

## Altronic III-NG Application List

AIII-NG AL 6-24

### APPLICATION NOTE:

In some cases, the Altronic III-NG system uses two (2) storage capacitors where the legacy Altronic III system used one (1). In these cases, any tachometer or overspeed device operating from the ignition system shutdown lead for speed reference must be reset for proper operation. See section 2 and the \* Application Note for details.

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**AVAILABILITY:** Altronic III-NG components for 3 and 4 cylinder applications are expected to be available by January 2025. These are unit nos. 3A29, 4A29, 4A39 and back cover nos. 381815-10, 381815-20, 381815-21.

# 1.0 COMPONENTS

## SYSTEM COMPONENTS

- Altronic III-NG Unit – see sections 2, 4 and 5
- Wiring Harness – see sections 2 and 7
- Ignition Coils – one per spark plug. Use only the following Altronic coils:  
 Unshielded: 501061, 591010, 591040  
 Shielded: 501061-S, 591010-S  
 Integral: 591007, 591011A, 591011B  
 Flange: 591012, 591018
- Engine Drive Parts  
 Base mount units: 560001  
 Flange mount units with gear flex coupling: 560009  
 Shaft extension (see application note 4): 510221
- Shielded System – see section 3
- Panel and Fuel Valve Adapter: 501213

## 2.0 APPLICATION LISTING

ENGINE/ MODEL NO.	DRIVE RATIO	RTN.	ALT. III-NG UNIT NO.	WIRING HARNESS	QTY. COILS	NOTES
<b>AJAX</b>						
DPC-120	2:1	CW	4A29-A-NG	393013-3	2	S,1,3
DP-160, DPC-160	2:1	CW	4A29-A-NG	393013-3	2	S,1,3
DPC-162	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DP-230, DPC-230	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DP-250	2:1	CW	4A29-A-NG	393013-3	2	S,1,3
DP-280	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DPC-300	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DP-325	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DPC-360	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DPC-540	2:1	CW	3A29-A-NG	393013-3	6	S,1
DPC-600	2:1	CW	3A29-A-NG	393013-3	6	S,1
DPC-800	2:1	CW	4A29-A-NG	393013-9	8	S,1
DPC-2202	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DPC-2802	2:1	CW	4A29-A-NG	393013-3	4	S,1,3
DPC-2803	2:1	CW	3A29-A-NG	393013-3	6	S,1
DPC-2804	2:1	CW	4A29-A-NG	393013-9	8	S,1

ENGINE/ MODEL NO.	DRIVE RATIO	RTN.	ALT. III-NG UNIT NO.	WIRING HARNESS	QTY. COILS	NOTES
<b>CATERPILLAR</b>						
G333	1-1/2:1	CW	6A39-A-NG	393023-1	6	S
G342	1-1/2:1	CCW/CW	6A39-A-NG	393023-2	6	S
G343	1-1/2:1	CCW/CW	6A39-G-NG	393023-1	6	S
G353	1-1/2:1	CCW	6A39-A-NG	393023-2	6	S
G379	1:1	CCW	12A25-A-NG	393018-2	8	D,2
G398	1-1/2:1	CCW/CW	12A33-A-NG	393018-2	12	D
G399	1:1	CCW	16B21-A-NG	393022-1	16	D,13
G3304	1:1	CCW	4A29-A-NG	393023-1	4	S,11
G3304	1-1/2:1	CCW	4A39-A-NG	393023-1	4	S,11
G3306	1-1/2:1	CCW	6A39-A-NG	393023-1	6	S
G3406	1:1	CW	6A29-AO-NG	393023-1	6	S
G3408	1:1	CCW	8A23-GO-NG	393018-1	8	D
G3412	1:1	CCW	12P21-GO-NG	393018-2	12	D
G3508	1:1	CW	8A23-J-NG	393018-1	8	D,1
G3512	1:1	CW	12A23-J-NG	393018-2	12	D,1
G3516	1:1	CW	16T21-J-NG	393022-1	16	D,1
<b>CLARK</b>						
MA,HMA,HMB - 4	2:1	CCW	4A29-BEL-NG	393023-2	4 or 8	S,1,4
MA,HMA,HMB - 6	3:1	CCW	6A39-BEL-NG	393023-2	6 or 12	S,1,4
<b>CUMMINS</b>						
G495	1:1	CW	4A29-D-NG	393023-1	4	S
GNH-220	1:1	CW	6A29-D-NG	393023-1	6	S
GNH-250	1:1	CW	6A29-D-NG	393023-1	6	S
GNHC-4	1:1	CW	4A29-D-NG	393023-1	4	S
G,GTA 5.9	1/2:1	CW	6A17-GV-NG	393023-1	6	S
G,GTA 8.3	1/2:1	CW	6A17-GV-NG	393023-1	6	S
GTA,KTA 19	1:1	CW	6A29-DVN-NG	393023-1	6	S,10
GTA 28	1:1	CW	12Z21-D-NG	393018-2	12	D,12
GTA 38	1:1	CW	12A21-D-NG	393018-2	12	D
GTA 50	1:1	CW	16T21-D-NG	392022-1	16	D
G,GTA 743	1:1	CW	6A29-D-NG	393023-1	6	S
G,GTA 855	1:1	CW	6A29-D-NG	393023-1	6	S
G,GTA 1150	1:1	CW	6A29-D-NG	393023-1	6	S
G,GTA 1710	1:1	CCW	12Z21-D-NG	393018-2	12	D,12

