



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 6

List View

**General Information** | [Contact](#) | [Default Values](#) | [Discount](#) | [Document Information](#) | [Clarification Request](#)

Procurement Folder: 1010761

Procurement Type: Central Master Agreement

Vendor ID: VS0000004719

Legal Name: Rohrer Enterprises Inc

Alias/DBA:

Total Bid: \$0.00

Response Date: 04/26/2022

Response Time: 9:43

Responded By User ID: TClawson

First Name: Teresa

Last Name: Clawson

Email: tclawson@rohrerbus.com

Phone: 800-735-3900

SO Doc Code: CRFQ

SO Dept: 0805

SO Doc ID: PTR2200000008

Published Date: 4/19/22

Close Date: 4/26/22

Close Time: 13:30

Status: Closed

Solicitation Description: 158" - 176" Wheelbase Cutaway Vehicle

Total of Header Attachments: 6

Total of All Attachments: 6





Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

State of West Virginia  
Solicitation Response

**Proc Folder:** 1010761  
**Solicitation Description:** 158" - 176" Wheelbase Cutaway Vehicle  
**Proc Type:** Central Master Agreement

Solicitation Closes	Solicitation Response	Version
2022-04-26 13:30	SR 0805 ESR04262200000006661	1

**VENDOR**  
VS0000004719  
Rohrer Enterprises Inc

**Solicitation Number:** CRFQ 0805 PTR2200000008  
**Total Bid:** 0  
**Response Date:** 2022-04-26  
**Response Time:** 09:43:43  
**Comments:**

**FOR INFORMATION CONTACT THE BUYER**  
David H Pauline  
304-558-0067  
david.h.pauline@wv.gov

<b>Vendor</b>		
<b>Signature X</b>	<b>FEIN#</b>	<b>DATE</b>

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	158"- 176" Wheelbase Cutaway Vehicle	0.00000	EA	3522785.000000	0.00

Comm Code	Manufacturer	Specification	Model #
25101502			

**Commodity Line Comments:** Thank you for the opportunity to Bid. If you have any further questions please contact me at 540-729-3752.  
David Clawson

**Extended Description:**

158" - 176" Wheelbase Cutaway vehicle with air / heat, fixed seats, wheelchair securement and lift to provide specialized transportation services in a urban and suburban-rural environment. .

# **ROHRER**

*School & Commercial Bus Sales*

CRFQ 0805 PTR22-008

158"-176" Wheelbase Cutaway Vehicle



158"-176" ELDORADO ADVANTAGE

Proposal From:  
Rohrer Enterprises, Inc. DBA/Rohrer Bus Sales  
1515 State Road  
Duncannon, PA 17020  
DAVID M. CLAWSON, JR.  
Senior Vice President Sales  
540-729-3751

2075 West Main Street, Waynesboro, VA 22980  
direct 540 729-3751  
[rohrerbus.com](http://rohrerbus.com)

# **ROHRER**

*School & Commercial Bus Sales*

April 25, 2022

David H Pauline  
Department of Administration  
Purchasing Division  
2019 Washington Street E  
Charleston, WV 25305

Ref: PTR2200000008

Dear Mr. Pauline:

Rohrer Bus Sales appreciates this opportunity to submit a bid for transit vehicles to the State of West Virginia. Our offerings, a Eldorado Advantage for classes A through F, meets the intent and letter of your specifications as well as amendments 1-3 with following documentation, clarifications, deviations and/or explanations per your Required Bid Documentation Checklist.

## **Mandatory Bid Forms**

- Bid Form #1: Locations of Technical Service Representatives and Parts Distribution Centers  
Bid Form #2: Certification for Air & Water Pollution  
Bid Form #3: Disadvantaged Business Enterprise Vendors/Manufacturers Certification  
The vendor shall also supply with bid FTA TVM DBE Goal Concurrence for the Current Fiscal Year Approval Letter.  
Bid Form #4: Buy America Certification Rolling Stock Should the Vendor be declared responsive and low bid, pursuant to Pre-Award and Post Delivery Audit Requirements, the Division will require the Vendor to submit documentation (with the bid or prior to any award) that lists:  
1) Component and sub-component parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs: and  
2) The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.  
Bid Form #5: Federal Motor Vehicle Safety Standards Certification Vendor shall also supply with bid a breakdown of FMVSS standards to be met with proposed vehicle.  
Bid Form #6: U.S. Comptroller's Debarment List Certification  
Bid Form #7: Certification of Primary Participant Regarding Debarment, Suspension, and Other Responsibility Matters  
Bid Form #8: Vendor's Certification of Understanding and Acceptance  
Bid Form #9: Certification of Restrictions on Lobbying  
Bid Form #10: Certification of Compliance with FTA's Vehicle Testing Requirements

## **Documentation also submitted with bid:**

Encl 1 for 3.1.11 Details of water testing procedures.

**2075 West Main Street, Waynesboro, VA 22980**

**direct 540 729-3751**

***rohrerbus.com***



# **ROHRER**

## *School & Commercial Bus Sales*

- Enc 2 for 3.2 Chassis- provide product description, warranty information and product literature.
- Encl 3 for 3.2 provide length of proposed wheelbase.
- Encl 4 for 3.3 Engine: gasoline: provide product description, warranty information and product literature.
- Encl 5 for 3.5 Radiator and Cooling System: provide product description, warranty information and product literature.
- Encl 6 for 3.6 High Idle System, provide product description, warranty information and product literature.
- Encl 7 for 3.8 Transmission: provide product description, warranty information and product literature.
- Encl 8 for 3.10.4 Rear View Back-Up Camera: provide product description, warranty information and literature.
- Encl 9 for 3.11.4 Tilt Wheel, Cruise Control and Power Steering: provide product description.
- Encl 10 for 3.13 Brakes: provide product description, warranty information and product literature.
- Encl 11 for 3.14 Wheels: provide product description, warranty information and product literature.
- Encl 12 for 3.15 Tires: provide product description, warranty information and product literature.
- Encl 13 for 3.16.5 Alternator: provide product description, warranty information and product literature.
- Encl 14 for 3.16.6 Battery: provide product description, warranty information and product literature.
- Encl 15 for 3.17.1 Radio/AM/FM/USB/MP3: provide product description, warranty information and product literature.
- Encl 16 for 3.19 Body Structure/Roof Specifications: provide a description of how construction/conversion will take place and meet the specification requirements. Provide actual interior height and body length of proposed vehicle.
- Encl 17 for 3.19.15 Stepwell: provide a description of construction.
- Encl 18 for 3.22 Entrance, Exit, Lift, and Emergency Exit Doors: Provide product description, dimensions, description of connection with interlock system, and locks to be provided.
- Encl 19 for 3.23 Rear Bumper: provide product description, warranty information and product literature.
- Encl 20 for 3.24 Wheelchair Lift: provide product description, warranty information and product literature.
- Encl 21 for 3.24.9 Interlock System: provide product description, warranty information and product literature.
- Encl 22 for 3.26 Front and Rear Heating and Air Conditioning: provide product description, warranty information, product literature.
- Encl 23 for 3.29 Flooring: provide a description of product to be used, samples of floor covering, colors to be used and assembly process.
- Encl 24 for 3.30.1 Passenger Seats and Restraints: provide product description, warranty information and product literature.
- Encl 25 for 3.30.2 Padded Grab Handle: provide product description.
- Encl 26 for 3.30.11 Driver's Seat: provide product description, warranty information and product literature.
- Encl 27 for 3.31 Wheelchair Securement System: provide product description, warranty information and product literature.
- Encl 28 for 3.32 Mobility Aid/ Occupant Restraint Systems: provide product description, warranty information and product literature.
- Encl 29 for 3.33.1 Exterior Mirrors: provide product description, warranty information and product literature.
- Encl 30 for 3.37 Digital Destination Signs: provide product description, warranty information and product literature.
- Encl 31 for 3.38 Passenger Signaling System: product description, warranty information and product literature.
- Encl 32 for 3.39 Mobile PA System: provide product description, warranty information and product literature.
- Encl 33 for 3.40 Fare Box Provision: provide description of provision.
- Encl 34 for 3.41 Strobe Light: provide product description, warranty information and product literature.
- Encl 35 for 3.42 Radio Install Prep: provide description of process.
- Encl 36 for 3.44 Security Camera System Including Playback: provide product description, warranty information and product literature.

