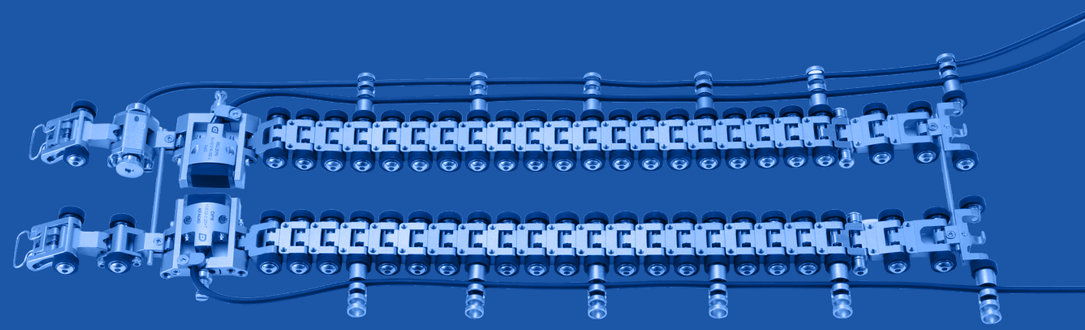
SCANNER SELECTION GUIDE

Guangzhou Doppler Electronic Technologies INC



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Guangzhou Doppler Electronic Technologies INC

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MANUAL / CHAIN-SCANNER FOR PIPELINES

MOS08 Chain-type Axial Step Scanner

The MOS08 Quick-Disconnect Chain Link Pipeline Weld Inspector is an efficient, flexible, and professional inspection tool that provides a highly reliable and adaptable pipeline inspection solution for the industrial sector. It is the ideal choice for those pursuing high-efficiency and high-precision pipeline inspection.

Product Introduction

■ Flexible quick release design

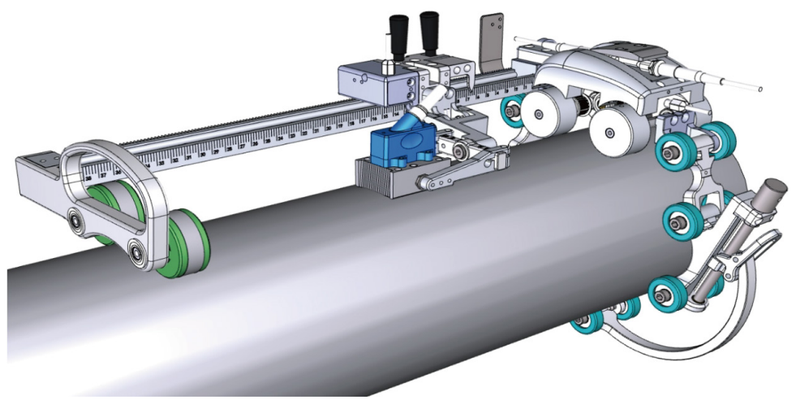
MOS08 adopts innovative quick-release links, which makes it easy and quick to switch between different pipe diameters. The minimum adaptable pipe diameter is 100mm, which meets the requirements of small pipeline inspection.

■ Stepping shaft function

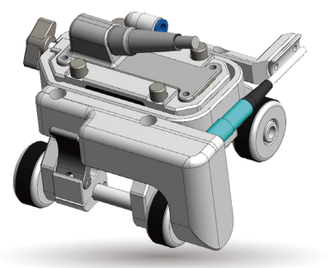
The unique stepping shaft of the equipment allows accurate positioning in the detection process. In the face of pipeline corrosion detection, the stepping function ensures continuous and uniform scanning; When detecting the bending weld, the stepping shaft can compensate the distance change by adjusting the probe position to ensure the continuity and accuracy of the detection process.

■ Customized itinerary

The stepping shaft provides a travel range of 250mm, and can also provide customized services according to the specific needs of customers.

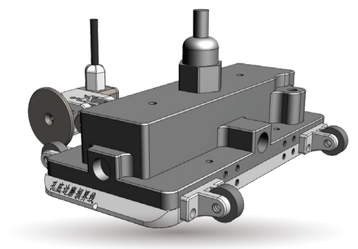


MANUAL / FLAT PROBE WATER-COUPLED



DSC06 Plate/Pipe Corrosion & Base Material Scanner

DSC06 is a scanner specially designed for corrosion detection of pipes and flat workpieces. It adopts local water immersion detection method, and the thickness of water layer is about 10mm, with a 64-element phased array probe as standard. If you need other specifications of water layers or probes with different array elements, we can provide customized services. The scanning device is compact in design, easy to carry and operate, and greatly improves the convenience of field operation. The standard configuration is suitable for pipe diameters and planes with a diameter of more than 127 mm. The minimum pipe diameter is 60mm, and the standard water layer is 14mm.



FS01 Corrosion Scanner

This system is mainly used for manual detection of wind turbine blades.

■ Key points of operation

Before use, please make sure that the probe is properly connected with the encoder.
Ensure that there is no obvious protrusion on the surface of the workpiece to obtain the best detection effect.

■ matters need attention

During use, avoid exerting excessive pressure on the probe to avoid damage. Regularly check whether the function of the encoder is normal, so as to ensure the accuracy of the measurement results, and check whether the support sleeve is worn in place.

MANUAL / CURVED PROBE WATER-COUPLED

FS04 Axial Straight Pipe Flexible Probe Scanner

FS04 scanning device is specially designed to detect the corrosion of straight pipes along the axial direction, which consists of a magnetic adsorption wheel, a support frame, a water jacket, an encoder and a flexible probe. For pipes with different diameters, the device needs to use corresponding customized water jackets, which can be customized to adapt to pipes with diameters above 38 mm. When detecting multiple rows of parallel pipelines, it is necessary to carefully consider whether the center distance between pipelines is appropriate to avoid possible interference problems. Therefore, it is recommended that customers communicate closely with technicians to ensure the smooth progress of testing.

FS05 Axial Straight Pipe Concave Array Probe Scanner

FS05 scanning device is specially designed to detect the corrosion of straight pipes along the axial direction, which consists of a magnetic adsorption wheel, a support frame, a water jacket, an encoder and a concave array probe. According to the requirements of pipelines and water layers with different diameters, the device needs to use corresponding customized water jackets and probes. The minimum customizable workpiece size is 19 mm.

FS06 Elbow Scanner

FS06 scanner is an efficient product designed to detect the corrosion of bent pipes and straight pipes. It consists of the following key components:

Flexible probe

A probe can be applied to various pipe diameters.

Guide support wheel

Ensure that the probe passes through the pipeline smoothly.

Water jacket

Customized according to different pipe diameters to ensure the correct positioning of the probe and protect the pipe surface.

Encoder

Provide accurate location information.

The scanner is especially suitable for elbow inspection, and can adapt to the pipeline with the minimum diameter of 102 mm. Users can interact with the detection instrument through the keys on the scanner, perform the functions of line feed and start detection, thus realizing an efficient operation flow.

MANUAL / WHEEL PROBE

LS03 64-element Wheel Scanner

This multifunctional wheeled scanner is an advanced tool designed for high-standard detection environment, which combines fast phased array technology and modular design to adapt to various complex and demanding detection tasks. Its unique tire material and standard modular design make it an ideal choice for high-quality inspection in challenging environment.

Product Introduction

Professional application scope

This scanner is designed to provide a solution for the detection of defects such as delamination and debonding of carbon fiber high-strength composites in the aerospace field, and is also suitable for aircraft skin detection.

building block design

Using standard modular design, users can change probes with different frequencies according to specific detection requirements, which enhances the versatility and flexibility of the equipment.

Broad applicability

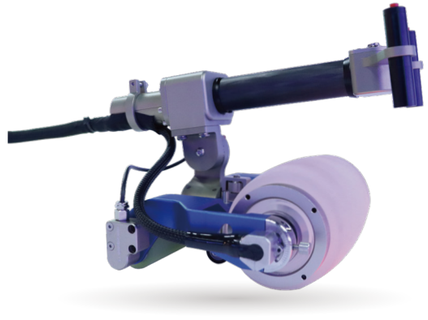
It is suitable for large-area corrosion or parent metal detection of plates made of various materials, and corrosion or parent metal detection of large-diameter pipes made of various materials.

Advanced technology alternatives

It provides an easy-to-implement alternative full two-dimensional coding system. At the same time, the wheeled scanner provides an effective substitute for liquid immersion detection technology, which is especially suitable for detection in an environment where traditional liquid immersion technology cannot be used.

LS06 128-element Wheel Scanner

Compared with LS03 64-element wheel scanner, this new 128-element wheel scanner has made remarkable progress in design and performance. Its appearance is more simple and fashionable, and the grip is designed with composite materials, which improves the user's comfort. What's more, its coverage is wider than that of LS03 model, which can cover more areas, thus effectively improving the detection efficiency.



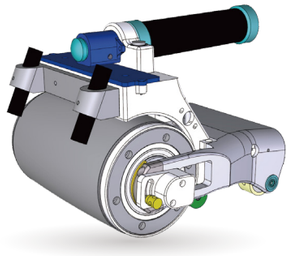
Product features

The water layer inside the rubber tire is 25mm;
Portable two-dimensional scanning tool;
Laser-guided, quickly and accurately complete the partition scanning;
Button customization, in the process of scanning, it is easy to perform functions such as line feed, reset and rescan the current line to ensure the accuracy and integrity of the data.

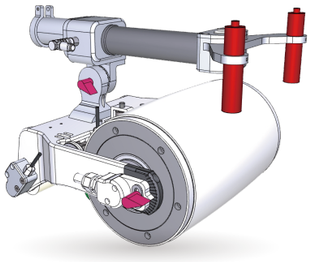
LS13/LS20 Special Wind Turbine Blade Wheel Scanner

Wind turbine blade materials present significant challenges in non-destructive testing due to their pronounced ultrasonic attenuation characteristics. This scanner demonstrates exceptional performance by combining efficient NDT capabilities with specialized adaptation to glass fiber composite surfaces. Specifically designed for common blade material configurations, it ensures inspection accuracy and reliability while providing robust assurance for the safe operation of wind energy infrastructure.

- LS13(1L64) wheeled scanner has a water layer of 32mm and a detection range of ⩽ 60 mm.



- LS20(1L128) wheeled scanner has a water layer of 42mm, and the applicable detection thickness is 64mm.



ELECTRIC

DSC03 Heavy-duty Crawler

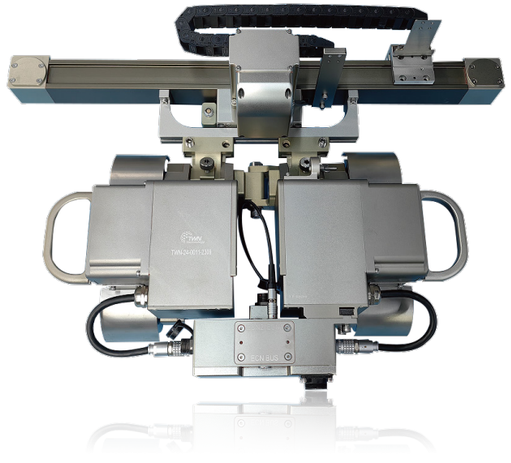
DSC03 is a multifunctional electric scanner, which is designed to carry the welding seam scanning bracket and the corrosion transverse scanning bracket to meet the diverse detection requirements. The main features of the scanner are: super stability and large load capacity.

