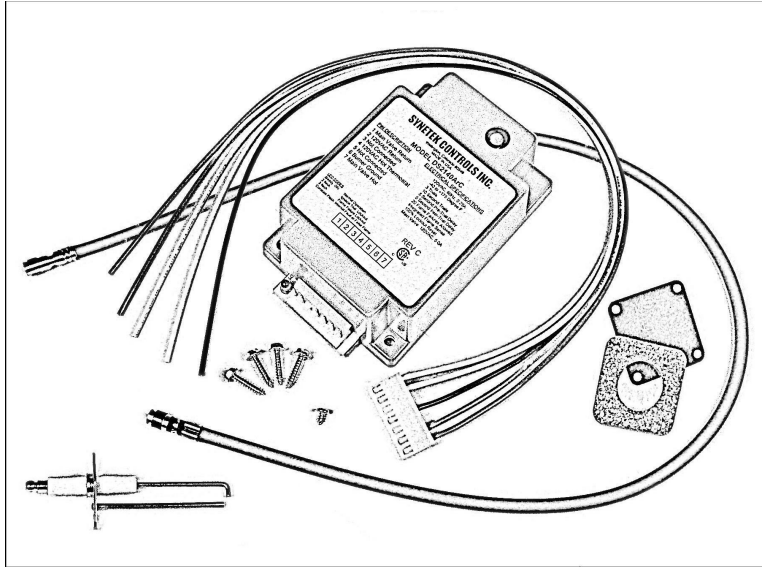


SYNETEK CONTROLS INC.

DS1-C: INSTALLATION INSTRUCTIONS



Synetek Controls Inc. Model DS1-C replaces the following 120VAC Direct Spark Ignition controls as well as converts 120VAC commercial laundry dryers from Standing Gas Pilot Systems to Electronic Direct Spark Ignition. The Model DS1-C is designed for simple installation and long lasting operation while eliminating most nuisance lockouts and providing simple diagnostic indication of failure.

RAM ELECTRONICS

CDS-1, EPIS-117V, RAM-1

CONVERTS

120V STANDING GAS PILOT SYSTEMS

TO

ELECTRONIC DIRECT SPARK IGNITION

DS1-C Kit Contents		Tools and Materials Required		DS2140ArC Rev. C Specifications			
1 - DS1-C Installation Instructions	DS1-C Kit and Installation Instructions	Input Voltage:	120VAC, 60Hz (+10% to -15%)	Ignition Trials:	3 Trials		
1 - DS2140ArC Ignition Control		Current Draw:	.25A	Ignition Trial Time:	10 sec.		
1 - HA140A1AB Wiring Harness	Slotted Screwdriver or 1/4" Nut Driver	Lockout:	Reset by power interruption of 5 sec.	Reignition Trial Time:	10 sec.		
1 - HV01 High Voltage Lead	Phillips Screwdriver	Temp Range:	-40F to +175F	Prepurge:	5 sec.		
1 - BP202E Igniter	5/32" Drill Bit			Interpurge:	5 sec.		
1 - Valve Plate	Drill Motor						
1 - Valve Gasket	Wire Stripper						
4 - Mounting Screws	Crimping Pliers						
1 - #8 Sheet Metal Screw							

PRE-INSTALLATION INSTRUCTIONS

IMPORTANT

Installation should only be attempted by persons trained and qualified to service and repair commercial laundry dryer ignition controls and equipment.

- 1 Read carefully through the DS1-C Installation Instructions before attempting installation.
- 2 Be certain dryer is operating correctly prior to converting with the DS1-C Kit. Repair malfunctioning items as required.
- 3 Inspect the burner and burner compartment for soot, cracks and corrosion. Clean, repair or replace as necessary.

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INSTALLATION PROCEDURE

WARNING

Property Damage, Injury or Death can result from improper installation of the DS1-C.

IMPORTANT

Turn OFF gas and electrical power before beginning the Installation Procedure.

