N
1:160 SCALE

GTEL 8500 HORSEPOWER TURBINE

RIVET COUNTER
SCALETRAINS.COM
EST. 2015
TM

DCC & Sound by...
LokSound

Color Matched To...
tru-color paint

02

INDEX & WARRANTY

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Photo By Alvin L Schultze, courtesy of David P. Oroszi

Warranty Policy

ScaleTrains.com, Inc. (ScaleTrains.com) warrants product purchased from authorized resellers 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 increased to two (2) years by registering your product on line at http://www.ScaleTrains.com/pages/warranty.

If the product fails during the limited warranty period, carefully pack the model in the original packaging and include the sales receipt and explanation of the issue. Ship the model to our Customer Service address noted below. We recommend using a traceable service and adding insurance. Costs associated with shipping are not covered under warranty. If ScaleTrains.com deems the product to be defective, we will either (1) repair or (2) replace at our discretion.

Defects due to misuse, improper maintenance, and/or modification are not covered under warranty. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. These terms are covered by the State of Tennessee.

ScaleTrains.com, Inc.
Attention: Service
7598 Highway 411
Benton, TN 37307

Customer Service Crew Contact Information

Support@ScaleTrains.com

Toll-Free:
844-9TRAINS
844-987-2467
Toll-Free Fax: 844-388-0779

MAINTENANCE, LUBRICATION & HOW TO REMOVE SHELL

Lubrication

The ScaleTrains UP 8,500hp “Big Blow” Super Turbine Locomotive represents hours of careful research and design work, and we are proud to present it to you. With the right care, it should provide years and years of model railroading enjoyment. Out of the box, the model should be ready for service, no lubrication should be necessary; it has been carefully lubricated at the factory for optimum performance. However, if the need to lubricate should arise, please follow these guidelines:

- Be sure to use a plastic-compatible lubricant! Most household lubricants, such as “3-in-1” type oils, may damage the slippery engineering plastic found in the driveline of the model. Wherever possible, use lubricants designed specifically for model railroad or similar hobby uses, and if in doubt, check the label for any compatibility warnings.

- Use the right type of lubricant in the right location! For metal-to-metal bearing surfaces, the use of light or medium oils is recommended. For plastic-to-plastic applications, such as gears, light greases are recommended.

- Always use lubricant sparingly! As the saying goes, a little goes a long way. When applying lubricant to bearing surfaces, a tiny drop or dab applied with a fine point, such as a toothpick, should be more than sufficient. Any excess lubricant oozing from a bearing surface should be carefully wiped away with a paper towel.

Lubrication points will be the same as would be expected in most any model locomotive. On the locomotive power trucks the bearing surface for the axles are behind the wheel so a small drop of light plastic compatible oil can be used behind each wheel as necessary. The interior of the both the A and B units are filled with circuit boards and wiring for the many features of your UP 8,500hp “Big Blow” Super Turbine Locomotive so great care must be taken when applying lubrication to areas that may require lubrication inside the locomotive. Refer to the below disassembly instructions and exploded diagrams to understand how to remove the body to access the inner workings of the locomotive. Lubrication points inside the model would be the motor bearings, where a small drop of oil between the motor ends and the brass flywheels, on the motor shaft, will be sufficient. The other location would be the at the worm shafts on the top of the gearboxes. These too can use a small drop of oil at both ends of the shaft. One end being where the driveshafts are attached to the metal worm shaft and the other being the opposite end where the shaft slightly protrudes out of the bearing. Grease can be applied to the gear box gear by removing the worm cover and then the worm and shaft. Once the worm and shaft are removed a small amount of grease can be applied to the top gear box gear, the one that contacts the worm gear then the worm and worm cover can be reinstalled. As the locomotive runs the grease will be distributed inside the gearbox to all the gears. Whenever possible, avoid contact of lubricants with the model’s exterior finish. Oils and greases can possibly harm the factory paint and lettering; any excess that may make contact should be gently wiped away with a paper towel or other fine cloth. Due the delicate nature of the interior components inside the locomotives if there is any concern it may be best to contact your local dealer or contact us directly to help guide you through the lubrication process.

Handling

Due to the delicate nature of the model, it is advised that care should be taken when removing the model from its packaging, and placing it onto your test track or layout. Carefully remove each component of the model (A-Unit, B-Unit, and Tender) from its compartment in the box foam. To remove each component, carefully slide off the outer sleeve from the “clamshell” plastic holder cradling each unit, and set it aside.

Next, unsnap the plastic clamshell holder; note that at one end is hinged, and designed to snap into the top half of the holder. Do this on a flat surface, to reduce the risk of the clamshell or the model slipping from your grip and falling to the floor. Once the clamshell is fully open, carefully remove the model; reverse the process to place it back into its packaging for storage. When handling the model, it is recommended that it is gripped firmly at its mid-section, avoiding the fine stirrup steps, doors, grab irons, or other small details that may be present.

Disassembly

In order to remove the body shells from the Turbine A or B-units, only removing the couplers and coupler boxes will be required. When disassembling each unit, it is recommended it is placed upside-down into a foam cradle to protect it from damage. Remove the screw from each coupler box at each end of the unit. Once the screws are removed, carefully slide each coupler box from its mounting location, and set aside. Once the screws , couplers and coupler boxes are removed the body shell can now be removed from the mechanism. There are no wires or other connections between the body and chassis so gently lifting up on the body, paying attention to the many stirrup steps and ladders, should allow the body to be easy removed from the Chassis. At this point maintenance can be preformed or crew figures added. Reverse the process to reinstall the body shell.

Cleaning

If kept out of its protective packaging for extended periods, it is likely your UP 8,500hp GTEL may accumulate dust or other debris. While unsightly, it can also potentially damage the finish of the model if allowed to accumulate. To remove light dust, it is recommended that a fine paint brush is used to gently knock off dust particles. For heavier accumulations, canned air dusters (commonly used for cleaning electronics), or air from an airbrush, can be used.

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HISTORY

Photo By Jim Walter, Collection Of Kevin Eudaly

Beginning in the 1950s, the Union Pacific Railroad sought higher and higher horsepower ratings from its locomotives to help move increasingly heavier and longer trains. Gas-Turbine Electric Locomotive (GTEL) technology promised much higher horsepower ratings over the diesel-electric locomotive designs of the time. General Electric (GE) and American Locomotive Co. (Alco) built the first GTEL design, a double-ended, 4,500 horsepower, B+B-B+B unit, delivered as UP #50 in 1949.

This groundbreaking design would kick off the "Turbine Era" on the UP, which saw GE building successively larger and more powerful GTELs that would power UP's hottest trains over the next two decades. The basic principle of the GTEL saw a GE-designed and built gas turbine…essentially a type of jet engine…-driving a generator that produced electricity, which was fed to traction motors on the locomotive's axles. This design offered several advantages over more conventional diesel-electric locomotive designs of the era, particularly in horsepower. While competing cab and hood unit designs of the era boasted 1,500-1,750hp, the first GTELs boasted 4,500hp. Another advantage of the GTEL was it being designed to burn Bunker C heavy fuel oil, which, at the time, was much less expensive compared to conventional diesel fuel oil. GE would build successive batches of GTELs for UP, with each new design featuring improvements and design changes learned from experience from their predecessors.

All of those factors and lessons learned over the years would result in the ultimate GTEL design, the 8,500hp "Super Turbines" ordered in 1955. Indeed, design changes and technological improvements didn't see the first of these units delivered until August 1958. These "C-C" (six-axle) units, numbered UP 1-15, with a second group, UP 16-30 also added to the order books, represented the pinnacle of the GTEL design from GE. Boasting 8,500hp, these units were built in a three-unit configuration, with an "A", or Control Unit, which housed the operator's cab, electrical control equipment, radiators, dynamic brakes, and a small 8-cylinder Bessemer-Cooper prime mover for hostling and auxiliaries. The semi-permanently coupled trailing "B", or Turbine Unit, housed the heart of the machine: a GE 10-chamber centrifugal-flow gas turbine, coupled to a pair of 3,500hp electrical generators, which in turn powered all twelve powered axles under the pair of units.

While outwardly similar, there were a few external differences between the two groups; the first, UP 1-15, featured a "H-H" and "H-I" configuration on the dynamic brake housings of the A and B-units, so-called due to the appearance of the housing shape when viewed from above. The second group, UP 16-30, featured "H-I" and "I-I" dynamics as a spotting feature. However, this spotting feature would soon be rendered moot, due to several A and B-units between the two orders being swapped during maintenance.

Completing each set was a fuel tender trailing the B-unit, which held up to 24,000 gallons of Bunker C, which was heated by built-in electrical heater elements to keep the tar-like fuel in a viscous state. In an interesting melding of technology, the fuel tenders started out as steam locomotive tenders, salvaged and rebuilt from retired UP FEF-1 Northern and 4-6-6-4 Challenger steam locomotives. There were differences in how the tenders were (re)built; UP 1-20 were delivered with 24-C tenders, which featured insulation and a welded outer sheet metal jacket, giving them a smooth appearance. UP 21-30 were delivered with 23-C tenders, which had riveted construction and a body shorter in length in comparison to the 24-Cs. Eventually, tenders would be swapped between units as maintenance needs dictated, resulting in units originally equipped with 24-C tenders sporting 23-C tenders, and vice-versa.

The resulting 3-unit set (Control unit, Turbine unit, and tender) was massive, stretching almost 179 feet end-to-end, with the last unit, UP #30, delivered in June 1961. And their performance was impressive; put to work on UP's Eastern District, they were commonly seen between Council Bluffs, IA, and Ogden, UT, hauling a variety of freight trains, frequently all by themselves. The deafening noise of their turbine engine and exhaust earned the Super Turbines the nickname "Big Blow"; so loud, that UP reportedly restricted their operation in and around major cities due to noise complaints. Indeed, the city of Los Angeles was made basically off-limits to the Big Blows and other GTELs after a few deafening visits in 1962. Nonetheless, the Big Blows made a name for themselves across the vast plains of Wyoming and Utah, often being heard from miles and miles out before they were even seen.

As with any other groundbreaking locomotive technology, in-service upgrades were implemented over their lifetimes to improve performance. In 1962, UP increased their rating to a whopping 10,000hp, which was subsequently dropped back down to their original 8,500 after a few years due to concerns of overloading their electrical systems. Many of the B-units were retrofitted with Farr-built "Dynavane" air intake systems for the turbine engine, resulting in a large, boxy structure jutting from the roof of the B-unit. Air requirements for the turbine were an issue early on, so much so that UP #30, the last unit built, came from GE with a one-of-a-kind intake system it would keep for its entire career. Horns on many were relocated from the operator's cab roof (ironically due to crew noise complaints), to a location over the A-unit radiators, which also had the side benefit of keeping the horns from being fouled by snow and ice during winter. Another visual change began appearing on many members of the fleet in 1962, which saw the original boxy diesel fuel tank under the A-unit replaced with a more angular high-capacity design, allowing for less-frequent trips to the fuel rack for the hostling engine. 1965 also saw the addition of Multiple-Unit, or MU equipment (additional pneumatic lines and electrical jumper connections), added to the rear of all but five of the B-units, allowing the Big Blows to operate in multiple with other locomotives.

