

***IntelliSpark***<sup>TM</sup>  
**Ignition Systems – 32, 16, 8**

***Applications Manual***

**Warranty** - A limited warranty on materials and workmanship is given with this Murphy product. A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>.



**BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT:**

- Read and follow all installation instructions.
- Please contact Enovation Controls immediately if you have any questions.

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## IntelliSpark Ignition System—Required Items

### A) IntelliSpark Ignition Module

Part Number	Description
72700030	IS-8, Ignition Module, 8 Outputs, Without Display
72700252	IS-8D, Ignition Module, 8 Outputs, With Display
72700028	IS-16, Ignition Module, 16 Outputs, Without Display
72700253	IS-16D, Ignition Module, 16 Outputs, With Display
72700199	IS-32, Ignition Module, 32 Outputs, Without Display
72700254	IS-32D, Ignition Module, 32 Outputs, With Display

**NOTE:** The IS-32 output module requires (2) 16 cylinder output harnesses.

**NOTE:** For best results use the IS-32 for single unit installation firing 2 coils simultaneously.

### B) Remote Display Unit

Part Number	Description
72700249	Display Module, PV450NV-03-CSA-IS
78001106	Cable, Remote Power 50 ft., PVW-450-PWR-50FT
78001107	Cable, Remote Communication 50 ft., PVW-450-RS485-50FT

**NOTE:** Use one display module and cable for each ignition module.

### C) Output Harness, Ignition Module to Junction Box or Ignition Coils

Part Number	Description
72700035	Harness, Shielded, 8 Output, 7' Conduit, 22' Leads, 90° Connector
72700032	Harness, Shielded, 16 Output, 4' Conduit, 19' Leads, 90° Connector
72700157	Harness, Unshielded, 8 Outputs, 30' Leads, 90° Connector
72700158	Harness, Unshielded, 8 Outputs, 50' Leads, 90° Connector
72700043	Harness, Unshielded, 16 Outputs, 30' Leads, 90° Connector
72700159	Harness, Unshielded, 16 Outputs, 50' Leads, 90° Connector

## D) Magnetic Pickup & Cable Assemblies

Part Number	Description
72700007	Magnetic Pickup, 5/8"-18 thread x 4.25" threaded body length
72700193	Magnetic Pickup, 5/8"-18 thread x 6.00" threaded body length
72700050	Cable Assembly, Shielded, 4' Conduit, 90° Connector
72700052	Cable Assembly, Shielded, 8' Conduit, 90° Connector
72700059	Cable Assembly, Unshielded, 20' Cable, 90° Connector
72700062	Cable Assembly, Unshielded, 40' Cable, 90° Connector

## E) Hall Effect Sensor and Cable Assemblies

Part Number	Description
72700006	Hall-Effect Sensor, Dual Output, 5/8-18 x 1.8" Thread, CB2 Connector
72700008	Hall-Effect Sensor, Dual Output, 5/8-18 x 6.00" Thread, CB2 Connector
72700152	Cable Assembly, Shielded, 20' Cable, 90° Connector, CB2 Connector
72700153	Cable Assembly, Shielded, 40' Cable, 90° Connector, CB2 Connector
72700206	Hall-Effect Sensor, Dual Output, 5/8-18 x 1.8" Thread, MS Connector
72700213	Sensor, Hall Effect, Dual Output, 5/8-18 x 3.6" Thread, MS Connector
72700205	Hall Effect Sensor, Dual Output, 5/8-18 x 6.3" Thread, MS Connector

## F) Ignition Coils—One Per Spark Plug

Part Number	Description
72700230	IT-230, Unshielded Coil, 230V
72700231	IT-230FM, Flange Mount Coil, 230V, CSA
72700232	ITX-230RM, Shielded Remote Mount Coil, 230V, CSA
72700233	ITX-150-6, Integral Coil, 150V, 6", CSA
72700234	ITX-150-12, Integral Coil, 150V, 12", CSA
72700237	IT-250, Unshielded Coil, 250V
72700240	IT-250FM, Flange Mount Coil, 250V, CSA
72700246	ITX-250RM, Shielded Remote Mount Coil, CSA
72700245	ITX-250-12, Integral Coil, 250V, 12", CSA

