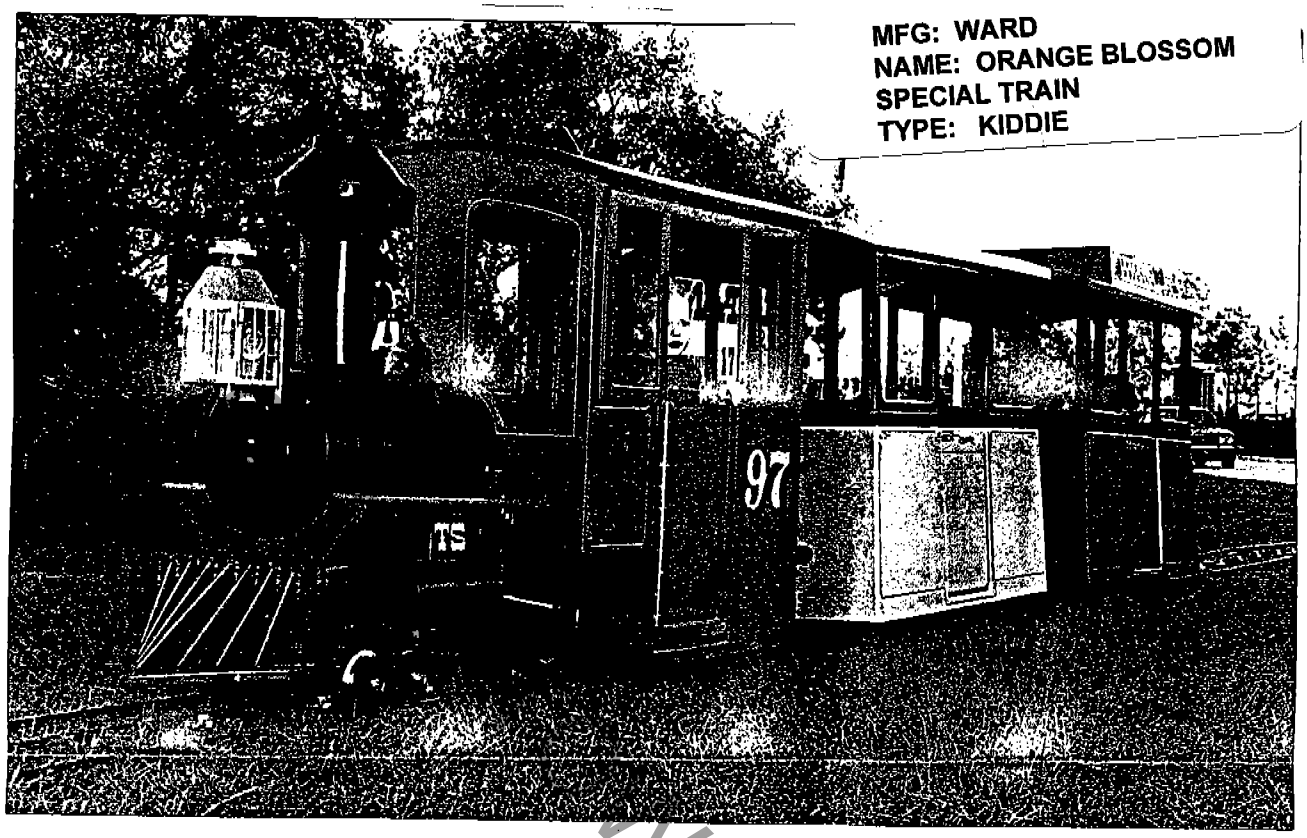
Orange Blossom Special

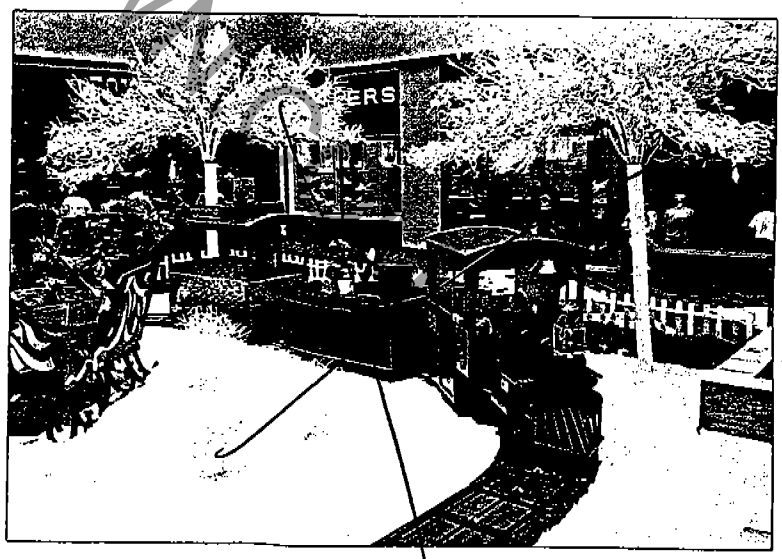


MFG: WARD
NAME: ORANGE BLOSSOM SPECIAL TRAIN
TYPE: KIDDIE

Great for any seasonal promotion or everyday attraction . . . wherever you set it up. The bright colored model cars create attention and excitement for every youngster or the young-at-heart. Write or call for detailed information concerning how you can become an operator of this profitable business. This ride is designed for indoor mall operation, it can also be used outdoors.

SPECIFICATIONS

- Transformer and switch panel
- 150 feet of prefabricated track
- Heavy gauge steel frames
- Color impregnated fiberglass bodies
- Brass bell on each engine
- Brass Head light
- 24 volt D.C. ballbearing-equipped motors
- 16" gauge track allows some adults to ride along with the kids.
- Custom Graphics and Lettering



Open Top Center Car Shown in Mall Operation

the WARD Co.

17 SUNSHINE BLVD. • ORMOND BEACH, FLORIDA 32074 • TELEPHONE (904) 677-4575

WARD COMPANY

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ORANGE BLOSSOM SPECIAL TRAIN SET-UP, OPERATING & MAINTENANCE GUIDE

Site selection in a mall is critical to operating success. If it is Christmas time, try to get near Santa Claus; at Easter, get near the Easter Bunny. The area must be flat in both directions, as the Orange Blossom Special in standard form is limited to less than one foot of climb in 100 feet of travel. Side to side (along length of track ties) must remain level.

The area must be free of cross traffic.

