

**CONNECTOR, "WYE," COMPRESSION - COPPER**

**1. General**

This specification is for copper compression connectors of the type shown in the drawings on pages 4 through 10. They are intended for underground, medium voltage, primary cable splices insulated for 4-kV and greater. The connectors may be either a one piece casting or a central casting with soldered on tube connectors. The connectors shall be constructed and tested in accordance with the latest revisions of this specification.

**2. Material**

- 2.1 Connectors furnished in accordance with the provisions of this specification shall be made from materials conforming to the requirements of the Copper Development Association (CDA) Standards Handbook, Part 2, Alloy Data, Wrought Products; and Part 7, Alloy Data, Cast Copper and Copper Alloy Products.
- 2.2 For cast copper products, the preferred alloy shall be CDA Alloy C81500. The manufacturer may use a substitute alloy if authorization is obtained prior to beginning production. Objective evidence indicating that the proposed alloy will provide a minimum conductivity of 75% IACS and contain a minimum of 98.0% copper as determined by chemical analysis must be submitted.
- 2.3 For wrought products, those alloys specified by CDA Standards Handbook, Part 2, to provide a minimum 75% conductivity shall be acceptable.
- 2.4 Aluminum bronze alloys are not acceptable.
- 2.5 All current-carrying surfaces shall be tin-coated in accordance with ASTM B32, Grade Sn 60.
- 2.6 The temper and ductility of the cable sockets shall be such as to permit soldering, indenting, squeezing, or rolling, as may be required for proper attachment without surface cracking or crazing.
- 2.8 Central Cast With Soldered On Tube Connectors Only.
  - The cable sockets shall be made from seamless copper tubing or rod which will not lead to chemical or galvanic corrosion of the connectors.
  - The product used to join cast and wrought sections of these connectors, if required, shall provide electrical joint conductivity which does not degrade the performance of the connector.

**3. Construction**

- 3.1 The connector shall be symmetrical about the center axis except where one cable socket is smaller. The smaller socket shall be located on the tap branch of the wye.
- 3.2 Cable sockets shall have tapered ends with rounded edges, the slope of the taper being not greater than 12 from the connector axis.
- 3.3 The fit of the cable sockets for the various sizes of cable shall be such as to facilitate installation and provide the required electrical and mechanical properties when properly indented or pressed on conductors that are within the allowable tolerance range.
- 3.4 The body shall be cast to dimensions and tolerances that will preclude more than  $\pm 1/32$ " variation in the cast and wrought portions of the assembly. When legs have different diameters, the body shall be smoothly blended to avoid a step in excess of  $\pm 1/32$ " in the connector at the solder joint or elsewhere.
- 3.5 The dimensions and conformation shown in the drawings in this specification are considered optimum by Seattle City Light. If the manufacturer produces a similar item designed for this application the dimensions of which do not vary by more than 10%, that item may be approved if it complies with all other requirements of this specification.

**4. Marking**

Each connector shall have permanent markings showing conductor size, tool, and die requirements, manufacturer's name or trademark, crimp locations, and the manufacturer's catalog number (if any) of the connector.

standards coordinator	standards supervisor	unit director
 Bill Shoemaker	 John Shipek	 Pamela S. Johnson

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**5. Performance Requirements**

A completed compression connection, indented or pressed in accordance with the manufacturer's instructions, shall provide electrical conduction equal to or greater than an equivalent length of uncut conductor when measured between points one-quarter-inch beyond each end of the connectors. This test shall be performed using bare conductors.

**6. Tool-Die Requirements**

Stock Number	Connector Main-Main-Tap						6775.10
		3/0	350	500	750	1000	Page Number
663506	3/0-3/0-3/0	U27RT #14	–	–	–	–	3
663524	350-350-3/0	U27RT #14	U31RT #18	–	–	–	3
663530	350-350-350	–	U31RT #18	–	–	–	4
663538	500-500-3/0	U27RT #14	–	U34RT #20	–	–	4
663544	500-500-500	–	–	U34RT #20	–	–	5
663559	750-750-350	–	U31RT #18	–	U39RT #24	–	5
663561	750-750-750	–	–	–	U39RT #24	–	6
663562	1000-1000-350	–	–	–	–	P44RT	6
663563	1000-1000-3/0	U27RT #14	–	–	–	P44RT	7
663564	1000-1000-500	–	–	U34RT #20	–	P44RT	7
663565	1000-750-750	–	–	–	U39RT #24	P44RT	8
010129	1000-1000-1000	–	–	–	–	P44RT	8
663567	1000-750-350	–	U31RT #18	–	U39RT #24	P44RT	9

