



# 4058 Retractable high energy igniter "HEI" system

The 4058 is a retractable high energy spark ignition system for lighting large capacity burners. It can replace a gas pilot because it puts a high intensity spark at an effective lighting location, and then retracts it to a thermally protected area. Retracting the igniter once the burner is lit greatly increases the igniter's life.

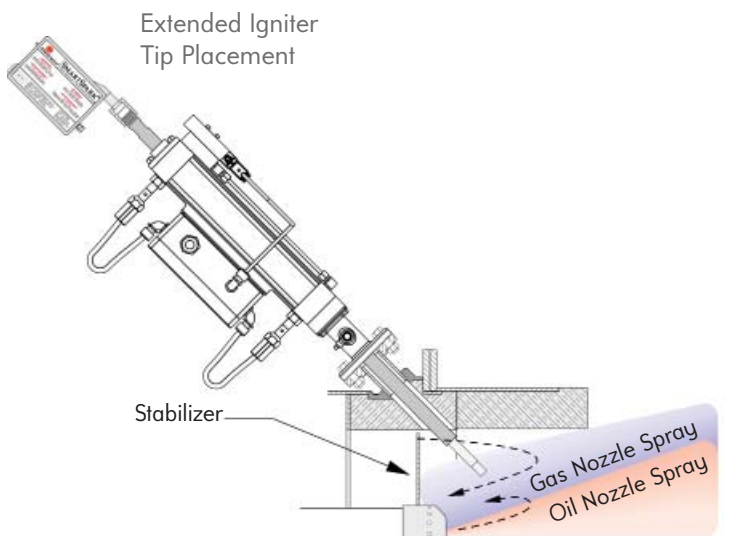


Figure 1: Typical 4058 Igniter Tip Placement

The 4058 has a number of modules that can be configured to fit many applications. They can be ordered as a complete assembly or ordered separately.

- 4058-\_\_A North American retraction assembly
- 4058-CSS SmartSpark™
- 4058-AF-\_\_ Adapter Flange Kit

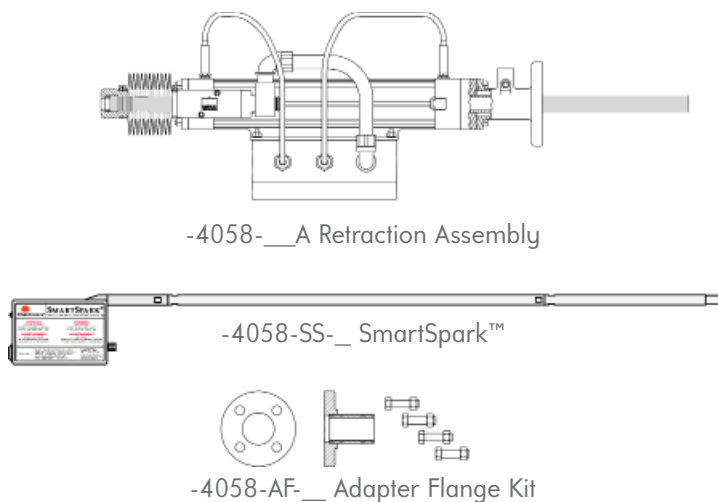


Figure 2: 4058 Modules

## RETRACTION ASSEMBLY CONFIGURATION OPTIONS

The 4058 is configurable for many burner applications. The cylinder stroke, voltage, and area classification can be specified. Optional position switches (one or two) are available to indicate the cylinder position. For general purpose conditions, order as 24 VDC, 120 or 240 VAC to operate the solenoid and proximity switches. For classified area (either Class 1 Div.2 or ATEX) order with 24 VDC operation for the solenoid and proximity switches.

The retraction mechanism is operated with compressed air via an integrated solenoid, and features an inline design with a hollow cylinder rod that allows for use in high backpressure applications up to 15 psi (103 kPa). This design allows the assembly to be more compact and simplifies the mounting of the retraction mechanism on the burner.

## SMARTSPARK™ CONFIGURATION OPTIONS

The standard 4058 igniter module to light natural gas or light oil burners is the SmartSpark™. It features solid state electronics in a 304-stainless steel exciter box and Inconel igniter tip which is mounted directly on the retraction assembly. It also has a pre-fault LED diagnostic indicator for igniter tip wear.

It can be configured with different length extension rods, and has options for classified areas (either Class 1 Div.2 or ATEX).

Custom engineered high energy igniters are also available for special fuel gases and heavy oils or where environmental conditions may require special material use. Consult your Fives sales and application engineer for your specific needs.

## EXCITER AND CABLE CERTIFICATIONS

- ETL: Class I Div. 2 Groups A, B, C, & D; UL, CSA
- ETL: CE Ex II 3G IIC T4UL



Figure 3: 4058 SmartSpark™ Modules

## CAUTION: READ ALL DOCUMENTATION

Read and understand all documentation and manuals before using the 4058. Follow all instructions and safety precautions included in all 4058 bulletins and sheets, as well as the installation and the operation manuals for the SmartSpark™ exciter or any other ignition system used in the 4058. Fives North American Combustion, Inc. urges compliance with National Safety Standards Insurance Underwriters recommendations, and care in operation.

The user must conform to all applicable electrical, mechanical, piping, and other codes in the installation, operation, or repair of these devices. Please contact Fives North American Combustion, Inc. if there are any questions or concerns regarding the safe installation, operation, repair, or maintenance of this equipment.

## IGNITER TIP PLACEMENT

For lighting natural gas or propane burners the 4058 should be configured so that when fully extended the tip of the igniter is in a location downstream of the stabilizer, and not in the direct path of high velocity air. Both fuel and air must be present, but generally it is best to spark at the edge of the fuel stream or in a re-circulation zone where both fuel and air are being pulled back towards the stabilizer, like the area between air holes, or downstream of a perforated plate stabilizer.

Atomized oil streams usually have a narrower stream than gas so the igniter will likely need to be extended further into the burner than for gas burners to get good lighting. If the burner is dual fuel design the igniter tip should be positioned for oil lighting.

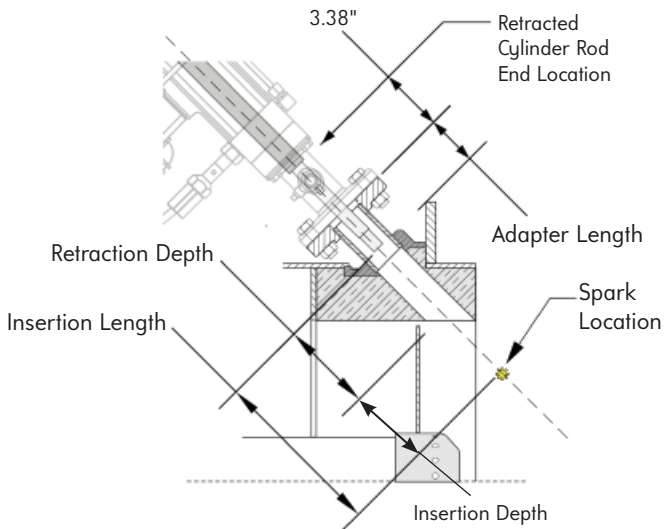


Figure 4: Typical 4058 Igniter Tip Placement

Once the burner is lit the igniter must be retracted into a thermally safe, and air purged location. When retracted the igniter tip should be near the entrance of the burner pilot boss. Four (4) inches or more from the hot face is ideal.

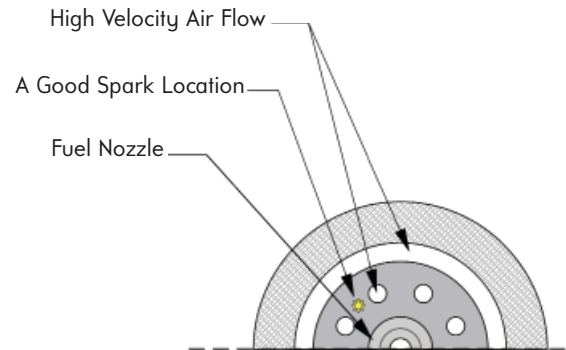


Figure 5: Typical 4058 Igniter Tip Placement

## NORMAL IGNITION SEQUENCE

Ignition initiation timing, cylinder position sequencing and position confirmation must be handled by the burner management system according to local regulatory requirements, but in general:

- The burner management system determines it is safe to start the burner and initiates an ignition cycle. Sparking can begin during igniter insertion and continue until it is retracted. Energizing the 4058 solenoid, advances the cylinder rod. An optional integrated position switch may be used to confirm that the ignition position has been reached.
- After energizing the igniter, the fuel valve is enabled to induce fuel to the burner. If a UV is used for flame supervision, it may “see” the spark as the burner flame, so it may be necessary to provide a few seconds of guaranteed ignition time to give the fuel time to light off the spark.
- Once the flame supervision has proven that the flame is on, the solenoid is de-energized, allowing the igniter assembly to retract into a benign location within the burner ignition tunnel. An optional second position switch may be used to confirm that the igniter has reached the fully retracted position.
- In some applications, it is best to have the igniter tip moving through the entire cylinder range of motion during the trial for ignition to find a good lighting location. In this case, energize the exciter, the cylinder, and the fuel valve at the same time so that the spark travels through the fuel/air mix to find a combustible region.

