SPECTRO

# Adapter Catalog

## MOBILE METAL ANALYZER





SPECTROTEST, SPECTROPORT
and SPECTRO iSORT

AMETEK®
MATERIALS ANALYSIS DIVISION

# Testing Adapters for portable/ mobile Metal Analyzers

SPECTRO iSORT

SPECTROPORT

SPECTROTEST

## A full range of metal analyzer products for onsite metal analysis tasks

Portable and mobile metal analyzers have been used for over 30 years to conduct metal analysis onsite. The rapid development in instrument technology has led to significant advances in the application possibilities.

As a technology leader, SPECTRO has markedly shaped and formed this development from the start. SPECTRO offers a complete range of metal analyzer products – from handheld XRF to arc spark OES spectrometers – for the many different tasks in onsite metal analysis.

The current range of applications for portable and mobile metal analyzers far exceeds the original, yet still critical, steel mill sorting requirements. Demanding metal analysis tasks such as the laboratory-like analysis of complex alloys or the detection of nitrogen in duplex steels highlight the modern capabilities of on-site metal analysis.

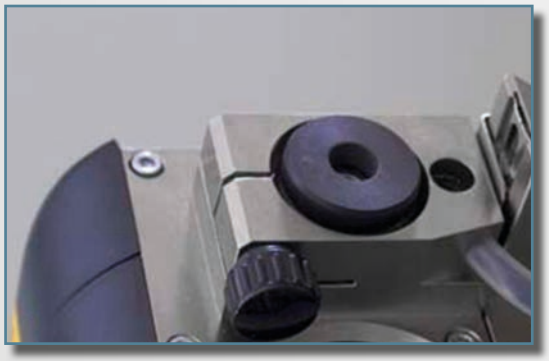
The complete family of products SPECTRO offers for onsite metal analysis allows the optimum instrument selection for the individual testing requirements. The right instrument delivers the optimum results. All of SPECTRO's onsite metal analyzers share important traits like a robust and rugged design, best-of-class analytical performance and intuitive operation.

Wires, small parts, tubes and many other types of metal in diverse forms, sizes and geometry can be analyzed without difficulty using one of the various special adapters SPECTRO offers.

Using the UV probe with SPECTROTEST and SPECTROPORT, the elements C, P, S as well as further elements like As, B, and Sn (SPECTROTEST also N) can be determined. To achieve reliable and accurate results, an appropriate sample preparation is necessary.

# Arc Adapters - easy to exchange without tools

SPECTROs portable and mobile metal analyzers are suitable for a wide range of testing tasks.
To ensure optimal results despite strongly varying sample geometries, SPECTRO offers a range of testing adapters which can be easily exchanged without tools and ensure optimal results.
Adapters for the fast identification and mix-up control of samples with differing geometries using arc excitation in air.

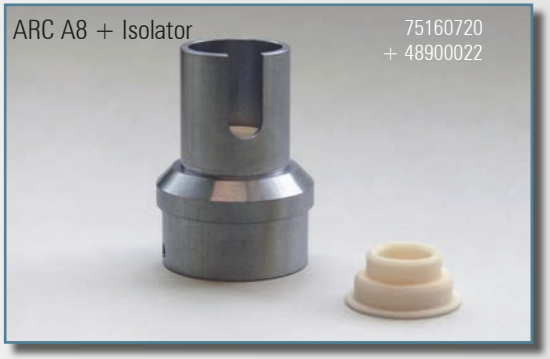


# Arc Adapters

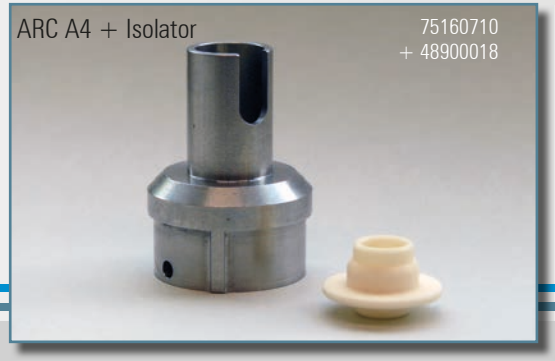
The A7/A8 arc adapters are universal adapters for many different applications for which the sample surface is large enough (resting on the edge of the adapter must be at least partially possible) and ideally planar (ground).
The outer diameter of the adapter is 20 mm.
If a smaller diameter is required – for a better immersion depth with bundled test pieces, for example – the A4 adapter with a 15 mm outer diameter is used.