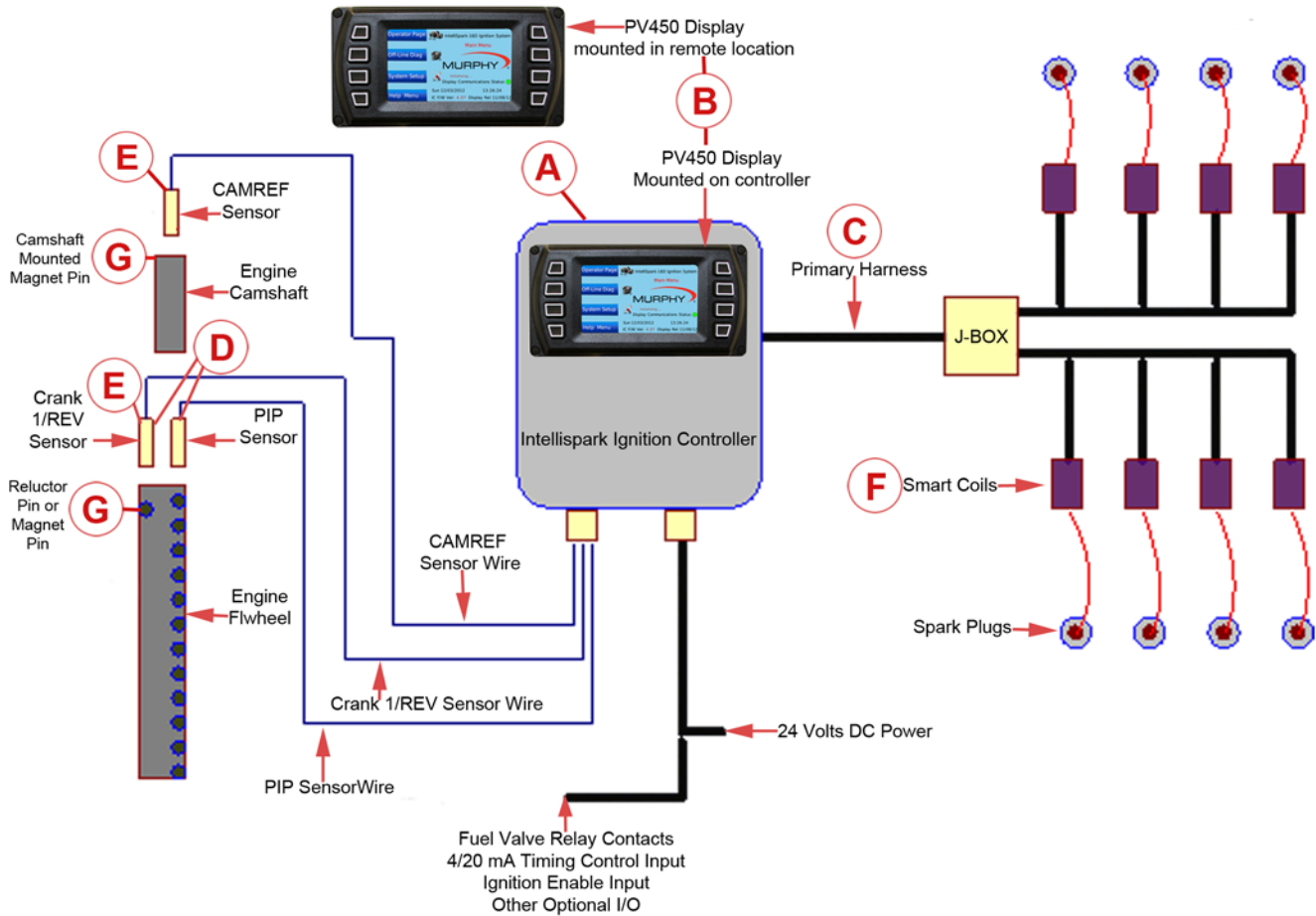
## G) Reluctor and Magnet Pins

Part Number	Description
72050049	Magnet Pin, Hall-effect sensor, north pole magnet
72050051	Reluctor Pin, magnetic pickup, ferrous material