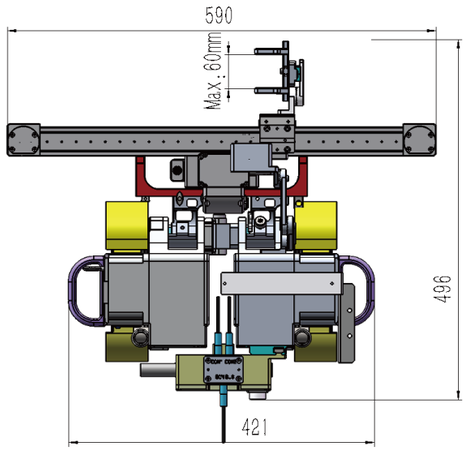
■ Characteristic parameter

Adsorption mode: permanent magnet, the equipment can maintain magnetic adsorption after power failure;
Scanning mode: horizontal, vertical, grid scanning and sawtooth scanning;
Available probes: conventional ultrasonic probe, phased array probe, TOFD probe;
Number of probes that can be carried: 1-4 probes can be carried according to customer requirements;

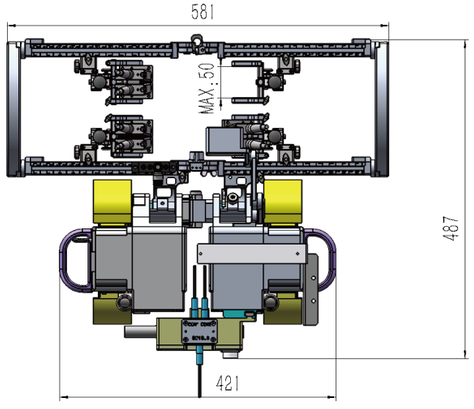
■ Area of application

When circumferential scanning is carried out on the inner wall of the circular tube, the inner diameter of the tube is ⩾ 2500mm;
When circumferential scanning is carried out on the outer wall of the circular tube, the outer diameter of the tube is ⩾ 300 mm;
When axial scanning is carried out on the outer wall of the circular tube, the outer diameter of the tube shall be ⩾ 500mm;





The probe clamping arm shown in the figure can clamp the phased array control head with 128 elements.



The illustrated clamping frame
Phased array probe capable of clamping 32 elements or 64 elements

Movement mode: vertical, horizontal, inverted, etc.
Operation mode: automatic scanning and manual scanning;
Crawler speed range: 5 mm/s ~ 120 mm/s;
Speed range of electric scanning shaft: 10 mm/s ~ 100 mm/s;
Working voltage: AC220V or DC24V;
Working temperature:-10°C ~ 50°C;
Waterproof grade: IP66, which can adapt to the harsh industrial inspection site;
Video function: equipped with wifi camera;
Coupling agent conveying device: electric water pump for water supply, and the lift is not more than 20m;
DSC03+ corrosion detection: the effective stroke of the scanning arm is 300mm。

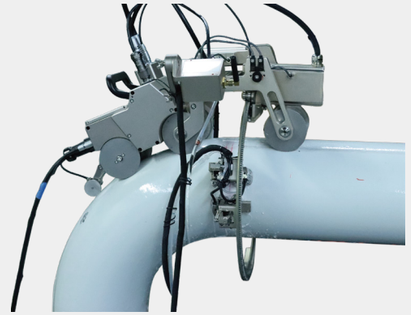
■ DSC03+ weld detection

Equipped with FC05 weld scanning device, it can effectively detect longitudinal and circumferential welds. When the circumferential weld of the outer wall is detected, the minimum applicable pipe diameter is 300mm; When testing the circumferential weld on the inner wall, the minimum applicable pipe diameter is 2500mm; When testing the longitudinal weld on the outer wall, the minimum pipe diameter is 500mm. In circumferential seam detection, the device can be equipped with up to four probes, while in longitudinal seam detection, it can be equipped with up to six probes, but it should be noted that the maximum width of the probes should not exceed 50mm to ensure the efficiency and accuracy of detection.

DSC05 Small Pipeline Longitudinal Travel Scanner

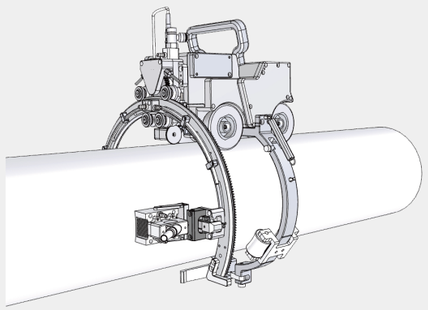
DSC05 is an advanced remote control inspection trolley, specially designed for the surface of magnetic metal materials, which can be firmly adsorbed on magnetic materials such as carbon steel. The trolley mainly moves along the axial direction of the workpiece, and the workpiece is comprehensively detected by the sensor. Its versatility enables it to assemble corrosion detection devices and weld detection devices to meet different detection requirements.

The structural design of this scanner integrates driving car body, encoder module for accurate positioning, magnetic wheel module to ensure stable adsorption, probe fixture module for installing detection probe, power supply module to provide continuous power, camera module for visual operation, and control module for remote control operation.



①The combination of DSC05 and double-side scanning device for elbow weld makes it efficient and feasible to detect the weld of straight pipe and elbow. The DSC05 remote control car body has excellent flexibility, which can adapt to the pipeline with a diameter of 60~190mm and move along its axis. The car body design supports clamping two phased array probes, which provides the necessary configuration for the detection of complex pipeline structures.

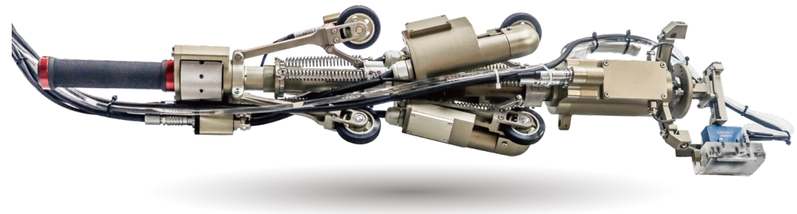
②DSC05 with straight pipe corrosion scanning device makes pipeline corrosion detection more accurate and efficient. This combination can drive two probes to work at the same time to complete the comprehensive coverage detection of the pipeline.
Adopt customized clamping structure, which can be used on non-magnetic materials.



DSC39 Straight Inner Pipe Auto-scanner

DSC39 is an electric scanner specially designed for straight pipe inspection, which has the ability to carry a variety of inspection probes, including phased array probes or eddy current probes, to meet the diverse inspection requirements.

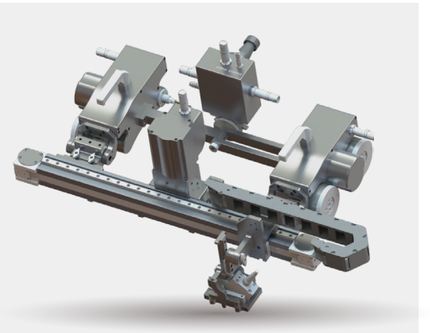
The standard configuration of DSC39 is specially designed for the detection of straight pipes with inner diameters ranging from 150 to 200 mm. For pipes of other sizes, we provide customized services to ensure that each scanner can be perfectly matched with pipes of a specific size, thus providing high-precision and efficient detection performance. The customization feature makes DSC39 widely used in the inspection of various industrial straight pipes, and ensures that it can obtain the best inspection results in different occasions.



DSC40 Weld/Corrosion Auto-scanner

DSC40 is a multifunctional electric scanner, which can meet the diverse detection requirements by replacing the welding seam scanning device, the corrosion transverse scanning device or the corrosion circular scanning device. The main features of this equipment are its light structure, strong load capacity and simple operation mode.

The maximum load of DSC40 on the vertical plane is 12kg, and the driving speed can be adjusted from 5 mm/s to 150 mm/s, allowing the operator to set it flexibly according to different detection scenarios and requirements.



■ Area of application

When circumferential scanning is carried out on the inner wall of the circular tube, the inner diameter of the tube is ⩾ 460mm (weld scanner);

When circumferential scanning is carried out on the outer wall of the circular tube, the outer diameter of the tube is ⩾ 200 mm;

When axial scanning is carried out on the outer wall of the circular tube, the outer diameter of the tube is ⩾ 400 mm;

Movement mode: vertical, horizontal, inverted, etc.

Operation mode: automatic scanning and manual scanning;

Crawler speed range: 5 mm/s ~ 150 mm/s;

Speed range of electric scanning shaft: 10 mm/s ~ 100 mm/s;

Working voltage: AC220V or DC24V;

Working temperature:-10°C ~ 50°C;

Waterproof grade: IP66, which can adapt to the harsh industrial inspection site;

Coupling agent conveying device: electric water pump for water supply, and the lift is not more than 5m;

■ Characteristic parameter

Adsorption mode: permanent magnet, the equipment can maintain magnetic adsorption after power failure;

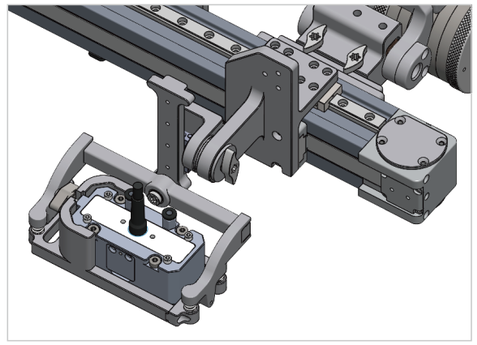
Available probes: conventional ultrasonic probe, phased array probe, TOFD probe;

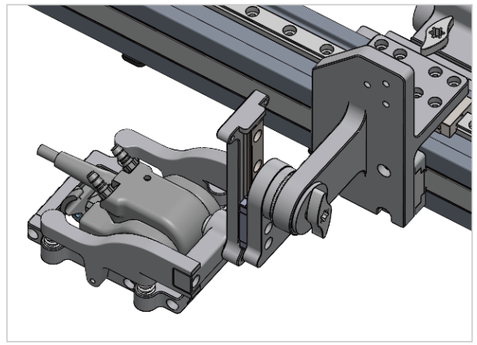
Number of probes that can be carried: 1-4 probes can be carried as required (weld detection);

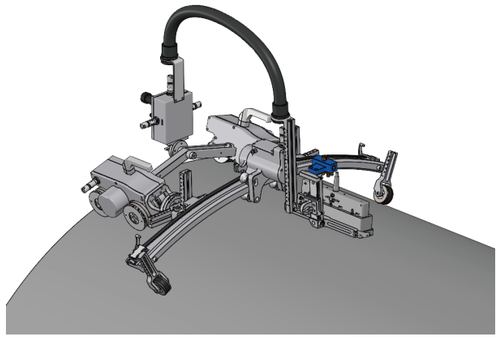
Scanning mode: horizontal, vertical, grid scanning and sawtooth scanning;

①DSC40+ corrosion transverse scanning device can clamp different types of probes according to actual detection requirements.

