

sandpaper, e.g., 320 sandpaper, may be used. A mini angle grinder is used to remove the original clear coat finish 12. The mini angle grinder would incorporate the use of a three inch foam loop pad along with the course grit sandpaper. The mini angle grinder rotates the course grit sandpaper at approximately 7000 revolutions per minute. When grinding the original clear coat finish 12, a halo effect will be created differentiated between the different thicknesses of the original clear coat finish 12 as it is being ground off the lamp surface 10. Thus, it can be confirmed that the original clear coat finish 12 is fully removed from the lamp surface 10 when the halo effect approaches the edges of the lamp surface 10. If the lamp surface 10 has deeper scratches, additional work in localized areas may be needed to more fully remove the scratch from the lamp surface 10. Once the original clear coat finish 12 is removed and the damage 14 is removed from the lamp surface 10, subsequent steps may be taken to prepare the lamp surface 10 for restoring it to its original equipment condition.

After the damage 14 has been removed, the lamp surface 10 is evened at 30. Referring back to FIG. 5, the evening of the lamp surface 10 includes the step of grinding the lamp surface 10 with a sandpaper having a grit of approximately 320, at 32. The lamp surface 10 is smoothed out as much as possible so that, if any troughs are created through the removal of the damage 14, they are minimized. The resulting lamp surface 10 will be substantially similar to the contour of the original lamp surface 10.

In the step of evening out the lamp surface 10, scratches and swirls may be created in the lamp surface 10. The next step of the inventive method 16 is to grind the swirls and scratches out of the lamp surface 10. This is done at step 34 in FIG. 4. Referring again to FIG. 5, the grinding out of the swirls and scratches is shown at 36 to be done with a sandpaper having a grit of approximately 600 grit. Once the use of 600 grit sandpaper has been completed, the step of removing the swirls and scratches continues with grinding out the swirls and scratches using a second sandpaper having a grit of approximately 1200 grit at 38. This further removes any swirls and scratches that may remain or that were created from the use of the 600 grit sandpaper in step 36.

All through the grinding steps of FIG. 5, a cutting solution is applied to each of the sandpapers and is used to absorb thermal energy during the steps of grinding. This is shown graphically at step 40. The cutting solution is water mixed with a generic detergent. This is not a free flowing solution, but one that is applied and absorbed by the sandpaper so that it is present during the grinding process. It does not create a flowing stream of cutting solution that drips over a jig or other holding device that would be used to hold the lamp while the lamp surface 10 is being ground. The application of the cutting solution is done on an add-need basis. It may be that one or more of the steps of FIG. 5 do not include the application of the cutting solution because the damage is not so great that it requires sanding to the point that it generates thermal energy that might damage the lamp surface 10.

Returning to FIG. 4, the lamp surface 10 is buffed at 42. The buffing includes the use of a wool buffing pad, followed by the use of a foam pad.

Subsequent to buffing, the lamp surface 10 is cleaned at 44. Referring to FIG. 6, the step of cleaning the lamp 44 is generally indicated. The cleaning process starts with the steaming of the lamp surface 10 at 46. The lamp is then blown dry at 48. To further clean the lamp surface 10, the lamp surface 10 is statically neutralized at 50. By neutralizing the lamp surface 10 to all static energy, particulate from the grinding and buffing steps may be more easily

removed. A solvent is applied to the lamp surface 10 at 52 whereafter the lamp surface 52 is statically neutralized for a second time at 54.

Returning attention to FIG. 4, the inventive method 16 continues with the application of a replacement clear coat material over the lamp surface 10 at 56. The application of the replacement clear coat is applied using a spraying technology to evenly coat the lamp surface 10 with the replacement clear coat 58.

Once applied, the replacement clear coat material 58 is cured at 60. The curing process 58 is done by having the replacement clear coat surface 58 receive infrared radiation. The material used to create the replacement clear coat surface 58 is sold by assignee under the trademark MAGNI 700, which requires enough infrared radiation typically found in an oven at a temperature of 230° F. ±40° F. for approximately 45 minutes to 60 minutes. An ultraviolet radiation cure could also be used to cure the MAGNI 700 material. Once cured, the lamp surface 10 and replacement clear coat surface 58 are in a condition for sale as a refurbished lamp having optical characteristics which are very similar to those of the original equipment lamp assembly.

The invention has been described in an illustrative manner. It is to be understood that the terminology, which has been used, is intended to be in the nature of words of description rather than of limitation.

Many modifications and variations of the invention are possible in light of the above teachings. Therefore, within the scope of the appended claims, the invention may be practiced other than as specifically described.

What is claimed:

1. A method for refurbishing a lamp surface of a lamp having surface damage, the method comprising the steps of: removing the lamp from a motor vehicle; removing an original clear coat finish from the lamp surface of the lamp; evening the lamp surface; grinding swirls and scratches out of the lamp surface; buffing the lamp surface; cleaning the lamp surface; spraying a replacement clear coating material over the lamp surface; and curing the replacement clear coat material.
2. A method as set forth in claim 1 wherein the step of removing the original clear coat finish includes the step of grinding the original clear coat finish with course grit sandpaper.
3. A method as set forth in claim 2 wherein the step of grinding the original clear coat finish using the course sandpaper in the range of approximately 320 and 240 grit.
4. A method as set forth in claim 3 wherein the step of grinding the original clear coat finish includes the step of rotating the sandpaper at a speed of about 7000 revolutions per minute.
5. A method as set forth in claim 2 wherein the step of evening the lamp surface includes the step of grinding the lamp surface with a sandpaper having a grit of approximately 320 grit.
6. A method as set forth in claim 5 wherein the step of grinding swirls and scratches out of the lamp surface includes the step of grinding the lamp surface with a sandpaper having a grit of approximately 600 grit.
7. A method as set forth in claim 6 wherein the step of grinding swirls and scratches out of the lamp surface further includes the step of grinding the lamp surface with a