of the instrument can be periodically wiped clean with a clean cloth and a mild general purpose cleaner. Avoid using cleaners such as lacquer thinner, or mineral spirits that could damage the outside housing.

The UW-115 and UW-12 should be thoroughly rinsed in fresh water and the leg joints lubricated after each use.

Never attempt field service. All UW series Contour Probes should be returned to the factory for repairs.



**OPERATION:** Connect the instrument into a Grounded power source of proper voltage. Place the Contour Probe legs upon the work surface with the suspected defect at right angles to the legs (Good contact will produce the best results). Power on the instrument. Lightly dust or float dry magnetic inspection powder over the area being inspected. Defect indications will be revealed in a direction shown on figure 2. Turn the Probe 90 degrees from the first test and repeat the process. Check all procedures and standards for further details involving inspection specifics.

**AC MAGNETIZATION:** An AC magnetic field induced into a part is a "skin" or surface field and does not penetrate the cross section of the material. A by-product of AC is in the form of eddy currents. These eddy currents tend to guide or direct the magnetic field in a narrow pattern between the poles. Another by-product is a vibratory action, which adds mobility to the inspection particles to form a more highly defined powder build-up at the defect. For these reasons, an AC magnetic field is the most desirable for the detection of surface breaking defects.

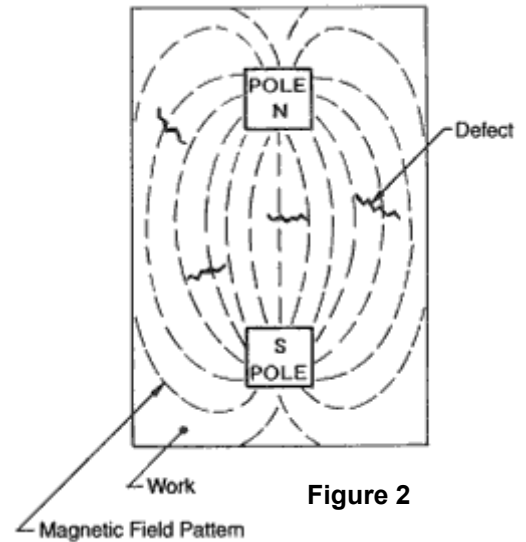
**DC MAGNETIZATION:** The DC magnetic field produced by the UW-12 is adequate for most inspection applications and offers greater convenience and safety factors. DC fields may not in all instances produce the same sensitivity to detect indications that might otherwise be obtained by an AC field.

**CAUTION:** Small parts may become magnetically saturated due to excessive field application. This may cause a masking effect to the point where it is impossible to define a defect.

**WARRANTY:** The Parker UW series are warranted against malfunction due to defective material and/or workmanship. The defective unit will be repaired or replaced (less incoming freight charges) for a period of 90 days from the date of sale. This repair warranty does not apply to altered units. Repair or replacement of the defective unit will be made at the discretion of Parker Research Corporation. Repaired or replacement unit(s) will be returned to the original customer prepaid.

The obligation of Parker Research Corporation is limited to the repair or replacement of the defective unit. No other obligation is expressed or implied. Parker Research Corporation assumes no liability from any claims arising from the use of this equipment.

**CAUTION:** For the correct and safe use of this equipment, training of operating personnel is required. Use of proper inspection procedures, standards compliance and safety requirements is the obligation of the user.



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