

**ALTRONIC V  
SMALL ENGINES, 1-6 CYLINDERS**

**APPLICATION LIST  
FORM AV AL 2-95**

**REQUIRED ITEMS:**

- A) ALTRONIC V UNIT - See listing and Identification section.  
 \* Single Firing Unit fires each cylinder individually on the compression stroke only.  
 \*\* Double Firing Unit fires on exhaust stroke as well as the compression stroke.
- B) WIRING HARNESS - See listing and Identification section.
- C) IGNITION COILS - unshielded, 1 per spark plug:  
 501 061 - standard  
 591 010 - long duration

**OPTIONAL ITEMS:**

- D) ELECTRONIC TIMING - See Application Options.
- E) SHIELDED SYSTEM - See Application Options.
- F) ALTRONIC DIGITAL INSTRUMENTS - Annunciator, Tachometer, Hourmeter, Overspeed Trip, Timing Indicator, Pyrometer, Temperature and Pressure Switch & Gauge - see form ADI-C.
- G) MURPHY PANEL/FUEL VALVE ADAPTOR - 501 213.

ENGINE / MODEL NO.	ALTRONIC 1/1-6 KIT AVAILABLE	ALTRONIC V SINGLE FIRING* UNIT NO.	HARNESS	ALTRONIC V DOUBLE FIRING** UNIT NO.	HARNESS	QTY. IGN. COILS	NOTES
<b>AJAX</b>							
6-1/2 x 8, 7-1/4 x 8	I	1A28-A	593 041-1	--	--	1	
7-1/2 x 10, 8-1/2 x 10	I	1A28-A	593 041-1	--	--	1	
E-15	I	1A28-A	593 041-1	--	--	1	
EA-22	I	1A28-A	593 041-1	--	--	1	
C-30, EA-30	I	1A28-A	593 041-1	--	--	1	
C-42, E-42	I	1A28-A	593 041-1	--	--	1	
DP-60, DPC-60	I	1A28-A	593 041-1	--	--	1	
DP-70	I	1A28-A	593 041-1	--	--	1	
DP-80, DPC-80	I	1A28H-A	593 041-1	--	--	2	
DPC-81	I	1A28H-A	593 041-1	--	--	2	
DPC-105	I	1A28H-A	593 041-1	--	--	2	
DP-115, DPC-115	I	1A28H-A	593 041-1	--	--	2	
DPC-120	I	2A28H-A	593 041-1	--	--	2	
DP-125	I	1A28H-A	593 041-1	--	--	2	
DPC-140	I	1A28H-A	593 041-1	--	--	2	
DP-160, DPC-160	I	2A28H-A	593 041-1	--	--	4	
DPC-162	I	2A28H-A	593 041-1	--	--	4	
DP-165	I	1A28H-A	593 041-1	--	--	2	
DPC-180	I	1A28H-A	593 041-1	--	--	2	
DP-230, DPC-230	I	2A28H-A	593 041-1	--	--	4	
DP-250	I	2A28H-A	593 041-1	--	--	4	
DPC-280	I	2A28H-A	593 041-1	--	--	4	
DPC-300	I	2A28H-A	593 041-1	--	--	4	
DP-325	I	2A28H-A	593 041-1	--	--	4	
DPC-360	I	2A28H-A	593 041-1	--	--	4	

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FORM AV AL 2-95**

<b>ENGINE / MODEL NO.</b>	<b>ALTRONIC I / I-6 KIT AVAILABLE</b>	<b>ALTRONIC V SINGLE FIRING* UNIT NO. HARNESS</b>	<b>ALTRONIC V DOUBLE FIRING** UNIT NO. HARNESS</b>	<b>QTY. IGN. COILS</b>	<b>NOTES</b>
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**ALLIS CHALMERS**

4-Cylinder (1:1)	--	4A24-A 393 023-1	2A14-A 593 041-1	4	
6-Cylinder (1-1/2:1)	--	6A34-A 393 023-1	3A64-A 593 041-1	6	

**ARIEL**

325JGS/1	--	2A18H-GV 593 041-1	-- --	4	
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**ARROW SPECIALTY**

C-245	I	2A25-A 593 041-1	-- --	2	
C-255	I	2A25-A 593 041-1	-- --	2	
L-795	I	2A28-GV 593 041-1	-- --	2	
L-1770	I	2A28-A 593 041-1	-- --	2	
L-2165	I	2A28-A 593 041-1	-- --	2	

