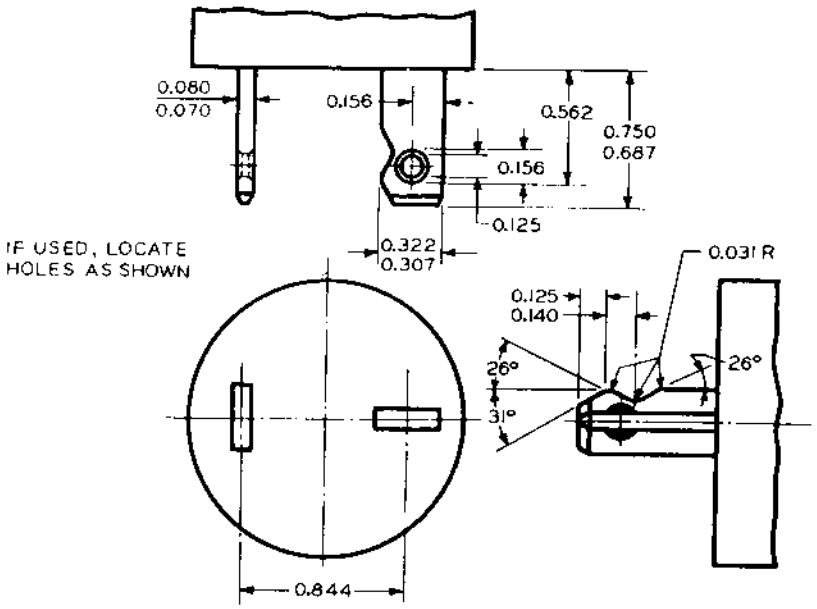
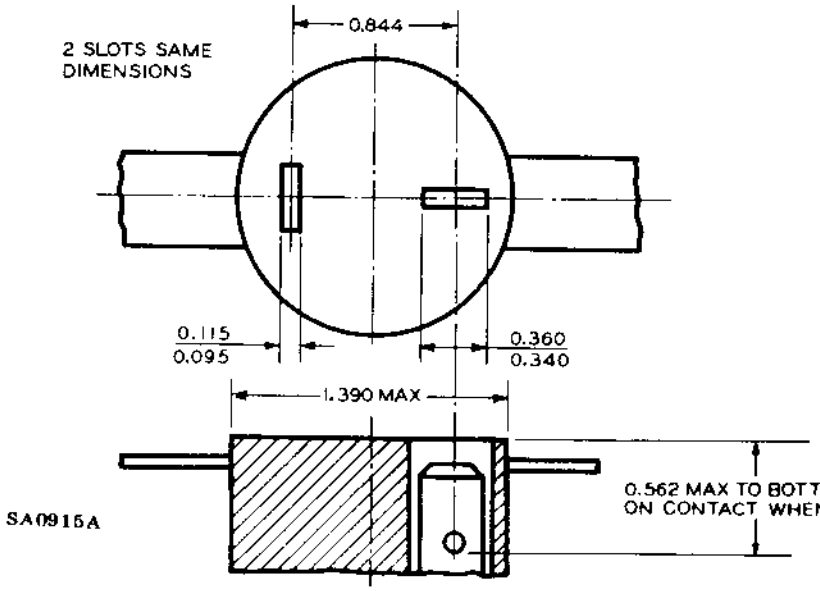
FIGURE 161.3
2-POLE, 2-WIRE DEVICES RATED
20 A, 250 V



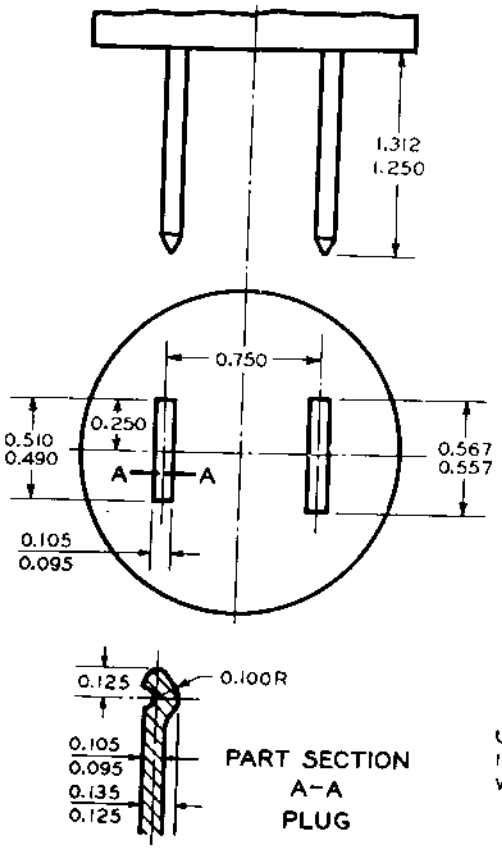
PLUG



RECEPTACLE

SA0915A

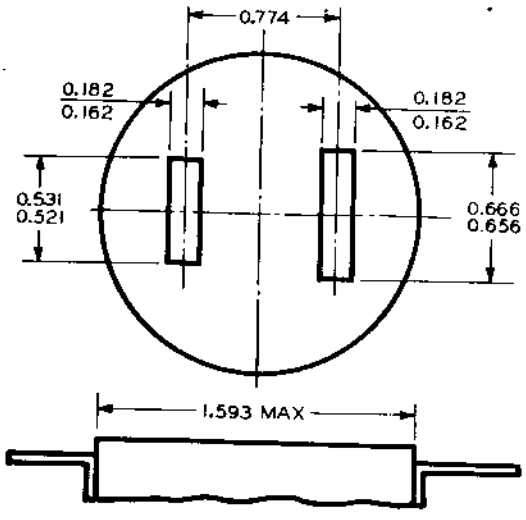
FIGURE 161.4
2-POLE, 2-WIRE DEVICES RATED
30 A, 250 V



PLUG

PART SECTION
A–A
PLUG

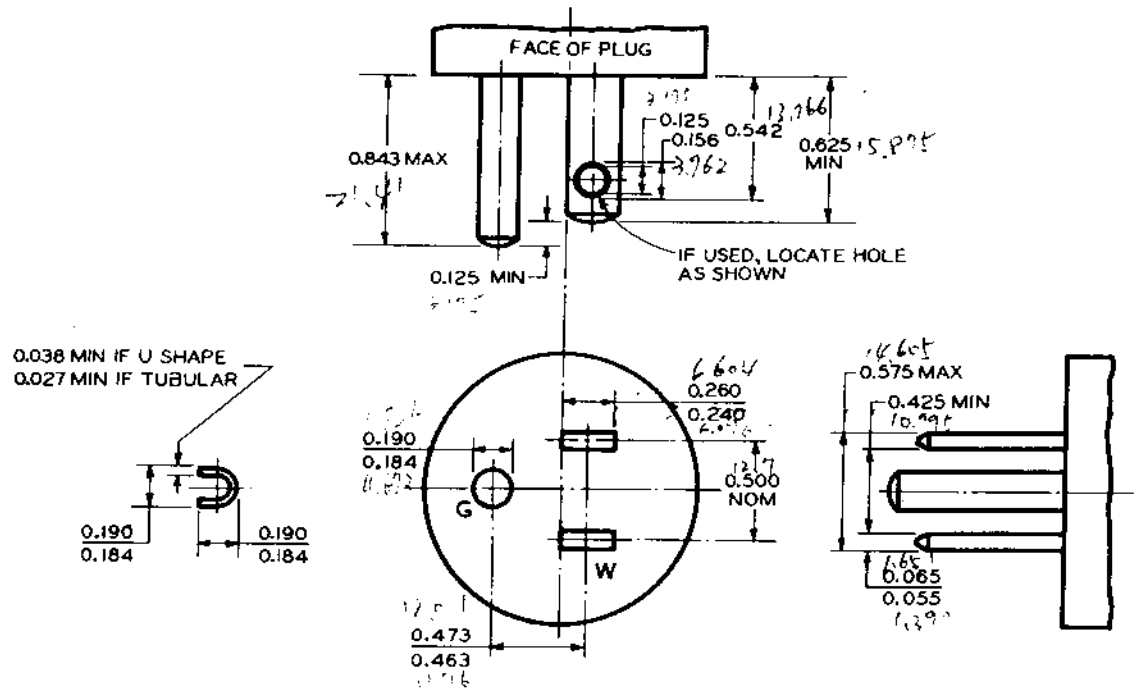
USE OF FORMING SHOWN IN SECTION A-A IS OPTIONAL. DIMENSIONS SHOWN APPLY WHEN FORMING IS USED



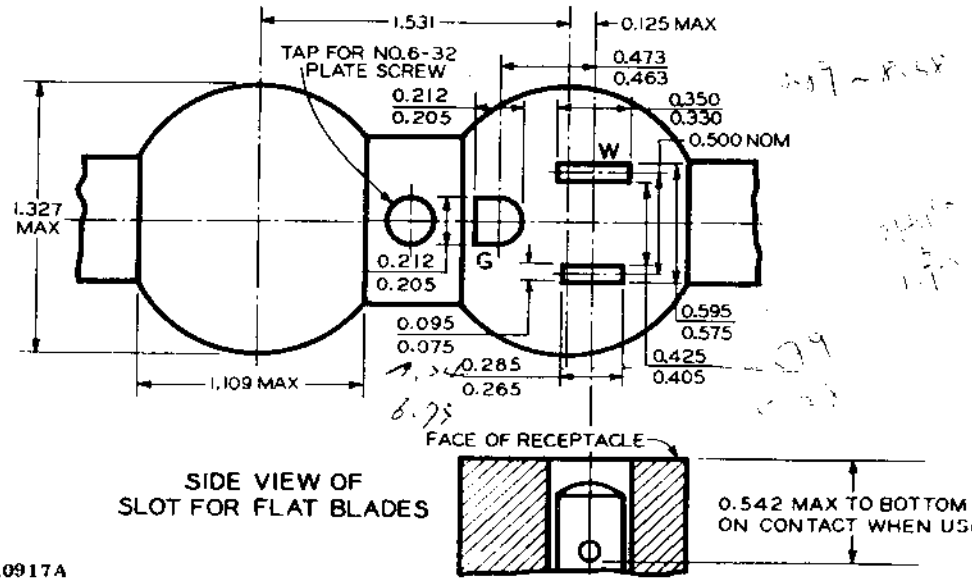
RECEPTACLE

SA0916A

FIGURE 161.5
2-POLE, 3-WIRE GROUNDING DEVICES RATED
15 A, 125 V



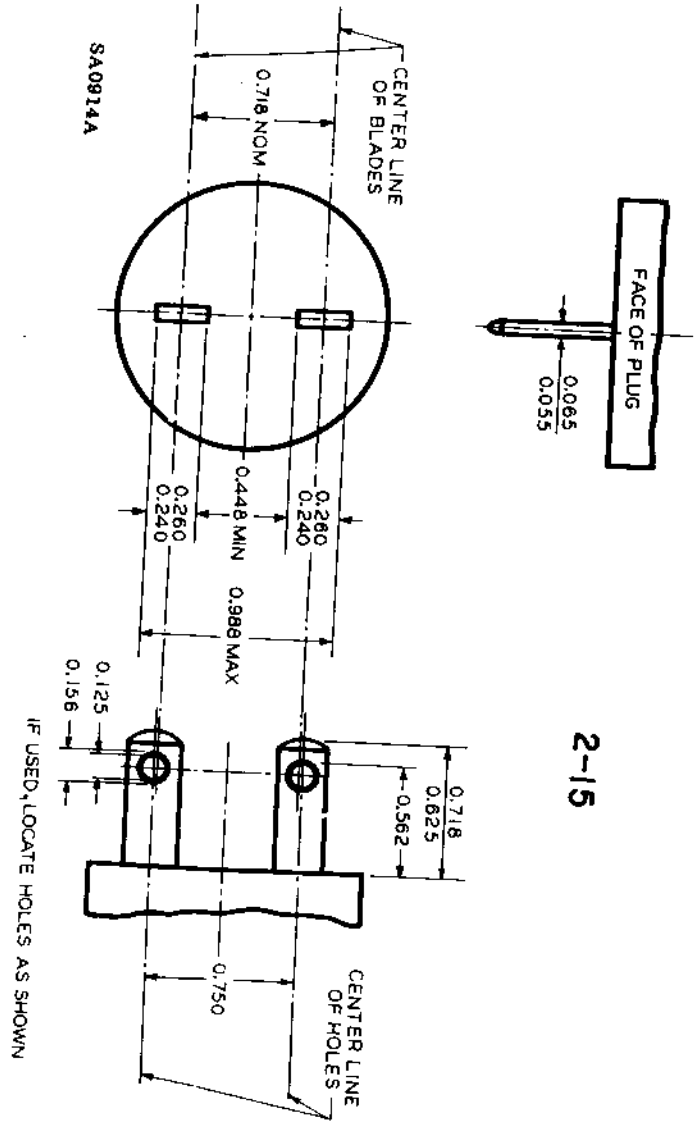
PLUG



RECEPTACLE

SA0917A

FIGURE 161.2
2-POLE, 2-WIRE PLUG RATED
15 A, 250 V



2-15

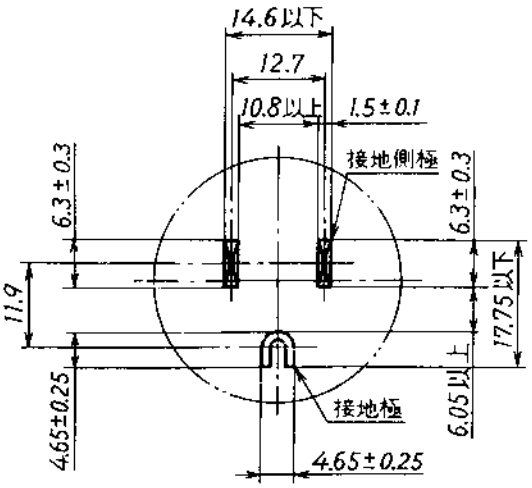
付図2　2極接地極付差込接続器

（刃受の形状は，一例を示す。）

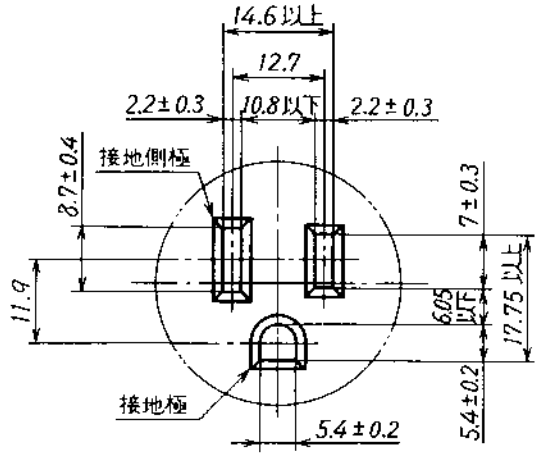
（1）　15 A　125 V

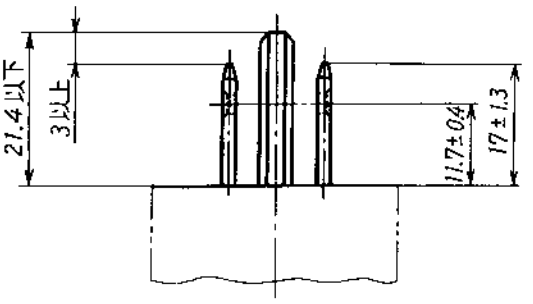
単位 mm

刃

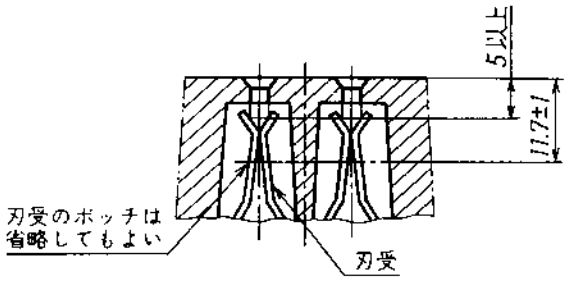


刃受穴



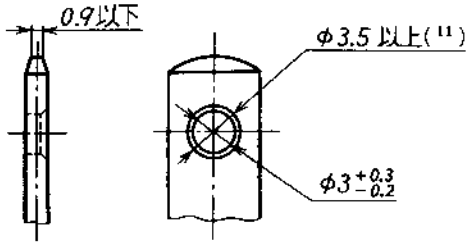


刃受穴断面

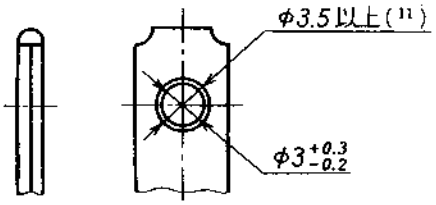


刃先拡大図

（一枚刃の場合）



（折曲刃の場合）(12)



注(11)　刃のポッチ穴の面取りは，両側に行う。

(12)　折曲刃の場合 材厚は0.6 mm以上とし，リブなどを付けてもよい。ただし，仕上り厚さは1.5±0.1 mmとし，定格電流は7 A以下とする。

備考1.　接地極の刃は，丸ピンでもよい。

[付図2の(2)，(3)，(4)，(5)，(6)，(7)及び(8)において同じ。]

2.　接地極は，11.7±1 mmのポッチ穴寸法は適用しない。

[付図2の(2)，(4)，(8)及び(9)において同じ。]

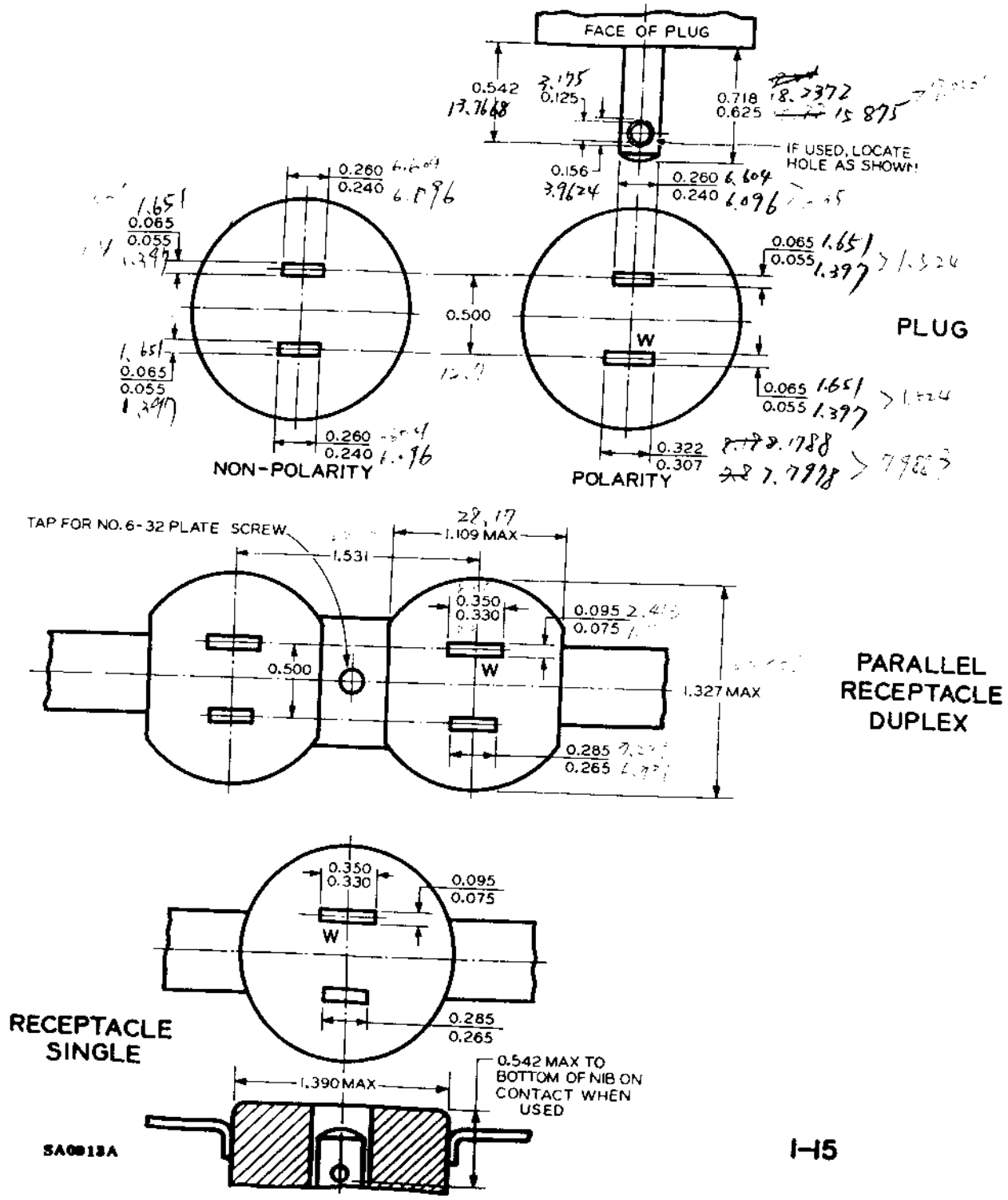
3.　許容差のない値は，基準寸法を示す。

4.　栓刃先端は，滑らかなこと。

5.　刃受穴の栓刃挿入口先端は，面取りすること。

161. General-Purpose Nonlocking Plugs and Receptacles

FIGURE 161.1
2-POLE, 2-WIRE DEVICES RATED
15 A, 125 V



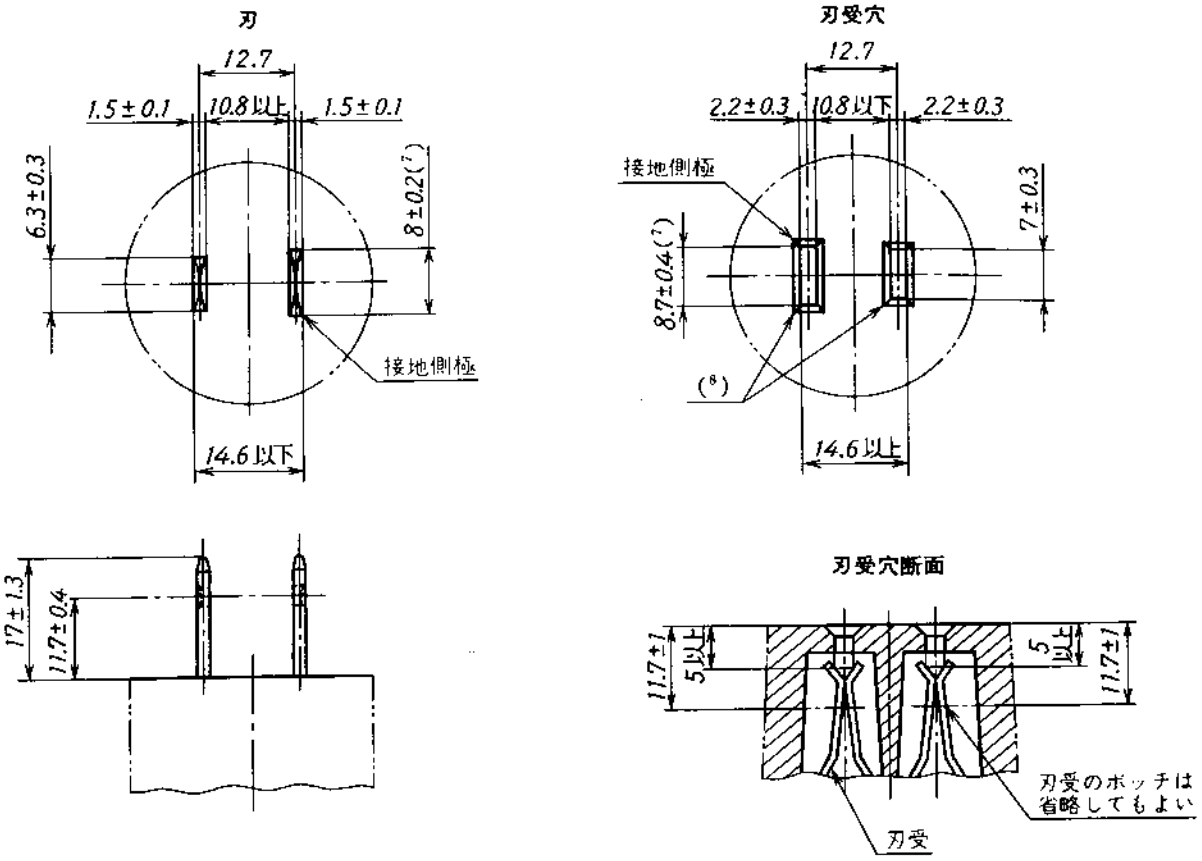
SA0013A

付図1　2極差込接続器

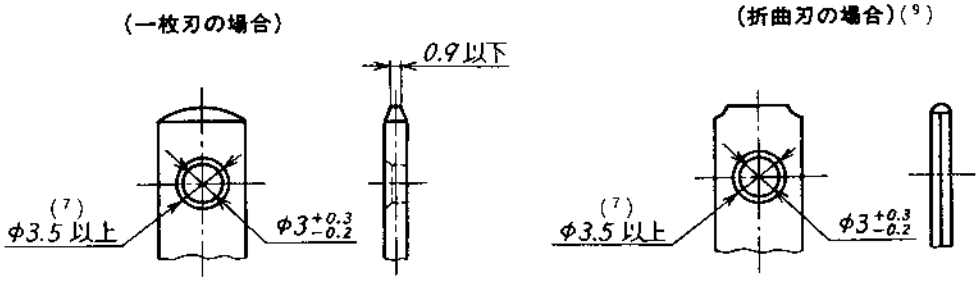
（刃受の形状は，一例を示す。）

（1）　15 A　125 V

単位 mm



刃先拡大図



注(7)　極性を付けないときは刃幅を6.3±0.3 mm，刃受穴の幅を7±0.3 mmとする。刃のポッチ穴の面取りは，両側に行う。

(8)　刃受穴の面取りについては，製造上困難なものは一部を省略してもよい。

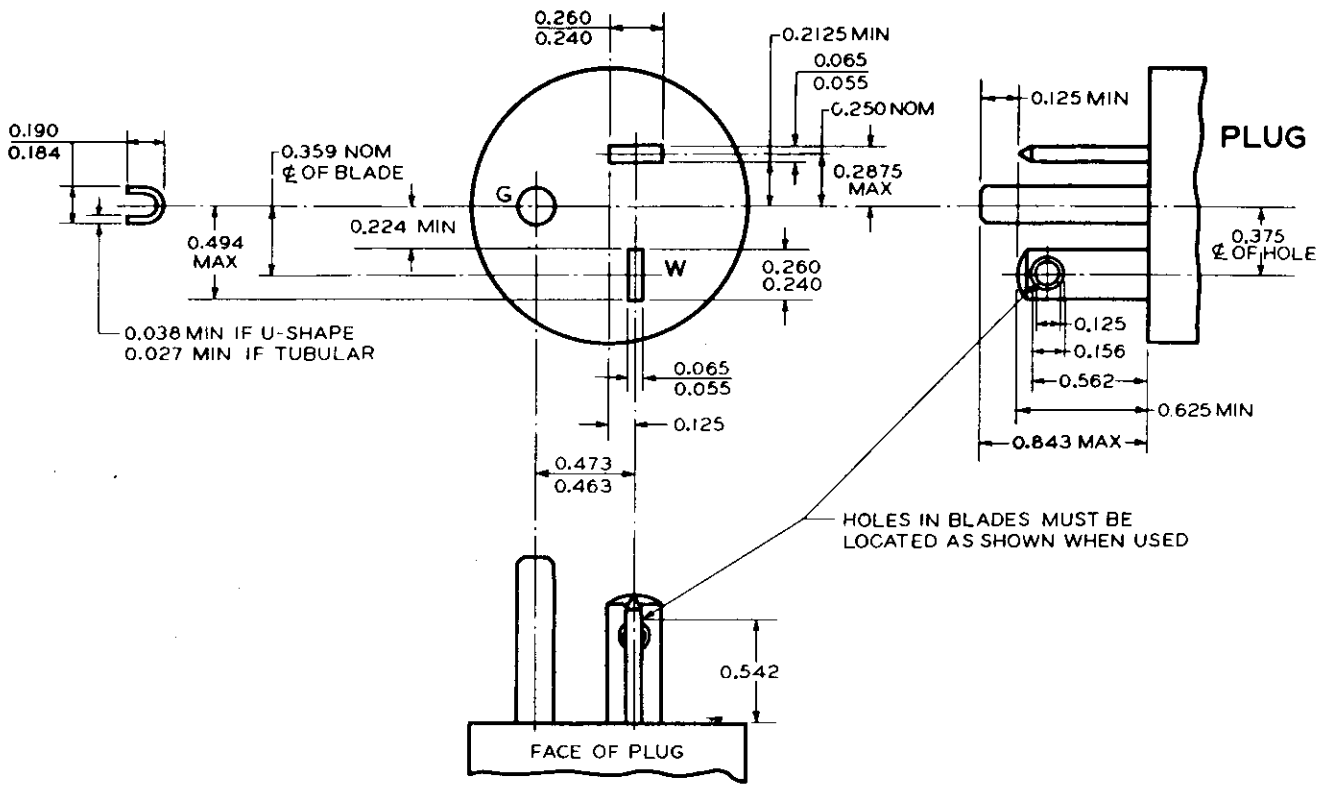
(9)　折曲刃の場合 材厚は0.6 mm以上とし，リブなどを付けてもよい。ただし，仕上り厚さは1.5±0.1 mmとし定格電流は7 A以下とする。

