

Articulated Nimble Adaptable Trunk

ANATERGOARM TMA-500™

Developed and designed by Robotics Design Inc. Canada

Robotics Design Inc. is an innovative Canadian company dedicated to the design and development of robotic, electrical and mechanical systems to resolve complex industrial challenges faced by manufacturers worldwide.

ANAT products are designed with **ANAT** modular technology from Robotics Design Inc. Canada.

Repair and maintenance of turbine components is a dangerous task due to the limited manoeuvring space available in the turbine. Power production stops during repair, which favours a fast solution to repair and maintenance needs that can be quickly assembled and disassembled on site. Without proper equipment for the job, plant owners risk time, productivity, and the safety of their workers.

Robotics Design Inc. created the **ANATERGOARM** TMA-500 specifically to overcome these challenges and provide a fast and easy maintenance and repair method that can bend around obstacles, carry heavy loads, be quickly and easily assembled and disassembled on site with a minimum workforce, and allow workers to perform tasks in complete safety.



The **ANATERGOARM** TMA-500 is a heavy-duty manual ergonomic manipulator arm specialized for repair and maintenance of hydroelectric turbines. It is composed of a series of linked ANAT modules forming a serpentine arm attached to a vertical axis that can be made mobile along a rail, or stationary when fixed to a column using our rugged support system. Its modular design and hyper-redundancy allows it to carry payloads of up to 500kg and manoeuvre around obstacles, making the **ANATERGOARM** TMA-500 highly effective for tasks in limited work-envelopes.

The **ANATERGOARM** TMA-500's arm(s) fold relatively to each other, mimicking the natural bio-mechanical movement of the human body, which offers a larger coverage area and allows users to accurately and effortlessly manipulate heavy loads, improving worker and equipment safety.

The components of the **ANATERGOARM** TMA-500 arrive ready-to-assemble in 2 portable pelican cases. Components are assembled, deployed and stored quickly and easily with two operators, thanks to the **ANATERGOARM** TMA-500's Lego-like **ANAT** modular design. The arm's length can be customized by adding or removing modules to or from the arm, depending on user needs.

This product is protected by US patent 6,323,615 and other international patents pending
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The **ANATERGOARM** TMA-500 is ruggedly built for lasting performance from aerospace aluminum and heat-treated steel, and is an indispensable part of maintaining a safe and functional hydroelectric power plant.

At the touch of a button, the **ANATERGOARM** TMA-500 moves vertically, while horizontal movements are performed by pushing the arm manually. The **ANATERGOARM** TMA-500 maintains its positioning along the vertical axis, even if power intake is removed, allowing users to safely leave the arm unattended at any time. Its innovative SCARA architecture nullifies the effect of gravity, allowing the arm to move horizontally without friction or power consumption.

To manipulate objects, simply lock them to the end effector using the included bars and pins, adjust to desired height pressing the UP and DOWN buttons, and push or bend the arm manually while gripping its handles.

Advantages

- Increases productivity, reduces operating costs and improves the quality of the production
- Reduces work-place accidents and injuries
- Works in limited spaces and around obstacles
- Portable and easy to operate, assemble, deploy and store
- Improves the operator's comfort and safety by providing an ergonomic working procedure and reducing RMI and carpal tunnel syndrome

Key Features

- Fast and easy to assemble and remove portable and re-configurable modular design
- Robust and flexible design which supports pay-loads up to 500kg
- Adjustable arm length: users can add or remove modules depending on their needs
- Optimized work-space coverage: performs a full rotation of 360 degrees without turning the base, reducing space needed to perform.
- Object and arm position retention assured even if power is removed
- Arm remains parallel to the horizontal plane
- Can be designed in dual arm configuration
- Built with anodized aerospace aluminum and black oxide heat treated steel

Applications

- Maintenance and repair of hydroelectric turbines
- Industrial material manipulation
- Handling, assembly and repair of heavy objects in limited work-envelopes

| ANATERGOARM TMA-500 | | |
|---------------------|-------------------|---------------------|
| Modules | Construct | Anodized aluminum |
| | Number of modules | 4 |
| | Weight | 25 kg |
| | Length | 9 inches |
| | Height | 8 inches |
| | Width | 4.5 inches |
| Base | Construct | Anodized aluminum |
| | Weight | 75 kg |
| | Length | 12.5 inches |
| | Height | 33.75 inches |
| | Width | 11.25 inches |
| Carrier | Construct | Anodized aluminum |
| | Load capacity | 500 kg |
| | Weight | 35 kg |
| Circular rail | Construct | Anodized aluminum |
| | Number of units | 16 |
| | Weight | 35 kg |
| Arm | Length | 68.5 inches |
| | Height | 8 inches |
| | Width | 4.5 inches |
| | Number of handles | 7 |
| | Rotation | 360° |
| Input | | 30-125 VAC 50/60 Hz |
| Consumption | | 16 A |
| Construct | | Anodized aluminum |
| Total weight | | 300 kg |