**CATERPILLAR**

G3304-NA (1:1)	I-6	4A24-A 393 023-1	2A14-A 593 041-1	4	12
G3304-NA (1-1/2:1)	--	4A34-A 393 023-1	-- --	4	12
G3306-NA	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
G3306-TA	--	6A34-A 393 023-1	-- --	6	
G3406	--	109-8912 393 023-1	-- --	6	13

**CONTINENTAL**

F-163	I-6	4A24-A 393 023-1	2A14-A 593 041-1	4	
F-226	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
F-227	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
F-245	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	

**CONTINENTAL-EMSCO**

C-E 264	I	2A25-A 593 041-1	-- --	2	
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**CUMMINS**

G-495	I-6	4A24-D 393 023-1	2A14-D 593 041-1	4	
G-743 (1:1)	I-6	6A24-D 393 023-1	3A14-D 593 041-1	6	11
G-743 (1-1/2:1)	--	6A34-GVC 393 023-1	3A64-GV 593 041-1	6	11
G-855 (1:1)	I-6	6A24-D 393 023-1	3A14-D 593 041-1	6	11
G-855 (1-1/2:1)	--	6A34-GVC 393 023-1	3A64-GV 593 041-1	6	11
GTA-743 (1:1)	--	6A24-D 393 023-1	-- --	6	
GTA-743 (1-1/2:1)	--	6A34-GVC 393 023-1	-- --	6	
GTA-855 (1:1)	--	6A24-D 393 023-1	-- --	6	
GTA-855 (1-1/2:1)	--	6A34-GVC 393 023-1	-- --	6	

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**APPLICATION LIST  
FORM AV AL 2-95**

ENGINE / MODEL NO.	ALTRONIC 1 / I-6 KIT AVAILABLE	ALTRONIC V SINGLE FIRING* UNIT NO. HARNESS	ALTRONIC V DOUBLE FIRING** UNIT NO. HARNESS	QTY. IGN. COILS	NOTES
<b>DEUTZ</b>					
GF2L912, GF2L913	--	2A25-GV 593 041-1	2A14-GV 593 041-1	2	
GF3L912, GF3L913	--	3A25-GV 593 041-1	3A14-GV 593 041-1	3	
GF4L912, GF4L913	--	4A24-GV 393 023-1	2A14-GV 593 041-1	4	
GF5L912, GF5L913	--	5A24-GV 393 023-1	-- --	5	
GF6L912, GF6L913	--	6A24-GV 393 023-1	3A14-GV 593 041-1	6	
<b>DORMAN</b>					
6LEG	--	6A34-A 393 023-1	3A64-A 593 041-1	6	
6QG	--	6A34-A 393 023-1	3A64-A 593 041-1	6	
<b>HERCULES (WHITE)</b>					
G-2300 (1:1)	I-6	4A24-GVW 393 023-1	2A14-GVW 593 041-1	4	1
G-2300 (1-1/2:1)	I-6	4A34-GVW 393 023-1	2A64-GVW 593 041-1	4	2
G-3400 (1-1/2:1)	I-6	6A34-GVW 393 023-1	3A64-GVW 593 041-1	6	2
G-4800 (1-1/2:1)	--	6A34-GVW 393 023-1	3A64-GVW 593 041-1	6	
<b>INTERNATIONAL</b>					
4-Cylinder (1:1)	--	4A24-A 393 023-1	2A14-A 593 041-1	4	
6-Cylinder (1-1/2:1)	--	6A34-A 393 023-1	3A64-A 593 041-1	6	
<b>LUFKIN</b>					
HC-333, HT-333	I	2A28-GV 593 041-1	-- --	2	
L-795	I	2A28-GV 593 041-1	-- --	2	
L-1770B	I	2A28-A 593 041-1	-- --	2	
L-2165B	I	2A28-A 593 041-1	-- --	2	
<b>MINNEAPOLIS MOLINE</b>					
4-Cylinder (1:1)	I-6	4A24-A 393 023-1	2A14-A 593 041-1	4	
6-Cylinder (1-1/2:1)	I-6	6A34-AM 393 023-1	3A64-AM 593 041-1	6	
<b>OILWELL</b>					
C-15RC	I	-- --	1A18-GV 593 041-1	1	
C-19RC	I	-- --	1A18-GV 593 041-1	1	
E-15RC	I	-- --	1A18-GV 593 041-1	1	
E-20RC	I	-- --	1A18-GV 593 041-1	1	
F-70RC	I	-- --	2A14-GV 593 041-1	2	
F-90RC	I	-- --	2A14-GV 593 041-1	2	