Despite their outstanding performance, the Big Blows were to have relatively short careers. One of the contributing factors to this was rising fuel costs; the once-cheap Bunker C fuel oil the turbines were designed to burn, which refiners practically couldn't give away early on, saw its price per gallon rise dramatically in the 1960s, eventually negating the fuel cost advantage the turbines enjoyed over their diesel-electric contemporaries. Rising maintenance costs compared to diesel-electrics also became an issue. The turbine engines were complex pieces of machinery compared to a typical diesel prime mover, in particular the delicate turbine fan blades. These factors, along with advances in diesel-electric locomotive horsepower, and limitations on where the GTELs could operate, saw the first of the Big Blows, UP 1-4, retired in August 1968, after scarcely 10 years of service. Their numbers continued to dwindle over the last few years of the decade, with UP #7 holding the distinction of being the last Big Blow to operate, pulling its last train on December 26th, 1969. All were officially retired by February 1970, closing out the loud and exciting Turbine Era on the Union Pacific.

Photo By Jim Walter, Collection Of Kevin Eudaly

Basic DCC/DC Instructions

The Prototype

The “Big Blow” Super Turbine is not your typical locomotive. While it has a small Diesel engine in the Control, or “A” unit, its main power comes from a gas-turbine engine in the Turbine, or “B” unit. The diesel is only used to maneuver through the yard while setting up the train, and while moving the turbine set around a fuel or maintenance facility. Coined the “hostler” engine, it is used in these applications to conserve fuel, and reduce and wear and tear on the turbine. Once the train is made up and ready to depart, the massive gas-turbine engine will be started. This turbine will run at a deafening, almost constant speed during operation out on the road.

The Model

Your ScaleTrains Union Pacific 8,500hp “Big Blow” Super Turbine GTEL model is a meticulously designed and crafted model of these incredible machines. Your Turbine includes an on-board sound system, featuring speakers in the Control and Turbine units, designed to replicate the roar of the prototype. Also included are sounds for the hostler engine, horn, bell, various auxiliary systems.

Start Up Cycle

Like most LokSound equipped models, the sound is off when you first put the locomotive on the track. In DCC pressing F8, the start-up sequence will begin. In DC the start up sequence will start as soon as there is sufficient electrical power on the track.
The start-up sequence of the ScaleTrains “Big Blow” Super Turbine is one of the most realistic in the hobby to date! The numberboard lights come on. Once the lights are on, the hostler engine will start. After the hostler engine has fully started your Turbine is ready to move.*

*Please note, Like the prototype the Model will not move while starting.

Headlights

Like most models, in DCC, F0 will illuminate the Front headlight. Unique to the turbine is the Use of F10 to turn on the rear light on the B unit. You can dim either light by pressing F7. Please note that headlights are only illuminated in the direction of travel. In DC operations the headlights are automatic in their direction control and are on all the time with sufficient track power.

Hostler Mode

When the turbine engine is not on, and all is heard is the hostler engine from the A-unit, you will be in “Hostler Mode”. As the speed was limited on the prototype while in this mode, it too is limited on the model. Once you have activated the turbine engine, you will notice you will have the full range of throttle. Hostler mode will only work in DCC. In DC operation both the hostler engine and turbine engine come on as soon as there is sufficient track power. You will have full operational speed for your turbine. Please note that with your Turbine, as with most sound equipped locomotives running in DC, it takes quite a bit of track power to operate the sound system and therefore quite a bit of power is necessary to start and run your Turbine.

Turbine Start

In DCC once you are coupled to your train and ready to depart, you can press the F3 button and the turbine will go through its start-up sequence. Once fully started, it’s very loud, so don’t forget your hearing protection! As noted above in DC operation the turbine will start to run as soon as the track power is sufficient.
Red: Reverse move (pushers).

F8 Sound ON/OFF

Like most ESU LokSound Equipped Locomotives, The ScaleTrains Turbine comes with the Sound OFF until F8 is pressed. Pressing F8 will turn on the Hostler Motor in the A Unit. If you wish for the sound to be on upon layout power up, please change the following CV’s in BOTH the A unit and the B Unit.

CV31 = 16, CV32 = 2

CV403 = 32

DCC Function Mapping

As with all LokSound decoders, the function buttons can be changed to work in any way you desire. By default, the Turbine is set up as follows:

F0 – Front Headlight
F1 – Bell
F2 – Horn
F3 – Turbine on B Unit.
F4 – Dynamic Brake
F7 – Headlight dimmer
F8 – Hostler Motor on A Unit
F9 – Coupler Clank
F10 – Rear Headlight
F11 - Sanding Valve
F12 – Short Air Let Off

For more info on changing the function mapping to your liking, please consult the Full LokSound Manuals at www.LokSound.com

CV48 Sound Options/ Alternate Horns and Bells

Your New Turbine will come to you with the Correct Leslie S5T-RF Horn and GE Bell right out of the box. But in case you would like to hear a different horn or bell sound we have provided an assortment.

Horns:

CV48=0 Dual Leslie A200
CV48=1 Nathan K3L
CV48=2 Nathan M5
CV48=3 Nathan P3
CV48=4 Nathan Old Cast P5A
CV48=5 Leslie S2M
CV48=6 Leslie RS3L
CV48=7 Leslie S3L
CV48=8 Leslie S5T
CV48=9 Nathan M3
CV48=10 Leslie RS3K
CV48=11 Nathan K5H
CV48=12 Leslie S3LR
CV48=13 Nathan M3H
CV48=14 Leslie Dual A125-A200
CV48=15 Leslie S5T-RF *Default*

Bells:

CV48=0 EMD Air Bell
CV48=64 GE Air Bell *Default*
Add values from above for total CV48 value.
Default CV48 Value = *79*
15 - HORN - Leslie RS3L
64 - BELL - GE Air Bell
Total CV48 Value 15+64 = 79

Full LokSound Select Manual Download

http://www.esu.eu/en/downloads/instruction-manuals/digital-decoders/
Rivet Counter Locomotives use the LokSound Select.

Basic Programming Notes

Each unit, A unit, B unit and tender should be treated as a separate “Locomotive” during programming. Do not program all three units on the programming track at once.
From the factory they are set to default address 03
They can be set to 2 or 4 digit addresses with normal addressing on all DCC systems.
They supports CV 1 Addressing Short Address 1-127
They supports CV 17/18 Long Address 128-9999 - Please add 32 to value of CV29 to enter Long addresses.
They supports NMRA Consisting Using CV’s 19, 21 and 22.
A Reset can be accomplished by setting CV 8 to a value of 8 on a programming track. *Do not reset the decoder on the main as a power recycle is needed.
Short address CV1 -03
Manufacturer CV8 -151
Long (Extended) Address CV17/CV18 – 192/128
Configuration Register CV29 – 4 Add 32 (bit 5) for Long address.

Instructions continued on next page...

The most complex CV within the DCC standards. This register contains important information for setting up your decoder. The range of this CV is 0-255 with the factory default set at 4.

Function	Bit	Value
Reverse direction of travel (forward becomes reverse)	0	1
Speed steps: 0 = 14 speed steps, 2 = 28 / 128 speed steps	1	2
Analog mode enable, 4 = Analog mode enabled	2	4
Speed curve selection. 0 = CV 2,5,6 ; 16 = CV 67 - 94	4	16
Address select. 0 = Primary address, 32 = Extended address	5	32

How to program long addresses. Typically most command stations will do this internally but if you need to enter the CVs manually the below information will guide you through the steps.

The long address is separated into two CVs. In CV 17 you will find the higher-valued byte of the address. This byte determines the section, in which the address will lie. If there, e.g., a value of 192 in CV 17, the extended address can accept values between 0 and 255. If there a value of 193 in CV 17, the extended address can accept values between 256 and 511. This can be continued up to a value of 231 in CV17, and then the extended address can take a value of 9984 and 10239. In the table on the below, all possible sections are listed. To calculate the values refer to the following:

- First determine the address desired, e.g. 4007.
- Refer to the values shown in the table below on the right hand side of each column and choose the address section desired. In the right column next to the address section chosen you will find the numerical value you have to write in C17, here in our example for 207:

CV 18 is apprized as follows:

Address desired 4007
Minus first address found in address section - 3840

Equals value of CV 18 167

- Figure 167 is now the value you have to write in CV 18, thus your decoder is responsive to address 4007.

If you wish to read out your addresses, please read out CV 17 and CV 18 one after another and flip the process:
Let´s say you read out the following:
CV 17 = 196; CV 18 = 147. For the corresponding address section look at the table below. The first possible address of this section is 1024. Now you have to add it to the value of CV18, and you will just know the address of the loco:

1024
+ 147
= 1171 Loco Address

Address sections from	to	CV 17
0	255	192
256	511	193
512	767	194
768	1023	195
1024	1279	196
1280	1535	197
1536	1791	198
1792	2047	199
2048	2303	200
2304	2559	201
2560	2815	202
2816	3071	203
3072	3327	204
3328	3583	205

Address sections from	to	CV 17
3584	3839	206
3840	4095	207
4096	4351	208
4352	4607	209
4608	4863	210
4864	5119	211
5120	5375	212
5376	5631	213
5632	5887	214
5888	6143	215
6144	6399	216
6400	6655	217
6656	6911	218
6912	7167	219

Address sections From	to	CV 17
7168	7423	220
7424	7679	221
7680	7935	222
7936	8191	223
8192	8447	224
8448	8703	225
8704	8959	226
8960	9215	227
9216	9471	228
9472	9727	229
9728	9983	230
9984	10239	231

Digitrax CV Programming for CV's over 255

Some Older Digitrax Systems do not allow programming of CVs above 255. In order to make full Programming possible, we have implemented an assistance tool. This helps to write the number of the CVs desired temporarily into two assisting CVs (so-called address registers), since the usual CVs cannot be reached. Afterwards the value of the CV desired will be programmed into another assisting CV (so-called value register). When the value register is written, the content will be copied to the actual desired position and the assisting CV will be set back. Consequently, 3 CVs have to be programmed to write one CV. These 3 CVs are described in the following chart:

CV	Name	Description	Value range
96	Address offset	Saves the CV number that should be actually programmed in hundreds.	0 – 9
97	Address	Saves the CV number that should be actually programmed in units and tens.	0-99
99	Value	Saves the value of the CV that should be actually programmed.	0-255

Example: You wish to program CV 317 with value 120.
Proceed as follows:
Program the value of the CV number in hundreds in CV 96.

- In this example: CV 96 = 3.

Program the value of the CV number in units and tens in CV 97.

- In our example: CV 97 = 17.

Program the desired value in CV 99.

- In our example: CV 99 = 120.

As soon as you have programmed CV 99, the value of CV 99 will be transferred into CV 317. When the programming finished, CVs 96, 97 and 99 will be set back automatically.
This procedure is ONLY needed when programming CV's above 255 on some older Digitrax DCC Systems.

Note: Please make sure that Index CV 32 is set to 1 and Index CV 31 is set to value 16 before you change any of the sound volume CVs. Please refer to the decoder's user manual.

If you have any further questions in regard to DC or DCC operations please download the full LokSound manual from their website
http://www.esu.eu/en/downloads/instruction-manuals/digital-decoders/
or you can contact us at Scaletrains.com for assistance.

Thank you again for your purchase and support of Scaletrains.com

USE OF MICROTRAINS® COUPLERS ON SCALETRAINS.COM EQUIPMENT

All Scaletriains.com N-Scale Equipment is designed to accept Microtrains couplers in the Scaletrains.com coupler boxes. You will need to use the replacement supplied Scaletrains.com coupler centering springs instead of the ones supplied with the Microtrains couplers. If you have any questions please feel free to contact us.

