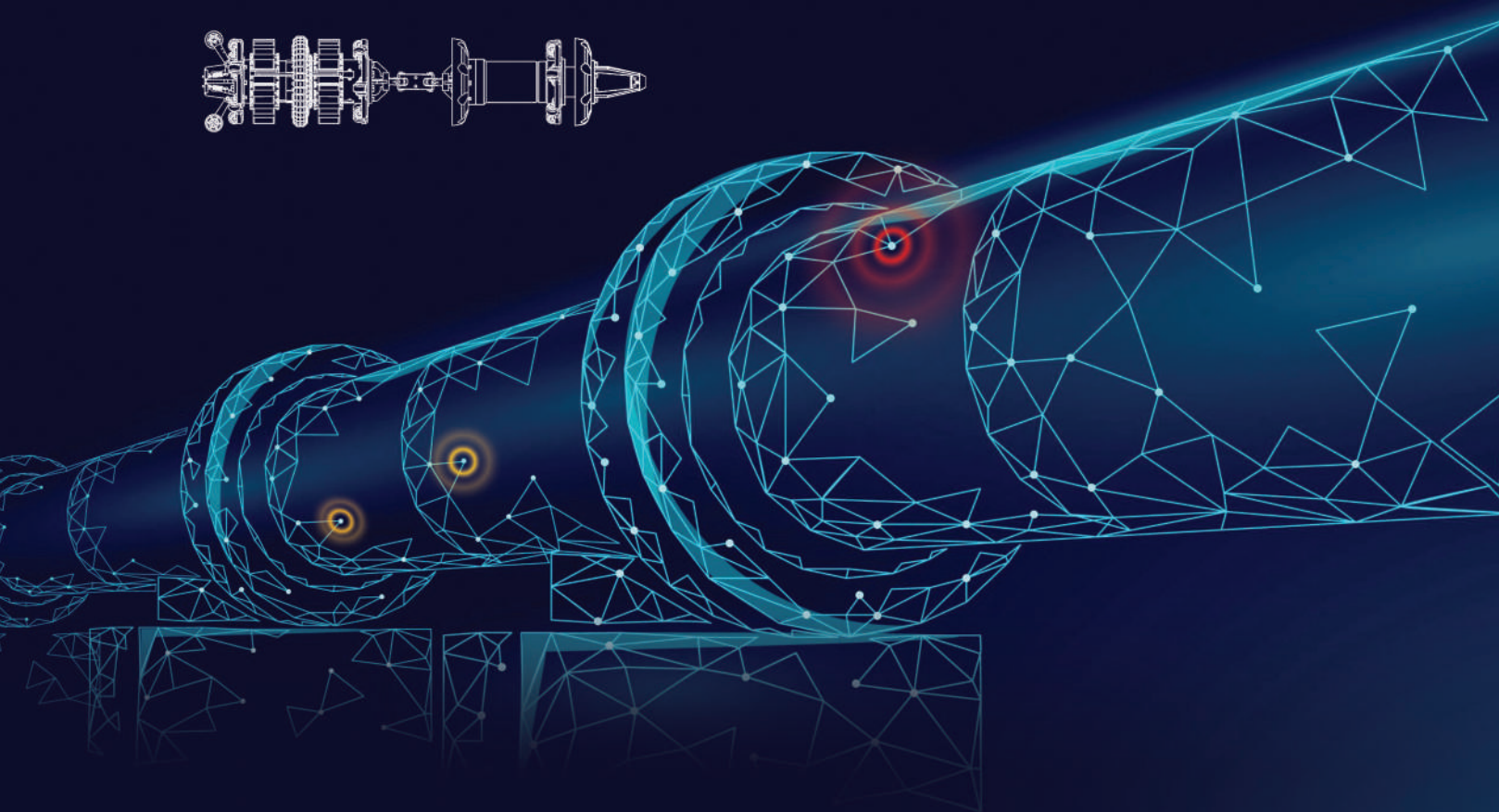
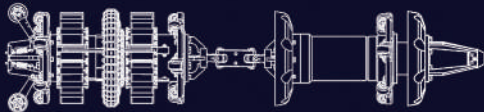




ROJHAN SANAT MAD

RASMco. 6-56 Inch INLINE INSPECTION PIPELINE



RASMco.