**2075 West Main Street, Waynesboro, VA 22980**

**direct 540 729-3751**

***rohrerbus.com***



# **ROHRER**

## *School & Commercial Bus Sales*

- Encl 37 for 3.45 Dual Purpose Safety Vent: provide product description, warranty information and product literature.  
Encl 38 for 3.46 Storage Compartment: provide information on proposed location.  
Encl 39 for 3.51 Training: submit letter of understanding to the terms in this Section.  
Encl 40 for 4.0.5 Overhead Luggage Rack: provide product description and product literature for Classes E & F  
Encl 41 for 4.0.5 High Back Passenger Seating: provide product description, warranty information and product literature. Classes E & F  
Encl 42 for 6.1.7.4 Warranty Provider Locations: provide names of providers in WV.  
Encl 43 for 6.1.7.5 Warranties: provide information on warranties to be provided.  
Encl 44 for 9.3 Complete two (2) bids in binder form –one (1) marked for DPT.  
Encl 45 for 11.1.1 Complete mechanical description of vehicle, its construction and equipment including manufacturer's model name and/or number.  
Class A Technical Proposal, Floorplan and Weight Analysis  
Class B Technical Proposal, Floorplan and Weight Analysis  
Class C Technical Proposal, Floorplan and Weight Analysis  
Class D Technical Proposal, Floorplan and Weight Analysis  
Class E Technical Proposal, Floorplan and Weight Analysis  
Class F Technical Proposal, Floorplan and Weight Analysis
- Encl 46 for 11.1.2 Proposed interior floor plans, showing detailed dimensions including the location of the wheelchair securement system.  
Encl 47 for 11.1.3 Curb weight (empty weight) and gross vehicle weight rating (GVWR of vehicle).  
Encl 48 for 11.1.6 Rustproofing and Undercoating: provide product description, warranty information and product literature.  
Encl 49 for 11.1.8 A list of five (5) users names, addresses, emails, and telephone numbers who have been provided similar equipment.  
No Debt Affidavit  
Addendum Acknowledgement

Please contact us immediately at 1-800-735-3900 if any additional documentation is required.  
Thanks again for your consideration!

Sincerely,

*David*

D.M. Clawson, Jr.  
Bus Sales & Administration



**ROHRER**

Direct 540.729.3751  
[dclawson@rohrerbus.com](mailto:dclawson@rohrerbus.com)

**2075 West Main Street, Waynesboro, VA 22980**

**direct 540 729-3751**

**[rohrerbus.com](http://rohrerbus.com)**





A DIVISION OF FOREST RIVER, INC.

## **FACILITY**

- Water test bay: 20' wide x 56' long x 18' high with attached pump room measuring 15' wide x 20' long x 9' high.
- Water jets:
- 5 Lengths of 1½" schedule 80 pipe at 45' long running lengthwise inside the building.
  - 15 Active nozzles per pipe length for a total of 75 nozzles (Model 24 WSQ Nozzles with 110° spray pattern).
  - Water supplied by 3" schedule 80 pipe with 3" schedule 80 pipe headers on each end of system.
  - System supply pump rated at 300 gpm
- Water Pressure:
- System water pressure adjustable up to 45 psi  
Example: - 20 psi = 3.3 gpm/nozzle  
              - 40 psi = 4.4 gpm/nozzle
  - System recovery pump rated at 300 gpm

## **PROCEDURE**

1. **DRIVE VEHICLE INTO BAY.**
2. **ACTIVATE WATER SPRAY. (SYSTEM GOES ON, AUTOMATICALLY)**
- \*3. **LET VEHICLE SET FOR A MINIMUM OF 15 MINUTES PER UNIT. (MORE TIME MAY BE NECESSARY, IF VEHICLE IS SLATED FOR HARSH ENVIRONMENTS. ENGINEERING SHOULD REVIEW AND APPROVE ALL REQUESTS FOR CHANGES TO THIS SYSTEM AND PROCEDURE. USE THE "ECR" SYSTEM FOR REQUESTED CHANGES.)**

**\*NOTE:** Currently, our system pressure, at the main pump is set at 10 psi. this is approximately equivalent to a rainfall of 18" per a 1 hour period.

4. **EXAMINE ALL WINDOWS, DOORS, WHEELWELLS, ESCAPE HATCHES, VENTS, WALLS, CEILING, FLOOR, AND ANY OTHER JOINT FOR WATER LEAKS.**
5. **RECORD RESULTS ON "WATER TEST LOG".**
6. **TURN OFF WATER SPRAY. (SYSTEM SHUTS OFF AUTOMATICALLY.)**
7. **EXIT BOOTH AND RETURN VEHICLE TO REPAIR BAY AND REPAIR ALL LEAKS.**
8. **IF ANY LEAKS WERE FOUND, RETEST VEHICLE (STEPS 1-5).**
9. **PROVIDE COMPLETED "WATER TEST LOG" TO QA PERSON, GROUP 50 (NORTH BLDG) OR GROUP 70 (SOUTH BLDG.) FOR REVIEW AND FILING WITH VEHICLE'S MASTER FILE.**
10. **QA PRODUCTION PERSONNEL SHOULD ALERT ALL GROUPS, OF CONSISTENTLY FOUND, NON-CONFORMING ASSEMBLY CONCERNS.**

## E-SERIES CUTAWAY E-450 DRW

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### Key Features



#### 7.3L V8 Premium-Rated Engine

This proven engine, available with a premium or economy rating, features single overhead-cam design and dual-equal variable-cam timing that helps optimize power across the entire power band. The standard 7.3L V8 Premium-rated engine with TorqShift® six-speed automatic



#### Ford Torqshift® Automatic Transmission

The Ford TorqShift® six-speed automatic transmission is designed and built by Ford to handle the high-performance demands of the standard, Premium-rated 7.3L V8 (325 horsepower and 450 lb.ft. of torque at 3,750 rpm)\* and the available 7.3L V8 Economy-rated



#### 16-inch x 6-inch White-Painted Steel Wheels

These white-painted steel wheels are standard on dual-rear-wheel models.

See attached sheet for 2023 Specifications. Per Ford we are to use these specs and an estimated price increase for 2024



10FZ

CNGP530

## VEHICLE ORDER CONFIRMATION

04/25/22 09:48:41

==&gt;

Dealer: F53110

2023 ECONOLINE

Page: 1 of 1

Order No: 0009 Priority: H1 Ord FIN: LC123 Order Type: 4B Price Level: 32

Ord PEP: 782A Cust/Flt Name: STARCRAFT PO Number:

	RETAIL	DLR INV		RETAIL	DLR INV
E4F COM CUTAWAY VAN	\$37835	\$35944.00			
158" WHEELBASE					
YZ OXFORD WHITE					
X NO TRIM	NC	NC	18A		
E MEDIUM FLINT			L23		
782A PREF EQUIP PKG					
.STANDARD TRIM					
572 .A/C FRONT ONLY			162		
646 .16" WHITE WHLS					
99N 7.3L PRE ENGINE	NC	NC			
44P ELEC 6-SPD AUTO					
T68 .LT225/75R16E					
X83 4.56 REG X83	NC	NC			
516 SP TIRE NOT INC					
47B SHUTTLE BUS PKG	460	418.00			
F1=Help					
F2=Return to Order					
F4=Submit					
F5=Add to Library					
5006 - MORE DATA IS AVAILABLE.					