**7. Testing**

- 7.1 Seattle City Light reserves the right to test connectors supplied. Testing may be nondestructive, destructive, and/or analytical and may include, but not be limited to, radiographic, metallurgical, or chemical methods.
- 7.2 If testing is required, samples will be selected randomly in accordance with Mil-Std 105E, AQL 1.0, normal inspection Level 1. If the sample selected is not found acceptable, the lot shall be rejected. The manufacturer shall submit certified test reports from an independent testing laboratory indicating that a random sample of the replacement lot of new parts, taken in accordance with Mil-Std 105E, conforms with the requirements of this specification.
- 7.3 Following receipt, evaluation, and approval of the test reports, the vendor will be authorized to ship the lot covered by test reports. The vendor will provide positive identification for the parts tested and the test reports.
- 7.4 The cost of any testing required to verify quality of the product as a result of a previous rejection shall be the responsibility of the manufacturer.

**8. Packaging and Shipping**

Connector shall be packed and shipped in such a manner as to protect the individual connector from damage during shipment. Each shipping container shall be marked with the manufacturer's name, City Light Stock number and quantity of connectors contained.

**9. Stock Unit: EA.****10. Approved Manufacturer: Gil's Aluminum and Core Shop (Order by description)**

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11. Figures, in order by stock number

Figure 11.1

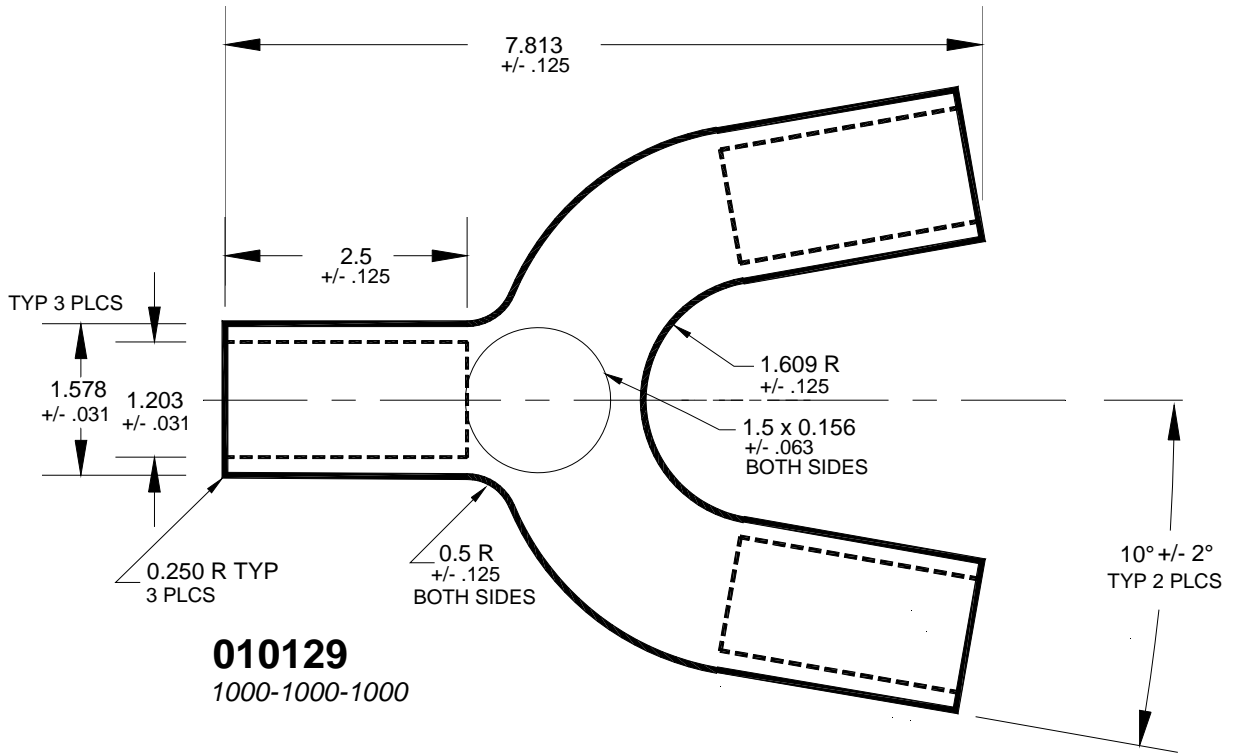
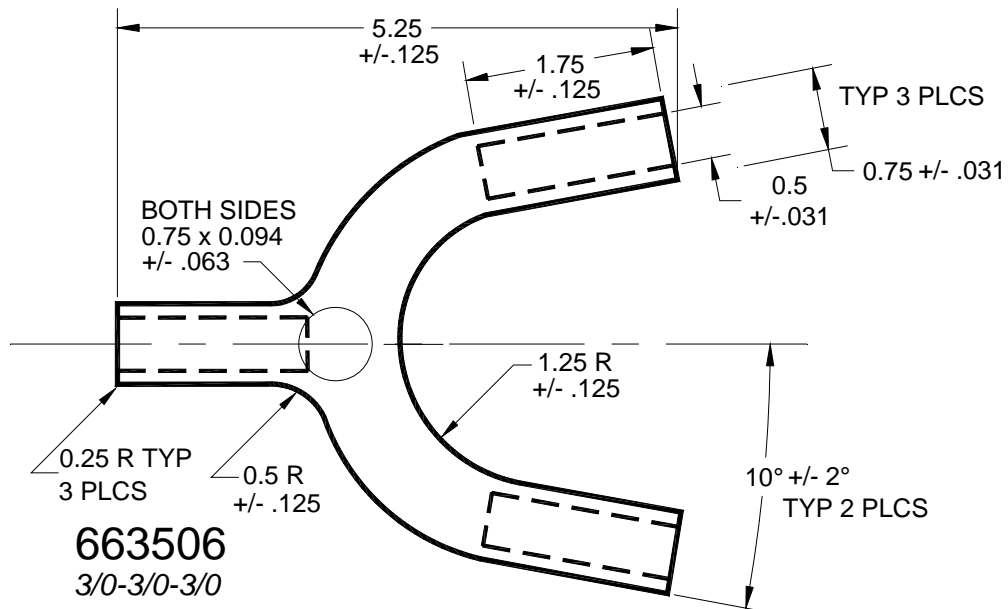


