TUNING UP YOUR ROLLING STOCK

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Couplers

Kadee vs. Horn hooks vs. Kadee look alikes?

Hornbooks;

Look horrible, hard to couple and uncouple.

Kadee look alikes;

Some look pretty good. In testing done by several modelers and myself found couples that rely on plastic components to provide spring action may develop memory when stored under load. I have had plastic couplers break under load. I prefer Kadee Metal couplers.

Inspection

Coupler height must be consistent will all other rolling stock. Check with Kadee Height Gauge. If coupler is low you have several choices. First insure Draft gearbox is mounted correctly, if not adjust. Replace coupler with offset shank coupler. Add washers between truck and body bolster. If coupler is high you can lower wheel set by filing car bolster. You can shim down the draft gear. Use an offset shank coupler. I will use the method that looks more prototypical.

Trip Pin (Air hose) must be adjusted to the proper height. If too low it will hang up on crossing, turnouts and magnets. If it is to high you will not have reliable magnetic uncoupling. Check with a Kadee gauge and if correction is needed bend the wire with trip pin pliers. Be careful not to use too much force, which can cause you to slip damaging the car.

Knuckle spring. If you use a coupler that has a knuckle spring insure that it is in place. If it is missing replace with a new one. To install a new coupler on Kadee couplers you can use a coupler spring tool or an exacto knife with a number 11 blade. The coupler pick is much easier to use and you will not loose as many springs. If you are going to use a number 11 blade, insert the tip of the blade between two turns of the spring near the end where they are tighter. Place the long end of the spring over the post on the knuckle then slide the short end over the other post, carefully hold the spring in place with your fingernail as you withdraw the knife blade. It is actually harder then it seems, buy a spring pick.

If you use a Kadee copy and the knuckle is stuck open, discard and replace the coupler.

Mounting

Don't rely on friction to hold your coupler in place. Install with a screw. Drill and tap with a 2-56 tap.

Trucks

Sprung or one piece

In my personal experience I found that if the trucks are mounted correctly, either type of truck will work fine. There are some older sprung trucks that are poorly made and tend to stick when flexed.

Inspection

Sprung trucks; Insure free movement of side frames without binding. Burnish any surfaces that are causing binding. All springs are present and in the proper location. If any are missing you will have to find spares that match the size and stiffness. Kadee and Precision Scale sell truck springs, or you can cannibalize other truck sets.

All trucks; Insure contact surface to top of truck is smooth. If there is any flashing, trim and then burnish the surface. Use Truck tuner to burnish it axle-bearing cone.

Mounting; Trucks that are to loose will cause cars to wobble or lean. There are two methods to correct this. The most common method is to tighten one mounting screw so that wheel set can rotate back and forth only. Tighten the other truck so it can rotate freely and rock from side to side.

I prefer installing truck gimbal washers. Then adjust one truck to rock front and back, one truck to rock side to side.

When adjusting Athearn rolling stock you will have to shorten the protrusion that the truck slides over to allow you to tighter the screw properly.

Wheels

Metal vs. Plastic

Metal wheels;

- Will add weight lowering center of gravity,
- Will stay cleaner,
- Most roll better,
- Most have RP25 contour,
- Add additional cost to model

Plastic Wheels;

Provided in most kits

Inspection

Use NMRA gauge to check wheel spacing, flange depth and tire width. If wheel spacing is incorrect adjust by twisting wheel back and forth while forcing the wheel to move in the direction needed. If the flange is too deep discard wheel set. If tread is too narrow and you are not modeling to proto 87 standards, discard and replace wheel set.

Roll car back and forth on test track feeling for any wobble which may show an out of round wheel. If found remove wheel sets from truck and test by rolling on test track feeling for the wobble. Discard and replace bad wheel set.

Weight

The NMRA standard for car weights has been around for a long time. Some think that it adds to much weight to your rolling stock making your train to heavy. Most model locomotives will pull more NMRA weighted cars then the prototype can pull for the same locomotive.

The weight standard has three benefits. The heavier the car the more forgiving it is of poor track work. If this is why you add weight to your cars you need to do more work on your track, not add weight to your cars.

A train made up of cars with wide differences in weight has a tendency to derail on curves. This is true for the prototype also. The railroad pays attention to the placement of light cars as heavier cars may pull the light ones over in a curve. To avoid this problem you need to balance the weight of the cars in relation to each other and the cars length. Here is where the standard is an excellent tool. For HO a car should weigh 1 ounce plus 1/2 ounce for each inch of length. This will balance the weight of all of your rolling stock. If you don't want your cars that heavy, modify the standard but still use a standard.

If everyone follows the same standard you will be able to interchange your cars with your friends model railroads and you will not experience the problem of balancing the weight of cars in a train.

Tools

Truck Tuner (Micro-Mark)	Screw Drivers	Kadee Coupler Trip Pin pliers
Bulls Eye Drill and Tap Jigs (A-Line)	#12 & 18 knifes	Fine tweezers
ACC thin	NMRA Gauge	Test track
Kadee coupler gauge	Scale	Pin Vise
Lead	OptiVisor with lights	Foam Cradle
Parts tray	Sprue Cutters	Kadee spring tool
Glue Brush	Glue cup	Calipers