.FRT LICENSE BKT

.ENG BLK HEATER

.FRAME PUCKS

EXT UPGRADE PKG

SURCHARGE

FLEET SPCL ADJ

SHUTTLE BUS DIS

FLR VINYL, FRT

TOTAL BASE AND OPTIONS

TOTAL

\*THIS IS NOT AN INVOICE\*

\* MORE ORDER INFO NEXT PAGE \*

F8=Next

F3/F12=Veh Ord Menu

QE05238

CNGP530

## VEHICLE ORDER CONFIRMATION

04/25/22 09:50:10

==&gt;

Dealer: F53110

2023 ECONOLINE

Page: 2 of 1

Order No: 0009 Priority: H1 Ord FIN: LC123 Order Type: 4B Price Level: 32

Ord PEP: 782A Cust/Flt Name: STARCRAFT PO Number:

	RETAIL	DLR INV		RETAIL	DLR INV
20F 14500# GVWR	NC	NC	874		
21D DR MANUAL PED	(135)	(123.00)	942		
425 50 STATE EMISS	NC	NC			
47Z AMB PKG NOT REQ					
525 CRUISE CONTROL	240	219.00			
54F MIRROR, DELETE					
57J AUX HTR CONNECT	25	23.00	B4A		
58W RADIO PREP 4 SP	(45)	(41.00)			
60X RT DOOR NOT INC	(200)	(182.00)			
.PASS AIRBAG DEL					
625 RRVIEW MIRROR	NC	NC			
630 ALTERNATOR	160	145.00			
634 DUAL BATTERIES	245	223.00			
656 FUEL TANK 55 GL					
672 FRT MAX GAWR	NC	NC			

4 SPEAKERS

DAYTIME LIGHTS

SP DLR ACCT ADJ

SP FLT ACCT CR

FUEL CHARGE

NET INV FLT OPT

PRICED DORA

DEST AND DELIV

TOTAL BASE AND OPTIONS

TOTAL

\*THIS IS NOT AN INVOICE\*

F7=Prev

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Dealer](#)

# New Vehicle Limited Warranty

## 3 years/36,000 miles (whichever comes first)

You will not be charged for repairs covered by any applicable warranty during the stated coverage period, unless specifically stated elsewhere in the Warranty Guide. The part will be repaired or replaced without charge by any authorized Dealer, regardless of any change of vehicle ownership during the warranty period.

The New Vehicle Limited Warranty doesn't cover:

1. Parts and labor needed to maintain the vehicle.
2. The replacement of parts due to normal wear and tear. You as the owner are responsible for those items.

Some examples of maintenance and normal wear are:

- oil changes
- oils
- lubricants, other fluids
- oil/air filters
- tire rotation/inflation
- cleaning/polishing
- clutch linings
- wiper blades<sup>1</sup>
- wheel alignments and tire balancing<sup>1</sup>
- brake pad/lining<sup>1</sup>



<sup>1</sup>Ford will replace or adjust certain maintenance items when necessary, free of charge during a limited period:

- Wiper blade replacements will be provided during the first six months in service, regardless of miles driven.
- Wheel alignments and tire balancing will be provided during the first 12 months or 12,000 miles in service, whichever occurs first.
- Brake pad/lining replacements will be provided during the first 12 months or 18,000 miles in service, whichever occurs first.

For important warranty details and exclusions, [contact your dealer](#) or see your [Warranty Guide](#).

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# Corrosion Warranty

## 5 years (regardless of mileage)

Your vehicle's body sheet metal panels or aluminum body panels are covered for an extended Corrosion Coverage Period. Coverage only applies if a body sheet metal panel becomes perforated due to corrosion during normal use due to a manufacturing defect in factory-supplied materials or factory workmanship. If aluminum body panels have corrosion or rust damage and the damage is not the result of abnormal usage, vehicle accident, customer actions or extreme environmental conditions, the corrosion or rust damage is covered for 5 years, unlimited miles.

For damage caused by airborne material (environmental fallout) where there is no factory-related defect involved and therefore no warranty – our policy is to provide free repair of paint damage due to the airborne material for 12 months or 12,000 miles, whichever occurs first.

For important warranty details and exclusions, [contact your dealer](#) or see your [Warranty Guide](#).

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## E-SERIES CUTAWAY E-450 DRW

[View Local Inventory](#)



Wheel bases used for this bid include both 158" and 176" depending on floorplan

Engine 7.3L gas premium engine is utilized. Warranty documentation included in Ford overview

Radiator and cooling system components follows. No literature available



Ford E450 Super Duty Radiator



Ford E450 Super Duty Belt



Ford E450 Super Duty Water Pump



Ford E450 Super Duty Hose (Upper)



Ford E450 Super Duty Coolant  
Overflow Tank



Ford E450 Super Duty Fan Clutch

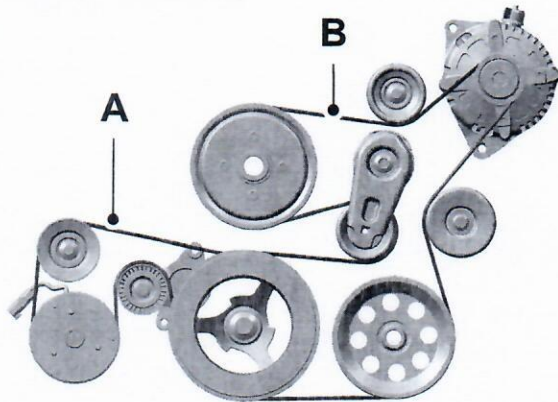
# Capacities and Specifications

## ENGINE SPECIFICATIONS

Engine	7.3L V8 Engine
Displacement.	445 in <sup>3</sup> (7,293 cm <sup>3</sup> )
Required fuel.	Minimum 87 octane
Firing order.	1-5-4-8-6-3-7-2
Ignition system.	Coil near spark plug with spark plug wire
Spark plug gap.	0.049 in (1.25 mm) - 0.053 in (1.35 mm)
Compression ratio.	10.5:1

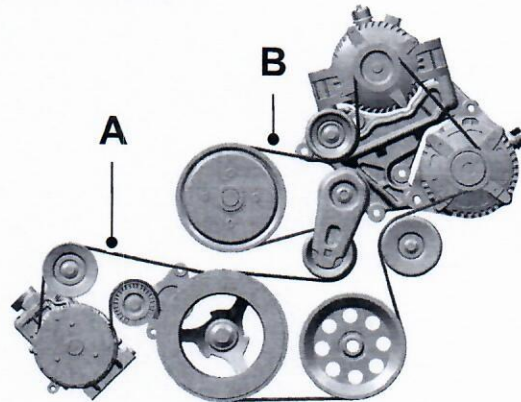
### Drivebelt Routing

#### Single Alternator



- A Drivebelt closest to the engine.
- B Drivebelt furthest from the engine.

#### Dual Alternator



- A Drivebelt closest to the engine.
- B Drivebelt furthest from the engine.

## MOTORCRAFT PARTS

Component	Motorcraft Part number
Air filter element.	FA-2042
One battery.	BXT-65-750
Two batteries (optional).	BXT-65-750

## Capacities and Specifications

Component	Motorcraft Part number
Engine oil filter. <sup>1</sup>	FL-820-S
Spark plug.	SP-589
Transmission fluid filter.	FT-187
Windshield wiper blade.	WW-2005

<sup>1</sup>If a Motorcraft oil filter is not available, use an oil filter that meets industry performance specification SAE/USCAR-36.

We recommend Motorcraft parts that are available at your authorized dealer or at [www.fordparts.com](http://www.fordparts.com). These parts are engineered for your vehicle, and meet or exceed our specifications. Use of other parts could impact vehicle performance, emissions and durability. Your warranty could be void for any damage related to use of other parts.



