TURNING A POWER TOOL INTO A LABORATORY INSTRUMENT

…and viceversa!

Adding a high precision load cell to a Coretec servopress drastically upgrades the performance of the CORETEC WPS Work Explorer function.

Coretec systems (as the GS and MS servopress series) are highly sophisticated measurement tools.

They don't just push, they analyze:

Work Explorer Function:

Coretec's controllers feature a Work Explorer mode. This allows the ram to move at a specific search speed until it detects a minute change in force (contact). It then records that exact position, effectively acting as a touch probe.

High Sampling Rates:

Coretec is known for very high-speed data processing (more than 1000 samples/sec), which is critical when using the servopress as a probe to ensure the trigger point is captured accurately.

Enhanced operations:

1. Superior Touch Sensitivity (Trigger Point). The standard load cell built into a servopress is sized for the maximum capacity of the machine (e.g., 5 kN). Because of this, it lacks the resolution to feel very light contact.

The Benefit: An external sensor can be sized specifically for the probing phase (e.g. detecting a 0.5 N contact on a 5 kN machine). This ensures the servopress to stop at the moment it touches the surface without deforming the part, providing a much more accurate Zero Point measurement.

2. Elimination of Internal Friction (Noise). Internal sensors must account for the friction of the ball screw, motor bearings, and seals. This mechanical noise can hide the actual force at the tip of the tool.

burster Italia s.r.l.
Via Repubblica, 10 24035 Curno (BG) Italy
Tel. +39 035/618120
info@acquatigroup.com - www.acquatigroup.com

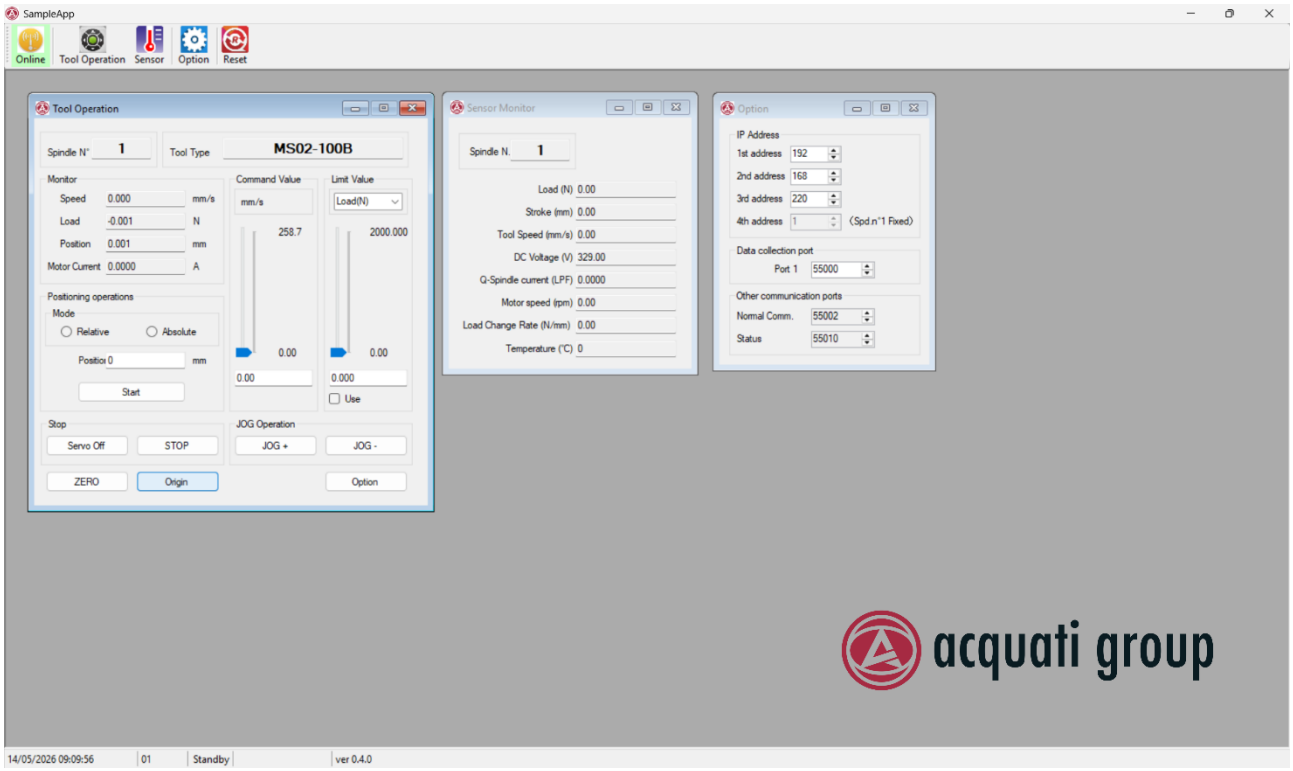
The Benefit: An external sensor mounted directly on the tooling only measures the force applied to the part. This clean signal allows the Coretec Work Explorer function to trigger with much higher repeatability, as it is not affected by the heat or wear or the servopress's internal mechanics.

3. Micron-Level Dimensional Accuracy. When you use a servopress as a probe, you are often trying to calculate a relative dimension (e.g., measuring the height of a component to determine which shim to insert).

The Benefit: Since the calculation is Force + Displacement, any error in force detection leads to an error in the recorded position. A more accurate sensor reduces this uncertainty window, allowing you to hold tighter assembly tolerances that would be impossible with a standard internal sensor.

4. Direct Traceability. In different industries like medical devices manufacturing and aerospace, the servopress is often treated as a Measuring Instrument.

The Benefit: It is significantly easier to calibrate and certify an external high-precision load cell, according to international standards, than it is to calibrate the entire internal drive train of a servopress.



Coretec with external sensors:

The WPS Controller is designed with high-speed analogue inputs specifically to handle this external sensor, making it very easy to implement a secondary, high accuracy feedback force loop.

burster Italia s.r.l.
Via Repubblica, 10 24035 Curno (BG) Italy
Tel. +39 035/618120
info@acquatigroup.com - www.acquatigroup.com