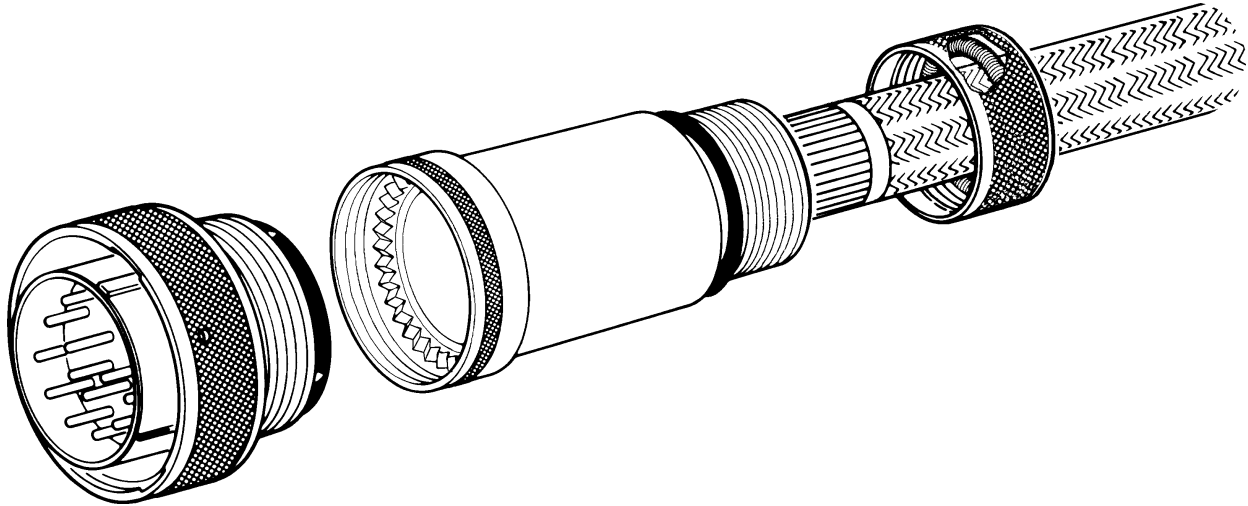


## ASSEMBLY INSTRUCTIONS 460-1



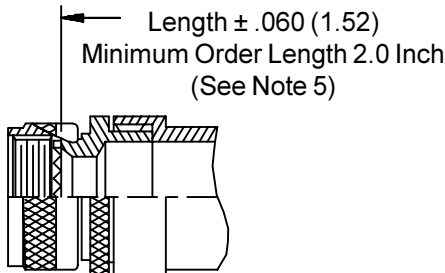
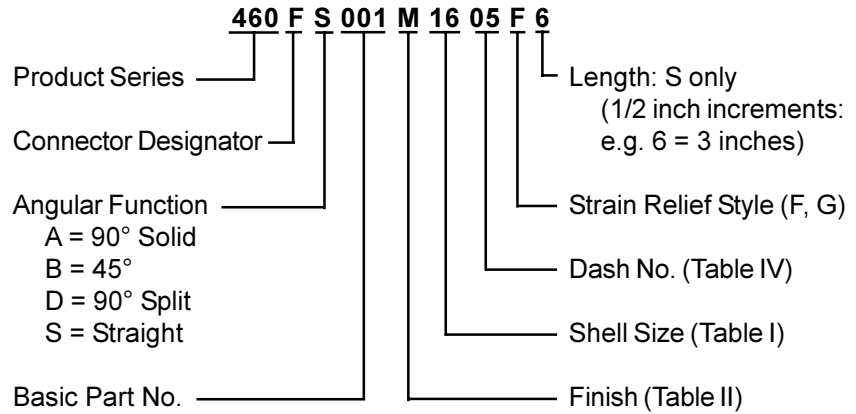
The following suggested procedure serves as a guide for the proper assembly and installation of Glenair EMI/RFI Non-Environmental Backshells (Type 460 G-spring Termination). It is recommended that trial samples of appropriate cables or harnesses be used to determine proper trim dimensions of the outer shield and individual conductors.

- a. Temporarily assemble backshell to connector.
- b. Place backshell, support ring (if used), G-Spring, nut or strain relief on cable or harness in sequence shown. Keep these components at a convenient distance from the end of the cable, so they will not interfere with subsequent assembly steps.
- c. Insert cable or harness into backshell and bottom against connector. Hold cable in position and mark outer shield at rear end of backshell.
- d. Remove backshell from connector and place on cable with items in step (b) above.
- e. Trim outer shield at mark made in step (c) above.
- f. Prepare and terminate contacts to individual conductors in accordance with established practices. (Crimp or solder in place.)