ARC A7 + Isolator
75160719
+ 48900021

ARC A8 + Isolator
75160720
+ 48900022



ARC A4 + Isolator
75160710
+ 48900018



## SPECTROPORT/SPECTROTEST

**The arc/spark spectrometers for the job when exact metal analysis is required**

SPECTROTEST and SPECTROPORT are arc/spark spectrometers that are ideal for many applications in the metal producing, processing, and recycling industries. These mobile metal analyzers flaunts their superior performance especially when exact metal analysis is required, when materials are difficult to identify or when there is a large number of samples to be tested.
The complex arc spark spectrometer design offers many ergonomic advantages for safe and fatigue-free onsite operation. The light, thin probe is quickly converted between arc excitation and spark excitation (arc/spark OES). A probe with an integrated UV optic is available for special measuring applications; in its newest version it can also be utilized with arc excitation.
These arc/spark spectrometers are even able to identify low alloy steel with the carbon content during the rapid arc excitation mode. In spark mode, the analysis of carbon, phosphorous and sulfur are potential applications. The identification of duplex steels using the nitrogen content is limited to SPECTROTEST.

# Arc Adapters

## Working principle of a mobile spectrometer

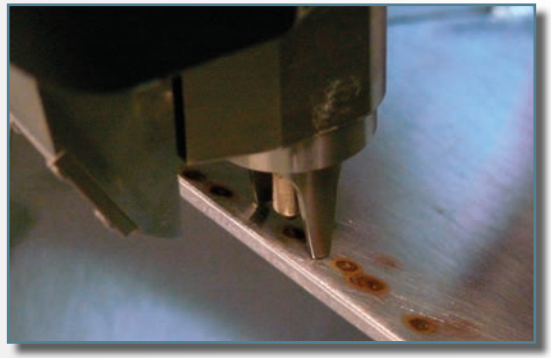
Arc and spark OES is the analysis method used by SPECTRO´s portable and mobile metal analyzers, SPECTROTEST, SPECTROPORT and SPECTRO iSORT.
The principle of the analysis method is optical emission spectroscopy (arc OES or spark OES). Sample material is vaporized with the testing probe by an arc spark discharge.

The atoms and ions contained in the atomic vapor are excited into emission of radiation. The radiation emitted is passed to the spectrometer (arc spark OES) optics via an optical fiber, where it is dispersed into its spectral components. From the range of wavelengths emitted by each element, the most suitable line for the application is measured by means of a CCD.

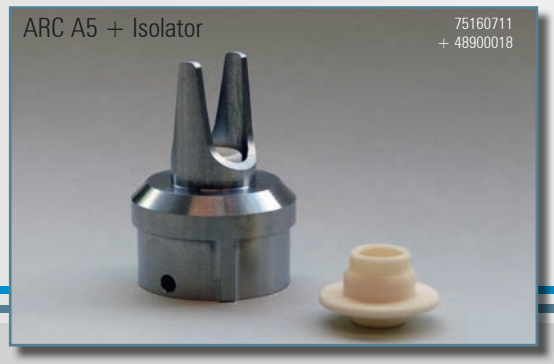
The radiation intensity, which is proportional to the concentration of the element in the sample, is recalculated internally from a stored set of calibration curves and can be shown directly as percent concentration.

