INCH-POUND

MIL-DTL-13777/5D
16 August 2011
SUPERSEDING
MIL-C-13777/5C
15 September 1969

DETAIL SPECIFICATION SHEET

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

Inactive for new design after 1 June 1998.

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

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-13777.

REQUIREMENTS:

Dimensions and configuration: See applicable figure and design data for the following cable types shown in table I. Design data is shown in table II.

TABLE I. 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.

TABLE II. Design data.

	DESIGN DATA				
Type designation		341273S[3/]		360860*	S361055*
Figure number		1		2	2
Total wires		34		36	36
Number of conductors & AWG #	23/#18[1/]	6/#18S[2/]	5/#16	36/#20	36/#18
Insulation					
Minimum average thickness		0.015”		0.015”	0.015”
Spark test voltage		3000		3000	3000
Inspection test voltage		1500		1500	1500
Cabling					
Layer 1		Filler		Filler	Filler
Layer 2					
(a) Number of wires		8	6	6	6
(b) AWG #		#18	#18S[2/]	#20	#18
(c) Maximum lay					
Layer 3					
(a) Number of wires		15	5	12	12
(b) AWG #		#18	#16	#20	#18
(c) Maximum lay					
Layer 4					
(a) Number of wires				18	18
(b) AWG #				#20	#18
(c) Maximum lay					7.0”
Sheath					
Number of layers		2		1	2
Total thickness minimum		0.140”		0.080”	0.117”
Minimum OD cable		1.248”		0.835”	1.025”
Maximum OD cable		1.318”		0.885”	1.085”

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA				
Type designation			361420S[3/]		
Figure number			3		
Total wires			36		
Number of conductors & AWG #	17/#18	13/#18S[3/ 4/]		5/#16	1/#16S[3/]
Insulation					
Minimum average thickness			0.015”		
Spark test voltage			3000		
Inspection test voltage			1500		
Cabling					
Layer 1			Filler		
Layer 2					
(a) Number of wires		13		1	
(b) AWG #		#18S[3/]		#16S[3/]	
(c) Maximum lay					
Layer 3					
(a) Number of wires		17		5	
(b) AWG #		#18		#16	
(c) Maximum lay					
Layer 4					
(a) Number of wires					
(b) AWG #					
(c) Maximum lay					
Sheath					
Number of layers			2		
Total thickness minimum			0.140”		
Minimum OD cable			1.382”		
Maximum OD cable			1.462”		

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA			
Type designation		371065S		371142
Figure number		4		5
Total wires		37		37
Number of conductors & AWG #	4/#18S	27/#18	6/#14	37/#18
Insulation				
Minimum average thickness		0.015”		0.015”
Spark test voltage		3000		3000
Inspection test voltage		1500		1500
Cabling				
Layer 1				Filler
(a) Number of wires		4		
(b) AWG #		#18S[5/]		
(c) Maximum lay		3.00”		
Layer 2				
(a) Number of wires	6		6	7
(b) AWG #	#18		#14	#18
(c) Maximum lay		5.00”		
Layer 3				
(a) Number of wires		21		12
(b) AWG #		#18		#18
(c) Maximum lay		6.00”		
Layer 4				
(a) Number of wires				18
(b) AWG #				#18
(c) Maximum lay				7.00”
Sheath				
Number of layers		1		2
Total thickness minimum		0.080”		0.140”
Minimum OD cable		1.050”		1.112”
Maximum OD cable		1.080”		1.172”
Maximum weight (lbs./1000ft.)		703		

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA		
Type designation		371193S	
Figure number		6	
Total wires		37	
Number of conductors & AWG #	29/#18	2/#18S	6/#14
Insulation			
Minimum average thickness		0.015”	
Spark test voltage		3000	
Inspection test voltage		1500	
Cabling			
Layer 1		Filler	
Layer 2			
(a) Number of wires	3	2	1
(b) AWG #	#18	#18S	#14
(c) Maximum lay			
Layer 3			
(a) Number of wires		7	5
(b) AWG #		#18	#14
(c) Maximum lay			
Layer 4			
(a) Number of wires		19	
(b) AWG #		#18	
(c) Maximum lay			
Sheath			
Number of layers		2	
Total thickness minimum		0.125”	
Minimum OD cable		1.163”	
Maximum OD cable		1.223”	

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA				
Type designation			371314S[3/]		
Figure number			7		
Total wires			37		
Number of conductors & AWG #	27/#18	5/#18S[3/ 6/]	1/#16S[3/]	1/#14	3/#14S[3/]
Insulation					
Minimum average thickness			0.015”		
Spark test voltage			3000		
Inspection test voltage			1500		
Cabling					
Layer 1					
(a) Number of wires			3		
(b) AWG #			#14S[3/ 7/]		
(c) Maximum lay					
Layer 2					
(a) Number of wires		5	5	1	1
(b) AWG #		#18	#18S[3/]	#16S[3/]	#14
(c) Maximum lay					
Layer 3					
(a) Number of wires			22		
(b) AWG #			#18		
(c) Maximum lay					
Sheath					
Number of Layers			2		
Total thickness minimum			0.125”		
Minimum OD cable			1.282”		
Maximum OD cable			1.346”		

See notes at end of table.

TABLE II. Design data – Continued.

	DATA DESIGN				
Type designation		371327S[3/]		371417S [3/ 10/]	391115S[3/]
Figure number		8		9	10
Total wires		37		37	39
Number of conductors & AWG #	21/#18	10/#18S*[3/ 11/]	6/#14	37/#18[8/]	39/#18
Insulation					
Minimum average thickness		0.015”		0.015”	0.015”
Spark test voltage		3000		3000	3000
Inspection test voltage		1500		1500	1500
Cabling					
Layer 1				Filler	
(a) Number of wires		4			2 pr tw/sh
(b) AWG #		#18S[3/]			#18
(c) Maximum lay					3.00”
Layer 2[2/]					
(a) Number of wires		6	6		14
(b) AWG #		#18S[3/]	#14	#18	#18
(c) Maximum lay				9.75”	5.00”
Layer 3					
(a) Number of wires		21			21
(b) AWG #		#18		#18	#18
(c) Maximum lay				9.75”	6.00”
Sheath					
Number of layers		2		2	2
Total thickness, minimum		0.125”		0.156”	0.109”
Minimum OD cable		1.297”		1.472”	1.100”
Maximum OD cable		1.357”		1.562”	1.130”
Maximum weight (lbs/1000ft.)					780

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA				
Type designation			401485S[3/]		
Figure number			11		
Total wires			40		
Number of conductors & AWG #	25/#18	10/#18S[3/ 12/]		4/#16[13/]	1/#16S[3/]
Insulation					
Minimum average thickness			0.015”		
Spark test voltage			3000		
Inspection test voltage			1500		
Cabling					
Layer 1			Filler		
Layer 2					
(a) Number of wires		10		4	1
(b) AWG #		#18S[3/ 12/]		#16[13/]	#16S[3/]
(c) Maximum lay					
Layer 3					
(a) Number of wires			25		
(b) AWG #			#18		
(c) Maximum lay					
Sheath					
Number of layers			2		
Total thickness minimum			0.156”		
Minimum OD cable			1.440”		
Maximum OD cable			1.530”		

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA				
Type designation			401582S[3/]		
Figure number			12		
Total wires			40		
Number of conductors & AWG #	20/#18	3/#18S[3/]	1/#16S[3/]	14/#12	2/#12S[3/]
Insulation					
Minimum 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 1					
(a) Number of wires				2	2
(b) AWG #				#18S[3/]	#12S[3/]
(c) Maximum lay					
Layer 2					
(a) Number of wires			20		
(b) AWG #			#18		
(c) Maximum lay					
Layer 3					
(a) Number of wires			1	1	1
(b) AWG #			#18S[3/]	#16S[3/]	#12
(c) Maximum lay					
Sheath					
Number of layers			2		
Total thickness minimum			0.140”		
Minimum OD cable			1.542”		
Maximum OD cable			1.622”		

See notes at end of table.

TABLE II. Design data – Continued.

