



## RIVET COUNTER HO SCALE UP FUEL TENDER- 23C

In the 1960s, Union Pacific converted old steam tenders from the Challenger and FEF locomotive classes to store Bunker C Fuel Oil for the "Big Blow" Turbines, resulting in two distinctive different classes. The new fuel tenders could carry 23,000 (23C type) to 24,000 (24C type) gallons of fuel. The easiest way to spot the difference between the two classes are the rivets. The 23C Tenders were rebuilt with riveted seams while the 24Cs were rebuilt with welded seams. The 23C types were originally built as Union Pacific 800-class steam tenders.

Two of these tenders, "Jim Adams" UPP #809 and "Joe Jordan" UPP #814, have been extensively modified since

their Turbine Fuel Tender careers. These changes include the removal of outer jacketing and insulation that were added when they were modified for GTEL tender service, removal of fuel oil heaters, and squaring-off of top corners to increase their water carrying capacity.

UPP 814 underwent rebuilding in July 2006, followed by UPP 809 in August 2008. The two tenders are frequently operated together and can be seen behind various locomotives, including UP FEF-3 #844, Challenger #3985, and Big Boy #4014.

## ROADNAME AND ROAD NUMBER SPECIFIC SCALETRAINS

- **All new model**
- **809 American flag printed on separate photo-etched metal placard**
- **Roof equipment boxes and water plumbing details**
- **Different weld seam locations and riveted end access plates for each tender**
- **Commonwealth 3-axle trucks with rotating bearing caps**
- **24,000-gallon capacity**
- **Non-insulated**
- **Intricate electrical and water plumbing**
- **Brake beam**
- **Handbrake housing with finely detailed wheel and chain**
- **Underbody brake details and plumbing**
- **Durable body-mounted metal semi-scale Type E knuckle couplers**
- **36" Machined metal wheels**
- **Directional lighting**
- **Truck chains available separately - requires 22" radius curve**
- **Minimum radius 18"**
- **Fully assembled**
- **Color matched to Tru-Color paint colors**
- **Printing and lettering legible under magnification**
- **Accurately profiled .110" wide wheel tread**
- **Coupler cut levers**
- **Trainline hoses**
- **Intricate brake plumbing**
- **Weighted to Industry standards**
- **Operates on Code 70, 83 and 100 rail**
- **Packaging safely stores model**

ScaleTrains • 4901 Old Tasso Rd NE, Cleveland, TN 37312 • [www.ScaleTrains.com](http://www.ScaleTrains.com)  
Toll-Free 844-9TRAINS • International 423-299-3689

WARNING: This product may contain a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.  
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**Body Assembly - JPP 809**  
**SXT80140**  
 Set Includes  
 Body, UPP 809  
 Body End Cover, Front  
 Body End Cover, Rear  
 Tender Bottom Cover (2)  
 Tank Access Cover, Front  
 Tank Access Cover Rear, UPP 809

