

USING THE SHRINKING AND SHAPING DISC

GRINDER REQUIREMENTS: A standard 7" 3400 rpm sander/polisher will work with the disc, but a 6000 rpm 15-amp grinder/sander is more effective. A standard 7" rubber or plastic backing pad and spindle nut are all that is required to mount the disc. In limited testing, a small pneumatic sander did not have enough torque to overcome the friction of using the disc, as the speed dipped too much to be useful. A larger pneumatic sander might work. Although the disc itself does have a slightly uneven surface when checked with an indicator, this does not affect the use of the tool. Check your backup pad for surface irregularities by spinning it by hand while up against a stationary indicator of some sort. You may want to remove some material from it to get the disc to spin as straight as you can. My prototype was out by a full 1/8" on the working surface, yet it performs flawlessly.

SAFETY: I recommend a full face shield, with goggles underneath and hearing protection. Make sure none of your clothing is loose enough to be a snag hazard. To reduce the risk of slivers, you must occasionally dress the surface of the disc, as it galls with use. You can dress it with a file or 80-grit sandpaper. If you choose to run the disc while dressing it with sandpaper, be aware that too much pressure can build up enough heat to warp the disc. Go slow. Don't run the disc without eye protection when onlookers are present. Tiny particles may fly off the disc during use. Always keep the disc on the work surface until it stops spinning. Regularly check the disc for cracks or discoloration caused by over-heating or wearing out. If after years of use, you see the disc turn blue during use, stop using it immediately and get a new one. I have not been able to wear one out during abusive testing, but I expect the disc to wear out eventually. Since you will be using water to cool the panel, be sure to keep it away from your electric grinder to reduce risk of electrocution or shock. Set the grinder as far away from the bucket of water as is practical. You might consider wearing leather gloves, in the unlikely event of failure of the disc or spindle nut during use. This disc is a dangerous tool, so exercise caution during use.

DENT REPAIR AND METAL FINISHING: To repair a dent, use a dolly to bump up the low spot from behind. Some larger dents are best worked from the perimeter in. Bumping with a dolly will bring the dent back near the original contour. This simple step is important throughout the repair, because, in addition to the inevitable small areas that need minor stretching later in the process, you will probably find low spots that just need bumping up. After bumping the dent up to its original contour, start working the metal off-dolly. This means pushing up with a dolly on low spots while hitting high spots with a hammer or slapper. This will start to get the panel smoother. Now start some medium-force on-dolly work. Usually, on-dolly work is stretching the metal between the hammer and dolly but, in this case, very little stretching is done, especially if you use a slapper instead of a hammer, as the force of the blow is spread more evenly. You are using multiple hits to planish (smooth) the area. Now check the shape of the panel. Use templates taken from the same spot on the other side of the car wherever possible. Use one up and down, and another front to back to see where the shape is too low or too high. Sometimes the whole area will still be too low and need more bumping and hammer-and-dolly work. Once you are satisfied that the general shape is right, you can start to pick up specific low spots by stretching on-dolly. Use a dolly that has a slightly higher crown than the panel being worked, and a hammer with a slight crown in it. This way there is a small contact area between the hammer and dolly, making it easier to stretch small areas up. You must push up fairly hard on the dolly. You should see small marks on the metal where it is stretched by the blows. Lightly file the area to show the highs and lows, then repeat the hammer-and-dolly steps, and file lightly again until you have the whole area smooth but a little too high. As an alternative to stretching up the low spots with a hammer and dolly, a tool called a bullseye pick (available from Ron Fournier at: