

Tubular and Process Assemblies

Screw Plug Immersion Heaters

1/4" NPT Screw Plug – WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.			Est. Ship.
			120V~(ac) 1-Phase	120/240V~(ac) 1-Phase	240V~(ac) 1-Phase	Weight lbs (kg)

Application: Clean Water

60 W/in² Brass Plug	0.5	4 3/8 (111)	BDC4G1		BDC4G10	3 (2)
	0.75	6 3/8 (162)	BDC6G1		BDC6G10	3 (2)
1-Copper (9.3 W/cm ²)	1.0	4 3/8 (111)		BEC4G6		4 (2)
	1.5	6 3/8 (162)		BEC6G6		4 (2)
	2.0	8 1/2 (216)		BEC8J6		5 (3)
	2.5	10 3/4 (273)		BEC10N6		5 (3)
	3.0	15 (381)		BEC15A6		6 (3)
	4.0	19 (483)			BEC19A10	7 (4)
	5.0	23 1/2 (597)			BEC23J10	8 (4)
	6.0	27 1/2 (699)			BEC27J10	9 (4)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in² Steel Plug	0.5	6 3/8 (162)		BES6G6		4 (2)
	0.5	7 3/8 (187)		BES7G6		4 (2)
2-Steel (3.6 W/cm ²)	0.7	8 3/8 (225)		BES8R6		5 (3)
	0.75	10 1/8 (256)		BES10B6		5 (3)
	1.0	12 3/4 (324)		BES12N6		6 (3)
	1.5	19 3/8 (492)		BES19G6		7 (4)
	2.0	25 3/8 (645)		BES25G6		8 (4)
	3.0	36 3/8 (937)		BES36R6		9 (4)

Applications: Forced Air and Gases, Caustic Solutions, Degreasing Solutions

23 W/in² 304 SS Plug	1.0	13 3/8 (340)		BEN13G6		6 (3)
2-Incoloy® (3.6 W/cm ²)	1.5	19 (483)		BEN19A6		7 (4)
	2.0	24 3/8 (619)		BEN24G6		8 (4)

1/4" NPT Screw Plug– FIREBAR Element

FIREBAR Description	kW	Immersed B-Dimension inch (mm)	Code No.			Est. Ship.
			240V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 3-Phase	Weight lbs (kg)

Applications: Clean and Potable Water

90 W/in² 304 SS Plug 1-Incoloy® (14 W/cm ²)	1.5	7 3/8 (194)	BDNF7R10 ② ⑦		BDNF7R11 ② ⑦	5 (3)
	3.0	11 1/8 (283)	BDNF11G10 ② ⑦		BDNF11G11 ② ⑦	6 (3)
	5.0	16 3/8 (410)		BDNF16G3	BDNF16G5	7 (4)
	6.5	19 3/8 (486)		BDNF19G3	BDNF19G5	8 (4)
	8.5	24 3/8 (619)		BDNF24L3	BDNF24L5	9 (4)
	10.5	29 3/8 (753)		BDNF29R3	BDNF29R5	10 (5)
	12.7	34 3/8 (879)		BDNF34R3	BDNF34R5	11 (5)
	17.0	45 3/8 (1146)		BDNF45G3	BDNF45G5	13 (6)
	21.5	55 3/8 (1413)			BDNF55R5	15 (7)

All heating elements are Assembly Stock unless otherwise noted.

Availability
Assembly Stock: Three to five working days
Standard: 10 working days

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- ② Standard
- ④ Wired for higher voltage.
- ⑦ Not available as 3-phase – 1-phase only.
- ⑧ Can be wired 1-phase.

Tubular and Process Assemblies

Screw Plug Immersion Heaters

1¼" NPT Screw Plug – FIREBAR Element

FIREBAR Description	kW	Immersed B Dimension inch (mm)	Code No.			Est. Ship. Weight lbs (kg)
			240V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 3-Phase	

Applications: Process Water, Ethylene Glycol (50%)

45 W/in ² ®	2.0	13 (330)		BDNF13A27		6 (3)
304 SS Plug	2.5	15½ (394)		BDNF15J27		7 (4)
1-Incoloy®	3.0	18 (457)		BDNF18A27		8 (4)
(7 W/cm ²)	4.0	22½ (572)		BDNF22J27	BDNF22J28	9 (4)
	5.0	27½ (699)		BDNF27J27	BDNF27J28	10 (5)
	6.0	32½ (826)		BDNF32J27	BDNF32J28	11 (5)
	8.0	42 (1067)		BDNF42A27	BDNF42A28	13 (6)
	10.0	51½ (1308)		BDNF51J27	BDNF51J28	15 (7)