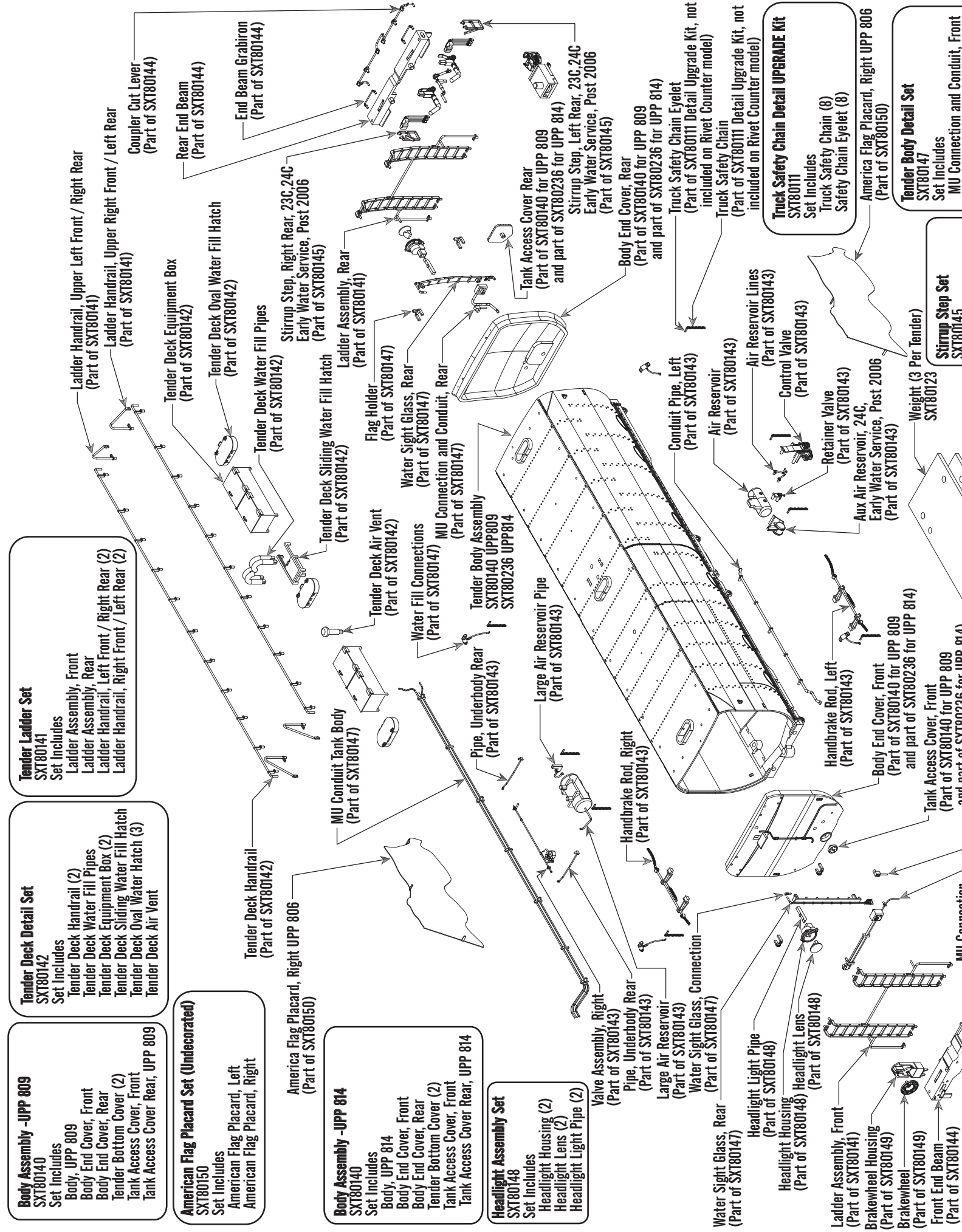
**Tender Deck Detail Set**  
**SXT80142**  
 Set Includes  
 Tender Deck Handrail (2)  
 Tender Deck Water Fill Pipes  
 Tender Deck Equipment Box (2)  
 Tender Deck Sliding Water Fill Hatch  
 Tender Deck Oval Water Hatch (3)  
 Tender Deck Air Vent

**Tender Ladder Set**  
**SXT80141**  
 Set Includes  
 Ladder Assembly, Front  
 Ladder Assembly, Rear  
 Ladder Handrail, Left Front / Right Rear (2)  
 Ladder Handrail, Right Front / Left Rear (2)

**American Flag Placard Set (Undecorated)**  
**SXT80150**  
 Set Includes  
 American Flag Placard, Left  
 American Flag Placard, Right

**Body Assembly - JPP 814**  
**SXT80140**  
 Set Includes  
 Body, UPP 814  
 Body End Cover, Front  
 Body End Cover, Rear  
 Tender Bottom Cover (2)  
 Tank Access Cover, Front  
 Tank Access Cover Rear, UPP 814

**Headlight Assembly Set**  
**SXT80148**  
 Set Includes  
 Headlight Housing (2)  
 Headlight Lens (2)  
 Headlight Light Pipe (2)



**Truck Safety Chain Detail UPGRADE KIT**  
**SXT80111**  
 Set Includes  
 Truck Safety Chain (8)  
 Safety Chain Eyelet (8)

**Tender Body Detail Set**  
**SXT80147**  
 Set Includes  
 MU Connection and Conduit, Front  
 MU Connection and Conduit, Rear