ENGINE/ MODEL NO.	DRIVE RATIO	RTN.	ALT. III-NG UNIT NO.	WIRING HARNESS	QTY. COILS	NOTES
<b>INGERSOLL RAND</b>						
JVG-4	1:1	CW	12A25-BEL-NG*	393018-2	4	D,*,2,4
JVG-6	1-1/2:1	CW	12A35-BEL-NG*	393018-2	6	D,*,2,4
PJVG-6	1-1/2:1	CW	12A35-BEL-NG*	393018-2	6	D,*,2,4
PJVG-8	1:1	CW	12A25-BEL-NG*	393018-2	8	D,*,2,4
PVG-4	1:1	CW	12A25-BEL-NG*	393018-2	4	D,*,2,4
PVG-6	1:1	CW	12A25-BEL-NG*	393018-2	6	D,*,2,4
PVG-8	1:1	CW	12A25-BEL-NG*	393018-2	8	D,*,2,4
SVG-6	1-1/2:1	CW	12A35-BEL-NG*	393018-2	6	D,*,2,4
SVG-12	1-1/2:1	CW	12A35-BEL-NG	393018-2	12	D,4
XVG-4	1:1	CW	12A25-BEL-NG*	393018-2	4	D,*,2,4
XVG-6	1:1	CW	12A25-BEL-NG*	393018-2	6	D,*,2,4
XVG-8	1:1	CW	12A25-BEL-NG*	393018-2	8	D,*,2,4
<b>MEP</b>						
MEP-6	3:1	CCW	6A39-A-NG	393013-5	12	S,5
MEP-8	2:1	CCW	8A23-A-NG *	393014-5	16	D,*,5
MEP-12	3:1	CCW	12A31-A-NG	393014-6	24	D,5
<b>SUPERIOR</b>						
6G-510	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S
6GT-510	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S
6G-825	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S
6GT-825	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S
6GTL	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S
8G-825	1:1	CCW	8A25-BEL-NG *	393018-1	8	D, *
8GT-825	1:1	CCW	8A25-BEL-NG *	393018-1	8	D, *
8GTL	1:1	CCW	8A25-BEL-NG *	393018-1	8	D, *
16G-825	1:1	CCW	16G23-BEL-NG	393022-1	16	D,14
16GT-825	1:1	CCW	16G23-BEL-NG	393022-1	16	D,14
16GTL	1:1	CCW	16G23-BEL-NG	393022-1	16	D,14
16SGT	1:1	CCW	16G23-BEL-NG	393022-1	16	D,14
<b>WAUKESHA</b>						
6LRO Series	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,6,8
6LRZ Series	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,6,8
6NKR Series	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,8
6WAK Series	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,8,9