Since the radius dimension of our curved section is 5′ 6″ (each curve section completes ¼ of a circle) and we require 2′ 6″ from the center of the rail to the fence line for clearance, you need a minimum of 16′ 0″ from fence to fence (5′ 6″ + 5′ 6″ + 2′ 6″ + 2′ 6″) for the width of your ride area. This width dimension may be increased by the addition of straight sections of track between the ends of the doubled (for a 180° section) curve sections that will then form the ends of a standard oval section. Remember that whatever length of track is used at one end, the exact same length must be used at the opposite end, and the same applies for side to side; if you use four 10′ lengths and one 5′ length on one side, then you must use four 10′ lengths and one 5′ length on the other side.

Our standard lengths of straights are 10′ 0″ or 5′ 0″; custom lengths are available on 3 to 4 week notice from us, or you can have a local welding shop take our standard sections and cut them down to the desired special lengths. Also be sure the welding shop handles the center rail *very carefully* as it is insulated (electrically) away from the ties and *must* remain this way.

If any center rail insulators are broken during assembly, shipping, disassembly, handling, or storage, the train *will not* operate. A faulty center rail insulator will show up on a voltmeter test (set on OHM SR × 100) as a dead short between the center rail and either outside rail. The short must be located and repaired before the train will operate. The best time to check for faulty center rail insulators is just before the track sections are bolted together—one section at a time. If a short is suspected (or proven) after all sections are bolted together, then you must disconnect all center rail bolts and place a piece of cardboard (or similar insulator) between the overlapped center rails and check with a voltmeter or circuit light until you find the shorted section. Once you find the shorted section, inspect each insulator to find the one that is broken and/or shows signs of arcing electricity.

