



BURNER SPEC & DATA SHEET

SERIES TCII™ **POWER FLAME MODEL "C" BURNER** **FOR OIL, GAS, AND GAS/OIL**

STANDARD EQUIPMENT

Oil Burners:

1. Lo-Hi-Lo operation on Models TCII-04 through TCII-09 boilers.
2. Modulation operation on Models TCII-10 through TCII-18 boilers.
3. Burner mounted control panel with on/off control switch, power-on and main fuel lights and terminal strip.
4. 15 second valve-on delay/30 second burner motor off delay –Models TCII-04 through TCII-09 boilers.
5. 30 second pre-purge/15 second post-purge –Models TCII-10 through TCII-18.
6. Direct spark ignition.

Gas Burners:

1. Lo-Hi-Lo operation on Model TCII-04 through TCII-09 boilers.
2. Modulation operation on Models TCII-10 through TCII-18 boilers.
3. Burner mounted control panel with on/off control switch, power-on and main fuel lights and terminal strip.
4. 30 second pre-purge/0 second post-purge – Models TCII-04 and TCII-05 boilers.
5. 90 second pre-purge/0 second post-purge – Models TCII-06 through TCII-08 boilers.
6. 90 second pre-purge/15 second post-purge – Models TCII-09 through TCII-18 boilers.
7. Spark ignited gas pilot.
8. Air flow safety switch.

Combination Gas/Oil Burners:

1. Lo-Hi-Lo operation on Models TCII-04 through TCII-09 boilers.
2. Modulation operation on Models TCII-10 through TCII-18 boilers.
3. Burner mounted control panel with on/off control switch, power-on and main fuel lights and terminal strip.
4. 30 second pre-purge/0 second post-purge – Models TCII-04 and TCII-05 boilers.
5. 90 second pre-purge/0 second post-purge – Models TCII-06 through TCII-09 boilers.
6. 90 second pre-purge/15 second post-purge – Models TCII-10 through TCII-18 boilers.
7. Spark ignited gas pilot.
8. Air flow safety switch.
9. Manual fuel changeover switch.

OPTIONAL EQUIPMENT

1. Full modulation burner operation for boilers with standard Lo-Hi-Lo.
2. Automatic fuel changeover on combination gas/oil burners.
3. Air flow switch on oil burners.
4. Step-down control circuit transformer and control circuit fuse.
5. Controls to comply with FM, Former IRI, CSD-1, and other codes. Contact your local Peerless® Representative or PB Heat, LLC for availability.
6. Various combustion controls. Contact your local Peerless® Representative or PB Heat, LLC for availability.
7. Various burner motor voltages: 120/1/60, 230/1/60, 208-230/460/3/60.

POWER FLAME MODEL "C" BURNER FOR OIL, GAS, AND GAS/OIL

| BOILER MODEL | INPUT (1) | | OVERFIRE PRESSURE IN. W.C. (2) | STANDARD BURNER MODEL | | | INITIAL AIR SETTINGS (3) INCHES | | |
|--------------|-----------|---------|--------------------------------|-----------------------|----------|-----------|---------------------------------|-----|--------|
| | OIL MBH | GAS MBH | | OIL | GAS | GAS/OIL | DIFF. | TOP | BOTTOM |
| TCII-04 | 7.9 | 1143 | 0.36 | C1-O | C1-G-12 | C1-GO-12 | 1/4 | 7/8 | 7/8 |
| TCII-05 | 10.2 | 1458 | 0.59 | C1-O | C1-G-12 | C1-GO-12 | 1/2 | 1 | 1 |
| TCII-06 | 12.2 | 1773 | 0.82 | C2-OA | C2-G-15 | C2-GO-15 | 3/8 | 3/8 | 3/8 |
| TCII-07 | 14.4 | 2088 | 0.46 | C2-OA | C2-G-15 | C2-GO-15 | 3/8 | 3/8 | 3/8 |
| TCII-08 | 16.6 | 2403 | 0.61 | C2-OB | C2-G-20A | C2-GO-20A | 3/8 | 3/8 | 3/8 |
| TCII-09 | 18.8 | 2718 | 0.45 | C2-OB | C2-G-20B | C2-GO-20B | 3/8 | 3/8 | 3/8 |
| TCII-10 | 21.0 | 3033 | 0.60 | C2-OB | C2-G-20B | C2-GO-20B | 1/2 | 3/8 | 3/8 |
| TCII-11 | 23.0 | 3348 | 0.55 | C3-O | C3-G-20 | C3-GO-20 | 5/8 | 3/8 | 3/8 |
| TCII-12 | 25.5 | 3663 | 0.61 | C3-O | C3-G-25 | C3-GO-25 | 5/8 | 3/8 | 3/8 |
| TCII-13 | 27.5 | 3978 | 0.62 | C3-O | C3-G-25 | C3-GO-25 | 5/8 | 3/8 | 3/8 |
| TCII-14 | 29.5 | 4293 | 0.69 | C3-O | C3-G-25 | C3-GO-25 | 5/8 | 3/8 | 3/8 |
| TCII-15 | 32.0 | 4608 | 0.73 | C3-OB | C3-G-25B | C3-GO-25B | 1/4 | 1/4 | 1/4 |
| TCII-16 | 34.0 | 4923 | 0.82 | C3-OB | C3-G-25B | C3-GO-25B | 5/16 | 1/4 | 1/4 |
| TCII-17 | 36.5 | 5238 | 0.79 | C4-OA | C4-G-25 | C4-GO-25 | 1/2 | 1/4 | 1/4 |
| TCII-18 | 38.5 | 5553 | 0.68 | C4-OA | C4-G-25 | C4-GO-25 | 1/2 | 1/4 | 1/4 |

