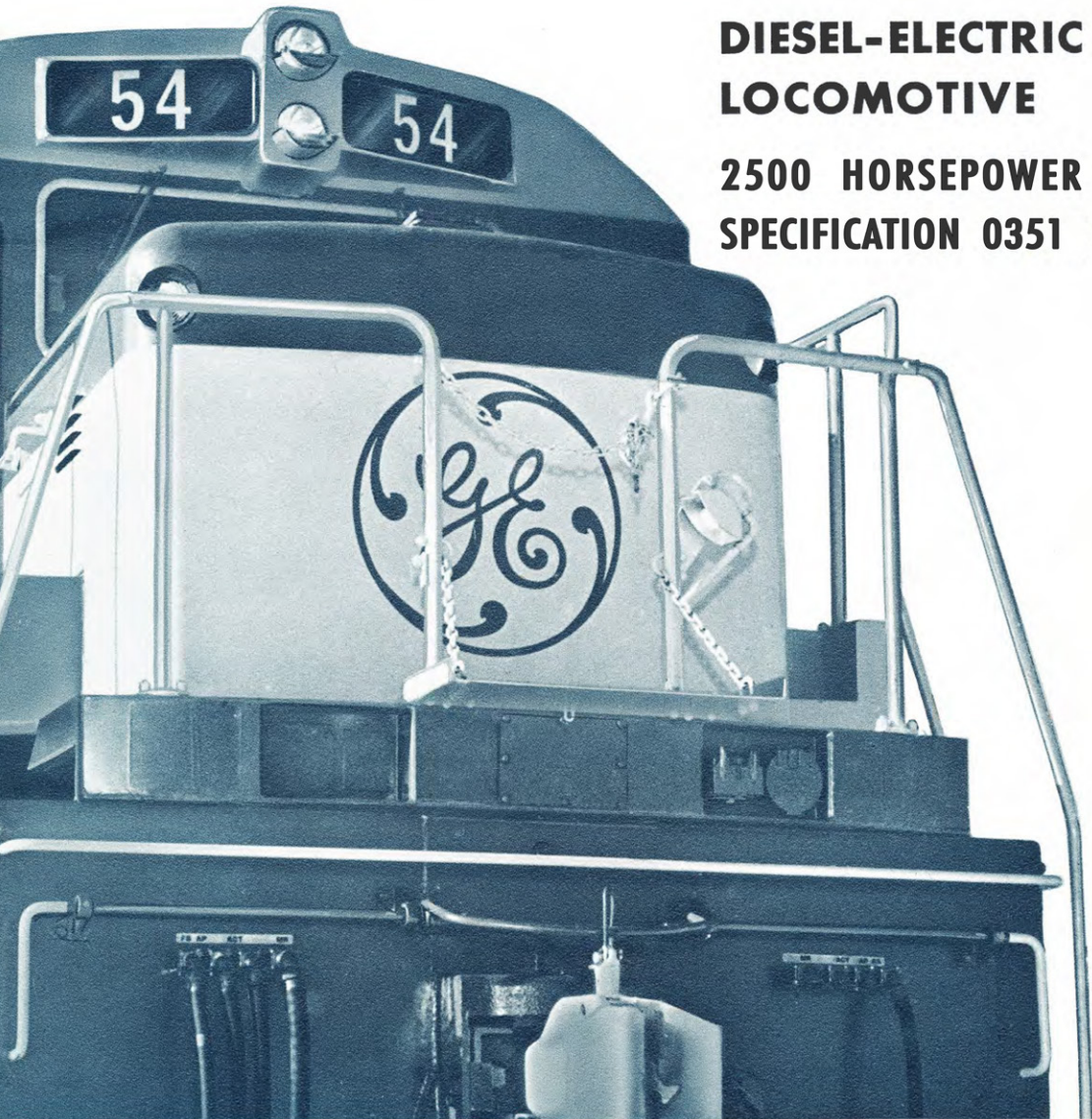


RAPIDO TRAINS, INC.

# U25B

**DIESEL-ELECTRIC  
LOCOMOTIVE**

**2500 HORSEPOWER  
SPECIFICATION 0351**



LOCOMOTIVE & CAR EQUIPMENT DEPARTMENT

**RAPIDO**  **TRAINS**

MARKHAM, ONTARIO

## **GE U25B LOCOMOTIVE PRODUCT GUIDELINES**

Thank you for purchasing this model of the very first 2nd Generation diesel-electric locomotive, the General Electric U25B. The first of GE's "U-Boats", this loco model didn't replace steam engines but it replaced the early diesels that did.

If this is your first Rapido locomotive, we must ask – why is this your first Rapido locomotive? No, seriously, we've been around for 20 years now and we're not just a Canadian company, eh? We've produced a US customary ton of American products, like the EMD E8s, ALCO PAs, GE B36-7s, Horizon coaches, SW1200s, FL9s, PRR X31A boxcars, AutoFlood III hoppers, etc. So just for that, we're going to make sure you LOVE your GE U25B. And then you'll say to yourself, "What have we missed out on all these years? We need to find and buy every Rapido model that has ever been released, in every scale! Especially the UK ones!" Then someone will yell at you for talking about yourself like you are royalty when you clearly are not.

If you are a returning customer, welcome back! Just put your engine on the track. All we ask is you don't intentionally set it on fire, don't use it on a daredevil stunt off the end of the layout, don't coat it in marshmallow Fluff, and don't MU it to anything made by Tyco. Oh, and REALLY keep it away from cheap DC controllers. Crappy power packs can quickly and easily give any Rapido loco an unwanted makeover... and not the good kind (but at least it will melt the Fluff into gooey goodness!).


If this is your first Rapido Manual, we should warn you up front – there's usually a good amount of humor through these manuals. Well, at least we think so. We have gotten some comments from people that don't agree, but we suspect that they have had their sense of humor surgically removed (we think it's near the spleen). After all, model railroading is supposed to be fun!

As always, if there is anything amiss with your GE U25B, please do not hesitate to contact us. We stand by our products 100%. The best way to contact us is through email ([service@rapidotrains.com](mailto:service@rapidotrains.com)) but you can also try to reach us by phone, the postal service, or two cans with a string (you must provide the string). Our contact info is near the back of this manual.

