SERVICE BULLETIN

NUMBER 32F **11/15/10**

Altronic III Updating and Optional Features

Revised 900 series circuit board assemblies were introduced in 1992 for Altronic III, superseding the 800 and previous series. In 1995, the zener diode regulation of the 900 series boards was revised; the new part numbers are listed below. The "H" suffix indicates high output (200V); the "S" suffix indicates special output (225V) which is used for certain applications only, and is no longer available in the 100/200 series boards. **This bulletin is to update the existing 372 xxxH and S boards to the new (surface mount) 373 100H and 200H series boards.**

Surface-mount 100/200 series boards no longer have a Zener mounted through the back cover. The Zener is on the board, and a plug for the Zener mounting hole is provided in each kit.

900 SERIES CIRCUIT BOARDS:

NUMBER OF OUTPUTS	NUMBER OF CAPACITORS	900 SERIES 200V HIGH OUTPUT	100/200 SERIES 200V HIGH OUTPUT	OUTPUT CONNECTOR
6	Single	372 926H	373 106H	7-pin
8	Single	372 927H/S	373 108H	14-pin
8	Dual	372 928H	373 208H	14-pin
9	Single	372 929H	373 109H	14-pin
12	Dual	372 932H/S	373 212H	14-pin
16	Dual	372 936H	373 216H	17-pin

CROSS-REFERENCE:

800 SERIES PART NO.	ORIGINAL PART NO.	900 SERIES PART NO.	100/200 SERIES P/N	800 SERIES PART NO.	ORIGINAL PART NO.	900 SERIES PART NO.	100/200 SERIES P/N
372 801	372 906H	372 926H	373 106H	372 805-8	372 908H	372 928H	373 208H
372 801H	372 906H	372 926H	373 106H	372 805-8H	372 908H	372 928H	373 208H
372 802	372 906H	372 926H	373 106H	372 805-12	372 912H	372 932H	373 212H
372 802H	372 906H	372 926H	373 106H	372 805-12H	372 912H	372 932H	373 212H
372 802S	372 906S	372 926S	373 106H	372 805-12S	372 912S	372 932S	373 212H
372 803	372 907H	372 927H	373 108H	372 806	372 916H	372 936H	373 216H
372 803H	372 907H	372 927H	373 108H	372 806H	372 916H	372 936H	373 216H
372 803S	372 907S	372 927S	373 108H	372 807	372 909H	372 929H	373 109H
372 804*	372 912H*	372 932H*	373 212H	372 807H	372 909H	372 929H	373 109H

* Unit changes to dual capacitor type with 372 912H, 372 932H, or 373 212H circuit board.

900 SERIES CIRCUIT BOARDS WITH INSTRUMENT DEVICES:

See page 2 for important information regarding the hook-up and calibration of instruments powered from Altronic III units with 900 or 200 series circuit board assemblies.

900 SERIES CIRCUIT BOARDS WITH INSTRUMENT DEVICES:

A. The 900 series circuit boards have an output voltage of 200-225 volts. This affects the hook-up to some instruments. Specifically, it is important to note these situations:

690 107 BARRIER – When powered from an Altronic III unit with a 900 or 373 series circuit board, change the hook-up to terminal 3 (175-350V).

690 101-1 ANNUNCIATOR POWER SUPPLY – When powered from an Altronic III unit with a 900 series (372 9xxH) circuit board, it is necessary to exchange the 690 101-1 Power Supply for type 690 101-3.

B. 10 AND 12-CYLINDER UNITS – When changing from an older unit having a single storage capacitor to a unit with a 900 series circuit board, re-calibration of speed sensing instruments is required. This information applies if replacing the following older model 10 or 12-cylinder units, back covers or circuit board assemblies having a single storage capacitor; these units become dual capacitor units with the use of circuit board 372 912H, 372 932H, or 373 series (373 xxx).