## Cooling system components con't



Ford E450 Super Duty Thermostat



Ford E450 Super Duty Radiator Fan Assembly



Ford E450 Super Duty Water Outlet



Ford E450 Super Duty Hose (Lower)



Ford E450 Super Duty Thermostat Gasket



Ford E450 Super Duty Water Pump Gasket

High Idle by Intermotive Gateway 508-Ford E Fast idle with interlock  
See attached literature on next page



**Gateway**



**INTERMOTIVE**  
**VEHICLE**  
**CONTROLS**

An ISO 9001:2015 Registered Company

# Gateway

## High Idle and Shift Interlock System

### Overview

- All-in-one wheelchair interlock and high idle system to ensure full functionality of the vehicle's systems while using the lift
- Provides battery charge protection and improves air conditioning performance
- System is fully compliant with FMVSS 403/404 and the Americans with Disabilities Act (ADA) for wheelchair lift interlocks
- Simple plug and play connections to the OEM chassis

### Features

- Prevents vehicle movement while the lift is in use by locking the shifter in Park
- Monitors OEM sensor inputs from the transmission, engine, charging system and ambient air temperature
- Programmable RPM for high idle
- Prevents driving with the park brake set
- Can provide real-time chassis data
- Diagnostic trouble codes available
- Optional BrakeMax add-on: automatically places vehicle in "tow haul" mode for reduced brake wear
- Uses Intermittent Fault Filter™ (IFF) technology to eliminate erroneous lift door signals

*Product features may vary by make, model or year. See instructions for complete details.*

Proudly distributed by

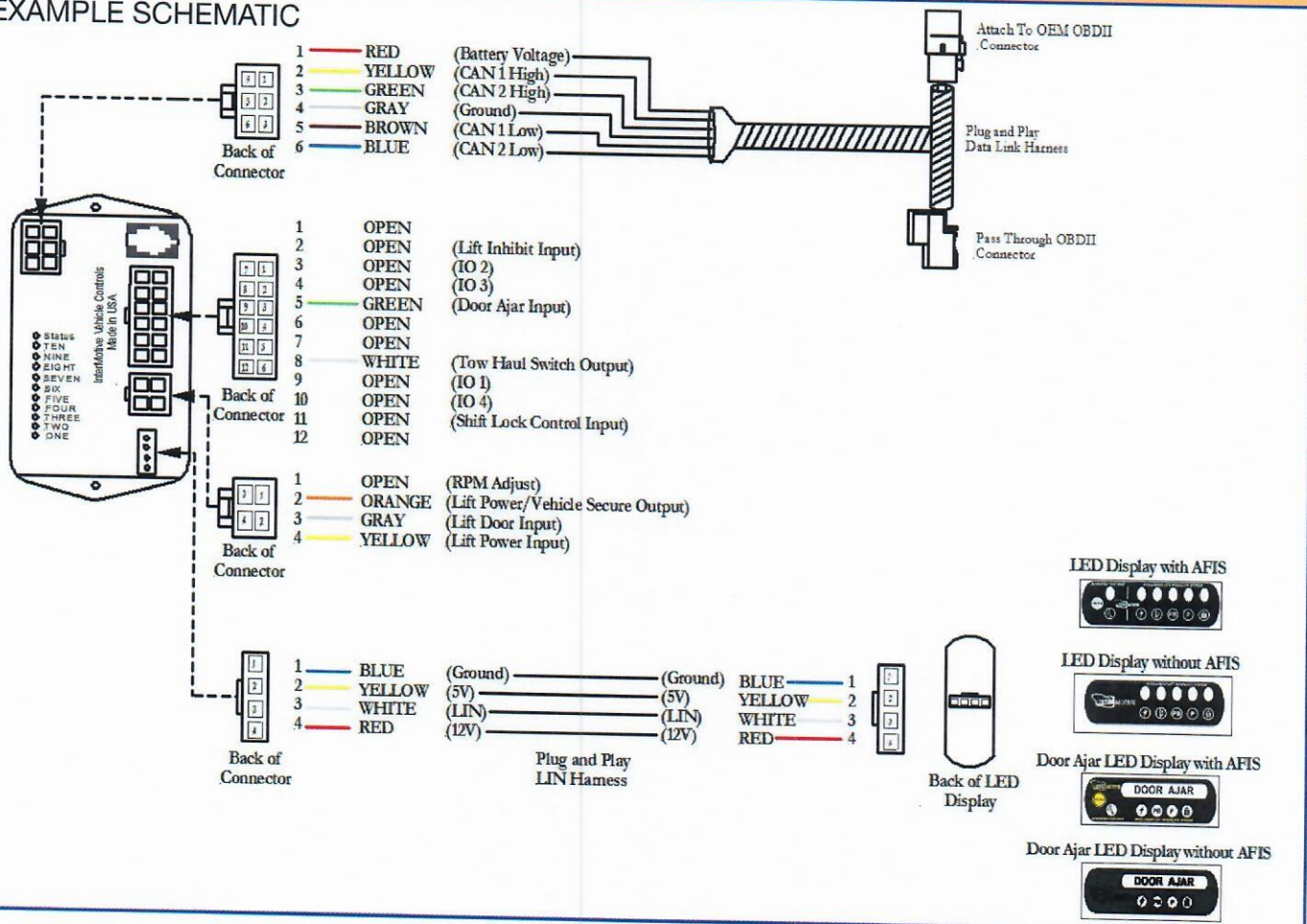
**LGS GROUP**  
AUTOMOTIVE TECHNOLOGIES

**(775) 831-2002**



# Details

## EXAMPLE SCHEMATIC



## SPECIFICATIONS

Number of Inputs	Five inputs (lift inhibit, door ajar, shift lock, lift door and RPM adjust)
Number of Outputs	Four configurable outputs, plus one lift power/vehicle secure output and one tow haul switch output
Current Draw	~120 mA
Quiescent Draw	~2 mA (sleep current)
CAN Speed	High and medium speed
Temperature Range	-40°C to 80°C
Dimensions	4" L x 2" W x 1" H



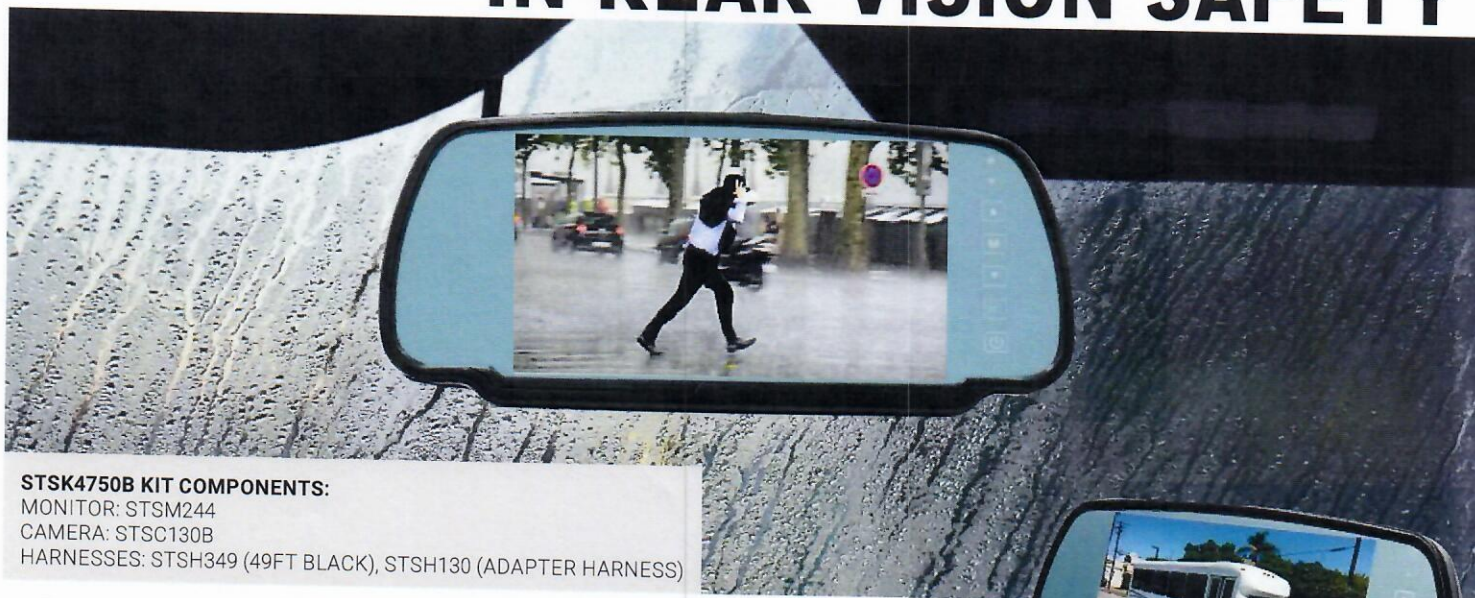
Ford Torqshift Automatic Transmission- Six speed covered by a 5 year 60000 mile extended warranty that exceeds base new vehicle limited warranty



The Ford TorqShift® six-speed automatic transmission is designed and built by Ford to handle the high-performance demands of the standard, Premium-rated 7.3L V8 (325 horsepower and 450 lb.ft. of torque at 3,750 rpm)\* and the available 7.3L V8 Economy-rated engine calibration (350 horsepower at 3,750 rpm and 425 lb.-ft. of torque at 3,250 rpm). \* Available with either the standard Premium or optional Economy-rated 7.3L engine.