However, PLEASE do not send a faulty model back to us without first getting authorization. You wouldn't believe how many times we get a delivery of a broken locomotive with only a name inside (sometimes only the FIRST name), meaning we have no idea what's wrong with it! (Hey Frank – your package of telephone poles is still sitting on the shelf in our bathroom.) If the issue with your model is something simple – like a loose grab iron – then we'll likely tell you how to fix it yourself. While we generally will support repairs to your GE U25B for a considerable length of time, please realize that eventually the parts supply will run out. That, or the Earth will be overrun by tribbles and all humans will become their pets; whichever comes first. Unfortunately, that will dictate when we can no longer help you. Again, please make sure you contact us first so we can tell you whether there's enough parts (or quadrottricale) left to do your repair.

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	<p><b>LOK SOUND</b> EST. 1999</p>	<p>Sound-equipped Rapido models feature ESU Loksound V5 decoders. For more information, please visit <a href="http://www.esu.eu">www.esu.eu</a>.</p>
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**U25B DCC FUNCTIONS**

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| F0 Front Headlight                    | F13 Rear Headlight                 |
| F1 Bell                               | F14 Radiator Fans                  |
| F2 Horn                               | F15 Air Compressor                 |
| F3 Flange Squeal                      | F16 Cab Interior Light             |
| F4 Dynamic Brake                      | F17 Roof Beacon Light              |
| F5 Doppler Horn                       | F18 Track Inspection Light         |
| F6 Ditchlights ( <i>if equipped</i> ) | F19 Numberboards                   |
| F7 Dim the Headlights                 | F20 Alarm Bell                     |
| F8 Startup/Mute/Shutdown              | F25 Rear White Class Lights On/Off |
| F9 Drive Hold                         | F26 Manual Notching Up/Run 8       |
| F10 Independent Brake                 | F27 Manual Notching Down/Coast     |
| F11 Front White Class Lights On/Off   | F28 Manual Notching Logic          |
| F12 Switching Mode                    |                                    |

## **PROTOTYPE HISTORY**

After decades producing electrical components for diesel-electric locomotives, along with offering a line of various light industrial/shortline engines and export locomotives, General Electric began work on a "Universal" road diesel aimed at the North American market. Given that there were already well-established builders currently building competing products, this was a risky move even for them.

GE negotiated with Cooper-Bessemer to build a new V16 diesel engine, the FDL16, to be used as the prime mover in their locomotives. In May 1959, a pair of diesel-electric locomotives with a clean-looking high-nosed hood was released from GE's Erie, Pennsylvania, plant. After 100,000 miles of testing, they were returned to Erie. In late 1960, four new U25B demonstrators were constructed. All featured high noses and were painted in a white and red scheme that toured America's railroads beginning in March 1961. Union Pacific signed up for the first eight production units (high nose), followed by Frisco purchasing the four demonstrators and adding four new units (all high noses).

Four *more* demonstrators were built in 1962. These were numbered 2501-2504 and painted in a striking red and white scheme with a large GE logo on the nose. GE 2501 was the first low-nose U25B (with 2502-2504 being high-nosed), to see if railroads preferred the better crew visibility it provided (which they did).

GE received U25B orders from a number of large railroads thanks to the demonstrator's tour. Between April 1959 and February 1966, 478 U25Bs were constructed. Orders were placed by AT&SF, C&O, CB&Q, MILW, RI, E-L, GN, L&N, NYC, NH, PRR, SL-SF, SP, UP and WAB. The U25B would pave the way for future Universal series locomotives.

Many U25Bs lasted into the early 1980s on some Class I railroads, others would find their way onto short lines and museums – only seven are left today.

## **BREAK-IN**

Just so we're clear, that doesn't mean break into anyone's layout room to steal their GE U25B. And don't break into a hobby shop either because that is really frowned upon. Just buy more for yourself. But this isn't about that kind of break-in.

Every locomotive needs a break-in period. Your GE U25B has been tested at our factory for about two minutes...maybe...just to make sure everything functions as it should. That is certainly not enough time to get the gears to mesh nicely or to even out any jerky operation in a new motor. We suggest that, after reading this manual, you put your GE U25B on a test loop and just let it run in each direction for an hour or two. Fast and slow. Don't have it pulling anything either while you're breaking it in.

There already should be enough grease in the gearbox so you don't need to add any. Just let the thing run. If you are running this thing on track on the carpet, please vacuum first. You have no idea how many models come back to us with gearboxes full of carpet fluff and pet fur. Our models are not cat-proof.

George Seacrest photo, Louis A. Marre collection.



## HOW TO HOLD YOUR LOCOMOTIVE

Hold your GE U25B gently, and with much love, care, and attention. Your model has numerous delicate parts, especially on the roof and underframe. If you want to back date it to be the quality of a model produced in the 1970s, then rip all the parts off and handle it like a doughnut from Dunkies after skipping breakfast. We're assuming you don't want to do that, so the GE U25B should be picked up carefully. It is best to pick it up with your fingers along the bottom edge of the fuel tank. That way you won't leave greasy fingerprints on the sides and you also won't stress any of the delicate parts. Always make sure your hands are free of shmutz before touching your engine, otherwise you'll shmutz up your fuel tank. Hey – if your hands have enough oil on them that could be realistic.

If you are taking your GE U25B to the club all the time and regularly handling it, stuff will likely break off. Sorry. The little bits are made of plastic and metal and attached with glue, which is all a bit fragile. We wanted to make the small parts out of unobtainium and use Steady-State Micro Welding to install them. Unfortunately, with the current global supply crisis, unobtainium has become unobtainable.

We suggest wrapping your GE U25B in a plastic bag before placing it in the packaging or in your holder so you can catch bits that fall off. White glue is the recommended adhesive for reattaching the bits, although you are welcome to use CA but only if you are very careful or very brave. Remember to apply the CA to just the part and not the model (don't ask us how we know this).

## **CHECKING AND ADJUSTING YOUR LOCOMOTIVE**

We try and make sure that every locomotive is perfectly up to spec before it leaves the factory, but if it was a Monday night and our factory workers were placing bets on last night's football game between Taiwan and Singapore rather than assembling models, there may be a couple of bugs. Doing a quick pre-service check will solve most operational glitches.

