



mechatron  **SOLAR TRACKER**
D170 **evolution**

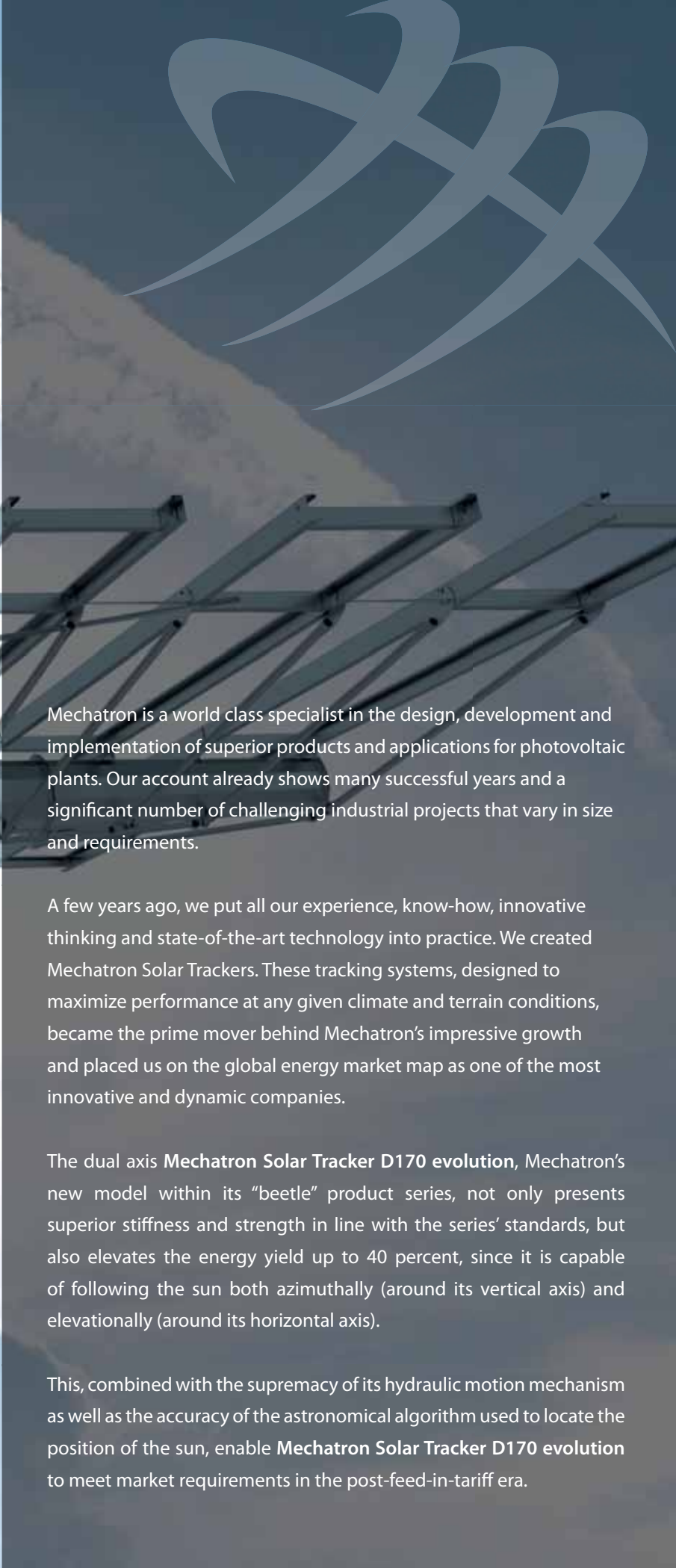
Connected to the Sun

DUAL AXIS
SOLAR TRACKING SYSTEM



mechatron 
SOLAR TRACKER
D170 **evolution**





Mechatron is a world class specialist in the design, development and implementation of superior products and applications for photovoltaic plants. Our account already shows many successful years and a significant number of challenging industrial projects that vary in size and requirements.

A few years ago, we put all our experience, know-how, innovative thinking and state-of-the-art technology into practice. We created Mechatron Solar Trackers. These tracking systems, designed to maximize performance at any given climate and terrain conditions, became the prime mover behind Mechatron's impressive growth and placed us on the global energy market map as one of the most innovative and dynamic companies.