# LEADING THE INDUSTRY IN REAR VISION SAFETY



## STSK4750B KIT COMPONENTS:

MONITOR: STSM244

CAMERA: STSC130B

HARNESSES: STSH349 (49FT BLACK), STSH130 (ADAPTER HARNESS)

Forest River, Inc. bus manufacturing companies will be the industry's first to offer a rear backup safety camera as standard equipment on every bus in 2019... Setting the safety tone and trend in the commercial and school bus market.

Forest River's hard stance on safety with the new 2019 rear backup safety program has selected Rosco Vision Systems in NY as the manufacturers of the STSK4750B backup camera system.



## STSM244 MONITOR SPECS

SCREEN SIZE	7"
RESOLUTION	800*480 pixels
MONITOR BRIGHTNESS	700cd/m2
NUMBER OF CAMERA INPUTS	1
INPUT FORMAT	13-pin
VIEWING ANGLES	L/75°, R/75°, UP/60°, DOWN/60°
SHOCK RATING	2G
VIBRATION RATING	6G
POWER SUPPLY	12 ~ 32 VDC
OPERATING TEMPERATURE RANGE	-4°F to 158°F -20°C to 70°C

## STSC130B CAMERA SPECS

TV LINES	420 TVL
FIELD OF VIEW (DIAGONAL)	150°
MINIMUM ILLUMINATION	0.2 LUX
DUST/WATER RATING	IP69K
POWER SUPPLY	12 Vdc
OPERATING TEMPERATURE	-22°F to 140°F -30°C TO 65°C



**1-800-227-2095**



ROSCOVISION.COM | ROSCOMIRRORS.COM  
INFO@ROSCOVISION.COM

90-21 144TH PLACE  
JAMAICA NEW YORK 11435





## Steering Wheel and Steering Column

For maximum comfort, the E-Series steering wheel and column easily adjust to fit your preferences behind the wheel. With an adjustable steering column, you are able to set your position for maximum comfort and help avoid the potential problems that come with long, uncomfortable drives.

Electronic cruise control operated from lower left of steering wheel controls

Power steering assisted hydraulically by engine driven power steering pump covered under 3 yr 36000 mile Ford warranty

## POWER STEERING FLUID CHECK



**WARNING:** A fluid level between the MAX and MIN lines is within the normal operating range and there is no need to add fluid. A fluid level not in the normal operating range could compromise the performance of the system.



**WARNING:** For E-350 and E-450 vehicles with the Hydro-Boost Brake System, do not press the brake pedal after the engine has been turned off. Pressing the brake pedal after the engine has been turned off will give a false power steering fluid level reading.

Only use fluid that meets Ford specifications. See **Hydraulic Power Steering Fluid Capacity and Specification** (page 234).

To top up the power steering fluid level do the following.

1. Start the engine and let it run until it reaches normal operating temperature.
2. Make sure the fluid is within the **MIN** and **MAX** range.
3. If the fluid level is low, add fluid to be within the **MIN** and **MAX** range. Do not overfill.
4. While the engine idles, turn the steering wheel left and right several times.
5. Recheck the fluid level in the reservoir.

**Note:** Do not operate the vehicle with a low power steering pump fluid level.



Brakes Ford OEM disc brakes with ABS covered under 3yr/36000 mile base warranty except pads

## GENERAL INFORMATION

**Note:** Occasional brake noise is normal. If a metal-to-metal, continuous grinding or continuous squeal sound is present, the brake linings may be worn-out, have the system checked. If the vehicle has continuous vibration or shudder in the steering wheel while braking, have the system checked as soon as possible.

**Note:** Brake dust may accumulate on the wheels, even under normal driving conditions. Some dust is inevitable as the brakes wear and does not contribute to brake noise. See [Cleaning the Wheels](#).



See [Warning Lamps and Indicators](#).



Wet brakes result in reduced braking efficiency. Gently press the brake pedal a few times when driving from a car wash or standing water to dry the brakes.

### Brake Over Accelerator

In the event the accelerator pedal becomes stuck or entrapped, apply steady and firm pressure to the brake pedal to slow the vehicle and reduce engine power. If you experience this condition, apply the brakes and bring your vehicle to a safe stop. Move the transmission to park (P), switch the engine off and apply the parking brake. Inspect the accelerator pedal for any interference. If none are found and the condition persists, have the system checked.

### Anti-lock Brake System

This system helps you maintain steering control during emergency stops by keeping the brakes from locking.



If it illuminates when you are driving, your vehicle requires service. Your vehicle continues to have normal braking without the anti-lock brake system function. Have your vehicle checked as soon as possible.

It also momentarily illuminates when you switch the ignition on to confirm the lamp is functional. If it does not illuminate when you switch the ignition on, or begins to flash at any time, have the system checked.



It illuminates when you engage the parking brake and the ignition is on.

If it illuminates when your vehicle is moving, make sure the parking brake is disengaged. If the parking brake is disengaged, this indicates low brake fluid level or a brake system fault. Have your vehicle checked as soon as possible.

It also momentarily illuminates when you switch the ignition on to confirm the lamp is functional. If it does not illuminate when you switch the ignition on, or begins to flash at any time, have the system checked.

### Hydraulic brake booster system (Hydroboost or Hydromax)

The Hydroboost and Hydromax systems receive fluid pressure from the power steering pump to provide power assist during braking.



The Hydromax booster receives backup pressure from the reserve system electric pump whenever the fluid in the power steering system is not flowing. When the engine is off, the pump turns on if you apply the brake pedal, or if you switch the ignition to the on position. The sound of the pump operating may be heard by the driver. This is a normal characteristic of the system.

The reserve system provides reduced braking power, so the vehicle should be operated under these conditions with caution, and only to seek service repair and removal of the vehicle from the roadway.

**Note:** For vehicles with the Hydromax system operating under normal conditions, the noise of the fluid flowing through the booster may be heard whenever you apply the brake. This condition is normal. Vehicle service is not required.

If braking performance or pedal response becomes very poor, even when you strongly press the pedal, it may indicate the presence of air in the hydraulic system or leakage of fluid. Stop your vehicle as soon as it is safe to do so. Have the system checked as soon as possible.

## PARKING BRAKE



**WARNING:** Apply the parking brake, shift into park (P), switch the ignition off and remove the key before you leave your vehicle. Failure to follow this instruction could result in personal injury or death.

Apply the parking brake whenever you park your vehicle.

- For vehicles with a foot operated parking brake, press the pedal down.
- For vehicles with a hand operated parking brake, pull the parking brake lever up.

**BRAKE**



It illuminates when you switch the ignition on and apply the parking brake. It also illuminates momentarily when you switch the ignition on to confirm the lamp is functional. If it does not illuminate when you switch the ignition on or begins to flash at any time, have the system checked by an authorized dealer.

If it illuminates when your vehicle is moving, make sure you disengage the parking brake.

If the parking brake is disengaged, this indicates a low brake fluid level or a brake system fault. Have your vehicle checked as soon as possible.

To release the parking brake:

- For vehicles with a foot operated parking brake, pull the parking brake release lever.
- For vehicles with a hand operated parking brake, push the parking brake lever down.