- Check to see that all wheelsets are correctly in gauge using an NMRA RP-2 Standards Gauge. Should any of the wheelsets be out of gauge, then remove the affected wheelset from the truck by prying off the bottom lid of the gearbox with a small flat screwdriver and then spreading apart the sideframes. The wheelset can be regauged by grabbing each wheel and twisting. Reverse the steps to replace the wheelset and ensure the gearbox cover is snapped into place before placing it on the track.
- Check that all underbody piping and appliances are firmly installed and clear of the track. Of particular note are the air hoses on the ends of the locomotive and both coupler trip pins. Bend up any low coupler trip pins so they don't interfere with your switches and crossings. We recommend using Kadee part #237 (Trip Pin Pliers) or Micro-Mark part #80600 (Trip Pin Bending Plier). If your track transitions from flat to a 12% grade in three inches, you might also want to cut off the pilot and the fuel tank as they will foul the rails. Have you ever considered roller coaster modeling? That might be more your style.
- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the sides of the trucks don't bind against the steps. If they do, see that everything is firmly installed.

## **MISSING OR DAMAGED PARTS**

If you open your GE U25B box and discover that something has obviously been bumped in transit and is damaged, please contact us. We know that some of you don't like the idea of human beings touching your models, but if it is a matter of gluing an exhaust stack back on you can do it yourself in less than a minute with a drop of white glue. If you really want to send your model back to us for us to install that, we would be happy to. But if you do send it back for us to put that one part back on and other stuff falls off when we send it back to you, then tough tooties. We're not fixing it again.

We try to make our models courier- and mail-proof, but there really is no way to protect a model from damage when it is used in a game of football at the UPS or FedEx distribution center. Model trains generally don't survive well after being "spiked" because Bobby scored a touchdown near the warehouse receiving doors.

If you see some grab irons are missing and they are not floating around the packaging, let us know and we will send you replacements. More information about our warranty can be found toward the end of this manual.

## **ADDITIONAL FEATURES**

Over the years, the GE U25B came with a few special features that were often customized for or by the purchaser. Some railroads opted for additional lights or details. With that said, let's have a look at what some of the interesting GE U25B features are:

### **HIGH NOSES**

Nine of the ten GE demonstrators had high short hoods and so did the first orders for UP and SL-SF. With the first low-nose GE Demo 2501, the railroads discovered that they preferred the extra visibility it provided.

### **DYNAMIC BRAKES**

The U25B was available with and without dynamic brakes. These can turn the traction motors into electrical current generators, and this power can be run through variable-resistor grids to control a train's speed. These grids, if present, are visible through the side screens at the end of the hood.

### **ROOF TOP BEACON (SL-SF)**

On the St. Louis - San Francisco Railroad, they used a rotary beacon on the cab roof as extra warning to near-by personnel and civilians that a 265,000 lb. locomotive was operating in their vicinity.

### **TRAIN CONTROL BOX (NH, PC)**

This provided cab signal information and Automatic Train Stop (ATS) ability on the New Haven's mainlines north and east of New Haven, Conn. If the train passed a red signal, the ATS would apply the brakes automatically.

## **REMOVING THE SHELL**

If you need to open your GE U25B to install a crew or a decoder, things should be pretty straightforward and easy. To get inside your GE U25B, you will need to follow these steps:

- We recommend that you only attempt opening up your locomotive in a zero-gravity environment. That way, if a part does break off, it will just be suspended there, right where you broke it, ready for you to reinstall it. If you don't have a zero-gravity chamber, then we suggest not installing shag carpet in your workspace. Yes, it looks great and yes it feels great on bare feet, but

Rapido employees have experience in understanding that whatever detail bits fall into shag carpet are gone forever. No questions, it's not coming back. The only way to find it is to walk barefoot and hope that it impales your foot in the most painful way possible. And if you decide to use this method to find the missing parts, you're not covered by our health plan.

- To that end, please make every effort to ensure nothing flies away. We normally suggest you work in a room with everything white – walls, floor, ceiling, workbench, tools, clothes – everything. But doing so would be very boring (albeit practical) so that's likely not the case, is it? Instead, wear a shop apron (white, of course!) but attach the bottom of it to the underside of your workbench. That way, at least some parts will be saved from hitting the floor. Just remember to remove the apron before standing up.
- To remove the shell, you have to remove the screws from the coupler boxes and pull them out of the pilots. Then just carefully pull the body shell and walkway assembly off the chassis. If you are working in a zero-gravity environment, then the chassis will slowly drift away from the shell. On the other hand, if you are not in a zero-gravity environment; remember – gravity sucks. If you hold your loco upright the chassis will now plummet to the nearest solid object. Hopefully that is not a concrete floor. You may want to do this carefully over your workbench with some foam or a cloth underneath.
- If you wish to install a crew inside your GE U25B, first remove the handrails from the cab ends. The cab is secured to the walkway by four clips – two on each side. Put a forefinger and a thumb on the front and rear cab walls down low near the walkway and squeeze. With a little manipulation, the cab should come free and lift up. Be careful not to yank too hard as the wires for the cab LEDs are attached between the cab and body. Patience will be key here. After the cab is separated, the cab floor needs to be removed from the cab by gently prying the cab apart in order for the floor to release from the snaps of the clear window GPPS. Install your crew figures and install in reverse order.
- If you wish to change out the decoder, then just follow the previous steps about removing the shell. It will expose all the wonders that lie within.

At this point you should have the entire shell off the frame, as long as you followed our super simple instructions. We don't know how to put it back together, so from here you're on your own. Just read the instructions backwards and you should be OK. If you find a cryptic message while reading the instructions backwards, it's not our fault.

Any requests for replacement bodies because you broke the little clips will be met with laughter, followed by sadness, then laughter again, and then a very polite



suggestion that you should model a locomotive rebuilder and use your recently broken body as scenery. We did warn you after all. If we can assist, then all joking aside we'll make every effort to do so. But note that we don't have a warehouse full of shells and cabs to replace the broken ones.

## **OPERATION – DC (SILENT)**

If your GE U25B locomotive is not equipped with a sound decoder, it should function like most other HO scale locomotives. Put it on the track. Give it some juice. Watch it go. In DC, the number boards are always on and the headlights are directional. All other lights – including class lights and optional beacons – are wired, but they will not work in DC.

If you are new to the hobby (or just like to occasionally “play trains”) and you have a DC-powered train set, please contact us before operating your GE U25B as it may not be safe (for your engine and/or your wallet) for you to use your controller.