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ENGINE / MODEL NO.	ALTRONIC I / I-6 KIT AVAILABLE	ALTRONIC V SINGLE FIRING* UNIT NO. HARNESS	ALTRONIC V DOUBLE FIRING** UNIT NO. HARNESS	QTY. IGN. COILS	NOTES
<b>WAUKESHA</b>					
135	I-6	6A34-AW 393 023-1	3A64-AW 593 041-1	6	3
140	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
145	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
180	--	4A24-A 393 023-1	2A14-A 593 041-1	4	9
190	I-6	6A34-AW 393 023-1	3A64-AW 593 041-1	6	4
195	I-6	6A34-AW 393 023-1	3A64-AW 593 041-1	6	4
F11G, F11GSI	--	6A34-GV 393 023-1	-- --	6	5
F11G, F11GSI	--	6A34-GVW 393 023-1	-- --	6	5
F554GU	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
F817GU	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	
F1197GU	I-6	6A34-GV 393 023-1	3A64-GV 593 041-1	6	8
F1905G	I-6	6A34-GV 393 023-1	3A64-GV 593 041-1	6	8
VRG-220	I-6	4A24-AW 393 023-1	2A14-AW 593 041-1	4	6
VRG-232	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	10
VRG-265	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	10
VRG-283	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	10
VRG-310	I-6	6A34-A 393 023-1	3A64-A 593 041-1	6	10
VRG-330	I-6	6A34-AW 393 023-1	3A64-AW 593 041-1	6	7
VRG-330S	--	6A34-AW 393 023-1	-- --	6	7

**NOTES:**

- 1 - Drive gear for Altronic V unit is White part no. 255446 which requires a 7/8" I.D. x 1/8" thick spacer washer.
- 2 - Drive gear for Altronic unit is White part no. 40-3076701.
- 3 - Drive gear for Altronic unit is Waukesha part no. 135119.
- 4 - Drive gear for Altronic unit is Waukesha part no. 195119.
- 5 - First production engines using attached Waukesha gear no. 355019 use unit 6A34-GVW. Later production engines using standard magneto drive use unit 6A34-GV.
- 6 - Drive gear for Altronic unit is Waukesha part no. 216019.
- 7 - Drive gear for Altronic unit is Waukesha part no. 217019.
- 8 - Adaptation to flange mounting is required; contact Rocky Mountain Ignition & Emission Controls, Inc.; 5829 Monaco St.; Commerce City, Colorado 80022.
- 9 - Installation requires Waukesha adaptor no. D151805; also requires various Waukesha parts to connect adaptor to the engine's oil system.
- 10 - Installation requires Waukesha adaptor no. AA199686; also requires various Waukesha parts to connect adaptor to the engine's oil system.
- 11 - The single firing system (6A unit) is recommended for new installations.
- 12 - Engines with S/N 37Y2112 and lower use unit 4A24-A; engines with S/N 37Y2113 and higher use unit 4A34-A.
- 13 - Unit 109-8912 is model 6A24-GV with special coupling 510 699 in place of standard coupling 510 454-U.

**ELECTRONIC TIMING OPTION**

- A) ALTRONIC V UNIT - Add "T" before the dash in the unit part number. Example: 6A34T-A.
- B) ELECTRONIC TIMING UNIT - Allows for two timing points to be set for dual-gas or dual-load applications.