	DESIGN DATA				
Type designation	420950		421010SC[14/ 15/ 16/]		S462080S[17/ 18/ 19/]
Figure number	13		14		15
Total wires	42		42		46
Number of conductors & AWG #	42/#20				
Insulation					
Minimum average thickness	0.015”		0.012”		0.015”
Spark test voltage	3000		4000		3000
Inspection test voltage	1500		1500		1500
Cabling					
Layer 1	Filler		Filler		Filler
(a) Number of wires					
(b) AWG #		#20		#27	
(c) Maximum lay					
Layer 2					
(a) Number of wires	8		15		
(b) AWG #	#20		#20		#16
(c) Maximum lay					
Layer 3					
(a) Number of wires	14		19		
(b) AWG #	#20		#20		#16
(c) Maximum lay			10.00”		12.00”
Layer 4					
(a) Number of wires	20				
(b) AWG #	#20				
(c) Maximum lay					
Sheath					
Number of layers	2		2		2
Total thickness minimum	0.098”		0.109”		0.203”
Minimum OD cable	0.925”		0.990”		2.055”
Maximum OD cable	0.975”		1.030”		2.105”
Maximum weight (lbs/1000ft.)			510		

See notes at end of table.

TABLE II. Design data – Continued.

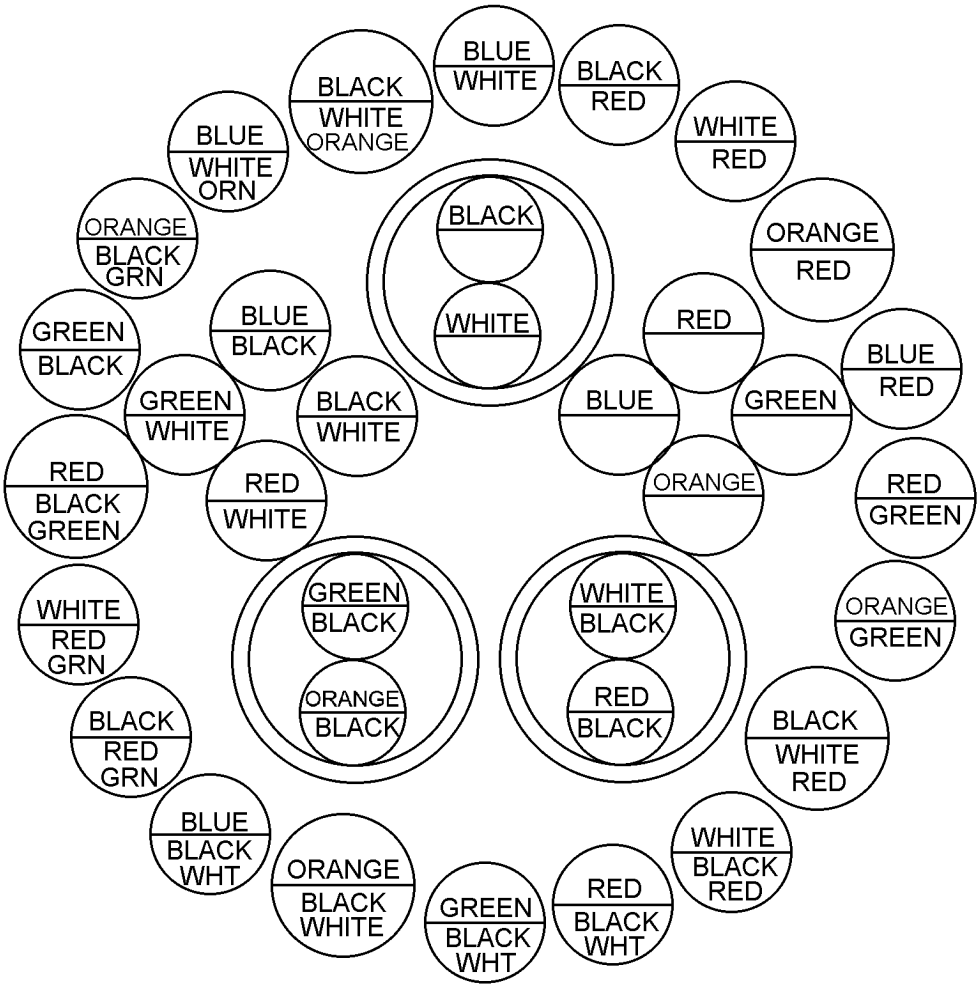
	DESIGN DATA				
Type designation			471374S[3/]		
Figure number			16		
Total wires			47		
Number of conductors & AWG #	41/#18	1/#18S[3/]	3/#14S[3/]	1/#12	1/#12S[3/]
Insulation					
Minimum average thickness	0.015”	0.015”	0.015”	0.020”	0.020”
Spark test voltage	3000	3000	3000	4000	4000
Inspection test voltage	1500	1500	1500	2000	2000
Cabling					
Layer 1					
(a) Number of wires		1	3	1	1
(b) AWG #		#18S[3/]	#14S[3/]	#12	#12S[3/]
(c) Maximum lay					
Layer 2					
(a) Number of wires			18		
(b) AWG #			#18		
(c) Maximum lay					
Layer 3					
(a) Number of wires			23		
(b) AWG #			#18		
(c) Maximum lay					
Sheath					
Number of layers			2		
Total thickness minimum			0.125”		
Minimum OD cable			1.344”		
Maximum OD cable			1.404”		

See notes at end of table.

TABLE II. Design data – Continued.

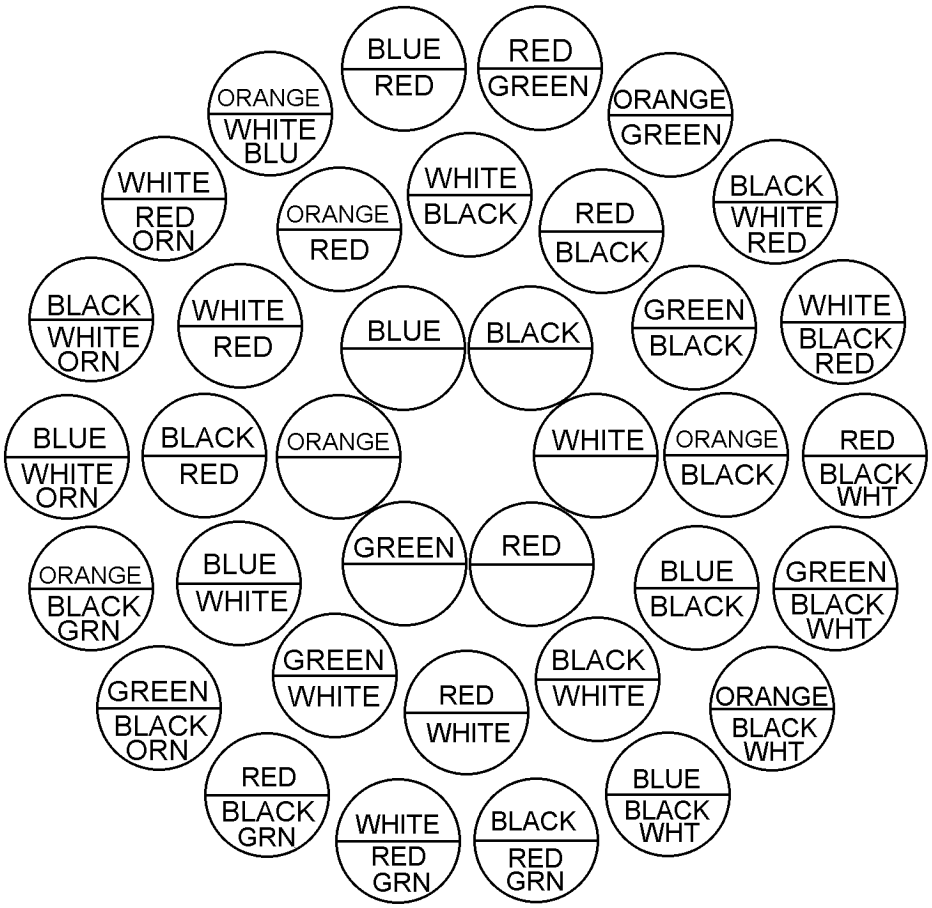
	DESIGN DATA
Type designation	S521235
Figure number	17
Total wires	26 Twisted Pairs
Number of conductors & AWG #	52/#20
Insulation	
Minimum average thickness	0.015”
Spark test voltage	3000
Inspection test voltage	1500
Cabling	
Layer 1	
(a) Number of wires	6 (3 twisted pairs)
(b) AWG #	#20
Layer 2	
(a) Number of wires	18 (9 twisted pairs)
(b) AWG #	#20
Layer 3	Filler
(a) Number of wires	28 (14 twisted pairs)
(b) AWG #	#20
(c) Maximum lay	10.0”
Sheath	
Number of layers	2
Total thickness minimum	0.117”
Minimum OD cable	1.210”
Maximum OD cable	1.280”

1/ Two twisted quads and 15 singles.
2/ Three shielded, twisted pairs. Maximum twist lay of 3.5” for quads and 3.0” for pairs.
3/ Letter “S” designates shielded construction.
4/ Four shielded, twisted pairs with maximum twist lay of 3.0 inches and 5 shielded singles.
5/ Shielded pairs AWG #18 with 3.00” maximum lay twist
6/ Two shielded, twisted pairs and one shielded single.
7/ Shielded, twisted triple.
8/ 8 Prs. Twisted/shielded, 6 shielded., 15 unshielded.
9/ 8 Prs. Twisted/shielded.
10/ 6 Singles shielded., 15 unshielded.
11/ One shielded, twisted triple and 7 shielded singles.
12/ Three shielded, twisted pairs and four shielded singles.
13/ Unshielded, twisted quad.
* Cold Bend Torque 30 ft/lbs.
14/ 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.
(b) Core: Extruded polyethylene per L-P-590, Type II,
Grade 7 diameter 0.097” ± 0.004”
(c) Outer conductor: Single braid, #38 AWG tinned copper wire, maximum diameter 0.118”
(d) Outer insulation: Extruded polyamide, minimum 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 (maximum) 13 db/100 ft. @ 400 mc
Impedance 73 ± 5 ohms.
Insulation resistance between outer conductors per 1000 ft using a potential of 200 V. dc min. 10 megohms min.
15/ Forty (40) single conductors
(a) Conductor #20 AWG
16/ 2 Twisted triplets – 2 coaxial Sh.
17/ 15 Prs. Tw. & Sh., 4 Quads. Tw & Sh.; All #16
18/ 4 Quads & 3 pairs.
19/ 12 pairs. 2 fillers.



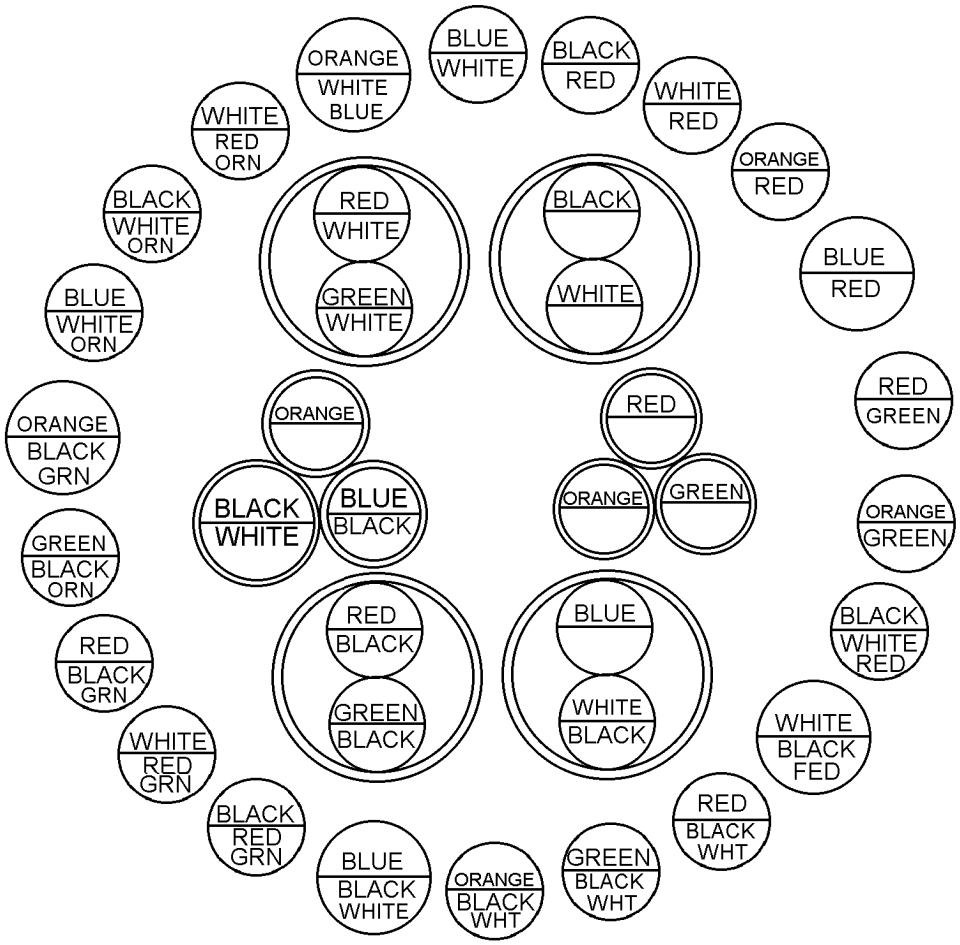
NOTE: Double circle indicates shielded construction.

FIGURE 1. Cable type (341273S).



NOTE: * Copper shield applied over cable assembly.

FIGURE 2. Cable types (360860, S361055).



NOTE: Double circle indicates shielded construction.

FIGURE 3. Cable type (361420S).

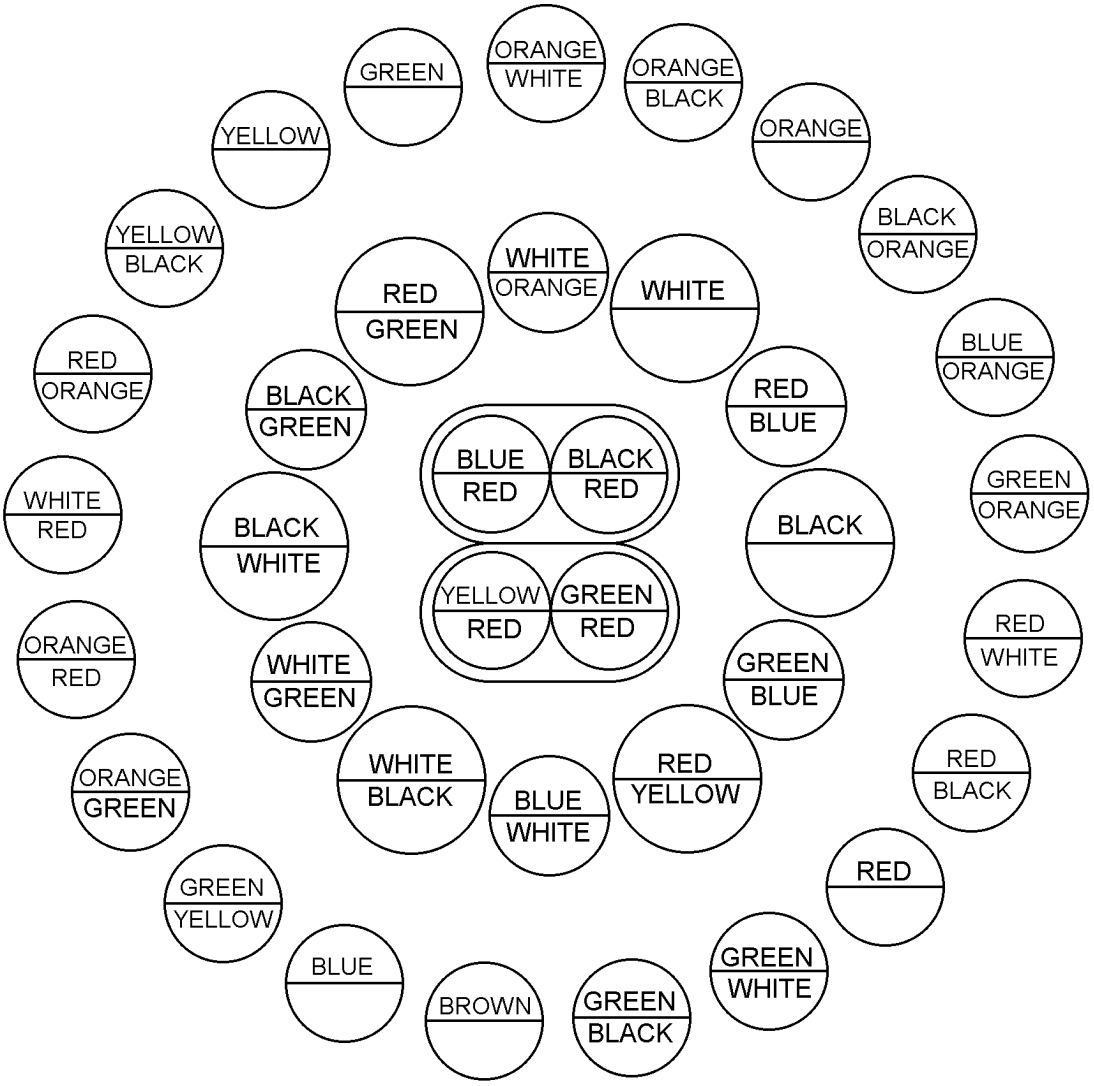


FIGURE 4. Cable type (731065S).