Some train set throttles put out a very high maximum voltage that is not suitable for scale model trains. The maximum recommended voltage is 15 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your GE U25B can handle. Please see the highlighted warning not too much further in this manual.

If you use a train set throttle or a throttle designed for large scale trains, your locomotive's circuitry may end up looking like a TV dinner forgotten in the microwave after you accidentally punched in an extra digit into the timer. In such situations, we'll try our best to fix it for you, but it may be beyond salvaging. Please note we may have to charge you for the replacement parts and/or the labor involved in restoring it to its former self. That's because you didn't read this bit of the manual. For those of you who are reading this, hi! How's it going? You in the mood for pizza?

## **INSTALLING A DCC DECODER**

The GE U25B contains a motherboard specially designed for our decoders. This is connected to the track, motor and lighting outputs. A blind plug is attached to the motherboard using a 21-pin connector. To install a decoder, remove the blind plug and install a 21-pin decoder. Your chosen decoder should have eight function outputs.

At the time of writing, we recommend only the following non-sound 21-pin decoders:

- ESU #59029 - LokPilot 5 Basic with 21MTC
- ESU #59629 - LokPilot 5 DCC with 21MTC

We feel the 21-pin connectors are superior because there are enough pins to ensure that all your lighting functions are connected. The necessary resistors are included on our motherboard so you don't have to futz around with resistors. Just plug in one of the recommended decoders and you have DCC. We know some of you prefer a different brand of decoder, but we honestly can't help you install it or map the functions.

We have made a GE U25B function mapping which can be downloaded onto ESU decoders so that the function buttons and motor control are exactly the same as our factory-released sound versions. This should be available for download from the Support section of our web site. If it isn't, bug us. You will need an ESU LokProgrammer to write the function mapping to the 59029 or 59629 decoders. If you don't have a LokProgrammer, you can adjust CVs in the usual way.

We will be selling GE U25B sound decoders separately; if they aren't on our web site by the time you read this, call our office, pick a random number between 1 and 75, divide by  $\frac{3}{4}$ , multiply by  $\sqrt{\pi}$ , and then take the second last number. Call that extension and you'll be redirected to someone whom you can yell at. Look at us – we use the correct pronoun and then end the sentence with a preposition. This is a metaphor for the contradictory nature of human existence! You can find further editions of this manual in the philosophy department of your local bookstore.

If you want to install a decoder other than the one we suggest, it's more than just plugging in the decoder and then playing trains. You will have to custom map all the functions. It's just how it is. We won't apologize for that. Sorry.

## OPERATION – DC (SOUND)

To operate your sound-equipped GE U25B locomotive on a DC layout, just give the throttle some juice. The engine will start up once sufficient voltage has been reached (around seven volts). See the note above (in Operation – DC (Silent)) about using train-set or large-scale throttles. With DC layouts, you have very little control over the sounds of your model.

*Louis A. Marre collection.*



## — WARNING —

Rapido products are designed to operate safely between 0V and 16V. Voltages in excess of 16V - as well as irregular waveforms, voltage spikes or short circuits - may cause severe and sometimes irreversible damage to the product. "Train set" power packs are known to suffer from any one of these unexpected irregularities, whereas higher-end systems have safeguards in place to prevent this. Rapido always recommends using a power supply system that matches the quality of the models you are running. If you're reading this, you've obviously invested in top-of-the-line, museum-quality motive power and equipment, so we hope you've made the same investment with your model railroad power supply too.

While many power supply systems exist, some are known to have caused problems with model train circuitry in the past. If you have any one of the following systems, **PLEASE DO NOT USE IT** until you contact us for more information: MRC RailPower 1300/1370-series, Bachman Spectrum Magnum, Atlas 313 Universal Power Pack.

The DC lighting is limited. Some throttle manufacturers produce special gadget-like thingies which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those gadget-like thingies, we have absolutely no idea how they will affect your GE U25B, for good or for ill, for richer or poorer, in sickness and in...sorry, wrong transcript. As always, we'll try to help you fix your GE U25B if one of these gadget-like thingies turns your locomotive's circuitry into something akin to glowing magma, but we can't guarantee we'll be able to.

It is usually at this point in the manual that Jason inserts a gentle dig at his fellow modelers who won't switch from DC to DCC. The rest of the staff continue to repeatedly remind him what happened the last time he did that. Something about being chased down the county highway by a group of townsfolk wielding transformers and potentiometers. As long as we can keep reminding him of this event, he'll be nice to DC modelers. Not that we're calling DC modelers Luddites - No, sir, not us!

## OPERATION – DCC (SOUND)

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are LokSound V5 decoders by ESU, with Full Throttle functionality. The sounds are about as bang-on accurate as we can make them. GE U25Bs weighed in at some 132 tons in working order. Therefore a certain amount of starting

momentum has been pre-programmed into the decoder to replicate that massive weight. If you want to eliminate the delay to speed up, program CV3=00, but when freight customers complain about their damaged cargo, don't blame us!

More detailed decoder instructions, including all sorts of weird CV settings we don't understand, can be found in the ESU LokSound V5 decoder manual. It is available for download from the support section of our web site or directly from the ESU website.

## LOCOMOTIVE ADDRESS

Your Rapido GE U25B comes from the factory with a decoder address of 3. We suggest if you are using DCC control that you first test that the locomotive responds on address 3 to all functions – motor, lights, sounds, everything. Once you have verified that the locomotive is responding you should assign it a unique address (normally the road number of the unit) before going any further. This can be done either on your programming track (recommended) or on the main if your system supports programming on the main. Be aware however that if you do program the locomotive on the main and you have any other locomotives assigned to address 3 (the normal default address for new locomotives) that ALL of them will also be changed to your new address! This is great if you want to simulate a bunch of kids getting into the engine shop, notching the controllers, and then heading for the hills.

Note that some DCC systems get a little wonky when programming sound-equipped locomotives on the programming track because of the high current draw. If weird stuff happens, try programming on the main or use a programming track booster.

## TURN ON THE SOUND

Press F8 and you will hear the GE U25B startup sequence followed by the sound of it idling. You can adjust CVs to prevent the locomotive from moving until the startup sequence has played out. Most of us at Rapido are really impatient so we turned this feature off. Refer to a full ESU LokSound V5 decoder manual for more information. You can now download it from the Support section of our web site. The feature is called the “Prime Mover Startup Delay” and is Section 13.2 on Page 89 of the ESU LokSound V5 manual.