NOTES

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RIVET COUNT

Fine separately applied wire grabirons

Photo-etched B unit walkway. Wireform grabirons and exhaust detail.

Photo-etched tender walkway. Separate tender deck handrails.

Sharply detailed access door and grab iron details on the sides of the GTEL B-Unit.

INNOVATIVE S

TER FEATURES

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Finely detailed 24C insulated tender, featuring fine plumbing and electrical connection details on the front end.

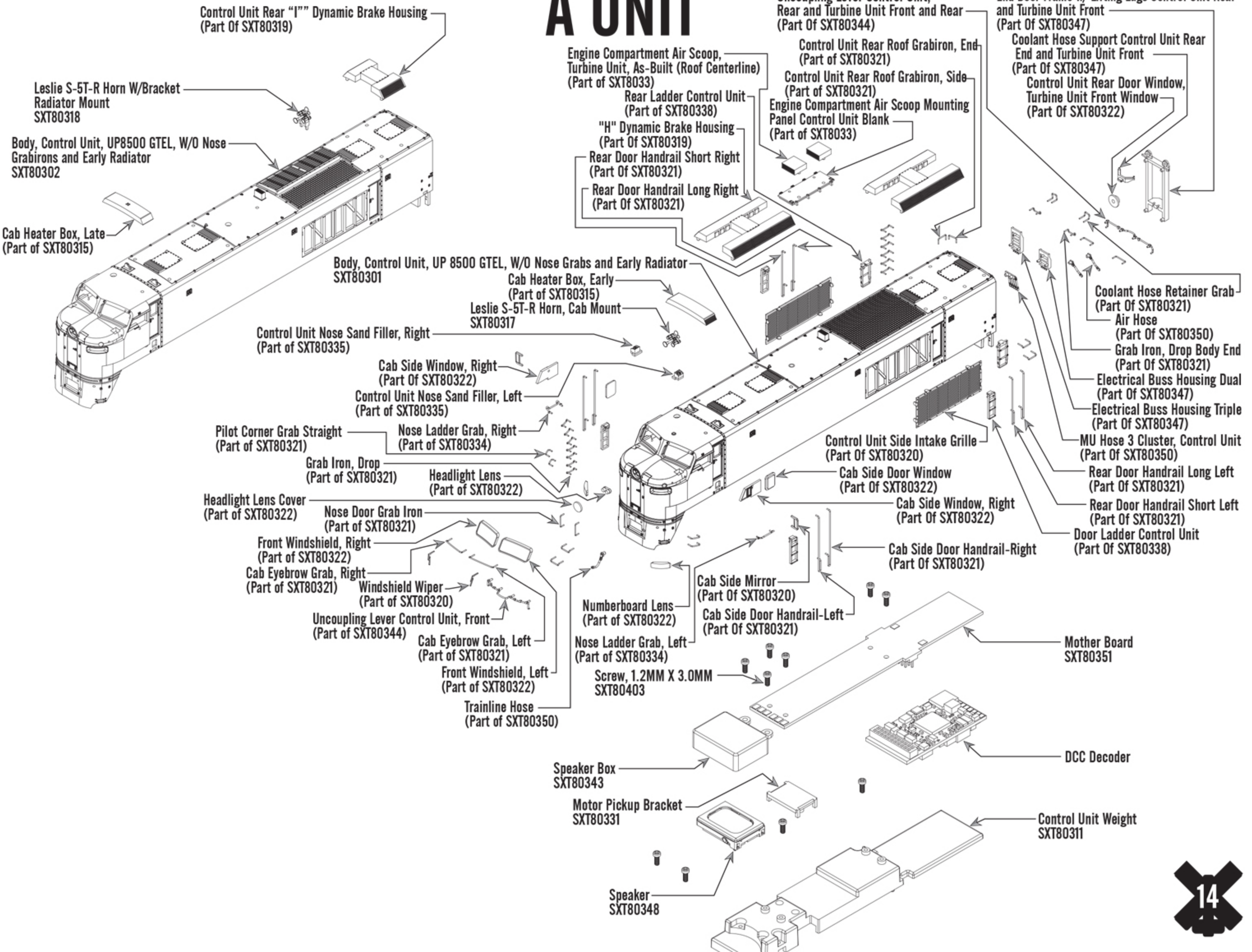
Sharp truck sideframe detail on locomotives and tenders. Separate wireform grabirons and ladder detail on B units.

Photo-etched see through side grille detail on A unit.

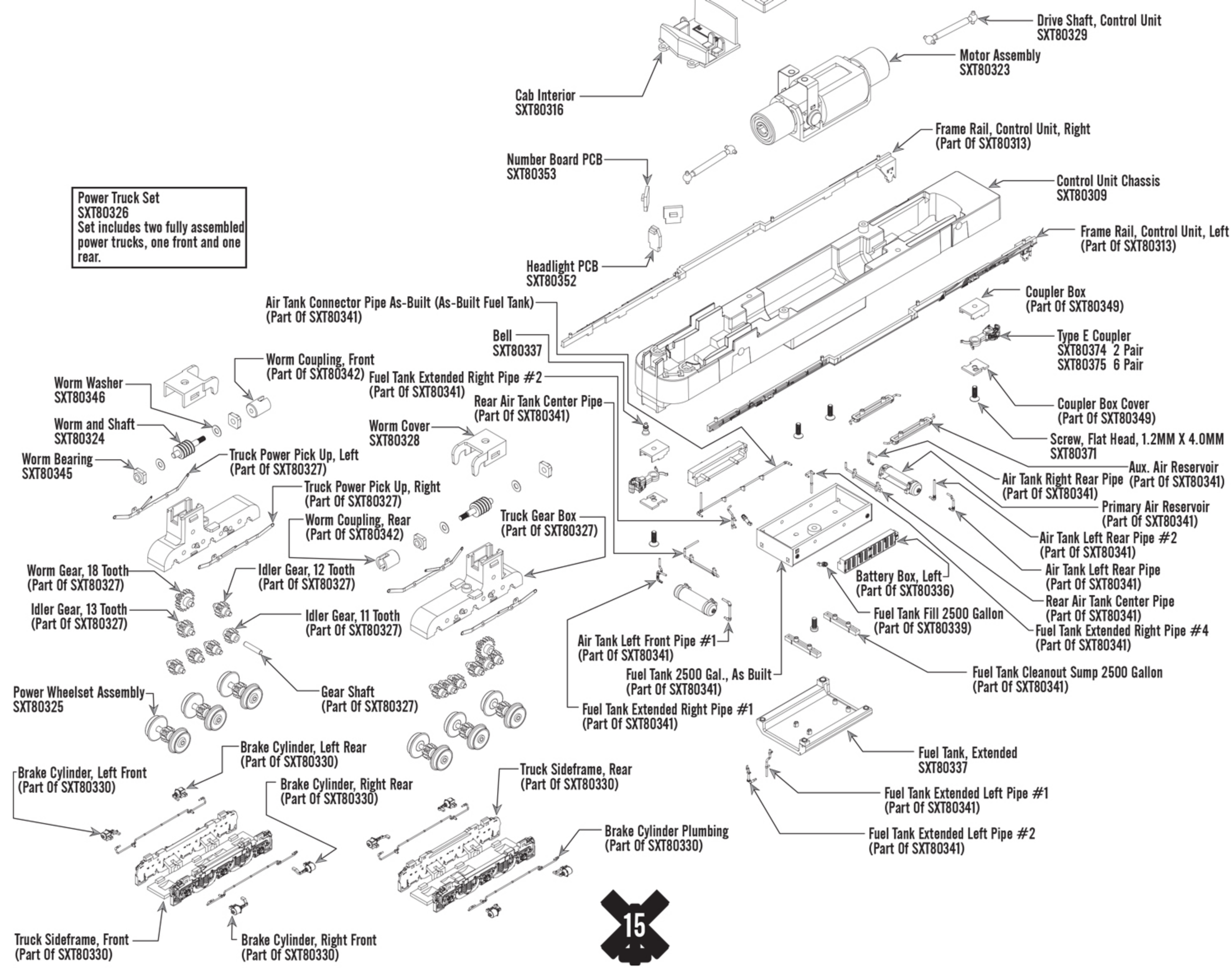
Sharply detailed turbine exhaust.

