

# Flame Safety and Ignition Components

## TECHNICAL INFORMATION

- Available accessories for ignition of gas burners
- Components for flame safety
- Flamerod available in various lengths



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### **1 Application**

These flame safety and ignition components can be used across a variety of applications with Eclipse burners. Refer to the Technical Information of the burner being used to identify the correct ignition components.

## 2 Function

### 2.1 Flame Rods

Flame rods operate on the rectification principle. Flames contain ions capable of conducting electrical current. An AC voltage on the flame rod will conduct current through the flame to a grounding surface, usually the metal parts of the burner. The signal will be rectified to DC with a 4 to 1 ratio of surface areas of the burner ground and flame rod that are in contact with the flame. On receipt of the DC signal, the controller will send power to keep the automatic fuel shutoff valves open. If the flame rod shorts to ground, then the DC signal is lost and the resulting AC signal is rejected by the controller and the shutoff valves are closed. Because of this action, flame rods with appropriate flame safeguard controllers are considered fail safe.

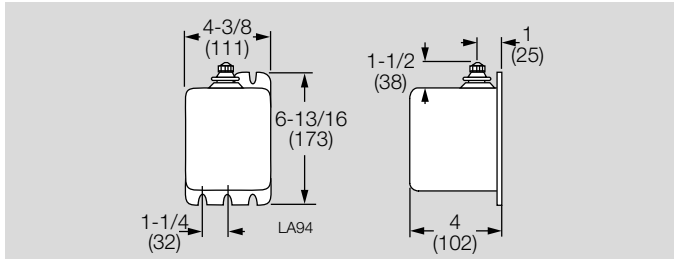
Unless the burner manufacturer's literature states otherwise, use flame rods only on gas burners, not oil burners. The rods may accumulate soot, or oil film, causing nuisance shutdowns.

Flame rods will work properly only if you maintain a predetermined ratio of rod surface area to burner grounding area in contact with the flame. Consequently, observe the flame rod length recommendations published for various burners.

### 3 Accessories

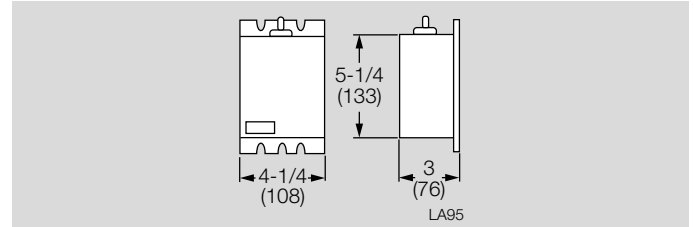
#### 3.1 Ignition transformer

Ignition transformer with 20 mA secondary current. Single phase.



Part No.	Primary Voltage and Frequency	Secondary Voltage
12178	120 VAC/60 Hz	6000 VAC
15171	240 VAC/60 Hz	6000 VAC
EC20683	120 VAC/50 Hz	6000 VAC
HK300038	220 VAC/50 Hz	6000 VAC
EC20923	110 VAC/50 Hz	5000 VAC

Honeywell Q-624A-1014 solid state half wave spark generator.



Part No.	Primary	Secondary
13551	120 VAC (66 VA)	10,000 VAC

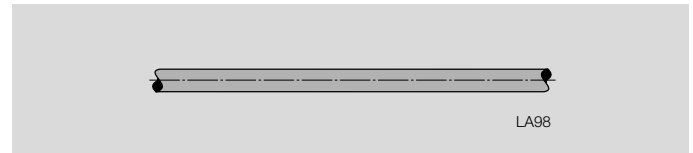
#### 3.2 Ignition cable

High temperature ignition wire for maximum of 480°F (250°C).



Part number 32756-50FT and 32756-100FT.

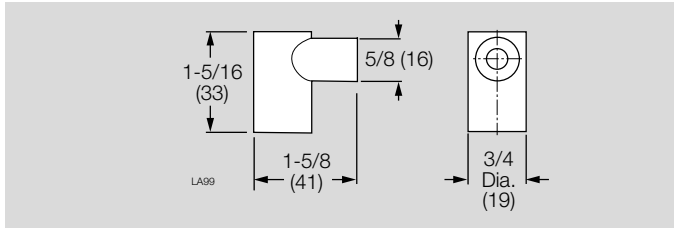
GTO-15 ignition cable for maximum ambient temperature of 220°F (105°C).



Part number 35443-50FT and 35433-100FT.

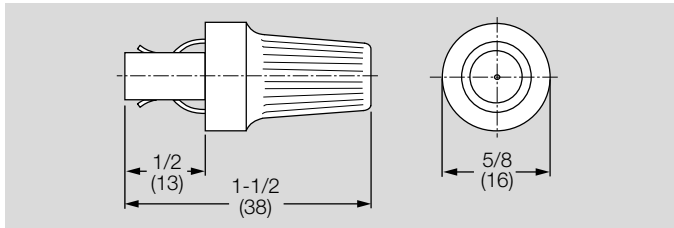
### 3.3 Terminals

Rajah 90° fitting with plastic insulator, connects to ignition cable. Snaps onto igniter or flamerod.