If you press F8 when the locomotive is already moving, it will skip the startup and the sound will just turn on. Press F8 again to turn the sound off.

Note that if you are listening to your GE U25B idling nicely and then you select another engine, your locomotive still thinks F8 is pressed so it will keep idling along. However, if someone else selects your locomotive's number and F8 isn't pressed on their controller, the GE U25B will promptly shut down. They will need to press F8 again.

## FUNCTIONS

F0	Front Headlight	F13	Rear Headlight
F1	Bell	F14	Radiator Fans
F2	Horn	F15	Air Compressor
F3	Flange Squeal	F16	Cab Interior Light
F4	Dynamic Brake	F17	Roof Beacon Light
F5	Doppler Horn	F18	Track Inspection Lights
F6	Ditchlights ( <i>if equipped</i> )	F19	Numberboards
F7	Dim the Headlights	F20	Alarm Bell
F8	Startup/Mute/Shutdown	F25	Rear White Class Lights On/Off
F9	Drive Hold	F26	Manual Notching Up/Run 8
F10	Independent Brake	F27	Manual Notching Down/Coast
F11	Front White Class Lights On/Off	F28	Manual Notching On/Off
F12	Switching Mode		

## FUNCTIONS: MORE INFORMATION

### F0 Front Headlight

Just like the real thing, our GE U25B headlight is not directional. No matter which way you're going, the front headlight IS the front headlight. If you want the headlight facing the opposite way of travel to be on, then read a little further on under the F13 Rear Headlight.

### F1 Bell

Probably one of the most difficult sounds to master is the bell because it's such a noticeable feature, and no matter what, chances are they all had their own unique tone to them. We have provided four slightly different bell sounds so that you can add a little variety to your huge fleet of GE U25Bs. You DO have a huge fleet of GE U25Bs, don't you? You can choose between the bells by changing CV164 to a value of 0 through 3.

### F2 Horn

We love our horns. Like really! Seriously, who doesn't love a good sounding horn? So, we're now providing a wide range of horns for you to apply to your locomotive as appropriate or as you see fit (even if it's not appropriate). To get a short "toot" just tap F2 or your "HORN" button. If you hear a long tail-off, you are tapping for too long. If, no matter what you do, you just can't get the darn thing to make a short "toot," switch to NCE. The default horn is a Leslie S-3E, but we've included a dozen others. Refer to the "Custom Sound Settings" section below.

## **F3 Flange Squeal**

Just as you're easing into a sharp curve on your layout, press F3 to hear the metal-on-metal squealing sound all trains are known for.

## **F4 Dynamic Brake (if equipped)**

Press F4 to get dynamic brake sounds. Who does that? Well apparently a lot of people because once upon a time, we got flak for putting it in the higher tiers of functions on our old locomotives. So for that, we apologize and have brought it to the forefront of functions for your acoustic pleasure. If your unit does not have dynamic brakes, you can *think* about using F4 but that would be so wrong.

## **F5 Doppler Horn**

You can play this when approaching level crossings or any other whistle post. The doppler is nicely timed for a moderately paced train blowing for a level crossing. When you change the default horn for F2, the doppler horn will also change to the appropriate tone as well. It's like we're wizards or something!

## **F6 Ditchlights (if equipped)**

Ditchlights were invented in Canada in the 1960s to illuminate right-of-way ditches for rockslides and other obstructions. They became mandatory in America on January 1, 1998. We added them to the programming just in case you want to model a preserved museum example that has them.

## **F7 Dim the Headlights**

When approaching a station stop or an oncoming train, press F7 to dim your lights and turn off your ditch lights – you don't want to blind your passengers or the oncoming train's engineers. It will also turn off any other potentially blinding lights you may be running. Not dimming your lights is a direct violation of what's commonly referred to as "Rule 17". The internet can answer all your questions about said rule.

## **F8 Startup/Mute/Shutdown**

While your locomotive is stationary, pressing F8 will begin the startup sequence of the engine sounds. If your locomotive is silent but already in motion, pressing F8 will skip the startup sequence and simply turn on the sound. If the sound is already on, press F8 to mute the sounds. If your locomotive is stationary, then you will hear the engine shut down sequence before the sound turns off.

*If you have a DCC system that only allows eight functions, you can remap the following functions following the guidelines in the ESU LokSound V5 manual,*

which can be downloaded from the support section of our web site. Or you can upgrade to a newer DCC system, which may be less stressful.

## **F9 Drive Hold**

ESU's "Full Throttle" feature allows you to play the prime mover of your GE U25B like a musical instrument. When you press F9, you turn on "drive hold." This keeps the speed of the engine constant at whatever speed step your throttle happens to be on. Then as you increase the throttle, you hear the prime mover revving up. This sounds awesome, especially when you're taking off with a hot shot TOFC job.

"Full Throttle" is even neater when you throttle down, as it allows you to simulate "coasting" which is such an important part of running a real train. When you press F9 again you turn off "Full Throttle" and the engine will accelerate or decelerate to whatever speed step your throttle happens to be on. For realism it's a good idea to take note of what speed step your throttle was on when you turned on "Full Throttle" and be back at that speed step when you turn "Full Throttle" off. Otherwise, your GE U25B may fly like an eagle, to the sea. Yes, fly like an eagle. Please don't make us sing the whole chorus.

## **F10 Independent Brake**

F10 works just like the brakes on a real engine. Press F10 and you put on the brakes. Turn off F10 and the brakes come off, so you can start moving again. ESU's Drive Hold feature has made the brake function more popular, so we've moved it up to F10 to match the ESU standard. The default sound is based on composite brake shoes but if you hate your eardrums, you can change it to cast iron brake shoes and writhe in pain every time the train stops. Change CV165 from 0 to 1 to hear the glory that is a cast iron brake shoe.

## **F11 Front White Class Lights On/Off**

When you press F11, the front white class lights will turn on. Hitting F11 a second time will turn them off. White Class lights were used to signify a train was running as an extra unscheduled train in train order territory. (See F25 for rear class lights.)

