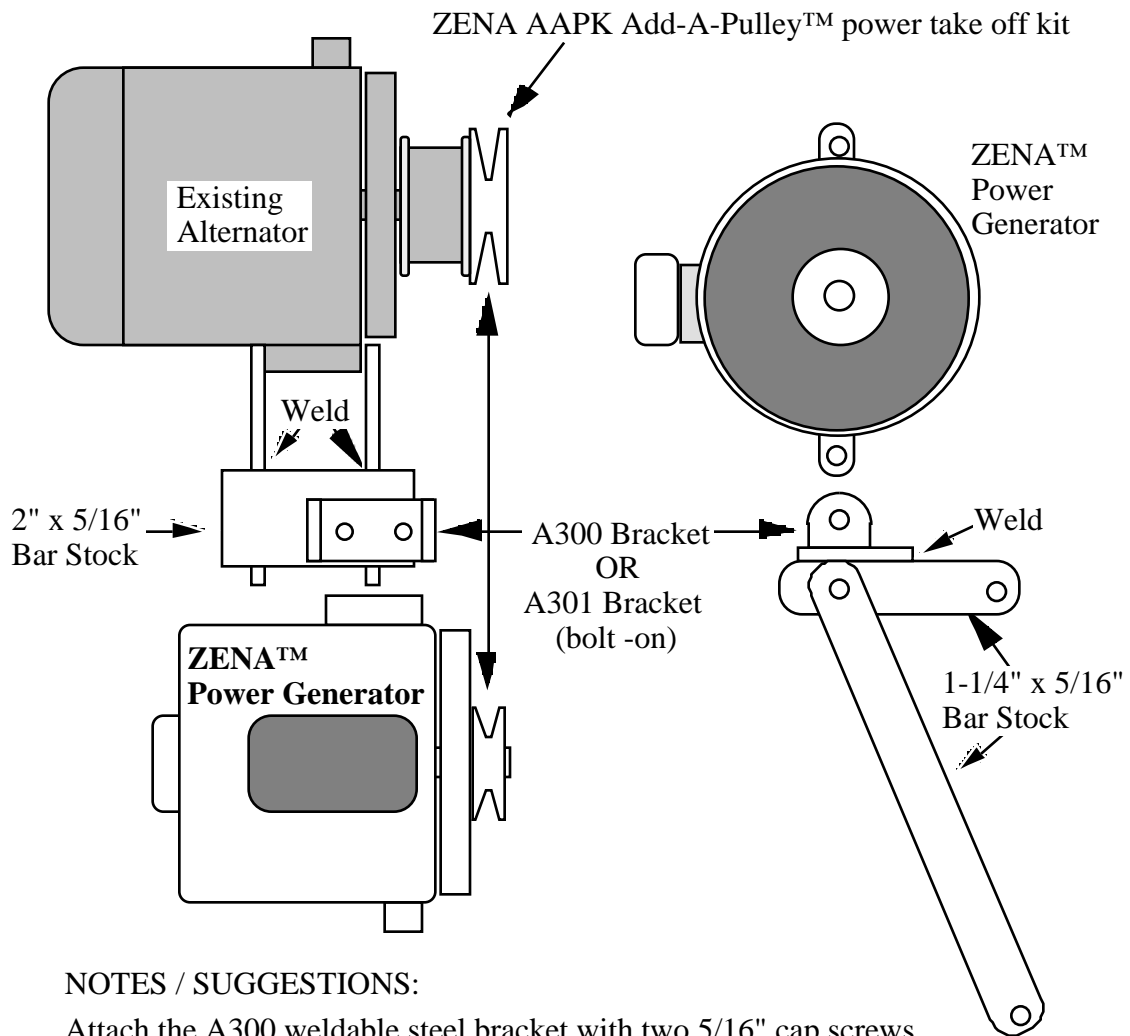


## Appendix B Selected Typical Installations/Techniques

### A. Typical Generic Bracketing Scheme - Piggyback Installation

#### Top and side views of a typical "piggyback" installation



#### NOTES / SUGGESTIONS:

Attach the A300 weldable steel bracket with two 5/16" cap screws  
(drill & thread the A300 base plate in appropriate locations)

If A301 slotted aluminum bracket is used, attach with two 5/16" through bolts  
(whichever bracket is used, make sure that mounting holes allow fine  
adjustment of power generator's physical position)

(support brace can be either welded or bolted into position -- fabricate after  
position of top bracket is determined)

Power generator tensioning can be accomplished by using ZENA's T.BUCK or  
A215 bracketing accessories OR by using a user fabricated tensioning system.