ALTRONIC V UNIT	TIMING UNIT
2A14T	581 603-1
2A18HT	581 603-1
2A25T	581 603-1
2A28T, 2A28HT	581 603-1
2A64T	581 603-1
3A14T	581 603-1
3A25T	581 603-1
3A35T	581 603-1
3A64T	581 603-1

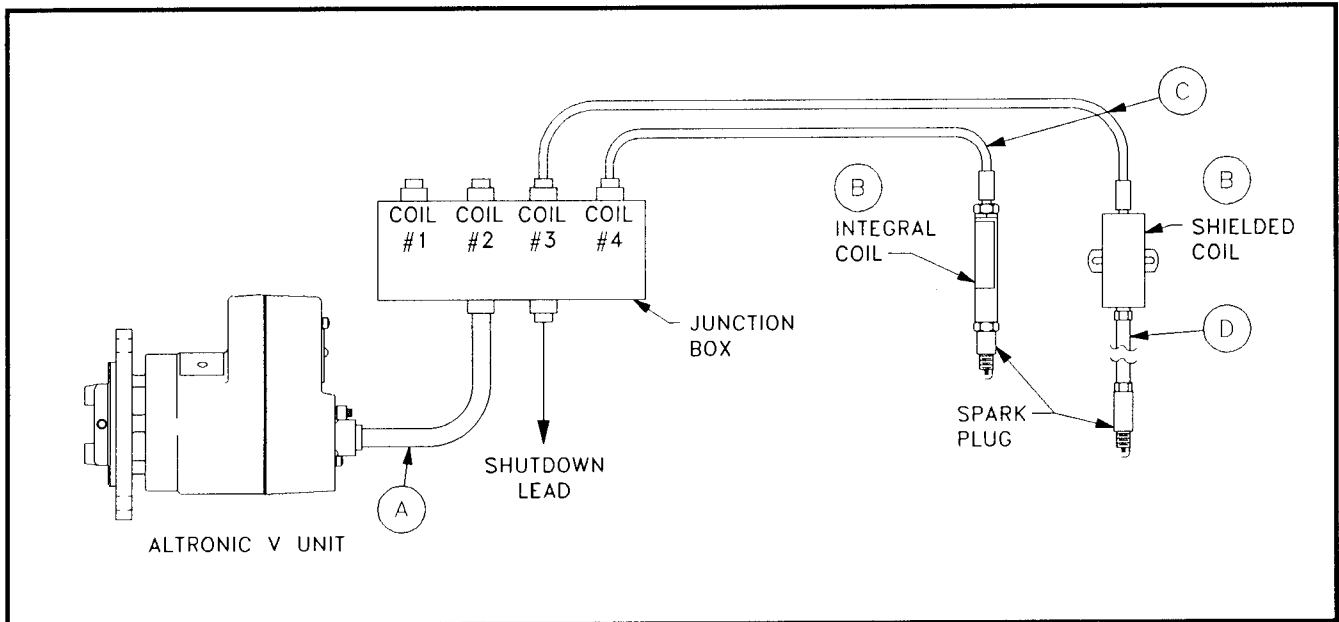
ALTRONIC V UNIT	TIMING UNIT
4A24T	581 603-2
4A34T	581 603-2
5A24T	581 603-2
6A24T	581 603-2
6A34T	581 603-2

- C) HARNESS - One per system:
  - 593 050      Harness, unshielded
  - 593 052-24      Harness, shielded
- D) SHORTING PLUG - To operate Altronic V as a standard, fixed timing unit:
  - 593 051      Shorting plug

**SHIELDED SYSTEM**

- A) SHIELDED HARNESS - Altronic V unit to junction box:
  - 593 044 series - 180° connector for models 1A, 2A, 3A
  - 593 046 series - 90° connector for models 1A, 2A, 3A
  - 393 013 series - 90° connector for models 4A, 5A, 6A
  - See Identification section for complete listing.
- B) IGNITION COILS - See Application Guide, form AIS AG:
  - 501 061-S series - shielded coil, standard
  - 591 010-S series - shielded coil, long duration
  - 591 007 series - integral coil, 1"-20 male thread
  - 591 011A series - integral coil, 13/16"-20 female thread
  - 591 011B series - integral coil, 13/16"-20 female thread
- C) SHIELDED PRIMARY CABLE ASSEMBLIES - coil to junction box:
  - 593 022 series - 180° connector
  - 593 027 series - 90° connector
  - See Application Guide, form AIS AG, for available lengths.
- D) SHIELDED SPARK PLUG LEAD ASSEMBLIES (FOR 501 061-S, 591 010-S COIL):
  - 593 020 - 10", 13", 16", 18"

NOTE: Components listed above are CSA Certified / FMR Approved for Class I, Group D, Division 2 locations.

