MODINE

ShopTalk

VOLUME 4, NO. 7 DECEMBER, 1991

TECHTOPICS

Effective PTR Work Begins With How You Handle Tabs

In this installment of *Tech Topics*, Modine is pleased to welcome Larry LePrevost, national sales manager for the Johnson Manufacturing Company, as a guest contributor on the subject of plastic tank repair. The Johnson organization produces a wide range of products for radiator shop use, and Larry is a frequent

Larry LePrevost

guest speaker at industry seminars nationwide. The appearance of Larry's observations on these pages does not necessarily imply Modine's endorsement of same, nor the endorsement of Johnson products. Questions relative to any of the subject matter can be directed to Larry at the Johnson Manufacturing Company, 114 Lost Grove Road, Princeton, Iowa 52768. Or, telephone 319-289-3825.

Since the introduction of PTRs (plastic tank radiators), there has been much said and written about ways to repair them. Recent surveys have shown that the fastest growing repair activity (soon to be the most frequent repair activity) in our industry involves the replacement of plastic tanks. As with all new products, the development of efficient repair practices requires a period of evolution. Our industry has now matured to the point where PTR work is both profitable and painless, when just a few basic principles are observed.

There are two important aspects regarding the replacement of plastic tanks. The first relates to how the tabs are manipulated (opened and closed) and what stress is placed upon them. The second has to do with the application of force on the plastic tank, so that each gasket is compressed adequately and uniformly. In this issue, we'll take a closer look at manipulating tabs.

Never open tabs wider than needed to remove the tank; never bend them more often than necessary. And, keep in mind that you're asking for trouble if you close (crimp) any tabs without compressing the gasket first.

Your success with closing tabs begins with the way you open them. It is not a good idea to place the radiator in a repair fixture to remove its plastic tank(s). It's much faster to use a TabTool™ without a fixture, lifting the tabs while steadying the radiator with the other hand.

By placing the radiator in a fixture where the tabs are held in a straight line, all of the stress is directed to a single bending point on each tab as it is

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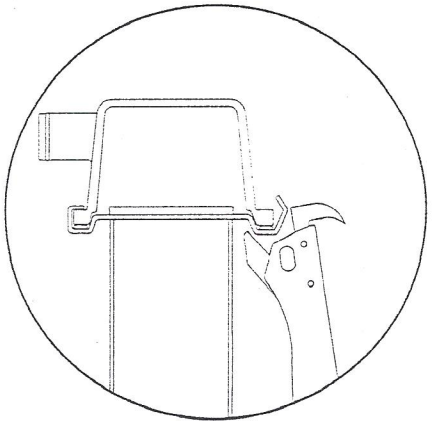

Figure A

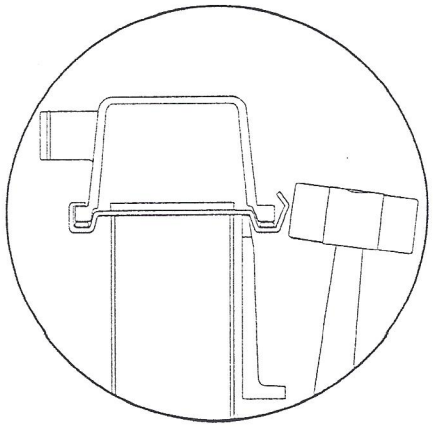

Figure B

Restoring the proper vertical alignment of the tabs is essential before crimping takes place. This can be achieved using a TabTool™ (Figure A) or by placing the radiator in a repair fixture and utilizing a soft-faced hammer.

Keys to Proper Tab Manipulation

(continued from page 1)

lifted. The top radius alone must be bent a full 90 degrees to permit tank removal. When each tab is then crimped, it undergoes another 90-degree bend. Tabs which are opened and closed at one point are weaker and much more prone to breaking.

Use Johnson's TabTool to lift (pry) each tab up and away from the lip of the tank. (Note: I refer to the Johnson product because I am most familiar with it and its properties. There may well be parallel products in the marketplace that

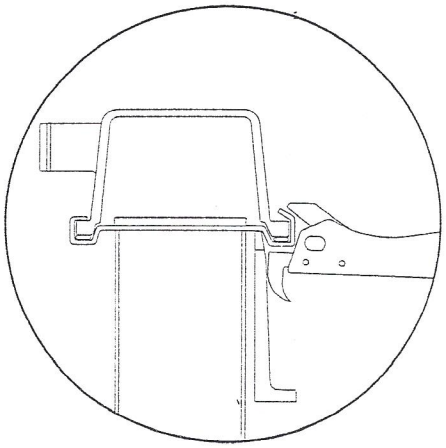

Figure C

The final crimping process, illustrated here, will be discussed at greater length in an upcoming ""Tech Topics" installment.

can be utilized for the same purpose). This action distributes the stress between two outer points on each tab. Each point is only bent 45 degrees, which minimizes the stress placed on the tabs. Tabs which are lifted correctly retain a much greater portion of their original strength, even after recrimping.

