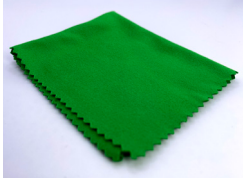


Turbo Axle Polishing Kit contents:



Turbo Axle Polish - Use to polish the axle.



Microfiber cloth - Use to apply the polish to the axle.



Abrasive Paper (x8) - Use to smooth the axle. One piece (each can be cut into eight smaller pieces) of each of the following grits:

400 2000
800 3000
1000 5000
1500 7000



Cut abrasive paper into smaller, 1/2 inch wide pieces



Synthetic Chord - Use to clean the axle after polishing.



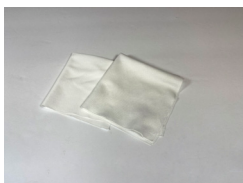
Flat Steel File - Use to remove flashing under the axle head and the sharp edges at the axle tip.



Craft Sticks (x2) - Use as a backing for the abrasive paper when sanding underneath the axle head.



Axle Sleeves (x2) - Use to insert the axle in a drill so the sharp edges of the axle tip can be filed and sanded.



Lint-Free Cleanroom Wipes - Use as a final cleaning step for the axle.

Axle Preparation Instructions

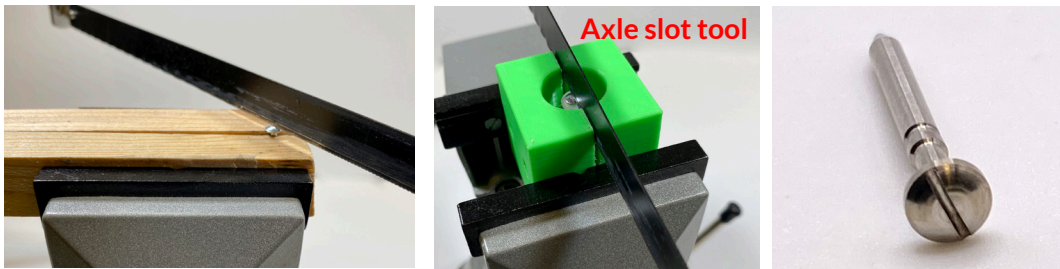
Supplies needed for Wheel preparation:

- Handheld power drill
- Small bowl of water
- Paper towel or cotton cloth
- Lemon Pledge furniture polish (optional)
- Isopropyl alcohol
- Hacksaw (if rail riding/running)
- Jeweler's loop or other magnification

1

The steps will apply to both stock axles and stainless steel aftermarket axles. However, there are differences in the process between the two. These differences are called out when applicable.

If building a rail rider/runner car (and the rules do not prohibit it), it is a good idea to cut a slot in the axle head. Once installed in the car, you can turn the axles with a small screwdriver. Slotting the axle head is accomplished by clamping the axle between two pieces of wood (so as not to mar the axle surface) and carefully cutting the slot with a hacksaw. Alternatively, an axle slot tool is [available](#).



2

The tip of the stock axle and the sharp edges near the tip need to be filed and sanded. Otherwise, you risk damage to the wheel bore when inserting an axle through it. Insert the axle into the drill chuck using the [axle sleeve](#). Tighten enough to hold the axle in the sleeve. Spin the drill, and file the tip and sharp edges with the [flat steel file](#). Follow with the 400 and 800-grit [abrasive paper](#). There is no need to go with the higher grit papers or the metal polish, as the goal is to remove the sharp edges so they won't scratch the wheel bore.



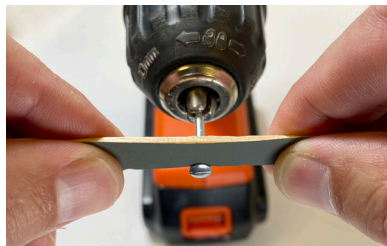
3

Insert the axle into the drill. The flashing or burrs under the axle head must be removed. Using the drill to hold the axle, use the [flat steel file](#) to scrape away the flashing. Do so while the **drill is NOT running**. You can put the axle head against a table or block of wood and file the burrs off. Inspect the axle head closely (magnification helps a great deal).



Cut abrasive paper into smaller pieces

Take note of the size and direction of the scratch marks left by the file. Next, dip a strip of 400 grit abrasive paper (make sure to cut into smaller strips) in the bowl of water. Then, run the drill and sand **underneath the axle head ONLY**, using a craft stick as a backing for the paper. For Race Teams with younger members, place the drill on a table and have them operate while the adult team member sands the axle head. For older Race Teams, you can do the opposite.



