

Engineering Submittal - IWT InterStor Indirect Water Heaters



Job Name _____

Address _____

Designer / Engineer _____

Wholesaler _____

Contractor _____

Model / Quantity

☐ IWT 40 _____	☐ IWT 50 _____
☐ IWT 65 _____	☐ IWT 80 _____
☐ IWT 119 _____	☐ IWT 80-Max _____
☐ IWT 119-Max _____	

Date _____

Features

- » Durable metal jacket
- » Top hot and cold connections on residential units
- » Front heating connections for a flexible installation
- » 2" of polyurethane foam insulation
- » Oversized low pressure drop coil
- » Ships with a 10KΩ sensor
- » Large smooth wall heating coils in counterflow configuration
- » Thermal well for sensor or aquastat
- » 444 stainless steel tank shell and 316L stainless steel heating coil
- » Factory-installed drain valve with cap
- » Stainless Steel Cold Inlet Dip Tube

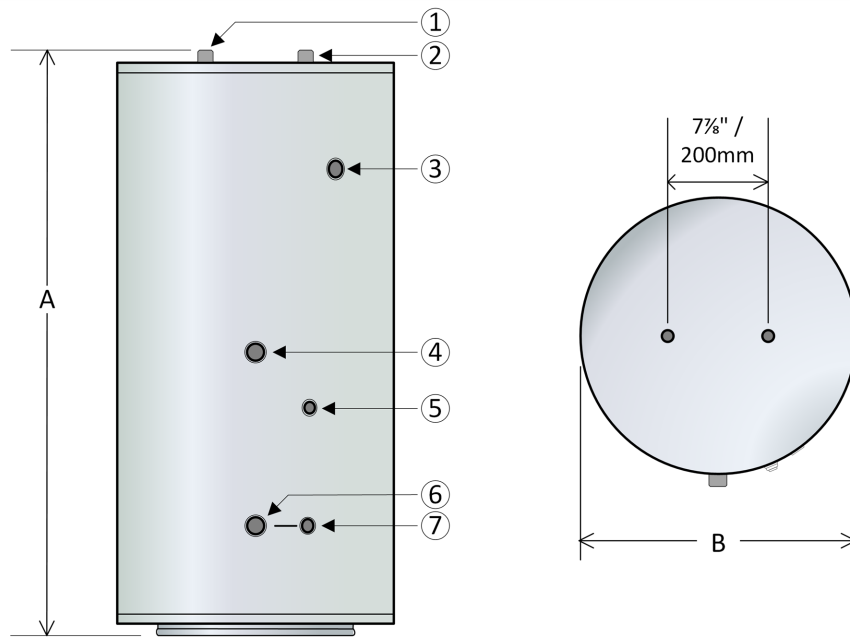
Certifications

- » Compliant with NSF/ANSI 372:2016 for Drinking Water System Components - Lead Content
- » Compliant with IAS 1-91 Issued: 1992/06/01 IAS - U.S. Requirements for Indirect Water Heaters for use with External Heat Source

Warranties

- » 1 year limited parts warranty
- » 10 years limited tank and heating coil warranty, or limited lifetime with registration for residential use
- » 5 years limited tank and heating coil warranty for commercial use

IWT 40, IWT 50, IWT 65 Dimensions



	IWT 40	IWT 50	IWT 65
A=Height (inches/mm)	45.2 / 1148	57 / 1448	54.5 / 1384
B=Diameter (inches/mm)	22 / 559	22 / 559	24.5 / 622

- ① 3/4" M NPT Hot water outlet
- ② 3/4" M NPT Cold water outlet
- ③ 3/4" F NPT T&P relief valve
- ④ 1" M NPT In from boiler (boiler supply)
- ⑤ Sensor well
- ⑥ 1" M NPT Out to boiler (boiler return)
- ⑦ 1/2" F NPT (tank drain)