Tabs which are opened correctly require two separate operations to close them. After placing the gasket and tank back into position in the header trough, the tabs must be restored to their original alignment before crimping can take place. This can be done quickly when using a Johnson's TabTool as shown in Figure A, on page 1, or by placing the radiator in a TankMate™ repair fixture (Figure B). *Again, I refer to the Johnson products because of my close familiarity with their capabilities; comparable PTR products can undoubtedly be used.*

The TankMate supports radiators in a manner that allows you to tap the tabs back into position using a small, soft-faced hammer while protecting the header from damage. Do not hammer tabs back into place without providing support directly behind the header trough. Doing so can create tube-to-header leaks and/or break the bond of header epoxies.

The final crimping process consists of closing the top part of the tab down firmly and uniformly on the lip of the tank. Again, this should only be done after force has been applied to the tank, placing the gasket under proper compression along its full width. (This will be discussed further in a future issue).

Crimping Strips

Crimping strips, found primarily on Japanese cars, require somewhat different handling. It is not recommended that they be re-used. They are difficult, though not impossible, to remove without distortion. They are susceptible to rusting and tabs may either break off or lose a significant portion of their

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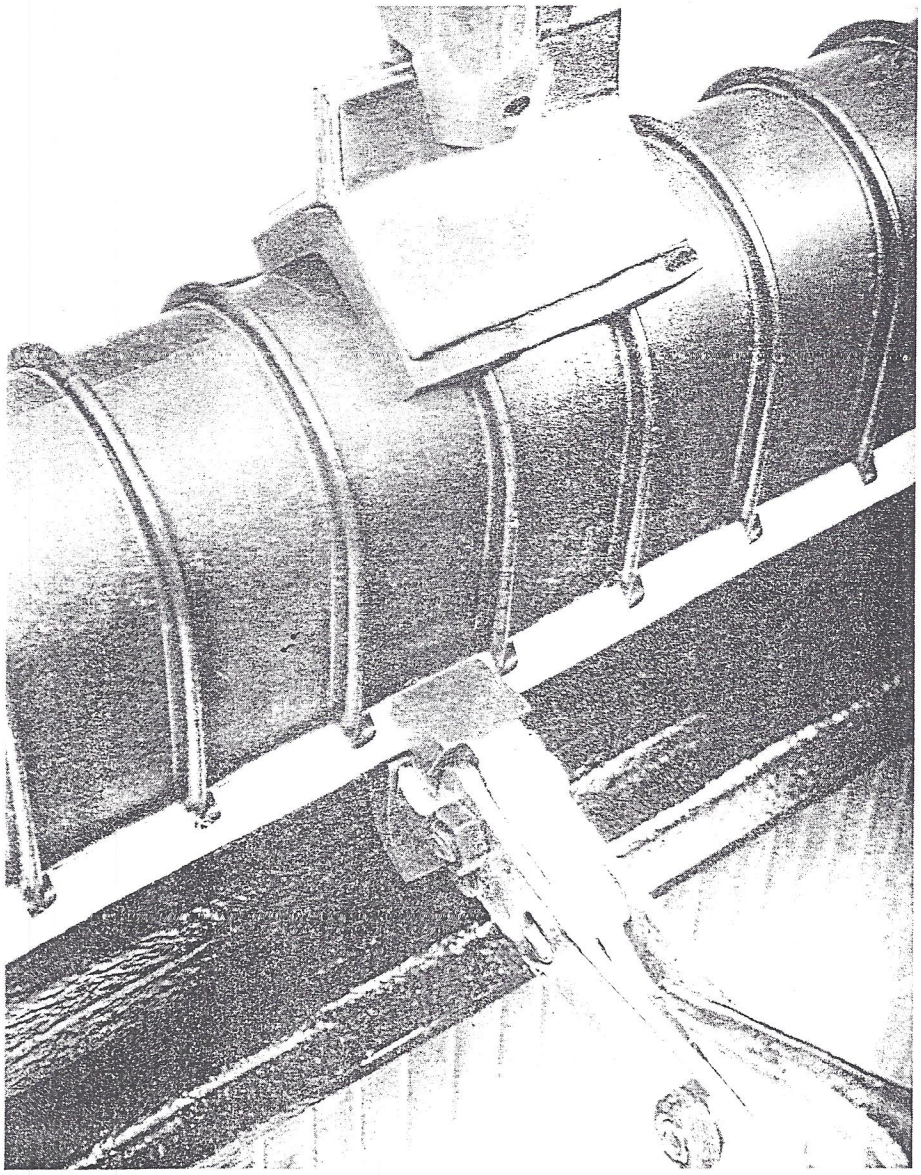

