

COMMERCIAL OIL AND DUAL-FUEL WATER HEATERS

A. O. Smith's COF water heaters are fired on No. 1 or 2 fuel oil while the COBT models have the versatility of operating with natural or propane gas and/or No. 1 or 2 oil. The COF/COBT models include some of the largest and most powerful A. O. Smith tank-type water heating systems available – with storage capacities up to 600 gallons and input up to 2.5 million BTUs per hour.

FULLY AUTOMATIC CONTROLS WITH SAFETY SHUTOFF — High temperature limit control (manual reset). CSA Certified and ASME rated temperature and pressure relief valve. Hinged door control compartment with key lock for ease of access. Two thermostats, upper and lower, for accurate temperature control.

JACKET & INSULATION — Heavy gauge steel jacket with baked powder coat finish. Insulated with high-density foam insulation that meets or exceeds all required standards.

Meets or exceeds the thermal efficiency and/or standby loss requirements of the U.S. Department of Energy and current edition ASHRAE/IESNA 90.1.

FEATURES

UL — Entire unit UL listed.

GLASS-LINED TANK — Exclusive corrosion protection with glass-lining on all interior surfaces. Multiple anodes provide cathodic protection.

ASME CONSTRUCTION STANDARD — 160 PSI design pressure on all models.

OTHER FEATURES

- Two layers of high temperature ceramic fiber insulation in combustion chamber
- Flame inspection port opening
- Mounted on rugged channel iron skids
- ASME Stamping
- Combination temperature and pressure gauge
- Low water cutoff
- Barometric draft regulator
- 120 volt control circuit
- Drain valve
- Removable lifting lugs
- Two 3 inch handhole inspection openings.

COF — OIL FIRED MODELS: No. 1 or 2 Oil 3450 RPM Motor • Multi-annular fuel containment combustor head • Available for firing light fuel oils including diesel • Oil ignition transformer • Integral 2-stage fuel unit • Squirrel cage blower • Oil safety valve.

COBT — COMBINATION GAS/OIL: Natural Gas or Propane & No. 1 or 2 Oil • 3450 RPM Motor • Multi-annular fuel containment combustor head • Gas electric pilot and gas ignition transformer • Pilot and main pressure regulators • Air safety switch • Manual fuel selector switch • Integral 2-stage fuel unit • Squirrel cage blower.

OPTIONS

Factory Mutual approved control arrangement • Industrial Risk Insurance (Formerly FIA) • High or low water pressure switch • 180°F water service thermostats • Modular graphic burner systems management on heaters with 270,000 BTU input and over • CSA certified and ASME rated T&P relief valve.

3-YEAR LIMITED TANK WARRANTY

- **FACTORY START-UP SERVICE INCLUDED**-Required for activating warranty and assuring maximum operating performance. Contact your local sales representative of authorized start-up agent to arrange a FREE certified start-up.
- For complete information, consult written warranty or contact A. O. Smith