**Stirrup Step Set**  
**SXT80145**

**Aux Air Reservoir, 24C, Early Water Service, Post 2006**  
 (Part of SXT80143)

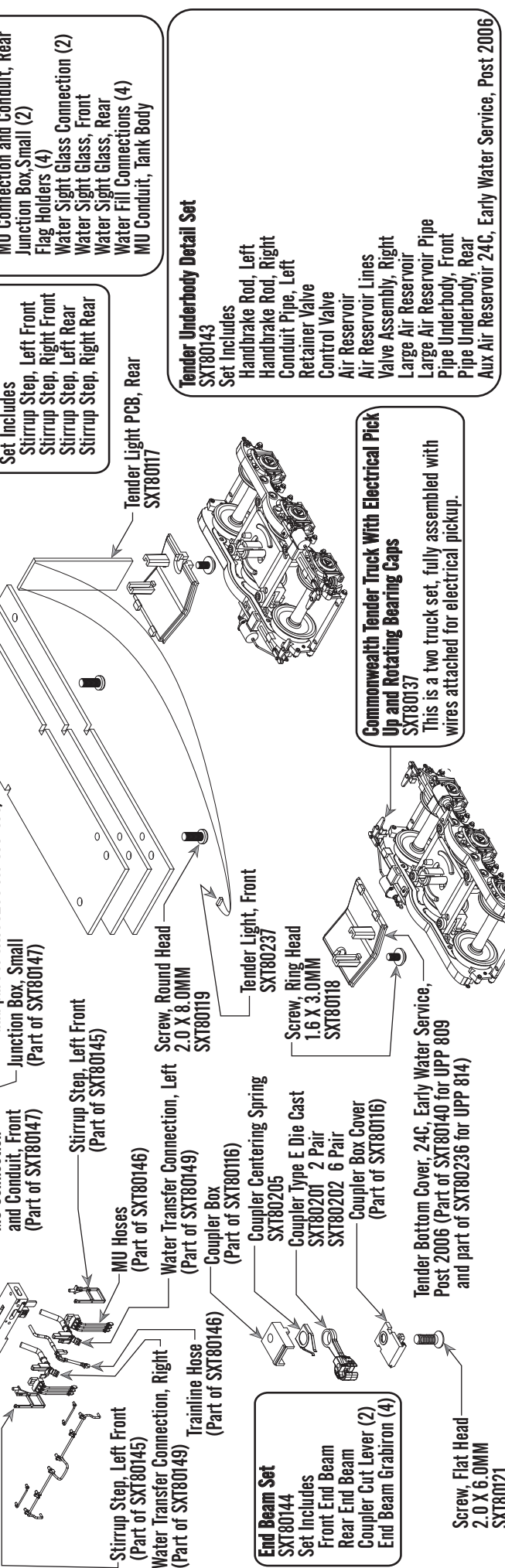
**Aux Air Reservoir, 24C, Early Water Service, Post 2006**  
 (Part of SXT80143)

**Weight (3 Per Tender)**  
**SXT80123**

**Tank Access Cover, Front**  
 (Part of SXT80140 for UPP 809 and part of SXT80236 for UPP 814)

**Tank Access Cover, Front**  
 (Part of SXT80140 for UPP 809 and part of SXT80236 for UPP 814)

**Tank Access Cover, Front**  
 (Part of SXT80140 for UPP 809 and part of SXT80236 for UPP 814)



**DCC and Lighting Information**

Your New Rivet Counter Post 2006 rebuild water tenders are equipped with directional lighting circuitry designed by ESU that works in both DCC and DC. It is a two (2) function decoder and each tender should be programmed individually.  
 From the factory, the default address is 03.  
 Two (2) or four (4) digit addresses can be programmed on all DCC systems.  
 The decoder supports CV 1 addressing short address 1-127  
 The decoder also supports CV 17/18 long address 128-9999 - Please add 32 to value of CV 29 to enter long addresses.  
 NMRA consisting is supported using CV's 19, 21 and 22.  
 To reset the decoder, change the value of CV 8 to eight (8) on a programming track. Do not reset the decoder on the main because a power recycle is required.

Short address CV 1 -03  
 Manufacturer CV 8 -151  
 Long (Extended) address CV 17/CV 18 -192/128  
 CV 29 contains important information for setting up your decoder.  
 Default value is 4 with a range of 0-255  
 Please add or subtract the value of each bit from the value of CV 29 to make changes.  
 Examples: If you wish to reverse the direction(forward becomes reverse), add one(1) from the value read from CV 29.  
 If you wish to disable analog mode subtract four (4) from the value of read from CV 29. It is best to read the value of 29 first as your DCC system may change this without your knowledge. Especially when changing to a 4 digit address.

**Function Chart**  
 Reverse direction of travel (forward becomes reverse)  
 Speed steps: 0 = 14 speed steps, 2 = 28 / 128 speed steps  
 Analog mode enable, 4 = Analog mode enabled  
 Speed curve selection. 0 = CV 2.5.6 ; 16 = CV 67 - 94  
 Address select. 0 = Primary address, 32 = Extended address

**Headlight CVs**

There may be times that wish to function map your headlights for your operating needs.  
 CV 33(Front Light) Value of 1 (on in forward) / Value of 0 (off in forward)  
 CV 34(Rear Light) Value of 2 (on in reverse) / Value of 0 (off in reverse)  
 Common Changes:  
 Front and rear headlights off in both directions - CV 33=0, CV 34=0  
 Front headlight off in both directions - CV 33=0, CV 34=1  
 To control the rear headlight of the rear tender using F10 - CV 44 = 2

| Bit | Value |
|-----|-------|
| 0   | 1     |
| 1   | 2     |
| 2   | 4     |
| 4   | 16    |
| 5   | 32    |

Please see our web page [www.scalettrains.com](http://www.scalettrains.com) for additional information.