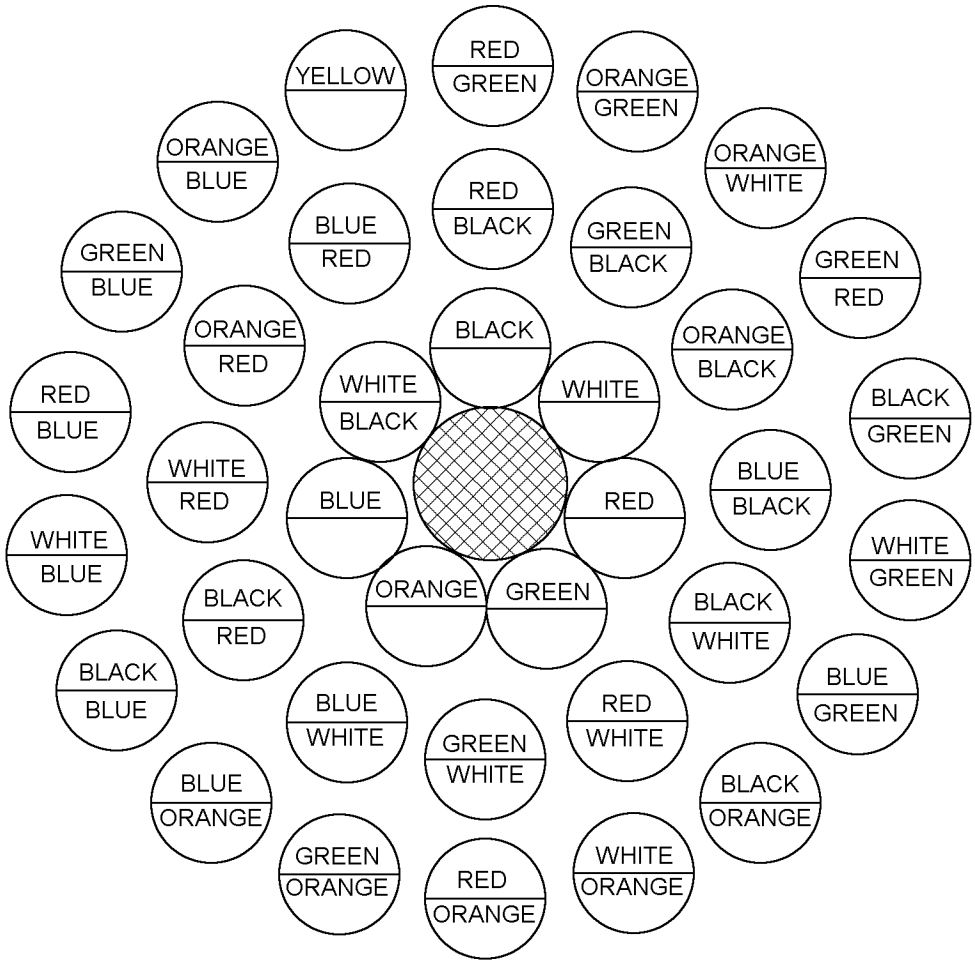
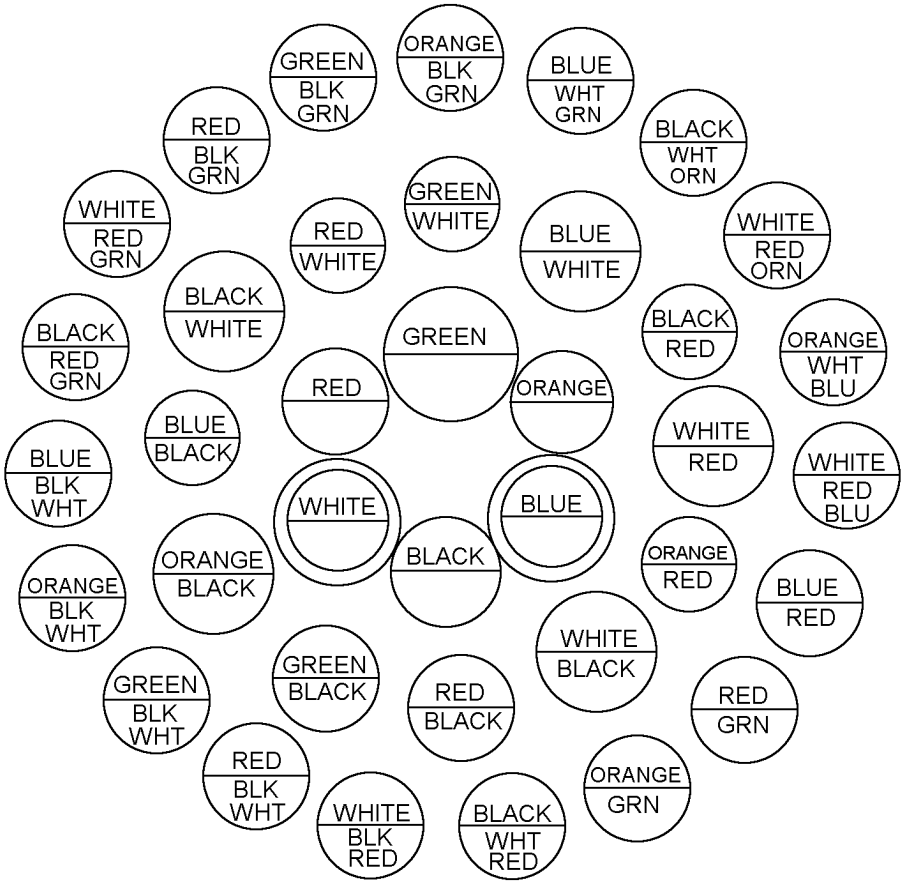
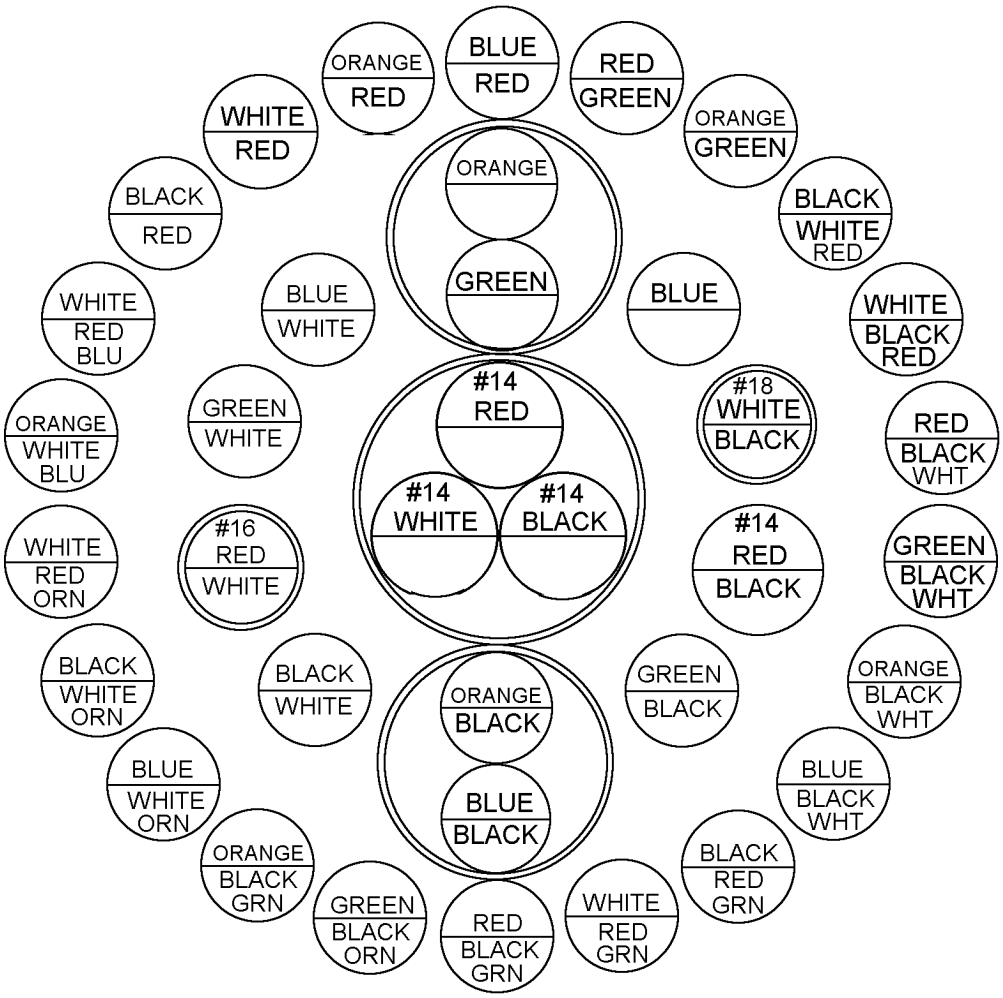


FIGURE 5. Cable type (371142).