IWT 80, IWT 80-Max, IWT 119, IWT 119-Max Dimensions

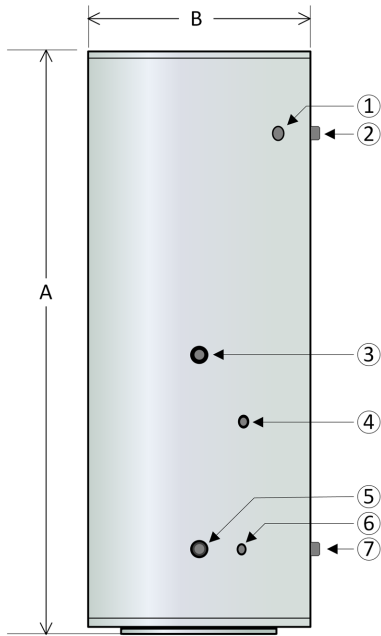


Figure 1 Tank dimension: IWT 80, IWT 80-Max

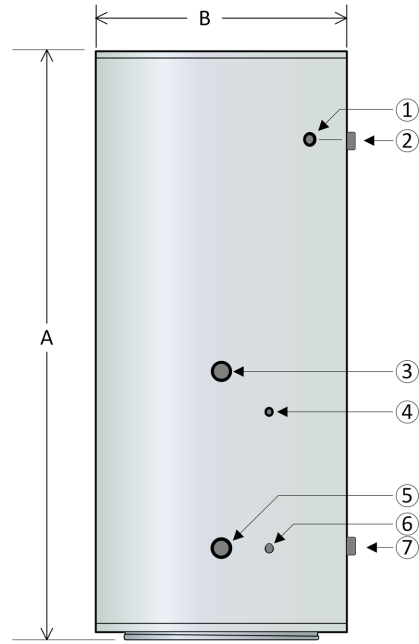


Figure 2 Tank dimension: IWT 119, IWT 119-Max

	IWT 80	IWT 80-Max	IWT 119	IWT 119-Max
A=Height (inches)	64.5 / 1638	64.5 / 1638	65.7 / 1669	65.7 / 1669
B=Diameter (inches)	24.5 / 622	24.5 / 622	28 / 711	28 / 711
	IWT 80	IWT 80-Max	IWT 119	IWT 119-Max
①	¾" F NPT T&P Relief valve	1" F NPT T&P Relief valve	1" F NPT T&P Relief valve	1" F NPT T&P Relief valve
②	1" M NPT Hot water outlet	1½" M NPT Hot water outlet	1½" M NPT Hot water outlet	1½" M NPT Hot water outlet
③	1" M NPT In from boiler (boiler supply)	1½" M NPT In from boiler (boiler supply)	1½" M NPT In from boiler (boiler supply)	1½" M NPT In from boiler (boiler supply)
④	Sensor well	Sensor well	Sensor well	Sensor well
⑤	1" M NPT Out to boiler (boiler return)	1½" M NPT Out to boiler (boiler return)	1½" M NPT Out to boiler (boiler return)	1½" M NPT Out to boiler (boiler return)
⑥	½" F NPT (tank drain)	½" F NPT (tank drain)	½" F NPT (tank drain)	½" F NPT (tank drain)
⑦	1" M NPT Cold water inlet	1½" M NPT Cold water inlet	1½" M NPT Cold water inlet	1½" M NPT Cold water inlet

Product Specifications

Specification	IWT 40 (150L)	IWT 50 (200L)	IWT 65 (250L)	IWT 80 (302L)	IWT 119 (425L)
Max. Operating Pressure	150 psi	150 psi	150 psi	150 psi	150 psi
Height (inches/mm)	45.2 / 1148	57 / 1448	54.5 / 1384	64.5 / 1638	65.7 / 1669
Diameter (inches/mm)	22 / 559	22 / 559	24.5 / 622	24.5 / 622	28 / 711
Operation at outlet water temperature ° F / ° C	180 / 82	180 / 82	180 / 82	180 / 82	180 / 82
Gross tank volume - USG / Liters	40 / 151	53 / 201	66 / 250	79.3 / 300	119 / 450
Net tank volume - USG / Liters	38.3 / 145	50.7 / 192	63.9 / 242	77.4 / 293	113 / 426
Weight - empty Lbs / kg	100 / 45.3	127 / 57.6	145 / 65.8	166 / 75	230 / 104
Shipping weight - Lbs / kg	120 / 54.4	145 / 65.7	170 / 77	193 / 87.5	275 / 125
Domestic conn. size	¾" M	¾" M	¾" M	1" M	1½" M
First hour delivery - Gal/Hr *	204	259	309	356	474
Continuous Draw @ - Gal/Hr*	170	217	259	287	373
Boiler Output Required - Btu/Hr*	120,000	140,000	180,000	200,000	240,000
Minimum flow rate - GPM	14	14	14	14	14
Heating coil pressure drop - Ft. Hd.*	6.2	7	7.5	10.1	11.8
Coil heat transfer area - Ft ²	8.1	10.2	11.4	13.4	18.1
Certified - water heater	✓	✓	✓	✓	✓
Certified - low lead	✓	✓	✓	✓	✓

Specification	IWT 80-Max (302L)	IWT 119-Max (425L)
Max. Operating Pressure	150 psi	150 psi
Dimensions Height (inches/mm)	64.5 / 1638	65.7 / 1669
Diameter (inches/mm)	24.5 / 622	28 / 711
Operation at outlet water temperature ° F / ° C	180 / 82	180 / 82
Gross tank capacity - USG / Liters	79.3 / 300	119 / 450

