

**Индикативно предложение по проведени пазарни консултации № 45842
с предмет "Доставка на сканер за ултразвуков контрол"**

от



Анализи, управленски
и проектантски решения
за енергийната индустрия

ДЖИ СИ АР АД

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№ по ред	ID на Възложителя	Описание и технически характеристики на предлаганото изделие	М.ед.	К-во	Ед. цена в евро, без ДДС	Стойност в евро, без ДДС
1		Доставка на сканер за ултразвуков контрол	бр.	1	196,000.00	196,000.00
Обща стойност: сто деветдесет и шест хиляди евро, без ДДС						196,000.00

Срок на доставка

150 кал.дни

Условие на доставка

DDP АЕЦ Козлодуй INCOTERMS 2020

Гаранционен срок

12 месеца от въвеждането в експлоатация

Съпроводителна документация при доставка

1. Декларация/сертификат за съответствие
2. Техническо ръководство
3. Инструкция за експлоатация на български или английски език
4. Ръководство за потребителя на софтуера за управление
5. Подробен списък с резервни части

Информация за производителя на оборудването

Inetec, Хърватия

<https://www.inetec.hr/en/products>

Прилагаме техническо описание на оборудването от производителя.

ИЗП. ДИРЕКТОР:

Заличено на
основание
ЗЗЛД

д-р инж. Богомил Манчев/



TECHNICAL DESCRIPTION

OF

Ultrasonic Inspection Scanner Systems

ORIGINAL

December 2020

PREPARED BY

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1. INTRODUCTION

The input document “*Market consultation 45842*” with subject “*Supply of Ultrasonic Inspection Scanner*”, provided by Kozloduy NPP EAD informs interested parties that in connection with preparation for awarding a public procurement and determining the estimated value pursuant to Article 44 of the PPA is collecting indicative proposals for “Supply of Ultrasonic Inspection Scanner”

Herein, INETEC proposes through its Distributor for Bulgaria GCRAD *Body Inspection Scanner*, ultrasonic inspection scanner system that covers the defined scope. The technical description of the device is given in the following chapters.

1.1 Body Inspection Scanner System (BIS)



Figure 1. Body Inspection Scanner

System is designed to provide remote ultrasonic pipe/pipe weld testing. It can be used for different pipe diameters and joint geometries.

Body Inspection Scanner System consists of scanner, control unit, portable operator workstation with manipulator control software and auxiliary system. The layout of hole system is shown in *Figure 2*.

Table 1. System description

General	
Remotely controlled	
Simple and fast installation	
Two Axis movement	
Adjustable translation axis	
Radiation resistant	
Adjustable chain guide with stainless steel chain	
Mechanical	
Speed	Up to 110mm/s (depend on OD value)
Pipe diameter	from OD 150mm
Environmental protection	IEC class IP54
Electrical	
Power supply	AC 110/220 V, 50-60 Hz
Operating voltage	48 V DC