## **F12 Switching Mode**

Are you one of those folks who models a large freight or engine terminal, like, say South Boston Freight Terminal? Do you have lengthy light engine moves between engine storage and the arrival/departure yard? Then this function is for you! It limits the top speed of your GE U25B by about 50% to reduce the risk of damage when coupling to parked freight equipment. Function F12 also dims both the headlight and the rear light so as not to blind your trainmen on the ground.

### **F13 Rear Headlight On/Off**

A common misconception on diesel locos is that the light on the rear should be on whenever the engine is moving backwards. Actually, it's only on when the engineer wants it turned on, regardless of direction. Pressing F13 will simply toggle the rear light 'on' and 'off'. It's magic, I tell you!

### **F14 Radiator Fan**

On the GE U25B, the radiator fans are the two large fans inside the rear of the screened-in area at the end of the long hood. By default, these fans are automatic – meaning the sound turns on and off at seemingly random times. But if you need to take direct control of the fans in your life, press F14 to hear that buzzing whine whenever you want.

### **F15 Air Compressor**

Pump that air up! By pressing F15, this will activate the air compressor but by default, the sound file will randomly play this feature.

### **F16 Cab Interior Light**

When the sun sets or you are in a tunnel, how do you read your train orders? Flashlights were too heavy and bulky back in the 1960s to carry one around with you all the time (and back then a "cell phone" was the payphone inside the local jail), so just turn on the cab light instead. Just remember to turn it off as soon as possible so as not to ruin your night vision.

### **F17 Roof Top Beacon (if equipped)**

Some railroads equipped their U25B units with a rotary roof beacon, replicated on our model by using function F17. This light fixture moves a beam of light around in a circular pattern all around the loco. In addition to warning pedestrians and cars along the right of way, it also signals to low-flying aircraft and possibly UFOs.

### **F18 Track Inspection Lights**

These lights shine down onto the roadbed. Why did we include them? Because they look neat, of course. Oh, and your engineer will be happy at night when he's making a shove. By default they are on. Pressing F18 will turn them off.

### **F19 Number Board Lights**

The number boards are on all the time as a default. We hate having to turn number boards back on after a power failure. If you want to turn off the number boards, just press F19.



## F20 Alarm Bell

Want to alarm your friends? Press F20 and let everyone know that your engine has low lubricating oil pressure, low cooling water pressure, an overheated diesel engine, the batteries won't charge, or the electrical system is grounding. Wow, this bell is like, super smart. How does it know all this?

## F25 Rear White Class Lights On/Off

If you press F25, the rear white class lights will turn on. Hit F25 a second time to turn them off. When running long hood forwards, these class lights were used to identify an extra unscheduled train in train order territory. (See F11 for front class lights.)

## F26 Manual Notching Up/Run 8

Kind of like the old "Straight to 8" function from several years ago, hitting F26 with F28 OFF will cause the prime mover to notch all the way to Run 8 and stay there. This will not effect loco speed, just the sound it makes. Great for pulling out of a station with a long train. Turn off F26 to return the prime mover sounds to normal operation.

## F27 Manual Notching Down/Coast

As a quick way to idle the prime mover sound without losing control of the loco speed, press F27 with F28 OFF to chop the throttle to idle. This is great when used with dynamic braking. Turn F27 off to return the prime mover sounds to normal operation.

## F28 Manual Notching On/Off

With F26 & F27 turned OFF, turn F28 ON. Now one can use F26 to manually notch up the prime mover and F27 to manually notch the prime mover down. This will not effect the loco speed, just the prime mover sounds. To go back to normal operation, all three functions must be turned off (F26, F27, and F28).

## CUSTOM SOUND SETTINGS

The GE U25B was used by several railroads and, as such, were equipped with a multitude of different horns, and could even feature slightly different bell tones, different brake materials and everything else in between.

The default horn on your model is a Leslie S3E. We have justified doing this because most U25Bs were delivered with Leslie S3E horn but some had others. You can change the default horn by changing the value of CV 163. We've also chosen defaults in the remaining categories because someone had to make the important decisions. They can all be changed by adjusting the value of their respective CVs.

## Horns

- CV163=0 Leslie S-3E *(Default)*
- CV163=1 Leslie S-3K-R
- CV163=2 Leslie S-3L-R
- CV163=3 Leslie S-5T-F
- CV163=4 Leslie S-5T-R
- CV163=5 Leslie S-5T-RRO
- CV163=6 Leslie SL-4T
- CV163=7 Nathan K5LA
- CV163=8 Nathan M3HR2
- CV163=9 Nathan M3R1
- CV163=10 Nathan M3RT1
- CV163=11 Nathan M5R24
- CV163=12 WABCO A2

## Bells

- CV 164=0 Steel Bell #1 *(Default)*
- CV 164=1 Steel Bell #2
- CV 164=2 Steel Bell #3
- CV 164=3 Steel Bell #4

## Brake Squeal

- CV 165=0 Composition Shoe *(Default)*
- CV 165=1 Cast Iron Brake Shoe

## Air Dryer

- CV 166=0 Air Dryer #1 *(Default)*
- CV 166=1 Air Dryer #2
- CV 166=2 Air Dryer #3
- CV 166=3 Air Dryer #4

Note that after you change the horn, bell or any other sound effect, you may need to cycle the power (turn it off and on). And changing the default horn automatically changes the doppler recording on F5 too.

## SOUND VOLUME SETTINGS

The sound volumes on your decoder have been pre-set at the factory to levels that we found comfortable on our test tracks.

Sound levels are very much a matter of personal taste (especially if you are showing signs of advanced deafness like we are), and what sounds great in one layout environment may sound too loud or too soft in another. Fortunately, the sound levels can be easily adjusted to best suit your own requirements and we recommend that you experiment with different settings if you don't care for the default levels.

To set the volume levels go into the program mode on your DCC system (refer to your system's manual for instructions on how to do this as each system is slightly different); enter the desired CV number; then enter the desired levels. Note that this can be done either on a programming track or on the main (Ops mode) if your DCC system supports programming on the main.

We strongly recommend that you keep notes on which settings you have changed, and which values were used. If you ever need to do a reset on the decoder (see "Factory Reset" below) then having good notes will allow you to easily re-enter any changes that you wish to keep.