ENGINE/ MODEL NO.	DRIVE RATIO	RTN.	ALT. III-NG UNIT NO.	WIRING HARNESS	QTY. COILS	NOTES
<b>WAUKESHA (continued)</b>						
F18G, GL	1:1	CW	6A29-GV-NG	393023-2	6	S
F18G, GL	1:1	CW	6A29-GVN-NG	393023-2	6	S,10
F1197G	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,8,9
F1905G	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,8
F2894G, GSI	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,6,8
F2895G, GSI (base)	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S,7,8
F2895G, GSI (flange)	1-1/2:1	CCW	6A39-G-NG	393023-2	6	S
F2995GL	1-1/2:1	CCW	6A39-G-NG	393023-2	6	S
F3520G, GSI	1-1/2:1	CW	6A39-BEL-NG	393023-2	6	S,6,8
F3521G, GSI (base)	1-1/2:1	CCW	6A39-BEL-NG	393023-2	6	S,7,8
F3521G, GSI (flange)	1-1/2:1	CCW	6A39-G-NG	393023-2	6	S
F3521GL	1-1/2:1	CCW	6A39-G-NG	393023-2	6	S
H24G, GL	1:1	CW	8A23-GV-NG	393018-1	8	D
H24G, GL	1:1	CW	8A23-GVN-NG	393018-1	8	D,10
H1077G	1:1	CW	12A25-G-NG	393018-2	8	D,2
H2475G	1:1	CW	12A25-A-NG	393018-2	8	D,2
H2476G	1:1	CW	12A25-A-NG	393018-2	8	D,2
L1616G	1-1/2:1	CCW/CW	12A33-G-NG	393018-2	12	D
L36G, GL	1-1/2:1	CW	12A33-GN-NG	393018-2	12	D,10
L3711G	1-1/2:1	CW	12A33-A-NG	393018-2	12	D
L3712G	1-1/2:1	CW	12A33-A-NG	393018-2	12	D
L5100G, GSI	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8
L5108G, GSI (base)	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8
L5108G, GSI (flange)	1-1/2:1	CCW	12A33-G-NG	393018-2	12	D
L5108GL	1-1/2:1	CCW	12A33-G-NG	393018-2	12	D
L5788G, GSI	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8
L5790G, GSI (base)	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8
L5790G, GSI (flange)	1-1/2:1	CCW	12A33-G-NG	393018-2	12	D
L5790GL	1-1/2:1	CCW	12A33-G-NG	393018-2	12	D
L7040G, GSI	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8
L7042G, GSI (base)	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8
L7042G, GSI (flange)	1-1/2:1	CCW	12A33-G-NG	393018-2	12	D
L7042GL	1-1/2:1	CCW	12A33-G-NG	393018-2	12	D
P9390G, GSI (base)	1:1	CW	16T21-BEL-NG	393022-1	16	D,8,13
P9390G, GSI (flange)	1:1	CW	16T21-GV-NG	393022-1	16	D,13
P9390GL	1:1	CW	16T21-GV-NG	393022-1	16	D
VLRO Series	1-1/2:1	CCW	12A33-BEL-NG	393018-2	12	D,8

## APPLICATIONS NOT LISTED

1. Caterpillar G3600 engines – use the Altronic CPU-95 or CPU-95EVS system.
2. Superior GTLA, GTLB, SGTA, SGTB engines – use the Altronic CPU-95 or CPU-95EVS system.
3. Clark, Cooper-Bessemer, Ingersoll-Rand, Worthington engines not listed – use the Altronic CPU-95, CPU-95EVS, CPU-2000 or NGI-5000 system.