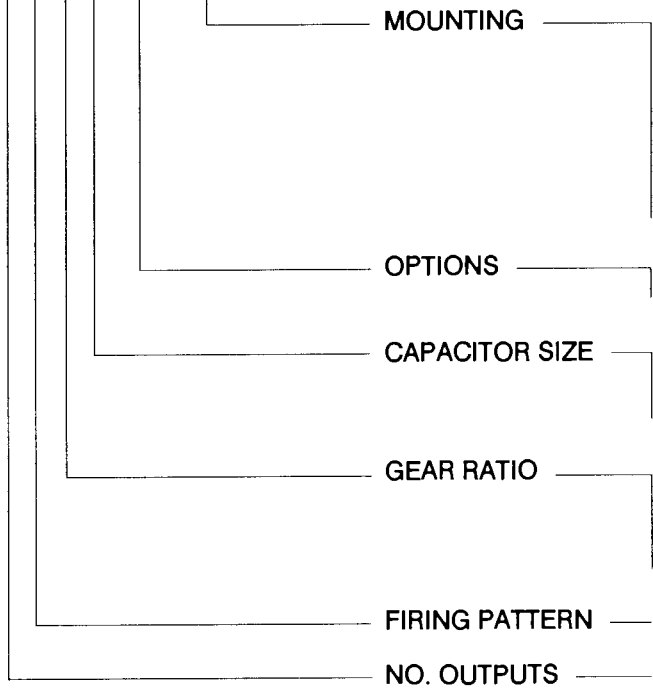


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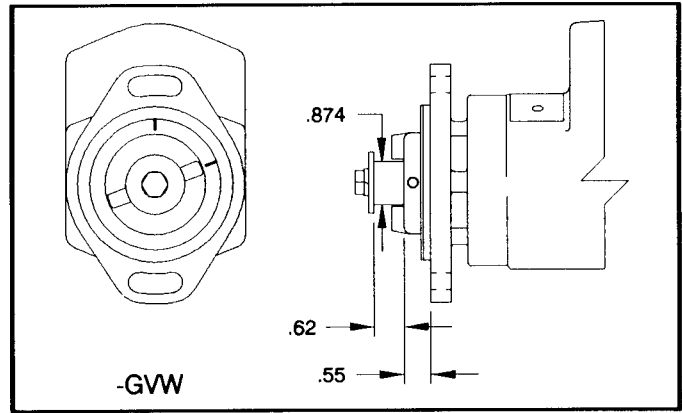
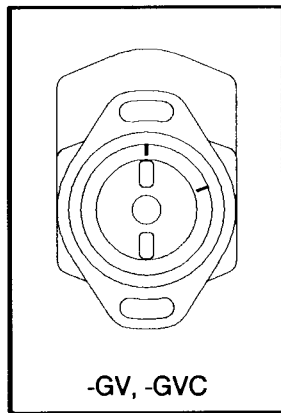
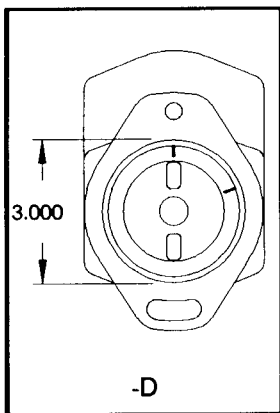
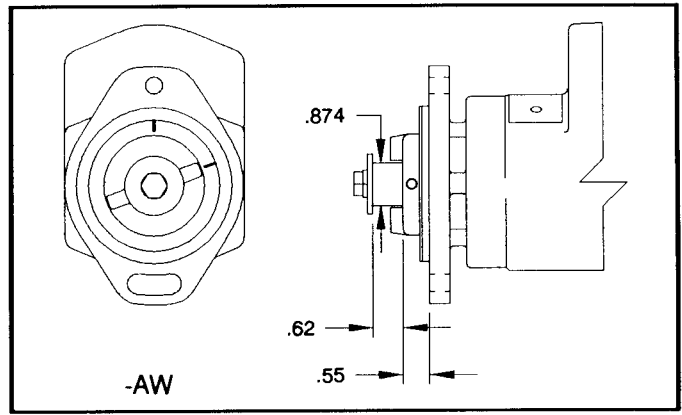
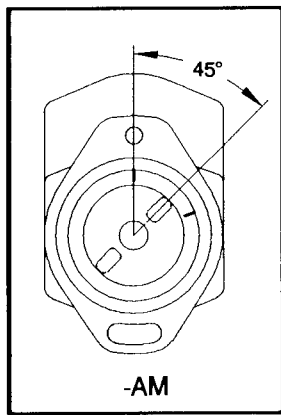
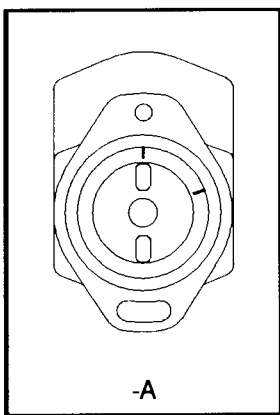
**IDENTIFICATION  
FORM AV AL 2-95**