Applications: Cooking Oils, Ethylene Glycol (100%)

30 W/in ² ®	1.7	16½ (410)		BDNF16G12	BDNF16G13	7 (4)
304 SS Plug	2.2	19½ (486)		BDNF19G12	BDNF19G13	8 (4)
1-Incoloy®	2.8	24% (619)		BDNF24L12	BDNF24L13	9 (4)
(4.7 W/cm ²)	3.5	29% (752)		BDNF29R12	BDNF29R13	10 (5)
	4.25	34% (880)		BDNF34R12	BDNF34R13	11 (5)
	5.7	45% (1146)		BDNF45G12	BDNF45G13	13 (6)
	7.2	55% (1413)		BDNF55R12	BDNF55R13	15 (7)

Applications: Heat Transfer Oils, Mineral Oils, Degreasing Solutions

23 W/in ² ®	1.25	16½ (410)		BDNF16G20		7 (4)
304 SS Plug	1.65	19½ (486)		BDNF19G20		8 (4)
1-Incoloy®	2.15	24% (619)		BDNF24L20	BDNF24L19	9 (4)
(3.6 W/cm ²)	2.65	29% (752)		BDNF29R20	BDNF29R19	10 (5)
	3.2	34% (879)		BDNF34R20	BDNF34R19	11 (5)
	4.25	45% (1146)		BDNF45G20	BDNF45G19	13 (6)
	5.4	55% (1413)		BDNF55R20	BDNF55R19	15 (6)

Applications: Medium Weight Oils, Heat Transfer Oils, Lubrication Oils, Liquid Paraffin

15 W/in ² ®	0.67	13 (330)		BDNF13A29		6 (3)
304 SS Plug	0.83	15½ (394)		BDNF15J29		7 (4)
1-Incoloy®	1.0	18 (457)		BDNF18A29		8 (4)
(2.3 W/cm ²)	1.33	22½ (572)		BDNF22J29	BDNF22J30	9 (4)
	1.67	27½ (699)		BDNF27J29	BDNF27J30	10 (5)
	2.0	32½ (826)		BDNF32J29	BDNF32J30	11 (5)
	2.67	42 (1067)		BDNF42A29	BDNF42A30	13 (6)
	3.33	51½ (1308)		BDNF51J29	BDNF51J30	15 (7)

Applications: Bunker C and #6 Fuel Oils, Asphalt

8 W/in ² ®	0.43	16½ (410)		BDNF16G22		7 (4)
304 SS Plug	0.55	19½ (486)		BDNF19G22		8 (4)
1-Incoloy®	0.7	24% (619)		BDNF24L22	BDNF24L21	9 (4)
(1.3 W/cm ²)	0.88	29% (753)		BDNF29R22	BDNF29R21	10 (5)
	1.08	34% (880)		BDNF34R22	BDNF34R21	11 (5)
	1.4	45% (1146)		BDNF45G22	BDNF45G21	13 (6)
	1.8	55% (1413)		BDNF55R22	BDNF55R21	15 (7)

③ Must be operated 3-phase only.

⑧ Can be wired 1-phase.

All heating elements are Assembly Stock unless otherwise noted.

Availability
Assembly Stock: Three to five working days

Tubular and Process Assemblies

Screw Plug Immersion Heaters

2" NPT Screw Plug – WATROD Element (Note: Will not fit into a two inch pipe)

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.					Est. Ship. Weight lbs (kg)
			120V~(ac) 1-Phase	120/240V~(ac) 1-Phase	240/480V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 3-Phase	

Application: Clean Water

60 W/in² ④ Brass Plug 2-Copper (9.3 W/cm ²)	2.0	8 1/8 (206)		BGC78C6	BGC78C7			4 (2)
	3.0	11 1/8 (283)		BGC711C6	BGC711C7			5 (3)
	4.0	15 1/8 (384)		BGC715C6	BGC715C7			6 (3)
	5.0	18 1/8 (460)		BGC718C6	BGC718C7 ②			6 (3)
	6.0	21 1/8 (537)			BGC721C7			7 (4)
60 W/in² Brass Plug 3-Copper (9.3 W/cm ²)	8.0	26 5/8 (676)			BGC726L7			7 (4)
	10.0	32 1/8 (816)			BGC732C7			8 (4)
	3.0	8 1/8 (206)	BHC78C1			BHC78C3	BHC78C13 ②③	5 (3)
	4.5	11 1/8 (283)	BHC711C1			BHC711C3	BHC711C5	6 (3)
	6.0	15 1/8 (384)				BHC715C3	BHC715C5	7 (4)
60 W/in² Brass Plug 3-Copper (9.3 W/cm ²)	7.5	18 1/8 (460)				BHC718C3	BHC718C5	7 (4)
	9.0	21 1/8 (537)				BHC721C3	BHC721C5	8 (4)
	12.0	26 5/8 (676)				BHC726L3	BHC726L5	8 (4)
	15.0	32 1/8 (816)				BHC732C3	BHC732C5	9 (4)