## Optional Items

Item	Notes
Power Supply	Belt driven alternator, CSA - Div. 2
Detonation Sensing Kit	Contact the factory for specific application.
Air/Fuel Ratio Control System	Contact the factory for specific application.
Murphy Digital Instruments	Pressure/vacuum switch/gauge, temperature switch/gauge, temperature scanner, level switch, tachometer, hourmeter, overspeed switch, vibration switch, annunciator, engine panel, automation system, engine/compressor controller, fuel valve, throttle controller, electric gauges, generator set controller, etc.
Control Panel	Contact Control Systems Services in Rosenberg, TX for application assistance.

# Basic Layout Diagram



Reference	Description
A	IntelliSpark Ignition Module
B	Remote Display Unit
C	Output Harness, Ignition Module to Junction Box or Ignition Coils
D	Magnetic Pickup & Cable Assemblies
E	Hall Effect Sensor and Cable Assemblies
F	Ignition Coils—One Per Spark Plug
G	Reluctor or Magnet Pins



# Engines

Ajax Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
2804, DPC-800		90°	IS-8	XXX	8	2	5
Bergen Rolls Royce) Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
KRGS	8	90°	IS-8	180	8	4	1,5
	9	80°	IS-16	180	9	4	1,5
KVGS	12	50°-70°	IS-16	180	12	4	1,5
	16	50°-40°	IS-16	180	16	4	1,5
	18	10°-70°	IS-32	180	18	4	1,5
Brons (Man) Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
L20/31NG	7	102.86°	IS-8	XXX	7	4	5
	8	90°	IS-8	XXX	8	4	5
	9	80°	IS-16	XXX	9	4	5
V20/31NG	12	75°-45°	IS-16	252	12	4	1,5
	14	57.86°-45°	IS-16	252	14	4	1,5
	16	45°	IS-16	252	16	4	1,5
	18	35°-45°	IS-32	252	18	4	1,5
Caterpillar Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
300 Series	G333	120°	IS-8	151	6	4	1,5
	G342	120°	IS-8	151	6	4	1,5
	G343	120°	IS-8	151	6	4	1,5
	G353	120°	IS-8	151	6	4	1,5
	G379	60°-120°	IS-8	183	8	4	1,5
	G398	60°	IS-16	183	12	4	1,5
	G399	60°-30°	IS-16	183	16	4	1,5
3300 Series	G3304	180°	IS-8	156	4	4	1,5
	G3306	120°	IS-8	156	6	4	1,5
3400 Series	G3406	120°	IS-8	136	6	4	1,5
	G3408	90°	IS-8	136	8	4	1,5
	G3412	55°-65°	IS-16	136	12	4	1,5
3500 Series	G3508	90°	IS-8	183	8	4	1,5
	G3512	60°	IS-16	183	12	4	1,5
	G3516	60°-30°	IS-16	183	16	4	1,5
	G3516	30°-60°	IS-16	183	16	4	1,5
3600 Series	G3606	120°	IS-8	255	6	4	1,5
	G3608	90°	IS-8	255	8	4	1,5
	G3612	50°-70°	IS-16	255	12	4	1,5
	G3616	50°-40°	IS-16	255	16	4	1,5