Photos and Scene by Ken Johnson
Early sample shown

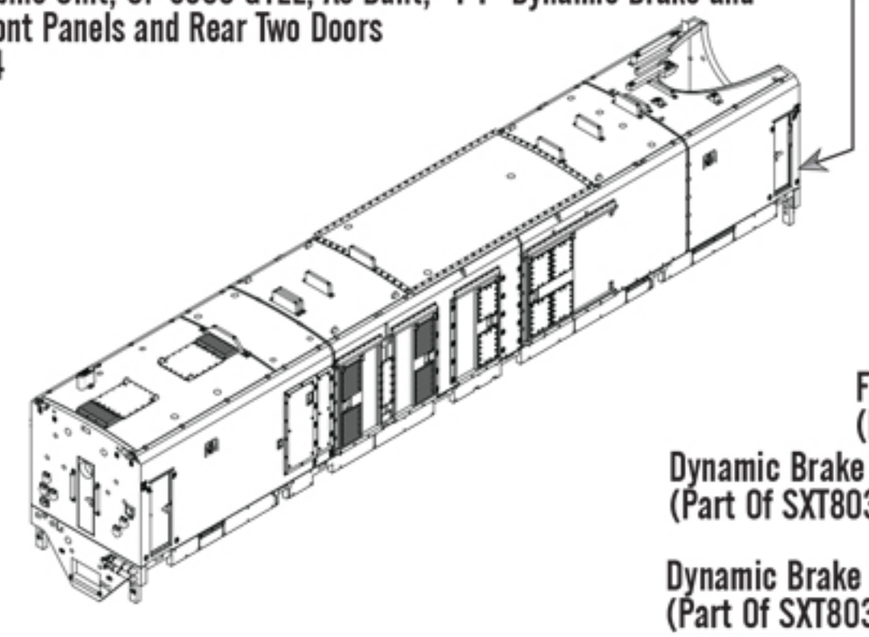
A UNIT


Control Unit Rear "I"" Dynamic Brake Housing
(Part Of SXT80319)
Leslie S-5T-R Horn W/Bracket
Radiator Mount
SXT80318
Body, Control Unit, UP8500 GTEL, W/O Nose
Grabirons and Early Radiator
SXT80302
Cab Heater Box, Late
(Part of SXT80315)
Engine Compartment Air Scoop,
Turbine Unit, As-Built (Roof Centerline)
(Part of SXT8033)
Rear Ladder Control Unit
(Part of SXT80338)
"H" Dynamic Brake Housing
(Part Of SXT80319)
Rear Door Handrail Short Right
(Part Of SXT80321)
Rear Door Handrail Long Right
(Part Of SXT80321)
Uncoupling Lever Control Unit,
Rear and Turbine Unit Front and Rear
(Part Of SXT80344)
Control Unit Rear Roof Grabiron, End
(Part of SXT80321)
Control Unit Rear Roof Grabiron, Side
(Part of SXT80321)
Engine Compartment Air Scoop Mounting
Panel Control Unit Blank
(Part of SXT8033)
End Door Frame w/ Lifting Lugs Control Unit Rear
and Turbine Unit Front
(Part Of SXT80347)
Coolant Hose Support Control Unit Rear
End and Turbine Unit Front
(Part Of SXT80347)
Control Unit Rear Door Window,
Turbine Unit Front Window
(Part Of SXT80322)
Body, Control Unit, UP 8500 GTEL, W/O Nose Grabs and Early Radiator
SXT80301
Cab Heater Box, Early
(Part of SXT80315)
Leslie S-5T-R Horn, Cab Mount
SXT80317
Control Unit Nose Sand Filler, Right
(Part of SXT80335)
Cab Side Window, Right
(Part Of SXT80322)
Control Unit Nose Sand Filler, Left
(Part of SXT80335)
Pilot Corner Grab Straight
(Part of SXT80321)
Nose Ladder Grab, Right
(Part of SXT80334)
Grab Iron, Drop
(Part of SXT80321)
Headlight Lens
(Part of SXT80322)
Headlight Lens Cover
(Part of SXT80322)
Nose Door Grab Iron
(Part of SXT80321)
Front Windshield, Right
(Part of SXT80322)
Cab Eyebrow Grab, Right
(Part of SXT80321)
Windshield Wiper
(Part of SXT80320)
Uncoupling Lever Control Unit, Front
(Part of SXT80344)
Cab Eyebrow Grab, Left
(Part of SXT80321)
Front Windshield, Left
(Part of SXT80322)
Trainline Hose
(Part of SXT80350)
Coolant Hose Retainer Grab
(Part Of SXT80321)
Air Hose
(Part Of SXT80350)
Grab Iron, Drop Body End
(Part Of SXT80321)
Electrical Buss Housing Dual
(Part Of SXT80347)
Electrical Buss Housing Triple
(Part Of SXT80347)
MU Hose 3 Cluster, Control Unit
(Part Of SXT80350)
Rear Door Handrail Long Left
(Part Of SXT80321)
Rear Door Handrail Short Left
(Part Of SXT80321)
Door Ladder Control Unit
(Part Of SXT80338)
Control Unit Side Intake Grille
(Part Of SXT80320)
Cab Side Door Window
(Part Of SXT80322)
Cab Side Window, Right
(Part Of SXT80322)
Cab Side Door Handrail-Right
(Part Of SXT80321)
Cab Side Mirror
(Part Of SXT80320)
Cab Side Door Handrail-Left
(Part Of SXT80321)
Numberboard Lens
(Part of SXT80322)
Nose Ladder Grab, Left
(Part of SXT80334)
Screw, 1.2MM X 3.0MM
SXT80403
Mother Board
SXT80351
DCC Decoder
Speaker Box
SXT80343
Motor Pickup Bracket
SXT80331
Control Unit Weight
SXT80311
Speaker
SXT80348

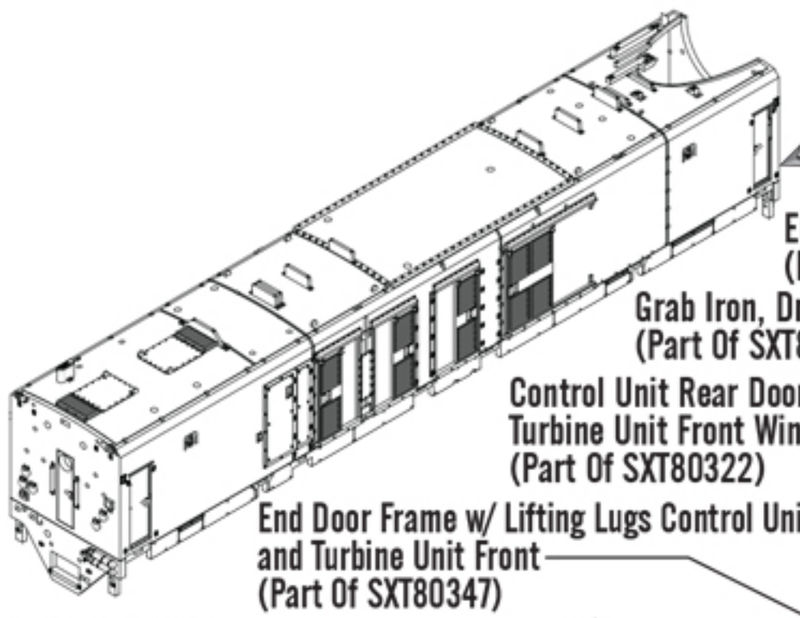
Power Truck Set
SXT80326
Set includes two fully assembled power trucks, one front and one rear.



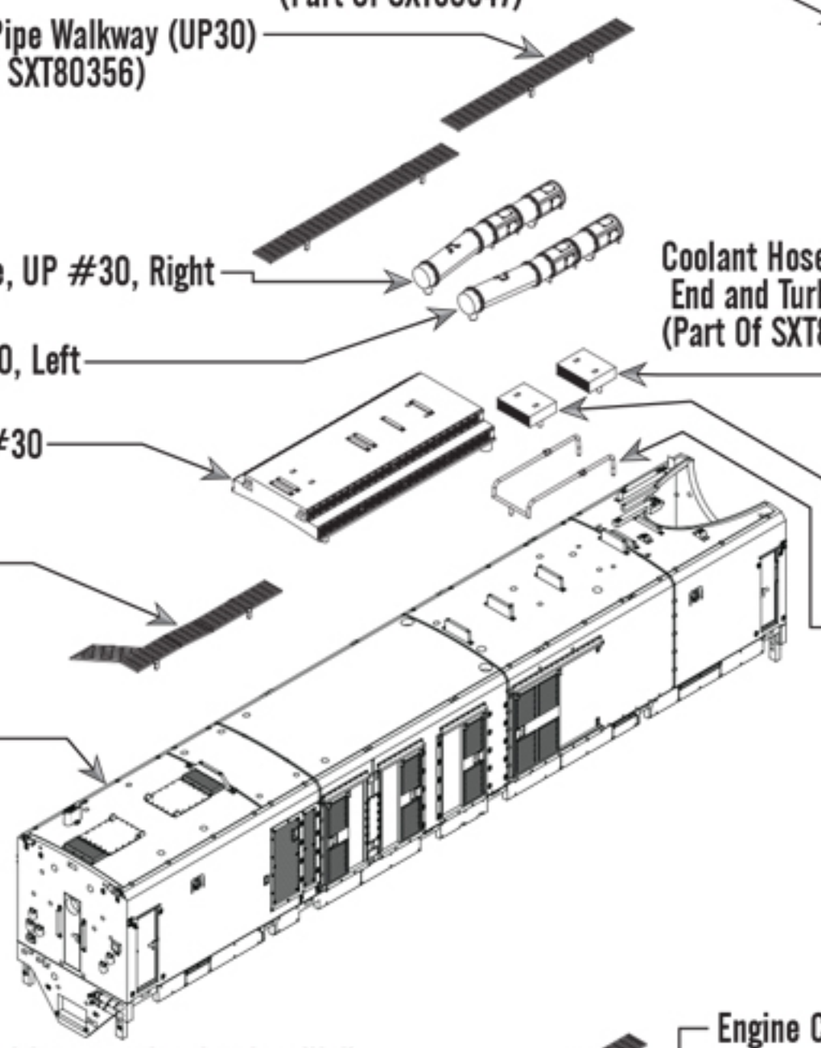
B UNIT



Body, Turbine Unit, UP 8500 GTEL, As Built, "I-I" Dynamic Brake and Plated Front Panels and Rear Two Doors
SXT80304

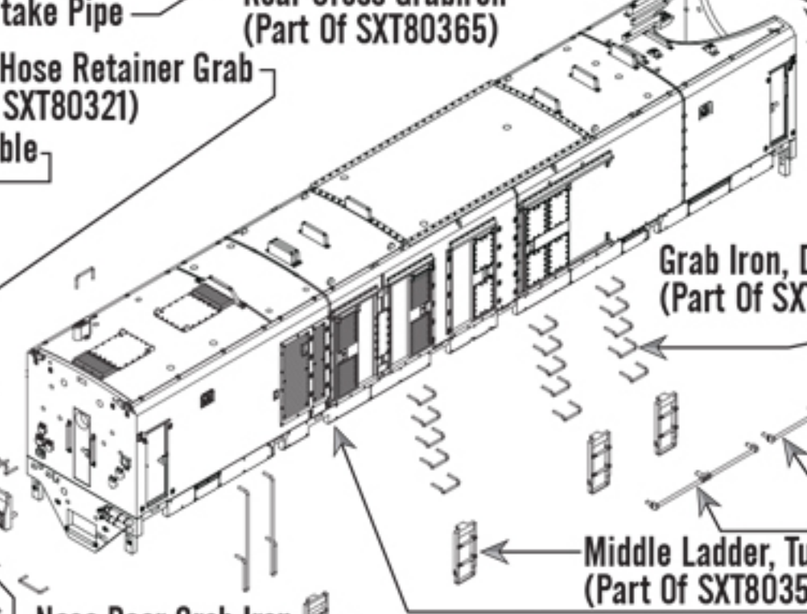


Body, Turbine Unit, UP 8500 GTEL, As-Built and "I-I" Dynamic Brake W/ Plated Front Panels
SXT80305



Body, Turbine Unit #30B
SXT80308

Center Walkway Turbine unit with square box intake, (H-I)
(Part Of SXT80367)



Angled Walkway Rear
(Part Of SXT80364)

Walkway Center Rear
(Part Of SXT80364)

Dynavane and UP 30 Air Intake Walkway
(Part Of SXT80364)

Front Walkway Turbine unit with Dynavane intake, (H-I)
(Part Of SXT80364)

Front Grabiron Angled Walkway
(Part Of SXT80365)

Dynamic Brake Housing, Turbine Unit, "I", Front
(Part Of SXT80319)

Dynamic Brake Housing, Turbine Unit, "I", Rear
(Part Of SXT80319)

Turbine Unit Dynavane Intake Housing
(Part Of SXT80363)

Turbine Unit Dynavane End Intake Pipe
(Part Of SXT80363)

Coolant Hose Retainer Grab
(Part Of SXT80321)

Electrical Buss Housing Double
(Part Of SXT80347)

Electrical Buss Housing Triple
(Part Of SXT80347)

Grab Iron, Drop Body End
(Part Of SXT80321)

Control Unit Rear Door Window, Turbine Unit Front Window
(Part Of SXT80322)

End Door Frame w/ Lifting Lugs Control Unit Rear and Turbine Unit Front
(Part Of SXT80347)

Intake Pipe Walkway (UP30)
(Part Of SXT80356)

Turbine Unit Long Intake Pipe, UP #30, Right
(Part Of SXT80356)

Turbine Unit Long Intake Pipe, UP #30, Left
(Part Of SXT80356)

Turbine Unit Large Intake Housing, UP #30
(Part Of SXT80356)

Angled Walkway, Front (UP30)
(Part Of SXT80356)

Engine Compartment Air Scoop, Turbine Unit, As-Built (Roof Centerline), Rear
(Part Of SXT80356)

Engine Compartment Air Scoop, Turbine Unit, As-Built (Roof Centerline), Front
(Part Of SXT80356)

Long Pipe Intake Conduit
(Part Of SXT80356)

Engine Compartment Air Scoop, Turbine Unit, As-Built (Roof Centerline), Rear
(Part Of SXT80360)

Nose Door Grab Iron
(Part of SXT80321)

Air Hose
(Part Of SXT80350)

MU Hose, 3 Cluster Turbine Unit
(Part Of SXT80355)

MU Hose, 2 Cluster
(Part Of SXT80355)

Coolant Hose Support Control Unit Rear End and Turbine Unit Front
(Part Of SXT80347)

Engine Compartment Air Scoop, Turbine Unit, Late, Right
(Part Of SXT80361)

