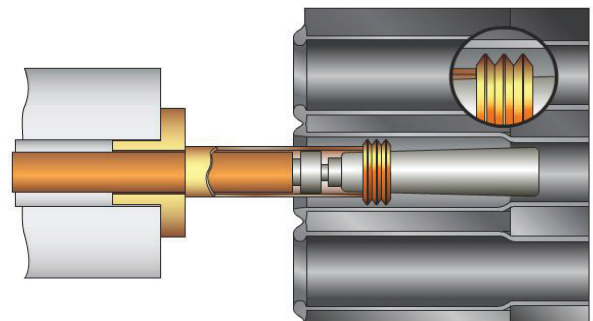


Pop-A-Plug® CPI/Perma Heat Exchanger & Condenser Tube Plugging System

Fast, Safe and Reliable Way to Seal Leaking Heat Exchangers & Condensers Tubes

Pop-A-Plug® CPI/Perma tube plugs are resistant to thermal cycling and are able to provide a seal that is helium leak tight. Pop-A-Plug® CPI/Perma tube plug installs using a controlled force. This protects against damage to tubesheet ligaments and adjacent tubesheet joints, extending the life of your heat exchanger and reducing total operating cost.

- **Fast** - Simple hydraulic installation significantly reduces turnaround/down time
- **Safe** - Pressure rated to 1,000 PsiG (69 BarG)
- **Reliable** - Provides helium leak tight seal to 1×10^{-6} cc/sec
- Lowest life cycle cost compared to alternative plugging methods
- Permanent solution, engineered for optimal performance throughout the life cycle of the heat exchanger
- Unique breakaway controls installation force for consistent repeatable results
- Eliminates need for welding or explosives
- Standard sizes - 0.472" - 2.067" (11.99mm - 52.50mm)
- Larger sizes and/or special materials available upon request
- Available in - Brass, Carbon Steel, 316 Stainless Steel, 304 Stainless Steel, 4142 Alloy, 70/30 CU/Ni, 90/10 CU/Ni, Monel, Titanium, Duplex 2205, Chromoly Grade 11, Chromoly Grade 22.
- Engineered solution - Fast installation without ligament or roll joint damage
- Designed to be a Through-The-Tube plugging solution. Allows the tube plug to be passed through the length of a straight through-tube heat exchanger and installs in the tubesheet without removing the bundle or far end cover.
- 24/7 Emergency manufacturing service available
- Patented internal & external serrated ring (USA #5,437,310)
- Compliant with several QA Systems, including; ANSI N45.2, 10 CFR 50 App. B, and 10 CFR 21
- Manufactured in an ISO 9001:2008 registered facility