(1) Based on Commercial Standard Number 2 fuel oil with a heating value of 140,000 BTU/gal. and Natural Gas with a heating value of 1000 BTU/cubic foot and 0.60 specific gravity at a maximum altitude of 2000 feet above mean sea level. Consult the factory for higher altitudes.

(2) With 0.10 inch W.C. at flue outlet and at Input.

(3) Start-up settings only. Final settings are to be determined using combustion analysis equipment.

POWER FLAME MODEL "C" BURNER FOR OIL, GAS, AND GAS/LIGHT OIL

| BOILER MODEL | STANDARD COMBUSTION CONTROL | | | 3450 RPM MOTOR HP | | STANDARD VOLTAGE VOLTS/PHASE/HERTZ |
|--------------|-----------------------------|---------|---------|-------------------|--------------|------------------------------------|
| | OIL | GAS | GAS/OIL | GAS | OIL, GAS/OIL | |
| TCII-04 | R7284P | RM7897A | RM7897C | 1/3 | 1/2 | 115/1/60 |
| TCII-05 | R7284P | RM7897A | RM7897C | 1/2 | 1/2 | 115/1/60 |
| TCII-06 | R7284P | RM7897A | RM7897C | 1/2 | 3/4 | 115/1/60 |
| TCII-07 | R7284P | RM7897A | RM7897C | 1/2 | 3/4 | 115/1/60 |
| TCII-08 | R7284P | RM7897A | RM7897C | 3/4 | 1 | 230/1/60 |
| TCII-09 | R7284P | RM7897C | RM7897C | 1 | 1-1/2 | 230/1/60 |
| TCII-10 | RM7897A | RM7897C | RM7897C | 1 | 1-1/2 | 230/1/60 |
| TCII-11 | RM7897A | RM7897C | RM7897C | 1-1/2 | 2 | 230/3/60 |
| TCII-12 | RM7897A | RM7897C | RM7840L | 1-1/2 | 2 | 230/3/60 |
| TCII-13 | RM7840L | RM7840L | RM7840L | 1-1/2 | 2 | 230/3/60 |
| TCII-14 | RM7840L | RM7840L | RM7840L | 1-1/2 | 2 | 230/3/60 |
| TCII-15 | RM7840L | RM7840L | RM7840L | 3 | 3 | 230/3/60 |
| TCII-16 | RM7840L | RM7840L | RM7840L | 3 | 3 | 230/3/60 |
| TCII-17 | RM7840L | RM7840L | RM7840L | 3 | 5 | 230/3/60 |
| TCII-18 | RM7840L | RM7840L | RM7840L | 3 | 5 | 230/3/60 |

