

## **KNOWLEDGE:**

Knowledge is the first and most important thing you'll need. There's many different ways to go about doing auto-body work. Some people do things differently than other people. It doesn't mean somebody's doing something wrong, it just means that some people take different routes to get to the same outcome. Of course, some people got it all wrong and may be able to do the work, but not do it properly. Those people may be able to get a car to come out nice, but some of their shortcuts and poor work will cause failures in the bodywork or paint down the road. You'll want to avoid getting your knowledge from someone like that, or someone who leads you to believe bodywork and paint are a piece of cake, and that you can make your car beautiful with a weekend's worth of work. With the right knowledge, practice, tools and materials, bodywork can be fairly fun and definitely rewarding. Especially when you get done and realized you saved thousands of dollars in labor rate to a body shop by doing it yourself.

### **How and where to get your knowledge from:**

This write-up should not be your only source of knowledge. Back when I learned how to do this stuff, all I had was a good teacher and some good textbooks. Now with the internet, we have an endless supply of info. Sometimes having a friend with some experience can be a benefit too.

-Internet- There's plenty of auto-body websites and forums. [www.autobody101.com](http://www.autobody101.com) is a great one with tons of info. Many online magazines have links to forums with auto-body info. Then there's tons of regular car forums for hot rods and muscle cars with their own auto-body forums. There's even some videos on places like YouTube. I suggest you look at as many sites as you can, to get as much info as possible. The only problem with the internet is that anybody can write anything- right or wrong. If you check out enough sites and get plenty of info, you'll realize when people are feeding you bullshit.

-Books- Probably one of the best resources. There's plenty of how-to books out there. Some are real good, and some are kind of lame. Personally, I like the textbook type books like I had back at skill center and college. They aren't the most exciting and enjoyable read out there, but they are a very thorough look into the proper processes. I still have them and look back to them from time to time if I'm unsure on something.

-Career/Skill Center/Tech School- These are a great place to learn. Some offer Adult Ed. Classes at night or on weekends. Usually it's just a couple hundred bucks to get into the class, but it will allow you to have a skilled teacher, all the tools you need, and the materials you need to refinish your car at cost. It's a great way to decide if bodywork is going to be enjoyable for you or not. If you take the class and decide you hate doing it, then at least you come out of it with a very nice looking car for way less than paying a body shop, AND you didn't waste a bunch of money on tools you're never going to use again.

-People with previous auto-body experience- Another real good resource to have IF they really know what they are doing. Again, if you've done your homework on the internet and some books, you'll be able to tell if these people really know what they are doing or not. Having an experienced person there to help guide you would be a great way to really tie together not only the processes, but WHY you do the processes the way you do. Knowing how to do something is an awesome start- Knowing why to do it is even better.

## **TOOLS:**

Many things will determine what tools you will need to get. There's some basic tools you'll absolutely need for a basic re-do, then there will be some tools that you don't necessarily need but will make the job easier. Of course, the more you get into metalwork, mods, rust repair, and other major bodywork, the more tools you'll be required to buy, rent or borrow. For instance, if you are just fixing door dings and repainting, you have no need for a welder. If you are doing rust repair or body mods, you will need one for sure. Again, some tools you may be able to find for rent or borrow. That allows you to make sure you are going to enjoy bodywork before coming off your own money for your own tools.

If you choose to buy the tools yourself, you can go about it many ways. I usually buy the higher quality tools from Cornwell, Mac, Snap-On or Craftsman as all have been proven and offer great warranties. Now, being a beginner

and unsure if this stuff is something you want to do a lot, you may want to buy your stuff cheap from Harbor Freight or something to save some coin. This is a good way to approach it. If you buy the tools and you hate doing bodywork, you're not out as much \$. If you do enjoy it, you can always replace the tool with something better down the road.

