TROUBLESHOOTING CHART

40-SERIES OIL BURNERS

530SE/C Control Box

THERMOSTAT CLOSED (CALLING FOR HEAT) AND OPERATING LIMITS CLOSED

RESET CONTROL BOX (PRESS RED BUTTON)

BURNER STARTS

BURNER REMAINS IN PRE-PURGE

- ☐ FIRST CHECK IF CAD CELL MAY BE SENSING LIGHT DURING PRE-PURGE BY REMOVING CAD CELL AND CHECKING RESISTANCE VALUE – LESS THAN 40,000 OHMS WITH LIGHT OR MORE THAN 150,000 OHMS WITHOUT LIGHT *(ALTERNATIVE IS TO REMOVE CAD CELL AND RESET BURNER – IF BURNER LOCKS OUT, CAD CELL SHOULD BE REPLACED)*
- ☐ THEN CHECK VISUALLY TO ENSURE GOOD CONTACT BETWEEN CONTROL BOX AND SUB-BASE
- ☐ THEN CHECK SUB-BASE FOR MIS-WIRED TERMINALS
- ☐ THEN CHECK FOR "OPEN" CIRCUIT BETWEEN TERMINALS 2 & 8 – IF "OPEN" CIRCUIT FOUND THE COIL SHOULD BE REPLACED
- ☐ THEN CHECK TO ENSURE VOLTAGE BETWEEN TERMINALS 3 & 7 WITHIN RANGE OF 39VAC -- 51VAC

IF THE CONDITION PERSISTS, THE CONTROL BOX IS LIKELY FAULTY AND SHOULD BE REPLACED

BURNER CONTINUES TO CYCLE THROUGH PRE-PURGE AND IGNITION WITH IMMEDIATE FLAME DROPOUT

- ☐ FIRST CHECK BURNER SETTINGS FOR COMPLIANCE WITH SPECIFICATIONS
- ☐ THEN CHECK COIL FOR MISSING METAL YOKE/BRACKET
- ☐ THEN CHECK CAD CELL BY REMOVING CAD CELL AND CHECKING RESISTANCE VALUE – LESS THAN 40,000 OHMS WITH LIGHT OR MORE THAN 150,000 OHMS WITHOUT LIGHT *(ALTERNATIVE IS TO REMOVE CAD CELL AND RESET BURNER – IF BURNER LOCKS OUT THE CAD CELL SHOULD BE REPLACED)*
- ☐ THEN CHECK SUB-BASE FOR MIS-WIRED TERMINALS
- ☐ THEN CHECK TO ENSURE RESISTANCE OF COIL ON TERMINALS 1 & 2 WITHIN RANGE OF 1215 OHMS – 1485 OHMS
- ☐ THEN CHECK PUMP VALVE STEM CONDITION BY REMOVING VALVE STEM AND ENSURING PISTON/PLUNGER OPERATES FREELY – IF NOT OPERATING PROPERLY THE VALVE STEM SHOULD BE REPLACED

IF THE CONDITION PERSISTS, THE CONTROL BOX IS LIKELY FAULTY AND SHOULD BE REPLACED

BURNER LOCKS OUT AFTER TRIAL FOR IGNITION

- ☐ FIRST CHECK OIL SUPPLY – FOR POSSIBLE EMPTY TANK, CLOSED VALVE, DIRTY FILTER, DAMAGED SUPPLY LINES, ETC.
- ☐ THEN CHECK COIL FOR MISSING METAL YOKE/BRACKET
- ☐ THEN CHECK IF CAD CELL FAILS TO SENSE FLAME DURING IGNITION BY REMOVING CAD CELL AND CHECKING RESISTANCE VALUE – LESS THAN 40,000 OHMS WITH LIGHT OR MORE THAN 150,000 OHMS WITHOUT LIGHT *(ALTERNATIVE IS TO REMOVE CAD CELL AND RESET BURNER – IF BURNER LOCKS OUT, CAD CELL SHOULD BE REPLACED)*
- ☐ THEN CHECK TO ENSURE PUMP VACUUM IS WITHIN RANGE OF 0 – 11" Hg
- ☐ THEN CHECK TO ENSURE OIL PRESSURE IS WITHIN APPROPRIATE RANGES OF 20 – 80 PSI IN PRE-PURGE MODE AND 120 – 200 PSI IN FIRING MODE
- ☐ THEN CHECK CONNECTION, SETTINGS AND CONDITION OF IGNITION ELECTRODES – CLEAN OR REPLACE IF NECESSARY
- ☐ THEN CHECK BREECH OR OVERFIRE DRAFT – REDUCE EXCESSIVE DRAFT CONDITIONS
- ☐ THEN CHECK NOZZLE AND PUMP STRAINER AND REPLACE IF NECESSARY
- ☐ THEN CHECK PUMP VALVE STEM CONDITION BY REMOVING VALVE STEM AND ENSURING PISTON/PLUNGER OPERATES FREELY – REPLACE IF NOT OPERATING FREELY
- ☐ THEN CHECK TO ENSURE RESISTANCE OF COIL ON TERMINALS 2 & 8 IS WITHIN RANGE OF 1.3 OHM ± 10%
- ☐ THEN CHECK TO ENSURE PUMP DRIVE KEY IS IN PLACE AND IN GOOD CONDITION

IF THE CONDITION PERSISTS, THE CONTROL BOX IS LIKELY FAULTY AND SHOULD BE REPLACED

BURNER DOES NOT START

- ☐ CHECK POWER SUPPLY AT SUB-BASE (BETWEEN L & N) TO ENSURE VOLTAGE WITHIN RANGE OF 102VAC – 132VAC

NO VOLTAGE

- ☐ FIRST CHECK SYSTEM FUSE AND ENSURE SERVICE SWITCH IS **ON**
- ☐ THEN CHECK TO ENSURE ALL CONTROL LIMITS ARE CLOSED
- ☐ THEN CHECK THERMOSTAT OR 24V RELAY FOR 0VAC

VOLTAGE WITHIN RANGE

- ☐ FIRST TURN OFF POWER SUPPLY
- ☐ THEN PLACE A JUMPER BETWEEN SUB-BASE TERMINALS 5 & 6
- ☐ THEN TURN ON POWER SUPPLY

MOTOR RUNS

- ☐ FIRST CHECK TO ENSURE VOLTAGE BETWEEN TERMINALS 3 & 7 WITHIN RANGE OF 39VAC -- 51VAC
- ☐ THEN CHECK VISUALLY TO ENSURE GOOD CONTACT BETWEEN CONTROL BOX AND SUB-BASE

IF THE CONDITION PERSISTS, THE CONTROL BOX IS LIKELY FAULTY AND SHOULD BE REPLACED

MOTOR DOES NOT RUN

- ☐ FIRST CHECK ELECTRICAL CONNECTIONS
- ☐ THEN CHECK FOR AND REPLACE SEIZED PUMP/MOTOR
- ☐ THEN CHECK FOR DEFECTIVE (PSC) MOTOR CAPACITOR – IF MOTOR HUMS THE CAPACITOR SHOULD BE REPLACED
- ☐ THEN WAIT UNTIL MOTOR COOLS AND RESET CONTROL BOX

IF THE CONDITION PERSISTS, THE MOTOR LIKELY SHUT DOWN ON A THERMAL OVERLOAD AND SHOULD BE REPLACED

RIELLO

FOR

TECHNICAL SUPPORT

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