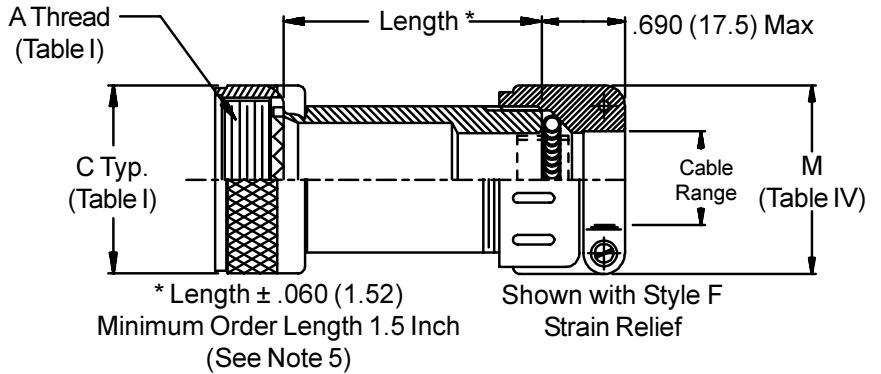
- g. Slide backshell forward to connector, and tighten securely.
- h. Move support ring (optional component used over loose wire bundles) forward, ahead of the trimmed outer shield, then slide support ring backward under outer shield. Pull outer shield forward covering support ring.
- i. Bring G-spring forward, and position on outer shield directly over the support at the rear of the backshell. Push G-spring and support ring into beveled area of backshell.
- j. Engage strain relief to backshell and tighten securely. Tighten relief saddles securely on cable or harness. This will then provide a good grounding or bonding joint for the over-all shields.

NOTE: As with any electrical connector assembly procedure, be sure to use the proper tools. For convenient, reliable assembly of the connector and backshell, it is suggested that Glenair's connector holding tools, strap wrenches and connector pliers be used.

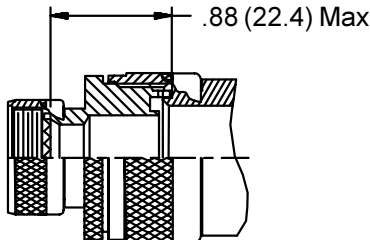
**CONNECTOR  
DESIGNATORS  
A-F-H-L-S  
ROTATABLE  
COUPLING**



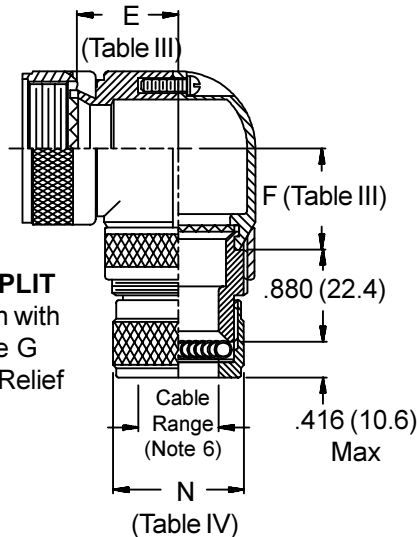
**STYLE 2  
(STRAIGHT  
See Note 1)**



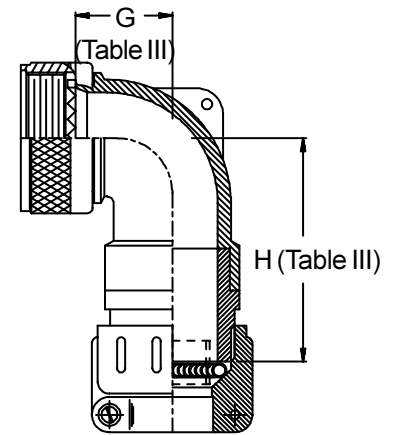
Shown with Style F Strain Relief



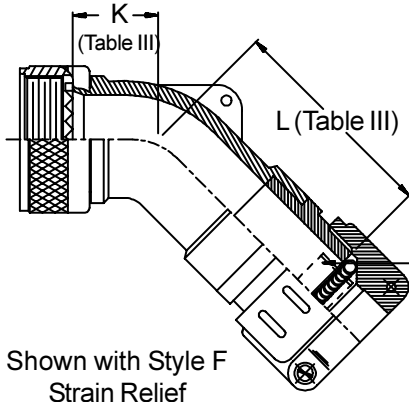
**STYLE 2  
(45° & 90°  
See Note 1)**



**90° SPLIT  
Shown with  
Style G  
Strain Relief**



**90° SOLID  
Shown with Style F  
Strain Relief**



Shown with Style F Strain Relief

469-001-XX Shield Support Ring (order separately) is recommended for use in all G-Spring backshells (see page 463-8)

# Series 460 RFI G-Spring Backshells



460

See inside back cover fold-out or pages 13 and 14 for Tables I and II.

