

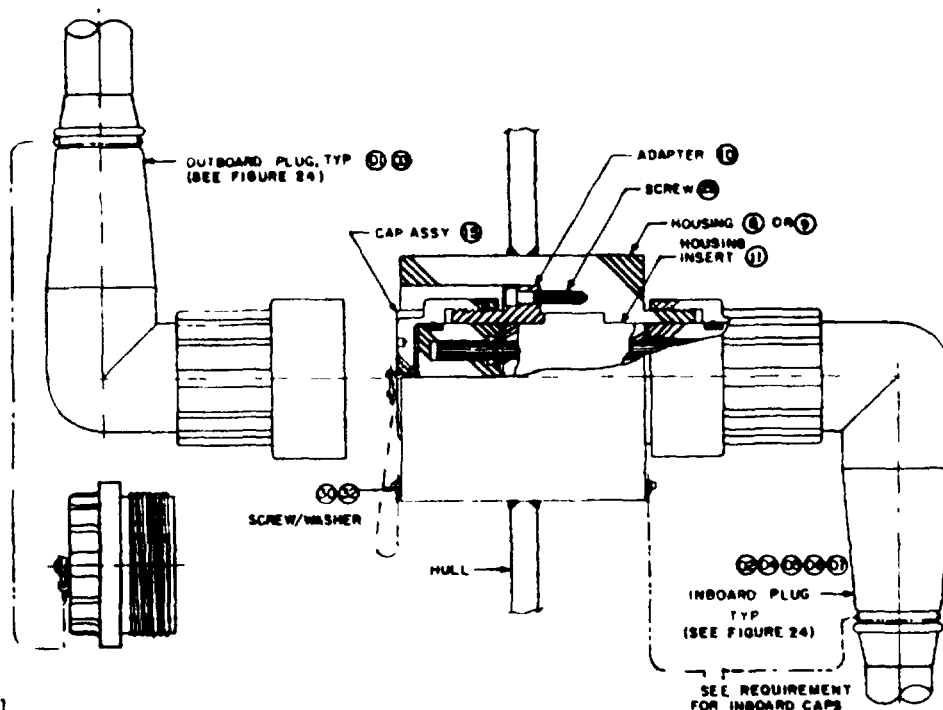
MIL-C-24368/5(NAVY)
 25 March 1987
 SUPERSEDING
 DRAWING 803-1197214
 REV. L, 23 APRIL 1975
 IN PART

MILITARY SPECIFICATION SHEET

CONNECTOR ASSEMBLIES; PLUG, SUBMARINE SHORE
 POWER TRANSFER, SHORE TO SHIP AND SHIP TO SHIP, 500 VOLTS,
 400 AMPERES, 60 HERTZ, THREE-PHASE, SYMBOL NUMBER 1149

This specification is approved for use within the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the submarine shore power connectors described herein shall consist of this specification and the latest issue of MIL-C-24368(NAVY).



SH 132316891

FIGURE 1. Submarine shore power connectors (angled body), typical.

All dimensions in inches.

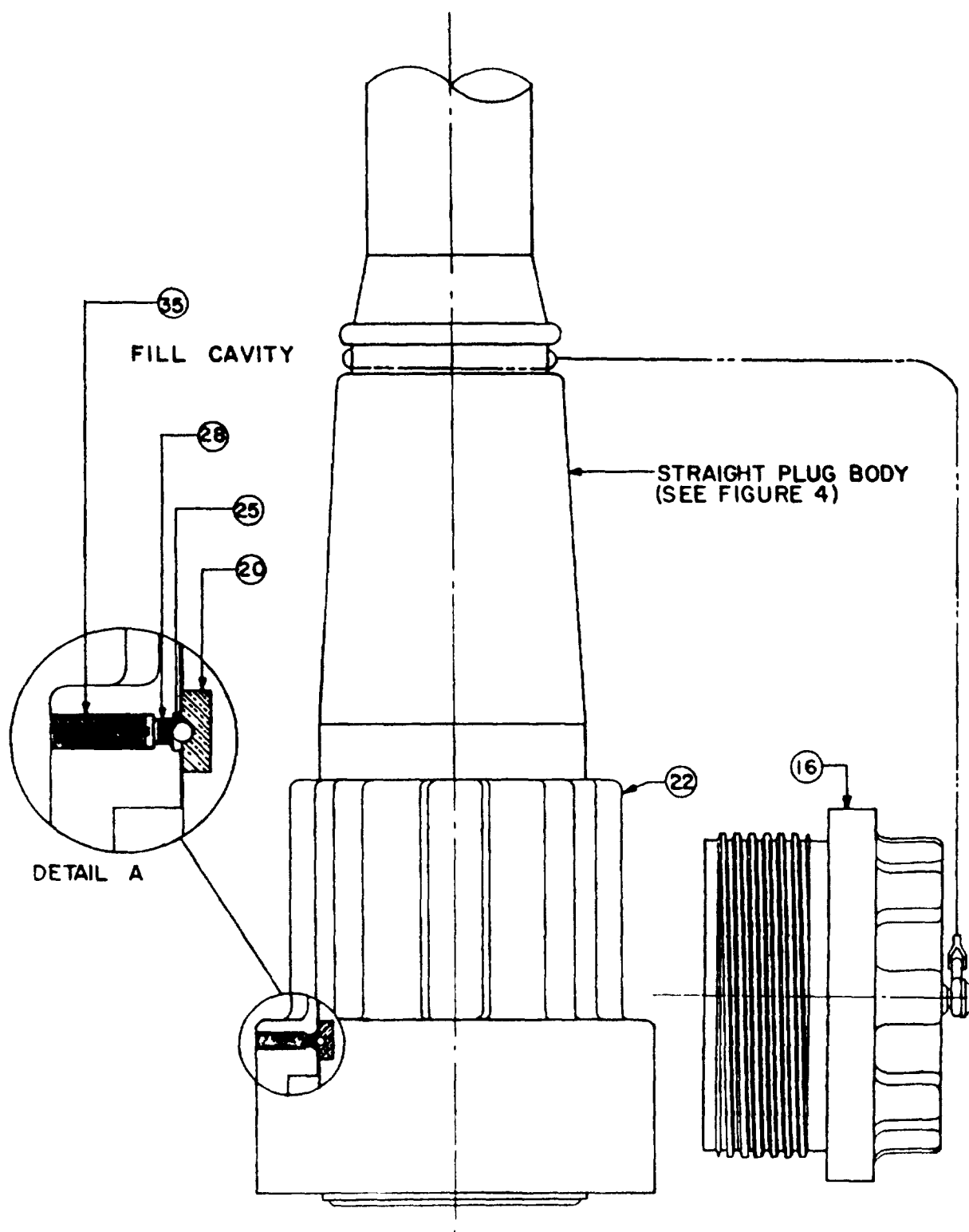
For tolerances other than specified herein, see dimensions and tolerances of MIL-C-24368.

AMSC N/A

FSC 2930

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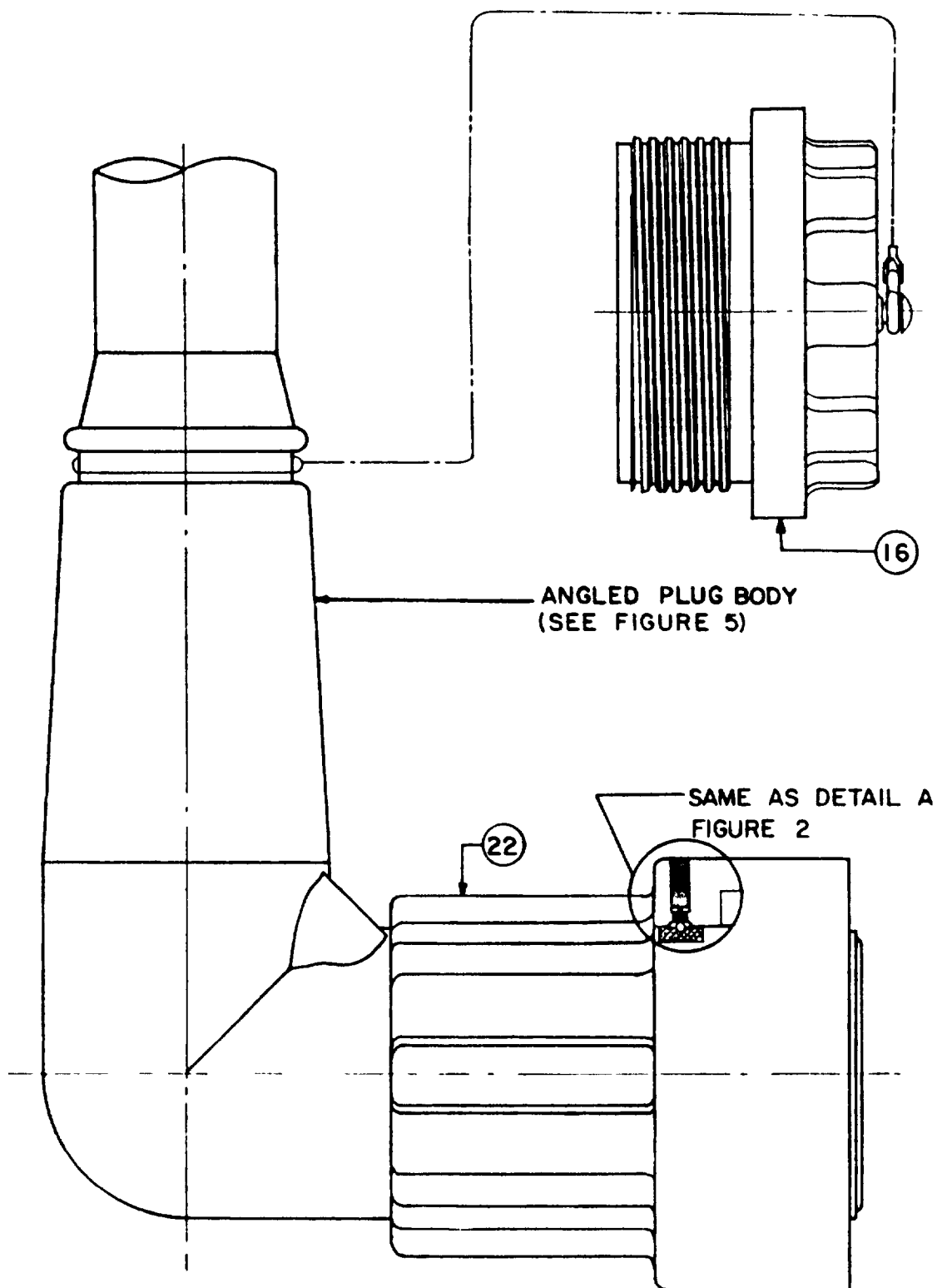
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FIGURE 2. Straight plug assembly, typical. (01) (02)