Engine Compartment Air Scoop, Turbine Unit, Late, Left
(Part Of SXT80361)

Roof Top Grabiron, Rear, Long
(Part Of SXT80365)

Rear Cross Grabiron
(Part Of SXT80365)

Turbine Unit Rear Ladder
SXT80369

Rear Angled Grabiron, Tall
(Part of SXT80365)

Rear Angled Grabiron, Short
(Part of SXT80365)

Turbine Unit Rear Fuel Hose
SXT80370

Rear Cross Grabiron
(Part Of SXT80365)

Grab Iron, Drop
(Part Of SXT80365)

Middle Ladder, Turbine Unit
(Part Of SXT80357)

Front Ladder, Turbine Unit
(Part Of SXT80357)

Trainline Hose
(Part of SXT80350)

Turbine Exhaust Nozzle Inner Brace
(Part Of SXT80362)

Turbine Exhaust Nozzle Outer Brace
(Part Of SXT80362)

Turbine Exhaust Hood Assembly
(Part Of SXT80362)

End Frame w/ Lifting Lugs, Turbine Unit Rear
SXT80368

Turbine Exhaust
(Part Of SXT80362)

Rear Headlight Lens
(Part Of SXT80322)

Uncoupling Lever Control Unit, Rear and Turbine Unit Front and Rear
(Part Of SXT80344)

Turbine Unit door Grab, Right
(Part Of SXT80365)

Turbine Unit door Grab, Left
(Part Of SXT80365)

Rear Ladder, Turbine Unit
(Part Of SXT80357)

Rear Side Door Hanger
(Part Of SXT80358)

Middle Side Door Hanger
(Part Of SXT80358)

Front Side Door Hanger
(Part Of SXT80358)

Body, Turbine Unit, UP 8500 GTEL, As Built, "I-I" Dynamic Brake and Plated Rear Two Doors
SXT80376