Figure 11.2



**MATERIAL STANDARD**

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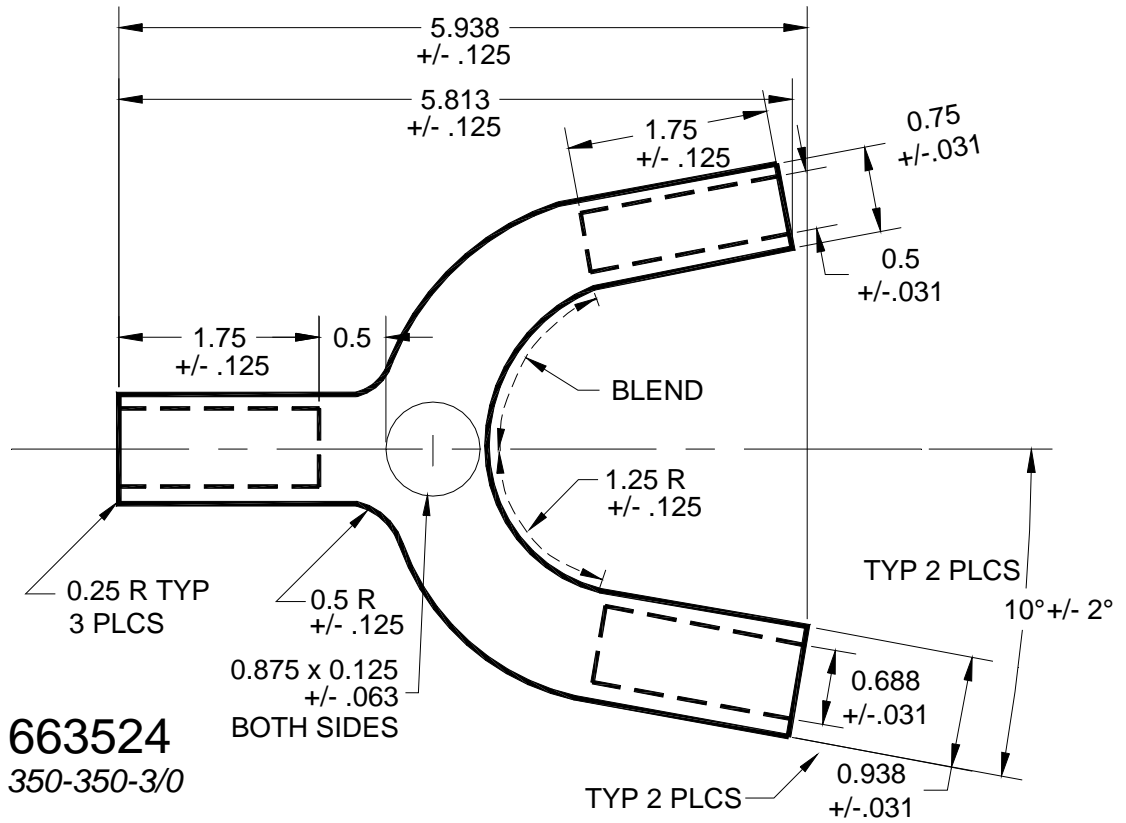
standard number: **6775.10**

