



PROMESS



Sensing Systems for Manufacturing

Gear Assembly Testing



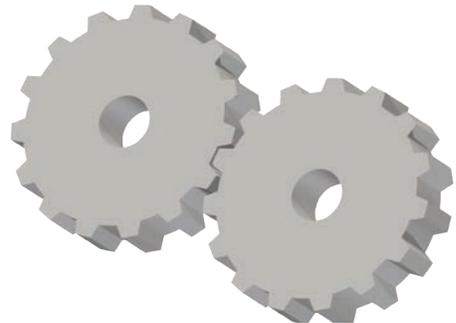
Allows you to perform multiple tests at a single station. Each is accomplished dynamically, capturing all tooth-to-tooth combinations for analysis

GEAR ASSEMBLY TESTING

The Promess PRO, when combined with a Promess TorquePRO System and/or a REMAP (Rotational Electro-Mechanical Assembly Press), is the ideal tool for gear assembly testing applications. This technology combination dynamically measures backlash at every degree of rotation at a rate up to 10,000 samples per second. The system is also able to perform any necessary torque-to-turn and efficiency test requirements.

Backlash Testing

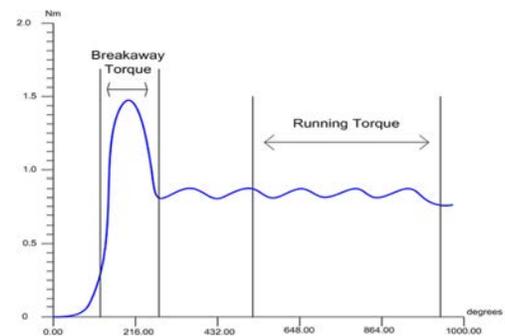
The Promess solution gives you the flexibility to test your components using either a static or dynamic method and the ability to easily switch from one method to the other. In the static test, the output (final driven gear) is held in a fixed position and the movement of the input (driving gear) is measured while it is driven to a load in one direction then the other. The measured movement is the static backlash. Using a dynamic method, a complete profile of the gear assembly backlash can be obtained in a fairly quick cycle. The input gear is turned while a resistive load is applied to the output; first in one direction and then in the other. The backlash is determined by measuring the relative position shift between the input gear and the output gear.



$$Backlash = |\Delta\theta_A| + |\Delta\theta_B|$$

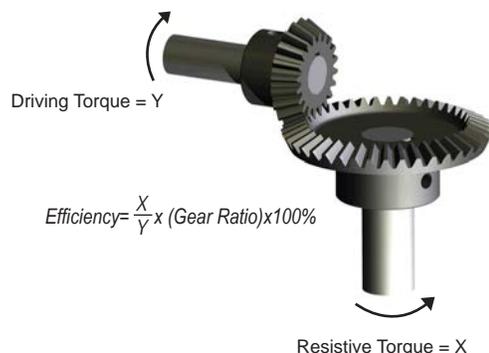
Torque-To-Turn Testing

With torque-to-turn testing, the input (driving gear) can be measured, plotted and analyzed using the Promess TorquePRO System. The test can be run with the output (final driven gear) left free or with a programmable resistive load applied to the output gear. The Promess solution provides a high degree of flexibility in your test procedure. For example, the results of the torque-to-turn test can be used to determine the locations to do a static backlash test. A static backlash test can be run at the locations with the highest and lowest torque (tightest and loosest fit).



System Efficiency

The efficiency of a gear train assembly is determined by calculating the ratio of the torque required to drive the input (driving gear) against the resistance torque being applied to the output (final driven gear). This test can be run using both a static and/or dynamic method depending on the requirements of the assembly to be tested. This test can be configured to run with multiple levels of resistance applied to the output gear allowing you to determine if the efficiency of the gear assembly is affected by the level of load it has to drive.



PROMESS PRODUCTS

REMAP

As every application places different demands on assembly and test systems, Promess has designed a complete line of linear/rotational assembly and test systems to provide a solution for the most demanding applications, with an off the shelf tool- the Rotational Electro-Mechanical Assembly Press (REMAP). The REMAP is extremely compact and versatile due to the complete independent control of linear and rotational motion and the integrated sensing of force and torque as well as position and angle.



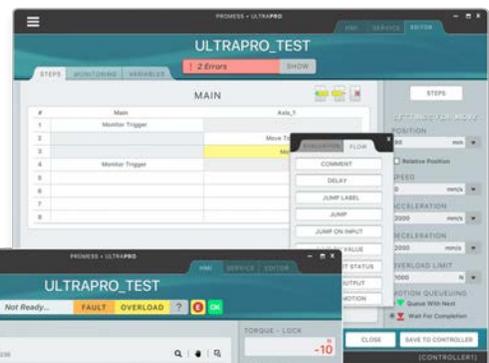
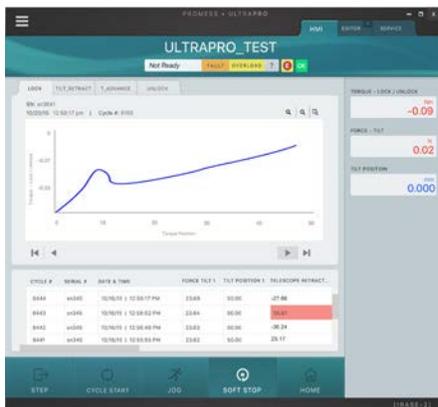
TorquePRO



Promess TorquePRO Systems are used by builders of test machines and end users in a broad range of functional torque testing and measuring applications. Applications include automotive steering, drivetrain component testing and assembly, seat testing, bearing preload testing and torque-to-turn testing.

SOFTWARE

The Promess application software is used to program and visualize the process. The HMI screens allow the user to program and set up the process and test routines. Easy to use templates are used to enter the program information.



Monitoring & Test Capabilities:

- Signature Analysis
- Advanced curve analysis includes:
 - Average force / torque
 - Area under curve
 - Min/max force / torque
 - Customized algorithms
 - Range / peak-to-valley

PART STATS	
CYCLE COUNTER:	127719
FAILED CYCLES:	1829
SERIAL NUMBER:	BBBR5D4

PROCESS DEVELOPMENT CENTER

Promess would like to invite you to our Process Development Center. The PDC is available to help you develop your processes and confirm the Promess technology that is best suited for your application. Call today to set up a visit.

The Process Development Center gives you access to:

- Electric Press Work Stations with capabilities ranging from 0.2kN-300kN
- Torque stations ranging from 1Nm-600Nm
- REMAP (Rotational Electro-Mechanical Assembly Presses) which combine rotational and linear motion in one machine



THE COMPANY



Promess is recognized as a leading U.S. manufacturer of highly adaptive monitoring and motion control systems used by companies around the world to assemble and test their products.



11429 Grand River Road
P.O. Box 748 • Brighton, MI 48116
810-229-9334 • Fax: 810-229-8125
promessinc.com • promess@promessinc.com
Copyright © Promess Incorporated. All rights reserved.



Cloning the perfect part