

BBP®33 Wire & Cable Materials:

B-345 PermaSleeve® HT High Temperature PVDF Wire Marking Sleeves

High temperature, low outgassing. 2:1 Shrink ratio.

- A 2:1 shrink ratio wire marker sleeve specifically designed for high temperature and low vacuum outgassing applications
- Made from irradiated high-temp Polyvinylidene Fluoride (PVDF) heat shrink tubing
- Fade-resistant and flame-retardant
- Meets the following industry specifications:
 - NASA SP-R-0022A Outgassing Performance
 - Tested per ASTM E162, ASTM E662, SAE-AMS-DTL-23053/18 (class 2)
 - MIL-STD-202
 - SAE-AS-81531

Service temp: -67°F to 437°F Agency Approvals for HT and HX Sleeves: RoHS

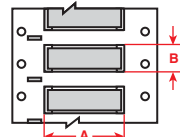


Figure 20



Fits Printer Model	Diagram	Catalog #	Material	Color	For Wire Gauge (approx.)	For Wire Diameters Inch (mm) Min. Max.	Supplied Diameter B Inch (mm)	Recovered Diameter Inch (mm)	Recovered Wall Thickness Inch (mm)	Sleeves Per Row	Sleeves Per Roll	Rec. Ribbon
3:1 Shrink ratio double-side printable, 2" sleeve width (diagram side A):												
BBP33	Fig. 20	B33D-94-2-345	B-345	White	26 to 20	0.031 (0.8) - 0.080 (2.0)	0.094 (2.4)	0.031 (0.8)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R6000
BBP33	Fig. 20	B33D-94-2-345BK	B-345	Black	26 to 20	0.031 (0.8) - 0.080 (2.0)	0.094 (2.4)	0.031 (0.8)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R4400-WT
2:1 Shrink ratio double-side printable, 2" sleeve width (diagram side A):												
BBP33	Fig. 20	B33D-125-2-345	B-345	White	20 to 16	0.063 (1.6) - 0.110 (2.8)	0.125 (3.2)	0.062 (1.6)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R6000
BBP33	Fig. 20	B33D-187-2-345	B-345	White	16 to 10	0.094 (2.4) - 0.150 (3.8)	0.187 (4.7)	0.093 (2.4)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R6000
BBP33	Fig. 20	B33D-250-2-345	B-345	White	12 to 8	0.125 (3.2) - 0.215 (5.5)	0.250 (6.4)	0.125 (3.2)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R6000
BBP33	Fig. 20	B33D-375-2-345	B-345	White	8 to 4	0.187 (3.2) - 0.320 (8.1)	0.375 (9.5)	0.187 (4.7)	.015 (0.4) +/- .003 (0.07)	1	100	B30-R6000
BBP33	Fig. 20	B33D-500-2-345	B-345	White	6 to 1	0.250 (6.4) - 0.450 (11.4)	0.500 (12.7)	0.250 (6.4)	.015 (0.4) +/- .003 (0.07)	1	100	B30-R6000
BBP33	Fig. 20	B33D-750-2-345	B-345	White	2 to 4/0	0.375 (9.5) - 0.700 (17.8)	0.750 (19.0)	0.375 (9.5)	.015 (0.4) +/- .003 (0.07)	1	50	B30-R6000
BBP33	Fig. 20	B33D-1000-2-345	B-345	White	2/0 to 0.950 dia	0.450 (11.4) - 0.950 (24.1)	1.000 (25.4)	0.500 (12.7)	.017 (0.4) +/- .004 (0.1)	1	50	B30-R6000
BBP33	Fig. 20	B33D-1500-2-345	B-345	White	N/A	0.750 (19.1) - 1.400 (35.6)	1.500 (38.1)	0.750 (19.1)	.024 (0.6) +/- .004 (0.1)	1	50	B30-R6000
BBP33	Fig. 20	B33D-125-2-345BK	B-345	Black	20 to 16	0.063 (1.6) - 0.110 (2.8)	0.125 (3.2)	0.062 (1.6)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R4400-WT
BBP33	Fig. 20	B33D-187-2-345BK	B-345	Black	16 to 10	0.094 (2.4) - 0.150 (3.8)	0.187 (4.7)	0.093 (2.4)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R4400-WT
BBP33	Fig. 20	B33D-250-2-345BK	B-345	Black	12 to 8	0.125 (3.2) - 0.215 (5.5)	0.250 (6.4)	0.125 (3.2)	.015 (0.4) +/- .003 (0.07)	1	250	B30-R4400-WT
BBP33	Fig. 20	B33D-375-2-345BK	B-345	Black	8 to 4	0.187 (3.2) - 0.320 (8.1)	0.375 (9.5)	0.187 (4.7)	.015 (0.4) +/- .003 (0.07)	1	100	B30-R4400-WT
BBP33	Fig. 20	B33D-500-2-345BK	B-345	Black	6 to 1	0.250 (6.4) - 0.450 (11.4)	0.500 (12.7)	0.250 (6.4)	.015 (0.4) +/- .003 (0.07)	1	100	B30-R4400-WT
BBP33	Fig. 20	B33D-750-2-345BK	B-345	Black	3 to 4/0	0.375 (9.5) - 0.700 (17.8)	0.750 (19.0)	0.375 (9.5)	.015 (0.4) +/- .003 (0.07)	1	50	B30-R4400-WT
BBP33	Fig. 20	B33D-1000-2-345BK	B-345	Black	2/0 to 0.950 dia	0.450 (11.4) - 0.950 (24.1)	1.000 (25.4)	0.500 (12.7)	.017 (0.4) +/- .004 (0.1)	1	50	B30-R4400-WT
BBP33	Fig. 20	B33D-1500-2-345BK	B-345	Black	N/A	0.750 (19.1) - 1.400 (35.6)	1.500 (38.1)	0.750 (19.1)	.024 (0.6) +/- .004 (0.1)	1	50	B30-R4400-WT