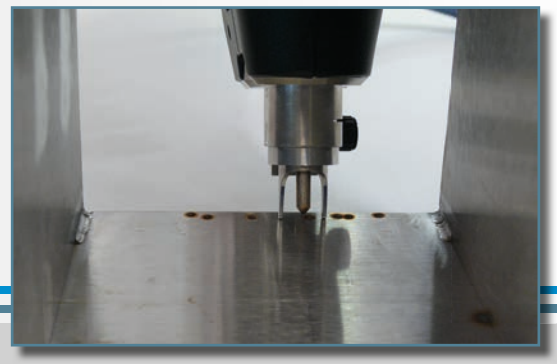
If the area to be tested cannot be viewed with the closed adapters (A4, A7/A8) or easily reached, then the A2 and A5 adapters (small diameter like A4) are the first choice. With the open "2 pin" form, the probe can be exactly positioned for the identification of welding seams, for example.
The "adapter for welding seams" can also be used when the sample geometry makes positioning difficult.

ARC A2 + Isolator
75068004
+ 47311009



ARC A5 + Isolator
75160711
+ 48900018

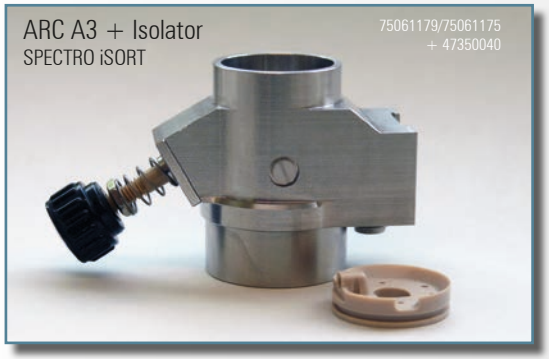


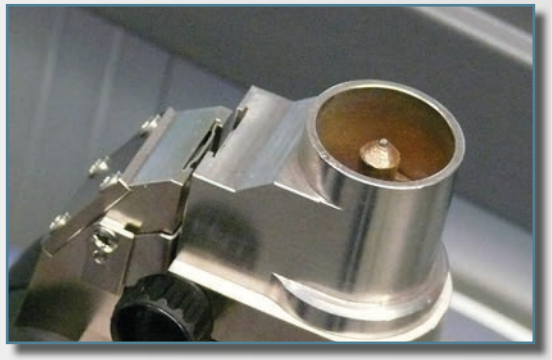


# Arc Adapters

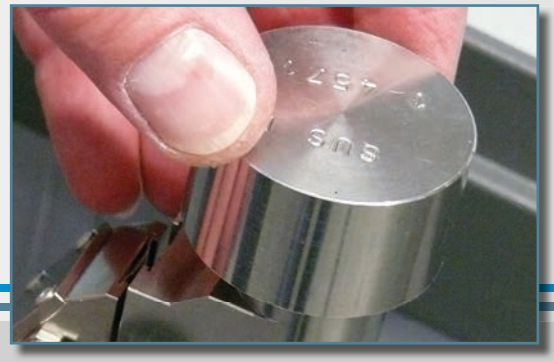
The determination of carbon with arc excitation in air requires the use of an A3 (SPECTRO iSORT) or A6 (SPECTROTEST & SPECTROPORT) adapter, which is optimized for this application.
This should – to ensure flushing of the adapter with purified air – be closed from above by the sample.

