Model	**FT600 & FT601***
Sizes	**3/4", 1", 1 1/2", 2"**
Connections	**NPT, SW, FLG**
Body Material	**Carbon Steel or 316SS**
Options	**Live Orifice Air Vent**
PMO Max. Operating Pressure	**450 PSIG**
TMO Max. Operating Temperature	**750ºF**
PMA Max. Allowable Pressure	**990 PSIG @ 100ºF**
TMA Max. Allowable Temperature	**750ºF @ 670 PSIG**

*** FT601 Body Material is 316 SS**
FT600 Body Material is Carbon Steel

Typical Applications

PROCESS: FT600 Series steam traps with Cast Steel Body were specifically designed for removing condensate and air from higher pressure steam applications or where steel bodies are specified. They are typically used in chemical plants an petrochemical refineries on re-boilers, heat exchangers, and other critical process applications. The excellent air-handling capability of float and thermostatic traps make them a better choice than bucket traps for applications requiring quick system start-up. Maximum steam pressure is 450 PSIG. Note: Model FT601 is identical to FT600 except body material is 316 SS.

How It Works

Float and thermostatic traps contain a float and seat mechanism with a separate thermostatic element which work together to remove both condensate and air from the steam system. The float, which is attached to a valve, rises and opens the valve when condensate enters the trap. This allows the condensate to discharge. Air is discharged through the thermostatic air vent to the outlet side of the trap. Steam entering the trap causes the thermostatic element to expand, closing the air vent and trapping the steam.

Features

- Investment cast steel body and cover with class 400 shell rating (670 PSIG @ 750˚F)
- Hardened stainless steel seat and disc for extended service life even at extreme temperatures and pressures
- Excellent air handling capability allows air to be discharged rapidly so steam can enter the system quickly during start-up
- In-line repairability is simplified by having all internals attached to the cover. Studded cover allows for easier removal of body.
- Welded stainless steel air vent resists shock from waterhammer. Live orifice air vent is available for superheated applications
- F&T traps discharge condensate immediately as it is formed (no condensate will back up into the system)

PRESSURE - TEMPERATURE RATINGS

Model	FT600	FT601
NPT, SW, 600# FLG	670 PSIG @ 750˚ F	565 PSIG @ 750˚ F
300# FLG	505 PSIG @ 750˚ F	425 PSIG @ 750˚ F
150# FLG	150 PSIG @ 567˚ F	150 PSIG @ 567˚ F

Options

Live orifice air vent for superheated applications.

SLR = Steam lock release

VB = Vacuum breaker

RL = Right to Left flow path. Consult factory.
(Left to Right flow is standard)