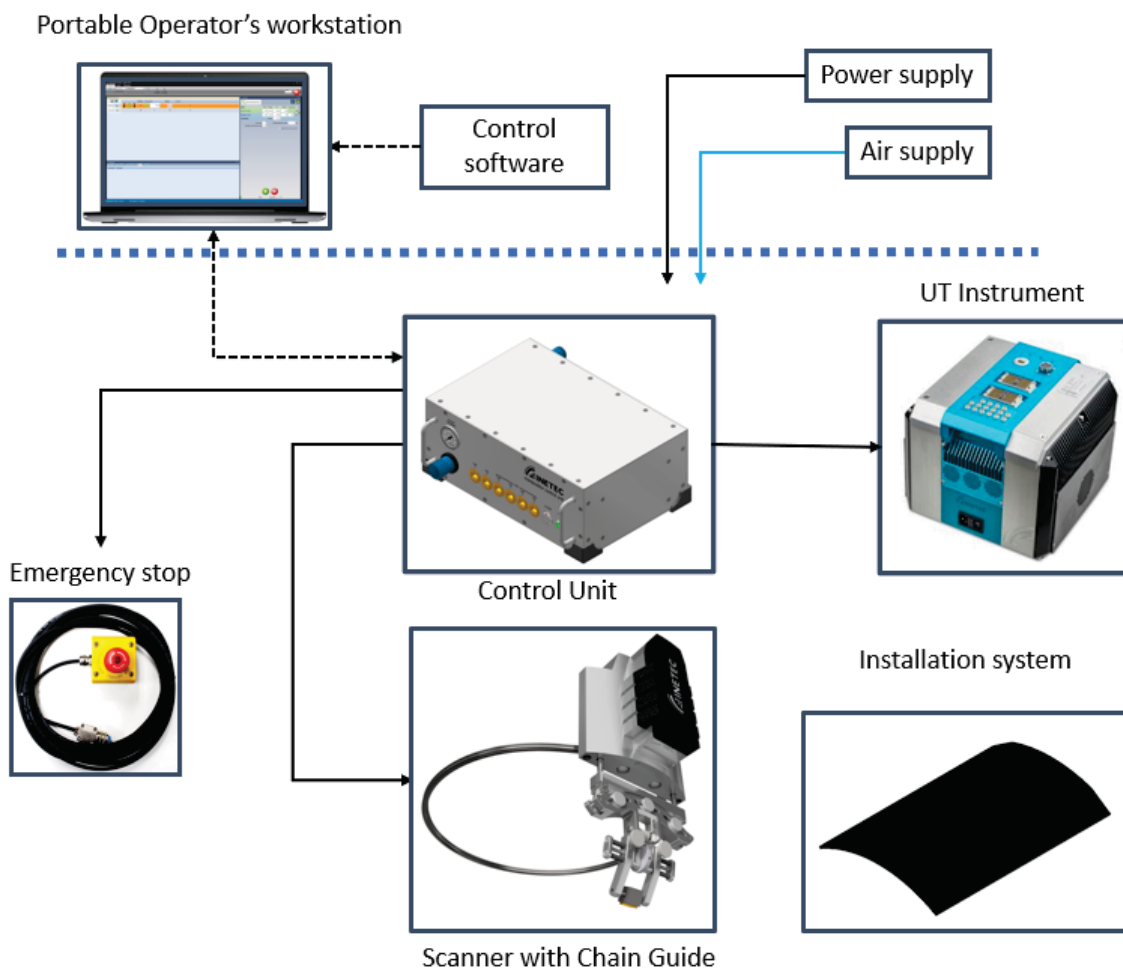


Figure 2. Body Inspection Scanner System(BIS)Layout

System is equipped with adjustable chain guide and installation system for simple wheel detachment from work surface. With simple modification scan plane can be altered (0-90°), what allows inspection of different pipe joint geometries.

Dependable on customer desire, system can be equipped with additional system as video surveillance system, communication system etc.

1.1.1 Body Inspection Scanner

Body Inspection Scanner (*Figure 3*) is designed to provide remote ultrasonic pipe weld testing. It can be used for different diameters.

Adjustable probe holder can accept UT probes of various types (Phased Array or Conventional) and dimensions which provide inspection of different shell thickness. Constant contact between pipe and scanner is ensured by means of four magnetic wheels. System is equipped with adjustable chain guide for guidance and can be simple attached/ detached from the surface by use of installation system.

Motion of the scanner is fully controlled (distance, speed, increment...) from INETEC Motion Control software installed on Operators workstation.

With simple modification scan plane can be altered (0 -90°), what allows inspection of different pipe joint geometries.

Scanner consist of two axis, rotation and translation with accuracy less than 0,1mm.

Translation axis can be modified for different lengths (240 mm movement, 130mm movement), rails of different length can be attached to the translation module to allow linear displacement.

Probe holders are designed in a way that allows probe movement and guaranteeing constant contact with variable geometry.



Figure 3. Body Inspection Scanner, 90° configuration

1.1.2 Manipulator Control software

Manipulator Control (MC) is a software package used to plan inspection, observe the position and control the movement of the INETEC BIS inspection system. It is intuitive, highly automated software which minimize operator intervention during inspection process.

Manipulator Control software (MC) controls the whole system during inspection process. MC, in general, is a software package created for control of the INETECs manipulators. The same software in different configurations runs different manipulators (*Figure 4*).

