



## Is your drawbar clamping correctly?

Correct drawbar tool clamping force directly influences machine performance, service life, and safety.

- Ensures optimum part finish
- Maintains machine accuracy
- Reduces fretting
- Increases spindle life
- Decreases tool vibration, wear, and breakage
- Reduces machine taper wear
- Helps prevent accidents

**The ForceCheck gage quickly measures drawbar tool clamping force on machining centers. It is easy to operate and displays force instantly.**

**Maintenance staff in a manufacturing facility** A preventive maintenance program that includes periodic measurement of tool clamping force allows problems to be detected and repaired early — before severe machine damage, unexpected downtime, or a serious accident occurs. If part surface finish is poor, the ForceCheck gage will quickly determine if low tool clamping force is at fault. Since even one unanticipated machine breakdown or an expensive scrapped part can easily cost thousands of dollars, the ForceCheck gage can quickly pay for itself.

**Machine builder service personnel** The ForceCheck gage comes complete with carrying case and rechargeable battery. It is ideally suited for service calls in the field to check performance of machine tool clamping systems. When troubleshooting, quick diagnostic verification of a drawbar's performance can prove to be invaluable. Without disassembling the drawbar, a service person can quickly verify that the drawbar is working correctly and rule out drawbar-related problems such as worn or broken springs. Even an untrained customer can check the drawbar force — sending a gage costs much less than sending a service technician.

**Machine and spindle manufacturers** Actual tool clamping force can vary substantially from the calculated theoretical force because friction and proper adjustment play such a large role in a tool clamping system. The ForceCheck gage is an easy way to verify design specifications of the power drawbar in machining center spindles and verify clamping system operation before shipment to a customer.

**ISO 9000 Certification** Verifying drawbar tool clamping force is an integral part of the ISO 9000 certification process for a machine or production process.

**Measuring bars are available for most machines** ForceCheck measuring bars are available for all standard and HSK tapers. Individual measuring bars can be purchased separately and can be used with an existing readout unit. Special measuring bars are available for a variety of applications including KM taper, pallet, chuck, vise, higher force range, lower force range, and other custom requirements.

### What ForceCheck users are saying

- “Today I cannot understand how we could live without a clamping force gage.”
- “I am surprised so little attention is paid to the clamping force — an important part of machine performance.”



[www.force-check.com](http://www.force-check.com)

## Features and Specifications

### Readout

- Selectable pound or Newton display (other units are available)
- Clamping force “peak-hold” display function can be turned on
- 16 character LCD display
- Multiple display languages available
- Auto shut-off saves battery life if the readout is inadvertently left on
- Microprocessor-based readout design allows new functions and improvements to be added
- Data-logging function available for detailed clamping force analysis
- Rechargeable NiMH battery and charger — unlike NiCad, NiMH batteries have no “memory effect” and longer life (if needed, a standard 9V battery can also be used)
- Oil and dirt resistant enclosure

### Measuring Bars

- Last calibration date of the measuring bar is displayed when connected to the readout
- One-piece design means no parts must be assembled for testing different machines
- Uses standard retention knobs
- The ForceCheck system is modular and expandable — measuring bars can be used with any readout
- No set-up or adjustment is needed — measuring results are operator-independent
- Extremely accurate clamping force measurement — electronics are directly at the sensor and sensor-specific calibration with data stored electronically in the measuring bar
- One-year warranty

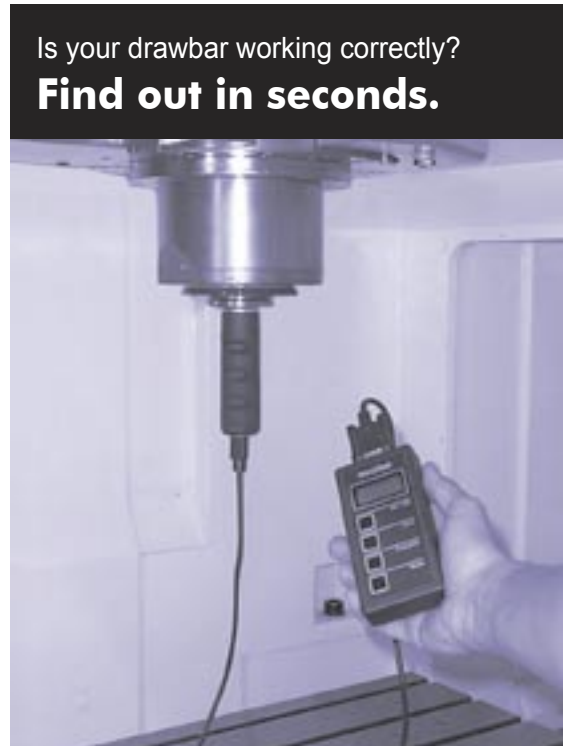


ForceCheck sets come complete with measuring bar, readout, connecting cable, NiMH rechargeable battery, charger, and a heavy-duty carrying case.

## Available Complete Sets

Measuring Bar Size	Order Number
#25 Taper	461.310.825.000
#30 Taper	461.310.830.000
#40 Taper	461.310.940.000
#45 Taper	461.310.845.000
#50 Taper	461.310.950.000
#60 Taper	461.310.960.000
HSK-A,C,E 32 / HSK-B,D,F 25	461.311.132.000
HSK-A,C,E 40 / HSK-B,D,F 32	461.311.140.000
HSK-A,C,E 50 / HSK-B,D,F 40	461.311.150.000
HSK-A,C,E 63 / HSK-B,D,F 50	461.311.163.000
HSK-A,C,E 80 / HSK-B,D,F 63	461.311.180.000
HSK-A,C,E 100 / HSK-B,D,F 80	461.311.190.000
HSK-A,C,E 125 / HSK-B,D,F 100	461.311.192.000

Individual measuring bars can be purchased separately and can be used with the same readout unit. Special sensing adapters are available for a variety of applications including HSK-160, KM taper, pallet, chuck, vise, higher force range, lower force range, and other custom requirements.



Is your drawbar working correctly?  
**Find out in seconds.**

# Adequate drawbar force is a key component of machine performance.

Make sure it is correct with the ForceCheck clamping force gage.