Wheels covered under 3 year 36000 mile warranty



## 16-inch x 6-inch White-Painted Steel Wheels

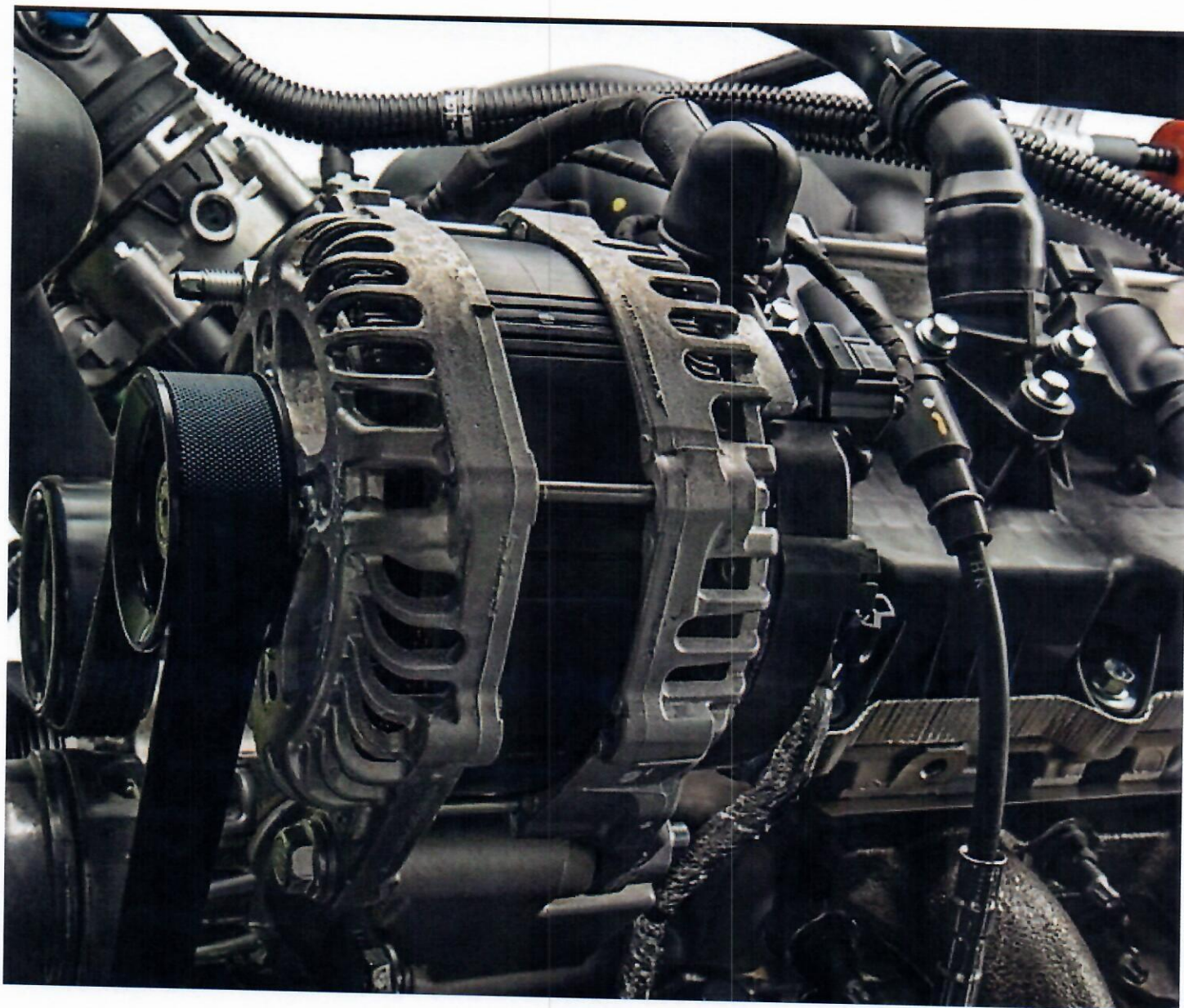
These white-painted steel wheels are standard on dual-rear-wheel models.

Tires – LT225/75R16E covered under separate limited defect warranty. Any replacement if warranted may be subject to mileage already used. No guarantee of tire manufacture. Subject to change over life of contract



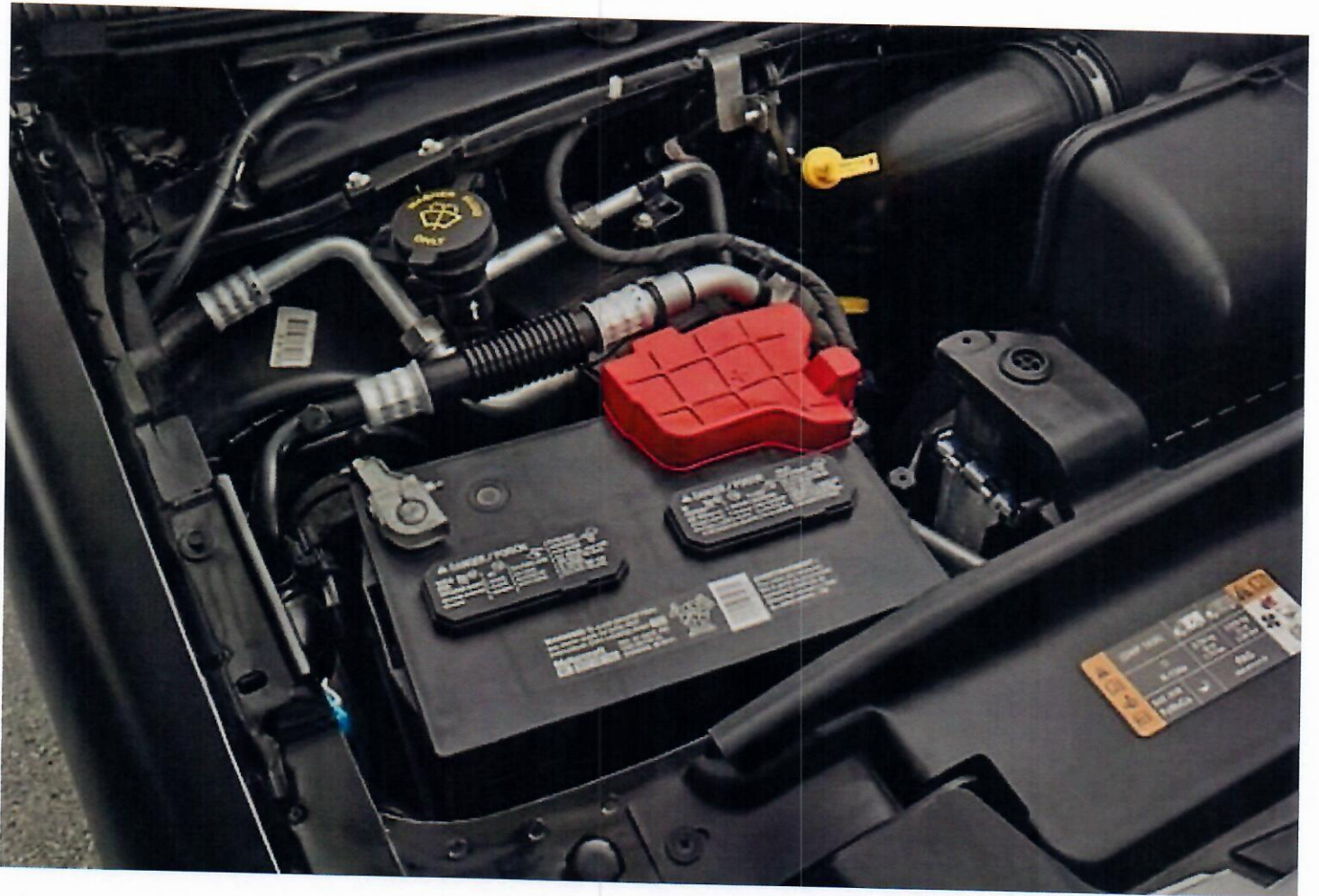


Optional 240 amp alternator by Ford – Covered under 3 yr /36000 mile warranty





Ford dual OEM Motorcraft batteries relocated to separate battery box. Covered by 3 yr / 36000 mile warranty





AM/FM/RBDS/WB Heavy Duty Radio

# JHD1130



## PRODUCT FEATURES

- 12V DC power
- Max output power: 40W x 4
- Electronic AM/FM tuner (US/Euro)
- NOAA 7-channel Weather band
- RBDS with PTY search
- Front AUX input
- Amber backlit control panel buttons
- 12/24 hour selectable clock with Super-Cap 30 day power backup
- Encoder knob volume control
- Beep tone confirmation (user selectable On/Off)
- EQ presets (Flat, Rock, Pop, Classical, User settings)
- Conformal coated PCB
- Preset tuning
- Non-volatile memory
- Low battery alert (Voltage < 10.8 VDC)
- IR remote ready (remote sold separately)
- Channel lock

DESIGNED TO MOVE [YOU]<sup>TM</sup>

Features and specifications subject to change without notice.