BBP®33 Wire & Cable Materials:

B-7642 PermaSleeve® HX Polyolefin Wire Marking Sleeves

Military/Industrial Grade. 2:1 Shrink ratio.

- Flame retardant and high-temp rated but not as high temp as B-345 "HT" sleeves
- Meets the following industry specifications:
 - SAE-AMS-DTL-23053/5 (class 1 and 3)
 - SAE-AS-81531
 - MIL-STD-202
 - Tested per ASTM E162, ASTM E662

Service temp: -40°F to 248°F (short burst max temp: 5 min at 464°F, 24 hrs at 320°F)

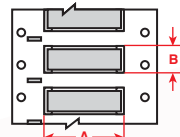
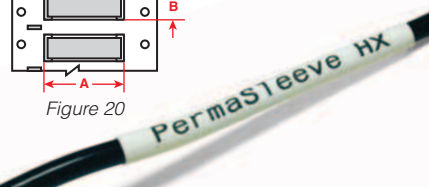


Figure 20



Fits Printer Model	Diagram	Catalog #	Material	Color	For Wire Gauge (approx.)	For Wire Diameters Inch (mm) Min. Max.	Supplied Diameter B Inch (mm)	Recovered Diameter Inch (mm)	Recovered Wall Thickness Inch (mm)	Sleeves Per Row	Sleeves Per Roll	Rec. Ribbon
3:1 Single-side printable, 2" sleeve width (diagram side A):												
BBP33	Fig. 20	B33-94-2-7642	B-7642	White	24 to 20	0.047 (1.2) - 0.080 (2.0)	0.094 (2.4)	0.047 (1.2)	.020 (0.5) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33-125-2-7642	B-7642	White	20 to 16	0.062 (1.6) - 0.110 (2.8)	0.125 (3.2)	0.063 (1.6)	.020 (0.5) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33-187-2-7642	B-7642	White	16 to 10	0.094 (2.4) - 0.151 (3.8)	0.187 (4.8)	0.094 (2.4)	.020 (0.5) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33-250-2-7642	B-7642	White	12 to 8	0.125 (3.2) - 0.215 (5.5)	0.250 (6.4)	0.126 (3.2)	.025 (0.6) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33-375-2-7642	B-7642	White	8 to 4	0.188 (4.8) - 0.320 (8.1)	0.375 (9.5)	0.189 (4.8)	.025 (0.6) +/- .003 (0.07)	1	250	B30-R4300
BBP33	Fig. 20	B33-500-2-7642	B-7642	White	6 to 1	0.250 (6.4) - 0.450 (11.4)	0.500 (12.7)	0.252 (6.4)	.025 (0.6) +/- .003 (0.07)	1	250	B30-R4300
BBP33	Fig. 20	B33-750-2-7642	B-7642	White	2 to 4/0	0.375 (9.5) - 0.700 (17.8)	0.750 (19.0)	0.374 (9.5)	.030 (0.8) +/- .003 (0.07)	1	150	B30-R4300