Probe holder type reference:

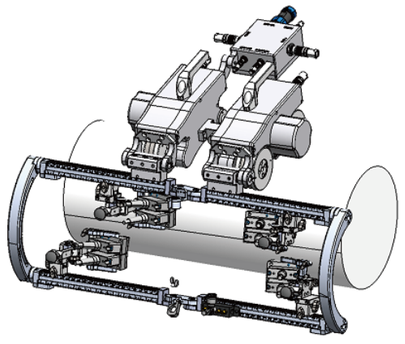


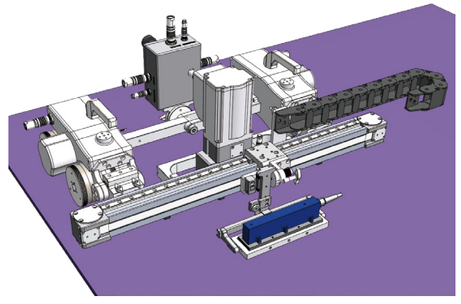




②The DSC40+ arc scanning device consists of two parts: the car body and the specially designed arc scanning device. The arc scanning device is suitable for workpieces with different sizes in a certain range, but if the workpiece exceeds this range, it is necessary to replace the arc scanning device with the corresponding size to ensure the accuracy of detection.

③DSC40 is equipped with FC05 weld scanning device, which can effectively detect longitudinal and circumferential welds. When the circumferential weld of the outer wall is detected, the minimum applicable diameter of the pipeline is 200mm;; When the circumferential weld is detected on the inner wall, the minimum pipe diameter is 460mm;; When testing the longitudinal weld on the outer wall, the minimum suitable pipe diameter is 400 mm. In circumferential seam detection, the device can be equipped with up to four probes, while in longitudinal seam detection, it can be equipped with up to six probes, but it should be noted that the maximum width of the probes should not exceed 50mm to ensure the efficiency and accuracy of detection.



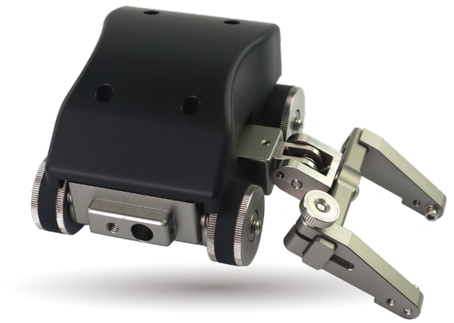


P2

Weld Inspection

COMPACT SIMPLE – SINGLE PROBE

MOS01 Mouse-type Scanner



The scanner is suitable for circumferential scanning of pipelines with a diameter of more than 100 mm.

MOS01 is a multi-purpose scanner specially designed for industrial inspection, which integrates portability and high performance, providing great convenience for users. The scanner is equipped with advanced encoder technology, which ensures the accuracy of data acquisition. At the same time, different types of probes can be easily replaced through its clamping frame to meet the needs of different detection tasks.

■ Application scenario

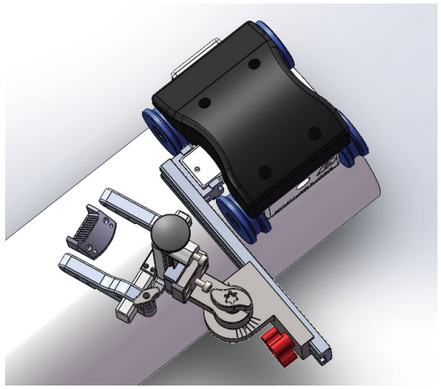
Oil and gas pipeline inspection.

Corrosion detection of chemical containers and pipelines.

Weld inspection of shipbuilding and marine structures.

MOS01

Accessories can be selected for oblique parallel scanning.



MOS02 Fillet Weld Scanner

MOS02 inherits the portability, flexibility and high applicability of MOS01, and at the same time, it greatly improves the accuracy and efficiency of fillet weld detection by adding fillet weld guide devices.

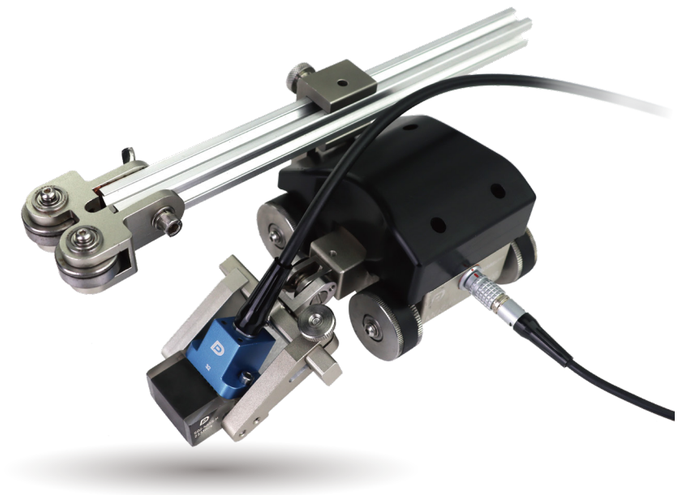
Product Introduction

Improve the detection accuracy: the design of fillet weld guide device avoids the problem of probe deviation in the detection process, and enhances the use effect of the equipment in complex environment.

Multi-purpose of one machine: In addition to the enhanced function of fillet weld detection, MOS02 still supports universal weld and corrosion detection, maintaining its multi-purpose characteristics.

Strong environmental adaptability: The high waterproof rating of IP67 makes MOS02 also suitable for all kinds of wet and underwater environments, which expands the application scope of the equipment.

The maximum width of the clamping frame is 49 mm. If a clamping frame with a width of more than 50mm is needed, customized design is supported.

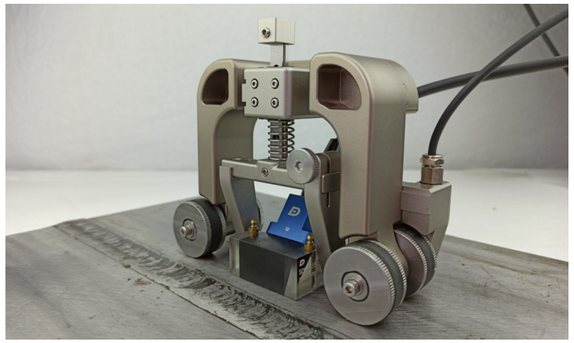


MOS20 Narrow-contact Surface Scanner

MOS20 compact weld scanner is a high-performance product designed for challenging detection environment. It combines magnetic attraction technology, stable clamping ability and ergonomic grip design. This tool is an ideal choice for pursuing efficiency and accuracy, especially suitable for use in complex and limited working conditions.

■ Minimum pipe diameter applicability

MOS20 can be used on pipes with a diameter of at least 114mm, which proves its excellent applicability in the field of small-size pipeline inspection.

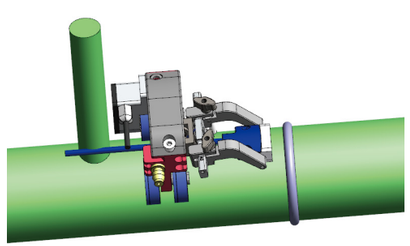


MOS43 Confined Space Weld Scanner

The scanner adopts magnetic attraction design, which can be firmly adsorbed on the surface of magnetic materials without additional fixing devices, and is easy to operate, safe and reliable. Equipped with a clamping frame with adjustable width, the width range covers 22-46 mm. Support the minimum pipe diameter of 60mm, which can adapt to the narrow operating space.

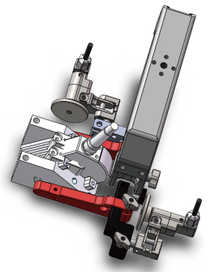
■ Application scenario

Surface quality inspection of magnetic materials.
Detection of magnetic defects in pipes, containers and other structures.

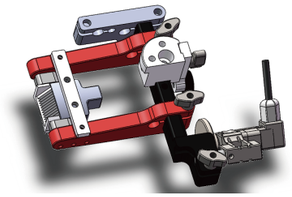


CCE-2 Simple Encoder

CCE-2 consists of an encoder, a clamping frame and a handle. Compared with the previous generation products, the direction of the end of the encoder is changed to upward, which increases the service life of the encoder. The maximum width of the clamping frame can reach 50mm, and the wedge with a width of 22mm-50mm can be clamped.
A handle which conforms to the human hand feeling is added to improve the comfort, and mounting holes are reserved on the handle, so that wires can be fixed to the handle, and the influence of wires on the probe coupling is reduced.
The encoder adds a fixed way in the axial direction. Where there is insufficient space, the handle can be removed for use.

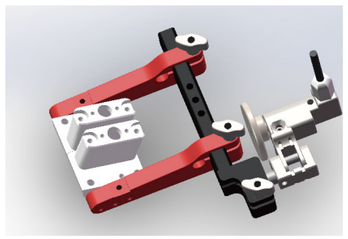


A32Probe fixing

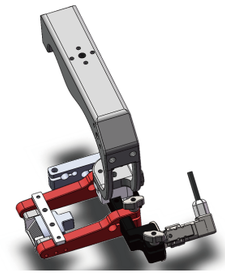


No handle state

SA27Probe use



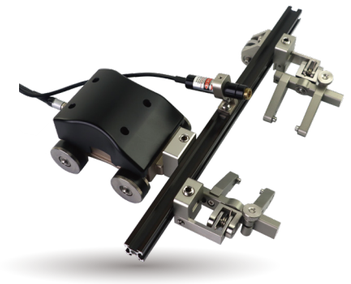
No handle state



Cobra Probe (D10,DP8,DP12)use

DUAL PROBE

MOS03 Weld Seam Bilateral Scanner



① MOS03 is consistent with the previous MOS01 in the design of the core body, which ensures the continuation of portability and operation convenience that users are familiar with.
② A pair of probes can be clamped for a group of TOFD or two groups of PA detection to meet different detection requirements.
③ The design of auxiliary wheel is added, which optimizes the coupling effect between probe and workpiece and improves the stability and reliability of detection data.
④ It can support the probe combination with the width up to 48mm at most, providing users with wider probe selection and higher flexibility in use.
⑤ Support efficient circumferential scanning of pipe diameters over 108mm, which makes the equipment have excellent applicability in the inspection of pipelines and containers of various specifications.
⑥ The integrated laser function provides clear visual reference for users during circumferential scanning, and ensures high accuracy and efficiency in the detection process.

CCE-3 TOFD Simple Bracket Scanner

①CCE-3 is an auxiliary equipment specially designed to cooperate with TOFD probe for weld detection, aiming at improving the accuracy and efficiency of detection.
② The gripper is especially suitable for the environment with narrow operation space, and can provide flexible operation performance in cramped working conditions.
③ According to the type of TOFD probe used, CCE-3 can customize the corresponding clamping screws to ensure the perfect matching with the probe.
④ CCE-3 has designed a simple and quick adjustment mechanism for different requirements of probe front distance, which can be easily adjusted by users to adapt to different detection scenarios.