WARNING!
If the changes in section A are not executed, performance of the ignition system will be degraded and the barrier or power supply may be permanently damaged. Deviation from these instructions may result in a loss of instrument operation which could cause personal injury to operators or other nearby personnel.

	PRIOR PART NO.	NEW PART NO.
Altronic III Units	10A54, 10A55 12A34, 12A35 12D34, 12D35	10A53H 12A33H 12D35H
Back Covers	381 404-1, 381 804-1 381 404-4, 381 804-4 381 406-1, 381 806-1	381 804-6H 381 804-7H 381 806-3H
Circuit Boards	372 504, 372 604 372 664, 372 804	372 912H, 372 932H, 373 212H

In the above cases, if an ignition powered tachometer and/or overspeed device is connected to the ignition unit, only half the firings will be available on the "G" lead. In order to have the correct RPM displayed and correct overspeed setting available (if used), it is necessary to calibrate the instrument as follows:

Use 5-cylinder calibration for 10-cylinder units using board 372 912H, 372 932H, or 373 212H.

Use 6-cylinder calibration for 12-cylinder units using board 372 912H, 372 932H, or 373 212H.

WARNING!
If the calibration change is not made, the tachometer will read half the actual amount and the overspeed trip RPM will be double what was previously set. Deviation from these instructions may lead to improper engine operation which could cause personal injury to operators or other nearby personnel.

CROSS-REFERENCE LIST — ALTRONIC III UNITS

As a result of the revised 900 series circuit board assemblies, many of the Altronic III unit part numbers have been revised. The following list is a cross-reference of prior part numbers to revised part numbers.

PRIOR NO.	NEW NO.
2A10H	2A19H**
2A20, 2A20H	2A29H**
3A20, 3A20H	3A29H**
4A20	2A29H**
4A28	4A29H
4A29	4A29H
4F28	4F29H
4F29	4F29H
4G28	4G29H
4G29	4G29H
5A58	5A59H
5A59	5A59H
6A12XS	6A17XS**
6A13	6A17H
6A14F	6A17H**
6A27, 6A27H	6A29H**
6A28	6A29H
6A29	6A29H
6A32S	6A37S**
6A37, 6A37H	6A39H**
6A38	6A39H
6A39	6A39H
6B38	6B39H
6B39	6B39H
6C38	6C39H
6C39	6C39H
6F38	6F39H
6P38	6P39H
6P39	6P39H
6Z13	6Z13H
7A33, 7A33H	7A37H
7A35, 7A35H	7A39H
8A11	8A11H
8A13	8A11H**
8A22S	8A27S**
8A24	8A25H (1)
8A25	8A25H (1)
8A26	8A25H
8A28	8A29H
8A29	8A29H
8A30, 8A30H	8A39H**
8A33, 8A33H	8A37H
8A35, 8A35H	8A39H
8A38	8A39H
8A39	8A39H
8B13	8B13H
8B20	8B25H**
8B24	8B25H
8B25	8B25H
8B26	8B25H
8B28	8B29H
8B29	8B29H
8B35	8B35H
8C24	8C25H
8C26	8C25H
8E29	8E29H
8E49	8E49H
8F24	8F25H
8F26	8F25H
8G28	8G29H
8G29	8G29H
8G49	8G49H
8H28	8H29H
8H29	8H29H
8P28	8P29H
8P29	8P29H
8P49	8P49H
8T25	8T25H
9A33, 9A33H	9A37H
9A35, 9A35H	9A39H
10A13	10A11H**
10A14	10A11H**
10A54	10A53H* **
10A55	10A53H* **
10A56	10A53H**
10D56	10D55H
10E56	10E55H
10H11	10H11H
10P56	10P55H
12A23	12A23H (2)
12A24	12A25H*
12A25	12A25H*
12A31H	12A33H**
12A33	12A33H
12A34	12A33H* **
12A34D	12A33H**
12A35	12A33H* ** (3)
12B11	12B11H
12C43H	12C45H**
12D34	12D35H*
12D35	12D35H*
12D36H	12D35H
12E13	12E11H**
12E23	12E23H
12E53	12E53H
12G13	12G11H**
12H34	12H35H
12H35	12H35H
12H36	12H35H
12P23	12P21H**
12P34	12P35H
12P35	12P35H
12P36	12P35H
12V43H	12V45H**
12Z23	12Z21H**
16B23	16B21H**
16G23	16G23H
16T23	16T21H**
16T32H	16T31H**