(A210 extension bracket may also be used in tensioning system)

## B. Variant on the Typical Generic Bracket Scheme

This bracket was fabricated by a professional welder for an installation of a Model MW150 welder on his service truck. The bracket is a variation of the “typical” bracket depicted on the previous page in which a tensioning bracket is included as part of the bracket itself. The A300 mounting bracket was used, but it was welded in place rather than bolted to the base bracketing. The installer was experienced and very careful and, in this case, the A300 bracket was welded into place perfectly. Likewise, the vertical support for the base bracketing was welded in place.

Since the welder is used for extended periods, an ASC1 automatic speed control was also installed in this vehicle to insure fuel efficient operation. The welder decided that, rather than having to attach welding cables to the Power Generator using the built-in wing nuts, he could minimize his time to set up for welding by installing a BJ150.4 quick-connect welding and control cable extension accessory was also included as part of the welding equipment package.

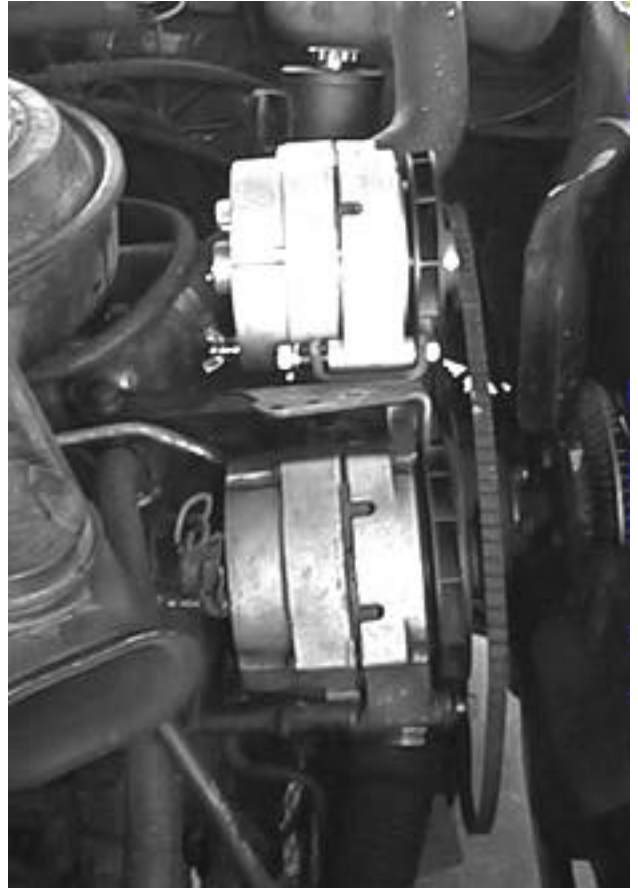
While not shown in this picture, this individual chose to install a 1200W AC inverter to provide power for a 7” grinder, a 3/8” drill, and a 1/2” drill. Since the inverter can be used without operating the engine, and since whatever battery power it requires is replenished while welding or otherwise using the truck the inverter provides all the power required for his work without any additional cost in fuel or wear and tear on the vehicle’s engine.



Variation of “typical” bracketing by professional welder

### C. 1984 Chevrolet® V8 Farm Pickup Installation

In this case, all that was required for mechanical installation of the Welding Power Generator was drilling and tapping two holes in a Universal Mounting Bracket and drilling two clearance holes in the existing alternator support bracket. A steel bar/strap was used to secure the unit's position. Belt tension adjustment was achieved by means of existing alternator adjustment means. And, since this vehicle was to be used for long periods of welding, an Automatic Engine Speed Control accessory was added to the vehicle.



**Base of Welding Power Generator is simply mounted (w/2 bolts) to stock Chevrolet V8 alternator bracket**



**Automatic Engine Speed Control**

### D. 1994 Chevrolet® V8 Pickup Installation

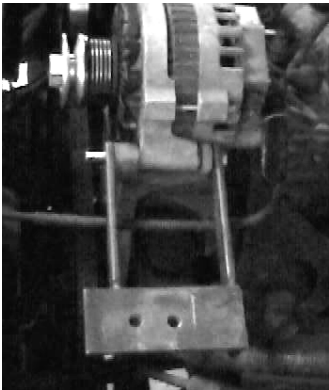
In this case, the truck had a serpentine drive belt system, necessitating the use of a ZENA Add-A-Pulley™ alternator power take off which eliminates the need to make any changes to the stock drive belt system.