備考1.　許容差のない値は，基準寸法を示す。

2.　栓刃先端は滑らかなこと。

3.　刃受穴の栓刃挿入口先端は面取りすること。

FIGURE 161.6
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 125 V



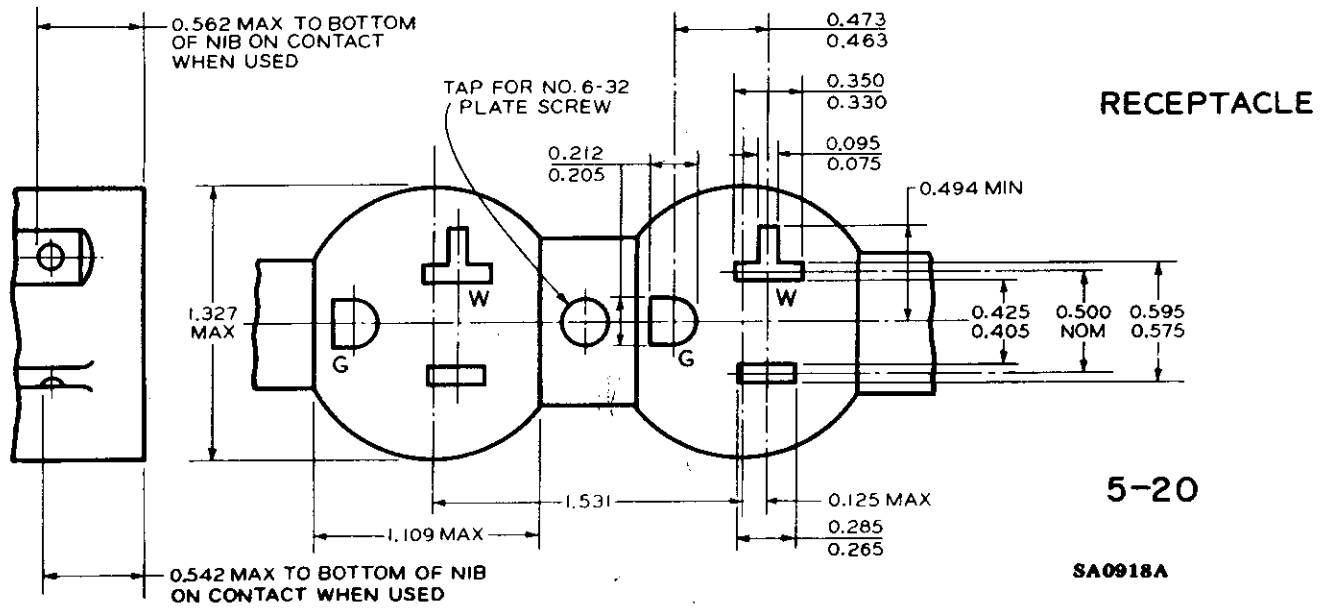


FIGURE 161.7
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 125 V

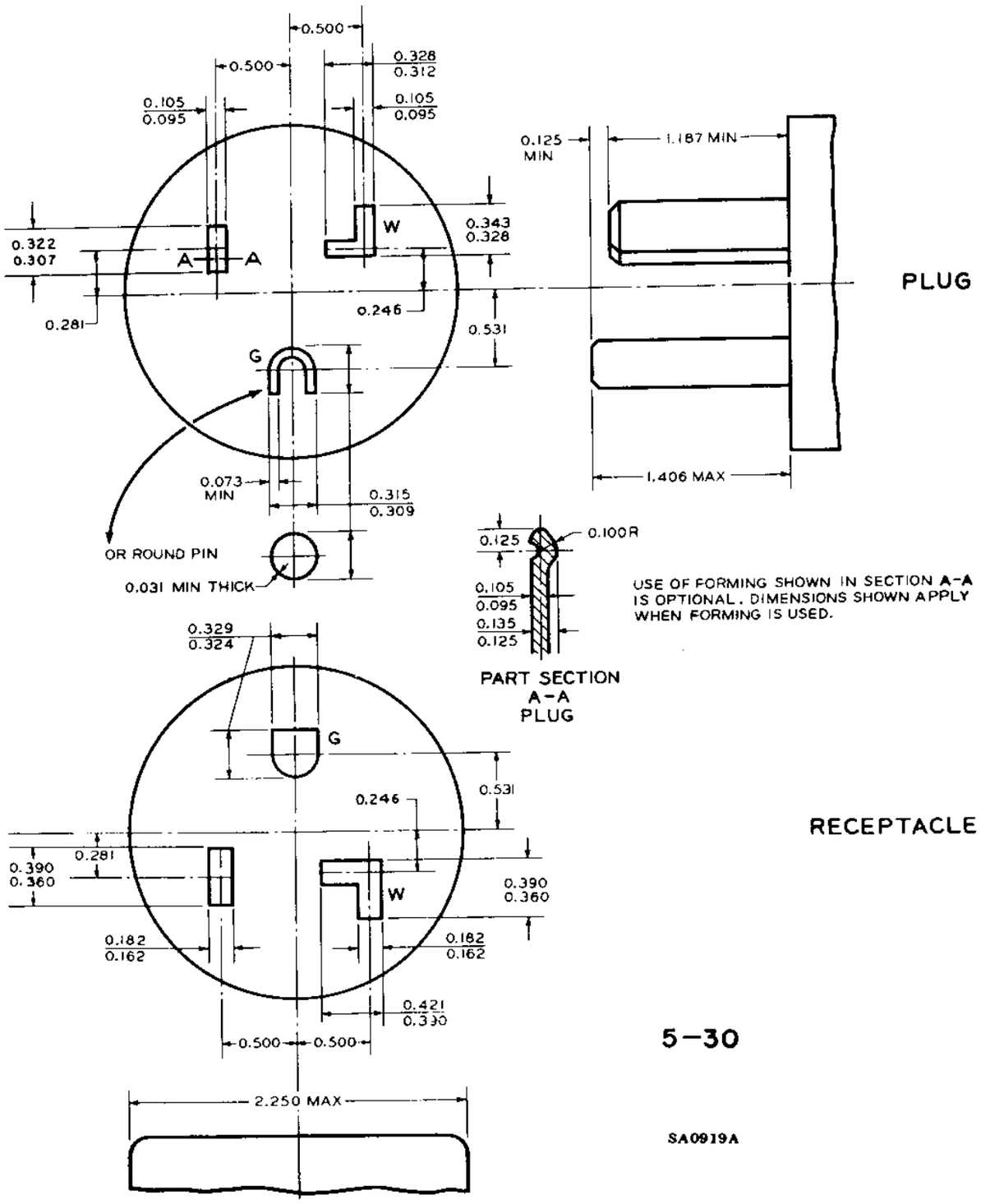
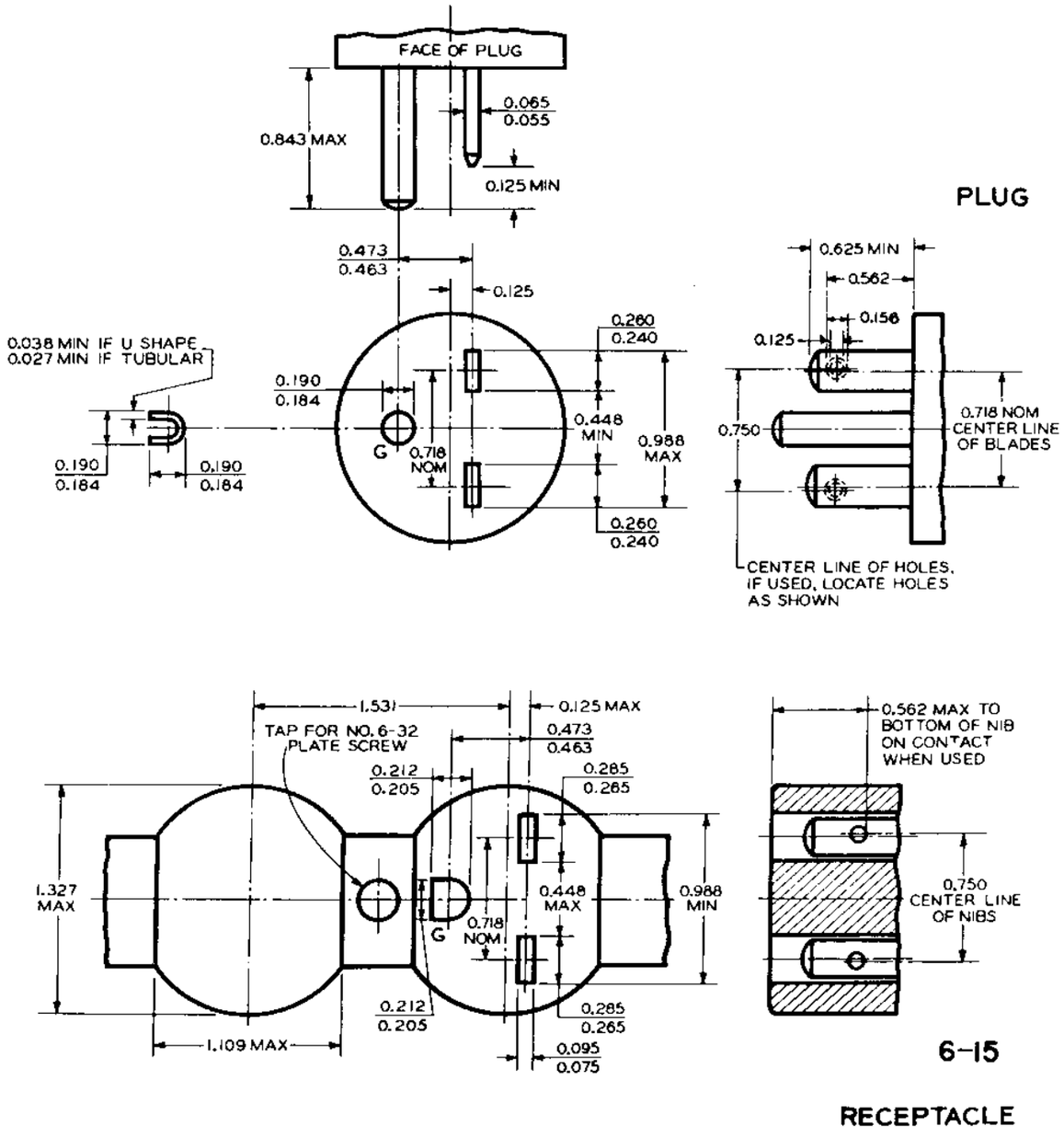
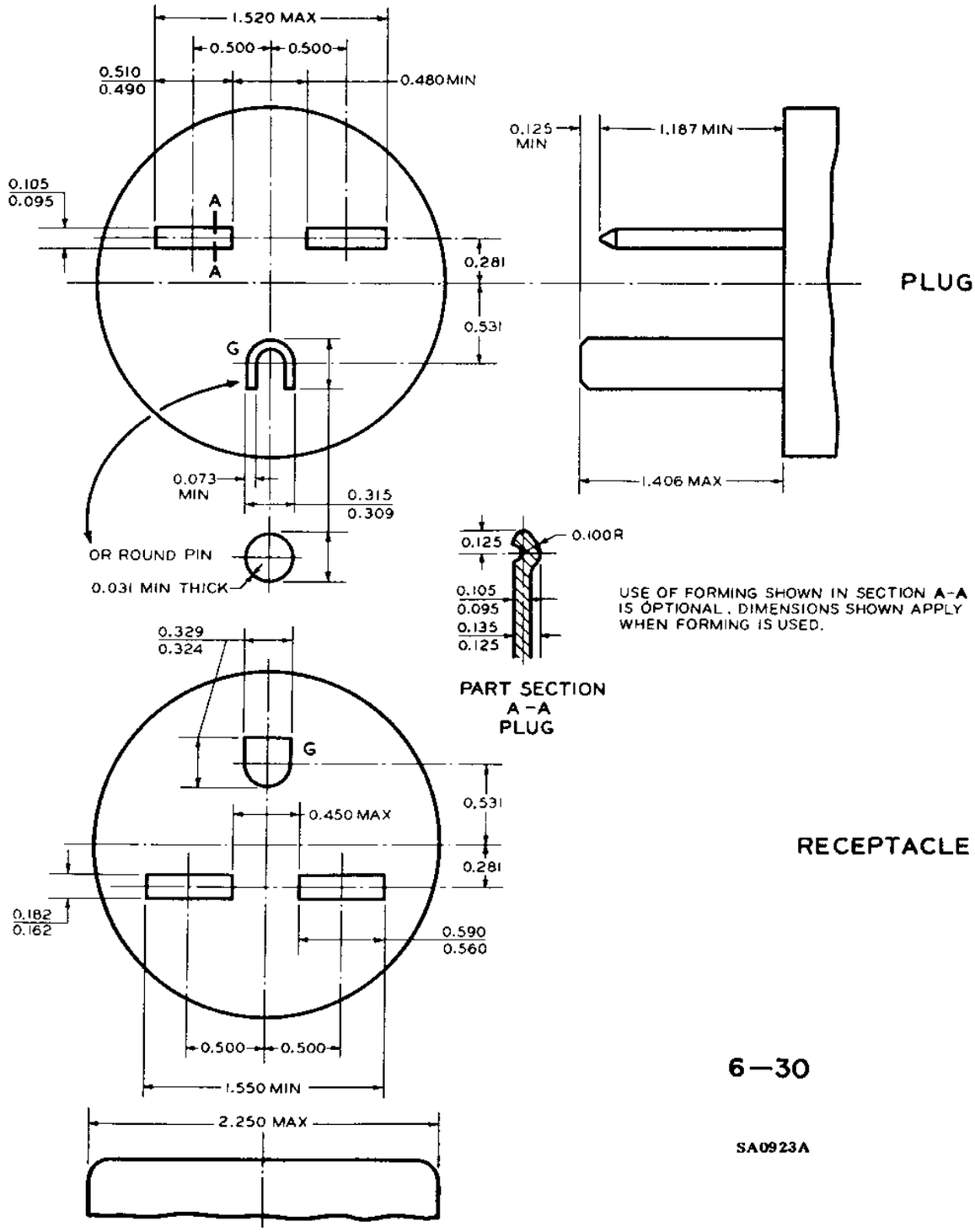


FIGURE 161.9
2-POLE, 3-WIRE GROUNDING DEVICES RATED
15 A, 250 V



SA0921A

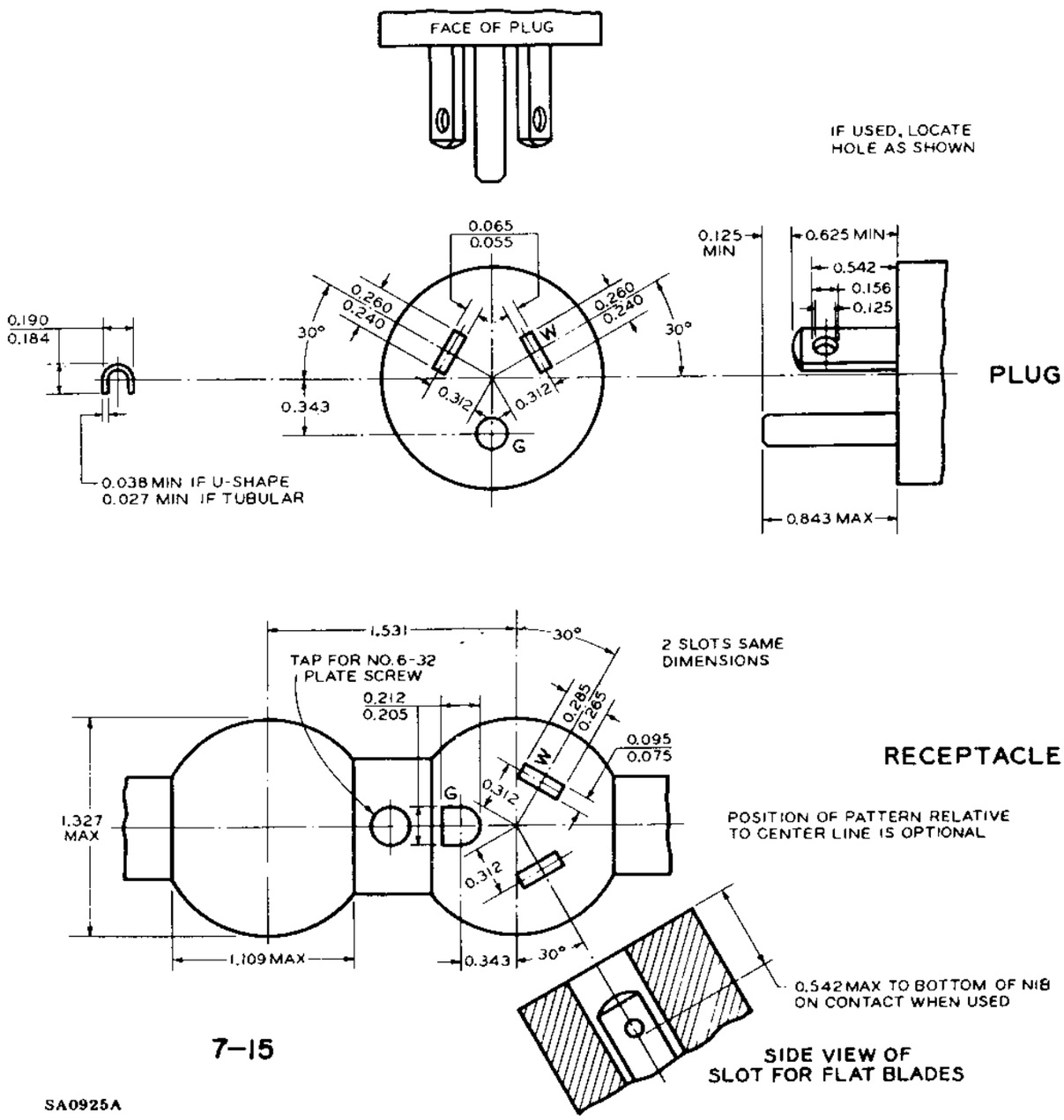
FIGURE 161.11
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 250 V



6—30

SA0923A

FIGURE 161.13
2-POLE, 3-WIRE GROUNDING DEVICES RATED
15 A, 277 V A-C



7–15

SA0925A

FIGURE 161.25
3-POLE, 4-WIRE GROUNDING DEVICES RATED
20 A, 125/250 V (3-WIRE)

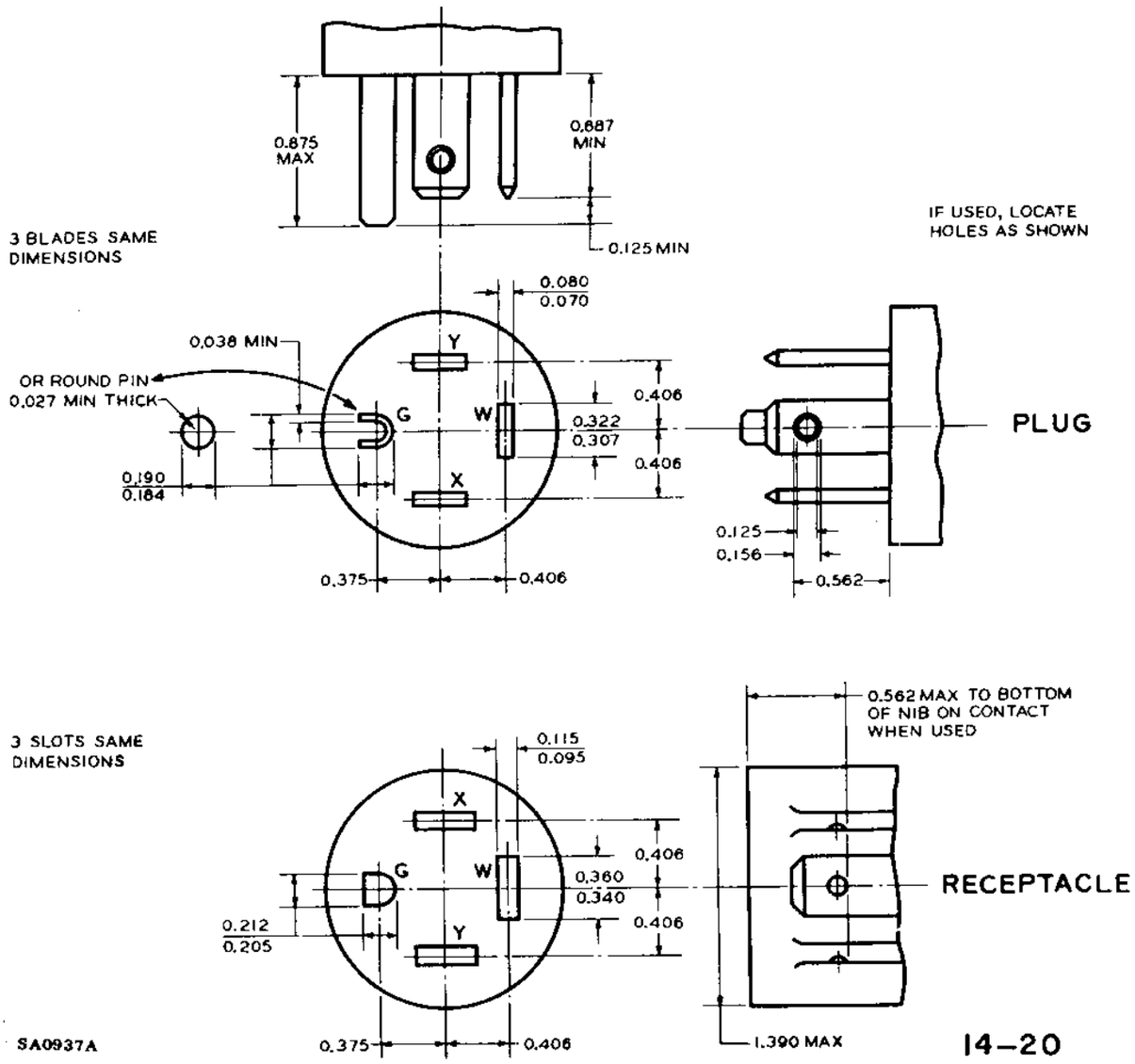


FIGURE 161.27
3-POLE, 4-WIRE GROUNDING DEVICES RATED
50 A, 125/250 V (3-WIRE)

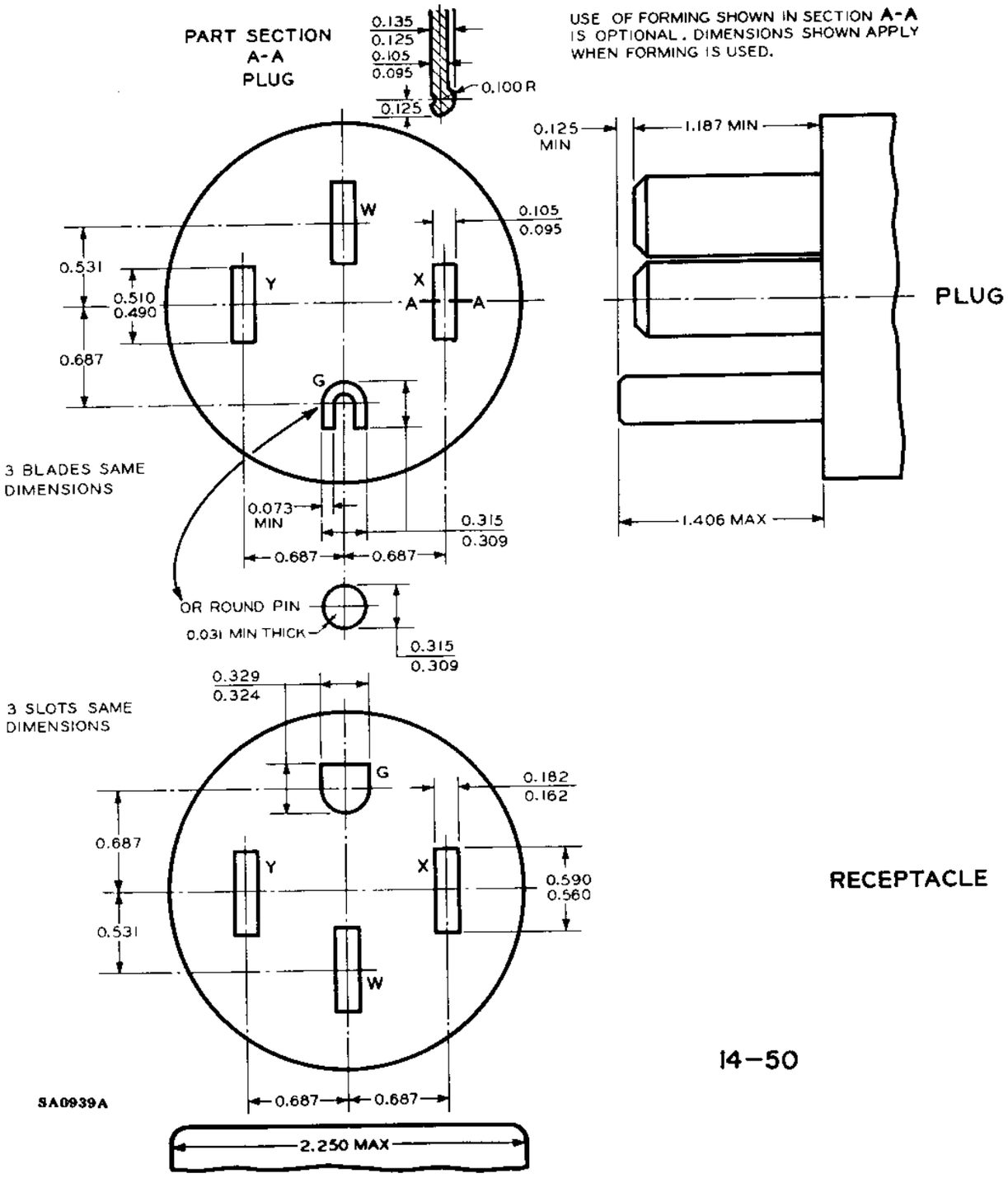
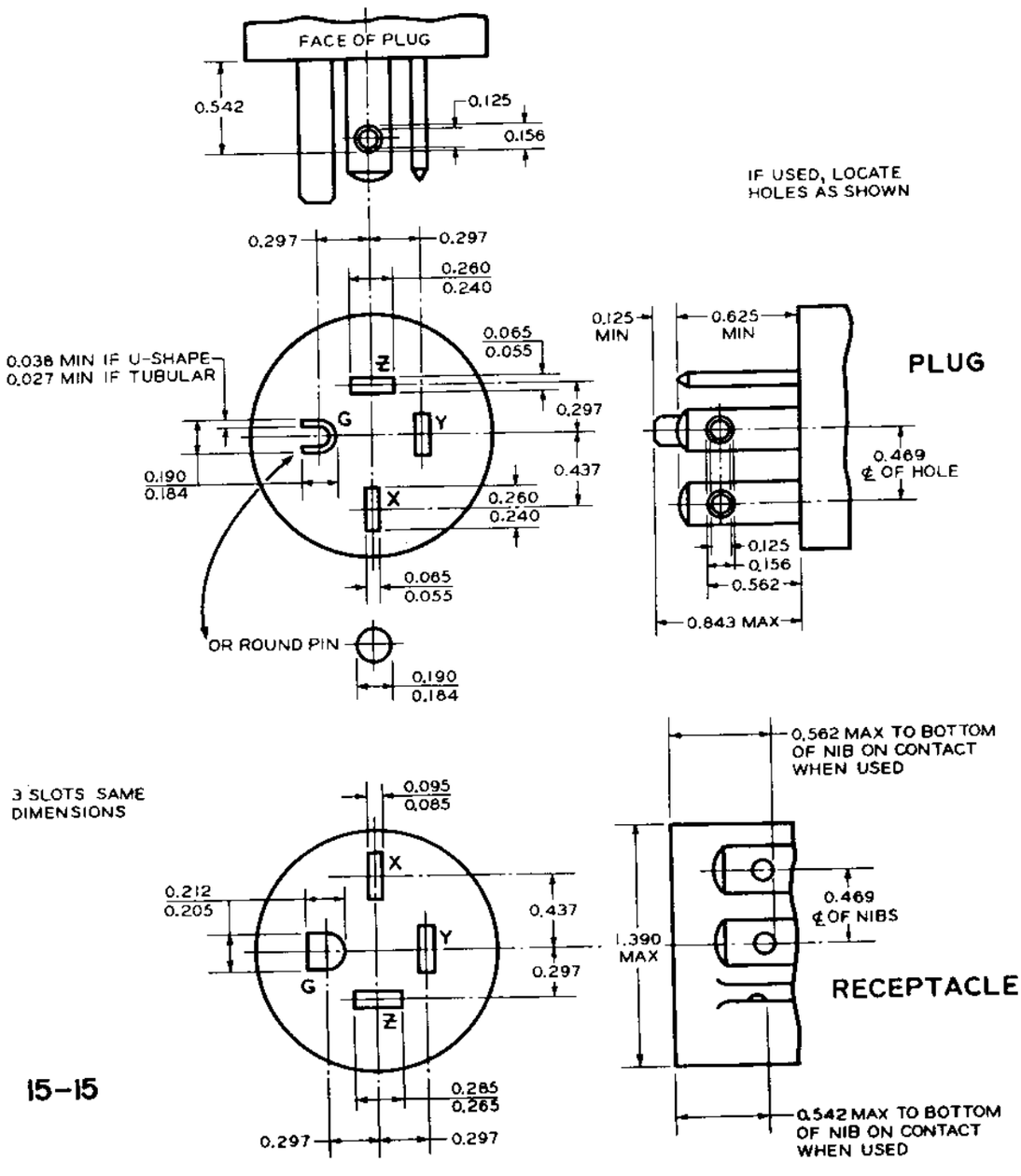