Speaker Box
SXT80343

Speaker
SXT80348

Motor Pickup Bracket
SXT80331

Screw, 1.2MM X 3.0MM
SXT80403

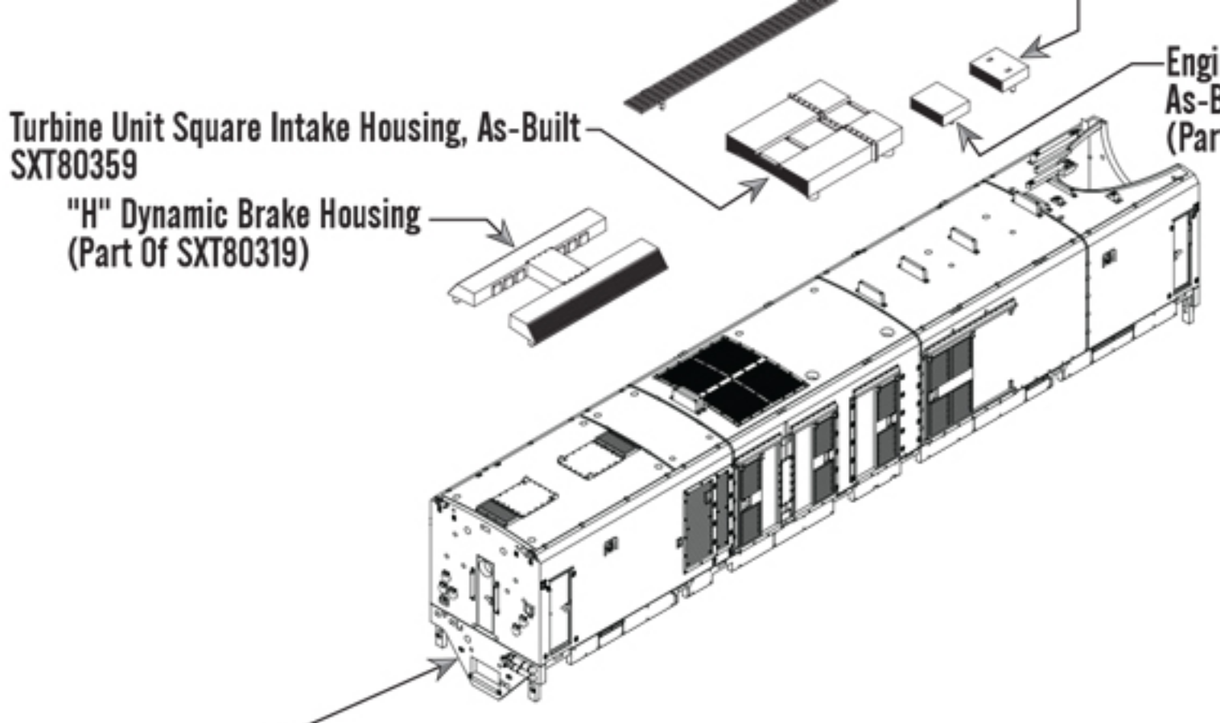
Mother Board
SXT80351

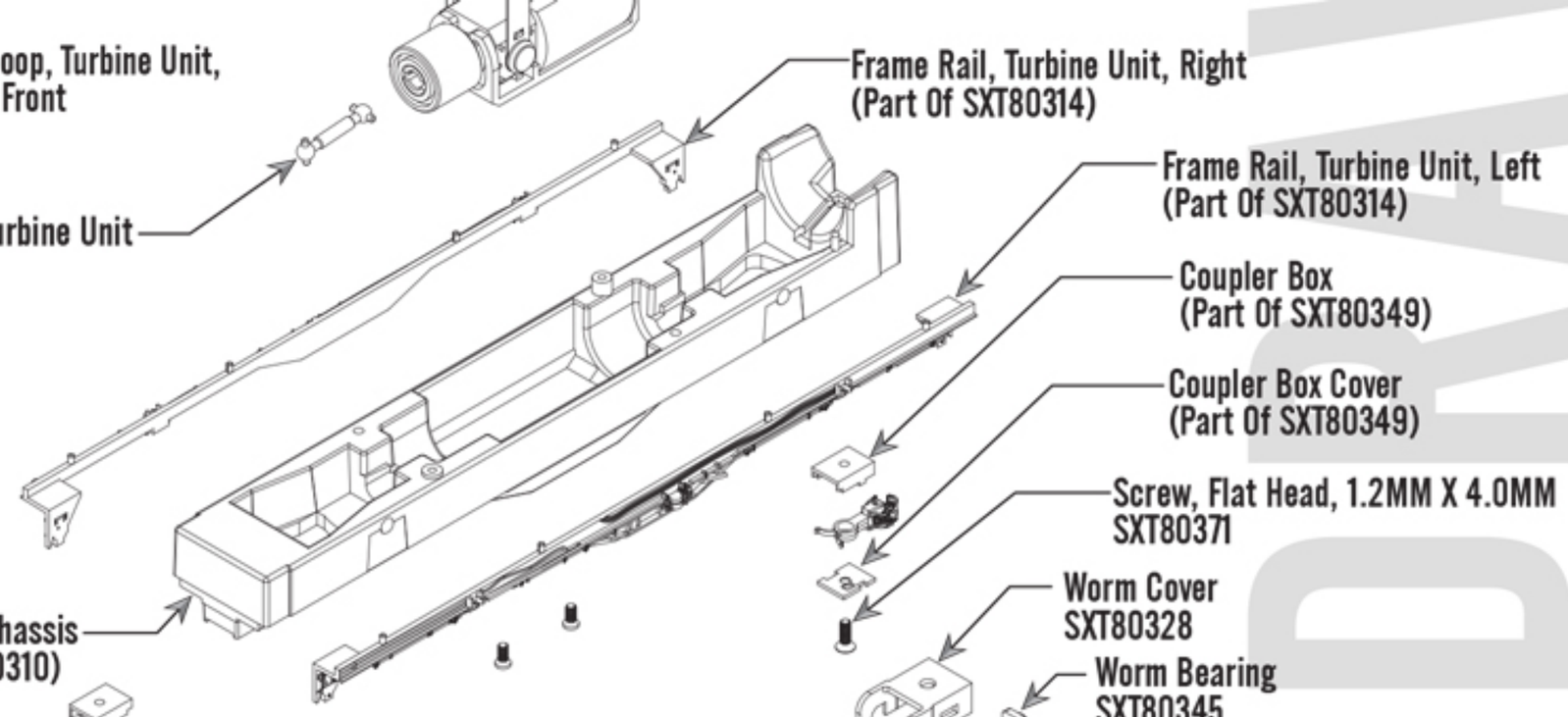
Turbine Unit Weight
SXT80311

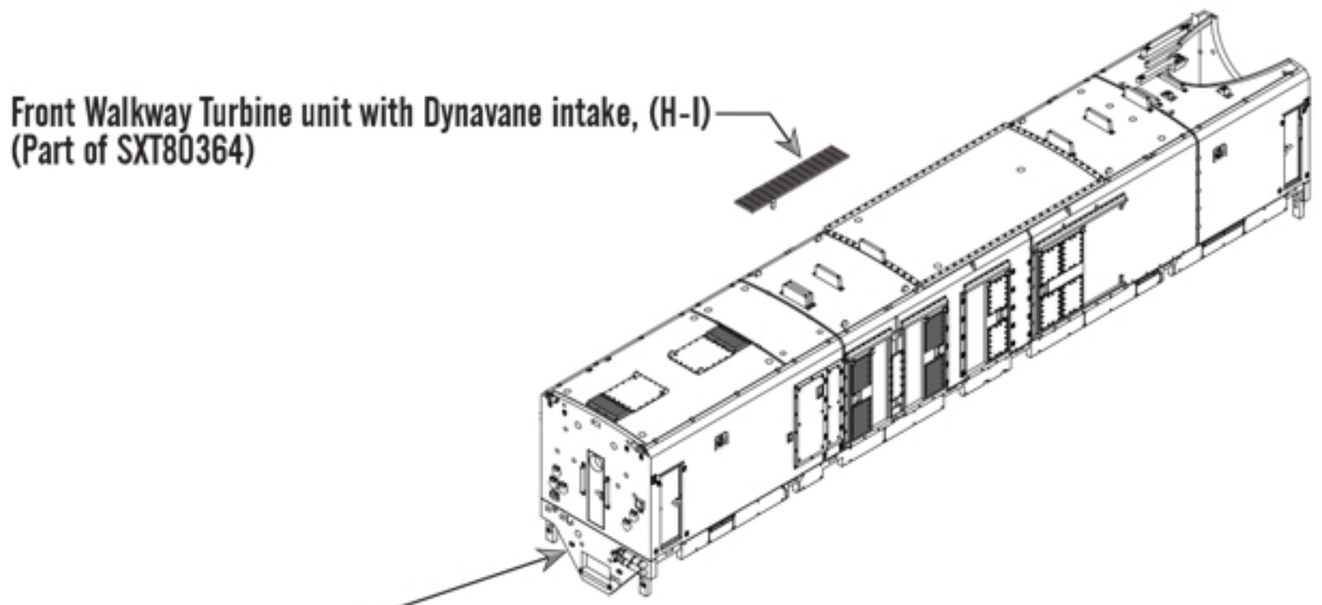
DCC Decoder

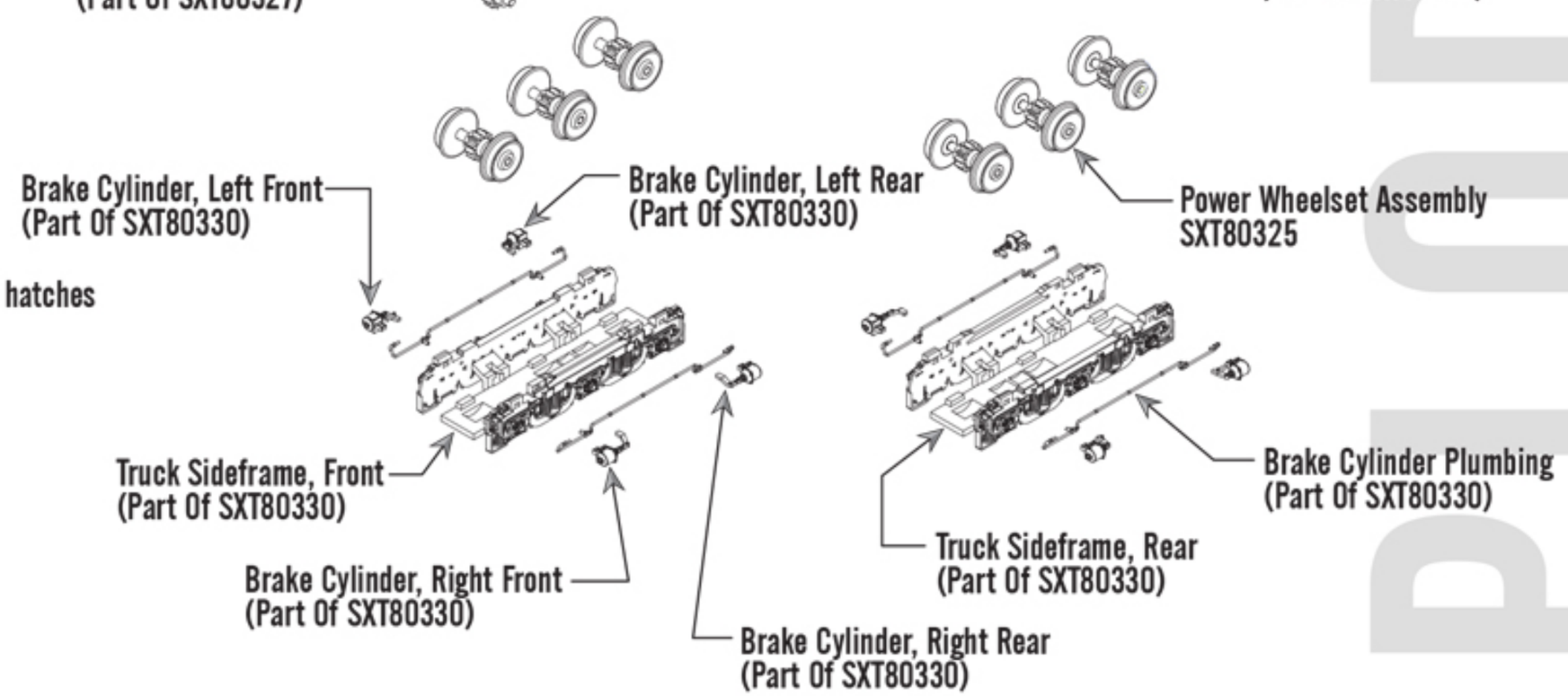
Motor Assembly
SXT80323

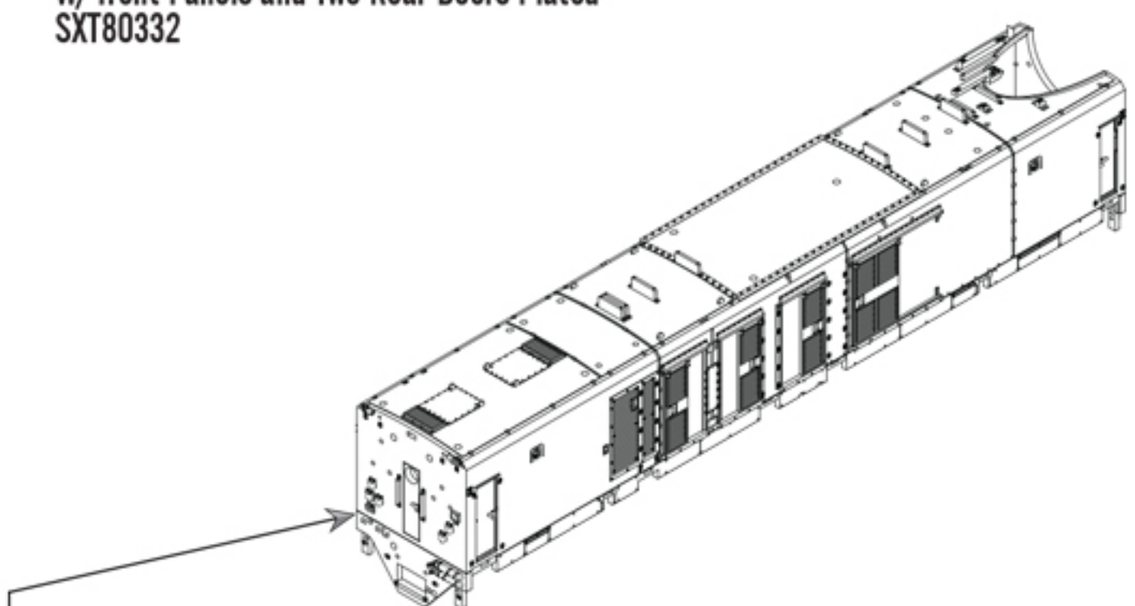
Rear Headlight PCB
SXT80354



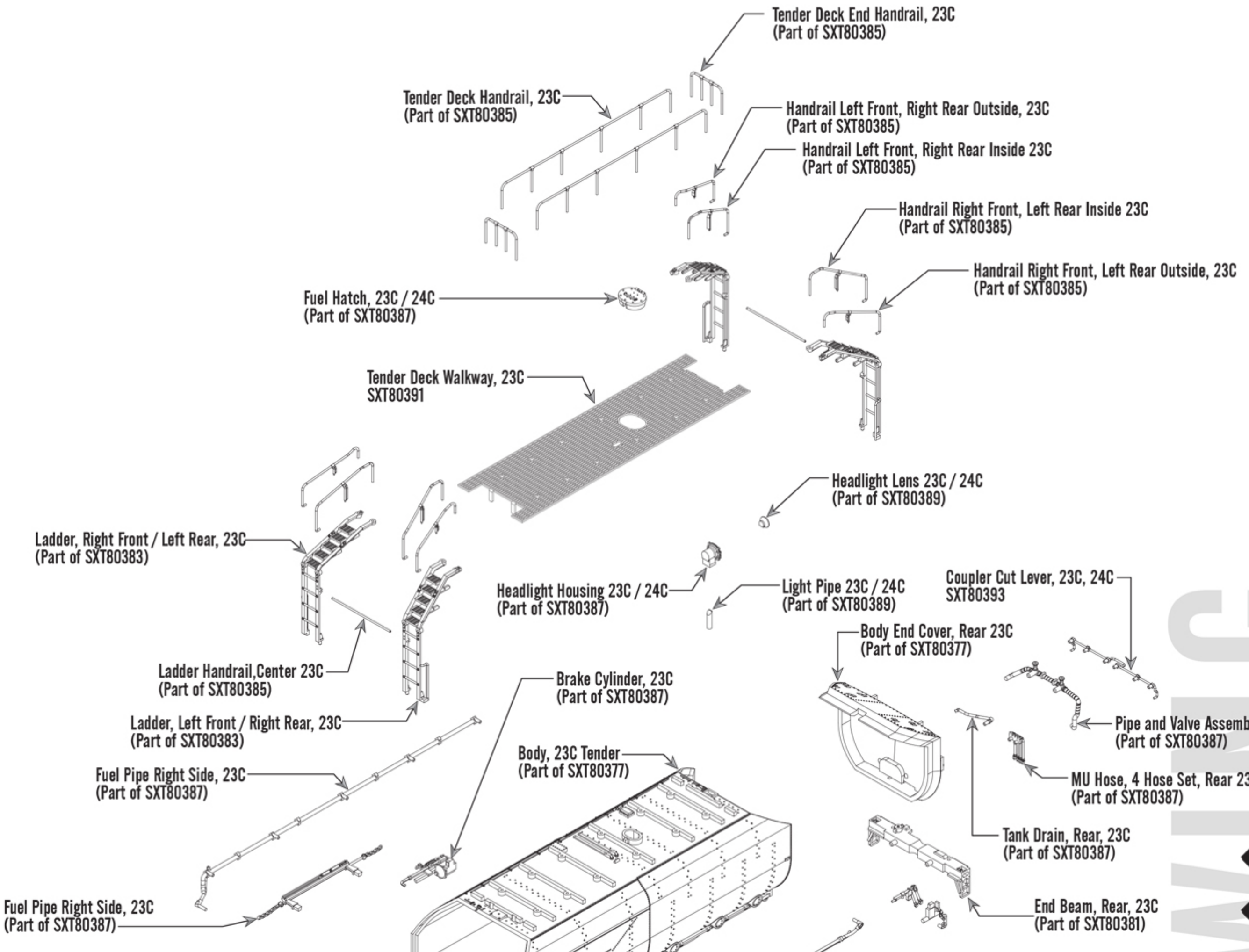


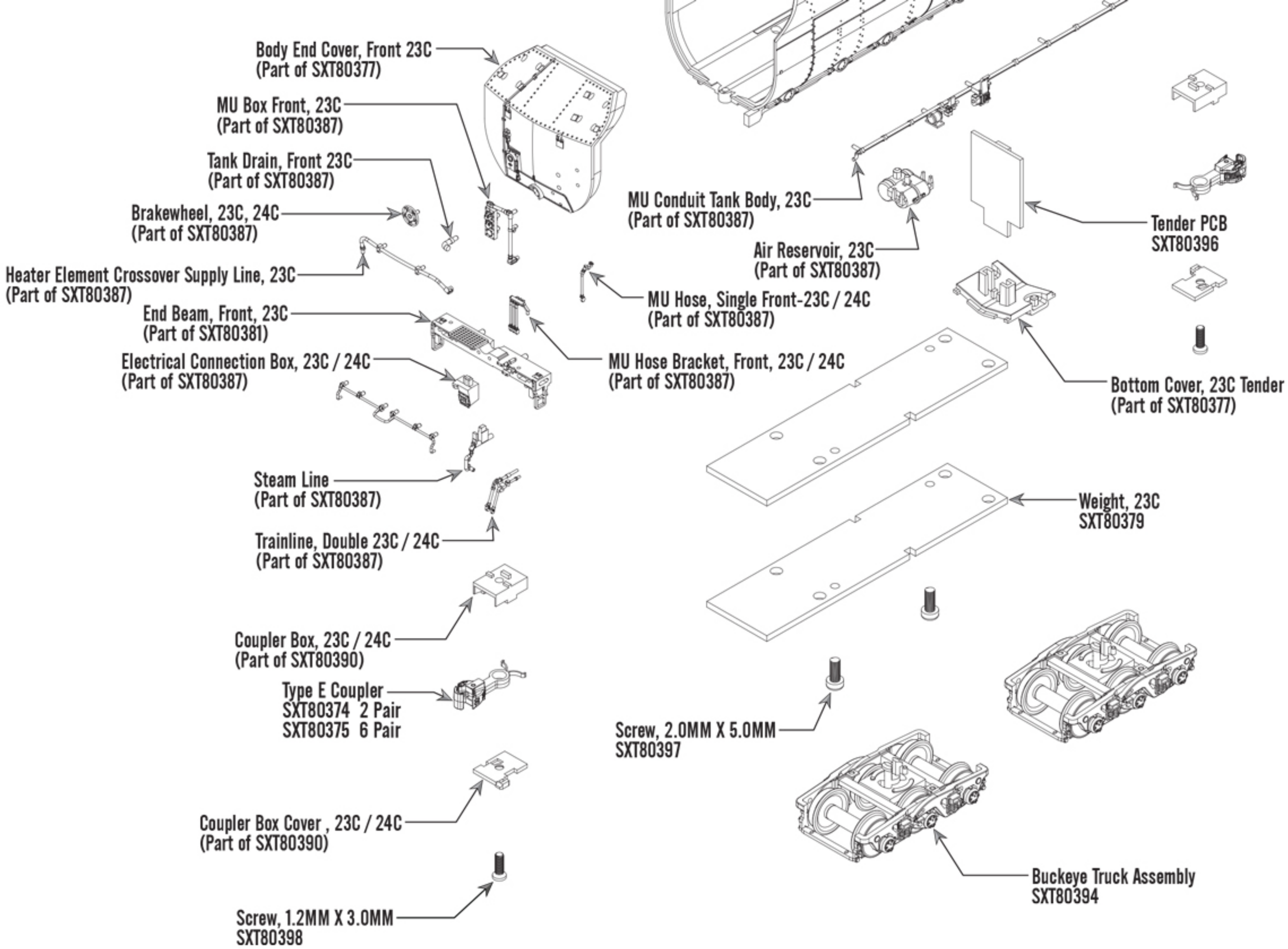






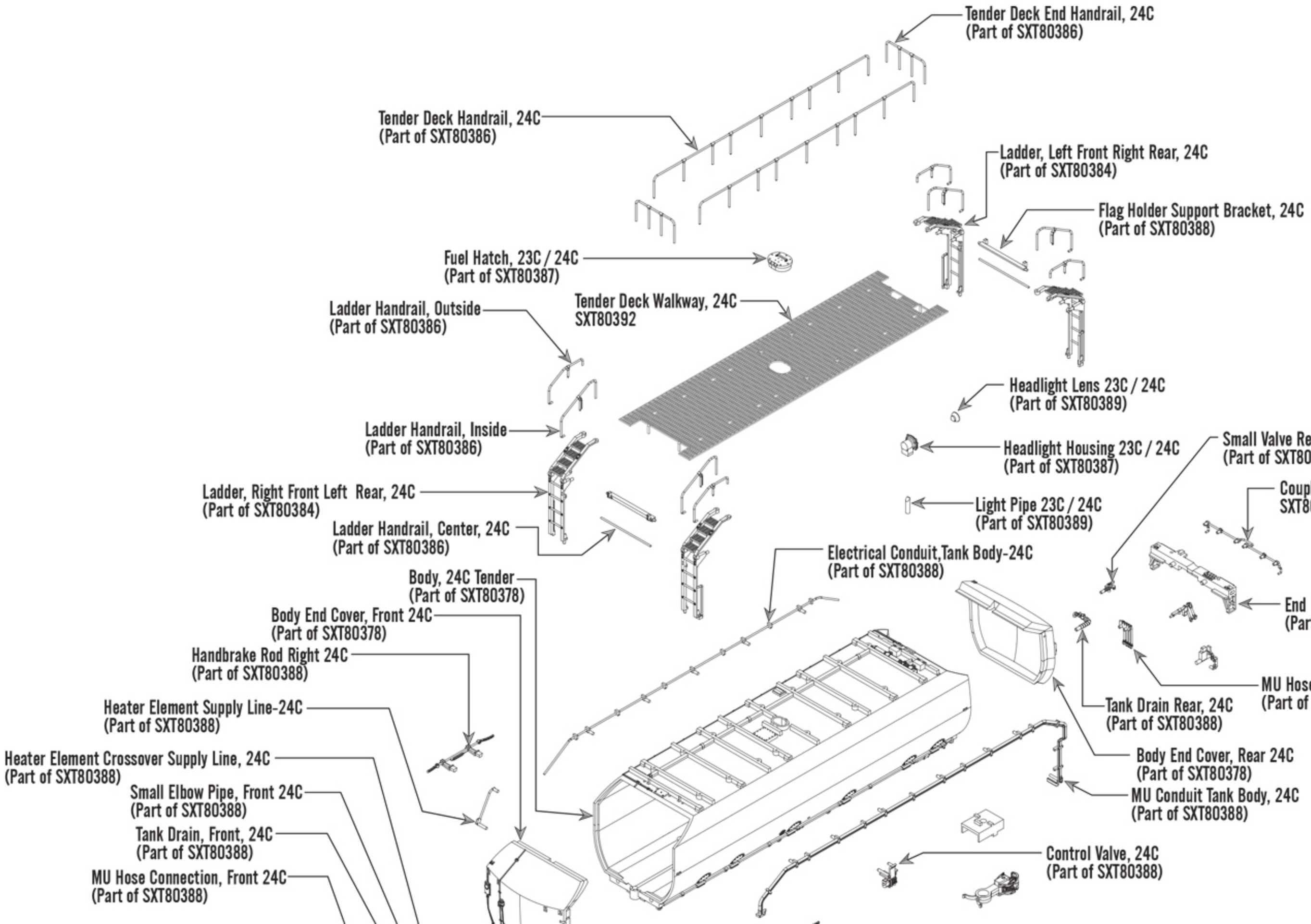
23C TENDER

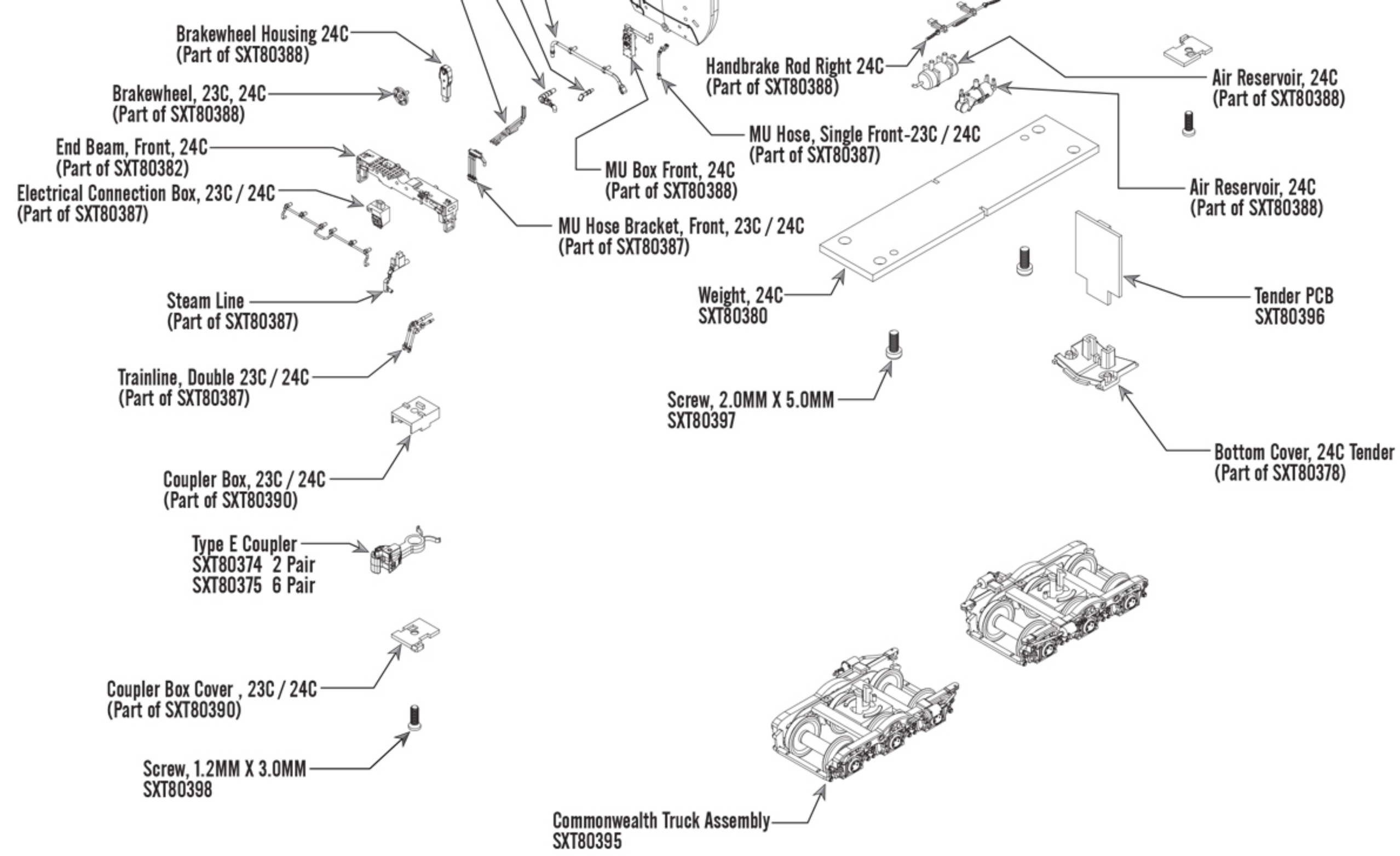

Tender Deck End Handrail, 23C
(Part of SXT80385)
Tender Deck Handrail, 23C
(Part of SXT80385)
Handrail Left Front, Right Rear Outside, 23C
(Part of SXT80385)
Handrail Left Front, Right Rear Inside 23C
(Part of SXT80385)
Handrail Right Front, Left Rear Inside 23C