It is *very important* that the bolted joints are *properly connected!* The tops of the rails need to be at the exact same height. To accomplish this, sometimes it will require the use of two pairs of Vice-grip pliers. Align the tops with the pliers and hold the rails with the Vice-grips *while* you are tightening the bolts and nuts in place. Tighten the nuts enough to align the inside faces of the rail and to make sure they will stay tight while the train is operating. If the bolt breaks or is left out at the hole nearest the joint in the outside rail, and the two inside rail fences are not aligned, it can cause a derailment if a wheel flange would happen to hit the end of I-rail. A hardly noticeable, 30-thousandth inch difference here can cause trouble. The tops of the center rails need to be aligned carefully also to keep the current pick-up bar from "catching" on a splice joint and breaking its insulator or spring assembly.

If the ride is to be used inside of a shopping mall, some floor covering needs to be installed between the track and any hard floor surface to cut down operating noise and also protect the floor surface. Rubber mat can be used to protect

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the floor surface, but it doesn't do a very good job of noise abatement. We recommend a good grade of indoor/outdoor carpet. The carpet should be checked to make sure it is fire-retardant, as there will be a few sparks dropping on it occassionally from the normal operation of the train. The carpet and track may try to "walk" a little during normal operation. To prevent this, cut about a dozen pieces of double-faced carpet tape about 4" each and place them between the carpet and the floor, remembering to step solidly on the spot where each is located so it will stick.

The station track is made with a joint in the center rail. This section must be located where you want the train to stop for loading and unloading, as well as within a few feet of the transformer. The wiring from the transformer is color-coded and should be connected to the station track as follows: the large positive 24 volt D.C. wire is colored green and white and should be connected to the center rail of the main track area; the large negative 24 volt D.C. wire is colored black and should be connected to the tie that has a hole in it for this purpose. The hole is in the top of the tie, and in the end outside of one of the outside rails, near the area of the center rail split. The red wire should be attached to the center rail that is usually about 8'-10' long. This short section of center rail is powered by the switch marked "Station Switch" and is where the engine will stop if the station switch is turned off. The rest of the track is powered by the switch marked "Main Switch." The train may be stopped at any point on the track by turning the main switch off.

The measurement between the inside faces of the outside rails is supposed to be 16". This is the track "gauge"; if this dimension is less than 16" it is possible for the wheel assemblies (or "trucks") to "climb" the rails and derail. If this dimension is more than 16⅛" or 16¼" the wheel on one side could "drop" and derail. These measurements should be checked on original set-up and again if a problem develops during operation. If the track gauge checks O.K. and there is still a problem in this area, you should check the dimension *between* wheel flange faces that run against the track; these should be 15¾". See sketch on opposite page.

Also check for excessive wear or "sharpening" of the wheel flanges caused by improper track lubrication. If the wheel flanges become worn enough, they can cause derailment. When installing new wheels, note that the drive wheels are keyed into the shafts with a ⅛" × ½" Woodruff key (Dorman part No. 595-057, available at most auto parts stores). Wheels with keyways may be used on "non-drive" shafts. Excessive wheel wear is usually caused by improper or infrequent track lubrication. This can be checked by walking around the track looking for wheel and track "grindings." If you find them, chances are your operator is not lubricating the track properly. We recommend the use of a clear stick lubricant called "Door Ease." It is a T.R.W. product that is available at most auto parts stores. Every morning your operator should apply this lubricant to *the inside faces of the outside rails, only at the curve section,* and *lightly* enough so excess amounts will *not* get squeezed over onto the top rails. If this lubricant gets onto the tops of the rails, it can cause the train to slide through the station or spin its wheels on takeoff. If this happens, you need to wash the tops of the rails and the horizontal areas of the drive wheels with rubbing alcohol and rags until the problem clears up. The straight sections or the center rails do *not* need to be lubricated.