**MODELS
COF-150-140
through
COF-600-2500
and
COBT-150-350
through
COBT-600-2500**



ASME





Commercial Oil and Dual Fuel Water Heaters

Models*	Actual Storage Capacity Gallons U.S.	Input Rating BTU/HR	Firing Rate GPH	Recovery Capacity 80°F Rise	Recovery Capacity 100°F Rise	Recovery Capacity 140°F Rise	COBT Motor HP 1ø 120V	COF Motor HP 1ø 120V
COF-150-140	163	140,000	1	170	136	97	1/3 HP 5.5 Amp	1/7 HP
COF-150-199	163	199,000	1.4	241	193	138		4.4 Amp
COF-150-255	163	255,000	1.8	309	247	176		
COF-150-270	163	270,000	1.9	327	262	187		
COBT-150-350	150	350,000	2.2	420	339	242	1/3 HP 5.5 Amp	1/4 HP
COF/COBT-150-400	151	400,000	2.8	485	387	277		4.6 Amp
COF/COBT-150-540	151	540,000	3.8	654	524	374		
COF/COBT-150-720	145	720,000	5.1	873	698	416		
COF/COBT-200-300**	221	300,000	2.1	364	291	208	1/3 HP 5.5 AMP	1/3 HP
COF/COBT-200-600	221	600,000	4.2	727	582	416		5.5 Amp
COF/COBT-200-800	221	800,000	5.7	970	776	554		
COF/COBT-200-1000	201	1,000,000	7.1	1212	970	693		
COF/COBT-200-1250	201	1,250,000	8.9	1515	1212	866	3/4 HP 10.2 Amp	3/4 HP
COF/COBT-200-1500	201	1,500,000	10.7	1818	1455	1039		10.2 Amp
COF/COBT-300-300**	300	300,000	2.1	364	291	208	3/4 HP 10.2 Amp	3/4 HP
COF/COBT-300-600	300	600,000	4.2	727	582	416		10.2 Amp
COF/COBT-300-800	300	800,000	5.7	970	776	554		
COF/COBT-300-1000	300	1,000,000	7.1	1212	970	693		
COF/COBT-300-1250	300	1,250,000	8.9	1515	1212	866	1/3 HP 5.5 AMP	1/4 HP
COF/COBT-300-1500	300	1,500,000	10.7	1818	1455	1039		5.5 AMP
COF/COBT-400-600	411	600,000	4.2	727	582	416	1/3 HP 5.5 Amp	1/4 HP
COF/COBT-400-800	411	800,000	5.7	970	776	554		4.6 Amp
COF/COBT-400-1000	411	1,000,000	7.1	1212	970	693		
COF/COBT-400-1250	411	1,250,000	8.9	1515	1212	866		
COF/COBT-400-1500	397	1,500,000	10.7	1816	1455	1039	3/4 HP 10.2 Amp	3/4 HP
COF/COBT-400-1750	397	1,750,000	12.5	2121	1697	1212		10.2 Amp
COF/COBT-400-2000	397	2,000,000	14.2	2424	1939	1385		10.2 Amp
COF/COBT-500-2250	495	2,250,000	16.0	2727	2182	1558	1 HP 16 Amp	1 HP
COF/COBT-500-2500	495	2,500,000	17.8	3030	2424	1732		16 Amp
COF/COBT-600-720	594	720,000	5.1	873	698	499	1/3 HP 5.5 Amp	1/4 HP
COF/COBT-600-1000	594	1,000,000	7.1	1212	970	693		5.5 Amp
COF/COBT-600-1250	594	1,250,000	8.9	1515	1212	866		4.6 Amp
COF/COBT-600-1500	594	1,500,000	10.7	1816	1455	1039	3/4 HP 10.2 Amp	1/3 HP
COF/COBT-600-1750	594	1,750,000	12.5	2121	1697	1212		10.2 Amp
COF/COBT-600-2000	594	2,000,000	14.3	2424	1939	1385		5.5 Amp
COF/COBT-600-2250	575	2,250,000	16.0	2727	2182	1558	1 HP 16 Amp	1 HP
COF/COBT-600-2500	575	2,500,000	17.8	3030	2424	1732		16 Amp

Recovery ratings are based on 80% thermal efficiency.

**COBT models are 350,000 BTU.

For high altitude areas above 2,000', please advise altitude when ordering.
Certified Minimum Installation Clearances to Combustibles: Front: 18 inches

Back: 0 inches

Sides: 0 inches

Top: 5 inches

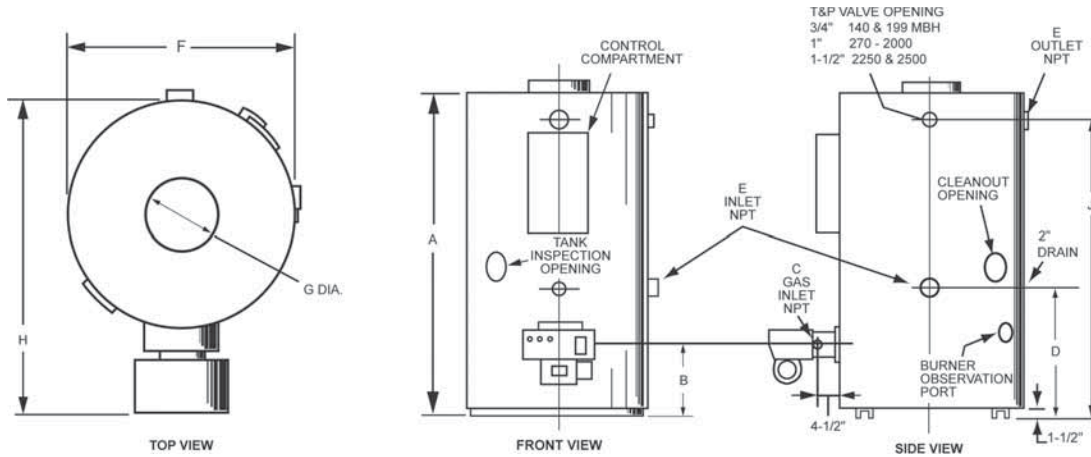
A clearance of 24 inches is recommended from serviceable parts such as relief valve, power burner, drain valve and anodes (anodes are located on side above cold water inlet).