Shell Size		E		F		G		H		K		L	
Conn. Desig.	H	Max	(mm)	Max	(mm)	Max	(mm)	Max	(mm)	Max	(mm)	Max	(mm)
A-F-L-S													
08	09	.680	(17.3)	.560	(14.2)	.500	(12.7)	1.670	(42.4)	.413	(10.5)	1.720	(43.7)
10	11	.750	(19.1)	.620	(15.7)	.595	(15.1)	1.790	(45.5)	.520	(13.2)	1.720	(43.7)
12	13	.810	(20.6)	.690	(17.5)	.610	(15.5)	1.810	(46.0)	.582	(14.8)	1.780	(45.2)
14	15	.870	(22.1)	.720	(18.3)	.700	(17.8)	1.880	(47.8)	.645	(16.4)	1.870	(47.5)
16	17	.930	(23.6)	.820	(20.8)	.885	(22.5)	1.970	(50.0)	.738	(18.7)	1.980	(50.3)
18	19	1.000	(25.4)	.880	(22.4)	.975	(24.8)	2.140	(54.4)	.926	(23.5)	2.170	(55.1)
20	21	1.060	(26.9)	.940	(23.9)	.975	(24.8)	2.140	(54.4)	.926	(23.5)	2.170	(55.1)
22	23	1.120	(28.4)	1.000	(25.4)	1.125	(28.6)	2.250	(57.2)	1.020	(25.9)	2.320	(58.9)
24	25	1.180	(30.0)	1.060	(26.9)	1.125	(28.6)	2.250	(57.2)	1.020	(25.9)	2.320	(58.9)
28		1.312	(33.3)	1.219	(31.0)	1.225	(31.1)	2.420	(61.5)	1.145	(29.1)	2.370	(60.2)
32		1.562	(39.7)	1.483	(37.7)	1.575	(40.0)	2.670	(67.8)	1.207	(30.7)	2.470	(62.7)
36		1.688	(42.9)	1.656	(42.1)	1.775	(45.1)	2.670	(67.8)	1.238	(31.4)	2.560	(65.0)

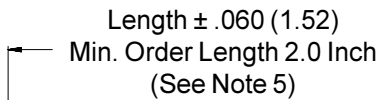
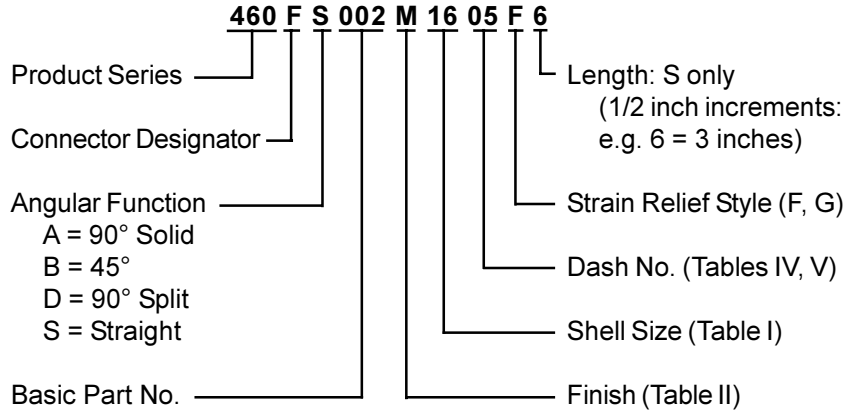
Dash No.	M	N	Cable Range	
	Max	Max	Min	Max
01	.843 (21.4)	.625 (15.9)	.156 (4.0)	.250 (6.4)
02	.968 (24.6)	.750 (19.1)	.188 (4.8)	.375 (9.5)
03	1.046 (26.6)	.875 (22.2)	.250 (6.4)	.438 (11.1)
04	1.156 (29.4)	1.000 (25.4)	.280 (7.1)	.500 (12.7)
05	1.218 (30.9)	1.125 (28.6)	.375 (9.5)	.625 (15.9)
06	1.343 (34.1)	1.250 (31.8)	.500 (12.7)	.750 (19.1)
07	1.468 (37.3)	1.375 (34.9)	.625 (15.9)	.875 (22.2)
08	1.593 (40.5)	1.500 (38.1)	.750 (19.1)	1.000 (25.4)
09	1.718 (43.6)	1.625 (41.3)	.875 (22.2)	1.125 (28.6)
10	1.843 (46.8)	1.750 (44.5)	1.000 (25.4)	1.250 (31.8)
11*	2.187 (55.5)	1.875 (47.6)	1.125 (28.6)	1.375 (34.9)
12*	2.312 (58.7)	2.000 (50.8)	1.250 (31.8)	1.500 (38.1)
13*	2.437 (61.9)	2.125 (54.0)	1.375 (34.9)	1.625 (41.3)
14*	2.546 (64.7)	2.250 (57.2)	1.500 (38.1)	1.750 (44.5)

