

The Probe

KK&S INSTRUMENTS - July / September 2012 Issue



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Front Page - Portable AC YOKE

AC YOKE INSPECTION AT REMOTE WORKSITES WITHOUT A GENERATOR,
with THE PARKER BAC310 PORTABLE, BATTERY OPERATED AC YOKE...

The **BAC310** battery operated Inverter/Powered Yoke is a totally portable, stand alone unit. The kit comes complete with a B310 yoke but will operate with other Parker Yokes (110V).



The **BAC310** operates independently from any outside power source. Power is derived from the internal 12VDC battery, which is inverted to 110VAC output through the self contained inverter. A separate battery charger is provided.

The **BAC310** is contained within a heavy duty steel case 29cm H x 19cm W x 14cm D and weighs only 12.7 kg. The unit may be used in any applicable field application and is ideal in areas where normal line power is not available or where outside power sources may present a safety concern.

Charge the battery, Plug in the Yoke and your ready to go. The Yoke will also function as it would normally from any A.C. power source. Follow Parker's operating instructions for normal A.C. Yoke inspection.

All Parker Contour Probes exceed applicable Magnetic Particle inspection requirements.

Parker Yokes under warranty will be repaired or replaced due to **malfunction or user damage at no charge*** for a period of one year from date of purchase.

BAC310 AC POWER SUPPLY ASSEMBLY	
DEDICATED USE	AC YOKES
CURRENT DRAW	7.5A (B310)
APPROXIMATE RUNNING TIME.....	2 HOURS
TOTAL WEIGHT	28 LBS (12.7 KG)

BAC310-600 INVERTER	
MAXIMUM CONTINUOUS POWER	600 WATTS
SURGE CAPACITY (PEAK POWER)	1200 WATTS
MAXIMUM EFFICIENCY	APPROX. 90%
NO LOAD CURRENT DRAW	0.8A
LOW VOLTAGE SHUTDOWN ACTIVATION ..	10.0 VOLTS
LOW VOLTAGE ALARM ACTIVATION	10.6VOLTS
WAVE FORM	MODIFIED SINE WAVE
FUSE	THREE 25 AMP (SPADE TYPE)
WEIGHT	4.25 LBS (1.9 KG)

BP20 BATTERY PACK	
TYPE	RECHARGEABLE SEALED LEAD ACID
RATING	12V. 20Ah/20 HR
FUSE	20A INLINE SPADE TYPE
WEIGHT	14.3 LBS (6.5 KG)

For further features or a price, reply to this email or contact us on
02 88503755 or www.kks.com.au

Special. 5mm Econoscope

The "Econoscope"

5mm, 6.5mm & 9mm diameter with workable lengths of up to 390mm. This popular Borescope has been around for more than 10 years and has earned its right as a market leading product. HSW has a history of over 85 years in inspection probes and is renowned for their quality robust Borescopes. Only German lenses are used throughout the range to ensure the **Econoscope** supplies the best image quality. The inbuilt halogen lighting, battery operation and up to a 90° field of view make the Econoscope a go anywhere Borescope that is great for most jobs. The **Econoscope** is still manufactured & assembled in Germany.



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News - New, Karl Deutsch Models

There are applications requiring the degree of nodularity in cast iron, or its deviation from a reference value.

The nodularity is defined as the relation between the nodular graphite and the total graphite content. This value affects the cast iron properties to a great extent. A nodularity value of 100% signifies that the total graphite content exists as nodular graphite. The nodularity value controls the elastic properties and the tensile strength of cast iron. In general, the strength increases if the nodularity value increases as well. A typical example for the utilization of nodular cast iron (abbreviation SGCI) is the well-known Castor container for the transport and storage of radioactive materials.

Ultrasonic testing offers the possibility to determine the material quality non-destructively by measuring the sound velocity.

In each case, the sound velocities are different for iron casting, nodular casting and casting with lamellar graphite. Thus, the determination of sound velocity turns out to be a fair method to determine the nodularity.

However, the sound velocity does not only depend on the percentage of the nodular graphite but also on the alloy composition, the total graphite content, the manufacturing process and the grain structure. To achieve a reliable statement on the value of nodularity, ideally the KARL DEUTSCH instrument **ECHOMETER 1076** can be utilized since it is designed to measure wall thickness and sound velocity.

First of all the nominal value needs to be determined by means of a reference block, made from the same material as the material under test with identical material properties. For the determination of the sound velocity the thickness of the object must be known as precisely as possible. For this purpose a digital calliper can be used which provides an interface for direct transfer of the thickness data to the gauge.