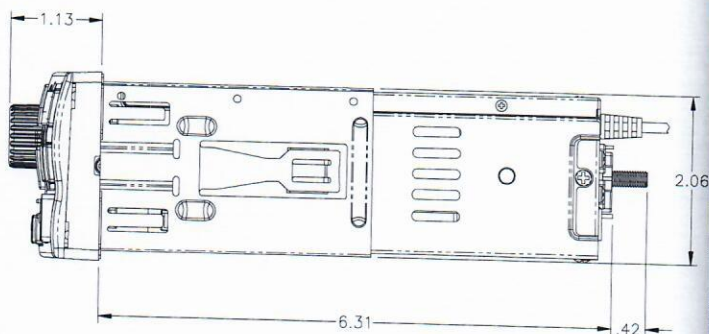
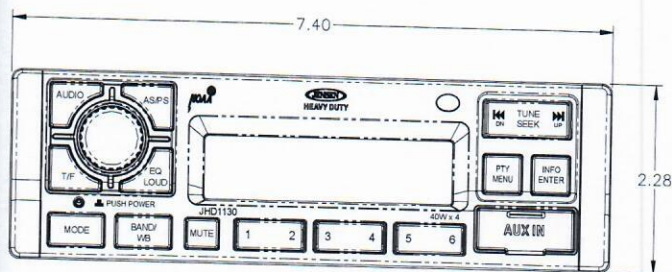
**asa**  
ELECTRONICS<sup>TM</sup>  
2602 Marina Drive • Elkhart, IN 48514  
[www.asaelectronics.com](http://www.asaelectronics.com)



# JENSEN®

AM/FM/RBDS/WB Heavy Duty Radio

# JHD1130



## Specifications

### General Specifications

Power System		12 VDC
Operating Voltage Range		9 V to 18 V
Current Draw @ 12V	Standby	0 A
	Nominal	1.3 A
	Maximum	9.5 A
Operating Temperature Range		-22°F to 185°F    -30°C to 85°C
Storage Temperature Range		-40°F to 185°F    -40°C to 85°C
Maximum Relative Humidity		95%
Overall Dimensions		6.3" x 7.4" x 2.1"
Product Weight (unpacked)		2.75 lbs.

### Performance Specifications

FM Sensitivity		1 uV
AM Sensitivity		20 uV
Output Power	RMS	18 W x 4
	Maximum	40 W x 4
Total Harmonic Distortion @ 1 Watt		1%
Applied Test Suite		ASA ES0013
Regulatory Certification		FCC Part 15B / E-Mark





## FOREST RIVER BUS

2367 CENTURY DRIVE • GOSHEN, INDIANA 46528 • 1.800.348.7440

### ELDORADO BUS BODY FRAME CONSTRUCTION

includes step  
@ 3.08 and 3.09

### 3.0 Body Construction – General Frame Construction

Manufactured from all steel products, the floor, roof, side walls, rear wall, driver halo assembly and entry door assembly are all wire welded (MIG) together to form an integral steel frame that is thoroughly coated in our primer paint shop, then mounted with specified hardware to the rubber body mount points (pucks) supplied by the chassis manufacturer. Once joined to the chassis, the bus finishing process begins.

#### 3.0.1 Floor frame construction and assembly –

- 3.0.1.1 Cross Members -- The floor cross members form the base structural support for the rest of the frame components. Our cross members are constructed of 14 gauge steel, formed to a capital "C" shape. Cross members over the fuel tank are made to provide the clearance needed to conform with FMVSS301 and include formed internal reinforcements welded in place for additional strength. All additional longitudinal and latitudinal structure is flush welded in place to form a one piece floor upon completion.
- 3.0.1.2 Steel "Hat Posts" – 1"x1"x4"x1"x1" run the length of the floor between cross members and are welded into place.
- 3.0.1.3 Seat Track - High Strength Low Alloy roll formed steel seat track is welded to the 4" dimension of the hat posts, providing even more strength to the floor structure.
- 3.0.1.4 Steel C Channel – 1"x1.5" C channel is welded in between cross members the full length of the floor in 5 places. Coupled with the Hat Posts this provides a one-piece strong "ladder" type frame for the flooring.
- 3.0.1.5 Wheel Wells -- Constructed of 14 gauge steel, wheel wells are also welded in during the floor construction process. All seams in the wheel well are welded to create a one piece water resistant wheel housing structure. The wheel wells also provide additional strength to the body assembly, when welded in place.
- 3.0.1.6 Structural Steel Angle – 1/8" thick 1.5" x 2.5" structural steel angle is used the full perimeter length of each floor assembly, welded to the ends of all floor cross members. This provides not only a flat plane for joining the sidewall assembly, but also ties all cross members together and provides additional side impact resistance.
- 3.0.1.7 Additional structure – When adding vertical stanchions, wheel chair lifts and/or tie down options, additional structure is welded into the floor at locations specified by our engineering department on CAD drawings.

#### 3.0.2 Sidewall Construction –

- 3.0.2.1 Sidewall vertical member – The heart of our sidewall is the vertical structure, a roll formed 18 gauge steel capital "C" channel with 8 bends that create extreme strength and rigidity. The vertical member is installed in full lengths between windows and in shorter sections above and below window frame centerlines. Additional vertical structure is used at both ends of the sidewall enabling the structure to withstand the forces applied by the vehicle when in motion. Using the open C member also enables a thorough primer application.
- 3.0.2.2 Steel Tubing – 1" x 1" 16 gauge steel tubing is welded horizontally between vertical members to frame all lower window openings and 1"x 3" 16 gauge steel tubing is



welded in to frame all upper windows openings. The 3" wide steel tube supplies a structural mounting surface for shoulder belt attachment and has been pull tested to federal standards.

- 3.0.2.3 Seat Track –High strength low alloy roll formed steel track is welded to each vertical sidewall member down each sidewall below the window frame. While serving as a seat attaching device, it adds excellent structure to the sidewall and also provides additional side impact resistance.
- 3.0.2.4 Wheelchair Options –Additional sidewall tube structure is added to form the perimeter frame for mounting of the wheelchair door assembly.
- 3.0.2.5 Full length steel tubing – 1"x1" 16 gauge steel tubing is MIG welded to the sidewall bottom and top at each vertical member for attaching to the floor and roof sections, respectively.

### **3.0.3 Rear Wall Construction –**

- 3.0.3.1 Rear wall vertical member – The vertical sidewall capital "C" channel with 8 bends is also used in the rear wall assembly. Full length structure is used at varying places, depending on choice of rear window, or rear door. Shorter cut pieces are used above windows and doors. Additional side windows used with the rear door also change the configuration.
- 3.0.3.2 Steel Tubing – 1"x1" 16 gauge steel tubing is welded horizontally between vertical members to provide a window frame in the standard product, and used as an upper door frame in the optional rear assembly.
- 3.0.3.3 Full length steel tubing – 1"x1" 16 gauge steel tubing is stitch welded to the rear wall top and bottom as in the sidewall assembly.

### **3.0.4 Roof Construction –**

- 3.0.4.1 Roof Bows – Radius formed one-piece 16 gauge steel roof bows formed as a modified hat post design are placed on 16" centers for exceptional strength, eliminating the need for any "roll bars" required by builders using spacing as wide as 48" on center. including 4 bends in the web similar to our vertical sidewall steel provide a roof structure capable of taking severe loads. They are then capped with top flat pieces from flange to flange to provide abundant surface area for securing the exterior roof material. Each bow is welded to the 1" tubing referenced below.
- 3.0.4.2 Steel Tubing – 1"x1" 16 gauge steel tubing is welded to the full perimeter of the roof for mating to the sidewall and rear wall, with short vertical pieces providing support on the front and rear ends. The 3" wide steel tube supplies a structural mounting surface for shoulder belt attachment and has been pull tested to federal standards.
- 3.0.4.3 Steel Plate 3" wide is welded full length longitudinally on each side of the roof to provide further strength and stability to the roof structure.
- 3.0.4.4 Steel Plate of varying dimensions is welded into the roof structure between bows to provide mount points for items such as stanchions for secure mounting whenever the items are not placed directly beneath a roof bow.