Application: Process Water

48 W/in² ④ 304 SS Plug 2-Incoloy® (7.5 W/cm ²)	2.0	9 3/4 (248)		BGN79N6	BGN79N7			4 (2)
	3.0	13 3/4 (337)		BGN713E6	BGN713E7			5 (3)
	4.0	17 3/4 (451)		BGN717N6	BGN717N7			6 (3)
	5.0	20 3/4 (514)		BGN720E6	BGN720E7			7 (4)
	6.0	25 3/4 (641)			BGN725E7			7 (4)
48 W/in² ⑤ 304 SS Plug 3-Incoloy® (7.5 W/cm ²)	8.0	32 3/4 (832)			BGN732N7			8 (4)
	10.0	40 3/4 (1022)			BGN740E7			9 (4)
	3.0	9 3/4 (248)	BHN79N1			BHN79N3 ②	BHN79N5	5 (3)
	4.5	13 3/4 (337)	BHN713E1			BHN713E3 ②	BHN713E5 ②	6 (3)
	6.0	17 3/4 (451)				BHN717N3 ②	BHN717N5 ②	7 (4)
48 W/in² ⑤ 304 SS Plug 3-Incoloy® (7.5 W/cm ²)	7.5	20 3/4 (514)				BHN720E3 ②	BHN720E5 ②	8 (4)
	9.0	25 3/4 (641)				BHN725E3 ②	BHN725E5 ②	9 (4)
	12.0	32 3/4 (832)				BHN732N3 ②	BHN732N5 ②	9 (4)
	15.0	40 3/4 (1022)				BHN740E3	BHN740E5 ②	10 (5)
	18.0	47 3/4 (1213)				BHN747N3 ②	BHN747N5 ②	11 (5)

CONTINUED 

All heating elements are Assembly Stock unless otherwise noted.

Availability

Assembly Stock: Three to five working days

② Stock

③ Must be operated 3-phase only.

④ Wired for higher voltage.

⑤ 240V~(ac) can be wired wye and operated at 480V~(ac) 3-phase to produce 1/3 more kW

Tubular and Process Assemblies

Screw Plug Immersion Heaters

2" NPT Screw Plug – WATROD Element (Note: Will not fit into a two inch pipe)

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.					Est. Ship.
			120V~(ac) 1-Phase	120/240V~(ac) 1-Phase	240/480V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 3-Phase	Weight lbs (kg)

Applications: Forced Air and Gases, Caustic Solutions, Degreasing Solutions

23 W/in ² ^{⑤⑥} 304 SS Plug 3-Incoloy® (3.6 W/cm ²)	3.0	17 ¼ (451)	BHNA17N1			BHNA17N3 ^①	BHNA17N5 ^①	7 (4)
	4.5	25 ¼ (641)	BHNA25E1			BHNA25E3	BHNA25E5	9 (4)
	6.0	32 ¼ (832)				BHNA32N3	BHNA32N5 ^①	9 (4)
	7.5	40 ¼ (1022)				BHNA40E3	BHNA40E5	10 (5)
	9.0	47 ¼ (1213)				BHNA47N3	BHNA47N5	11 (5)
	12.5	64 ¼ (1632)				BHNA64E3	BHNA64E5	15 (7)
15.0	76 ¼ (1950)				BHNA76E3	BHNA76E5	18 (9)	