FIGURE 161.29
3-POLE, 4-WIRE GROUNDING DEVICES RATED
15 A, 250 V, 3 PHASE



SA0941A

FIGURE 162.5
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 125 V

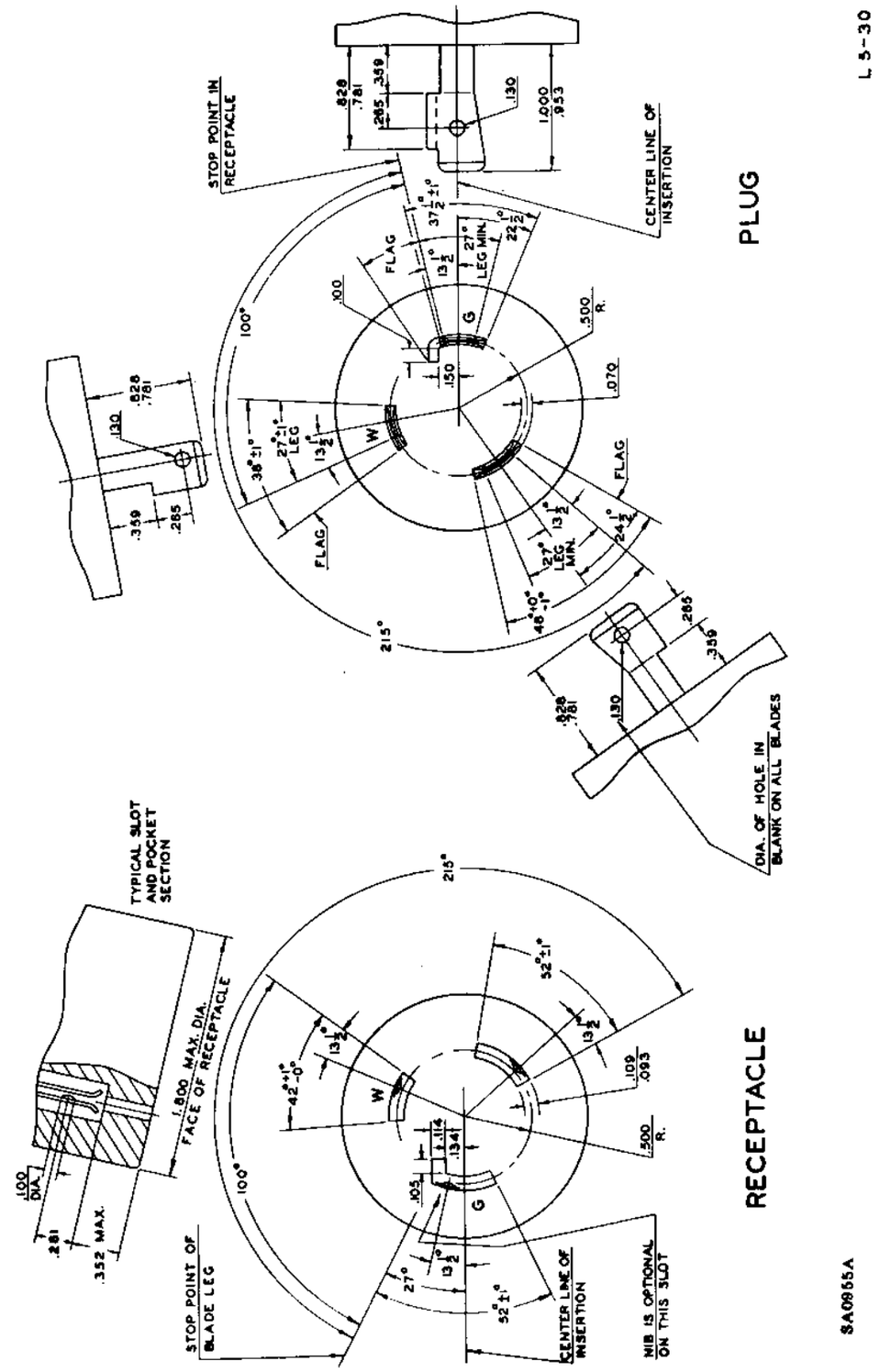


FIGURE 162.7
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 250 V

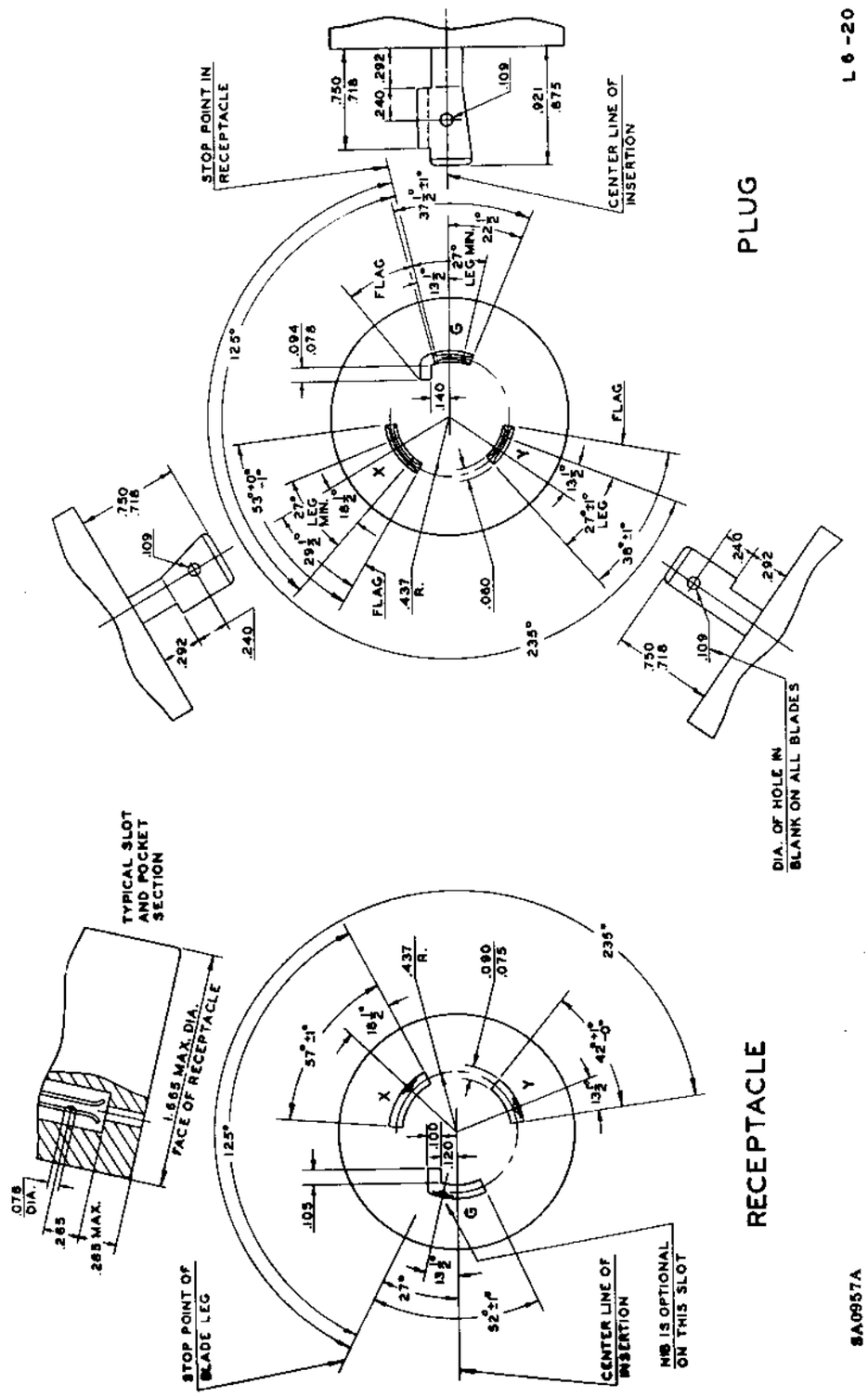


FIGURE 162.9
2-POLE, 3-WIRE GROUNDING-TYPE LOCKING DEVICES
RATED 15 A, 277 V

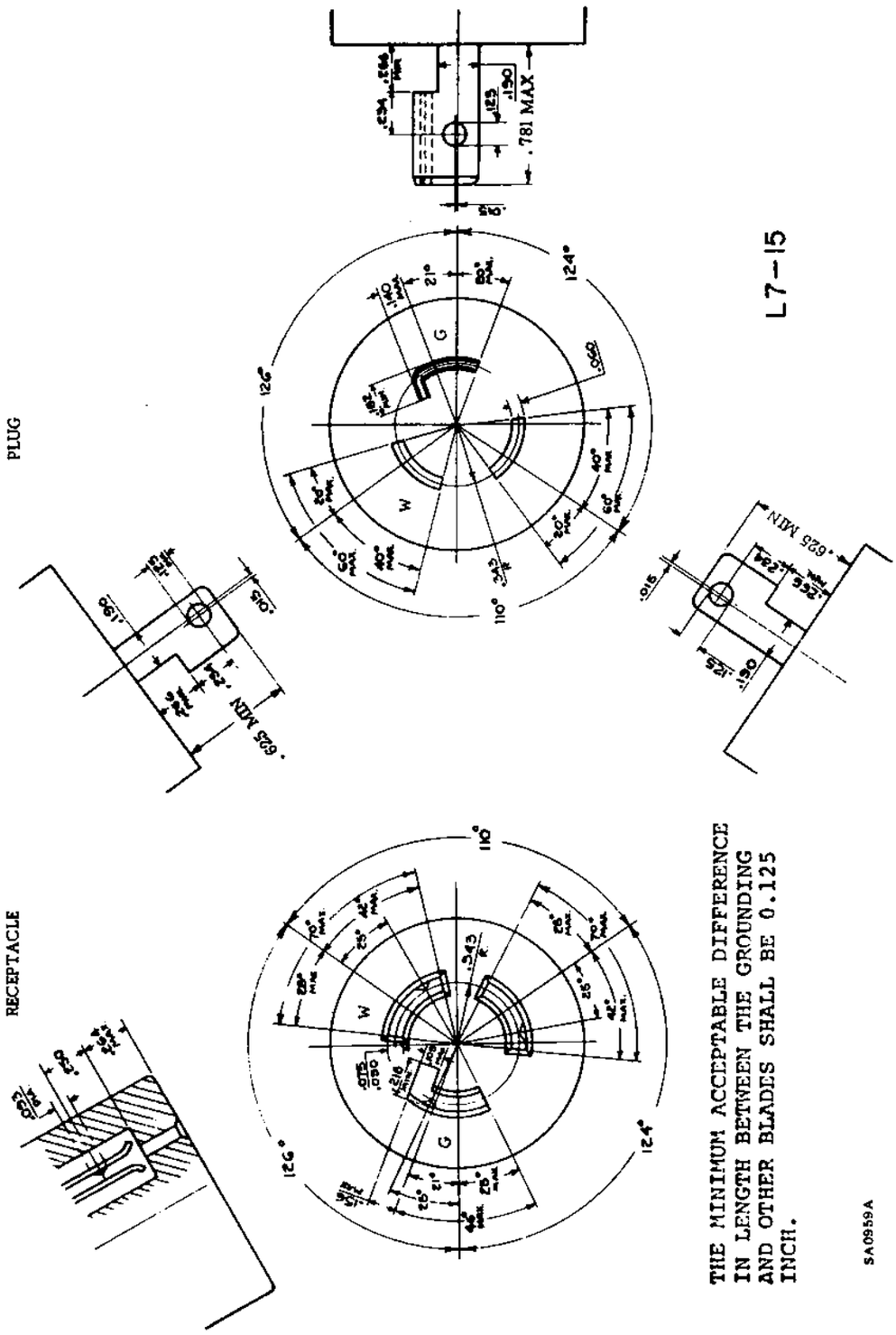


FIGURE 162.11
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 277 V A-C

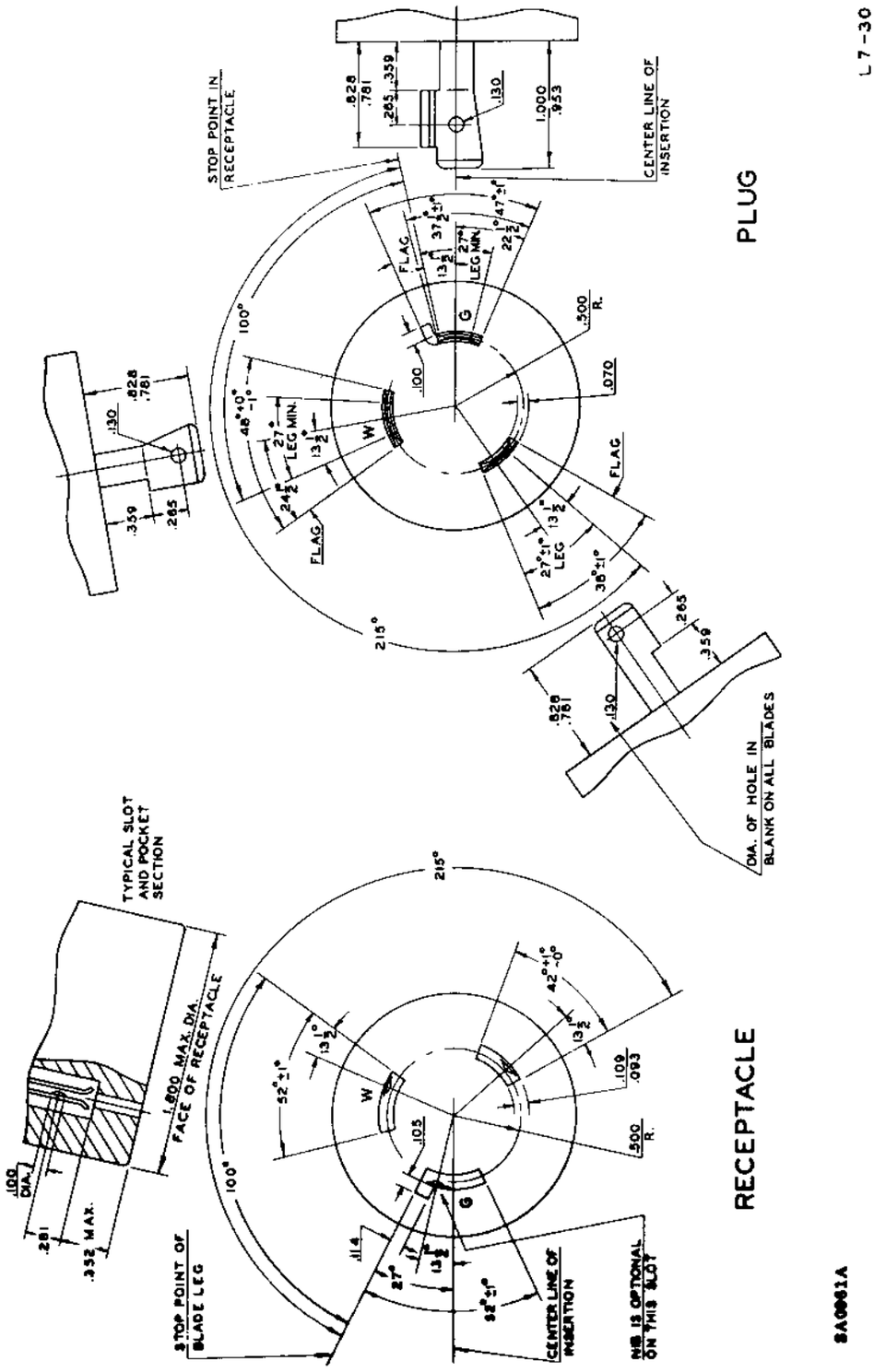


FIGURE 162.13
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 480 V A-C

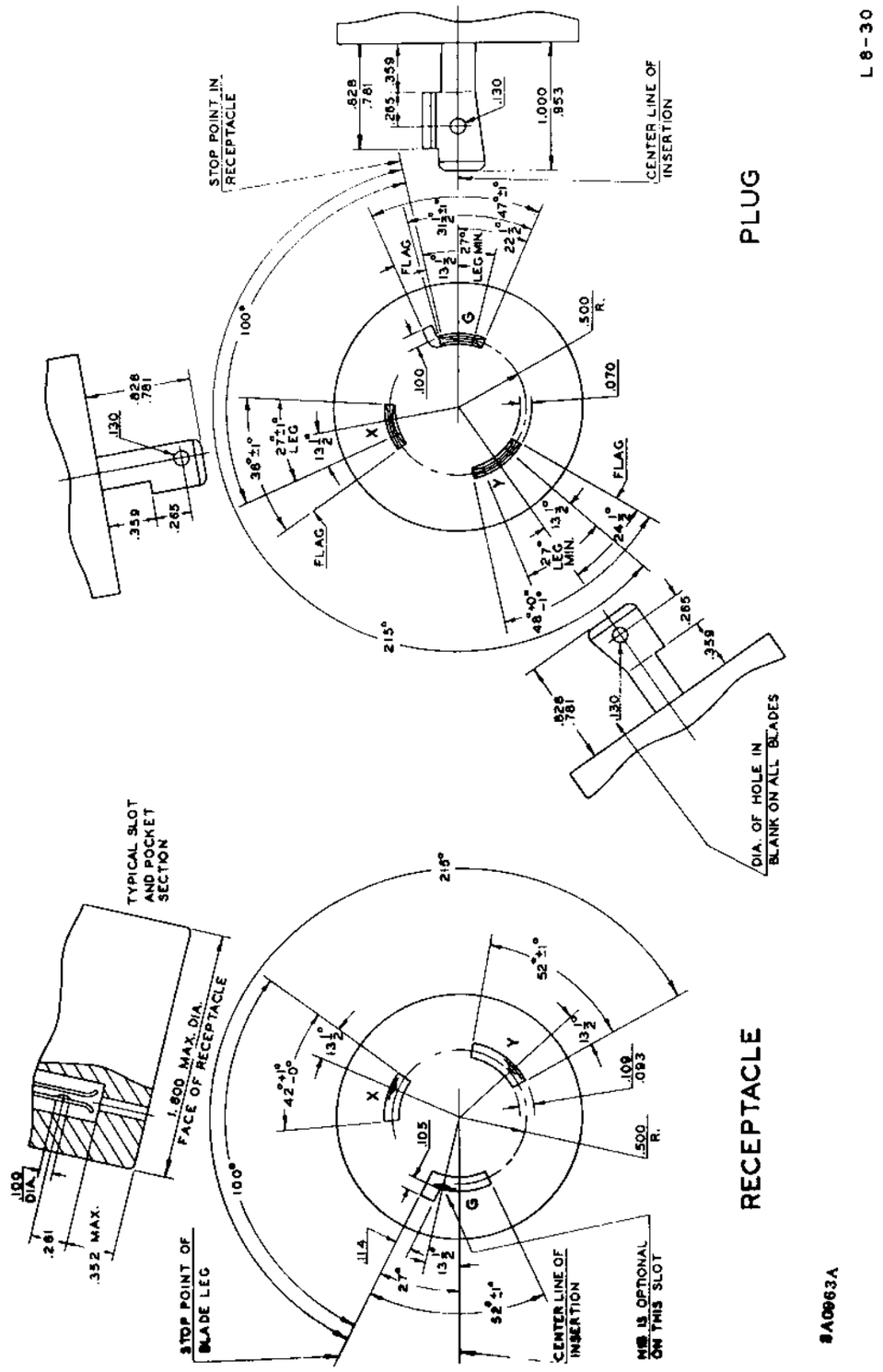


FIGURE 162.15
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 600 V A-C

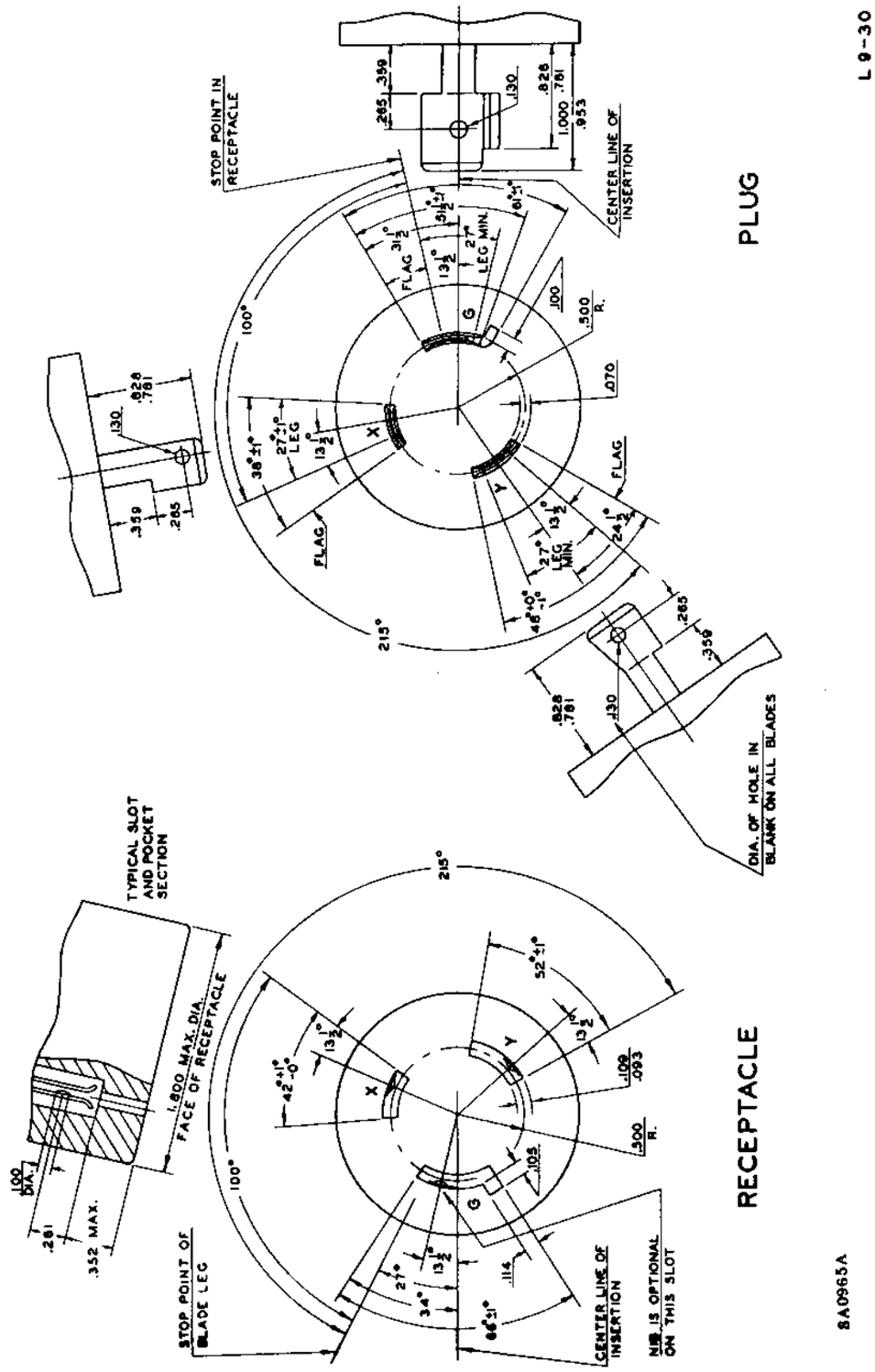


FIGURE 162.17
3-POLE, 3-WIRE DEVICES RATED
30 A, 125/250 V (3-WIRE)

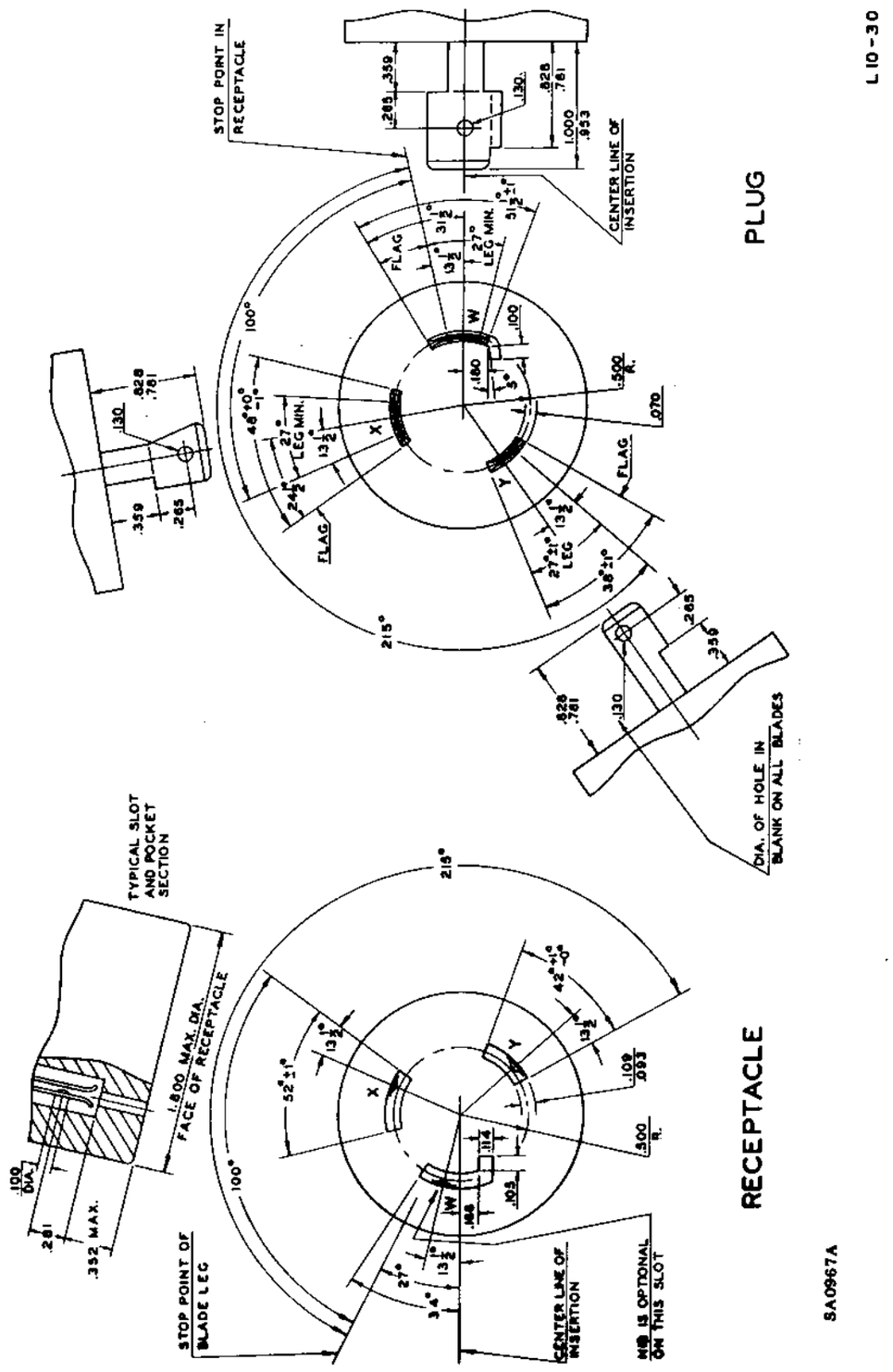


FIGURE 162.19
3-POLE, 3-WIRE DEVICES RATED
20 A, 250 V, 3 PHASE

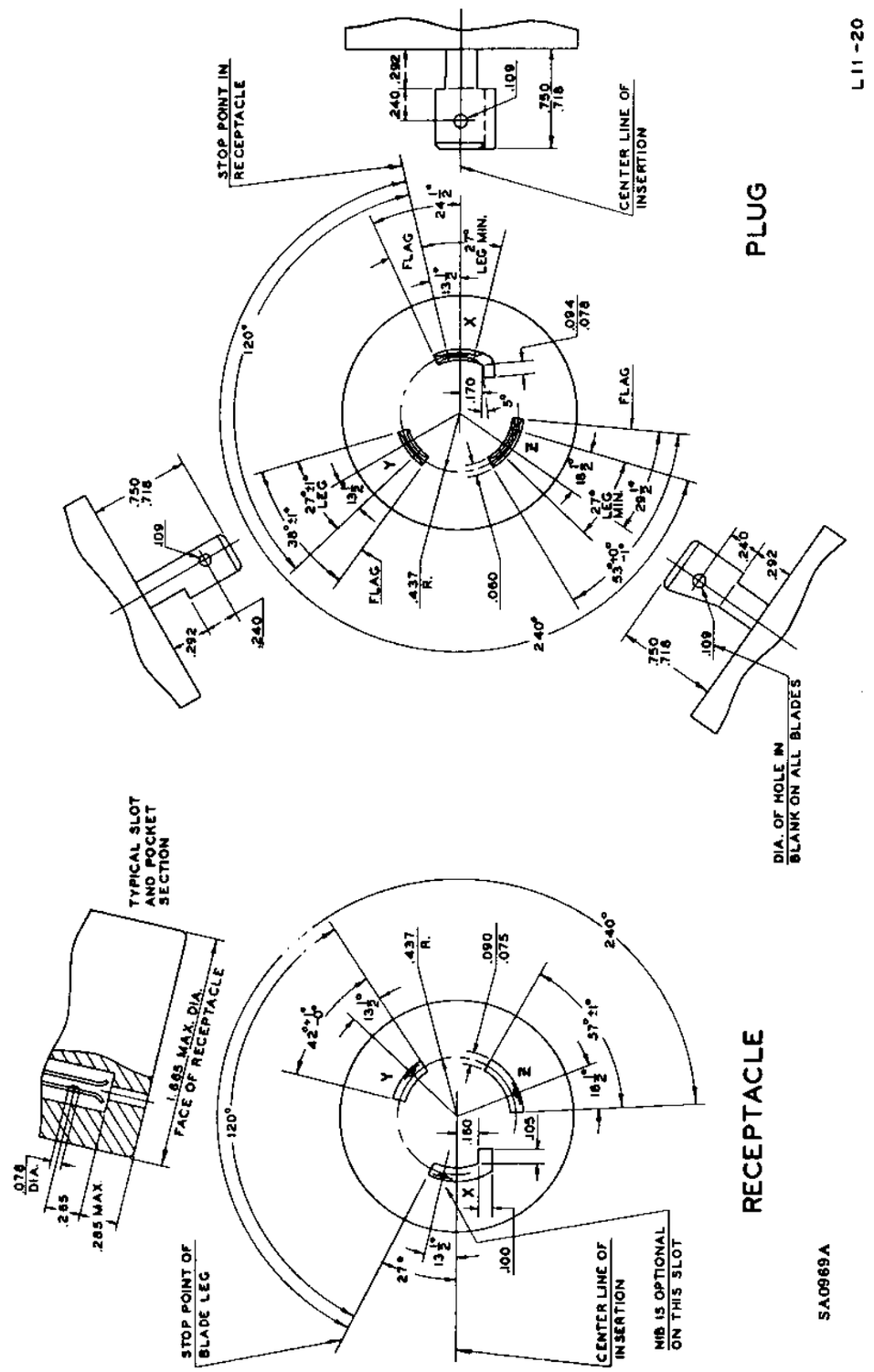


FIGURE 162.20
3-POLE, 3-WIRE DEVICES RATED
30 A, 250 V, 3 PHASE

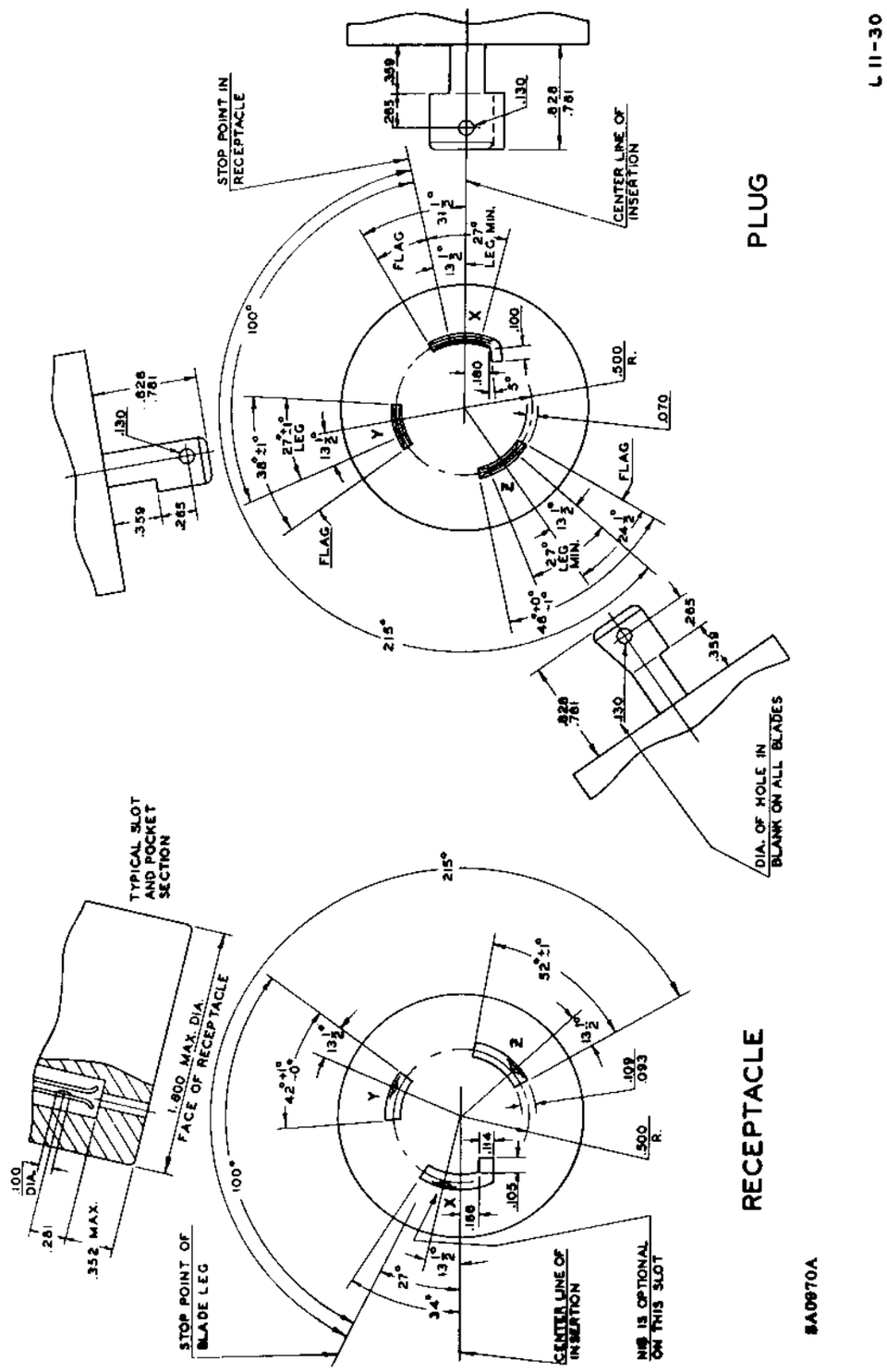


FIGURE 162.18
3-POLE, 3-WIRE DEVICES RATED
15 A, 250 V, 3 PHASE

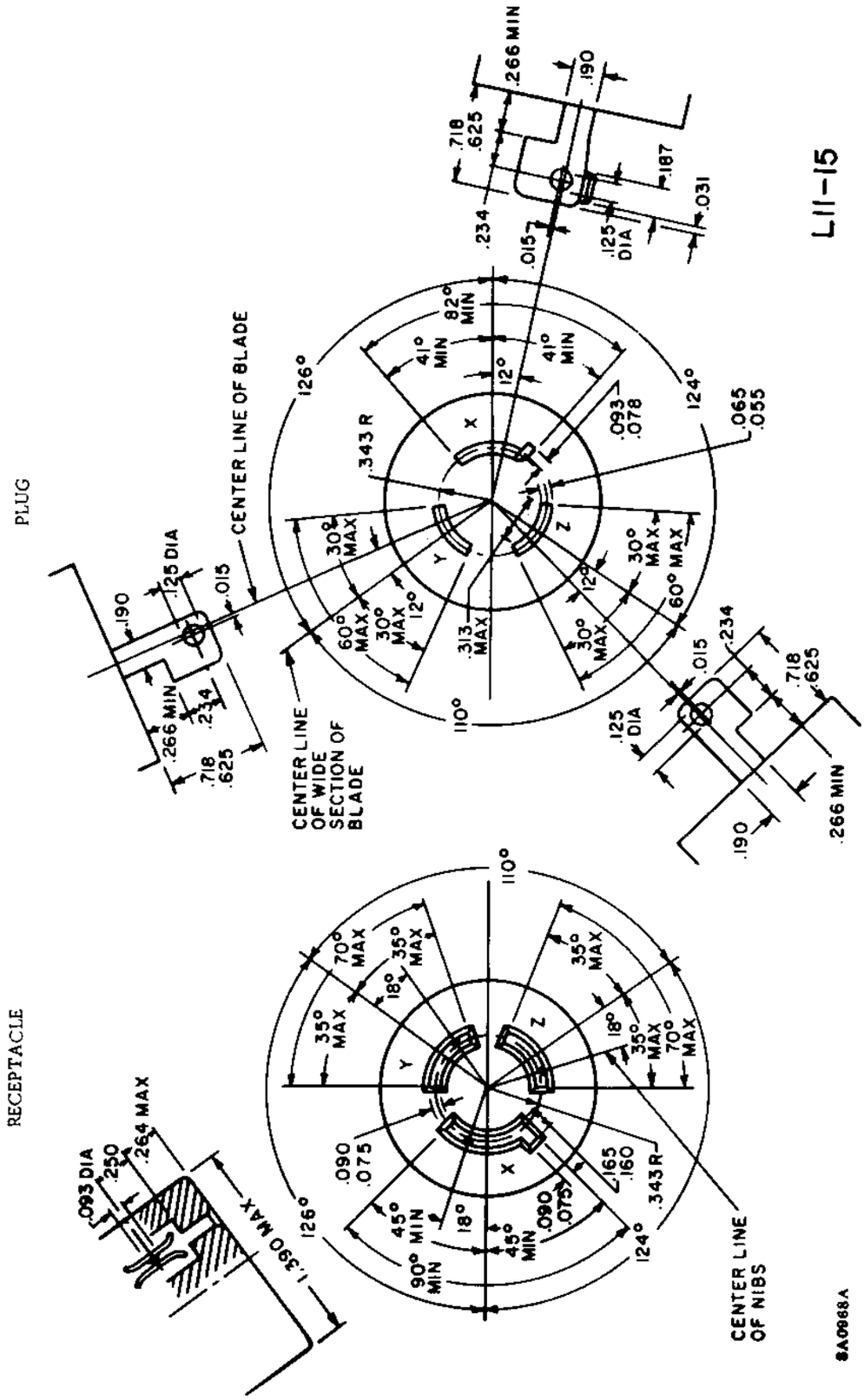


FIGURE 162.16
3-POLE, 3-WIRE DEVICES RATED
20 A, 125/250 V (3-WIRE)