ARC A3 + Isolator
SPECTRO iSORT
75061179/75061175
+ 47350040





ARC A6 + Isolator
SPECTROTEST &
SPECTROPORT
75061181
+ 47350040

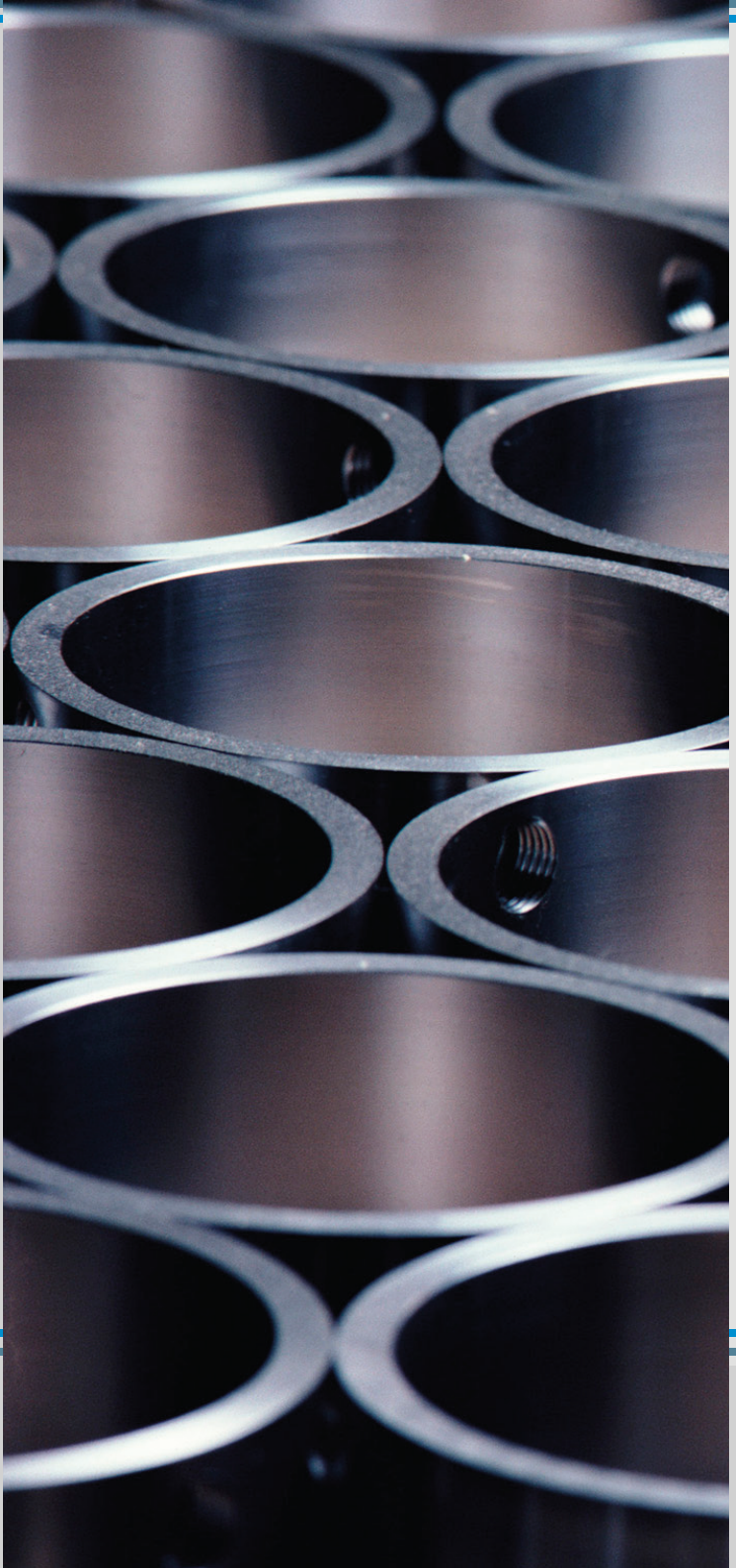


## SPECTRO iSORT

### The hand-held metal analyzer for fast, easy determination of metal alloys

The hand-held metal analyzer SPECTRO iSORT is battery-powered, for fast, easy on-site identification and analysis of all common metal alloys. It uses an efficient arc excitation and requires neither argon nor a radioactive source.
The hand-held metal analyzer can conduct several hundred measurements utilizing the instrument's integrated rechargeable battery. The SPECTRO iSORT metal analyzer can be used for material testing in production, component identification in chemical and petrochemical plants, material failure analysis, weld seam analysis, and the rapid determination of metal alloys when buying, selling or blending scrap metal.
For the analysis of carbon in Fe base, the SPECTRO iSORT utilizes a proprietary scrubbing system that prepares the atmosphere between electrode and sample, enabling the precise measurement of carbon with arc excitation in air like never before.