# 4058 Specifications

## 4058-CSS IGNITER MODULE

Item	Description
<b>Igniter</b> Spark Tip Length/Weight Spark Tip Max Temperature Igniter Extensions Weight Igniter Extensions Available Lengths	12" (305mm) / 0.50 lbs. (0.23 kg) 1200°F (649°C) 0.66 lbs. per foot (1.0 kg/M) 16" (406mm) to 60" (1727mm) in 2" (51mm) increments, igniter length = tip length + extension. Special lengths are available upon request or use multiple extensions together.
<b>SmartSpark™ Exciter</b> Size Weight Intergral Base Rod Length Input Power Stored Energy Spark Rate Operating Temperature	Approximate 4" (100mm) x 2" (50mm) x 6" (150mm) 5.25 lbs. (2.39 kg) 4" (100mm) 100-240 VAC, 50-60 Hz 4 Joules Minimum 15 SPS (sparks-per-second) for 30 second burst, then 1 SPS Operational -40°F (-40°C) to 185°F (85°C)
<b>Input Power Cable</b> Voltage Rating Input Power AC Line L1 (Live) Input Power AC Line L2 (N) Input Power Ground Line Cable Length Operating Temperature	UL rated 600V connector, IP66 quick connect Power cable brown wire Power cable blue wire Power cable green/yellow wire 8, 12 or 15 feet (2.4, 3.6 or 4.6 M) Operational -40°F (-40°C) to 221°F (105°C)

## 4058-A RETRACTION MODULES

Item	Description
<b>Retraction Module Weight</b>	20-30 Lbs (9 to 14 kg) Depending on Configuration
<b>Cylinder</b> Cylinder Stroke Available Pressure to Operate Seal Max Temperature Weight	8, 12, 16, 20, 24 inches (200, 305, 406, 508, 610mm) 35-150 psi (240 to 1030 kPa) 400°F (204°C)
<b>Solenoid</b> Inlet Compressed Air Pipe Size Solenoid Ambient Temperature Available Coil Voltages Solenoid Coil Operating Temperature	1/4" NPT -4 to 180°F (-20 to 82°C) 110-140 VAC, 220-240 VAC, 50-60 Hz, 24 VDC -4 to 140° (-20 to 60°C)
<b>Cooling Air</b> Air Inlet Pipe Size Recommended Air Flow Air Pressure Tap Pipe Size Recommended Air Pressure	1/2" NPT 500 scfh (14.2 Nm3/Hr) 1/8" NPT 6"w.c. (1.5 kPa)
<b>Proximity Switches</b> General Purpose UL/CSA/CE R830-3151  Classified Area UL/CSA Class I Div 2 R830-3150  Classified Area CE/ATEX R830-3118	24VDC/120-240VAC, Temperature -13 to +158°F (-25 to +70°C) Allen Bradley 871TM-B3N12-A2  24VDC, Temperature -13 to +158°F (-25 to +70°C) Allen Bradley 871TM-DR2NE12-A2  24VDC (10-30VDC) , Temperature -40 to +212°F (-40 to +100°C) Turck B14U-EM12WD-AP6X-H1141/3GD (M1634851)

# 4058 Installation and operation (mechanical)

## REMOVING OR ADJUSTING IGNITER IN RETRACTION ASSEMBLY

The igniter module is attached to 4058\_A retraction module with a compression fitting on the igniter rod of the exciter box. Multiple rings of packing rope are provided to ensure that the ignition device is securely attached to the retraction assembly.

To remove or adjust the igniter, first loosen the bellows hose clamp that attaches the bellows to the packing nut. Then loosen the packing nut until the igniter can be removed or adjusted. Reverse instructions to re-install igniter.

There are a few ways to modify the length of a 4058 igniter once it's installed.

- The packing nut can be temporarily loosened and the igniter inserted or retraced 1½ inches (38 mm).
- The igniter extension rod can be replaced with a longer or shorter model. See Table #5 for available sizes.
- If less insertion length is required, a longer nipple can be added to the mounting adapter flange to move the igniter tip away from the burner.

## COOLING AIR CONNECTION

Cooling air should be present in the burner pilot tunnel to keep the tunnel purged and help cool the igniter and cylinder rod. It can be added by piping clean ambient air to the ½" NPT connector on the 4058 mounting flange.

Set the air pressure at the built-in pressure tap to 6" w.c. (1.5 kPa) to get the recommended air flow of 500 SCFH (14.2 Nm<sup>3</sup>/Hr). If the 4058 is mounted in a large opening or needs extra thermal protection, a stainless steel cooling air tube can be added to provide additional thermal protection for the cylinder rod.

## COMPRESSED AIR OPERATION

The 4058 retraction cylinder rod is operated in both directions with pre-piped compressed air via an electrically operated solenoid valve that is rated for 35-150 psi (240 to 1030 kPa). If the compressed air is removed from the 4058, the cylinder will remain in the last position where the compressed air was present. The compressed air source should be piped to the #1 port on the solenoid valve.

Using an 8645A Compressed Air Filter / Separator and stainless steel tubing upstream of the 4058 is recommended. Galvanized or stainless tubing is recommended upstream of the 8645A to prevent pipe scale from entering the components. Instrument quality air is preferred. Take care when routing the compressed air supply, so that the compressed air temperature does not exceed 150°F (66°C). Before installing the 4058, all air lines in the system should be blown clean to remove any moisture or loose material.

DO NOT attempt to install, operate, or repair these devices without proper training in pneumatic systems and devices. Compressed air systems contain high levels of stored energy. DO NOT attempt to connect, disconnect, or repair this product when the system is under pressure. Always exhaust or drain the pressure from a system before performing any service work. Failure to do so can result in serious personal injury.

