

# STEEL ELEMENT PIPE PLUG IMMERSION HEATERS

- Medium Watt Density
- Steel Pipe Plug

For Lightweight Oil Heating

For fluid heat transfer oils, synthetic heat transfer materials, maintaining or raising the temperature of bulk stored oils or other hydrocarbon materials to pumping viscosity, degreasing or solvent oil.

- See Watt Density and Operating Temperature Guideline (23T)
- See Corrosion Resistance of Sheath Materials (24T)

1" NPT—ONE ELEMENT				FIG. 1		FIG. 2		FIG. 3		FIG. 4	
WATTS	VOLTS	WATT/ SQ. IN.	B IMM. LENGTH	A TOTAL LENGTH	CATALOG NUMBER	C TOTAL LENGTH	CATALOG NUMBER	D TOTAL LENGTH	CATALOG NUMBER	E TOTAL LENGTH	CATALOG NUMBER
350	120	20	9%	13%	KE-1-0001-M1	12 <sup>1</sup> / <sub>16</sub>	KE-1-0001-M7	14 <sup>1</sup> / <sub>2</sub>	KE-1T1-0001-M1	16 <sup>3</sup> / <sub>16</sub>	KE-1T1-0001-M7
350	240	20			KE-1-0002-M1		KE-1-0002-M7		KE-1T1-0002-M1		KE-1T1-0002-M7
475	120	20	12 <sup>5</sup> / <sub>16</sub>	16 <sup>1</sup> / <sub>16</sub>	KE-1-0005-M1	16%	KE-1-0005-M7	17 <sup>1</sup> / <sub>16</sub>	KE-1T1-0005-M1	19%	KE-1T1-0005-M7
475	240	20			KE-1-0006-M1		KE-1-0006-M7		KE-1T1-0006-M1		KE-1T1-0006-M7
600	120	20	15 <sup>1</sup> / <sub>16</sub>	19 <sup>1</sup> / <sub>16</sub>	KE-1-0007-M1	19%	KE-1-0007-M7	20 <sup>1</sup> / <sub>16</sub>	KE-1T1-0007-M1	22%	KE-1T1-0007-M7
600	240	20			KE-1-0008-M1		KE-1-0008-M7		KE-1T1-0008-M1		KE-1T1-0008-M7
725	120	20	18%	23	KE-1-0009-M1	22%	KE-1-0009-M7	24%	KE-1T1-0009-M1	25 <sup>1</sup> / <sub>16</sub>	KE-1T1-0009-M7
725	240	20			KE-1-0010-M1		KE-1-0010-M7		KE-1T1-0010-M1		KE-1T1-0010-M7
850	120	20	22 <sup>5</sup> / <sub>16</sub>	26 <sup>3</sup> / <sub>16</sub>	KE-1-0011-M1	25%	KE-1-0011-M7	27 <sup>5</sup> / <sub>16</sub>	KE-1T1-0011-M1	29	KE-1T1-0011-M7
850	240	20			KE-1-0012-M1		KE-1-0012-M7		KE-1T1-0012-M1		KE-1T1-0012-M7
1100	120	20	28 <sup>3</sup> / <sub>16</sub>	32 <sup>3</sup> / <sub>16</sub>	KE-1-0013-M1	32%	KE-1-0013-M7	33 <sup>1</sup> / <sub>16</sub>	KE-1T1-0013-M1	35%	KE-1T1-0013-M7
1100	240	20			KE-1-0014-M1		KE-1-0014-M7		KE-1T1-0014-M1		KE-1T1-0014-M7
1325	120	19	34%	39	KE-1-0015-M1	38%	KE-1-0015-M7	40%	KE-1T1-0015-M1	41 <sup>1</sup> / <sub>16</sub>	KE-1T1-0015-M7
1325	240	19			KE-1-0016-M1		KE-1-0016-M7		KE-1T1-0016-M1		KE-1T1-0016-M7
1575	240	19	41 <sup>5</sup> / <sub>16</sub>	45 <sup>5</sup> / <sub>16</sub>	KE-1-0017-M1	44%	KE-1-0017-M7	46 <sup>5</sup> / <sub>16</sub>	KE-1T1-0017-M1	48%	KE-1T1-0017-M7

