

Assembling a
Complete Skateboard



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About This Manual

Manual Contents

This manual will help you assemble a complete skateboard. It assumes that you are building a standard size skateboard comprised of standard parts. It also assumes that you understand how to use basic tools such as a screwdriver and wrench.

The manual is divided into seven main sections that include the following information:

- Understanding the Skateboard
- Gripping the Deck
- Mounting the Trucks to the Deck
- Installing the Bearings into the Wheels
- Attaching the Wheels to the Trucks
- Finalizing the Skateboard
- Frequently Asked Questions

Intended Goal

The goal of this manual is to teach you the correct techniques and steps necessary for assembling a complete skateboard. Once you complete all of the main sections, you will have successfully built a fully functional skateboard.

Intended Audience

This manual is intended for people who want to build their own custom complete skateboard. The audience is expected to have the basic skills required to use the tools and to perform the related tasks provided in the user manual.

There are two types of readers, each with their own level of understanding about skateboards. The first type of reader has no experience and needs to learn the parts and tools necessary to complete a skateboard. The second type of reader has knowledge and an understanding of skateboards and is wishing to customize his or her skateboard.

How to Use This Manual

This manual functions as a step-by-step walkthrough. To successfully assemble your skateboard, complete the main sections and their instructions in the order they are presented.

WARNING: Not following the manual from start to finish in the order it is presented may cause complications during the building process.

Understanding the Skateboard

This section provides a brief background on what a skateboard is, as well as a detailed description of the parts and their functions. This section defines the terminology needed to explain how to build a complete skateboard.

Skateboard Components

A skateboard is a four wheel mode of transportation made of multiple components. It has a wooden deck with grip tape applied to the top for better traction. This deck is mounted to two trucks. Trucks are the turning mechanisms of the skateboard that allow the skater to lean on one side of the deck or the other to turn the skateboard. Bearings are installed into the wheels, which are then applied to the trucks. This allows the skateboard to roll across the ground as it is pushed by the rider.

Skateboards are ridden by people of various ages. Skateboarding is done by pushing the board with one foot while keeping the other on the board. Skateboarding is a sport but is also used as a mode of transportation. People who carry out the various skateboarding activities are known as skateboarders or skaters.

Parts and Their Functions

All the parts of a complete skateboard can be purchased from your local skate shop. These parts can also be found online, or at a Zumiez or Vans outlet store nearest you.

Figures 1 and 2 illustrate the parts of a skateboard. These figures are followed by a table explaining each part's function.

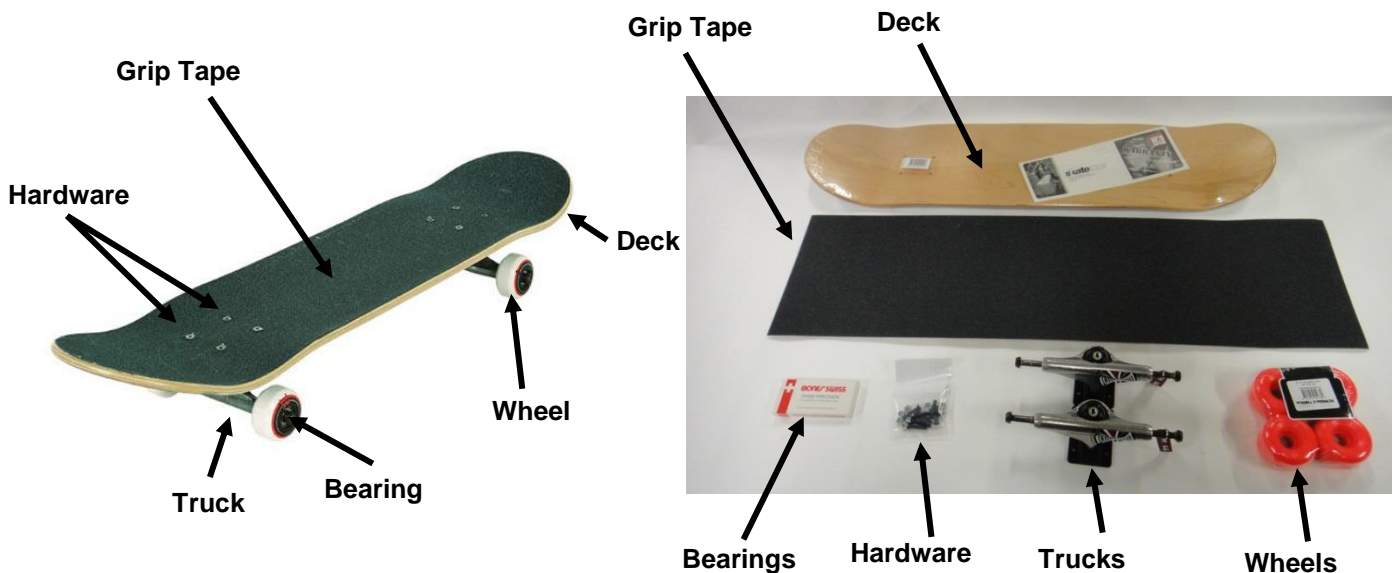


Figure 1: Parts Assembled

Figure 2: Parts Not Assembled

Terms	Definitions
Deck	The actual board of a skateboard. It is the flat, long, oval/rectangle, usually wood, part of the skateboard that you stand on. Skateboard decks are classically made of 7 plies of wood, usually maple, laminated together.
Grip Tape	Grip tape is the gritty, sand papery layer that's applied to the top of a skateboard deck for traction. It allows your shoes to grip the board.
Hardware	The screws and nuts that are used to connect the trucks and the deck.
Trucks	Trucks act like the axle of a car, but for a skateboard. Trucks are the metal T-shaped part that mounts onto the underside of the skateboard deck, which the wheels will be attached to. A regular skateboard will have two trucks, each facing outward.
Bearings	The bearings are ball-bearings that fit inside each wheel. There are two bearings per wheel. The bearings are what allows the wheels to rotate on the trucks.
Wheels	The wheels are polyurethane wheels that allow the skateboard to make smooth contact with the ground.

Gripping the Deck

This section will show you how to grip the deck of your skateboard. It lists and illustrates all the materials and equipment necessary to perform this task. It also explains the correct techniques and skills involved with this task.