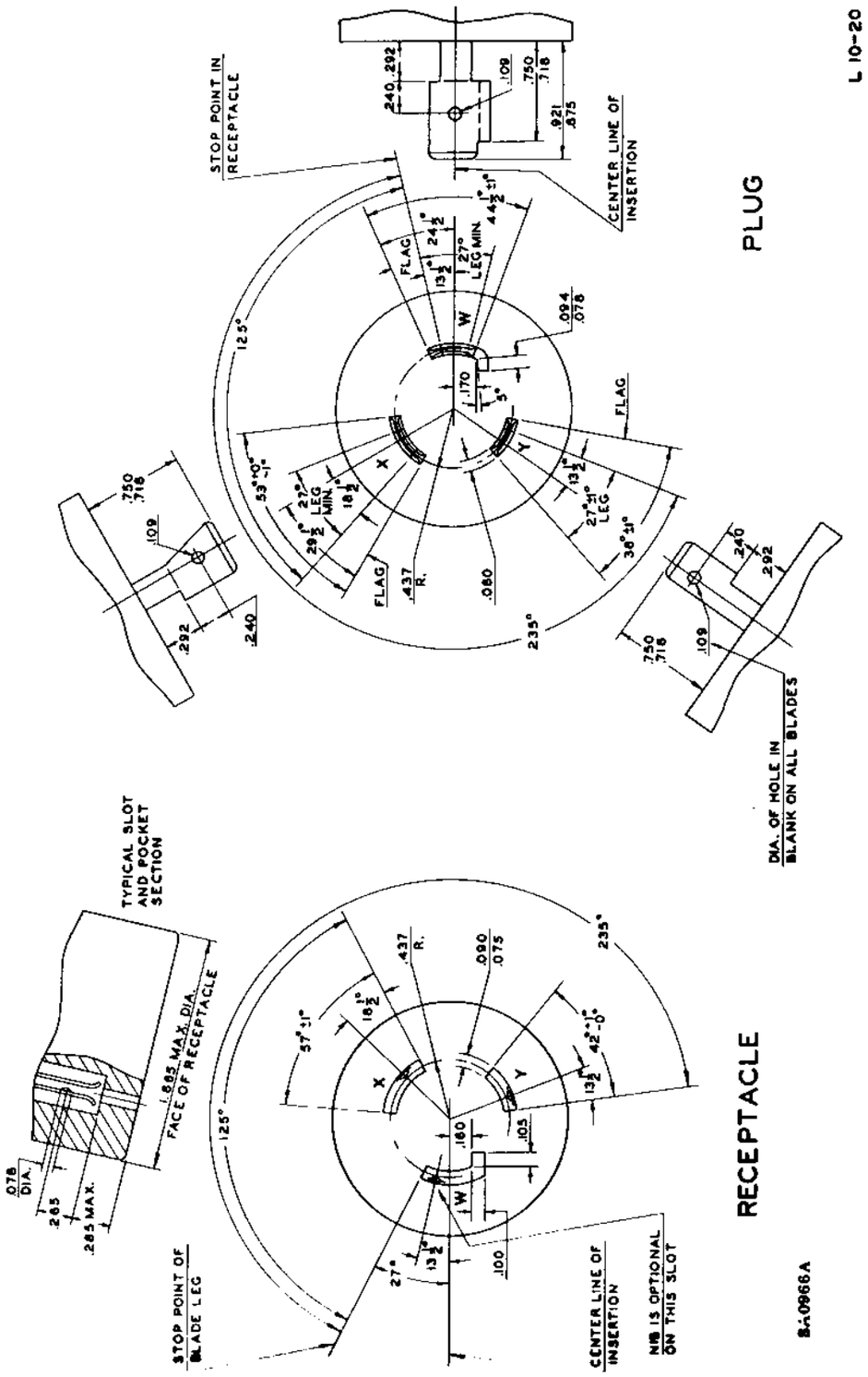


FIGURE 162.14
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 600 V A-C

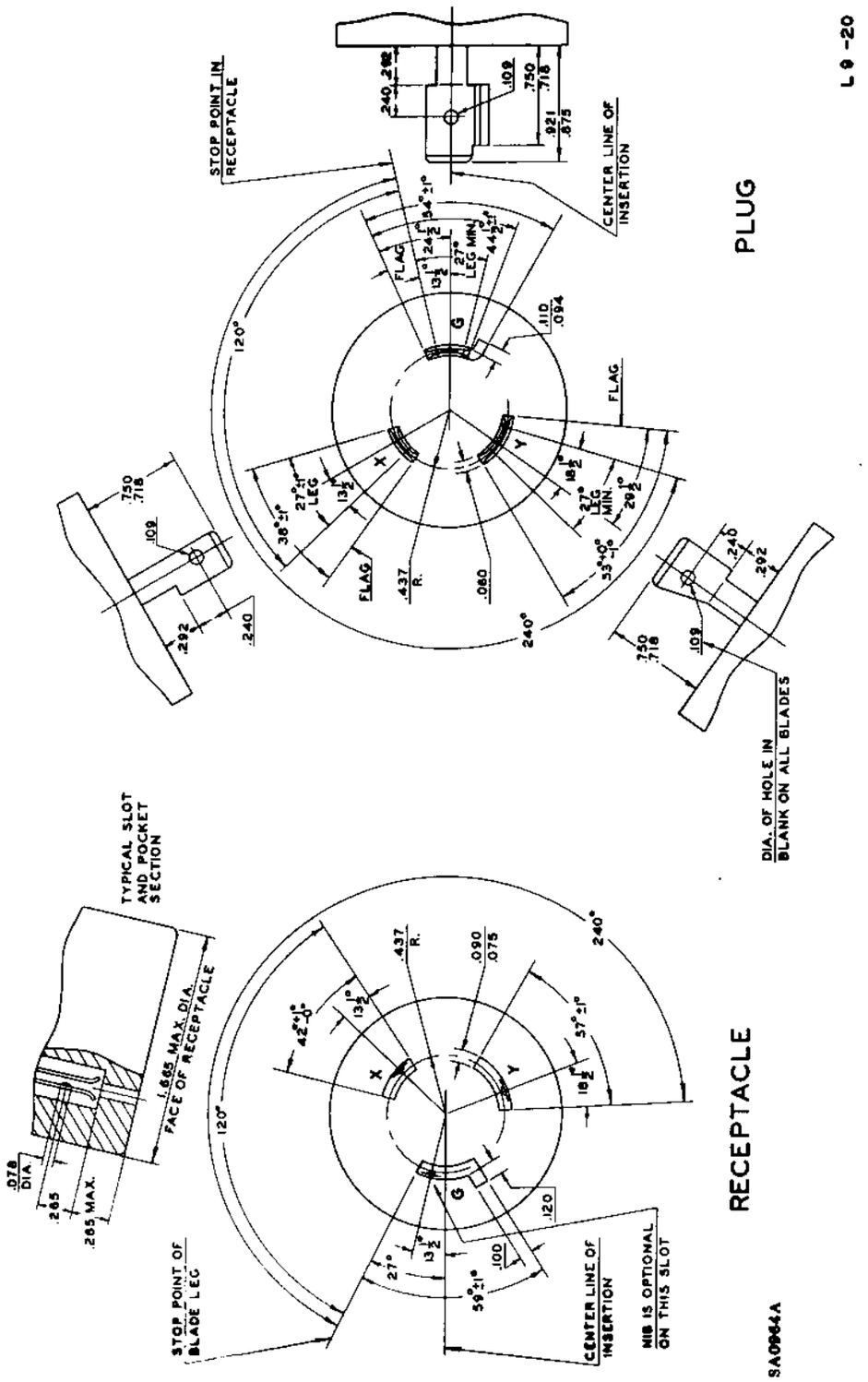


FIGURE 162.12
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 480 V A-C

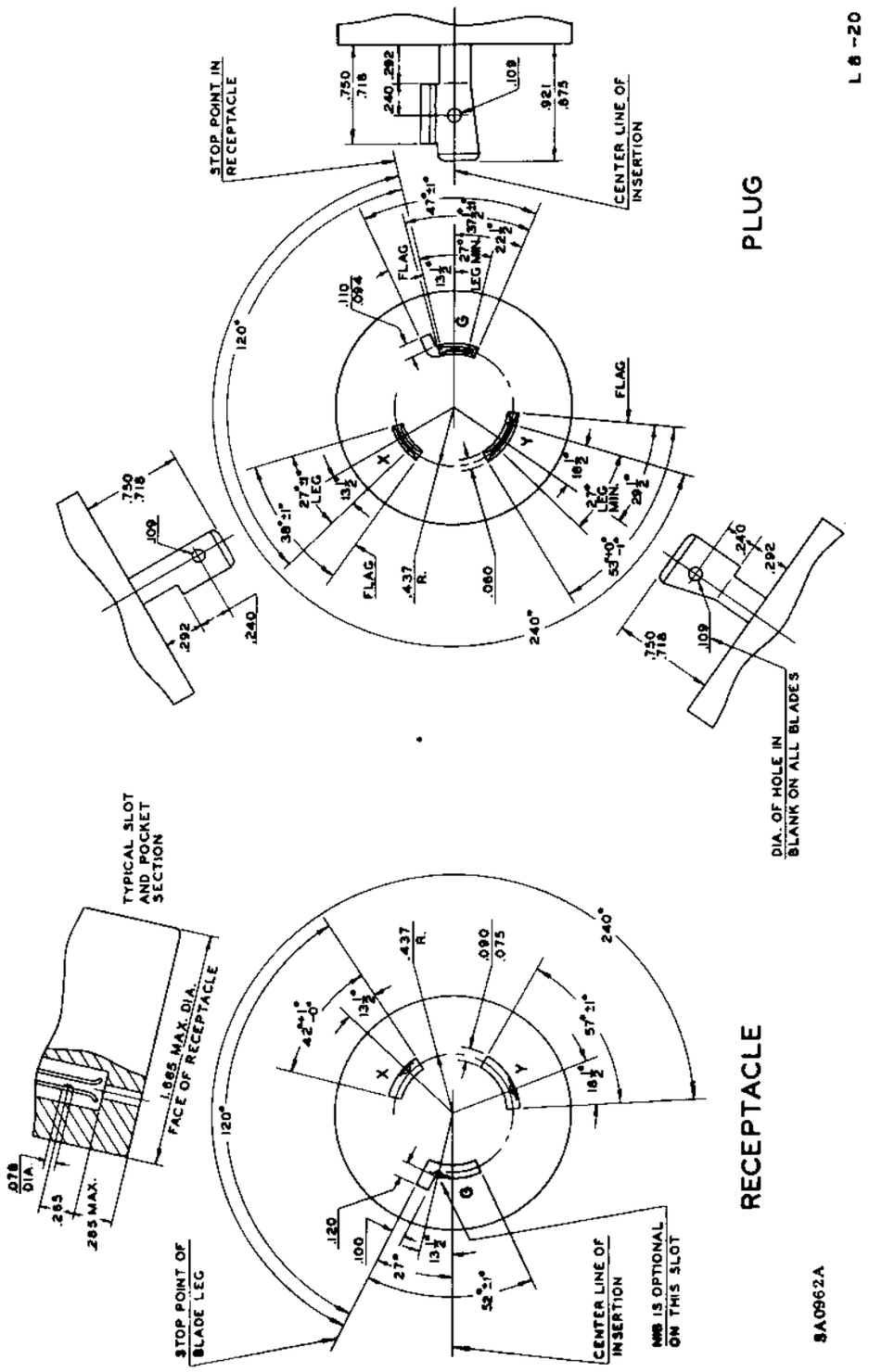


FIGURE 162.10
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 277 V A-C

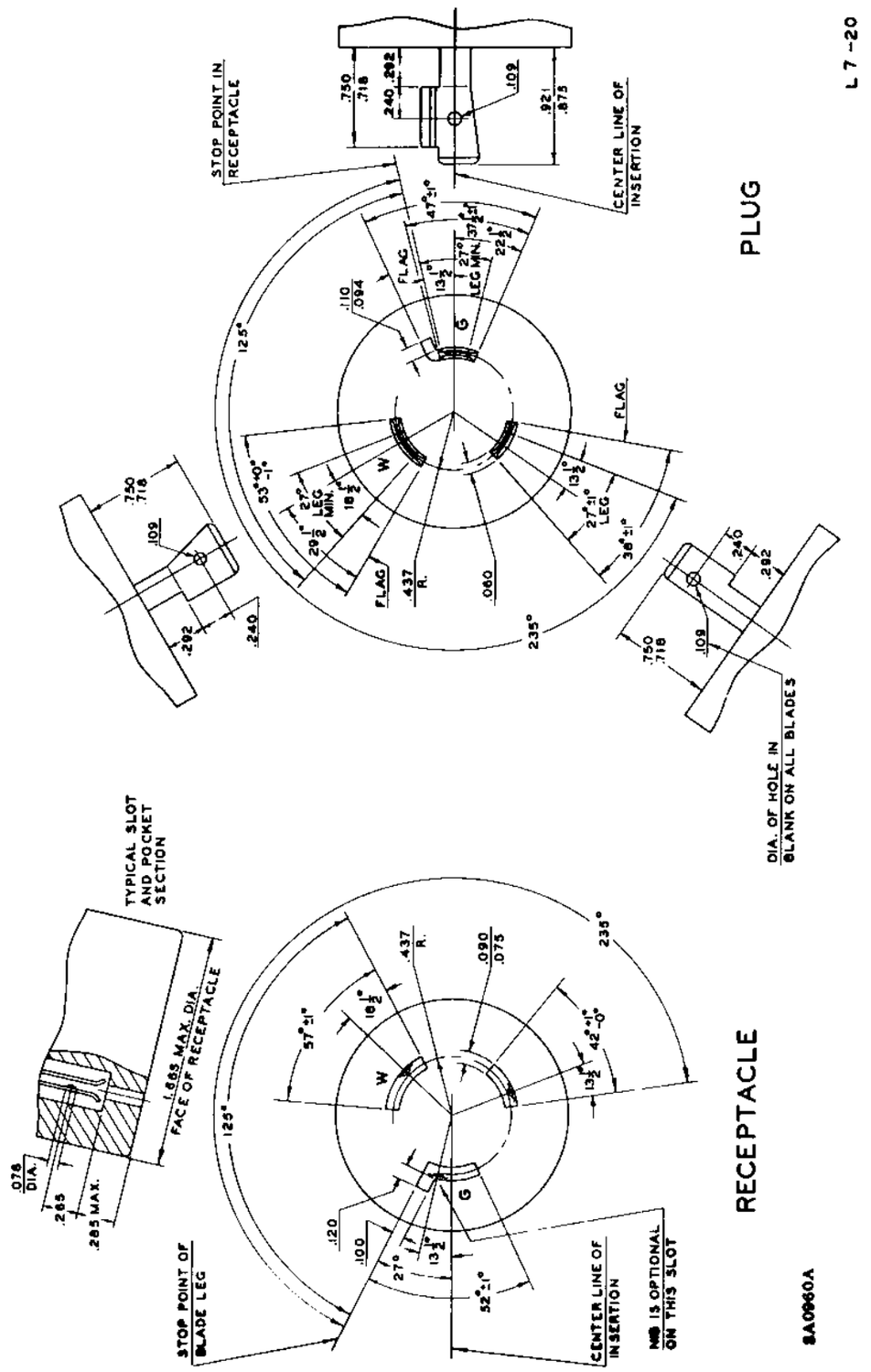


FIGURE 162.8
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 250 V

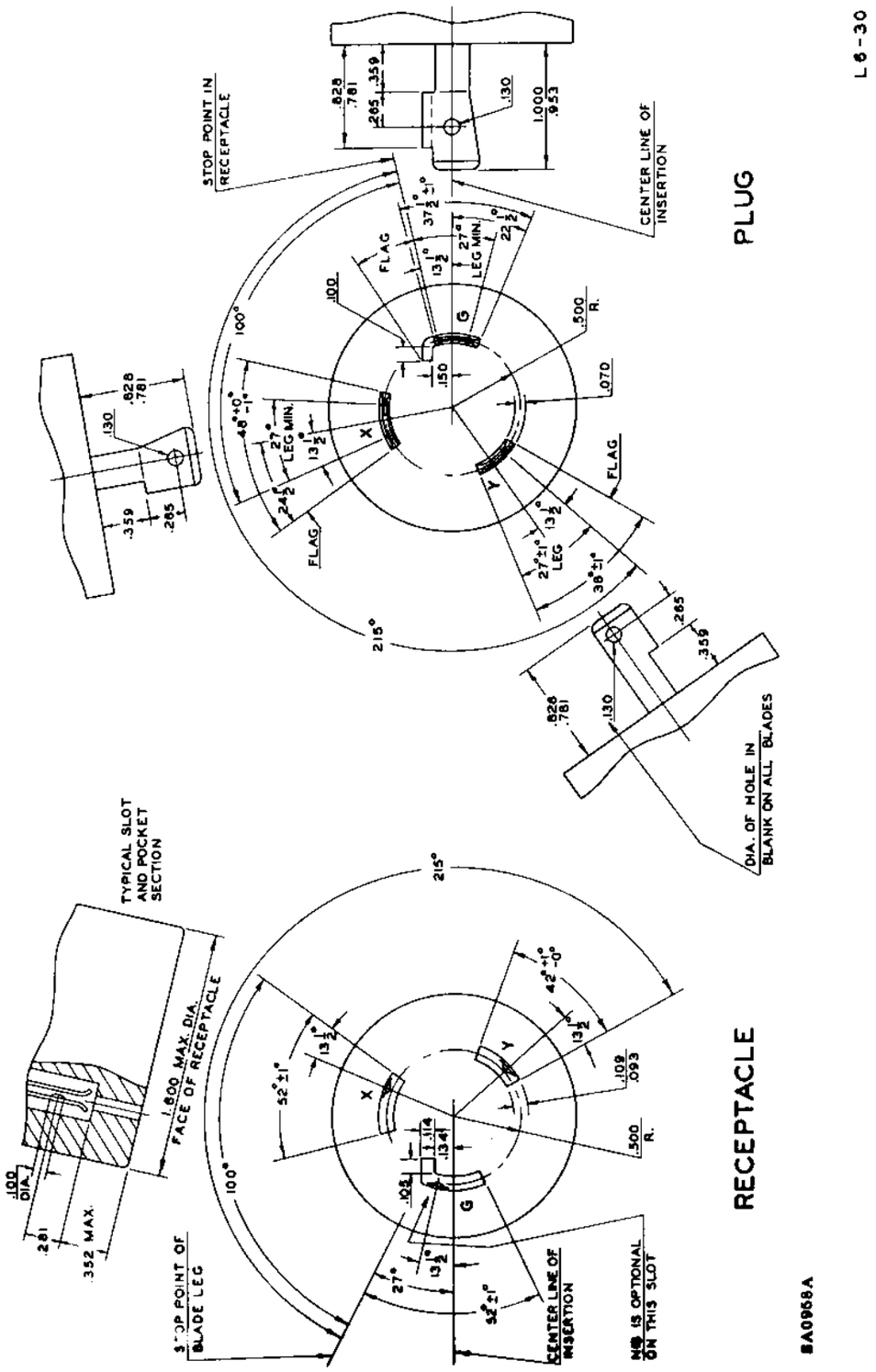


FIGURE 162.6
2-POLE, 3-WIRE GROUNDING DEVICES RATED
15 A, 250 V

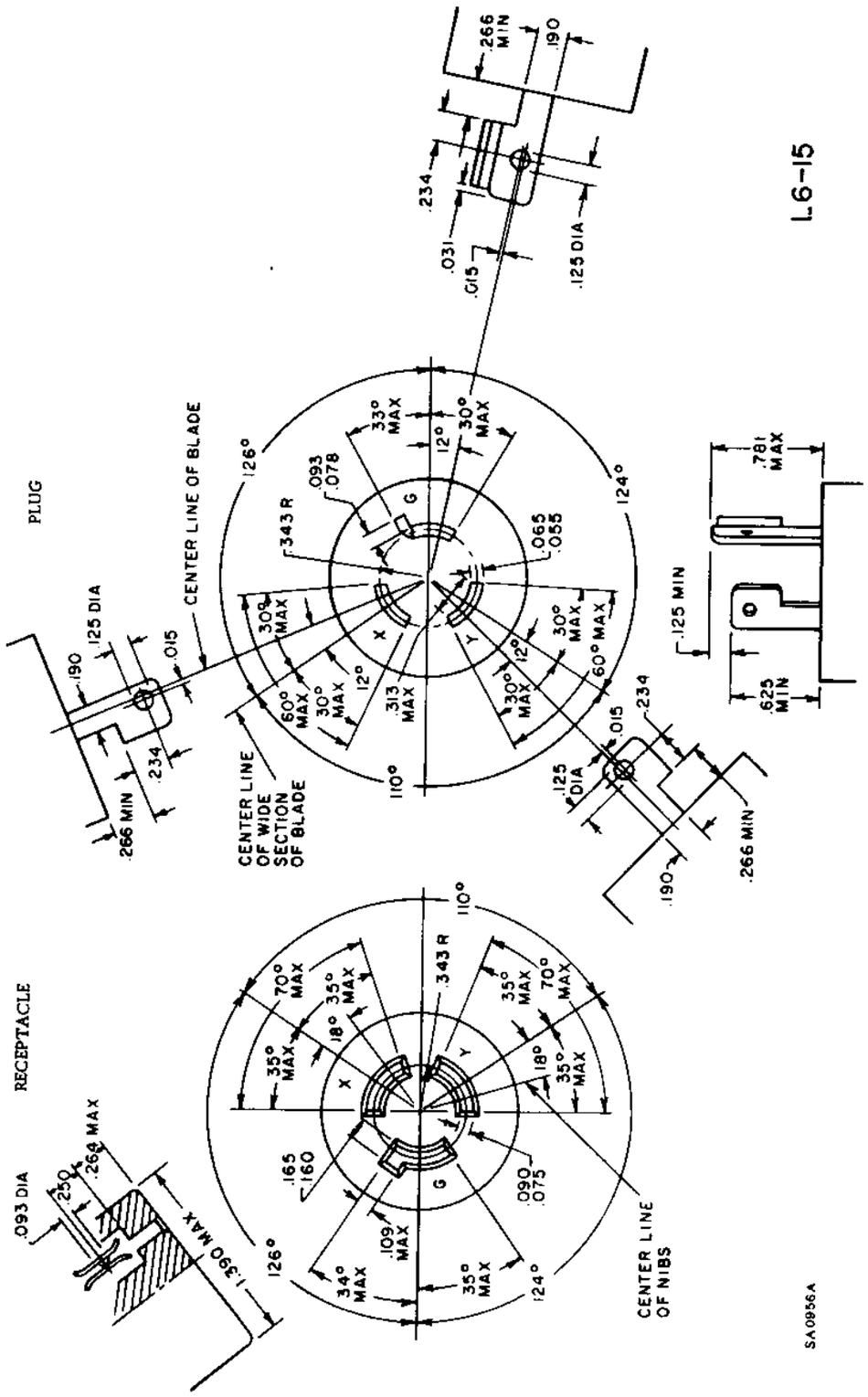


FIGURE 161.30
3-POLE, 4-WIRE GROUNDING DEVICES RATED
20 A, 250 V, 3 PHASE

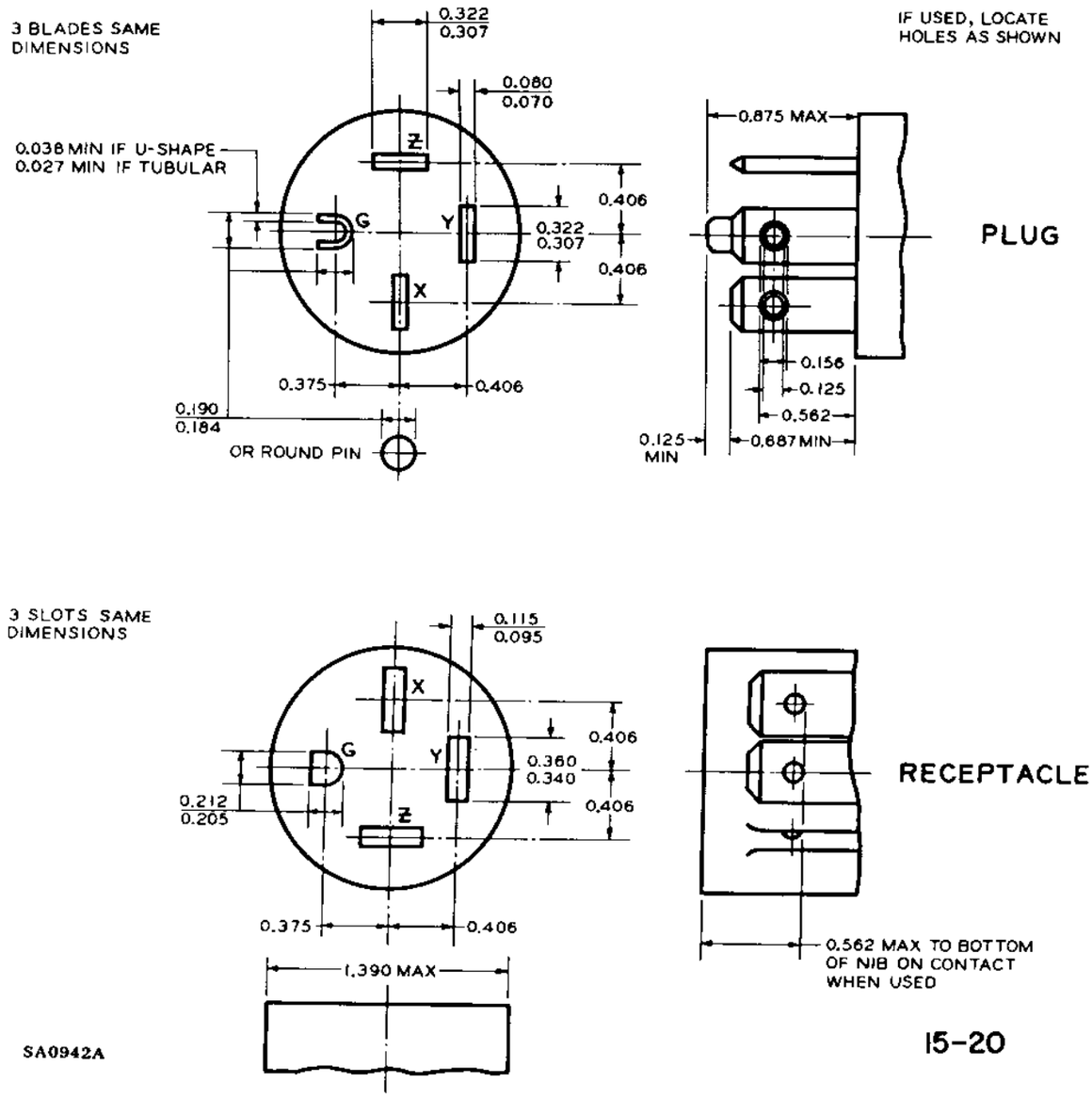


FIGURE 161.28
3-POLE, 4-WIRE GROUNDING DEVICES RATED
60 A, 125/250 V (3-WIRE)

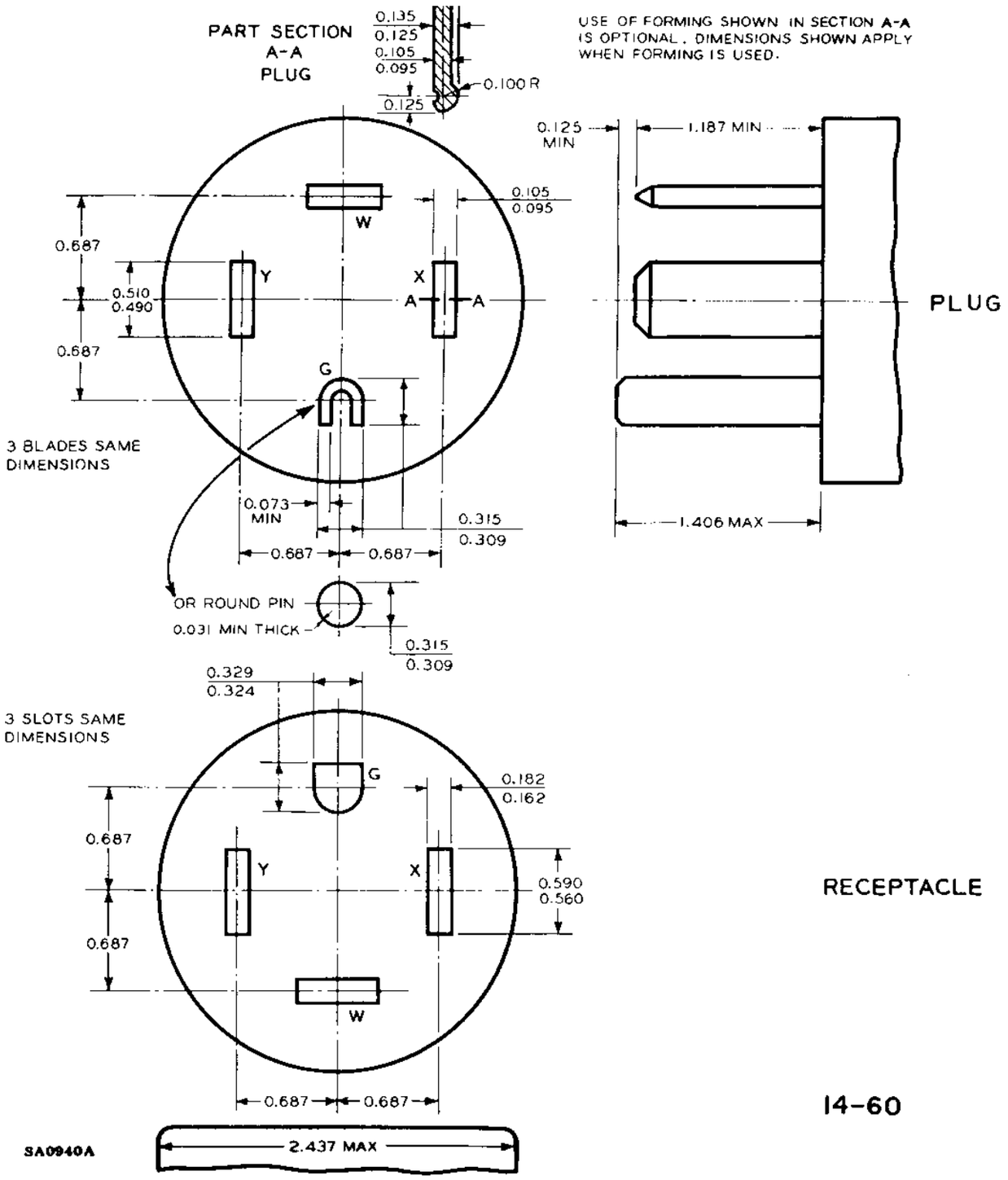


FIGURE 161.26
3-POLE, 4-WIRE GROUNDING DEVICES RATED
30 A, 125/250 V (3-WIRE)

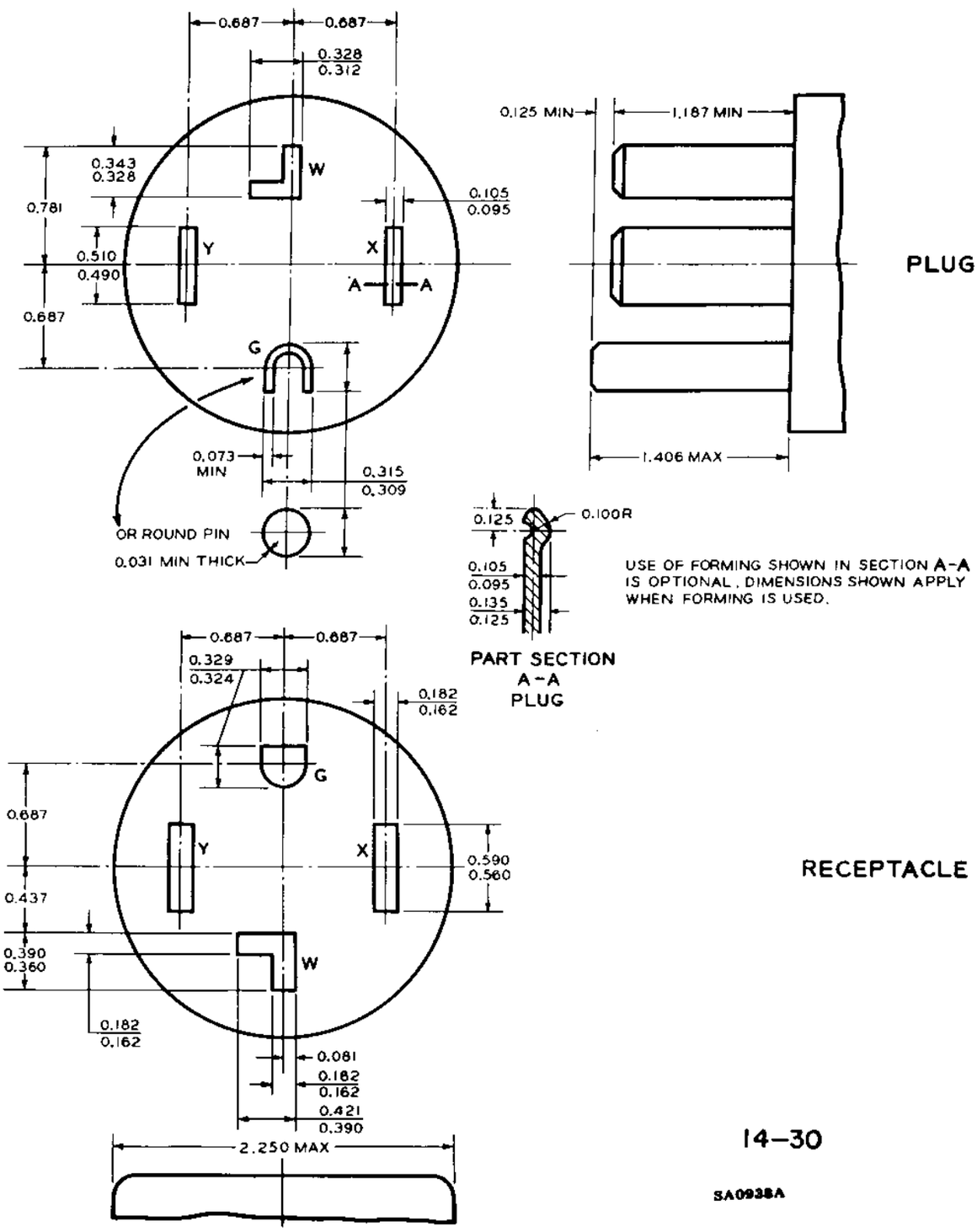


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FIGURE 161.14
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 277 V A-C