## APPLICATION NOTES

- \* The predecessor Altronic III was a single storage capacitor unit; the replacement Altronic III-NG is a dual capacitor system. Therefore, it is necessary to reset any Altronic tachometer or overspeed device operating from the ignition shutdown lead for the speed signal. Use one-fourth (1/4) the number of ENGINE cylinders for 4-cycle or one-half (1/2) the number of ENGINE cylinders for 2-cycle.
- S Single storage capacitor unit.  
D Dual storage capacitor unit.
1. Long spark duration coils 591010, 591010-S or 591012 are recommended for this application.
  2. This installation uses a 12-output unit or back cover but not all outputs are used. A new harness per this listing is required. See installation instructions form AIII-NG II for the specific hook-up for this application.
  3. When replacing an Altronic I system, connect “A” to #1 cyl. and “C” to #2 cyl. No wiring change is needed when replacing a standard Altronic III model 2A29H-A or 4A29H-A.
  4. Installation requires 510221 shaft extension for each Altronic III-NG unit.
  5. Two units per engine recommended where possible; some engines may have only one unit and drive.
  6. When mounting to the lower magneto drive, use Waukesha bracket #12062. With water pump shaft diameter of 1.120”, use Waukesha extension #B2932; with water pump shaft diameter of 0.965”, use extension #B2932A.
  7. Magneto mounting bracket Waukesha #153290 and cover should be rotated 30 degrees away from the engine block to allow the Altronic III-NG unit to fit.
  8. Order appropriate Altronic drive hub as follows: 510658 for 12-cyl. engines with 5/8” diameter shaft; 510551 for 6-cyl. engines with 3/4” diameter shaft.
  9. Requires re-location of the oil-by-pass; request Waukesha drawing #SB-4868-30 for details.
  10. Units -DVN, -GN and -GVN use gear-flex coupling 560009.
  11. Engines with S/N 37Y2112 and lower use unit 4A29-A-NG; engines with S/N 37Y2113 and higher use unit 4A39-A-NG.
  12. Engines using unit 6Z13H-D should upgrade to the single-firing III-NG unit and harness shown in this listing.
  13. Engines using units 8A25H (2) or 8B13H (1) should upgrade to the III-NG unit and harness shown in this listing. If replacing 2 X 8A25H, any Altronic tachometer or overspeed device should be reset to an 8-cylinder setting.
  14. Engines using units 8A29H (2) should upgrade to the single III-NG unit and harness shown in this listing.

### 3.0 SHIELDED SYSTEM

**SHIELDED HARNESS (A)** – Altronic III-NG unit to junction box

393013 Series - 90° connector for 4-6 cylinder units

393014 Series - 90° connector for 8-12 cylinder units

393021 Series - 90° connector for 16 cylinder units

See section 7 for complete listing.

**SHIELDED COILS (B)** – three types available

501061-S – shielded coil, standard

591010-S – shielded coil, long duration

591007 – integral coil, 1"-20 male thread

591011A – integral coil, 13/16"-20 female thread

591011B – integral coil, 13/16"-20 female thread

591012 – flange coil, long duration

591018 – flange coil, standard

**SHIELDED PRIMARY CABLE ASSEMBLIES (C)** – coil to junction box

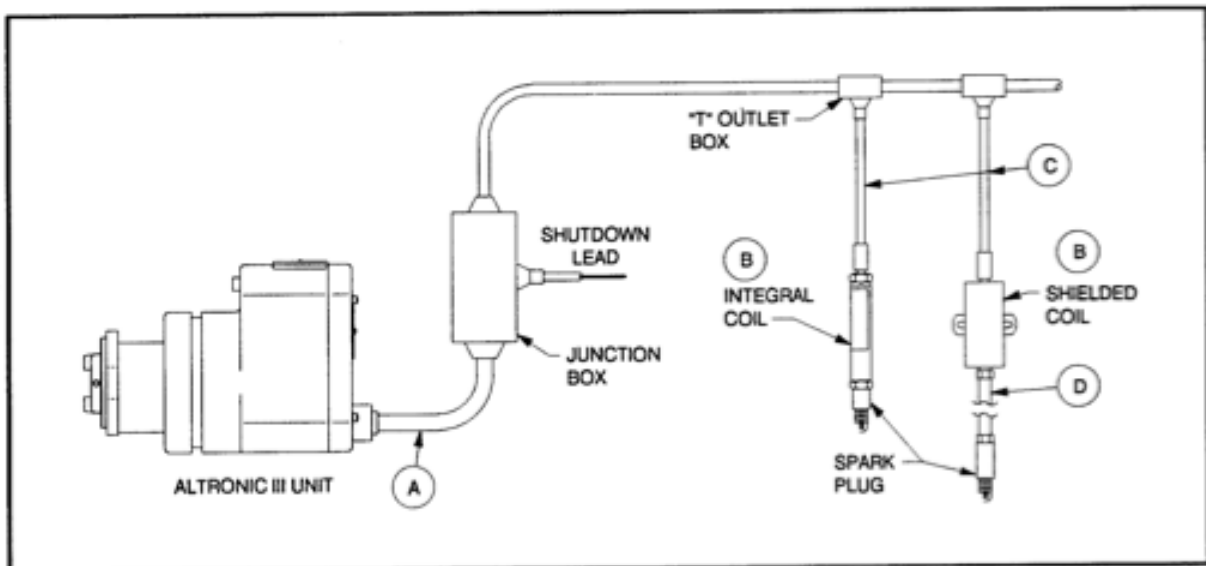
593022 Series - 180° connector, lengths from 6" to xxx" available