**End Beam Detail Set**  
 SXT80144  
 Set Includes  
 Front End Beam  
 Rear End Beam  
 Coupler Cut Lever (2)  
 End Beam Grabiron (4)

**Multiple Unit / Trainline Hose Set**  
 SXT80146  
 Set Includes  
 MU Hoses (4)  
 Trainline Hose (2)

**Coupler Box Assembly**  
 SXT80116  
 Set Includes  
 Coupler Box (2)  
 Coupler Box Cover (2)

# RIVET COUNTER HO SCALE UP LATE STEAM EXCURSION WATER TENDER SET PARTS LIST

SXT80235 Instruction Sheet - Download for FREE from our Website  
SXT80140 Body Assembly - UPP 809  
SXT80236 Body Assembly - UPP 814  
SXT80123 Tender Weight  
SXT80137 Commonwealth Tender Truck with Electrical Pickup and Rotating Bearing Caps  
SXT80138 Tender Truck Wheelset for Rotating Bearing Cap Trucks  
SXT80141 Tender Ladder Set  
SXT80142 Tender Deck Detail Set  
SXT80143 Tender Underbody Detail Set  
SXT80144 End Beam Set  
SXT80145 Stirrup Step Set  
SXT80146 Multiple Unit / Trainline Hose Set  
SXT80147 Tender Body Detail Set

SXT80148 Headlight Assembly  
SXT80149 End Beam Detail Set  
SXT80150 American Flag Placard Set - Unpainted  
SXT80117 Tender Light Circuit Board, Rear  
SXT80237 Tender Light, Front  
SXT80118 Tender Bottom Cover Screw, Ringed Head, 1.6MM X 3.0MM  
SXT80119 Weight Screw, Round Head, 2.0MM X 5.0MM  
SXT80120 Truck Bolster Screw, Round Head, 1.6MM X 3.0MM  
SXT80121 Coupler Screw, Flat Head, 2.0MM X 6.0MM  
SXT80201 Type E Coupler, Die-Cast 2 Pair  
SXT80202 Type E Coupler, Die-Cast 6 Pair  
SXT80205 Coupler Centering Spring  
SXT80206 Coupler Knuckle Spring

For a list of parts included in each parts set, see the exploded view.

## ADDITIONAL PARTS AVAILABLE

SXT80111 Tender Truck Safety Chain Set

The installation of the truck safety chains requires modeling skills. In addition, the use of truck safety chains increases the minimum radius to 22 inches.



### PRODUCT SUPPORT

U.S. 844-9TRAINS; 844-987-2467 Ext. 2  
International 423-299-3689  
Support@ScaleTrains.com



### ScaleTrains

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## WARRANTY POLICY

ScaleTrains.com, Inc. (ScaleTrains) warrants products purchased from our website to be free from defects in material and workmanship for a period of two (2) years from the date of purchase. Products purchased directly from ScaleTrains are automatically registered and a receipt is not required for proof of purchase.

ScaleTrains warrants products purchased from an authorized Select Retailer to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. The warranty period can be extended to two (2) years by registering the product within 30 days of purchase on our website at [www.ScaleTrains.com/warranty](http://www.ScaleTrains.com/warranty). Be sure to retain the receipt as proof of purchase as it may be required in the event your model requires warranty service by our Service Center.

If the product fails during the limited warranty period, carefully pack the model in the original packaging. Be sure to include an explanation of the issue(s) along with your name, address, phone and email. If the product(s) were purchased from a Select Retailer, include a legible copy of the sales receipt.

Ship item(s) for repair to our Service Center at...

**ScaleTrains Service Center**  
4901 Old Tasso Road NE  
Cleveland, TN 37312

We recommend using a trackable shipping service. Shipping damage incurred on the way to our service center and costs associated with shipping are not covered under warranty.

Damages due to improperly storing, handling, or packaging are not covered under warranty.

If ScaleTrains.com deems the product to be defective, we will either (1) repair (2) replace the item, or (3) offer a store credit redeemable at ScaleTrains.com toward a future purchase. This determination is at the sole discretion of ScaleTrains.

ScaleTrains has the final decision on all warranty matters. The warranty policy is subject to change without notice.