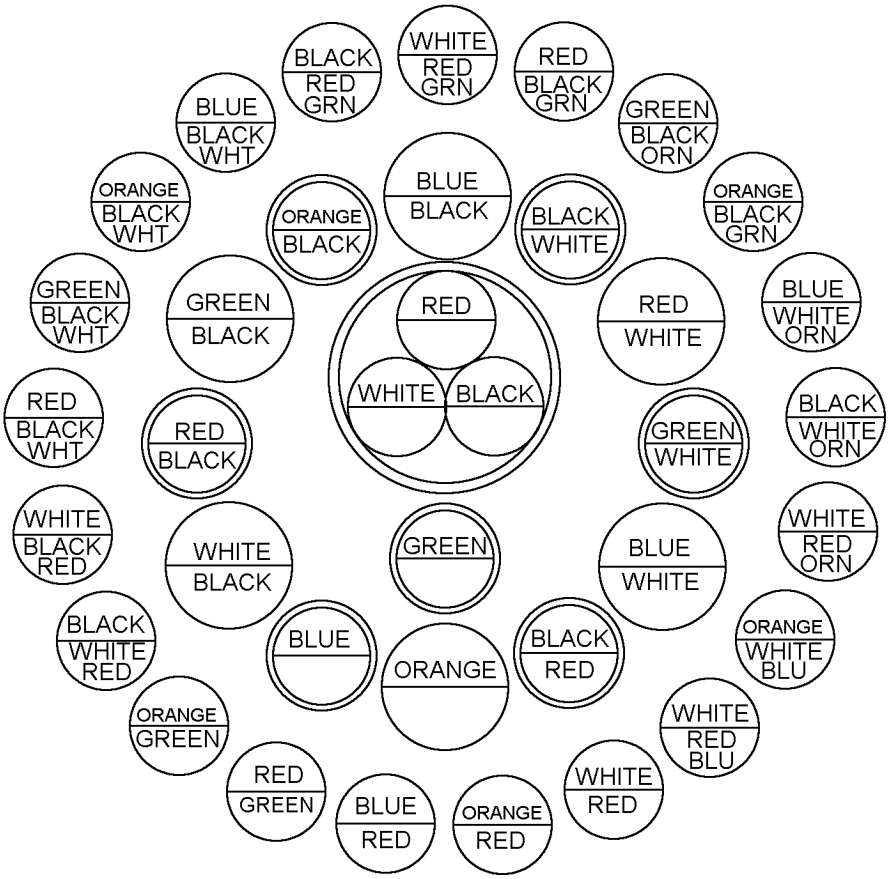
NOTE: Double circle indicates shielded construction.

FIGURE 6. Cable type (371193S).



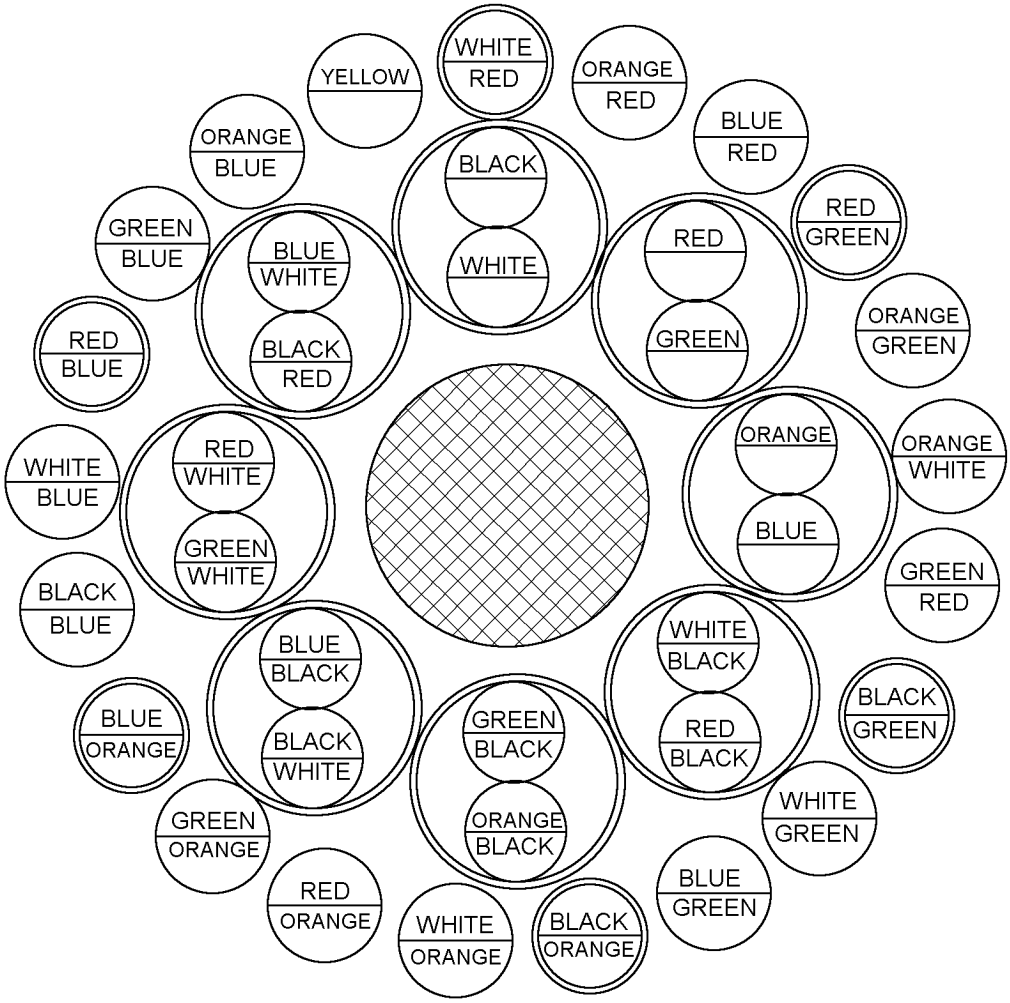
NOTE: Double circle indicates shielded construction.

FIGURE 7. Cable type (3713145).



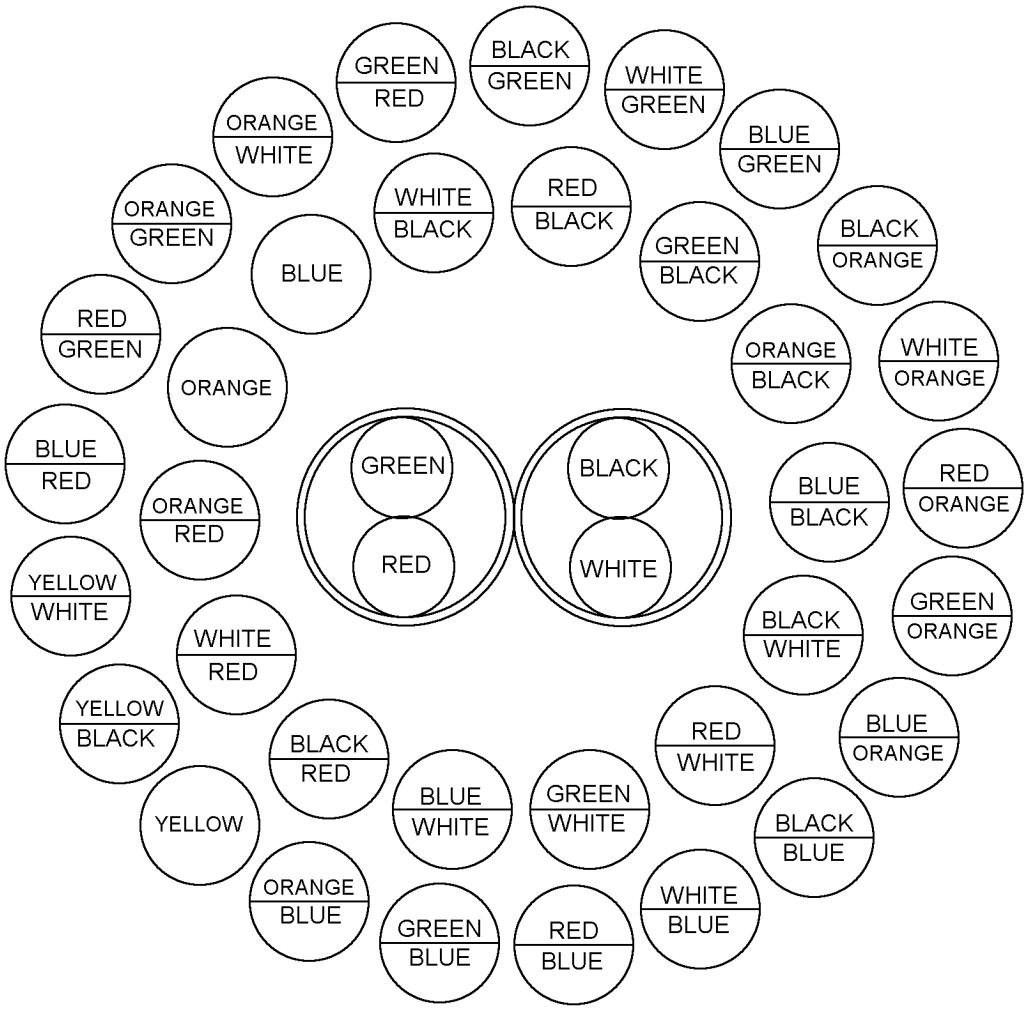
NOTE: Double circle indicates shielded construction.