superseding: April 17, 2003

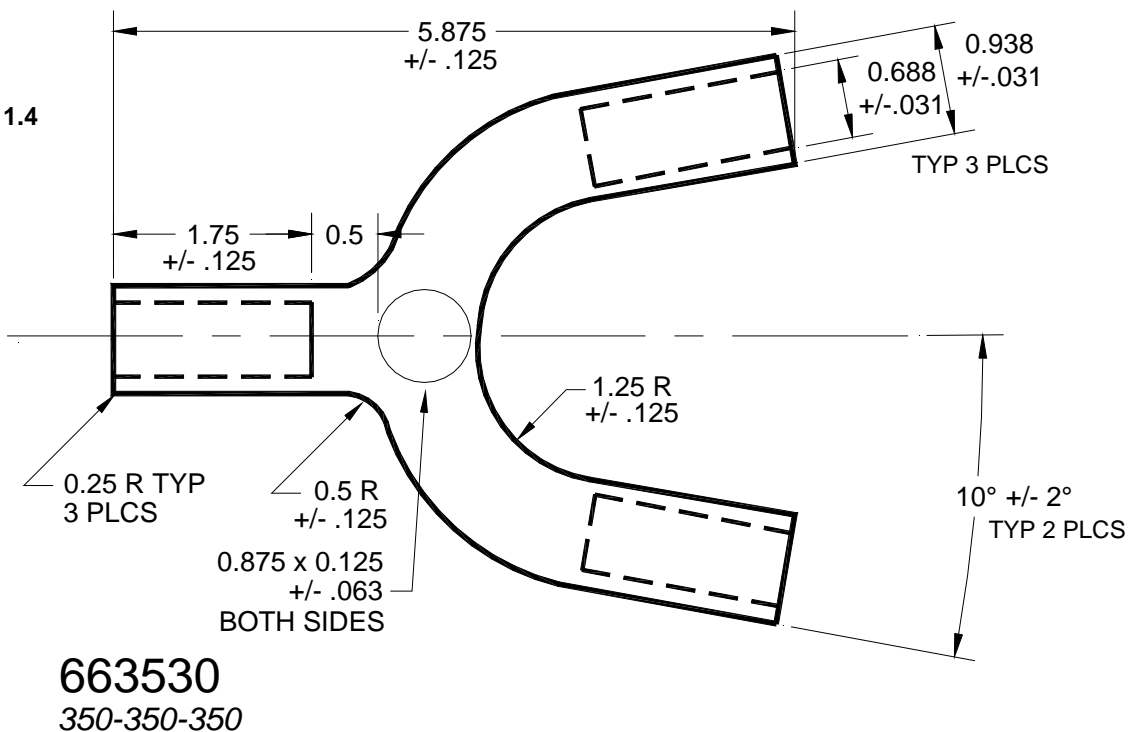
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**Figure 11.3**