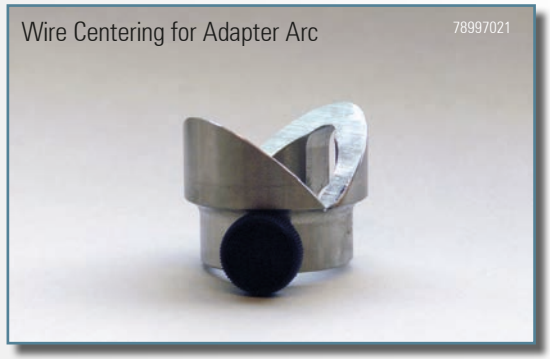
The iCAL software logic on this hand-held metal analyzer saves time by controlling instrument status independently from external influences and eliminating the need for lengthy recalibrations for changes in location and temperature.

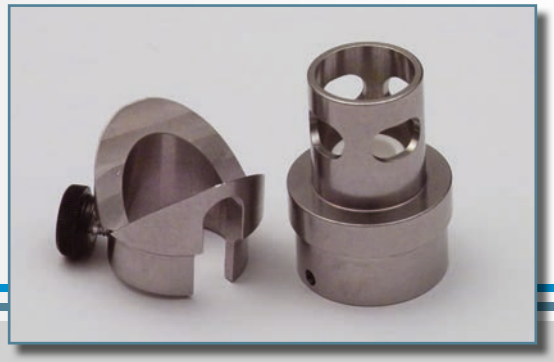


# Arc Adapters

The wire centering device for the A7/A8 adapter is typically used for the measurement of wires or pipes with diameters between 1 and 40 mm. This attachment ensures that the samples to be measured are correctly positioned over the center of the electrode. The attachment is slid onto the adapter until the sample rests against the edge of the adapter.

**Remark:**
Wire applications possibly requires calibration method updates due to sample diameter and material specifications.



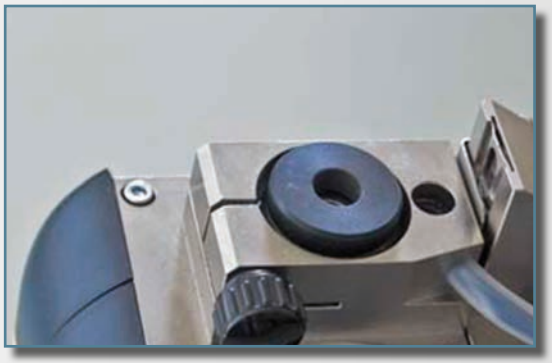



# Arc Adapters

| Part Nr. | Description | SPECTROTEST | | | SPECTROPORT | iSORT |
|---|---|---|---|---|---|---|
| | | TXC01 | TXC02 | TXC25/03 | PXC01 | TSC20 |
| 78997021 | WIRE CENTERING FOR ADAPTER ARC | ● | ● | ● | ● | ● |
| 75068004 | ADAPTER ARC A2 WELDING SEAMS | ● | ● | | | ● |
| 75061179 | ADAPTER ARC A3 (Carbon in Arc) | | | | | ● |
| 75061175 | ADAPTER ARC A3 (Carbon in Arc) | ● | ● | | | |
| 75160710 | ADAPTER ARC A4 (Reduced Diameter) | | | ● | ● | |
| 75160711 | ADAPTER ARC A5 WELDING SEAMS | | | ● | ● | |
| 75061181 | ADAPTER ARC A6 (Carbon in Arc) | | | ● | ● | |
| 75160719 | ADAPTER ARC A7 (Successor A1) | | | ● | ● | |
| 75160720 | ADAPTER ARC A8 (Successor A1) | ● | ● | | | ● |
| | | | | | | |
| 47311009 | ISOLATOR INSERT ADAPTER ARC A1/A2 | ● | ● | ● | ● | ● |
| 47350040 | ISOLATOR INSERT ADAPTER ARC A3/A6 | ● | ● | ● | ● | ● |
| 48900018 | ISOLATOR INSERT ADAPTER ARC A4/A5 | | | ● | ● | |
| 48900021 | ISOLATOR INSERT ADAPTER ARC A7 | | | ● | ● | |
| 48900022 | ISOLATOR INSERT ADAPTER ARC A8 | ● | ● | | | ● |

# Spark Adapters - easy to exchange without tools

SPECTRO portable and mobile metal analyzers are suitable for a wide range of testing tasks.
To ensure optimal results despite strongly varying sample geometries, SPECTRO offers a range of testing adapters which can be easily exchanged without tools and ensure optimal results.
Adapters for the precise analysis of all common metals and alloys with spark excitation in argon atmosphere.