PIPELINE INSPECTION
BY
INTELLIGENT PIG

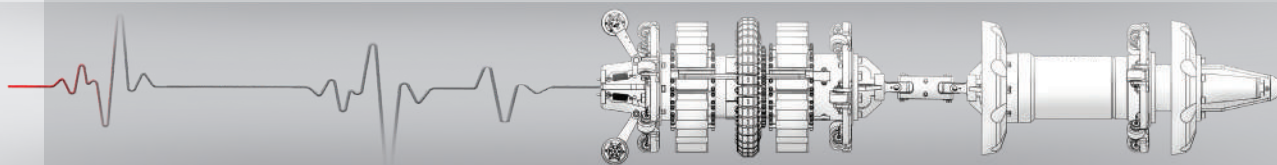
MFL, TFI, Caliper, Geo_Pig
FFP, FFS, PIMS

INLINE INSPECTION PIPELINE

RASMCO (Rojhan Sanat Maad Co.)

Founded in 2003, Rasmco relies on the proven expertise of its managers and specialists bringing with them over 15,000 km of intelligent pigging experience across oil, gas, and product pipelines.

With continuous R&D, the company has localized advanced intelligent pig technology, proudly delivering Iran's first fully indigenized intelligent pig, approved by the Ministry of Petroleum. In 2023, Rasmco became the first company in Iran to achieve Knowledge-Based Certification in the field of intelligent pigging.



RASMCO





Pipeline Survey with Intelligent Pigs

Oil and gas pipelines serve as the vital arteries of the energy industry, ensuring the safe and continuous delivery of energy resources. Early detection of pipeline defects is critical to prevent leaks, spills, and potential explosions, enabling timely maintenance and ensuring operational safety.

Smart Pigs are the most advanced and comprehensive tools for pipeline inspection. They not only detect defects but also provide detailed information about the technical specifications of the pipeline. Moving along with the flow of the product inside the pipeline, these specialized devices perform a thorough inspection, identifying metal loss, geometric irregularities, and other potential issues.

RASMCO Company utilizes Magnetic Flux Leakage (MFL) technology to detect metal loss defects. In addition, the company has developed Caliper and Geo technologies to identify geometric anomalies and precisely map geographical locations.

Offering a full spectrum of pipeline inspection services, RASMCO deploys four types of Smart Pigs suitable for pipelines ranging from 8 inches to 56 inches, ensuring reliability, accuracy, and safety across all pipeline systems.



INLINE INSPECTION PIPELINE

Magnetic Flux Leakage (MFL)

RASMCO's MFL Smart Pigs are developed using advanced Magnetic Flux Leakage (MFL) technology, recognized as one of the most reliable methods in pipeline inspection. With high and extra high resolution measurement capability, these tools accurately detect a wide range of anomalies, including:

- General corrosion and pitting
- Circumferential cracks
- Gouges, dents, and scratches
- Girth weld defects

Transverse Flux Inspection (TFI)

RASMCO's TFI Smart Pigs, designed with MFL technology, employ a transverse flux field to enhance defect detection in the longitudinal direction of pipelines. This configuration provides superior performance in identifying:

- Stress Corrosion Cracking (SCC)
- Axial cracks
- Longitudinal weld seam defects



**Caliper: Electronic Geometry Pig (EGP)**

RASMCO's Electronic Geometry Pig (EGP), also known as a Caliper Pig, is designed to measure the internal geometry of pipelines with high accuracy. Equipped with multi-channel mechanical arms and displacement sensors, it provides a full 360° profile of the internal dimensions.

This technology enables precise measurement of pipeline geometry and detection of defects such as:

- Dents and ovalities
- Gouges and deformations
- Irregularities caused by installed components (e.g., check valves, pig signalers)

By delivering detailed geometric data, the Caliper Pig supports effective assessment and integrity management of pipeline systems.