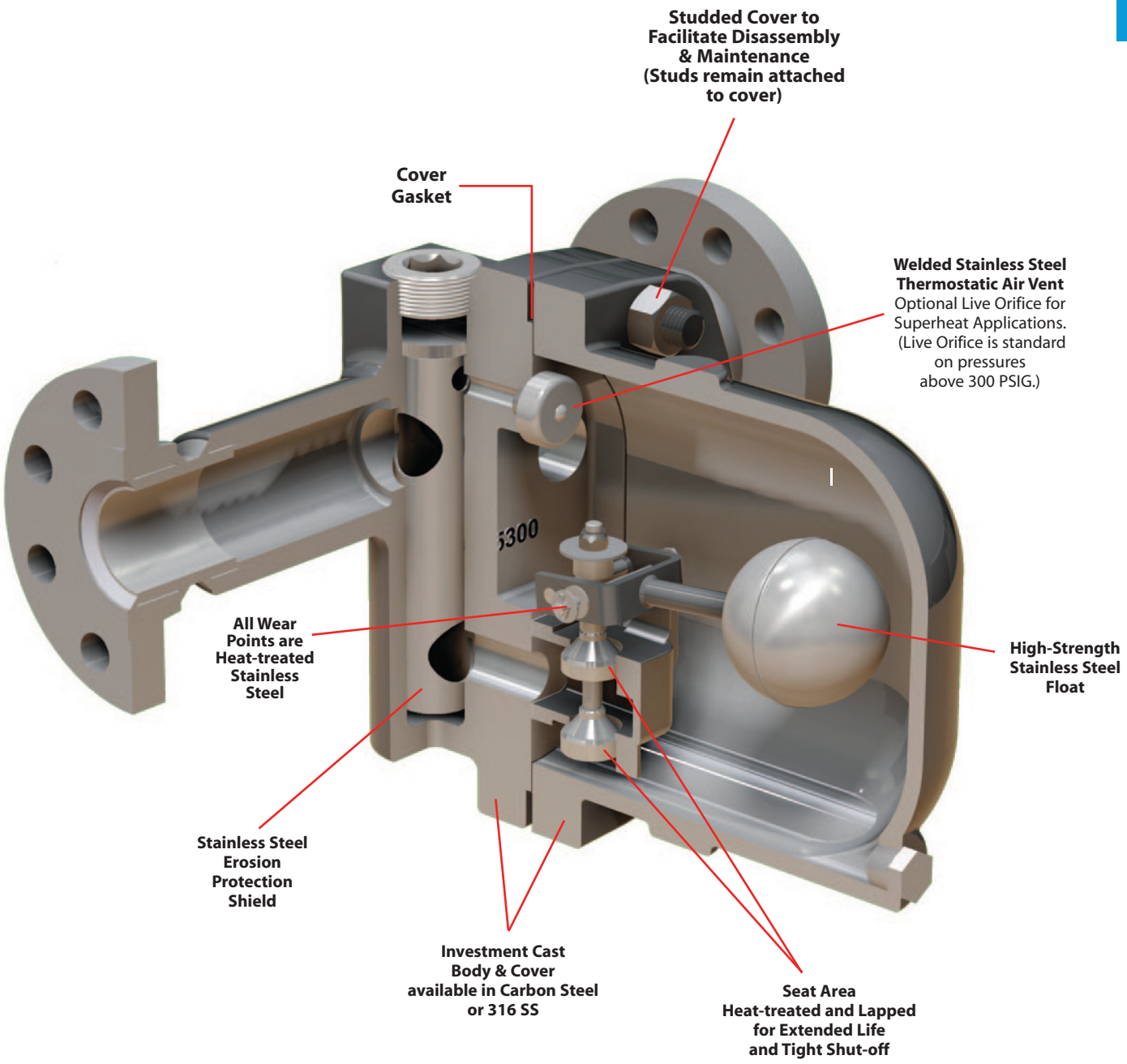
Sample Specification

The steam trap shall be of the mechanical float type having cast steel bodies, horizontal in-line connections in NPT, SW, or flanged, and all stainless steel internals. Incorporated into the trap body shall be an all stainless steel welded thermal element air vent which is water hammer resistant. The air vent is to be located at the high point of trap body to assure proper venting of non- condensables. The trap body will be in-line renewable. All bodies and covers shall be class 400 shell design, suitable for 670 PSIG @ 750ºF.

Installation and Maintenance

The trap must be installed upright and level for the float mechanism to operate properly. All internal components can be replaced while the steam trap remains connected to the piping (in-line repairable). Threaded studs are permanently installed into the cover assembly which greatly simplifies the removal and replacement of the body when servicing. Internal components include a high quality welded stainless steel thermostatic air vent and stainless steel seat and mechanism. The standard thermostatic air vent can be damaged by superheat; therefore, in applications with superheated steam, the thermostatic air vent should be replaced with a special "live orifice" air vent.

FT600 & FT601
Float & Thermostatic



MATERIALS	
FT 600: Body & Cover	Cast Steel, ASTM A-216
FT 601: Body & Cover	316 SS
Cover Studs	Steel, SA 193, GR B7
Cover Nuts	Steel, SA 194, GR 2H
Cover Gasket	Stainless Steel Reinforced Grafoil
Valve Assembly	Stainless Steel, AISI 431
Gasket, Valve Assembly	Stainless Steel Reinforced Grafoil
Pivot Assembly	Stainless Steel, 17-4 PH
Mounting Screws	Stainless Steel Hex Head, 18-8
Float	Stainless Steel, ASTM -240, 304
Air Vent Assembly	Thermostatic element 304 SS Optional: Live orifice

How to Size / Order

The **Maximum Operating Pressure** (PMO) rating of model selected must meet or exceed the maximum steam pressure or the trap may not open. For example, the **FT600-145 has a PMO of 145 psi.** Condensate capacity (lbs/hr) of the trap is based on the differential pressure across the trap.