COF/COBT models are Category I appliances (Fan Assisted) and require a negative draft. These units should only be commonly vented with other Category I negative draft appliances per the latest edition of the National Fuel Gas Code. An approved/listed Type "B" venting material is recommended.

A negative draft of -0.02" to -0.07" is required in the vent.



Commercial Oil and Dual Fuel Water Heaters



Models*	A	B	C	D	E	F	G	H	J	Ship. Wt. w/Burner (lbs.)
COF-150-140	82 1/4	13 1/2	1/2	29 1/4	1 1/4	36 1/2	5	47	73 1/2	1292
COF-150-199	82 1/4	13 1/2	1/2	29 1/4	1 1/4	36 1/2	6	47	73 1/2	1292
COF-150-255	82 1/4	13 1/2	1/2	29 1/4	1 1/4	36 1/2	6	47	73 1/2	1292
COF-150-270	82 1/4	13 1/2	1	29 1/4	1 1/4	36 1/2	6	57 1/2	73 1/2	1397
COBT-150-350	82 1/4	13 1/2	1	29 1/4	1 1/4	36 1/2	7	57 1/2	73 1/2	1397
COF/COBT-150-400	82 1/4	13 1/2	1	29 1/4	1 1/4	36 1/2	7	57 1/2	73 1/2	1397
COF/COBT-150-540	82 1/4	13 1/2	1	29 1/4	1 1/4	36 1/2	8	57 1/2	73 1/2	1505
COF/COBT-150-720	82 1/4	13 1/2	1 1/4	29 1/4	1 1/4	36 1/2	10	57 1/2	73 1/2	1510
COF/COBT-200-300**	84 1/2	17 1/2	1	34 3/4	1 1/2	44 3/4	6	66 1/2	74 3/4	2098
COF/COBT-200-600	84 1/2	17 1/2	1	34 3/4	1 1/2	44 3/4	8	66 1/2	74 3/4	2098
COF/COBT-200-800	84 1/2	17 1/2	1 1/4	34 3/4	1 1/2	44 3/4	10	66 1/2	74 3/4	2103
COF/COBT-200-1000	84 1/2	17 1/2	1 1/4	34 3/4	1 1/2	44 3/4	10	66 1/2	74 3/4	2103
COF/COBT-200-1250	84 3/4	13 1/2	1 1/4	29 1/2	1 1/2	44 3/4	12	66 1/2	75	2467
COF/COBT-200-1500	84 3/4	13 1/2	1 1/2	29 1/2	1 1/2	44 3/4	12	81 1/2	75	2757
COF/COBT-300-300**	92	14	1	29 1/4	1 1/2	44 3/4	6	66 1/2	81 1/2	2150
COF/COBT-300-600	92	14	1	29 1/4	1 1/2	44 3/4	8	66 1/2	81 1/2	2150
COF/COBT-300-800	92	14	1 1/4	29 1/4	1 1/2	44 3/4	10	66 1/2	81 1/2	2308
COF/COBT-300-1000	92	14	1 1/4	29 1/4	1 1/2	44 3/4	10	66 1/2	81 1/2	2308
COF/COBT-300-1250	92	14	1 1/4	29 1/4	1 1/2	44 3/4	12	66 1/2	81 1/2	2584
COF/COBT-300-1500	92	14	1 1/2	29 1/4	1 1/2	44 3/4	12	81 1/2	81 1/2	2774
COF/COBT-400-600	89	17 1/2	1	33 1/4	2	55	8	76 1/2	78 3/4	3207
COF/COBT-400-800	89	17 1/2	1 1/4	33 1/4	2	55	10	76 1/2	78 3/4	3212
COF/COBT-400-1000	89	17 1/2	1 1/4	33 1/4	2	55	10	76 1/2	78 3/4	3212
COF/COBT-400-1250	89	17 1/2	1 1/4	33 1/4	2	55	12	76 1/2	78 3/4	3212
COF/COBT-400-1500	89	17 1/2	1 1/2	33 1/4	2	55	12	91 1/2	78 3/4	3402
COF/COBT-400-1750	89	17 1/2	2	33 1/4	2	55	14	91 1/2	78 3/4	3528
COF/COBT-400-2000	96 1/4	17 1/2	2	33 1/4	2	55	14	91 1/2	86 1/2	3669
COF/COBT-500-2250	108	17 1/2	2	33 1/4	2	55	16	91 1/2	98 1/2	4277
COF/COBT-500-2500	108	17 1/2	2	33 1/4	2	55	16	91 1/2	98 1/2	4419
COF/COBT-600-720	114	17 1/2	1 1/4	33 1/4	2	55	10	76 1/2	105	3667
COF/COBT-600-1000	114	17 1/2	1 1/4	33 1/4	2	55	10	76 1/2	105	3667
COF/COBT-600-1250	114	17 1/2	1 1/4	33 1/4	2	55	12	76 1/2	105	3667
COF/COBT-600-1500	114	17 1/2	1 1/2	33 1/4	2	55	12	91 1/2	105	3837
COF/COBT-600-1750	114	17 1/2	2	33 1/4	2	55	14	91 1/2	105	3837
COF/COBT-600-2000	114	17 1/2	2	33 1/4	2	55	14	91 1/2	105	3837
COF/COBT-600-2250	114	17 1/2	2	33 1/4	2	55	16	91 1/2	105	4477
COF/COBT-600-2500	114	17 1/2	2	33 1/4	2	55	16	91 1/2	105	4619