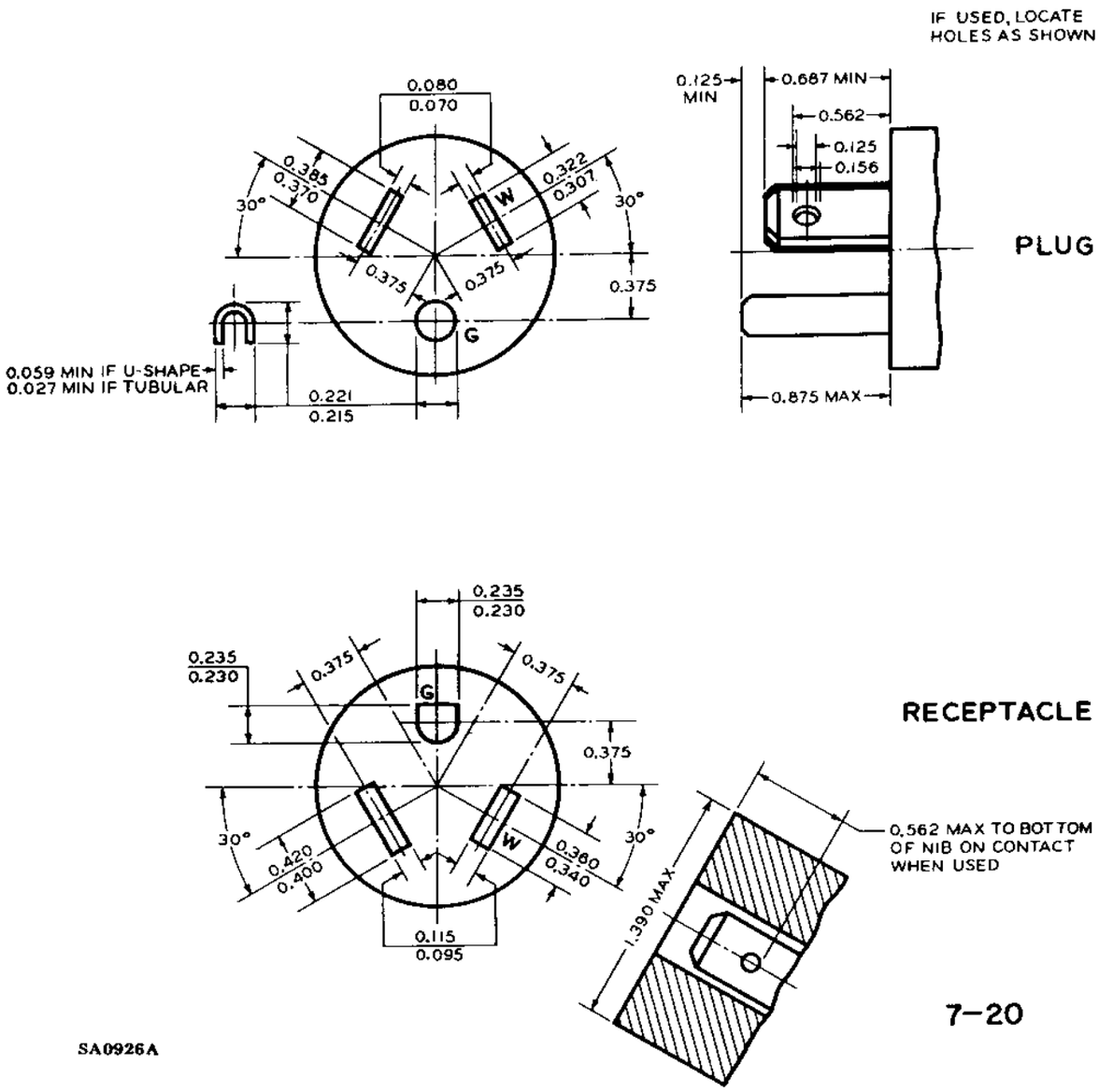


FIGURE 161.12
2-POLE, 3-WIRE GROUNDING DEVICES RATED
50 A, 250 V

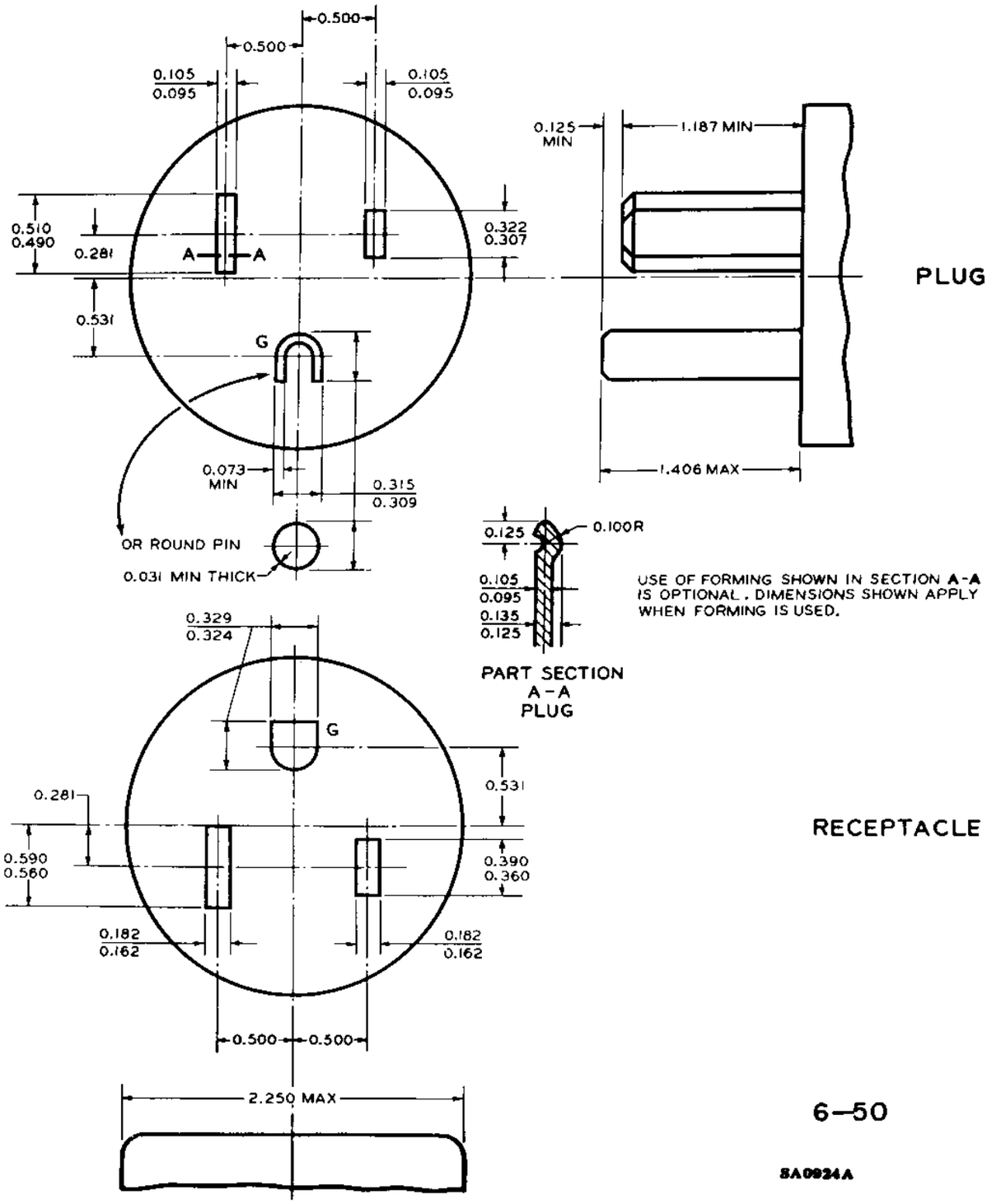
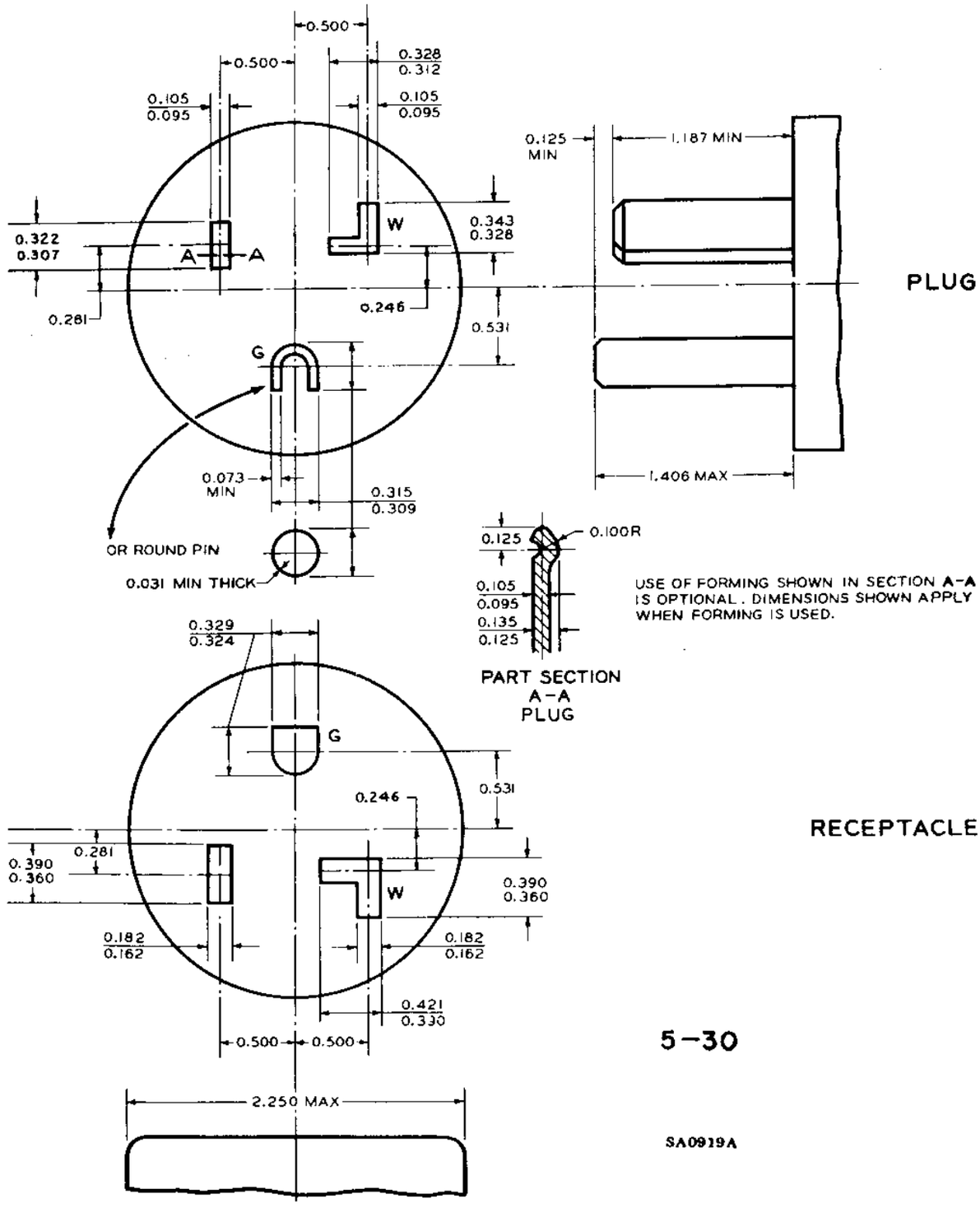


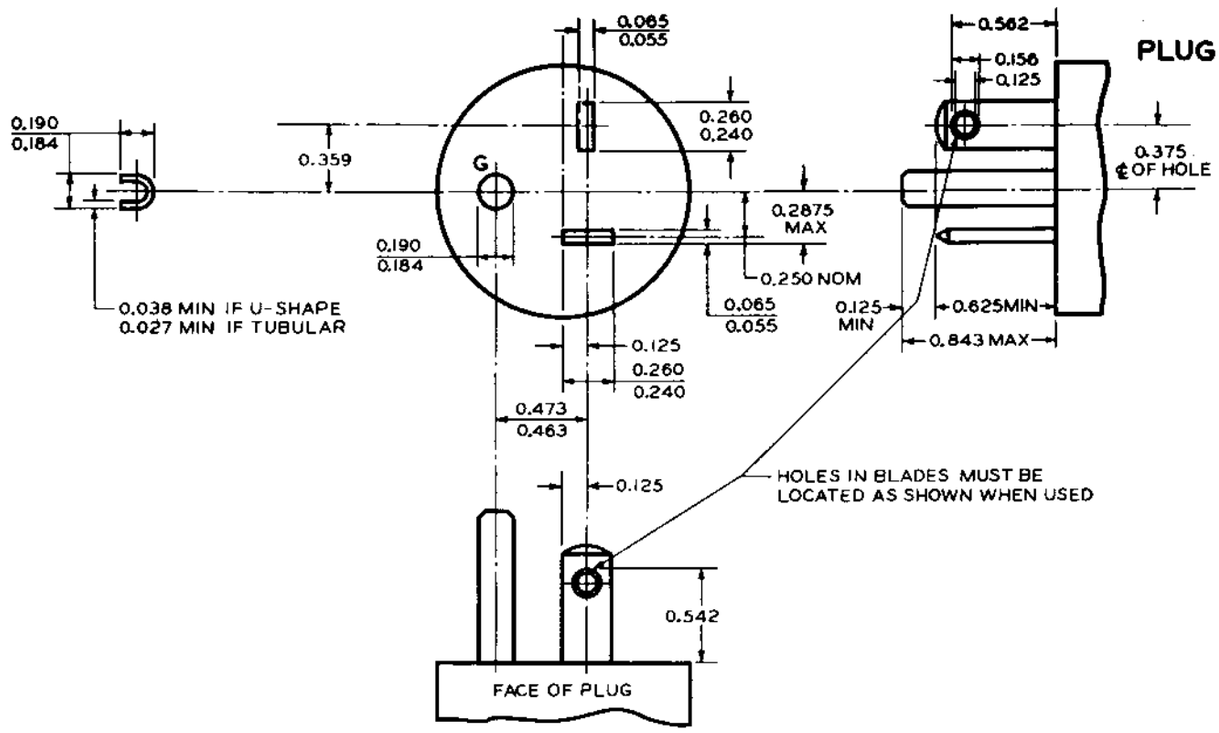
FIGURE 161.7
2-POLE, 3-WIRE GROUNDING DEVICES RATED
30 A, 125 V