Specification	IWT 80-Max (302L)	IWT 119-Max (425L)
Net tank capacity - USG / Liters	75.0 / 284	111 / 419
Weight - empty Lbs / kg	188 / 85	246 / 111
Shipping weight - Lbs / kg	201 / 91	290 / 131
Domestic conn. size	1½" M	1½" M
First hour delivery - Gal/Hr *	719	753
Continuous Draw @ - Gal/Hr *	653	653
Boiler Output Required - Btu/Hr *	420,000	420,000
Minimum flow rate - GPM	25	25
Heating coil pressure drop - Ft. Hd.*	16.7	16.7
Coil Heat Transfer Area - Ft. ² *	27.4	27.4
Certified - water heater	✓	✓
Certified - low lead	✓	✓

Clearances from Heater Jacket

Surface	Distance from Combustibles	For Service
Front	1"	24"
Rear, Right and Left Sides	1"	1"
Top	1"	1"
Bottom	0"	0"

Recovery Rates

IWT 40 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 14 gpm / 160 °F		Boiler Flow - 14 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
50,000	97	60	114	78
60,000	108	72	129	93
80,000	132	96	159	124
100,000	155	120	190	156
120,000	166	131	204	170

IWT 40 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 14 gpm / 160 °F		Boiler Flow - 14 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
140,000	166	131	204	170
160,000	166	131	204	170

IWT 50 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 14 gpm / 160 °F		Boiler Flow - 14 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
50,000	107	60	124	78
60,000	118	72	139	93
80,000	141	96	169	124
100,000	165	120	199	156
120,000	188	144	230	187
140,000	211	167	259	217
160,000	211	167	259	217

IWT 65 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 14 gpm / 160 °F		Boiler Flow - 14 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
50,000	116	60	134	78
60,000	128	72	149	93
80,000	151	96	179	124
100,000	174	120	209	156
120,000	198	144	239	187
140,000	221	168	269	218
160,000	244	192	300	249
180,000	252	199	309	259

IWT 80 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 14 gpm / 160 °F		Boiler Flow - 14 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
50,000	136	60	153	78
60,000	147	72	168	93
80,000	171	96	198	124
100,000	194	120	228	156

IWT 80 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 14 gpm / 160 °F		Boiler Flow - 14 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
120,000	217	144	259	187
140,000	240	168	289	218
160,000	263	192	319	249
180,000	287	216	349	280
200,000	292	221	356	287

IWT 119 (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 20 gpm / 160 °F		Boiler Flow - 20 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
50,000	170	60	187	78
60,000	181	72	202	93
80,000	204	96	232	124
100,000	228	120	262	156
120,000	251	144	293	187
140,000	274	168	323	218
160,000	297	192	353	249
180,000	321	216	383	280
200,000	344	240	413	311
220,000	367	263	443	342
240,000	390	287	474	373

IWT 80 Max (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 25 gpm / 160 °F		Boiler Flow - 25 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
200,000	322	249	383	311
220,000	347	274	414	342
240,000	371	299	444	373
250,000	383	311	459	389
300,000	444	373	536	467
350,000	505	435	612	544
380,000	542	473	658	591
400,000	566	498	688	622
420,000	591	523	719	653

IWT 119 Max (135 °F)				
Boiler Output (BTU/Hr)	Boiler Flow = 25 gpm / 160 °F		Boiler Flow - 25 gpm / 180°F	
	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water	1st Hour Rating (Gal/Hr)	Continuous rating (Gal/Hr) 58°F entering cold water
200,000	357	249	418	311
220,000	381	274	448	342
240,000	405	299	479	373
250,000	418	311	494	389
300,000	479	373	570	467
350,000	539	435	646	544
380,000	576	473	692	591
400,000	600	498	722	622
420,000	625	523	753	653

Temperature Sensor Resistance Values

Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω
30	-1	34,558	115	46	4,184
35	2	29,996	120	49	3,760
40	4	26,099	125	52	3,383
45	7	22,763	130	54	3,050
50	10	19,900	135	57	2,754
55	13	17,436	140	60	2,490
60	16	15,311	145	63	2,255
65	18	13,474	150	66	2,045
70	21	11,883	155	68	1,857
75	24	10,501	160	71	1,689
80	27	9,299	165	74	1,538
85	29	8,250	170	77	1,403
90	32	7,334	175	79	1,281
95	35	6,532	180	82	1,172
100	38	5,828	185	85	1,073
105	41	5,210	190	88	983
110	43	4,665	195	91	903

Pressure Drop vs Tank Flow

Pressure Drop (ft of water) vs Tank Flow			
Model	10 gpm	14 gpm	25 gpm
IWT 40	3.3	6.2	-
IWT 50	4.0	7.0	-
IWT 65	4.4	7.5	-
IWT 80	5.4	10.1	-
IWT 119	6.5	11.8	-
IWT 80 Max	8.0	14.4	16.7
IWT 119 Max	8.0	14.4	16.7