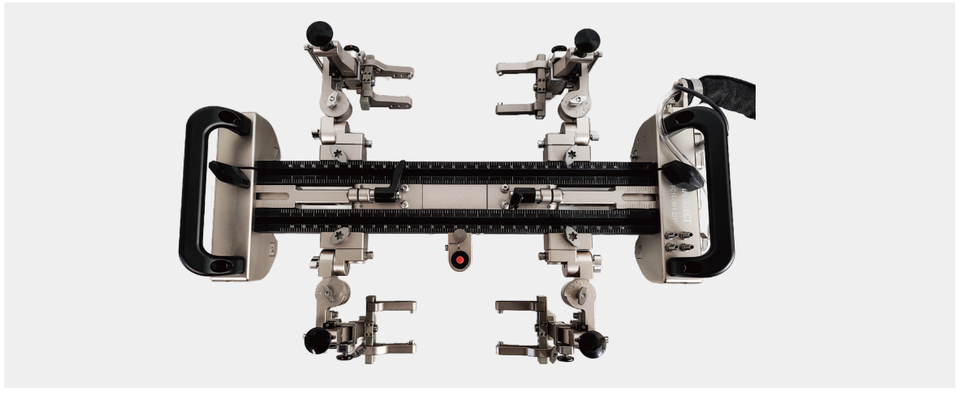
MANUAL MULTI-PROBE PIPE / PLATE WELD INSPECTION – MAGNETIC MULTI-PROBE

FC14 Axial/Longitudinal Weld Scanner

FC14 scanner is an efficient tool specially designed for pipeline weld detection. The equipment can clamp four probes at the same time to support longitudinal and axial detection of welds.

FC14 oblique parallel scanning bracket (optional)

FC14 diagonal parallel scanning bracket coding: 2SP0446、2SP0447



Component composition

Magnetic wheel: realize the stable adsorption with the surface of magnetic pipeline.

Water supply port: provides coupling water for the probe.

Clamping frame: fix the probe to ensure the stability in the detection process.

Scale bar: provide accurate position reference for the operator.

Support frame: ensure the correct positioning of the equipment on the pipeline.

Main feature

Fast positioning and stable adsorption are realized by four magnetic wheels.

The auxiliary function of laser pointer improves the accuracy of detection data.

It is suitable for the detection of different pipe diameters, and the axial mode adaptation diameter is more than 200mm, and the circumferential mode adaptation diameter is more than 200 mm.

Improve the inspection efficiency and quality, and be suitable for weld inspection of various pipeline specifications.

FC29 Simple Circumferential Scanner

Core characteristics

Flexible configuration, supporting up to four probes to work at the same time, improving detection efficiency;

Equipped with accurate encoder to ensure the accuracy and repeatability of detection data;

Four independent movable magnetic wheels adapt to different pipe diameters to ensure the stable operation of the equipment;

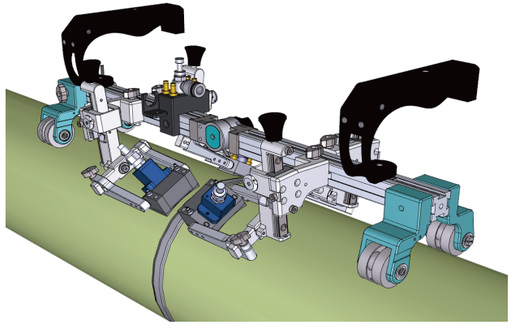
Easy-to-read scale rod design simplifies the operation process and improves the user experience;

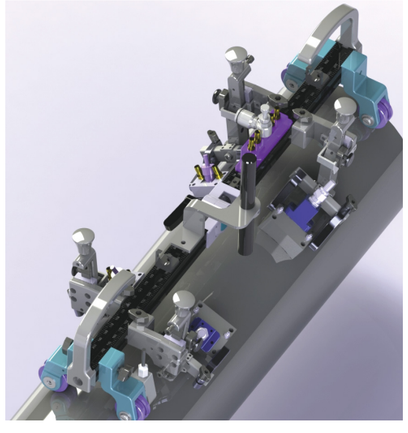
The clamping frame is firm and durable, ensuring the stability of the equipment in various environments;

technical parameter

Minimum detection diameter: 150mm, suitable for pipeline detection of various specifications;

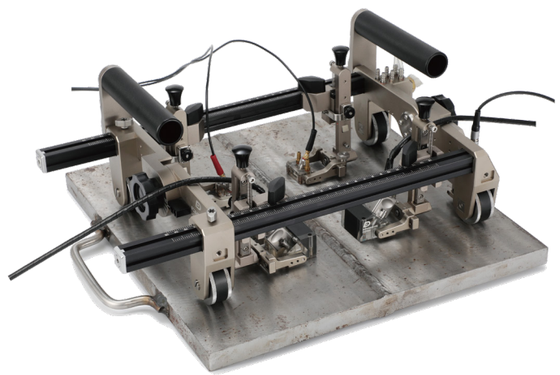
Equipment composition: including encoder, independent moving magnetic wheel, scale bar, clamping frame and water injection distribution block.

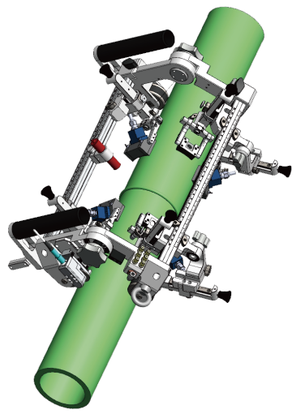




FC30 Manual Weld Inspection Scanner

The standard configuration of this manual scanner allows four probes to be installed, and it can be expanded to be equipped with up to eight probes according to the detection requirements, providing flexible detection schemes.





Core characteristics

Magnetic adsorption technology: four magnetic wheels ensure the firm attachment of equipment on the surface of magnetic pipeline, specially designed for circumferential weld detection.

Swing joint design: the swing joint in the central position allows the user to easily adjust the probe holder to ensure the coupling accuracy with the pipe surface.

Laser indicator: accurately guide the detection area and provide reference marks, greatly improving the accuracy and convenience of detection.

Wide applicability: the minimum applicable pipe diameter is 110mm, which is suitable for pipelines of various specifications and helps all kinds of weld detection.

NEGATIVE PRESSURE SCANNER

FC26 Negative Pressure Pipeline Longitudinal Weld Scanner

FC26 scanner is a pipeline longitudinal seam inspection product, which can provide customers with an efficient and stable inspection experience.

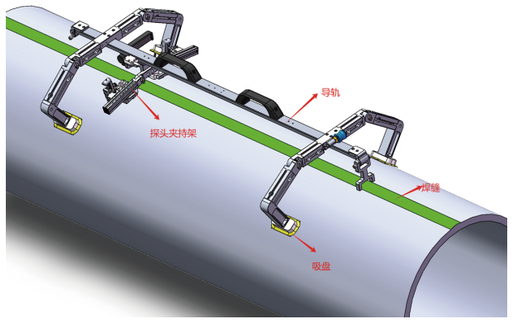
Product advantage

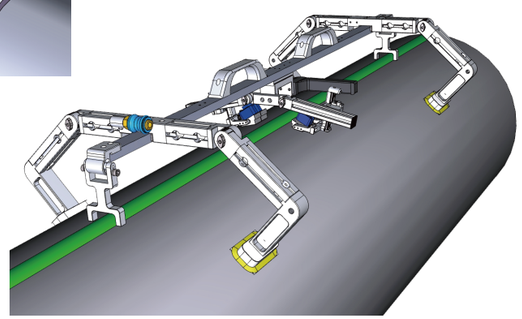
Stability: negative pressure adsorption technology ensures that the scanner does not deviate during operation, thus improving the detection efficiency.

Customized stroke: the standard stroke is 1000mm, which can be extended to 1500mm according to the demand, and is suitable for pipeline inspection with different lengths.

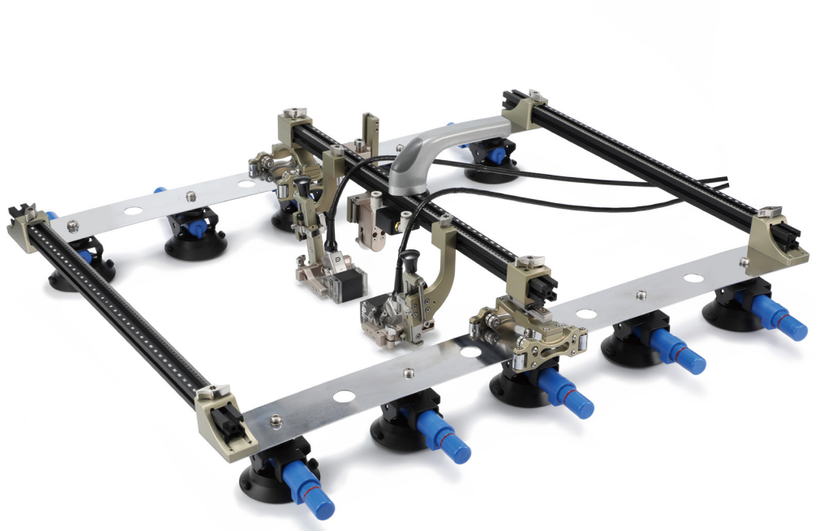
Flexible configuration: two probes can be clamped as standard, and up to four probes can be customized according to customer's needs.

Widely applicable: the minimum applicable pipe diameter is 500mm, covering various pipe specifications.





FC44 Suction Cup Weld Scanner



Standard equipment weight：4.75kg

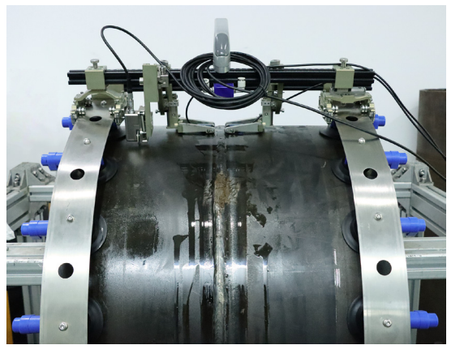
FC44 manual scanner is suitable for various material types, which overcomes the material limitations faced by traditional detection tools and provides greater flexibility for all kinds of detection work.

The fixed running track design prevents the probe from deviating during scanning, ensures the detection accuracy and ensures the consistency of the results.

Manual sucker technology eliminates power dependence, and negative pressure can be generated by simple manual operation, which greatly simplifies the operation process and lowers the use threshold.

It is especially suitable for detection in the environment of frequent movement or no power supply, and its portability greatly improves the work efficiency and convenience.

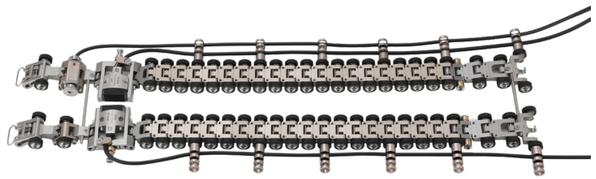
At least it can be used to detect the girth weld of straight pipes with a diameter of more than 600mm, so that it can meet the needs of more industrial scenes.



MANUAL CHAIN-TYPE FOR PIPELINES / SMALL DIAMETER PIPES (ϕ20-114mm)
—
STANDARD (Width⩾256mm)

CRS-7 (Single Chain)/CRS-8 (Dual Chain) Small-diameter Pipe Weld Scanner

CRS-7 Single Chain Scanner



CRS-8 Dual Chain Scanner

■ CRS7/8 Product features

Slim and flat chain structure design, designed for extremely small detection space, can pass the minimum tube-to-tube gap of 13 mm.