593027 Series - 90° connector, lengths from 6" to xxx" available

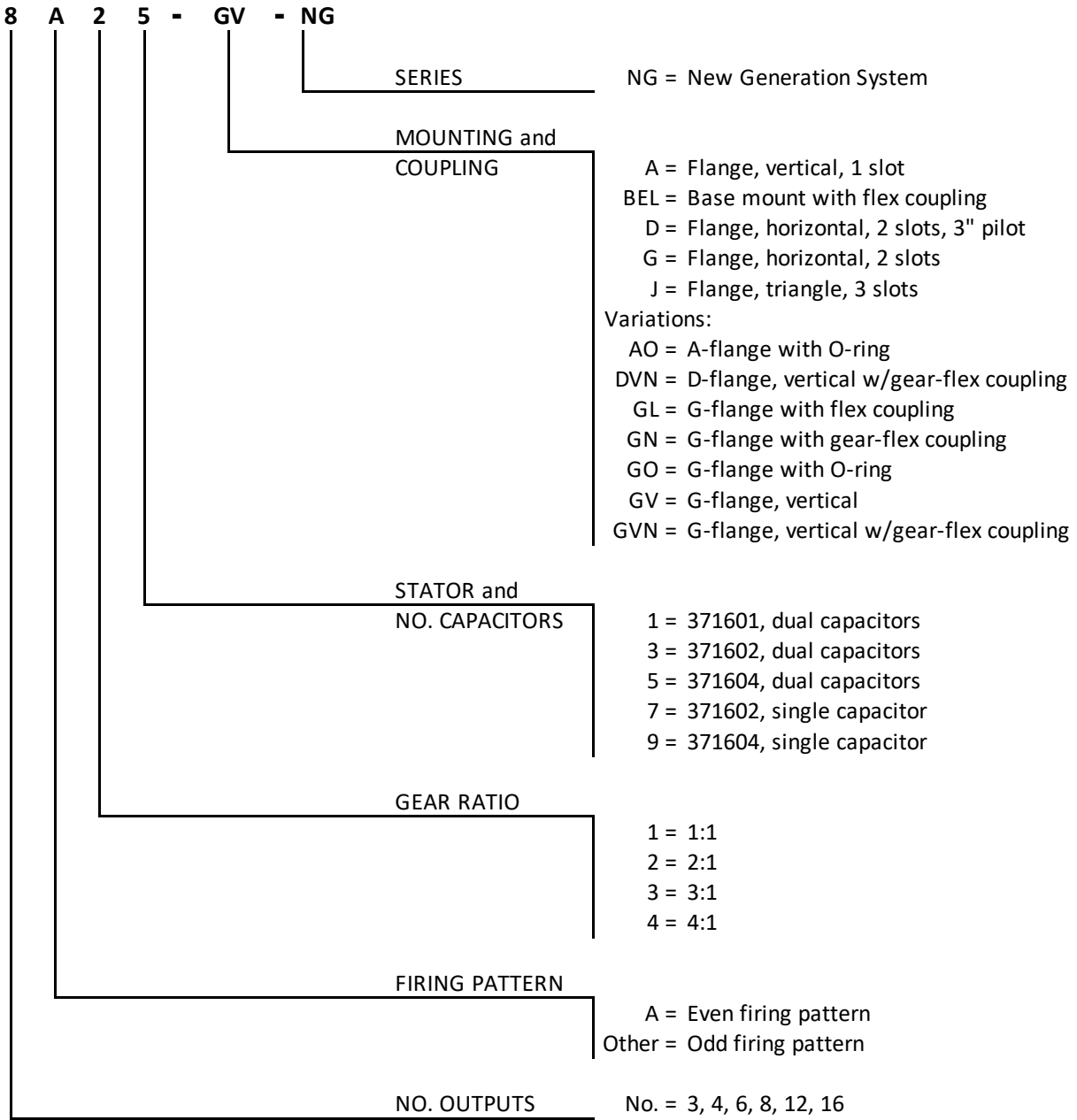
**SHIELDED SPARK PLUG LEAD ASSEMBLIES (D)** – for 501061-S, 591010-S coils

