

Functional Replacement Pilots

IMPORTANT

1. Always include complete heater model and serial number so that any specification change can be considered for parts shipment. It can save time and expense.
2. Specifications are subject to change without notice.
3. We reserve the right to substitute functional replacements.
4. Order either by Kit or Component Part No.

Quick Reference Replacement Pilot Kit Selection Table
 (Refer to **FIGURES 1 - 11**, pages 1 - 4, for illustrations and component part numbers)

Type of Heater	Model Designation* / Sizes	Match Lit Pilot Kits			Spark Pilot Kits**		
		Natural	Propane	FIGURE	Natural	Propane	FIGURE
Infrared	T, TR-H 50	---	---	---	110854	110854	2
	T, TR-H 75 - 200	---	---	---	110853	110853	2
Unit Heaters	F, B 25 - 400	110851	110852	1	110853	110854	2
	FE, BE 25 - 400	---	---	---	110853	110854	2
	UA, XL, XLB, CXL, CXLB 30 - 105	110855	110856	3	110857	110858	4
	XL, XLB, CXL, CXLB 125 - 400	110859	110860	5	110861	110862	6
	EEXL, EEXLB, CEEXL, CEEXLB 30 - 105	---	---	---	110857	110858	4
	EEXL, EEXLB, CEEXL, CEEXLB 125 - 400	---	---	---	110861	110862	6
	SCA, SCB prior to Series 6	---	---	---	110861	110862	6
	SCA, SCB Series 6	---	---	---	131457	131458	7
Duct Furnaces & Packaged Systems (Also applies to Models with prefix "H")	EEDU, HEEDU Series 6	---	---	---	110853	110854	2
	EEDU, HEEDU prior to Series 6	---	---	---	110861	110862	6
	X, XA, XB, XC, XD, XE, XG, XJ, PAK, DFAH prior to 9/73	110863	---	8	---	---	---
	X, XA, XB, XC, XD, XE, XG, XJ, PAK, DFAH, CX, CXE, CPAK beginning 9/73	110859	110860	5	110861	110862	6
	SC, SCE Series 6	---	---	---	131457	131458	7
	RX, REB, RXE, RXJ, CRX, CREB, CRXE, RPAK, CRPAK, SC, SCE, SCJ prior to Series 6	---	---	---	---	---	---
	RPV, PRVE, RPBE, RPVAK, CRPV, CRPVE, CRPBE, CRPVAK Series 6	---	---	---	110861	110862	6
	RG, CRG, RP, CRP, RGB, CRGB, RPB, CRPB, RGBL, CRGBL, RPBL, CRPBL, SSCBL	---	---	---	---	---	---
RPV, RPBE, RPVE, RPVAK, RPVJ, CRPV, CRPBE, CRPVE, CRPVAK prior to Series 6	---	---	---	110865	110866	9	
Heating / Cooling	RCG7-1/2, 10 TON	---	---	---	110865	110866	9
	RCG2 - 5 ton - with vertical pilot	---	---	---	110867	110868	10
	ton - with horizontal pilot	---	---	---	110861	110862	6
Direct Fired	ADF, ADFH with hot surface ignition	---	---	---	120048	120048	11
	- with spark ignition and flame probe	---	---	---	110869	110869	11
	RDF - with spark ignition and ultraviolet sensor	---	---	---	110918	110918	11
	- with hot surface ignition	---	---	---	120048	120048	11
	DV with hot surface ignition	---	---	---	120048	120048	11
DFA with hot surface ignition	---	---	---	120048	120048	11	

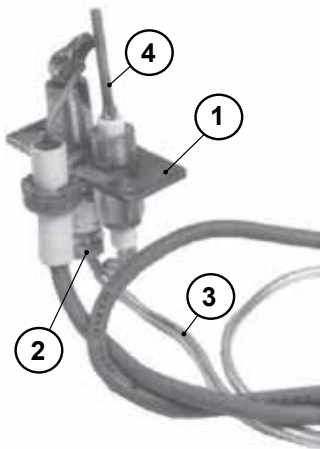
* If the replacement pilot changes with the introduction of a Model Series, the Series is indicated in the Selection Table. The Series indicator is on the heater rating plate; it is the suffix number on the Model Size (Ex: SC400-6; "6" is the Series).