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FIGURE 3. Angled plug assembly, typical. (03) (04) (05) (06) (07)

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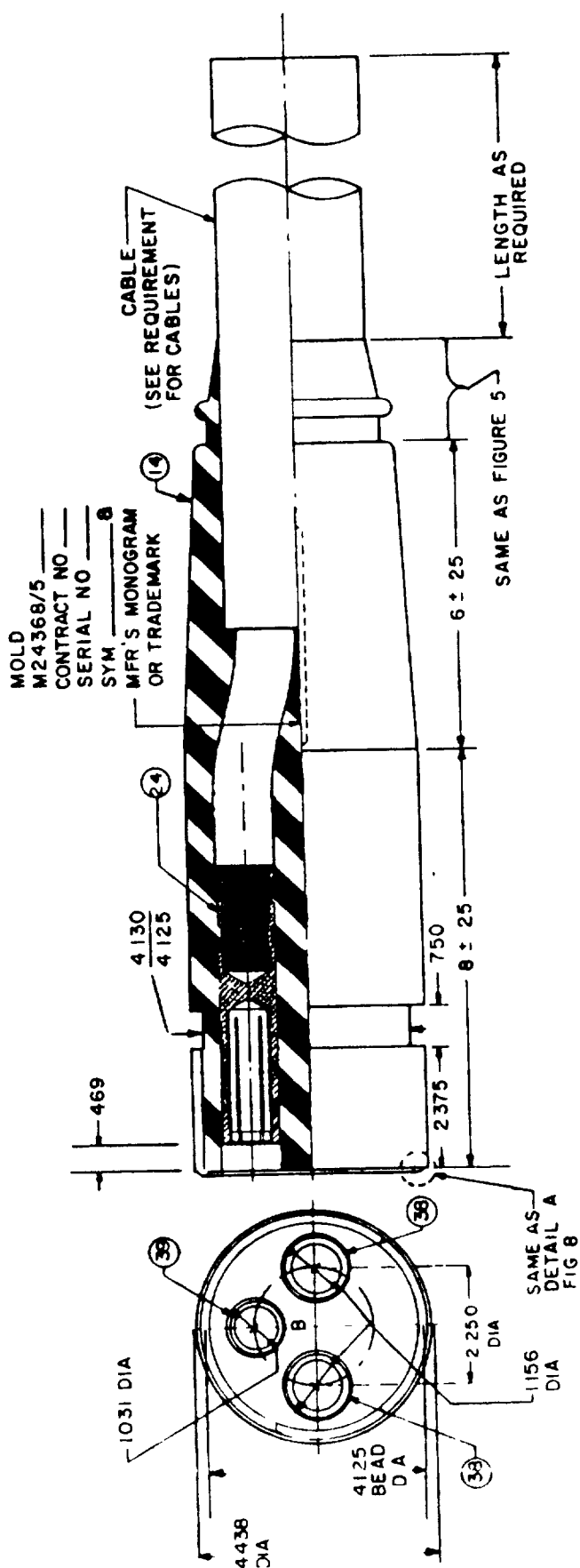
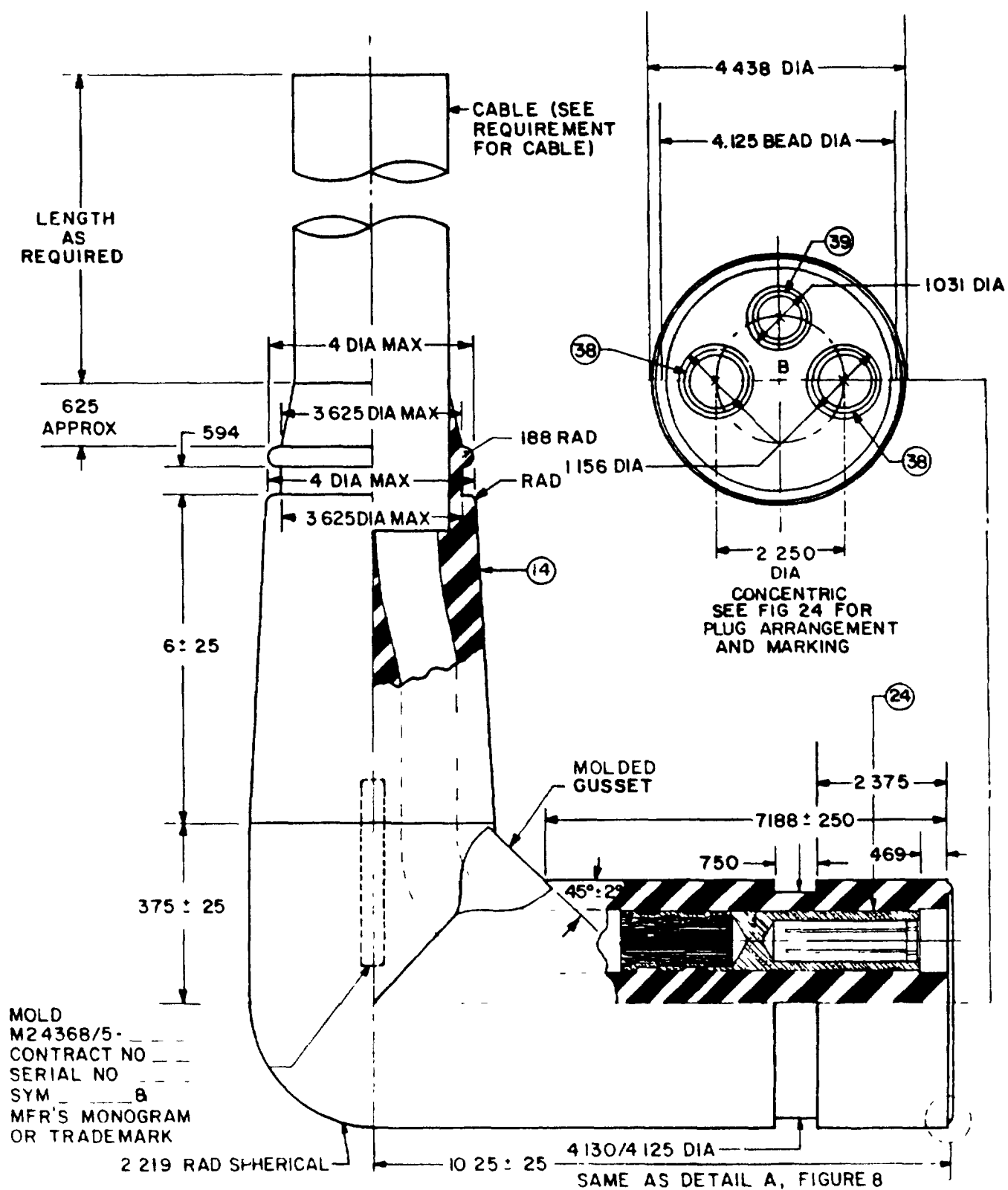


FIGURE 4. Body, straight plug.