FIGURE 8. Cable type (371327S).



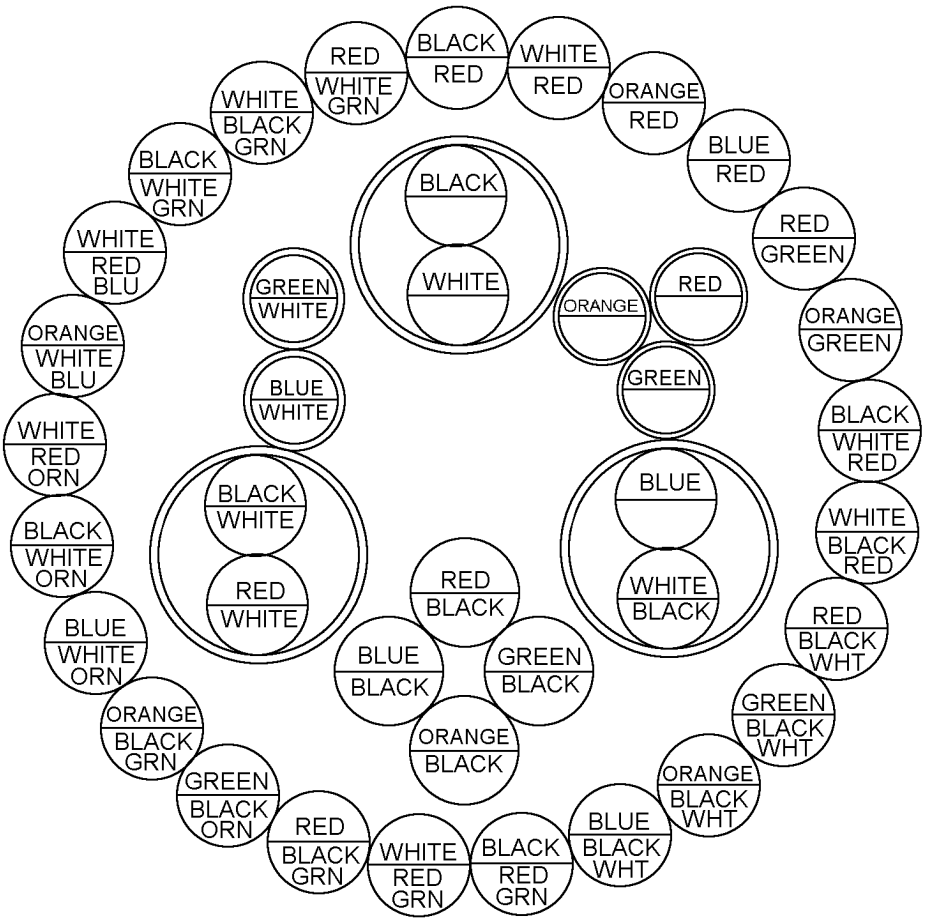
NOTE: Double circle indicates shielded conductors.

FIGURE 9. Cable type (371517S).



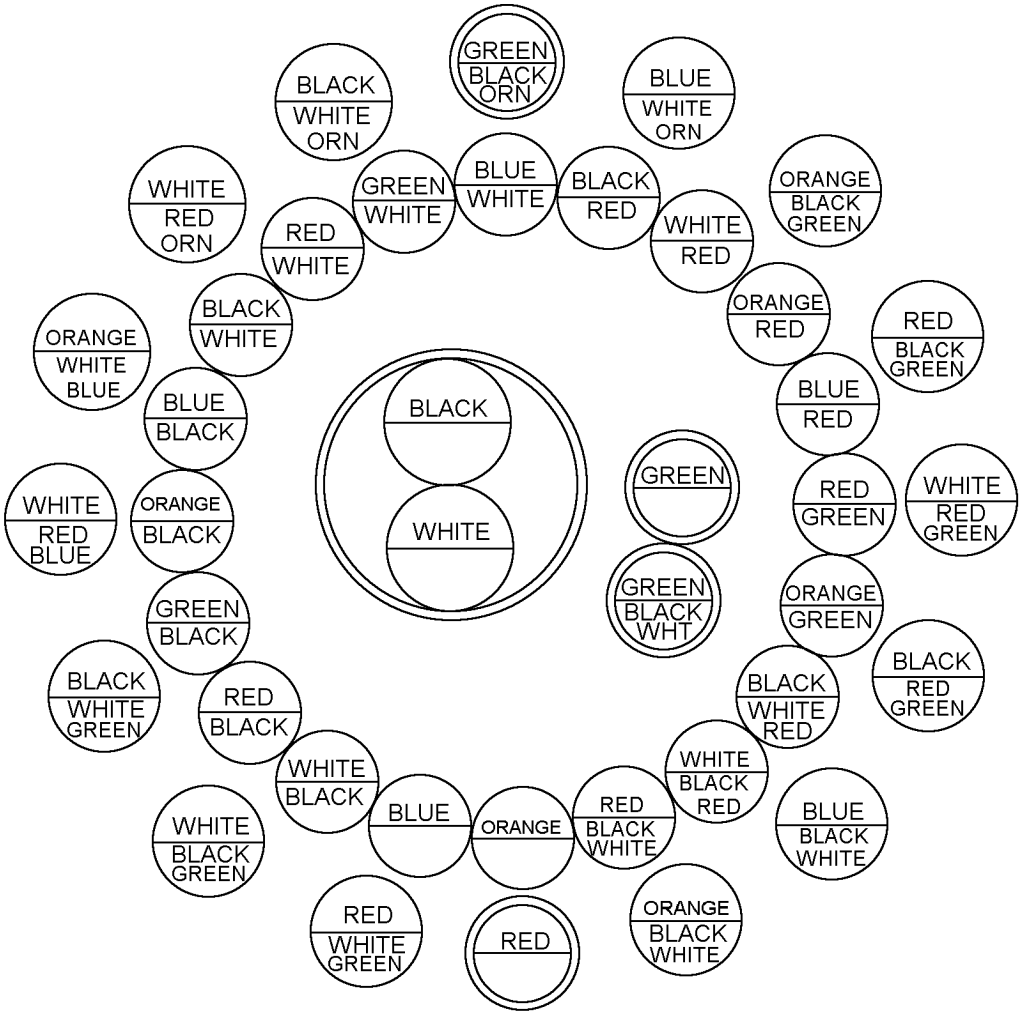
NOTE: Double circle indicates shielded conductors.

FIGURE 10. Cable type (391115S).



NOTE: Double circle indicates shielded construction.

FIGURE 11. Cable type (401485S).



NOTE: Double circle indicates shielded construction.

FIGURE 12. Cable type (401582S).