The electrical contact plate on the pick-up assembly is tool steel, heat treated for hardness, so it is much harder than the center rail. We have had operators report that this pick-up plate can accumulate filings off of the center rail and deposit these filings into the gaps cut to form the station section, causing an electrical circuit to be continuous at the station track, and making it appear that the station track switch is not working. If this happens, you will need to clean the filings out of the gaps. Gaps are sometimes made by putting insulators between center rails at laps, and using nylon bolts.

If you are checking the track after assembly, with the train on the track, you will need to place a piece of cardboard between the center rail and the current pick-up plate. Don't forget to remove the cardboard when you are ready for the train to go.

The current pick-up assembly (bolted to the bottom of one of the gearboxes) consists of a 10 ga. steel bracket, a brass plated spring assembly, a rectangular Lexan insulator, and a rectangular tool steel pick-up plate. There is a bendable tab on the spring assembly that allows adjustment for the amount of pressure that the pick-up plate applies to the center rail of the track. A moderate amount of pressure is required to transmit current to the motors (and headlight). If the tab is not properly bent, or has been bent wrong accidently (during set-up or storage), the pick-up plate may be slightly off of the center rail and the train wil not go—even though everything looks O.K. and everything else checks out right. If this happens, disconnect the drawbar between the engine and the coal car, and have someone else hold the engine over at about a 45° angle with the pick-up assembly off of the center rail. Carefully hold the pick-up plate and Lexan insulator and pull them a little (¼" to ½") farther away from the bottom of the gearbox. This will bend the tab on the spring assembly and allow more pressure to be applied between the plate and center rail.

The roller chain from the gearbox to the two drive axles is a standard #41 roller chain. To adjust the tension on this chain you must either add or subtract washers or shims between the gearbox and the underside of the drivetruck top plate. Adding shims will loosen the chain; subtracting shims will tighten the chain. All three sprockets are 13 T #41 with 3/16" keyway and set screw. Axle sprocket keys are 3/16 × ¾ Woodruff, Doman part No. 595-061.

The most critical pieces in keeping the correct alignment of the truck assemblies are the setscrews that hold the wheel bearings on the axles in the proper location. For that reason, on final assembly at the factory (after checking to see that the dimension from the side plate to the wheel is the same on each side), we set these setscrews (2 per bearing) very tight, using LocTite to be sure the setscrew stays tight. You must remove these setscrews to remove the wheel bearing. If the LocTite causes you trouble, a little heat will help. Anytime you replace a wheel bearing, or if you notice more distance on one side (between the wheel and side plate) than the other during operation, set the distances the same. Set all setscrews very tight, and use LocTite. We also use LocTite on the setscrews that hold the sprockets in place.

The rotating four-wheel truck assemblies are held in place by a single Grade 8 fine threaded bolt with an elastic lock nut. The tightening of this nut is critical to the proper rotation of the truck assembly at the track curves. If the nut is too

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tight, the assembly could "bind" and cause the wheels to climb the rails; if the nut is too loose, it would cause the assembly to be "floppy" and could affect the stability of the car.

The gearboxes are attached to the truck top plate with four bolts and lockwashers. The gearboxes should be checked for lube occasionally. Remove the Allen plug near the center of the gearbox opposite the motor. Add Lubriplate 8, part No. 01413, with a squirt type oil can until the lube runs back out. Be certain the plastic vent is screwed into the highest hole in the gearbox (when the unit is upright). If this vent gets into the wrong hole (too low) the lube could run out and ruin the gearbox.

The 15¾" dimension between the wheel flange faces should be checked occasionally, and this dimension should be maintained as the wheels wear. Remove both wheels, and add shims as required behind wheels to maintain 15¾" gauge, using the same number of shims on each side. See sketch below.

