



Model 646 Hydraulic Collet Grips

Premier grips for fatigue testing of round specimens

Benefits

EXCELLENT REPEATABILITY

- » Minimizes bending strains by clamping onto your specimens in the same position each time

SHORT, STIFF DESIGN

- » Minimizes lateral movements that can cause buckling in your fatigue specimens

EASY SPECIMEN LOADING

- » Just slide your specimen into the smooth collet
- » No threads or button ends to be machined or bolts or collars to be replaced

PRE-DRILLED FOR WATER COOLING

- » Water-cooled 646 grips are ideal for induction heating

MTS 646 Hydraulic Collet Grips are our premier grips for fatigue testing of round specimens. They feature excellent repeatability – clamping onto your specimens in exactly the same position each time. This minimizes the bending strains that can invalidate test results. In addition, their short, stiff design minimizes lateral movement, thus protecting your specimens from buckling due to lateral strains. Both axial and axial-torsional models are available.

Specimen loading is simply a matter of sliding the specimen into the smooth collet. There are no threads or button ends to machine and no time-consuming bolts or collars to replace.

As with all MTS hydraulic grips, these provide a constant, adjustable gripping force, regardless of the test load applied. This prevents damage to soft specimens and specimen slippage during testing.

MTS 646 stainless steel grips feature pre-drilled ports for use with a water cooling kit for induction-heating or short-furnace applications.

The furnace extension option uses the same specimen adapters as the Model 680 grips, enabling high-temperature performance.

be certain.

Specifications

REQUIRED GRIP SUPPLY PRESSURE

- » 45 MPa (6500 psi)

GRIP BODY TEMPERATURE RANGE

- » -40 to +66°C (-40 to +150°F). Water cooling does not change these limits

Options

PRESSURE INTENSIFIER

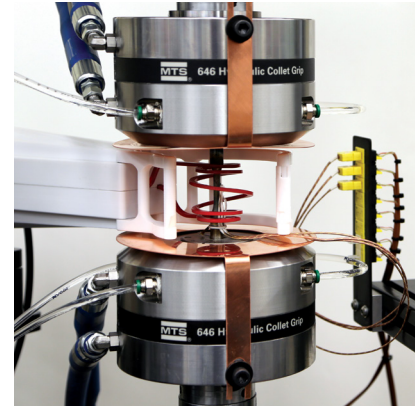
- » Boosts 3000 psi hydraulic pressure to 6500 psi required to operate grips

WATER COOLING KIT

- » Includes manifold and hoses to and from grip

FURNACE EXTENSIONS

- » For use with MTS 653 high-temperature furnace (646.10 grips only). Hand pump required



Axial Model 646

Model	Force	Temperature	Height	Diameter	Mounting Thread Size	Part Number
646.10B	100 kN (22 kip)	-40°C to 65°C (-40°F to 150°F)	114 mm (4.50 in)	171 mm (6.75 in)	M27x2 (1"-14)	042-481-807
646.25B	250 kN (55 kip)	-40°C to 65°C (-40°F to 150°F)	171 mm (6.75 in)	254 mm (10.0 in)	M36x2 (1 1/2"-12)	042-481-705

Grips are sold in pairs.

Axial-Torsional Model 646

Model	Axial Force*	Temperature	Torsional Force*	Height	Diameter	Mounting Thread Size	Part Number
646.10B-11	100 kN (22 kip)	-40°C to 65°C (-40°F to 150°F)	1100 N.m (10,000 in.lb)	147 mm (5.8 in)	171 mm (6.75 in)	M68x2	043-816-502
646.25B-22	250 kN (55 kip)	-40°C to 65°C (-40°F to 150°F)	2200 N.m (20,000 in.lb)	231 mm (9.1 in)	254 mm (10.0 in)	M92x3	043-816-301

Grips are sold in pairs.

* The stated values are the full rated capacities for the individual axis of loading. The combined load rating is specimen size dependent. See manual PN 011-558-204 for combined axial and torsional loads.

Collets for Round Specimens*

METRIC COLLET SIZES

Grip Model	Specimen Type	Part Number
646.10-XX	Round 10 mm diameter	038-058-917
646.10-XX	Round 12 mm diameter	038-058-903
646.10-XX	Round 15 mm diameter	038-058-902
646.25-XX	Round 20 mm diameter	038-059-203
646.25-XX	Round 25 mm diameter	038-059-207
646.25-XX	Round 30 mm diameter	038-059-204

US CUSTOMARY COLLET SIZES

Grip Model	Specimen Type	Part Number
646.10-XX	Round 0.25 in diameter	038-058-905
646.10-XX	Round 0.50 in diameter	038-058-907
646.10-XX	Round 0.75 in diameter	038-058-909
646.25-XX	Round 1.0 in diameter	038-059-202
646.25-XX	Round 1.5 in diameter	038-059-210
646.25-XX	Round 2.0 in diameter	038-059-211

HIGH TEMPERATURE PACKAGE COMPONENTS

Description	Part Number
Furnace Extension Kit for 646.10	045-337-601
Hand Pump	100-254-831
Specimen Adapters	See Model 680
Water Cooling Kit	057-697-502

* Flat and threaded specimen collet configurations are available (see manual PN 011-558-204).



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