For Drip Applications: A (3/4)" FT600 size is sufficient to exceed warm-up loads with a 2X safety factor.

For process applications: The condensate loads (lbs/hr) are normally calculated at the maximum steam pressure; then an appropriate safety margin is applied in order to select a trap with sufficient capacity when operating at lower steam pressures. Reference full explanation of Safety Load Factors in Steam Traps Introduction section.

When a temperature control valve regulates the flow of steam to the process equipment (Heat Exchanger) being drained of condensate, it is recommended to select a trap with a PMO that exceeds the inlet steam pressure to the temperature control valve. This assures that under all operating conditions, the steam pressure will not exceed the PMO of the trap.

For Example: Process application has a maximum steam inlet pressure of 100 psi, a maximum condensate load of 2,500 lbs/hr and is discharging to a condensate return line with a possible back pressure of 20 psig. **ΔP** = 100-20 = 80 PSI

To select trap: If the Safety Load Factor is chosen to be 2X max capacity at max differential pressure, then Trap should be selected based on 5,000 lbs/hr (2,500 x 2 = 5,000) at 80 PSI differential pressure with a PMO in excess of 100 PSIG

Selection: **FT600-145-16-N**, PMO=145 PSIG, 1 1/2" NPT with a condensate capacity of 9,900 lbs/hr at **80 PSI** differential pressure.

Connection Codes:
(**N**=NPT, **SW**=Socket Weld, **F150**=150# FLG, **F300**=300# FLG, **F600**=600# FLG)