#### **Basic Tool Set:**

- Your hand and eyes- these are your best tools, and luckily, they're free! If you can feel or see a wave in your bodywork before paint, then you will absolutely see it for sure in the finished product.
- Patience- Again, another free tool, yet this is one of the harder to come by sometimes.
- General mechanics tool set- you'll be needing to take parts off the car to do a quality job.
- Air compressor- a fairly expensive tool, but useful for any car guy to have. A good one will last a long time and can be used for more than auto-body work.
- Sanding blocks- just a couple simple ones are really all you need, but there's real nice multi piece sets for sale pretty cheap.
- Dual Action sander (DA)- This can do a number of jobs, from surface rust removal on up to finish sanding.
- Grinder- I have numerous ones, but a good electric grinder and right angle pneumatic grinder will get you far.
- Body Hammer and Dolly set- Harbor Freight has a nice cheap set.
- High Volume, Low Pressure spray gun (HVLV) Harbor Freight has cheap ones, but I use SATA and DeVilbiss.
- Some tarps and fans to try and set up a half assed spray booth in your garage.

#### **Intermediate Tool Set- all of the above plus:**

- Cutoff Wheel- Probably should be on the basic list but is really only needed when getting into rust and metal work.
- Dent Puller- Another one that could go on the basic list. You'll need one for pulling large dents.
- Air board/Inline sander-Comes in handy for larger repairs using fillers.
- Sandblaster- helps clean up rust and welds. Can be \$15 for a cheapie handheld unit on up to hundreds for a vacuum aided Spot Blasting system.
- MIG Wire feed Welder- can be used at lower temps than other welders and are easy to use. They can be had at Harbor Freight for under \$150, but Miller, Lincoln or Hobart would be way better units.
- Another grinder or two- I have a large variety of them in my collection. Depending on style and size, different grinders work for different applications.
- A second spray gun-It's always nice to have a cheapie gun for your primers and a good gun for your topcoats.
- A nice Polishing Wheel- Even a nice paint job can benefit from a good wet-sanding and polishing.

#### **Deluxe Tool Set:**

At this point you have determined you really enjoy doing this and want to try more stuff and maybe do some side work.

- Consider upgrading- Maybe some of the Harbor Freight specials you bought aren't living up to your expectations or power requirements.
- UniSpotter- This is a device that can weld little studs to a body panel to use for pulling dents. Pull it and grind off the stud- no need to fill a hole left by other dent pullers. They are also useful for shrinking metal. It's one of my favorite tools in the shop.
- More grinders, sanders- There are many on the market and each type is useful in its own way.
- More spray guns- You may be interested in having numerous guns for different applications and may also be wanting a touch-up gun and airbrush to get into doing some graphics.
- A Spray Booth- Wondering what to do with that 3rd stall? Walling off a stall with filters in one wall and an industrial fan in another will do wonders for producing a clean paint job. You can sell your wife on the idea by letting her park her clean car in it when you aren't painting. It stays clean, she's guaranteed garage space most of the time, and you get the rest of the garage to keep your messy projects and bondo dust in.

#### **MATERIALS:**

The amount of work you plan on doing will determine what materials you'll need. Some things do the same job for

far different prices. Sometimes the most expensive materials are the best for the job and worth their cost. Other times, you can save a few bucks and get the same quality.

#### **ABRASIVES:**

Pretty safe bet going with 3M or Norton on this stuff. The cheap sandpapers suck and don't last near as long.  
-Grinding- I'll use anywhere from 24 grit on rust removal and weld grinding all the way up to 80 grit on my smaller grinders when I'm forming fiberglass.

-Sanding fillers and primers- I like to keep a selection of self-stick DA paper and also rolls of the 2" wide self stick papers. The rolls of 2" work on most all sanding blocks and air boards. They are also good for sticking on other soft blocks or even wood blocks you may build to do certain contours. I will use 40 grit for roughing in fillers then go all the way up in grit- 80 and 180 for finishing fillers, 220, 320, 400 for sanding primers.

-Wet-sanding- You will need a wide array of grits wet paper- 400 and 600 for wet-sanding primers, 800 for finish wet-sanding of sealers, 1000, 1200, 1500, 2000 on up for wet-sanding your clear-coat before polishing.