SEE FIG 24 FOR
PUG ARRANGEMENT
AND MARKING

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131. *Wally, no help!*

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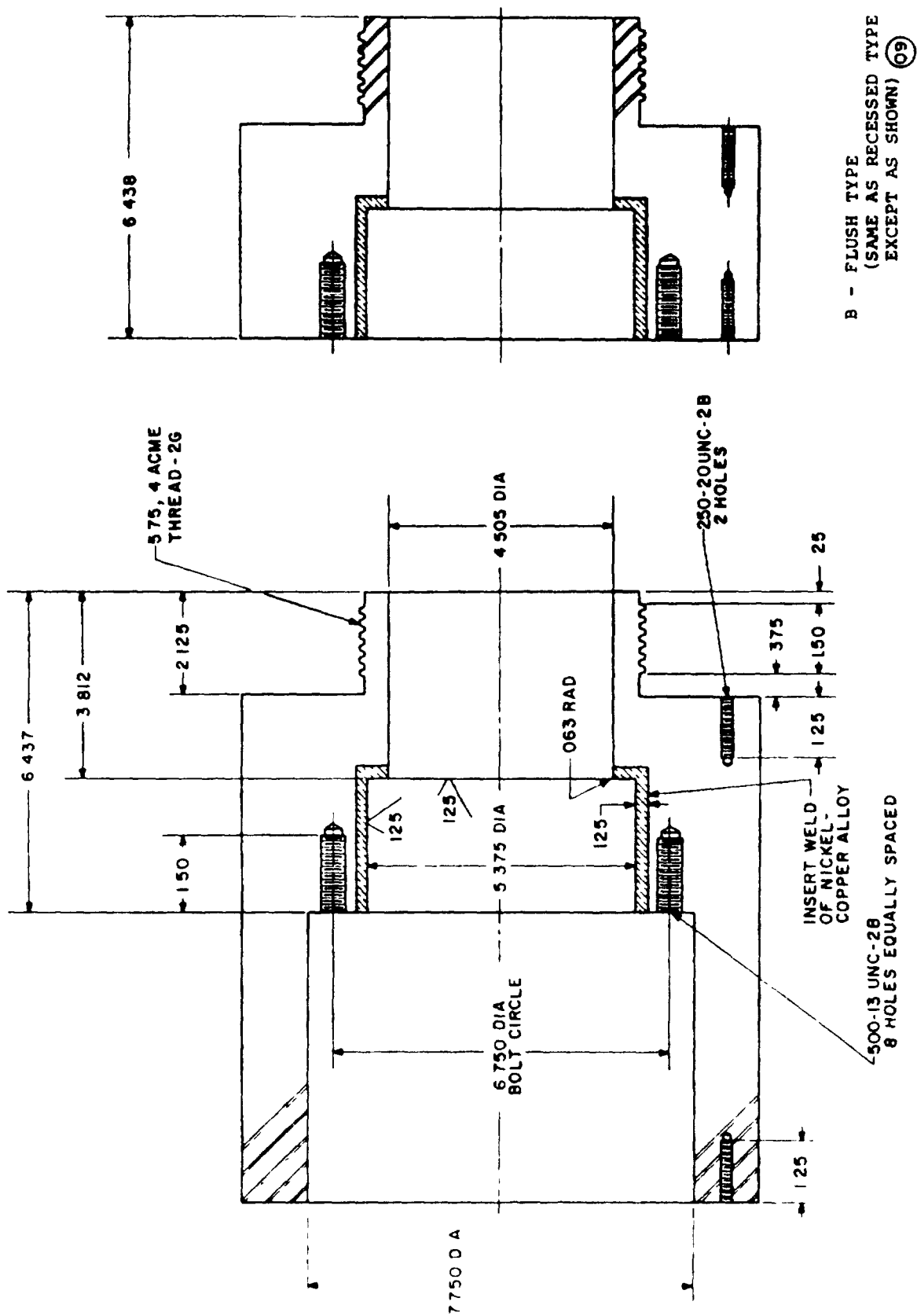
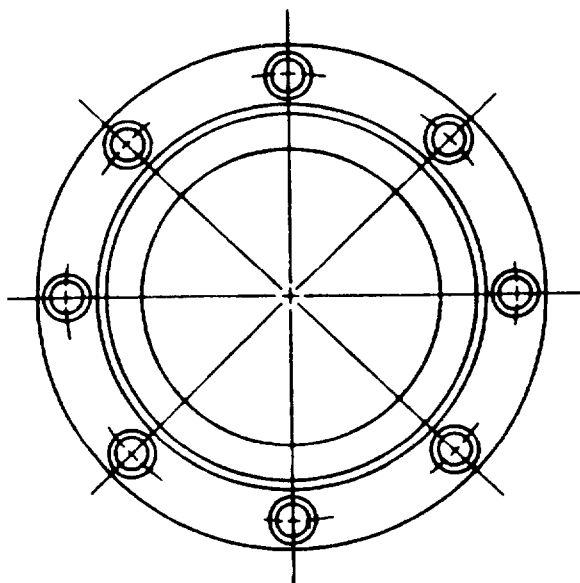
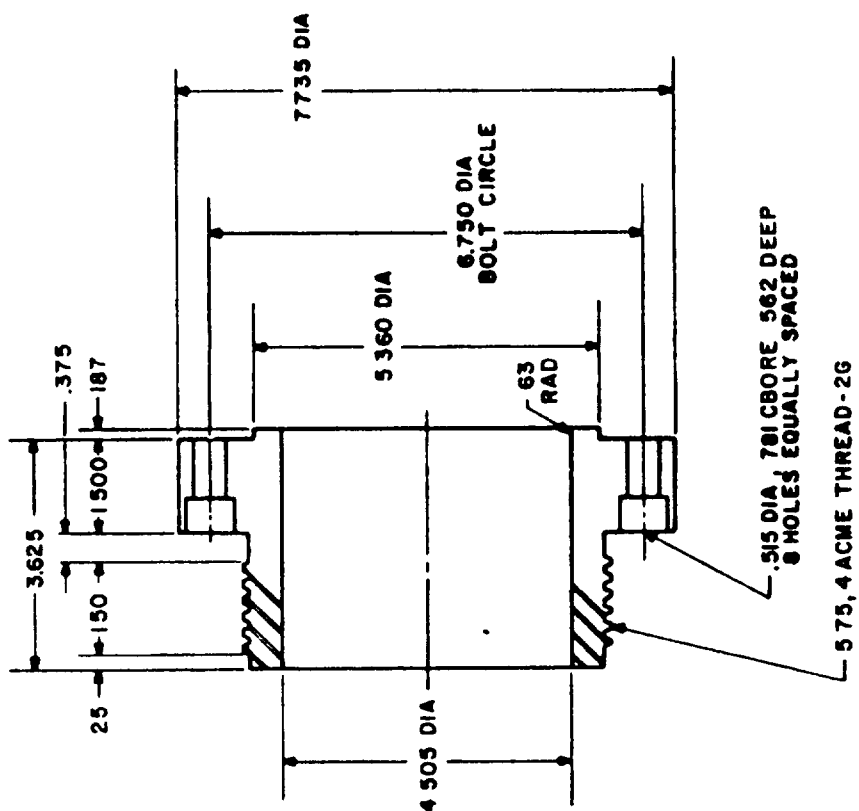


FIGURE 6. Housing.

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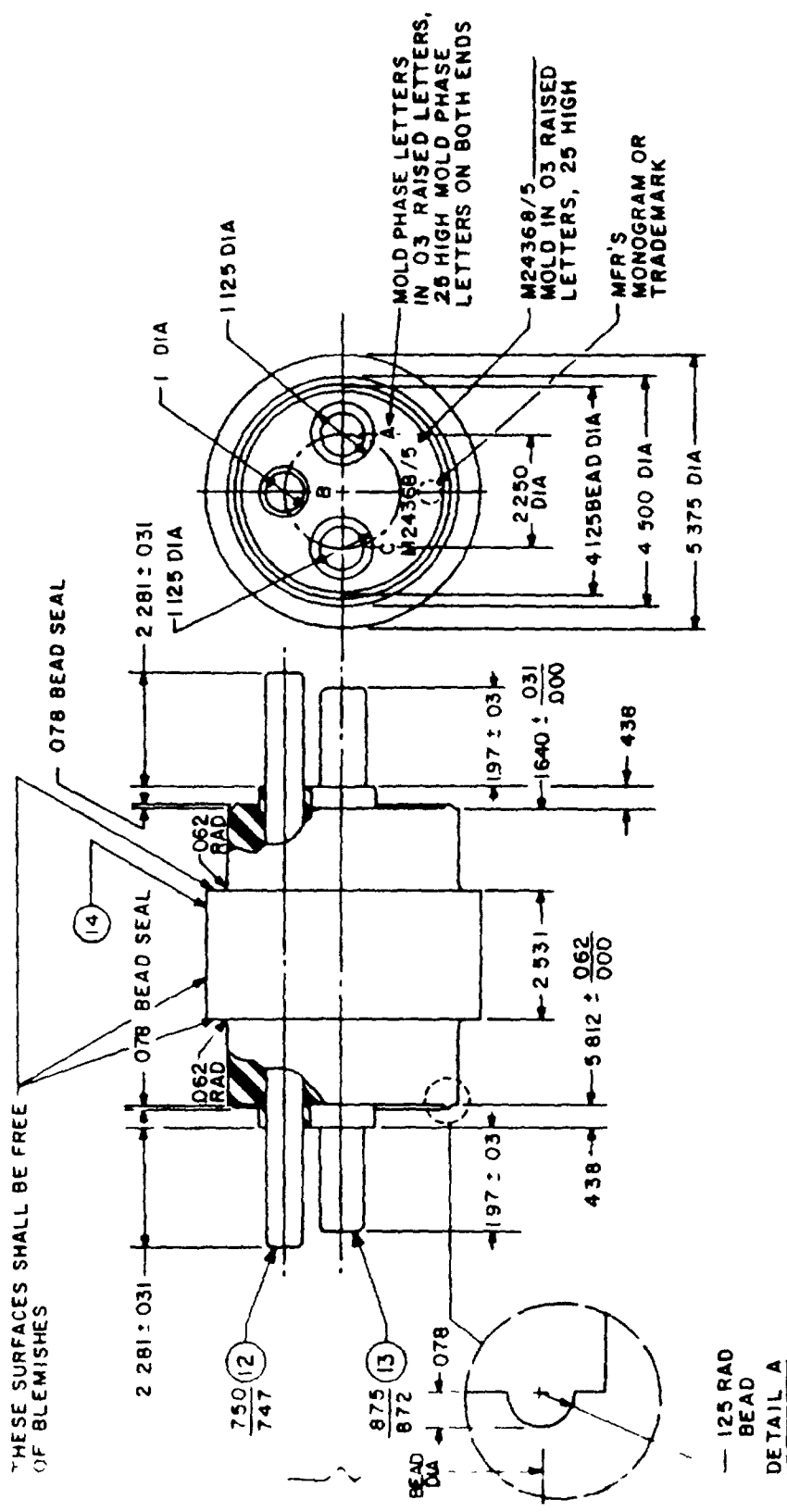


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FIGURE 7. Adapter. (10)