\* Consult factory for availability

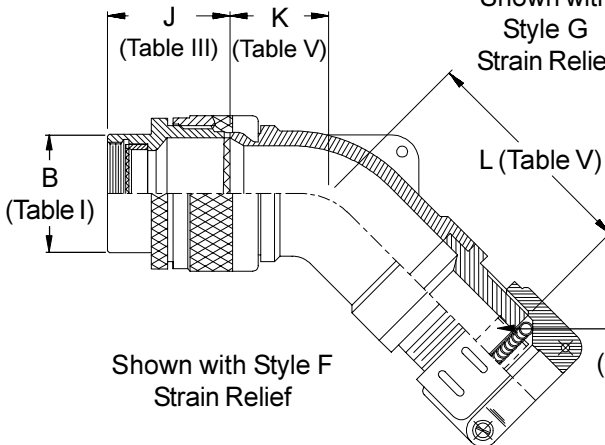
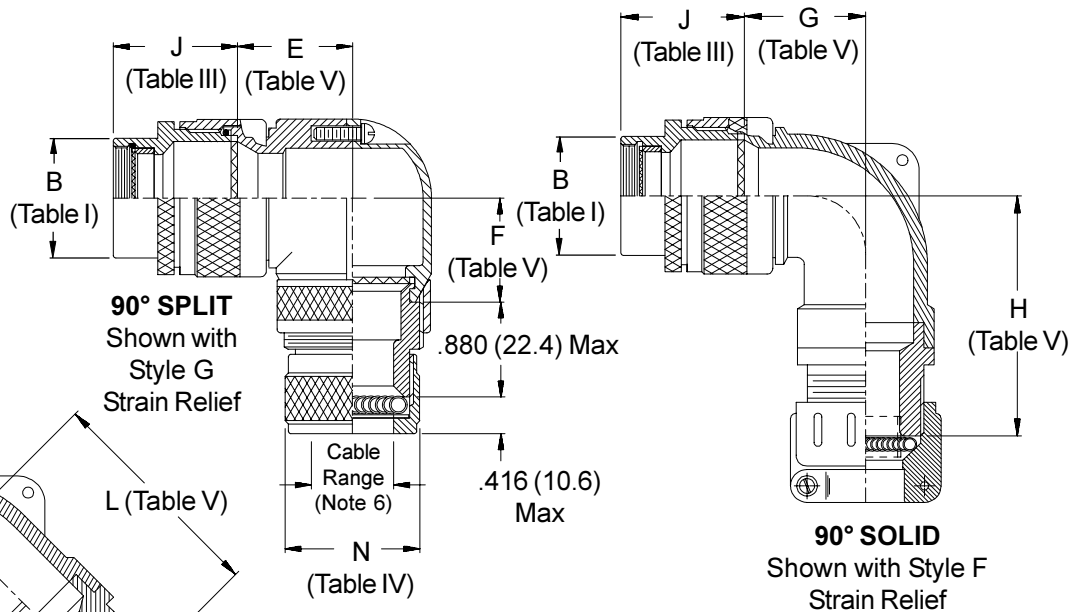
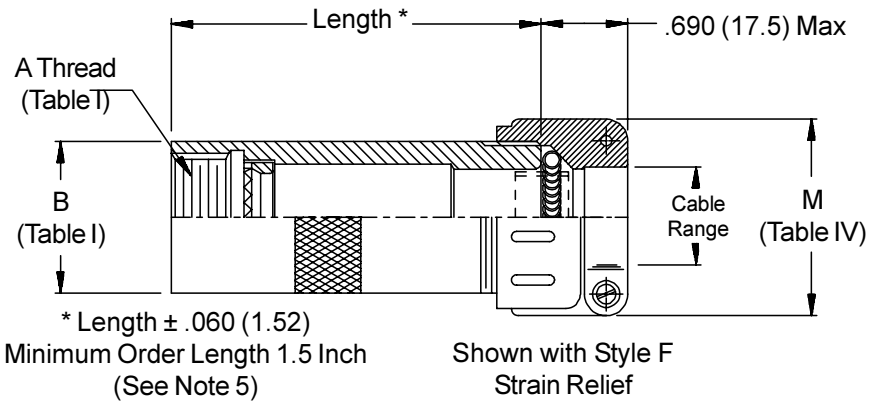
1. Shield Support Ring (469-001-XX) is recommended for use in all G-Spring backshells (see page 463-8).
2. When maximum cable entry (page 21) is exceeded, Style 2 will be supplied. Dimensions E, F, G, H, K and L will not apply. Please consult factory.
3. Metric dimensions (mm) are indicated in parentheses.
4. Cable range is defined as the accommodations range for the wire bundle or cable. Dimensions shown are not intended for inspection criteria.
5. Consult factory for shorter lengths on straight backshells.
6. Maximum cable entry available for split elbow is 1.188 (30.2).

**CONNECTOR  
DESIGNATORS  
A-B\*-C-D-E-F  
G-H-J-K-L-S**

\* Conn. Desig. B See Note 7  
**DIRECT COUPLING**



**STYLE 2  
(STRAIGHT  
See Note 1)**



469-001-XX Shield Support Ring (order separately) is recommended for use in all G-Spring backshells (see page 463-8)

# Series 460 RFI G-Spring Backshells



460

See inside back cover fold-out or pages 13 and 14 for Tables I and II.

**TABLE III**

**J Max - Conn. Designator**

Shell Size	A-DEF		
	J-H-L-S	B-G-K	C
08/09	1.000 (25.4)	1.250 (31.8)	
10/11	1.000 (25.4)	1.250 (31.8)	
12/13	1.000 (25.4)	1.250 (31.8)	1.735 (44.1)
14/15	1.000 (25.4)	1.250 (31.8)	1.915 (48.6)
16/17	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
18/19	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
20/21	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
22/23	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
24/25	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
28/29	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
32/33	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
36	1.000 (25.4)	1.416 (36.0)	1.915 (48.6)
40	1.000 (25.4)	1.687 (42.9)	1.915 (48.6)