1 1/4" NPT—TWO ELEMENTS				FIG. 5		FIG. 6		FIG. 7		FIG. 8	
WATTS	VOLTS	WATT/ SQ. IN.	B IMM. LENGTH	A TOTAL LENGTH	CATALOG NUMBER	C TOTAL LENGTH	CATALOG NUMBER	D TOTAL LENGTH	CATALOG NUMBER	E TOTAL LENGTH	CATALOG NUMBER
1000	120	21	12 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>16</sub>	KH-2-0003-M1	16%	KH-2-0003-M7	18 <sup>5</sup> / <sub>16</sub>	KH-2T1-0003-M1	19%	KH-2T1-0003-M7
1000	240	21			KH-2-0004-M1		KH-2-0004-M7		KH-2T1-0004-M1		KH-2T1-0004-M7

2" NPT—TWO ELEMENTS				FIG. 13		FIG. 14		FIG. 15		FIG. 16	
KILO-WATTS	VOLTS	WATT/ SQ. IN.	B IMM. LENGTH	A TOTAL LENGTH	CATALOG NUMBER	C TOTAL LENGTH	CATALOG NUMBER	D TOTAL LENGTH	CATALOG NUMBER	E TOTAL LENGTH	CATALOG NUMBER
1.5	120	25	11%	16%	KB-2-0003-M1	16 <sup>5</sup> / <sub>16</sub>	KB-2-0003-M7	18%	KB-2T2-0003-M1	20 <sup>5</sup> / <sub>16</sub>	KB-2T2-0003-M7
1.5	240	25			KB-2-0004-M1		KB-2-0004-M7		KB-2T2-0004-M1		KB-2T2-0004-M7
1.5	480	25			KB-2-0005-M1		KB-2-0005-M7		KB-2T2-0005-M1		KB-2T2-0005-M7
2	120	20	17%	22%	KB-2-0006-M1	22 <sup>5</sup> / <sub>16</sub>	KB-2-0006-M7	24%	KB-2T2-0006-M1	26 <sup>5</sup> / <sub>16</sub>	KB-2T2-0006-M7
2	240	20			KB-2-0007-M1		KB-2-0007-M7		KB-2T2-0007-M1		KB-2T2-0007-M7
2	480	20			KB-2-0008-M1		KB-2-0008-M7		KB-2T2-0008-M1		KB-2T2-0008-M7
2.5	120	23	19%	24%	KB-2-0009-M1	24 <sup>5</sup> / <sub>16</sub>	KB-2-0009-M7	26%	KB-2T2-0009-M1	27 <sup>5</sup> / <sub>16</sub>	KB-2T2-0009-M7
2.5	240	23			KB-2-0010-M1		KB-2-0010-M7		KB-2T2-0010-M1		KB-2T2-0010-M7
2.5	480	23			KB-2-0011-M1		KB-2-0011-M7		KB-2T2-0011-M1		KB-2T2-0011-M7
3	120	21	25	29%	KB-2-0012-M1	29 <sup>5</sup> / <sub>16</sub>	KB-2-0012-M7	31%	KB-2T2-0012-M1	33 <sup>5</sup> / <sub>16</sub>	KB-2T2-0012-M7
3	240	21			KB-2-0013-M1		KB-2-0013-M7		KB-2T2-0013-M1		KB-2T2-0013-M7
3	480	21			KB-2-0014-M1		KB-2-0014-M7		KB-2T2-0014-M1		KB-2T2-0014-M7
4	120	21	33	37%	KB-2-0015-M1	37 <sup>5</sup> / <sub>16</sub>	KB-2-0015-M7	39%	KB-2T2-0015-M1	41%	KB-2T2-0015-M7
4	240	21			KB-2-0016-M1		KB-2-0016-M7		KB-2T2-0016-M1		KB-2T2-0016-M7
4	480	21			KB-2-0017-M1		KB-2-0017-M7		KB-2T2-0017-M1		KB-2T2-0017-M7
5	120	21	40 <sup>1</sup> / <sub>2</sub>	45%	KB-2-0018-M1	44 <sup>1</sup> / <sub>16</sub>	KB-2-0018-M7	47%	KB-2T2-0018-M1	48 <sup>1</sup> / <sub>16</sub>	KB-2T2-0018-M7
5	240	21			KB-2-0019-M1		KB-2-0019-M7		KB-2T2-0019-M1		KB-2T2-0019-M7
5	480	21			KB-2-0020-M1		KB-2-0020-M7		KB-2T2-0020-M1		KB-2T2-0020-M7
6	240	21	48	52%	KB-2-0021-M1	52 <sup>5</sup> / <sub>16</sub>	KB-2-0021-M7	54%	KB-2T2-0021-M1	56 <sup>5</sup> / <sub>16</sub>	KB-2T2-0021-M7
6	480	21			KB-2-0022-M1		KB-2-0022-M7		KB-2T2-0022-M1		KB-2T2-0022-M7