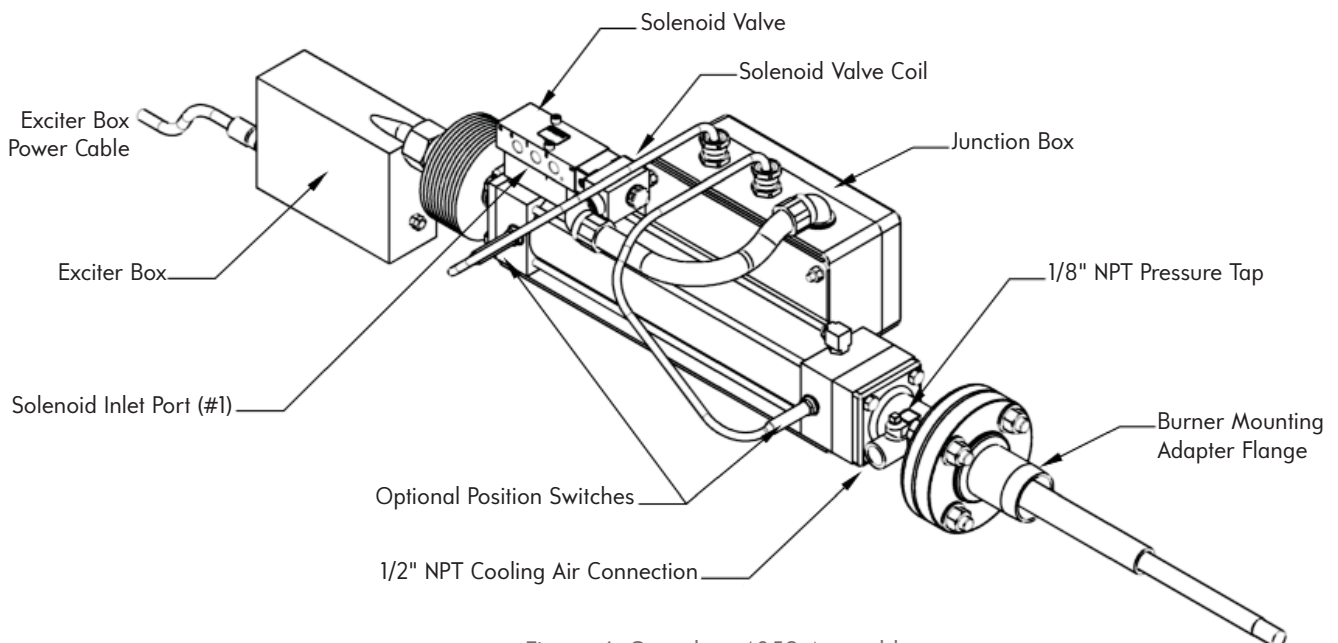


Figure 6: Complete 4058 Assembly

# 4058 Installation and operation (electrical)

## Wiring for general purpose end switch

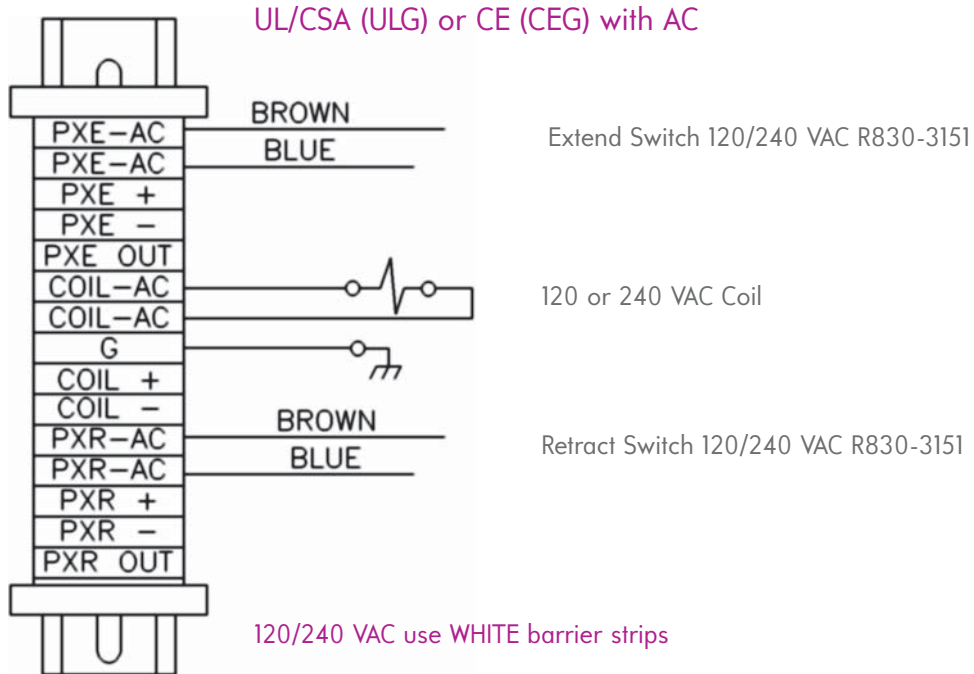


Figure 7a: UL/CSA (ULG) or CE (CEG) with AC

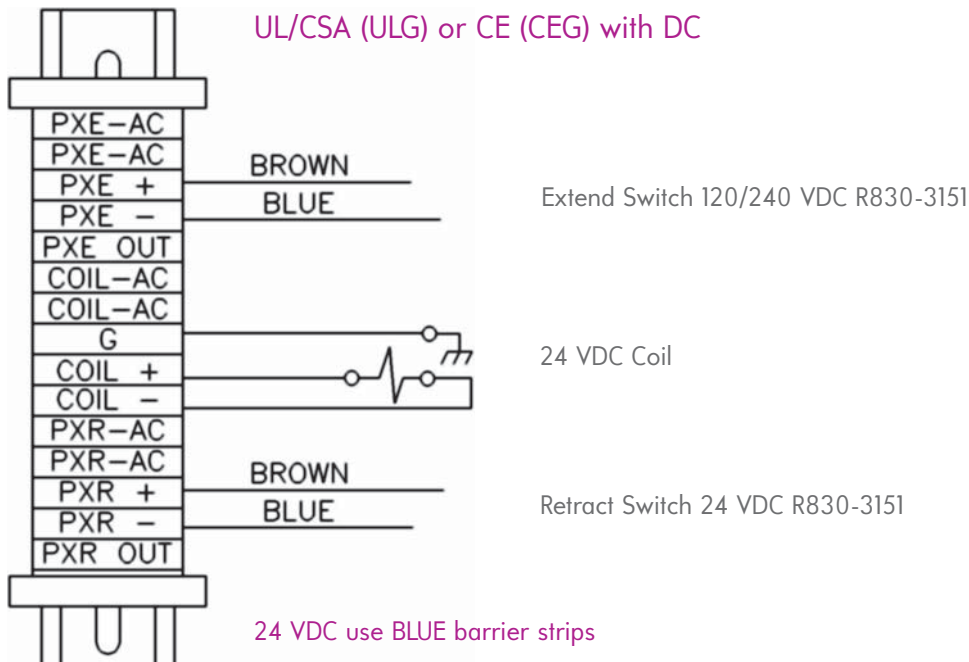


Figure 7b: UL/CSA (ULG) or CE (CEG) with DC

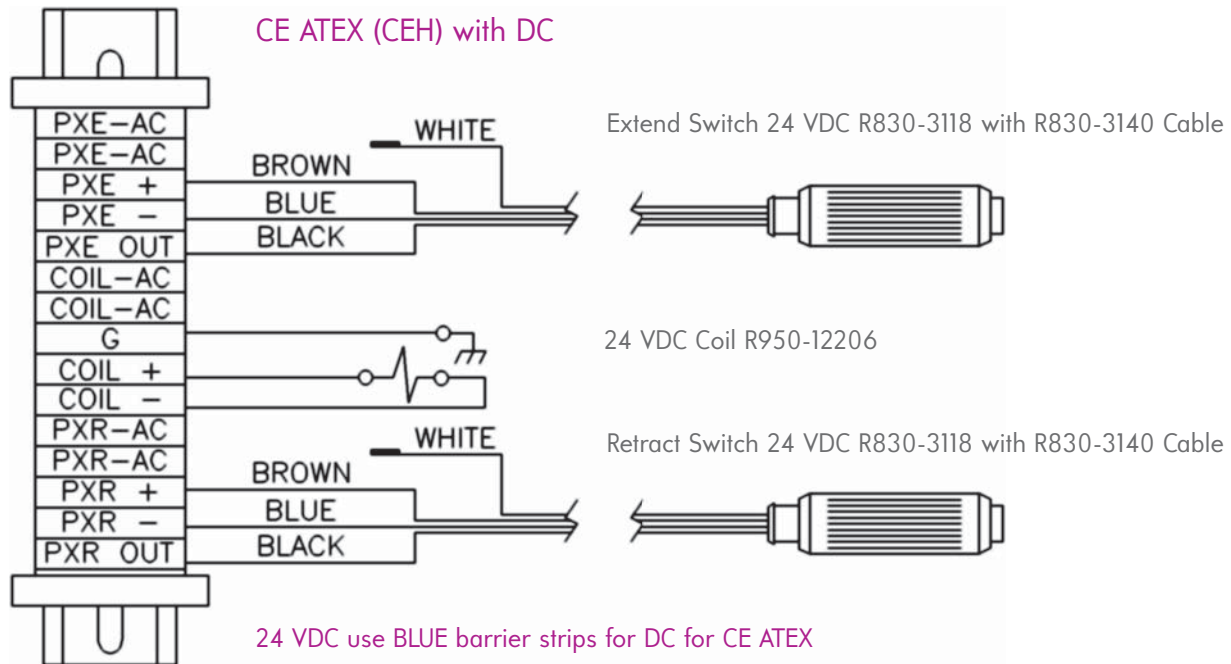


Figure 7c: CE ATEX (CEH) with DC

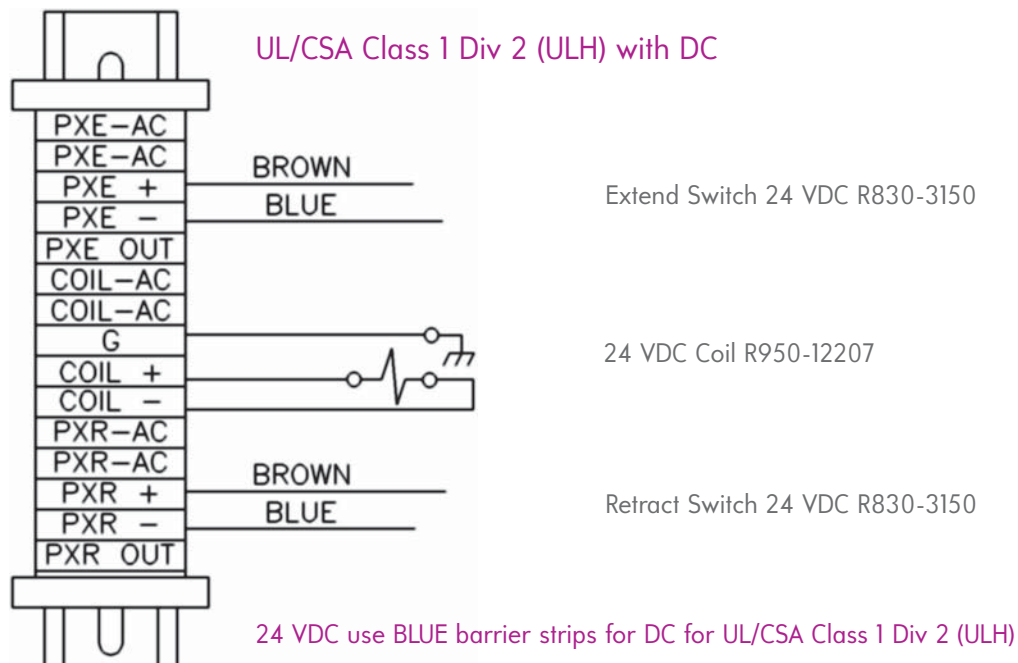


Figure 7d: UL/CSA Class 1 Div 2 (ULH) with DC

# 4058 Sizing and custom configurations

## 4058 SIZING FOR STANDARD BURNERS

Tables 1 and 2 show pre-configured 4058 modules for use with many standard North American burners through their standard angled pilot boss ports. To use the tables, pick the intersecting configuration between the burner model at the top of the table and the size on the left. These lengths are suitable to lighting gas or oil burners. For lighting gas only burners it is acceptable to use a retraction assembly 4 inches shorter, and an igniter 8 inches shorter.

If the desired burner configuration is not on one of the tables, use the instructions below for custom configurations.