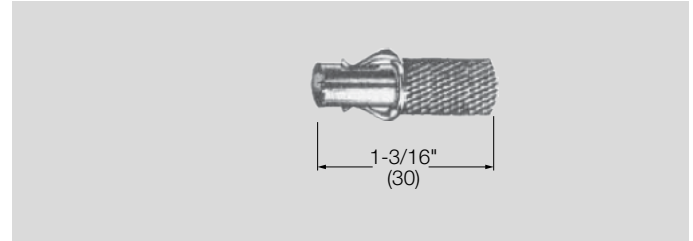
Part number 13564-4PC.

Terminal, Rajah, straight fitting with half insulation over portion that connects to ignition cable. Snaps onto igniter or flamerod.



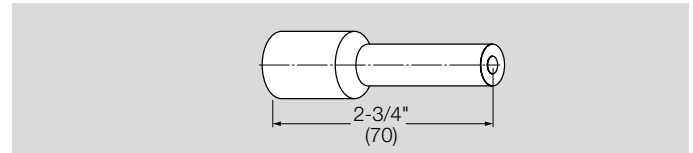
Part number 15996.

Terminal, Rajah, straight, maximum 225°F (107°C), use with 14202-1 boot.



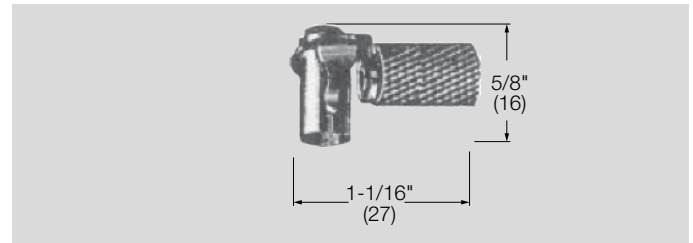
Part number 14202.

Terminal Boot, straight, rubber, for use with 14202 terminal.



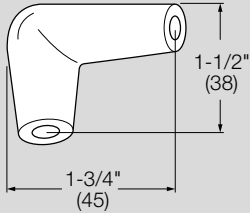
Part number 14202-1.

Terminal, Rajah, right-angle, maximum 225°F (104°C), use with 14204-1 boot.



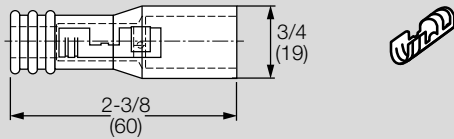
Part number 14204.

Terminal Boot, right-angle, rubber, used with 14204 terminal.



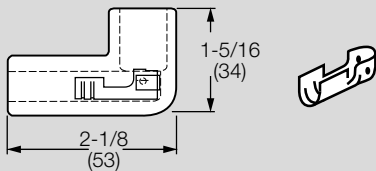
Part number 14204-1.

Terminal, straight, ceramic, maximum 432°F (220°C).



Part number 10008547.

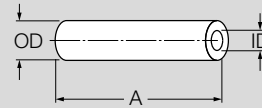
Terminal, right-angle, ceramic, maximum 432°F (220°C).



Part number 10008548.

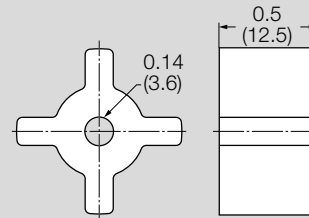
### 3.4 Insulators

Insulator, ceramic to support electrode rods.



Length A		ID		OD		Part No.
Inches	mm	Inches	mm	Inches	mm	
3"	76	0.130"	3.3	9/16"	14	12130
3"	76	0.140"	3.6	7/16"	11	20255

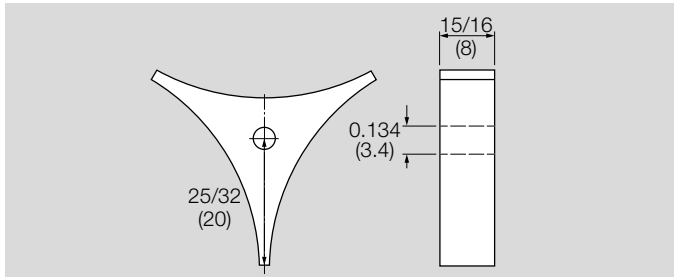
Insulator, ceramic, 1/2" long used to support 1/8" diameter rod inside pipe.



Pipe Size	Part No.
1/2 inch Sch 80	14462-1
3/4 inch Sch 40	14463
3/4 inch Sch 80	14463-1
1 inch Sch 80	14464-1

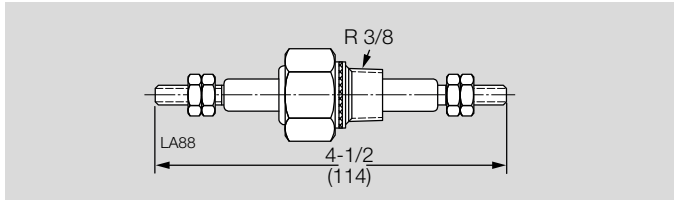
## Accessories

Insulator, ceramic, used to support 1/8" diameter rod inside pipe diameter minimum of 1.625".



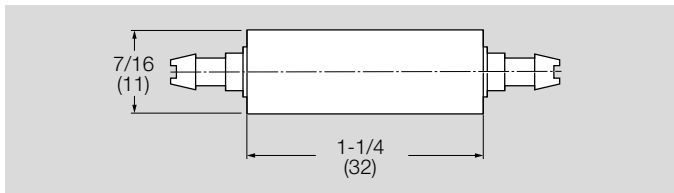
Part number 20403.

3/8" Feed-thru insulator; 4-1/2" lg.



Part number 14320.

Flame lead insulator with ignition studs.

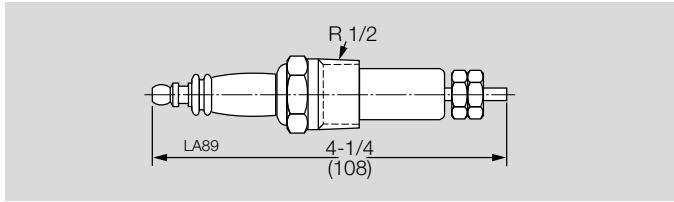


Part number 16216.



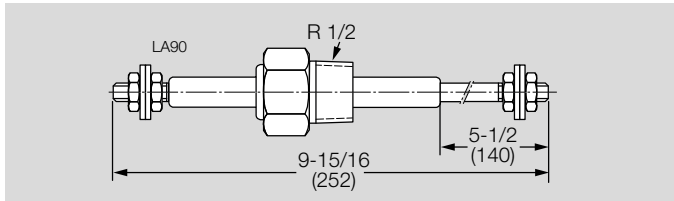
## Accessories

1/2" Feed-thru insulator; 4-1/4" lg.



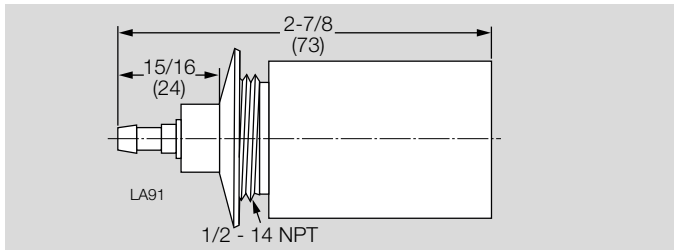
Part number 14319.

1/2" Feed-thru insulator; 9-15/16" lg. for 6-5/8" thick wall insulation.



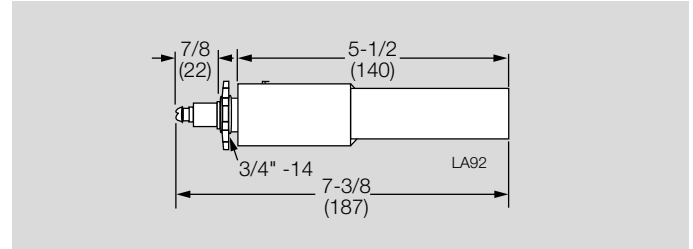
Part number 15908.

Flame lead insulator; 1/2" conduit knock-out with ignition stud both ends.



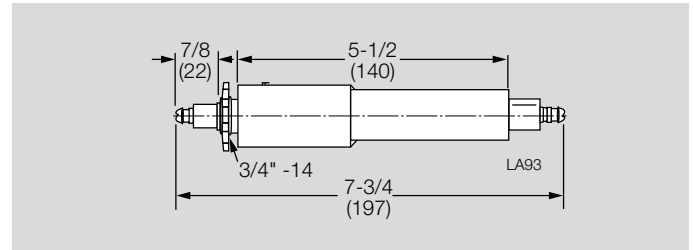
Part number 109031.

Feed-thru insulator 3/4-14 pipe thds.; 7-3/8" lg for 5" thick insulation; ignition studs both ends.



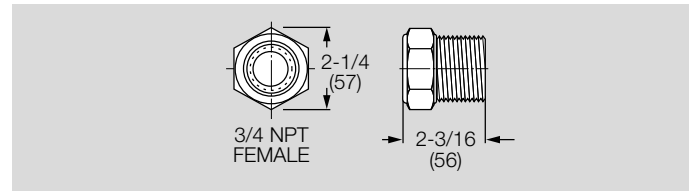
Part number 109345.