Materials and Equipment

- Skateboard Deck
- Grip Tape
- Razor Blade or Box Cutter
- Multifunctional Unit Skateboard Tool (optional)
- Flat Head Screw Driver
- Paperclip or Toothpick (not shown)

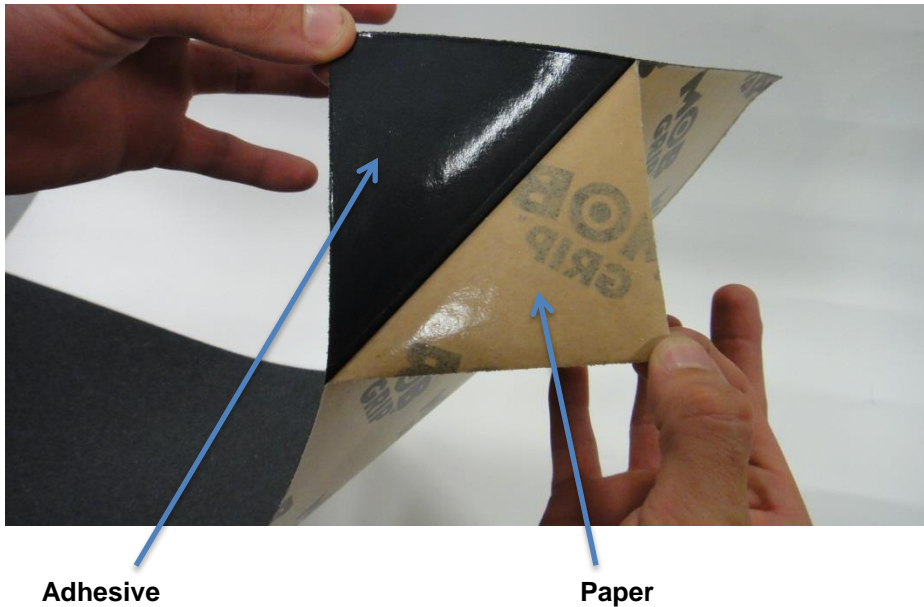
Figure 1 illustrates the parts necessary for gripping a skateboard deck:



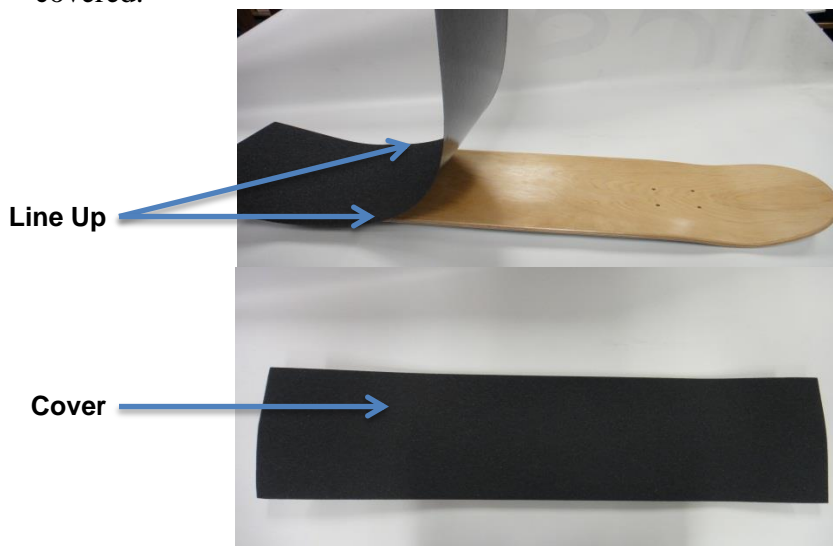
Figure 1

Gripping the Deck

1. Remove the plastic wrapping from the deck.
2. Put aside any warranty cards and/or stickers that may have come with the deck.
NOTE: Make sure that the top side of the deck has a clean surface before gripping.
3. Peel back the paper on the bottom side of the grip tape until the adhesive is completely exposed.



4. Line up the grip tape parallel to both rails and then lay it flat so that the deck is covered.



5. Pull the grip tape up at one end until the grip tape rests on one kicktail.



**Grip tape resting
on one kicktail**

6. Using one hand, flatten the grip tape to board from one kicktail to the other as shown in figure 2.

WARNING: Flatten the grip tape to the deck from the inside to the outer rails as you move from one kicktail to the other. Not doing so will cause air bubbles to form between the deck and the grip tape.

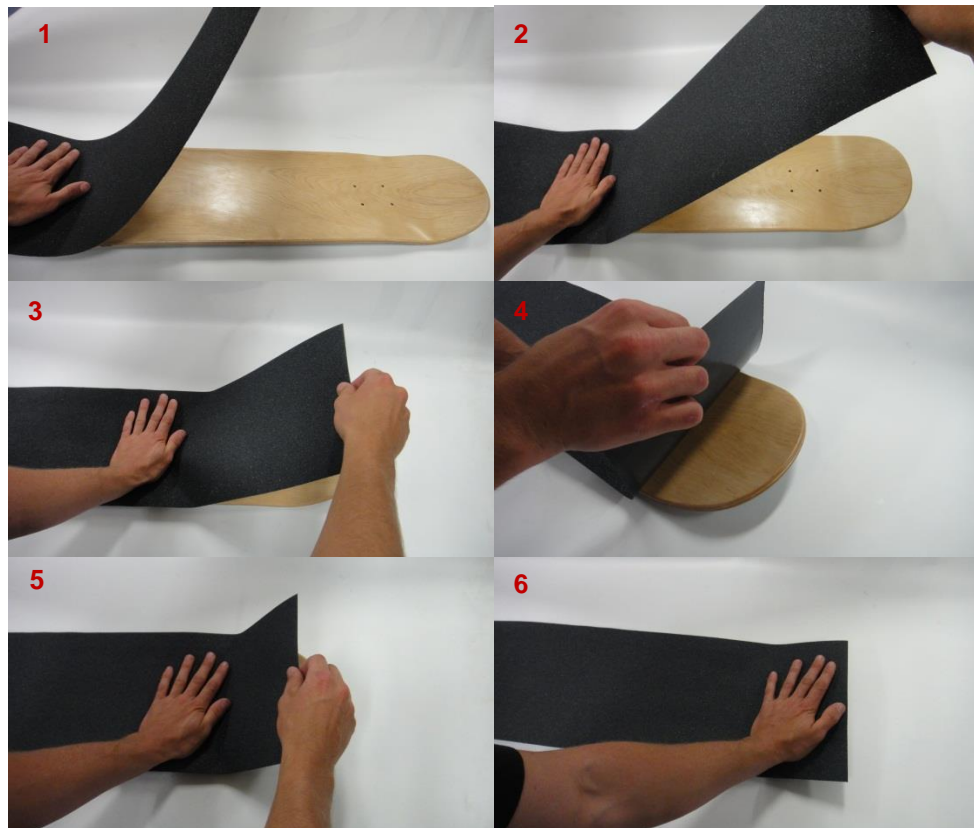
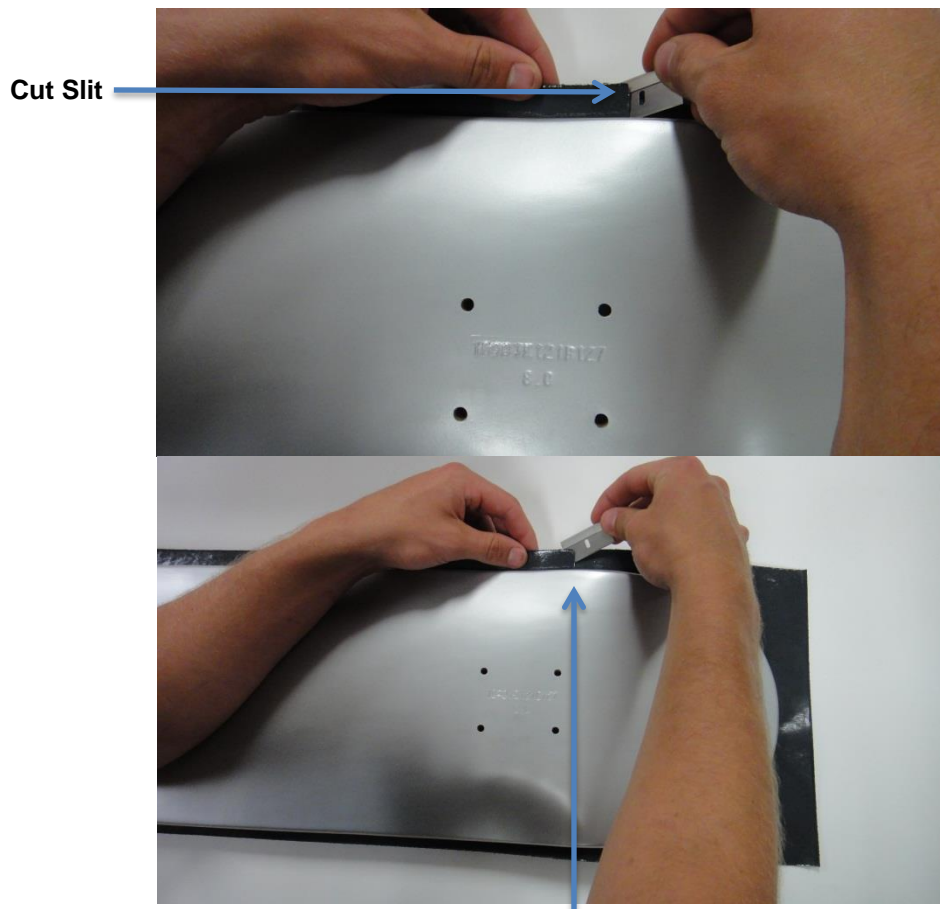


