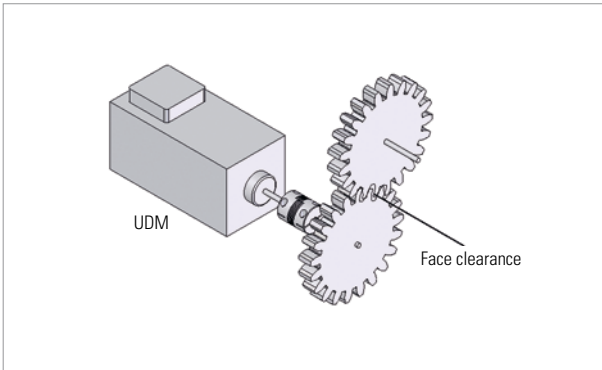


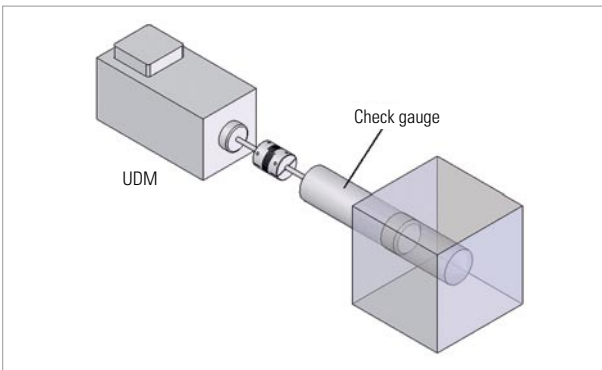
UNIVERSAL TORQUE MODULES

- Integrated torque measurement for optimal quality assurance
- Precise and flexible torque measurement for a broad area of applications

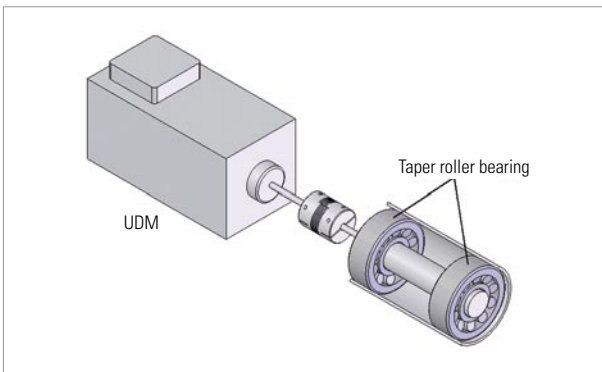




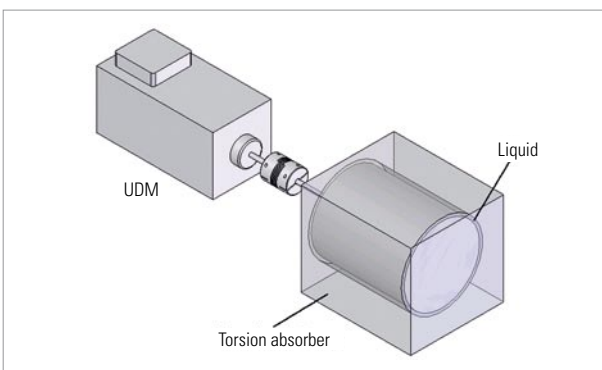
Flange play measurement



Thread testing



Moment of friction measurement



Testing of torsion dampers

AN INTEGRATED SOLUTION OF DRIVE AND TORQUE MEASUREMENT

The Universal Torque Modules (UDM) consists of an AC-servomotor with integrated overload protected torque transducer. They connect the NC-controlled rotation to the monitor for the torque angle curve. These units serve to trigger angle positions precisely and to apply load torques in exactly the right position. Process data is recorded and monitored easily on the PC. The system can be networked via standard bus systems like Profibus-DP, InterBus-S etc.