Clark Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
BA, HBA, HLA	5	72°	IS-32	xxx	10	2	4,5
	6	60°	IS-32	xxx	12	2	4,5
	8	67.5°-22.5°	IS-32	xxx	16	2	4,5
	10	36°	IS-32	xxx	20	2	4,5
MA, HMA, HMB, & TMB	4	90°	IS-16/32	xxx	4/8	2	4,5
	6	60°	IS-16/32	xxx	6/12	2	4,5
	8	22.5°-67.5°	IS-16/32	xxx	8/16	2	4,5
	10	36°	IS-16/32	xxx	10/20	2	4,5
RA, HRA	32	120°	IS-32	xxx	6	2	4,5
	4	90°	IS-32	xxx	8	2	4,5
	5	72°	IS-32	xxx	10	2	4,5
	6	60°	IS-32	xxx	12	2	4,5
	8	45°	IS-32	xxx	16	2	4,5
TCV, TCVA, TCVC, TCVD, & TPV	10	50°-22°	IS-32	xxx	20		4,5
	12	50°-10°	IS-32	xxx	24	2	4,5
	16	22.5°-27.5°-22.5°-17.5°	IS-32	xxx	32	2	4,5
	20	14°-22°	IS-32	xxx	40	2	3,4,5
TLA, TLAC, TLAD, & TRA	5	72°	IS-32	xxx	10	2	4,5
	6	60°	IS-32	xxx	12	2	4,5
	8	67.5°-22.5°	IS-32	xxx	16	2	4,5
	10	36°	IS-32	xxx	20	2	4,5
TVM, VMC	10	22°-50°	IS-32	xxx	20	2	4,5
	12	10°-50°	IS-32	xxx	24	2	4,5
VRA	12	8°-55°-2°-55°	IS-32	xxx	24	2	4,5
	16	Consult Factory	IS-32	xxx	32	2	4,5
	20		IS-32	xxx	40	2	3,4,5
Climax Engine Model	Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes	
H-2470	120°	IS-8	XXX	8	4	5	
K-67	120°	IS-8	XXX	6	4	5	
K-75	120°	IS-8	XXX	6	4	5	
L-3230	60°	IS-16	XXX	12	4	5	
L-3711	60°	IS-16	XXX	12	4	5	
V-80	60°-120°	IS-8	XXX	8	4	5	
V-85	60°-120°	IS-8	XXX	8	4	5	
V-120	60°	IS-16	XXX	12	4	5	
V-122	60°	IS-16	XXX	12	4	5	
V-125	60°	IS-16	XXX	12	4	5	

Cooper Bessemer Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
GMV (short stroke) & GMX Series	4	63°-117°	IS-8	xxx	4	2	4,5
	6	63°-57°	IS-8	xxx	6	2	4,5
	8	63°-27°	IS-8	xxx	8	2	4,5
	10	63°-9°	IS-16	xxx	10	2	4,5
	12	0°-63°-0°-57°	IS-16	xxx	12	2	4,5
GMV,GMVA,GMVC, GMVE, GMVG, & GMVH  (Flat Crank)—	4	60°-120°	IS-16/32	xxx	4/8	2	4,5
	6	60°	IS-16/32	xxx	6/12	2	4,5
	8	60°-30°	IS-16/32	xxx	8/16	2	4,5
	8	0°-60°-0°-120°	IS-32	xxx	16	2	4,5
	10	60°-12°	IS-16/32	xxx	10/20	2	4,5
	12	0°-60°	IS-32	xxx	24	2	4,5
GMW, GMWA,GMWC GMWE, GMWH	6	36°-84°	IS-32	xxx	12	2	4,5
	8	36°-54°	IS-32	xxx	16	2	4,5
	10	36°	IS-32	xxx	20	2	4,5
	12	36°-24°	IS-32	xxx	24	2	4,5
	16	36°-9°	IS-32	xxx	32	2	4,5
JS, LS	6	120°	IS-32	xxx	12	4	4,5
	6	4°-116°	IS-32	xxx	12	4	4,5
	8	90°	IS-32	xxx	16	4	4,5
	8	4°-86°	IS-32	xxx	16	4	4,5
LVS	12	36°-84°	IS-32	xxx	24	4	4,5
	12	4°-32°-4°-80°	IS-32	xxx	24	4	4,5
	16	36°-54°	IS-32	xxx	32	4	4,5
	16	4°-32°-4°-50°	IS-32	xxx	32	4	4,5
Q145,Q145H, Q155, & Q155H (QUAD)	8	60°-30°	IS-32	xxx	16	2	4,5
	12	0°-60°	IS-32	xxx	24	2	4,5
	16	15°-30°	IS-32	xxx	32	2	4,5
	20	24°-12°	IS-32	xxx	40	2	3,4,5
V-250,V-275, & W-330  (odd crank)— (63° crank)— (76.5° crank)—	6	36°-84°	IS-32	xxx	12	2	4,5
	8	36°-54°	IS-32	xxx	16	2	4,5
	10	36°	IS-32	xxx	20	2	4,5
	10	30°-6°-30°-84°-30-6°-30°-54°-36°-54°	IS-32	xxx	20	2	4,5
	12	36°-24°	IS-32	xxx	24	2	4,5
	12	36°-18°-36°-27°-36°-27°	IS-32	xxx	24	2	4,5
	12	9°-27°-40.5°-36°-40.5°-27°	IS-32	xxx	24	2	4,5
	16	18°-18°-36°-18°	IS-32	xxx	32	2	4,5
Z-330  (90° crank)—	12	40°-20°	IS-32	xxx		2	4,5
	16	20°-20°-30°-20°	IS-32	xxx		2	4,5
	16	0°-40°-0°-50°	IS-32	xxx		2	4,5