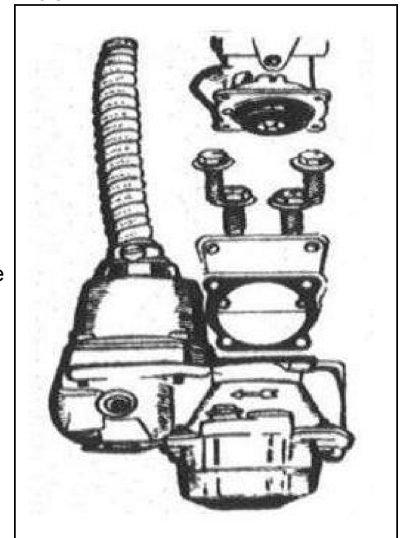
GAS VALVE PREPARATION

- 1 Remove the following parts from the dryer.
 - A. Remove thermocouple.
 - B. Remove gas line from pilot and pilot assembly.
 - C. Remove magnetic gas pilot operator.
- 2 Inspect gasket surface on gas valve where the magnetic gas pilot operator was removed. Remove old gasket and be sure gasket surface is clean.
- 3 Install the Valve Gasket then the Valve Plate where the magnetic gas pilot operator was removed. Use the original bolts that held the magnetic gas pilot operator to the gas valve.

See *FIGURE 1.2* for step 1-3

- 4 If you are satisfied that the previous steps are correct and complete, continue to the IGNITER PROBE INSTALLATION section.

FIGURE 1.2



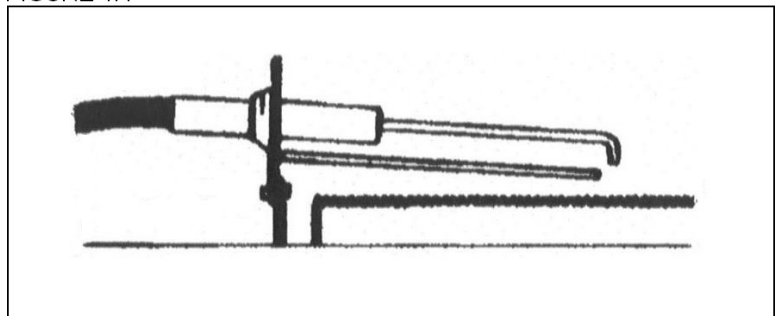
IGNITER PROBE INSTALLATION

- 1 On the burner support bar (holding the burners) drill a 1/8" diameter hole over the left burner side. Position the hole slightly to the right of the center of the burner.
- 2 Using the #8 Sheet Metal Screw, mount the BP-202E Igniter with the igniter probes over the burner surface.
- 3 Once the BP202E Igniter is mounted, bend the metal bracket so the the tip of the igniter probe is between 1/4" to 1/2" above the burner surface.

See *FIGURE 1.1* for steps 1-3

NOTE: Do not pry on the ceramic body of the BP202E igniter.

FIGURE 1.1



- 4 If you are satisfied that the previous steps are correct and complete, continue to the CONTROL MOUNTING / WIRING section.

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CONTROL MOUNTING / WIRING

- 1 Mount the DS2140ArC Ignition Control in the control area away from any hot parts. Be sure the control is not touching the timer when the service door is closed.
- 2 Connect HA140A1AB Wiring Harness to DS2140ArC.
 - A. Locate, in the control area, the leads going to the gas valve and disconnect them. Re connect the gas valve leads to Pin 1, Main Valve Return (White), and Pin 7, Main Valve Hot (Blue), of the DS2140ArC control board.
 - B. Locate leads from DS2140ArC Pin 2, 120VAC Return (White) and Pin 4, 120VAC Hot Thermostat (Black), and connect to where the valve leads were removed from in step A.

NOTE: If the 120VAC Line and Neutral wires are reversed, intermittent flame detection problems may arise.

