MIL-C-13777/5C
15 September 1969
SUPERSEDING
MIL-C-13777/5B
1 September 1966

MILITARY SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL
34, 36, 37, 39, 40, 42, 46, 47, AND 52 CONDUCTORS

The complete requirements for procuring the cable described herein shall consist of this document and the latest issue of Specification MIL-C-13777.

This specification is mandatory for use by all Departments and Agencies of the Department of Defense.

REQUIREMENTS:

Dimensions and configuration: See applicable figure and design data for the following cable types:

341273S	371065S	371327S	401582S
360860	371142	371517S	420950
S361055	371193S	391115S	421010SC
361420S	371314S	401485S	S462080S
			471374S
			S521235

In any conflict between the design data and the applicable figure, the design data shall govern.

FSC 6145

DESIGN DATA

Type Designation	341273S		360860	S361055
Figure No.----------	1		2	2
Total Wires----------	34		36	36
No. of Conductors & AWG # 23/#18*	6/#18S**	5/#16	36/#20	36/#18
Insulation				
Min average thickness---	0.015"		0.015"	0.015"
Spark Test Voltage------	3000		3000	3000
Inspection Test Voltage-	1500		1500	1500
Cabling				
Layer No. 1----------	Filler		Filler	Filler
Layer No. 2----------				
(a) Number of wires---	8	6	6	6
(b) AWG #----------	#18	#18S**	#20	#18
(c) Maximum Lay-------				
Layer No. 3----------				
(a) Number of wires---	15	5	12	12
(b) AWG #----------	#18	#16	#20	#18
(c) Maximum Lay-------				
Layer No. 4----------				
(a) Number of wires---			18	18
(b) AWG #----------			#20	#18
(c) Maximum Lay-------				7.0"
Sheath				
No. of Layers----------	2		1	2
Total thickness Min-----	0.140"		0.080"	0.117"
Minimum OD Cable--------	1.248"		0.835"	1.025"
Maximum OD Cable--------	1.318"		0.885"	1.085"

Explanation of notations used:

Letter "S" designates Shielded construction.
* Two twisted quads and 15 singles.
** Three shielded, twisted pairs
Maximum Twist Lay of 3.5" for quads and 3.0" for pairs.

DESIGN DATA

Type Designation		361420S		
Figure No.----------		3		
Total Wires----------		36		
No. of Conductors & AWG #	17/#18	13/#18S*	5/#16	1/#16S
Insulation		0.015"		
Min average thickness----		3000		
Spark Test Voltage-------		1500		
Inspection Test Voltage--				
Cabling				
Layer No. 1----------		Filler		
Layer No. 2----------				
(a) Number of wires----		13	1	
(b) AWG #----------		#18S	#16S	
(c) Maximum Lay--------				
Layer No. 3----------				
(a) Number of wires----		17	5	
(b) AWG #----------		#18	#16	
(c) Maximum Lay--------				
Layer No. 4----------				
(a) Number of wires--				
(b) AWG #----------				
(c) Maximum Lay------				
Sheath				
No. of Layers----------		2		
Total thickness Min------		0.140"		
Minimum OD Cable---------		1.382"		
Maximum OD Cable---------		1.462"		

Explanation of notations used:

Letter "S" designates shielded construction.
* Four shielded, twisted pairs with max. twist lay of 3.0 inches and 5 shielded singles.

Type Designation		371065S		371142
Figure No.----------		4		5
Total Wires----------		37		37
No. of Conductors & AWG #	4/#18S	27/#18	6/#14	37/#18
Insulation				
Min average thickness----		0.015"		0.015"
Spark Test Voltage-------		3000		3000
Inspection Test Voltage--		1500		1500
Cabling				
Layer No. 1----------				Filler
(a) Number of wires----		4		
(b) AWG #----------		#18S*		
(c) Maximum Lay--------		3.00"		
Layer No. 2----------				
(a) Number of wires----	6		6	7
(b) AWG #----------	#18		#14	#18
(c) Maximum Lay--------		5.00"		
Layer No. 3----------				
(a) Number of wires----		21		12
(b) AWG #----------		#18		#18
(c) Maximum Lay--------		6.00"		
Layer No. 4----------				
(a) Number of wires----				18
(b) AWG #----------				#18
(c) Maximum Lay--------				7.00"
Sheath				
No. of Layers----------		1		2
Total thickness Min------		0.080"		0.140"
Minimum OD Cable---------		1.050"		1.112"
Maximum OD Cable---------		1.080"		1.172"

Shielded Pairs AWG #18 with 3.00" Max Lay Twist

DESIGN DATA

Type Designation		371193S	
Figure No.----------		6	
Total Wires----------		37	
No. of Conductors & AWG #	29/#18	2/#18S	6/#14
Insulation			
Min average thickness----		0.015"	
Spark Test Voltage-------		3000	
Inspection Test Voltage--		1500	
Cabling			
Layer No. 1----------		Filler	
Layer No. 2----------			
(a) Number of wires----	3	2	1
(b) AWG #----------	#18	#18S	#14
(c) Maximum Lay--------			
Layer No. 3----------			
(a) Number of wires----		7	5
(b) AWG #----------		#18	#14
(c) Maximum Lay--------			
Layer No. 4----------			
(a) Number of wires----		19	
(b) AWG #----------		#18	
(c) Maximum Lay--------			
Sheath			
No. of Layers----------		2	
Total thickness Min------		0.125"	
Minimum OD Cable---------		1.163"	
Maximum OD Cable---------		1.223"	

DESIGN DATA

Type Designation			371314S		
Figure No.----------			7		
Total Wires----------			37		
No. of Conductors & AWG #	27/#18	5/#18S*	1/#16S	1/#14	3/#14S
Insulation					
Min average thickness----			0.015"		
Spark Test Voltage-------			3000		
Inspection Test Voltage--			1500		
Cabling					
Layer No. 1----------					
(a) Number of wires----			3		
(b) AWG #----------			#14S**		
(c) Maximum Lay--------					
Layer No. 2----------					
(a) Number of wires----		5	5	1	1
(b) AWG #----------		#18	#18S	#16S	#14
(c) Maximum Lay--------					
Layer No. 3----------					
(a) Number of wires----			22		
(b) AWG #----------			#18		
(c) Maximum Lay--------					
Sheath					
No. of Layers----------			2		
Total thickness Min------			0.125"		
Minimum OD Cable---------			1.282"		
Maximum OD Cable---------			1.346"		

Explanation of notations used:

Letter "S" designates shielded construction.
* Two shielded, twisted pairs and one shielded single.
** Shielded, twisted triple.

DESIGN DATA

Type Designation		371327S		371517S	391115S
Figure No.----------		8		9	10
Total Wires----------		37		37	39
No. of Conductors & AWG	21/#18	10/#18S*	6/#14	(1) 37/#18	39/#18
Insulation					
Min average thickness--		0.015"		0.015"	0.015"
Spark Test Voltage-----		3000		3000	3000
Inspection Test Voltage-		1500		1500	1500
Cabling					
Layer No. 1----------				Filler	
(a) Number of wires--		4		2 pr tw/sh	
(b) AWG #----------		#18S			#18
(c) Maximum Lay------					3.00"
Layer No. 2----------				(2)	
(a) Number of wires--		6	6		14
(b) AWG #----------		#18S	#14	#18	#18
(c) Maximum Lay------				9.75"	5.00"
Layer No. 3----------					
(a) Number of wires--		21		(3)	21
(b) AWG #----------		#18		#18	#18
(c) Maximum Lay------				9.75"	6.00"
Sheath					
No. of Layers----------		2		2	2
Total thickness Min----		0.125"		0.156"	0.109"
Minimum OD Cable-------		1.297"		1.472"	1.100"
Maximum OD Cable-------		1.357"		1.562"	1.130"

Note: (1) 8 Prs. Tw/Sh., 6 Sh., 15 Unshielded
(2) 8 Prs. Tw/Sh.
(3) 6 Singles Sh., 15 Unshielded

Letter "S" designates shielded construction.
* One shielded, twisted triple and 7 shielded singles.

Type Designation		401485S		
Figure No.----------		11		
Total Wires----------		40		
No. of Conductors & AWG #	25/#18	10/#18S*	4/#16**	1/#16S
Insulation				
Min average thickness----		0.015"		
Spark Test Voltage--------		3000		
Inspection Test Voltage--		1500		
Cabling				
Layer No. 1----------		Filler		
Layer No. 2----------				
(a) Number of wires----		10	4	1
(b) AWG #----------		#18S*	#16**	#16S
(c) Maximum Lay--------				
Layer No. 3----------				
(a) Number of wires----		25		
(b) AWG #----------		#18		
(c) Maximum Lay--------				
Sheath				
No. of Layers----------		2		
Total thickness Min------		0.156"		
Minimum OD Cable---------		1.440"		
Maximum OD Cable---------		1.530"		

Explanation of notations used:

Letter "S" designates shielded construction.
* Three shielded, twisted pairs and four shielded singles.
** Unshielded, twisted quad.