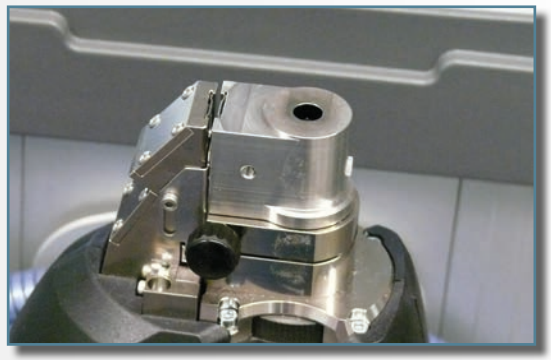


# Spark Adapters

The S1/S3 (UV) spark adapters are universal adapters for many different applications for which the sample surface is large enough (sample completely covers the adapter opening of 8 mm) and ideally planar (ground).
There is a model for the standard probe and a model for the UV probe with integrated optic.

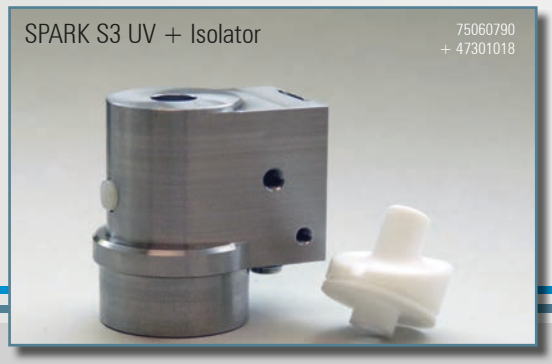
SPARK S3 + Isolator

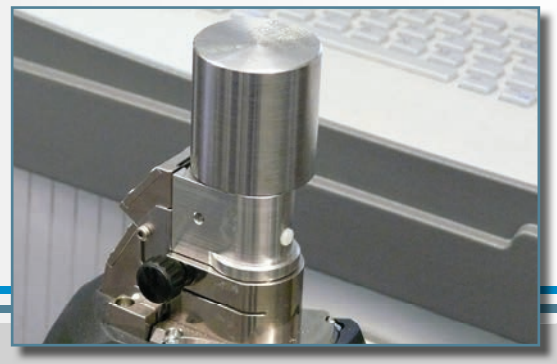
75060792
+ 47301018



SPARK S3 UV + Isolator

75060790
+ 47301018





# Spark Adapters

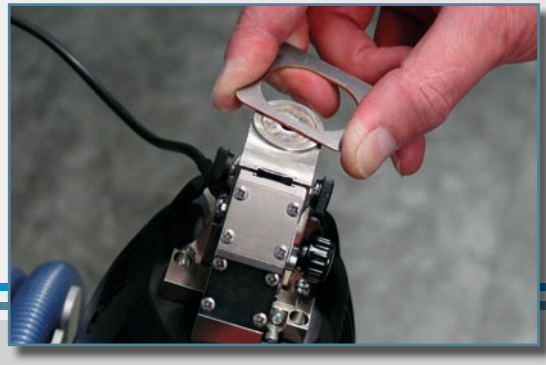
The S4 (UV) adapter is suited to the measurement of small parts. It has a smaller adapter opening (5 mm) than the standard adapter.
The smaller adapter opening makes it necessary to use a ceramic insert to prevent electrical discharges between the electrode and adapter.
The sample clamp delivered with the adapter must be used to ensure electrical contact between the sample surface and the adapter during the measurement.
There is a model for the standard probe and a model for the UV probe with integrated optic.

