WA Technology

Skid Pad Protector

The C7 Corvette is similar to its predecessors; there is not a lot of ground clearance! The first item to scrap when leaving a driveway, etc. or going over a very high, speed bump is the air dam. The flexible air dam is designed to scrap and makes a modest noise. However not much higher and the next item to scrap is what GM calls a "radiator support" or most call it a "skid pad." It is made of square aluminum tubing and when it scrapes the noise is very upsetting- and should be! It will raise the car if hit only moderately, or worse, bent and possibly break if hit hard. A concrete wheel stop could make the car stop and cause the "skid pad," as we'll refer to it here, to break!

C6 Scraped Skid Pad

My C6 Corvette unfortunately hit the skid pad a number of times (pic right is the scraped C6 skid pad! In fact, I built a 3/16 inch thick aluminum skid pad protector and screwed in into the original when this picture was taken. After the aluminum protector it was installed I recall one fairly hard hit! It occurred at a place I frequently visited that had a rather steep entrance so I would go in slowly and at an angle. However because of a traffic situation, the angled slow approach could not be used and I had to go in straight at a higher speed than usual. The scraping noise was horrifying!! However the aluminum strip I added took the punishment not the skid pad. Fortunately there were no cracks or bent tubing!

Bought "Fangs" for the C7

Was determined to add skid pad protectors when I got the C7. Waited for SacCityCorvette (www.saccitycorvette.com) to make their heavy plastic product they call, Fangs to fit the C7. This is a picture review of the installation.

Photo Sequence

Photo right is a bottom view of what GM refers to as a "radiator support" for a C7 (also called a skid pad) that bolts into the frame below the radiator. It is the low point after the flexible air dam. Unlike the air dam it is not designed to move! This picture is from eBay where it can be purchased for $195.

This is a picture the manufacturer sent me when they were in stock, as I had inquired about when it would available even before I received the Corvette in early October! You can see that this 1/8 inch think HD plastic fits over the low portion of the skid pad. Unlike aluminum, the plastic has a low friction surface. On their web site, www.saccitycorvette.com) they show a Vette moving and sliding up and over a cement parking stop! For the C7 they are selling the glued version versus both it and the screw-on type they also sell for older Vettes. After reviewing their video, thought the glued-on approach would be fine.

Pic left is also from their web site and shows what comes in the kit. In addition to the Fangs (right in photo) they supply 4 small tubes of Gorilla glue. For joining plastic to aluminum it is a very good choice. They also supply 6 heavy duty Nylon ties. These are much heavier than normal Nylon ties and are used in the installation to assure the Fangs are held close to the skid pad while the glue sets. They also supply a small bottle to produce a very fine spray of water. Gorilla glue sets by reacting with water.

Rubber gloves and a roll of sandpaper are included. The Fangs are inserted on the skid pad with glue on the inside and gloves help to prevent it getting on your hands.

The small roll of coarse sandpaper is provided to roughen up the skid pad surface. In a video describing the installation they indicate it will remove most of the paint. I also used an oscillating multi-tool, as shown here. It is an inexpensive one from Harbor Freight that I have found it to very useful for many tasks. I bought some coarse sand paper designed for removing paint from a surface (I used 60 grit.) It made quick work of removing most of the paint! Hand finished some hard to reach areas with the sandpaper roll supplied in the kit.

The instructions recommend the use of a brake cleaner to prepare the surface. Although I had what they referred to (right in photo,) I have found a product made by 3M is most useful for removing wax etc. before painting, and since I also had it available, I used it instead. It was used both to clean the skid pad before and after sanding.

First step is jacking up the car to provide access to the skid pads. Used the 2 inch diameter Nylon jack pads I made that are only 2 inches in diameter. GM recommends a maximum of 2 ½ inches and you can see when inserting in the shipping slots, there is not a lot of room around where they are placed before they would touch the plastic body. The 3 inch diameter hockey pucks some used in the past would defiantly contact the plastic body. In fact, these 2 inch OD pads look like the ideal size.

Note the brick used for a wheel chock and a low profile jack. The jack has plenty of room to fit under the jacking pad.

The car does not have to be jacked up very high as the skid pads are close to the front. It is advised to put jack stands under the car whenever it is jacked up. In this case they can be placed under the front cradle as defined in the Owner's Manual. Since you will not be going under the car very far just placing the jack stands under the outer ends of the cradle it all that is necessary.

This is a picture of the "skid pad" in the C7. Unlike the C6, there is a gap on either side so it was easy to remove the paint and "roughen" the surface as suggested in the instructions. It was easy to gain enough access with the oscillating tool to quickly do most of the job.

