

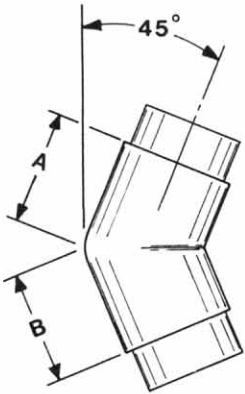
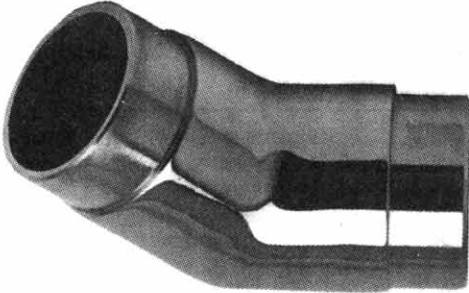
TSM

TUBULAR SPECIALTIES MFG., INC.

13011 S. SPRING ST., LOS ANGELES, CA 90061-1685 • 213/515-4801 TOLL FREE 800/421-2961 CA ONLY 800/521-7548
 DESIGNER SERVICE: 7:00 A.M. TO 5:00 P.M. PACIFIC TIME • TELEX II: 910-346-6362 • FAX: 213/217-0653

409,410, 411,412

45° Flush Angle



	A	B
BH-409	1 7/8"	1 7/8"
	48mm	48mm
BT-409	2"	2"
	51mm	51mm



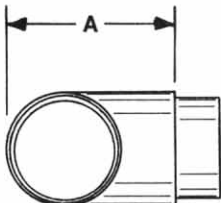
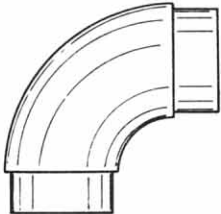
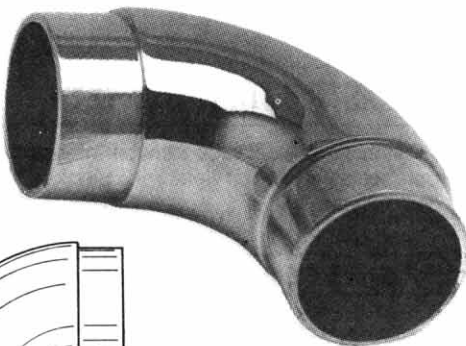
BRASS FLUSH ELBOWS



DESIGN CONSIDERATIONS

- TSM brass components (angles, brackets and tubing lengths) can be combined to create upright, wall-hung, stair, and ramp railings which are decorative as well as utilitarian.
- The flexibility of the TSM brass component system gives a custom look to any application.
- Components are simple to work with in the field, making even stairway and ramp configurations easy to install. Brass tubing can be cut easily with a tube cutter, a circular saw with an abrasive wheel, or a hack saw.
- The natural beauty of the bright brass finish is maintained by regular, frequent cleaning and polishing. For strictly decorative applications or where access for cleaning isn't possible, clear coating is available as an option to prevent oxidation of the finish. However, the clear coating will lose its effectiveness if it becomes scratched. For further information, see Care of Metal Finishes, Reference Section B.
- TSM has the capability of producing custom brass wall hung railing as well as upright, crowd control, and queue rails. Round brass tubing is available in 1" (25mm), 1-1/4" (32mm), 1-1/2" (38mm), and 2" (51mm) O.D. with 12" (305mm) or larger radii.
- TSM can also produce specially designed brass items such as salad bar sneeze guards, slides for buffets/cafeterias, wine bottle storage racks, and custom stemware racks. Please contact the factory with questions regarding custom designs.
- TSM recommends midsupports at maximum 48" (1219mm) intervals for strength in upright and wall hung brass railing.
- It is important to evaluate wall or floor conditions, for any railing is only as strong as its anchoring devices and the surface on which it is mounted.
- TSM recommends that brass handrail work be specified in a separate subsection of Division 5, "Metals," to ensure competent and competitive bids from experienced railing suppliers.