BBP33	Fig. 20	B33-1000-2-7642	B-7642	White	2/0 to 0.950 dia	0.450 (11.4) - 0.950 (24.1)	1.000 (25.4)	0.500 (12.7)	.035 (0.9) +/- .005 (0.1)	1	150	B30-R4300
BBP33	Fig. 20	B33-1500-2-7642	B-7642	White	N/A	0.750 (19.0) - 1.400 (35.6)	1.500 (38.1)	0.752 (19.1)	.040 (1.0) +/- .006 (0.2)	1	50	B30-R4300
BBP33	Fig. 20	B33-2000-2-7642	B-7642	White	N/A	1.000 (25.4) - 1.900 (48.3)	2.000 (50.8)	1.000 (25.4)	.045 (1.1) +/- .007 (0.2)	1	50	B30-R4300
3:1 Double-side printable, 2" sleeve width (diagram side A):												
BBP33	Fig. 20	B33D-94-2-7642	B-7642	White	24 to 20	0.047 (1.2) - 0.080 (2.0)	0.094 (2.4)	0.047 (1.2)	.020 (0.5) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33D-125-2-7642	B-7642	White	20 to 16	0.062 (1.6) - 0.110 (2.8)	0.125 (3.2)	0.063 (1.6)	.020 (0.5) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33D-187-2-7642	B-7642	White	16 to 10	0.094 (2.4) - 0.151 (3.8)	0.187 (4.8)	0.094 (2.4)	.020 (0.5) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33D-250-2-7642	B-7642	White	12 to 8	0.125 (3.2) - 0.215 (5.5)	0.250 (6.4)	0.126 (3.2)	.025 (0.6) +/- .003 (0.07)	1	500	B30-R4300
BBP33	Fig. 20	B33D-375-2-7642	B-7642	White	8 to 4	0.188 (4.8) - 0.320 (8.1)	0.375 (9.5)	0.189 (4.8)	.025 (0.6) +/- .003 (0.07)	1	250	B30-R4300
BBP33	Fig. 20	B33D-500-2-7642	B-7642	White	6 to 1	0.250 (6.4) - 0.450 (11.4)	0.500 (12.7)	0.252 (6.4)	.025 (0.6) +/- .003 (0.07)	1	250	B30-R4300
BBP33	Fig. 20	B33D-750-2-7642	B-7642	White	2 to 4/0	0.375 (9.5) - 0.700 (17.8)	0.750 (19.0)	0.374 (9.5)	.030 (0.8) +/- .003 (0.07)	1	150	B30-R4300
BBP33	Fig. 20	B33D-1000-2-7642	B-7642	White	2/0 to 0.950 dia	0.450 (11.4) - 0.950 (24.1)	1.000 (25.4)	0.500 (12.7)	.035 (0.9) +/- .005 (0.1)	1	150	B30-R4300
BBP33	Fig. 20	B33D-1500-2-7642	B-7642	White	N/A	0.750 (19.0) - 1.400 (35.6)	1.500 (38.1)	0.752 (19.1)	.040 (1.0) +/- .006 (0.2)	1	50	B30-R4300
BBP33	Fig. 20	B33D-2000-2-7642	B-7642	White	N/A	1.000 (25.4) - 1.900 (48.3)	2.000 (50.8)	1.000 (25.4)	.045 (1.1) +/- .007 (0.2)	1	50	B30-R4300

BBP®33 Printer Ribbons on page 109.
Full Material Properties on page 187.