Feed-thru insulator 3/4-14 pipe thds.; 7-3/4" lg. for 5" thick insulation studs both ends.



Part number 109344.

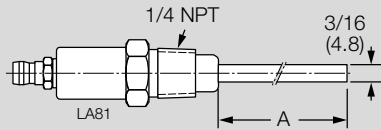
Swivel adapter to position a flamerod in the flame.



Part number 103401.

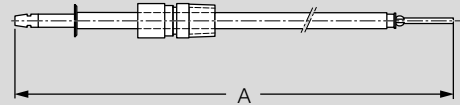
## 3.5 Igniters/flamerods

### 3.5.1 Flamerod 1/4"



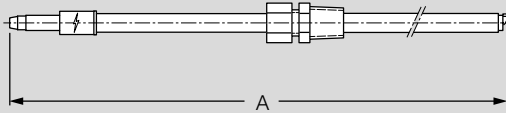
Length A		Part No.
Inches	mm	
1-5/8"	41	13093-5
1-13/16"	46	13093-4
3"	76	13093-3
4"	102	13093-6
5-3/4"	146	13093
11-3/4"	298	13093-1
17-3/4"	451	13093-2

### 3.5.2 Adjustable flamerod 1/4"



Length A		Part No.
Inches	mm	
10-1/4"	260	100602-1
16-1/4"	413	100602-2
19-1/4"	489	100602-3
22-1/4"	565	100602-4
25-1/4"	641	100602-5
28-1/4"	718	100602-6
31-1/4"	794	100602-7
34-1/4"	870	100602-8
12.4"	315	100602-9
21-1/4"	540	100602-10
17-1/4"	438	100602-11
29-1/4"	743	100602-12
50-3/4"	1289	100602-13
45.91"	1166	100602-14
59"	1499	100602-15
24"	610	100621
43-1/2"	1105	100629

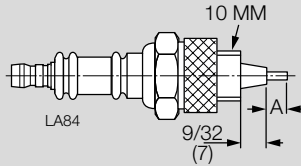
### 3.5.3 Adjustable self-grounding igniters 1/4"



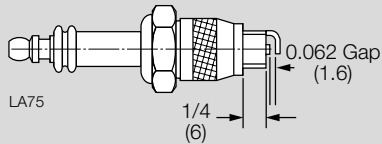
Length A		Part No.
Inches	mm	
5.9"	150	150000-44
7.0"	178	150000-41
8.8"	224	150000-26
11.1"	282	150000-28
12.9"	328	150000-31
13.8"	351	150000-32
14.8"	376	150000-33
15.9"	404	150000-27
16.8"	427	150000-29
17.9"	455	150000-36
18.8"	478	150000-1
19.8"	503	150000-2
20.9"	531	150000-3
21.8"	554	150000-4
22.9"	582	150000-5
22.9"	582	150000-6
23.8"	605	150000-7
24.9"	632	150000-8
25.9"	658	150000-9
26.9"	683	150000-10
27.9"	709	150000-11
28.9"	734	150000-12
29.9"	759	150000-13

Length A		Part No.
Inches	mm	
30.9"	785	150000-14
32.9"	836	150000-15
33.8"	589	150000-16
34.8"	884	150000-17
35.9"	912	150000-18
36.8"	935	150000-19
37.9"	963	150000-20
38.8"	986	150000-21
39.8"	1011	150000-22
40.9"	1039	150000-23
41.8"	1062	150000-24
43.8"	1113	150000-25
45.9"	1116	150000-38
47.3"	1201	150000-39
49.8"	1265	150000-46
53.3"	1354	150000-37
54.3"	1379	150000-42
65.9"	1674	150000-40
77.9"	1979	150000-43

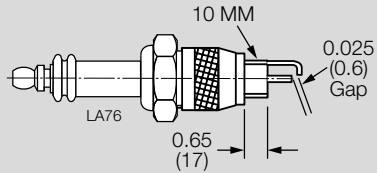
### 3.5.4 Igniter or flamerod 10 mm



Length A		Part No.
Inches	mm	
1/2"	13	18461
2-1/2"	64	18460

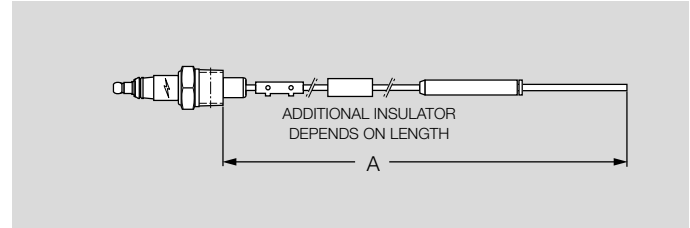
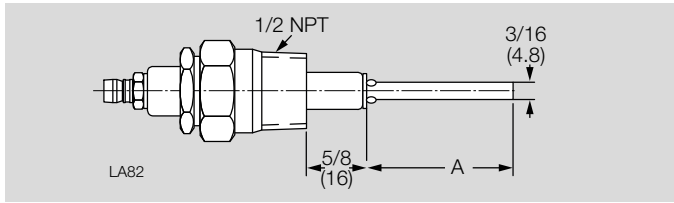


Part number 16160. 10 mm self-grounding igniter.