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in ² ^④ Steel Plug 2-Steel (3.6 W/cm ²)	1.0	9 ½ (241)		BGS79J6	BGS79J7			4 (2)
	1.5	13 ½ (343)		BGS713J6 ^①	BGS713J7 ^①			5 (3)
	2.0	17 ½ (445)		BGS717J6 ^①	BGS717J7			6 (3)
	2.5	20 ½ (521)		BGS720J6	BGS720J7			7 (4)
	3.0	25 (635)		BGS725A6	BGS725A7			7 (4)
	4.0	32 ½ (826)		BGS732J6	BGS732J7			8 (4)
23 W/in ² Steel Plug 3-Steel (3.6 W/cm ²)	5.0	40 (1016)		BGS740A6	BGS740A7			9 (4)
	6.0	47 ½ (1207)			BGS747J7			10 (5)
	1.5	9 ½ (241)	BHS79J1			BHS79J3	BHS79J13 ^③	5 (3)
	3.0	17 ½ (445)	BHS717J1			BHS717J3	BHS717J5 ^①	7 (4)
	4.5	25 (635)	BHS725A1			BHS725A3	BHS725A5	9 (4)
	6.0	32 ½ (826)				BHS732J3	BHS732J5	12 (6)
	7.5	40 (1016)				BHS740A3	BHS740A5	13 (6)
	9.0	47 ½ (1207)				BHS747J3	BHS747J5	13 (6)
	12.5	64 (1626)				BHS764A3	BHS764A5	17 (8)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in ² ^③ 304 SS Plug 3-Incoloy® (2.5 W/cm ²)	1.0	9 ¼ (248)				BHN79N12	BHN79N13	5 (3)
	1.5	13 ¼ (337)				BHN713E12	BHN713E13	6 (3)
	2.0	17 ¼ (451)				BHN717N12	BHN717N13	7 (4)
	2.5	20 ¼ (514)				BHN720E12	BHN720E13	8 (4)
	3.0	25 ¼ (641)				BHN725E12	BHN725E13	9 (4)
	4.0	32 ¼ (832)				BHN732N12	BHN732N13	9 (4)
15 W/in ² Steel Plug 3-Steel (2.3 W/cm ²)	5.0	40 ¼ (1022)				BHN740E12	BHN740E13	10 (5)
	6.0	47 ¼ (1213)				BHN747N12	BHN747N13	11 (5)
	1.5	13 ¼ (337)				BHSS13E3	BHSS13E13 ^③	6 (4)
	2.0	17 ½ (445)				BHSS17J3	BHSS17J5	7 (4)
	2.5	20 ½ (521)				BHSS20J3	BHSS20J5	8 (4)
	3.0	25 (635)				BHSS25A3	BHSS25A5	9 (4)
	4.0	32 ½ (826)				BHSS32J3	BHSS32J5	12 (6)
	5.0	40 (1016)				BHSS40A3	BHSS40A5	13 (6)
	6.0	47 ½ (1207)				BHSS47J3	BHSS47J5	13 (6)
7.5	58 ½ (1486)				BHSS58J3	BHSS58J5	16 (8)	
9.0	69 ¼ (1772)				BHSS69N3	BHSS69N5	20 (9)	

All heating elements are Assembly Stock unless otherwise noted.

Availability

Assembly Stock: Three to five working days
Stock: Same day shipment

① Stock

③ 3-phase wye only.

④ Wired for higher voltage.

⑤ 240V~(ac) can be wired wye and operated at 480V~(ac) 3-phase to produce ½ more kW and watt density.

⑥ Can be rewired wye to produce ½ of original kW and watt density (3-phase only).

Tubular and Process Assemblies

Screw Plug Immersion Heaters

2½" NPT Screw Plug – WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.			Est. Ship. Weight lbs (kg)
			120V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 3-Phase	

Applications: Deionized Water, Demineralized Water

60 W/in ²	3.0	7% (194)	BLR77L1	BLR77L3	BLR77L5	6 (3)
316 SS Plug	4.5	10% (270)	BLR710L1	BLR710L3	BLR710L5	7 (4)
3-316 SS	6.0	14% (372)		BLR714L3	BLR714L5	9 (4)
Passivated (9.3 W/cm ²)	7.5	17% (448)		BLR717L3	BLR717L5	9 (4)
	9.0	20% (524)		BLR720L3	BLR720L5	11 (5)
	12.0	26% (664)		BLR726C3	BLR726C5	12 (6)
	15.0	31% (803)		BLR731L3	BLR731L5	14 (7)
	18.0	37% (943)		BLR737C3	BLR737C5	15 (7)

Application: Clean Water

60 W/in ²	3.0	7% (194)	BLC77L1	BLC77L3	BLC77L13	6 (3)
Brass Plug	4.5	10% (270)	BLC710L1	BLC710L3	BLC710L5	7 (4)
3-Copper	6.0	14% (371)		BLC714L3	BLC714L5	9 (4)
(9.3 W/cm ²)	7.5	17% (448)		BLC717L3	BLC717L5	9 (4)
	9.0	20% (524)		BLC720L3	BLC720L5 ^①	11 (5)
	12.0	26% (664)		BLC726C3	BLC726C5 ^①	12 (6)
	15.0	31% (803)		BLC731L3	BLC731L5	14 (7)
	18.0	37% (943)		BLC737C3	BLC737C5	15 (7)