5–30

SA0919A

FIGURE 161.10
2-POLE, 3-WIRE GROUNDING DEVICES RATED
20 A, 250 V



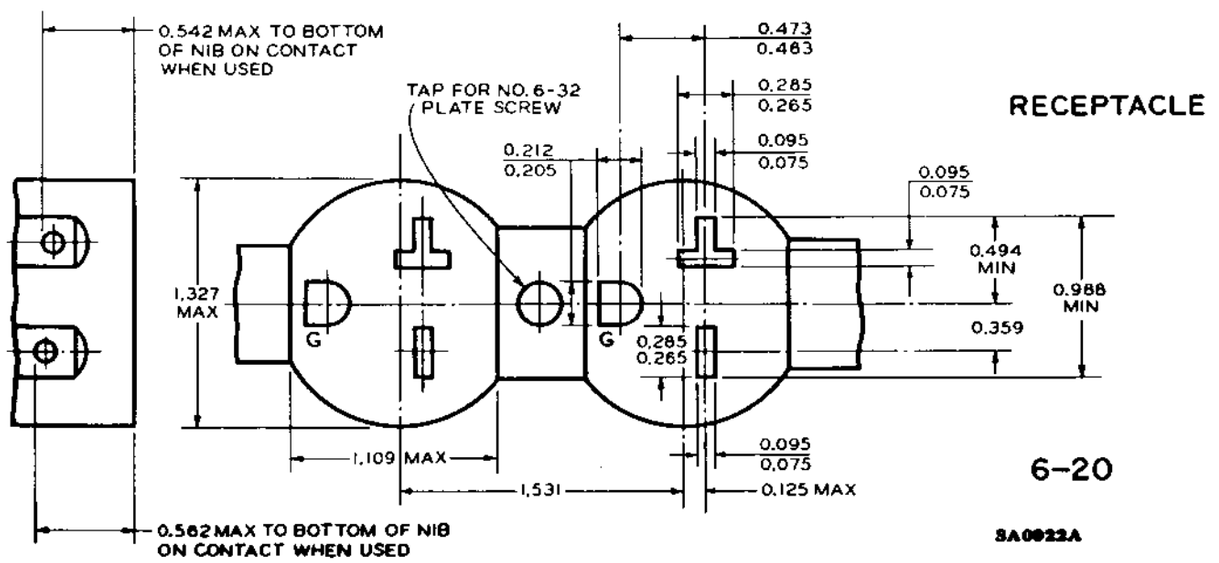


FIGURE 162.21
3-POLE, 3-WIRE DEVICES RATED
20 A, 480 V, 3 PHASE

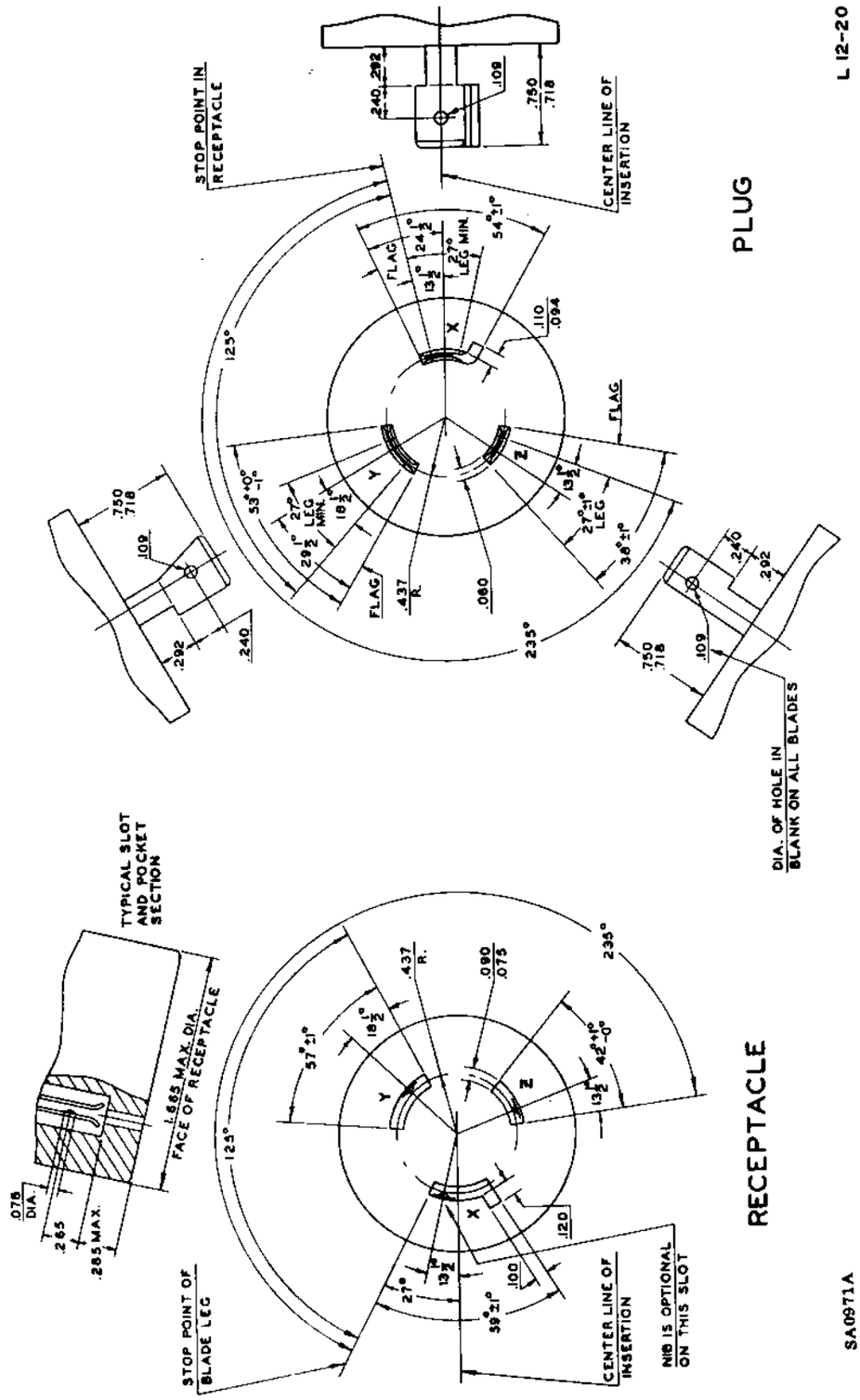


FIGURE 162.23
3-POLE, 3-WIRE DEVICES RATED
30 A, 600 V, 3 PHASE

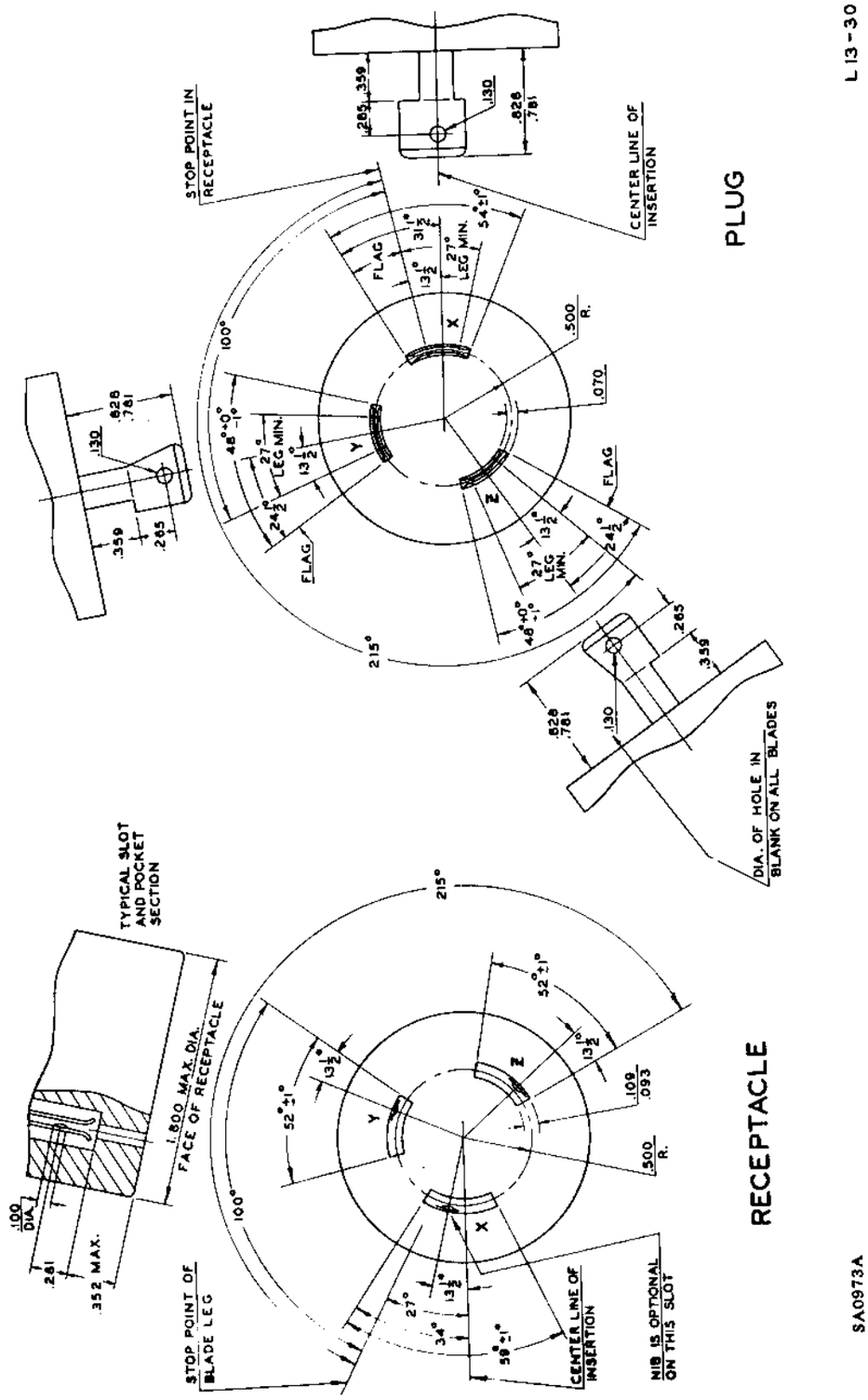


FIGURE 162.33
4-POLE, 4-WIRE DEVICES RATED
20 A, 277/480 V, 3-PHASE WYE

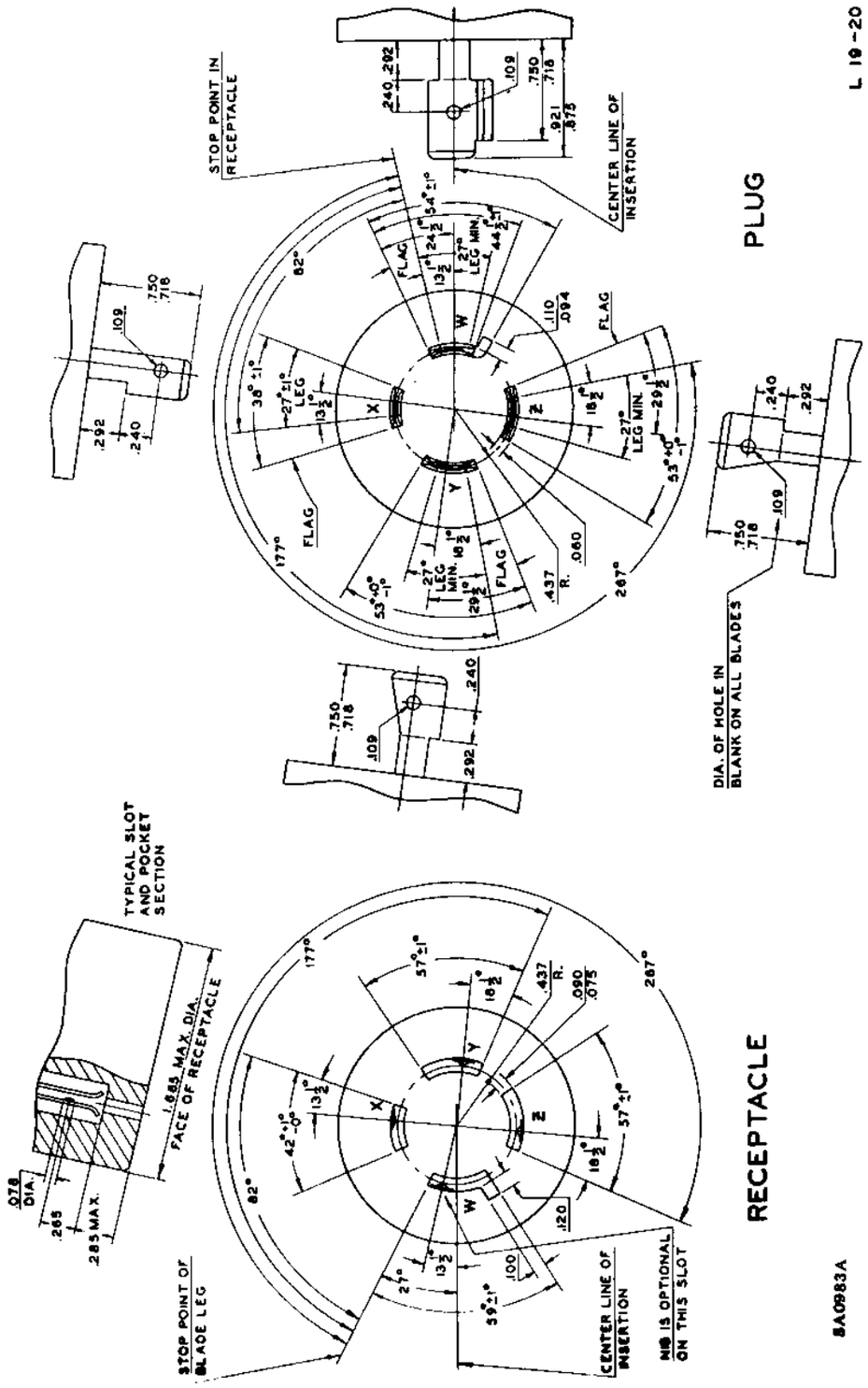


FIGURE 162.35
4-POLE, 4-WIRE DEVICES RATED
20 A, 347/600 V, 3-PHASE WYE

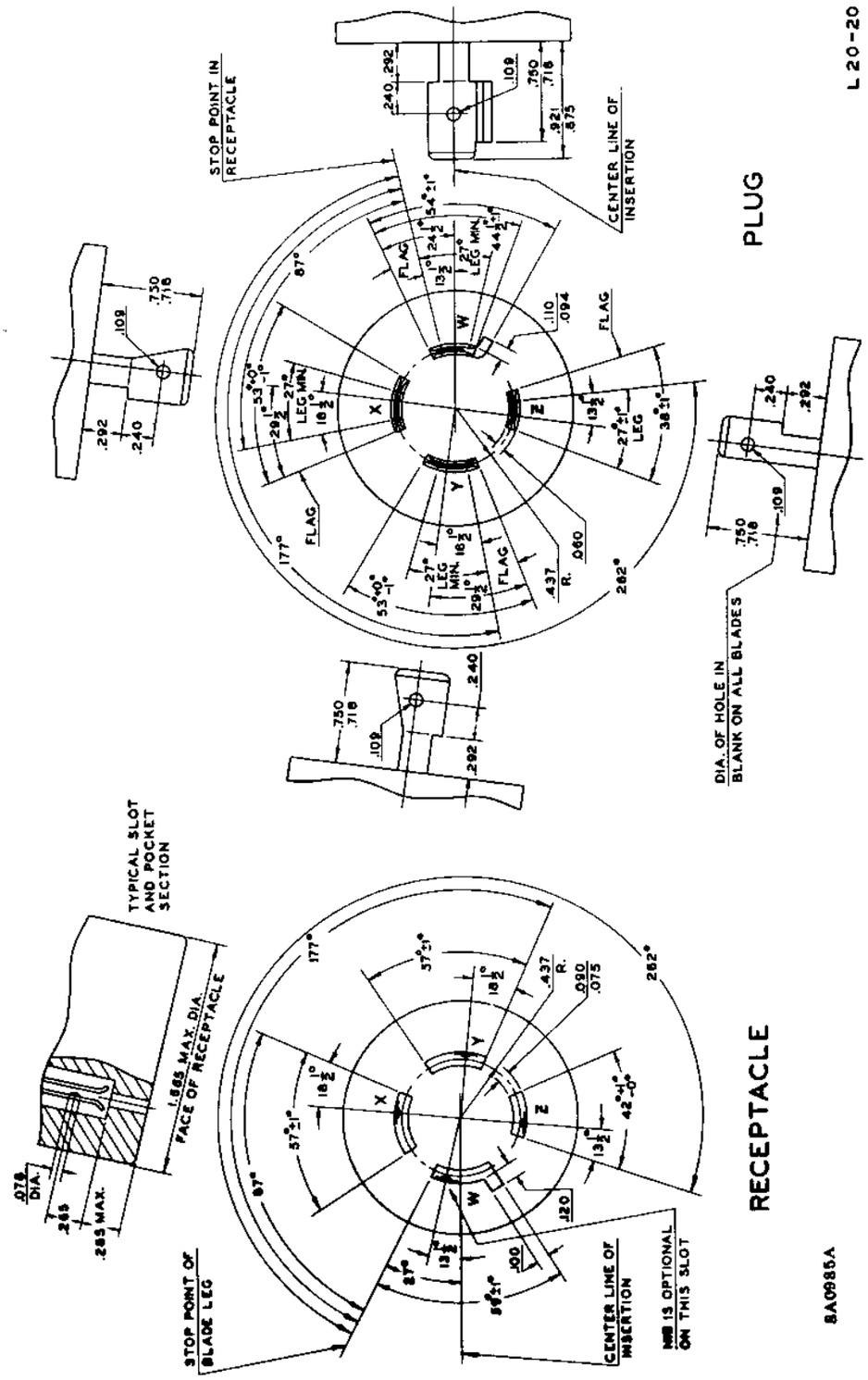


FIGURE 162.37
4-POLE, 5-WIRE GROUNDING DEVICES RATED
20 A, 120/208 V, 3-PHASE WYE

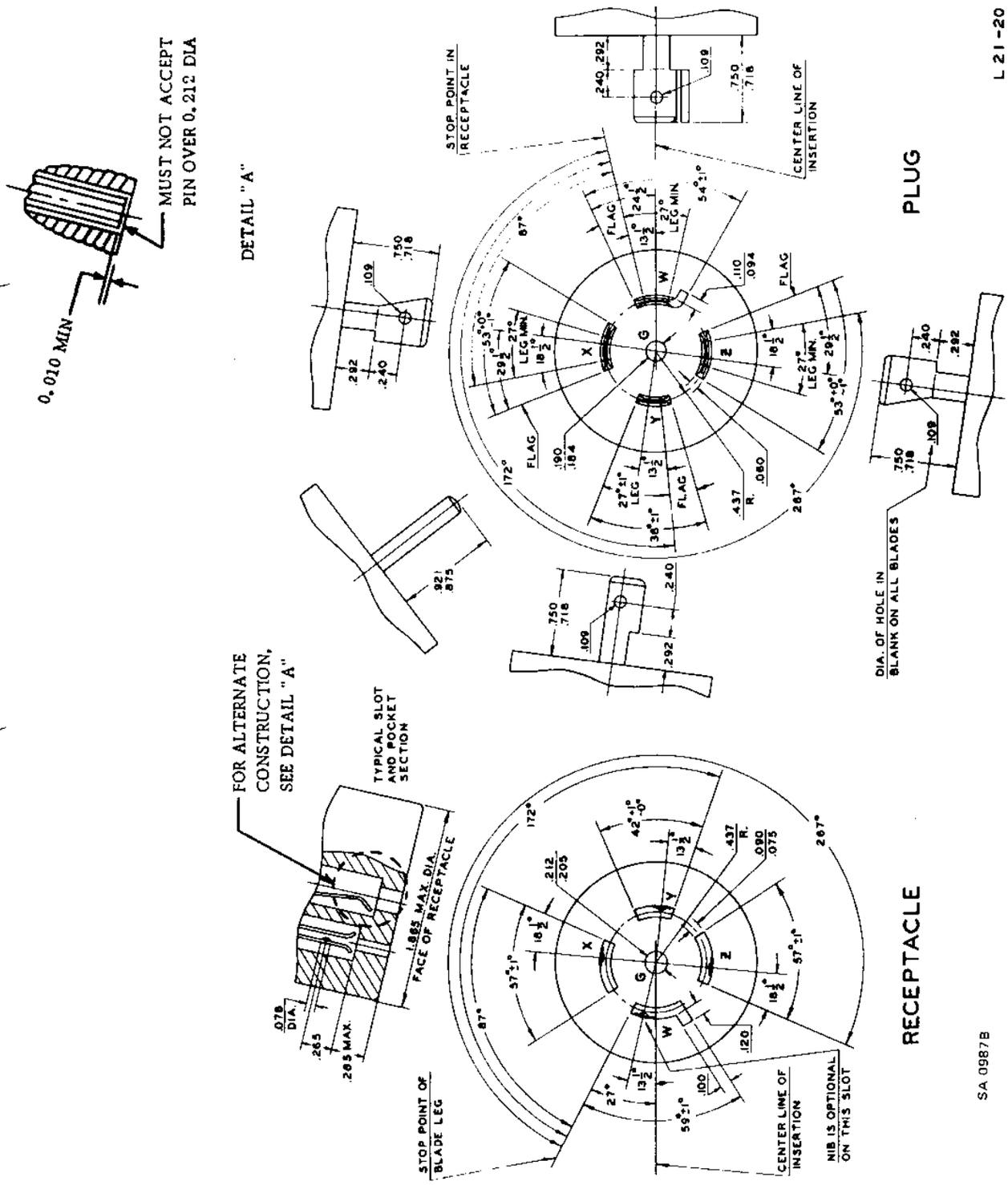
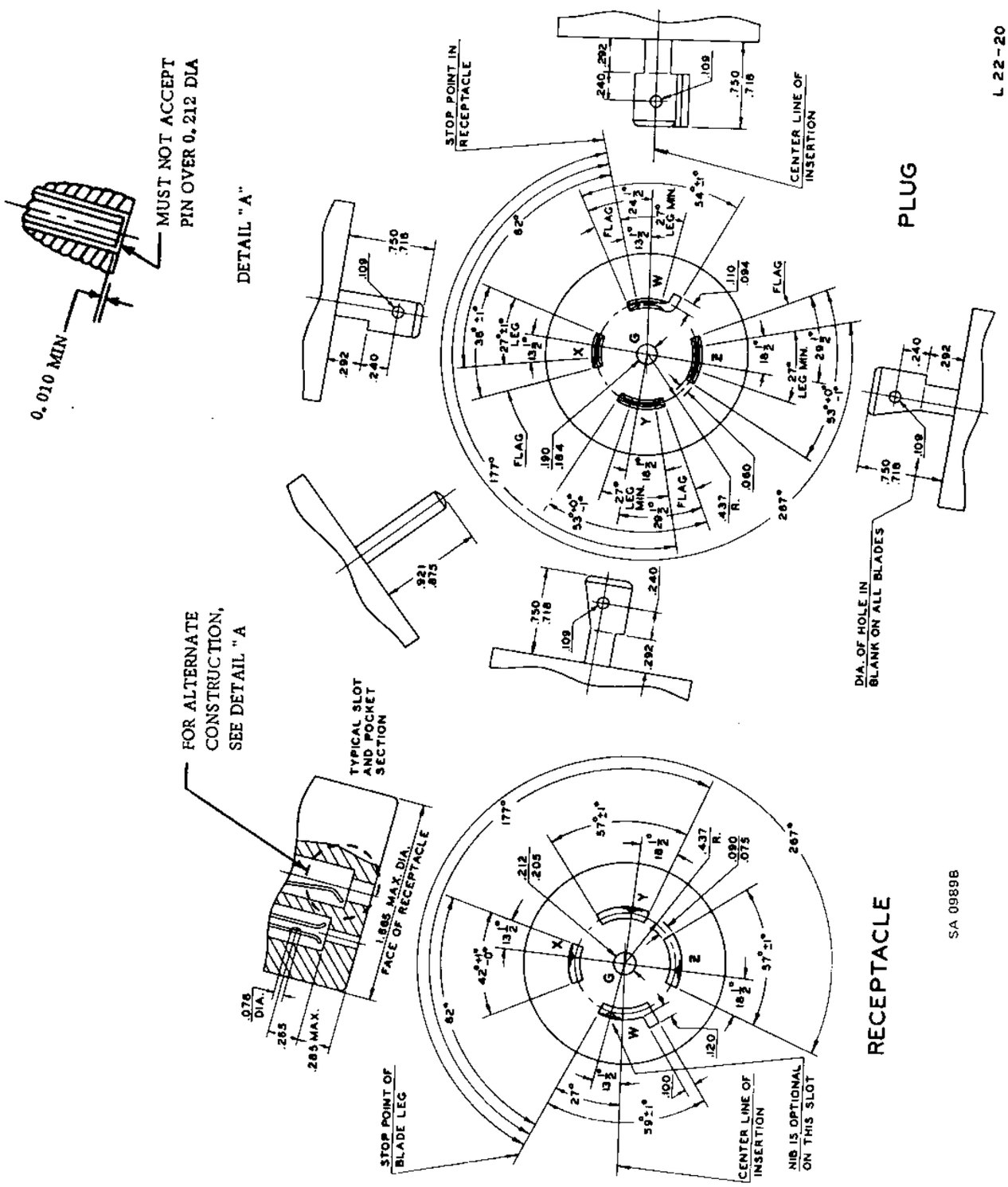
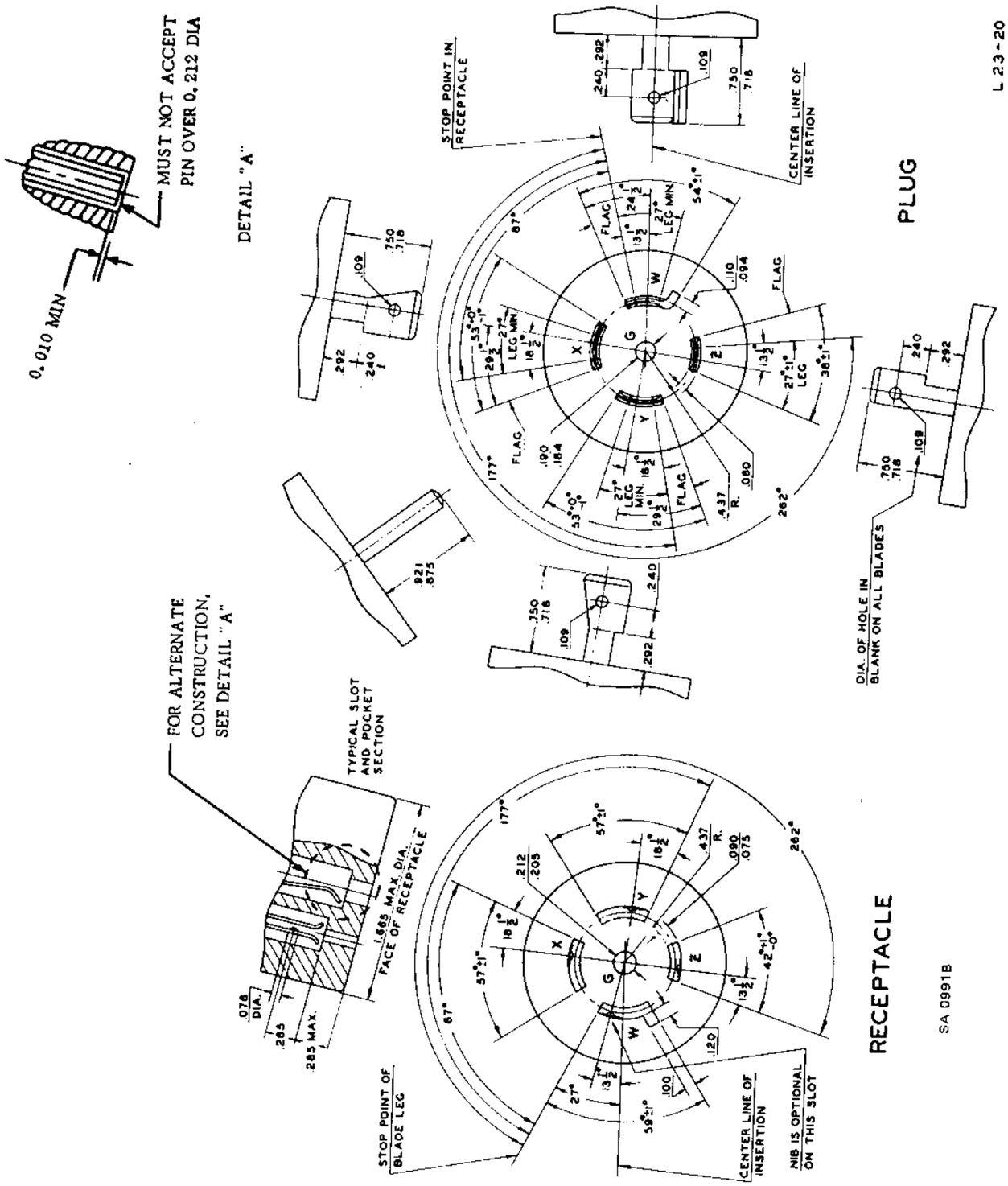


FIGURE 162.39
4-POLE, 5-WIRE GROUNDING DEVICES RATED
20 A. 277/480 V, 3-PHASE WYE



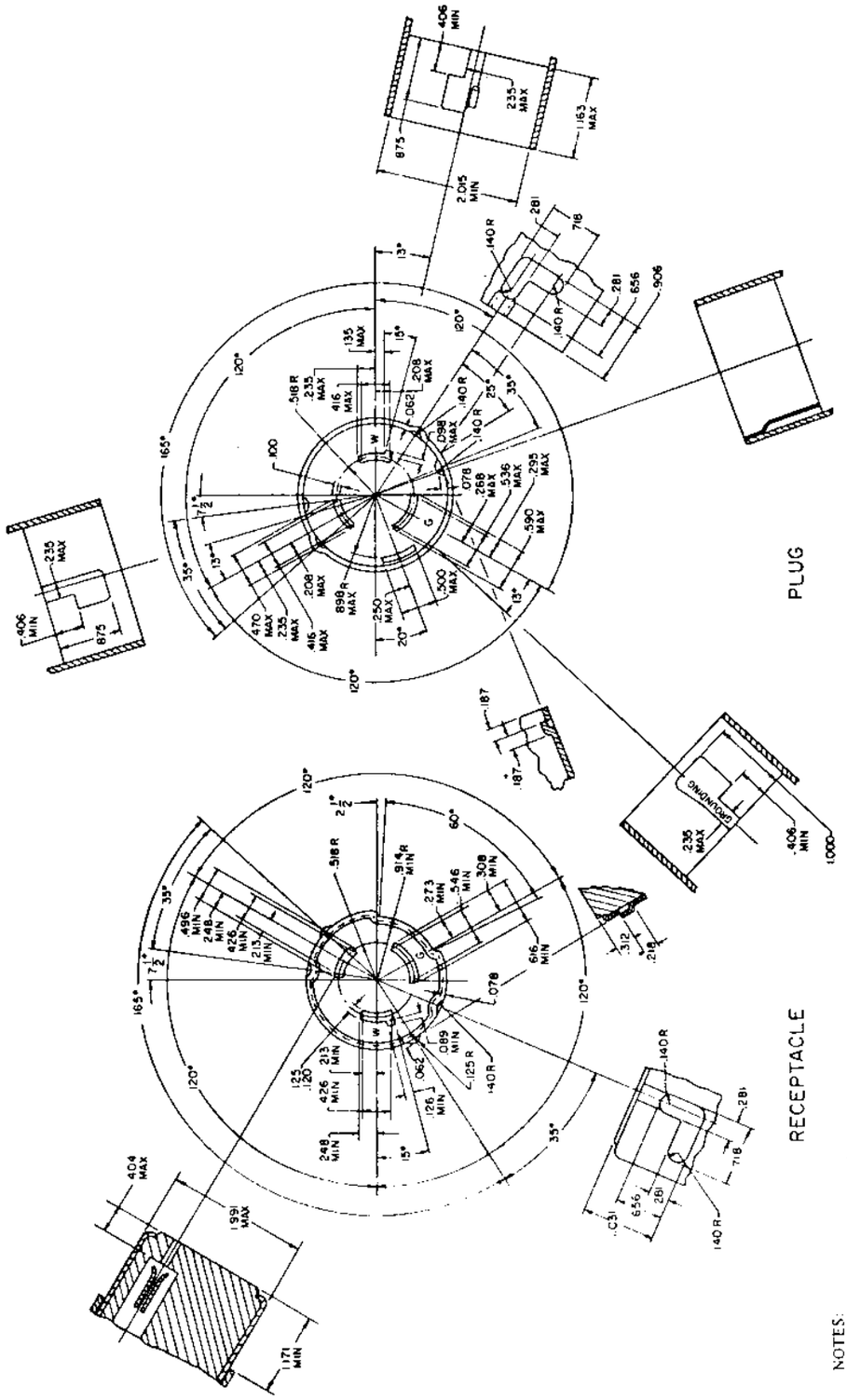
**Replaces page 145 dated December 22, 1986*

FIGURE 162.41
4-POLE, 5-WIRE GROUNDING DEVICES RATED
20 A, 347/600 V, 3-PHASE WYE



Replaces page 147 dated December 22, 1986

FIGURE 162.43
2-POLE, 3-WIRE GROUNDING DEVICES RATED 50 A, 125 V
FOR MARINE SHIP-TO-SHORE USE FOR SMALL CRAFT



NOTES:
(1) All dimensions are in inches.
(2) Decimal dimensions without tolerances shall be subject to a ± 0.005-inch tolerance.
(3) All power blades and grounding shell must be of nonferrous metal.

