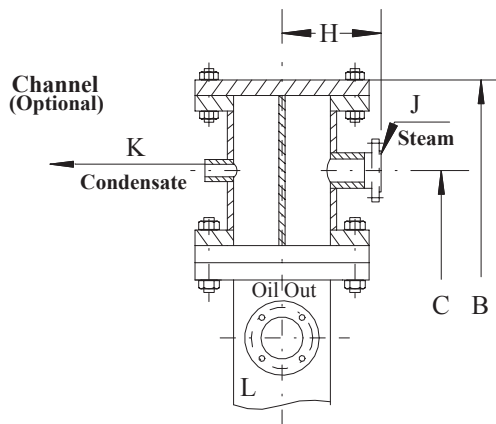
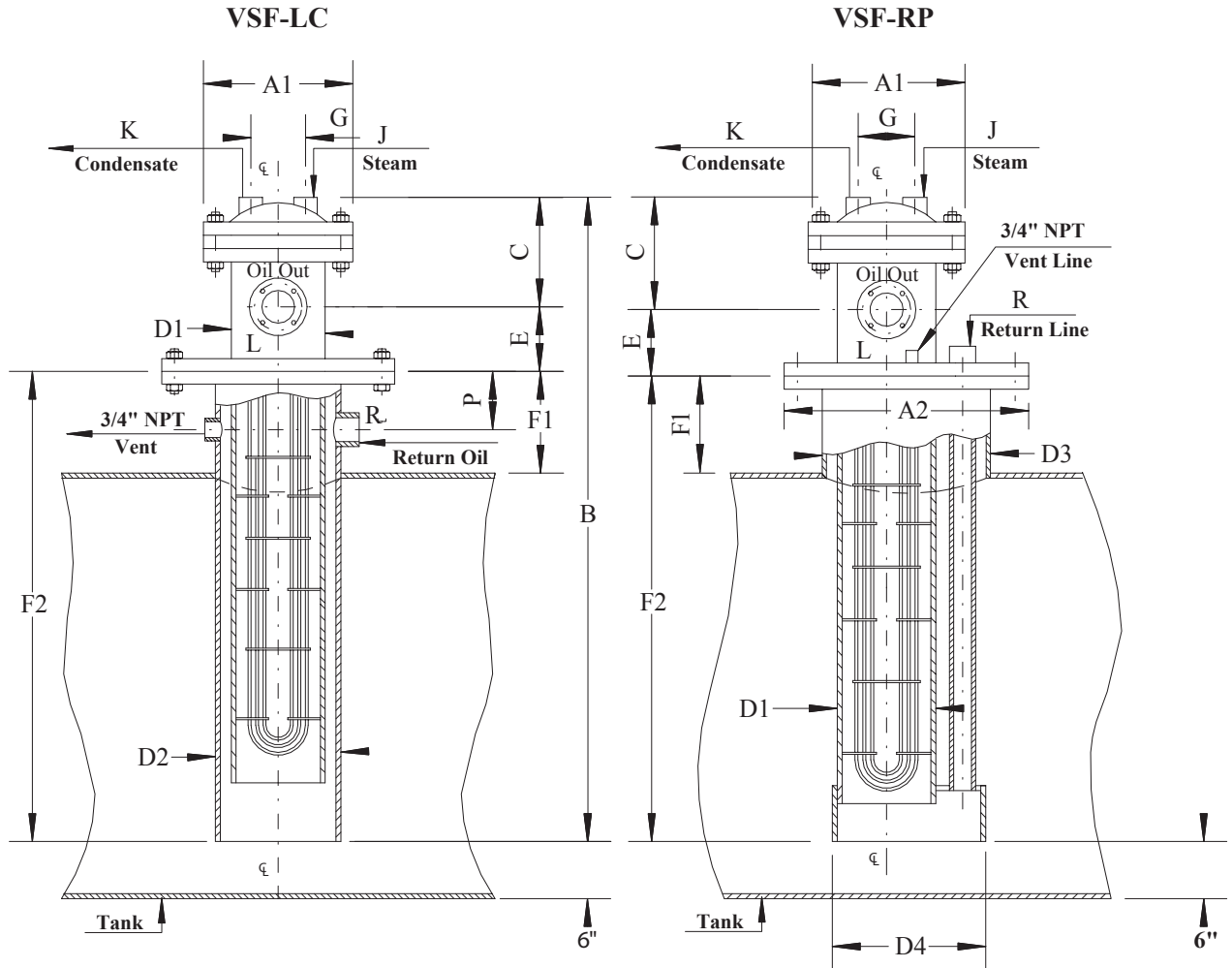


# “Smart Flow” Vertical Tank Suction Oil Heaters Series “VSF”

<p><b>Typical Applications</b></p> <p>Fuel oil underground storage tanks</p>	<p>To have the capacity to heat _____ ( gph ) ( gpm ) of # _____ fuel oil in the shell from _____ F to _____ F using _____, entering at _____ in the tubes.</p>
<p>Easy removal of tube bundle. Unaffected by thermal expansion Low pressure drop</p>	<p>Unit to be constructed in accordance with ASME requirements. ASME Stamp is ( not ) required.</p> <p>Unit to have no more than _____ ft. of length and _____ psi pressure drop in the shell.</p>



The optional channel head permits the plugging of leaking tubes without dismounting steam, condensate and oil piping.