Application: Process Water

48 W/in ²	3.0	9% (238)	BLN79G1	BLN79G3	BLN79G5	6 (3)
304 SS Plug	4.5	12% (327)	BLN712R1	BLN712R3	BLN712R5	7 (4)
3-Incoloy®	6.0	17% (441)		BLN717G3	BLN717G5 ^①	9 (4)
(7.5 W/cm ²)	7.5	19% (505)		BLN719R3	BLN719R5	11 (5)
	9.0	24% (632)		BLN724R3	BLN724R5 ^①	12 (6)
	12.0	32% (822)		BLN732G3	BLN732G5 ^①	14 (7)
	15.0	39% (1013)		BLN739R3	BLN739R5	15 (7)
	18.0	47% (1203)		BLN747G3	BLN747G5 ^①	17 (8)

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All heating elements are Assembly Stock unless otherwise noted.

① Stock

Availability

Assembly Stock: Three to five working days

Stock: Same day shipment

Tubular and Process Assemblies

Screw Plug Immersion Heaters

2½" NPT Screw Plug – WATROD Element

WATROD Description	kW	Immersed B Dimension inch (mm)	Code No.			Est. Ship. Weight lbs (kg)
			120V~(ac) 1-Phase	240V~(ac) 3-Phase	480V~(ac) 3-Phase	

Applications: Forced Air and Gases, Caustic Solutions, Degreasing Solutions

23 W/in² ⑤⑥	3.0	17¼ (441)	BLNA17G1	BLNA17G3	BLNA17G5	9 (4)
304 SS Plug	4.5	24¾ (632)	BLNA24R1	BLNA24R3	BLNA24R5	12 (5)
3-Incoloy®	6.0	32¾ (822)		BLNA32G3	BLNA32G5 ①	14 (7)
(3.6 W/cm ²)	7.5	39¾ (1013)		BLNA39R3	BLNA39R5	15 (7)
	9.0	47¾ (1203)		BLNA47G3	BLNA47G5	17 (8)
	12.5	63¾ (1622)		BLNA63R3	BLNA63R5	20 (9)
	15.0	76¾ (1940)		BLNA76G3	BLNA76G5	23 (11)

Applications: Lightweight Oils, Degreasing Solutions, Heat Transfer Oils

23 W/in² ⑥	3.0	17¼ (438)	BLS717E1	BLS717E3	BLS717E5 ①	9 (4)
Steel Plug	4.5	24¾ (629)	BLS724N1	BLS724N3	BLS724N5	12 (6)
3-Steel	6.0	32¾ (819)		BLS732E3	BLS732E5 ①	14 (7)
(3.6 W/cm ²)	7.5	39¾ (1010)		BLS739N3	BLS739N5	15 (7)
	9.0	47¾ (1200)		BLS747E3	BLS747E5	17 (8)
	12.5	63¾ (1619)		BLS763N3	BLS763N5	20 (9)
	15.0	76¾ (1937)		BLS776E3	BLS776E5	27 (13)

Applications: Medium Weight Oils, Heat Transfer Oils, Liquid Paraffin

16 W/in² ③	1.0	9¾ (238)		BLN79G12	BLN79G13	6 (3)
304 SS Plug	1.5	12¾ (327)		BLN712R12	BLN712R13	7 (4)
3-Incoloy®	2.0	17¾ (441)		BLN717G12	BLN717G13	9 (4)
(2.5 W/cm ²)	2.5	19¾ (505)		BLN719R12	BLN719R13	11 (5)
	3.0	24¾ (632)		BLN724R12	BLN724R13	12 (6)
	4.0	32¾ (822)		BLN732G12	BLN732G13	14 (7)
	5.0	39¾ (1013)		BLN739R12	BLN739R13	15 (7)
	6.0	47¾ (1203)		BLN747G12	BLN747G13	17 (8)

Applications: Bunker C and #6 Fuel Oils

8 W/in² ③	1.0	17¼ (438)		BLS717E12	BLS717E13	9 (4)
Steel Plug	1.5	24¾ (629)		BLS724N12	BLS724N13	12 (6)
3-Steel	2.0	32¾ (819)		BLS732E12	BLS732E13	14 (7)
(1.3 W/cm ²)	2.5	39¾ (1010)		BLS739N12	BLS739N13	15 (7)
	3.0	47¾ (1200)		BLS747E12	BLS747E13	17 (8)
	4.0	63¾ (1619)		BLS763N12	BLS763N13	20 (9)
	5.0	76¾ (1937)		BLS776E12	BLS776E13	23 (11)

All heating elements are Assembly Stock unless otherwise noted.