The dual axis **Mechatron Solar Tracker D170 evolution**, Mechatron's new model within its "beetle" product series, not only presents superior stiffness and strength in line with the series' standards, but also elevates the energy yield up to 40 percent, since it is capable of following the sun both azimuthally (around its vertical axis) and elevationally (around its horizontal axis).

This, combined with the supremacy of its hydraulic motion mechanism as well as the accuracy of the astronomical algorithm used to locate the position of the sun, enable **Mechatron Solar Tracker D170 evolution** to meet market requirements in the post-feed-in-tariff era.

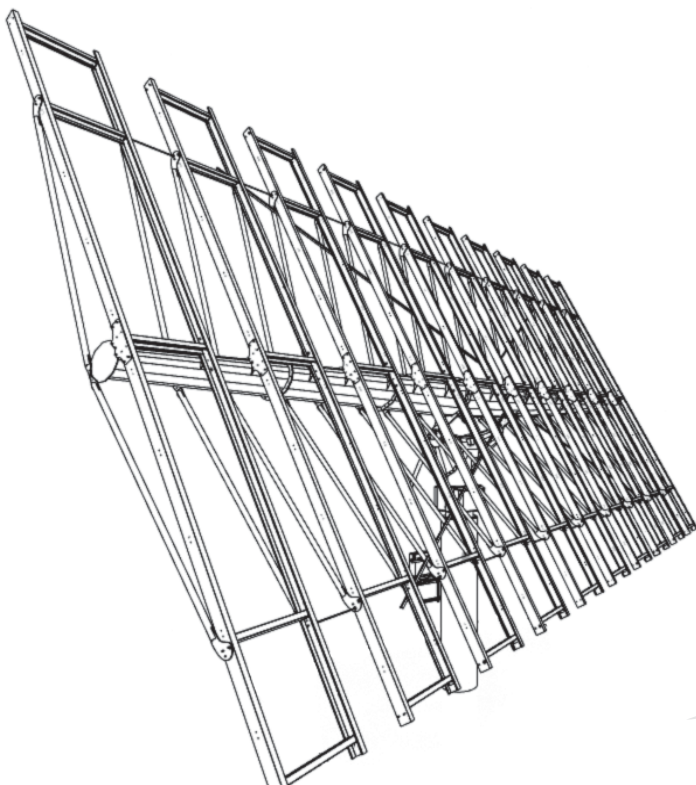
Research: the one-way road to success

Mechatron's Research and Development Department is working today to meet the challenges of tomorrow. This is Mechatron's key to success; continuous, unceasing research towards constant innovation.

A technological marvel inspired by nature

The structure's design principle is inspired by the beetle's exoskeleton, which exhibits superior strength to weight ratio. The structure is a combination of an elliptical tube design (similar to the wing of a wind turbine) and a simple lattice structure that holds the panels.

The new elliptical tube, based on Mechatron's accumulated knowledge, field experience and extensive testing validation, provides significantly superior stiffness and strength. The lattice structure, that supports the PV panels, transfers safely the structural loads. It also provides higher structural rigidity for better panel alignment and higher strength for structural survivability.



