



Tubular Inspection System

- * Portable Inspection Instrument for Sucker Rods
- * Portable Testing Instrument for Tubing
- * Tank Floor MFL Scanner
- * Automatic Testing Line for Sucker Rods
- * Automatic Testing Line for Transition Area of Sucker Rods
- * Skid-Mounted Tubing Testing Line
- * Testing Line for Drill Pipe
- * Inspection Equipment for Steel Wire

Wuhan Jiangnan Petroleum Machinery Co.,Ltd.

EMT-R Portable Inspection Instrument for Sucker Rods

Function

Fast testing of corrossions, abrasions and cracks of sucker rod at the wellhead.

Main Characteristics

- By HI-Intensity permanent magnet magnetization technology, magnetic flux leakage testing and main magnetic flux testing methods are integrated as well as high adaptability is achieved with water and oil resistance.
- Full detection of all defects is achieved with a few quantities of Hall elements by patent original created Magnetic Field Concentration Technology and it is preferable to Eddy Current Testing.
- Parted multilevel slave centering structure is applied which can adapt to the working condition and make the signal stable.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of sucker rod condition is achieved.
- One probe fits the sucker rod of 19 to 25mm, without need of changing the probe.

Technical Data

Testing Range OD	6/8 " ~ 1-3/8 "
Testing Speed	0.3 ~ 1m/s
Sensor Position Resolution	20mm
Testing Sensitivity of Transverse Flaws	Depth: 0.3mm-Length: 15mm
Abrasion Testing Resolution	4%
Blind Area	60mm
False Alarm Rate	≤0.5%
Weight	92kg

Device Configuration

The device consists of the tester, the wellhead unit, the signal converter, the signal cable, the instruments and the computer.

TY-MTP73/89 Portable Testing Instrument for Tubing

Function

Fast testing of corrosions, abrasions, cracks existing inside or outside of the tubing at the wellhead.

Main Characteristics

- By HI-Intensity permanent magnet magnetization technology, magnetic flux leakage testing and main magnetic flux testing methods are integrated as well as high adaptability is achieved with water and oil resistance.
- Full detection of all defects is achieved with a few quantities of Hall elements by patent original created Magnetic Field Concentration Technology and it is preferable to Eddy Current Testing.
- Parted multilevel slave centering structure is applied which can adapt to the working condition and make the signal stable.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of pipe condition is achieved.

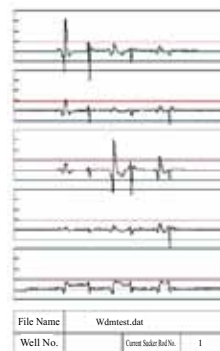
Technical Data

Testing Range	Φ2-3/8 " ~ Φ4-1/2 "
Testing Speed	0.3 ~ 1m/s
Precision of Identifying Position	20mm
Testing Sensitivity of Transverse Flaws	Depth: 0.3mm-Length: 15mm
Testing Sensitivity of Through Hole	Φ 1.6mm through hole
Abrasion Testing Resolution	4%
Blind Area	60mm
False Alarm Rate	0.5%

Device Configuration

The device consists of the tester, the wellhead unit, the signal converter, the signal cable, the instruments and the computer.

Detection Waveform Diagram for Oil Tubing on Wellhead



Testing Report for Tubing

Tubing Specifications	Φ2-3/8" ~3-1/2"
Name of Customer	
Well No.	Wdmhuasta.dat
File Name	S01
The Total Number of Detection Tubing	169
The Total Number of Defective Tubing	
No. of Defected Tubing	1 2 4 5 6 31 32 33 35 36 37 40 42 43 44 48 49 51 52 53 66 76 77 78 79 81 82 83 84 85 86 87 88 89 90 91 92 93 97 98 102 104 105 106 107 121 130 131 134 500
Surveyor Brand Number	
Date of Detection	

HTT-II Tank Floor MFL Scanner

Application

Fast testing of corrosions and cracks in large areas of the storage tank floor, especially of the corrosion condition on the bottom of the tank floor.