Note that "igniter length" is the extension rod length plus 12 inches (305 mm). The exciter box also adds 1-3 inches (25 to 76 mm) to the total length.

If special adapters with longer lengths or with added isolating valves are used, the igniter length must be increased to compensate.

## PICKING A CYLINDER

The cylinder length needed for a 4058 retraction assembly, is generally the same length as the "Insertion Length" rounded to the nearest appropriate cylinder stroke size available. Available stroke lengths are: 8, 12, 16, 20, 24 inches. Use the shortest appropriate cylinder stroke size to minimize the length of the assembly, and cylinder rod thermal exposure.

## FINDING THE IGNITER TIP PROTRUSION LENGTH WHEN ATTACHING TO AN ANGLED PILOT BOSS.

For applications where the igniter is attached to a standard angled pilot boss at the exit of the burner body, the approximate igniter tip protrusion length should be the distance needed to put the igniter tip flush with the entrance of the ignition boss, use this equation:

$$\text{Igniter Tip Protrusion} = (\text{Adapter Length}) + (3.38)$$

**Example:** for a 4058 system with a 4058-AF-3 adapter  
Igniter Tip Protrusion = (2.5) + (3.38) = 5.88"

This dimension is approximate because the igniter tip protrusion length can vary by a few inches to compensate for the difference between the desired "Insertion Length" and the available cylinder stroke and igniter sizes. Once all the 4058 modules are configured a final more accurate length can be calculated with this equation:

$$\text{Final Igniter Tip Protrusion} = (\text{Igniter Length}) - (2 \times \text{Cylinder Stroke}) - 8".$$

## PICKING AN IGNITER LENGTH

The 4058-CSS igniter is configured by selecting the igniter extension length needed. Since the the igniter tip adds 12 inches to the length of the igniter, subtract 12" from the igniter length to find the correct extension length needed.

The igniter length needed for a 4058 retraction assembly is: (2 X cylinder stroke) + (Approximate Igniter Tip Protrusion) + (8.50) rounded to the nearest available igniter length (28-80" in 2 inch increments). Multiple extension rods can be used together if an igniter longer than 80 inches is needed or if shorter segments are needed for assembly clearance. They are available from 16" to 68" in 2 inch increments, see Chart # for part numbers.

## ATTACHING A 4058 TO A BURNER BACKPLATE AND FINDING THE IGNITER TIP PROTRUSION LENGTH

For applications where the 4058 is attached to the burner backplate or a windbox use a guide tube between the cylinder and the burner stabilizer to ensure that the igniter can be extended into the lighting area reliably.

The 4058 igniter can be attached to the burner over a 1-1/2" hole surrounded with four (4) threaded studs on a 1-1/2" 150# ANSI flange pattern (3-7/8" B.C.).

Use a retraction length between 2 and 6 inches, depending on thermal conditions. The igniter protrusion will be whatever length is need to traverse the length of the burner air body or windbox. See figure #8.

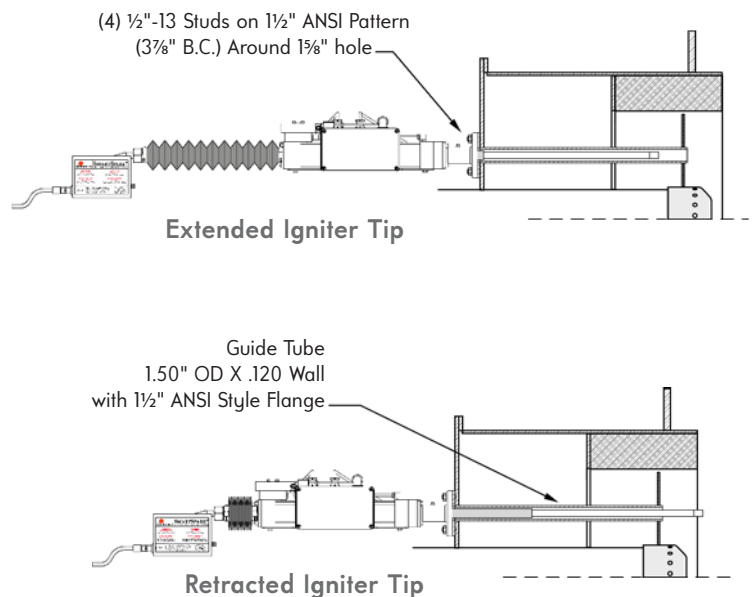


Figure 8: Typical 4058 mounting on a Burner Backplate



# Burner sizing table 1

This table shows part numbers needed to install a 4058 retractable high energy spark ignition system on many common North American Burners. The lengths in this table are suitable to lighting gas or oil burners. For lighting gas only burners it is acceptable to use a retraction assembly 4 inches shorter, and an igniter 8 inches shorter.

Size	Part Name	4384	4472	4482
<b>-9(A,B)</b>	Retraction Assembly Type	4058-08A	4058-08A	4058-08A
	Smartspark Igniter Type	4058-CSS-18	4058-CSS-20	4058-CSS-20
	Pilot Adaptor	4058-AF-3	4058-AF-2	4058-AF-2
	Igniter Tip Protrusion (in.)	6	8	8
<b>-10(A)</b>	Retraction Assembly	4058-08A	4058-12A	4058-12A
	Smartspark Igniter	4058-CSS-18	4058-CSS-26	4058-CSS-26
	Pilot Adaptor	4058-AF-3	4058-AF-3	4058-AF-3
	Igniter Tip Protrusion (in.)	6	6	6
<b>-10(B)</b>	Retraction Assembly	4058-08	4058-12A	4058-12A
	Smartspark Igniter	4058-CSS-18	4058-CSS-26	4058-CSS-26
	Pilot Adaptor	4058-AF-3	4058-AF-3	4058-AF-3
	Igniter Tip Protrusion (in.)	6	6	6
<b>-12</b>	Retraction Assembly	4058-08A	4058-12A	4058-12A
	Smartspark Igniter	4058-CSS-18	4058-CSS-26	4058-CSS-26
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	6	6
<b>-14</b>	Retraction Assembly	4058-12A	4058-12A	4058-12A
	Smartspark Igniter	4058-CSS-26	4058-CSS-26	4058-CSS-26
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	6	6
<b>-16</b>	Retraction Assembly	4058-12A	4058-16A	4058-16A
	Smartspark Igniter	4058-CSS-26	4058-CSS-34	4058-CSS-34
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-3
	Igniter Tip Protrusion (in.)	6	6	6
<b>-18</b>	Retraction Assembly	4058-12A	4058-20A	4058-20A
	Smartspark Igniter	4058-CSS-26	4058-CSS-42	4058-CSS-42
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	6	6
<b>-20</b>	Retraction Assembly	4058-16A	4058-20A	4058-20A
	Smartspark Igniter	4058-CSS-34	4058-CSS-42	4058-CSS-42
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	6	6
<b>-22</b>	Retraction Assembly	4058-16A	4058-20A	4058-20A
	Smartspark Igniter	4058-CSS-34	4058-CSS-42	4058-CSS-42
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	6	6
<b>-24</b>	Retraction Assembly	4058-20A	4058-24A	4058-24A
	Smartspark Igniter	4058-CSS-42	4058-CSS-50	4058-CSS-50
	Pilot Adaptor	4058-AF-3	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	6	6
<b>-26</b>	Retraction Assembly	4058-20A	—	—
	Smartspark Igniter	4058-CSS-42	—	—
	Pilot Adaptor	4058-AF-3	—	—
	Igniter Tip Protrusion (in.)	6	—	—

# Burner sizing table 2

This table shows part numbers needed to install a 4058 retractable high energy spark ignition system on many common North American Burners. The lengths in this table are suitable to lighting gas or oil burners. For lighting gas only burners it is acceptable to use a retraction assembly 4 inches shorter, and an igniter 8 inches shorter.