**— VERY IMPORTANT —**

Before you manually change any of the volume control CVs, you must set CV 31 to 16 and then CV 32 to 1. CV 31 and CV 32 are used as index selection registers and if you don't set them first, unspeakable things may happen to your unit. You must set the CVs every time before changing any volume CV settings.

Or just get a LokProgrammer. No, we will not teach you how to use it!

**GE U25B SOUND VOLUME SETTINGS**

KEY	FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
	Master Volume	63	155	0-192	
F1	Bell Volume	283	60	0-255	
F2	Horn Volume	275	128	0-255	
F3	Flange Squeal Volume	435	50	0-255	
F4	Dynamic Brake Volume	299	75	0-255	
F5	Doppler Horn Volume	291	175	0-255	
F8	Diesel Volume	259	128	0-255	
F10	Independant Brake Volume	339	50	0-255	
F14	Radiator Fan Volume	315	90	0-255	
F15	Air Compressor Volume	307	50	0-255	
F20	Alarm Bell Volume	427	128	0-255	
F28	Manual Notching Logic Volume	467	20	0-255	



T. J. McNamara photo, NHRHTA, Inc. collection.

## **FACTORY RESET**

On your GE U25B you can perform a factory reset by entering a value of “8” into CV 8. Note that this will cause all of your new volume and motor settings to be lost, so you will need to reprogram any settings that you want to keep. What do you mean, you didn’t take any notes? WE JUST TOLD YOU TAKE NOTES! If we had a band, you’d be kicked out of it. Again!

You can NOT lose all the pre-recorded sounds on your GE U25B decoder by doing a factory reset. However, after performing a factory reset, your GE U25B may begin to binge watch *Doctor Who* episodes and recite lines from the song *Love Shack* by the B-52’s. If that happens, you have probably lost your mind. But don’t worry. Just sit back, grab some popcorn, and enjoy the show.

By the way, pay no attention to the person breaking into your layout room attempting to steal your Rapido GE U25B because they misread the instructions on Page 4.

## **MORE INFORMATION**

While addressing the features that most modelers will need for normal operation, these instructions have covered just a small number of the many customizable features of your ESU LokSound decoder. For advanced users who want to more fully explore the capabilities of the decoder we suggest downloading the ESU LokSound V5 decoder manual. This is available in the Support section of our web site.

## **LIMITED WARRANTY**

We will do our best to solve any problems or issues that you may have with your GE U25B locomotive. If your locomotive has any defects that originate from the factory, we will repair your locomotive using new components or replace it outright should a repair not be possible. However, we can only replace your locomotive while we have additional ones in stock. While we would love to have an infinite supply of spare parts and do our best to keep as many on hand as possible, eventually these will run out too. In some cases, future productions of the same locomotive may result in a parts supply being restocked, but that is not always guaranteed. If you are like most of us and – after purchasing this locomotive – you put it on the collection shelf under the darkest corner of your layout and are now just discovering it 30 years later after your friend at the club ran theirs, then you are on your own if there are any issues. Jason is long retired and probably touring the country on our restored

sleeping car, *Edmundston*. The rest of us have also retired but probably don't have the luxury of our own private rail car. And we're not bitter at all. Really. Not....at... all....

There are several things that this warranty cannot cover. If your GE U25B arrives with a couple of loose grab irons or underbody bits, there is a very good chance that you can affect a repair in less time and effort than it would take to contact us. Don't be afraid to do some model railroading! White glue works wonders for securing all sorts of parts and will not mar or damage your paint. However, if parts are missing that is another story – contact us directly through our website or give us a call and we'll send you some replacements.

Of course, damage caused by running your locomotive at full speed around a 15" radius curve along the edge of your 60" high layout, weathering it with canola oil, or any other unique damage caused by you and that we haven't been able to cover here is not covered by the warranty. If catastrophe does strike – even as the result of your own actions (or possible inactions) – and your locomotive gets damaged, please give us a shout and we'll do our best to help you out if possible. Don't be shy.

## **ACKNOWLEDGEMENTS**

The GE U25B project was very much a labor of love as many of us on the Rapido team also love these locomotives. However, this project would not have been possible without the extensive help and expertise provided by the following folks:

Mike Bradley, Nate Clark, Mark Kerlick, New Haven Railroad Historical & Technical Association, Howard Pincus and the Railroad Museum of New England, Rich Ramiarz and the Great Northern Historical Society, John Sheridan, Greg Sommers, and Paul Tupaczewski.

A very special thanks to the Southern California Railway Museum because they allowed us to perform a 3D scan of their U25B that was used to create this model.



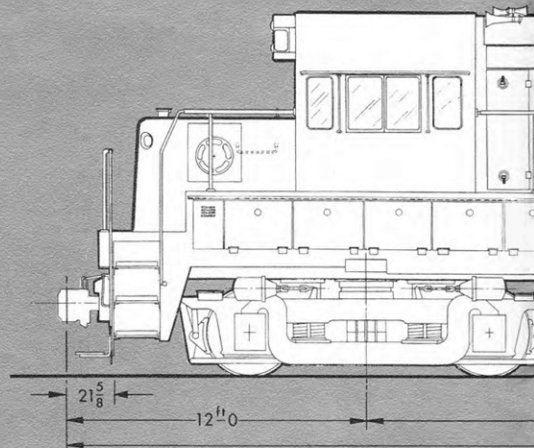
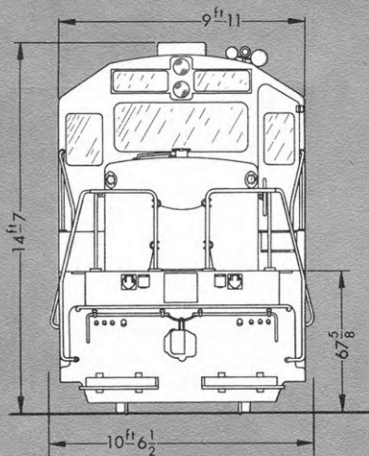
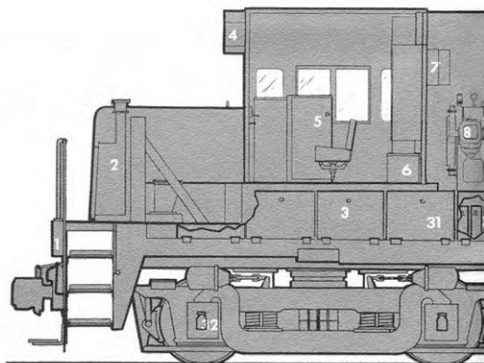
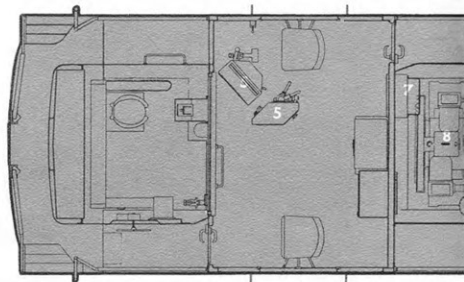
## **CONTACT US!**

