

Precision Parts

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LIVE WIRE

Welcome

Greg Stuart
Engineering Manager

Welcome to the April 2002 issue of the "Live Wire" newsletter.

Greg Stuart's **Technical** column for this issue covers two specific and related unit numbers, DOA876 and DOA877.

Hot Stuff discusses a feature that is becoming increasingly popular on late model alternator applications, over-running clutched pulleys.

For more information on these articles or other information, I can be E-mailed directly at:

gstuart@pprok.com

I look forward to hearing from you.

THANKS.

Contact Us



By Phone: 1-800-654-3846 ext. 243
Mon - Fri 7:00-4:30 Central Time
Precision Parts Technical Support can answer your questions on cataloging and technical issues.



By Fax: **1-405-685-7215**
Mon - Fri 7:00-4:30 Central Time

Precision Parts Technical Support can provide you with technical information via fax line. Call or fax in your request and we can respond by fax. We can supply catalog information, copies of technical articles and service bulletins.



By Email: techsupport@pprok.com

Combined, our technical staff has hundreds of years of experience diagnosing and correcting electrical system problems. We also have numerous resources available to help research and solve your toughest problems.



Technical

Greg Stuart
Engineering Manager

This month we are going to discuss the alternators that fit: 1994 - 95 Mitsubishi Galant 2400cc Engine. The PPR numbers are **DOA876 and DOA877**.

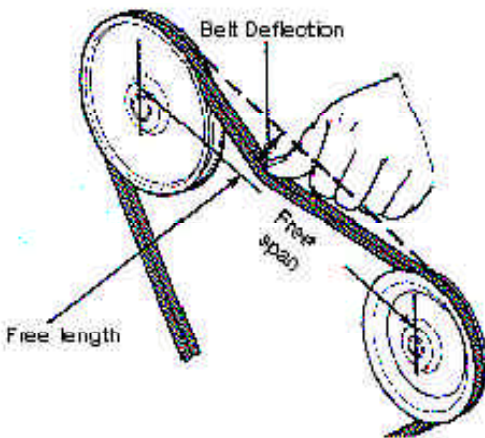
If your customer is experiencing repeated low battery states, no start due to low battery or frequent alternator replacement check out the following Technical Service Bulletin: TSB-97-16-001

Purpose: Heavy electrical load (a combination of rear defogger, windshield wipers, radio, etc.) while the vehicle is at idle or low RPM for prolonged period of time may cause the battery to become discharged. This may typically occur when driving in heavy stop and go traffic.

Repairs: There are 3 repairs that will alleviate the problems listed above.

1. For "S" and "ES" models, a timed rear defogger switch (Mitsubishi part number MR356400) is now available. The timer turns the rear defogger off at a pre-determined interval, preventing system overload. When installing the new switch, **the rear defogger switch connector must be modified. Call Precision Parts for the complete instructions for this installation.**

2. A smaller diameter alternator pulley and belt are to be installed. This will increase the alternator RPM at slow speeds resulting in a higher output at idle and slow speeds. **Precision Parts has already installed the smaller pulley on all DOA 876 and 877 alternators that we manufacture.** The customer may need to install a shorter belt, checking for proper belt tension as shown below.



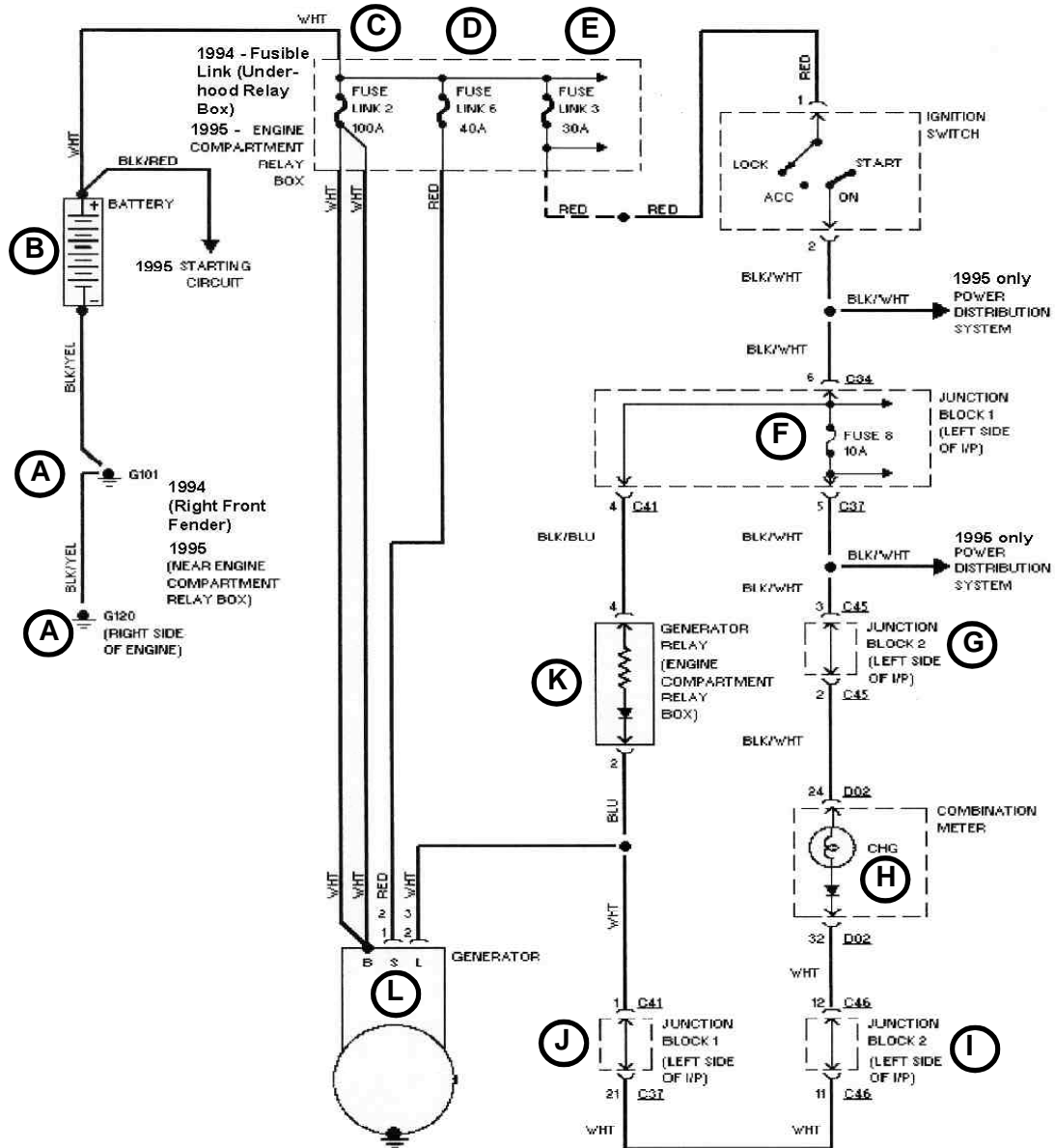
Apply pressure (22lbs/10Kg) midway on belt run.
Deflection should be:
New Belt .30" - .35" (7.6 - 9mm)
Used Belt .39" (10mm)