**TABLE IV**

Dash No.	M Max	N Max	Cable Range	
			Min	Max
01	.843 (21.4)	.625 (15.9)	.156 (4.0)	.250 (6.4)
02	.968 (24.6)	.750 (19.1)	.188 (4.8)	.375 (9.5)
03	1.046 (26.6)	.875 (22.2)	.250 (6.4)	.438 (11.1)
04	1.156 (29.4)	1.000 (25.4)	.280 (7.1)	.500 (12.7)
05	1.218 (30.9)	1.125 (28.6)	.375 (9.5)	.625 (15.9)
06	1.343 (34.1)	1.250 (31.8)	.500 (12.7)	.750 (19.1)
07	1.468 (37.3)	1.375 (34.9)	.625 (15.9)	.875 (22.2)
08	1.593 (40.5)	1.500 (38.1)	.750 (19.1)	1.000 (25.4)
09	1.718 (43.6)	1.625 (41.3)	.875 (22.2)	1.125 (28.6)
10	1.843 (46.8)	1.750 (44.5)	1.000 (25.4)	1.250 (31.8)
11*	2.187 (55.5)	1.875 (47.6)	1.125 (28.6)	1.375 (34.9)
12*	2.312 (58.7)	2.000 (50.8)	1.250 (31.8)	1.500 (38.1)
13*	2.437 (61.9)	2.125 (54.0)	1.375 (34.9)	1.625 (41.3)
14*	2.546 (64.7)	2.250 (57.2)	1.500 (38.1)	1.750 (44.5)

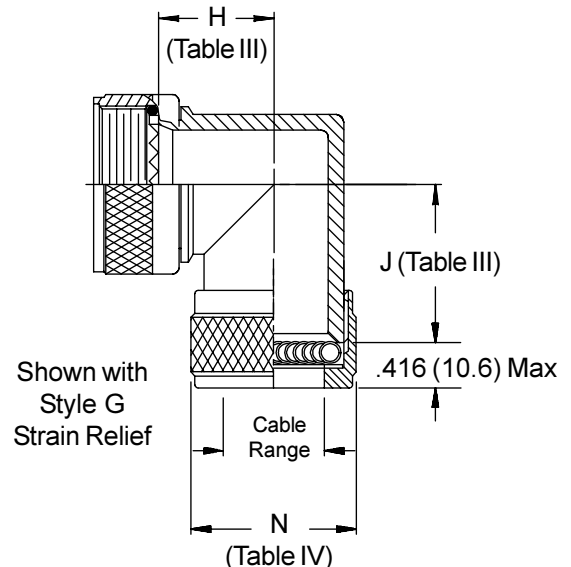
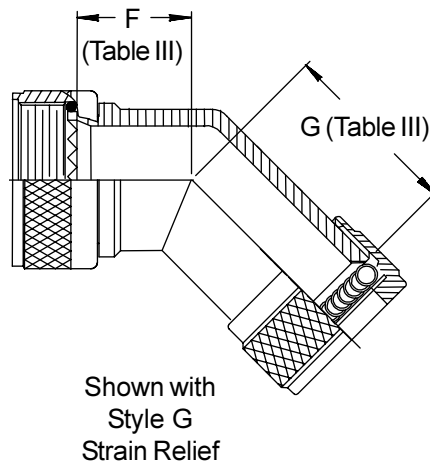
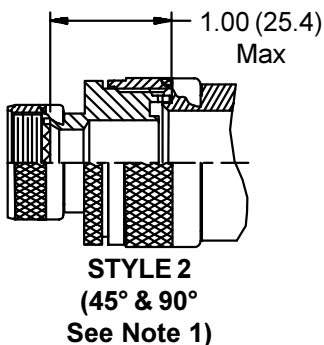
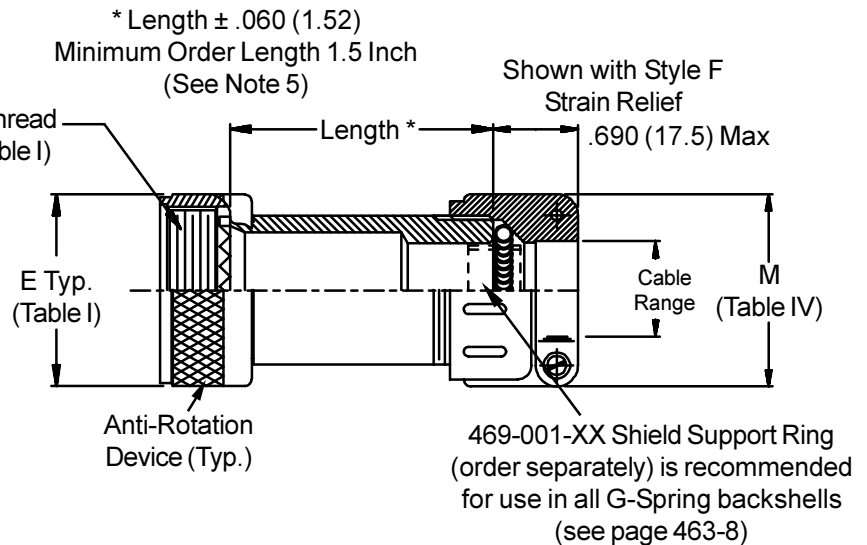
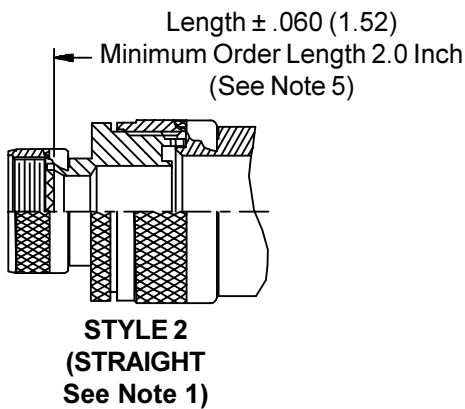
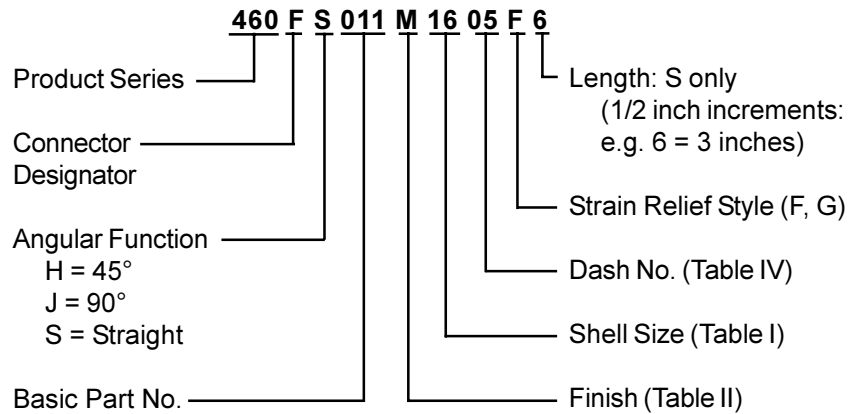
\* Consult factory for availability