**Figure 11.4**



**Figure 11.5**

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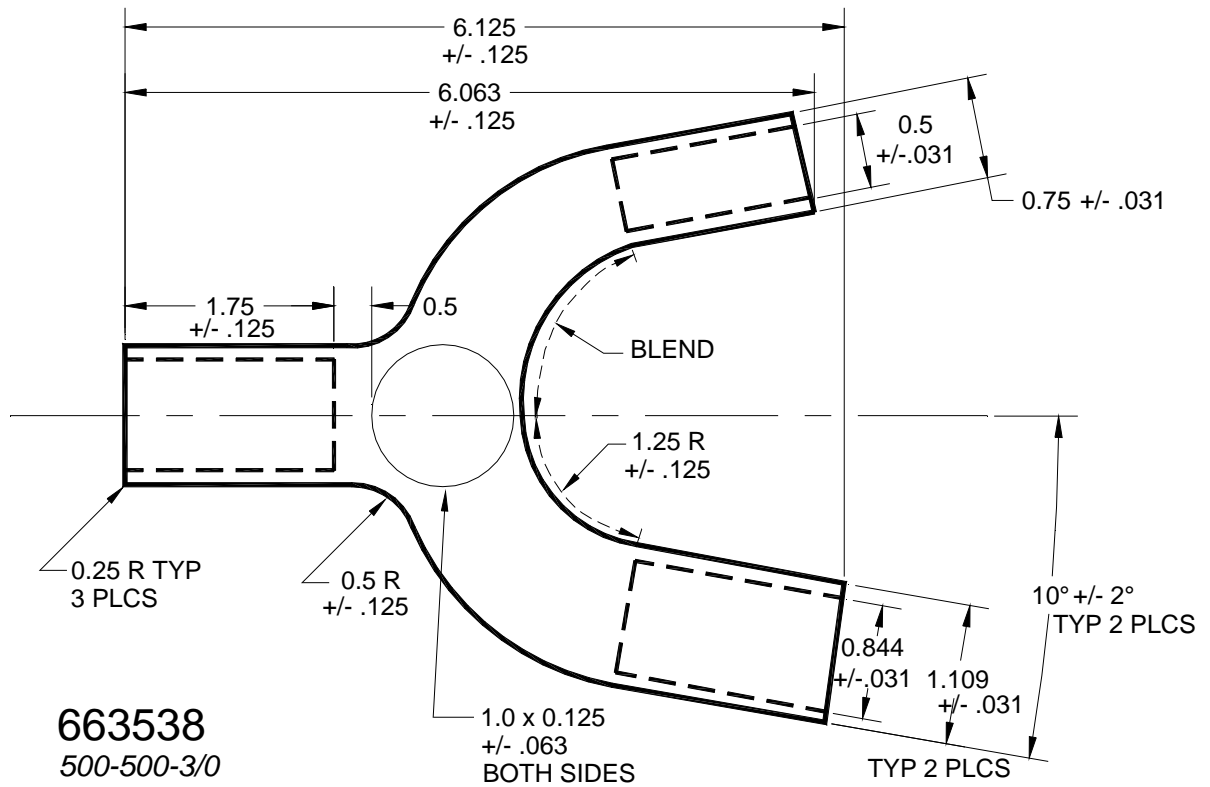
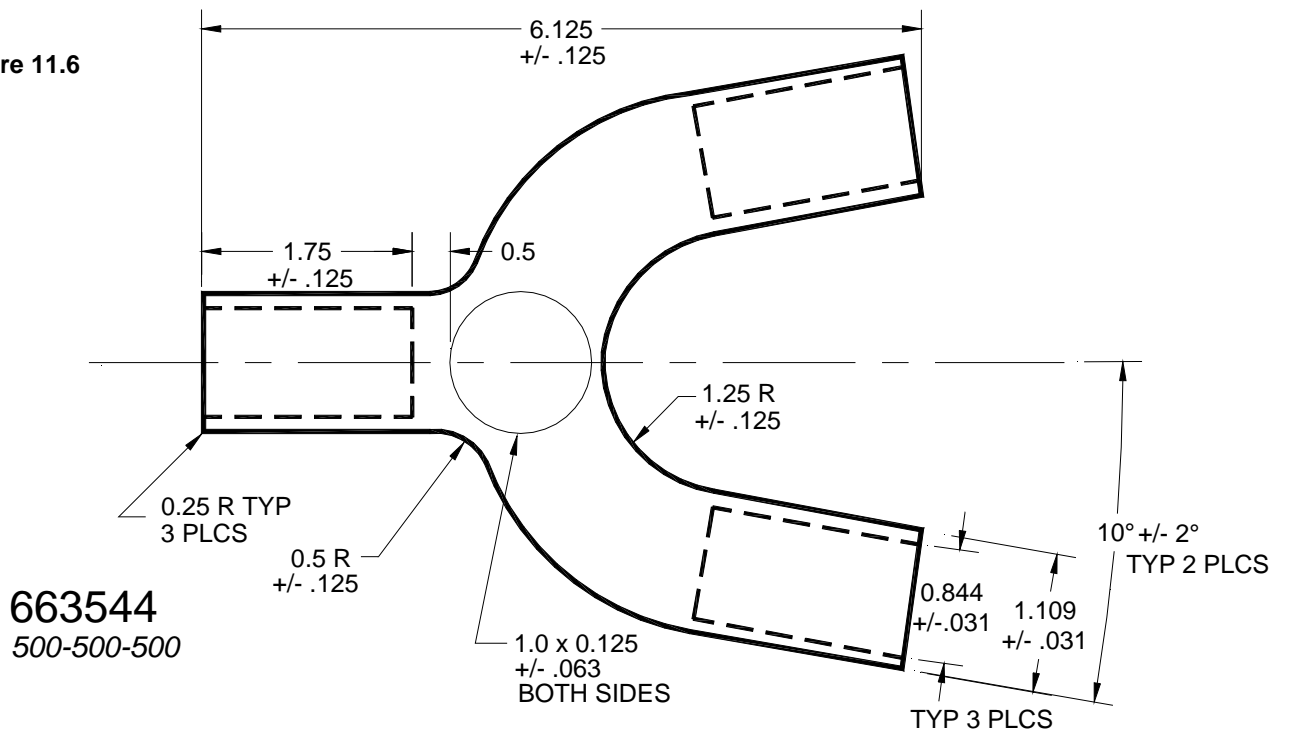