* Unit changes to dual capacitor type.
** Replacement unit requires different stator winding.
(1) If engine operating speed is above 1,500 RPM, use unit 8A23H**.
(2) If engine operating speed is above 1,500 RPM, use unit 12A21H**.
(3) For I-R 12SVG engine, use unit 12A35H.

ALTRONIC III OPTIONAL FEATURES

Three features available in new Altronic III units may be of interest in retrofit situations:

LONG SPARK DURATION COIL - 591010, 591 010-S - The long spark duration (500 usec.) red coil is specifically recommended where the spark plug fires a lean mixture. It may also be of benefit on 2 stroke-cycle engines, especially at less than full load and in situations where the fuel gas is of low BTU value or of questionable quality.

HIGH OUTPUT OPTION - 40KV - All current production Altronic III units use the 900 series circuit boards having the energy level of the former "high output" option. In general the high output level is recommended on lean-mixture engines and engines with two spark plugs per cylinder. In these cases, there is a higher energy demand on the ignition system.

ELECTRONIC TIMING OPTION - This option allows the ignition timing to be varied through the use of one of several Altronic electronic timing units. Listed in this bulletin are the applications for the 381 601 series timing units which allow two timing points to be set for dual-gas or dual-load applications. The same updating procedure applies if the 381 610 or 381 650 (Altronic III-CPU) timing units are to be used.

To update an existing Altronic III installation, follow the guidelines listed below:

UPDATE TO LONG SPARK DURATION COIL - 591 010, 591 010-S:
The Altronic III unit must have the 372 80x-x or 372 9xxH circuit board series; see Altronic Bulletin No. 12E for exchange details. These boards permit the use of the long duration, red ignition coils with no other changes required.

UPDATE TO HIGH OUTPUT OPTION:
See the following page for details. Components in older units may not operate properly with the higher primary voltage used with the High Output option. Therefore, follow the recommendations on page 5 strictly to insure reliable performance.

UPDATE TO ELECTRONIC TIMING OPTION:
Components in electronic timing back covers are specifically selected for this application. **DO NOT** attempt to install the extra connector in standard back covers of any vintage; follow the recommendations on page 6 strictly to insure reliable performance.

UPDATE TO HIGH OUTPUT OPTION:

It is recommended that the high output primary energy be used only in back covers having WHITE pick-up coils. The general guidelines are:

1. If the back cover has BLACK pick-up coils, order a new back cover 381 8xx-xH – see (1) below; the removed back cover can be returned for exchange credit – see Altronic Bulletin No. 12E for details.
2. If the back cover has WHITE pick-up coils, order a new or exchange circuit board 372 9xx-xH or 373 xxx – see (2) below and Altronic Bulletin No. 12E.
3. In some cases the alternator stator must be changed to achieve the desired high output performance – see (3) below.