DESIGN DATA

Type Designation			401582S		
Figure No.----------			12		
Total Wires----------			40		
No. of Conductors & AWG #	20/#18	3/#18S	1/#16S	14/#12	2/#12S
Insulation					
Min average thickness----	0.015"	0.015"	0.015"	0.020"	0.020"
Spark Test Voltage-------	3000	3000	3000	4000	4000
Inspection Test Voltage--	1500	1500	1500	2000	2000
Cabling					
Layer No. 1----------					
(a) Number of wires----				2	2
(b) AWG #----------				#18S	#12S
(c) Maximum Lay--------					
Layer No. 2----------					
(a) Number of wires----			20		
(b) AWG #----------			#18		
(c) Maximum Lay--------					
Layer No. 3----------					
(a) Number of wires----			1	1	14
(b) AWG #----------			#18S	#16S	#12
(c) Maximum Lay--------					
Sheath					
No. of Layers----------			2		
Total thickness Min------			0.140"		
Minimum OD Cable---------			1.542"		
Maximum OD Cable---------			1.622"		

Explanation of notations used:

Letter "S" designates shielded construction.

DESIGN DATA

Type Designation	420950		421010SC		S462080S
Figure No.----------	13		14		15
Total Wires----------	42		42		46
No. of Conductors & AWG #	42/#20		(1)	(2)	(4)
Insulation					
Min average thickness----	0.015"		0.012"		0.015"
Spark Test Voltage-------	3000		4000		3000
Inspection Test Voltage--	1500		1500		1500
Cabling					
Layer No. 1----------	Filler		Filler		Filler
(a) Number of wires----			(3)		
(b) AWG #----------		#20		#27	
(c) Maximum Lay--------					
Layer No. 2----------					
(a) Number of wires----	8		15		(5)
(b) AWG #----------	#20		#20		#16
(c) Maximum Lay--------					
Layer No. 3----------					
(a) Number of wires----	14		19		(6)
(b) AWG #----------	#20		#20		#16
(c) Maximum Lay--------			10.00"		12.00"
Layer No. 4----------					
(a) Number of wires----	20				
(b) AWG #----------	#20				
(c) Maximum Lay--------					
Sheath					
No. of Layers----------	2		2		2
Total thickness Min------	0.098"		0.109"		0.203"
Minimum OD Cable---------	0.925"		0.990"		2.055"
Maximum OD Cable---------	0.975"		1.030"		2.105"

* Cold Bend Torque 30 FT/lbs.

(1) Two (2) Coaxials

(a) Inner Conductor:----------#27 AWG stranded, 7 strands each #35 AWG annealed (copper clad) steel wire, dc resistance/1000 ft at 20°C 180 ohms max. Nominal strand diameter 0.0056"

(b) Core:----------Extruded polyethylene per L-P-590, Type II, Grade 7 Diam. 0.097" ± 0.004"

(c) Outer Conductor:----------Single braid, #38 AWG tinned copper wire, maximum diameter 0.118"

(d) Outer Insulation:----------Extruded polyamide, min average thickness 0.005", max OD 0.136". Color Code one (1) each black and white, striped

(e) Electrical Tests:

Capacitance----------20.5± 2 uuf/ft.

Attenuation (Max)----------13 db/100 ft. @ 400mc

Impedance----------73 ± 5 ohms

DESIGN DATA
421010SC (Cont'd)
S462080S (Cont'd)

Insulation resistance between Outer Conductors per 1000 ft using a potential of 200 V. dc min.----------10 megohms min.

(2) Forty (40) Single Conductors
  (a) Conductor:----------#20 AWG
(3) 2 Tw Triplets - 2 Coaxial Sh.
(4) 15 Prs. Tw. & Sh., 4 Quads. Tw. & Sh.; All #16
(5) 4 Quads & 3 Prs.
(6) 12 Prs. 2 Fillers

DESIGN DATA

Type Designation			471374S		
Figure No.----------			16		
Total Wires----------			47		
No. of Conductors & AWG #	41/#18	1/#18S	3/#14S	1/#12	1/#12S
Insulation					
Min average thickness----	0.015"	0.015"	0.015"	0.020"	0.020"
Spark Test Voltage-------	3000	3000	3000	4000	4000
Inspection Test Voltage--	1500	1500	1500	2000	2000
Cabling					
Layer No. 1----------					
(a) Number of wires----		1	3	1	1
(b) AWG #----------		#18S	#14S	#12	#12S
(c) Maximum Lay--------					
Layer No. 2----------					
(a) Number of wires----			18		
(b) AWG #----------			#18		
(c) Maximum Lay--------					
Layer No. 3----------					
(a) Number of wires----			23		
(b) AWG #----------			#18		
(c) Maximum Lay--------					
Sheath					
No. of Layers----------			2		
Total thickness Min------			0.125"		
Minimum OD Cable---------			1.344"		
Maximum OD Cable---------			1.404"		

Explanation of notations used:

Letter "S" designates shielded construction.

DESIGN DATA

Type Designation ---------- S521235
Figure No. ---------- 17
Total Wires ---------- 26 Twisted Pairs
No. of Conductors & AWG # ---------- 52/#20

Insulation
Min average thickness ---------- 0.015"
Spark Test Voltage ---------- 3000
Inspection Test Voltage ---------- 1500

Cabling
Layer No. 1 ----------
(a) Number of wires ---------- 6 (3 twisted pairs)
(b) AWG # ---------- #20
Layer No. 2 ----------
(a) Number of wires ---------- 18 (9 twisted pairs)
(b) AWG # ---------- #20
Layer No. 3 ---------- Filler
(a) Number of wires ---------- 28 (14 twisted pairs)
(b) AWG # ---------- #20
(c) Maximum Lay ---------- 10.0"

Sheath
No. of Layers ---------- 2
Total thickness Min ---------- 0.117"
Minimum OD Cable ---------- 1.210"
Maximum OD Cable ---------- 1.280"

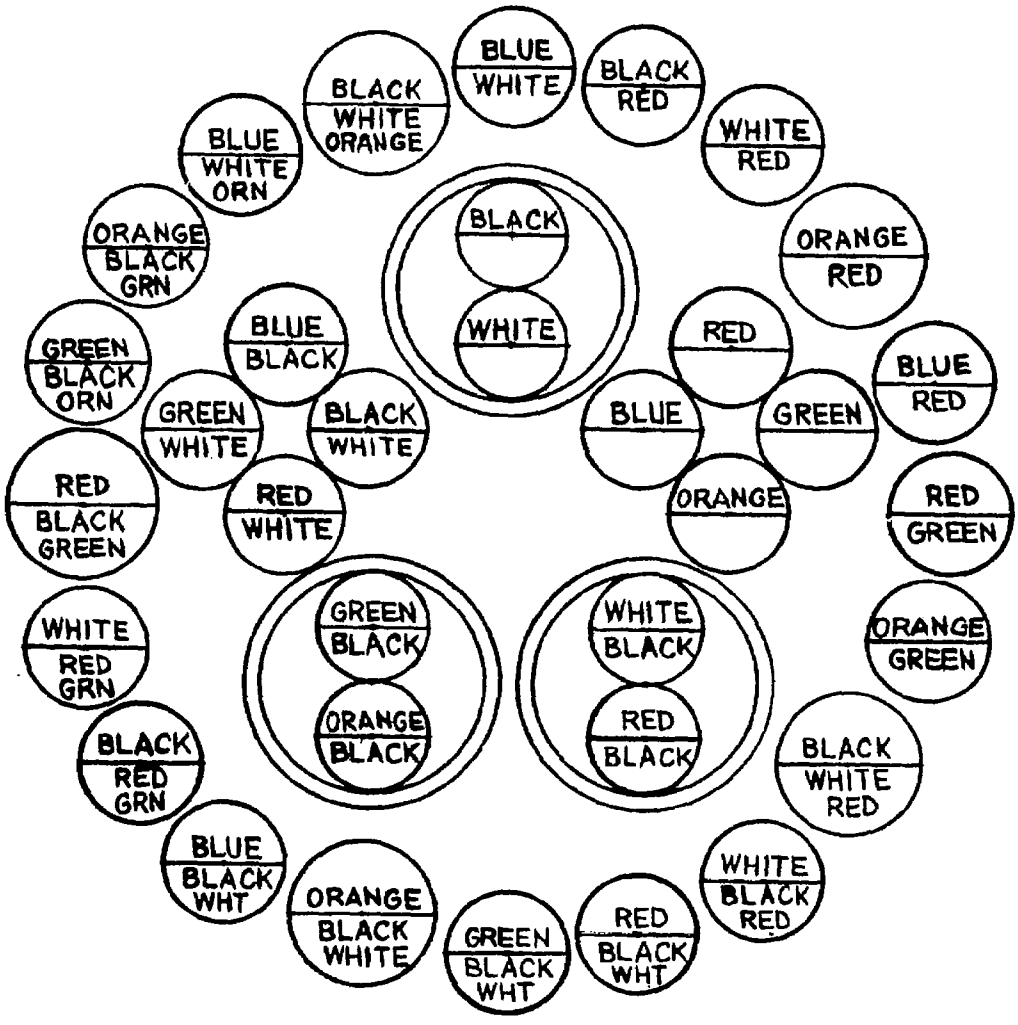
Custodians:
Army - MU
Navy - SH
Air Force - 17