** Spark pilot kits for all indirect-fired products are for use with Model G60, G65, G67 or G770 ignition controllers only. Pilot is not available for other spark ignition systems used on indirect-fired products.

Pilot Kits and Components

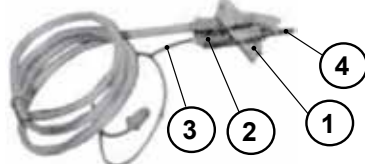
FIGURE 1 Vertical Match-Lit Pilot for Models F&B	Replacement Pilot Kits		Natural Gas - PN 110851 Propane Gas - PN 110852
	Code	PN	Component Description
	1	96360	Natural Gas Pilot Assembly with orifice, pilot tubing & thermocouple; less fitting (Johnson #J994HKA-9731-715)
		96361	Propane Gas Pilot Assembly with orifice, pilot tubing & thermocouple; less fitting (Johnson #J994HKA-9733-410)
	2	103034	Natural Gas Orifice only (Johnson #9731-715 (brass))
		98695	Propane Gas Orifice only (Johnson #9733-410 (black))
	3	98698	Pilot Tubing, 1/8"O.D. x 18"lg (Johnson #B10499-995-11)
		97572	Compression Fitting, FTG75 (2 req'd when replacing pilot tubing)
	4	84761	Thermocouple, 24", #K15FA - 24D

FIGURE 2
Vertical Spark Pilot for Unit Heater
Models F/FE/B/BE, Infrared Models
TR/TR-H & Duct Furnace Models
EEDU/HEEDU Series 6



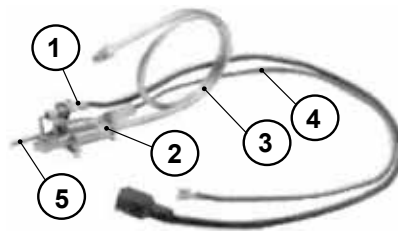
Replacement Pilot Kits		Models F/FE/B/BE	Natural Gas - PN 110853; Propane Gas - PN 110854	
		Model TR 50	Natural Gas - PN 110854; Propane Gas - PN 110854	
		Models TR 75-200	Natural Gas - PN 110853; Propane Gas - PN 110853	
		Models (H)EEDU Series 6	Natural Gas - PN 110853; Propane Gas - PN 110854	
Code	PN	Application	Gas	Component Description
1	97534	F/FE/B/BE & (H)EEDU Series 6	Natural	Pilot Assembly with orifice, pilot tubing & flame rod; less flame sensor lead & fitting (Johnson #J982HKW-9731-713)
		TR 75 - 200	Natural & Propane	
	97535	F/FE/B/BE & (H)EEDU Series 6	Propane	Pilot Assembly with orifice, pilot tubing & flame rod; less flame sensor lead & fitting (Johnson #J982HKW-9731-713)
		TR 50	Natural & Propane	
2	103034	F/FE/B/BE & (H)EEDU Series 6	Natural	Orifice only (Johnson #9731-713 - brass)
		TR 75 - 200	Natural & Propane	
	98695	F/FE/B/BE & (H)EEDU Series 6	Propane	Orifice only (Johnson #9733-410 - black)
		TR 50	Natural & Propane	
3	98698	F/FE/B/BE/TR & (H)EEDU Series 6	Natural & Propane	Pilot Tubing, 1/8" O.D. x 18"lg (Johnson #B10499-99-11)
				Compression Fitting, FTG75 (2 req'd when replacing pilot tubing)
4	98697			Flame Rod (Johnson #Y75AA-10)
5	97575			Flame Sensor Lead, 21"lg