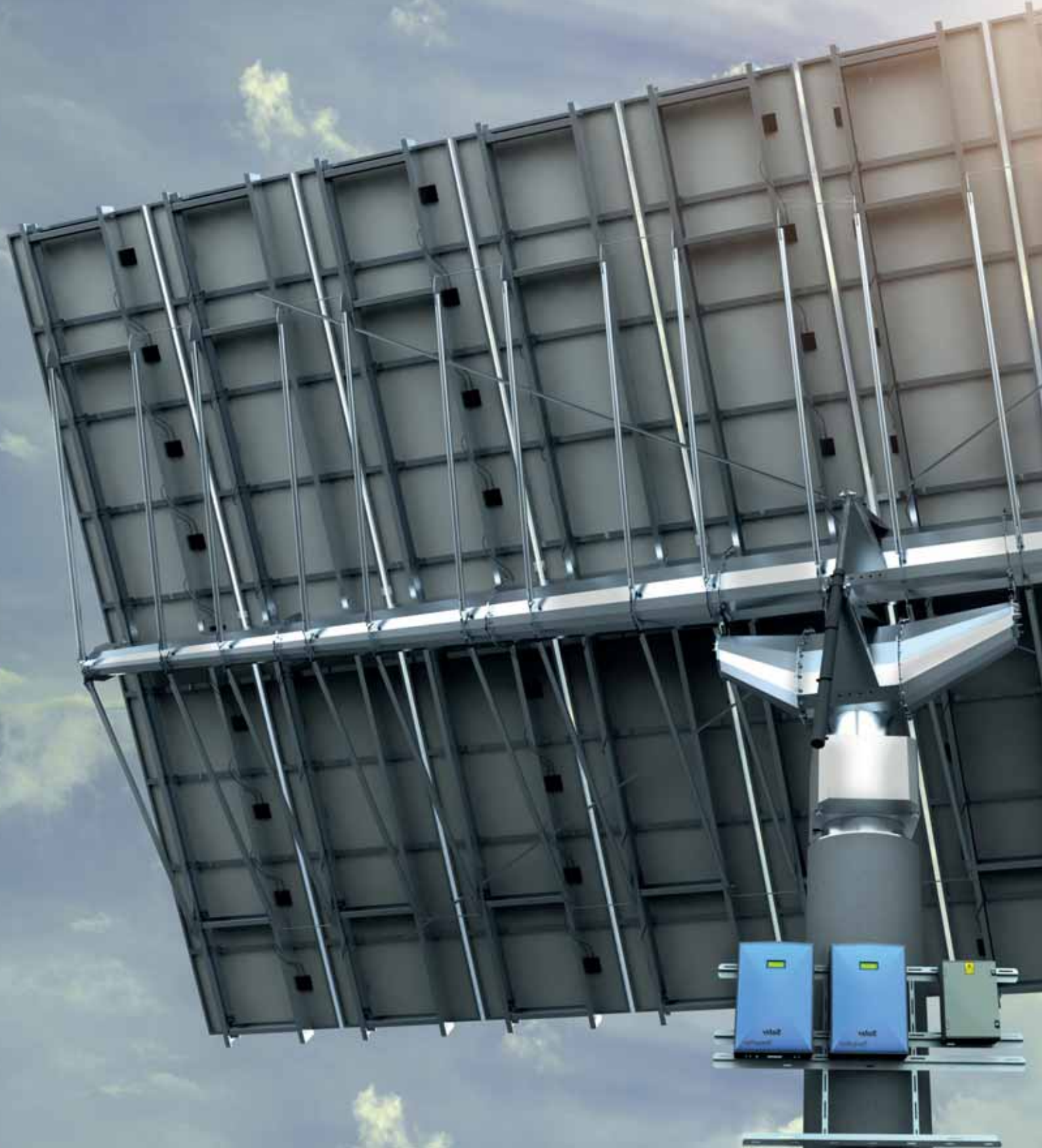
A patented zero-backlash drive mechanism allows for smooth movement and operation. Also, due to the continuous slip capability under strong winds, the drive mechanism is extremely robust and capable of surviving even hurricane conditions.

The above are combined with the innovative and unique features of Mechatron Solar Trackers, such as:

- Advanced hydraulic system to ensure maximum endurance (extended product lifetime)
- High production quality (with certifications)
- Quick and easy installation process
- All modules compatibility