Mechanical installation of the Welding Power Generator was accomplished by making a simple welded support bracket which attached to the vehicle's existing alternator bracketing, and which was combined with a ZENA A300 universal mounting bracket which was attached to the support bracket with two 5/16" bolts. A 1-1/4" strap was used below the bracket assembly (attached with a 5/16" bolt) to further secure and solidly fix the position of the bracket assembly. A simple turnbuckle was secured to the 1-1/4" support strap to secure the unit's position and to tighten the drive belt. Belt length was selected so that the Power Generator's drive belt tension is adjusted by pulling out and down on the Power Generator.

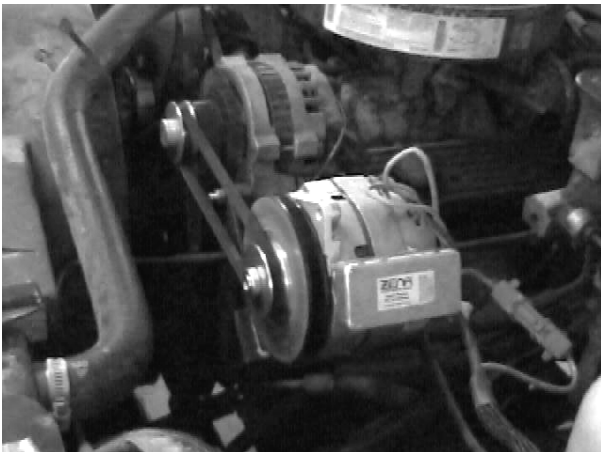
This vehicle is used for frequent welding jobs and is also equipped with an Automatic Engine Speed Control accessory and a BJ150.4 lead extension kit which is used to make it easy for workers to attach and remove welding and control cables.



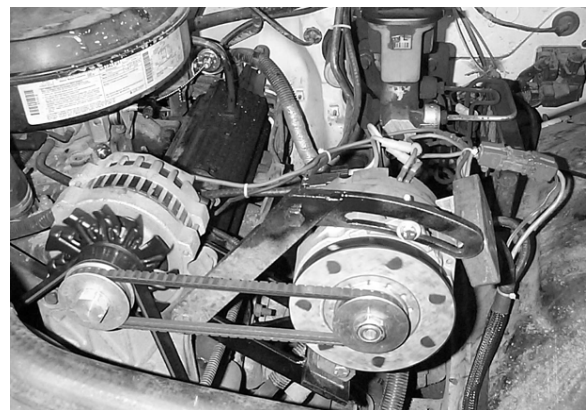
**Add-A-Pulley™ attached to existing alternator.**



**Site fabricated bracket is used with ZENA A300 universal mounting bracket to mount Power Generator**



**Everything together except for tension bracket**



**All done -- ready to weld**

### E. Jeep® Wrangler 4X4 Under-hood Welder Installation

This Jeep operates far off road and in addition to providing the owner with the ability to fix anything that breaks when 4-wheeling, the vehicle's welder is used frequently to rescue others on the trail.

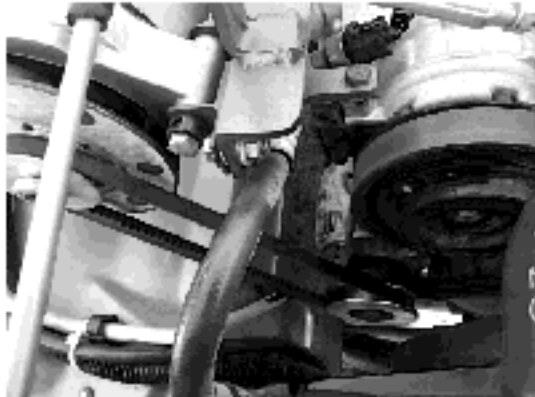
Installation is straightforward:

An Add-A-Pulley™ secondary retrofittable alternator pulley is used to drive the Power Generator. The Power Generator is mounted to

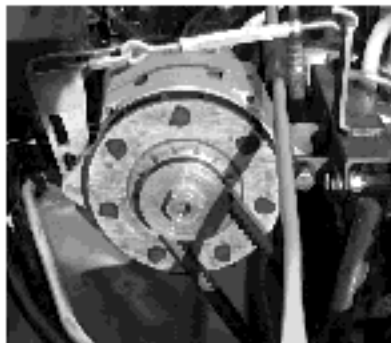
the vehicle using a ZENA A300 universal mounting bracket which is attached (using 5/16" bolts) to a bracket fabricated from 2"x1/4" angle and 1-1/4"x1/4" bar stock which is attached to the existing alternator mounting bracket.