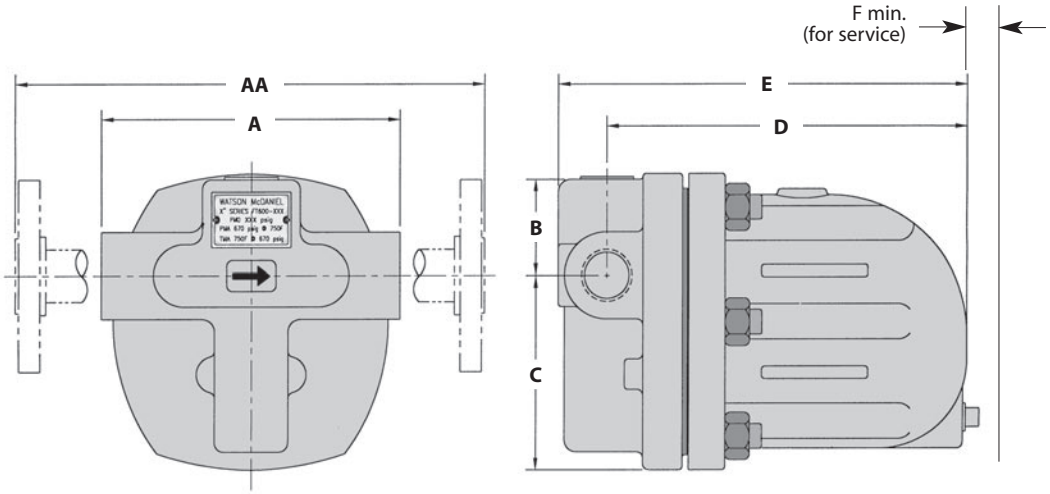
CAPACITIES — *Condensate (lbs/hr)*

Model Code*	PMO (PSIG)	Sizes	ΔP = Differential Pressure (PSI) 1/2	1	2	3	5	10	20	30	40	50	65	80	100	145	200	300	400	450
FT600-65-13-N	65	3/4"	155	225	300	363	463	635	960	1060	1180	1320	1460							
FT600-65-14-N	65	1"	500	775	1094	1340	1690	2370	3260	3990	4500	5000	5500							
FT600-65-16-N	65	1 1/2"	1650	2500	3450	4130	5300	7500	10625	13125	15000	16800	18850							
FT600-65-17-N	65	2"	4820	8500	11950	14670	18700	25250	35900	43000	49600	55500	61250							
FT600-145-13-N	145	3/4"	104	137	180	218	275	380	520	625	725	863	895	995	1120	1315				
FT600-145-14-N	145	1"	275	400	555	660	850	1237	1593	1925	2240	2490	2750	3000	3430	3935				
FT600-145-16-N	145	1 1/2"	970	1275	1750	2125	2740	3750	5100	6250	7200	7995	8875	9900	11250	13300				
FT600-145-17-N	145	2"	2680	3125	4400	5375	6900	9250	14625	16875	19375	21875	25000	27500	31000	37000				
FT600-200-13-N	200	3/4"	70	93	137	160	205	287	400	487	560	610	710	775	875	1060	1250			
FT600-200-14-N	200	1"	212	300	410	487	610	925	1140	1375	1520	1687	1875	2060	2312	2750	3100			
FT600-200-16-N	200	1 1/2"	710	825	1130	1400	1760	2500	3375	4125	4740	5250	6000	6600	7300	8650	10200			
FT600-200-17-N	200	2"	1100	1560	2187	2800	3490	4800	6750	8250	9500	10625	12400	13700	15000	18120	21200			
FT600-300-13-N	300	3/4"	35	50	68	83	106	155	197	240	275	300	340	375	413	490	570	710		
FT600-300-14-N	300	1"	155	225	300	363	463	635	960	1060	1180	1320	1468	1640	1815	2130	2550	3000		
FT600-300-16-N	300	1 1/2"	710	825	1130	1400	1760	2500	3375	4125	4740	5250	6000	6600	7300	8650	10200	12600		
FT600-300-17-N	300	2"	1100	1560	2187	2800	3490	4800	6750	8250	9500	10625	12400	13700	15000	18120	21200	26250		
FT600-450-13-N	450	3/4"	22	32	42	49	62	84	119	145	163	175	192	210	186	275	312	375	425	450
FT600-450-14-N	450	1"	91	137	180	218	275	380	520	625	725	863	895	995	1120	1315	1500	1870	2125	2250
FT600-450-16-N	450	1 1/2"	710	825	1130	1400	1760	2500	3375	4125	4740	5250	6000	6600	7300	8650	10200	12600	14375	15200
FT600-450-17-N	450	2"	1100	1560	2187	2800	3490	4800	6750	8250	9500	10625	12400	13700	15000	18120	21200	26250	28700	31250

Note: *For 450 Model, the Thermostatic Air Vent is replaced with a live Orifice.*

*** Chart is applicable for both Models FT600 & FT601**

FT600 & FT601:
3/4", 1", 1 1/2", 2"