The chart below lists the units which may be converted to the High Output type:

STD. UNIT	H.O. UNIT	(1) BACK CVR	(2) CIRC. BRD	(3) STATOR
2A20	2A29H	381 801-0H	373 106H	371 604
3A20	3A29H	381 801-4H	373 106H	371 604
4A20	2A29H	381 801-0H	373 106H	371 604
4A28, 4A29	4A29H	381 801-1H	373 106H	
4F28, 4F29	4F29H	381 801-2H	373 106H	
4G28, 4G29	4G29H	381 801-3H	373 106H	
5A59	5A59H	381 805-1H	373 106H	
6A14F	6A17H	381 802-11H	373 106H	371 602
6A28, 6A29	6A29H	381 802-2H	373 106H	
6A38, 6A39	6A39H	381 802-1H	373 106H	
6A69	6A69H	381 802-7H	373 106H	
6B38, 6B39	6B39H	381 802-3H	373 106H	
6C38, 6C39	6C39H	381 802-6H	373 106H	
6F38, 6F39	6F39H	381 802-4H	373 106H	
6F69	6F69H	381 802-8H	373 106H	
6P38, 6P39	6P39H	381 802-5H	373 106H	
6Z13	6Z13H	381 807-4H	373 208H	
8A11, 8A13	8A11H	381 803-13H	373 208H	371 601
8A24, 8A25	8A25H	381 803-5H	373 208H	
8A25 (MEP-8)	8A23H	381 803-5H	373 208H	371 602
8A28, 8A29	8A29H	381 803-1H	373 108H	
8A30	8A39H	381 803-9H	373 109H	371 604
8A33	8A37H	381 803-9H	373 109H	
8A35	8A39H	381 803-9H	373 109H	
8A38, 8A39	8A39H	381 803-9H	373 109H	
8B13	8B13H	381 803-14H	373 208H	
8B20	8B25H	381 803-6H	373 208H	371 604
8B24, 8B25	8B25H	381 803-6H	373 208H	
8B28, 8B29	8B29H	381 803-3H	373 108H	
8B35	8B35H	381 803-23H	373 208H	
8C24, 8C26	8C25H	381 803-7H	373 208H	
8E29	8E29H	381 803-12H	373 108H	
8E49	8E49H	381 803-124H	373 108H	
8F24, 8F26	8F25H	381 803-10H	373 208H	
8G28, 8G29	8G29H	381 803-4H	373 108H	
8G49	8G49H	381 803-44H	373 108H	
8H28, 8H29	8H29H	381 803-8H	373 108H	
8P28, 8P29	8P29H	381 803-11H	373 108H	
8P49	8P49H	381 803-114H	373 108H	
8T25	8T25H	381 803-20H	373 208H	
10A13, 10A14	10A11H	381 806-2H	373 212H	371 601
10A54, 10A56	10A53H	381 806-3H	373 212H	371 602
10D56	10D55H	381 814-1H	373 212H	
10E56	10E55H	381 814-2H	373 212H	
10H11	10H11H	381 806-5H	373 212H	
10P56	10P55H	381 814-3H	373 212H	
12A23	12A23H	381 804-2H	373 212H	
12A24, 12A25	12A25H	381 804-2H	373 212H	
12A33	12A33H	381 804-6H	373 212H	
12A34, 12A34D	12A33H	381 804-6H	373 212H	371 602
12A35	12A33H	381 804-6H	373 212H	371 602
12A35 (1-R 12SVG)	12A35H	381 804-6H	373 212H	
12B11	12B11H	381 812-51H	373 212H	
12D34, 12D35	12D35H	381 804-7H	373 212H	
12E23	12E23H	381 812-2H	373 212H	
12E53	12E53H	381 812-3H	373 212H	
12H34, 12H35	12H35H	381 804-9H	373 212H	
12H36	12H35H	381 804-9H	373 212H	
12P23	12P21H	381 804-11H	373 212H	371 601
12P34, 12P36	12P35H	381 804-10H	373 212H	
12Z23	12Z21H	381 812-8H	373 212H	371 601
16B23	16B21H	381 809-3H	373 216H	371 601
16G23	16G23H	381 809-6H	373 216H	
16T23	16T21H	381 809-5H	373 216H	371 601

UPDATE TO ELECTRONIC TIMING OPTION:

The variable electronic timing feature is available for the Altronic III models listed below; contact factory for models not listed.