- C. Connect DS2140ArC Pin 6, Burner Ground (Green), to the dryer chassis. Be sure chassis ground connection point is clean and connection is secure.
- 3 Connect the HV01 High Voltage Lead to the DS2140ArC. Connect opposite end to the spark probe installed in the IGNITER PROBE INSTALLATION section tucking the high voltage lead under the notch at the base of the metal dividing wall.

IMPORTANT

Make certain the high voltage lead is routed away from open flame or any hot surfaces.

IMPORTANT

Make certain all burner bay cover plates are re-installed.

- 4 If you are satisfied that the previous steps are correct and complete, continue to the CHECK OUT SEQUENCE section.

CHECK OUT SEQUENCE

WARNING

If you smell gas at any point during the check out sequence, immediately turn the gas supply OFF and repair the gas leak. DO NOT continue the check out procedure until the gas leak has been repaired.

- 1 Turn ON gas and use a soap and water solution to check input, output and the Valves Plate/Valve Gasket on valve for leaks. If a leak is found, repair BEFORE continuing.
- 2 Turn OFF gas supply to dryer.
- 3 Turn ON power to the dryer (gas supply OFF) and start the dryer cycle. Observe the following:
 - A. Green diagnostic LED is on.
 - B. 5-7 seconds after tumbler starts, the high voltage spark starts.
 - C. Sparking continues for 10 seconds then pauses for 5 seconds and repeats this cycle an additional 2 times.
 - D. Spark stops and DS2140ArC goes into lockout mode. Green diagnostic LED will flash 2 times.
- 4 Reset DS2140ArC lockout mode by opening dryer door until LED stops flashing. Close dryer door and observe sequence in step 3 again making certain the spark is jumping the gap on the igniter probe and not shorting to any surrounding metal parts.

NOTE: Gap on spark probe should be between 1/8" to 1/4".

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DS1-C: INSTALLATION INSTRUCTIONS

CHECK OUT SEQUENCE (Continued)

- 5 Turn ON the gas supply to the dryer.
- 6 Start the dryer and observe the following:
 - A. Green diagnostic LED is on.
 - B. DS2140ArC starts the ignition spark in 5-7 seconds after tumbler starts and flame is established within a few seconds.
 - C. Spark stops after flame is established.
 - D. Main burner flame shuts off after thermostat is satisfied and reignites when temperature drops.

TROUBLESHOOTING

Problem	Solution
<i>No ignition spark. LED is OFF.</i>	No power to the control. Be sure the accumulator has time on it, the door switch is closed and the thermostat is calling for heat. Check thermostat, airflow switch and high limit switch. Repair or replace as necessary.
<i>No main burner flame LED is flashing 2 times.</i>	Control is in safety lockout. Reset by opening door till dryer stops. Restart dryer.
<i>Main burner lights for 10 seconds or less then goes out. LED is flashing 2 times after 3 spark cycles.</i>	Controls is not sensing flame has been established. Check spark probe alignment, probe should be in the flame and the flame should be resting on the surface of the burner. Clean spark probe, burner, air intake and exhaust if necessary. Verify continuity between burner ground connection and the burner. Clean or repair in necessary.
<i>Ignition sparks but does not light the burner. LED is flashing 2 time after 3 spark cycles.</i>	Check that the spark is arching across the spark gap. Check for cracks in the ceramic insulator of the electrode and for shorts from the high voltage lead the the chassis of the dryer. Verify the integrity of the the wiring to the gas valve. Repair or replace as necessary.
<i>High voltage lead or flame sensor lead is burnt at the connector.</i>	Check the lint screen, ducting, and fan. Clean, repair or replace as necessary. Check the airflow switch for correct operation. Repair or replace as necessary.

NOTES

WARRANTY

Synetek Controls Inc. guarantees to the first retail purchaser that, should the control be defective within 24 months of manufacturing, due to manufacturing defects, Synetek Controls Inc. will repair or replace the defective control. Synetek Controls Inc. is not responsible for equipment down time, labor costs or any other expenses associated with the failure of our controls.

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