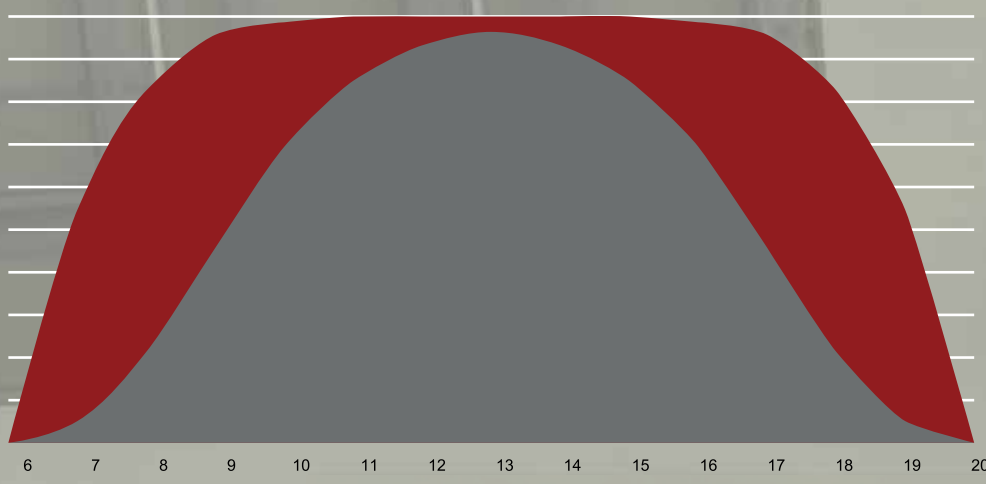
“Astronomical” Performance

Tracking system motion is based on the accuracy of the astronomical algorithm. This contributes to maximum solar radiation intake even when it is cloudy. The result is better quality and up to 40% greater energy production, ensuring greater benefit per unit of installed capacity in comparison to conventional systems.





Energy Production Comparison



Comparison of conventional bases ■ with Mechatron Solar Tracker D170 evolution ■

A Smart Thinking Tracker

Mechatron Solar Tracker D170 evolution is equipped with an advanced telemetry system which informs you of the machinery operations in real time. This is what Mechatron means by intelligent systems.

“Plug ‘n’ Play”

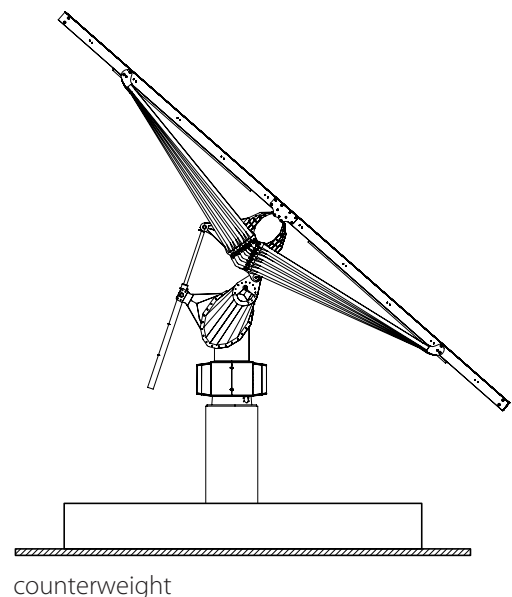
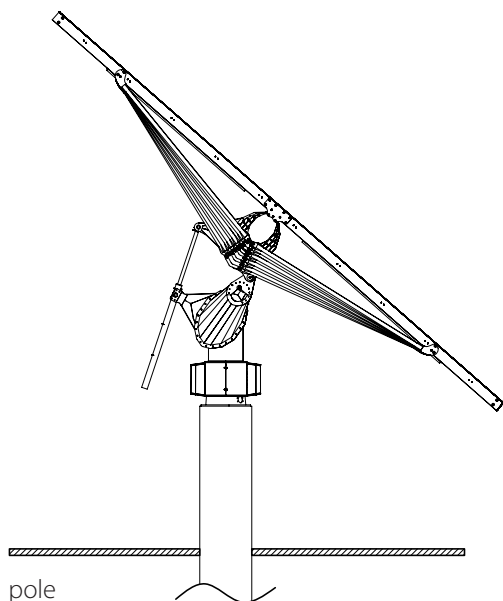
The installation of Mechatron Solar Tracker D170 evolution is quick and easy with the highest degree of standardization (plug & play). All work takes place in the field without need of experts. Photovoltaic panels are clipped on purlins with the mechgrip™ clamp, which has been designed exclusively by Mechatron for that exact purpose, while providing anti-theft protection. Each system operates independently and undergoes many hours of operation testing prior to delivery, in order to satisfy Mechatron’s operating specifications.