Cummins Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
G,GT,GTA	495	180°	IS-8	XXX	4	4	5
	743	120°	IS-8	XXX	6	4	5
	855	120°	IS-8	XXX	6	4	5
	1150	120°	IS-8	XXX	6	4	5
	1710	60°	IS-16	XXX	12	4	5
GNH,GNHC	4	180°	IS-8	XXX	4	4	5
	220	120°	IS-8	XXX	6	4	5
	250	120°	IS-8	XXX	6	4	5
G,GTA	3.9	180°	IS-8	XXX	4	4	1,5
	5.9	120°	IS-8	159	6	4	1,5
	8.3	120°	IS-8	159	6	4	1,5
	12	120°	IS-8	138	6	4	5
	14	120°	IS-8	XXX	6	4	5
	19	120°	IS-8	XXX	6	4	5
	28	60°	IS-16	XXX	12	4	5
	38	60°	IS-16	XXX	12	4	5
50	30°	IS-16	XXX	16	4	5	
DeLaval Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
HVA	6	120°	IS-32	XXX	12	4	4,5
	8	46°-134°	IS-32	XXX	16	4	4,5
	12	46°-74°	IS-32	XXX	24	4	4,5
	16	46°-44°	IS-32	XXX	32	4	4,5
Deutz Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
GF8L413F		90°	IS-8	XXX	8	4	5
GF10L413F		54°-90°	IS-16	XXX	10	4	5
GF12L413F		90°-30°	IS-16	XXX	12	4	5
Dorman Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
6SETCWG		120°	IS-8	XXX	6	4	5
8SETCWG		90°	IS-8	XXX	8	4	5
12STCWG		90°-30°	IS-16	XXX	12	4	5
Guascor Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
SFGLD	180	120°	IS-8	178	6	4	1,5
	240	90°	IS-8	178	8	4	1,5
	360	60°	IS-16	165	12	4	1,5
	420	60°	IS-16	165	12	4	1,5
	480	30°-60°	IS-16	165	16	4	1,5
	560	30°-60°	IS-16	165	16	4	1,5