FIGURE 3
Horizontal Match Lit Pilot for Models UA, XL, XLB, CXL, CXLB 30 - 105



Replacement Pilot Kits		Natural Gas - PN 110855 Propane Gas - PN 110856
Code	PN	Component Description
1	40964	Natural Gas Pilot Assembly with orifice, less pilot tubing & thermocouple (Baso #J999HKA4213)
	40420	Propane Gas Pilot Assembly with orifice, less pilot tubing & thermocouple; (Baso #J999HKA4207)
2	40966	Natural Gas Orifice only (#4213)
	40965	Propane Gas Orifice only (#4207)
3	5145	Pilot Tubing, 22"lg
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)
4	84761	Thermocouple TC2, 24"lg

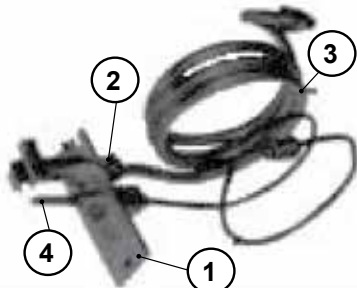
FIGURE 4
Horizontal Spark Pilot for Models EEXL, EEXLB, CEELX, CEEXLB 30-105. May also be used on XL, XLB, CXL, CXLB when equipped with G60, G65 or G67 ignition controller (with or without Serial No Suffix "B")



Replacement Pilot Kits		Natural Gas - PN 110857 Propane Gas - PN 110858
Code	PN	Component Description
1	93971	Natural Gas Pilot Assembly with orifice & high tension lead, less pilot tubing & flame prove (Baso #J983HKW7715)
	93972	Propane Gas Pilot Assembly with orifice & high tension lead, less pilot tubing & flame probe; (Baso #J983HKW4709)
2	93973	Natural Gas Orifice only (#7715)
	93974	Propane Gas Orifice only (#4709)
3	5145	Pilot Tubing, 22"lg
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)
4	50450	Sensor Lead, 16"lg
5	43594	Flame Probe, Y75BA

Above pilot replaces Baso #J987HKW, natural gas PN 50449 & propane gas PN 51330. Also replaces General Controls #26C27113 with a 16" high tension lead, natural gas pilot PN 64463 & propane gas PN 64464 & General Controls #26C27113 with a 24" high tension lead, natural gas pilot PN 73614 & propane pilot PN 73615.

FIGURE 5
Horizontal Match Lit Pilot - Starting 9/73 for Models X, XA, XB, XC, XD, XE, XG, XJ, PAK, DFAH, HX, HXE, CX, CXE, HCX, HCXE, CPAK; Also XL, XLB, CXL, CXLB 125 - 400



Replacement Pilot Kits		Natural Gas - PN 110859 Propane Gas - PN 110860
Code	PN	Component Description
1	17890	Natural Gas Pilot with orifice, less pilot tubing and thermocouple (Baso #J963HXA6218), for propane units, replace pilot orifice with PN 42089 (Baso #4211)
2	46392	Natural Gas Orifice only (#6218)
	42089	Propane Gas Orifice only (#4211)
3	7671	Pilot Tubing, 26"lg for X Series
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)
3A	5145	Pilot Tubing 22"lg for XL, XLB, CXL, CXLB 125 - 400
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)
4	84761	Thermocouple TC2, 24"lg for X Series
4A	84760	Thermocouple TC2, 18"lg for XL, XLB, CXL, CXLB 125 - 400

This pilot may be used in place of GC #26C23114

FIGURE 6

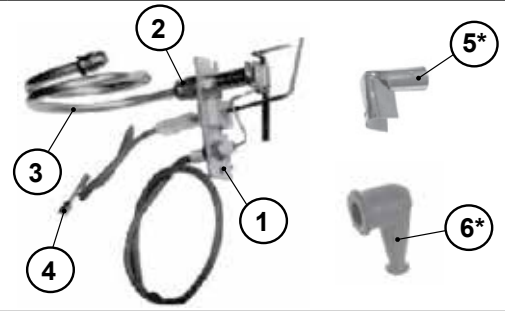
Horizontal Spark Pilots for Models: XL, XLB, CXL, CXLB 125-400, EEXL, EEXLB, CEEXL, CEEXLB 125-400; EEDU & HEEDU prior to Series 6.