Size	Part Name	4821/6821	4514/6514	4795/6795	4796/6796
<b>-9(A,B)</b>	Retraction Assembly Type 4058-08A	4058-08A	4058-08A	4058-08A	
	Smartspark Igniter Type	4058-CSS-18	4058-CSS-18	4058-CSS-20	
	Pilot Adaptor	4058-AF-3	4058-AF-3	4058-AF-2	
	Igniter Tip Protrusion (in.)	6	6	8	
<b>-10(A)</b>	Retraction Assembly	4058-08A	4058-08A	4058-08A	
	Smartspark Igniter	4058-CSS-18	4058-CSS-18	4058-CSS-18	
	Pilot Adaptor	4058-AF-3	4058-AF-3	4058-AF-3	
	Igniter Tip Protrusion (in.)	6	6	6	
<b>-10(B)</b>	Retraction Assembly	4058-08A	—	—	
	Smartspark Igniter	4058-CSS-26	—	—	
	Pilot Adaptor	4058-AF-3	—	—	
	Igniter Tip Protrusion (in.)	6	—	—	
<b>-12</b>	Retraction Assembly	4058-12A	—	4058-08A	4058-08A
	Smartspark Igniter	4058-CSS-26	—	4058-CSS-18	4058-CSS-18
	Pilot Adaptor	4058-AF-3	—	4058-AF-3	4058-AF-3
	Igniter Tip Protrusion (in.)	6	—	6	6
<b>-14</b>	Retraction Assembly	4058-12A	—	4058-12A	4058-08A
	Smartspark Igniter	4058-CSS-26	—	4058-CSS-26	4058-CSS-18
	Pilot Adaptor	4058-AF-3	—	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	—	6	6
<b>-16</b>	Retraction Assembly	4058-12A	—	4058-12A	4058-8A
	Smartspark Igniter	4058-CSS-26	—	4058-CSS-26	4058-CSS-18
	Pilot Adaptor	4058-AF-3	—	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	—	6	6
<b>-18</b>	Retraction Assembly	4058-12A	—	4058-12A	4058-8A
	Smartspark Igniter	4058-CSS-26	—	4058-CSS-34	4058-CSS-18
	Pilot Adaptor	4058-AF-3	—	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	6	—	6	6
<b>-20</b>	Retraction Assembly	4058-16A	—	4058-16A	4058-8A
	Smartspark Igniter	4058-CSS-34	—	4058-CSS-34	4058-CSS-18
	Pilot Adaptor	4058-AF-3	—	4058-AF-4	4058-AF-4
	Igniter Tip Protrusion (in.)	5 $\frac{7}{8}$	—	6	6
<b>-22</b>	Retraction Assembly	4058-16A	—	—	4058-12A
	Smartspark Igniter	4058-CSS-34	—	—	4058-CSS-26
	Pilot Adaptor	4058-AF-3	—	—	4058-AF-4
	Igniter Tip Protrusion (in.)	6	—	—	6
<b>-24</b>	Retraction Assembly	—	—	—	4058-12A
	Smartspark Igniter	—	—	—	4058-CSS-26
	Pilot Adaptor	—	—	—	4058-AF-4
	Igniter Tip Protrusion (in.)	—	—	—	6

# 4058 System dimensions

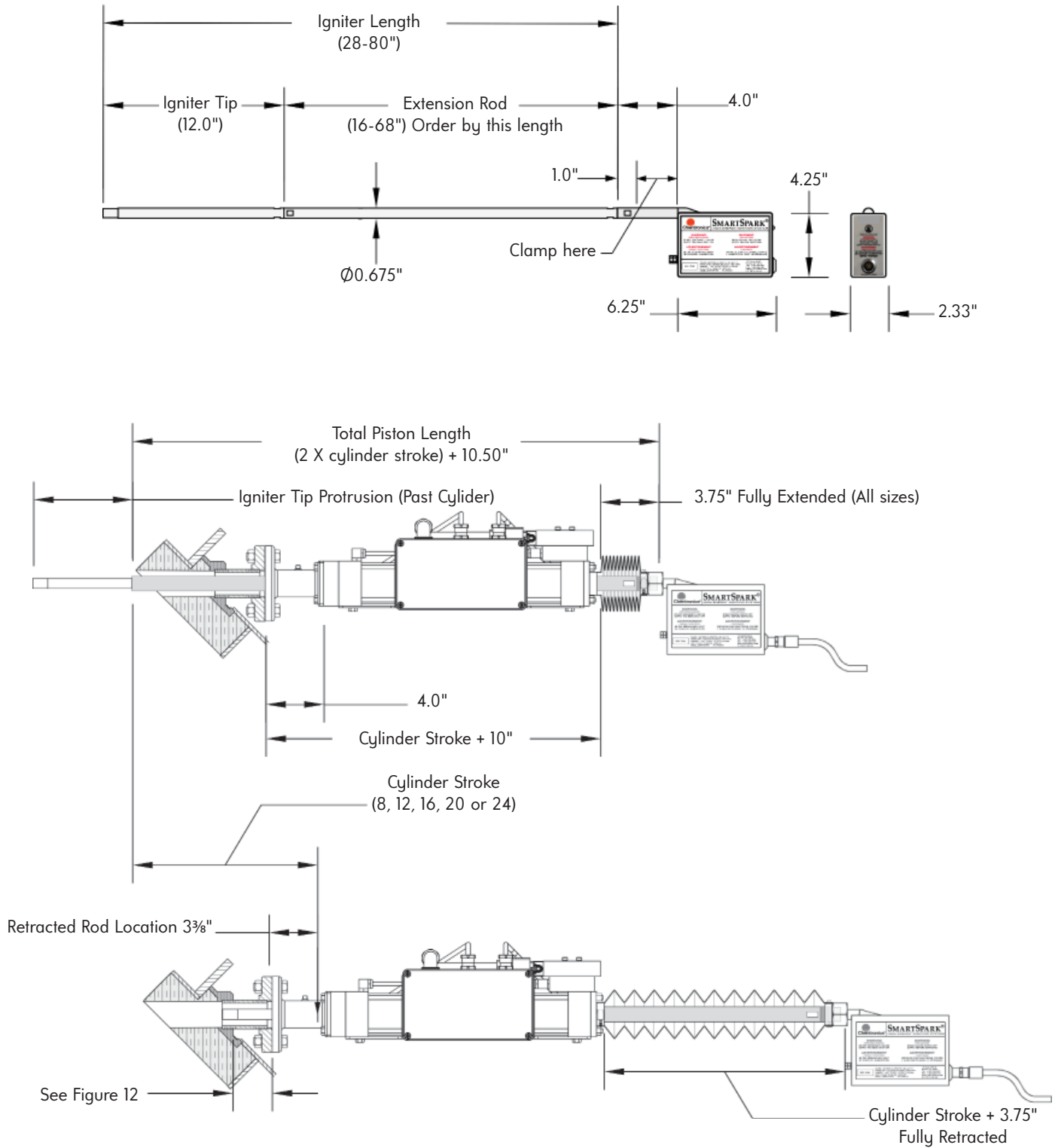
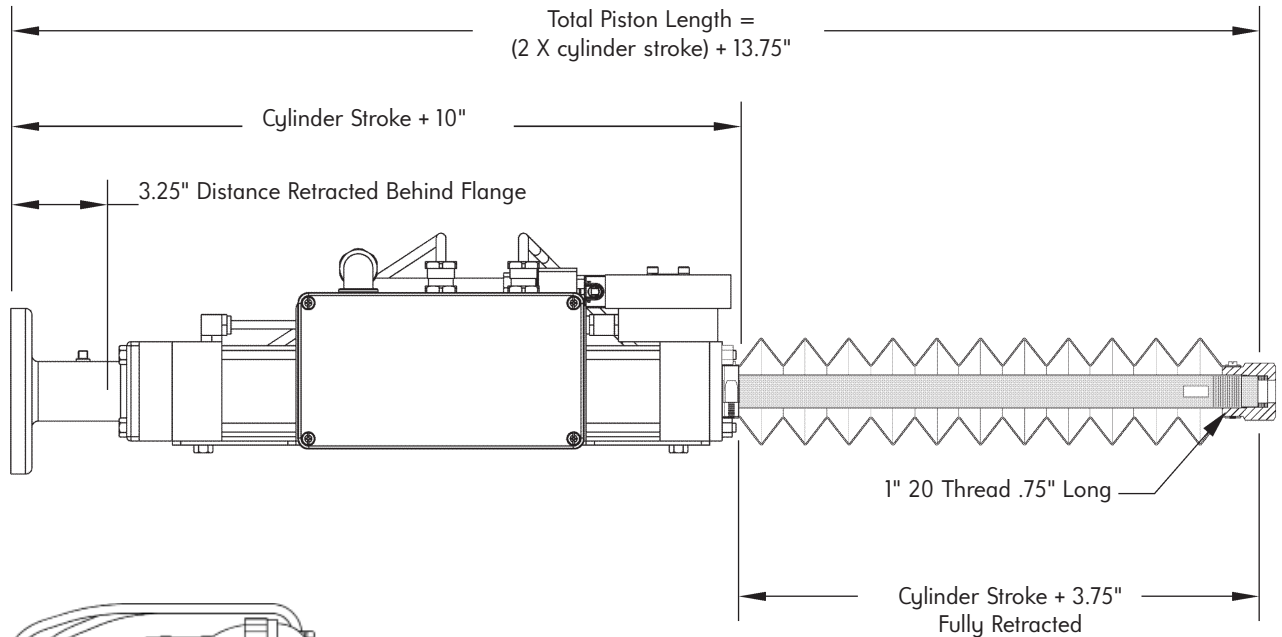


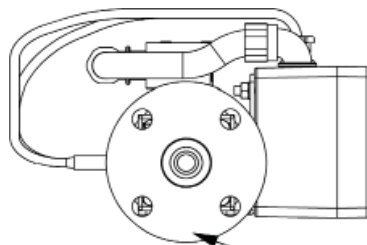
Figure 9: Dimensions

Note that the total piston length grow 2X when the cylinder is increased by X. So increase the length of the igniter by 8" if the cylinder length is increased by 4".

# Retraction assembly dimensions



Note: Shown without adapter flange.