Main Characteristics

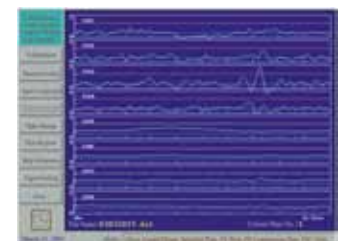
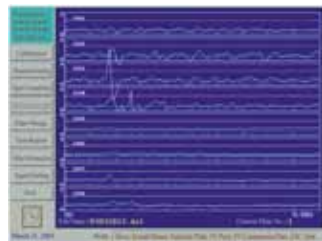
- Full testing of the defects on underside/topside surfaces of storage tank is achieved accurately and precisely.
- Testing is not affected by the oil mud and water, without need for couplants or other auxiliary material.
- Flaw detection through coatings.
- Quantitative evaluation of the flaw condition.
- Automated sound and light alarm for the defective storage tank floor.
- Driven by hand pushing, portable and anti-explosion with AC and DC power supply.

Technical Data

Maximum Thickness	22mm
Testing Sensitivity	Φ 1.6mm through hole and 12.5% thickness losses for the plate 8mm thickness
	Φ 10.0mm through hole and 80% thickness losses for the plate 22mm thickness
Sensor Working Temperature Range	-30°C-70°C
Size	300mm × 300mm × 1200mm
Weight	≤ 50kg

Configuration

Storage tank floor scanner, Signal preprocessor, A/D converter, Sample controller and PC Based-Digital analysis system



EMT-R25 Automatic Testing Line for Sucker Rods

Function

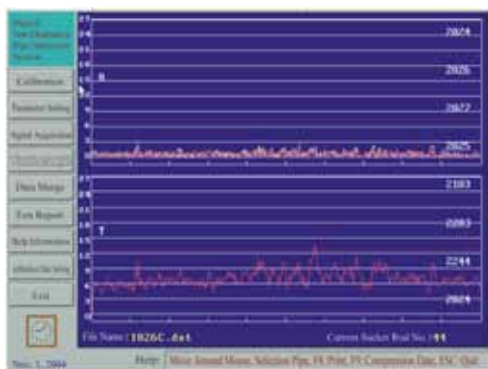
Fast testing of corrosions, abrasions and cracks of sucker rod in the mill.

Main Characteristics

- Comprehensive testing of cracks, corrosions and rod-like abrasions is achieved, combining magnetic flux leakage testing with main magnetic flux testing method, by resultant magnetization technology.
- An original patented technology of Magnetic Field Concentration Technology is adopted to reach a full testing. In order to obtain the steady sounding signal and extends the service life of this system, the slave-centering patented technology and a three-section probe of mechanical design are employed.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of pipe condition is achieved.
- One probe fits the sucker rod of 19 to 25mm, without need of changing the probe. The sucker rod $\phi 19-25$ at the same transport line are tested automatically and flexible.
- PLC auto-control is applied, and testing process is simple and flexible with convenient maintenance of the system.

Technical Data

Testing Range OD	6/8 " ~ 1-3/8 "
Testing Speed	15-30m/min
Testing Sensitivity of Transverse Flaws	Depth: 0.3mm-Length: 50mm
Measuring Resolution of The Sectional Area	4%
Blind Area	<30mm
False Alarm Rate	$\leq 0.5\%$
Residual Longitudinal Magnetic Field After Demagnetization	≤ 20 Gauss



EMT-R Automatic Testing Line for Transition Area of Sucker Rods

Function

Fast testing of corrosions, abrasions and cracks in the transition area of the sucker rod in the mill.