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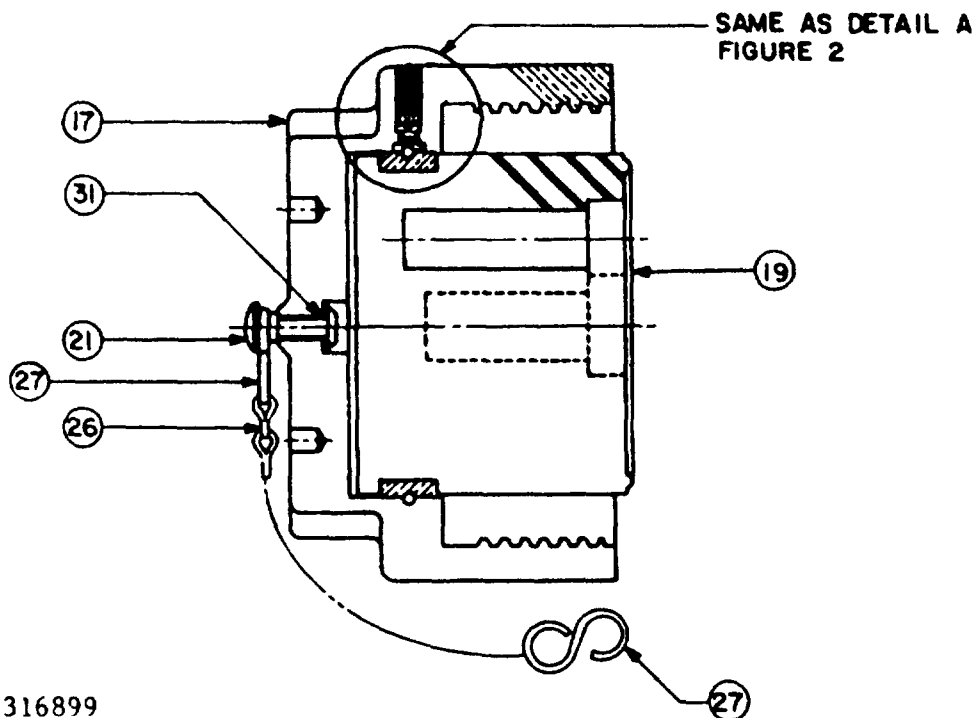


- Notes:
- 1. Molding compound shall be polycycloporene or polyurethane (see table II).
 - 2. Plastic stiffener plates are required to position contacts and to provide adequate strength to this assembly.

FIGURE 8. Housing insert. 11

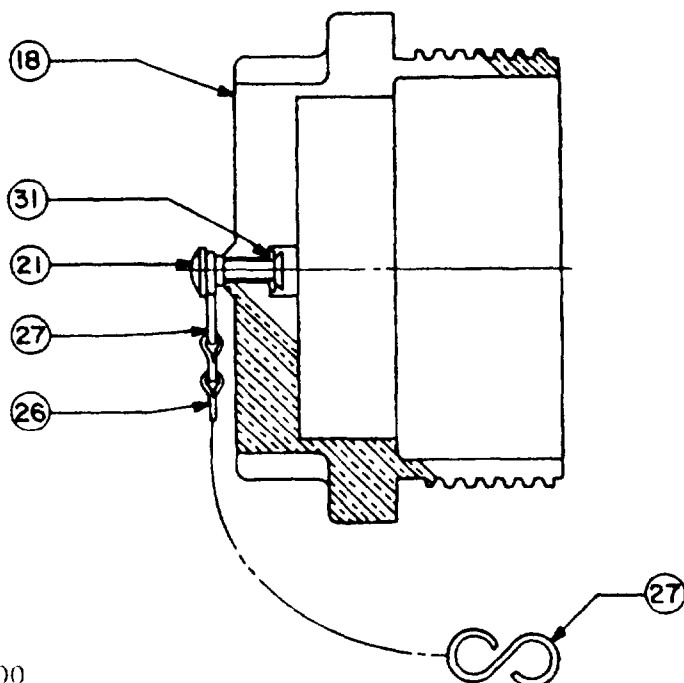
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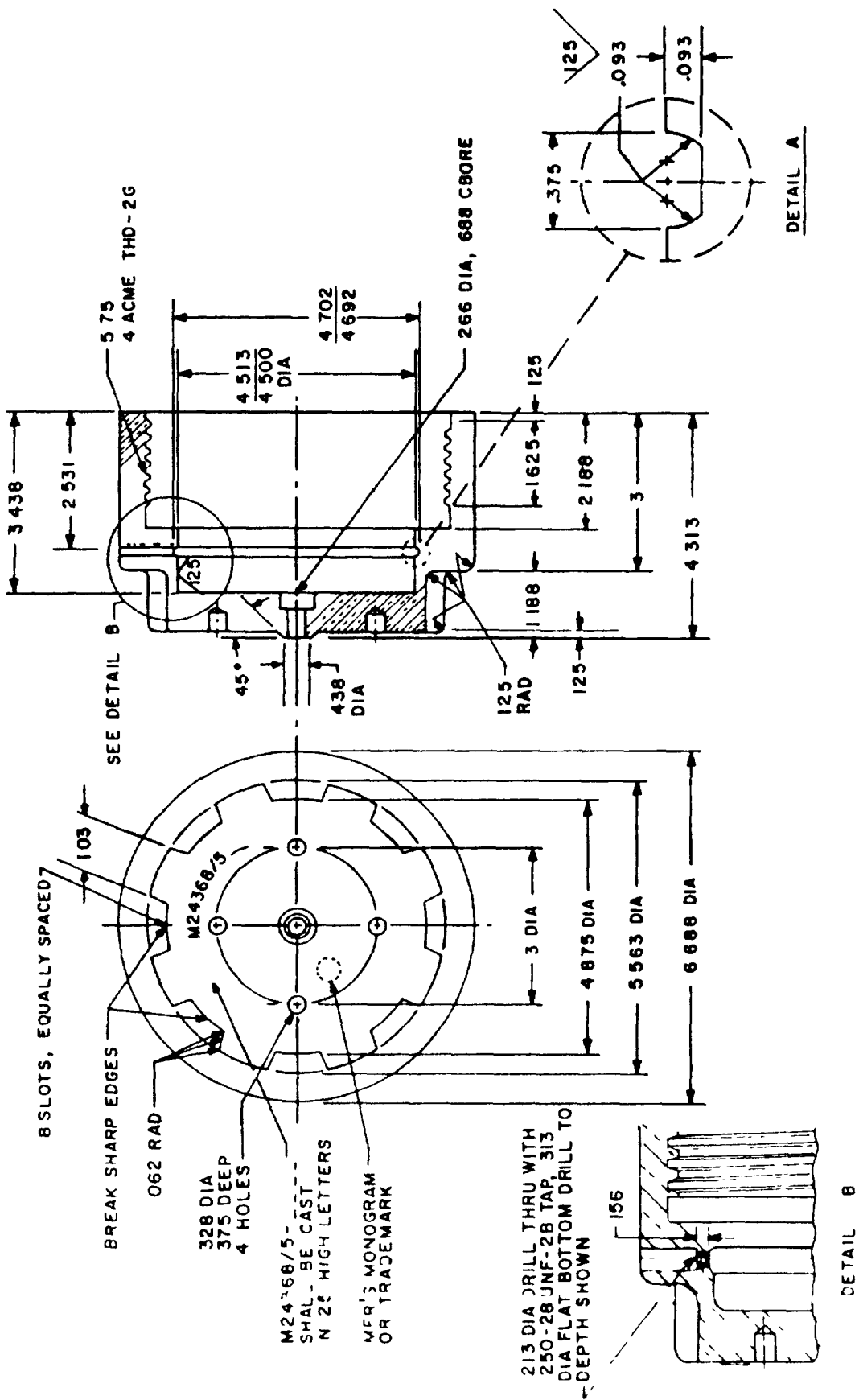
FIGURE 9. Cap insert assembly, typical. (15)



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FIGURE 10. Plug cap assembly, typical. (16)

