

**PLARAD**

**Bolting systems for**

**POWER PLANTS**



**PLARAD<sup>®</sup>**  
Torque & Tension Systems



# THE EXPERTISE TO SOLVE YOUR ASSEMBLY CHALLENGE

We are in the business of solving your problems. Over forty years of success in global markets tells us we are on the right track.

**40 YEARS OF SUCCESS ...  
IN GLOBAL MARKETS**

Our engineers continue this tradition by creating innovative new bolting systems to satisfy your needs.

Being competitive today means facing the challenges of tomorrow.



## SAVE MONEY, TIME AND RESOURCES

Our goal is to identify your needs and develop innovative solutions that save money, time and resources.

**PLARAD®**  
Torque & Tension Systems



# TO WORK WITH PLARAD

## IS TO INVEST IN THE FUTURE.

Energy generation techniques have always been innovative. Thankfully, PLARAD has been there every step of the way keeping a watchful eye on your individual needs.

Nowadays, the turnaround in energy policy entails an innovative leap as far as technology is concerned. New procedures and technologies are finding their way into combined heat and power generation: from its beginnings in reactor chambers, turbines and emission control, right through to the latest power plants and energy sources.

bolt connections. Together with specialists in the field, we design and realize solutions that enable the creation of efficient, lasting connections when constructing new facilities.

Just as important for existing power plants is to be able to rely on safe, efficient tools. Whether for revision or repairs, precise, repeatable bolt connections are indispensable if you wish to achieve the highest level of safety at work and avoid downtime.

### SPECIALLY DESIGNED SOLUTIONS FOR USE IN THE CONSTRUCTION AND REVISION OF POWER PLANTS

Our decades of experience in the industry have taught us about the demands that are placed on

PLARAD bolting systems support and help you not only to save time, but also see to it that you get the maximum return on investment possible.







## CH / RKW.F

Ultra-versatile –  
go-anywhere bolting tool!

- Extremely compact
- Wide range of ring inserts for maximum flexibility
- Light and handy
- Ideal in awkward, low-clearance bolting situations

300 Nm

20,000 Nm



## RE

Ultra-capable –  
concentrated power and versatility!

- Absolute maximum torque
- Bolt sizes up to A/F 320
- Ideal in awkward, low-clearance bolting situations

5,000 Nm

150,000 Nm



## SC

Ultra-powerful –  
setting new standards of safety and precision!

- Rugged, durable lightweight aluminium/titanium case
- Patented separate high-pressure safety cylinder
- Precise, fine-splined ratchet system
- Optional Safety Hold system\*
- 360° rotating reaction arm
- Extra heavy duty loosening-shock absorber

210 Nm

65,000 Nm



## VS / HSX

Ultra-slim –  
unbeatably light and compact!

- Extremely low-profile light aluminium/titanium case
- Patented separate high-pressure safety cylinder
- Superior working speed
- 360° rotating hose connection
- Precise, fine-splined ratchet system
- Optional Safety Hold system\*

250 Nm

45,000 Nm

The products shown represent only a small selection from our extensive product range.  
Ask for more information on the individual products.

\* Further information on the Safety Hold system is provided in our individual product leaflets.

# HIGHLIGHTS FROM OUR MAINTENANCE AND SERVICE RANGE



## G type

**Torque multipliers –  
bolting made easy, anywhere!**

- No outside energy source needed
- High efficiency for minimum effort
- Built to take the knocks
- Ultra-compact size

170 Nm      8,600 Nm

## ST / STM

**Electric turbo torque tools –  
A new dimension in speed and precision!**

- Used in assembly, maintenance and mass production
- Multiposition electronic torque selector
- Light weight
- Unmatched high tightening speed
- Industrial grip and casing
- Vibration-free and low-noise

250 Nm      12,000 Nm

## STA / STAM

**Pneumatic turbo torque tools –  
a new dimension in speed and precision!**

- For high-risk environments (an **ATEX** certified torque tool is also available)
- Pneumatic valve for fine adjustment
- Unmatched high tightening speed
- No need for electrical power
- Shock-free and low-noise
- Low weight

130 Nm      12,000 Nm

## Bolt Tensioner

**Controlled force –  
maximum power at minimum torsion!**

- Performance range 130 kN to 6,000 kN
- No torsion and unaffected by friction
- Exact tension preset
- Withstand maximum pressures
- Universally deployable

Technical data subject to change without notice.

# ONE POWER PACK, ENDLESS POSSIBILITIES

Three performance classes up to 3.5 l/min at 800 bar

**PLARAD IQ-VX** power packs are an upgradable modular system that grows with your needs. The **IQ-VX** series offers basic models in three sizes with differing flow rate.