If a new belt is needed use the following numbers:
Mitsubishi -- MD329451
NAPA -- 25-040384 (38.4" length)
AC-Delco -- 4K384 (38.4" length)
Dayco -- 504385 (38.5" length)

3. A larger capacity alternator is available for vehicles that have had previous repairs made but still exhibit low output problems. If using the DOA876 (75amp) and you still are experiencing problems use the DOA877 (90amp).



Other areas of potential problems are shown below.



Troubleshooting Information

Check The following Items:

- A: **Ground Connections** G101 and G120
- B: **Battery connections** +(Pos) and -(Gnd)
- C: **Fuse Link 2 100A**, Check for voltage drop across fusible link
- D: **Fuse Link 6 40A**, Check for voltage drop across fuse link
- E: **Fuse Link 3 30A**, Check for voltage drop across the link
- F: **Fuse 8 10A**, Check fuse condition
- G: **Junction Block 2** -- Check connections thru block C45
- H: **Charge indicator Light** -- Check bulb operation
- I: **Junction Block 2** -- Check connections thru block C46
- J: **Junction Block 1** -- Check connections thru block C37,C41
- K: **Generator Relay** -- Check for operation
- L: **Alternator connection** -- Key on engine off, voltage present at all wires.

HOT STUFF

Over-running clutched pulleys

More later model vehicles are now being supplied with alternators built with over-running clutched pulleys.

The consumer driven forces behind this include the increased popularity of electrical devices on today's vehicles. More electrical devices mandate more powerful charging systems, (ie, larger alternators). As so many vehicles now use only one or two serpentine (multi-groove) belts for all under the hood belt driven devices, this introduces more engineering challenges for automotive and alternator manufacturers. The primary benefits of over-running clutched alternator pulleys include:

- Reduction of noise from the engine department.
- Reduction of vibration from the engine department.
- Increased alternator belt life.

Basically, the clutch 'free-wheels', or clutches during rapid deceleration of the engine. By clutching, all of the above benefits can be achieved.

These benefits do have a monetary cost. Clutched pulleys are not cheap, regardless of the brand of vehicle on which they are used.

PPR has now seen several alternators with over-running clutched pulleys. Although we expect other alternator manufacturers to use this feature, to date all alternators we have seen thus far with over-running clutch pulleys are manufactured by Bosch. PPR anticipates being able to remanufacture the clutched pulleys. Until we **are** able to remanufacture the pulleys, all units with this feature will be supplied with [new original equipment pulleys](#).

These clutched pulleys have resulted in a new pulley abbreviation in our cataloging system. Any pulley type ending with the letter 'C' will be a clutched pulley (Example: 6MG designates a 6 multigroove pulley; [6MGC](#) is a 6 multigroove pulley with an over-running clutch mechanism).

To date, PPR has identified the following PPR alternator numbers as having the over-running clutched pulleys. As special tooling is required to remove and install these pulleys, the following part numbers will be shipped with pulleys from PPR.

[Applications with over-running clutched pulleys:](#)

[Volkswagen/Audi applications:](#) BOA107, BOA112, BOA113, BOA122, BOA159, BOA162.

[Mercedes Benz applications:](#) BOA218, BOA219.

[Porsche applications:](#) BOA402

PPR now has cores on most of the unit numbers listed above, and as soon as pulleys are received, the units will be available for shipment.

See you in the next issue of the PPR Live Wire!!!!