Figure 11.6



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Figure 11.7

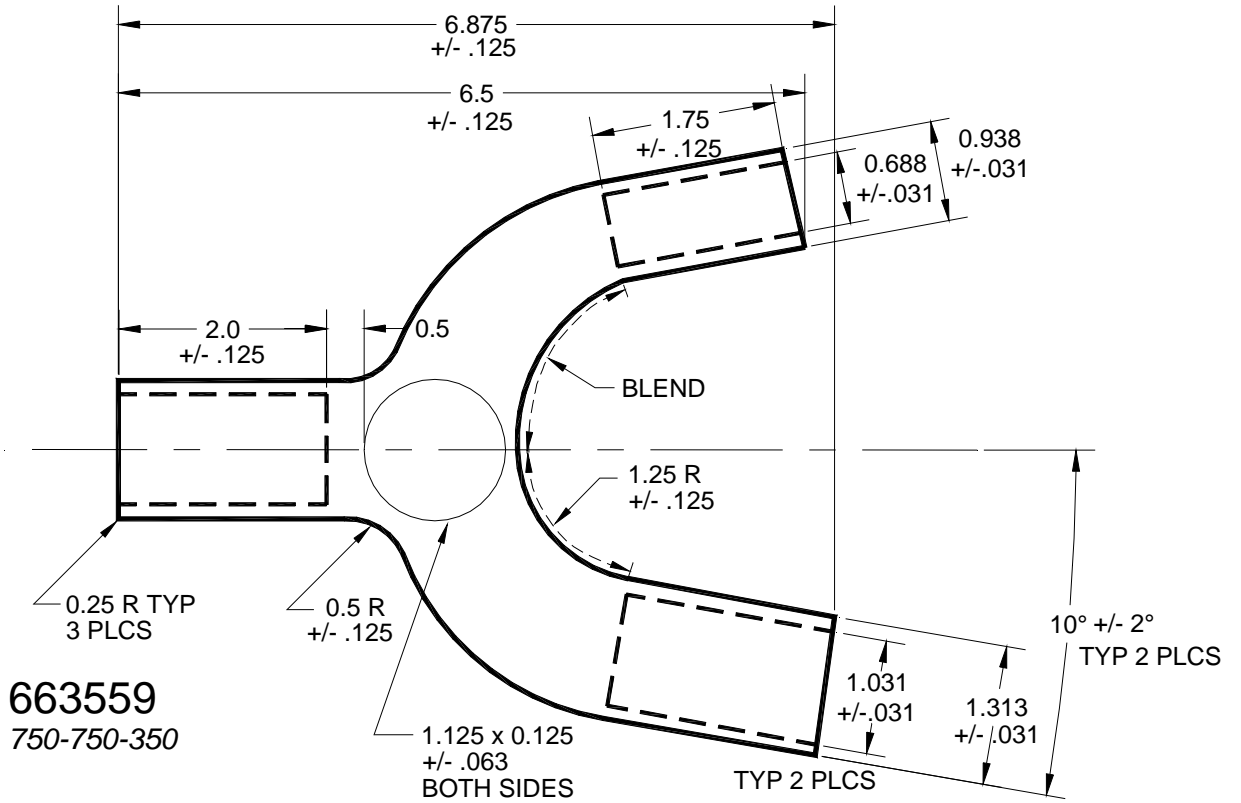
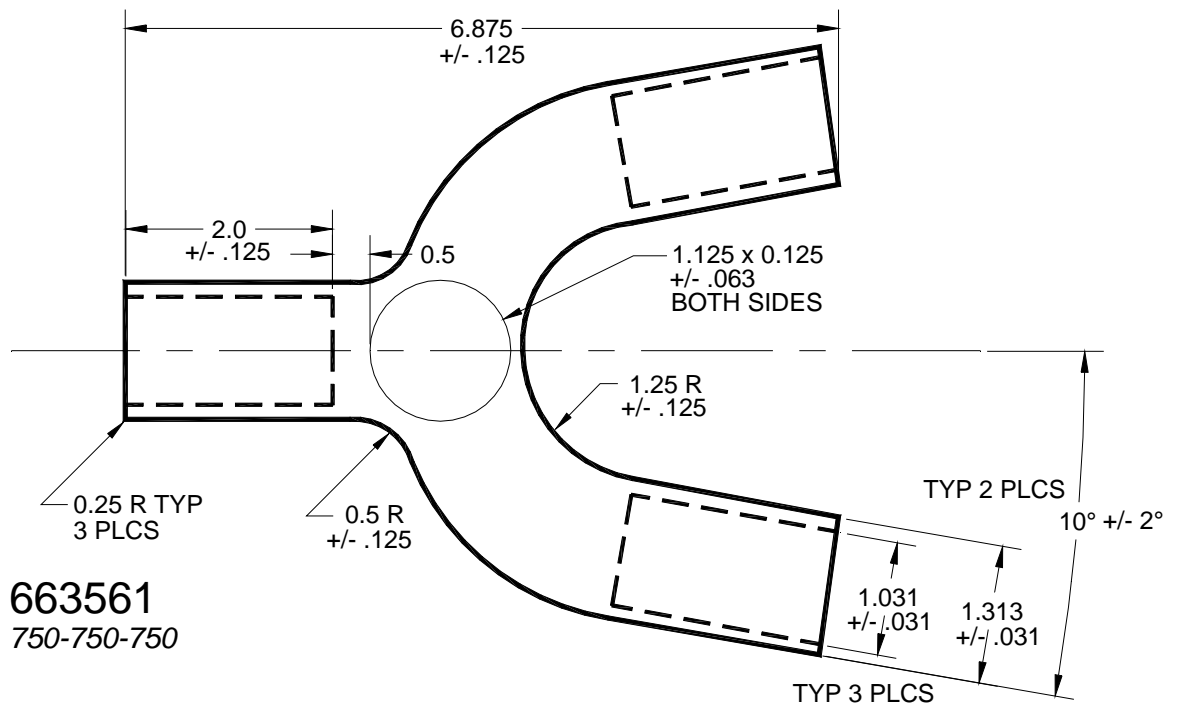