Part number 18458. 10 mm self-grounding igniter.

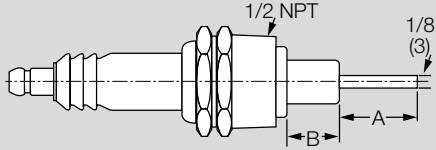
### 3.5.5 Flamerod 1/2"



Length A		Part No.
Inches	mm	
1-7/8"	48	13312-3
2-3/8"	60	13312-4
2-1/2"	64	13312-7
3"	76	13312-5
5"	127	13312-8
6"	152	13312
8.82"	224	10002219-3
9-3/4"	248	13312-10
9.98"	253	10002219-1
12"	304	13312-1
12"	305	10002219
24"	610	13312-2

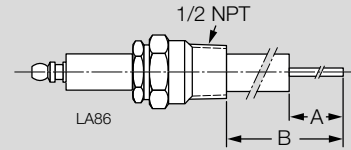
Length A		Part No.
Inches	mm	
18.8"	478	100355-1
22.8"	579	100355-2
26.8"	681	100355-3
30.8"	782	100355-4
34.8"	884	100355-5
38.8"	986	100355-6
42.9"	1090	100355-7
46.9"	1191	100355-8
50.9"	1293	100355-9
54.9"	1294	100355-10

### 3.5.6 Igniter or flamerod 1/2"

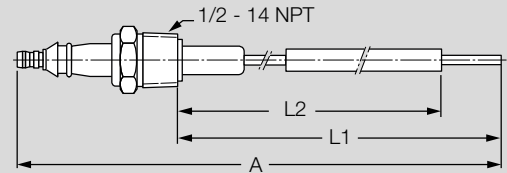


Length A		Length B		Part No.
Inches	mm	Inches	mm	
1/2"	13	1/2"	13	16946-6
3/4"	19	1/2"	13	16946-5
1-3/8"	35	1/2"	13	16946-3
1-13/16"	46	1/2"	13	16946-7
2"	51	1/2"	13	16946-9
2-1/2"	64	1/2"	13	16946-4
4-7/16"	113	1/2"	13	16946-2
5"	127	1/2"	13	16946-1
12"	305	1"	25	10002242
24"	610	1"	25	12978
38"	965	1"	25	12978-1

### 3.5.7 Adjustable igniter or flamerod 1/2"

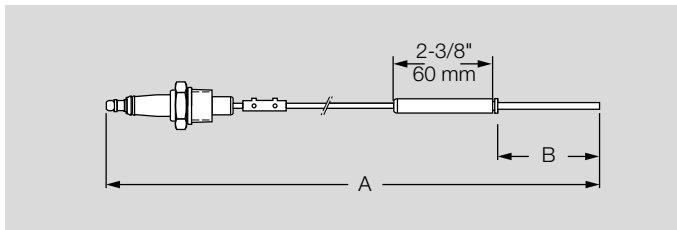


Length A		Length B		Part No.
Inches	mm	Inches	mm	
1"	25	5/8" to 4-1/4"	16 to 108	18193-1
2"	51	3-3/16" to 5-7/16"	81 to 138	20212
3"	76	2-5/8" to 6-1/4"	67 to 159	18193



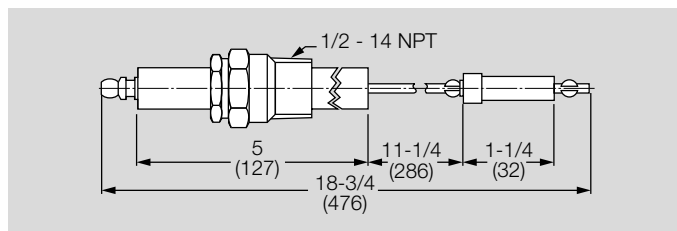
Length A		Length 1		Length 2		Part No.
Inches	mm	Inches	mm	Inches	mm	
11.4"	290	9.03"	229	8.06"	205	13837
19.12"	486	16.74"	425	15.79"	401	13581