The instructions say to fit the Fang and mark it so you know exactly where to place it after the glue is applied. For the C7, there is a raised area in the Fang that clears the bracket on the outer rear side (red arrow.) This makes it easy to define the location.

This is a picture of the paint removed and the surface roughened by the 60 grit paper used on the oscillating multi- tool. Also used the roll of sandpaper supplied in the kit to access to the front area as well as some recessed areas in the back of the skid pad.

This is a picture showing three Nylon ties installed on a sanded “skid pad.” They were easy to install by placing each on in the center and tilting the tip backward so it could be slid to the opposite side. The instructions say to install the ties loosely but they are very thick and need to be inserted past the taper to engage and stay in place. You might check to be sure the Fang slips into the loops before putting on the glue. You don’t want to be sliding the Fang forward after the glue is applied.

Glue was applied on the sides and in the middle of the Fang. I used two tubes of glue for each. About ½ of a tube along one side and the remainder in a line down the bottom toward the same side. The other tube was used the same way on the other side. This left two lines of glue in the bottom. Doesn’t look like much glue but Gorilla glue expands 3 to 4 to 1. The glue and the sanded skid pad were misted with water is mentioned in the instructions. This is a picture of the Fang installed and the Nylon ties tightened to push it in close contact with the skid pad. To get the ties to tighten, grip the tab end next to the head with pliers and leverage sideways. You can hear the clicks as the teeth engage. Use as much force as possible to get them tight. The use of pliers is shown on their installation video.

Bottom Line:

The ties will be cut with side cutters after several days (Gorilla glue fully cures in 24 hours.) No need to jack up the car, they are easy to reach from under the bumper. The low friction heavy duty, thick plastic should provide the added protection needed. They also look much better than the aluminum ones I had made for the C6. In fact the black color looks just like the painted original.

Have a MIG (Wire) Welder?

A Friend with a MIG Welder? Know Someone with a Fabrication Shop?

Do Them a Big Favor and Have Them Review the Shielding Gas Saving Information on Our Web Site:

www.NetWelding.com

If You Have a Home Shop - Have You Run Out of Shielding Gas on a Saturday or Sunday? We Have a Solution:

How Much Gas Can Be Saved??

The best way to show the savings is with an example from one of our industrial customers who tested the system then bought them for all 35 of his MIG welders.

A Texas Truck Box manufacturer evaluated the system on a repetitive job, welding doors. With their standard gas delivery hose they welded ***236 doors*** with a full cylinder of shielding gas. Just substituting their gas hose with our patented ***GSS*** maintaining the same flow settings they welded ***632 doors***! That's a 63% reduction in shielding gas use.

Weld Performance Improvement

A small shop owner provided this feedback after he purchased a 3 foot ***GSS*** for his small MIG welder. Al Hackethal reported these findings:

"Well, I can't believe it. I never thought a hose could make that much of a difference. I had a small job that's been waiting for a while. The weld quality, and even penetration is considerable better. Almost no spatter! The weld seemed to be hotter and I turned my MIG down a notch.

Initially thought that my imagination had kicked in, but then realized that the gas I'm buying is actually working the way it's supposed to. Glad I found your website. This is one of the few things that really works better than any info could suggest. I understood the theory, though in practice I understood much better after the first couple of welds. Now I have better looking welds and almost no spatter, which means less grinding and finish work! In addition, the tip was cleaner after the job I just did.

This will provide savings in time, labor and maybe even consumables too. As a one man shop there's never enough time for anything.

Al also has a TIG welder with 300 amp water cooled torch and bought one of our Leather Cable Covers. His email said this about it!

Oh, the leather wrap for my TIG hoses worked very well and fits perfectly. I'd just replaced the hoses and was looking for something to protect them that was better than the nylon wrap that's available around here. Now I'm "TIGing" again too, and much safer. It's good to know the coolant hoses are well protected. Much better than using a 300 amp TIG and then realizing that I was standing in a puddle of coolant, which is what recently happened. Can't pay the bills if I electrocute myself!

Thanks for making products affordable".

Another Home Shop Writes About GSS System

Perry Thomasson has a very well equipped home shop. He uses a 175 amp MIG welder. However the small welder cart only held a medium size shielding gas cylinder and Perry wanted to reduce the number of times he had to have it filled.

He purchased the largest cylinder his distributor offered for sale and chained it to a wall in his shop. He needed a much longer gas delivery hose so he added a 50 foot conventional 1/4 inch ID hose. He found he was using a lot of gas.