90° Flush Elbow, Rounded



	A
BH-410	2 3/4"
	70mm
BT-410	3"
	76mm

MODEL NUMBERS

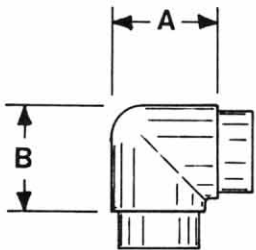
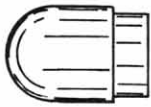
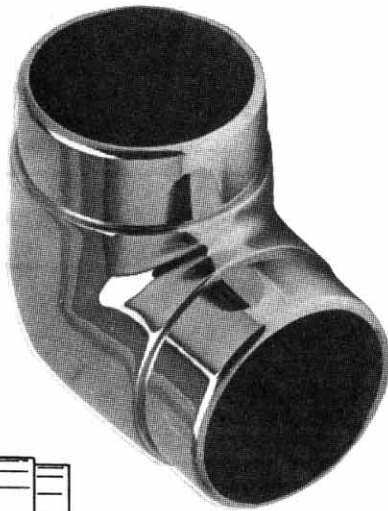
See chart below for description of model numbers.

<input type="checkbox"/> BH-409	<input type="checkbox"/> BH-411
<input type="checkbox"/> BT-409	<input type="checkbox"/> BT-411
<input type="checkbox"/> BH-410	<input type="checkbox"/> BH-412
<input type="checkbox"/> BT-410	<input type="checkbox"/> BT-412



GUARANTEED PRODUCT
 SEE PAGE 3 FOR COMPLETE DETAILS

90° Flush Elbow, Square



	A	B
BH-411	1 7/8"	1 7/8"
	48mm	48mm
BT-411	2 1/8"	2 1/8"
	54mm	54mm



FINISH (select one)

- Uncoated Bright Brass (standard)
- Other (additional charge; see Finish Schedule, Reference Section A, for options)



SUGGESTED ARCHITECTURAL SPECIFICATION

TSM model(s) _____ (fill in model number[s]) Brass Flush Elbow(s) from Tubular Specialties Manufacturing, Inc., Los Angeles, California, (213) 515-4801. Construction: sand cast of brass and machined to controlled dimensions to fit _____ (1-1/2" [38mm] or 2" [51mm]) O.D. tubing. Finish: _____ (select from Finish Schedule). Installation Hardware: 1-1/2" (38mm) x #10 (5mm) Phillips oval head brass wood screws and 1/4" (6mm) x 8/32 (6mm) pan head brass machine screws.



MATERIAL/WORKMANSHIP

Sand cast brass (copper alloy—approximately 60% copper and 40% zinc) machined to controlled dimensions.



INSTALLATION

TSM recommends the Drill and Tap Set, TSM model BDT, which contains a #29 bit and 8/32 tap. Drill through elbow and tubing with bit, thread tubing with tap, and fasten the elbow to the tubing with set screw provided by TSM.

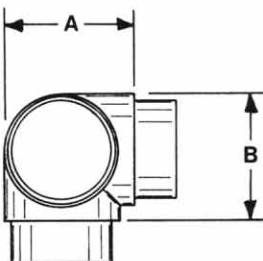
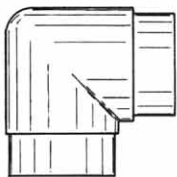
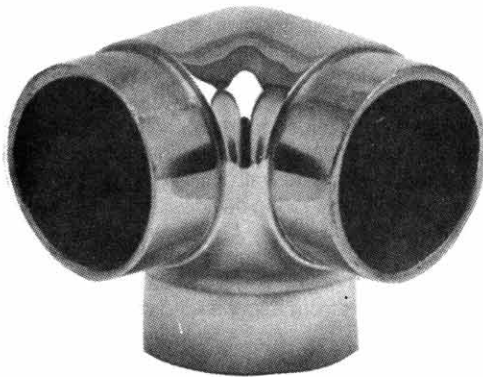
If railing will be subjected to heavy use, TSM recommends using Brass Adhesive, TSM model B-Lok, in conjunction with the set screws for extra strength.



DISTRIBUTION

TSM maintains a worldwide network of distributors. Call your sales representative listed in Reference Section O for the names of those nearest you.

Flush Elbow, Side Outlet



	A	B
BH-412	1 3/4"	1 3/4"
	44mm	44mm
BT-412	2 1/4"	2 1/4"
	57mm	57mm

Brass Flush Elbow Model Numbers

	1 1/2" O.D.	2" O.D.
45° Angle	BH-409	BT-409
90° Rounded	BH-410	BT-410
90° Square	BH-411	BT-411
Side Outlet	BH-412	BT-412