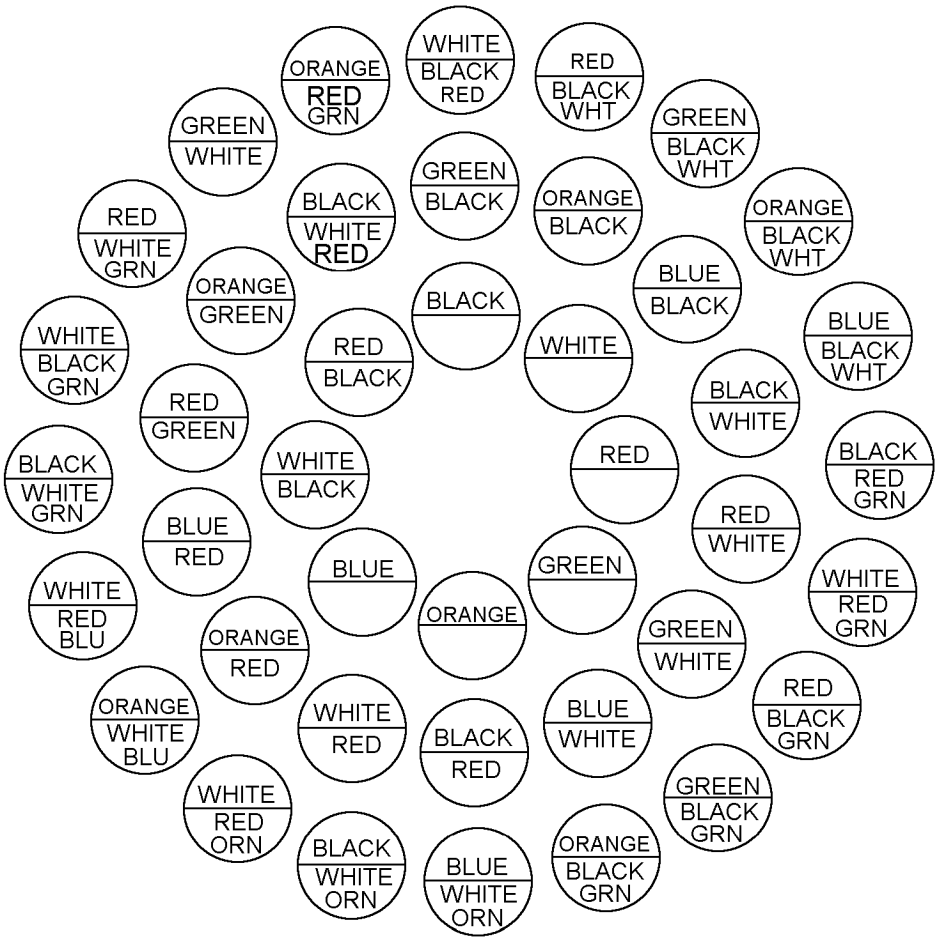
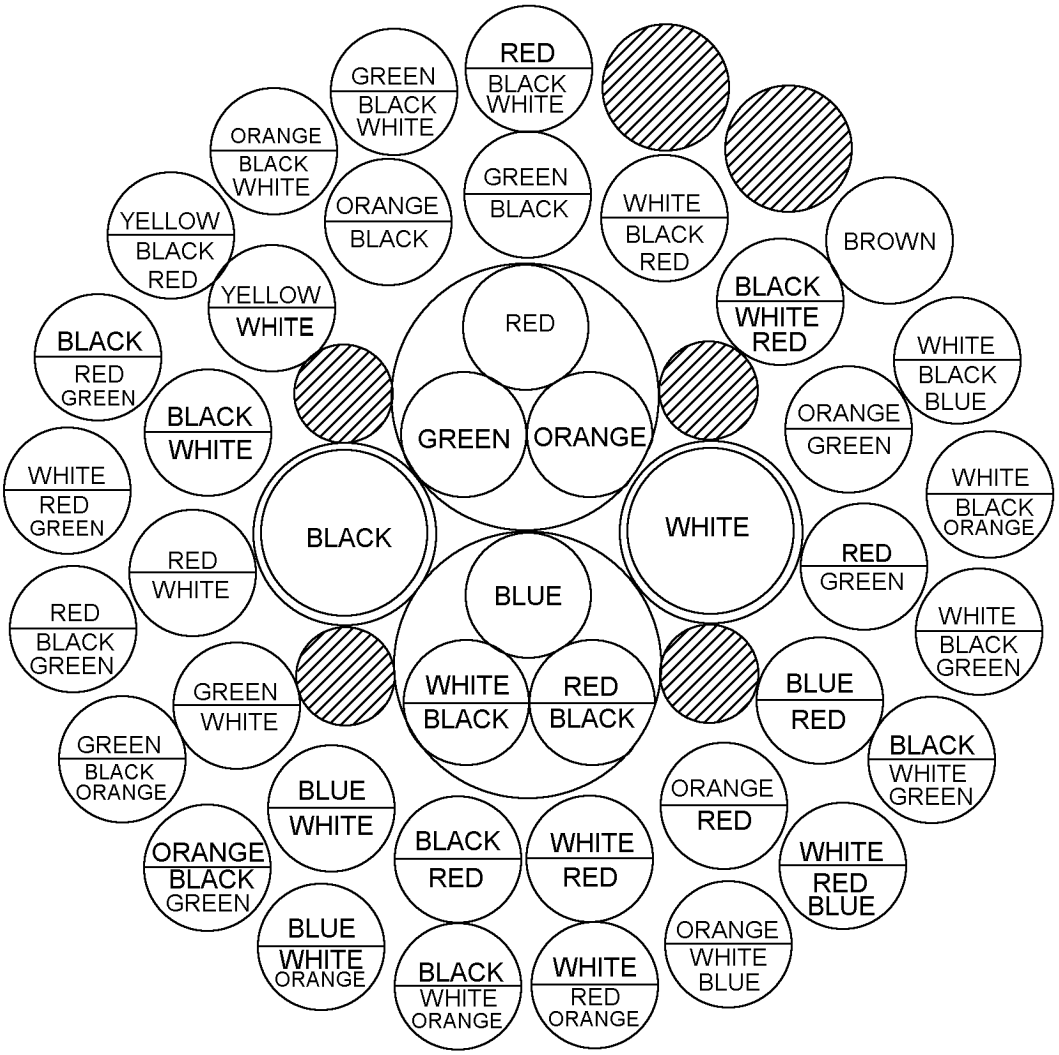
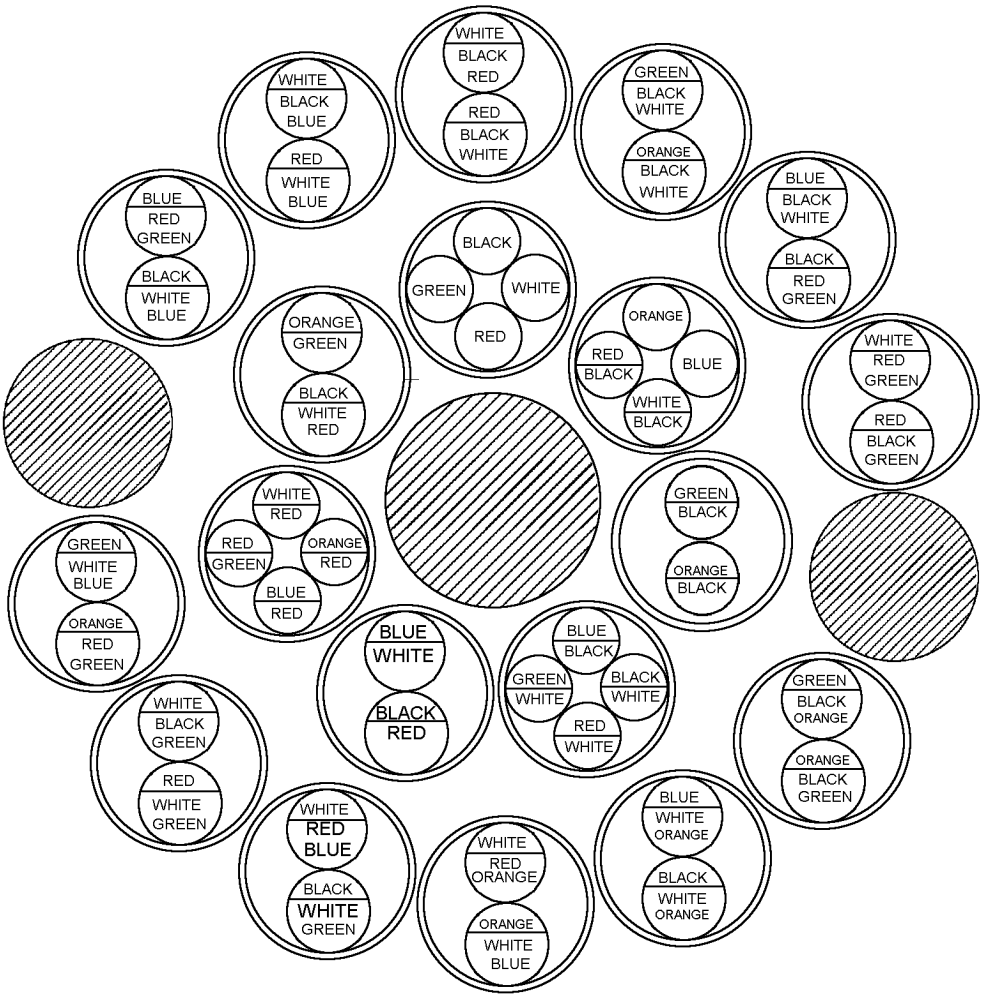


FIGURE 13. Cable type (420950).