Replaces page 149 dated December 22, 1986

163. Other Plugs and Receptacles

FIGURE 163.1
RECREATIONAL-VEHICLE USE ONLY 2-POLE, 3-WIRE
GROUNDING DEVICES RATED 30 A, 125 V

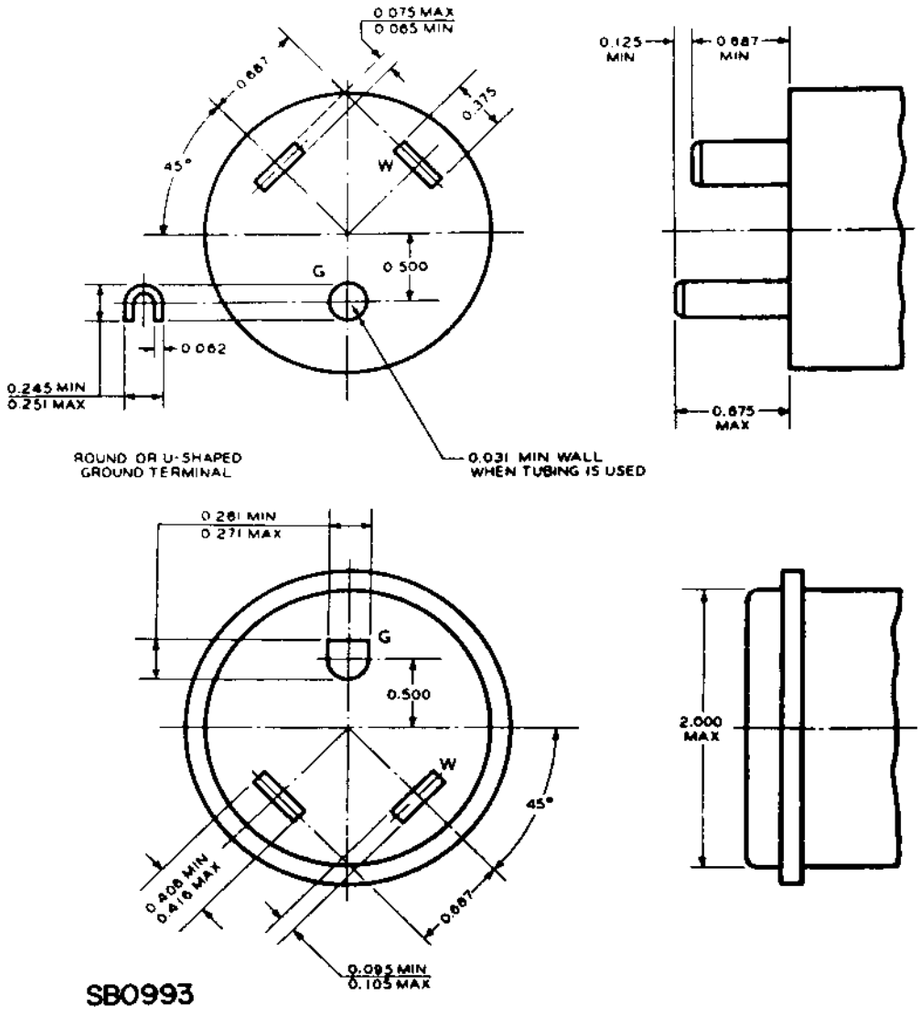


FIGURE 163.3
2-POLE, 2-WIRE PLUG RATED
30 A, 125 V

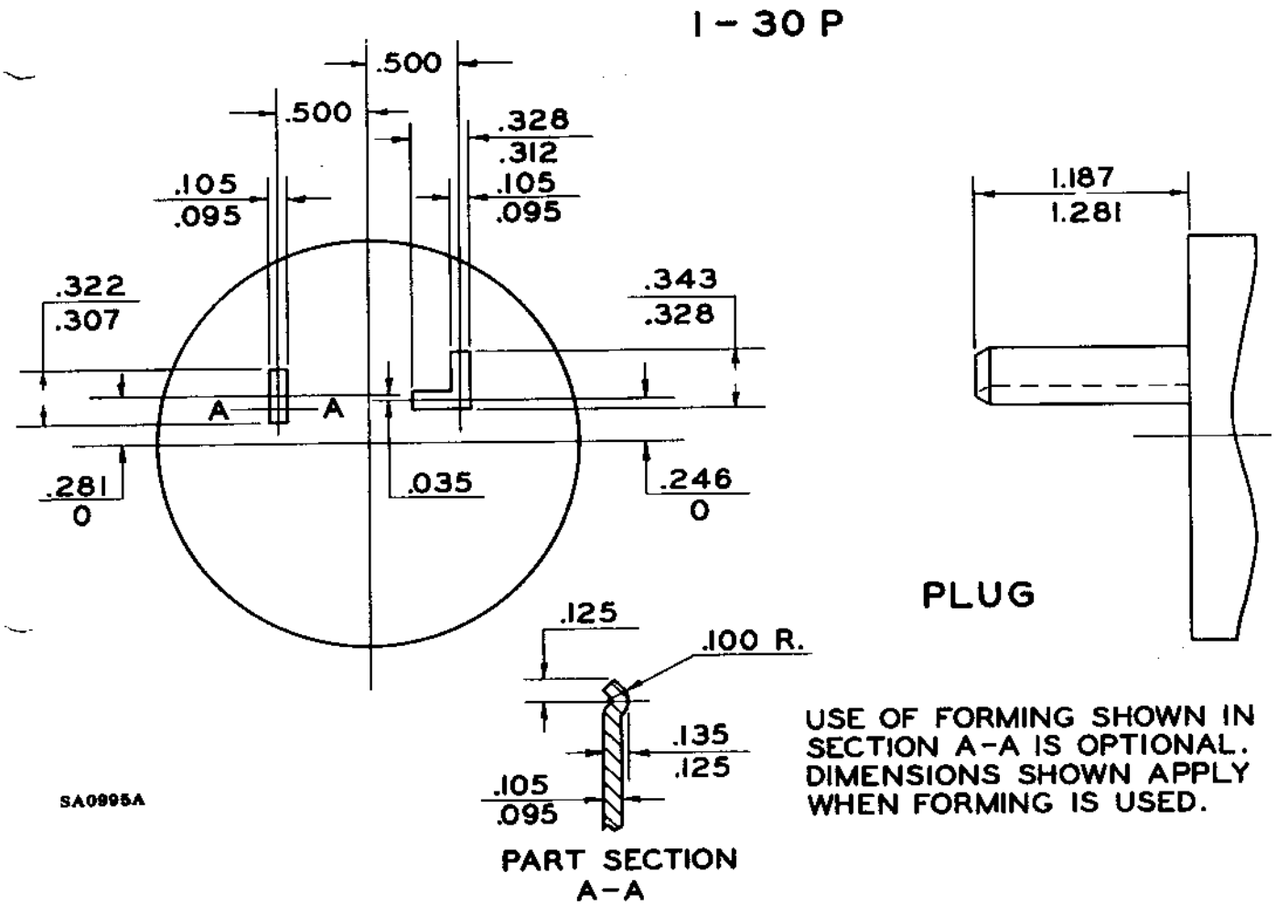


FIGURE 163.5
MIDGET 2-POLE, 2-WIRE LOCKING DEVICES
RATED 15 A, 125 V

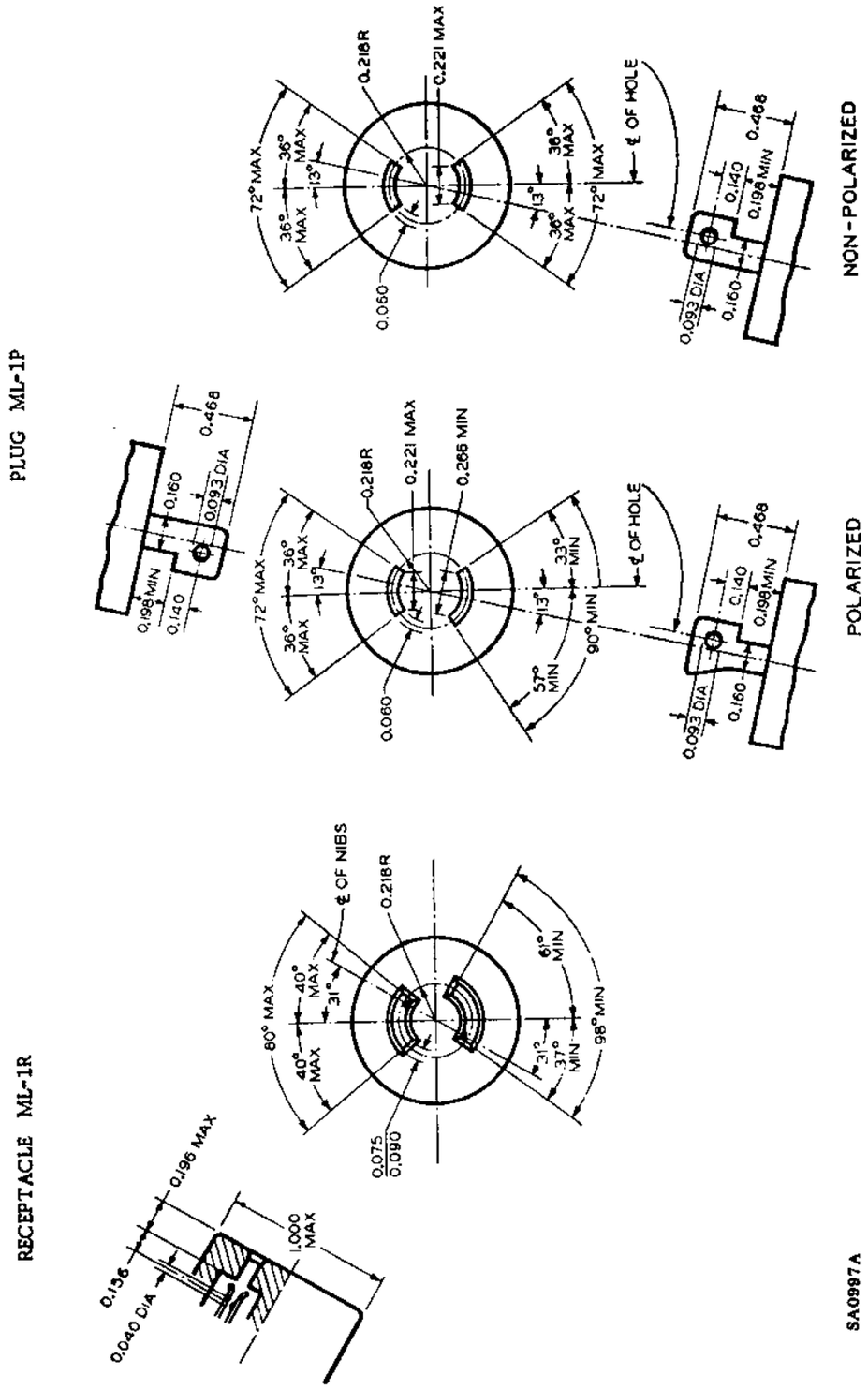


FIGURE 163.7
MIDGET 3-POLE, 3-WIRE LOCKING DEVICES
RATED 15 A, 125/250 V

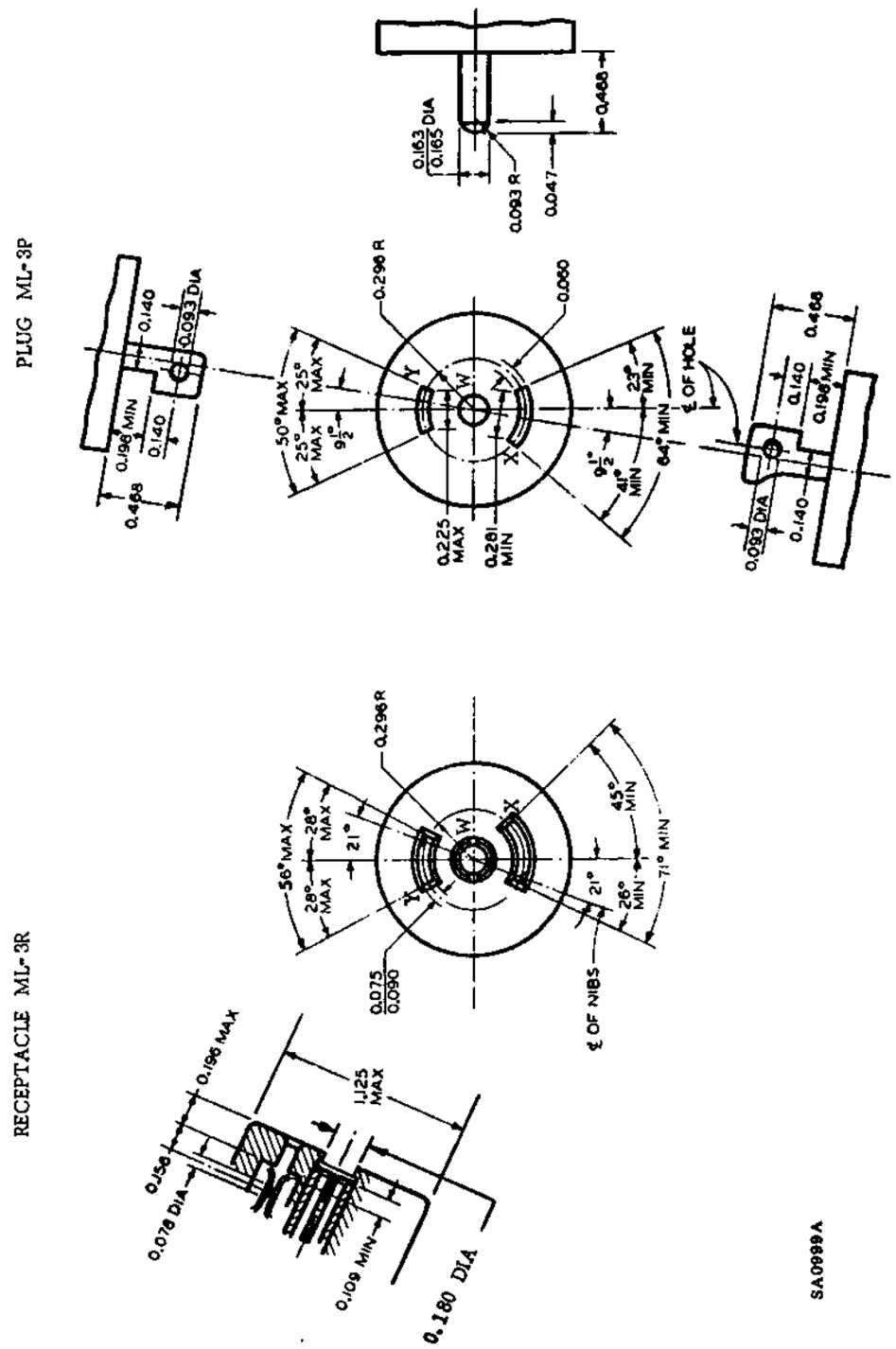


FIGURE 163.8
HOSPITAL USE ONLY
2-POLE, 3-WIRE GROUNDING TYPE LOCKING DEVICES
RATED 20 A, 125 V

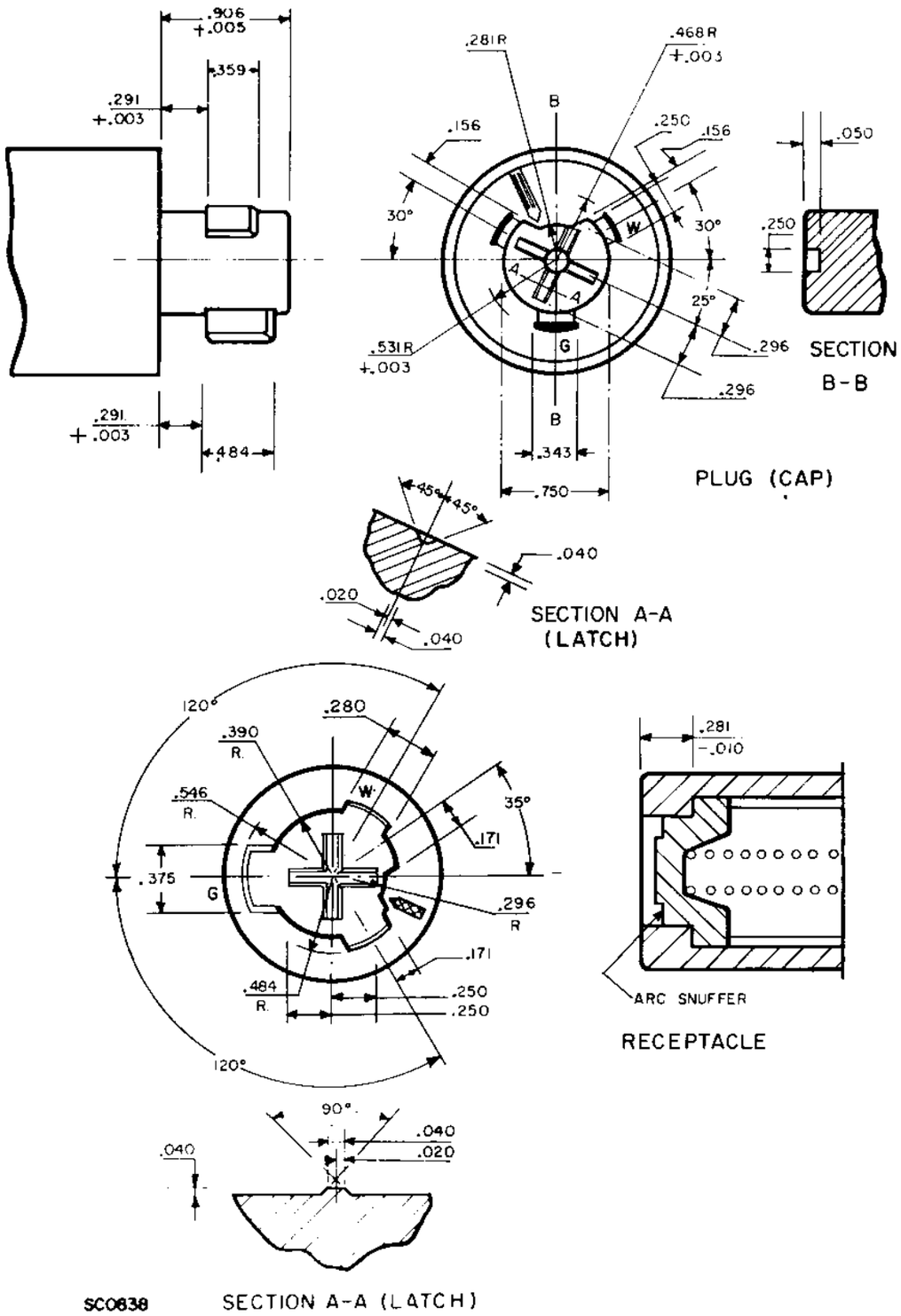


FIGURE 163.6
MIDGET 2-POLE, 3-WIRE GROUNDING TYPE
LOCKING DEVICES RATED 15 A, 125 V

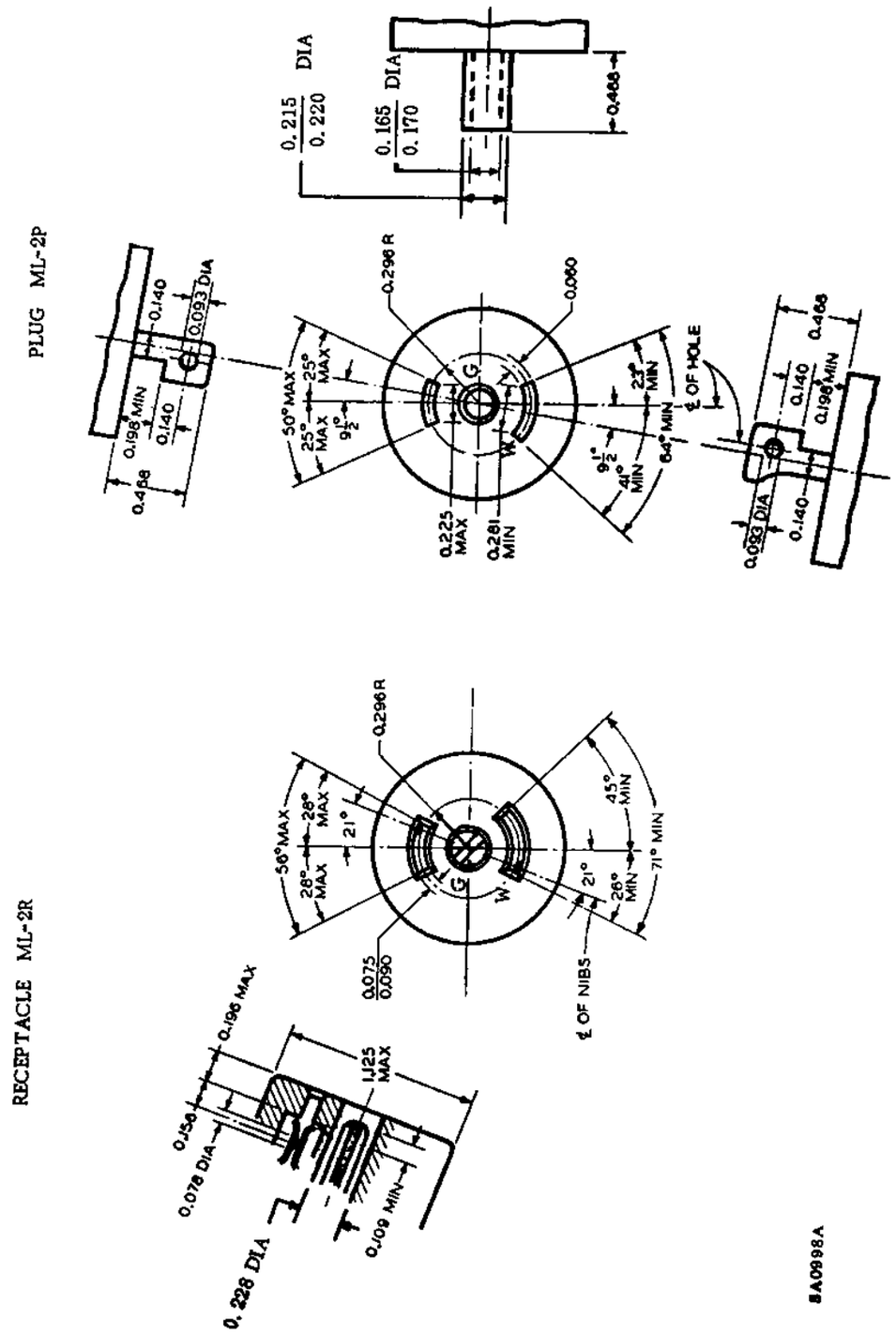


FIGURE 163.4
2-POLE, 2-WIRE PLUG RATED
20 A, 250 V

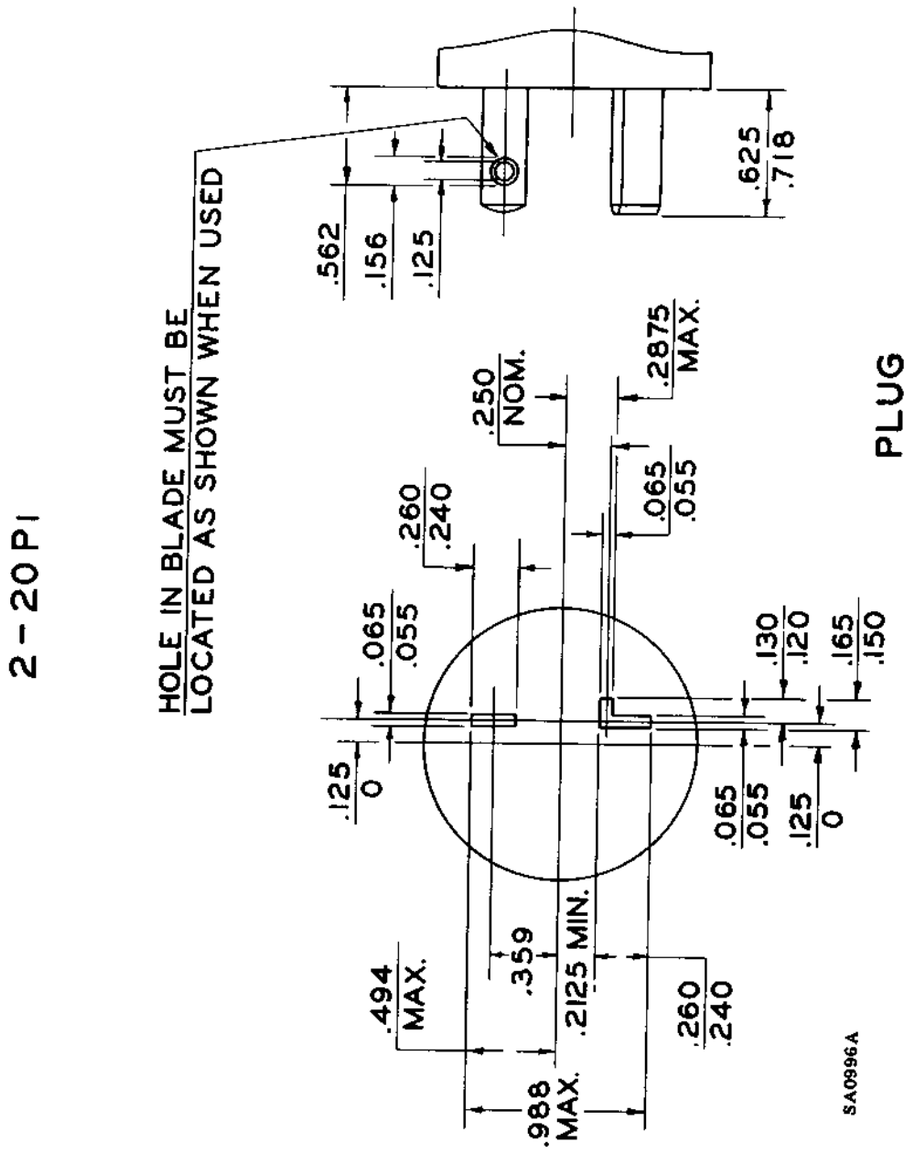


FIGURE 163.2
2-POLE, 2-WIRE PLUG RATED
20 A, 125 V

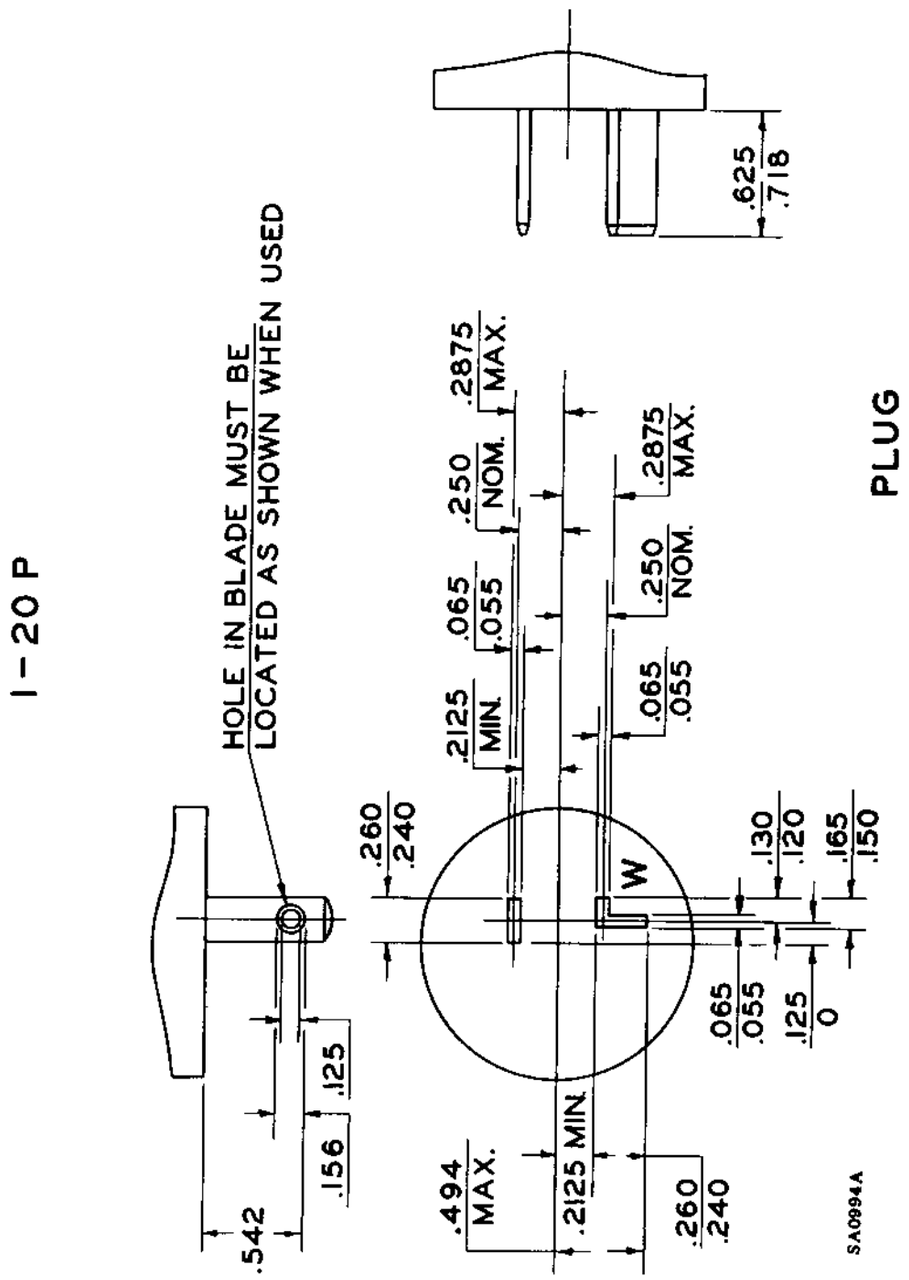
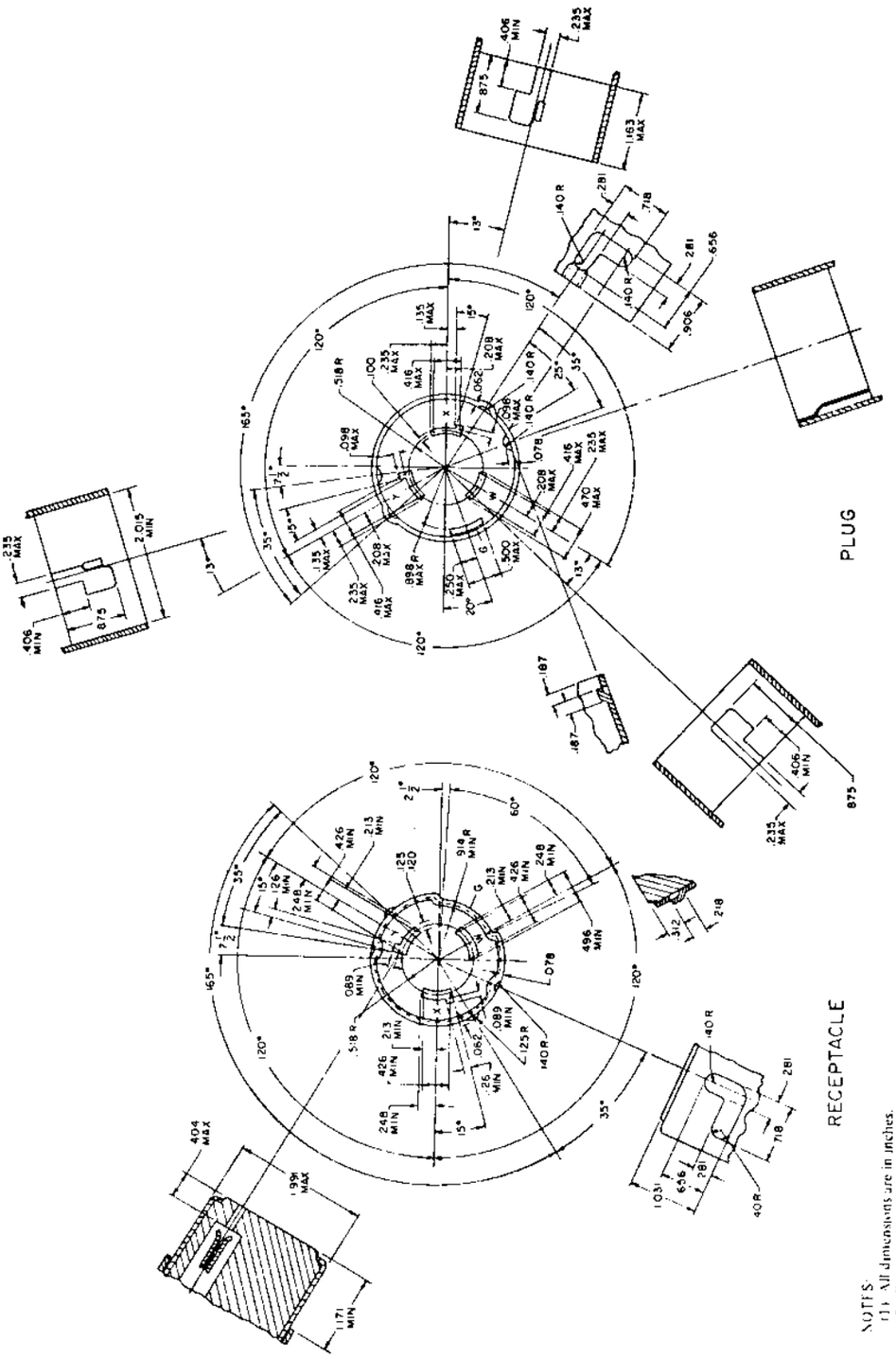
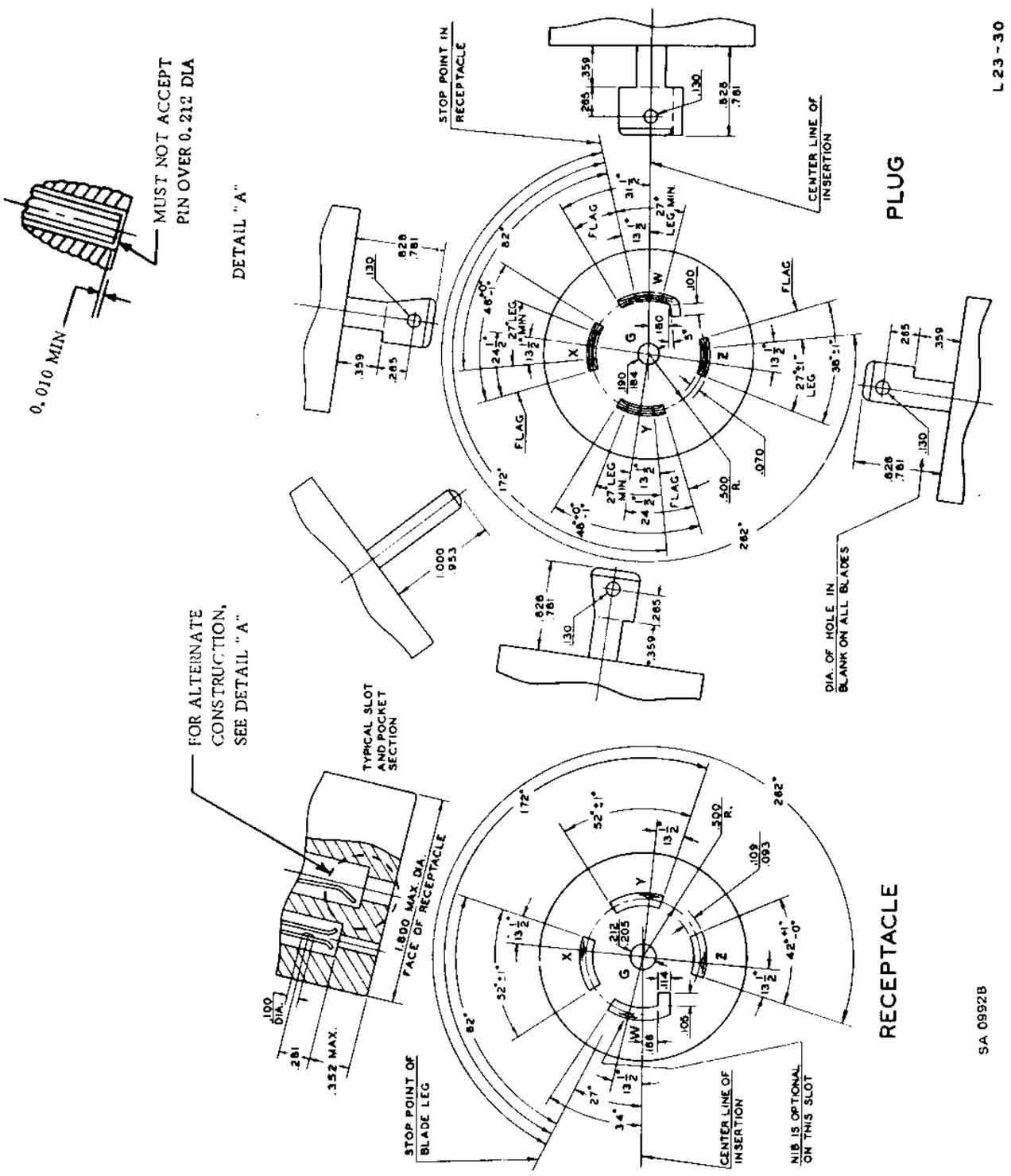


FIGURE 162.44
3-POLE, 4-WIRE GROUNDING DEVICES RATED 50 A, 125/250 V
FOR MARINE SHIP-TO-SHORE USE FOR SMALL CRAFT



Replaces page 150 dated March 5, 1987

FIGURE 162.42
4-POLE, 5-WIRE GROUNDING DEVICES RATED
30 A, 347/600 V, 3-PHASE WYE



Replaces page 148 dated December 22, 1986

FIGURE 162.40
4-POLE, 5-WIRE GROUNDING DEVICES RATED
30 A, 277/480 V, 3-PHASE WYE

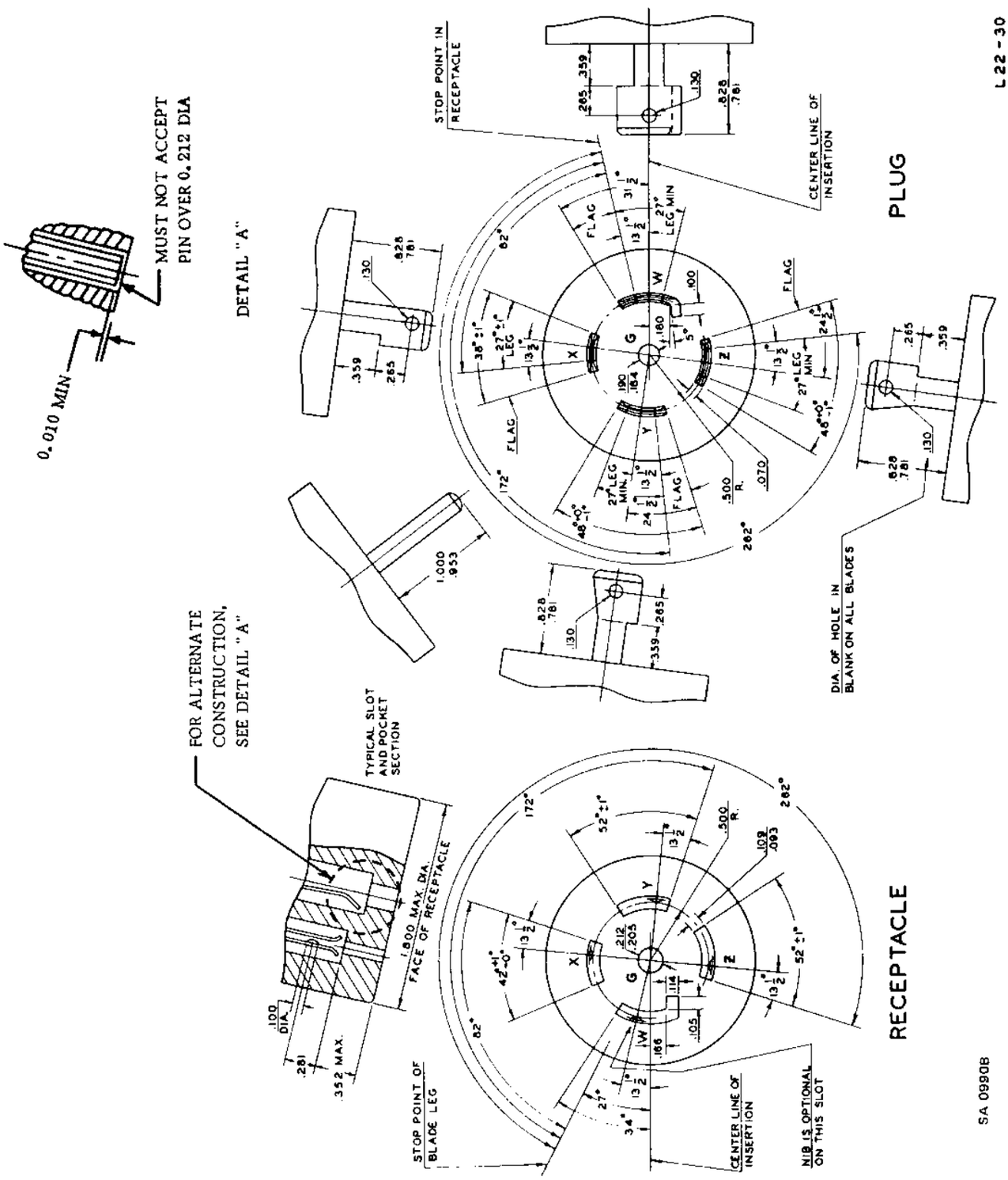


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FIGURE 162.38
4-POLE, 5-WIRE GROUNDING DEVICES RATED
30 A, 120/208 V, 3-PHASE WYE

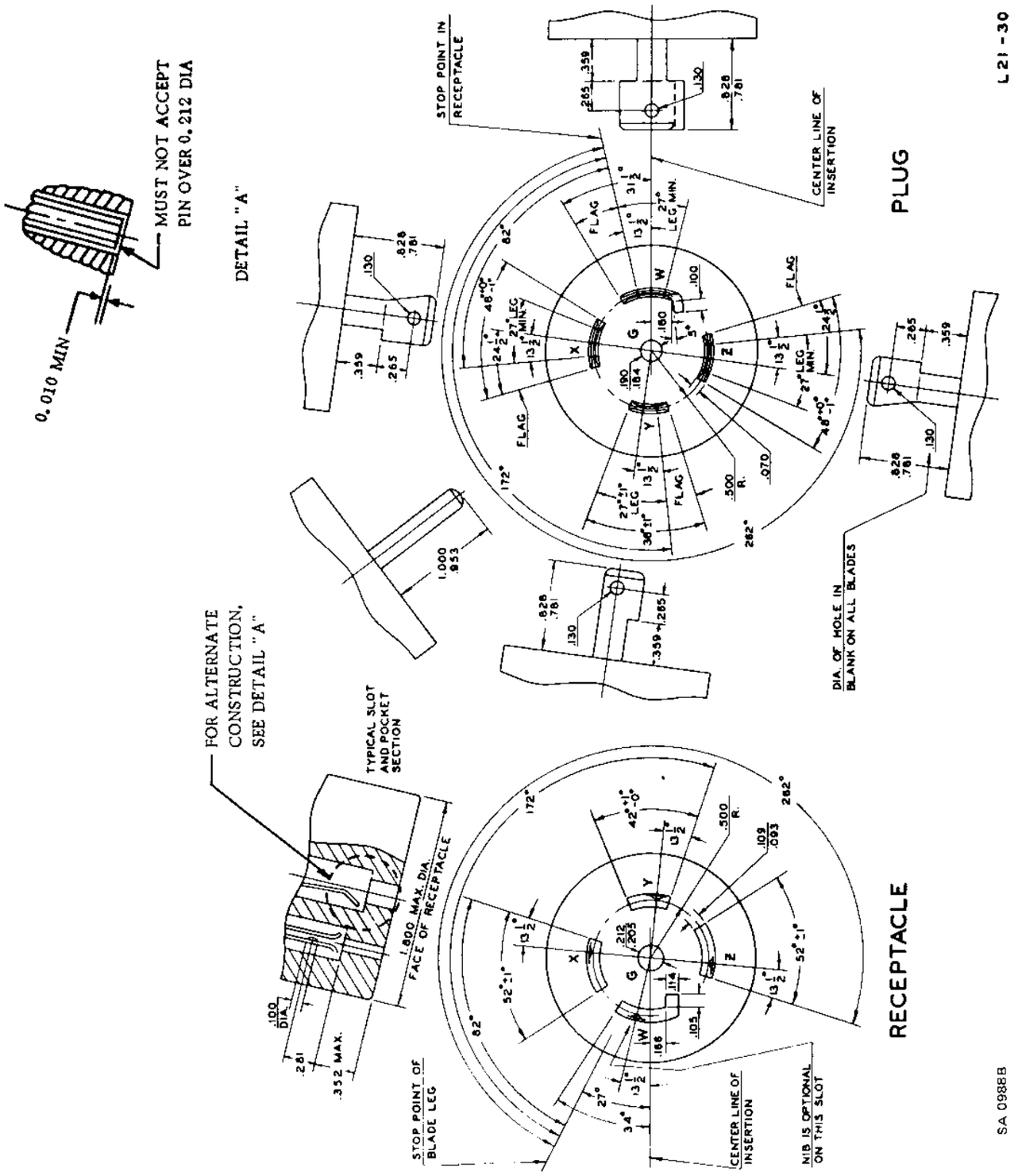


FIGURE 162.36
4-POLE, 4-WIRE DEVICES RATED
30 A, 347/600 V, 3-PHASE WYE

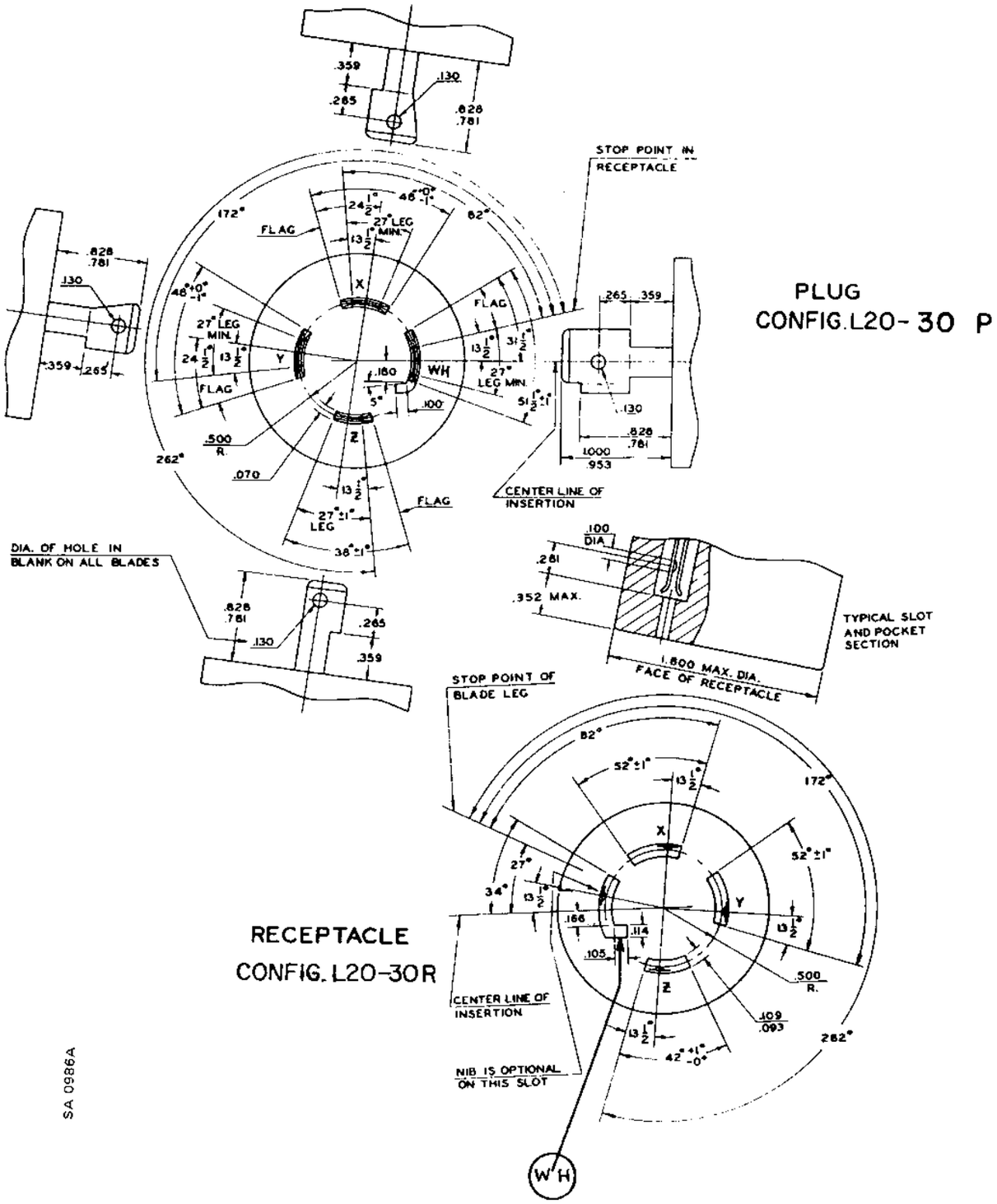


FIGURE 162.34
4-POLE, 4-WIRE DEVICES RATED
30 A, 277/480 V, 3-PHASE WYE

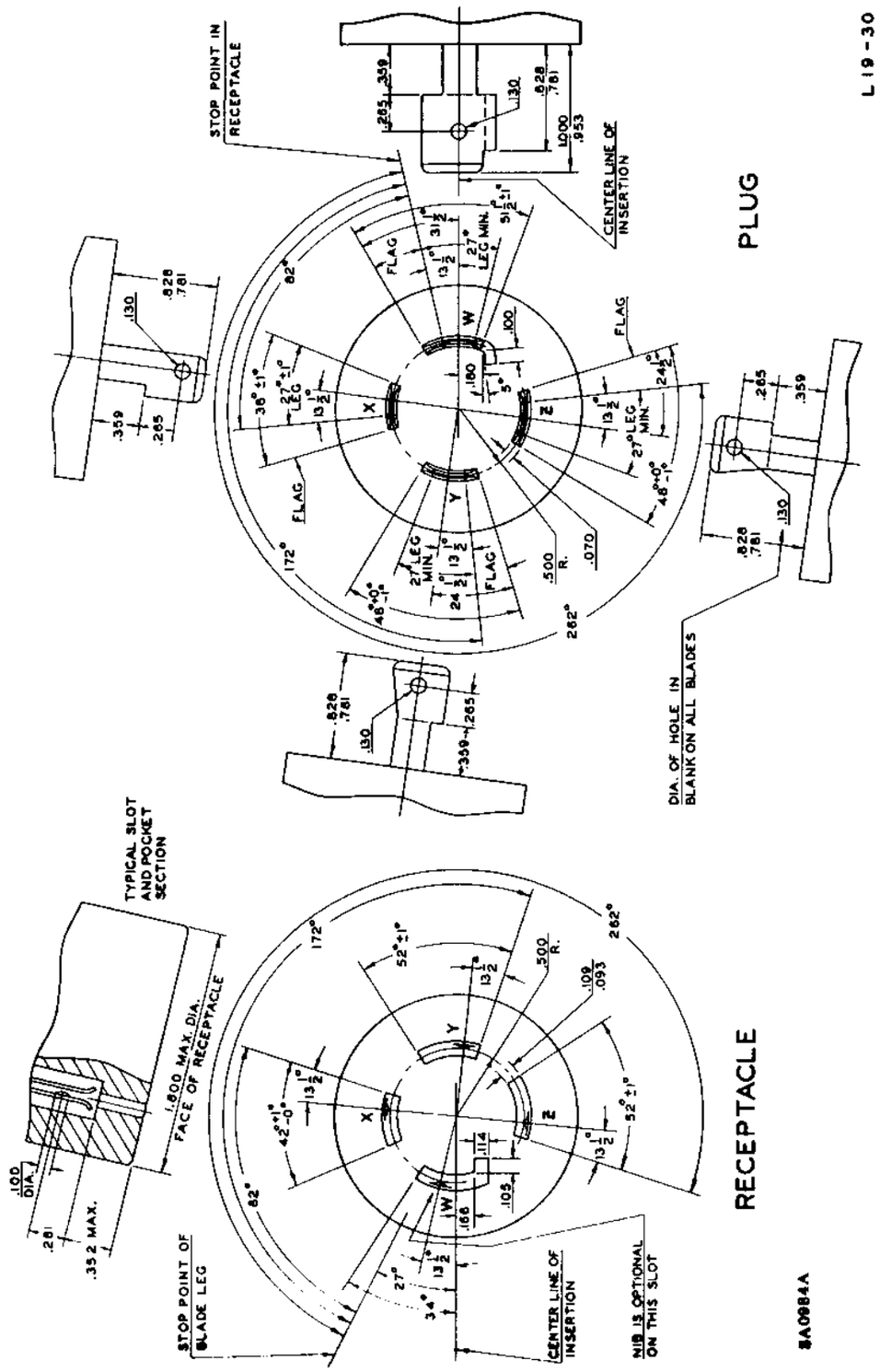


FIGURE 162.24
3-POLE, 4-WIRE GROUNDING DEVICES RATED
20 A, 125/250 V (3-WIRE)

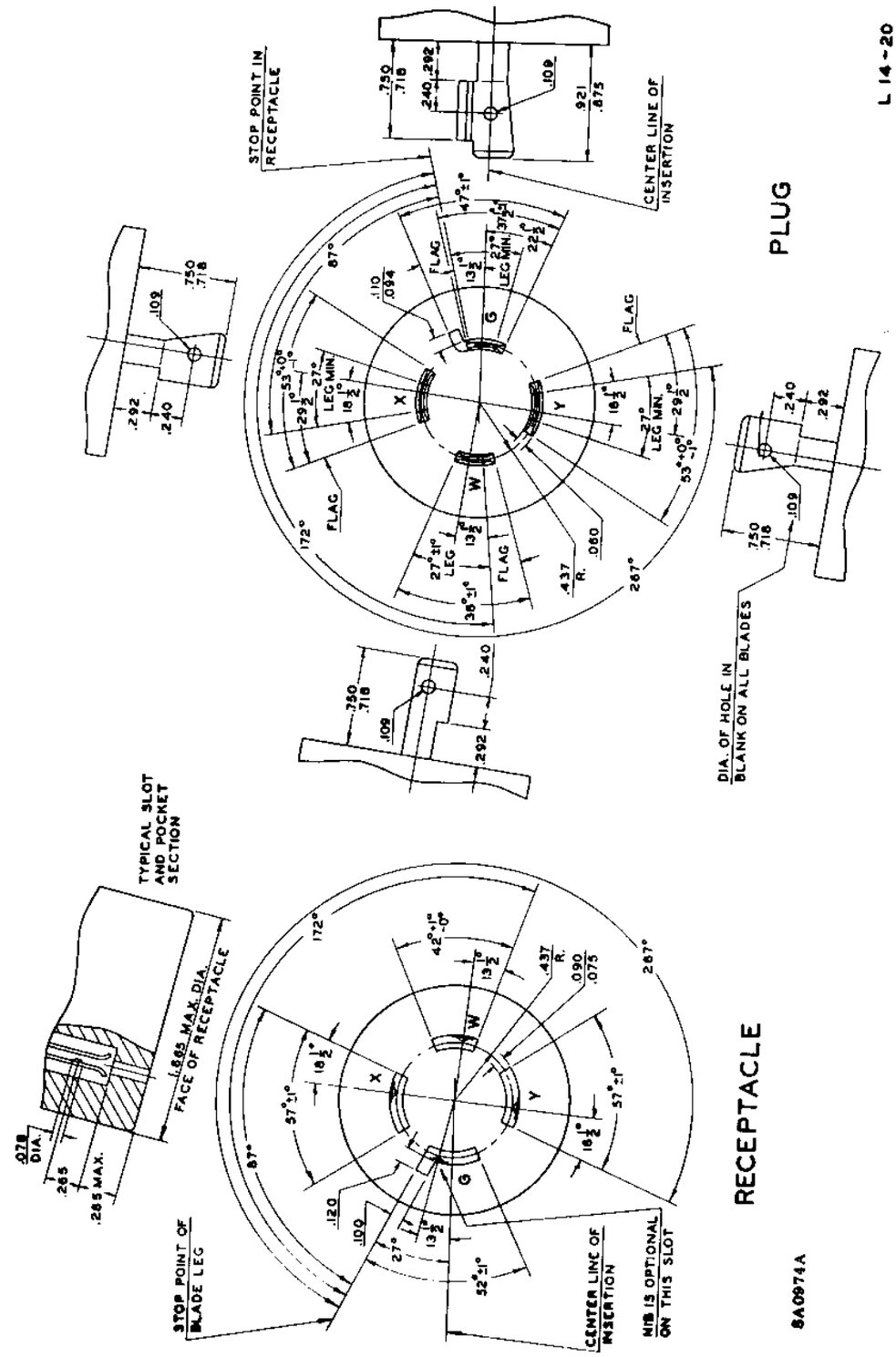
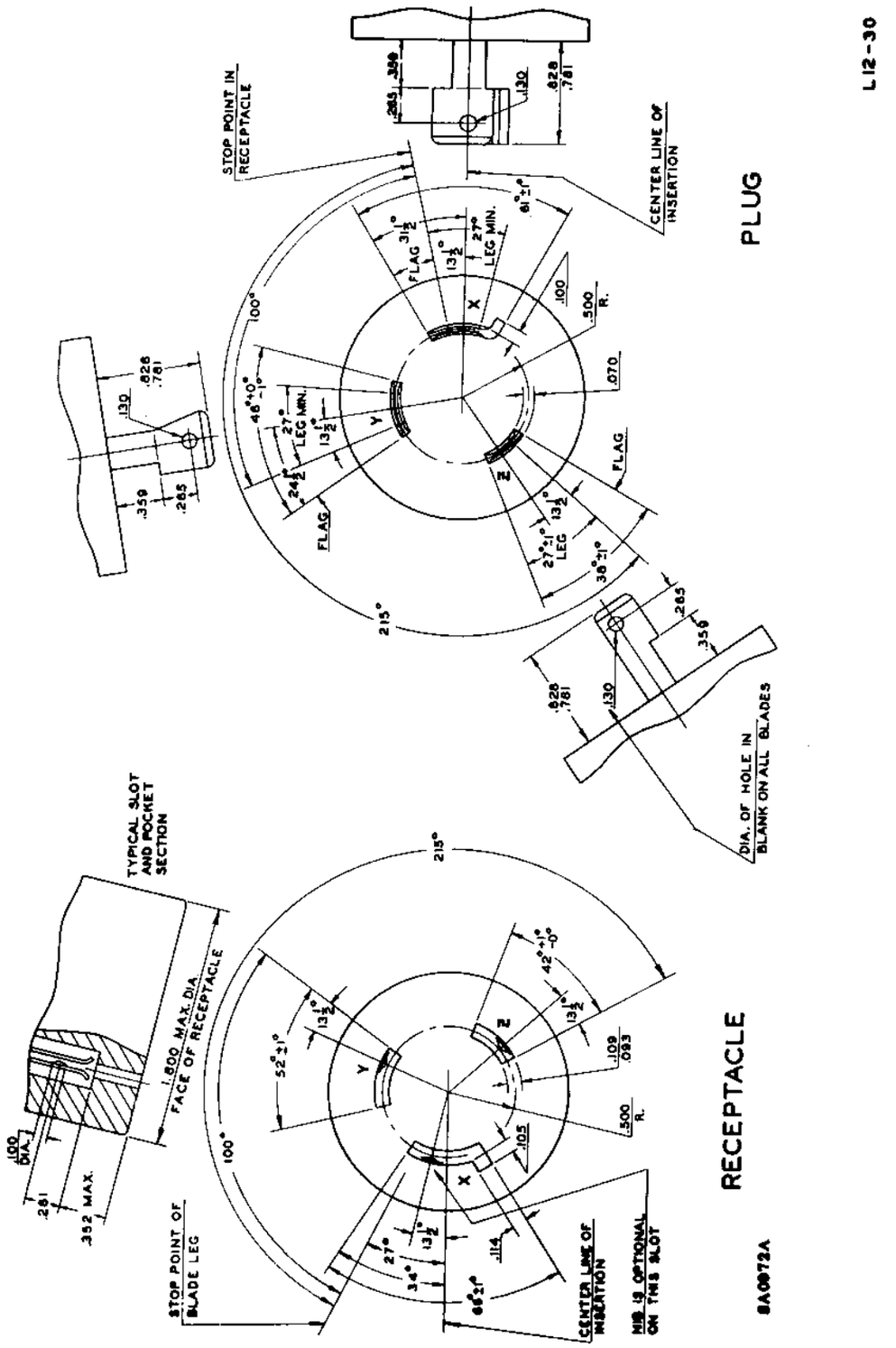


FIGURE 162.22
3-POLE, 3-WIRE DEVICES RATED
30 A, 480 V, 3 PHASE



SUPPLEMENT FOR MARINE SHORE POWER CABLE SETS

S1. Scope

S1.1 These requirements cover marine shore power cable sets rated at not less than 20 A and not more than 50 A, 250 V maximum. Marine shore power cable sets are intended to extend the shore power supply from a shore-installed power outlet to a power inlet on a boat, in accordance with the applicable requirements of the American Boat and Yacht Council (ABYC) Std. E—8—1985, National Fire Protection Association Standard for Pleasure and Commercial Motor Craft, NFPA No 302—1987, and the United States Coast Guard (USCG) Regulations Title 33, Chapter 1, CFR, Part 183.