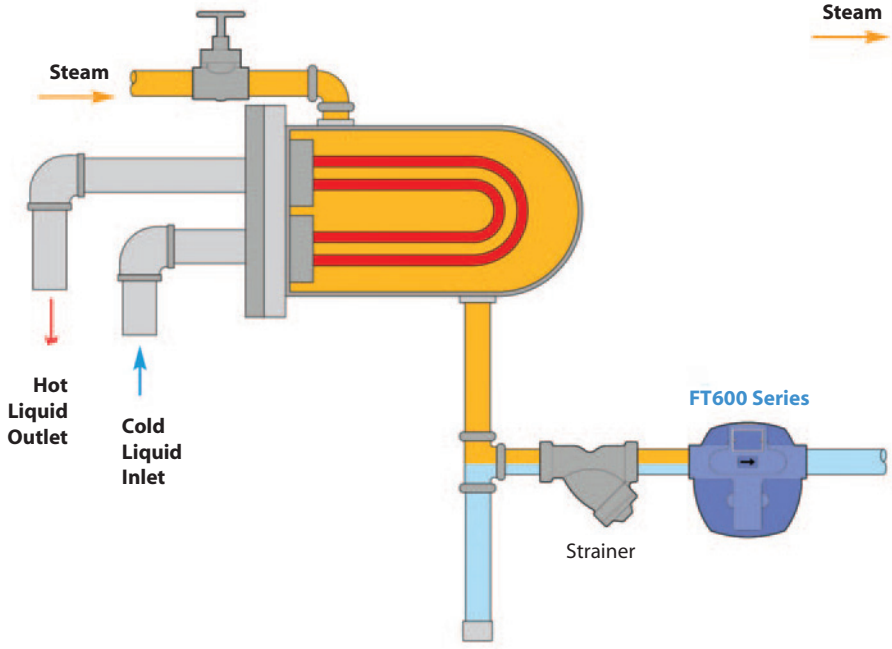
DIMENSIONS & WEIGHTS – *inches*

Model*	Size	A	AA	B	C	D	E	F	Weight (lbs) NPT/SW	Weight (lbs) FLG
FT600	3/4"	6.10	10.10	2.07	3.93	7.38	8.41	5.75	25	31
FT600	1"	6.50	10.40**	2.50	5.50	8.44	9.50	6.25	31	36
FT600	1 1/2"	9.80	14.00	3.26	6.85	10.40	11.94	7.75	82	91
FT600	2"	11.80	16.00	3.60	7.40	11.59	13.27	8.00	93	107

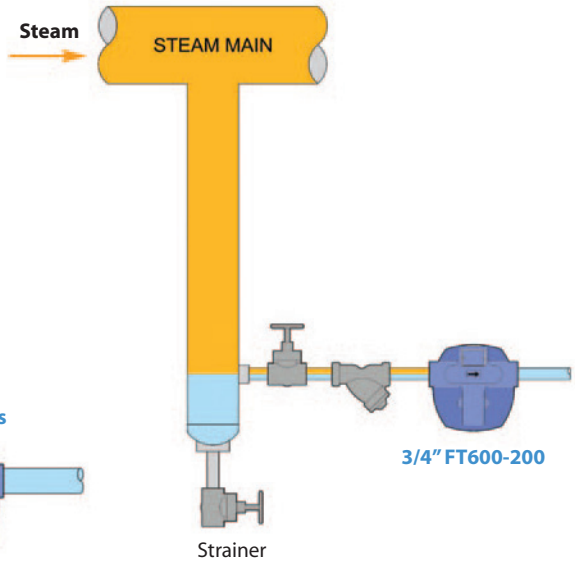
* Chart is applicable for FT600 & FT601
** Face-to-Face for 1" FT600/601 with 600# flanges is 12".

Typical Applications for Float & Thermostatic Steam Traps

Shell & Tube Heat Exchanger Application:

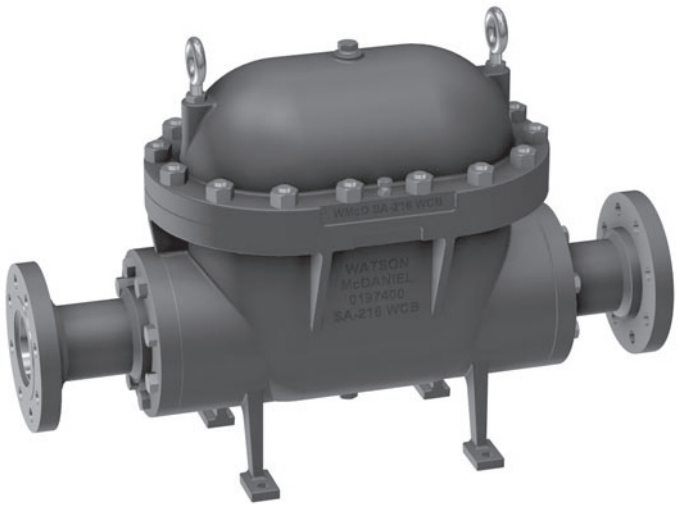


Steam Main Drip Application



FT600 & FT601
Float & Thermostatic

Model	**FT600 & FT601***
Sizes	**3", 4"**
Connections	**NPT, SW, FLG**
Body Material	**Carbon Steel or 316SS**
PMO Max. Operating Pressure	**450 PSIG**
TMO Max. Operating Temperature	**750ºF**



*** FT601 Body Material is 316 SS**
FT600 Body Material is Carbon Steel

3" & 4" FT600 & FT601 contain an open orifice air vent.
If a thermostatic air vent is required, contact factory.