Highly modular design, including scanner main frame, encoder, quick release chain module and lock block, the effective combination of these components ensures the flexibility and reliability of the equipment when surrounding and detecting pipelines with different diameters.

By increasing or decreasing the number of chain parts, pipes with different sizes can be quickly adjusted and adapted without complicated tools, which significantly improves work efficiency.

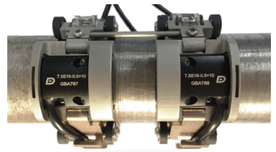
The design of quick-release chain simplifies the assembly process, reduces the demand for professional tools, and improves the convenience and accuracy of operation.

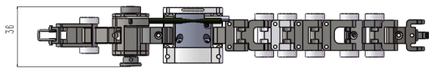
NARROW WIDTH

(⩾36mm)

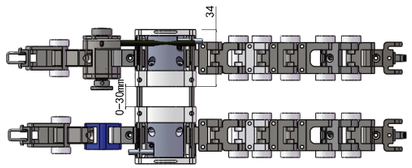
CRS-14/CRS-15 Narrow-width Small-diameter Pipe Weld Scanner

This series of small-diameter weld scanner is suitable for detection scenes with relatively small axial space, and the narrowest applicable width can reach 36 mm. The scanner is mainly composed of scanner main frame module, encoder module (side outlet), quick-release chain module, lock block and other structures. By configuring different number of chain components, it can be wrapped around pipes with different diameters. The chain is in the form of quick release, which can reduce the use of tools and is convenient and fast.





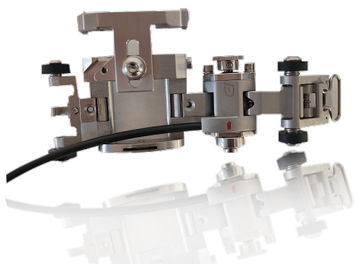
CRS-14 Single Chain Scanner

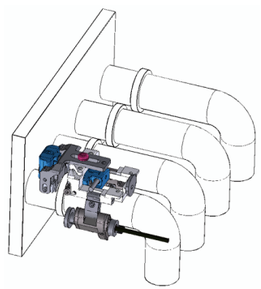


CRS-15 Dual Chain Scanner

CRS-34 Narrow-gap Weld Scanner

CRS-34 is a scanner specially designed for welding seams under specific and narrow working conditions, and the two matched probes need to adopt special cable extraction methods. In design, the minimum distance from the weld to the blocking area on the opposite side should be 15mm to meet the specific space constraints. In addition, the design of the scanner allows the distance from the front end of the probe to the center of the weld to be adjusted between 2.5~7.5mm and 7.5 mm. The scanner can pass through a pipe gap at least 25mm wide. The minimum pipe diameter suitable for the scanner is 25mm.

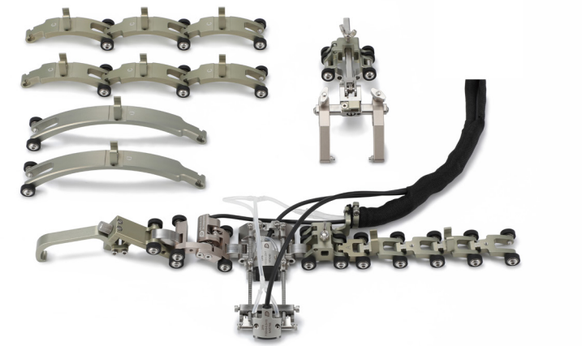


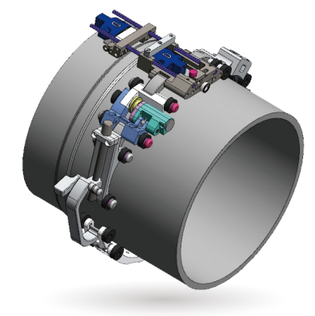


MEDIUM-DIAMETER PIPES (ϕ50-300mm)

CRS-25 Small/Medium Pipeline Weld Scanner

CRS-25 is an efficient inspection equipment specially designed to inspect the welds of small and medium-sized pipelines with diameters ranging from 50 to 300 mm.. It uses Y15 probe for unilateral scanning, and its probe frame is cleverly installed in the center of the chain, thus effectively saving the space needed for scanning. In order to ensure the tight coupling between the probe wedge and the workpiece, CRS-25 uses a bolt-type locking design, which enables it to be fixed on the surface of the pipeline more stably and ensures the stability and accuracy of the detection process. In addition, the equipment has the characteristics of light structure and is equipped with a quick detachable chain, which greatly facilitates the use and carrying of users. CRS-25 also supports the installation of side-out phased array probes with a width of 32~48mm to meet the detection requirements of different width ranges, further improving the applicability and flexibility of the equipment. The scanner can pass through a pipe gap of only 50 mm.

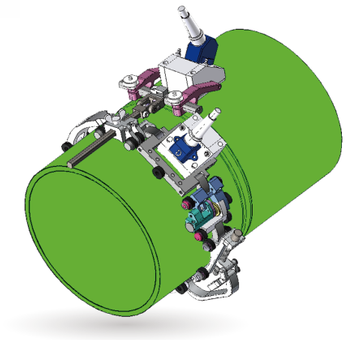




CRS25 supporting DP2 probe holder (optional)

DP2 probe holder coding：2SP0544

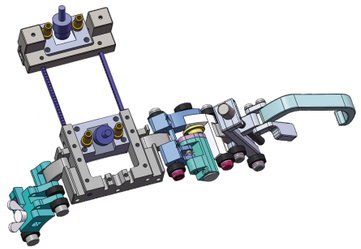
Dopple DP2 probe can be used by purchasing customized clamping frame, which is generally used to detect pipeline welds with thickness over 12 mm.



CRS25 TOFD clamping module) (optional)

TOFD clamping module coding：2SP0542

Customers who have purchased the standard board can customize the clamping of TOFD module according to their needs.



CRS25 extension chain module (optional)

CRS25 extended chain module coding：2SP0124、2SP0151

After purchasing the standard version, an extended chain module can be added, and the maximum length can be extended to adapt to pipes with a diameter of 600 mm. (Note: Excessive chain length will cause problems such as pushing and pulling force, coupling, deviation, etc. It needs to be selected according to the actual situation.)

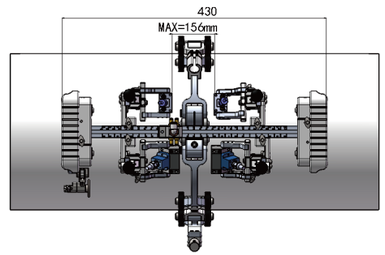
CRS25 can be equipped with optional water supply module (optional).

CRS25 can be equipped with water supply module code.：1SP0134

LARGE-DIAMETER PIPES (Φ200-1440mm)

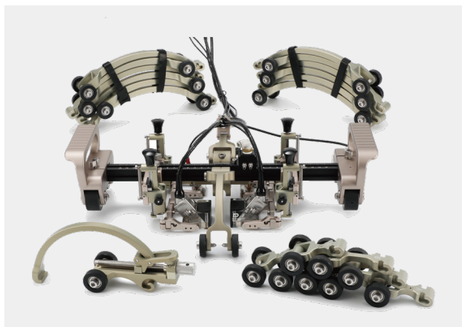
MOS04 Large-diameter Pipe Scanner

MOS04 multi-probe long-distance pipeline weld detection system is a high-end equipment developed to meet the needs of high efficiency and large-area weld detection. It combines professional detection mode, high compatibility clamping frame, multi-probe configuration, excellent waterproof performance and quick release chain design, which provides excellent performance and great convenience for the detection of long-distance pipelines.



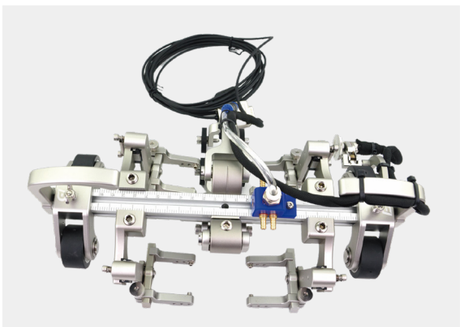
Wide pipe diameter applicability: suitable for magnetic and non-magnetic materials; It is suitable for a wide range of pipe diameters, ranging from ϕ 8 "(ϕ 203 mm) to ϕ 48" (ϕ 1220 mm), and other specifications can be customized as required to ensure universality in various pipeline detection.

Multi-mode support: It supports PA (Phase Array) detection and TOFD (Diffraction Time Difference Method) detection, providing a flexible choice for different detection scenarios.



High compatibility clamping frame: the wedge or probe with the maximum width not exceeding 46mm can be compatible, which ensures the adaptability with various testing equipment.

Multi-probe configuration: it can clamp up to four probes at the same time, which greatly improves the detection efficiency and data acquisition speed, and is especially suitable for large-area and efficient detection tasks.



IP67 encoder waterproof grade: High standard waterproof performance ensures the reliable operation of equipment in wet and underwater environment.

Quick-release chain design: the chain is replaced by quick-release method, which is convenient for operators to quickly switch between different pipe diameters and improves the convenience and efficiency of field work.

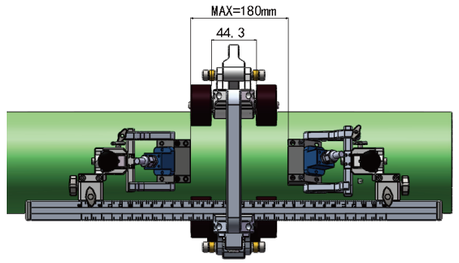
MOS04-A Dual-probe Chain Scanner

MOS04-A adopts innovative quick-release chain design, which is convenient for quick chain replacement and improves working efficiency. Its exquisite clamping frame supports the maximum width of 45mm, which is suitable for a variety of double probe combinations and has good adaptability. The equipment can support the scanning of pipe diameters exceeding 100mm, and is widely used for the inspection of various pipelines and containers. In design, the scanner can be accurately placed in the center of the weld with a width less than 40mm and a height less than 6.5mm to ensure accurate and reliable detection. IP67 protection level enables it to work normally in harsh environment, increasing durability. The overall design is portable and efficient, which meets the efficient and convenient needs of field workers for tools.

Examples of application scenarios

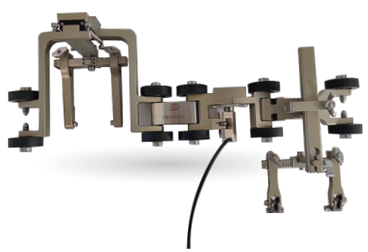
MOS04-A is very suitable for welding seam quality inspection in oil and gas pipelines, chemical pipelines, shipbuilding and bridge construction.

MOS04-A can provide excellent performance in industrial detection occasions that need to change detection positions frequently and adapt to different environmental conditions.



CRS-35 Elbow Scanning

CRS-35 Scanner is specially designed and manufactured for the inspection of pipelines with diameters over 200mm. The equipment adopts a thick chain structure similar to that of MOS04 large-diameter chain scanner. This design can ensure that the scanner runs stably in the pipeline and can clamp two probes at the same time. The maximum width of the probe holder shall not exceed 52 mm. In addition, CRS-35 scanner is also suitable for elbow weld detection.