Figure 2

7. Flip the deck over so that the grip tape faces downward.



8. Using the razor blade, cut a slit into the excess grip tape so that the slit is aligned with a mounting hole.



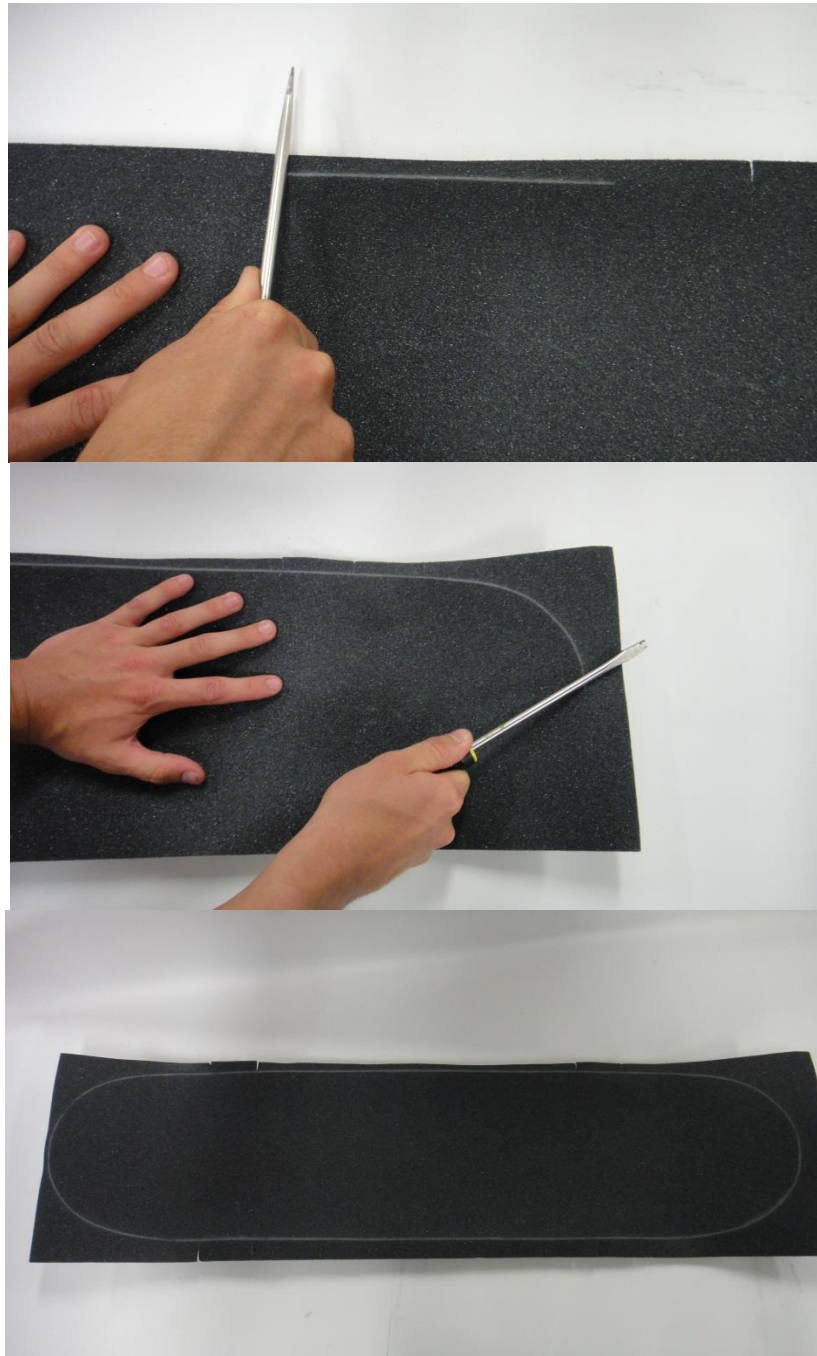
Aligned with a Mounting Hole

9. Repeat step 8 for all mounting holes.

10. Flip the deck over so that the grip tape faces upward.

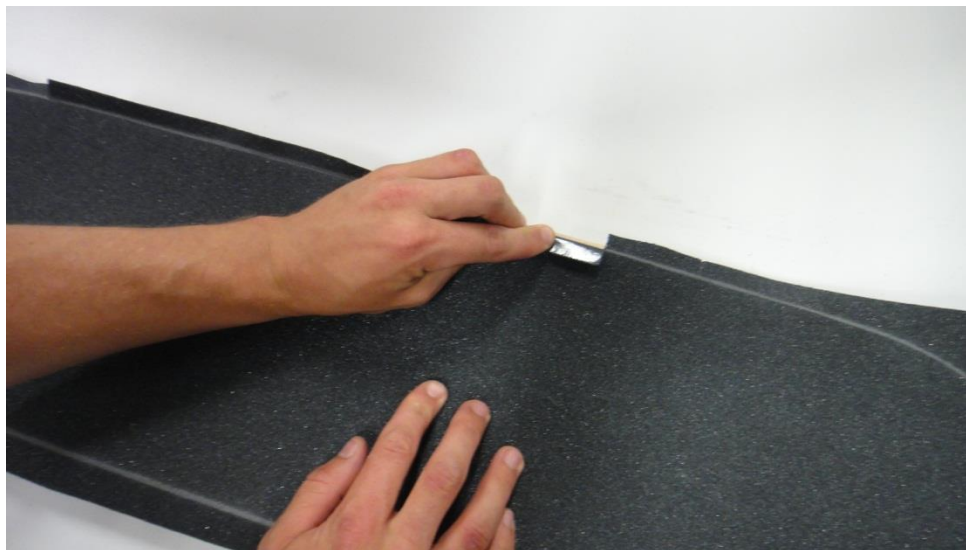
11. Rub down the edges of the deck using the shaft of the flat head screwdriver.

NOTE: Rub the edges very hard, and at an angle, until the grain of the grip tape is worn off and the grip tape is white along the edges.

