



ART CRAWLER SERVICES

FIND VALUE FOR
THE LONG RUN

NON-INVASIVE CORROSION
INSPECTION SERVICE



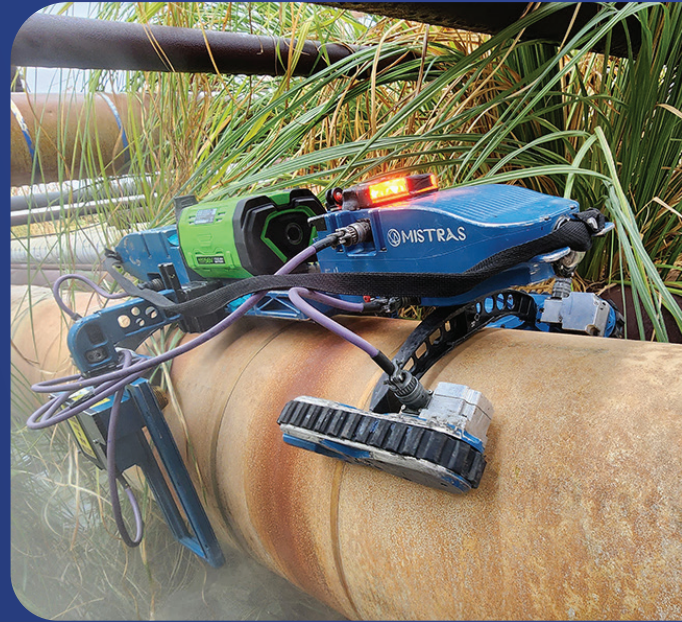
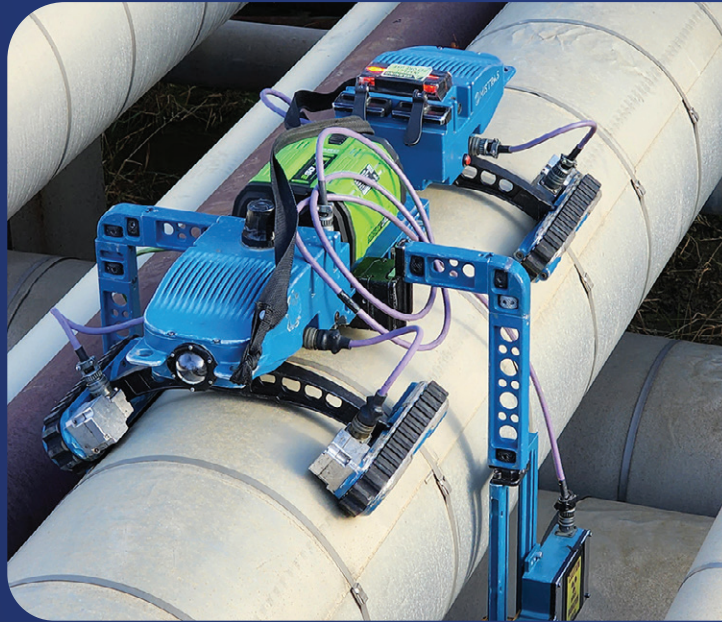
OVERVIEW

Make Inspections a Work of ART

MISTRAS' Automated Radiographic Testing (ART) Crawler services utilize digital radiography (DR) to screen for internal corrosion and corrosion under insulation (CUI) in insulated and uninsulated aboveground piping and pipelines, even with product flowing through the lines.

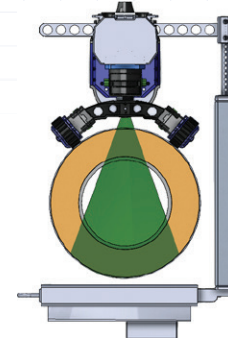
Designed, developed, and manufactured in-house by MISTRAS Group, ART Crawler services support customers across the upstream, midstream, and downstream sectors of the oil & gas industry.





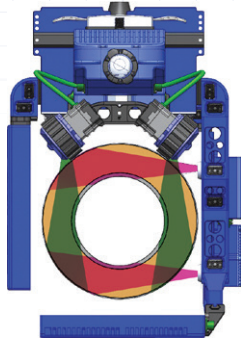
THE RIGHT INSPECTION SOLUTION FOR YOU

No matter what type of corrosion screenings your operations call for, MISTRAS' collection of ART Crawler services has the capabilities to meet your unique corrosion inspection needs.



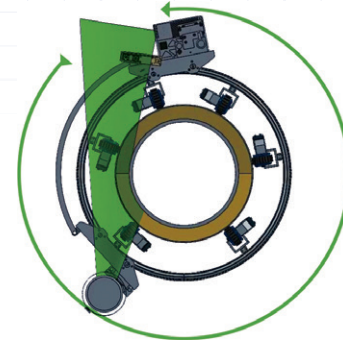
INTERNAL CORROSION CRAWLER SERVICES

TECHNIQUE	Thru-Wall Radiography
PIPE RANGE (INSULATED)	4" - 48" overall OD in-service lines
PHYSICAL SPECS	55" x 11" x 10"; 70 lbs.
REGION OF INTEREST	Bottom quadrant of pipe
DAMAGE MECHANISMS	General corrosion, isolated pitting, MIC, pipe liner failure, plugging
WIRELESS RANGE	Up to ½ mile line of sight
POWER REQUIREMENTS	56v Li-ion battery
CLIMB ANGLE	0-15 degrees from horizontal
TEMPERATURE RANGE	-40 F to 120 F
IMAGERS	Multi-line Photon Detectors
X-RAY ENERGY	60kV to 225kV



CUI CRAWLER SERVICES

TECHNIQUE	Tangential OD Radiography
PIPE RANGE (INSULATED)	2" to 48" overall OD in-service lines
PHYSICAL SPECS	36" x 8" x 8"; 37 lbs.
REGION OF INTEREST	Single & multi azimuth
DAMAGE MECHANISMS	CUI, moisture saturation, insulation failure, ice build-up, weld ID
WIRELESS RANGE	Up to ½ mile line of sight
POWER REQUIREMENTS	56v Li-ion battery
CLIMB ANGLE	0-15 degrees from horizontal
TEMPERATURE RANGE	-40 F to 120 F
IMAGERS	Multi-line Photon Detectors
X-RAY ENERGY	50kV to 160kV

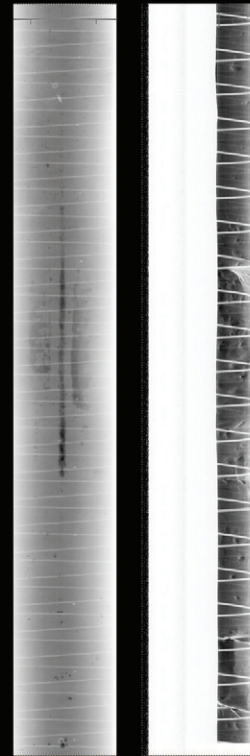


360° CRAWLER SERVICES

TECHNIQUE	Tangential OD Radiography
PIPE RANGE (INSULATED)	12" to 60" overall OD in-service lines
PHYSICAL SPECS	70lbs + ring weight (varies by diameter)
REGION OF INTEREST	360 degrees OD
DAMAGE MECHANISMS	CUI, Moisture saturation insulation failure, ice build-up, weld ID
POWER REQUIREMENTS	110 VAC
CLIMB ANGLE	0-15 degrees from horizontal; ≥3D 90-degree elbows
TEMPERATURE RANGE	-40 F to 120 F
IMAGERS	Large Area CMOS detector
X-RAY ENERGY	50kV to 225kV

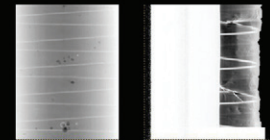
HOW DIGITAL RADIOGRAPHY WORKS

- Digital radiography uses X-rays to provide silhouettes of the pipe wall, identifying where internal corrosion or CUI is present
- Digital scans can be instantly viewed on a tablet or computer screen, with no need for a film room or chemical processing
- Radiographic inspection results are permanently archived so corrosion data is easily accessed at any time



ART CRAWLER

The ART Crawler can inspect 100% of a line in the time it takes traditional methods to inspect 5-10%.