Main Characteristics

- The crack of the transition area is tested with the special ending inspection method. The magnetization part is fixed and the point magnetic sensors scan accurately along the sucker rod in this magnetic flux leakage testing method.
- Full testing of the transition area is achieved by combining the integrated Hall element magnetic measure technology with Magnetic Field Concentration patent technology.
- The space sampling technology is employed to obtain the signal stably. Then the crack position is found accurately.
- The self-adaptation filter technology is employed to get freedom of the influence of the background noise effectively. Therefore, the flaws are accurately classified and the false or missed test resultant is decreased.
- One probe fits the sucker rod of 19 to 25mm, without need of changing the probe. The sucker rods ϕ 19–25 at the same transport line are tested automatically and flexible.
- PLC auto-control is applied, and testing process is simple and flexible with convenient maintenance of the system.

Technical Data

Testing Range OD	6/8 " ~ 1-3/8 "
Testing Speed	each 40s
Testing Length of The End Area	\geq 150mm
Sensor Position Resolution	2mm
Detecting Sensitivity of Transverse Flaws	Depth: 0.5mm–Length: 50mm
Residual Longitudinal Magnetic Field After Demagnetization	\leq 30GS



EMT-P Skid-Mounted Tubing Testing Line

Function

Fast testing for outside/inside corrosions, abrasions and cracks of tubing in storage place or in bracket at the well site.

Main Characteristics

- Comprehensive testing of cracks, corrosions and rod-like abrasions is achieved, combining magnetic flux leakage testing with main magnetic flux testing method, by resultant magnetization technology.
- Full detection of all defects is achieved with a few quantities of Hall elements by patent original created Magnetic Field Concentration Technology
- The slave-centering patented technology and a three-section probe of mechanical design are employed to obtain the steady sounding signal and extend the service life of this system,.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of tubing condition is achieved.
- Testing process is simple and flexible with convenient maintenance of the system.

Technical Data

Testing Range OD	2-3/8 " ~ 4-1/2 "
Testing Speed	2 min/EA
Sensor Position Resolution	20mm
Transverse Crack Testing Resolution	Depth: 0.5mm-Length: 100mm (smooth surface)
Longitude Crack Testing Resolution	Depth: 0.5mm-Length: 100mm (smooth surface)
Hole Testing Resolution	Φ 1.6mm (through hole) (smooth surface)
Cross-Sectional Area Testing Resolution	4%
Blind Area	<60mm
False Alarm Rate	≤0.5%
Residual Longitudinal Magnetic Field After Demagnetization	≤20 Gauss
Tester must be changed according to different types of tubing.	
Main specifications meet or exceed API Spec 5CT, RP 5A5 and GB/T12606-1999.	



EMT-D Skid-Mounted Testing Line for Drill Pipe

Function

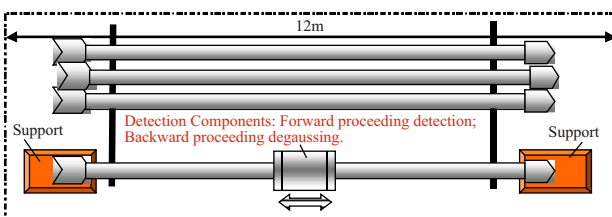
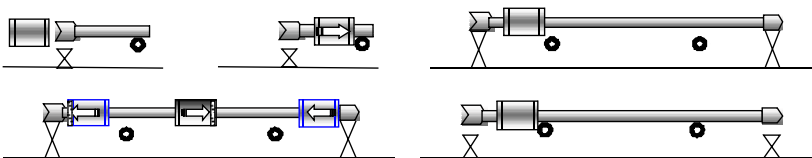
Used for fast detection of drill pipe with corrosion, crack and variety of wall thickness in drill site or bedding pile.

Main Characteristics

- Comprehensive testing of cracks, corrosions rod-like abrasions and variation of wall thickness is achieved, combining magnetic flux leakage testing with main magnetic flux testing method, by resultant magnetization technology.
- An original patented technology of Magnetic Field Concentration Technology is adopted to reach a full testing. In order to obtain the steady sounding signal and extends the service life of this system, the slave-centering patented technology and a three-section probe of mechanical design are employed.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of pipe condition is achieved.
- The tester can move, stop, in/out detect service position with remote control, It does not need manual handling, so it can save labor and working time.