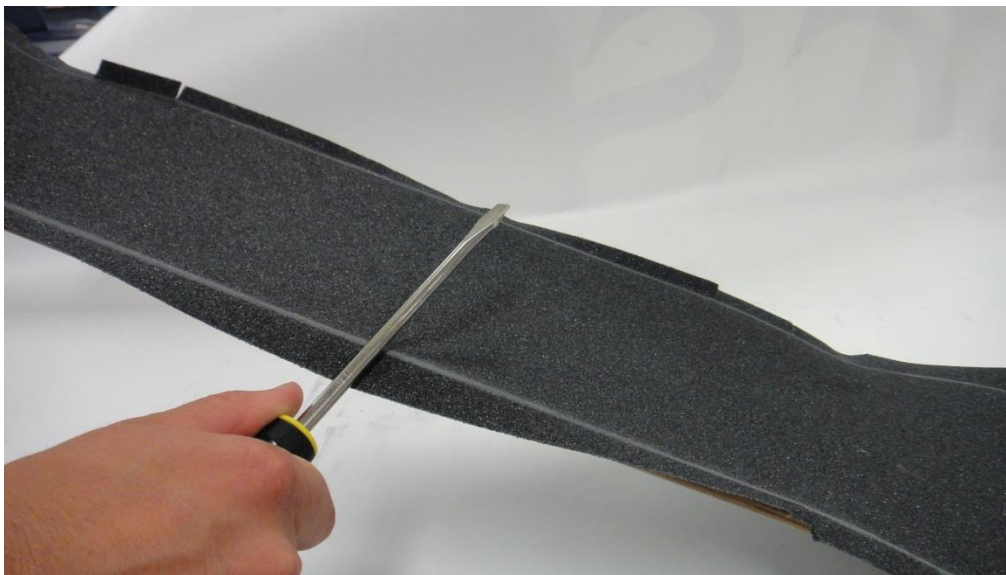


12. Bend the excess grip tape back and forth across the white line that was formed along the rails.

NOTE: You are trying to make the white line even weaker, so that it will cut smooth and easy. Bend the grip tape along the entire perimeter of the deck.



13. Rub the edges of the deck an additional time using the screwdriver shaft.



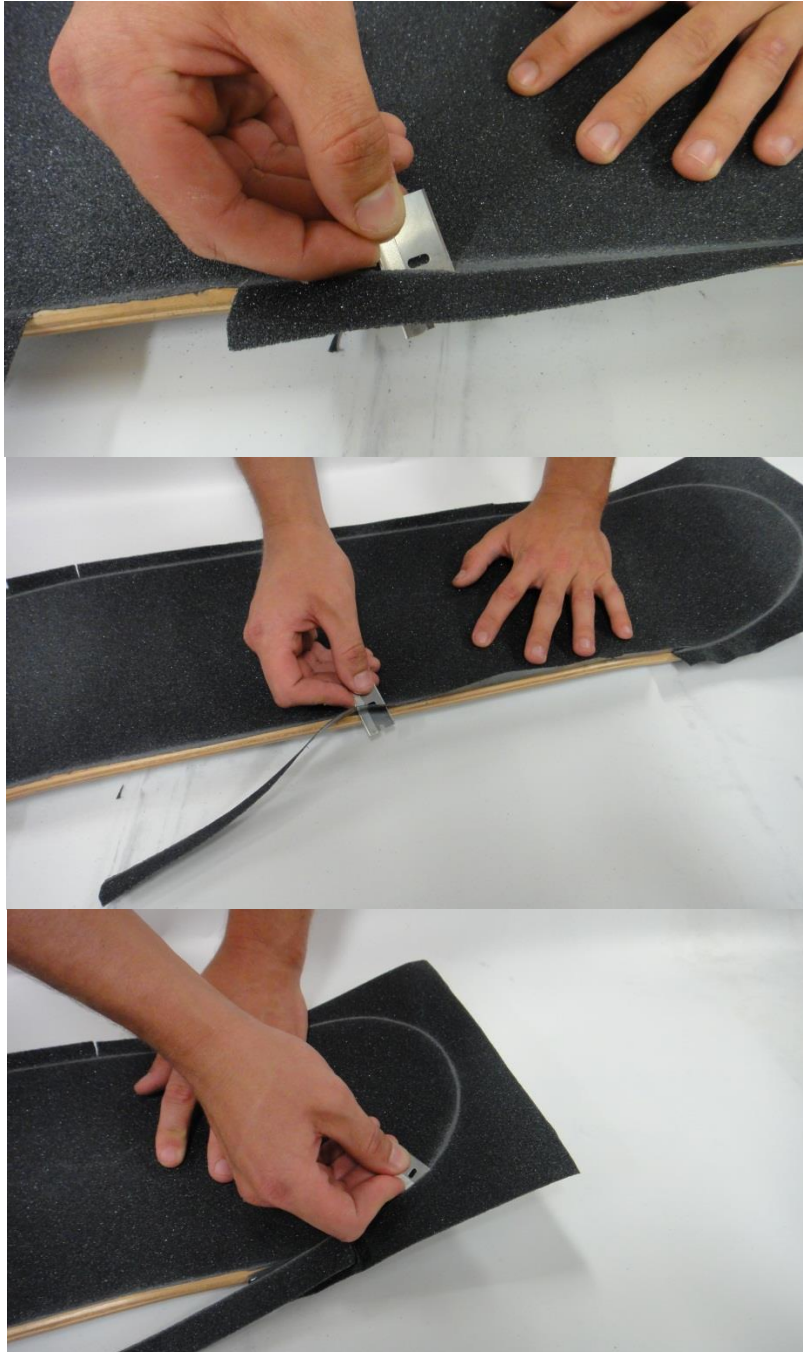
14. Bend all the excess grip tape at the white line so that it sticks straight into the air.