**TABLE V**

Dash No.	E Max	F Max	G Max	H Max	K Max	L Max
01	.680 (17.3)	.560 (14.2)	.636 (16.2)	1.670 (42.4)	.630 (16.0)	1.720 (43.7)
02	.750 (19.1)	.620 (15.7)	.710 (18.0)	1.790 (45.5)	.630 (16.0)	1.720 (43.7)
03	.810 (20.6)	.690 (17.5)	.734 (18.6)	1.810 (46.0)	.692 (17.6)	1.780 (45.2)
04	.870 (22.1)	.720 (18.3)	.825 (21.0)	1.880 (47.8)	.755 (19.2)	1.870 (47.5)
05	.930 (23.6)	.820 (20.8)	.988 (25.1)	1.970 (50.0)	.848 (21.5)	1.980 (50.3)
06	1.000 (25.4)	.880 (22.4)	1.087 (27.6)	2.140 (54.4)	1.036 (26.3)	2.170 (55.1)
07	1.060 (26.9)	.940 (23.9)	1.087 (27.6)	2.140 (54.4)	1.036 (26.3)	2.170 (55.1)
08	1.120 (28.4)	1.000 (25.4)	1.325 (33.7)	2.250 (57.2)	1.130 (28.7)	2.320 (58.9)
09	1.180 (30.0)	1.060 (26.9)	1.325 (33.7)	2.250 (57.2)	1.130 (28.7)	2.320 (58.9)
10	1.180 (30.0)	1.060 (26.9)	1.337 (34.0)	2.420 (61.5)	1.255 (31.9)	2.370 (60.2)
11	1.312 (33.3)	1.219 (31.0)	1.827 (46.4)	2.670 (67.8)	1.317 (33.5)	2.470 (62.7)
12	1.562 (39.7)	1.438 (36.5)	1.827 (46.4)	2.670 (67.8)	1.317 (33.5)	2.470 (62.7)
13	1.562 (39.7)	1.438 (36.5)	2.027 (51.5)	2.670 (67.8)	1.348 (34.2)	2.560 (65.0)
14	1.688 (42.9)	1.656 (42.1)	2.027 (51.5)	2.670 (67.8)	1.348 (34.2)	2.560 (65.0)

1. Shield Support Ring (469-001-XX) is recommended for use in all G-Spring backshells (see page 463-8).
2. When maximum cable entry (page 22) is exceeded, Style 2 will be supplied. Angular Function S only.
3. Metric dimensions (mm) are indicated in parentheses.
4. Cable range is defined as the accommodations range for the wire bundle or cable. Dimensions shown are not intended for inspection criteria.
5. Consult factory for shorter lengths on straight backshells.
6. Maximum cable entry available for split elbow is 1.188 (30.2).
7. When using Connector Designator B refer to pages 18 and 19 for part number development.

**CONNECTOR  
DESIGNATORS  
A-F-H-L-S  
SELF-LOCKING  
ROTATABLE  
COUPLING**



# Series 460 RFI G-Spring Backshells



460

See inside back cover fold-out or pages 13 and 14 for Tables I and II.

Shell Size		F		G		H		J	
Conn. Desig.	H	Max		Max		Max		Max	
A-F-L-S									
08	09	.795	(20.2)	.950	(24.1)	.906	(23.0)	1.040	(26.4)
10	11	.820	(20.8)	.980	(24.9)	.966	(24.5)	1.090	(27.7)
12	13	.844	(21.4)	1.000	(25.4)	1.026	(26.1)	1.150	(29.2)
14	15	.861	(21.9)	1.030	(26.2)	1.076	(27.3)	1.200	(30.5)
16	17	.888	(22.6)	1.050	(26.7)	1.136	(28.9)	1.250	(31.8)
18	19	.904	(23.0)	1.060	(26.9)	1.176	(29.9)	1.300	(33.0)
20	21	.929	(23.6)	1.080	(27.4)	1.236	(31.4)	1.360	(34.5)
22	23	.956	(24.3)	1.120	(28.4)	1.296	(32.9)	1.420	(36.1)
24	25	.979	(24.9)	1.150	(29.2)	1.356	(34.4)	1.480	(37.6)
28		1.197	(30.4)	1.270	(32.3)	1.636	(41.6)	1.600	(40.6)
32		1.294	(32.9)	1.350	(34.3)	1.876	(47.7)	1.780	(45.2)
36		1.340	(34.0)	1.515	(38.5)	1.986	(50.4)	1.890	(48.0)