Reviewer:
Army - MI, EL, WC
Navy - SH
Air Force - 85

Users:
Army - ME, AT
Navy - MC, AS, EC
Air Force - 11

Preparing activity:
Army - MU

(Project 6145-0474)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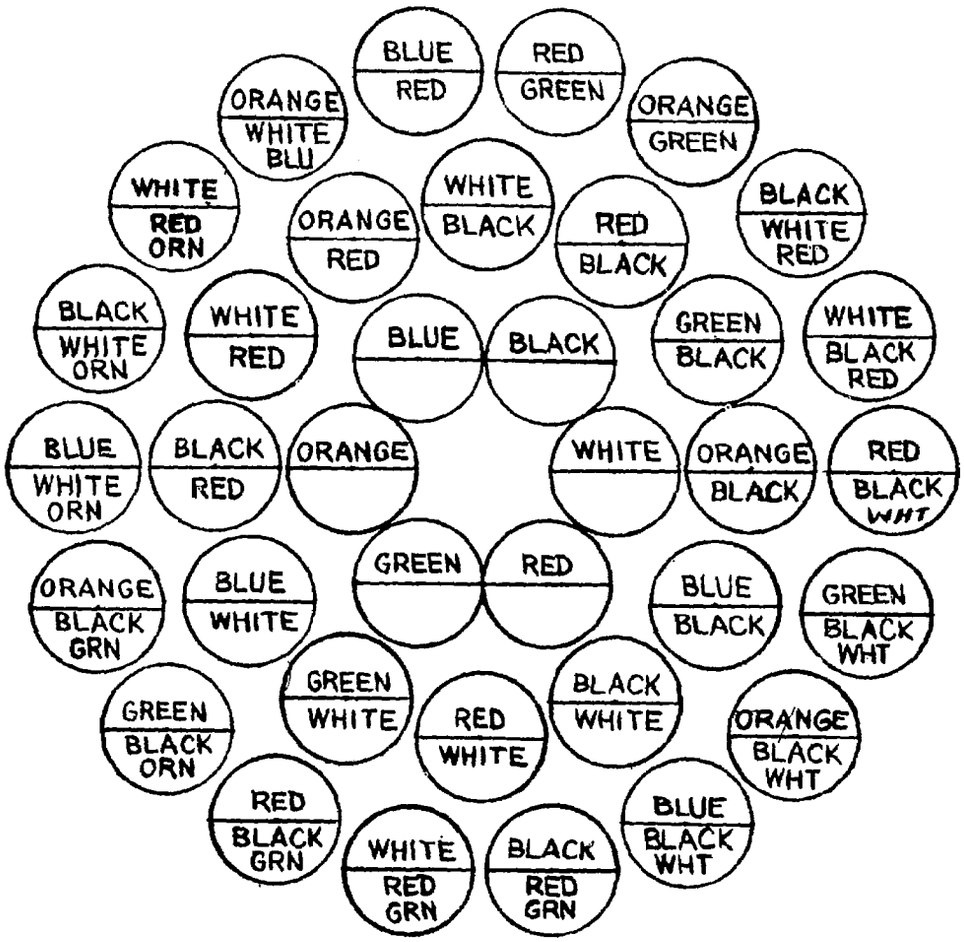
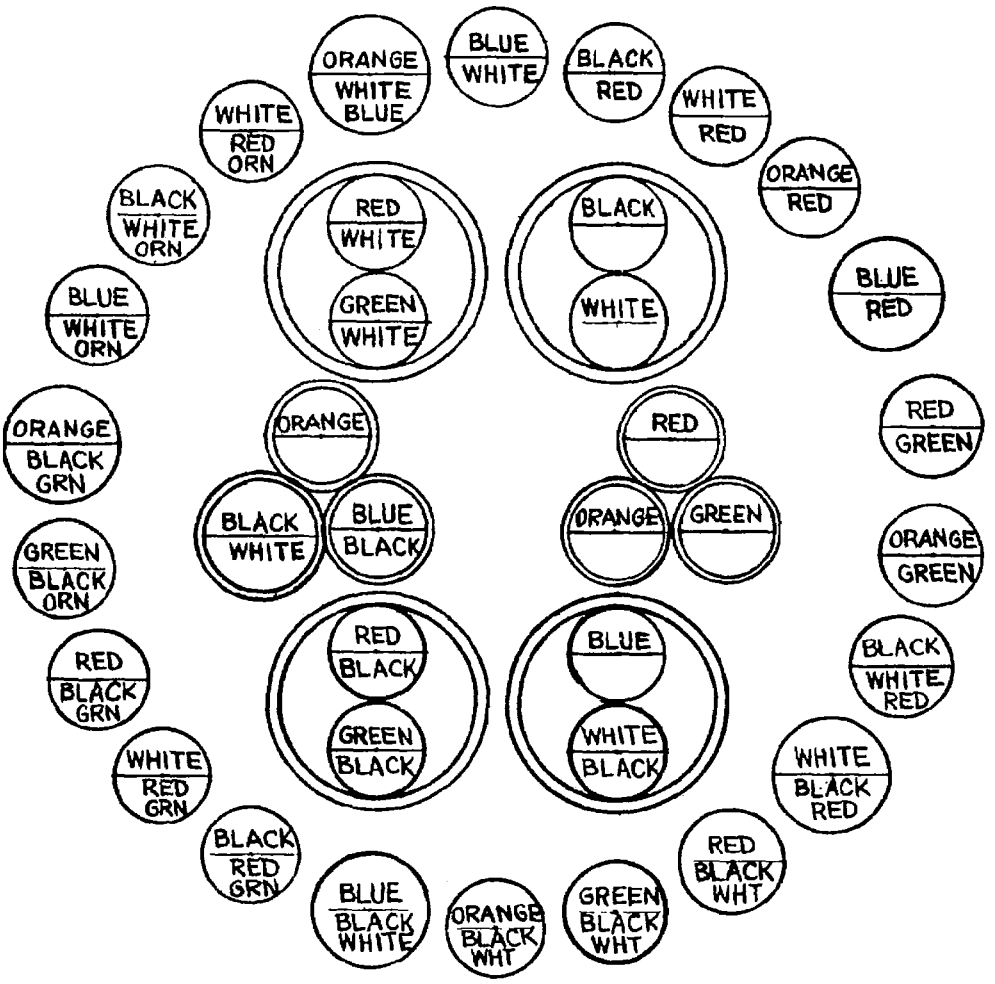


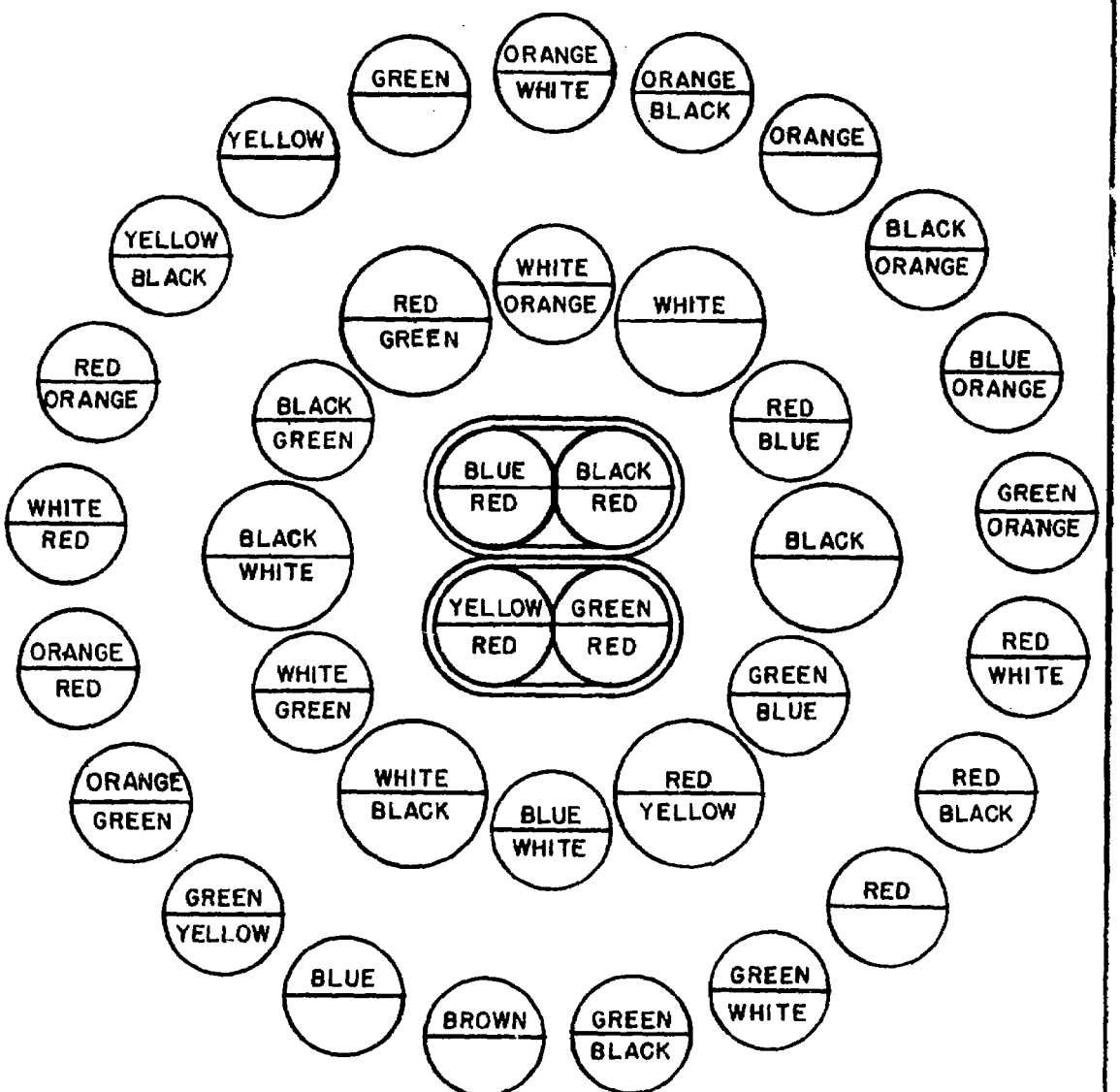
CABLE TYPES: 360860 S361055*
NOTE: *COPPER SHIELD APPLIED OVER CABLE ASSEMBLY

FIGURE 2



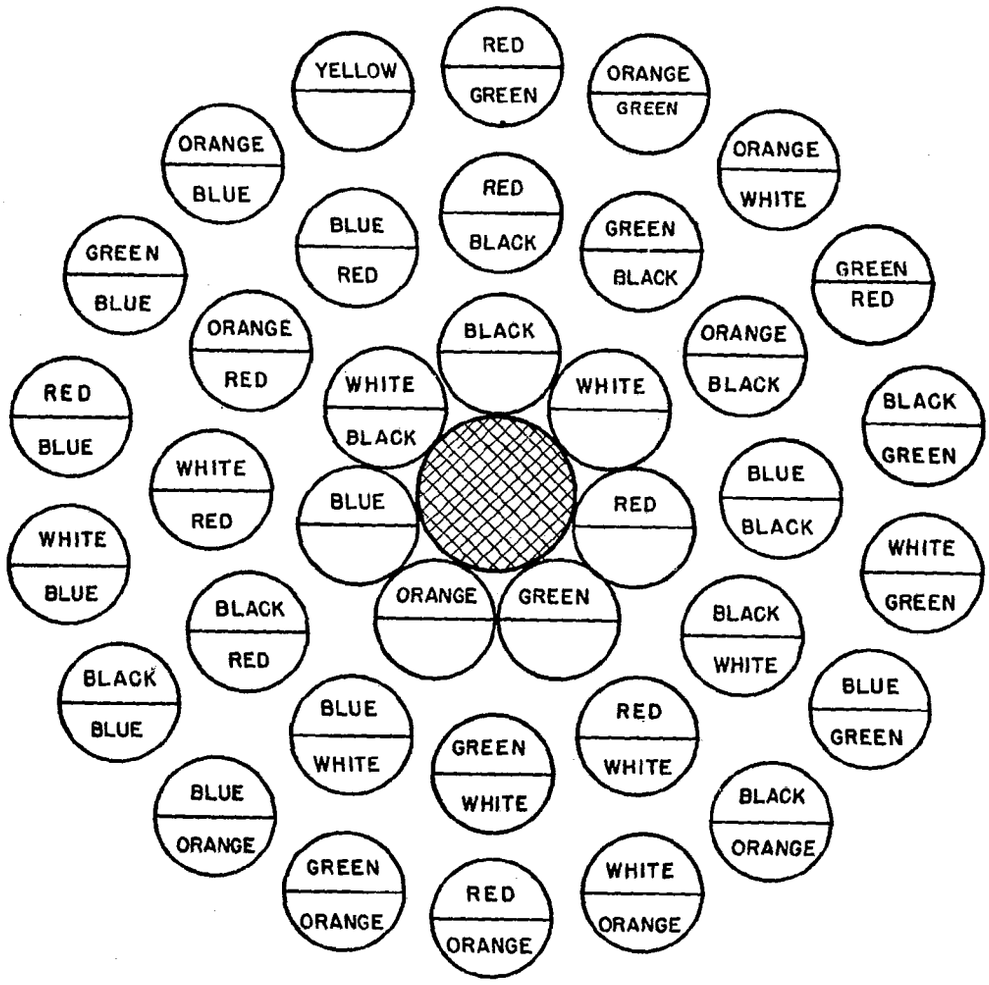
CABLE TYPE: 361420S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION

FIGURE 3



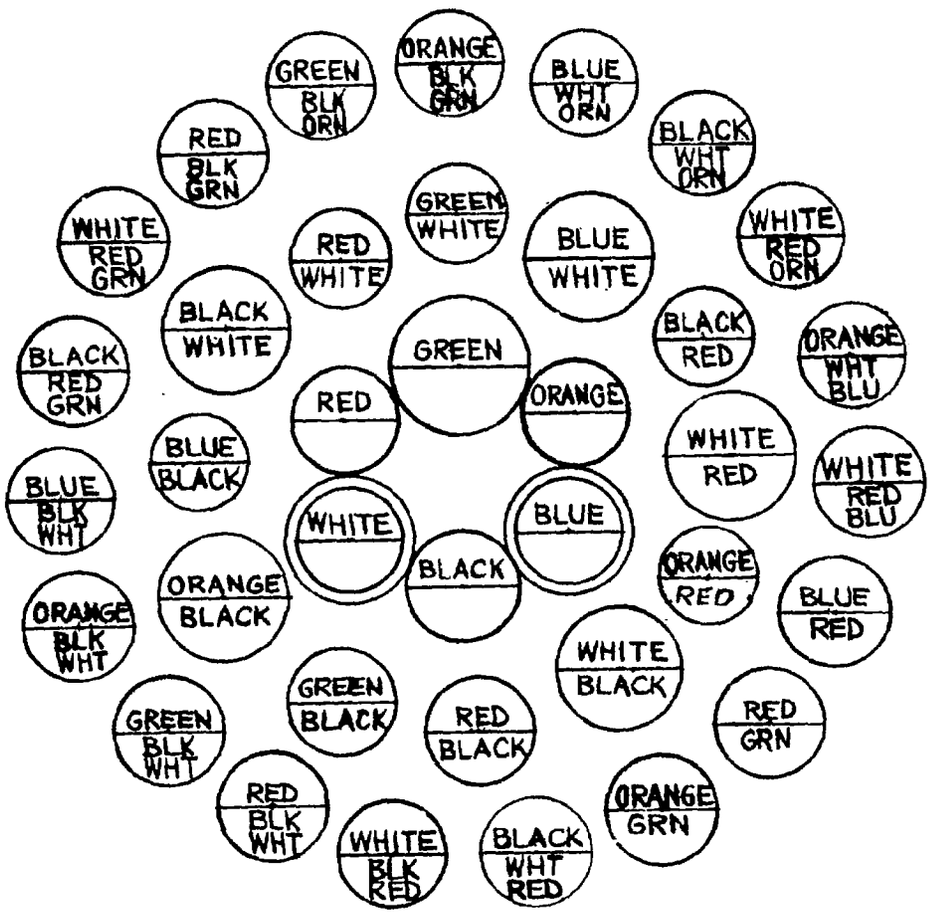
CABLE TYPE: 371065S

FIGURE 4



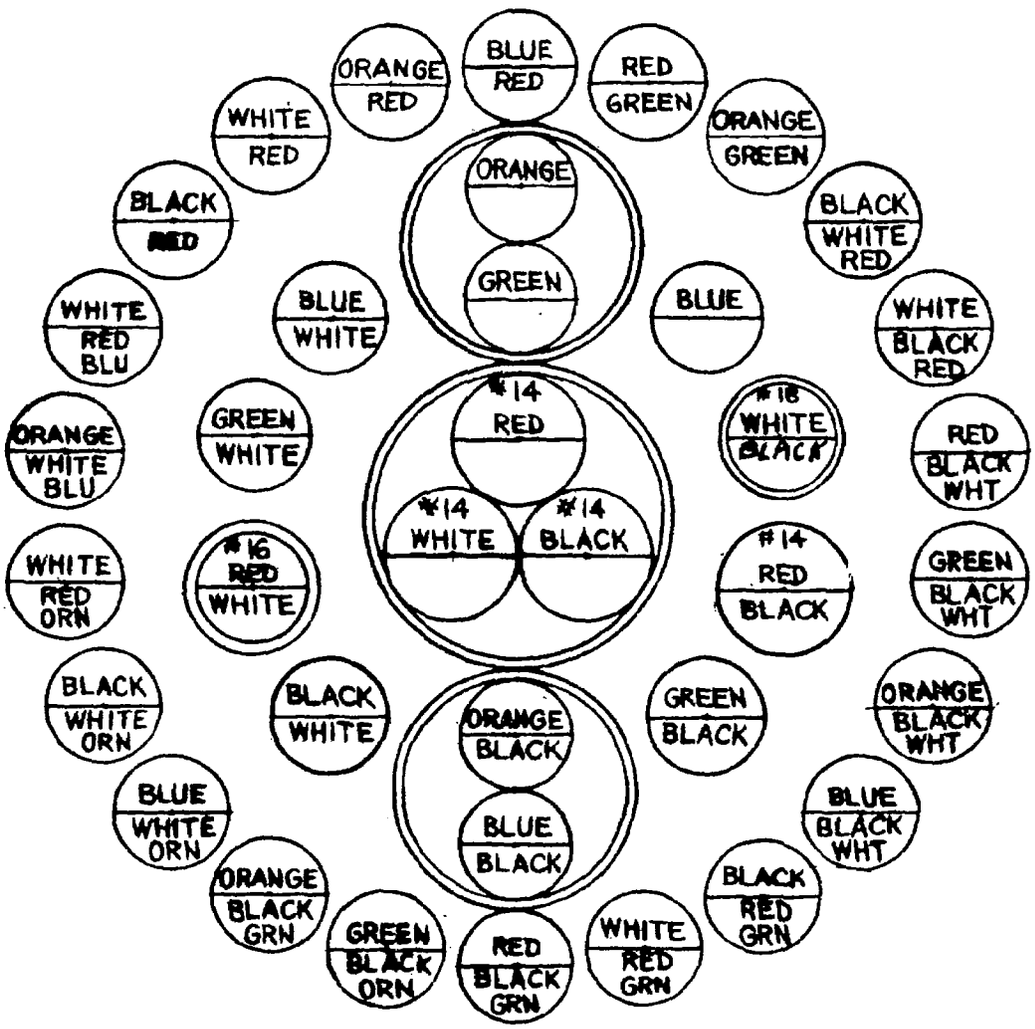
CABLE TYPE: 371142

FIGURE 5



CABLE TYPE: 371193S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION

FIGURE 6

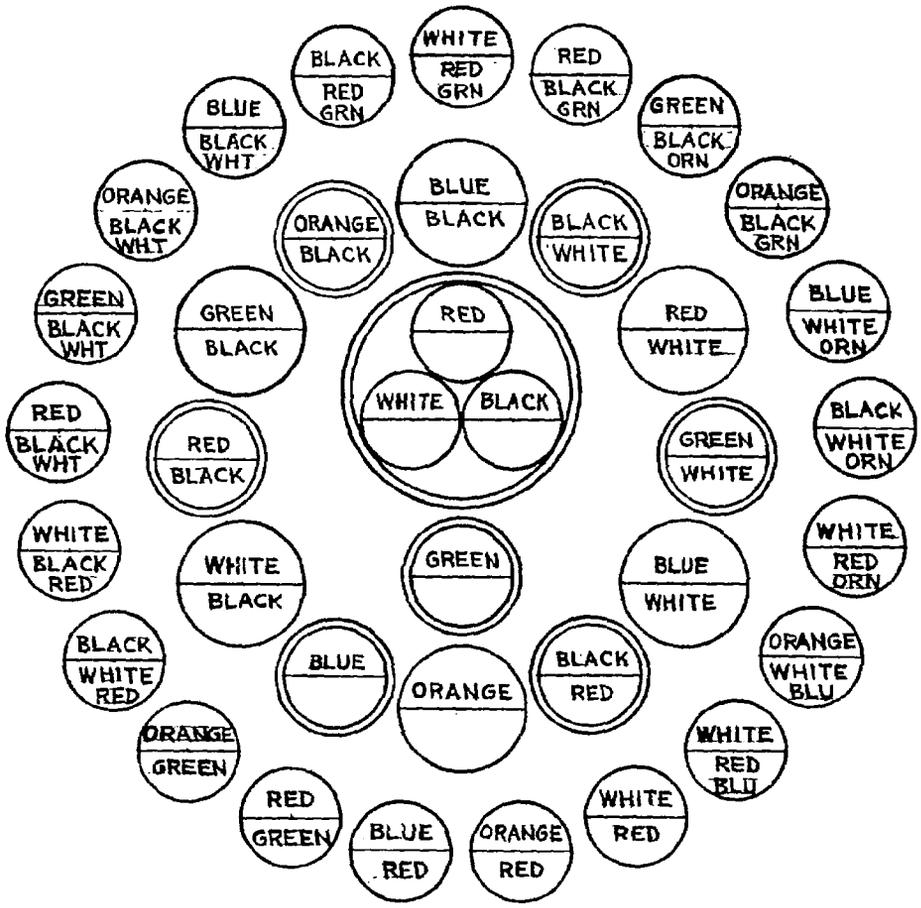


CABLE TYPE : 371314S

NOTES

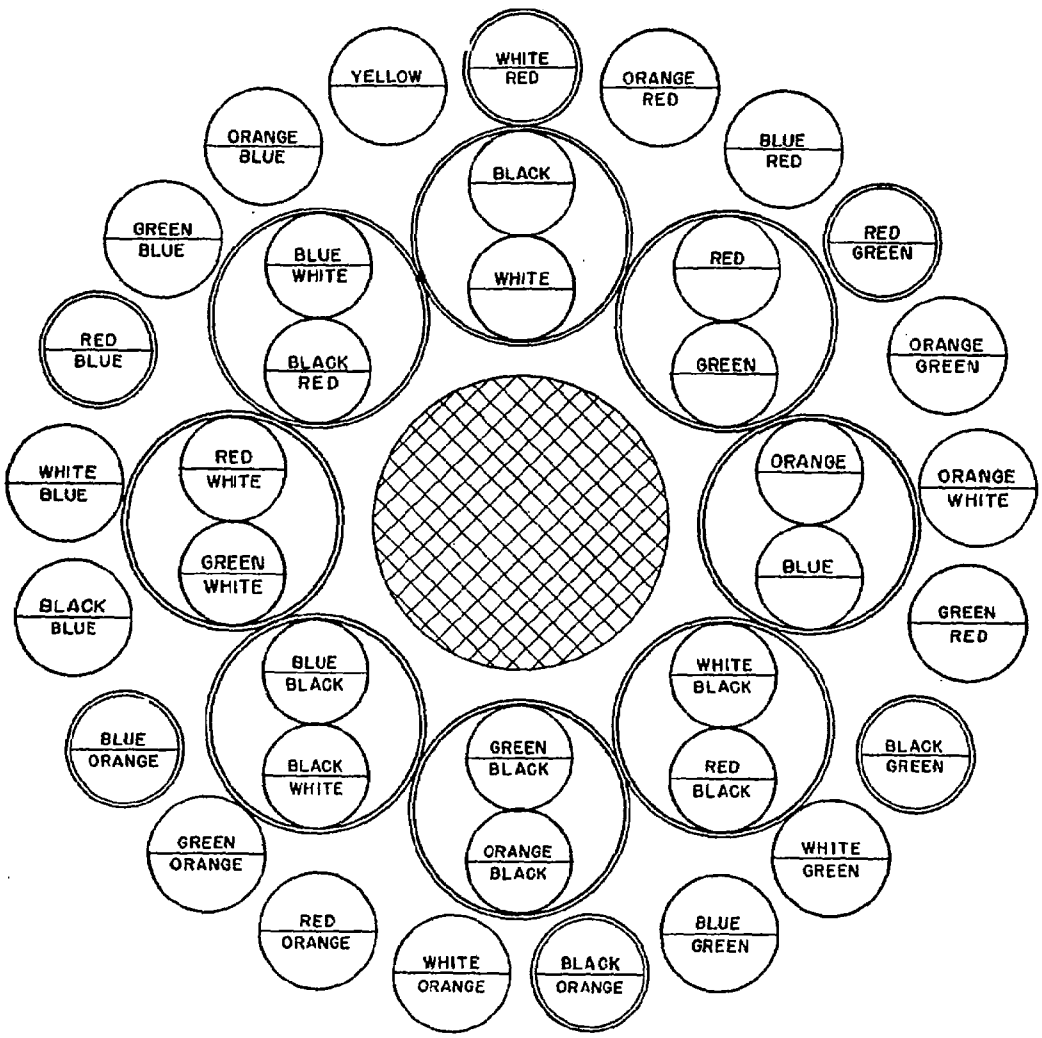
DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION

FIGURE 7



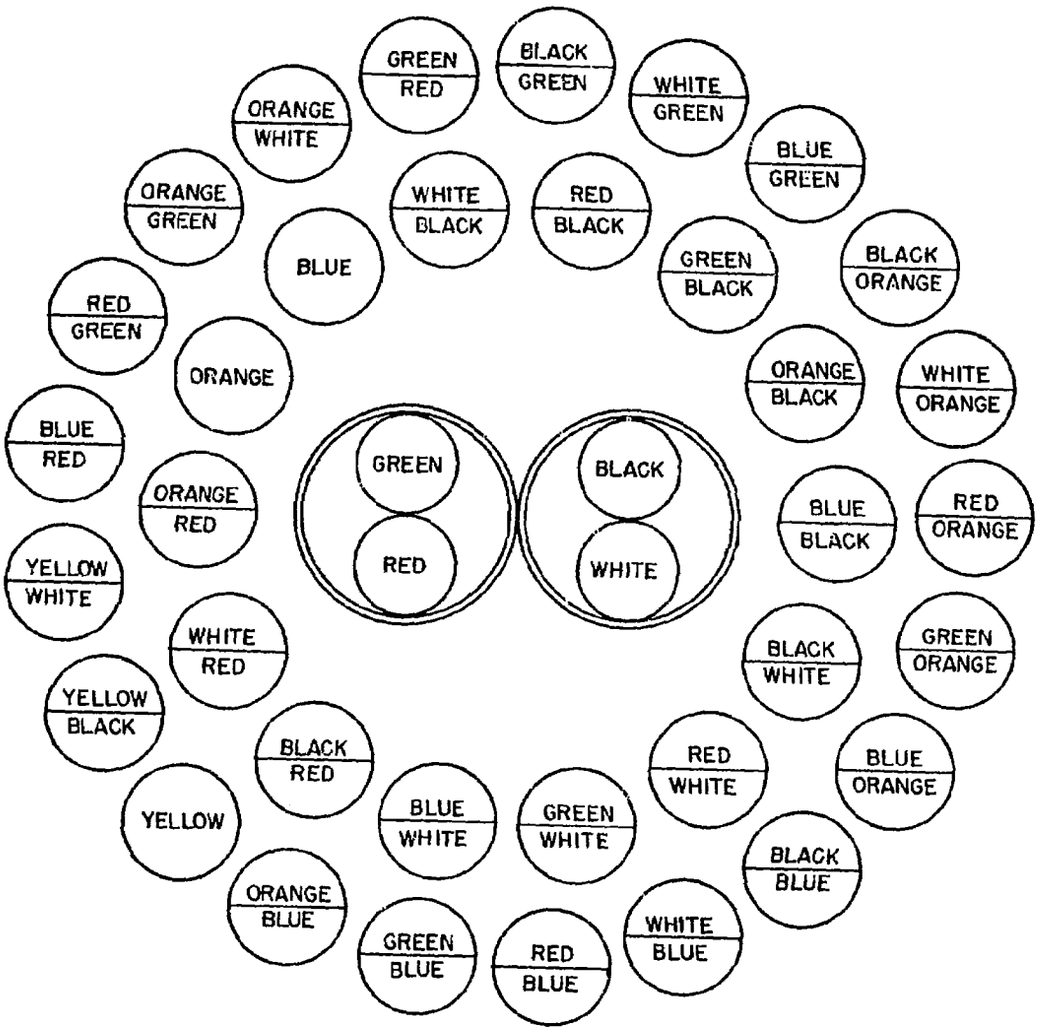
CABLE TYPE: 371327S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION

FIGURE 8



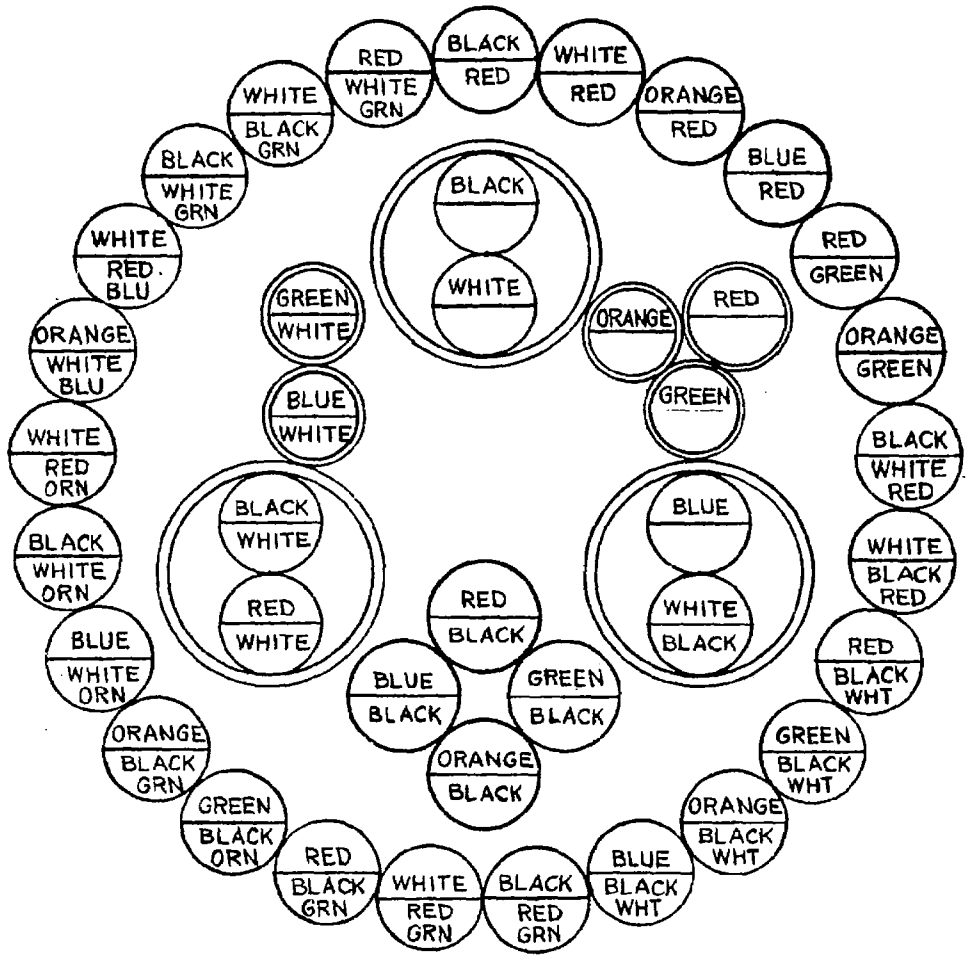
CABLE TYPE: 371517S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONDUCTORS

FIGURE 9



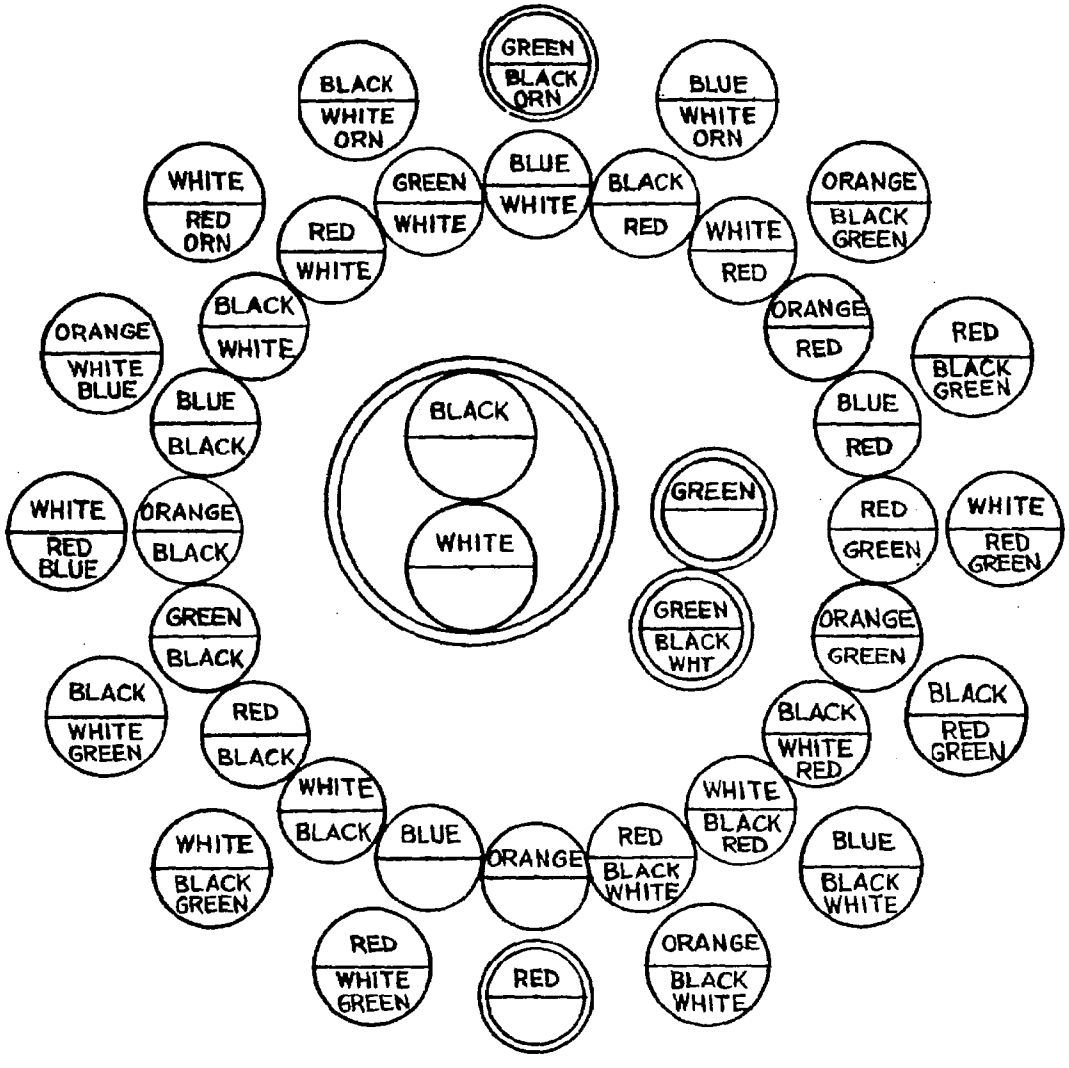
CABLE TYPE: 391115S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONDUCTORS

FIGURE 10



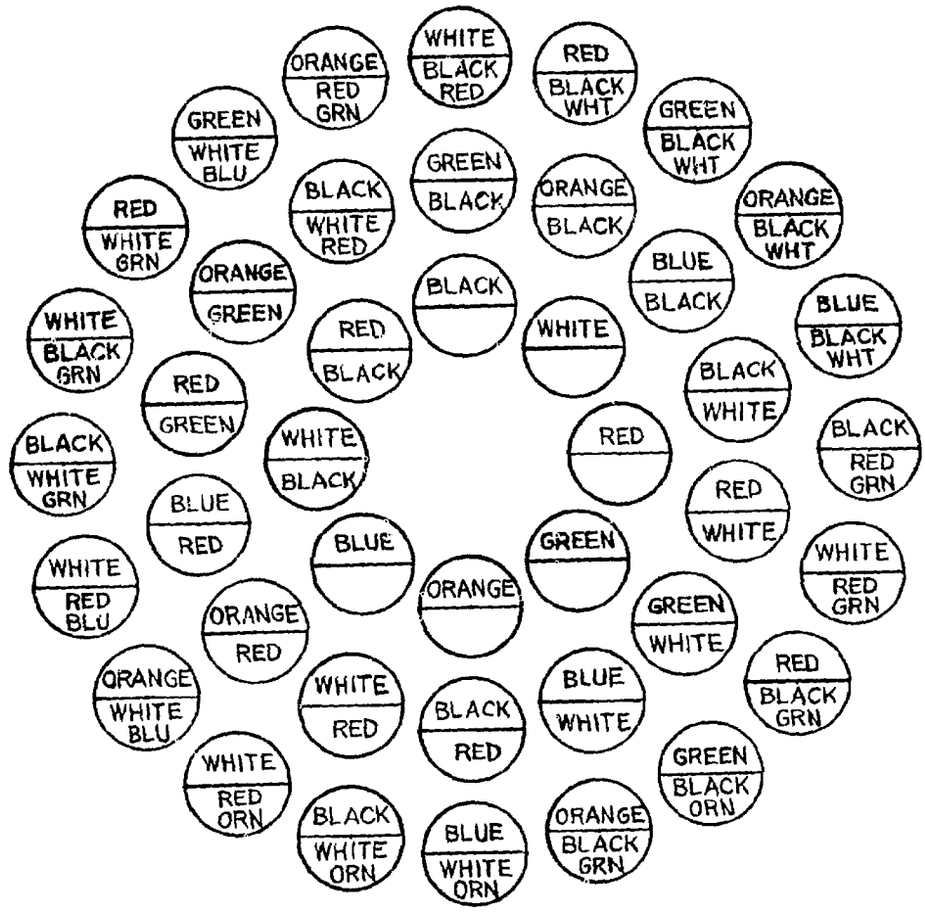
CABLE TYPE: 401485S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION

FIGURE 11



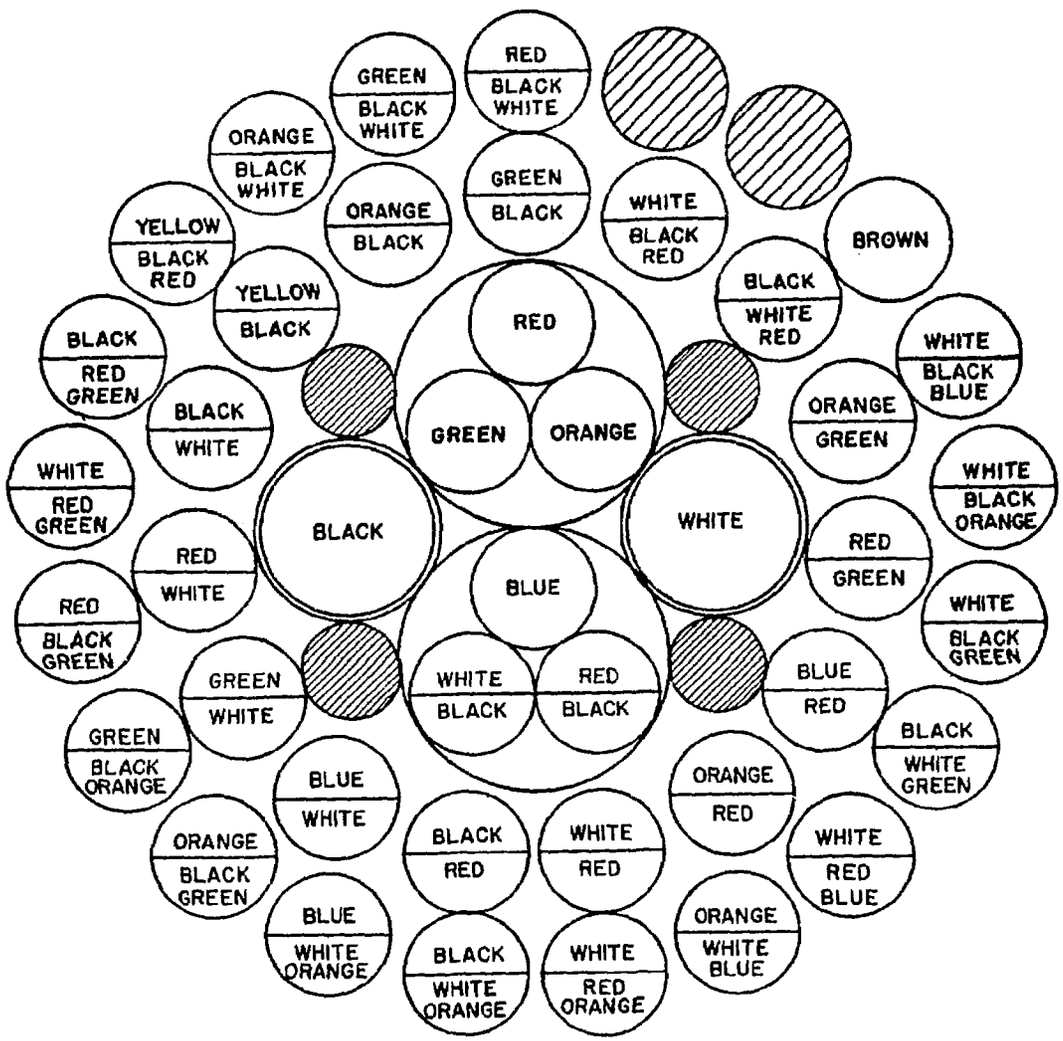
CABLE TYPE: 401582s
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION

FIGURE 12



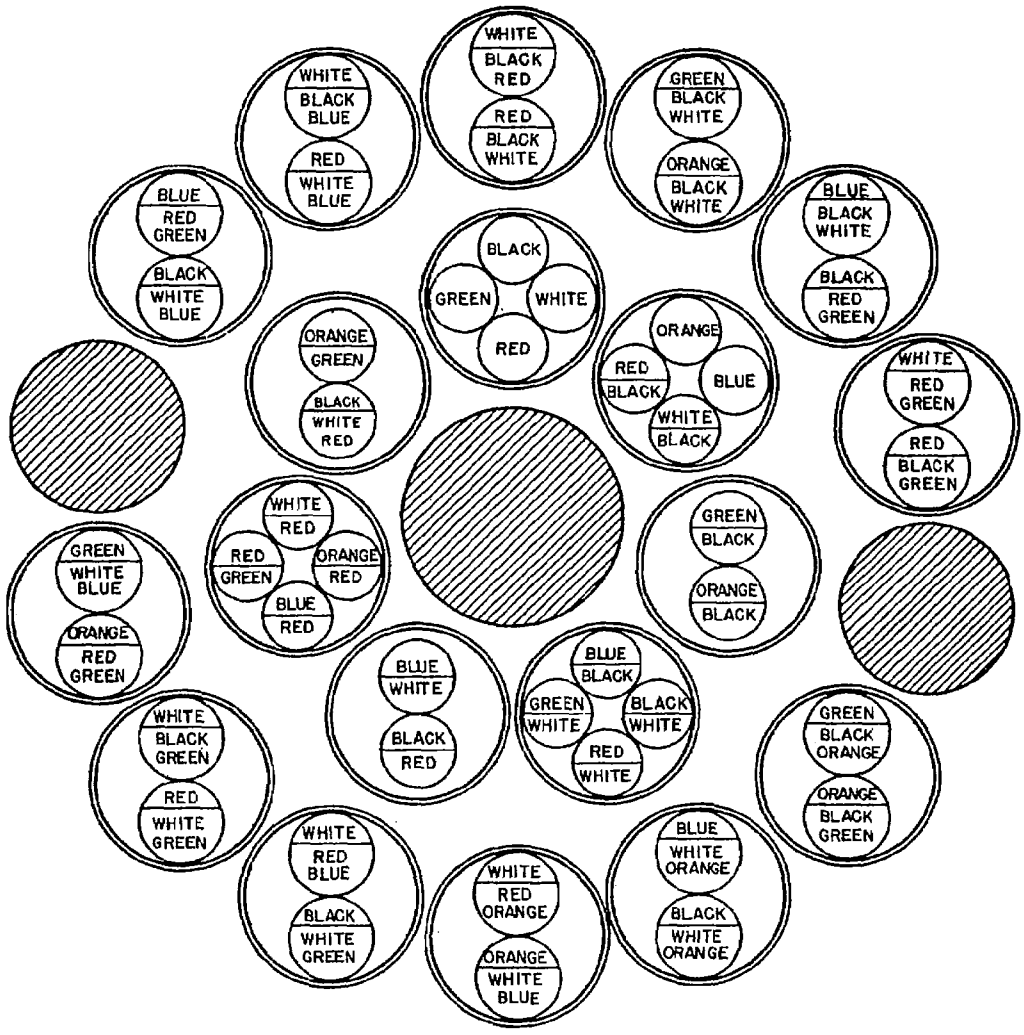
CABLE TYPE: 420950

FIGURE 13



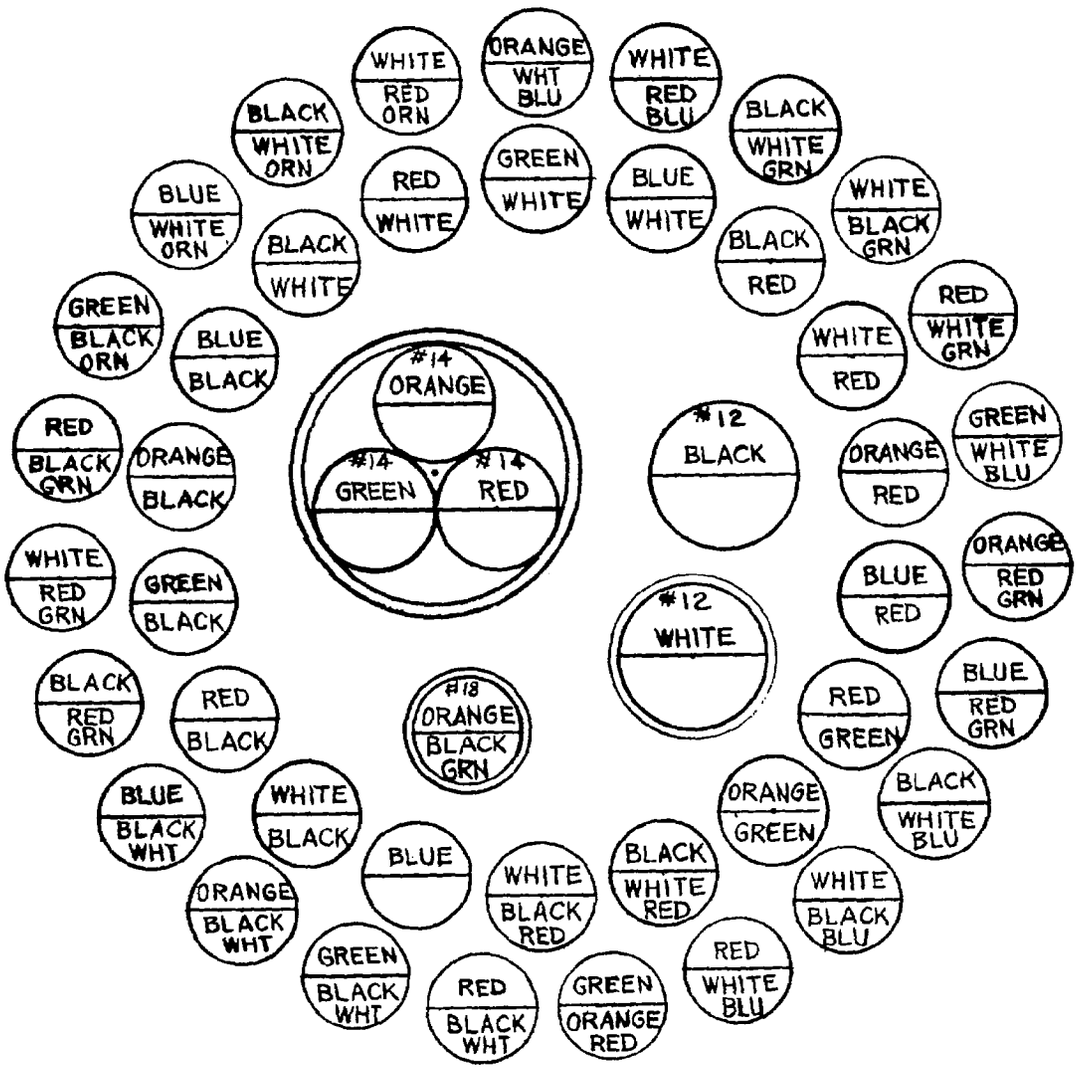
CABLE TYPE: 421010SC
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONDUCTORS

FIGURE 14



CABLE TYPE: S462080S
NOTE: DOUBLE CIRCLE INDICATES SHIELDED CONDUCTORS

FIGURE 15

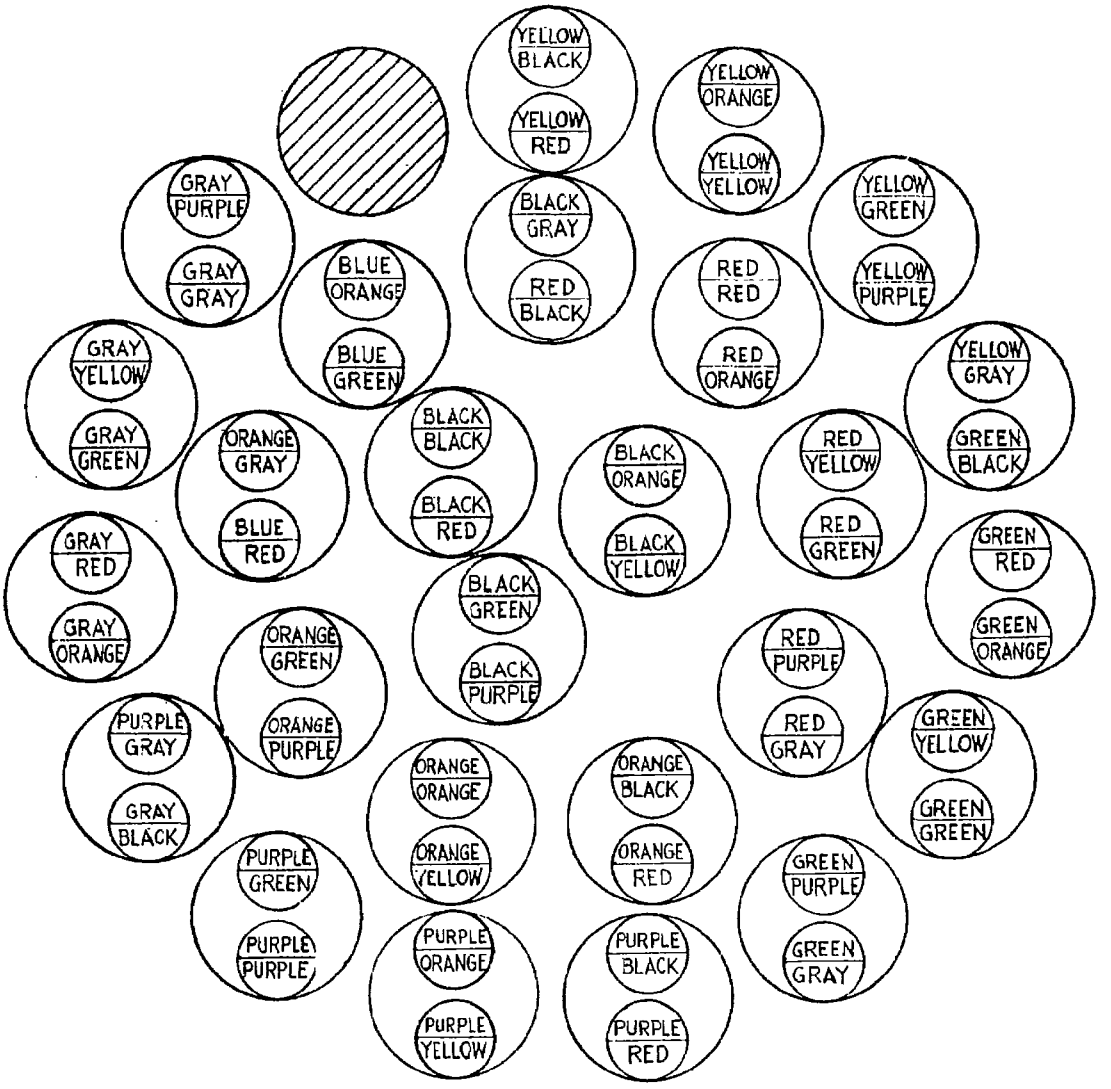


CABLE TYPE : 4713745

NOTES

DOUBLE CIRCLE INDICATES SHIELDED CONSTRUCTION.

FIGURE 16



NOTE: (TYPE S521235)
BASE COLOR = ALL WHITE INSULATION
TOP HALF OF CIRCLE = WIDE STRIPE .040" WIDE (MIN)
LOWER HALF OF CIRCLE = NARROW STRIPE .020" WIDE (APPROX.)

CABLE TYPE S521235
FIGURE 17