1 1/2" ANSI Flange Connection

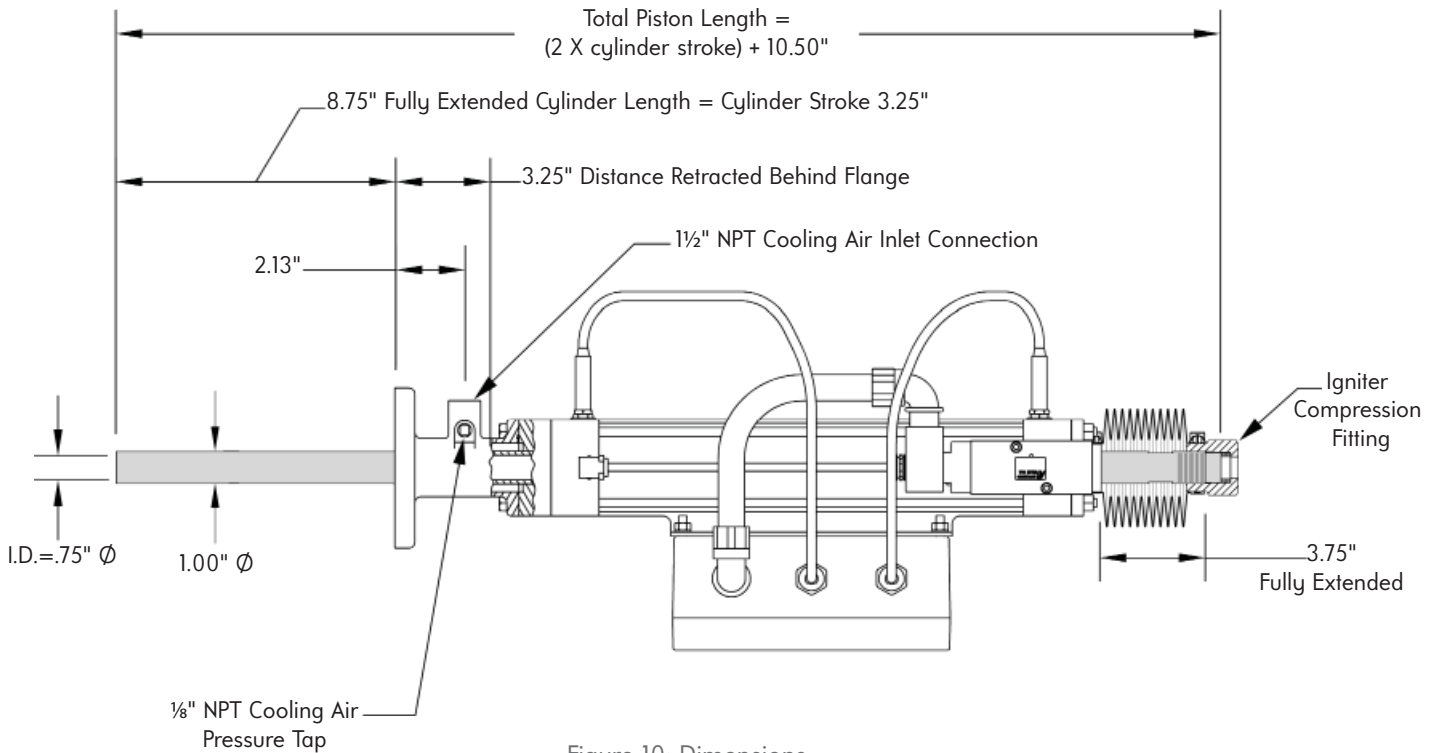
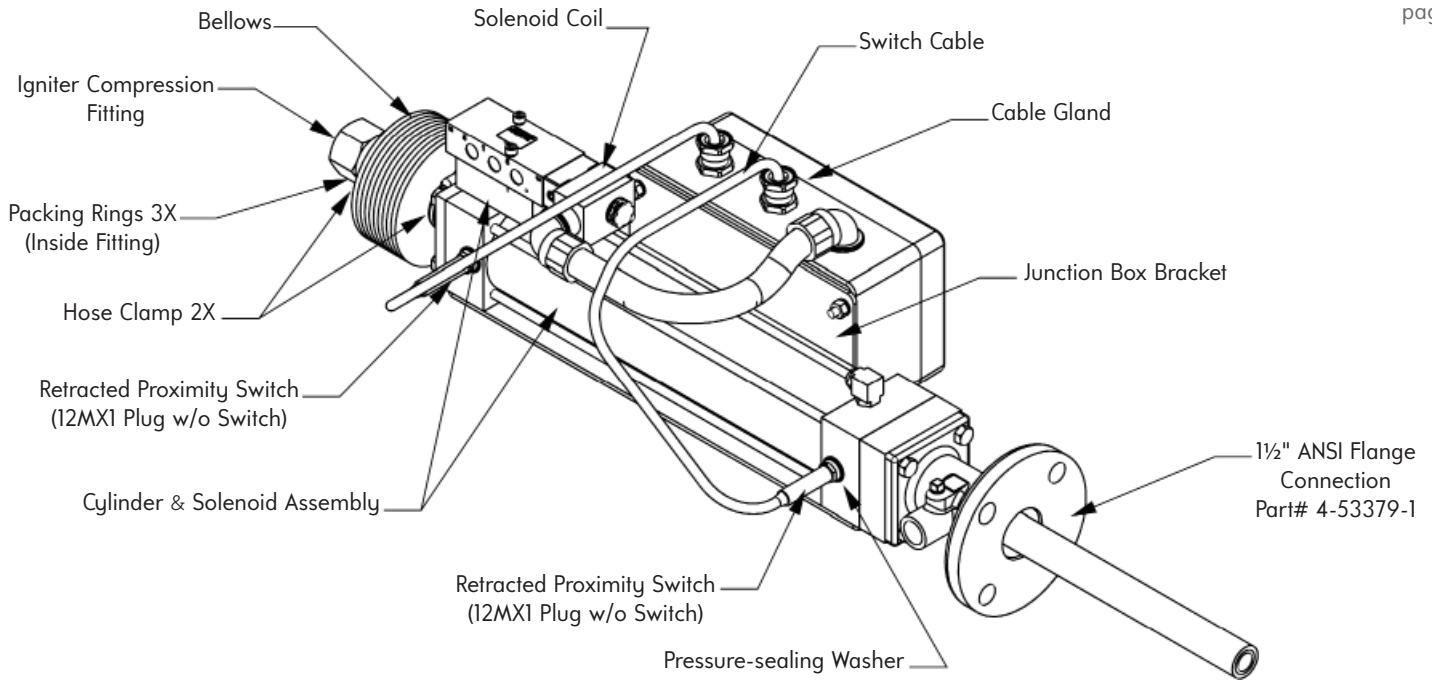


Figure 10: Dimensions

# Retraction assembly parts list



Note: Shown without adapter flange see Table 4 for adapter flange parts.

Figure 11: Parts

Table 3

Stroke	Cylinder & Solenoid Assembly	Junction Box Bracket	Bellows	Hose Clamp (2 req'd)
8"	R130-7170	4-53743-1	R320-8238	R120-2211
12"	R130-7171	4-53743-2	R320-8238	R120-2211
16"	R130-7172	4-53743-3	R320-8238	R120-2211
20"	R130-7173	4-53743-4	R320-8239	R120-2211
24"	R130-7174	4-53743-5	R320-8239	R120-2211

Igniter Mounting Hardware	Compression Fitting	Packing Rings
For 0.68" Ø Rod	4-53495-1	4-5974-1

Solenoid Valve	Pressure-Sealing Washer	12MX1 Plug
R950-12201	R970-8751-M-Z	R590-7865-M

Solenoid Coil	UL/CSA	CE
24 VDC (Classified Area)	R950-12207	R950-12206
120 VAC	R950-12204	R950-12202
240 VAC	R950-12205	R950-12203
Coil Cable Gland	NA	R190-1030

General Purpose End Switch	UL/CSA/CE (ULG)/(CEG)
120-240VAC Switch	R830-3151
Switch Cable Gland	R190-1030

Classified Area End Switch	UL/CSA Class 1 Div 2 (ULH)	CE/ATEX (CEH)
24 VDC Prox. Switch	R830-3150	R830-3118
Switch Cable	NA	R830-3140
Cable Lock	NA	R830-3130
Switch Cable Gland	R190-1030	R190-1030

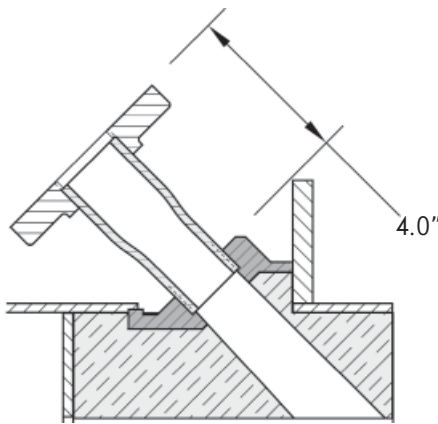
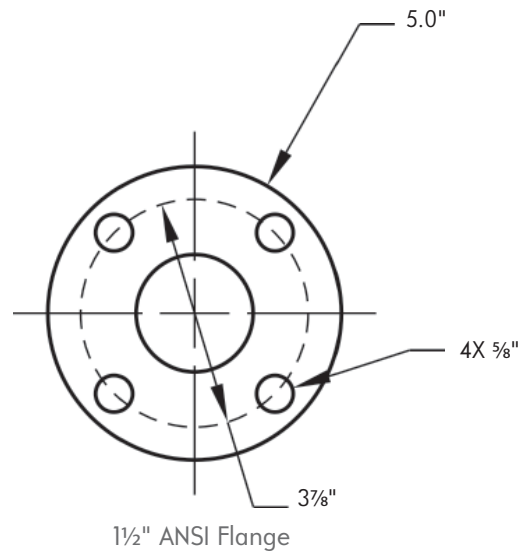
# Adapter flange, part list and dimensions

## 4058-AF BURNER MOUNTING ADAPTER FLANGE KITS

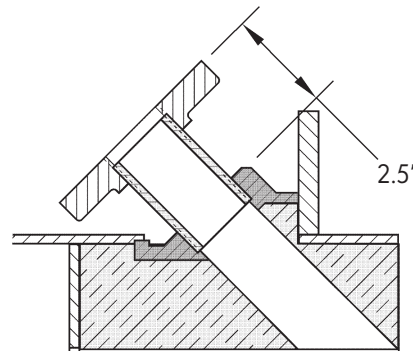
The 4058 High Energy Igniter Assembly has a 1½" ANSI flange connection to attach to a mating flange on the burner. For most burners additional pipe fittings are required to attach a 1½" ANSI flat face flange to the threaded pilot port on the burner.