ALL KINDS OF ELECTRIC CRAWLING VEHICLES

DSC03 Heavy-duty Crawler

See page 07 for details.

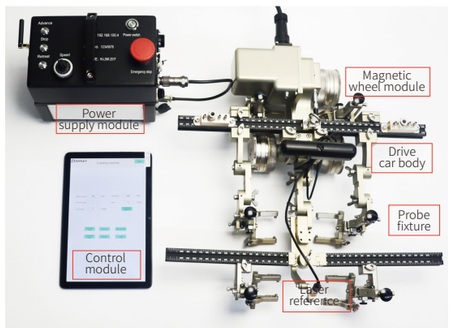
DSC16 Ring-shaped Auto-crawler

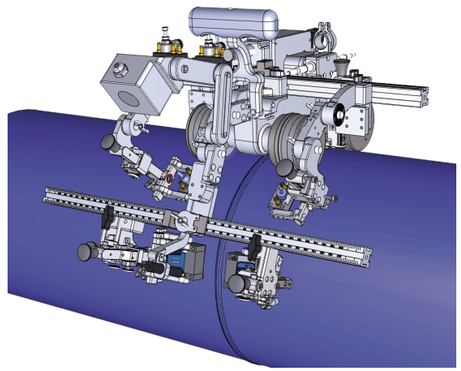
DSC16 is a remote inspection trolley specially designed for magnetic metal workpieces. It has strong adsorption capacity and can be stably attached to magnetic materials such as carbon steel.

DSC16 is suitable for welding seam detection of pipes and flat workpieces.

1. It is suitable for welding seam detection of magnetic metal pipes with a diameter greater than 200mm;
2. Suitable for plane weld detection;
3. The front probe can realize oblique parallel scanning.

In terms of structural design, DSC16 is composed of several professional modules. The encoder module is used to achieve accurate positioning, the magnetic wheel module ensures that it is firmly adsorbed on the metal surface, the probe fixture module facilitates the installation and replacement of different types of probes, the laser reference module provides accurate detection guidance, the power supply module ensures the continuous operation of the equipment, and the control module realizes flexible remote control operation.





DSC40 Weld/Corrosion Auto-scanner

See page 10 for details.

PIPELINE CIRCUMFERENTIAL WELDS

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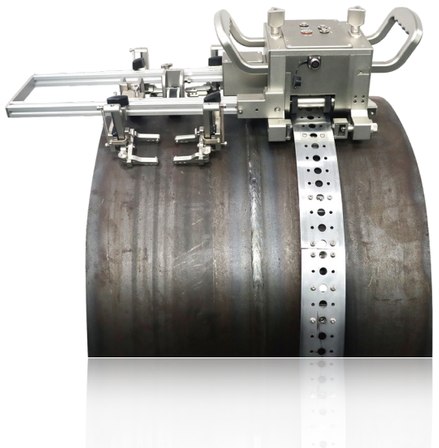
RAIL-GUIDED

DSC27 Pipeline Circumferential/Axial Weld Rail-guided Scanner

The scanning device is equipped with a suitable pipeline guide rail, and the main body of the scanning device is a remote-controlled crawler, which is suitable for metal and nonmetal circular pipes. The steel belt guide rail is fixed on the circular workpiece, and the crawler is installed on the guide rail, which can carry multiple pairs of probes to detect the weld of the workpiece. (Note: Different pipe diameters require different guide rails.)



Performance characteristics

Applicable pipe outer diameter≥400mm;
Crawler speed range:5~60mm/sec (0.2~2.36in/sec) ;
Waterproof grade:IP65;
Working temperature:-20°C~50°C (-4°F~122°F) ;

Supply voltage range of power supply:
When using the commercial power, it is 110VAC or 220VAC. Before ordering, users should provide the local commercial power voltage to our company so as to set a suitable use range before leaving the factory.
When using the battery, the battery voltage range is 20~30V, and the maximum current is more than 10A. The power supply module of the crawler will automatically adjust to the power supply voltage.

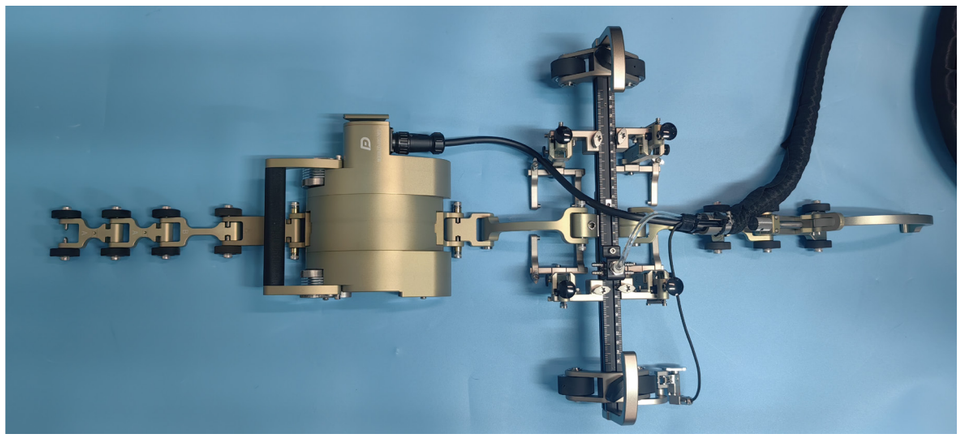
CHAIN TYPE

MOS04 Large-diameter Pipe Scanner

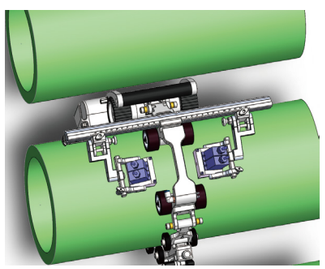
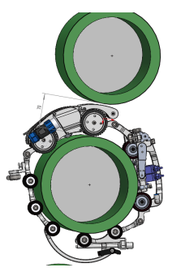
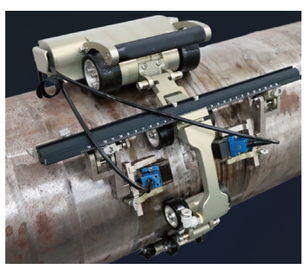
See page 28 for details.

MOS04-DD Motorized Chain Scanner

MOS04-DD is mainly used for pipeline weld detection, belonging to electric chain scanner, which can carry four probes, and the suitable scanning diameter range for non-magnetic materials is 203 mm ~ 700 mm; The suitable scanning diameter range for magnetic materials is 203 mm ~ 1219 mm.



DSC51 Pipeline Chain Scanner

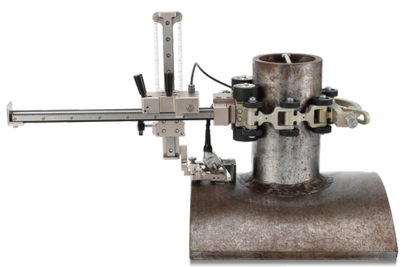




DSC51 is mainly used for pipeline weld detection, belonging to electric chain scanner, which can be equipped with two probes and can also be used in non-magnetic materials. The applicable pipeline diameter range is 200mm-800mm, and the minimum gap between passable pipes is 70 mm. However, the larger the pipe diameter, the greater the possibility of deviation during detection.

PIPE NOZZLE WELDS

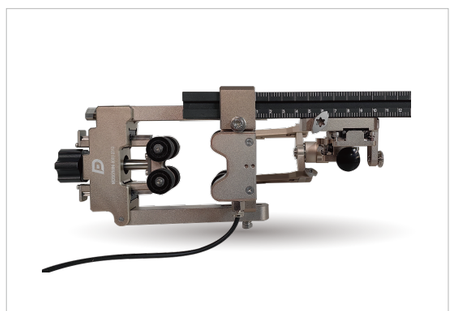
MOS07 Nozzle Joint Scanner

MOS07 is specially designed for welding seam detection of complex pipe seats, providing accurate detection data. Its flexible probe clamping system can stably support one probe with a maximum clamping width of 48mm, which is compatible with various probes.

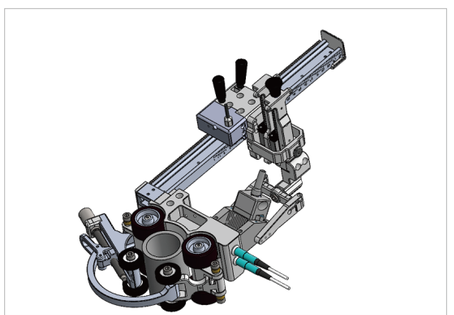


Customization of welding seam with special angle: the angle of probe can be adjusted according to the angle of welding seam to ensure good coupling.
Quick chain replacement: With quick-release chain design, the operator can quickly and easily switch between different pipe diameters, which greatly improves the efficiency of field operation.

Dual encoder configuration: the conventional model is equipped with two encoders, one installed on the chain to record the position information of the branch pipe, and the other installed on the probe stepping shaft to ensure the accuracy and reliability of the test results.
IP67 protection level: The encoders have high waterproof performance, which makes the equipment run stably even in wet and underwater environment, and enhances the environmental adaptability and durability of the equipment.

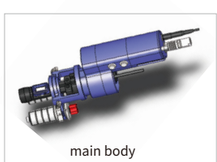


Small-diameter customized model: supports workpiece inspection with branch pipe diameter of ϕ 20 mm-ϕ 50 mm and main pipe diameter of ϕ 500 mm or more.



Conventional model: supports the inspection of workpieces with branch pipe diameter above ϕ Φ50mm and main pipe diameter above ϕ 500 mm, covering most industrial pipeline sizes and providing more possibilities for pipeline inspection of different scales.