Availability

Assembly Stock: Three to five working days

Stock: Same day shipment

① Stock

③ Must be operated 3-phase only.

⑤ 240V~(ac) can be wired wye and operated at 480V~(ac) 3-phase to produce ⅓ more kW and watt density.

⑥ Can be rewired wye to produce ⅓ of original kW and watt density (3-phase only).

Tubular and Process Assemblies

Screw Plug Immersion Heaters

2½" NPT Screw Plug – FIREBAR Element

FIREBAR Description	kW	Immersed B Dimension inch (mm)	Code No.		Est. Ship. Weight lbs (kg)
			240V~(ac) 3-Phase	480V~(ac) 3-Phase	

Applications: Clean and Potable Water

90 W/in ² ®	15	15 ½ (384)	BLNF15C3	BLNF15C5	10 (5)
304 SS Plug	20	18 ½ (460)	BLNF18C3	BLNF18C5 ③	12 (6)
3-Incoloy®	25	23 ½ (587)		BLNF23C5	14 (7)
(14 W/cm ²)	32	28 ½ (727)		BLNF28L5	17 (8)
	38	33 ½ (854)		BLNF33L5	18 (9)

Applications: Process Water, Ethylene Glycol (50%)

45 W/in ² ®	6	12 (305)	BLNF12A27		10 (5)
304 SS Plug	7.5	14 ½ (368)	BLNF14J27		11 (5)
3-Incoloy®	9	17 (432)	BLNF17A27		12 (6)
(7 W/cm ²)	12	21 ½ (546)	BLNF21J27	BLNF21J28	14 (7)
	15	26 ½ (673)	BLNF26J27	BLNF26J28	17 (8)
	18	31 ½ (800)	BLNF31J27	BLNF31J28	18 (9)
	24	41 (1041)		BLNF41A28	20 (9)
	30	50 ½ (1283)		BLNF50J28	22 (10)

Applications: Cooking Oils, Ethylene Glycol (100%)

30 W/in ² ®	5	15 ½ (384)	BLNF15C12	BLNF15C13	10 (5)
304 SS Plug	6.5	18 ½ (460)	BLNF18C12	BLNF18C13	12 (6)
3-Incoloy®	8.5	23 ½ (587)	BLNF23C12	BLNF23C13	14 (7)
(4.7 W/cm ²)	10.5	28 ½ (727)	BLNF28L12	BLNF28L13	17 (8)
	12.8	33 ½ (854)	BLNF33L12	BLNF33L13	18 (9)
	17	44 ½ (1121)	BLNF44C12	BLNF44C13	20 (9)
	21.5	54 ½ (1388)		BLNF54L13	22 (10)

Applications: Heat Transfer Oils, Mineral Oils, Degreasing Solutions

23 W/in ² ®	3.8	15 ½ (384)	BLNF15C20		10 (5)
304 SS Plug	4.9	18 ½ (460)	BLNF18C20		12 (6)
3-Incoloy®	6.4	23 ½ (587)	BLNF23C20	BLNF23C19	14 (7)
(3.6 W/cm ²)	7.9	28 ½ (727)	BLNF28L20	BLNF28L19	17 (8)
	9.6	33 ½ (854)	BLNF33L20	BLNF33L19	18 (9)
	12.8	44 ½ (1121)	BLNF44C20	BLNF44C19	20 (9)
	16.1	54 ½ (1387)	BLNF54L20	BLNF54L19	22 (10)

CONTINUED 

All heating elements are Assembly Stock unless otherwise noted.

Availability

Assembly Stock: Three to five working days

Stock: Same day shipment

③ Must be operated 3-phase only.

⑧ Can be wired 1-phase.