Areas of parts where a correct nodularity is essential need to be examined with special care.

Upper and lower tolerance values can be adjusted with the **ECHOMETER**, thus enabling a comfortable, reliable and fast tracing of the quality.

The tolerance range may either be defined empirically or by measuring the sound velocity of cast samples with defined maximum and minimum properties.

Easy and convenient Magnetic field strength measurement

The new gauge for field strength measurement **DEUTROMETER 3873** was specially developed for magnetic particle crack detection. Efficient and quick operations, without complicated settings or displays which are difficult to read are now possible.

The large and illuminated display provides an outstanding data and menu readability. The lettering of the keypad which fluoresces under UV light complements the great readability. This allows a safe and easy operation also inside the darkened testing booth. The selected unit (mT, A/cm, kA/m, Gauss) is shown while working in measuring mode. The instrument automatically recognizes a direct field or an alternating field (AD/DC). A special operating mode is available to measure both the magnetizing strength as well as the residual field strength immediately one after the other. This applies also for large and small measured values. A fast and reliable control of the field strength with a selectable visual and acoustic limit alarm is now possible. As usual the measuring heads are available in various geometrical designs. Special types of measuring heads can also be offered on request.

The device works with two regular batteries or rechargeable batteries (type AA) for up to 50 hours. It is supplied with a shock absorbing protective rubber holster. This makes it a robust and reliable device even in harsh environments.

The new **DEUTROMETER 3873** is now available in a sturdy carrying case with a quality test certificate. For the inspection of testing and measurement equipment within your QM system, KARL DEUTSCH offers regular check ups of your instruments.



Have any questions or like a price, contact us on -

Ph 02 88503755 - contact@kks.com.au - www.kks.com.au

Application - Post Cure Powder Coating

Measuring Post Cure Powder Coating Thickness

Powder coating is a popular finish used for functional and decorative purposes on products ranging from outdoor machinery to household items. Measuring the thickness of applied powder coating is a critical requirement for custom coaters and those performing incoming inspection of finished goods. FISCHER instruments, utilizing the magnetic induction and eddy current methods are the instruments of choice for powder coating thickness measurement.

Powder Coating is applied globally to everything from lawn and garden equipment to furniture, appliance, and automotive components. The thickness of the powder coating applied determines how long the part will last, the part's appearance and even in some cases the part's colour.

Proper measurement of the thickness therefore is critical.

In today's competitive climate it is extremely important for anyone applying a coating to adhere to the thickness specification. Monitoring powder coating thickness with a FISCHER hand held coating thickness gauge will ensure this and also potentially save tens of thousands of dollars in costs.

Table 1 shows how using a FISCHER instrument can provide cost savings based on annual powder purchases.

Film Thickness Reduction	Cost Savings based on annual Powder Purchases (\$/year)			
	10,000	50,000	250,000	1,000,000
0.05 mil	167	833	4,167	16,667
0.10 mil	333	1,667	8,333	33,333
0.15 mil	500	2,500	12,500	50,000
0.20 mil	667	3,333	16,667	66,667
0.25 mil	833	4,167	20,833	83,333
0.30 mil	1,000	5,000	25,000	100,000
0.35 mil	1,167	5,833	29,167	116,167
0.40 mil	1,333	6,667	33,333	133,333
0.45 mil	1,500	7,500	37,500	150,000
0.50 mil	1,667	8,333	41,667	166,667

Table 1: This table reflects the cost savings based on a customer baseline of 3.0 mils. Increments of 0.05 mil used to demonstrate savings at the smallest measurable level. Source - Metal Finishing Magazine

Note in Table 1 that increments such as 0.10 mil if measured and controlled properly, can provide a significant reduction in costs, thus making the custom coater more competitive.

However, only instruments with superior repeatable precision allow for the reliable measurement to this level. Likewise, utilizing certified standards to adjust and verify gauge accuracy, something that comes included with the scope of supply of FISCHER instruments.



Fig. 1: The DUALSCOPE® is quick and easy to use set extremely repeatable. Patented conductivity compensation allow for measurements on various non-ferrous alloys, without time-consuming onsite calibration on the actual substrate material.

Because powder coating is applied to such diverse parts, selecting the most appropriate instrument and probe is highly important. FISCHER offers a wide selection of instruments and probes starting with small, handy DUALSCOPE® MP0R pocket instruments up to the flexible FMP family with numerous interchangeable high precision probes for the most demanding measurement tasks.

Have any questions or like further details, contact us now !

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