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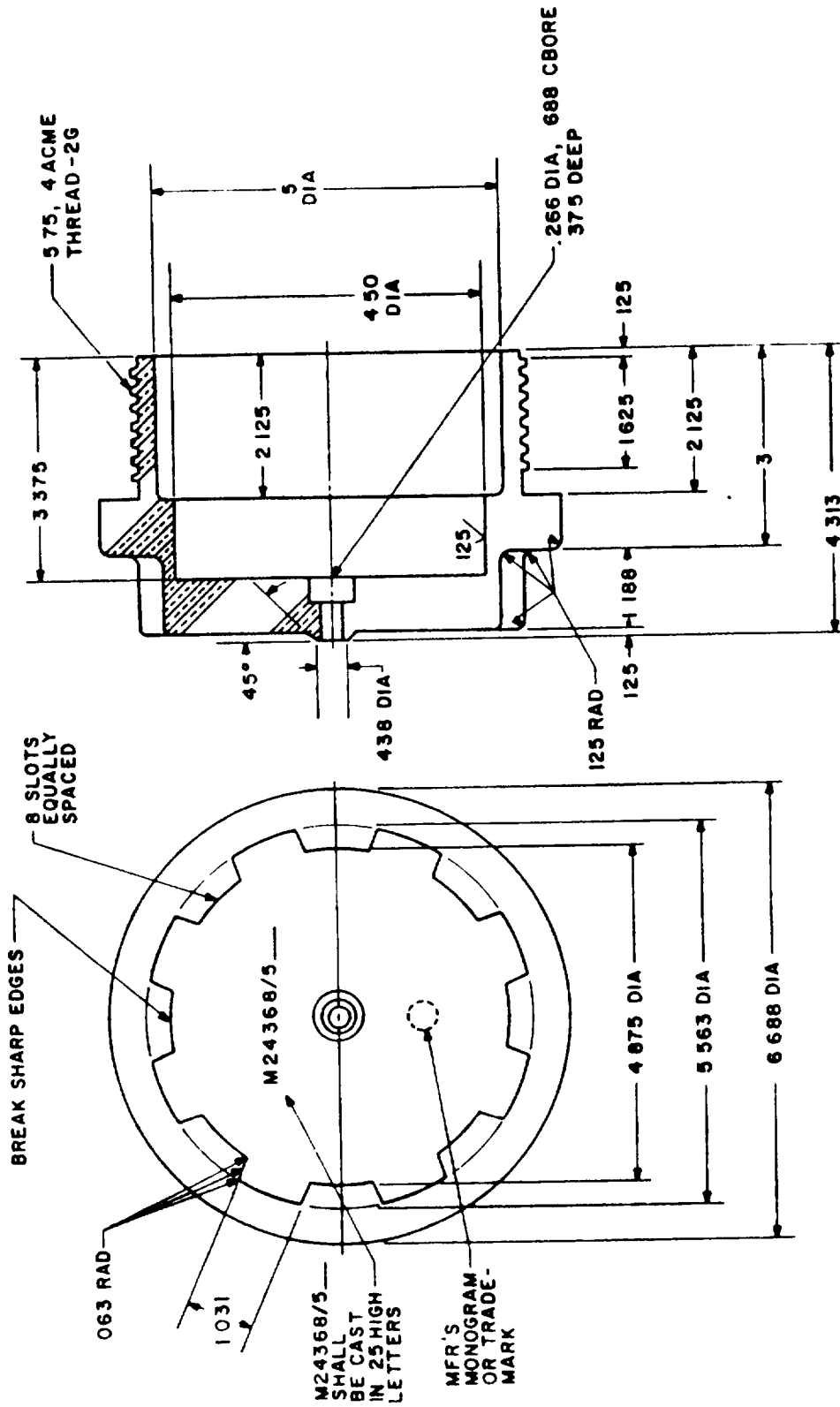


FINISH. $\overbrace{250}^{\text{ALL OVER EXCEPT AS SHOWN}}$ NON MACHINED CAST DIMENSION TOLERANCE PLUS 0.15, MINUS 0.093

FIGURE 11. Body, housing insert cap. (17)

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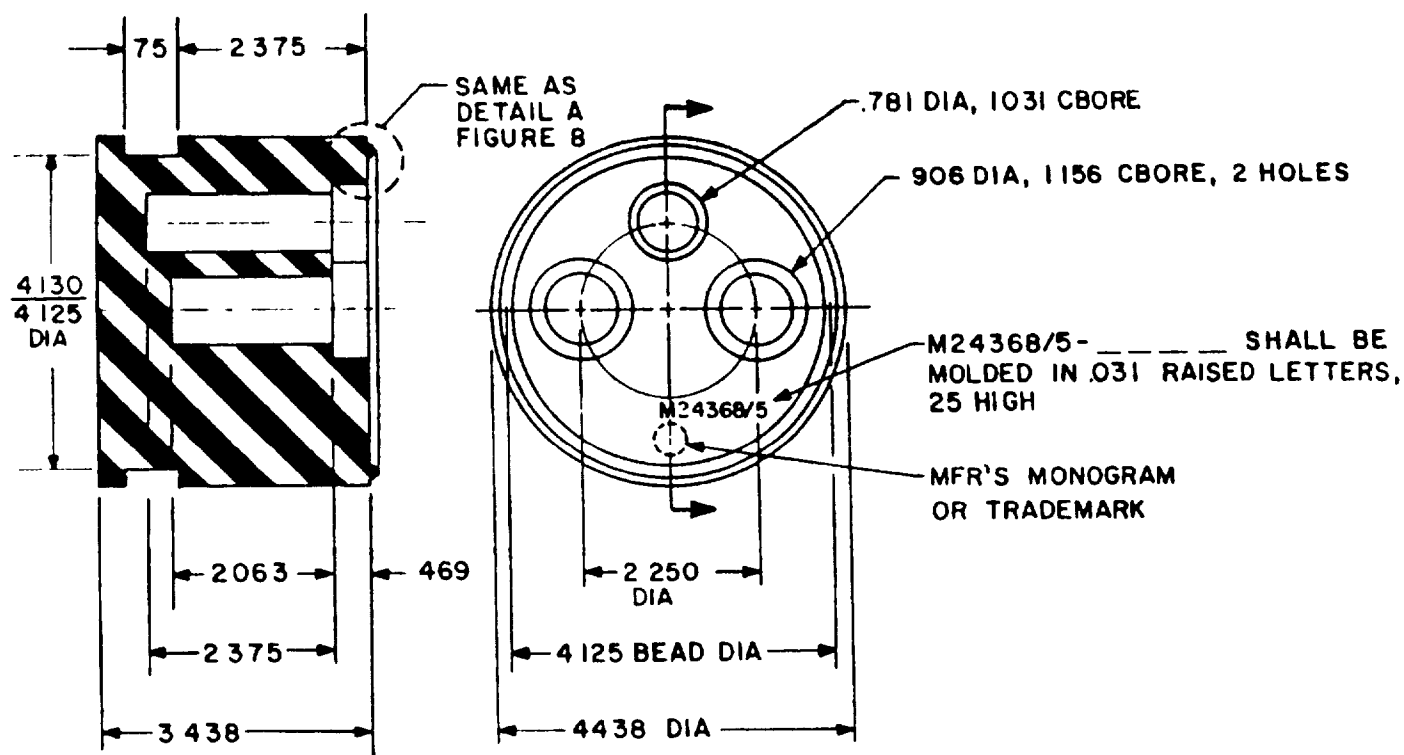


FINISH: $\frac{250}{\text{ALL OVER EXCEPT AS SHOWN}}$
NON MACHINED CAST DIMENSION TOLERANCE PLUS 0.156, MINUS 0.093

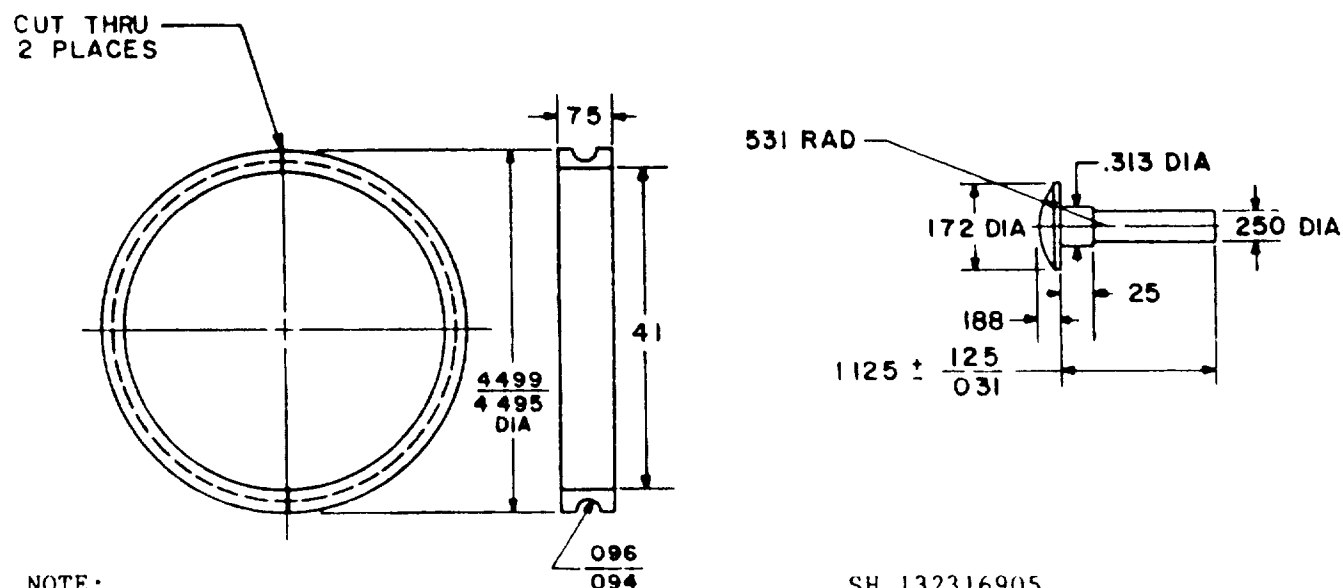
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FIGURE 12. Body, plug cap. (18)

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FIGURE 13. Insert, housing insert cap. (19)

NOTE:

Race may be manufactured in one circle piece and molded directly into the body of the plugs in Figure 14, 15 and 16.