GEOpig: Internal Navigation System (INS)

RASMCO's GEOpig utilizes an advanced **Internal Navigation System (INS)** to track spatial position and rotation across all three **XYZ** axes, providing sub-meter accuracy in pipeline location.

It can operate as a standalone tool or in combination with MFL, TFI, and Caliper Smart Pigs.

By mapping the pipeline's three-dimensional path and identifying welds, valves, and defects, GEOpig delivers essential data for optimized operation and integrity management.

In addition, GEOpig supports FFP/FFS analyses by evaluating stresses on pipelines caused by external factors such as natural disasters.

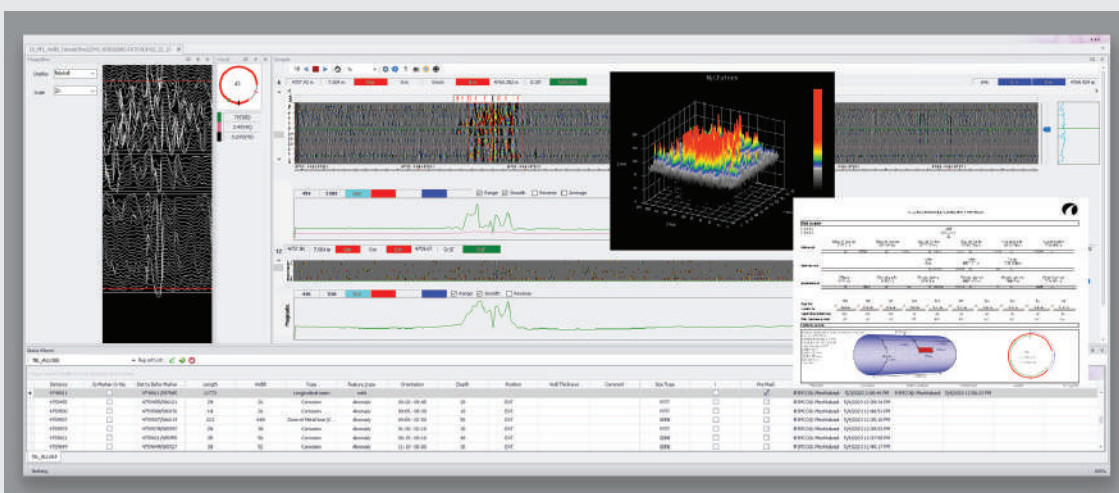


INLINE INSPECTION PIPELINE

Software & RSM-WARE

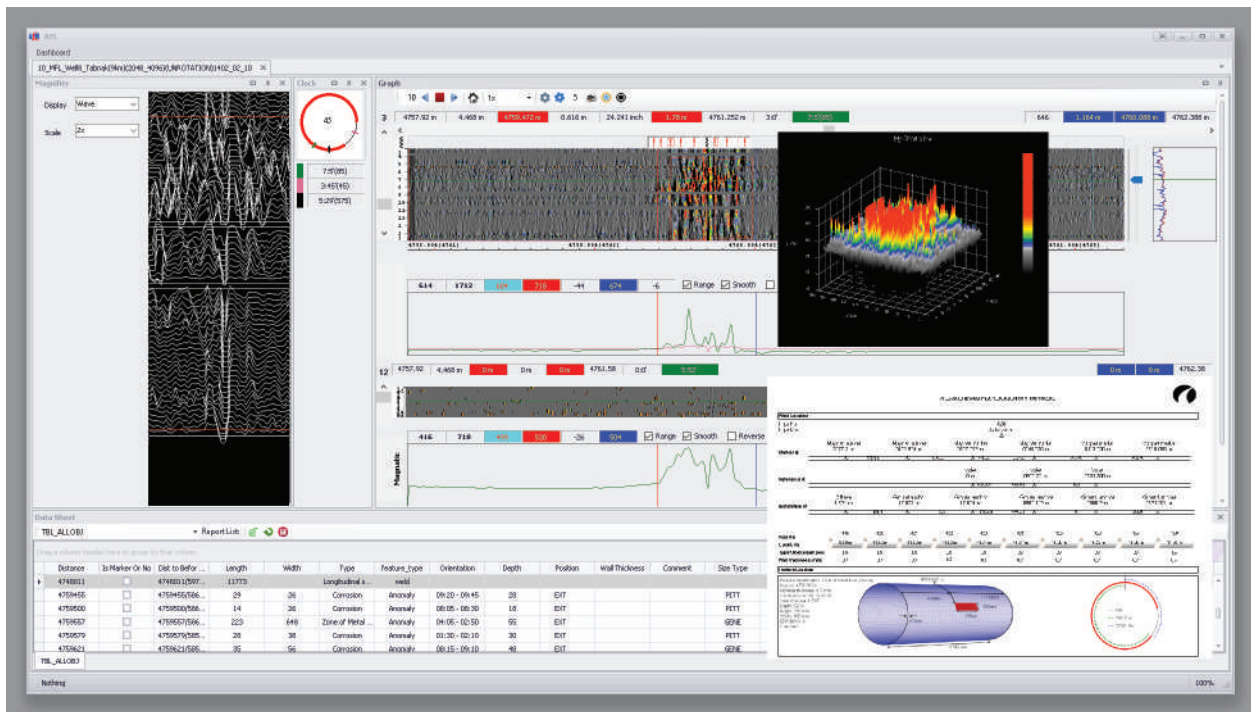
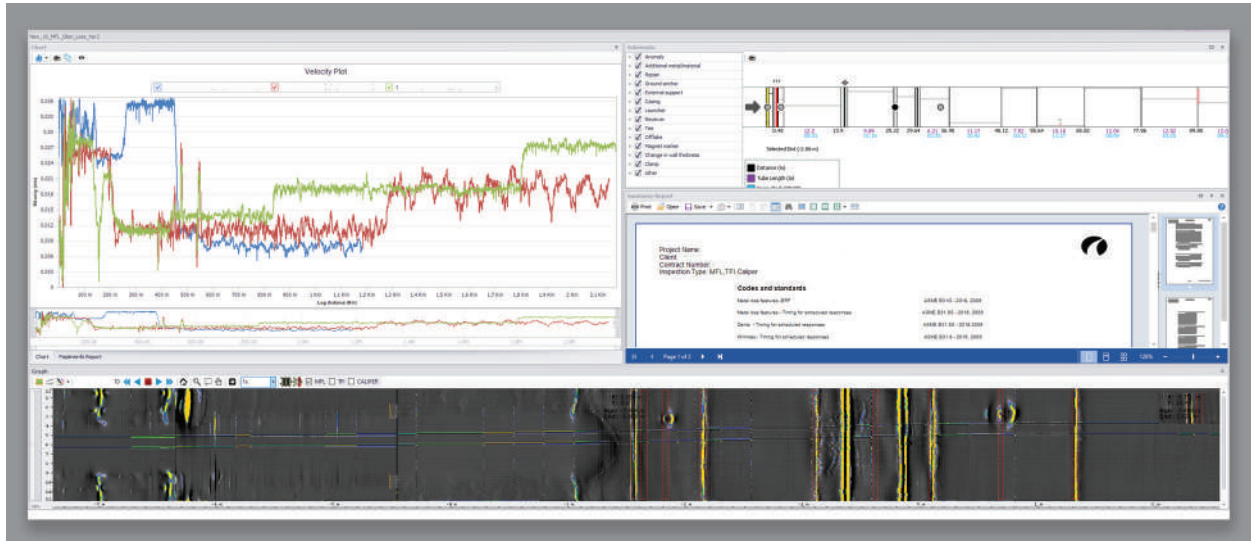
All algorithms and software codes are developed in-house by RASMCO experts. Dedicated software tools have been created to handle initial data processing, full interpretation, and reporting.

In addition to printed formats, ILI reports are also delivered through software platforms. Given the large volume of pipeline inspection data, the use of advanced software is essential for effective data utilization. To meet this need, RASMCO has developed RSM-WARE, a powerful and user-friendly software suite.