Ingersoll Rand Engine Model	Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes	
KVG, KVGR	26	165°-75°	IS-8	xxx	6	4	4,5
	36	165°-75°	IS-8	xxx	6	4	4,5
	48	90°-90°-90°-135°- 90°-90°-90°-45°	IS-8	xxx	8	4	4,5
	48	90°-135°-45°- 135°- 90°-45°- 135°-45°	IS-8	xxx	8	4	4,5
	62	165°-75°	IS-8	xxx	6	4	4,5
	82	45°-135°	IS-8	xxx	8	4	4,5
	83	90°-90°-90°-135°- 90°-90°-90°-45°	IS-8	xxx	8	4	4,5
	103	117°-27°	IS-16	xxx	10	4	4,5
	104	117°-27°	IS-16	xxx	10	4	4,5
	123	45°-75°	IS-16	xxx	12	4	4,5
	410	117°-27°	IS-16		10	4	4,5
	410	45°-120°-75°-45°- 75°- 45°-75°-120°- 45°-75°	IS-16	xxx	10	4	4,5
	412	45°-75°	IS-16	xxx	12	4	4,5
	512	45°-75°	IS-16	xxx	12	4	4,5
KVS, KVSE, KVSF, & KVSR	36	165°-75°	IS-32	xxx	12	4	4,5
	48	90°-135°-45°- 135°- 90°-45°- 135°-45°	IS-32	xxx	16	4	4,5
	410	45°-75°-45°-75°- 120°- 45°-75°-45°- 75°-120°	IS-32	xxx	20	4	4,5
	412	45°-75°	IS-32	xxx	24	4	4,5
	512	45°-75°	IS-32	xxx	24	4	4,5
	612	45°-75°	IS-32	xxx	24	4	4,5
KVT,KVR	38	90°-90°-90°-135°- 90°-90°-90°-120°	IS-32	xxx	16	4	4,5
	410	117°-27°	IS-32	xxx	20	4	4,5
	512	45°-75°	IS-32	xxx	24	4	4,5
	616	45°	IS-32	xxx	32	4	4,5
PKVG, PKVGR	6	165°-75°	IS-8	xxx	6	4	4,5
	8	90°-90°-90°-135°- 90°-90°-90°-45°	IS-8	xxx	8	4	4,5
	10	117°-27°	IS-16	xxx	10	4	4,5
	12	45°-75°	IS-16	xxx	12	4	4,5
	16	45°	IS-16	xxx	16	4	4,5
PKVS, PKVSR	6	165°-75°	IS-32	xxx	12	4	4,5
	8	90°-135°-45°- 135°- 90°-45°- 135°-45°	IS-32	xxx	16	4	4,5
	10	45°-75°-45°-75°- 120°- 45°-75°-45°-	IS-32	xxx	20	4	4,5

Ingersoll Rand Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
		75°-120°					
	12	45°-75°	IS-32	xxx	24	4	4,5
	16	45°	IS-32	xxx	32	4	4,5
PKVT	12	75°-45°	IS-32	xxx	24	4	4,5
PSVG	6	185°-55°	IS-8	xxx	6	4	5
	8	90°-90°-90°-65°-90°-90°-90°-115°	IS-8	xxx	8	4	5
	10	137°-7°	IS-16	xxx	10	4	5
	12	65°-55°	IS-16	xxx	12	4	5
PVG, XVG	4	180°-240°-180°-120°	IS-8	xxx	4	4	5
	6	60°-180°-120°-60°-120°-180°	IS-8	xxx	6	4	5
	8	60°-120°	IS-8	xxx	8	4	5
SVG	6	180°-60°	IS-8	xxx	6	4	5
	8	90°-90°-90°-60°-90°-90°-90°-120°	IS-8	xxx	8	4	5
	10	132°-12°	IS-16	xxx	10	4	5
	12	60°	IS-16	xxx	12	4	5
JVG	4	180°-240°-180°-120°	IS-8	xxx	4	4	5
	6	180°-60°	IS-8	xxx	6	4	5
	8	90°-90°-90°-60°-90°-90°-90°-120°	IS-8	xxx	8	4	5
PJVG	6	180°-60°	IS-8	xxx		4	5
	8	60°-120°	IS-8	xxx		4	5
SVS,TVS,TVR	8	90°-135°-45°-135°-90°-45°-135°-45°	IS-32	xxx	16	4	4,5
	10	117°-27°	IS-32	xxx	20	4	4,5
	12	45°-75°	IS-32	xxx	24	4	4,5
Jenbacher Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
J212, J312		50°-70°	IS-16	164	12	4	1,5
J216, J316		20°-70°	IS-16	164	16	4	1,5
J612		60°	IS-16	269	12	4	1,5
J616		30°-60°	IS-16	269	16	4	1,5
M.E.P. Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
M.E.P.	6	60°	IS-32	318	12	2	1,4,5
	8	45°	IS-32	318	16	2	1,4,5
	10	36°	IS-32	318	20	2	1,4,5
	12	30°	IS-32	318	24	2	1,4,5