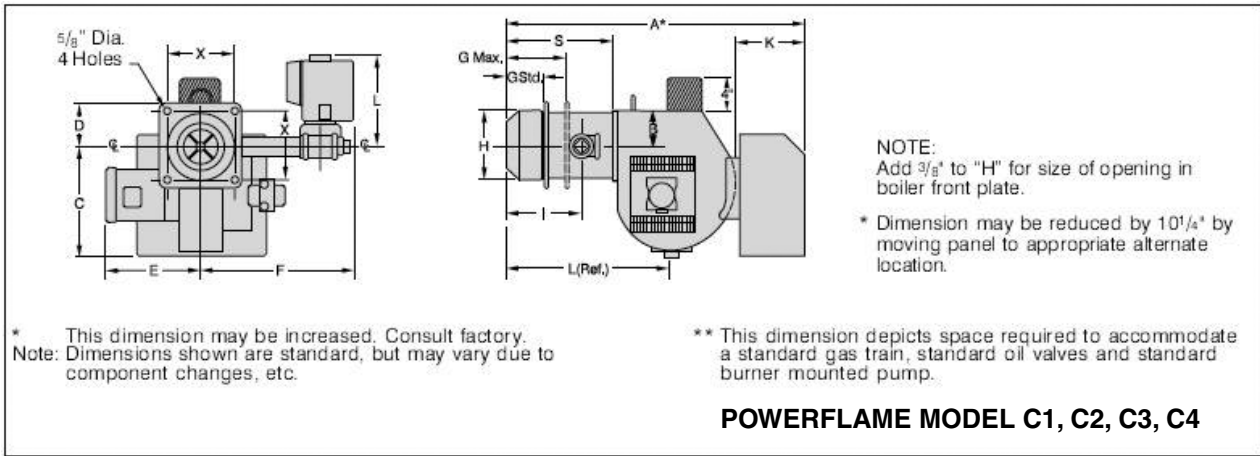
POWER FLAME MODEL "C" BURNER - BURNER CHARACTERISTICS FOR GAS FIRING

| BOILER MODEL | GAS ORIFICE | | | GAS CONTROL TRAIN | | | GAS MANIFOLD PRESSURE (IN. W.C.) | GAS TRAIN PRESSURE DROP (IN. W.C.) |
|--------------|-------------|-----------|-----------|-------------------|---------------------------|---------|----------------------------------|------------------------------------|
| | QTY | SIZE INCH | SIDE INCH | SIZE NPS (1) | INLET PRESSURE (IN. W.C.) | | | |
| | | | | | MINIMUM | MAXIMUM | | |
| TCII-04 | 30 | 9/64 | 7/8 | 1.25 | 5.0 | 14.00 | 3.9 | 2.04 |
| TCII-05 | 30 | 9/64 | 1 | 1.25 | 6.6 | 14.00 | 3.3 | 3.81 |
| TCII-06 | 40 | 11/64 | 1-1/4 | 1.50 | 6.5 | 14.00 | 3.1 | 3.72 |
| TCII-07 | 40 | 11/64 | None | 1.50 | 8.7 | 14.00 | 3.0 | 5.71 |
| TCII-08 | 40 | 11/64 | None | 2.00/1.50 | 6.3 | 14.00 | 4.0 | 2.34 |
| TCII-09 | 40 | #1 | 1-5/16 | 2.00/1.50 | 5.6 | 14.00 | 2.6 | 3.00 |
| TCII-10 | 40 | #1 | 1-5/8 | 2.00/1.50 | 7.4 | 14.00 | 3.3 | 3.74 |
| TCII-11 | 50 | #10 | None | 2.00 | 6.8 | 14.00 | 3.4 | 2.88 |
| TCII-12 | 50 | #10 | None | 2.00 | 7.7 | 14.00 | 3.9 | 3.47 |
| TCII-13 | 50 | #10 | None | 2.50/2.00 | 7.2 | 14.00 | 3.6 | 3.20 |
| TCII-14 | 50 | #10 | None | 2.50/2.00 | 8.3 | 14.00 | 4.2 | 3.70 |
| TCII-15 | 50 | 9/32 | None | 2.50/2.00 | 7.8 | 14.00 | 3.0 | 4.35 |
| TCII-16 | 50 | 9/32 | None | 2.50/2.00 | 8.8 | 14.00 | 3.3 | 4.98 |
| TCII-17 | 50 | 1/4 | None | 2.50 | 6.8 | 14.00 | 3.0 | 3.29 |
| TCII-18 | 50 | 1/4 | None | 2.50 | 7.4 | 14.00 | 3.3 | 3.70 |

(1) On dual size gas train, first number is the main gas valve, aux. gas valve, and leakage test cock. The second number is the main shutoff cock and gas pressure regulator.

