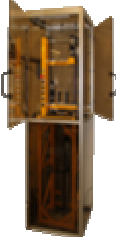







Force Standard Machines

Type	Application	Force range / kN
	Expanded uncertainty 0.002% to 0.01%	
 <p>Dead-weight</p>	<p>Often imitated, never duplicated.</p> <p>GTM dead weight standard machines are used for the precise definition of the force scale and meet the most demanding requirements. The machines are uncompromisingly optimised for precision through their selected material, equipment, drive concept and other important design criteria.</p> <p>Expanded uncertainty 0.01% to 0.05%</p>	
 <p>Jockey-weight</p>	<p>Jockey weight standard machines are not only a cost-effective alternative to dead weight standard machines. Their design principle offers the only known process for allowing alternating loads based on mass and length to determine the remanence of force transducers.</p> <p>Expanded uncertainty <0.01% to 0.02%</p>	
 <p>Lever amplification</p>	<p>The lever load of the dead weights offers an optimal cost-effective alternative for large forces. Thanks to the constant development of GTM lever bearings with strain-controlled joints, measuring uncertainties have now reached levels that could previously only be achieved by dead weight standard machines.</p>	



Hydraulic

Expanded uncertainty 0.02% to 0.05%

Thanks to the double reference transducer invented by GTM, hydraulic standard machines from GTM offer significant advantages in accuracy when compared to other hydraulic systems, even at extended measuring ranges. In addition, the sealed cylinder system allows for virtually silent, energy-saving operation.



Torque Standard Machines

Type

Application

Expanded uncertainty 0.002% to 0.01%

Torque range / N-m



Dead-weight

The lever bearing is one of the most important elements in torque dead weight systems. Taking into account the nominal loads and other requirements, we install either proven GTM joints or precision air bearings in order to offer the best possible solution. Tolerances are not welcome in precision equipment.



Expanded uncertainty 0.01% to 0.05%



Jockey-weight

The ideal standard machine for research, development and production. The combination of the jockey weight principle and strain-controlled lever bearings ensures high precision, swift load reversal and long-term stability.

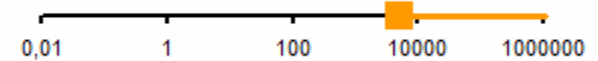


Expanded uncertainty 0.05% to 0.1%



Reference
with lever

When used together with multi-component transducers for force introduction on the lever, precision force transducers constructed according to the bending ring principle are at the heart of this standard machine for large torques. When used with floating lever bearings (invented by GTM), a unique suppression of interference variables is achieved.



Multicomponent Standard Machines



Type

Application

Ranges

Expanded uncertainty 0.2% to 0.5%

According to requirements

Reference For multi-component calibration, we have developed reference transducer systems and procedures in order to trace the forces and torques on multi-component applications back to the forces on the dead weight units. These standard machines are suitable for research, development and calibration purposes.