The operator should be advised to listen for any change in the "sound" of the train while it is operating.

The wheel bearings are cast iron self-aligning flange bearings, with grease zerks, that are interchangeable.

There are times when shop operators near a train location will not be able to tolerate the excessive noise of the bell. If you are located anywhere near a shop that requires or desires quiet (such as a bookstore, clothing store, jewelry store, etc.), it would be wise to wrap some tape around the ball in the bell assembly (the more the tape, the quieter) so the kids can hear the bell, but the local merchants can't. If you don't do this, someone will probably steal the bell some night.

The body parts can be kept looking good with the occasional use of some "Pledge" cleaner.

Laws, Regulations, Insurance

It is very important that each operator check with local authorities regarding ever-changing rules and regulations that involve the operation of amusement rides. Also important is to obtain liability insurance in the amount required for the location you are using. Some locations require as much as $1,000,000.00 liability, which is not too expensive if you work with your local insurance agent and give him time to "shop around" in various insurance markets. Have your insurance man look the ride over and see if he has any suggestions that would make the rate better.

At no time should the train be out of sight of the operator and the operator should always be near the control switch and observe the passengers closely, being prepared to stop the ride in the event any kids start to get out or get frightened and start crying, etc. If the train is going to be used commercially or allowed to go out of sight of the operator, then seat belts should be installed for the small kids.

It is generally considered the parents' responsibility to decide how small a child is allowed to ride; however, we have found some parents (lacking good judgement) trying to put children on the ride that are too young. The operator should insist that someone accompany such a child. Older kids that have reached "rowdy" age should not be allowed for obvious reasons.

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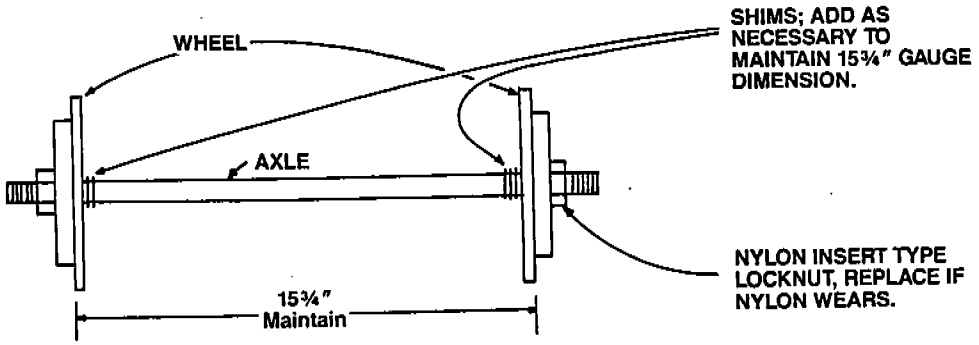

WARD MFG. COMPANY

505 REYNOLDS • SALINA, KANSAS 67401 • (913) 827-8972

OLD-TIMER TRAIN SET-UP, OPERATING & MAINTENANCE GUIDE

Site selection in a mall is critical to operating success. If it is Christmas time, try to get near Santa Claus; at Easter, get near the Easter Bunny. The area must be flat in both directions, as the old-timer in standard form is limited to less than one foot of climb in 100 feet of travel. Side to side (along length of track ties) must remain level.

The area must be free of cross-traffic.

Since the radius dimension of our curved section is 5'7" (each curve section completes ⅛ of a circle) and we require 2'6" from the center of the rail to the fence line for clearance, you need a minimum of 16'2" from fence to fence (5'7" + 5'7" + 2'6" + 2'6") for the width of your ride area. This width dimension may be increased by the addition of straight sections of track between the ends of the doubled (for a 90° section) curve sections that will then form the corners of a standard oval section. Remember that whatever length of track is used at one end, the exact same length must be used at the opposite end, and the same applies for side to side; if you use four 10' lengths and one 5' length on one side, then you must use four 10' lengths and one 5' length on the other side.