*Specify COF (Oil Fired) or COBT (Combination Oil/Natural Gas) Model.
 **COBT models are 350,000 BTU
 Example: COF-150-140 or COBT-150-350.



SUGGESTED SPECIFICATIONS

Water heater(s) shall be Model _____ as manufactured by the A. O. SMITH or an approved equal. Heater(s) shall have a minimum oil firing rate of _____ gallons per hour, an input rating of _____ BTU/HR. The heater(s) shall have a recovery rate of _____ GPH at a 100°F rise and a storage capacity of _____ gallons. The 160 psi design pressure tank shall be glass-lined with an alkaline borosilicate composition and fused to the steel by firing at 1600°F. The heater(s) shall be equipped with _____ NPT water inlet and outlet openings, (2) 3" handhole cleanouts, and carry a National Board stamping. The heater(s) shall be ASME and the entire unit listed by Underwriters Laboratories. Controls shall include: high temperature limit control (manual reset), upper and lower thermostats, combination temperature and pressure gauge, low water cutoff, CSA certified and ASME rated T&P relief valve, and barometric draft regulator. Control compartment door shall be hinged for easy access and include cam locks for security. The heater(s) shall be equipped with multiple anodes for cathodic protection. The heater(s) shall be insulated with glass fiber insulation and meet or exceed the thermal efficiency and/or standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1 and insulation R value. The heater(s) shall include a drain valve and flame observation port. The jacket shall be baked powder coat finish. Heater(s) vessel shall have a 3-year limited warranty against failure as outlined in the written warranty.

The COF models shall have a UL listed burner with two-stage pump, oil safety valve, electronic flame safeguard, intermittent ignition and diaphragm air switch for proof of flame operation.

The COBT models shall include a dual fuel burner with two-stage oil pump, oil safety valve, electronic flame safeguard, intermittent ignition, diaphragm air switch, main and pilot automatic gas valves, gas pressure regulator and manual crossover switch.