Technical Data

Testing Range OD	2-3/8 " ~ 5-1/2 "
Testing Speed	1 pipe/min
Testing Sensitivity of Transverse Flaws	Depth: 0.3mm-Length: 15mm
Testing Sensitivity of Hollow	Φ 1.6mm (through hole)
Testing Sensitivity of Cross-Section Area	4%
Precision of Identifying Position	20mm
Blind Area	≤60mm
False Alarm Rate	≤0.5%
Residual Longitudinal Magnetic Field After Demagnetization	≤30GS



EMT-P Automatic Testing Line for Tubing

Function

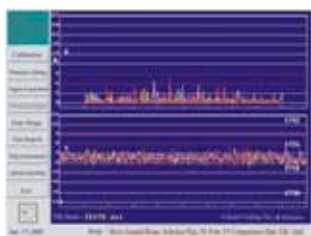
Fast testing of internal and external pipe corrosion, wear, cracks, etc, in the tubing product or used tubing repaired line.

Main Characteristics

- Comprehensive testing of cracks, corrosions and rod-like abrasions is achieved, combining magnetic flux leakage testing with main magnetic flux testing method, by resultant magnetization technology.
- Full detection of all defects is achieved with a few quantities of Hall elements by patent original created Magnetic Field Concentration Technology
- The slave-centering patented technology and a three-section probe of mechanical design are employed to obtain the steady sounding signal and extend the service life of this system.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of pipe condition is achieved.
- Testing systems for 73mm/89mm tubing can be installed in series to test automatically and neatly in the same transporting line.
- Testing process is simple and flexible with convenient maintenance of the system.

Technical Data

Testing Range OD	2-3/8 " ~ 4-1/2 "
Testing Speed	0.3 ~ 1m/s
Testing Sensitivity of Longitudinal Flaws	Depth: 0.5mm-Length: 150mm
Testing Sensitivity of Transverse Flaws	Depth: 0.5mm-Length: 100mm
Testing Sensitivity of Hole	Φ 1.6mm perforitive hole
Abrasion Testing Resolution	4%
Blind Area	≤60mm
Rate of Accurate Alarm	98%
Residual Longitudinal Magnetic Field After Demagnetization	≤20GS
Main specifications meet or exceed API Spec 5CT, RP 5A5 and GB/T12606-1999.	



EMT-D60/73/89/127/140 Testing Line for Drill Pipe

Function

Fast testing of the flaws existing on the drill pipe, such as corrosion, crack and thickness variation, etc.

Main Characteristics

- Comprehensive testing of cracks, corrosions and rod-like abrasions is achieved, combining magnetic flux leakage testing with main magnetic flux testing method, by resultant magnetization technology.
- The slave-centering patented technology and a three-section probe of mechanical design are employed to obtain the steady sounding signal and extend the service life of this system.
- With patent Quantitative Data Analysis Technology and Software Adjustable Alarming Threshold, signal status display can be zoomed in and out freely and precise testing of drill pipe condition is achieved.
- The drill pipe upset area testing is achieved by combining patented technology of the unique end testing with frequency conversion and PLC control technology.
- Through changing tester, different types of the drill pipe are tested automatically and flexibly in the same transporting line. The flaw testing parameters, classification of test results and reports are adjustable automatically according to the different specifications of drill pipes.
- Testing process is simple and flexible with convenient maintenance of the system.

Technical Data

Testing Range OD	2-3/8 " ~ 5-1/2 "
Testing Speed	15-30m/min
Precision of Identifying Position	20mm
Detecting Sensitivity of Transverse Flaws	Depth: 0.5mm-Length: 60mm
Detecting Sensitivity of Through Hole	Φ 1.6mm through hole
Abrasion Testing Resolution	4%
Blind Area	<60mm
False Alarm Rate	≤0.5%
Residual Longitudinal Magnetic Field After Demagnetization	≤20 Gs
Main specifications meet or exceed API Spec 5CT, RP 5A5 and GB/T12606-1999.	