Tubular and Process Assemblies

Screw Plug Immersion Heaters

2½" NPT Screw Plug – FIREBAR Element

FIREBAR Description	kW	Immersed B Dimension inch (mm)	Code No.		Est. Ship. Weight lbs (kg)
			240V~(ac) 3-Phase	480V~(ac) 3-Phase	

Applications: Medium Weight Oils, Heat Transfer Oils, Lubrication Oils, Liquid Paraffin

15 W/in ² ③	2	12 (305)	BLNF12A29		10 (5)
304 SS Plug	2.5	14 ½ (368)	BLNF14J29		11 (5)
3-Incoloy®	3	17 (432)	BLNF17A29		12 (6)
(2.3 W/cm ²)	4	21 ½ (546)	BLNF21J29	BLNF21J30	14 (7)
	5	26 ½ (673)	BLNF26J29	BLNF26J30	17 (8)
	6	31 ½ (800)	BLNF31J29	BLNF31J30	18 (9)
	8	41 (1041)	BLNF41A29	BLNF41A30	20 (9)
	10	50 ½ (1283)	BLNF50J29	BLNF50J30	22 (10)

Applications: Bunker C and #6 Fuel Oils, Asphalt

8 W/in ² ③	1.25	15 ½ (384)	BLNF15C22		10 (5)
304 SS Plug	1.63	18 ½ (460)	BLNF18C22		12 (6)
3-Incoloy®	2.13	23 ½ (587)	BLNF23C22	BLNF23C21	14 (7)
(1.3 W/cm ²)	2.63	28 ½ (727)	BLNF28L22	BLNF28L21	17 (8)
	3.19	33 ½ (854)	BLNF33L22	BLNF33L21	18 (9)
	4.25	44 ½ (1121)	BLNF44C22	BLNF44C21	20 (9)
	5.38	54 ½ (1388)	BLNF54L22	BLNF54L21	22 (10)

All heating elements are Assembly Stock unless otherwise noted.

③ Must be operated 3-phase only.

Availability

Assembly Stock: Three to five working days

Stock: Same day shipment

Tubular and Process Assemblies

F.O.B.: Hannibal, Missouri

Screw Plug Immersion Heaters

Build-a-Code

Stock Screw Plug Code Number ① _____

(Includes general purpose terminal enclosure (NEMA 1))

Optional Terminal Enclosure _____

S = General purpose with thermostat (NEMA 1)

W = Moisture resistant (NEMA 4)

E = Explosion resistant (NEMA 7)

E/W = Explosion/moisture resistant (NEMA 7/4)

Optional Thermostat ② **or Thermocouple** ④ _____

Optional Pilot Light ③ _____

PL10 = 250V~(ac) Max.

PL11 = 480V~(ac) Max.

- ① Screw plug immersion heaters are supplied with a general purpose terminal enclosure (NEMA 1). A thermostat will not fit inside the standard 2⁵/₈ inch (67 mm) tall general purpose terminal enclosure. If a thermostat is required, a taller terminal enclosure will be supplied.
- ② Thermostat code numbers are shown in the *Thermostat Stock* chart on **page 425**.
- ③ Pilot lights are configured for general purpose enclosure (NEMA 1) applications. For pilot light availability with other terminal enclosure ratings, consult factory.
- ④ Specify Type J or K thermocouple. If overtemp thermocouple specify orientation horizontal, vertical up or vertical down.

How to Order

To order a stock screw plug heater, please specify:

- Watlow code number
- NPT screw plug size and material
- Volts/watts
- Phase
- Options
- Quantity

If our stock units do not meet your application needs, Watlow can provide made-to-order heaters. For a **made-to-order** unit, please specify:

- Application, including heated material, process temperature and flow rate, etc.
- Volts/watts
- Watt density
- Phase
- Screw plug size, style and material
- Element diameter
- Number of heating element(s)
- Sheath material
- Immersed ('B' dimension) length
- No-heat section below the plug
- Terminal enclosure type
- Options
- Quantity

Availability

Stock: Same day shipment

Assembly Stock: Three to five working days

Modified Stock ④: Five to seven working days

Standard: 10 working days

Made-to-Order: Four to six weeks

Options, complexity and quantity may affect availability and lead times. Consult factory.

④ Stock and assembly stock units with catalog options.

Tubular and Process Assemblies

Quick Ship

On stock chart units:

- Five working days on all heaters
- 10 working days on special voltages and/or wattages
- 15 working days on special element lengths

Screw Plug Immersion Heaters with Control Assembly

Constructed from a WATROD screw plug heater, a moisture resistant (NEMA 4) terminal enclosure and built-in temperature sensor and power control, this assembly comes pre-wired and ready for hook-up to any 120V~(ac) control circuit.