**ALTRONIC V UNIT PART NO. DESIGNATION**

2 A 2 8 H T - A



- |                       |   |
|-----------------------|---|
| <b>MOUNTING</b>       | A = Vertical Flange, 1 slot<br>AM = Vertical Flange, 45° coupling<br>AW = Vertical Flange, gear drive<br>D = Vertical Flange, 3.00" pilot<br>GV = Vertical Flange, 2 slots<br>GVC = Vertical Flange, 2 slots<br>GW = Vertical Flange, gear drive, 2 slots |
| <b>OPTIONS</b>        | H = High Output Option<br>T = Electronic Timing Option  |
| <b>CAPACITOR SIZE</b> | 4 = 4.8 mfd.<br>5 = 4.8 mfd.<br>8 = 8.0 mfd.  |
| <b>GEAR RATIO</b>     | 1 = 1:1<br>2 = 2:1<br>3 = 3:1<br>6 = 1-1/2:1  |
| <b>FIRING PATTERN</b> | A = Even Firing Pattern   |
| <b>NO. OUTPUTS</b>    | 1, 2, 3, 4, 5, 6  |



**BACK COVER LISTING**

<b>UNIT</b>	<b>BACK COVER ASS'Y.</b>
1A18	581 401-1
1A28	581 401-2
1A28H	581 401-2H
2A14	581 404-1
2A18H	581 402-2H
2A25	581 404-3
2A28	581 402-1
2A28H	581 402-1H
2A64	581 404-2

<b>UNIT</b>	<b>BACK COVER ASS'Y.</b>
3A14	581 406-2
3A25	581 406-4
3A35	581 406-3
3A64	581 406-1
4A24	581 407-1
4A34	581 407-2
5A24	581 405-1
6A24	581 408-2
6A34	581 408-1

**UNSHIELDED HARNESSSES**

<b>PART NO.</b>	<b>CONNECTOR / PINS</b>	<b>CYLS. / L1*</b>	<b>APPLICATION</b>	<b>NOTES</b>
393 023-1	180° / 7	4-6 / 72"	unshielded	b
393 023-2	180° / 7	4-6 / 180"	unshielded	b
593 041-1	180° / 5	1-6 / 72"	unshielded	b
593 041-2	180° / 5	1-6 / 96"	unshielded	b

**SHIELDED HARNESSSES**

<b>PART NO.</b>	<b>CONNECTOR / PINS</b>	<b>CYLS. / L1* / L2*</b>	<b>APPLICATION</b>	<b>NOTES</b>
393 013-1	90° / 7	4-6 / 72" / 48"	shielded	a
393 013-2	90° / 7	4-6 / 180" / 48"	shielded	a
593 044-12	180° / 5	1-6 / 72" / 12"	shielded	a
593 044-18	180° / 5	1-6 / 72" / 18"	shielded	a
593 044-24	180° / 5	1-6 / 72" / 24"	shielded	a
593 046-12	90° / 5	1-6 / 72" / 12"	shielded	a
593 046-18	90° / 5	1-6 / 72" / 18"	shielded	a
593 046-24	90° / 5	1-6 / 72" / 24"	shielded	a

**NOTES:**

- a) CSA Certified for Class I, Group D, Division 2 hazardous locations when used with applicable CSA Certified Altronic ignition unit and coils.
- b) All 180 degree connectors are potted type.

\* L1 = length of 16 ga. conductor  
L2 = length of conduit on shielded harnesses