

ROLLER GUIDED BEND TESTER

MODEL BT1D

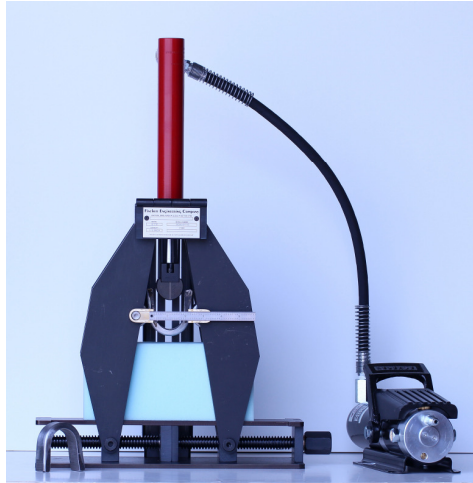
“The New Generation Roller Guided Bend Tester”

The Model BT1D replaces the Model BT1B that we have manufactured since 1987. The BT1B is in all 50 states and many countries around the world. While it has been our most popular bend tester, we have found ways to improve it. The new Model BT1D does everything the BT1B did and more. It is easier to adjust and weighs less.

This model is readily adjustable for the range of materials and thicknesses that are commonly encountered when using the ASME, AWS, API and military codes and standards. The bend tester is intended for fabricators, contractors, utilities, manufacturers, and schools that want a versatile unit which will allow their welding program to grow and to meet their changing needs.

With the Model BT1D, you are not limited to any preset bend radii.

For example, ASME Section IX has five alternative standard radii. The Model BT1D is adjustable for all of these, plus all of the ones listed in other welding codes and standards. It comes standard with a 1-1/2 inch diameter mandrel which is the one most commonly used for 3/8 inch thick plain carbon and stainless steels. To select mandrels for other materials or thicknesses, please refer to the back of this brochure.



Model BT1D is adjustable to meet your present and future needs.

The Model BT1D incorporates the latest improvements allowed by the listed codes and standards.

The bending of the specimen is not impeded by the design of the bend tester. Unlike die-type jigs that use rounded shoulders, the BT1D uses hardened, tool steel rollers to support the specimen during bending. The rollers rotate on heavy-duty needle bearings so that there is no drag placed on the specimen. Die-type jigs tend to pull as well as

bend the specimen, thus creating a more severe test than is necessary.

The bent specimens bottom eject into a foam cushion. The weld surface to be evaluated never contacts any hard surface during or after bending. The specimen cannot get stuck. You won't have to pry it out of a die, as is often the case with die-type benders.

The Model BT1D can bend up to the maximum 3/8 or 1/2 inch thick specimens required by the ASME, AWS, API, and Military codes and standards.

If you are testing thick material, you will use side bend specimens or face and root bend specimens reduced to 3/8 or 1/2 inch thick in accordance with the applicable code or standard.

The BT1D is portable and simple to use. It includes an integral hydraulic cylinder and a separate air-driven pump; all within a weight of 60 pounds. All that is required is a source of 6-9 cfm air at 90-120 psi. Optional electric and hand-powered versions of the BT1D are also available.

SPECIFICATIONS

Code Compliance:	ASME, AWS, API, MIL
Specimen Thickness:	1/8 to 1/2 inch
Mandrel Range:	0.250 to 3.750 inch diameter
Bending Force:	10,000 lb. maximum
Service Required:	90-120 psi air at 6-9 cfm (Pneumatic Version) 115 VAC, 50/60 Hz (Electric Version) 78 lb. max. handle effort (Hand Operated Version)
Weight:	64-73 lb. (All Versions)

Specification subject to change without notice.

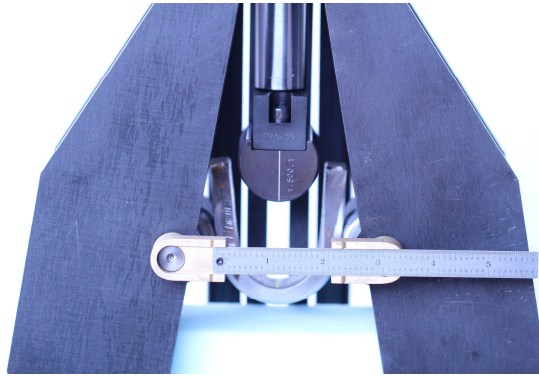
**Fischer
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How to Determine the Bend Radius (and Mandrel) Required for Your Application

There are three factors that determine the bend radius to be used. These are 1) the code or standard, 2) the material being welded, and 3) its thickness. Each code and standard lists the required bend radius and the associated roller spacing to be used for a given material and thickness. The table below gives paragraph references from several popular codes and standards.



Close-up view of mandrel, rollers, and graduated scale

Interchangeable mandrels and adjustable rollers allow the Model BT1D to produce bend radii from 1/8 to 1-7/8 inches. The roller spacing is easily adjusted by means of a hand knob and a precision graduated (by 0.01 inches) scale.

None of the commercial or military codes or standards require you to bend any specimen thicker than 3/8 inch (1/2 inch for API 1104). If you are testing thick material to ASME Section IX, 1-1/2 inch thick steel for example, you are required to prepare side bend specimens which are only 3/8 inch x 1-1/2 inch side bend specimens, can be bent easily by the Model BT1D with the standard 1-1/2 inch diameter mandrel.



Mandrels

WHERE TO LOOK IT UP

Code or Standard	Bend Radius	Description of Test
ASME Section IX:2021	Fig. QW-466.1	Parag. QW-160
AWS D1.1:2020	Fig. 6.13	Parag. 6.10.3.1
AWS B2.1:2021	Fig. A.5A	Parag. A5
AWS B4.0:2016	Fig. 6.1	Parag. 6.8.2
API 1104: 22nd Edition	Fig. 8	Parag. 5.6.4, 5.6.5

BT1D Mandrel and Mandrel Adapters

(Optional)

All mandrels are hardened tool steel. They include our patented knurled surface to reduce the possibility that the specimen will slip sideways during bending. The numerical portion of the mandrel part number is the mean outside diameter, in inches, of the mandrel. The smaller mandrels require an adapter, as shown.

The mandrel listed are the most common ones. For sizes not listed, call for price and delivery.

Mandrel Part Number	Mandrel Adapter Required
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BT1-M0.250	BT1-MA3
BT1-M0.260	BT1-MA3
BT1-M0.436	BT1-MA3
BT1-M0.500	BT1-MA1
BT1-M0.625	BT1-MA1
BT1-M0.750	BT1-MA1
BT1-M0.872	BT1-MA2
BT1-M1.000	BT1-MA2
BT1-M1.120	BT1-MA2
BT1-M1.250	BT1-MA0
BT1-M2.000	BT1-MA0
BT1-M2.063	BT1-MA0
BT1-M2.500	BT1-MA0
BT1-M3.000	BT1-MA0
BT1-M3.500	BT1-MA0
BT1-M3.750	BT1-MA0

HOW TO ORDER

Part No.	Description	Part No.	Description
BT1D	Roller Guided Bend Tester. Includes air-driven pump, BT1-M1.500 mandrel and BT1-MA0 mandrel adapter (set up as shown in this brochure). 22"H x 17"W x 6"D (Bender), 6"H x 5"W x 15"D (Pump) 73 lbs. total	BT1D-HO	Same as BT1D except for hand-operated pump. 6"H x 3.8"W x 13.3"D (Pump), 64 lbs. total
BT1D-E	Same as BT1D except for electric-driven pump. 7"H x 6"W x 14"D (Pump), 73 lbs. total	BT1-MX.XXX	Mandrel (X.XXX indicates the mandrel dia., in inches). Current pricing is available at fischerengr.com

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FISCHER ENGINEERING COMPANY, LLC

WHERE "GOOD ENOUGH" IS NOT GOOD ENOUGH.

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