**STEEL ELEMENTS—medium watt density**

2" NPT—THREE ELEMENTS				FIG. 17		FIG. 18		FIG. 19		FIG. 20		
KILO-WATTS	VOLTS	WATT/SQ. IN.	PHASE	B IMM. LENGTH	A TOTAL LENGTH	CATALOG NUMBER	C TOTAL LENGTH	CATALOG NUMBER	D TOTAL LENGTH	CATALOG NUMBER	E TOTAL LENGTH	CATALOG NUMBER
2.25	240	25	1	11%	16%	KB-3-0186-M1	16%	KB-3-0186-M7	18%	KB-3T2-0186-M1	20%	KB-3T2-0186-M7
		25	3			KB-3-0187-M1		KB-3-0187-M7		KB-3T2-0187-M1		KB-3T2-0187-M7
2.25	480	25	1			KB-3-0188-M1		KB-3-0188-M7		KB-3T2-0188-M1		KB-3T2-0188-M7
		25	3			KB-3-0189-M1		KB-3-0189-M7		KB-3T2-0189-M1		KB-3T2-0189-M7
3	240	20	1	17%	22%	KB-3-0190-M1	22%	KB-3-0190-M7	24%	KB-3T2-0190-M1	26%	KB-3T2-0190-M7
		20	3			KB-3-0191-M1		KB-3-0191-M7		KB-3T2-0191-M1		KB-3T2-0191-M7
3	480	20	1			KB-3-0192-M1		KB-3-0192-M7		KB-3T2-0192-M1		KB-3T2-0192-M7
		20	3			KB-3-0193-M1		KB-3-0193-M7		KB-3T2-0193-M1		KB-3T2-0193-M7
3.75	240	23	1	19%	24%	KB-3-0194-M1	24%	KB-3-0194-M7	26%	KB-3T2-0194-M1	27%	KB-3T2-0194-M7
		23	3			KB-3-0195-M1		KB-3-0195-M7		KB-3T2-0195-M1		KB-3T2-0195-M7
3.75	480	23	1			KB-3-0196-M1		KB-3-0196-M7		KB-3T2-0196-M1		KB-3T2-0196-M7
		23	3			KB-3-0197-M1		KB-3-0197-M7		KB-3T2-0197-M1		KB-3T2-0197-M7
4.5	240	21	1	25	29%	KB-3-0198-M1	29%	KB-3-0198-M7	31%	KB-3T2-0198-M1	33%	KB-3T2-0198-M7
		21	3			KB-3-0199-M1		KB-3-0199-M7		KB-3T2-0199-M1		KB-3T2-0199-M7
4.5	480	21	1			KB-3-0200-M1		KB-3-0200-M7		KB-3T2-0200-M1		KB-3T2-0200-M7
		21	3			KB-3-0201-M1		KB-3-0201-M7		KB-3T2-0201-M1		KB-3T2-0201-M7
6	240	21	1	33	37%	KB-3-0202-M1	37%	KB-3-0202-M7	39%	KB-3T2-0202-M1	41%	KB-3T2-0202-M7
		21	3			KB-3-0203-M1		KB-3-0203-M7		KB-3T2-0203-M1		KB-3T2-0203-M7
6	480	21	1			KB-3-0204-M1		KB-3-0204-M7		KB-3T2-0204-M1		KB-3T2-0204-M7
		21	3			KB-3-0205-M1		KB-3-0205-M7		KB-3T2-0205-M1		KB-3T2-0205-M7
7.5	240	21	1	40%	45%	KB-3-0206-M1	44%	KB-3-0206-M7	47%	KB-3T2-0206-M1*	48%	KB-3T2-0206-M7*
		21	3			KB-3-0207-M1		KB-3-0207-M7		KB-3T2-0207-M1		KB-3T2-0207-M7
7.5	480	21	1			KB-3-0208-M1		KB-3-0208-M7		KB-3T2-0208-M1		KB-3T2-0208-M7
		21	3			KB-3-0209-M1		KB-3-0209-M7		KB-3T2-0209-M1		KB-3T2-0209-M7
9	240	21	1	48	52%	KB-3-0210-M1	52%	KB-3-0210-M7	54%	KB-3T2-0210-M1*	56%	KB-3T2-0210-M7*
		21	3			KB-3-0211-M1		KB-3-0211-M7		KB-3T2-0211-M1		KB-3T2-0211-M7
9	480	21	1			KB-3-0212-M1		KB-3-0212-M7		KB-3T2-0212-M1		KB-3T2-0212-M7
		21	3			KB-3-0213-M1		KB-3-0213-M7		KB-3T2-0213-M1		KB-3T2-0213-M7