He purchased a 50 foot long ***GSS*** and saved a significant amount of shielding gas while improving his weld starts by reducing the starting gas surge. Since his regulator/flowgauge had a hose barb on the output, we supplied Perry with a splice connection on the supply end of the ***GSS***. He simply cut the existing gas delivery hose close to the regulator and spliced in the ***GSS*** hose. The welder end uses a standard CGA fitting that is supplied with the system.

Perry emailed a picture and said;

" The system works great. Thanks for the professional service and a great product."

A Professional Street Rod Builder Had This to Say About the GSS*:*

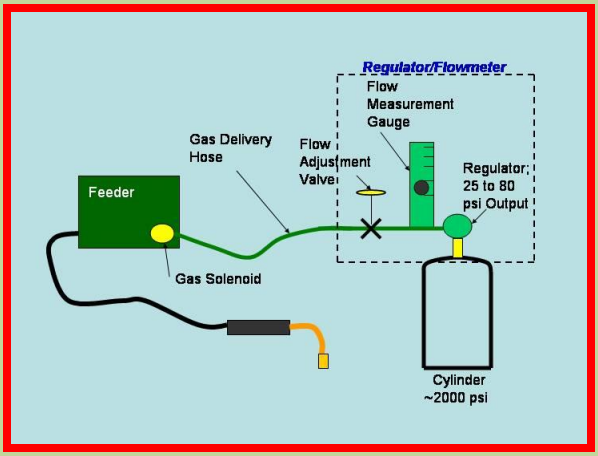
They use a 250 amp MIG welder with built in feeder and a 6 foot gas delivery hose. With their standard gas delivery hose the peak shielding flow at weld start was measured at 150 CFH, far more than needed and enough to pull air into the shielding stream. Air is then sucked into the gas stream causing poor weld starts and possibly weld porosity.

With the ***GSS*** replacing their existing hose, the peak flow surge at the weld start was about 50 CFH and it quickly reduced to the 25 CFH setting. With the many short welds made and frequent inching of the wire, they used less than half the gas and had better starts.

Kyle Bond, President, indicated a big benefit is the reduced time and effort changing cylinders since it's required less frequently. He quickly saw the improvement achieved in weld start quality as a significant advantage! Kyle, an excellent automotive painter, was well aware of the effects of gas surge caused by pressure buildup in the delivery hose when stopped. He has to deal with the visible effects in the air hose lines on the spray gun in his paint booth! It's too bad we can't see the shielding gas waste as Kyle can the effects of excess pressure when he triggers his spray gun! The paint surge is visible and creates defects unless the gun is triggered off the part being painted! Kyle can manage the surge by triggering the paint gun off the part; unfortunately we can't start our weld with the MIG gun off the part ! The ***GSS*** has a built in surge flow limiting orifice that keeps the peak flow from becoming excessive. So you not only save gas you improve your weld starts!

How Does The GSS Work?

Gas waste occurs every time you pull the MIG torch trigger even if it's only to inch the wire to cut off the end.



To keep flow at the preset level the gas pressure in the cylinder regulator will be between 25 and 80 psi. Flowgauge regulators (those with a flow calibrated pressure gauge) operate in this pressure range as well.) However to flow shielding gas though the welder and torch typically requires 3 to 5 psi depending on restrictions. Therefore every time welding stops the pressure in the gas hose raises to the regulator pressure of 25 to 80 psi. That stores up to 7 times the hose volume of gas in the hose. This is similar to your shielding gas cylinder which holds about 150 times the volume of gas as the physical volume of the cylinder due to the high pressure!

The patented ***GSS*** stores over 80% less gas then typical shielding gas hoses. In addition to the wasted gas (which you can hear when you pull the torch trigger) the high flow also causes air to be pulled into the turbulent shielding gas stream! This is like starting with the gas cylinder shut off! You have probably experienced that before when you forgot to open the valve!

It takes a short time for the shielding gas flow to return to a smooth less turbulent (laminar) flow even when the start gas surge flow reduces. That can take several seconds so when making short welds or tack welds you're not getting all the benefits of the shielding gas you're purchasing!

SUMMARY:

The ***GSS*** can cut your gas use in half or more. It also has a surge restriction orifice built into the fitting at the welder- wire feeder end. That limits peak flow (*but not your set flow*) to a level that avoids excess turbulence for better starts. It allows a controlled amount of shielding gas to quickly purge the weld start area.

All you need to do is replace the exiting gas hose from cylinder regulator to welder with our patented *GSS*. *It is available in various lengths at* www.NetWelding.com .

There are more testimonials at:

http://www.netwelding.com/production_test_results.htm

Have more questions? See:

http://www.netwelding.com/Overview_GSS.htm

Or email us at:
TechSupport@NetWelding.com