SPARK S4+ Isolator

75060796
+ 47301018

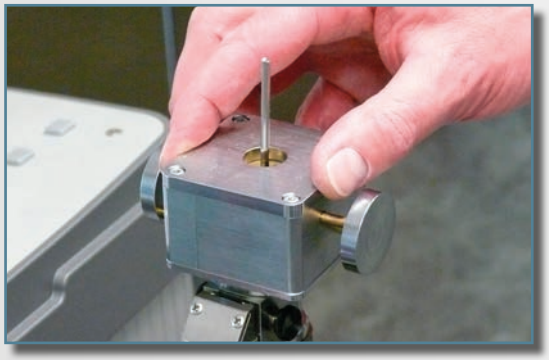
SPARK S4 UV+ Isolator

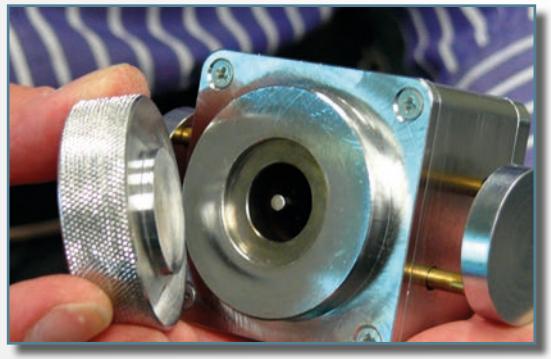
75060794
+ 47301018

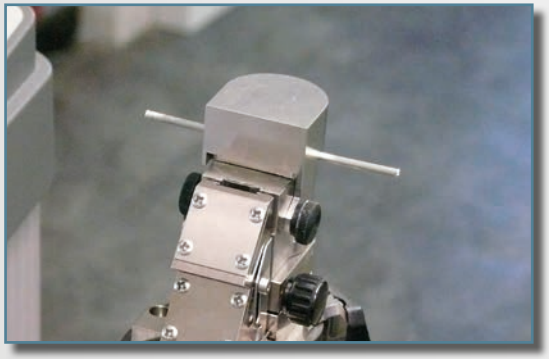


# Spark Adapters

The adapter for wires can be applied for wires down to 1.5mm. Down to 3mm possible calibration method updates are to a minor degree.
The samples measured on its front end.
The centering devices are used to measure tubes with diameters between 1 and 40 mm (1-6.5 / 6.5-15/ 15-40mm). These can be used together with the S4 adapters as well as with the S1/S3 (UV) adapters. The samples are measured on the skin surface.