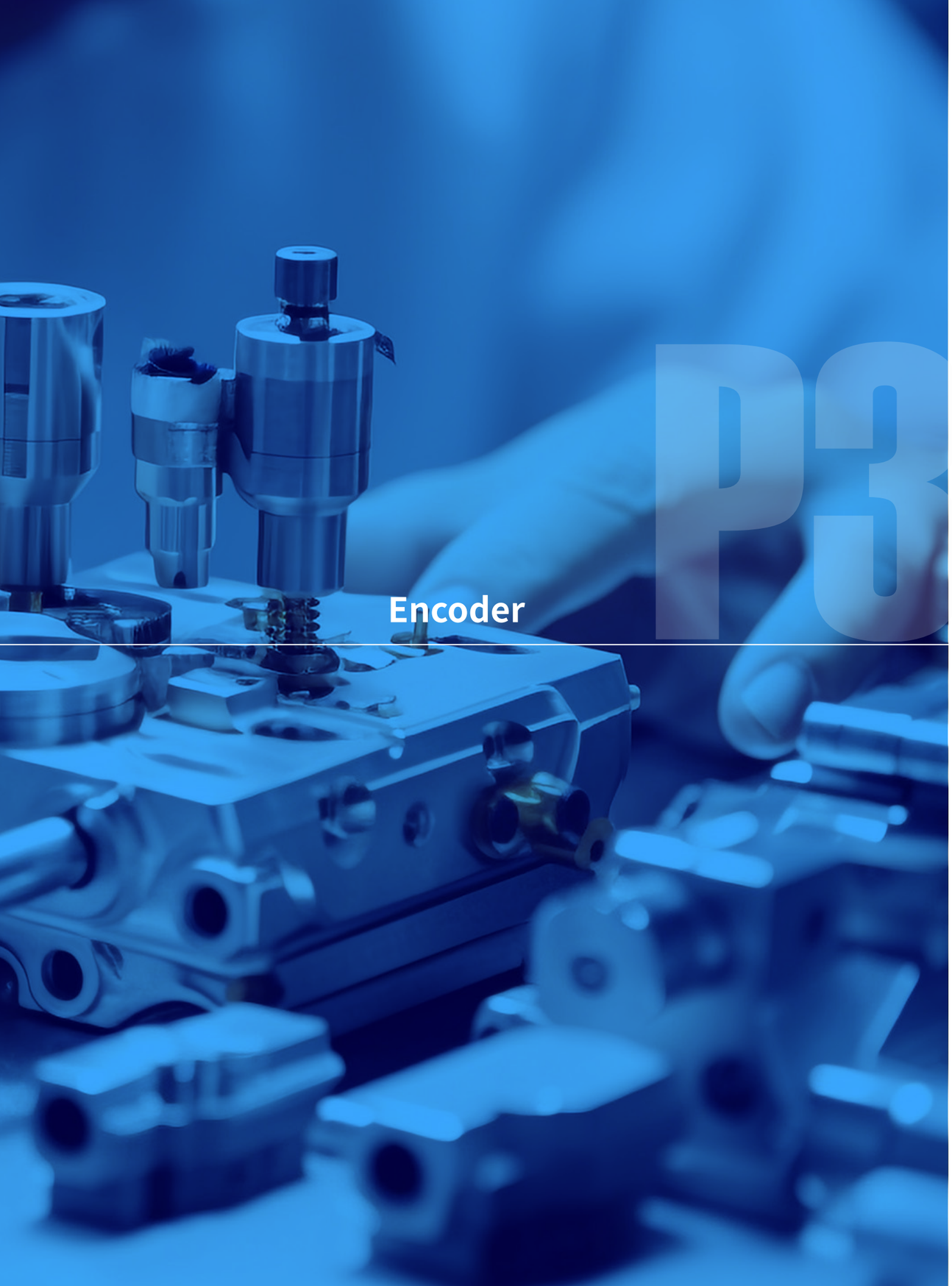
DSC52 Auto Tube-sheet Weld Scanner for Small Bore



main body

controller

The welding seam scanning device is mainly used to detect the welding seam near the pipe end, which consists of two core components: the scanner body and the controller, and is suitable for detecting the welding seam of inner holes with a diameter of more than 25 mm. The positioning mechanism ensures the stable positioning of the scanner on the workpiece. As a universal module, the rotating body can flexibly adapt to different pipe diameters, but it is suggested that the inner diameter should not exceed 100mm to ensure the best detection effect. The rotating mechanism realizes the omni-directional rotation of the probe around the center of the pipe through an efficient driving system, and accurately detects the weld. The drive body integrates a motor, a gearbox and an encoder to provide strong power, effectively prevent the probe wire from winding, and improve the detection efficiency and safety.

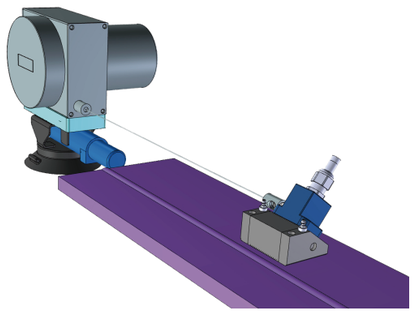


ENCODER

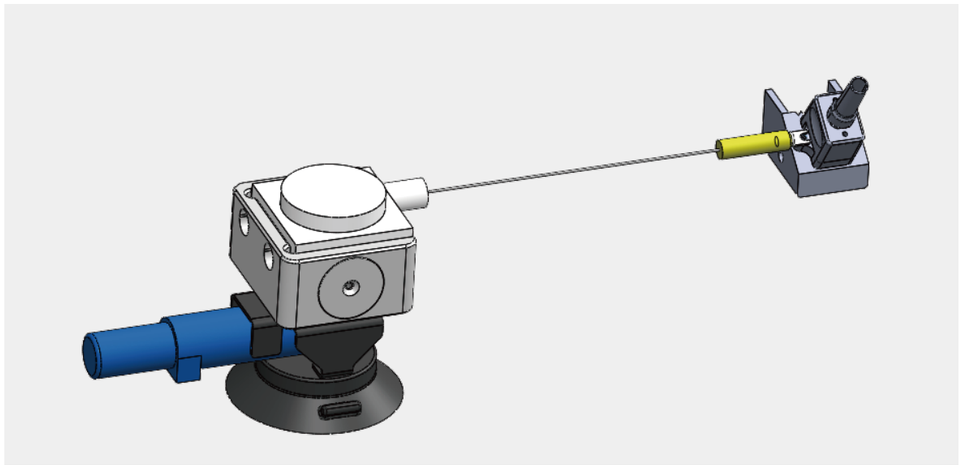
ENC-10 Wheel Encoder

This compact encoder is specially designed for modern industrial inspection requirements, with miniaturization, high adaptability and strong durability. It is compatible with various probes, providing high flexibility and adapting to different detection requirements. The compact size makes it suitable for working conditions with limited space or complex structure. With IP67 dustproof and waterproof grade, it ensures reliable work in harsh environment. When matched with special accessories, it can realize 90-degree angle adjustment and provide a variety of detection angle choices. The rolling design of steel wheels ensures smooth operation and anti-skid effect, and supports the replacement of rollers to adapt to special surfaces. It is widely used in aerospace, automobile manufacturing, petrochemical and other industries, and is an ideal choice to improve detection efficiency and accuracy.

LX14 Cable-encoder

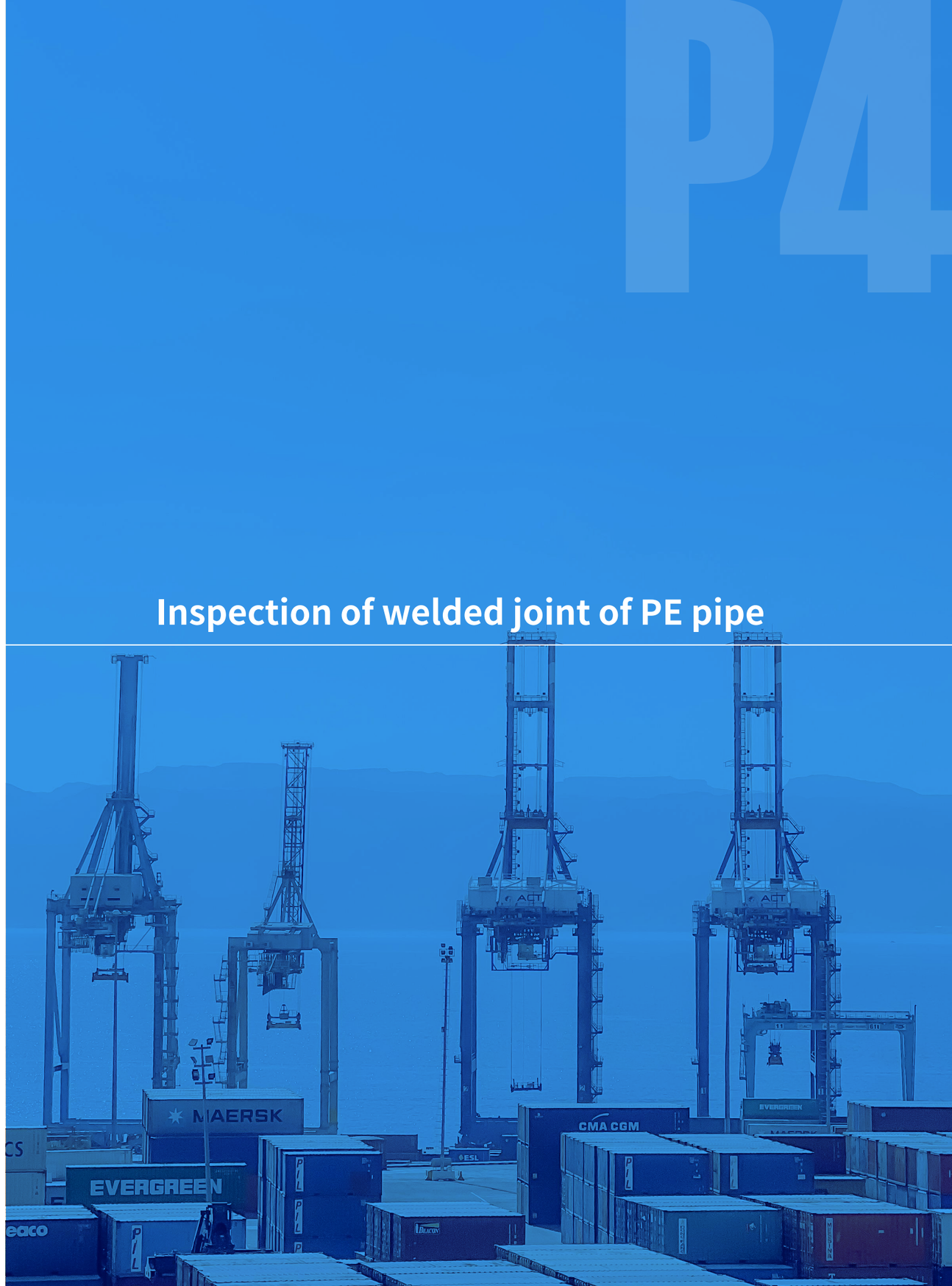


This multifunctional compact inspection assistant tool is specially designed to improve the efficiency and accuracy of industrial inspection, and is widely used in aerospace, automobile manufacturing, petrochemical and other industries. It adopts aluminum alloy shell, which is light and durable and easy to carry on site. The product design is compact and suitable for space-limited environment. There is a U-shaped clamping slot at the end of the drawstring, which supports the quick connection of various probes or scanners and enhances flexibility. Side magnets and bottom vacuum sucker provide double stable fixation to prevent sliding. The encoder stroke up to 1000mm provides enough adjustment space to meet different detection requirements, and it is an ideal tool for on-site detection engineers.



P4

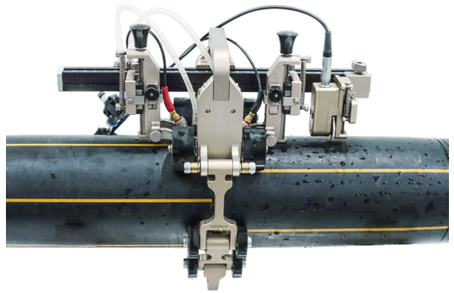
Inspection of welded joint of PE pipe



PE PIPE INSPECTION

MOS05-D PE Pipe Heat Fusion Scanner

MOS05-D special scanner for hot welding joint detection is an efficient tool designed for the maintenance and quality assurance of PE pipeline.