(Part of SXT80385)
Handrail Right Front, Left Rear Outside, 23C
(Part of SXT80385)
Fuel Hatch, 23C / 24C
(Part of SXT80387)
Tender Deck Walkway, 23C
SXT80391
Headlight Lens 23C / 24C
(Part of SXT80389)
Ladder, Right Front / Left Rear, 23C
(Part of SXT80383)
Headlight Housing 23C / 24C
(Part of SXT80387)
Light Pipe 23C / 24C
(Part of SXT80389)
Coupler Cut Lever, 23C, 24C
SXT80393
Body End Cover, Rear 23C
(Part of SXT80377)
Ladder Handrail,Center 23C
(Part of SXT80385)
Brake Cylinder, 23C
(Part of SXT80387)
Pipe and Valve Assembly Rear, 23C
(Part of SXT80387)
Ladder, Left Front / Right Rear, 23C
(Part of SXT80383)
Body, 23C Tender
(Part of SXT80377)
Fuel Pipe Right Side, 23C
(Part of SXT80387)
MU Hose, 4 Hose Set, Rear 23C / 24C
(Part of SXT80387)
Tank Drain, Rear, 23C
(Part of SXT80387)
Fuel Pipe Right Side, 23C
(Part of SXT80387)
End Beam, Rear, 23C
(Part of SXT80381)