1. A new back cover 381 8xx-xHT must be ordered – see listing beolow; the removed back cover can be returned for exchange credit – see Altronic Bulletin No. 12E for details. For older part numbers, first find the corresponding High Output (H.O.) unit on page 5, then follow the recommendation for the new unit number in the listing below. Note that updating to the electronic timing option also includes updating to the high output energy level.
2. If the 381 601 series timing unit is to be used, specify the appropriate part number from the list below.
3. Specify the appropriate connecting harness:
   593 042 – Unshielded harness, 180 inch leads
   593 049 – Unshielded harness, 48 inch leads with 1/2"-14 NPT fitting
   593 043-x – Shielded harness with 180° connector and 1/2"-14 NPT fitting, x = 12", 24", 36", 48"
   593 047-x – Shielded harness with 90° connector and 1/2"-14 NPT fitting, x = 12", 24", 36", 48"
4. To use a unit with the electronic timing feature as a standard, fixed timing unit, specify shorting plug 593 045.

UNIT	BACK COVER	TIMING UNIT
4A29H	381 801-1HT	381 601-1A
5A59H	381 805-1HT	381 601-1A
6A17XS	381 802-11ST	381 601-1A
6A17H	381 802-11HT	381 601-1A
6A29H	381 802-2HT	381 601-2A
6A37S	381 802-1ST	381 601-1A
6A39H	381 802-1HT	381 601-1A
6A69H	381 802-7HT	381 601-1A
6B36H	381 807-6HT	381 601-3A
6B39H (6B36HT)	381 807-6HT	381 601-3A
8A11H	381 803-13HT	381 601-3A
8A12XS	381 803-13ST	381 601-3A
8A23H	381 803-5HT	381 601-1A
8A25H	381 803-5HT	381 601-1A
8A27S	381 803-1ST	381 601-1A
8A29H	381 803-1HT	381 601-1A
8A37H	381 803-9HT	381 601-2A
8A39H	381 803-9HT	381 601-2A
8B25H	381 803-6HT	381 601-1A
8B29H (8B25HT)	381 803-6HT	381 601-1A
8C25H	381 803-7HT	381 601-1A
8F25H	381 803-10HT	381 601-1A
8T25H	381 803-20HT	381 601-1A
10A11H	381 806-2HT	381 601-1A
10A11XS	381 806-2ST	381 601-1A
10A51S	381 806-3ST	381 601-1A
10A53H	381 806-3HT	381 601-1A
10D55H	381 814-1HT	381 601-1A

UNIT	BACK COVER	TIMING UNIT
10E55H	381 814-2HT	381 601-1A
10H11H	381 806-5HT	381 601-1A
10P55H	381 814-3HT	381 601-1A
10T53H	381 814-4HT	381 601-1A
12A11XS	381 804-21ST	381 601-1A
12A21H	381 804-2HT	381 601-2A
12A23H	381 804-2HT	381 601-2A
12A31S	381 804-6ST	381 601-2A
12A33H	381 804-6HT	381 601-2A
12A35H	381 804-6HT	381 601-2A
12B11H	381 812-51HT	381 601-2A
12D35H	381 804-7HT	381 601-2A
12E23H	381 812-2HT	381 601-2A
12E53H	381 812-3HT	381 601-2A
12F33H	381 804-18HT	381 601-2A
12H35H	381 804-9HT	381 601-2A
12K33H	381 804-14HT	381 601-2A
12P21H	381 804-11HT	381 601-1A
12P35H	381 804-10HT	381 601-2A
12T23H	381 812-9HT	381 601-2A
12T33H	381 812-10HT	381 601-2A
12Z21H	381 812-8HT	381 601-2A
16B21H	381 809-3HT	381 601-2A
16G23H	381 809-6HT	381 601-2A
16G33H	381 809-7HT	381 601-2A
16K33H	381 809-10HT	381 601-2A
16T21H	381 809-5HT	381 601-2A