## Accessories



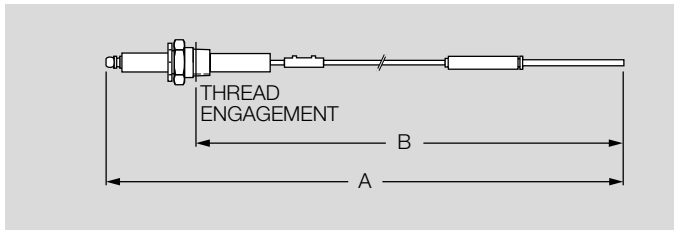
Length A		Length B		Part No.
Inches	mm	Inches	mm	
13-3/4"	349	4-3/4"	121	100050-1
15-7/8"	403	4-3/4"	121	100050-7
16-3/4"	425	4-3/4"	121	100050-2
18-15/16"	481	4-3/4"	121	100050-9
19-3/4"	502	4-3/4"	121	100050-3
21-1/16"	535	4-3/4"	121	100050-5
21-3/4"	552	4-3/4"	121	100050-13
21-15/16"	557	4-3/4"	121	100050-6
22-11/16"	576	4-3/4"	121	100050-11
24-1/16"	611	4-3/4"	121	100050-4
24-1/2"	622	4-3/4"	121	100050-14
24-11/16"	627	1"	25	100670-7
24-15/16"	633	4-3/4"	121	100050-12
25-3/16"	640	1"	25	100670-13
26"	660	4-3/4"	121	100050-10
26-11/16"	678	1"	25	100670-9
26-3/4"	679	4-3/4"	121	100050-8
27-7/16"	697	1"	25	100670-2
27-5/16"	694	4-3/4"	121	100050-15
27-15/16"	710	1"	25	100670-3
30-9/16"	777	1"	25	100670-8
31-3/8"	797	1"	25	100670-12
32-5/8"	829	1"	25	100670-10

Length A		Length B		Part No.
Inches	mm	Inches	mm	
32-15/16"	837	1"	25	100670-14
33-3/8"	848	1"	25	100670-1
33-7/8"	860	1"	25	100670-4
38-1/2"	978	1"	25	100670-11
39-1/4"	997	1"	25	100670-5
39-3/4"	1010	1"	25	100670-6
13-3/4"	349	4-3/4"	121	100050-1
15-7/8"	403	4-3/4"	121	100050-7
16-3/4"	425	4-3/4"	121	100050-2
18-15/16"	481	4-3/4"	121	100050-9
19-3/4"	502	4-3/4"	121	100050-3
21-1/16"	535	4-3/4"	121	100050-5
21-3/4"	552	4-3/4"	121	100050-13
21-15/16"	557	4-3/4"	121	100050-6



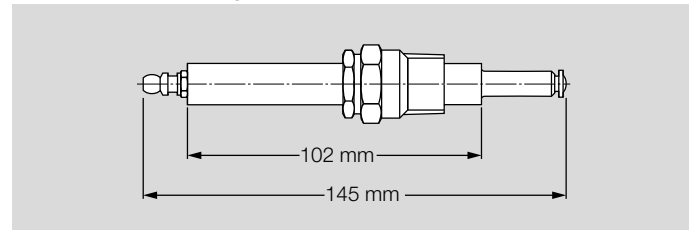
Part number 11941

### 3.5.8 Adjustable flamerod 1/2"



Length A		Length B		Part No.
Inches	mm	Inches	mm	
17	432	14	356	10014915-30
18	458	15	381	10014915-31
19	483	16	406	10014915-32
20	508	17	432	10014915-33
21	533	18	457	10014915-34
22	559	19	483	10014915-35
23	584	20	508	10014915-36
24	610	21	533	10014915-1
25	635	22	559	10014915-2
26	660	23	584	10014915-3
27	686	24	610	10014915-4
28	711	25	635	10014915-5
29	737	26	660	10014915-6
30	762	27	686	10014915-7
31	787	28	711	10014915-8
32	813	29	737	10014915-9
33	838	30	762	10014915-10
34	864	31	787	10014915-11
35	889	32	813	10014915-12
36	914	33	838	10014915-13
37	940	34	864	10014915-14
38	965	35	889	10014915-15

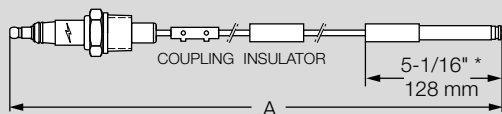
### 3.5.9 Adjustable igniter 1/2"



Part number 10034074



### 3.5.10 Self-grounding adjustable igniter 1/2"

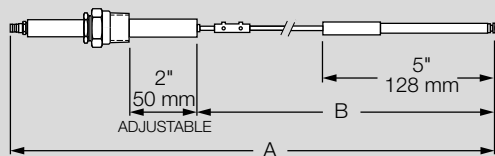


Length A		Coupling	Insulator	Part No.
Inches	mm			
11-15/16"	287	Yes	No	100173-1 <sup>1)</sup>
14-3/16"	361	Yes	No	100205-1
16-5/16"	415	Yes	No	100205-2
17"	432	Yes	No	100205-20
17-1/16"	434	Yes	No	100354-1
18-1/8"	461	No	No	10050564
18-11/16"	474	Yes	No	100205-18
19-5/16"	491	Yes	No	100205-3
19-3/4"	502	Yes	No	100205-21
20-3/4"	527	No	No	10050565
21-1/16"	536	Yes	No	100354-2
22-1/4"	565	Yes	No	100205-12
22-15/16"	582	Yes	No	100205-22
23-15/16"	608	Yes	No	100205-16
25-1/8"	638	Yes	No	100354-3
26-1/8"	664	No	No	10051949
26-3/4"	680	Yes	No	100205-7
27-1/4"	693	Yes	No	100205-8
28-5/16"	720	Yes	No	100205-4
28-15/16"	735	Yes	No	100205-10
29-1/8"	740	Yes	Yes	100354-4
29-13/16"	758	Yes	No	100205-17
30-1/8"	766	Yes	No	100205-19