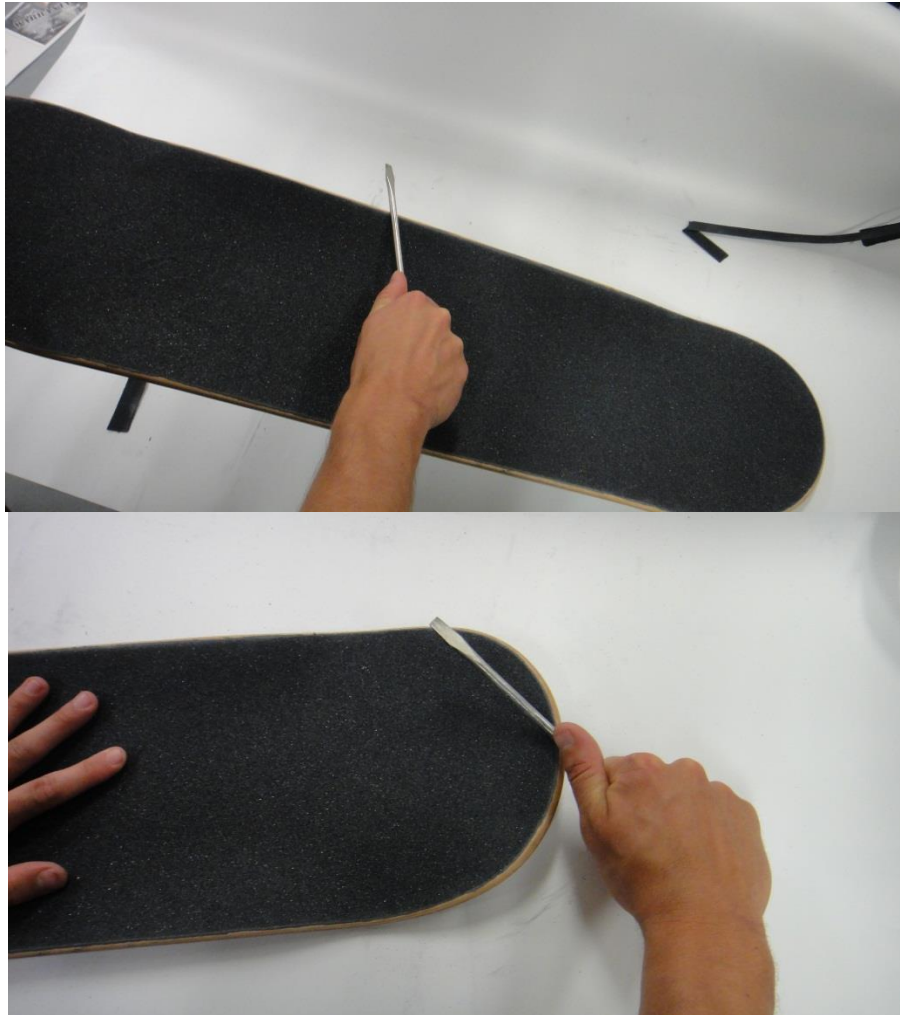
15. Use the razor blade or box cutter to cut along the white line that you just wore into the grip tape.

WARNING: Razor blades are extremely sharp and should be handled with care. Always cut away from your body and keep hands and fingers clear.

NOTE: Make your cuts long and smooth so the edges don't look choppy.

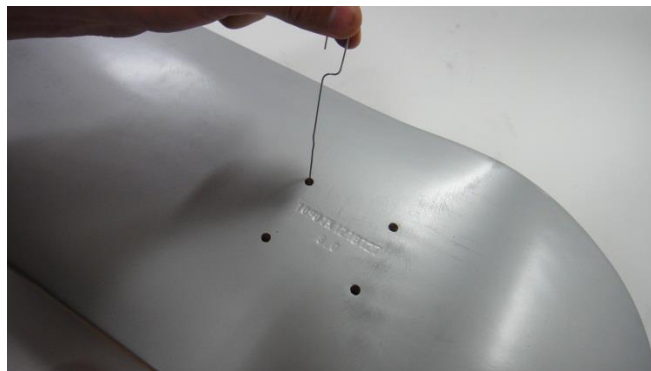


16. Rub down the rail edges again with the screwdriver shaft.



17. Flip the deck over so that the grip tape is facing downward.

18. Use a paperclip or toothpick to poke a hole into the grip tape through a mounting hole.



19. Repeat step 18 for the remaining mounting holes.
20. Flip the deck over so that the grip tape is facing upwards.
21. Poke the Allen wrench component of the skate tool or the flat head screwdriver through the previously made hole on the top side of the grip tape.

NOTE: The purpose of this step is to increase the size of the holes so that the mounting hardware can go through the grip tape with ease.



22. Repeat step 21 for all 8 holes in the grip tape.

Mounting the Trucks to the Deck

This section shows you how to mount your trucks to your skateboard deck. It lists and illustrates all the materials and equipment necessary to perform this task. It also explains the correct techniques and skills involved with this task.

Materials and Equipment

- Hardware:
 - 8 screws
 - 8 nuts
- Skate Deck
- Set of Trucks (2)
- Phillips Head Screwdriver
- Socket Wrench

Figures 1, 2, and 3 illustrate the parts needed to attach the trucks to the deck of the skateboard:



Figure 1: Hardware



Figure 2: Skate Deck

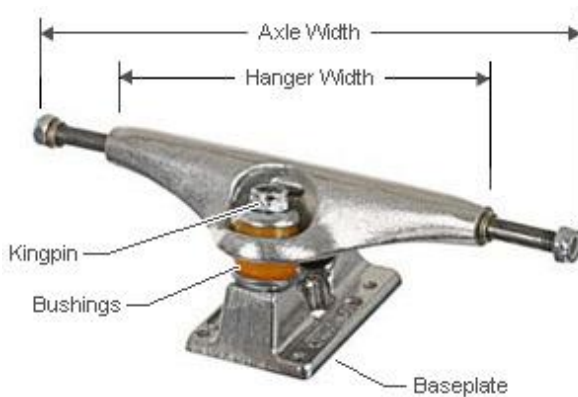


Figure 3: Truck

Mounting the Trucks

1. Remove the hardware from the packaging.
2. Insert a screw through one of the holes from the topside of the deck.
3. Repeat step 2 for the remaining holes so that there are four screws inserted in the shape of a square.