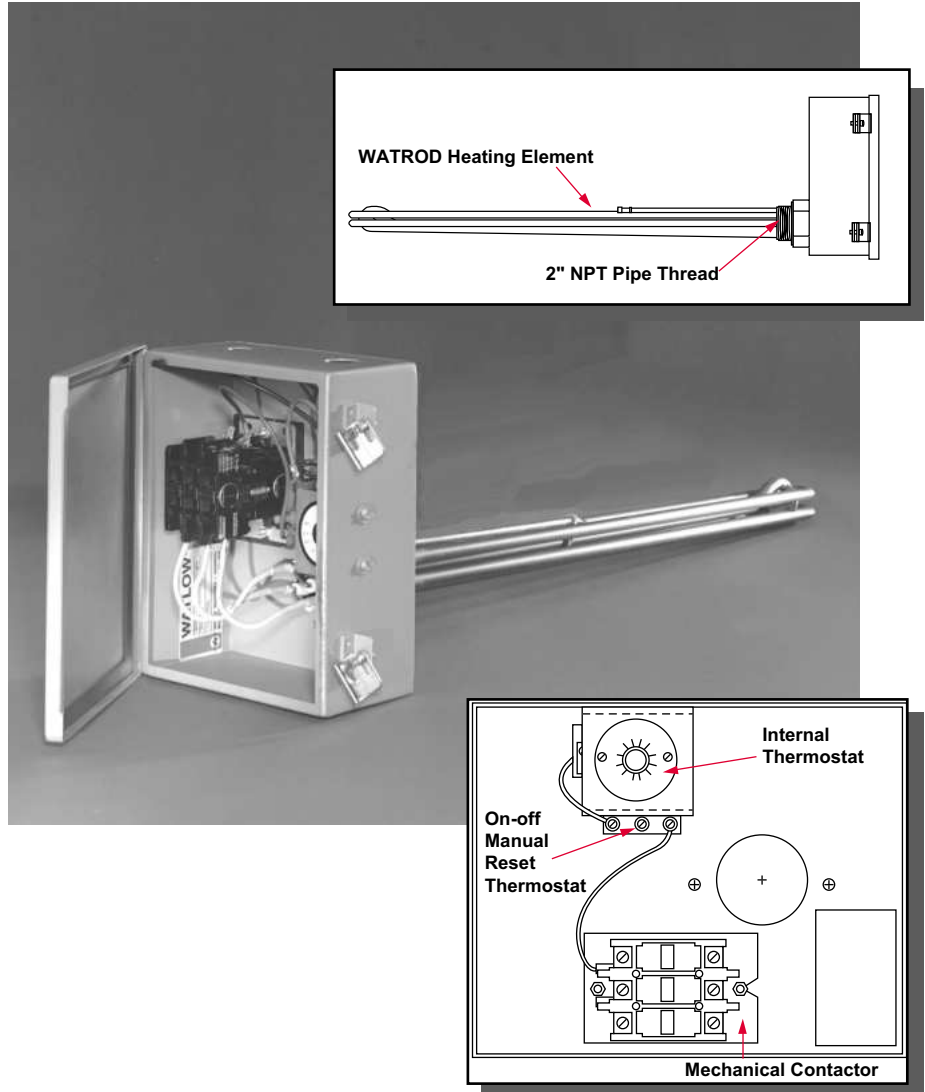
Optional sheath materials, NPT screw plug sizes and materials, wattages, voltages and terminal enclosures extend application versatility.

Performance Capabilities

- Watt densities to 60 W/in² (9.3 W/cm²)
- Wattages to 20kW
- Voltages to 600V~(ac)
- Incoloy® sheath temperatures to 1400°F (760°C)

Features and Benefits

- **Three 0.475 inch (12 mm) diameter WATROD elements** are brazed to a two inch NPT brass screw plug to produce a pressure-tight seal.
- **WATROD hairpins are repressed (recompacted)** after bending to maintain MgO density, dielectric strength, heat transfer and life.
- **Two built-in thermostats**, one on-off with manual reset, help ensure safe operation by automatically cycling on and off when process or sheath temperatures reach a predetermined set point selectable from 30° to 250°F (0° to 120°C).
- **Internal mechanical contactor** works on a 120V~(ac) control circuit to switch higher volts/amps to the heating elements.



- **Hinged, moisture resistant (NEMA 4) terminal enclosure** has two conduit openings to accommodate ¾ inch NPT conduit fittings.
- **Terminal enclosures can be rotated** to mate with existing conduits.
- **Thermowells** allow replacing the thermostat sensing element without draining the fluid being heated.

Applications

- Water heating
- Commercial dishwashers and glass washers
- Sterilizing equipment

Construction Features

Same as **Screw Plug Immersion Heaters**. See **pages 321 to 322** for details.

Application Hints

Same as **Screw Plug Immersion Heaters**. See **page 326** for details.

Accessories

Clamping Nut, Gasket and Washers—for mounting to thin-wall tanks, use optional clamping nut, gasket and washers. To order, specify **NGW**.