The **PLARAD IQ-VX** also grows with your needs, with a range of accessories including an extra oil tank and a pressure intensifier.

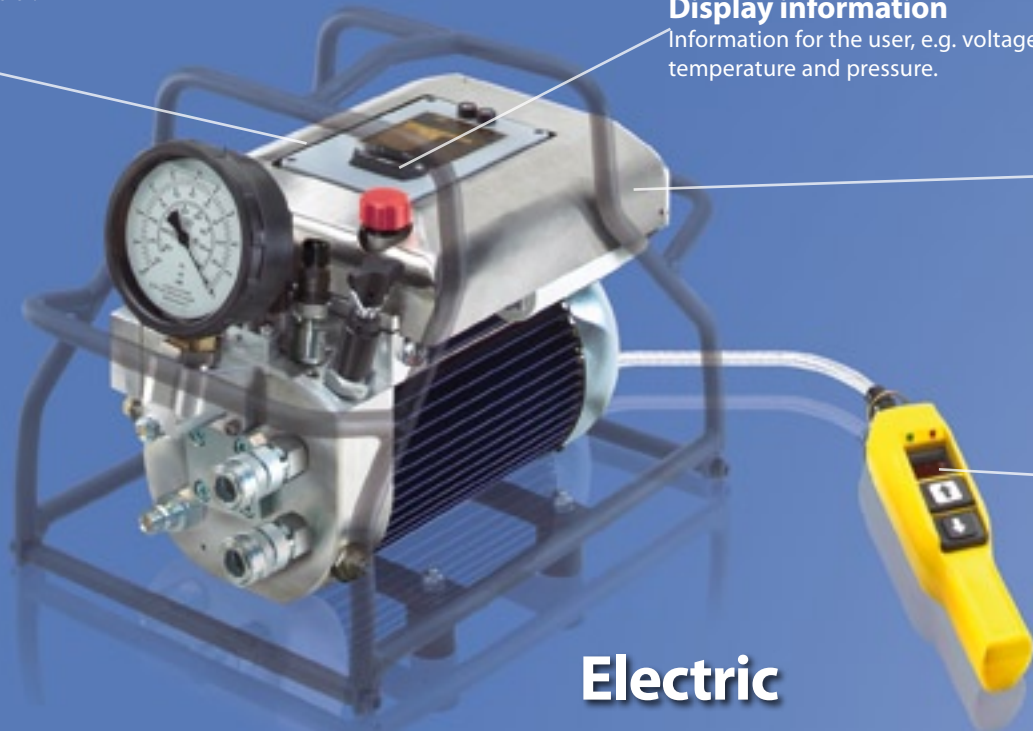
All models from the basic PLARAD VX upwards boast an integral microcontroller and a range of operating modes and tightening methods.

## VAX technology (fully automated)

Safe to use with fully automated tightening, automatic tool shut-off and completion indicator on remote control.

## Display information

Information for the user, e.g. voltage, temperature and pressure.



**Electric**

## IQ-VAX 1 - Z

- Compact
- Light weight

## IQ-VAX 2 - Z

- Excellent handling
- High speed

## IQ-VAX 3,5 - Z

- Minimum payback period
- Extremely high speed



# MULTIFUNCTION POWER PACK TECHNOLOGY FOR POWER PLANTS

## Synchro

For tightening multiple bolts in parallel.

## Rugged

Strong frame to protect the machine.

## Handy and lightweight

Ideally suited for mobile use (from 22 kg).

## Pneumatic

(also available with VAX technology)

## Latest bolting methods

Microcontroller for torque or angle-controlled tightening without tool-mounted sensors.

## Fast two-stage system

with additional gear pump.

## ATEX-compliant

Specially designed for use in explosive atmospheres.

## Digital remote control

Digital display shows applied pressure and status message on assembled joint.

## Optional extras for added versatility

### Fully scaleable

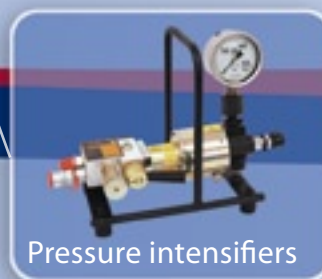
For use with two or more large torque tools.



Extra oil tank

### Extends up to 2,000 bar

For use with bolt tensioners and other high-pressure hydraulic components up to 2,000 bar.



Pressure intensifiers

### Data input/output

Record and print attained torque and other data.



Recording

# PRECISE TORQUE – LASTING, REPEATABLE AND DOCUMENTABLE

Modern power plants need precise torques and pretensioning forces to ensure they run seamlessly and safely.