**VSF-LC-10-6-B**

- ↑ Bonnet or Channel
- ↑ Tube bundle immersion length
- ↑ Nominal shell diameter
- ↑ Model



# “Smart Flow” Vertical Tank Suction Oil Heaters Series “VSF”

**Smart** : - Variable distance between baffles with change of fuel oil viscosity to optimize the flow velocity  
**Flow** - Divided flow of fuel oil to reduce pressure drop  
 - True crossflow of fuel oil to tubing to improve heat transfer

VSF	A1	A2	Bonnet		Channel		D1	D2	E	F1	F2	H	WGT.	VSF
			B	C	B	C								
63	9-1/4	13-1/2	42	9	52	12	6-5/8	8-5/8	7	8	26	7-1/2	185	63
66	9-1/4	13-1/2	78	9	88	12	6-5/8	8-5/8	7	8	62	7-1/2	265	66
69	9-1/4	13-1/2	114	9	124	12	6-5/8	8-5/8	7	8	98	7-1/2	345	69
612	9-1/4	13-1/2	150	9	160	12	6-5/8	8-5/8	7	8	134	7-1/2	425	612
83	12	16	43	10	53	14	8-5/8	10-3/4	8	8	24	9	300	83
86	12	16	79	10	89	14	8-5/8	10-3/4	8	8	60	9	435	86
89	12	16	115	10	125	14	8-5/8	10-3/4	8	8	96	9	570	89
812	12	16	151	10	161	14	8-5/8	10-3/4	8	8	132	9	705	812
103	15	19	44	12	54	16	10-3/4	12-3/4	9	10	21	10-1/2	445	103
106	15	19	80	12	90	16	10-3/4	12-3/4	9	10	57	10-1/2	645	106
109	15	19	116	12	126	16	10-3/4	12-3/4	9	10	93	10-1/2	845	109
1012	15	19	152	12	162	16	10-3/4	12-3/4	9	10	129	10-1/2	1045	1012
123	17	21	45	13	56	18	12-3/4	14	10	10	18	11-1/2	610	123
126	17	21	81	13	92	18	12-3/4	14	10	10	54	11-1/2	885	126
129	17	21	117	13	128	18	12-3/4	14	10	10	90	11-1/2	1160	129
1212	17	21	153	13	164	18	12-3/4	14	10	10	126	11-1/2	1435	1212
143	19	23-1/2	46	16	58	19	14	16	11	12	18	12-1/2	765	143
146	19	23-1/2	82	16	94	19	14	16	11	12	54	12-1/2	1130	146
149	19	23-1/2	118	16	130	19	14	16	11	12	90	12-1/2	1495	149
1412	19	23-1/2	154	16	166	19	14	16	11	12	126	12-1/2	1860	1412
163	21	25	47	16	60	20	16	18	11	12	18	13-1/2	955	163
166	21	25	83	16	96	20	16	18	11	12	54	13-1/2	1395	166
169	21	25	119	16	132	20	16	18	11	12	90	13-1/2	1835	169
1612	21	25	155	16	168	20	16	18	11	12	126	13-1/2	2275	1612
183	23	27-1/2	47	18	64	23	18	20	12	12	16	14-1/2	1220	183
186	23	27-1/2	83	18	100	23	18	20	12	12	52	14-1/2	1795	186
189	23	27-1/2	119	18	136	23	18	20	12	12	88	14-1/2	2370	189
1812	23	27-1/2	155	18	172	23	18	20	12	12	124	14-1/2	2945	1812
203	25-1/2	29-1/2	47	18	64	23	20	22	12	12	16	15-3/4	1495	203
206	25-1/2	29-1/2	83	18	100	23	20	22	12	12	52	15-3/4	2200	206
209	25-1/2	29-1/2	119	18	136	23	20	22	12	12	88	15-3/4	2905	209
2012	25-1/2	29-1/2	155	18	172	23	20	22	12	12	124	15-3/4	3610	2012

Customized or Replacement Tank Suction Fuel Oil Heater

**Recommended Connections Sizes - Inches**

J	K	L	R	P	D3	D4	G

**Design Data**

The weight is calculated for the heater with bonnet head and without the collar

Design Temperature		Above 20 deg. F	Below 20 deg.F
Design Pressure	Shell Side	100 psi	100 psi
	Tube Side	150 psi	150 psi
Front Head		C.S. SA516 Gr. 70	S.S. SA240 Gr. 304
Tubing		C.S. SA214	S.S. SA249 Gr. 304
Shell		C.S. SA53 Gr. B	S.S. SA312 Gr. 304
Tubesheet		C.S. SA516 Gr. 70	S.S. SA240 Gr. 304

- \* - Various materials and working conditions can be provided.
- Legs can be supplied when specified.
- Space equal to or greater than dimension "B" should be provided for removal of tube bundle.

- \* - All Heat Exchangers are designed and manufactured according to ASME Code, Section VIII, Div.1. ASME U-1 Form, Stamp, and N.B. Number are provided upon request for an additional cost.

- \* - All heaters have a one year guarantee against failure caused by materials or workmanship, but not against gasket failure or damage caused by corrosion, water hammer, fouling, sealing, excessive pressure or temperature, incorrect installation or other factor beyond the manufacturer's control.