S2. Glossary

S2.1 SHORE POWER INLET — A boat-mounted motor attachment plug intended to provide connection for a shore power cable set.

S2.2 SHORE POWER CABLE SET — A length of flexible cord or cable assembled with a locking-type grounding attachment plug as a line fitting and a locking-type grounding cord connector as a load fitting intended to be used in supplying a-c power to boats that are moored to a dock.

S3. General

S3.1 Marine shore power cable sets shall comply with the applicable requirements for outdoor-use cord sets in the Standard for Cord Sets and Power-Supply Cords, UL 817, except as modified by the following requirements. Marine shore power cable sets are intended to be stored where not exposed to sunlight or weather while not in use.

CONSTRUCTION

S4. General

S4.1 A nonmetallic material employed for component parts, such as boots, covers, or locking rings, shall be (1) nonhygroscopic, (2) resistant to sunlight, thermal aging, and ozone, and (3) capable of withstanding tests at minus 35° and plus 85°C (minus 31°C and plus 185°F). If it is not clear that a component part has the required properties, the applicable tests for exposure to low temperature, exposure to high temperature, ozone resistance, exposure to ultraviolet light and water, or accelerated oven aging in Sections S13—S17 shall be used.

S4.2 The overall length of a shore power cable set shall be at least 25 ft (7.6 m) but not more than 50 ft (15.2 m).

S5. Corrosion Resistance

S5.1 All current-carrying parts shall be copper alloy. The blades and contacts of fittings shall be provided with a corrosion resistant plating.

S5.2 Noncurrent-carrying metal parts, such as metal strain-relief clamps that are depended upon to meet the requirements of the standard, shall provide corrosion resistance equal to that of (1) stainless steel Alloys 302, 304, 410, or 430 or (2) bronze alloys with less than 15 percent zinc content, and shall be galvanically compatible with other metal parts of the shore power cable set.

S5.3 If there is any question that the parts are corrosion resistant, the salt spray test in Section S8 shall be used.

S6. Flexible Cord

S6.1 The flexible cord shall be outdoor-use Type S, SO, SOO, ST, STO, STOO, SE, SEO, SJ, SJO, SJOO, SJT, SJTO, SJTOO, SJE, or SJEO identified as described in paragraph 25.2. All cord conductors shall be of the same size and shall not be smaller than indicated in Table 25.1. The flexible cord shall contain two, three, or four insulated circuit conductors with an insulated grounding conductor of the same size as the circuit conductors.

S7. Fittings

S7.1 A shore power cable set shall employ one of the line and load fittings of the locking-grounding types illustrated in Figures 162.4, 162.5, 162.7, 162.8, 162.24—162.27, 162.37, 162.38, 162.43, and 162.44.

S7.2 The construction of a line and load fitting assembly, including any protective covering or boots, shall exclude entrance of moisture where the cord enters the assembly.

TABLE S7.1
DIMENSIONS FOR CORD CONNECTORS AND SHORE POWER INLETS IN FIGURE S7.2

ANSI Standard Designation	Rating	Shore Power Inlet[a]		Cord Connector[a]		Figure in UL 817
		A[b]	B	C[d]	D[b]	
C73—72	20 A, 125 V, 1 Phase, 2 Pole, 3 Wire	1.880 (47.75)	0.921[c] (23.39)	1.860 (47.24)	0.967 (24.56)	162.4
C73—73	30 A, 125 V, 1 Phase, 2 Pole, 3 Wire	1.880 (47.75)	1.000[c] (25.40)	1.860 (47.24)	1.046 (26.57)	162.5
C73—75	20 A, 250 V, 1 Phase, 2 Pole, 3 Wire	1.880 (47.75)	0.921[c] (23.39)	1.860 (47.24)	0.967 (24.56)	162.7
C73—76	30 A, 250 V, 1 Phase, 2 Pole, 3 Wire	1.880 (47.75)	1.000[c] (25.40)	1.860 (47.24)	1.046 (26.57)	162.8
C73—83	20 A, 125/250 V, 1 Phase, 3 Pole, 4 Wire	2.000 (50.80)	0.921[c] (23.39)	1.980 (50.29)	0.967 (24.56)	162.24
C73—84	30 A, 125/250 V, 1 Phase, 3 Pole, 4 Wire	2.000 (50.80)	1.000[c] (25.40)	1.980 (50.29)	1.046 (26.57)	162.25
C73—85	20 A, 250 V, 3 Phase, 3 Pole, 4 Wire	2.000 (50.80)	0.921[c] (23.39)	1.980 (50.29)	0.967 (24.56)	162.26
C73—86	30 A, 250 V, 3 Phase, 3 Pole, 4 Wire	2.000 (50.80)	1.000[c] (25.40)	1.980 (50.29)	1.046 (26.57)	162.27
C73—90	20 A, 208Y/120 V, 3 Phase, 4 Pole, 5 Wire	2.000 (50.80)	0.921[c] (23.39)	1.980 (50.29)	0.967 (24.56)	162.37
C73—91	30 A, 208Y/120 V, 3 Phase, 4 Pole, 5 Wire	2.000 (50.80)	1.000[c] (25.40)	1.980 (50.29)	1.046 (26.57)	162.38
C73—110[e]	50 A, 125 V, 1 Phase, 2 Pole, 3 Wire	2.015 (51.18)	1.163[d] (29.54)	1.991 (50.57)	1.171 (29.74)	162.43
C72—111[e]	50 A, 125/250 V, 1 Phase, 3 Pole, 4 Wire	2.015 (50.18)	1.163[d] (29.54)	1.991 (50.57)	1.171 (29.74)	162.44

[a] Dimensions in inches (mm).

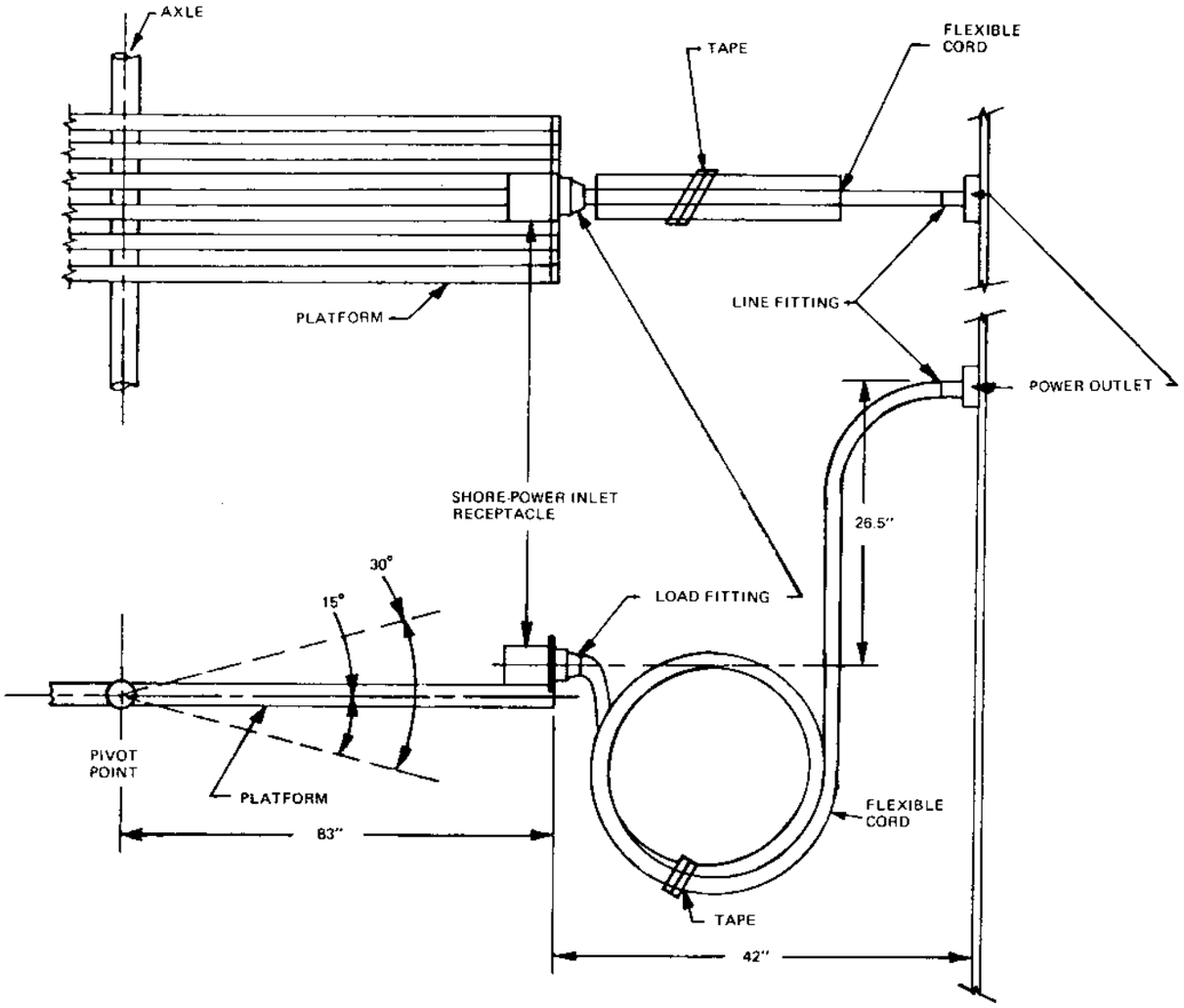
[b] Minimum dimension.

[c] Tolerance of minus 0, plus 0.031 (plus 0.79 mm).

[d] Maximum dimension.

[e] Small-craft.

FIGURE S9.1
MECHANICAL STRENGTH TEST APPARATUS



SB1968

inch	26.5	42	83
m	0.67	1.07	2.11

S10. Flexure and Water Spray Test

Load Fittings

S10.1 Load fittings shall be tested as described in paragraphs S10.2—S10.5 to determine that their constructions keep water from reaching current-carrying parts.

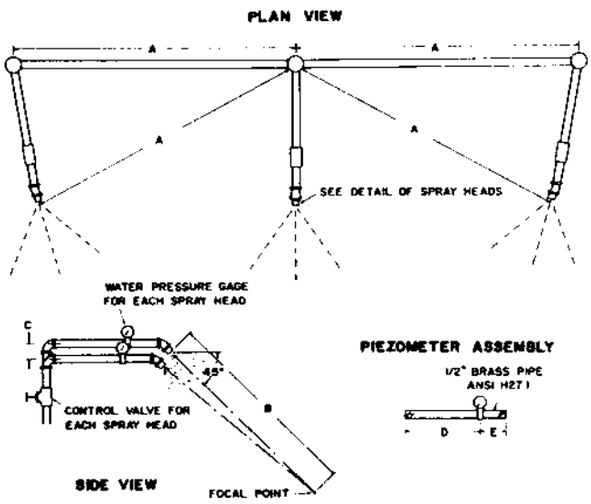
S10.2 The shore power cable set shall be installed as shown in Figure S10.1 with its load fitting connected to a power inlet mounted on a vertical wall section. The excess length of flexible cord shall be coiled on the floor.

S10.3 While connected to the power inlet, the shore power cable set is to be sprayed with water from the apparatus described in paragraph S10.4. The test shall last 1 hour during which time the shore power cable set shall be flexed at a rate of 6 cycles per minute. Each cycle is to consist of the movement of the cable set from its starting position, through the positions resulting from pulling on the rope for a distance of 16 inches (406 mm), then releasing the rope and allowing the cable set to fall to its natural resting position below the starting position, and then pulling on the rope until the cable set is returned to the starting position. See Figure S10.1.

S10.4 The water-spray apparatus is to consist of three spray heads mounted in a water-supply pipe rack as illustrated in Figure S10.2. Spray heads are to be constructed in accordance with Figure S10.3. The water-supply pipe rack with spray heads is to be located so that the focal point of the spray is at the load fitting of the shore power cable set. The water pressure is to be maintained at 5 lbs/in^2 (34 kPa) at each spray head.

S10.5 The load fitting shall then be disconnected from the power inlet and examined to determine that water has not reached current-carrying parts.

FIGURE S10.2
WATER-SPRAY-HEAD PIPING



Item	inch	mm
A	28	710
B	55	1400
C	2-1/4	55
D	9	230
E	3	75

S14. Exposure to High Temperature Test

S14.1 Following the high-temperature conditioning and impact described in this section, a fitting with boot shall not have any permanent damage, such as distortion of the boot or fitting, or cracking or splitting of the nonmetallic material.

S14.2 An assembly consisting of a boot and its associated line or load fitting is to be capable of withstanding an impact of 5 ft-lbf (7 N•m) after an exposure to a temperature of 85 ± 3°C (185 ± 5°F) for a period of 72 hours. Three samples are to be tested. At the end of 72 hours, each fitting with boot shall be removed from the oven, connected to a mating device mounted to a fixed vertical wall, and subjected to a single 5 ft-lbf (7 N•m) impact within 30 seconds after removal from the oven.

S14.3 The impact is to be applied as described in paragraphs S13.3 and S13.4.

S15. Ozone Resistance Test

S15.1 Compliance with the ozone-resistance requirement in paragraph S4.1 shall be demonstrated by the absence of any permanent damage such as distortion of the boot or fitting, or cracking or splitting of the nonmetallic material, following the exposure to ozone and subsequent impact described in this section.

S15.2 Three samples of a nonmetallic boot, ring, or cover with its associated line or load fitting shall be exposed for 70 hours to an ozone concentration of 50 ± 5 ppm at a temperature of 40 ± 1°C (104 ± 2°F). At the end of the 70 hours, each sample shall be connected to a mating device mounted to a fixed vertical wall and then subjected to a single 5 ft-lbf (7 N•m) impact.

S15.3 The impact is to be produced as described in paragraphs S13.3 and S13.4.

S16. Exposure to Ultraviolet and Water Test

S16.1 Compliance with the moisture and sunlight-resistance requirement in paragraph S4.1 shall be demonstrated by the absence of any permanent damage, such as distortion of the boot or fitting, or cracking or splitting of the nonmetallic material, following the exposure to ultraviolet light and water spray, and subsequent impact, described in this section.

S16.2 Three samples of a nonmetallic boot, ring, or cover with its associated line or load fitting shall be exposed for 720 hours to ultraviolet light and water spray as described in paragraph S16.4. At the end of 720 hours, each sample shall be connected to a mating device mounted to a fixed vertical wall and then subjected to a single 5 ft-lbf (7 N•m) impact.

S16.3 The impact is to be produced as described in paragraphs S13.3 and S13.4.

S16.4 The parts are to be exposed in a Type D or DH Twin enclosed carbon-arc lamp apparatus as described in the Standard Recommended Practice for Operating Light- and Water-Exposure Apparatus (Carbon-Arc Type) for Exposure of Nonmetallic Materials, ASTM G23—81. The cycle shall consist of 17 minutes of exposure to ultraviolet light only followed by 3 minutes of ultraviolet light plus water-spray exposure.

S17. Accelerated Air Oven Aging Test

S17.1 Compliance with the thermal-aging resistance requirement in paragraph S4.1 shall be demonstrated by having each specimen retain at least 80 percent of its initial tensile strength and 50 percent of its initial elongation properties following the air-oven conditioning described in this section.

S17.2 Components constructed of rubber compounds or similar material are to be exposed to an air temperature of 100 ± 2°C (212 ± 4°F) for 70 hours in accordance with paragraph S17.5.

S17.3 Three specimens are to be cut using Die C as described in the Standard Test Methods for Rubber Properties in Tension, ASTM D412—83.

S17.4 A power-driven buffing machine (grinding wheel) shall be used for buffing off irregularities on samples from which die-cut specimens are prepared. The abrasive wheel is to be of about No. 36 grit (particle size of 0.486 mm or 0.019 inch). The diameter and rotary velocity of the wheel are to result in a peripheral speed of 4000—5000 ft/minute (20—25 m/s). The machine shall be provided with a slow-feed feature so that very little compound is removed during each cut, thereby not overheating the specimen.

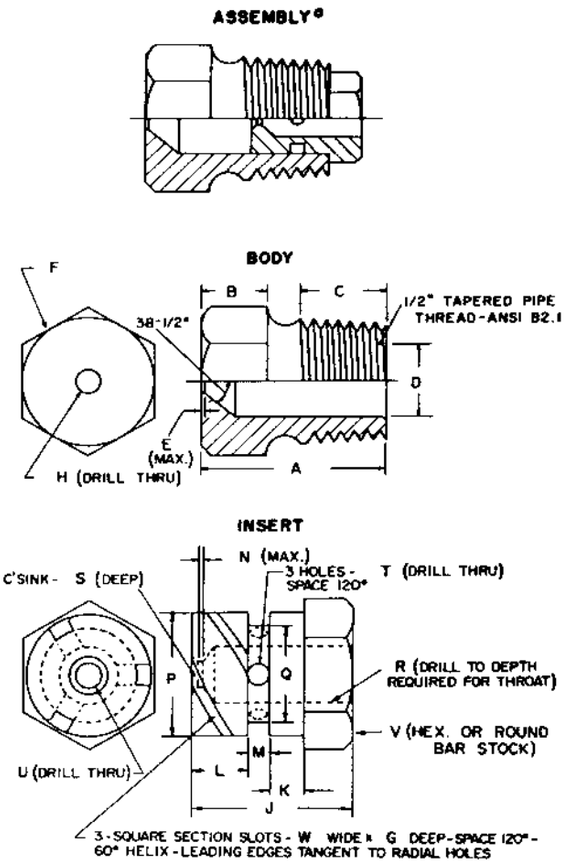
S17.5 The apparatus and test method used for accelerated aging of specimens is described in the Standard Test Method for Rubber Deterioration in an Air Oven, ASTM D573—81. Air within the aging chamber is to be circulated at a high velocity. The exhaust ports of the oven are to be adjusted so that fresh air is added at a minimum rate of 200 changes/hour. The blower or other means for circulating the air is to be located entirely outside the aging chamber.

INSTRUCTIONS

S18. Instruction Manual

S18.1 A pamphlet, booklet, or flyer sheet shall be provided with each shore power cable set containing instructions for proper use, care, and storage of the shore power cable set.

FIGURE S10.3
WATER-SPRAY HEAD



Item	inch	mm	Item	inch	mm
A	1-7/32	31.0	N	1/32	0.80
B	7/16	11.0	P	.575	14.61
C	9/16	14.0		.576	14.63
D	.578	14.68	Q	.453	11.51
	.580	14.73		.454	11.53
E	1/64	0.40	R	1/4	6.35
F	[c]	[c]	S	1/32	0.80
G	.06	1.52	T	(No. 35)[b]	2.79
H	(No.9)[b]	5.0	U	(No. 40)[b]	2.49
J	23/32	18.3	V	5/8	16.0
K	5/32	3.97	W	0.06	1.52
L	1/4	6.35			
M	3/32	2.38			

[a] - Molded nylon Rain-Test Spray Heads are available from Underwriters Laboratories Inc.

[b] - ANSI B94.11 Drill Size.

[c] - Optional - To serve as wrench grip.

RT 100

S11. Insulation Resistance Test

S11.1 Following the mechanical-strength and the flexure and water-spray tests described in Sections S9 and S10, a shore power cable set shall have an insulation resistance between conductors that is not less than 90 percent of the "as received" value when determined in accordance with Section 81.

S12. Dielectric Voltage-Withstand Test

S12.1 A shore power cable set, after being subjected to the mechanical-strength and the flexure and water-spray tests described in Sections S9 and S10, shall acceptably withstand the 1-minute application of a 1250-V, 60-Hz potential as described in Section 80.

S13. Exposure to Low Temperature Test

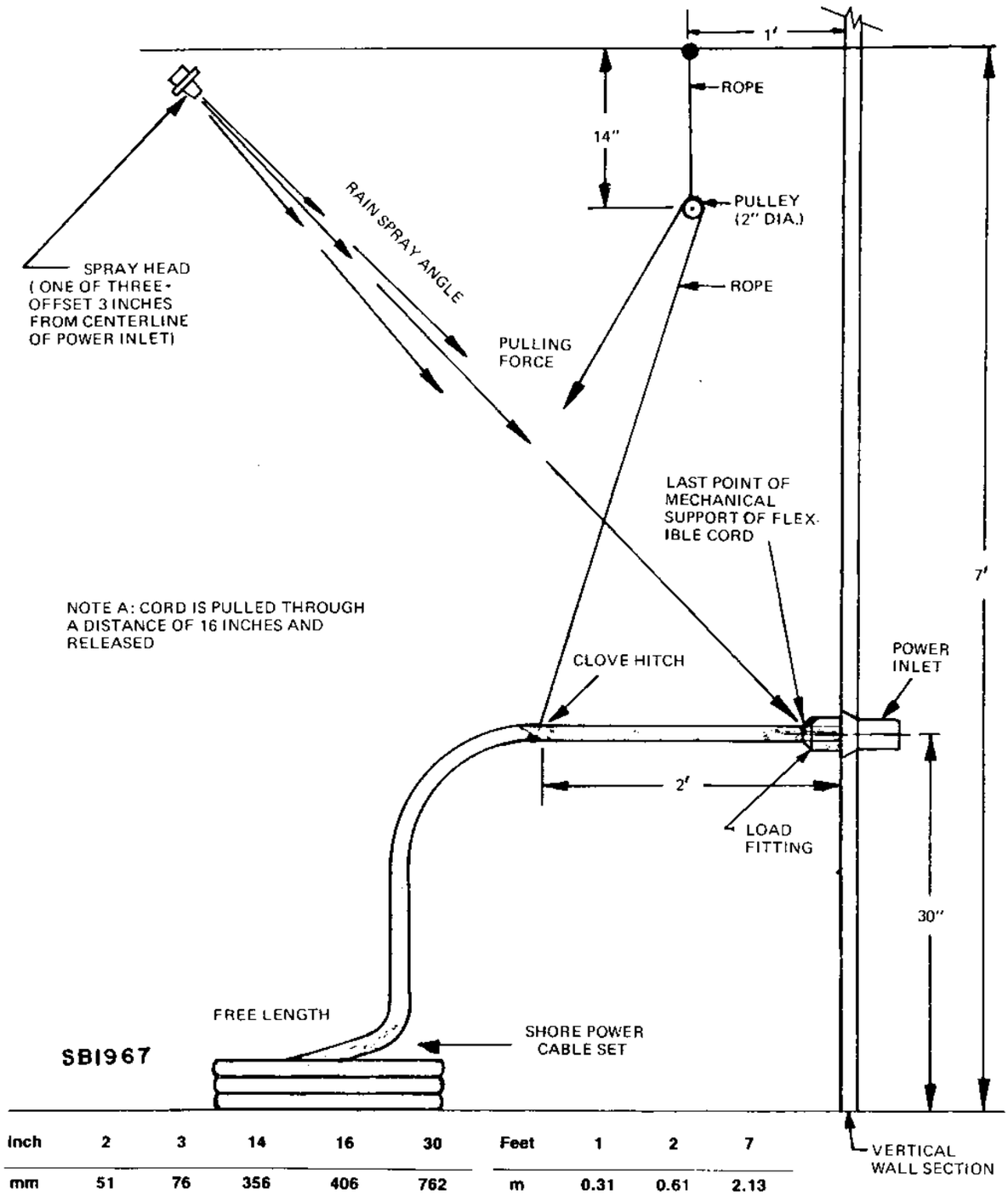
S13.1 Following the low-temperature conditioning and impact described in this section, a fitting with boot shall not have any permanent damage such as distortion of the boot or fitting, or cracking or splitting of the nonmetallic material.

S13.2 An assembly consisting of a boot and its associated line or load fitting is to be capable of withstanding an impact of 5 ft-lbf (7 N•m) after exposure to a temperature of minus 35.0 ± 3.0°C (minus 31.0 ± 5.4°F) for 72 hours. Three samples are to be tested. At the end of the 72 hours, each fitting with boot is to be removed from the cold chamber with cotton gloves, connected to a mating device mounted to a fixed vertical wall, and subjected to a single 5 ft-lbf (7 N•m) impact within 30 seconds after removal from the chamber.

S13.3 The impact is to be applied from any direction in a plane perpendicular to the center axis of the line or load fitting.

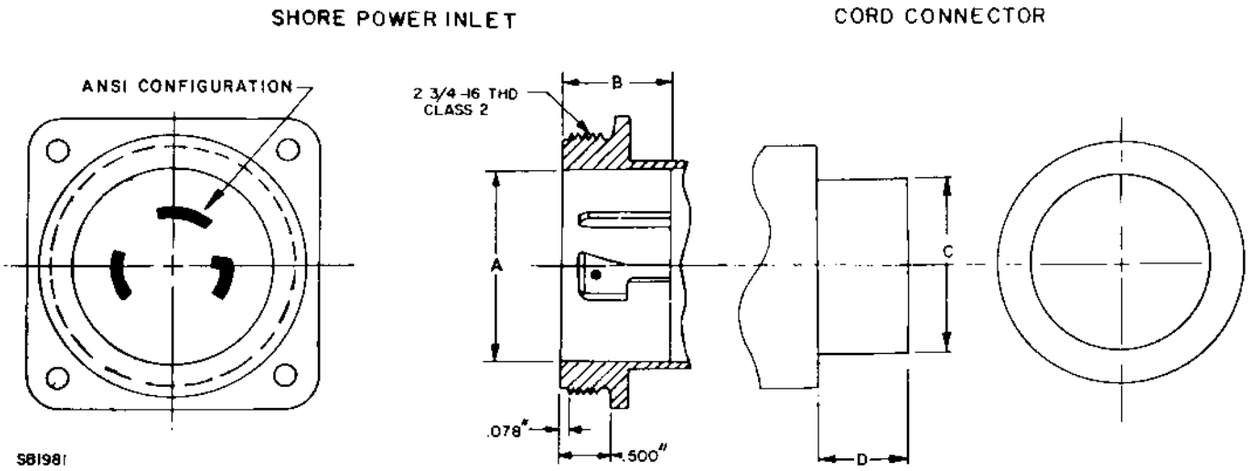
S13.4 The impact is to be produced by dropping a steel sphere 2 inches (51.8 mm) in diameter and weighing approximately 1.18 lb (535 g) from a height of 51 inches (1.3 m). For contact with the top surface, the sphere may be allowed to free fall through the 51 inches (1.3 m). For contact with surfaces other than the top, the steel sphere is to be suspended by a cord and allowed to swing as a pendulum dropping through a vertical distance of 51 inches (1.3 m).

FIGURE S10.1
FLEXURE AND WATER-SPRAY TEST APPARATUS
(Start Position)



Inch	2	3	14	16	30	Feet	1	2	7
mm	51	76	356	406	762	m	0.31	0.61	2.13

FIGURE S7.2
DIMENSIONS OF CORD CONNECTORS
AND SHORE POWER INLETS



PERFORMANCE

S8. Salt Spray Test

S8.1 If necessary to determine compliance with the corrosion resistance requirement of paragraph S5.3, the shore power cable set shall be exposed to salt spray (fog) for a period of 750 hours. The salt spray exposure shall be conducted in accordance with the Standard Method of Salt Spray (Fog) Testing, ASTM B117—73 (1979). Following the exposure, the cable set shall comply with the mechanical strength, flexure and water-spray, insulation resistance, and dielectric voltage-withstand tests in Sections S9—S12.

S9. Mechanical Strength Test

S9.1 A sample shore power cable set of the maximum length shall be tested as described in paragraph S9.2 without external physical damage to the component parts. A maximum-length shore power cable set is the longest one produced by a particular manufacturer but not exceeding the 50 ft (15.2 m) maximum length specified in paragraph S4.2.

S9.2 A maximum-length shore power cable set shall be installed as shown in Figure S9.1, connected at one end to a power inlet and to a power outlet at the other end. The excess cord of the shore powered cable set shall be coiled between the power outlet and inlet and taped at the base of the coil. During the test, the shore power cable set shall be free to move without striking any surface. The platform shall be rotated to cause the mounted power inlet to move back and forth in a vertical direction through an angle of 30 degrees (15 degrees above and below the horizontal) for a total of 1000 cycles. The rate shall be 15 cycles per minute.

S9.3 After completion of the 1000 cycles, the shore power cable set components shall be visually examined for damage including cracking of the insulation materials, boots, and covers.

S7.3 To determine compliance with paragraph S7.2, the flexible cord is to be bent to an angle of 90 degrees to the plane of the cord entry and visually examined for openings through which moisture might enter the body. Any opening between the flexible cord and the boot, cover, or body of an attachment plug or cord connector is unacceptable.

Exception: Molded-on attachment plugs and cord connectors are acceptable if positive adhesion can be demonstrated between the flexible cord and the molded-on body at all points around the periphery of the cord. Samples may be cut apart to show the inner construction and the resultant seal between the cord and body.

S7.4 A load fitting shall:

A. Be provided with a threaded coupling ring for attachment to a threaded hub of a shore power inlet that shall be positively retained in place on the load fitting. The coupling ring shall have a 2-3/4—16, Class 2 thread having at least three full threads. See Figure S7.1.

B. Prevent water from entering between the load fitting and the shore power inlet as determined by the flexure and water-spray test in Section S10.

C. Be dimensioned to couple with a shore power inlet of a corresponding configuration. See Figure S7.2 and Table S7.1 for the required dimensions of cord connectors and shore power inlets.

FIGURE S7.1
THREADED COUPLING RING