

**PLARAD**

**Bolting Systems for the**

**OIL AND GAS INDUSTRY**



**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**

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



# CHOOSE PLARAD, INVEST IN THE FUTURE.

We have been taking up the challenge of developing bolting systems tailored to the special needs of oil and gas companies for many years. In oil and gas extraction, environmental protection and accident prevention are paramount.

Facilities producing and processing fossil resources measure their daily output in millions. Any down-time, any loss of production must be avoided.

We have worked for years together with industry specialists to develop and implement solutions that prevent leakage and guarantee user safety.

To this end, we maintain constant close contact with our clients – leading companies in the oil and gas sector.

This close collaboration, alongside dialogue with universities and engineering institutes, enables us to provide solutions for every bolting challenge.

## **SOLUTIONS SPECIALLY DEVELOPED FOR THE OIL AND GAS INDUSTRY**

We call it fit2gether – a perfect fit between your requirements and our innovative solutions that directly benefits your bottom line.



# QUALITY PRODUCTS FOR

# QUALITY BOLTED JOINT ASSEMBLY



## KXU

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



## HPR

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



## MSX/MXEC

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



## FSX

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.

# OUR HIGHLIGHTS FOR THE OIL AND GAS INDUSTRY



## LTX/XVR/XVK

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



## DEM/DEA

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



## DPM/DPA

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 with a choice of output volumes. The **IQ-VX** series offers basic models in three sizes with differing volume-to-weight ratios.

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

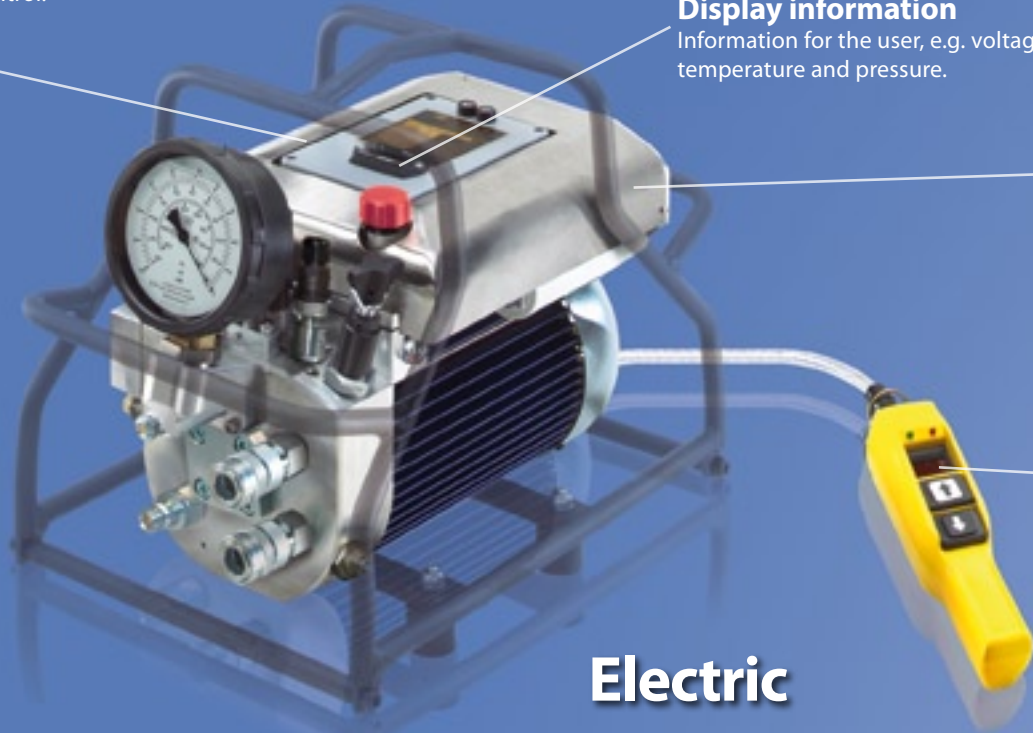
All models from the basic PLARAD VX upwards boast an integral microcontroller and a range of operating modes and tightening methods.

## 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 PACKS FOR THE OIL AND GAS INDUSTRY

## 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 for low torque ranges.

## 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. Optimum weight in every application.

### Extends up to 2,000 bar

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

### Data input/output

Record and print attained torque and other data.



Extra oil tank



Pressure intensifiers



Recording

# PLARAD SYNCHRO -

## PERMANENTLY LEAKTIGHT FLANGES

Only around 13 % of estimated 5-8 million tonnes of crude oil which pollute the oceans escapes from shipwrecked tankers.

**The overwhelming share** originates from ships which wash out their tanks while at sea or **from leakages in oil rigs and pipelines.**

Tightening a flange evenly all round used to be a multiple stage process. The only way to avoid gaps and uneven settling was by tightening the bolts in a criss-cross pattern and in several passes.

With a 20-bolt flange, this could mean repositioning the torque tool 99 times – a major waste of time and effort.

### **... PERFECT AND LEAKTIGHT ASSEMBLY AT MAXIMUM SPEED**

In synchronous tightening, two, four or more bolts are tightened simultaneously. All fasteners are perfectly and evenly tightened in only two passes.



# SPECIAL TECHNOLOGIES

# FOR SPECIAL APPLICATIONS

## EXPLOSION SAFETY

When choosing tools and equipment, the oil and gas industry must apply very high standards of explosion safety. We have taken up the challenge and developed pneumatic bolting systems that meet the high standards permitting their use in explosive atmospheres. Our ATEX-certified pneumatic tool, **DP-ATEX (EX-I M2cT6)**, and our ATEX-compliant pneumatic power pack, **X2P**, are ideally suited for ATEX applications.



## UNDERWATER APPLICATIONS

Deep-sea assembly is another application where only PLARAD tools make the grade. Precise and safe assembly is no problem – without any loss of working speed – down to greater depth. Our users gain the benefits of PLARAD where other tools fail.



# 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.

**... 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 wind power certifier **Germanischer Lloyd** supports us in product certification.



Germanischer Lloyd

# PLARAD BOLTING TECHNOLOGY: INDISPENSABLE

## ... IN EXTRACTION

*Explosion-safe bolting systems for ATEX applications.*



## ... IN PIPELINES

*Synchronous bolting systems for permanently leaktight flanges.*



## ... AND IN PROCESSING

*Minimum payback periods, maximum return on investment.*



# *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**.

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