PRESSURE - TEMPERATURE RATINGS

Model	FT600	FT601
NPT, SW, 300# FLG 600# FLG	505 PSIG @ 750˚ F	505 PSIG @ 750˚ F
150# FLG	150 PSIG @ 567˚ F	150 PSIG @ 567˚ F

Size	Conn	PMO (PSIG)	Model Code
3"	NPT	**450**	**FT600-450-19-N**
3"	SW	**450**	**FT600-450-19-SW**
3"	**150 #** Flg	**285**	**FT600-285-19-F150**
3"	**300 #** Flg	**450**	**FT600-450-19-F300**
3"	**600 #** Flg	**450**	**FT600-450-19-F600**
4"	**150 #** Flg	**285**	**FT600-285-20-F150**
4"	**300 #** Flg	**450**	**FT600-450-20-F300**
4"	**600 #** Flg	**450**	**FT600-450-20-F600**

CAPACITIES — *Condensate (1000 lbs/hr)*

	Differential Pressure (PSI)																				
Temp	**1/2**	**1**	**2**	**5**	**10**	**15**	**20**	**30**	**40**	**50**	**75**	**100**	**125**	**150**	**175**	**200**	**250**	**300**	**350**	**400**	**450**
COLD*	44	59	81	122	170	205	230	280	317	350	425	480	540	580	625	670	740	800	860	910	960
HOT	44	53	64	83	100	112	121	138	149	159	177	190	201	212	222	230	247	260	270	280	290

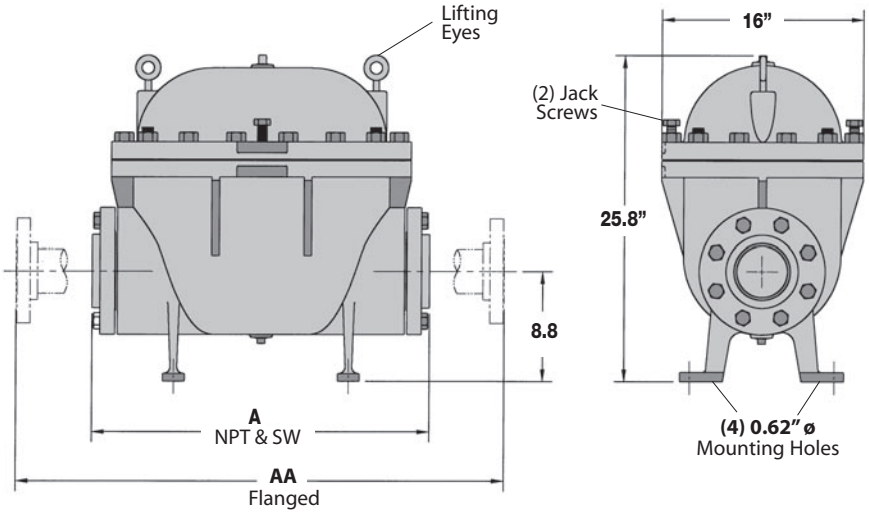
** Cold Water capacities are to be used when the trap is used as a liquid drain trap.*
Note: For liquid drain trap applications, please specify "liquid drain trap" when ordering.

CAPACITY CORRECTION FACTORS

To obtain capacity with a liquid other than water, multiply water capacity by correction factor.

Spec. Gravity	**1**	.98	.96	.94	.92	.90	.88	.86	.84	.82	.80	.75	.70	.65	.60	.55	.50
Corr. Factor	**1**	.990	.980	.970	.959	.949	.938	.927	.917	.906	.894	.866	.837	.806	.775	.742	707

FT600 & FT601:
3" & 4"



DIMENSIONS & WEIGHTS – *inches*

Model*	Size	A	AA	Weight (lbs) Connection	Weight (lbs) FLG
FT600	3"	27	39	587 (NPT, SW)	626
FT600	4"	27	39	587 (SW)	654

*** Chart is applicable for both Models FT600 & FT601**

FT600: 3" - 4" :
Process: Refinery Reboiler Application