\*requires use of external contactor

2½" NPT—THREE ELEMENTS				FIG. 21		FIG. 22		FIG. 23		FIG. 24		
KILO-WATTS	VOLTS	WATT/SQ. IN.	PHASE	B IMM. LENGTH	A TOTAL LENGTH	CATALOG NUMBER	C TOTAL LENGTH	CATALOG NUMBER	D TOTAL LENGTH	CATALOG NUMBER	E TOTAL LENGTH	CATALOG NUMBER
3	240	21	1	17½	22½	KQ-3-0005-M1	22%	KQ-3-0005-M7	24%	KQ-3T2-0005-M1	25%	KQ-3T2-0005-M7
		21	3			KQ-3-0006-M1		KQ-3-0006-M7		KQ-3T2-0006-M1		KQ-3T2-0006-M7
3	480	21	1			KQ-3-0007-M1		KQ-3-0007-M7		KQ-3T2-0007-M1		KQ-3T2-0007-M7
		21	3			KQ-3-0008-M1		KQ-3-0008-M7		KQ-3T2-0008-M1		KQ-3T2-0008-M7
3.75	240	24	1	19%	24%	KQ-3-0009-M1	23%	KQ-3-0009-M7	26%	KQ-3T2-0009-M1	27%	KQ-3T2-0009-M7
		24	3			KQ-3-0010-M1		KQ-3-0010-M7		KQ-3T2-0010-M1		KQ-3T2-0010-M7
3.75	480	24	1			KQ-3-0011-M1		KQ-3-0011-M7		KQ-3T2-0011-M1		KQ-3T2-0011-M7
		24	3			KQ-3-0012-M1		KQ-3-0012-M7		KQ-3T2-0012-M1		KQ-3T2-0012-M7
4.5	240	22	1	24%	29%	KQ-3-0013-M1	28%	KQ-3-0013-M7	31%	KQ-3T2-0013-M1	33%	KQ-3T2-0013-M7
		22	3			KQ-3-0014-M1		KQ-3-0014-M7		KQ-3T2-0014-M1		KQ-3T2-0014-M7
4.5	480	22	1			KQ-3-0015-M1		KQ-3-0015-M7		KQ-3T2-0015-M1		KQ-3T2-0015-M7
		22	3			KQ-3-0016-M1		KQ-3-0016-M7		KQ-3T2-0016-M1		KQ-3T2-0016-M7
6	240	21	1	32%	37%	KQ-3-0017-M1	36%	KQ-3-0017-M7	39%	KQ-3T2-0017-M1	40%	KQ-3T2-0017-M7
		21	3			KQ-3-0018-M1		KQ-3-0018-M7		KQ-3T2-0018-M1		KQ-3T2-0018-M7
6	480	21	1			KQ-3-0019-M1		KQ-3-0019-M7		KQ-3T2-0019-M1		KQ-3T2-0019-M7
		21	3			KQ-3-0020-M1		KQ-3-0020-M7		KQ-3T2-0020-M1		KQ-3T2-0020-M7
7.5	240	21	1	40	45	KQ-3-0021-M1	44%	KQ-3-0021-M7	41%	KQ-3T2-0021-M1	42%	KQ-3T2-0021-M7
		21	3			KQ-3-0022-M1		KQ-3-0022-M7		KQ-3T2-0022-M1		KQ-3T2-0022-M7
7.5	480	21	1			KQ-3-0023-M1		KQ-3-0023-M7		KQ-3T2-0023-M1		KQ-3T2-0023-M7
		21	3			KQ-3-0024-M1		KQ-3-0024-M7		KQ-3T2-0024-M1		KQ-3T2-0024-M7
9	240	22	1	47%	52%	KQ-3-0025-M1	51%	KQ-3-0025-M7	51%	KQ-3T2-0025-M1	53	KQ-3T2-0025-M7
		22	3			KQ-3-0026-M1		KQ-3-0026-M7		KQ-3T2-0026-M1		KQ-3T2-0026-M7
9	480	22	1			KQ-3-0027-M1		KQ-3-0027-M7		KQ-3T2-0027-M1		KQ-3T2-0027-M7
		22	3			KQ-3-0028-M1		KQ-3-0028-M7		KQ-3T2-0028-M1		KQ-3T2-0028-M7