Dash No.	M Max	N Max	Cable Range	
			Min	Max
01	.843 (21.4)	.625 (15.9)	.156 (4.0)	.250 (6.4)
02	.968 (24.6)	.750 (19.1)	.188 (4.8)	.375 (9.5)
03	1.046 (26.6)	.875 (22.2)	.250 (6.4)	.438 (11.1)
04	1.156 (29.4)	1.000 (25.4)	.280 (7.1)	.500 (12.7)
05	1.218 (30.9)	1.125 (28.6)	.375 (9.5)	.625 (15.9)
06	1.343 (34.1)	1.250 (31.8)	.500 (12.7)	.750 (19.1)
07	1.468 (37.3)	1.375 (34.9)	.625 (15.9)	.875 (22.2)
08	1.593 (40.5)	1.500 (38.1)	.750 (19.1)	1.000 (25.4)
09	1.718 (43.6)	1.625 (41.3)	.875 (22.2)	1.125 (28.6)
10	1.843 (46.8)	1.750 (44.5)	1.000 (25.4)	1.250 (31.8)
11*	2.187 (55.5)	1.875 (47.6)	1.125 (28.6)	1.375 (34.9)
12*	2.311 (58.7)	2.000 (50.8)	1.250 (31.8)	1.500 (38.1)
13*	2.437 (61.9)	2.125 (54.0)	1.375 (34.9)	1.625 (41.3)
14*	2.546 (64.7)	2.250 (57.2)	1.500 (38.1)	1.750 (44.5)

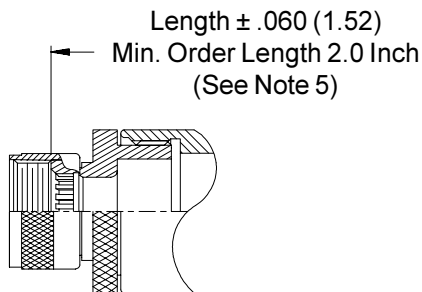
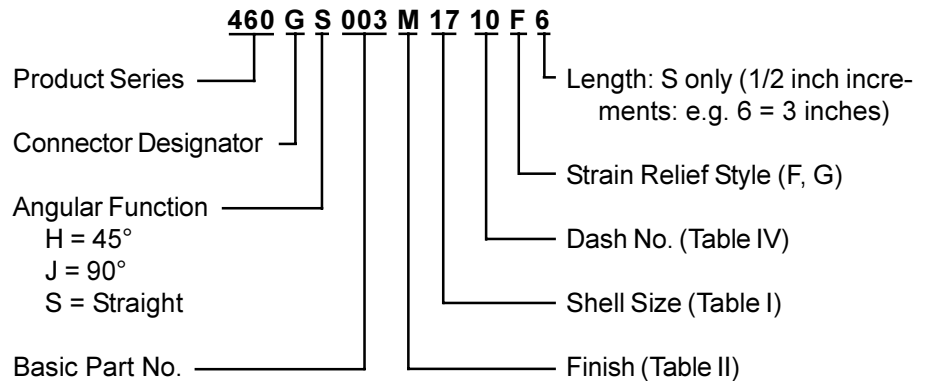
\* Consult factory for availability

1. Shield Support Ring (469-001-XX) is recommended for use in all G-Spring backshells (see page 463-8).
2. When maximum cable entry (page 21) is exceeded, Style 2 will be supplied. Dimensions E, F, G, and H will not apply. Please consult factory.
3. Metric dimensions (mm) are indicated in parentheses.
4. Cable range is defined as the accommodations range for the wire bundle or cable. Dimensions shown are not intended for inspection criteria.
5. Consult factory for shorter lengths on straight backshells.

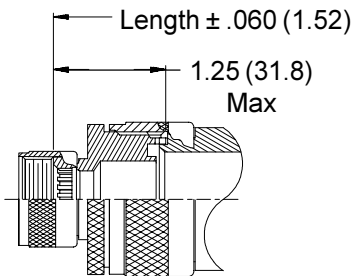
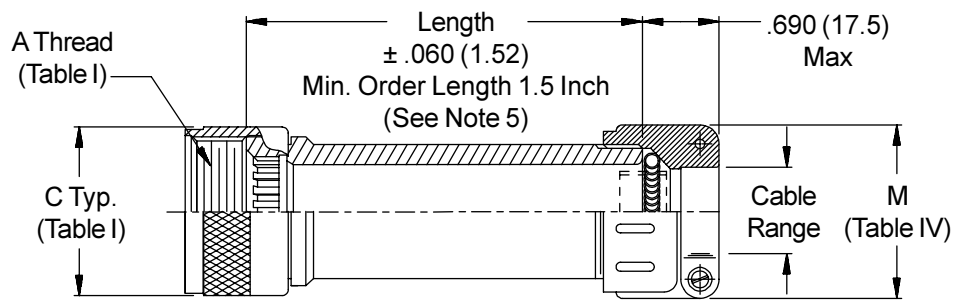
## CONNECTOR DESIGNATOR