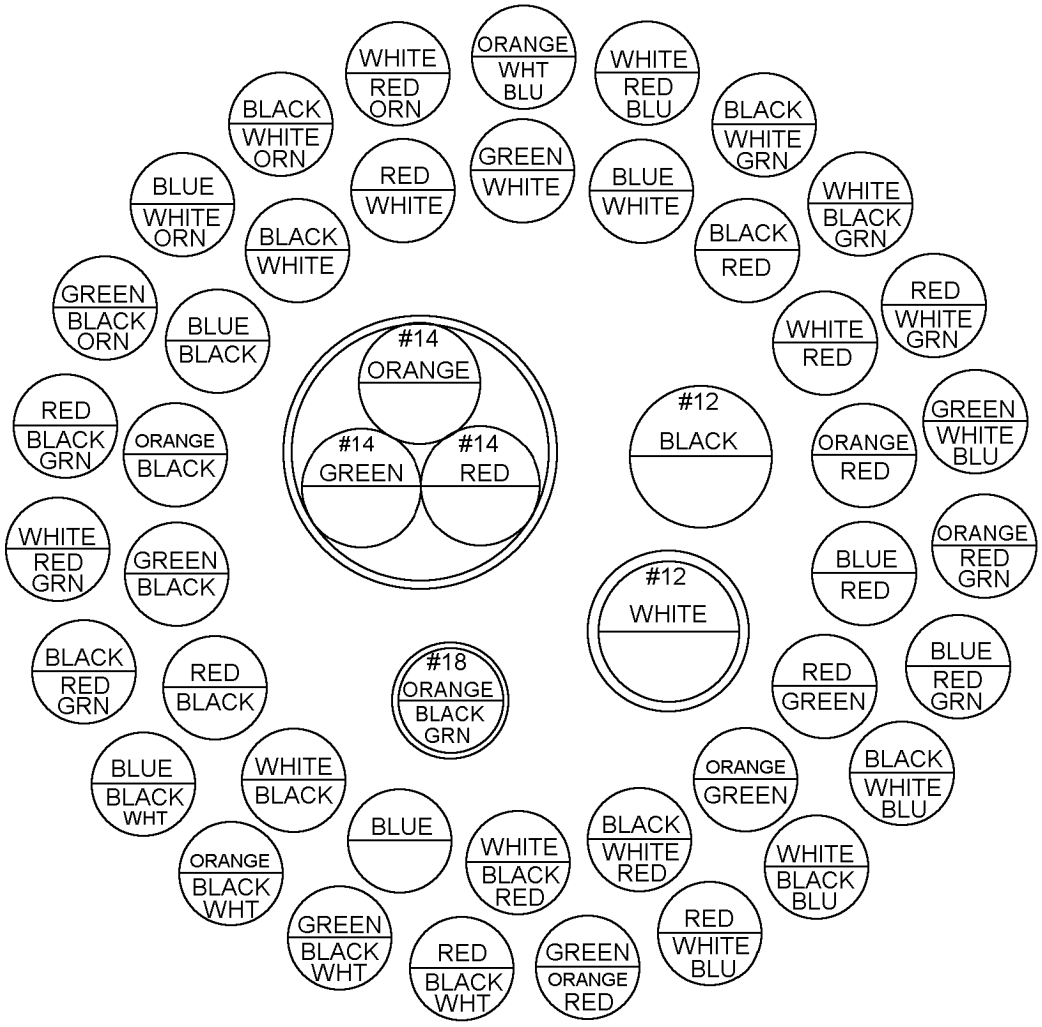
NOTE: Double circle indicates shielded conductors.

FIGURE 14. Cable type (421010SC).



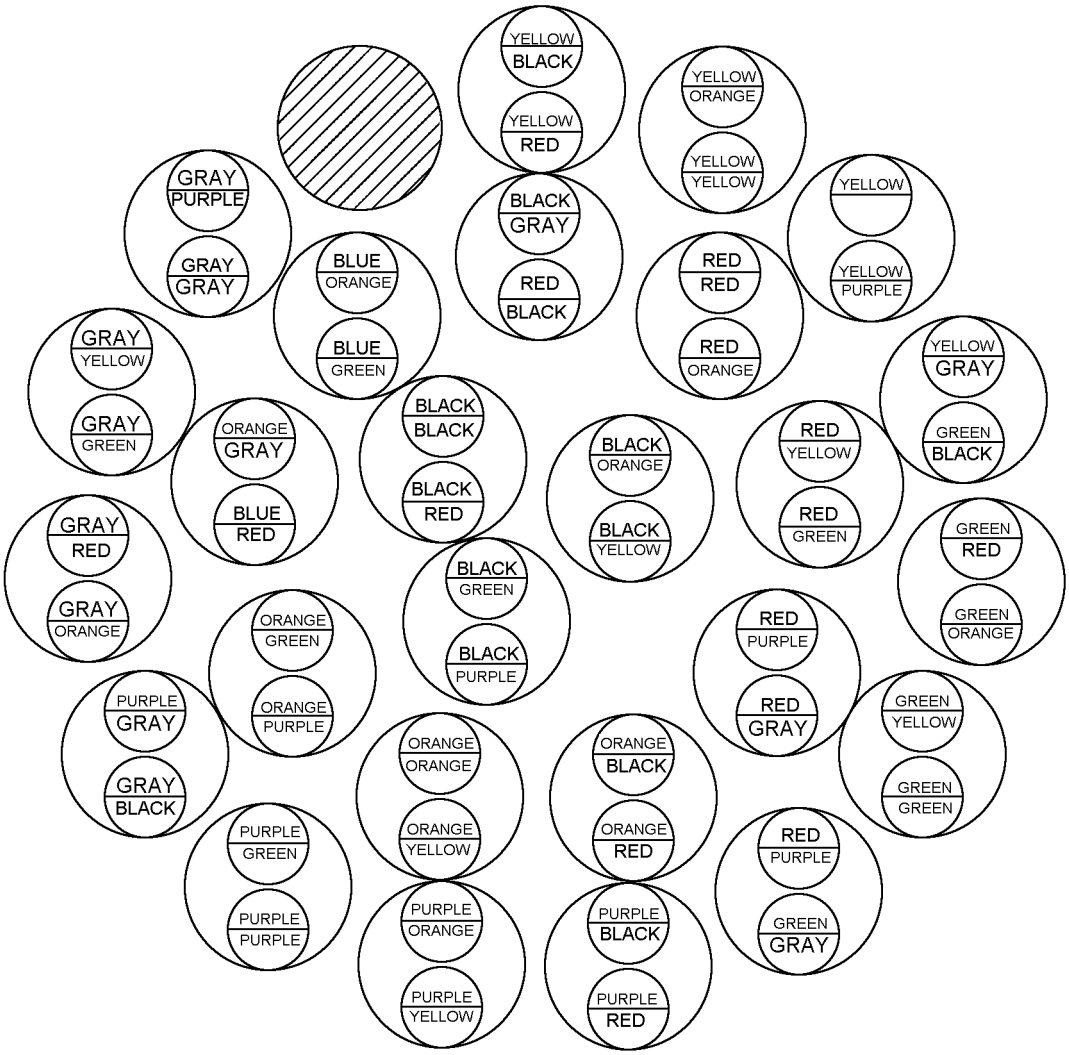
NOTE: Double circle indicates shielded conductors.

FIGURE 15. Cable type (S462080S).



NOTE: Double circle indicates shielded construction.

FIGURE 16. Cable type (4713745).



NOTE: Base color is all white insulation. Top half of circle is the wide stripe and is 0.010 inches wide, (minimum). Lower half of circle is the narrow stripe and is approximately 0.020 inches wide.

FIGURE 17. Cable type (S521235).

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issues due to the extensiveness of the changes.

Referenced documents. This document references MIL-DTL-13777.

CONCLUDING MATERIAL

Custodians:
Army – AR
Navy – SH
Air Force – 85
DLA - CC

Preparing activity:
DLA – CC

(Project 6145-2011-008)

Review activities:
Army – CE, CR, MI
Navy – MC, OS
Air Force – 19

Note: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information using the Assist Online database at https://assist.daps.dla.mil.