Inspection Equipment of Steel Wire Special for Elevator

- Model number: MTC-E13
- Detection range: 9~13mm

Features:

1. Portable, weight is 2.5kg only;
2. Adopt technology of servo centring;
3. High performance-price ratio;
4. Applied in inspection of single-row and multi-row steel wire special for elevator.



Inspection Equipment of Steel Wire Special for Lifting

- Model number: MTC-P24
- Detection range: 17~24mm

Features:

1. Portable, weight is 4kg only;
2. Adopt technology of servo centring, wide detection range;
3. Convenient assembly on site;
4. Applied in single-row steel wire;
5. Weak current system, powered by computer.



General-Purpose Inspection Equipment of Steel Wire:

- Model number: MTC-P30
- Detection range: 25~30mm

Features:

1. Portable, weight is 5kg only;
2. Adopt technology of servo centring, wide detection range;
3. Convenient assembly on site;
4. Applied in inspection of steel wire in mine, mechanism, ropeway and etc.

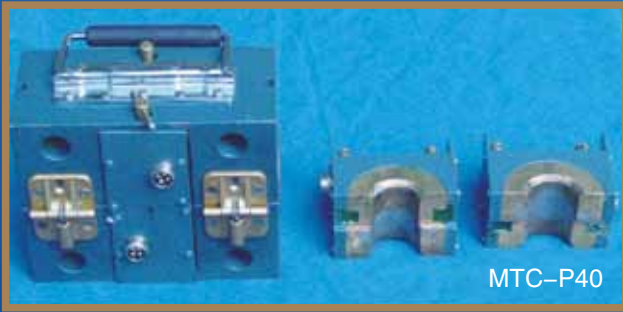


General-Purpose Inspection Equipment of Steel Wire:

- Model number: MTC-P35
- Detection range: 30~35mm

Features:

1. Portable, weight is 7.5kg only;
2. Adopt technology of servo centring, wide detection range;
3. Convenient assembly on site;
4. Applied in inspection of steel wire in mine, mechanism, oil field and etc.

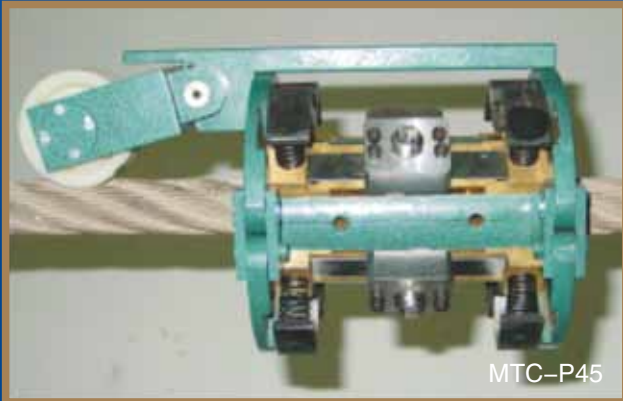


General-Purpose Inspection Equipment of Steel Wire:

- Model number: MTC-P40
- Detection range: 35~40mm

Features:

1. Portable, weight is 5kg only;
2. Adopt technology of servo centring, wide detection range;
3. Applied in several types of steel wire, Inner core changeable.



General-Purpose Inspection Equipment of Steel Wire:

- Model number: MTC-P45
- Detection range: 40~45mm

Features:

1. Portable, weight is 7.5kg only;
2. Adopt technology of servo centring, wide detection range;
3. Multi channel signal detection in 4 passages;
4. Applied in inspection of steel wire in mine, ropeway and etc.

Notice: Users can choose different types of products according to their own demand.
The products have serial sets, and structure design of different types can be made according to the type of the steel wire.



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