# G

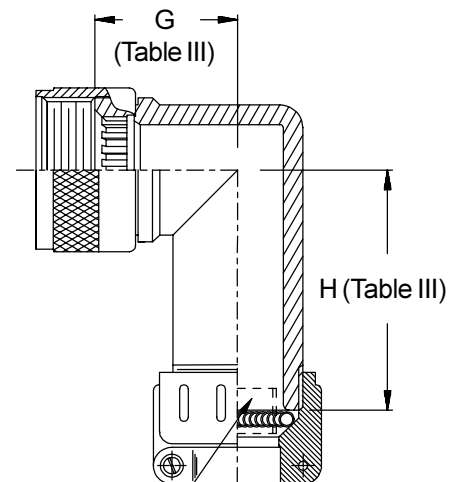
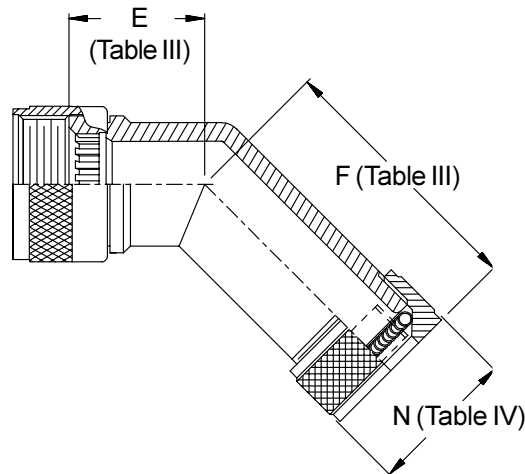
## ROTATABLE COUPLING



**STYLE 2  
(STRAIGHT  
See Note 1)**



**STYLE 2  
(45° & 90°  
See Note 1)**



469-001-XX Shield Support Ring  
(order separately) is recommended  
for use in all G-Spring backshells  
(see page 463-8)

# Series 460 RFI G-Spring Backshells



460

See inside back cover  
fold-out or pages 13 and  
14 for Tables I and II.

Shell Size	E Max	F Max	G Max	H Max
11	1.240 (31.5)	.980 (24.9)	1.380 (35.1)	1.120 (28.4)
13	1.260 (32.0)	1.000 (25.4)	1.440 (36.6)	1.180 (30.0)
15	1.290 (32.8)	1.030 (26.2)	1.500 (38.1)	1.250 (31.8)
17	1.310 (33.3)	1.050 (26.7)	1.570 (39.9)	1.310 (33.3)
19	1.340 (34.0)	1.080 (27.4)	1.630 (41.4)	1.390 (35.3)
23	1.380 (35.1)	1.120 (28.4)	1.730 (43.9)	1.470 (37.3)
25	1.410 (35.8)	1.150 (29.2)	1.800 (45.7)	1.540 (39.1)
29	1.580 (40.1)	1.320 (33.5)	2.040 (51.8)	1.780 (45.2)
33	1.620 (41.1)	1.360 (34.5)	2.130 (54.1)	1.870 (47.5)

Dash No.	M Max	N Max	Cable Range	
			Min	Max
01	.843 (21.4)	.625 (15.9)	.156 (4.0)	.250 (6.4)
02	.968 (24.6)	.750 (19.1)	.188 (4.8)	.375 (9.5)
03	1.046 (26.6)	.875 (22.2)	.250 (6.4)	.438 (11.1)
04	1.156 (29.4)	1.000 (25.4)	.280 (7.1)	.500 (12.7)
05	1.218 (30.9)	1.125 (28.6)	.375 (9.5)	.625 (15.9)
06	1.343 (34.1)	1.250 (31.8)	.500 (12.7)	.750 (19.1)
07	1.468 (37.3)	1.375 (34.9)	.625 (15.9)	.875 (22.2)
08	1.593 (40.5)	1.500 (38.1)	.750 (19.1)	1.000 (25.4)
09	1.718 (43.6)	1.625 (41.3)	.875 (22.2)	1.125 (28.6)
10	1.843 (46.8)	1.750 (44.5)	1.000 (25.4)	1.250 (31.8)
11*	2.187 (55.5)	1.875 (47.6)	1.125 (28.6)	1.375 (34.9)
12*	2.312 (58.7)	2.000 (50.8)	1.250 (31.8)	1.500 (38.1)
13*	2.437 (61.9)	2.125 (54.0)	1.375 (34.9)	1.625 (41.3)
14*	2.546 (64.7)	2.250 (57.2)	1.500 (38.1)	1.750 (44.5)

\* Consult factory for availability

1. Shield Support Ring (469-001-XX) is recommended for use in all G-Spring backshells (see page 463-8).
2. When maximum cable entry (page 21) is exceeded, Style 2 will be supplied. Dimensions E, F, G and H will not apply. Please consult factory.
3. Metric dimensions (mm) are indicated in parentheses.
4. Cable range is defined as the accommodations range for the wire bundle or cable. Dimensions shown are not intended for inspection criteria.
5. Consult factory for shorter lengths on straight backshells.