Manipulator Control supports three modes of operation – the standard mode, the admin mode and the simulation. The standard mode is designed so the manipulator can always be driven safely, without the possibility of accidentally releasing it or causing it to behave incorrectly. The admin mode allows the user full control over the manipulator and can only be accessed with an administrator password, while simulation mode is used for training purposes and can be used without device connected.

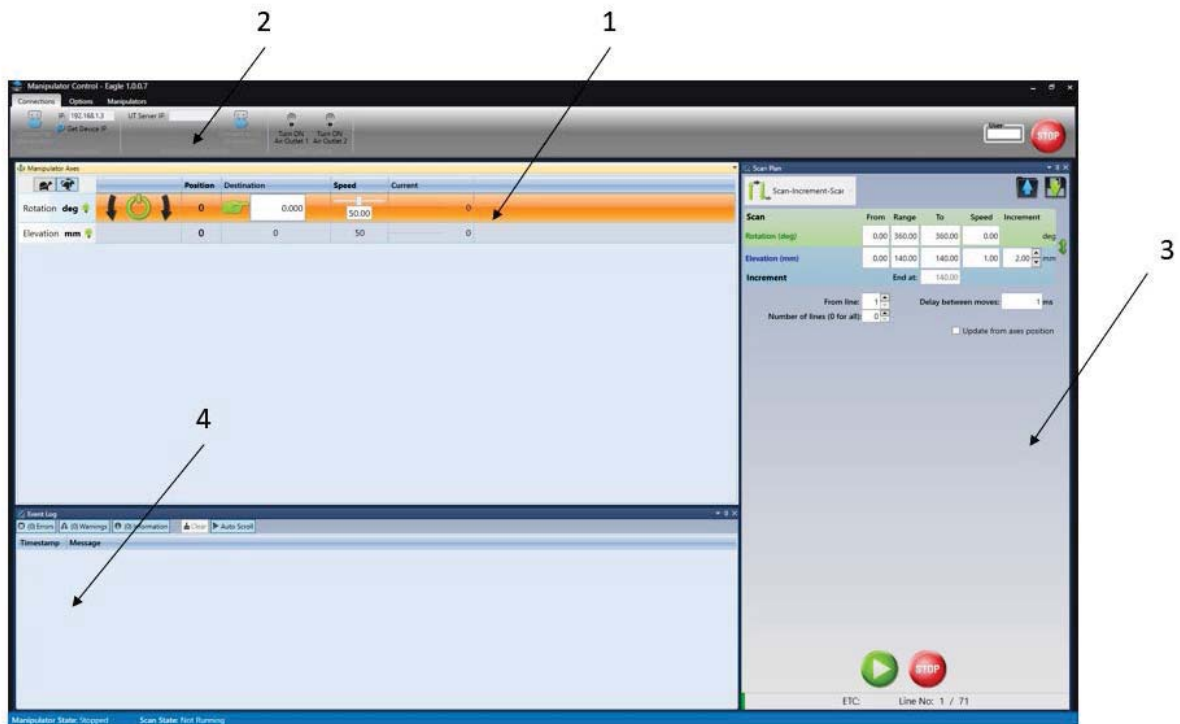


Figure 4. Manipulator Control Software
 1) Axes controls; 2) Ribbon tabs; 3) Scan plan window; 4) Event log window

If wanted MC can be customized and upgraded with additional features as visualization, camera control, or other features depending on customer demands. Please note that customization and additional features can be offered on demand (not included in price).

1.1.3 Operator workstation

System is delivered with portable operator workstation with following configuration:

- Intel® Core™i5 Processors or better
- RAM – DDR 48 GB or larger
- 1 GB graphic card or better
- Licensed Windows 10 OS
- ROM - 512 GB SSD or better
- 15,6” display (39,62cm) Full HD (1920x1080)
- Installed Motion Control Software

1.1.4 Control Unit and Cabling

Control Unit (*Figure 5*) is designed to provide remote control of two axis INETEC manipulators/scanners. Its lightweight design enables fast and safe equipment displace or set up. The total weight of the Manipulator Control Unit is 10 kg what enables single-man manipulation.

Connection between manipulator, control unit and operator's workstation is conducted by standard Ethernet cable. Two Ethernet and four PoE connectors are located on the front panel and either one can be used for operator computer connection. Rest of the Ethernet connectors can be used for various application (camera, communication...).