Starting 9/73 for X, XA, XB, XC, XD, XE, XG, XJ, PAK, DFAH, CX, CXE, CPAK, RX, REB, RXE, RXJ, CRX, CREB, CRXE, RPAK, CRPAK; SC, SCA, SCB, SCE, SCJ prior to series 6.

RPV, RPVE, RPBE, RPVAK, CRPV, CRPVE, CRPBE, CRPVAK Series 6

RG, CRG, RP, CRP, RGB, CRGB, RPB, CRPB, RGBL, CRGBL, RPBL, CRBL, SSCBL

RCG 2 through 5 ton with horizontal pilot



Notes:

- Horizontal spark pilots for ignition systems other than G60, G65, G67 & G770 are no longer available.
- Kits also apply to models listed with the Prefix "H".

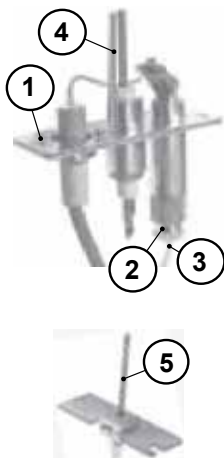
* Included in all kits. Used only with the above models equipped with any Model G60 ignition controller, a Model G67BG-2 or a Model G67NG-2. Not used with ignition controller Models G67BG-5 & G770NGC-4. See instructions on page 4.

- This pilot replaces Baso #J991HXW, natural gas PN 45150, propane PN 45141; #J994HXW, natural gas PN 47303, propane PN 47384. May be used as a substitution for J993HXW & J999HXW.

Replacement Pilot Kits		Natural Gas - PN 110861 Propane Gas - PN 110862
Code	PN	Component Description
1	61145	Natural Gas Pilot Assembly with orifice, high tension lead & flame probe; less pilot tubing & flame sensor lead (Baso #J992HXW7221)
	61146	Propane Gas Pilot Assembly with orifice, high tension lead & flame probe; less pilot tubing & flame sensor lead (Baso #J992HXW9817)
2	63088	Natural Gas Orifice only (#7221)
	37801	Propane Gas Orifice only (#4209)
3	5145	Pilot Tubing, 22"lg
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)
4	50450	Sensor lead, 16"lg
5*	112647	Crimp-on 90°Rajah terminal connector
6*	112648	90°Boot Terminal Protector

FIGURE 7

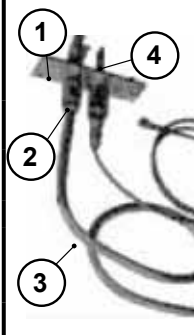
Vertical Spark Pilot for Models SC, SCA, SCB & SCE Series 6



Replacement Pilot Kits		Natural Gas - PN 131457 Propane Gas - PN 131458
Code	PN	Component Description
1	125251	Natural Gas Pilot Assembly with orifice, pilot tubing & flame probe; less flame sensor lead & fitting (Johnson #J981HKW-9731-713)
	125671	Propane Gas Pilot Assembly with orifice, pilot tubing & flame probe; less flame sensor lead & fitting (Johnson #J981HKW-9715-413)
2	103034	Natural Gas Orifice only (Johnson #9731-713 - brass)
	126024	Propane Gas Orifice only (Johnson #Y90HC-9715D - black)
3	98698	Pilot Tubing, 1/8"O.D. x 18"lg (Johnson #B10499-99-11)
	97572	Compression Fitting, FTG75 (2 req'd when replacing pilot tubing)
4	126104	Flame Rod (Johnson #Y75AA-2)
5	126101	Auxiliary Flame Probe w/brkt, J/C Y5-GB-1
6	125401	(2) Sensor Lead Assy, 18ga x 14"lg, 150°C

FIGURE 8

Vertical Match Lit Pilot for Models X, XA, XB, XC, XD, XE, XG, XJ, PAK, DFAH prior to 9/73