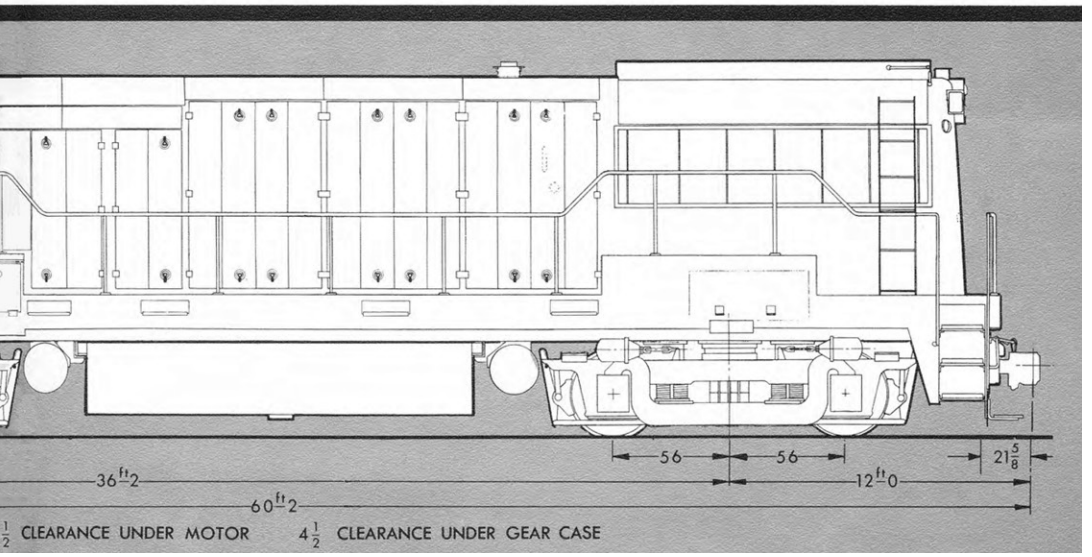
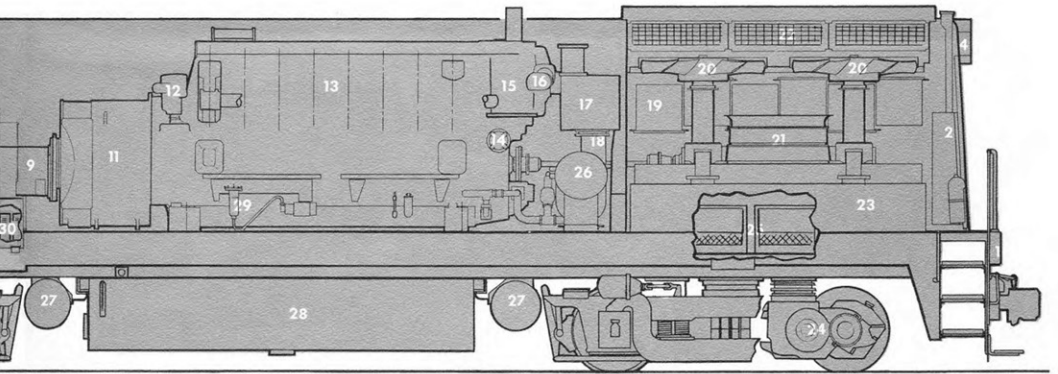
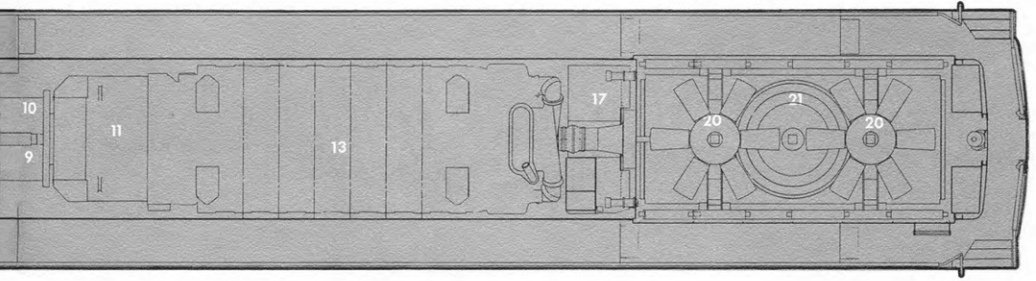
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## DRAWINGS

- |   |  |
|---|--|
| 1. Multiple-Unit Connectors                   | 19. Dynamic Brake Grids (when furnished)         |
| 2. Sand Box                                   | 20. Radiator Fan                                 |
| 3. Control Equipment Compartments (left side) | 21. Equipment Blower                             |
| 4. Headlight and Number Boxes                 | 22. Radiator                                     |
| 5. Operating Controls                         | 23. Equipment Air Cleaner                        |
| 6. Cab Heater                                 | 24. Traction Motor                               |
| 7. Engine Control Panel                       | 25. Engine Air Filters (both sides)              |
| 8. Air Compressor                             | 26. Lube Oil Filter                              |
| 9. Auxiliary Generator                        | 27. Air Reservoir                                |
| 10. Exciter                                   | 28. Fuel Tank                                    |
| 11. Traction Generator                        | 29. Fuel Oil Strainer, Transfer Pump (left side) |
| 12. Governor                                  | Filter (right side)                              |
| 13. Diesel Engine                             | 30. Battery (right side)                         |
| 14. Lube Oil Strainer                         | 31. Air Brake Equipment (right side)             |
| 15. Intercooler                               | 32. Speed-Sensing Alternator (one per axle)      |
| 16. Turbocharger                              |  |
| 17. Cooling Water Storage Tank                |  |
| 18. Lube Oil Cooler                           |  |







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