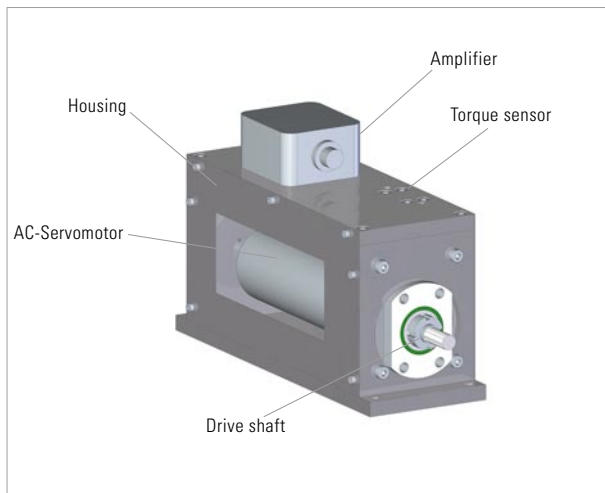
Compared to conventional measuring systems PROMESS Universal Torque Modules offer the user various advantages:

- Flexibility and precision for a broad area of applications
- Low repair and maintenance reduces shutdown times and costs
- High functionality due to easily understandable technology, thus requiring less training
- Low noise levels and clean use
- Extremely robust set-up, suitable for long periods of use

APPLICATION EXAMPLES

The Universal Torque Modules have been conceived for a wide range of applications and are suitable for the following tasks:

- Drag torque measurements in gear construction
- Torque friction measurements on adjusting elements
- Testing of vehicle seats
- 100 % - testing of ball bearings
- Testing of torsion dampers



SET-UP OF THE MECHANICS

The Universal Torque Modules feature a highly robust mechanical design, suitable for long periods of use. The mechanics consists of the following components:

- Housing
- AC-servomotor with encoder
- Gearbox
- Torque sensor
- Amplifier for force transducer

THE CONTROL: MODULAR AND NETWORKABLE

The mechanics are triggered via a power amplifier with an integrated NC-Module. The Riskprocessor fitted in the NC-Module takes over control and monitoring of the assembly unit. It can be programmed comfortably and easily with the PROMESS software using a commercially available PC and thus guarantees the user the highest operating comfort as well as maximum reliability.

Using standard components simplifies the integration of our electro-mechanical assembly unit in production lines with open and industrial communication interfaces.

BUS SYSTEMS

Profibus, Can Open, Interbus, CT-Net

INTEGRATED QUALITY ASSURANCE

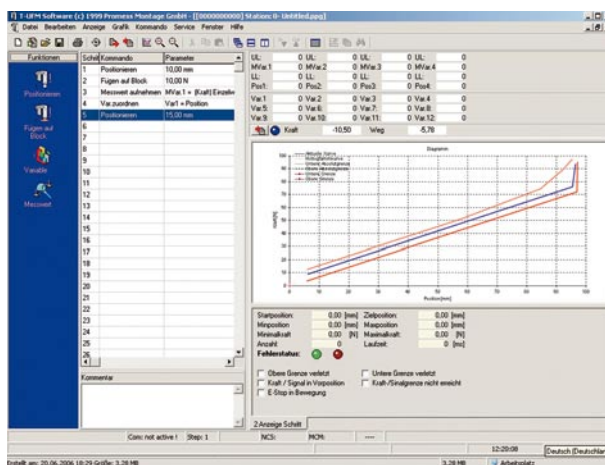
The torque angle curve of a process is displayed on the monitor. Process values are compared with an envelope, monitored and stored. For serial production the necessary quality assurance data is available for the user in the PC program.



THE SOFTWARE

The visualization and programming of the process takes place using a PC. An easy to understand and visually clear interface under Windows 2000/XP provides trouble-free and simple operation. All important information and functions are clearly shown in the main menu.

Parameters and input details necessary for programming can be processed quickly using a very simple and self-explanatory window technology. Different function windows are used one by one to insert the process data until the whole program is set up. All program steps with their specific functions are displayed in the main window.



UNIVERSAL TORQUE MODULES

Dimensions and specifications

MODULE	Load range [NM]	Speed [mm/s]	Art.-No.
UDM 0,1/400	0,1	400	379001
UDM 0,3/300	0,3	300	379003
UDM 5/800	5	800	379005
UDM 20/350	20	350	379020
UDM 20/800	20	800	379021
UDM 50/160	50	160	379050
UDM 100/300	100	300	379100

Further dimensions upon request.

SCOPE OF SUPPLY

MECHANICS:

Universal Torque Module with motor (gearbox), Encoder, Torque sensor, Amplifier for force transducer

ELECTRONICS:

Power amplifier, Braking resistance, Connection plug for Power cable, Resolver and Power amplifier

CONTROL TECHNOLOGY:

NC-Module with firmware, Ethernet Module, Operator software with all functions on CD-ROM

CONNECTIONS FOR:

Motor, Resolver, Torque Sensor

SERVICE:

Installation and Start-up support, Pre-Tests, Maintenance, Process analysis, Consulting

Subject to change.