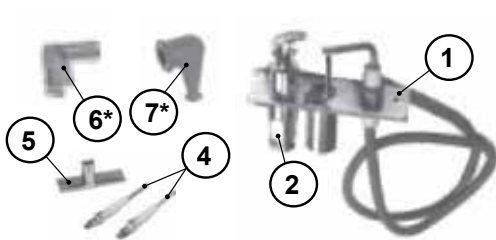


Replacement Pilot Kits		Natural Gas - PN 110863
Code	PN	Component Description
1	9661	Natural Gas Pilot Assembly with orifice; less pilot tubing & thermocouple (Baso #J915HHA6221)
2	44048	Natural Gas Orifice only (#6221)
	42089	Propane Gas Orifice only (#4211)
3	7671	Pilot Tubing, 26"lg
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)
4	84761	Thermocouple, TC2, 24"lg

For LP pilot use PN 110863 and 42089 LP orifice

FIGURE 9

Vertical Spark Pilot for Models RPV, RPBE, RPVE, RPVJ, RPVAK, HRPV, HRPBE, HRPVE, CRPV, HCRPV, CRPBE, HCRPBE, CRPVE, HCRPVE; CRPVAK prior to Series 6 & RCG 7-12 /, 10 ton equipped with G60 or G67 ignition controller



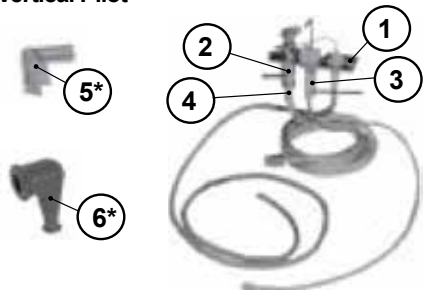
NOTES:

* See instructions on page 4.

Vertical Spark Pilots for ignition systems other than G60 & G70 are no longer available.

Replacement Pilot Kits		Natural Gas - PN 110865 Propane Gas - PN 110866
Code	PN	Component Description
1	41775	Natural Gas Pilot with orifice & high tension lead; less pilot tubing, flame probe & sensor lead (Baso #J999HHW6221)
	44673	Propane Gas Pilot with orifice & high tension lead; less pilot tubing, flame probe & sensor lead (Baso #J999HHW4209)
2	44048	Natural Gas Orifice only (#6221)
	37801	Propane Gas Orifice only (#4209)
3	92848	Sensor Lead Assembly, 16"lg & 21"lg wires (not shown)
4	43594	(2) Flame Probe Y75BA-3
5	44678	Bracket Y59DD-1
6*	112647	Crimp-on 90° Rajah terminal connector
7*	112648	90°Boot Terminal Protector
8	7671	Pilot Tubing, 26"lg (not shown)
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)

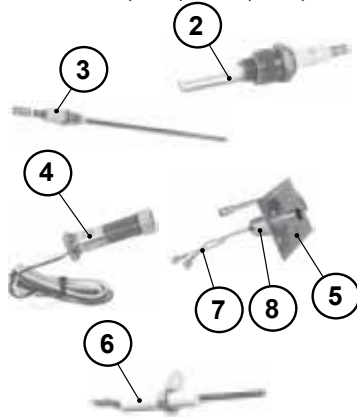
FIGURE 10
Vertical Spark Pilot for Models RCG 2-5 ton with Vertical Pilot



* See instructions below.

Replacement Pilot Kits		Natural Gas - PN 110867	Propane Gas - PN 110868
Code	PN	Component Description	
1	47484	Natural Gas Pilot with orifice, high tension lead & built-in flame probe; less pilot tubing & sensor lead (Baso #J993HHW6221)	
	47485	Propane Gas Pilot with orifice, high tension lead & built-in flame probe; less pilot tubing & sensor lead (Baso #J993HHW4211)	
2	44048	Natural Gas Orifice only (#6221)	
	42089	Propane Gas Orifice only (#4211)	
3	44183	Sensor lead, 38"lg	
4	7671	Pilot Tubing 26"lg	
	9664	Nut with breakaway ferrule (2 req'd when replacing pilot tubing)	
5*	112647	Crimp-on 90° Rajah Terminal Connector	
6*	112648	90° Boot Terminal Protector	

FIGURE 11
Pilot Systems used on Direct-Fired Models RDF, ADF, ADFH, DFA, DV



* PN 135435 is a replacement flame sensor only kit for ADF or ADFH units manufactured prior to 11/94.