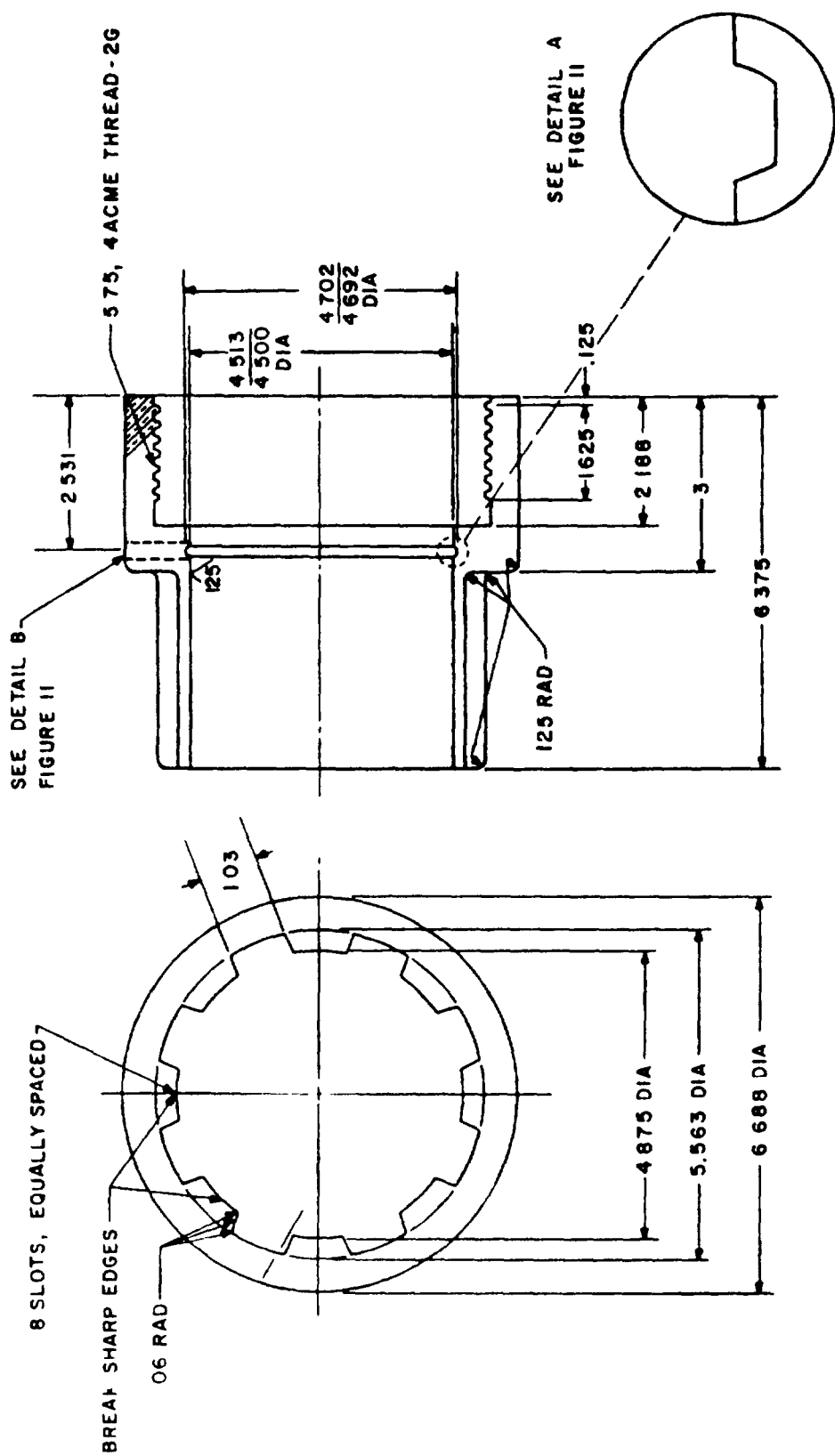
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FIGURE 15. Rivet. (21)

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FIGURE 14. Race. (20)

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FINISH: 250 ALL OVER EXCEPT AS SHOWN
NON MACHINED CAST DIMENSION TOLERANCE PLUS 0.156, MINUS 0.093

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FIGURE 16. Gland nut. 22

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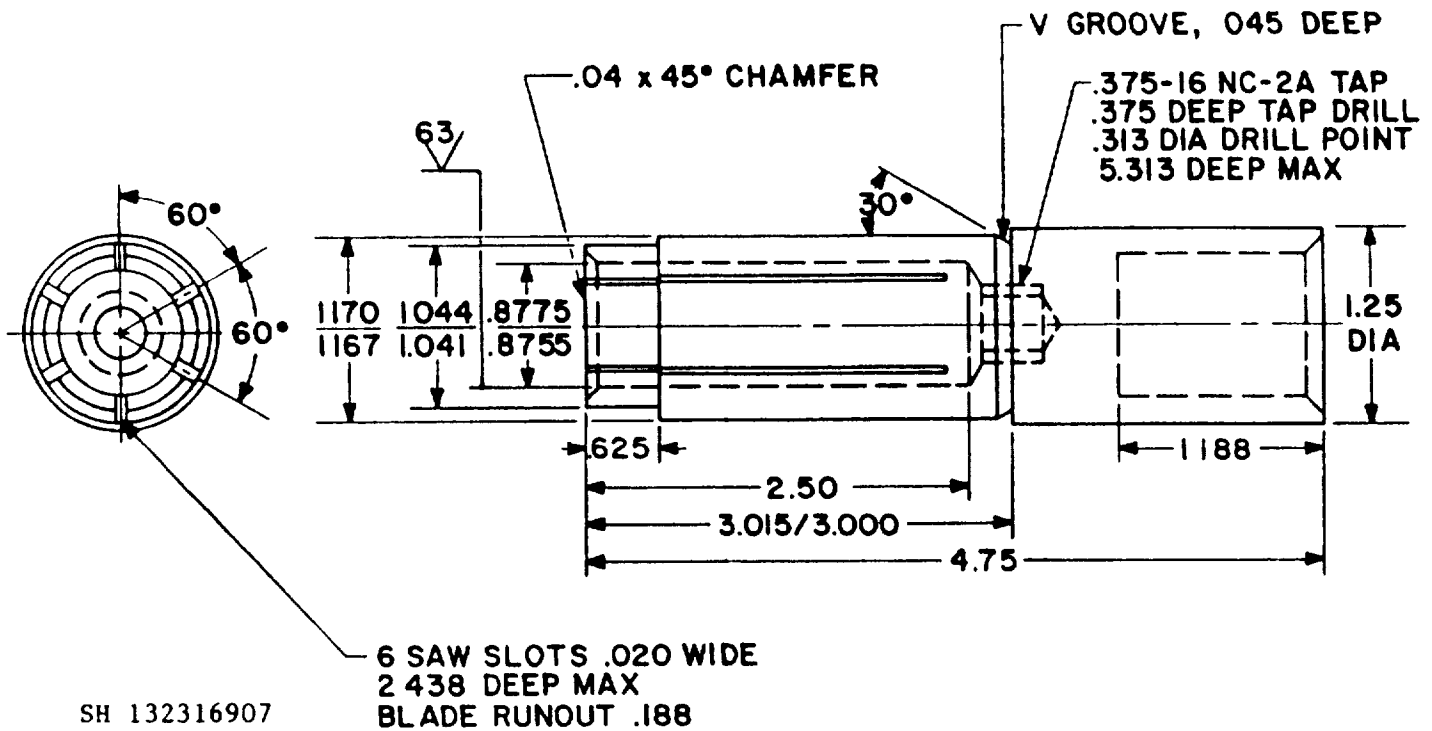


FIGURE 17. Contact, female 0.875 dia. (23)

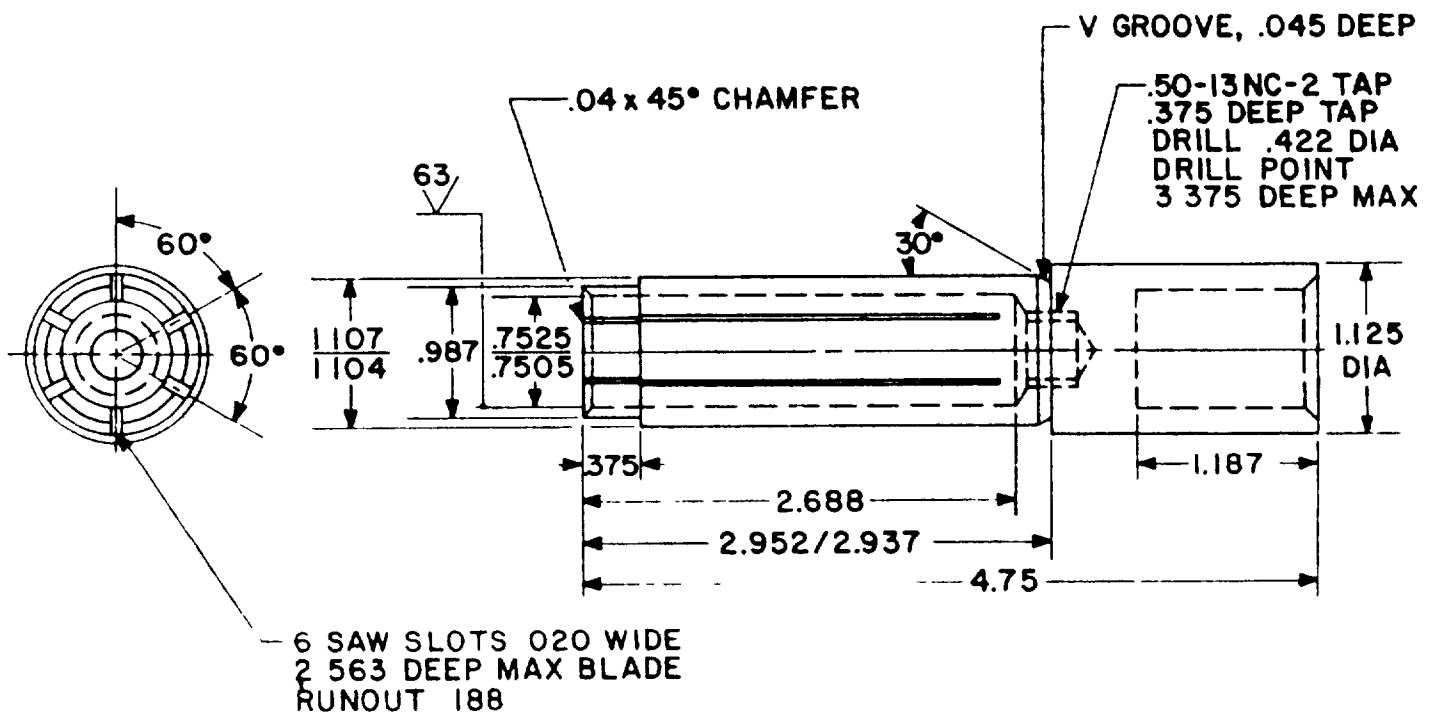
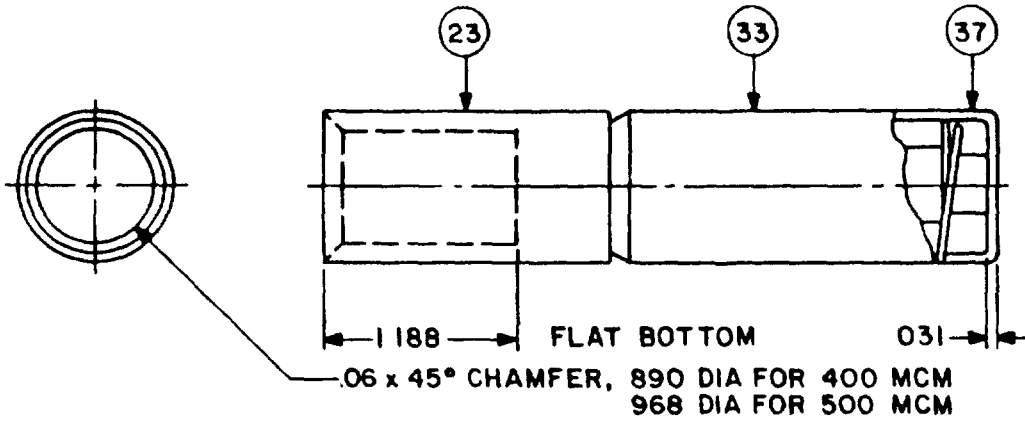