Our standard lengths of straights are 10'0" or 5'0"; custom lengths are available on 3 to 4 week notice from us, or you can have a local welding shop take our standard sections and cut them down to the desired special lengths and re-weld new matching splice bars on the outside rail, and redrill the rails to fit into the system. Be *sure* to countersink the inside face (holes) of the outside rails deep enough so the ¼-20 × ¾ flathead bolt heads *will not* be hit by the wheel flanges as the train passes. If the wheel flanges are allowed to hit the bolt heads, it will cause excessive noise, can break the wheel flanges, and possibly cause *derailment!* Also be sure the welding shop handles the center rail *very carefully* as it is insulated (electrically) away from the ties and *must* remain this way.

If *any* center rail insulators are broken during assembly, shipping, disassembly, handling, or storage, the train *will not* operate. A faulty center rail insulator will show up on a voltmeter test (set on OHM SR × 100) as a dead short between the center rail and either outside rail. The short must be located and repaired before the train will operate. The best time to check for faulty center rail insulators is just before the track sections are bolted together—one section at a time. If a short is suspected (or proven) after all sections are bolted together, then you must disconnect all center rail bolts and place a piece of cardboard (or similar insulator) between the overlapped center rails and check with a voltmeter or circuit light until you find the shorted section. Once you find the shorted section, inspect each insulator assembly to find the one that is broken and/or shows signs of arcing electricity. The faulty insulator assembly may be removed by drilling out the "pop" rivet with a 7/16" bit and replacing any faulty pieces. On a temporary basis (as long as there are not too many per section) you may remove the entire insulating assembly and wrap the horizontal leg of the angle that would ordinarily hold the insulator with black plastic electrical tape to keep it away from the tie—until a more permanent repair can be made.

It is *very important* that the bolted splice joints at the rail sections be *properly connected!* Each outside rail section is fastened to the matching splice bar with two ¼-20 × ¾ flathead bolts, with the heads set in countersinks so the wheel will miss them. As of 1984 and following, we are using *Grade 8 bolts and nuts* for this location since it is so critical. The bolts require a 5/32" hex Allen wrench, and the nuts are 7/16" hex. To make a proper connection, the tops of the rails and splice bars need to be at the exact same height. To accomplish this, sometimes it will require the use of two pairs of Vice-grip pliers and a small "drift" or aligning pin. Align the tops with the drift pin, and hold the rails and splice bars with the Vice-grips *while* you are tightening the Grade 8 bolts and nuts in place. Tighten the nuts enough to align the inside faces of the rail and to make sure they will stay tight while the train is operating. We started using the Grade 8 bolts and nuts for this application when the quality of standard bolts and nuts became low enough that we were breaking too many on installation. If the bolt breaks or is left out at the hole nearest the joint in the outside rail, and the two inside rail faces are not aligned, it can cause a derailment if a wheel flange would happen to hit the end of I-rail. A hardly noticeable, 30-thousandth inch difference here can cause trouble. The tops of the center rails need

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to be aligned carefully also to keep the current pick-up bar from "catching" on a splice joint and breaking its insulator or spring assembly.

If the ride is to be used inside of a shopping mall, some floor covering needs to be installed between the track and any hard floor surface to cut down operating noise and also protect the floor surface. Rubber mat can be used to protect the floor surface, but it doesn't do a very good job of noise abatement. We recommend a good grade of indoor/outdoor carpet. The carpet should be checked to make sure it is fire-retardant, as there will be a few sparks dropping on it occassionally from the normal operation of the train. The carpet and track may try to "walk" a little during normal operation. To prevent this, cut about a dozen pieces of double-faced carpet tape about 4" each and place them between the carpet and the floor, remembering to step solidly on the spot where each is located so it will stick.