Filing the flashing/burs will leave the underside of the axle head quite rough. You'll want to sand with the 400 grit paper for 1-2 minutes (target 600 RPM). Dip the abrasive paper in the water bowl at regular intervals. The water keeps the axle from becoming too hot and washes away loose sandpaper and axle material. If cutting a slot in the top of the axle head for a rail riding/running car, sand the sides and top of the axle head during this process to remove any burrs from cutting the slot (30 seconds should suffice). Next, inspect underneath the axle head. **The goal is to remove all the gouges/scratches left by the filing process.** After the 400-grit paper, move to the 800-grit paper and repeat the process. Sand for 1-2 minutes to remove all the scratches left by the 400-grit paper.



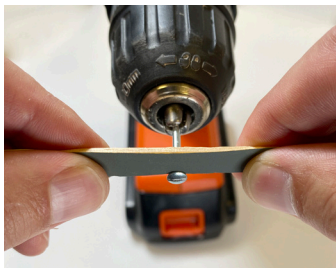
4

It is time to include the axle shaft in the sanding process. As mentioned, the goal is to remove as little material as possible, resulting in a smooth axle. On a properly aligned car, the **rear wheels are riding against the heads of the axles**, so take additional care to sand/polish the underneath of the axle heads until they are extra smooth and shiny!

Keeping the abrasive paper wet, utilizing medium pressure, and targeting an RPM of approximately 600, do the following three steps with each grit of sandpaper:



Sand the shaft



Sand under the head



Sand sides and top of head

Use the following as a guide:

- 1000 grit paper, 10-20 seconds on shaft, 60 seconds under axle head, 20 seconds on side and top of axle head
- 1500 grit paper, 10-20 seconds on shaft, 60 seconds under axle head, 20 seconds on side and top of axle head
- 2000 grit paper, 20-30 seconds on shaft, 60 seconds under axle head
- 3000 grit paper, 20-30 seconds on shaft, 60 seconds under axle head
- 5000 grit paper, 20-30 seconds on shaft, 60 seconds under axle head
- 7000 grit paper, 30-40 seconds on shaft, 60 seconds under axle head



Remember, the goal is to remove as little material as possible from the shaft, polish a mirror finish underneath the axle head and remove any burrs from cutting the tuning groove on the sides and top of the axle head!

For stainless steel axles, DO NOT sand underneath the axle head with the file, 400 or 800 grit paper. Additionally, skip the 1000 and 1500-grit abrasive paper steps as well. Instead, go straight to the 2000 grit steps and proceed from there. However, if you've cut a groove in the top of the axle head for rail riding, you will want to sand the top and sides of the axle head with the 400, 800, 1000, and 1500 grit paper to remove the burrs from cutting the groove.

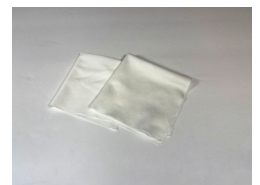
After completing the sanding process, wash off the axles to remove all loose metal and sandpaper grit, and wipe them thoroughly with a cloth or paper towel. Make sure to clean the tuning groove as well.

5

Chuck the axle back into the drill. Apply Turbo Axle Polish to the microfiber cloth. Polish the shaft and underneath of the axle head for 60 seconds each. **STOP BE CAREFUL; the cloth can entangle with the axle and pull fingers in with it. Cutting the microfiber cloth into smaller pieces helps prevent this.**



Cut a 1-foot section of the synthetic cord. Soak the cord in water. Loop the cord over the axle and run the drill while moving the cord back and forth over the axle to clean it. Remove the axles from the drill and wash thoroughly with water. Then soak for 5-10 minutes in either isopropyl alcohol or ammonia-free glass cleaner. Be careful not to touch the axles' polished surfaces; wipe them using the clean room wipes to ensure you've removed all lint and other contaminants. Make sure to inspect them thoroughly under magnification to make sure there is no residue from the polishing process or other debris on the axles. Finally, put them away in a clean, safe place.



Unpolished

Polished

6

Optional if using graphite: Lightly spray the axles with Lemon Pledge Furniture polish. Allow to dry, and then put them away.

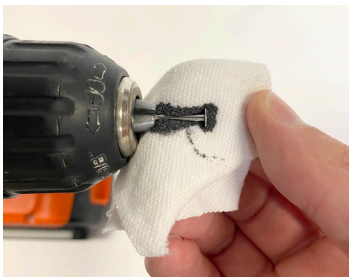
Optional if using oil: Lightly spray the axles with Dupont Chain Saver or Jig-a-Loo lubricant. Allow to dry, and then put them away.



7

Optional if using graphite:

Lightly dust a soft cloth with Lemon Pledge and sprinkle graphite onto the cloth. Next, insert a polished axle into a drill and turn it slowly while pressing the cloth/graphite to the axle. Do so for 1 minute, 3-5 times; doing so adds a thin film of graphite to the axle.



(Sold Separately)