MAINSTREAM METHOD

ART CRAWLER SERVICES BENEFITS

MISTRAS' ART Crawler services help inspection and integrity personnel make your internal corrosion and CUI inspection process run smoothly.



Advanced robotic inspection technology



DICONDE-compliant radiographic images



High efficacy for CUI detection



Insulation remains intact



Rapid corrosion screening



Reduce downtime and costs



No impact on simultaneous operations (SIMOPS)

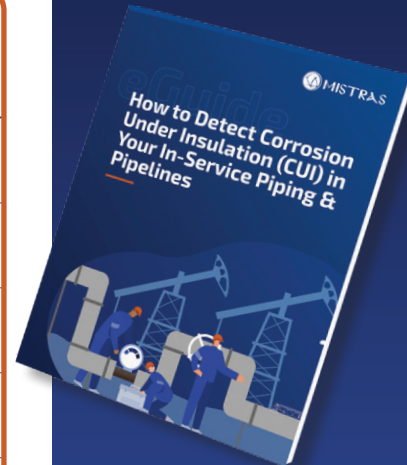


More informed asset integrity decisions

INSPECTION METHOD PROS AND CONS

CAPABILITIES	COMPUTED/DIGITAL RADIOGRAPHY (CR/DR)	AUTOMATED ULTRASONICS (AUT)	ART CRAWLER
Rapid, Large-Scale Screening Coverage			○
Keep Product in In-Service Lines	○	○	○
Permanent Image Archiving	○	○	○
Keep Insulation Intact	○		○
Digital Imaging	○	○	○
Unlimited Autonomous Range			○

Get the free eGuide, How to Detect Corrosion Under Insulation (CUI) in Your In-Service Piping & Pipelines, for a guide to selecting the right CUI detection method for you.



SCAN TO GET IT NOW!



artcrawler.mistrasgroup.com

ADDITIONAL SUPPORT SERVICES

MISTRAS offers support to help identify and remediate corrosion damage as quickly, cost-effectively, and non-invasively as possible. Trained and certified technicians can be quickly mobilized to provide additional inspection and maintenance support where you need it, and when you need it most, with services including:

- ➔ Traditional and advanced non-destructive testing (NDT) follow-ups
- ➔ Maintenance services to remove and re-install insulation and protective coating
- ➔ At-height inspections with experienced rope access personnel and drone pilots



A CLOSER LOOK

IMAGING

The crawler provides quick and advanced radiographic data results that produce high-resolution, DICOMDE-compliant images.

VERSATILITY

The fully wireless crawler's two-axis robotic arm and slim body allow it to effortlessly traverse past supports and other obstacles.

CUSTOM BUILT

With options for pipelines from 2-60 inches, the ART Crawler is compatible with any aboveground, horizontal pipeline, including those with product still in them.

MULTI-VIEW SCREENING

4-view screening capability enables CUI and wet or damaged insulation to be viewed at the top, bottom, and sides of the pipe.

WEATHERPROOF AND RUGGED

Tested in harsh weather conditions, the crawler can operate in subprime environments, eliminating the need to postpone or reschedule work.



ADDITIONAL RESOURCES

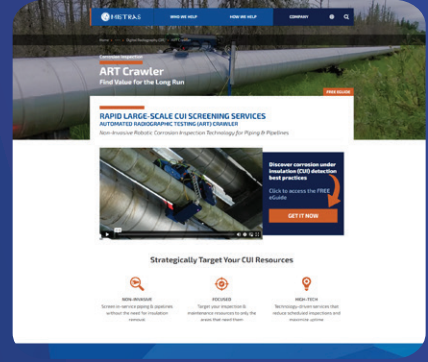
ART Crawler in World Pipelines Magazine



ART Crawler Inspection Services Video



ART Crawler Webpage





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THE LONG RUN**

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INSPECTION SERVICE

**DON'T LET UNDETECTED
CORROSION SLOW YOU DOWN**



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