Mitsubishi Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
KU30G	12	50° - 70°	IS-16	184	12	4	1,5
	14	50° - 52.86°	IS-16	184	14	4	1,5
	16	50° - 40°	IS-16	184	16	4	1,5
	18	50° - 30°	IS-16	184	18	4	1,4,5
Nordberg Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
FSE	6	120°	IS-32	xxx	12	4	4,5
	1316	45°	IS-32	xxx	32	4	4,5
Roline Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
D-1000		180°	IS-8	XXX	4	4	5
F-1500		120°	IS-8	XXX	6	4	5
F-1850		120°	IS-8	XXX	6	4	5
H-540		90°	IS-8	XXX	8	4	5
H-570		90°	IS-8	XXX	8	4	5
H-844		90°	IS-8	XXX	8	4	5
H-884		90°	IS-8	XXX	8	4	5
H-2000		60°-120°	IS-8	XXX	8	4	5
H-2470		60°-120°	IS-8	XXX	8	4	5
L-3000		60°	IS-16	XXX	12	4	5
L-3230		60°	IS-16	XXX	12	4	5
L-3460		45°-75°	IS-32	XXX	24	4	5
L-4000		45°-75°	IS-32	XXX	24	4	5
RXISV		60°	IS-16	XXX	12	4	5
RXIV		60°-120°	IS-8	XXX	8	4	5
Ruston Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
RK270G	12	75°-45°	IS-32	292	24	4	1,5
	16	45°	IS-32	292	32	4	1,5
Superior Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
G510/825 Series	6	120°	IS-8	230	6	4	1,4,5
	8	90°	IS-8	230	8	4	1,4,5
	12	48°-72°	IS-16	276	12	4	1,2,4,5
	16	48°-72°	IS-16	276	16	4	1,2,4,5
GT825 Series	6	120°	IS-8	230	6	4	1,4,5
	8	90°	IS-8	230	8	4	1,4,5
	12	48° - 72°	IS-16	276	12	4	1,2,4,5
	16	48° - 42°	IS-16	276	16	4	1,2,4,5
GTL	6	120°	IS-8	230	6	4	1,4,5
	8	90°	IS-8	230	8	4	1,4,5
	12	48° - 72°	IS-16	276	12	4	1,2,4,5
	16	48° - 42°	IS-16	276	16	4	1,2,4,5
GTLA, GTLB	6	120°	IS-8	230	6	4	1,4,5
	8	90°	IS-8	230	8	4	1,4,5
	12	48° - 72°	IS-16	276	12	4	1,4,5
	16	48° - 42°	IS-16	276	16	4	1,4,5
SGT	12	48° - 72°	IS-16	276	12	4	1,2,4,5
	16	48° - 42°	IS-16	276	16	4	1,2,4,5
SGTA, SGTB	8	90°	IS-8	230	8	4	1,4,5
	12	48° - 72°	IS-16	276	12	4	1,4,5
	16	48° - 42°	IS-16	276	16	4	1,4,5