Replacement Pilot Kits		w/Flame Probe - PN 110869 (includes Codes 1, 2 & 3)	RDF with spark pilot
		w/Ultraviolet Sensor - PN 110918 (includes Codes 1, 2 & 4)	RDF with spark pilot
		w/Hot Surface Ignition - PN 120048 (includes Codes 5 thru 8)	ADF, DFA, RDF, DV w/ hot surface ignition
Code	PN	Component Description	Applies To
1		Pilot Supply Connection including (1) brass elbow PN 93388, (3) connectors PN 95188, (3) long nuts PN 95189 & (1) tube PN 91388	RDF Models with a spark pilot and either a probe or ultraviolet flame sensor
2	87936	Spark Plug 27750-1-31, Maxon #18075	
3	87937	Flame Probe, Auburn AA67-7892-1, Standard on units with date code prior to ANI (9/88)	
4	89411	Ultraviolet Minipeeper, #C7027A, Standard on units with date code prior to ANI (9/88) through AVB (2/96) - optional on prior units	ADF / ADFH*, DFA, DV & RDF with a hot surface ignition
5	122840	Pilot Plate & Tubing Assembly	
6	134706*	Flame Sensor, J/C #Y75MK-1D	
7	121865	Ignition, Norton #401E	
8	121730	Pilot Bushing	

Hot Surface Kits below include all components needed to change RDF units from a spark pilot system with either a flame probe or ultraviolet sensor to hot surface ignition.

- for an RDF unit with a 200VA Transformer - PN 146268
- for a 115V RDF unit with a 80VA Transformer - PN 146318
- for a 208V RDF unit with a 80VA Transformer - PN 146319
- for a 240V, 480V or 575V RDF unit with a 80VA Transformer - PN 146320

NOTE: Model, Serial No. & Wiring Diagram No. **MUST** be provided when ordering these kits.

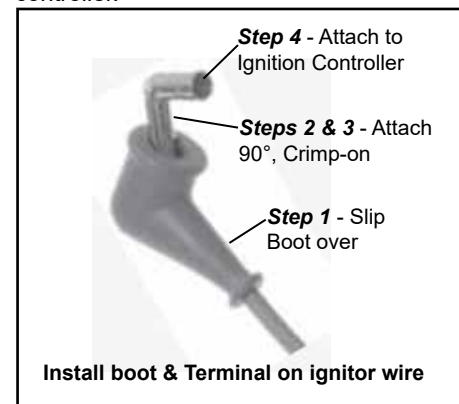
Instructions for connecting ignition lead on replacement spark pilots to Model G60 & G67 ignition controllers (applies to Pilot Kits in FIGURES 6, 9 & 10):

Crimp on, 90°Rajah Terminal Connector, PN 112647

Protective Boot, PN 112648

Effective with replacement pilots purchased 9/91, these parts are required (in the kit or separately) when the replacement pilot is for heater Models listed in **FIGURES 6, 9 or 10** equipped with a Model G60 or G67BG-NG-2 ignition controller. (**NOTE:** These parts are not required when the ignition controller is a Model G67BG-5 or G770NGC-4)

1. Identify the ignitor wire attached to the pilot electrode. Slip the 90° protective boot to the wire, as shown below.
2. On the "open" leg of the 90° crimp-on terminal (PN 112647), locate a flat, triangular spike tab punched in the metal. With the tip of a small, straight screwdriver, force the spike towards the inside of the connector. Straighten the tab to a vertical position.
3. Insert the ignition wire into the same connector leg (just to the 90° bend) and push the wire onto the protruding spike tab, making sure that the tab penetrates the insulation. (Do not strip the ignitor wire). Using a crimping tool or pliers, squeeze the sides of the terminal to form a "C" shape. The ignitor wire should now be firmly held by the terminal.
4. Slide the protective boot over the terminal. Holding the boot, attach the 90°Rajah terminal to the ignitor lead Rajah connector on the Model G60 or G67BG/NG-2 ignition controller.



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