Length A		Coupling	Insulator	Part No.
Inches	mm			
31-7/8"	809	Yes	No	100205-23
32-1/4"	819	Yes	No	100205-13
32-11/16"	830	Yes	No	100205-6
32-1/8"	842	Yes	Yes	100354-5
33-3/16"	843	Yes	No	100205-9
33-5/16"	847	Yes	No	100205-5
33-15/16"	862	Yes	No	100205-11
37-1/8"	944	Yes	Yes	100354-6
38-9/16"	980	Yes	No	100205-14
39-1/16"	993	Yes	No	100205-15
41-3/16"	1046	Yes	Yes	100354-7
45-3/16"	1148	Yes	Yes	100354-8
49-3/16"	1250	Yes	Yes	100354-9
53-3/16"	1352	Yes	Yes	100354-10

1) Except 100173-1, dimension is 2-13/16" (71 mm)

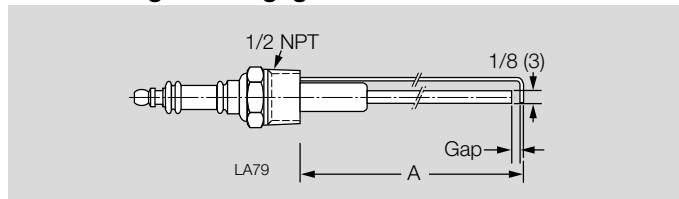
### 3.5.11 Adjustable self-grounding igniter 1/2"



Length A		Length B		Part No.
Inches	mm	Inches	mm	
19-1/2"	495	14"	356	100640-1
20-1/2"	521	15"	381	100640-2
21-1/2"	546	16"	406	100640-3
22-1/2"	572	17"	432	100640-4
23-1/2"	597	18"	457	100640-5
24-1/2"	622	19"	483	100640-6
25-1/2"	648	20"	508	100640-7
26-1/2"	673	21"	533	100640-8
27-1/2"	699	22"	559	100640-9
28-1/2"	724	23"	584	100640-10
29-1/2"	749	24"	610	100640-11
30-1/2"	775	25"	635	100640-12
31-1/2"	800	26"	660	100640-13
32-1/2"	826	27"	686	100640-14
33-1/2"	851	28"	711	100640-15
9-3/4"	248	4-1/4"	108	100640-16
38-1/2"	978	33"	838	100640-17
35-1/2"	902	30"	762	100640-18
12-1/2"	318	7"	178	100640-30
13-1/2"	343	8"	203	100640-31
14-1/2"	368	9"	229	100640-32
15-1/2"	394	10"	254	100640-33
16-1/2"	419	11"	279	100640-34

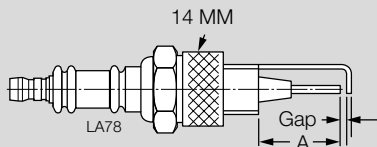
Length A		Length B		Part No.
Inches	mm	Inches	mm	
17-1/2"	445	12"	305	100640-35
18-1/2"	470	13"	330	100640-36

### 3.5.12 Self-grounding igniters 1/2"

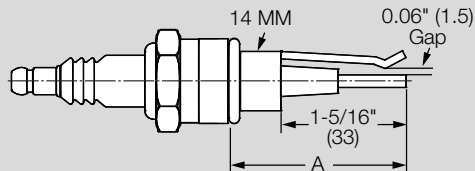


Length A		Gap	Part No.
Inches	mm		
1.72	44	0.090	10089
2.21	56	0.125	11576
4-1/8"	105	0.125	12568
4.550"	116	0.125	17396
5-1/8"	130	0.063	17652

### 3.5.13 Self-grounding igniter 14 mm



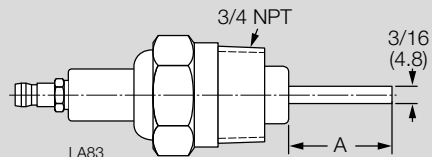
Length A		Gap		Part No.
Inches	mm	Inches	mm	
1"	25	0.07"	1.7	17071
1-1/2"	38	0.10"	2.5	16927
1-3/4"	70	0.10"	2.5	10019728