POWER FLAME MODEL "C" BURNER - BURNER CHARACTERISTICS FOR OIL FIRING

| BOILER MODEL | OIL NOZZLES - DELAVAN | | | OIL PRESSURE PSIG | | STANDARD FUEL UNIT | | |
|--------------|-----------------------|----------|----------|-------------------|-----------|--------------------|--------------|-------------|
| | QTY | SIZE GPH | PATTERN | LOW FIRE | HIGH FIRE | MODEL | MANUFACTURER | GEARSET GPH |
| TCII-04 | 1 | 4.5 | 45B | 100-150 | 300 | CV4-RR25 | Combu | 35 |
| TCII-05 | 1 | 6.0 | 80B | 100-150 | 300 | BTA-8850 | Suntec | 29 |
| TCII-06 | 1 | 7.0 | 80B | 100-150 | 300 | BTA-8851 | Suntec | 35 |
| TCII-07 | 1 | 8.5 | 80B | 100-150 | 300 | BTA-8851 | Suntec | 35 |
| TCII-08 | 1 | 10.0 | 80B | 100-150 | 300 | BTA-8852 | Suntec | 42 |
| TCII-09 | 1 | 11.0 | 80B | 100-150 | 300 | BTA-8852 | Suntec | 42 |
| TCII-10 | 1 | 12.0 | 80B | 100-150 | 300 | BTA-8852 | Suntec | 42 |
| TCII-11 | 1 | 16.0 | VF 80BPS | — | 260 | BTA-8852 | Suntec | 42 |
| TCII-12 | 1 | 16.0 | VF 80BPS | — | 295 | 22R322 | Webster | 105 |
| TCII-13 | 1 | 18.0 | VF 80BPS | — | 295 | 22R322 | Webster | 105 |
| TCII-14 | 1 | 20.0 | VF 80BPS | — | 295 | 22R322 | Webster | 105 |
| TCII-15 | 1 | 35.0 | VF 80BPS | — | 280 | 22R623 | Webster | 135 |
| TCII-16 | 1 | 37.5 | VF 80BPS | — | 260 | 22R623 | Webster | 135 |
| TCII-17 | 1 | 40.0 | VF 80BPS | — | 300 | 22R623 | Webster | 135 |
| TCII-18 | 1 | 45.0 | VF 80BPS | — | 250 | 22R623 | Webster | 135 |



| BURNER MODEL | DIMENSIONS, INCHES | | | | | | | | | | | | | | | | | |
|--------------|--------------------|----------|--------|--------|----------|-------|--------|---------|--------|-------|-------|------------|--------|--------|--------|--------|--------|-------|
| | A | B | B (R) | C | C (R) | D | E | F | | G | | | H | I | K | L | S | X |
| | | | | | | | | GAS/OIL | ST OIL | STD | MAX* | CAD ST OIL | | | | | | |
| C1 | 34-1/8 | 13-13/16 | 5-9/16 | 14-1/2 | 14-1/2 | 4-5/8 | 12-1/4 | 20 | 12-3/4 | 3-1/4 | 4-3/4 | 11 | 7-1/4 | 7-3/8 | 10-1/4 | 17-1/8 | 12-5/8 | 7-1/4 |
| C2 | 39-1/8 | 4-1/2 | 6-1/8 | 14-7/8 | 14 | 5-1/4 | 14 | 20 | 13 | 4 | 6-3/4 | 11-1/2 | 8-3/8 | 8-1/2 | 10-1/4 | 18-7/8 | 13-3/8 | 8-1/2 |
| C3 | 44 | 5-1/2 | 7 | 16-5/8 | 15-1/4 | 6 | 16 | 22-3/8 | 14-1/2 | 4-1/2 | 8 | — | 10-1/8 | 11-1/2 | 10-1/4 | 22 | 15-1/2 | 10 |
| C4 | 50 | 6-1/4 | 7-5/16 | 18-7/8 | 17-11/16 | 7 | 18-1/2 | 28 | 18 | 6 | 9 | — | 12-1/8 | 14-1/4 | 10-1/4 | 26-5/8 | 19-1/8 | 12 |

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