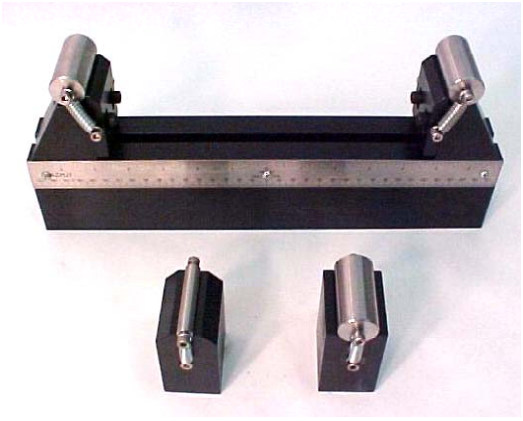
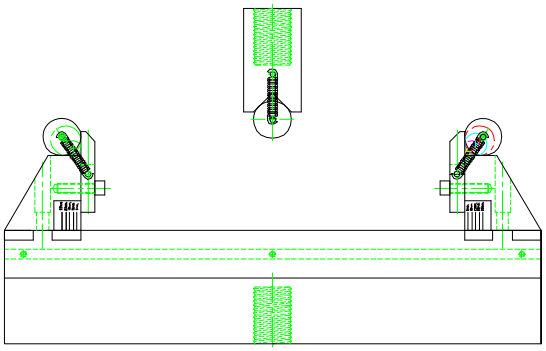
MODEL NO. ASTM.D5045.20

ASTM, FLEX, PLASTIC, PLANE, STRAIN,

THREE POINT FLEXURE FIXTURE (CS)





Specimen:	Width	Up to 2”
	Length	Up to 16”

Fixture:	Construction	High strength steel with protective black oxide finish
	Temperature	-120 to 250°F (-85 to 122°C)
	Mounting	1” -14 threaded couplings
	Capacity	20,000 lbs
	Weight	41 lbs
	Dimensions	14 x 2” x 8” high approximately
	Standard	Manufactured in accordance with ASTM D5045 & E399.

Model No. ASTM.D5045.20 - Three Point Flexure Fixture
Specimen support spans are continuously adjustable up to 12". Specimen widths up to 2.0”. The fixture is constructed from high strength steel with a protective black oxide finish. The loading pins are constructed from heat treated stainless steel. The fixture is supplied with (3) 0.5” diameter loading pins and (1) 1.0” diameter loading pin. Temp Range -120 to 250°F (-85 to 122°C). 20,000 lbs capacity. Includes (3) ea 10mm, 20mm, 25mm rollers.
Support Base - 14" long by 2" wide with a T-slot running the length of the base. The support block separation is measured along a center finding scale located on the the front surface of the support base. Supplied with 1” -14 threaded coupling.
Specimen Supports - 2" wide by 2" tall with alignment rails which fit in the T-slotted support base. The supports are supplied with an adjustable loading pin stop. The stop can be adjusted from 1/8”diameter to 1.0”diameter loading pins which are held in alignment with a tension spring. The supports are free sliding along the support base and may be reversed for short and long spans.
Three Point Loading Head - The loading head is supplied with 1.0" diameter loading pin which is held in alignment with a tension spring. The loading head is supplied with an 1” -14 threaded coupling end.

Material Testing Technology
420 Harvester Court - Wheeling, IL. 60090 – Ph: (847) 215-7448 Fax: (847) 215-7449 E-mail: sales@mttusa.net

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ACCESSORIES

ACC.D5045.2001 - Set of (3) Rollers 5mm Diameter
ACC.D5045.2002 - Set of (3) Rollers 10mm Diameter
ACC.D5045.2003 - Set of (3) Rollers 20mm Diameter
ACC.D5045.2004 - Set of (3) Rollers 25mm Diameter

Upper and lower fixture attachment is supplied with 1" -14 female coupling. (Common adapter sizes include:)
Model No. M03S36 - 1.25" Male Clevis (Type D) to 1" -14 Threaded Stud
Model No. S42S36 - 1.25" -12 to 1" -14 Threaded Step Stud
Model No. S48S36 - 1.5" -12 to 1" -14 Threaded Step Stud
Model No. S60S36 - 2" -12 to 1" -14 Threaded Step Stud
Model No. LN36 - Threaded Locking Nut with Knurled OD

SPARE PARTS

SPA.D5045.2001 - Extra Set of (3) Rollers 1/2" Diameter
SPA.D5045.2002 - Extra Set of (3) Rollers 1" Diameter

REFERENCE DOCUMENT AND TEST METHOD SCOPE:

http://www.astm.org/Standards/D5045.htm
ASTM D5045-14
Standard Test Methods for Plane-Strain Fracture Toughness and Strain Energy Release Rate of Plastic Materials
1.1 These test methods are designed to characterize the toughness of plastics in terms of the critical-stress-intensity factor, KIc, and the energy per unit area of crack surface or critical strain energy release rate, GIc, at fracture initiation. 1.2 Two testing geometries are covered by these test methods, single-edge-notch bending (SENB) and compact tension (CT).1.3 The scheme used assumes linear elastic behavior of the cracked specimen, so certain restrictions on linearity of the load-displacement diagram are imposed.1.4 A state-of-plane strain at the crack tip is required. Specimen thickness must be sufficient to ensure this stress state.1.5 The crack must be sufficiently sharp to ensure that a minimum value of toughness is obtained.1.6 The significance of these test methods and many conditions of testing are identical to those of Test Method E399, and, therefore, in most cases, appear here with many similarities to the metals standard. However, certain conditions and specifications not covered in Test Method E399, but important for plastics, are included.1.7 This protocol covers the determination of GIc as well, which is of particular importance for plastics. 1.8 These test methods give general information concerning the requirements for KIc and GIc testing. As with Test Method E399, two annexes are provided which give the specific requirements for testing of the SENB and CT geometries.1.9 Test data obtained by these test methods are relevant and appropriate for use in engineering design.1.10 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.NOTE 1: This standard and ISO 13586 address the same subject matter, but differ in technical content.