Key Features of RSM-WARE:

- User-friendly interface
- Developed in accordance with international ILI standards and guidelines
- Online and offline accessibility with defect and element visualization on maps
- Integrated reporting with comparison of multiple inspection runs
- Dedicated pipeline schematic panel
- 3D visualization of pipeline routes with defects and elements
- Comprehensive charts covering pigging operations and inspection results
- FFP reporting capability
- Display of raw data and graphical outputs
- Simultaneous data and graphic view for multiple pig runs (MFL, TFI, Caliper)
- Synced data tables with graphical displays
- DIG-UP sheet generation for user-specified defects
- Complete documentation for each pipeline section
- User notes within data tables
- ERF calculation with adjustable parameters across different standards
- Reporting export in multiple formats (Excel, Word, PDF, etc.)
- Dynamic panels for data management
- Defect and element image visualization
- Ability to update and add inspection reports over time
- Customization based on client requirements





INLINE INSPECTION PIPELINE

FFP (Fitness for Purpose) & FFS (Fitness for Service)

Following in-line inspection (ILI), the identified anomalies are thoroughly evaluated to ensure the safe and reliable operation of the pipeline. Each defect and the associated pipeline segment are assessed based on inspection history, enabling accurate estimation of corrosion growth rates.

Accordingly:

- Immediate repairs are recommended for critical defects.
- Scheduled maintenance plans (annual or semi-annual) are prepared for other anomalies.
- The appropriate timeframe for the next ILI run is determined.

This process establishes a structured repair and maintenance program, taking into account both technical and financial constraints.

It also enables the definition of new operating conditions (e.g., working pressure) for pipelines with cracks or damage, ensuring safe service over a specified period.

RASCO has developed dedicated software for FFP analysis, life estimation, and maintenance planning.

Key Outcomes of FFP/FFS Assessments:

- Significant improvement in pipeline safety
- Reduction of direct maintenance and repair costs
- Recommendations for safe operation until the next inspection
- Identification of immediate repairs
- Maintenance scheduling for existing anomalies
- Recommendations for corrosion mitigation and control strategies
- Corrosion management program planning

FFP & FFS PIMS



Utility & Cleaning Pigs

RASMCO designs and manufactures a wide range of Utility Pigs for pipeline cleaning, pre-commissioning, and verifying the successful passage of pigs through the pipeline. Each pig is engineered in accordance with pipeline specifications and operational requirements to ensure optimal performance.

Available Types:

- Bi-Directional Cleaning Pig
- Magnetic Brush Pig
- Gauging Pig
- Cup Brush Pig
- Batching Pig
- Magnetic Plus Pig



INLINE INSPECTION PIPELINE

Maintenance & Special Pipeline Pigging

RASMCO provides comprehensive maintenance solutions to ensure the safe and continuous operation of pipeline networks. Through advanced inspection, assessment, and repair planning, our services help extend pipeline life, reduce operational risks, and minimize maintenance costs.

Tailored maintenance programs are developed based on inspection results, international standards, and client requirements.

In addition to routine pigging operations, RASMCO specializes in special pipeline pigging projects where conventional pigging methods may not be applicable.

These include:

- Unpiggable pipelines with design or operational limitations
- Multi-diameter pipelines requiring customized pigging tools
- Non-routine pigging operations for unique configurations and conditions

By combining engineering expertise with innovative tool design, RASMCO ensures safe, reliable, and efficient pigging solutions even for the most challenging pipeline systems.