FIGURE 18. Contact, female 0.750 dia. (24)

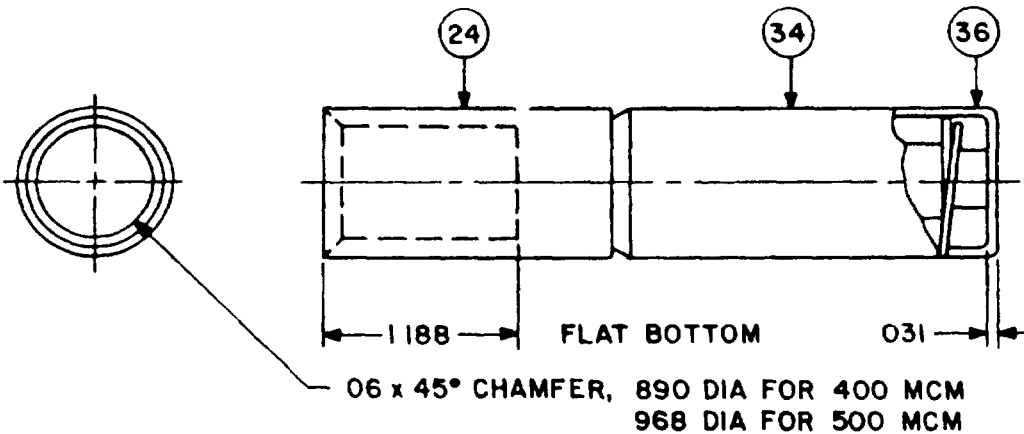
MIL-C-24368/5(NAVY)



NOTES:

1. DRILL CONTACT BEFORE ASSY. MUST NOT MEET TAP.
2. SPREAD DC-4 COMPOUND OVER SPRING AND SLOTS BEFORE SLEEVE IS CRIMPED INTO "V" GROOVE.

SH 132316909

FIGURE 19. Contact assembly 0.875 dia. (38)

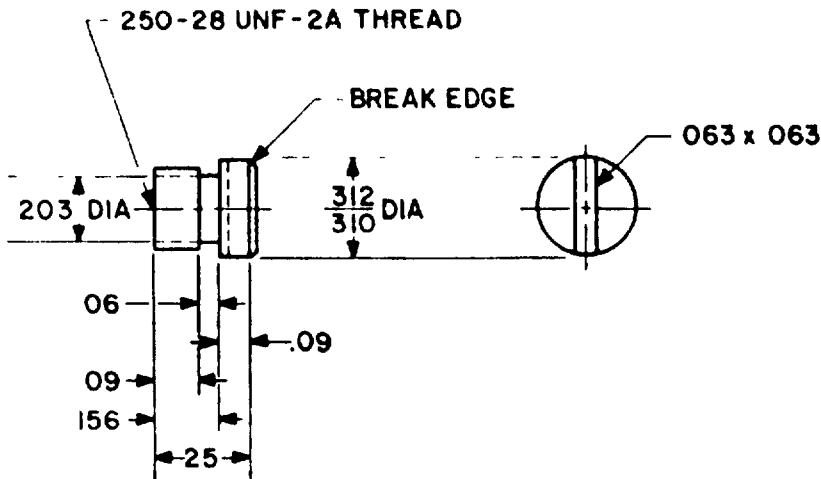
NOTES:

1. DRILL CONTACT BEFORE ASSY. MUST NOT MEET TAP.
2. SPREAD DC-4 COMPOUND OVER SPRING AND SLOTS BEFORE SLEEVE IS CRIMPED INTO "V" GROOVE.

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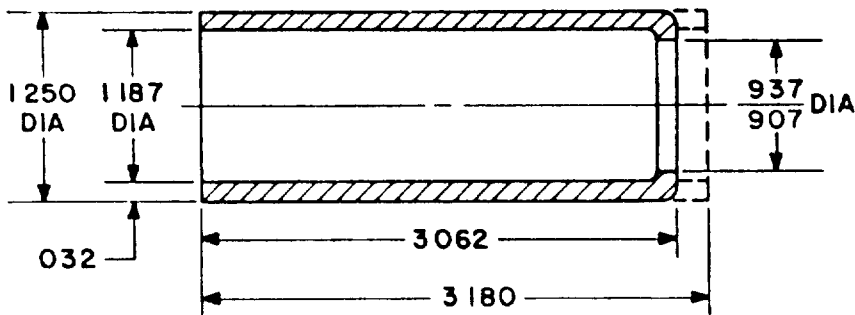
FIGURE 20. Contact assembly 0.750 dia. (39)

MIL-C-24368/5(NAVY)



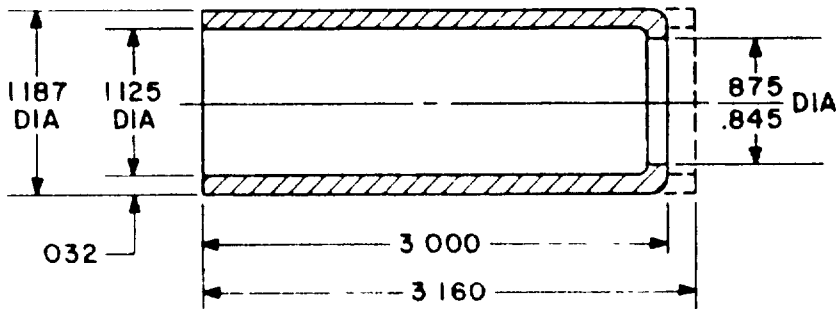
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FIGURE 21. Screw, ball retaining. (28)



SH 132316912

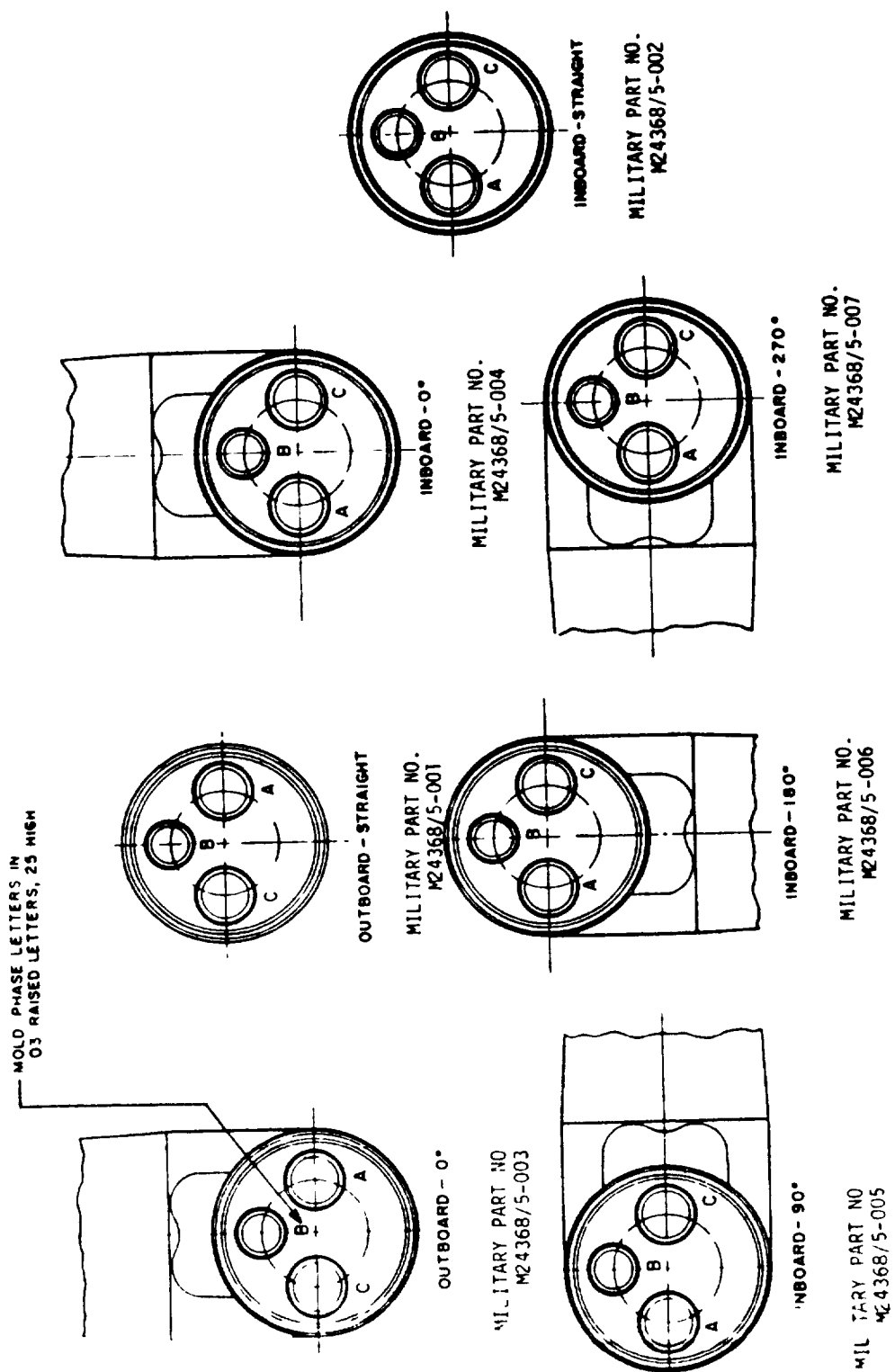
FIGURE 22. Sleeve, contact, 1.25 dia. (33)



