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The following precautions will ensure the ball-joint scraper provides years of service.

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- Never strike the blade with a hammer or any other hard object.
- If desired, a small amount of light machine oil may be applied to the mating threads of the locking mechanism but never apply any kind of oil or other lubricant to the mating spherical surfaces of the ball joint.
- Never use pliers or any other similar tool to tighten the wing nut. Finger tight is quite sufficient to hold the blade firmly.
- Keep the ball-joint scraper from water or humid storage conditions. Under such conditions, the wooden parts can swell and split, while the blade and other steel parts will rust. A light coat of wax or mineral oil on the steel parts (except the mating surfaces of the ball joint) will help prevent rust.

Carbide Blade Tips
- When scraping old finish down to bare wood, we suggest you round the corners (one edge only) of the carbide blade to help minimize gouging the surface. (We don’t recommend rounding both edges since a square edge is often useful when working into a corner.) While almost any kind of abrasive wheel can be used, unless it is specifically made for carbide, it will wear quickly.
- Since the carbide blade is not resharpenable, you can save unnecessary wear and tear by switching to the steel blade. The steel blade is easily resharpened and will usually provide the best results on bare wood, or when removing varnish and light finishes such as oil or shellac, or minor discoloration from water damage.
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The scraper equipped with a carbide blade and holder (05K21.04) is for the most demanding scraping jobs. The 2” wide carbide blade not only stays sharp many times longer than steel, it excels at removing paint, glue and accumulated dirt. The reversible blade is securely fastened to a formed-steel holder with two setscrews. For working in tight spots, the wooden grip can be removed. The carbide blade is also slightly wider than the holder to allow scraping right into a corner.
Assembly

1. Remove all parts from the box.
2. Unscrew the wing nut and remove the thrust washer.
3. Place the appropriate blade as shown in Figure 1 or 2, ensuring the rectangular hole lines up with the shoulder on the ball joint so the blade sits flat against the ball-joint flange. Orient the bevel as shown in Figure 3.
4. Replace the thrust washer and re-install the wing nut. DO NOT use pliers or any similar tool to tighten the wing nut! Finger tight is more than adequate.
5. Place the grip on the edge opposite the bevel. Back off the grip screws as required and insert the blade in the grip slot. Make sure the handle is fully engaged, with the bottom of the slot in contact with the blade edge. Tighten the grip screws until the grip cannot be pulled off by hand. To avoid overtightening the brass screws (and possibly stripping them or the threaded inserts), the first time you try this, advance each of the screws just a quarter turn at a time, testing how firmly the grip holds the blade each time.
6. Carbide Blade Only: Install the carbide blade with the bevel oriented as shown in Figure 3 (inset). Tighten the setscrews just until the blade is no longer loose, then rotate them one additional 1/4 turn. Do not overtighten the setscrews as this will bend the holder. Install grip as shown.

Blade Adjustment

1. To release the ball joint for blade adjustment, check that the ball-joint scraper is fully assembled and the grip securely installed.
2. Grasp the grip with one hand, and the handle with the other. Twist the handle counterclockwise as shown in Figure 4.
3. Position the handle at the desired angle. Lock the position by twisting the handle clockwise.

Sharpening, Steel Blade Only

Depending on how you want to use the ball-joint scraper, there are three to six different edges available to use. The blade is provided with one bevelled edge, which may be used as supplied or reground to a different angle or square as desired. The edges adjacent to the bevel may also be prepared for use by grinding on a bevel, leaving them square, or burnishing them. Bevelled edges are usually ground at 45°, honed to a keen edge and then used as is or burnished at about 10° if you prefer a hook.

Square edges are most easily prepared on a belt sander. All you want is to strip off any worn portion to recreate a sharp arris.

Step 1: Burnishing

Some people prefer to work with a more aggressive scraping action than a square edge, but without going to the trouble of preparing and maintaining a bevelled edge. This role is filled by a square edge with a hook burnished onto it. Any burnisher will do, providing it is harder than the blade (which is Rc49-50) and is polished to avoid creating a ragged hook. The Veritas® Tri-Burnisher (05K32.01) is a good choice. This teardrop-shaped burnisher is able to do both straight and curved edges. For the ultimate in ease of use and consistency in hook angle, we suggest using the Veritas® Variable Burnisher (05K37.01) for straight edges.

Burnishing is best done with the blade removed from the handle and clamped in a vise so that the blade stands erect. Draw the burnisher along the flat of the edge with very firm pressure (Figure 7).

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Figure 6: Square edge.
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