593020 Series – 10", 13", 16", 18" length – 1" spark plug connector

593030 Series – 10", 13", 16", 18" length – 2" spark plug connector

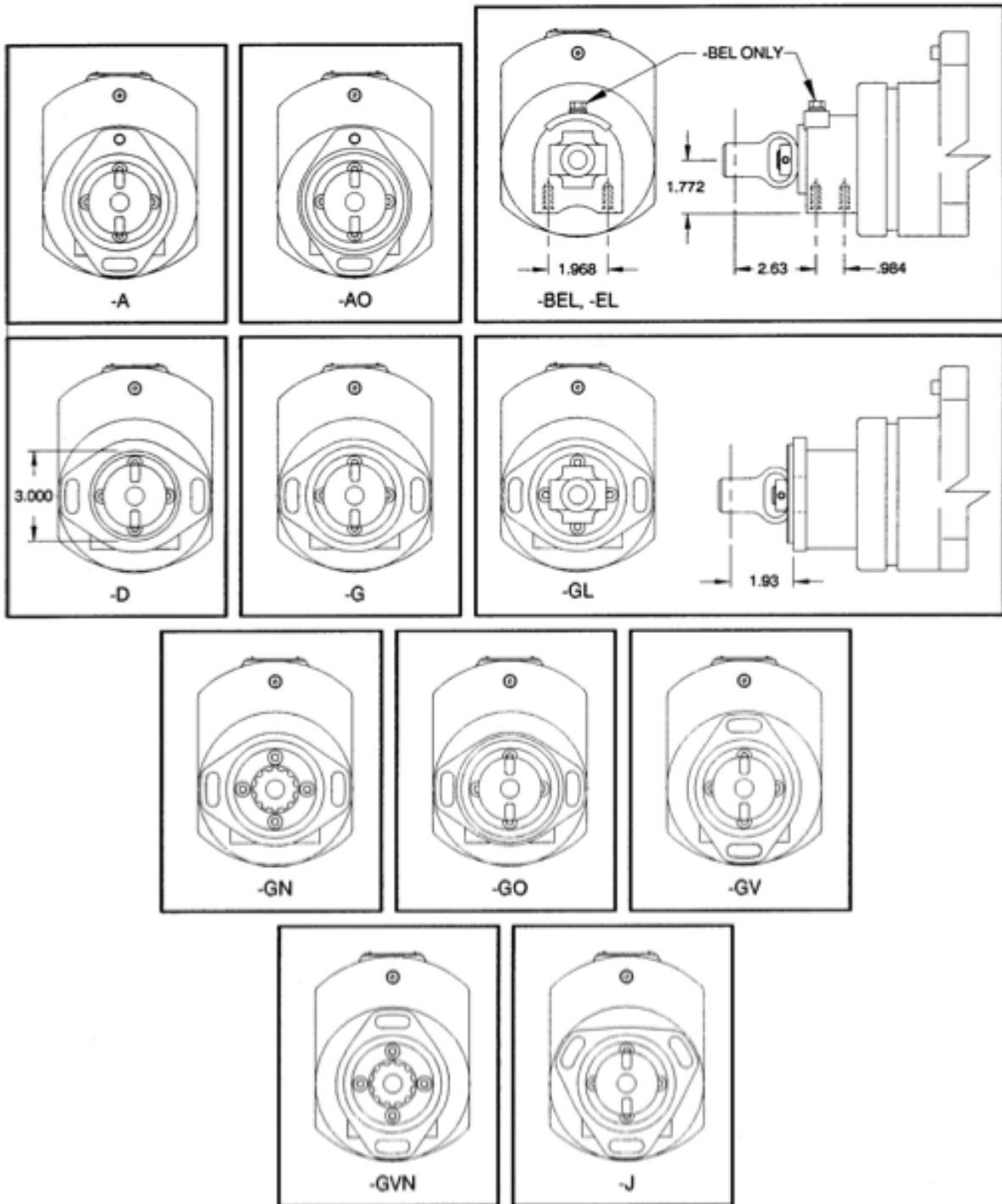


# 4.0 IGNITION UNIT PART NO. BREAKDOWN





## 5.0 ALTRONIC III-NG UNIT MOUNTING / COUPLING TYPES



## 6.0 BACK COVER REPLACEMENT

### OBSOLETE UNIT REPLACEMENT LIST

UNIT NO.	ALT. III BACK COVER	ALT. III-NG SUBSTITUTE
2A29	381801-0H	4A29
4G29	381801-3H	12A25 *
6B39	381802-3H	12A35 *
8A12	381803-21S	8A11 *
8A27	381803-1H	8A23 *
8A29	381803-1H	8A25 *

UNIT NO.	ALT. III BACK COVER	ALT. III-NG SUBSTITUTE
8A37	381803-9H	8A33 *
8A39	381803-9H	8A35 *
8B23	381803-6H	12A23
8B25	381803-6H	12A25
8B29	381803-3H	12A25 *
8T25	381803-20H	12A25

\* Requires recalibration of ignition powered tachometers and speed switches; see \* note under Application Notes at the end of section 2.

### BACK COVER UPGRADE LIST

UNIT NO.	ALT. III BACK COVER	ALT. III-NG BACK COVER
3A29	381801-4H	381815-10
4A29	381801-1H	381815-20
4A39	381801-6H	381815-21
6A17	381802-11H	381815-30
6A29	381802-2H	381815-31
6A37	381802-1H	381815-32
6A39	381802-1H	381815-32
8A11	381803-13H	381815-40
8A23	381803-5H	381815-41
8A25	381803-5H	381815-41
8A33	381803-9H	381815-42

UNIT NO.	ALT. III BACK COVER	ALT. III-NG BACK COVER
12A21	381804-2H	381815-60
12A23	381804-2H	381815-60
12A25	381804-2H	381815-60
12A31	381804-6H	381815-61
12A33	381804-6H	381815-61
12A35	381804-6H	381815-61
12P21	381804-11H	381815-63
12Z21	381804-8H	381815-64
16B21	381809-3H	381815-80
16F21	381809-13H	381815-84
16G23	381809-6H	381815-82
16G33	381809-7H	381815-83
16T21	381809-5H	381815-84

## 7.0 WIRING HARNESSSES

### UNSHIELDED HARNESSSES

PART NO.	CONN. PINS	CONN. ANGLE	CYLS.	Wire Length
393011-1	7	90°	6	72"
393011-2	7	90°	6	180"
393012-8	14	90°	8	180"
393012-12	14	90°	12	180"
393018-1	14	180°	8	180"
393018-2	14	180°	12	180"
393020-1	17	90°	16	180"
393020-2	17	90°	16	180"
393022-1	17	180°	16	180"
393022-2	17	180°	16	180"
393023-1	7	180°	6	180"
393023-2	7	180°	6	180"

### SHIELDED HARNESSSES (CSA certified Class 1, Group D, Division 2)

PART NO.	CONN. PINS	CONN. ANGLE	CYLS.	Wire Length	Conduit Length
393013-1	7	90°	6	72"	48"
393013-2	7	90°	6	180"	48"
393013-3	7	90°	3	72"	48"
393013-4	7	90°	6	60"	20"
393013-5	7	90°	6	300"	120"
393013-6	7	90°	4	60"	38"
393013-7	7	90°	6	60"	48"
393013-8	7	90°	6	72"	60"
393013-9	7	90°	4	240"	48"
393013-10	7	90°	2	72"	38"
393014-1	14	90°	8	180"	48"
393014-2	14	90°	12	180"	48"
393014-3	14	90°	8	42"	20"
393014-4	14	90°	12	72"	48"
393014-5	14	90°	8	300"	120"
393014-6	14	90°	12	300"	120"
393014-7	14	90°	8	72"	48"
393014-8	14	90°	12	60"	36"
393014-9	14	90°	12	96"	66"
393014-10	14	90°	8	60"	48"
393014-11	14	90°	8	60"	36"
393021-1	17	90°	16	180"	48"
393021-2	17	90°	16	60"	48"