## 4058-AF\_ ADAPTER FLANGE ORDERING INFORMATION

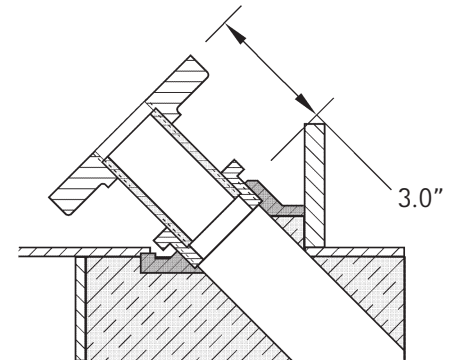
- 4058-AF-2** 1¼" NPT pipe fitting to 1½" ANSI flange
- 4058-AF-3** 1½" NPT pipe fitting to 1½" ANSI flange
- 4058-AF-4** 2" NPT pipe fitting to 1½" ANSI flange
- 4058-AF-5** 2½" NPT pipe fitting to 1½" ANSI flange
- 4058-AF-6** 3" NPT pipe fitting to 1½" ANSI flange



4058-AF-2 with 1¼" Mounting Port



4058-AF-3 with 1½" Mounting Port



4058-AF-4 with 2" Mounting Port

Figure 12

## 4058-AF Parts List

Table 4

	AF-2 1¼"	AF-3 1½"	AF-4 2"	AF-5 2½"	AF-6 3"
1½" ANSI flange	8767C-3 (Threaded Flat Flange)				
1½" ANSI gasket	OA3-2302-42F4 (1/8" THK)				
½"-13 x 2-1/4 long bolt	8737C-3 (4 req'd)				
½" - 13 nut	R510-2319-C (4 req'd)				
½" SAE washer	R970-7370-C (4 req'd)				
Adapter nipple	R590-7355	R590-6703 (1½" : 3" Long)			
Adapter bushing	—	—	R590-0710	R590-0757	R590-0807-S1

# SmartSpark™ parts list

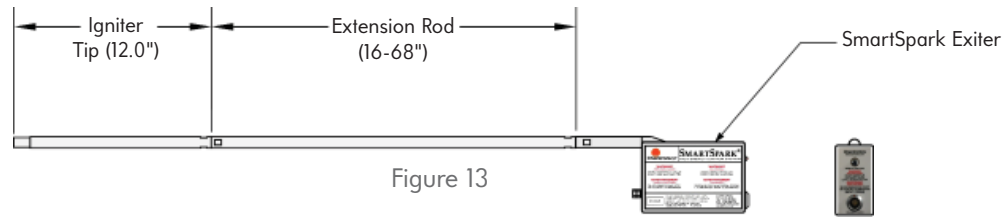


Figure 13

Table 5

	Part Number	
	UL/CSA Class I Div. 2	ATEX (CE)
SmartSpark™ Exciter	R130-7210	R130-7131
Input Power Cable 8'	R130-7290	R130-7129
Input Power Cable 12'	R130-7213	R130-7132
Input Power Cable 15'	R130-7211	R130-7140
Igniter Tip: 12" long (305mm)	R130-7134	
Extension Rod	Part Number	
16" (406mm)	R130-7240	
18" (457mm)	R130-7241	
20" (508mm)	R130-7220	
22" (559mm)	R130-7242	
24" (610mm)	R130-7221	
26" (660mm)	R130-7243	
28" (711mm)	R130-7133	
30" (762mm)	R130-7244	
32" (813mm)	R130-7222	
34" (864mm)	R130-7228	
36" (914mm)	R130-7200	
38" (965mm)	R130-7229	
40" (1002mm)	R130-7223	
42" (1064mm)	R130-7218	
44" (1118mm)	R130-7224	
46" (1168mm)	R130-7245	
48" (1219mm)	R130-7199	
50" (1270mm)	R130-7246	
52" (1321mm)	R130-7247	
54" (1372mm)	R130-7248	
56" (1422mm)	R130-7225	
58" (1473mm)	R130-7249	
60" (1524mm)	R130-7136	
62" (1575mm)	R130-7250	
64" (1626mm)	R130-7251	
66" (1676mm)	R130-7137	
68" (1727mm)	R130-7226	

# Ordering information - complete 4058 assembly

**4058(- A - - - CSS - ) Configured Options**

<p><b>Cylinder      Stroke</b></p> <p><b>08</b>      8" (203mm)</p> <p><b>12</b>      12" (305mm)</p> <p><b>16</b>      16" (406mm)</p> <p><b>20</b>      20" (508mm)</p> <p><b>24</b>      24" (610mm)</p>	<p><b>Compression Fitting I.D.</b></p> <p><b>A</b>      .69 w/3 Rings 1/8" Packing</p>	<p><b>Electrical Cable Classification</b></p> <p>UL/CSA Class I, Div. 2, Groups A, B, C, D</p> <p><b>UL8</b>    w/8' Cable</p> <p><b>UL12</b>   w/12' Cable</p> <p><b>UL15</b>   w/15' Cable</p> <p>CE Ex 11 3G 11CT4 (ATEX)</p> <p><b>CE8</b>    w/8' Cable</p> <p><b>CE12</b>   w/12' Cable</p> <p><b>CE15</b>   w/15' Cable</p>	<p><b>HEI Igniter Extension Length</b></p> <table border="0" style="width: 100%;"> <tr><td><b>16</b></td><td>16" (406mm)</td><td><b>44</b></td><td>44" (1118mm)</td></tr> <tr><td><b>18</b></td><td>18" (457mm)</td><td><b>46</b></td><td>46" (1168mm)</td></tr> <tr><td><b>20</b></td><td>20" (508mm)</td><td><b>48</b></td><td>48" (1219mm)</td></tr> <tr><td><b>22</b></td><td>22" (559mm)</td><td><b>50</b></td><td>50" (1270mm)</td></tr> <tr><td><b>24</b></td><td>24" (610mm)</td><td><b>52</b></td><td>52" (1321mm)</td></tr> <tr><td><b>26</b></td><td>26" (660mm)</td><td><b>54</b></td><td>54" (1372mm)</td></tr> <tr><td><b>28</b></td><td>28" (711mm)</td><td><b>56</b></td><td>56" (1422mm)</td></tr> <tr><td><b>30</b></td><td>30" (762mm)</td><td><b>58</b></td><td>58" (1473mm)</td></tr> <tr><td><b>32</b></td><td>32" (813mm)</td><td><b>60</b></td><td>60" (1524mm)</td></tr> <tr><td><b>34</b></td><td>34" (864mm)</td><td><b>62</b></td><td>62" (1575mm)</td></tr> <tr><td><b>36</b></td><td>36" (914mm)</td><td><b>64</b></td><td>64" (1626mm)</td></tr> <tr><td><b>38</b></td><td>38" (965mm)</td><td><b>66</b></td><td>66" (1676mm)</td></tr> <tr><td><b>40</b></td><td>40" (1020mm)</td><td><b>68</b></td><td>68" (1727mm)</td></tr> <tr><td><b>42</b></td><td>42" (1067mm)</td><td></td><td></td></tr> </table>	<b>16</b>	16" (406mm)	<b>44</b>	44" (1118mm)	<b>18</b>	18" (457mm)	<b>46</b>	46" (1168mm)	<b>20</b>	20" (508mm)	<b>48</b>	48" (1219mm)	<b>22</b>	22" (559mm)	<b>50</b>	50" (1270mm)	<b>24</b>	24" (610mm)	<b>52</b>	52" (1321mm)	<b>26</b>	26" (660mm)	<b>54</b>	54" (1372mm)	<b>28</b>	28" (711mm)	<b>56</b>	56" (1422mm)	<b>30</b>	30" (762mm)	<b>58</b>	58" (1473mm)	<b>32</b>	32" (813mm)	<b>60</b>	60" (1524mm)	<b>34</b>	34" (864mm)	<b>62</b>	62" (1575mm)	<b>36</b>	36" (914mm)	<b>64</b>	64" (1626mm)	<b>38</b>	38" (965mm)	<b>66</b>	66" (1676mm)	<b>40</b>	40" (1020mm)	<b>68</b>	68" (1727mm)	<b>42</b>	42" (1067mm)		
<b>16</b>	16" (406mm)	<b>44</b>	44" (1118mm)																																																								
<b>18</b>	18" (457mm)	<b>46</b>	46" (1168mm)																																																								
<b>20</b>	20" (508mm)	<b>48</b>	48" (1219mm)																																																								
<b>22</b>	22" (559mm)	<b>50</b>	50" (1270mm)																																																								
<b>24</b>	24" (610mm)	<b>52</b>	52" (1321mm)																																																								
<b>26</b>	26" (660mm)	<b>54</b>	54" (1372mm)																																																								
<b>28</b>	28" (711mm)	<b>56</b>	56" (1422mm)																																																								
<b>30</b>	30" (762mm)	<b>58</b>	58" (1473mm)																																																								
<b>32</b>	32" (813mm)	<b>60</b>	60" (1524mm)																																																								
<b>34</b>	34" (864mm)	<b>62</b>	62" (1575mm)																																																								
<b>36</b>	36" (914mm)	<b>64</b>	64" (1626mm)																																																								
<b>38</b>	38" (965mm)	<b>66</b>	66" (1676mm)																																																								
<b>40</b>	40" (1020mm)	<b>68</b>	68" (1727mm)																																																								
<b>42</b>	42" (1067mm)																																																										