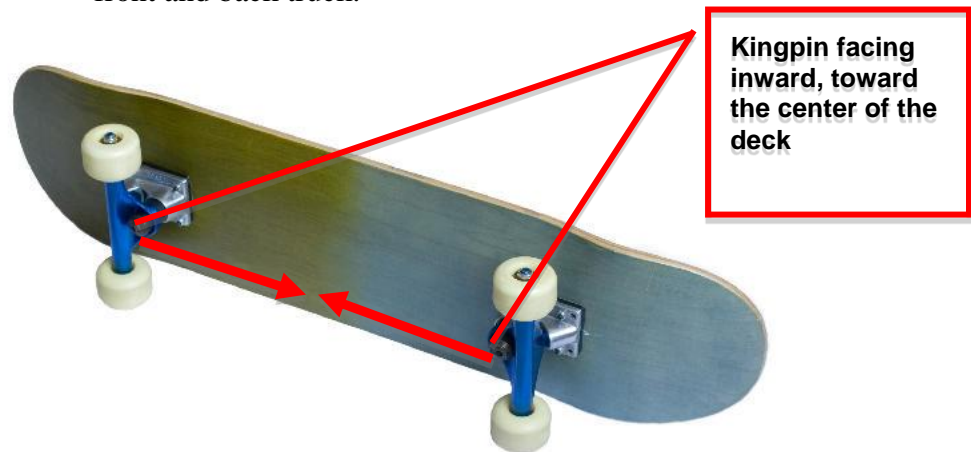


4. Align the screws that are protruding from the deck with the holes in the base plate of the truck.



5. Place the truck over the screws so that the screws protrude through the base plate.

NOTE: The kingpin of the truck must always face inwards for both the front and back truck.



6. Use your fingers to put a nut on the end of a screw.



7. Turn the nut clockwise until you can't anymore.
8. Repeat steps 7 and 8 for the remainder of the screws.
9. Place the socket wrench around the nut that is on the screw (See Figure 4A).
10. Insert the Phillips screwdriver into the screw head (See Figure 4B).

11. Keep the screwdriver in place so the screw can't rotate.

12. Turn the socket wrench clockwise to further tighten all the nuts until you can't anymore (See Figure 4C).

NOTE: The nuts must be tightened in a diagonal order. After tightening one nut, move to the screw in the opposite diagonal corner and proceed.

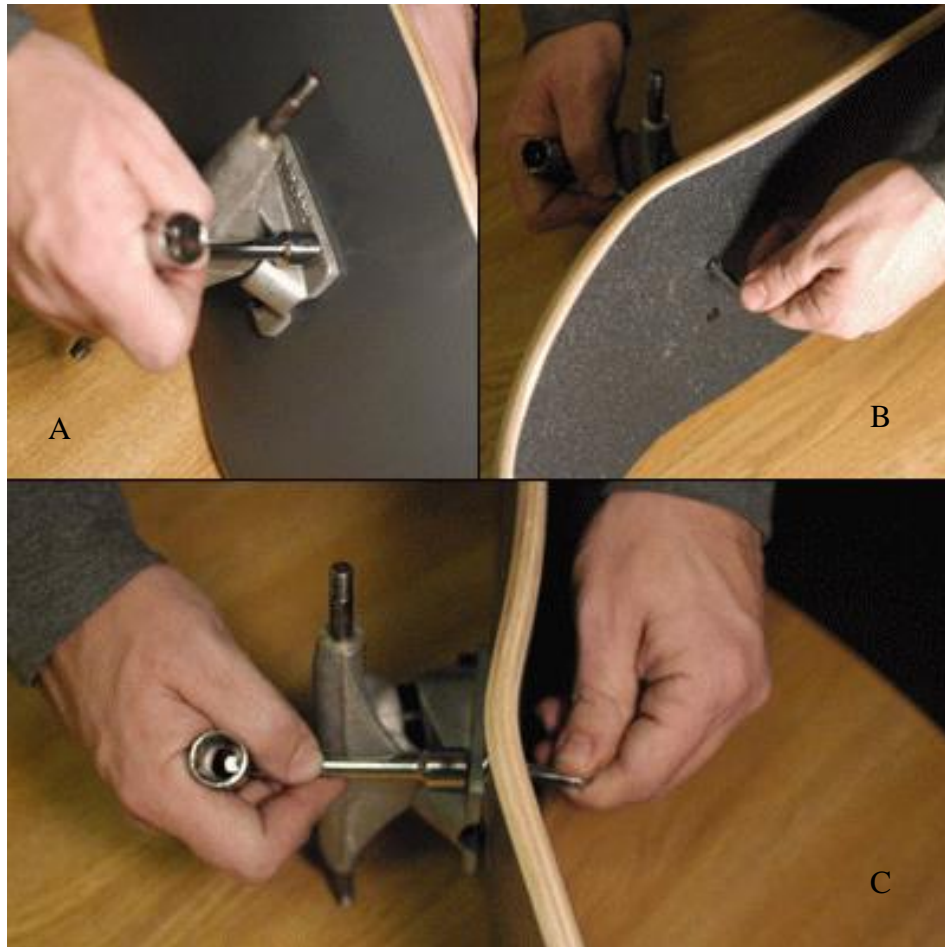


Figure 4 (A-C)

13. Repeat steps 1 through 12 for the other truck.

Installing the Bearings into the Wheels

This section explains how you install your bearings into your wheels. It lists and illustrates all the materials and equipment necessary to perform this task. It also explains the correct techniques and skills involved with this task.

Materials and Equipment

- 2 Trucks
- 8 Bearings
- 4 Wheels
- 4 Axle Nuts
- 8 Washers
- ½ in. Socket Wrench

Figures 1 through 3 illustrate the parts of the skateboard's trucks, wheels, and bearings. These terms are necessary for completing this task:



Figure 1: Truck

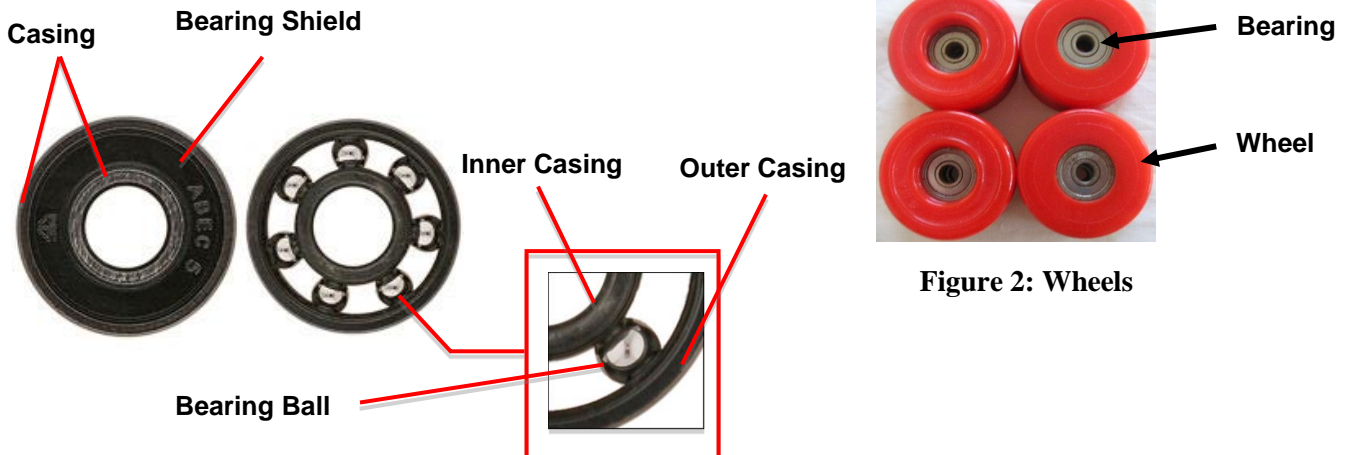


Figure 2: Wheels

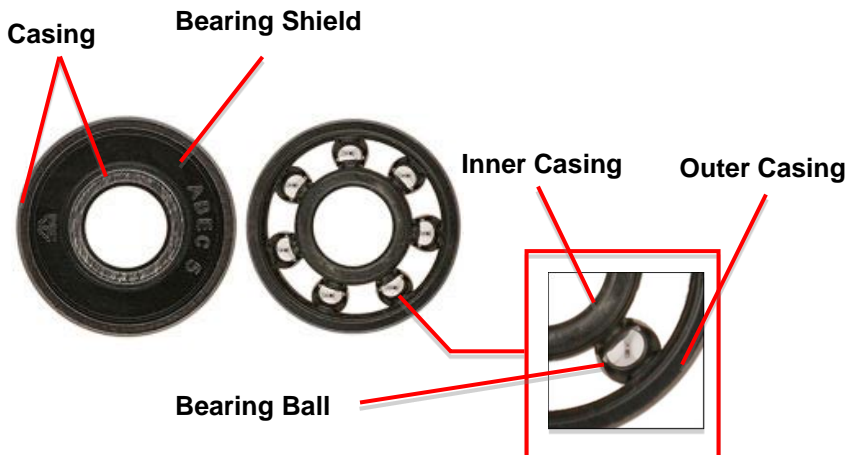


Figure 3: Bearing

Installing the Bearings

1. Remove the wheels and the bearings from their packaging.
2. Place the bearing into the wheel.

NOTE: The bearing won't fit all the way into the wheel; the fit will be too tight.

3. Apply pressure on the outside metal rim of the bearing.

WARNING: Do not press on the shield or the center of the bearing.

4. Press the bearing down into the hole.

NOTE: You should be able to press the bearing down to where it is flat with the edge of the wheel.



5. Repeat steps 2 through 4 for the other side of the wheel.
6. Put the wheel on one of the axles of the truck.

NOTE: For washers, put one on the truck axle before putting the wheel on, and put one on after the wheel has been slid into place.

7. Fit an axle nut on the end of the axle, outside of the wheel.



8. Tighten the nut with a socket wrench by turning clockwise.

WARNING: Tighten nut slowly, if you tighten too fast or too hard you can damage the bearing.

NOTE: Do not tighten the nut too far. Tighten it just enough so that it stops turning.



9. Loosen the nut slightly so that there is a small space between the wheel and the truck.

10. Jiggle the wheel back and forth on the trucks so that it moves a small amount.

NOTE: The wheel should make a soft “clack” sound when moving the wheel back and forth. This space allows the wheel to spin faster and more freely.



11. Repeat steps 2 through 10 for the remaining wheels.

Attaching the Wheels to the Trucks

This section shows you how to attach your wheels to your trucks. It lists and illustrates all the materials and equipment necessary to perform this task. It also explains the correct techniques and skills involved with this task.

Materials and Equipment

- 2 Trucks
- 4 Axle Nuts
- 8 Washers
- 4 Wheels (bearings already installed)
- ½ in. Socket Wrench

Figures 1 and 2 illustrate the parts of the skateboard's wheels and trucks. These terms are necessary for completing this task:



Figure 1: Truck

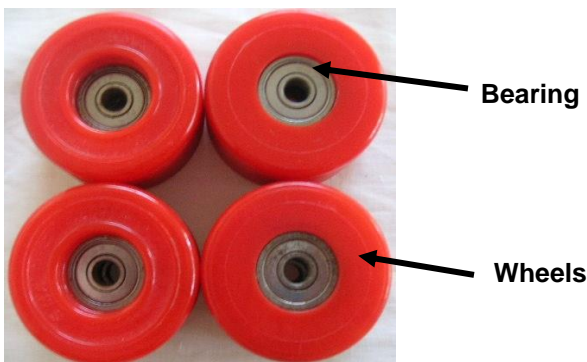


Figure 2: Wheels

Attaching the Wheels

1. Choose one of the axles on one of the trucks to begin.

NOTE: There are two trucks per skateboard.



2. Unscrew the axle nut from the axle by turning it to the left (counterclockwise) using the ½ in. socket wrench.

WARNING: Do not remove or misplace the washers that lay on the axle. They are needed to complete 'Step 3'.



3. Remove the first washer (outside washer), but leave the second washer (inside washer) on the axle.

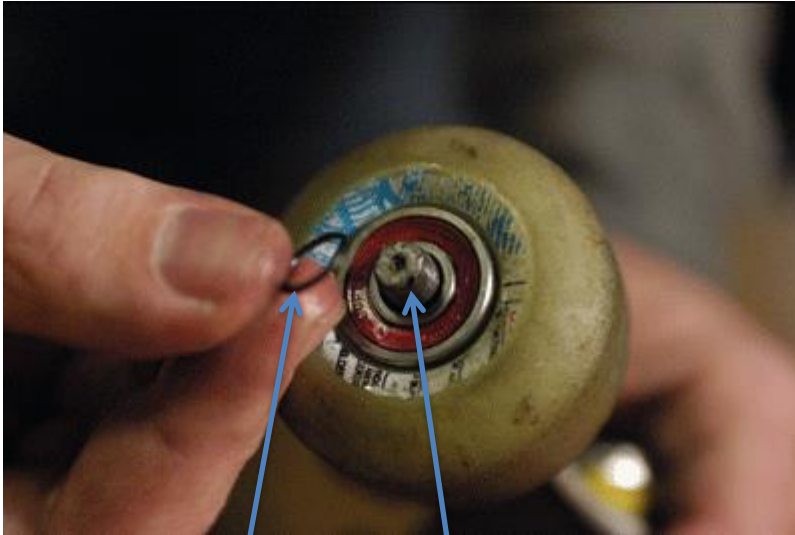


4. Place the wheel on the axle so that the axle fits through bearings.

NOTE: The remaining part of the axle will stick out the other side of the wheel through the outer bearing.



