

TECH TALK continued: 8-00

160 MPH Gear Doors continued

The following steps should help out.

1. Eight (8) bolt gear doors are the only ones that can be modified directly. Our 78/31ATC has the 8 bolt gear door brackets so it was almost a bolt on.
2. Gear doors with the Four (4) bolt brackets may be modified to an 8 bolt by grinding out the foam core, replacing w/ fiberglass layers, and installing the 8 bolt brackets using Tinnerman washers on the outside. I suppose the 4 bolt bracket could be modified to an 8 bolt by adding/welding on a backing plate of .063 4130 chromemoly steel. I would use this method if 8 bolt brackets became made out of unobtainium (unavailable). See Doubler drawing page 12.
3. The four 8 bolt brackets must be modified with a .700 wide x 1.25" long support. This support is made of .062 4130 chromemoly steel and is welded across the link rod end attach arms, see drawing A, page 11. This adds considerable lateral support.
4. Enlarge 8 bolt bracket rod end attach holes to 1/4" to accommodate the AN4 bolts, see drawing B, page 11.
5. Replace the 1/4" link rods with to 5/16" rods (4). Duplicate the originals exactly with 5/16" 4130 steel rod. Cut to length and thread ends. See drawing C, page 11. No one that I am aware of makes these — no reason anyone should. Besides the material and the threading die are very inexpensive.
6. Assemble link rod and rod ends using AN315-5R Locknuts (8). Note: leave long and do not tighten locknuts. Use originals as a guide.
7. Enlarge upper lever assembly holes to 1/4".
8. Assemble the link rods to the upper lever assembly.
9. Assemble the lower rod ends to the gear door brackets one at a time. Insure the link rods stops are adjusted so as the fork aligns with the pin. This will require connecting one side, checking its operation, and then disassembling (remove the AN4-12A bolt) to connect and adjust the other side. Naturally, your Viking must be on jacks for this operation.
10. By raising and lowering the gear, slowly adjust the gear doors one at a time so that they are very tight and even when closed. Again, your Viking must be on jacks for this operation. There should not be any gap, nor should you be able to pull them open. Some filing or sanding may be required.

As far as a FMS goes, if you must have one, obtain a copy of a POH from a later model Viking ~1992 with the upgraded doors. If a member with a "~92 or newer" Viking will send us a copy of their POH, I will make it available to all that need it.

Continued

TECH TALK continued: 8-00

160 MPH Gear Doors continued

Tools:

- Steel ruler &/or calipers
- Pencil
- Drill motor
- 1/4" drill bit
- Metal band saw or hacksaw
- Grinder &/or mill file
- Vise is handy
- 5/16"-24 die (to thread the 4130 rods)
- Combination wrench set
- Screwdrivers
- Sand paper
- Common sense

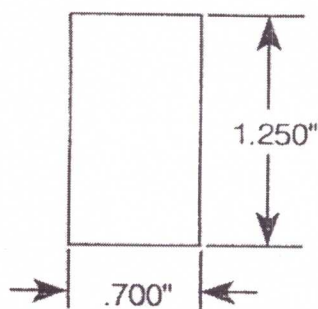
Though welding is very minor it is required, so you must be able to weld or know a good welder.

Materials*:

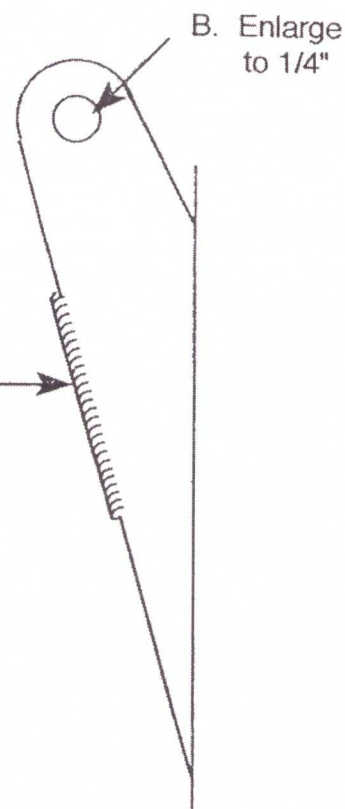
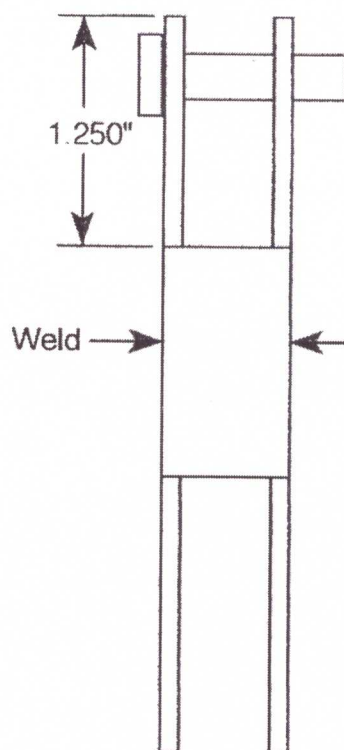
- 6" x 12" sheet .063 4130 chromemoly steel ASSC* #03-23400
- 3' - 5/16" 4130 chromemoly steel rod ASSC* #03-20400
- 8 - Heim #F45-19M Female Rod Ends
- 8 - AN315-5R Nuts (link rod end lock nuts)
- 8 - AN4-12A Bolts
- ~16 - AN960-416(L) Washers (as required)
- 8 - AN365-428A Nuts
- Primer & Paint as desired

*ASSC = Aircraft Spruce & Specialty Co. and many other supply houses.

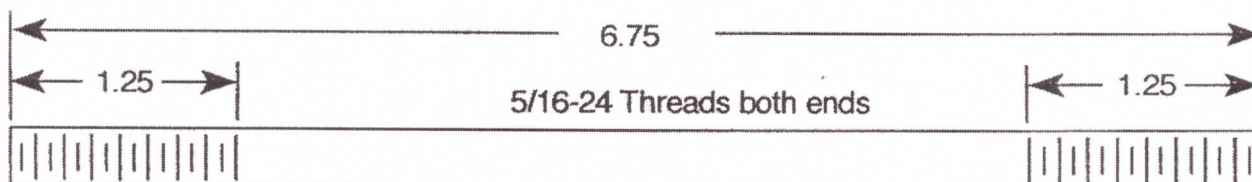
Note: For those just needing to replace the original part; purchase Heim #F34-14M (3/16" Bore x 1/4" Class) female rod ends.



A. Bracket Supports
4130 Steel .063



Locate & weld support 1.25" from top.



C. 5/16" 4130 Steel Rod

PLEASE NOTE:

This drawing is for information only. It is not to be construed as being correct. All dimensions must be verified by reader/user.

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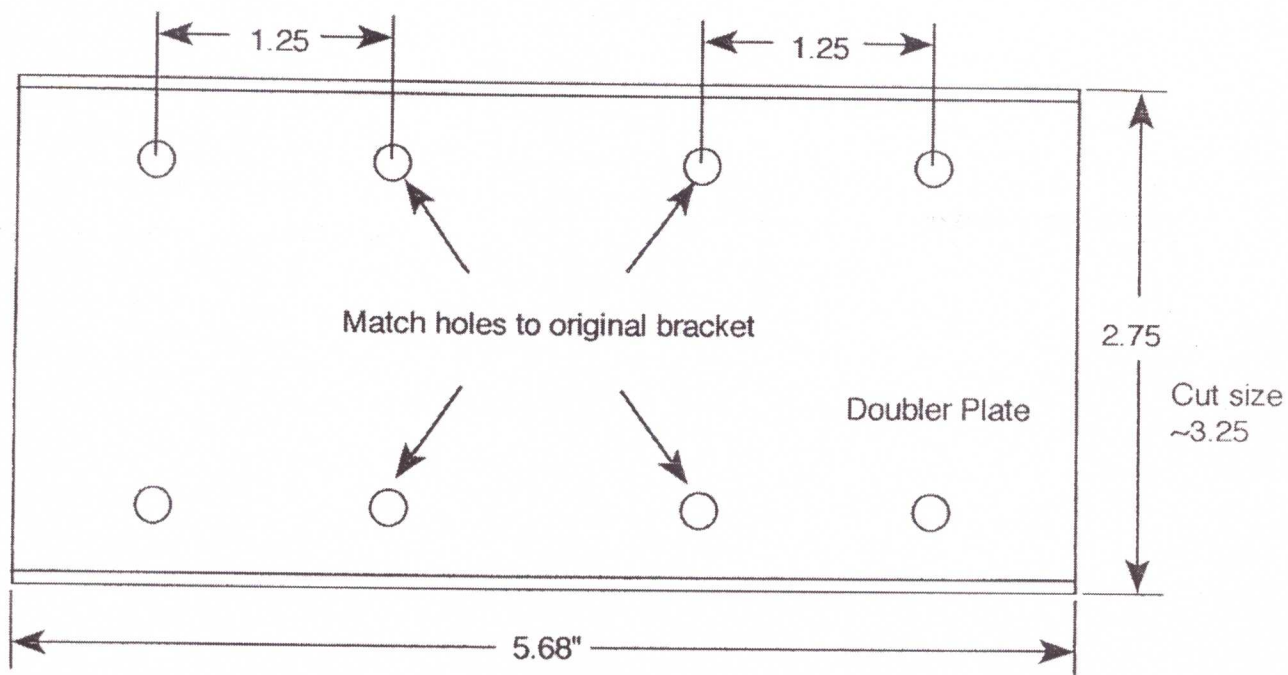
DO NOT SCALE