V-Belt tensioning is achieved by using an A210 universal extension bracket (which is attached to the Power Generator), a vertical member made from 1-1/4"x1/4" bar stock (which is attached to the fabricated mounting bracket), and two 5/16" turnbuckles in combination.

To control engine speed, a RTASC automatic speed control was installed.



**V-belt attachment, Add-A-Pulley to Power Generator, & bracket fabrication details (top view)**



**Tensioning system (upright, link, & A210 bracket) / Power Gen. to bracket assembly detail**



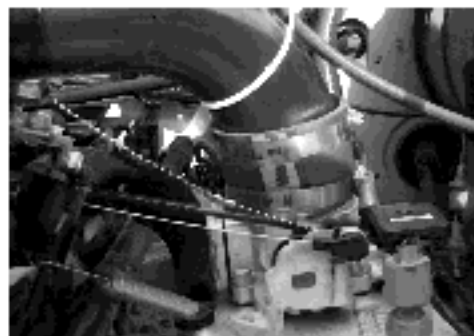
**Belt tensioning system (turnbuckles, A210 bkt., link, & upright) (frt. view)**



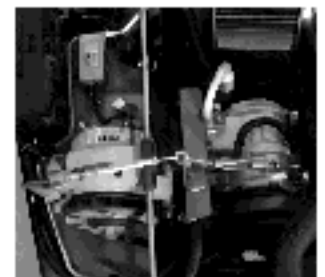
**Detail of belt tensioning upright support (welded to bracket assembly) & bracket assembly**



**Speed control mount (rear view)**



**Speed control to throttle attachment (side view)**



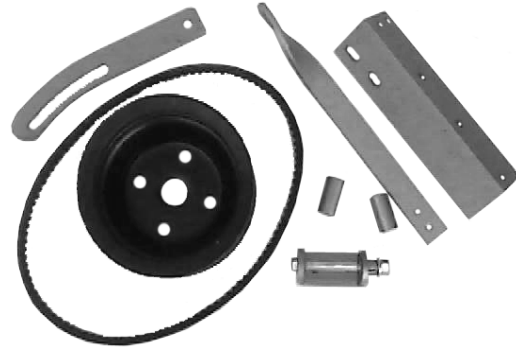
**Belt tensioning system (2 turnbuckles, A210 bkt., chain link, & upright) (top view)**

## F. Gravely® Lawn Tractor Installation -- A Riding Welder

Working daily on a farm, it goes anywhere one can walk --- a **most** useful (and very frequently used) piece of maintenance equipment. To quote the owner, *“I don’t know how we ever made do without it”* --- *“paid for itself in the first month”*.

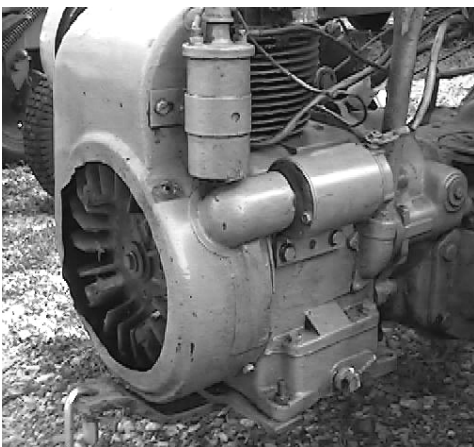


The Riding Welder (w/leads attached)



ZENA A300 and A215 Brackets were used. V-belt is from an auto parts store, large pulley comes from a Chevrolet dealer, and the other components were fabricated on site using 1”x1/4” bar stock, 2”x1/4” angle stock, and 1/4” wall tubing/pipe for spacers.

This installation is particularly interesting in that it embodies and illustrates a typical ZENA welding system installation. The Power Generator is mounted to the tractor using a simple bracket assembly which is made by using a ZENA A300 universal mounting bracket which is mounted (using 5/16” bolts) to a piece of 2”x1/4” angle stock. The 2” angle is mounted to the engine via existing bolt holes which are used to mount the engine’s starter motor. Longer bolts are selected and spacers are used to space the 2” angle away from the engine just enough to clear the starter motor and surrounding components. A tensioning arm is made up from a piece of 1-1/4”x1/4” bar stock (twisted 90° - see photos), and a shortened ZENA A215 slotted tension arm bracket. The tensioning arm components are assembled and the arm is attached to the 2” angle using 5/16 bolts.



Lawn tractor engine (right side) before installation.



This view shows the installation components (including completed mounting bracket assembly).