



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

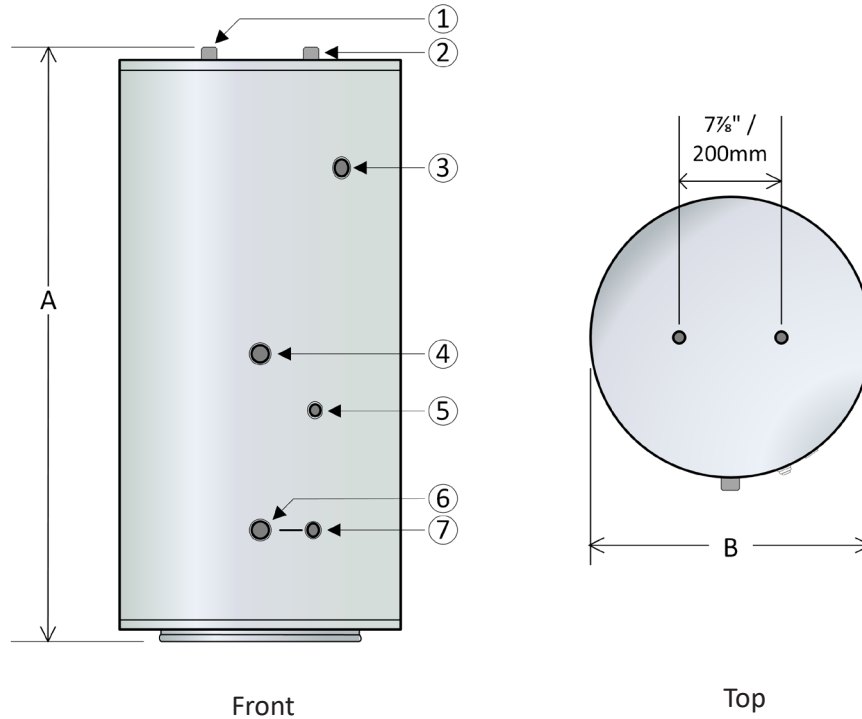
Certifications

- 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

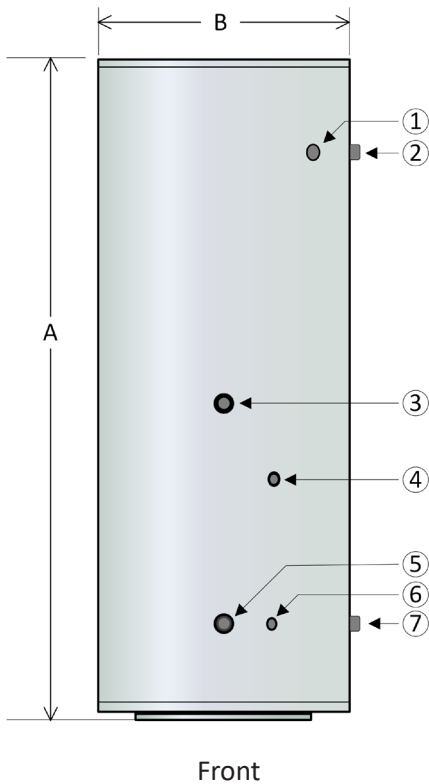
IWT 40, IWT 50, IWT 65



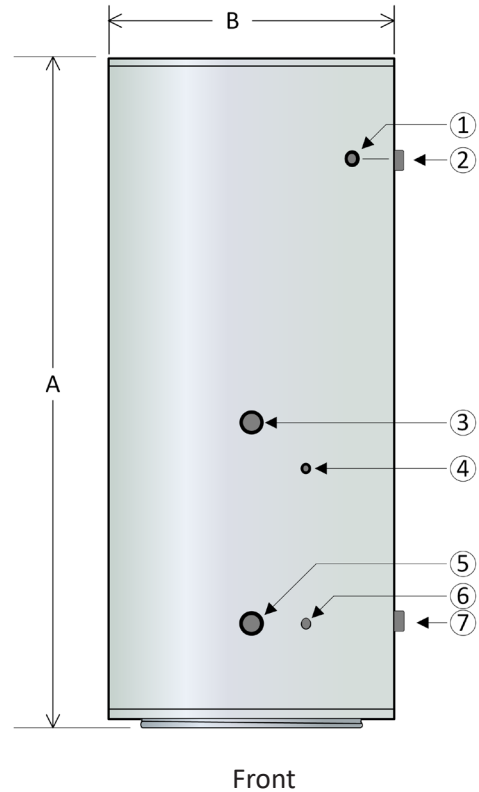
| Specification | IWT 40 | IWT 50 | IWT 65 |
|--------------------------|-------------|-----------|-------------|
| A = Height (inches/mm) | 45.2 / 1148 | 57 / 1448 | 54.5 / 1384 |
| B = Diameter (inches/mm) | 22 / 559 | 22 / 559 | 24.5 / 622 |