160 MPH GEAR DOOR MOD.

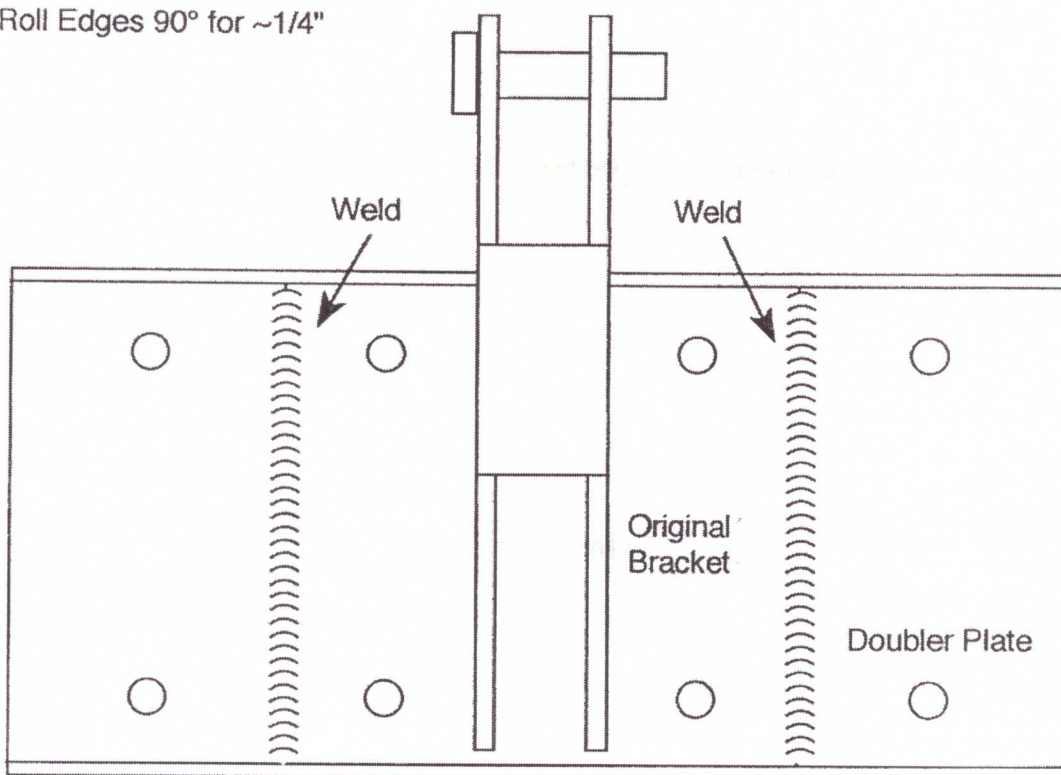
BELLANCA VIKING

Gary Robinson

8-8-00



Roll Edges 90° for ~1/4"



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DOUBLER PLATE

4 BOLT to 8 BOLT GEAR DOOR BRACKET

BELLANCA VIKING

Gary Robinson

8-9-00