## “JUST BOLT”

**TODAY, NO SUITABLE BOLTING PROCESS OFFERS THIS.**

PLARAD bolting systems make it easy for you to satisfy these demands. Comfortable operator guidance and the automatic operation of the VAX ensure a safe, quick bolting procedure for creating absolutely exact connections, whether that be decided by the torque or yield point.

What’s more, the intelligent PLARAD hydraulic systems make it possible to repeat a one-off result without further ado.

Quality managers, certifiers and insurers are also aware of how important the quality of a bolt connection is.

To demonstrate the exact torque and pretensioning force achieved, PLARAD offers a range of high-performance documentation systems, which, thanks to their sensor-free measuring and data compilation technology, can be used on-site, without the need for a PC.

**In short – simple and safe for daily use.**





# UNRIVALLED SPEEDS

## FOR MAINTENANCE AND SERVICE

PLARAD bolting systems have working speeds proven to be up to 50 % higher than those of comparable systems from other manufacturers.

### FLANGE WITH 20 BOLTS M 48

Tested with PLARAD MSX hydraulic power wrench and VAX automatic power pack

|   | PLARAD  | Competitor |
|---|---------|------------|
| 1 Bolt  | 40 sec. | 75 sec.    |
| 20 Bolts<br>Torquing time plus changing to next bolt and marking. | 13 min. | 25 min.    |

**Saving: 46 %** with PLARAD systems!

“Time is money” – particularly as far as the huge downtime costs of modern power plants are concerned.

The high working speed and the efficient bolting processes of PLARAD systems noticeably reduce downtime, help to save costs, reduce amortization times and free up resources to your staff.



# PLARAD-SYNCHRO – PERMANENTLY TIGHT FLANGE CONNECTIONS

Every power plant, be it nuclear, coal or gas, particularly contains kilometers of pipelines.

The seamless running of these plants is thus heavily dependent on the quality and stability of flange connections, particularly in the sensitive cooling systems and discharge-lines.

To guarantee a high connection quality, a flange should be tightened evenly. To do this, conventional systems required processes consisting of several stages. Gaping and leakage could only be counteracted by repeatedly tightening the bolts crosswise.

For a given flange containing 20 bolts, it was necessary to reposition the torque tool 99 times! Time and effort were being wasted unnecessarily.

Our Sync function allows the use of several tools simultaneously, allowing processes to occur at two, four or even more points at the same time. This gives you a perfect and permanently reliable join in the shortest time.



# VERIFIED QUALITY FOR OUR CUSTOMERS



Our working relationships are always founded on a top-quality product. Ongoing development and decades of experience keep us always a step ahead of the competition.

In many cases, our expertise is verified with internationally recognized certification and type approval.

## ... ALWAYS A STEP AHEAD OF THE COMPETITION.

Among other things, this includes **DIN ISO 9001:2000** certification of systematic quality management.

The acclaimed **German National Metrology Institute (PTB)** provides us with support in product and acceptance testing.

The global certifier **Germanischer Lloyd** supports us in product certification.





# *fit***2***gether*

**Fit2gether:** You and **PLARAD** products from Maschinenfabrik Wagner are the perfect fit.

Together we join components, tighten fasteners, master engineering challenges and find the most cost-effective solution to match your needs. Our products go hand in hand with full service.

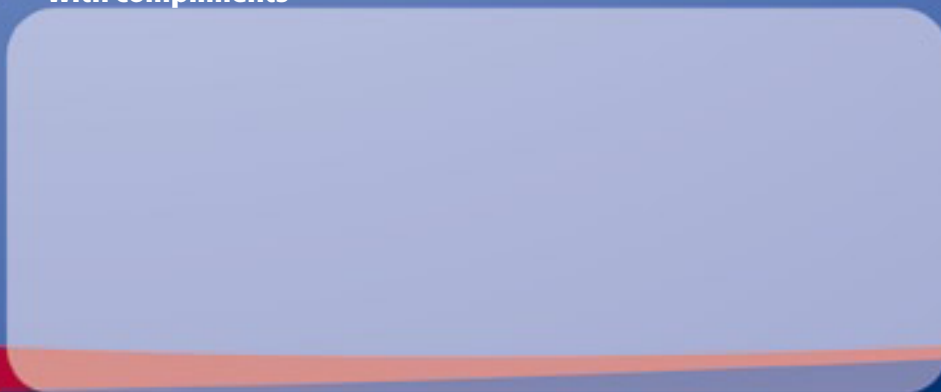
When you buy **PLARAD**, you are entering into a long-term partnership focused exclusively around your needs.

**Fit2gether** is professional knowledge and expertise in bolting.

We meet your needs.

**Fit2gether** – your partnership with **PLARAD**.

**With compliments**



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