| Number | Description |
|--------|---|
| 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



| Specification | IWT 80 | IWT 80-Max | IWT 119 | IWT 119-Max |
|--------------------------|-------------|-------------|-------------|-------------|
| A = Height (inches/mm) | 64.5 / 1638 | 64.5 / 1638 | 65.7 / 1669 | 65.7 / 1669 |
| B = Diameter (inches/mm) | 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 |



Engineering Submittal

IWT InterStor Indirect Water Heaters

Product Specifications

| Specification | IWT 40 (150 L) | IWT 50 (200 L) | IWT 65 (250 L) | IWT 80 (302 L) | IWT 119 (425 L) |
|--|-------------------|-------------------|-------------------|-------------------|--------------------|
| 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 |
| Maximum 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 Connection Size | ¾" M | ¾" M | ¾" M | 1" M | 1½" M |
| Boiler Connection Size | 1" M | 1" M | 1" 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 (Btu/Hr*) | 120,000 | 140,000 | 180,000 | 200,000 | 240,000 |
| Minimum Flow Rate (GPM) | 14 | 14 | 14 | 14 | 20 |
| 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 | 10.2 |
| Certified - Water Heater | Yes | Yes | Yes | Yes | Yes |
| Certified - Low Lead | Yes | Yes | Yes | Yes | Yes |

**Based on 180°F boiler supply and 58°F entering cold water*



Engineering Submittal

IWT InterStor Indirect Water Heaters

Product Specifications - Max models

| Specification | IWT 80-Max (302 L) | IWT 119-Max (425 L) |
|--|-----------------------|------------------------|
| Max. Operating Pressure | 150 psi | 150 psi |
| Height (inches/mm) | 64.5 / 1638 | 65.7 / 1669 |
| Diameter (inches/mm) | 24.5 / 622 | 28 / 711 |
| Maximum Outlet Water Temperature (°F/°C) | 180 / 82 | 180 / 82 |
| Gross Tank Volume (USG/Liters) | 79.3 / 300 | 119 / 450 |
| Net Tank Volume (USG/Liters) | 75.0 / 284 | 111 / 419 |
| Weight (empty) - lbs/kg | 188 / 85 | 246 / 111 |
| Shipping Weight (lbs/kg) | 201 / 91 | 290 / 131 |
| Domestic Connection Size | 1½" M | 1½" M |
| Boiler Connection Size | 1½" M | 1½" M |
| First Hour Delivery - Gal/Hr* | 719 | 753 |
| Continuous Draw @ - Gal/Hr* | 653 | 653 |
| Boiler Output (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 | Yes | Yes |
| Certified - Low Lead | Yes | Yes |

**Based on 180°F boiler supply and 58°F entering cold water*

Clearances from Heater Jacket

| IWT 40, 50, 65, 80, 119, 80-Max, 119-Max | | |
|--|----------------------------|-------------|
| Surface | Distance from Combustibles | For Service |
| Front | 1" | 24" |
| Rear, Right and Left | 1" | 1" |
| Top | 1" | 1" |
| Bottom | 0" | 0" |



Engineering Submittal

IWT InterStor Indirect Water Heaters

Recovery Rates - IWT 40, IWT 50

| 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 |
| 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 |



Engineering Submittal

IWT InterStor Indirect Water Heaters

Recovery Rates - IWT 65, IWT 80

| 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 |
| 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 |



Recovery Rates - IWT 119

| 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 |



Recovery Rates - IWT 80-Max, IWT 119-Max

| 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 | 10gpm | 14gpm | 25gpm |
| 40GAL / 150L | 3.3 | 6.2 | - |
| 50GAL / 200L | 4.0 | 7.0 | - |
| 60GAL / 250L | 4.4 | 7.5 | - |
| 80GAL / 300L | 5.4 | 10.1 | - |
| 115GAL / 450L | 6.5 | 11.8 | - |
| 80 MAX GAL / 300L | 8.0 | 14.4 | 16.7 |
| 119 MAX GAL / 450L | 8.0 | 14.4 | 16.7 |