Figure 11.8



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Figure 11.9

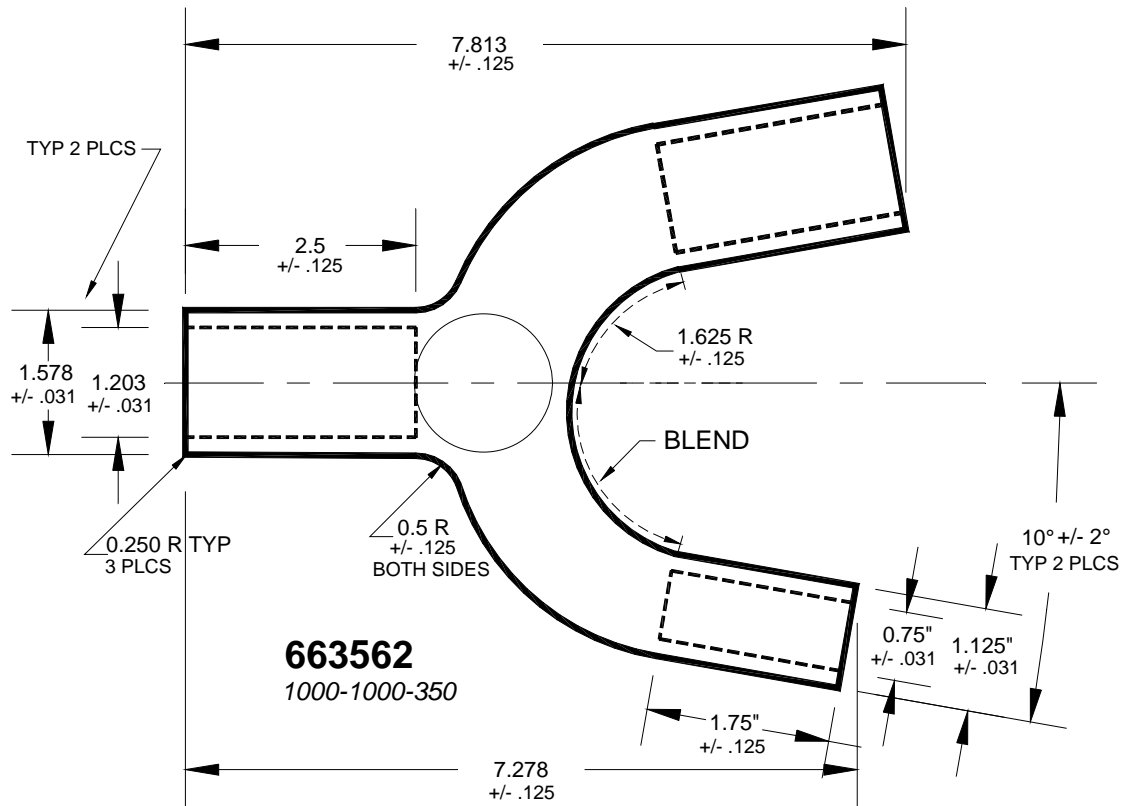
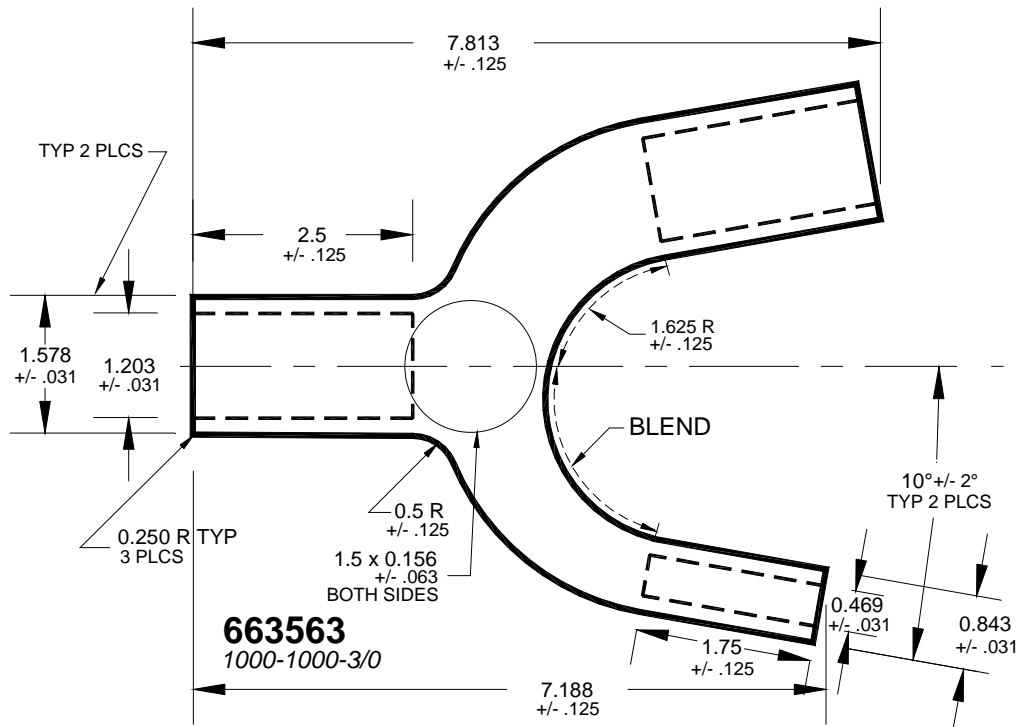