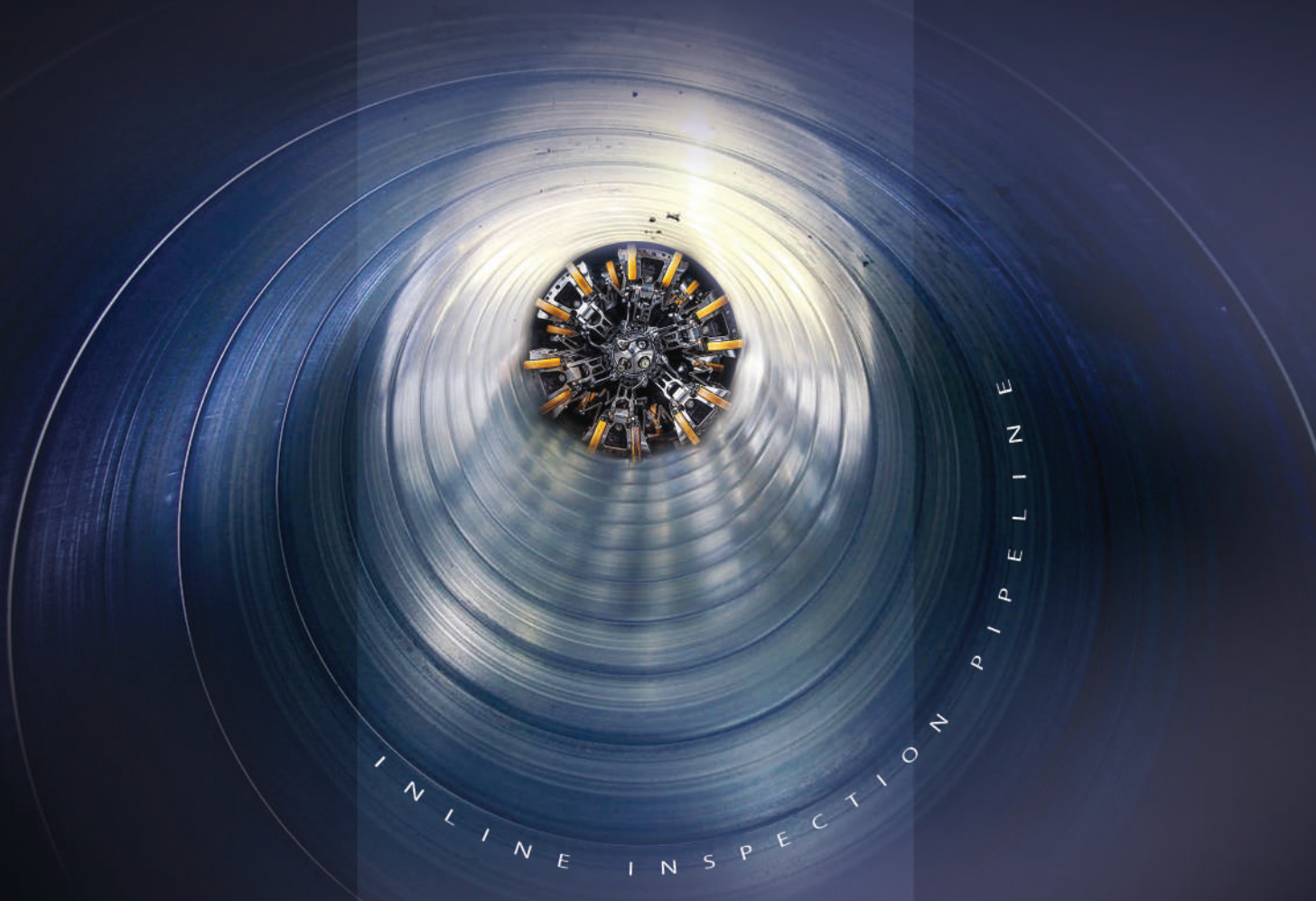
Experience & References

Over the years, RASMCO has built a solid track record in the field of pipeline inspection and integrity management. Backed by a management team with more than 15,000 km of intelligent pigging experience, the company combines proven expertise with innovative technology to deliver reliable results.

Today, with its fully indigenized intelligent pigging technology, RASMCO continues to serve the oil, gas, and refined product pipeline sectors, ensuring safe, efficient, and cost-effective operations. This unique blend of past experience and present capability allows RASMCO to offer dependable solutions tailored to the most demanding pipeline challenges.



RASMco.



IN LINE INSPECTION PIPELINE

Office: Saba Tower, Baradaran Mozafar (Saba) Ave.,
Talegani St., Tehran, Iran

Work shop: Petroleum Industry Innotech Park,
Pajoheshgah Naft Blvd, Rajaei Expy, Tehran, Iran

www.rasmco.com

www.rasm-co.ir

Tel: +98 21 82809126
66959206

Email: info@rasm-co.ir