Superior Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
1700 Series	1706G	120°	IS-8	182	6	4	1,4,5
	1712G	60°	IS-16	193	12	4	1,4,5
	1712G	55° - 65°	IS-16	193	12	4	1,4,5
	1716G	60° - 30°	IS-16	193	16	4	1,4,5
2400 Series	2406G	120°	IS-8	180	6	4	1,4,5
	2408G	90°	IS-8	180	8	4	1,4,5
	2412G	60°	IS-16	180	12	4	1,4,5
	2416G	60° - 30°	IS-16	180	16	4	1,4,5
Waukesha Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
6LRO Series		120°	IS-8	xxx	6	4	5
6LRZ Series		120°	IS-8	xxx	6	4	5
6NKR Series		120°	IS-8	xxx	6	4	5
6WAK Series		120°	IS-8	xxx	6	4	5
F817G		120°	IS-8	138/158/195	6	4	1,5
F1197G		120°	IS-8	144	6	4	1,5
F1905G		120°	IS-8	180	6	4	1,5
H1077G		60° - 120°	IS-8	xxx	8	4	5
L1616G		60°	IS-16	xxx	12	4	5
VLRO Series		60°	IS-16	xxx	12	4	5
7.5" Bore	H2475G	60° - 120°	IS-8	204	8	4	1,5
	H2476G	60° - 120°	IS-8	204	8	4	1,5
	L3711G	60°	IS-16	204	12	4	1,5
	L3712G	60°	IS-16	204	12	4	1,5
VGF Series, GL, GLD, GSID	F18	120°	IS-8	150	6	4	1,4,5
	H24	90°	IS-8	150	8	4	1,4,5
	L36	60°	IS-16	165	12	4	1,4,5
	P48	60° - 30°	IS-16	165	16	4	1,4,5
VHP Series, G, GL, GSI	F2894/5	120°	IS-8	208	6	4	1,4,5
	F3520/1	120°	IS-8	208	6	4	1,4,5
	L5100/8	60°	IS-16	208	12	4	1,4,5
	L5788/90	60°	IS-16	208	12	4	1,4,5
	L7042	60°	IS-16	208	12	4	1,4,5
	P9390	60° - 30°	IS-16	208	16	4	1,4,5
AT25/27 Series	8	90°	IS-8	267	8	4	1,4,5
	12	54° - 66°	IS-16	291	12	4	1,4,5
	16	54° - 36°	IS-16	291	16	4	1,4,5



Worthington Engine Model		Firing Pattern	Ignition Model	Geer Teeth	Coils	Cycle	Notes
LTC	3	120°	IS-32	xxx	6	2	4,5
	4	90°	IS-32	xxx	8	2	4,5
	5	72°	IS-32	xxx	10	2	4,5
	6	60°	IS-32	xxx	12	2	4,5
	8	45°	IS-32	xxx	16	2	4,5
SLHC	4	180°-90°-180°-270°	IS-32	xxx	8	4	4,5
	5	144°	IS-32	xxx	10	4	4,5
	6	120°	IS-32	xxx	12	4	4,5
	7	102.86°	IS-32	xxx	14	4	4,5
	8	90°	IS-32	xxx	16	4	4,5
	10	72°	IS-32	xxx	20	4	4,5
UTC, SUTC	5	72°	IS-32	xxx	10	2	4,5
	6	60°	IS-32	xxx	12	2	4,5
	7	51.43°	IS-32	xxx	14	2	4,5
	8	45°	IS-32	xxx	16	2	4,5
	10	36°	IS-32	xxx	20	2	4,5
ML (MAINLINER)	5	72°	IS-32	xxx	10	2	4,5
	6	60°	IS-32	xxx	12	2	4,5
	7	51.43°	IS-32	xxx	14	2	4,5
	8	45°	IS-32	xxx	16	2	4,5
	10	36°	IS-32	xxx	20	2	4,5
MLV (MAINLINER)	10	36°	IS-32	xxx	20	2	4,5
	12	36° - 24°	IS-32	xxx	24	2	4,5
	14	36° - 15.43°	IS-32	xxx	28	2	4,5
	16	36° - 9°	IS-32	xxx	32	2	4,5
	18	36° - 4°	IS-32	xxx	36	2	4,5
	20	0° - 36°	IS-32	xxx	40	2	4,5

**NOTE 1:** The number of teeth listed is for the latest standard ring gear. Verify the tooth count prior to programming unit.

**NOTE 2:** Alternate ring gear has 249 teeth. Verify the tooth count prior to programming unit.

**NOTE 3:** Two units required for this application.

**NOTE 4:** The IT-250 series coil is recommended when using =/< 250VDC Tank Voltage. The IT-230 series coil is recommended when using +250VDC Tank Voltage.

**NOTE 5:** Verify the firing angles prior to applying any IntelliSpark Ignition System.

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