**Contact EST Group for information on installation and removal equipment
or visit www.cw-estgroup.com**

Part Number	Tube I.D. Range (inches(mm))	Pin Length (inches(mm))	Brush Kit (hard alloys)	Brush Kit (soft alloys)	Positioner	Pull Rod Assembly	Channel Head Pull Rod Assembly
V-471-Q	0.472 - 0.515 (11.99 - 13.08)	1.630 (41.40)	BSH-471-HT	BSH-471	P-471	PA-471	CPA-471-YY
V-491-Q	0.492 - 0.540 (12.50 - 13.72)	1.670 (42.42)	BSH-491-HT	BSH-491	P-491	PA-491	CPA-491-YY
V-512-Q	0.513 - 0.562 (13.03 - 14.27)	1.590 (40.39)	BSH-512-HT	BSH-512	P-512	PA-512	CPA-512-YY
V-524-Q	0.525 - 0.585 (13.34 - 14.86)	1.280 (32.51)	BSH-524-HT	BSH-524	P-524	PA-524	CPA-524-YY
V-555-Q	0.556 - 0.616 (14.12 - 15.65)	1.400 (35.56)	BSH-555-HT	BSH-555	P-555	PA-555	CPA-555-YY
V-584-Q	0.585 - 0.649 (14.86 - 16.48)	1.320 (33.53)	BSH-584-HT	BSH-584	P-584	PA-584	CPA-584-YY
V-621-Q	0.622 - 0.689 (15.80 - 17.50)	1.570 (39.88)	BSH-621-HT	BSH-621	P-621	PA-621	CPA-621-YY
V-649-Q	0.650 - 0.713 (16.51 - 18.11)	1.320 (33.53)	BSH-649-HT	BSH-649	P-649	PA-649	CPA-649-YY
V-670-Q	0.671 - 0.740 (17.04 - 18.80)	1.660 (42.16)	BSH-670-HT	BSH-670	P-670	PA-670	CPA-670-YY
V-712-Q	0.713 - 0.777 (18.11 - 19.74)	1.320 (33.53)	BSH-712-HT	BSH-712	P-712	PA-712	CPA-712-YY
V-735-Q	0.736 - 0.810 (18.69 - 20.57)	1.680 (42.67)	BSH-735-HT	BSH-735	P-735	PA-735	CPA-735-YY
V-774-Q	0.775 - 0.838 (19.69 - 21.29)	1.320 (33.53)	BSH-774-HT	BSH-774	P-774	PA-774	CPA-774-YY
V-804-Q	0.805 - 0.890 (20.45 - 22.61)	1.700 (43.18)	BSH-804-HT	BSH-804	P-804	PA-804	CPA-804-YY
V-837-Q	0.838 - 0.902 (21.29 - 22.91)	1.320 (33.53)	BSH-837-HT	BSH-837	P-837	PA-837	CPA-837-YY
V-853-Q	0.854 - 0.949 (21.69 - 24.10)	1.720 (43.69)	BSH-853-HT	BSH-853	P-853	PA-853	CPA-853-YY
V-899-Q	0.900 - 0.963 (22.86 - 24.46)	1.320 (33.53)	BSH-899-HT	BSH-899	P-899	PA-899	CPA-899-YY
V-919-Q	0.920 - 1.019 (23.37 - 25.88)	1.760 (44.70)	BSH-919-HT	BSH-919	P-919	PA-919	CPA-919-YY
V-962-Q	0.963 - 1.027 (24.46 - 26.09)	1.320 (33.53)	BSH-962-HT	BSH-962	P-962	PA-962	CPA-962-YY
V-979-Q	0.980 - 1.079 (24.89 - 27.41)	1.820 (46.23)	BSH-979-HT	BSH-979	P-979	PA-979	CPA-979-YY
V-1024-Q	1.025 - 1.088 (26.04 - 27.64)	1.320 (33.53)	BSH-1024-NY	BSH-1024-NY	P-1024	PA-1024	CPA-1024-YY
V-1054-Q	1.055 - 1.154 (26.80 - 29.31)	1.900 (48.26)	BSH-1054-NY	BSH-1054-NY	P-1054	PA-1054	CPA-1054-YY
V-1087-Q	1.088 - 1.152 (27.64 - 29.26)	1.320 (33.53)	BSH-1087-NY	BSH-1087-NY	P-1087	PA-1087	CPA-1087-YY
V-1103-Q	1.104 - 1.203 (28.04 - 30.56)	1.900 (48.26)	BSH-1103-NY	BSH-1103-NY	P-1149	PA-1103	CPA-1103-YY
V-1149-Q	1.150 - 1.213 (29.21 - 30.81)	1.320 (33.53)	BSH-1149-NY	BSH-1149-NY	P-1149	PA-1149	CPA-1149-YY
V-1171-Q	1.172 - 1.270 (29.77 - 32.26)	2.000 (50.80)	BSH-1171-NY	BSH-1171-NY	P-1171	PA-1171	CPA-1171-YY
V-1212-Q	1.213 - 1.336 (30.81 - 33.93)	2.000 (50.80)	BSH-1212-NY	BSH-1212-NY	P-1212	PA-1212	CPA-1212-YY
V-1334-Q	1.335 - 1.458 (33.91-37.03)	2.000 (50.80)	BSH-1334-NY	BSH-1334-NY	P-1334	PA-1334L	CPA-1334L-YY
V-1456-Q	1.457 - 1.579 (37.01-40.11)	2.000 (50.80)	BSH-1456-NY	BSH-1456-NY	P-1456	PA-1456L	CPA-1456L-YY
V-1578-Q	1.579 - 1.701 (40.11-43.21)	2.000 (50.80)	BSH-1578-NY	BSH-1578-NY	P-1578	PA-1578L	CPA-1578L-YY
V-1700-Q	1.701 - 1.823 (43.21-46.30)	2.000 (50.80)	BSHV-1700-NY	BSHV-1700-NY	P-1700	PA-1700L	CPA-1700L-YY
V-1822-Q	1.823 - 1.945 (46.30-49.40)	2.000 (50.80)	BSH-1822-NY	BSH-1822-NY	P-1822	PA-1822L	CPA-1822L-YY
V-1944-Q	1.945 - 2.067 (49.40-52.50)	2.000 (50.80)	BSH-1944-NY	BSH-1944-NY	P-1944	PA-1944L	CPA-1944L-YY

Specifications subject to change without notice. See DC1224 for more information.

Ordering Information

Please supply the following information when ordering:

- Tube O.D. and wall thickness; or measured tube I.D.
- Tube material and/or tubesheet material
- Maximum pressure and temperature
- The type of tube-to-tubesheet joint (rolled, welded, etc.)
- Each kit includes a Go/ No-Go Gage for ensuring proper plug size (Brush kits and installation equipment sold separately.)

Standard Materials

- The suffix Q in the Part Number column is a plug material designator.
- Replace Q with one of the following: (B) for Brass, (C) for Carbon Steel, (S) for 316 Stainless Steel, (E) for 304 Stainless Steel, (A) for 4142 Alloy, (H) for 70/30 CU/Ni, (N) for 90/10 CU/Ni, (M) for Monel, (D) for Duplex 2205, (F11) for Chromoly Grade 11, (F22) for Chromoly Grade 22.
- (T) Titanium plugs do not have the same tube I.D. range. Please consult factory for ranges.
- The suffix (YY) in the Pull Rod Assembly column signifies the length, in feet, of the channel head extension. These parts are available in 1, 2, 3, 4, and 6 foot lengths (304.8, 609.6, 914.4, 1219.2 & 1828.8 mm). Add -01, -02, -03, etc. for the respective channel head extension length required.



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