EXPLODED DRAWINGS

24C TENDER


Tender Deck End Handrail, 24C
(Part of SXT80386)
Tender Deck Handrail, 24C
(Part of SXT80386)
Ladder, Left Front Right Rear, 24C
(Part of SXT80384)
Flag Holder Support Bracket, 24C
(Part of SXT80388)
Fuel Hatch, 23C / 24C
(Part of SXT80387)
Ladder Handrail, Outside
(Part of SXT80386)
Tender Deck Walkway, 24C
SXT80392
Headlight Lens 23C / 24C
(Part of SXT80389)
Ladder Handrail, Inside
(Part of SXT80386)
Headlight Housing 23C / 24C
(Part of SXT80387)
Small Valve Rear, 24C
(Part of SXT80388)
Ladder, Right Front Left Rear, 24C
(Part of SXT80384)
Light Pipe 23C / 24C
(Part of SXT80389)
Coupler Cut Lever, 23C / 24C
SXT80393
Ladder Handrail, Center, 24C
(Part of SXT80386)
Electrical Conduit,Tank Body-24C
(Part of SXT80388)
Body, 24C Tender
(Part of SXT80378)
End Beam, Rear, 24C
(Part of SXT80382)
Body End Cover, Front 24C
(Part of SXT80378)
Handbrake Rod Right 24C
(Part of SXT80388)
MU Hose, 4 Hose Set, Rear 23C / 24C
(Part of SXT80388)
Heater Element Supply Line-24C
(Part of SXT80388)
Tank Drain Rear, 24C
(Part of SXT80388)
Heater Element Crossover Supply Line, 24C
(Part of SXT80388)
Body End Cover, Rear 24C
(Part of SXT80378)
Small Elbow Pipe, Front 24C
(Part of SXT80388)
MU Conduit Tank Body, 24C
(Part of SXT80388)
Tank Drain, Front, 24C
(Part of SXT80388)
Control Valve, 24C
(Part of SXT80388)
MU Hose Connection, Front 24C
(Part of SXT80388)



EXPLODED DRAWINGS

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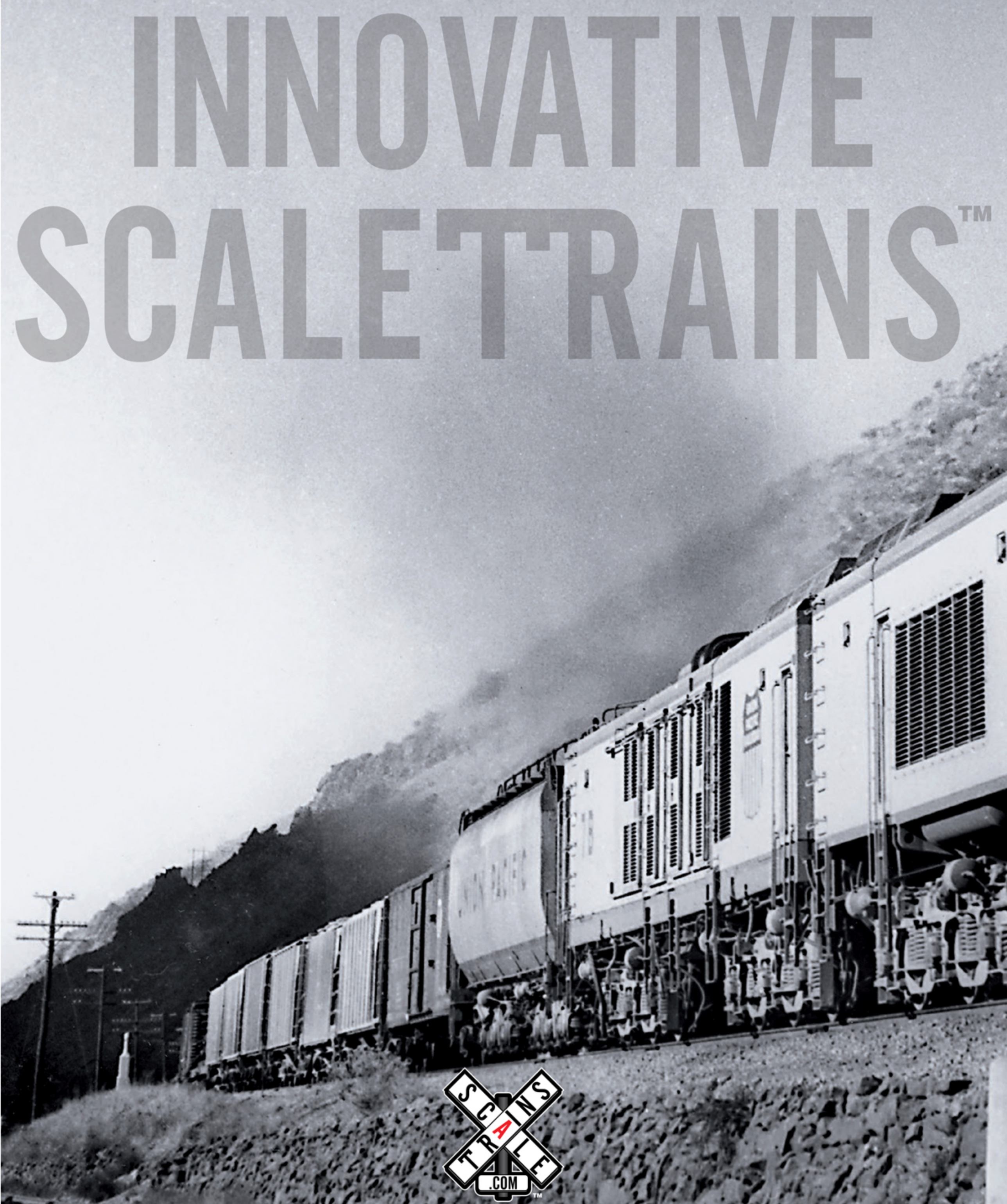
Rivet Counter 8500 GTEL Turbine, 23C & 24C Parts List

PARTS LIST

SXT80300 RC N-Scale Turbine Manual
SXT80301 Body, Control Unit, UP 8500 GTEL, W/O Nose Grabs and Early Radiator
SXT80302 Body, Control Unit, UP 8500 GTEL, W/ Nose Grabs and modified radiator
SXT80303 Body, Turbine Unit, UP 8500 GTEL, W/ Square Box (as-build) Silencer intake and "H-I" Dynamic Brake Hatches
SXT80304 "Body, Turbine Unit, UP 8500 GTEL, As Built, “I-I” Dynamic Brake and Plated Front Panels and Rear Two Doors"
SXT80305 Body, Turbine Unit, UP 8500 GTEL W/ Dynavane intake system and "H-I" dynamic brake hatches W/ front Panels Plated
SXT80306 Body, Turbine Unit, UP 8500 GTEL, W/ Square Filter Housing (as-built), and "I-I" Dynamic Brake Hatches W/ Rear Two Doors Plated
SXT80307 Body, Turbine Unit, UP 8500 GTEL W/ Dynavane intake system and "H-I" Dynamic Brake Housing
SXT80308 Body, Turbine Unit #30B
SXT80309 Control Unit Chassis
SXT80310 Turbine Unit Chassis
SXT80311 Control Unit Weight
SXT80312 Turbine Unit Weight
SXT80313 Control Unit (A Unit) Frame Rail Set
SXT80314 Turbine Unit (B Unit) Frame Rail Set
SXT80315 Cab Heater Box Set
SXT80316 Cab Interior
SXT80317 Leslie S-5T-R Horn, Cab Mount
SXT80318 Leslie S-5T-R Horn, With Bracket, Radiator Mount
SXT80319 Dynamic Brake Housing Set
SXT80320 A Unit Etching Set
SXT80321 A Unit Wirefrorm Set
SXT80322 Window and Lens Set
SXT80323 Motor Assembly
SXT80324 Worm and Shaft
SXT80325 Power Wheelset Assembly
SXT80326 Power Truck Set
SXT80327 Truck Gearbox Assembly
SXT80328 Worm Cover
SXT80329 Drive Shaft, Control Unit
SXT80330 Sideframe Set
SXT80331 Motor Pickup Bracket
SXT80332 Body, Turbine Unit, UP 8500 GTEL W/ Dynavane intake system and "H-I" dynamic brake hatches W/ front Panels and Two Rear Doors Plated
SXT80333 Control Unit, Engine Compartment Air Scoop Assembly Set
SXT80334 Control Unit, Nose Ladder Grab Set
SXT80335 Control Unit, Nose Sand Filler Set
SXT80336 Control Unit, Battery Box Set
SXT80337 Bell
SXT80338 Control Unit, Ladder Set
SXT80339 Control Unit, 2500 Gal (As Built Fuel Tank
SXT80340 Fuel Tank, Extended
SXT80341 Control Unit, Air Tanks and Plumbing Set
SXT80342 Worm Coupling Set
SXT80343 Speaker Box
SXT80344 Control Unit, Turbine Unit Uncoupling Lever Set
SXT80345 Worm Bearing
SXT80346 Worm Washer
SXT80347 Control Unit, Rear Detail Set
SXT80348 Speaker
SXT80349 Coupler Box
SXT80350 Control Unit Hose Set
SXT80351 Mother Board
SXT80352 Headlight PCB
SXT80353 Number Board PCB
SXT80354 Rear Headlight PCB
SXT80355 Turbine Unit MU Hose Set
SXT80356 Turbine Unit #30B Roof Detail Set
SXT80357 Turbine Unit Ladder Set
SXT80358 Turbine Unit Side Door Hanger Set
SXT80359 Turbine Unit Square Intake Housing, As-Built
SXT80360 Turbine Unit Centerline Air Scoop Set (As Built)
SXT80361 Turbine Unit Air Scoop Set (Modified, Late)
SXT80362 Turbine Unit Exhaust Nozzle Set

SXT80363 Turbine Unit Dynavane Intake Housing Set
SXT80364 Turbine Unit Roofwalk Set, For Dynavane Intake Housing
SXT80365 Turbine Unit Wire Form Set
SXT80366 Driveshaft, Turbine
SXT80367 Turbine Unit Roofwalk Set, For Intake Housing
SXT80368 End Frame w/ Lifting Lugs, Turbine Unit Rear
SXT80369 Turbine Unit Rear Ladder
SXT80370 Turbine Unit Rear Fuel Hose
SXT80371 Screw, 1.2MM X 4.0MM
SXT80372 Screw, 1.2MM X 3.0MM
SXT80373 Screw, 1.2MM X 3.0MM
SXT80374 N-Scale Type E Coupler- 2 pair
SXT80375 N-Scale Type E Coupler- 6 pair
SXT80376 "Body, Turbine Unit, UP 8500 GTEL, As Built,
“I-I” Dynamic Brake and Plated Rear Two Doors"
SXT80377 23C Tender Body
SXT80378 24C Tender Body
SXT80379 Weight, 23C
SXT80380 Weight, 24C
SXT80381 23C Tender End Beam Set
SXT80382 24C Tender End Beam Set
SXT80383 23C Tender Ladder Set
SXT80384 24C Tender Ladder Set
SXT80385 23C Tender Handrail Set
SXT80386 24C Tender Handrail Set
SXT80387 23C Body Detail Set
SXT80388 24C Body Detail Set
SXT80389 Lens Set, 23C / 24C
SXT80390 Coupler Box Set 23C / 24C
SXT80391 Tender Deck Walkway, 23C
SXT80392 Tender Deck Walkway, 24C
SXT80393 Coupler Cut Lever, 23C, 24C
SXT80394 Buckeye Truck Assembly
SXT80395 Commonwealth Truck Assembly
SXT80396 N-Tender PCB
SXT80397 Screw, 2.0MM X 5.0MM
SXT80398 Screw, 1.2MM X 3.0MM

INNOVATIVE SCALETRAINS™



ScaleTrains.com, Inc. • 7598 Highway 411, Benton, TN 37307 • www.scaletrains.com • Toll-Free 844-9TRAINS

SXT80300 WARNING: This product may contain a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.