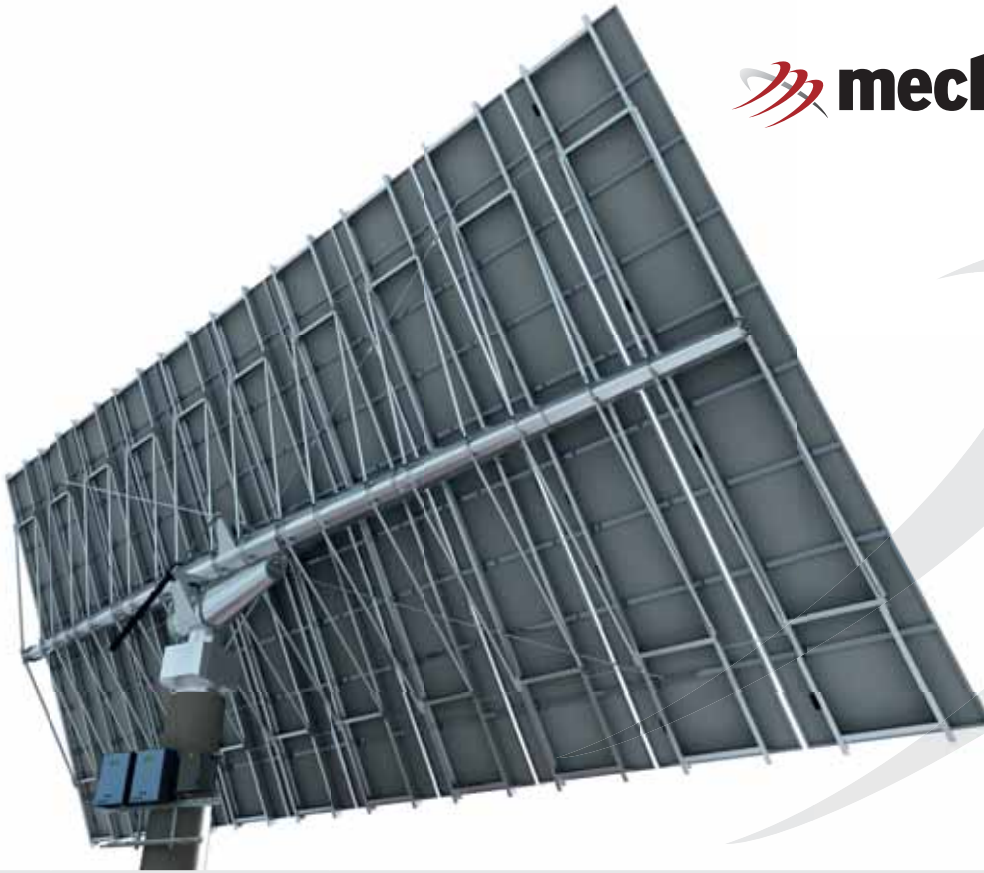
A very important factor taken into account during the design of Mechatron Solar Tracker D170 evolution has been the optimisation of logistics. The total number of parts in combination with the more standardised elements that have been introduced make installation and maintenance even easier. Additionally, their shape has been optimised in order to allow the delivery of a higher number of components within one load and thereby reduce transport costs.



Your premier consulting partner

Apart from choosing the appropriate system, successful investment in photovoltaics depends on other factors. At every stage of the process, our experienced engineers and the installers are here to provide you with exclusive advice and expert solutions.





Main Features

- Dual axis tracking system
- A rectangular geometry frame with available surface of 150-170m²
- PV modules per unit up to 26kW
- 340° of azimuthal motion range
- 0-60° elevation motion range for frame
- Foundation on an over-ground gravitational base with pile or pole mounting
- Solution of an astronomical algorithm for tracking the sun's position

Monitoring

- Autonomous control unit
- Full monitoring in real time through telemetry
- Wind speed sensor

Safety

- Automatic horizontal frame levelling in extreme weather conditions and during power cuts
- Protection of electronic systems through surge protection devices at all input-output points

Construction

- Systems designed according to Eurocode 3
- Hot-dip galvanized steel elements

Installation

- Compatibility with all photovoltaic module types
- Photovoltaic panels are placed and secured with the use of the special Mechgrip™ clamp
- Inherent anti-theft protection

Hydraulic Motion Mechanism

- Zero backlash
- Overload protection
- No wear and tear parts
- No precision parts