Back panel (*Figure 6*) contains several connectors both electrical and pneumatic. Power supply and power supply connector with integrated On/Off switch are used for energizing the unit. Connection between scanner and the unit is conducted by scanner cable. Scanner cable is designed with connectors including protection against involuntary disconnection during work process.

Encoders outputs for each axis are located above scanner cable connector, assuring transmission of coordinates to various UT scanners (INETEC Dolphin, Dynaray...)

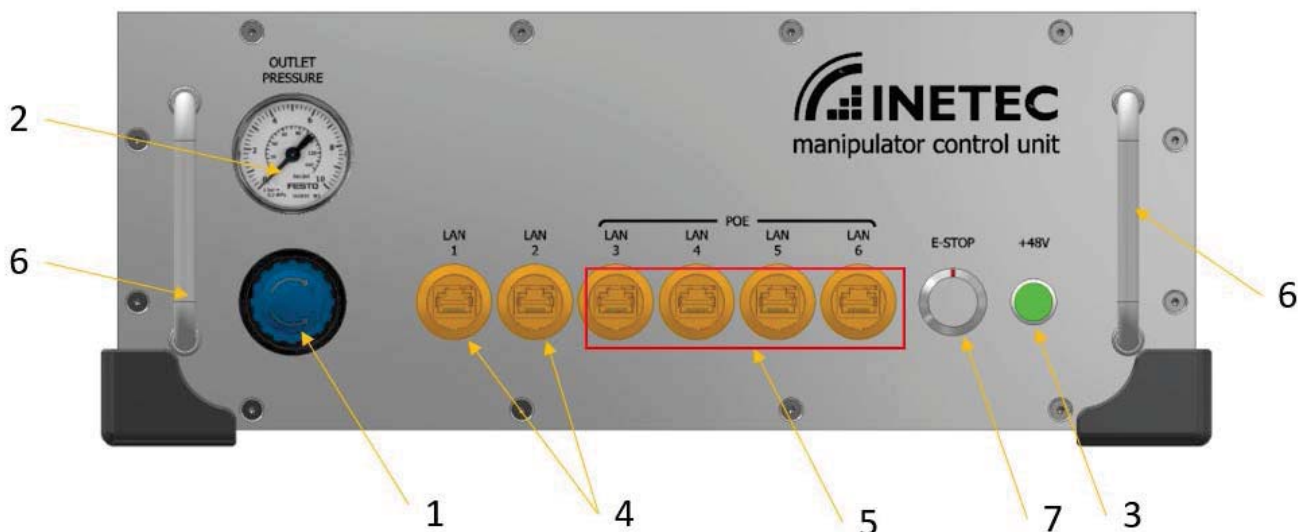


Figure 5. Manipulator Control Unit Front Panel

- 1) • Pressure regulator; 2) • Pressure gauge; 3) Power supply status indicators; 4) Ethernet connectors; 5) PoE connectors; 6) Handles; 7) E-Stop Connector