#### **FILLERS:**

-Fiberglass- Usually used for roughing in dents or patch areas. Also used in some custom molding applications. These tend to be stronger than the plastic Bondo-type fillers. FG fillers come in different degrees of thickness. The ones with larger reinforcement hairs tend to work well for filling any minor holes or other extensive repairs. The ones with the smaller hairs can be sanded smoother and easier and are an all-around good product to have for most jobs. There's also FG matting and resin that I'll get into more in the rust and custom mods sections. Bondo makes decent, accessible FG fillers but there's also Dynatron, Evercoat, and USG brands that are good too.

-Plastic- This is what most people would call Bondo. Personally, I won't use Bondo's plastic fillers. For a little more money you can get into the good stuff by Evercoat, USG and others. I like the more expensive stuff as it seems to sand much easier. There are varying degrees of thickness with plastic fillers just like FG. The lighter the filler, the easier it will spread and sand, but the less it will build and less strength it will have. The lightest ones are pretty much glazes and don't do much but fill major sanding scratches and pits and such.

#### **PRIMERS:**

Again, there's many types for different applications. There's etch-primers and epoxy sealers for covering bare metal all the way up to final sealers.

-Etch primer- pretty much just used to cover bare metal, ward off future rust, and give all the other topcoats something to bite into. You won't want to put plastic fillers over etch primer without sanding the etch primer off first. Epoxy sealers also work well to ward off rust, and protect metal. They cost more than etch primers but can also have filler work done on top of them.

-Primer/Surfaces- used to cover filler work or etch primers. I like to use a nice high build filler primer. Once I get my fillers finished off real well I can use the filler primer to get those pesky deep sanding scratches and minor pits. It also sand out well and will help you get a super smooth finish.

-Sealers- These will help seal off all the stuff you've done to get your body perfect. Think of it as encapsulating all those various fillers, primers and other body products- and giving your car an excellent, consistent foundation for your paint. Some sealers need sanding before applying topcoats while others can be sprayed, flash for 20 minutes then be ready for your basecoat.

#### **PAINTS:**

Your pocketbook will pretty much be determining what you get for paint. There's decent companies out there that have pretty cheap paint, yet good paint. NAPA has a very good cheap brand that I've used on most of my side work. We use PPG at work and it is far superior but WAY more expensive. If you want to do a fairly custom paint job, chances are you're going to have to go with the more expensive brands. They have a better selection of candies and pearls.

Single Stage- cheaper to buy overall, and fewer steps, but not the top of the line finish you can expect from a basecoat/clear-coat . Basically spray it and end up with a decent glossy finish.

Base coat- the color stage of a basecoat/clear-coat system. Will need to be clear-coated unless you are going for the matte finish look.

Mid coat- a pearl or candy that goes over the basecoat but before the clear.

Clear-coat- goes on over the base and/or mid-coat and gives the final glossy finish.

#### **OTHER MATERIALS:**

Metal- used for patches or any possible body mods to the metal panels. Many times you can find smaller cheaper pieces at a scrapyard.

Specialty adhesives- Maybe you are molding on a body kit or fixing a bumper- In that case you may need a good Structural Adhesive or Flexible Parts Repair adhesive.

Strippers and thinners- You may have large areas of factory paint to remove, or chipped, cracking paint on a plastic bumper. There's special strippers for plastic parts and then the hardcore ones for metal. Of course, you're going to need plenty of lacquer thinner for cleaning your spray guns.

Respirators spray suit, surgical gloves and dust masks- Safety First!

Plenty more materials to come as I get more in depth with the various processes.

#### **PRACTICE:**

The first thing we did after doing the textbook work at Skill Center, was to take a junk fender off a car and fix it. We'd have to cut and patch, do the bodywork, prime and paint that fender before we ever touched a real car. And you kept doing it until you got it right. This is an excellent way to start out as it will give you a chance to try everything out and get used to the way the tools work before you ever do any possibly irreversible damage to your car. If you have the chance I would go that route.

Otherwise, you can start directly on your car, however, be warned that you might want to just plan on doing it twice. Even the most well prepared novice will rarely see their desired results their first time trying.

#### **PATIENCE:**

I listed this in the basic tools list but I need to list it again. While this is a skill that can be learned, it is not one that can be learned quickly. If you are the impatient type or are easily frustrated this may not be the thing for you. If you can have some patience you may find a very rewarding, fun, new talent.