Length A		Gap		Part No.
Inches	mm	Inches	mm	
1-5/16"	33	0.06"	1.5	13047
1-5/16"	33	0.06"	1.5	13047-2*
1-5/8"	41	0.06"	1.5	13047-1
2-3/4"	70	0.06"	1.5	10019728
4"	102	0.06"	1.5	23045
4.33"	110	0.06"	1.5	10014597

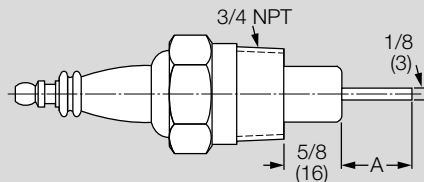
1) Terminal is not removable

### 3.5.14 Flamerod 3/4"



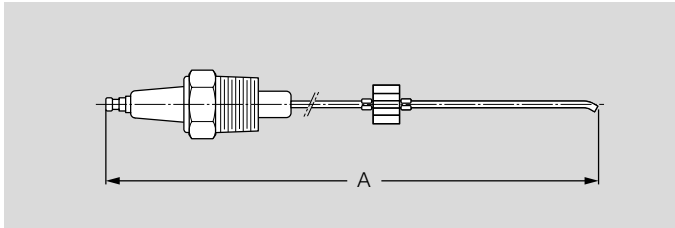
Length A		Part No.
Inches	mm	
6"	152	14265-1
8"	203	14265-2
12"	305	14265-3

### 3.5.15 Igniter or flamerod 3/4"

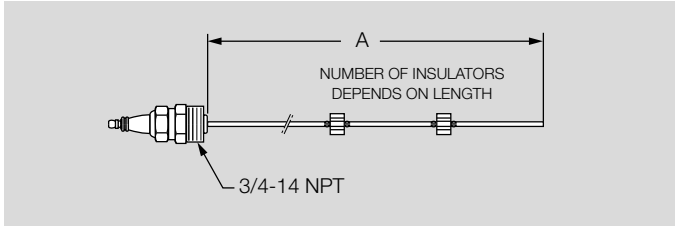


Length A		Part No.
Inches	mm	
2-3/8"	60	12392-4
6"	152	12392
12"	304	12392-3
26"	660	12392-1
54"	1372	12392-2

### 3.5.16 Igniter 3/4"

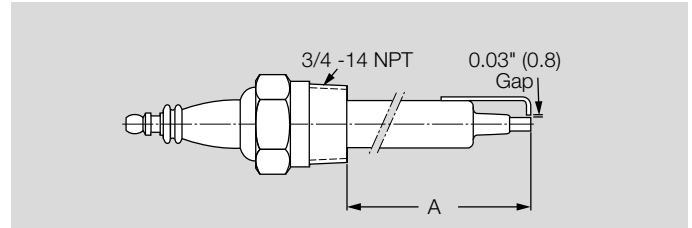


Length A		Part No.
Inches	mm	
24.33"	618	100216-1
28-1/8"	714	100224-1



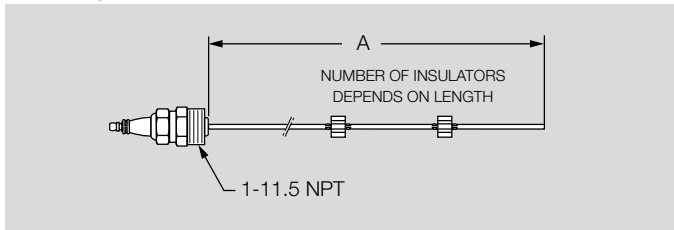
Length A		Part No.
Inches	mm	
12-1/2"	318	103162-1
18-1/2"	470	103162-2
24.48"	622	103162-3

### 3.5.17 Self-grounding igniters 3/4" with stainless steel sleeve



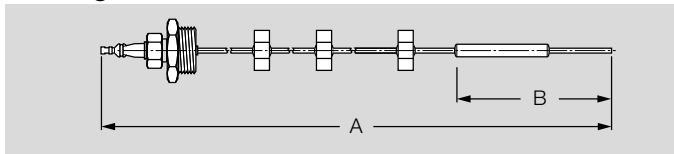
Length A		Part No.
Inches	mm	
4-1/4"	108	13499
6"	152	13499-1
9"	229	13499-2

### 3.5.18 Igniter 1"



Length A		Part No.
Inches	mm	
13.3"	338	103162-4
19.3"	490	103162-5
25.4"	645	103162-6
37.4"	950	103162-7
15.9"	404	103162-8
41.4"	1052	103162-9
49.4"	1255	103162-10
61.4"	1560	103162-11

### 3.5.19 Igniter 1-1/4"



Length A		Length B		Part No.
Inches	mm	Inches	mm	
40-15/16"	1040	5-1/8"	130	900287
42-11/16"	1084	5-7/8"	150	900288
47-13/16"	1214	5-7/8"	150	900289

## For more information

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