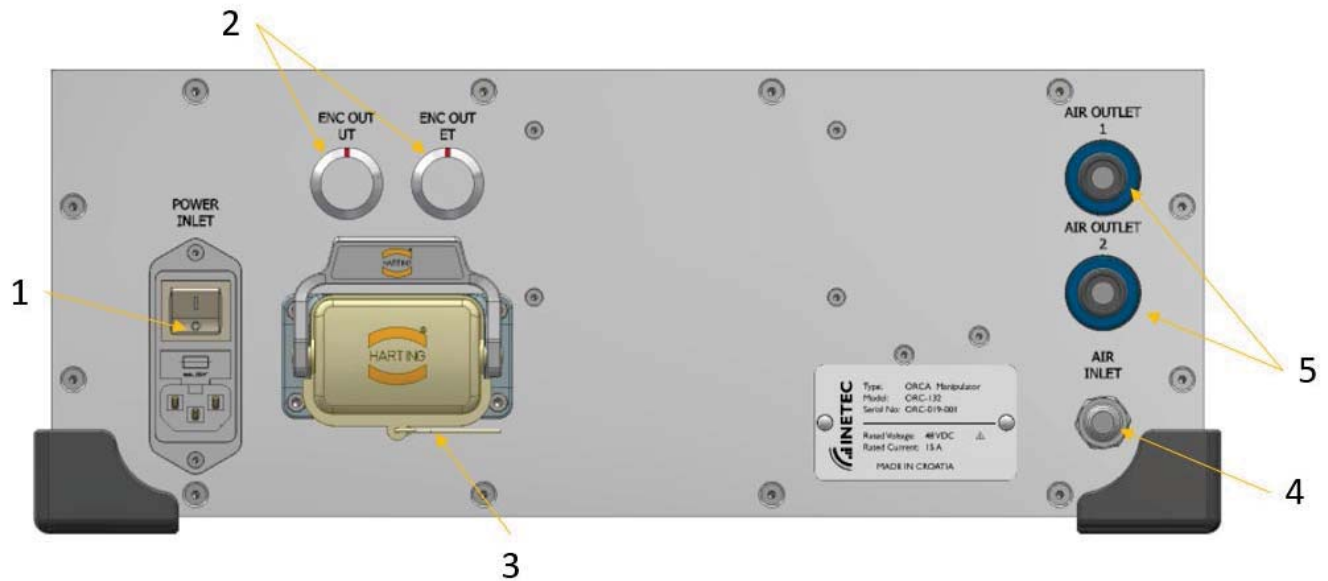


Figure 6. Manipulator Control Unit Back Panel

1) • Power supply connector; 2) • Encoder outputs; 3) Scanner cable connector; 4) Air inlet connector; 5) Air outlet connectors

2. PACKAGING AND SHIPPING

All equipment supplied will be packed in accordance with necessary precaution and protection measures. System will be packed in metal shipping containers (Figure 7).

Simultaneously with shipping of the equipment, all the ordered consumables, spare parts and special tools will be shipped.

All items will be properly packed with name, specification and quantity of each item clearly marked. Each package will contain detailed packing list.

Optionally, DOT 7A metal shipping containers can be offered (not included in price). DOT 7A containers are suitable for long-distance transportation and moving of contaminated equipment. They are also moisture-proof, shock-proof, anti-rust and proof for rough handling.

Please note that DOT 7A containers are not included in the price.



Figure 7. Shipping Container

3. WARRANTY

INETEC warrants the system functioning in the period of one year from the date of signing the Final Acceptance Test. The warranty does not cover damages and malfunction of the equipment caused by working personnel negligence, transport damages, malfunctions due to not authorized modifications, and use in improper environment (excessive heat, fire, high humidity, and crane accidents).

4. AFTER SALES SERVICE

After the warranty period, INETEC can provide customers support in terms of spare parts, consumables, and maintenance according to the separate agreement.

5. EQUIPMENT OPERATION AND MAINTENANCE TRAINING

Optionally (not included in price), equipment operation and maintenance training can be provided by and at INETEC.

The purpose of the training course is personnel familiarization with inspection system manipulator and other BIS components.

Please note that training is not included in the price.

6. DOCUMENTATION

INETEC delivers the following documentation with the Inspection Systems and is included in the price paragraph 1, item 1.1.:

- Technical manual
- Operating Manual
- A detailed list of spare parts
- CE compliance declaration
- Software user manual.

Additional documentation is not included in the price paragraph 1, item 1.1.:

- Risk Analysis Technical Note
- A Failure Modes, Effects and Criticality Analysis (FMECA)
- CE Certificate
- Material intrinsic and/or functional requalification procedure
- Watertightness trials
- PMUC compliance declaration.

7. QUALITY MANAGEMENT SYSTEM

The INETEC Quality Safety Environmental Management System is based on ISO 9001, ISO 14001, OHSAS 18001, ISO/IEC 17025 and meets a quality assurance system in accordance with 10 CFR 50 App. B and ASME NQA-1 requirements from very beginning, and has been certified by RW TUV, from December 4th, 1995 in accordance with ISO 9001 requirements.

Our goal is to fully satisfied each customer according to the highest ethical and legal requirements. We are committed to ensuring that our products and services conform to the expectations, needs and requirements of our customers and are therefore approved to international quality, environmental and occupational health and safety standards.