Using the proper tools and techniques always saves time. Here we see a wide TabTool being employed to crimp the wide-style tabs on this GM radiator. Other TabTools are used for smaller (narrower) tabs.

Proper Tab Treatment Essential

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strength when recrimped.

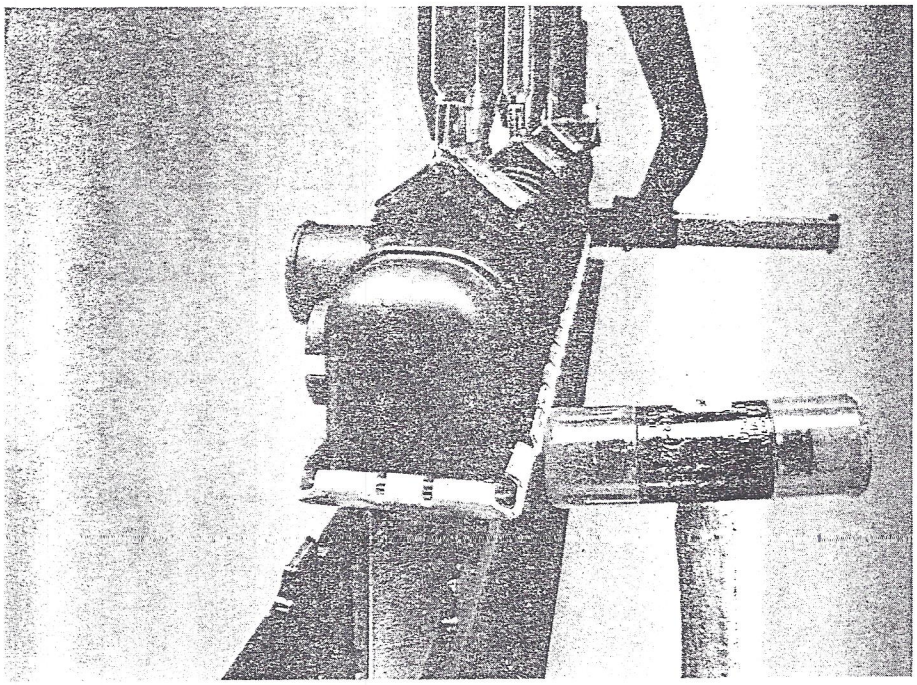
If the strips are new enough and must be re-used, the technique of lifting every other tab, then going back again, permits their removal with the least distortion. When using new strips, it is a good practice to start a partial bend (45 degree) in each tab, using Johnson's TabPliers. Then, after the strips are placed in position, do the final crimp with either TabPliers or the TabTool.

Dimpled Headers

Dimpled headers (also called "ribbon" headers because of their wavy appearance) are found on many European cars. These also require a slightly different approach. It is fairly easy to remove these tanks by prying the dimples off the lip of the tank using a TabTool. However, setting each dimple back where it belongs requires more diligence. This seems to be a job for everyone's favorite tool . . .you know, the home-made kind, such as a screwdriver or chisel which has been rounded off. The secret here is simply take your time, being careful not to stretch the header too much in any one spot.

Ad-Tech Radiators

None of the procedures which I have described so far, apply to the replacement of plastic tanks on Modine's Ad-Tech heavy-duty radiators. The latching system found on these heavy duty PTR's makes it quite easy to remove and replace tanks, once the gasket has been properly compressed. Never remove these strips without first releasing the pressure on them, by compressing the gasket. This is best accomplished when using an approved clamping system, or other fixture like the TankMate, which provides adequate force to do the job. In subsequent issues, we'll examine how much force is required for Ad-Tech radiators, as well as all other types of PTR's and their gaskets.



Here we see a clear view of how tabs are easily tapped back into correct vertical alignment prior to the final crimping process. This calls for firm support immediately behind the gasket trough, and also requires the softer touch of a urethane-faced hammer to prevent damage to the tabs.

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