SH 132316913

FIGURE 23. Sleeve, contact, 1.187 dia. (34)

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SH 132316914

FIGURE 24. Plug arrangements.

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REQUIREMENTS:

CONFIGURATION:

Electrical rating: 500 volts, 400 amperes, 60 hertz, three-phase.

Dimensions and configuration: See figures 1 through 24.

Typical installation: See figure 1.

Cable: Cable for inboard plug shall be TSGA-400 or TSGU-400 conforming to MIL-C-24643/16. Cable for outboard plug shall be THOF-500 conforming to MIL-C-915/6 only. Unless otherwise specified, cable lengths shall be 15 feet as measured from cable end to rear of gland nut (item 22).

Unless otherwise specified, cable for inboard plugs shall be TSGA-400.

Cable shall be attached directly to the female contacts with conductor insulation intact and flush at point of entry into the female contact.

If armored cable is used, the armor shall be cut back a minimum of 6 inches from the female contacts to provide sufficient electrical clearance. However, armor shall terminate inside molding.

Conductor color coding: Cable conductor color coding shall be as follows:

Phase A-Black; Phase B-White and Phase C-Red.

Caps for inboard plugs and inboard housing insert: Unless otherwise specified, caps (items 15 and 16) shall not be furnished.

Standard parts: The standard parts shown in table II shall be used in the construction of the connectors specified herein.

QUALITY ASSURANCE:

- (a) Material certification: Material certification for items 10, 11, and 29 of table II shall conform to 4.1.2 of MIL-C-24368.
- (b) For testing purposes, the housing insert assembled in the housing (less the plugs and caps) as shown on figure 1 shall be considered as the receptacle as specified in MIL-C-24368.
- (c) Connector assemblies (items 01 through 07) and housing insert (item 11) shall be checked with a gauge to ensure proper alignment and size of the contacts.
- (d) Housing insert (item 11) shall be subjected to the hydrostatic pressure test.
- (e) HI shock: Outboard plugs only N/A.
- (f) Mechanical vibration: Outboard plugs only N/A.
- (g) Impact: Housing insert N/A.
- (h) Mechanical shock: Housing insert N/A.

GENERAL INFORMATION:

Assignment of military part numbers and general information shall be as follows and as shown in table I.

- (a) Typical installation of submarine shore power connectors is shown in Drawing 803-5001027.
- (b) Spanner Wrench for use with cap assemblies (item 15 and 16) shall be J.H. Williams & Co. 3-inch face Spanner Wrench part no. 434, or equivalent.
- (c) Connectors specified herein were previously covered by Drawing 303 1197214.

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ORDERING DATA:

- (a) Specify cable type and length required if other than 15 feet.
- (b) Specify when caps for inboard plugs or housing inserts are required.
- (c) Specify when material certification is required.
- (d) Specify when TSGU-400 cable is to be furnished with inboard plugs.

TABLE I. Assignment of military part numbers and general information.

Military part number	Item name	Figure	Remarks
M24368/5-001	Plug assy, straight, outboard	2	Item 01
-002	Plug assy, straight, inboard	2	Item 02
-003	Plug assy, angled, outboard, 0 degrees	3	Item 03
-004	Plug assy, angled, inboard, 0 degrees	3	Item 04
-005	Plug assy, angled, inboard, 90 degrees	3	Item 05
-006	Plug assy, angled, inboard, 180 degrees	3	Item 06
-007	Plug assy, angled, inboard, 270 degrees	3	Item 07
-008	Insert, housing	8	Item 11

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TABLE II. Standard parts list.

Item no ^{1/}	Description	Qty	Material/spec	Remarks
01	Plug assy, straight, outboard	-	--	Figure 2 & 4
02	Plug assy, straight, inboard	-	--	Figure 2 & 4
03	Plug assy, angled, outboard, 0 degrees	-	--	Figure 3 & 5
04	Plug assy, angled, inboard, 0 degrees	-	--	Figure 3 & 5
05	Plug assy, angled, inboard, 90 degrees	-	--	Figure 3 & 5
06	Plug assy, angled, inboard, 180 degrees	-	--	Figure 3 & 5
07	Plug assy, angled, inboard, 270 degrees	-	--	Figure 3 & 5
08	Housing, recessed	1	Steel ^{2/}	Figure 6A
09	Housing, flush	1	Steel ^{2/}	Figure 6B
10	Adapter	1	Manganese bronze, QQ-C-390, alloy C86200	Figure 7
11	Insert, housing	1	--	Figure 8
12	Contact, male, 0.750 dia	1	Tellurium copper, ASTM B 301, AL C 14500	Figure 8
13	Contact, male, 0.875 dia	2	Tellurium copper, ASTM B 301, AL C 14500	Figure 8
14	Molding compound	AR	^{3/}	-
15	Cap, housing, insert	1	--	Figure 9
16	Cap, plug	1	--	Figure 10
17	Body, housing insert cap	1	Manganese bronze, QQ-C-390, alloy C86200	Figure 11

See appendix A for details of figures

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TABLE II. Standard parts list. - Continued

Item no ^{1/}	Description	Qty	Material/spec	Remarks
18	Body, plug cap	1	Manganese bronze, QQ-C-390, alloy C86200	Figure 12
19	Insert, housing insert cap	1	Molding compound item 14	Figure 13
20	Race	1	Manganese bronze, QQ-C-390, alloy C86200	Figure 14
21	Rivet	1	Brass, com1	Figure 15
22	Nut, gland ,	1	Manganese bronze, QQ-C-390 alloy C86200	Figure 16
23	Contact, female 0.875 dia	2	Copper, tellurium, ASTM B 301, AL C14500	Figure 17
24	Contact, female 0.750 dia	1	Copper, tellurium, ASTM B 301, AL C14500	Figure 18
25	Bearing, ball 0.187 dia	75	Bronze	-
26	Chain, Navy, no. 3	AR	Brass, com1	-
27	Hook, "S", AWG #6, 1.50 L	2	Brass, com1	-
28	Screw, ball retaining	1	Brass, QQ-B-626, AL 360	Figure 21
29	Screw, 0.50-13 UNC-2A X 2.25L soc HD cap	8	CRES, QQ-S-763, CL 316 ^{4/}	
30	Screw, 0.25-20 UNC-2A X 1.50L soc HD cap	1	CRES, QQ-S-763, CL 316 ^{4/}	
31	Washer, flat, 0.281 id, 0.625 od, .062 thk	1	Brass, com1	-
32	Washer, flat, 0.2666 id, 0.50 od, 0.62 thk	1	CRES, com1	-
33	Sleeve, contact 1.250 dia	2	Brass tube, WW-T-791, type I or II, grade B	Figure 22
34	Sleeve contact 1.787 dia	1	Brass tube, WW-T-791, type I or II, grade B	Figure 23

see footnotes at end of table.

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TABLE II. Standard parts list. - Continued

Item no ^{1/}	Description	Qty	Material/spec	Remarks
35	Sealing compound	AR	GE black silicone glue or seal #GE 2563-31 DP, or equal	-
36	Spring, wire 2 coils (id 0.906 \pm 0.010, 0.059 dia)	1	Steel music wire, ASTM A 228 (brass plate)	-
37	Spring, wire 2.5 coils (id 0.937 \pm 0.002, 0.063 dia)	2	Steel music wire, ASTM A 228 (brass plate)	-
38	Contact assy, female, 0.875 dia	19	--	Figure 19
39	Contact assy, female, 0.750 dia	20	--	Figure 20
40	Cable, TSGA-400 or TSGU-400	AR	MIL-C-24643/16	
41	Cable, THOF-500	AR	MIL-C-915/6	

- 1/ Item numbers are the same as numbers shown in circles on figures.
- 2/ Housing (item 8 or 9) shall be made by shipbuilder of a steel to match submarine hull. If flush type installation is necessary, housing (item 9) can be made by cutting off housing (item 8) to dimensions shown.
- 3/ Molding compound shall be polychloroprene, class 2, grade 60 of MIL-R-6855, or polyurethane, clear or amber in accordance with MIL-M-24041.
- 4/ The socket head cap screw shall be nylok type or equivalent.

Revision letters are not used to denote changes due to the extensiveness of the changes.

Review activity.

Navy - YD

Preparing activity:

Navy - SH

(Project 5935-N193-5)

User activity:

Navy - EC