5. Place the washer back onto the axle on the outside of the wheel.



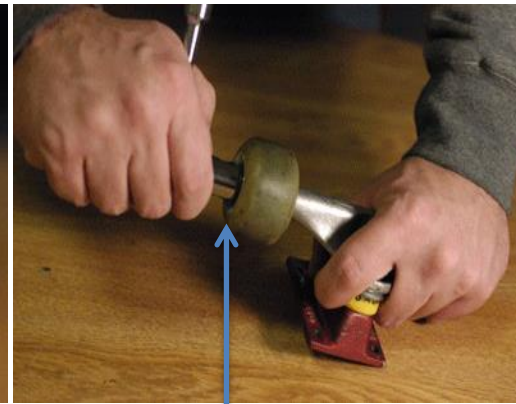
Washer

Place washer here

6. Screw the axle nut back onto the axle on the outside of the wheel using the ½ in. socket wrench.



**Axle Nut
(Outside Wheel)**



**Screw Back On
(Turn Right or Clockwise)**

7. Repeat steps 1 through 6 for the remaining 3 axles.

Finalizing the Skateboard

Before the completed skateboard can be used, you must test and adjust each component of the skateboard.

Testing after Completion

To test your completed skateboard you must first carry out 5 steps:

1. Set skateboard in a riding position on the ground (preferably carpet).
2. Stand on the top of the deck and transfer your weight between your toes and heels.
NOTE: This will flex the bushings of the trucks and expose any loose screws on the skateboard.
3. Complete this task for about ten “weight transfers” and then get off.
4. Turn the skateboard over so that the wheels face upward.
5. Using one hand, grab a truck and twist left and right.
6. Repeat step 5 for the other truck.

NOTE: There should not be movement between the baseplate of the trucks and the bottom of the deck. If movement occurs, you must adjust the skateboard.

Adjusting after Completion

Once you have tested your complete skateboard and found movement between the baseplate and deck, you must adjust the hardware using the following 3 steps:

1. Start by loosening each screw of the loose truck.
2. Retighten in a diagonal order so that each screw is tightly secured.
3. Repeat testing and adjusting as needed until there is no movement between the baseplate of the truck and the bottom of the deck.

Frequently Asked Questions

This section answers some frequently asked question about skateboards and how to maintain your parts.

FAQs

Question: How Do I Store a Skateboard, or Skateboard Decks?

Answer: First, you want to make sure that your skateboards and decks are kept dry. Don't store them outside during wet weather, even if they are under a tarp, or on an open porch. The wet air will, over time, warp the board. Remember that skateboard decks are basically wood, and wood gets damaged when left out in the elements too long.

Question: Why is it better to shop at skateboard shops?

Answer: Customer service and product knowledge are important. At a locally owned skateboard shop, you should get personal and invested customer service. Just to open your own skateboard shop is a lot of work, and it takes someone who really loves skateboarding to do it. The second reason for shopping at your local skateboard shop is better selection. Not just more selection, but better. Most chain stores won't carry high end equipment, and they won't have as good of a selection. Also, your local skate shop will carry things that chain shops just can't, like decks made locally, and gear made by smaller companies.

Question: Should I skateboard in the rain?

Answer: Skating in the rain is not a good idea. The wood of your deck will soak up water and warp, and it is also not good to get the bearings wet.

Question: What happens if my skateboard gets wet?

Answer: Getting your skateboard wet is probably inevitable, but if it gets wet a lot, it could crack. In any event, getting your board wet will take away from the strength or the pop you get out of it, which will cause a definite decrease in the quality of your tricks and moves.

Question: How do I determine my skateboard size?

Answer: Deck width and length are determined by personal preference. It also is determined by the type of skating. Wider decks (over 8" wide) are normally used for vert/ramp skating. Narrower decks (7.5" - 8.0") tend to be used for street skating.

Question: How do I adjust the trucks on my skateboard?

Answer: Before you skate check your newly assembled deck for anything you might have missed. Check the tightness of the truck mounting hardware, the tightness the truck axle nuts and the kingpins. The kingpins are the large nuts used to adjust the tightness of your truck turning ability. Remember everyone skates their trucks a little differently; the tightness of your kingpins is personal preference.

Question: How do I remove grip tape from my skateboard?

Answer: First, you want to remove your old grip tape. It's pretty tricky and takes a bit of patience. You'll need to use a blow dryer to heat up your grip tape. The heat helps soften the grip tape adhesive. Work a corner of the grip tape up once it has been heated up. Keep applying heat to the top of the board with the blow dryer while pulling up the grip tape. Once the old grip tape is removed you can apply a sheet of new grip tape.

Question: How can I customize a skateboard?

Answer: If you are shopping for a skateboard and would like the benefits of building your own, but the ease of taking position of a complete, try this. Many manufacturers will let you customize a skateboard by letting you choose the components you want.

Question: How do you tune your skateboard?

Answer: Tuning your skateboard will greatly help you control the kind of ride you want. There's no right or wrong way to do this. It's all personal preference, and a little experimentation will help you learn what's best for you. Tuning your board involves tightening or loosening the various parts. All trucks use either a 1/2" socket head and a Phillips screwdriver or an Allen wrench. You might already have these common tools in the garage. If not, they are easy to find and inexpensive too.

Question: How do I take care of skateboard bearings?

Answer: The inside of your bearings contain small steel balls that will cause friction when not clean. So every once in a while, your skateboard bearings will require cleaning to free them from the dust and dirt that builds up both on the inside and out. This will keep your skateboard rolling fast and you'll find you won't have to push as hard, making your time on your skateboard much more enjoyable.

Question: Is there a way to fix a chipped deck?

Answer: If you take a hard fall, or in the words of the game, if you take a harsh bail, and your deck chips, the sooner you take care of it the better. Use an electric sander to sand down the chip until it's gone or close to gone. If left unchecked, the chip will get worse, and you'll find yourself needing a new deck sooner than you anticipated.

Question: When do I have to replace my skateboard wheels?

Answer: Uneven wear in your skateboard wheels can be a cause of performance loss, so check your wheels regularly. Wheels that have developed flat spots or have become smaller than the other wheels can decrease your speed. Polyurethane, over time will begin to discolor too, but that doesn't seem to affect their performance in the least.

Question: How do you maintain skateboard wheels?

Answer: If you've been riding on your wheels for some time, take a good look at them. You might find that one side has become more worn than the others. This is a result of regular wear and tear. Just rotate your wheels. The more often you rotate, the longer they will last. It's the same principle as for a car.

Question: What is the difference between shielded and sealed bearings?

Answer: Lots of people get confused over the difference between sealed bearings and shielded bearings. All skateboard bearings have shields on at least one side. Some are double-shielded. Sealed bearings have a shield made of metal and a coating over them. The seal protects the bearings from dirt, moisture and road salt. While shielded bearings have the benefit of producing no friction, there is a tiny amount of open space where dirt and moisture can enter. The choice is yours.