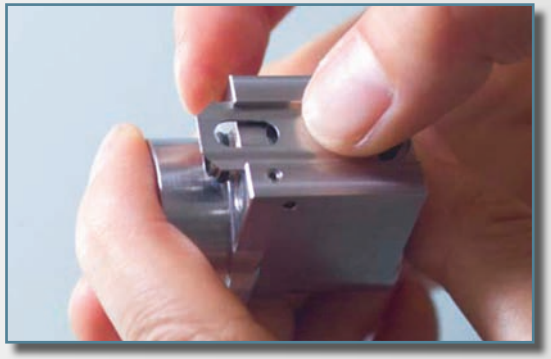


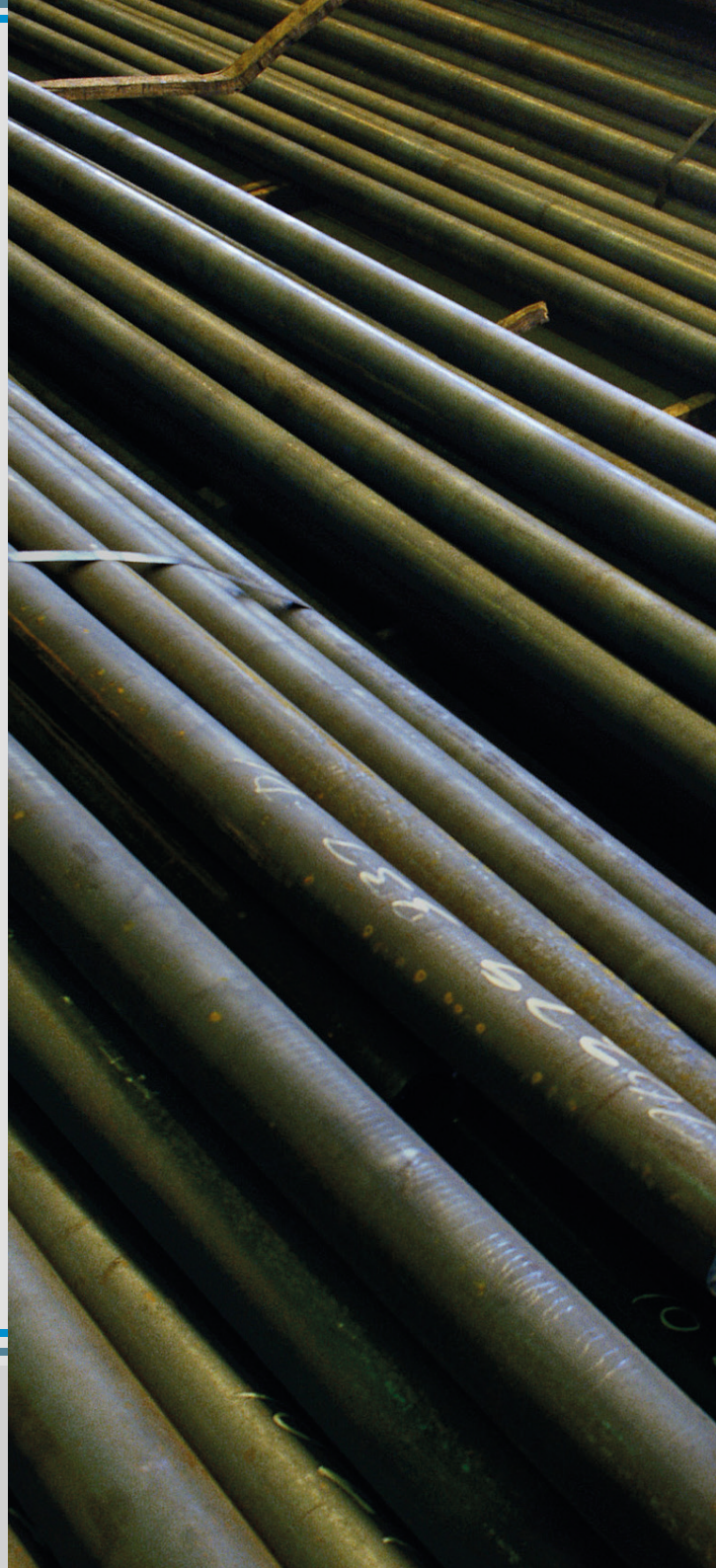
Adapter for wires 75060787

Centering cap set for adapter S3/S4/UV 75060786

# Spark Adapters

The windows located in the adapters must be replaced as necessary – visible contamination or damage.





# Spark Adapters

| Part Nr. | Description | SPECTROTEST | | | SPECTROPORT |
|---|---|---|---|---|---|
| | | TXC01 | TXC02 | TXC25/03 | PXC01 |
| 75060776 | ADAPTER SPARK S1 | ● | | | |
| 75060777 | ADAPTER SPARK S1 UV | ● | | | |
| 75060792 | ADAPTER SPARK S3 | | ● | ● | ● |
| 75060790 | ADAPTER SPARK S3 UV | | ● | ● | ● |
| 75060796 | ADAPTER SPARK S4 WIRE- AND SMALL PARTS | ● | ● | ● | ● |
| 75060794 | ADAPTER SPARK S4 UV WIRE- AND SMALL PARTS | ● | ● | ● | ● |
| 75060786 | CENTERING CAP SET FOR ADAPTER S3/S4/UV | ● | ● | ● | ● |
| 75060787 | ADAPTER FOR WIRES OD= 3-10MM | ● | ● | ● | ● |
| | | | | | |
| 47311010 | ISOLATOR INSERT ADAPTER SPARK S1/S2/UV | ● | | | |
| 47301018 | ISOLATOR INSERT ADAPTER SPARK S3/S4/UV | ● | ● | ● | ● |

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