The station track is made with a joint in the center rail. This section must be located where you want the train to stop for loading and unloading, as well as within a few feet of the transformer. The wiring from the transformer is color-coded and should be connected to the station track as follows: the large positive 24 volt D.C. wire is colored red (on the end lug) and should be connected to the center rail of the main track area; the large negative 24 volt D.C. wire is colored black (on the end lug) and should be connected to the tie that has a hole in it for this purpose. The hole is in the top of the tie, and in the end outside of one of the outside rails, near the area of the center rail split. The smaller 24 volt D.C. wire is colored green (on the end lug) and should be attached to the center rail that is usually about 5' long. This short section of center rail is powered by the switch marked "Station Switch" and is where the engine will stop if the station switch is turned off. The rest of the track is powered by the switch marked "Main Switch." The train may be stopped at any point on the track by turning the main switch off.

The measurement between the inside faces of the outside rails is supposed to be 12". This is the track "gauge"; if this dimension is less than 12" it is possible for the wheel assemblies (or "trucks") to "climb" the rails and derail. If this dimension is more than 12⅛" or 12¼" the wheel on one side could "drop" and derail. These measurements should be checked on original set-up and again if a problem develops during operation. If the track gauge checks O.K. and there is still a problem in this area, you should check the dimension *between* the wheel flanges. It should be about 11 7/16.

Also check for excessive wear or "sharpening" of the wheel flanges caused by improper track lubrication. If the wheel flanges become worn enough, they can cause derailment. The wheels have a machine or "press" fit and can be removed with a standard two-arm wheel puller. When installing new wheels, note that the drive wheels are keyed onto the shafts with a ⅛" × ½" Woodruff key (Dorman part No. 595-057, available at most auto parts stores). The wheels may be installed on a press or with a sledgehammer. If a sledgehammer is used, be careful to have the new wheel aligned with the shaft, and be certain you have something of at least equal mass "backing-up" the other end of the shaft. Apply the wheel with several, moderate blows, checking after each blow that proper progress is being made and your "back-up" is still in place. Check the distance you drive the wheel onto the shaft with other assemblies. Wheels with keyways may be used on "non-drive" shafts. Excessive wheel wear is usually caused by improper or infrequent track lubrication. This can be checked by walking around the track looking for wheel and track "grindings." If you find them, chances are your operator is not lubricating the track properly. We recommend the use of a clear stick lubricant called "Door Ease." It is a T.R.W. product that is available at most auto parts stores. Every morning your operator should apply this lubricant *to the inside faces of the outside rails, only at the curve sections,* and *lightly* enough so excess amounts will *not* get squeezed over onto the top rails. If this lubricant gets onto the tops of the rails, it can cause the train to slide through the station or spin its wheels on takeoff. If this happens, you need to wash the tops of the rails and the horizontal areas of the drive wheels with rubbing alcohol and rags until the problem clears up. The straight sections or the center rails do *not* need to be lubricated.

The electrical contact plate on the pick-up assembly is tool steel, heat treated for hardness, so it is much harder than the center rail. We have had operators report that this pick-up plate can accumulate filings off of the center rail and deposit these filings into the gaps cut to form the station section, causing an electrical circuit to be continuous at the station track, and making it appear the station track switch is not working. If this happens, you will need to clean the filings out of the gaps.

If you are checking the track after assembly, with the train on the track, you will need to place a piece of cardboard between the center rail and the current pick-up plate. Don't forget to remove the cardboard when you are ready for the train to go.

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The roller chain from the gearbox to the two drive axles is a standard #41 roller chain. To adjust the tension on this chain you must either add or subtract washers or shims between the gearbox and the underside of the drivetruck top plate. Adding shims will loosen the chain; subtracting shims will tighten the chain. All three sprockets are 13 T #41 w/⅝" bore, with 3/16" keyway and set screw. Axle sprocket keys are 3/16 × ¾ Woodruff, Dorman part No. 595-061.