**Electrical Options (See page 17 for details)**

CEG-120-SW0	CEG-120-SW1	CEG-120-SW2
CEG-240-SW0	CEG-240-SW1	CEG-240-SW2
CEH-024-SW0	CEH-024-SW1	CEH-024-SW2
ULG-120-SW0	ULG-120-SW1	ULG-120-SW2
ULG-240-SW0	ULG-240-SW1	ULG-240-SW2
ULH-024-SW0	ULH-024-SW1	ULH-024-SW2

**Examples:**

**CEH-024-SW1** = CE/ATEX general purpose and hazardous area, 24 VDC, 1 switch

**ULG-120-SW2** = UL/CSA general purpose, 120 VAC, 2 switches

**Burner Mounting Adapter (See page 14 for details)**

<b>AF-NONE</b>	Without Adapter Flange
<b>AF-2</b>	1 1/4" NPT Adapter (4058-AF-2)
<b>AF-3</b>	1 1/2" NPT Adapter (4058-AF-3)
<b>AF-4</b>	2" NPT Adapter (4058-AF-4)
<b>AF-5</b>	2 1/2" NPT Adapter (4058-AF-5)
<b>AF-6</b>	3" NPT Adapter (4058-AF-6)

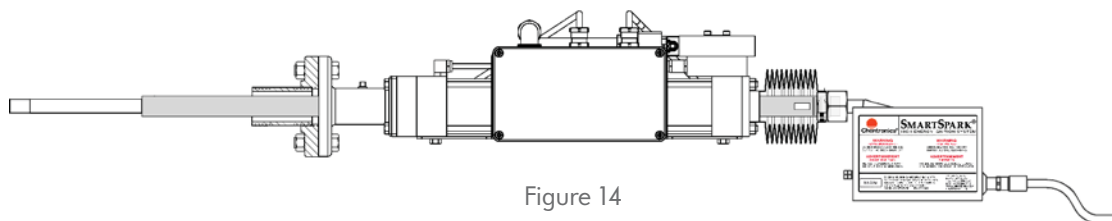


Figure 14



# Ordering information, 4058-A retraction assembly

## 4058-     A ( - - - ) Configured Options

Cylinder	Stroke	Adapter Flange
08	8" (203mm)	AF-NONE Without Adapter Flange
12	12" (305mm)	AF-2 1¼" NPT Pipe Fitting to 1½" ANSI Flange
16	16" (406mm)	AF-3 1½" NPT Pipe Fitting to 1½" ANSI Flange
20	20" (508mm)	AF-4 2" NPT Pipe Fitting to 1½" ANSI Flange
24	24" (610mm)	AF-5 2½" NPT Pipe Fitting to 1½" ANSI Flange
		AF-6 3" NPT Pipe Fitting to 1½" ANSI Flange

**Compression Fitting I.D.**  
A .69 w/3 Rings 1/8" Packing

- CEG-120-SW0; CE/ATEX general purpose and hazardous area, 120 VAC, no switches
- CEG-240-SW0; CE/ATEX general purpose and hazardous area, 240 VAC, no switches
- CEH-024-SW0; CE/ATEX general purpose and hazardous area, 24 VDC, no switches
- ULG-120-SW0; UL/CSA general purpose, 120 VAC, no switches
- ULG-240-SW0; UL/CSA general purpose, 240 VAC, no switches
- ULH-024-SW0; UL/CSA general purpose and hazardous area, 24 VDC, no switches
  
- CEG-120-SW1; CE/ATEX general purpose and hazardous area, 120 VAC, 1 switch
- CEG-240-SW1; CE/ATEX general purpose and hazardous area, 240 VAC, 1 switch
- CEH-024-SW1; CE/ATEX general purpose and hazardous area, 24 VDC, 1 switch
- ULG-120-SW1; UL/CSA general purpose, 120 VAC, 1 switch
- ULG-240-SW1; UL/CSA general purpose, 240 VAC, 1 switch
- ULH-024-SW1; UL/CSA general purpose and hazardous area, 24 VDC, 1 switch
  
- CEG-120-SW2; CE/ATEX general purpose and hazardous area, 120 VAC, 2 switches
- CEG-240-SW2; CE/ATEX general purpose and hazardous area, 240 VAC, 2 switches
- CEH-024-SW2; CE/ATEX general purpose and hazardous area, 24 VDC, 2 switches
- ULG-120-SW2; UL/CSA general purpose, 120 VAC, 2 switches
- ULG-240-SW2; UL/CSA general purpose, 240 VAC, 2 switches
- ULH-024-SW2; UL/CSA general purpose and hazardous area, 24 VDC, 2 switches

### Electrical Standards

- ULG : UL/CSA - General Use (USA)/(Canada)
- ULH : UL/CSA - Class I Div. 2 Groups A, B, C, D (Classified Area)
- CEG : CE - General Use (Europe)
- CEH : CE Ex II 3G IIC T4 ATEX (Classified Area - 24V only)

### Pneumatic Solenoid Voltage

- 024 24 VDC - ATEX and General Use
- 120 110 - 140 VAC NOT Available for ATEX (EX)
- 240 220 VAC 50/60 Hz NOT Available for ATEX (EX)

### End Switches for Position Sensing

- SW0 None
- SW1 One switch for extended position
- SW2 Two switches for extended & retracted positions

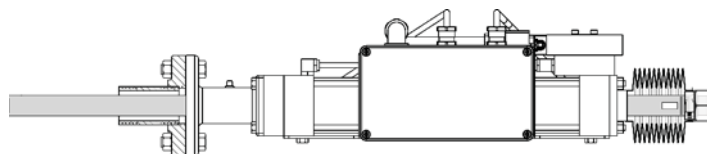
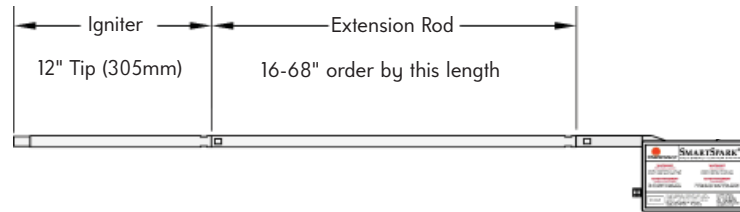


Figure 15

## W/O RETRACTION ASSEMBLY OR ADAPTER

### 4058-CSS ( - - ) Configured Options

HEI Igniter Extension Length			Electrical Cable Classification			
16	16" (406mm)	34	34" (864mm)	52	52" (1321mm)	UL/CSA Class I, Div. 2, Groups A, B, C, D
18	18" (457mm)	36	36" (914mm)	54	54" (1372mm)	UL8 w/8' Cable
20	20" (508mm)	38	38" (965mm)	56	56" (1422mm)	UL12 w/12' Cable
22	22" (559mm)	40	40" (1020mm)	58	58" (1473mm)	UL15 w/15' Cable
24	24" (610mm)	42	42" (1067mm)	60	60" (1524mm)	CE Ex 11 3G 11CT4 (ATEX)
26	26" (660mm)	44	44" (1118mm)	62	62" (1575mm)	CE8 w/8' Cable
28	28" (711mm)	46	46" (1168mm)	64	64" (1626mm)	CE12 w/12' Cable
30	30" (762mm)	48	48" (1219mm)	66	66" (1676mm)	CE15 w/15' Cable
32	32" (813mm)	50	50" (1270mm)	68	68" (1727mm)	



Note: 4058-CSS cables are suitable for general or classified areas.

Figure 16

**WARNING:** Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Components in combustion systems may exceed 160°F (71°C) surface temperatures and present hot surface contact hazard. Fives North American Combustion, Inc. suggests the use of combustion systems that are in compliance with all Safety Codes, Standards, Regulations and Directives; and care in operation.



#### CONTACT US:

Fives North American Combustion, Inc  
 4455 East 71st Street - Cleveland, OH 44105 - USA  
 Tel: +1 216 271 6000 - Fax: +1 216 373 4237  
 Email: [fna.sales@fivesgroup.com](mailto:fna.sales@fivesgroup.com)



[www.fivesgroup.com](http://www.fivesgroup.com)