Figure 11.10



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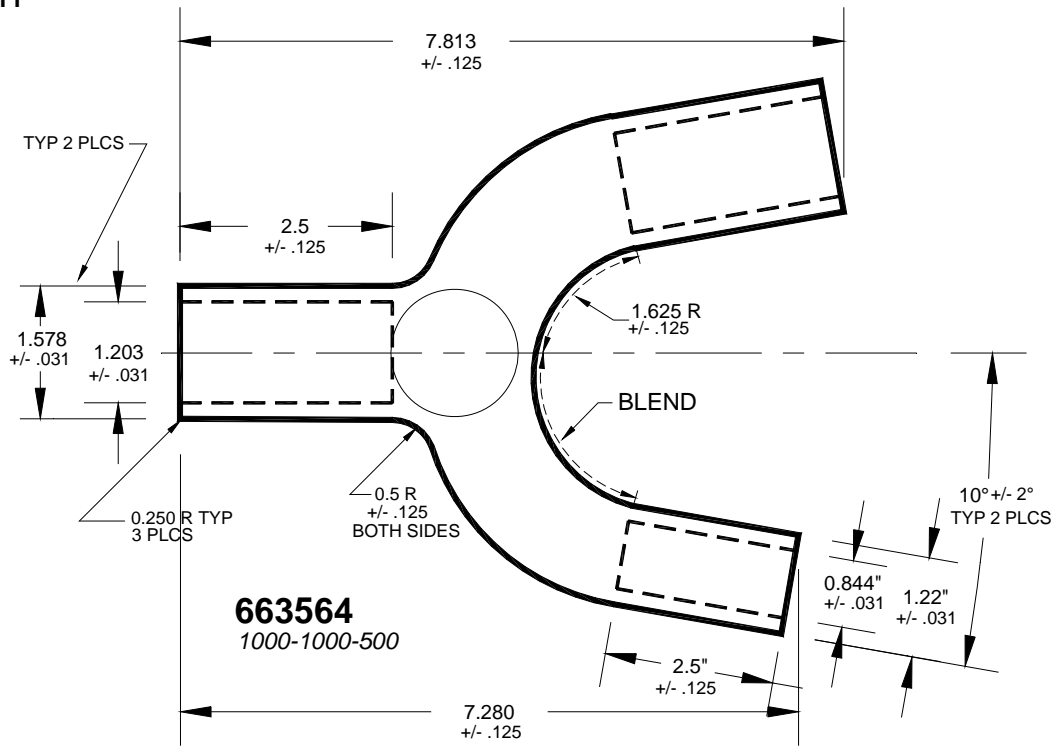
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**Figure 11.11**



**Figure 11.12**