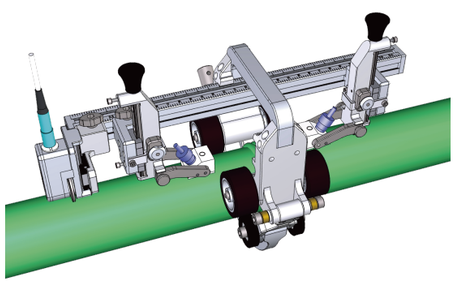


Efficient quick-release chain

Convenient quick-release chain design is adopted, so that operators can change the chain quickly to adapt to different working environments and improve working efficiency.

Wide pipe diameter applicability

It is suitable for PE pipes with diameters ranging from ϕ Φ 60mm to ϕ Φ400mm, covering most common pipe diameters, which provides great convenience for pipeline inspection of various scales.



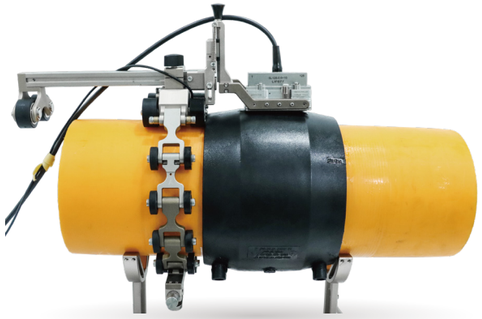
TOFD probe compatibility

Specially designed to clamp the TOFD probe matched with the hot melt defect detection of PE pipe to ensure the professionalism and accuracy of the detection process.

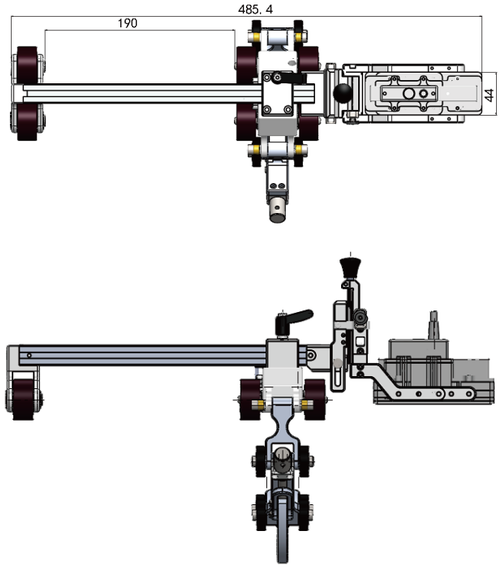
Adequate radial clearance

A radial clearance of at least 120mm is needed to place and operate the scanner, which ensures sufficient space for operation in the detection process and improves the flexibility and convenience of use.

MOS05-B PE Pipe Electrofusion Scanner

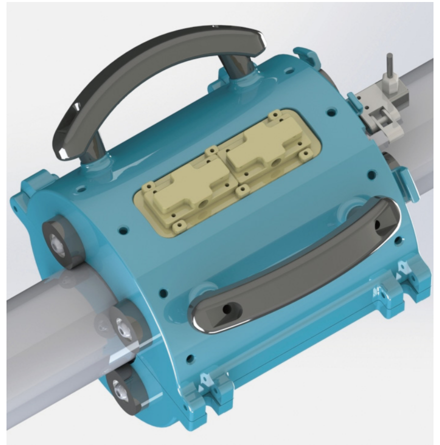


MOS05-B is specially designed for detecting the electrofusion connection of PE pipes, and supports the wedge with the maximum clamping width of 44mm to meet the customization requirements. Up to one probe can be clamped to adapt to different detection scenarios. It is suitable for coaxial reducer pipeline inspection, and the probe and wedge can be flexibly matched. IP67 protection level ensures stable operation in wet environment and improves durability. It is suitable for pipe diameter detection from 90mm to Φ400mm, and other specifications can be customized, which is widely suitable for industrial applications.



PE Pipe Scanner

building block



Water bag: customized according to the size of the workpiece, with special sealing ring to ensure that the water cavity is sealed and achieve excellent acoustic coupling effect.
Probe: Various models are available to meet the requirements of different detection processes.
Encoder: responsible for accurately recording the position information of the probe in the pipeline for subsequent data analysis.
Support wheel: ensure the stability of the water bag and assist it to move smoothly on the surface of the workpiece for comprehensive inspection.
Customized service scope: This scanner can support customized pipe diameters ranging from 32 mm to 90 mm to meet different application requirements.

Product advantage

Ensure the good coupling performance between the probe and the workpiece and improve the detection accuracy.
The design considers avoiding obstacles on the workpiece to ensure that there is no interference in the inspection process.
Highly adaptable, providing customized solutions for various pipe sizes.
The encoder provides accurate positioning and simplifies the subsequent data analysis.

Customized Version

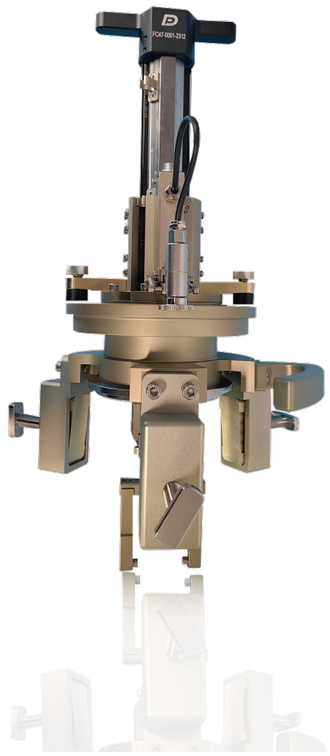
CUSTOMIZED VERSION

FC47 Internal Pipe Weld & Corrosion Scanner

FC47 manual scanner is a high-performance detection tool, suitable for corrosion and weld detection, equipped with flexible accessories and compatible with various probes. Its main features include: universal clamping frame, suitable for corrosion or weld probe to ensure stability and accuracy; Customize the positioning sleeve to adapt to different sizes of workpieces, and the standard pipe with an inner diameter of 71mm is applicable; The axial stepping rod accurately controls the probe movement and supports point-by-point detection; The rotary seat provides 360 omni-directional scanning without dead angle coverage; Double encoder system ensures high precision and repeatability; The outer diameter fixing seat simplifies operation and improves efficiency.

■ Application scenario

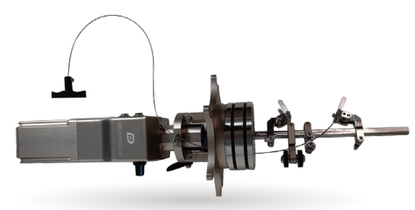
FC47 manual scanner is very suitable for regular inspection of pipelines and containers in petroleum, natural gas, chemical industry and other industries. Its manual operation mode provides direct control of the detection process, which is especially suitable for those occasions that need high precision and meticulous detection.



DSC37 Motorized Weld Scanner

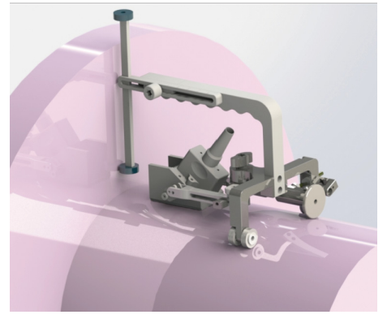
DSC37 is a semi-automatic scanner carefully designed for the inspection of internal welds of pipelines. This equipment is especially suitable for complex workpieces which are small in size and cannot be detected by hand.
Structurally, DSC37 is composed of three key parts: driving device, positioning device and probe clamping device.
In order to adapt to different pipe diameters, the positioning device and probe clamping device can be customized according to the specific pipe diameter to ensure the accuracy and stability of data in the detection process.

The applicable pipe diameter range of DSC37 can be customized according to the specific needs of customers. The minimum applicable diameter is only 39mm, and the maximum applicable diameter can reach 200 mm. This wide applicability makes DSC37 an ideal choice for a variety of industrial pipeline inspection applications, which can provide efficient and reliable inspection solutions in both manufacturing and maintenance processes.

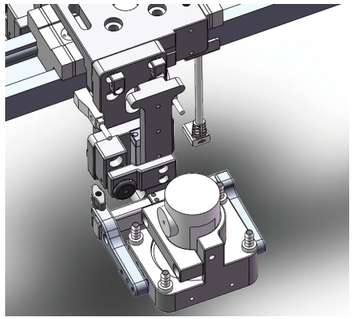


CCE-4 Weld Scanner

The scanner is specially designed for the detection of pipe parts with a diameter of 150mm and above, and the guide mechanism provides side support to ensure the distance between the probe and the weld is consistent; The supporting wheel bears the weight of the equipment, adapts to different pipe diameters and ensures smooth movement; The handle conforms to ergonomics, improving the operating comfort; The encoder records the position information to ensure the accuracy of the detection data; The clamping frame is adapted to the wedge with the width of 22-46mm, which has good compatibility and adjustability and meets the requirements of diversified detection.



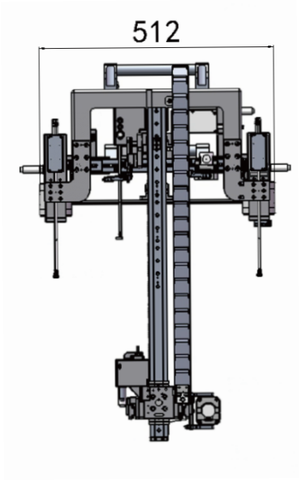
DSC41 Ring-shaped Component Auto-scanner

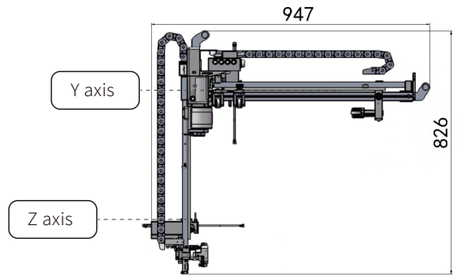


The standard clamping frame can clamp the probe with a width of 60 mm.

DSC41 is a high-performance electric scanner specially designed for detecting defects in the end face and axial face of large cylindrical or annular workpieces. The equipment adopts advanced mechanical design, realizes the accurate stroke control of 500mm in Y axis and 500mm in Z axis, and can meet the detection requirements of ring parts with diameters ranging from 2000mm~6000mm. The design of the probe holder takes into account a variety of detection scenarios, which can not only firmly hold conventional probes, but also adapt to various probe types such as phased array probes.

In order to ensure the efficiency and accuracy of the inspection work, we provide a fixture solution customized according to different probe sizes.





Y axis is used for end face detection and
Z axis is used for axial detection.
Y-axis speed range: 5-100mm/s;
Speed range of Z axis: 5-100mm/s;
X-axis speed range: 5-250 mm/s.

FC54 Manual Water-tank Scanner

FC54 is a precision-designed manual XYZ three-axis water tank scanner, which has the ability to clamp various contact probes or immersion probes. The water tank part can be disassembled conveniently, which is not only convenient for contact workpiece detection, but also greatly improves the applicability and operation convenience of the equipment.

In addition, the FC54 scanner can also be equipped with a phased array card, so that it can manually detect the water cooling plate. In terms of the effective travel of XY axis, the scanner has a spacious space of 350*400mm, which ensures that it can show excellent performance and accuracy when dealing with detection tasks of various scales. Combining its versatility, flexibility of operation and high reliability, FC54 has become the preferred equipment to meet the needs of diversified industrial testing.