### **3.0.5 Driver Compartment Overhead Halo –**

- 3.0.5.1 Steel Tubing – 1"x1" 16 gauge steel tubing is cut and jig welded into an integrated one piece structure spanning from the front roof bow of the body to the newly cut roof line of the cab. Also created during the structure manufacture is the housing for mounting the electronic circuit board.
- 3.0.5.2 11 Gauge Steel – formed to make brackets used to mount to the chassis roof.

### **3.0.6 False Floor (Cab to body transition) –**

- 3.0.6.1 Steel Tubing – 2" x2" 16 gauge steel tubing is welded together forming a flat body floor transition from the step area back to the actual body area. An overhang on the curbside provides a secure attach point frontally for the entry door frame added later.



3.0.6.2 Structural steel angle – 11 gauge 1.5"x1.5" structural angle is added in short lengths five places to provide attachment points to the chassis floor.

### **3.0.7 Interior Vertical Transition Frames –**

3.0.7.1 Steel Tubing – 1"x1" 16 gauge steel tubing is used vertically and a ladder type assembly is made welding the 1x1 tube to .75"x.75" 11 gauge steel tube that is used horizontally in the assemblies. These pieces transition from the body fronts on each side to the driver halo side assembly and the entry door frame assembly on the curbside.

### **3.0.8 Entry Door & Step Assembly Frame –**

3.0.8.1 Steel Tubing – 1"x1" 16 gauge vertical and .75"x.75" 11 gauge horizontal steel tube is cut to length and welded together in a ladder type construction forming a rigid frame for attaching the entry door/step assembly.

### **3.0.9 Entry Door/Step Assembly –**

3.0.9.1 11 Gauge Steel – The step riser/tread piece is manufactured from one-piece 11 gauge steel and uses 90° bends at all risers and treads. The bottom tread also adds an additional 90° bend for additional strength and safety. Upper and lower side pieces are then welded to the vertical tubing and step riser/tread.

## **APPLICATION OF EXTERIOR SIDEWALL MATERIAL**



### **FIBERGLASS/FRP/COMPOSITE SIDEWALLS**

Composite FRP exterior sidewall panels are installed using Manus Bond 75-UHVFC solvent and isocyanate-free structural adhesive. The adhesive is applied to the vertical and horizontal frame members in the sidewall structure, then the one piece panel is set into place and clamped until the structural adhesive reaches initial "green" strength that gives it the ability to support the weight of the sidewall panel without additional aid.

Manus 75-UHVFC is used due to the excellent adhesion, yield strength and elongation percentage of the product once cured. Designed as a replacement for mechanical fasteners, the adhesive also allows the material to expand and contract without undue stress since the elongation of the product is 250%. Faster curing two-part adhesives can be used but their lack of elongation can lead to cracking of the skin due to stresses applied by typical heat/cold cycles encountered.

Manus 75-UHVFC is also the adhesive used by Eldorado to ensure permanent bonding of the plywood floor substrate to the coated steel frame members.

A product data sheet for Manus 75-UHVFC Structural Adhesive is attached for further information.

Should any further questions arise, please contact your Eldorado Bus representative.

### **PAINTED ALUMINUM OR STEEL SIDEWALLS**

Mill painted aluminum or galvanized steel exterior sidewall panels are installed using a combination of Very High Bond tape with an acrylic adhesive and Manus Bond 75-UHVFC solvent and isocyanate-free structural adhesive. The side vertical wall bows have two flanges facing the exterior. Tape is applied to one vertical flange for fast adhesion while Manus 75-UHVFC structural adhesive is applied to the other vertical flange. The metal is put in place then pressure is applied by rollers to secure the metal to the tape and ensure good contact with the bead of structural adhesive.

As normal practice dictates, metal is overlapped moving up the sidewall for water shedding. The metal is



held in place initially by the VHB tape, then subsequently by window ring flanges and belt line molding that is secured with stainless steel fasteners. The structural adhesive "greens" (initial grab strength) within two hours, depending on temperature and humidity conditions, then moves to a full cure within a few days.

As above, product data sheets are attached for Manus 75-UHVFC and also the VHB tape for your information. A pictorial information sheet of the process is also attached to enable a visual understanding of the process as well.

## PASSENGER ENTRY DOOR

36" WIDE ROUGH OPENING WELDED ENTRY ASSEMBLY. A&M MANUFACTURING PRODUCED ENTRY DOOR LEAVES AND A&M ELECTRIC DOOR HEADER MECHANISM (MANUAL IS AVAILABLE - OPTIONS MAY DICTATE DIFFERING DOOR SIZE). FULL HEIGHT 1/8" THICK TEMPERED SAFETY GLASS IN EACH DOOR LEAF IS FMVSS COMPLIANT AS-2 TINTED. LEAF FRAMES ARE INTERLOCKED ALUMINUM EXTRUSIONS WITH TOUGH, CLEAR COAT ANODIZED 204 R1 RATED FINISH FOR CORROSION PROTECTION AND INTEGRATED, OVERLAPPING FLEXIBLE SEALS (APPROXIMATELY 2.5" EACH). FRONT LIFT 138/139" WB MODELS CAN ONLY USE A 32" WIDE DOOR.

## Wheelchair Door and Rear door –

REAR EMERGENCY with WINDOWS / 20% LIGHT TRANSMITTANCE / 60" WIDE X 22.5" HIGH

Latch system with door ajar light and buzzer

Wheelchair Double Door with windows / 20% LIGHT TRANSMITTANCE / 49.5" wide exceed ADA height

Latch system with door ajar light, buzzer and LED light

Tied to Interlative interlock system which prevents vehicle from being shifted into drive while WC door is open and lift in operation

## The HELP® Energy Absorbing Bumper

The patented HELP® Bumper (High Energy Level Polymer) works actively to absorb energy from an impact and transmits the forces away from the vehicle chassis, shielding the vehicle from any harm. Unlike a steel or foam core bumper, the HELP® bumper can form back to its original molded shape without internally damaging the bumper, losing its energy absorbing properties and damaging the vehicle, even after multiple impacts. Our HELP® technology, combined with **in-mold paint** and an aluminum back structure, **decreases downtime** for your vehicle.







## CENTURY SERIES NCL1000-2 WHEELCHAIR LIFTS

### THE ONE-STOP-SHOP FOR ALL YOUR MOBILITY TRANSPORTATION NEEDS

Since 1963, BraunAbility® has been the trusted industry leader. Our wheelchair accessible vehicles and lifts are designed to meet your specific needs, with performance, safety, and reliability that will keep your fleet up and running day after day, year after year. With the most diverse product portfolio of any mobility vehicle company in the industry, BraunAbility delivers the right solution to every commercial mobility need.



# NCL1000-2 CENTURY SERIES WHEELCHAIR LIFT

## STANDARD FEATURES

- **1,000-pound lifting capacity**
- NHTSA-compliant
- Fully automatic FMVSS 403-compliant lift, operated by an attendant
- Interfaces with OEM interlocks
- Long-lasting LED lift-mounted lights
- Side or rear door application\*
- Platform options up to 37" wide
- Floor to ground lift heights up to 48"
- Made in the USA

\* Vehicle suspension dynamics affect body roll and FMVSS 404 platform tilt allowance. Before selecting a lift with a 1000# rated capacity, ensure this load does not induce excessive platform tilt.

## SAFETY FEATURES

- Locking mechanical Inboard Barrier (IB), powder coated yellow for safety and high visibility, prevents operation if occupied
- Visual and audible warnings alert both passengers and attendants to unsafe conditions
- Interlocked gas spring activated outer barrier
- Dual handrails for security and convenience
- Pump design prevents platform folding when occupied

## EASE OF USE FEATURES

- Hand-held control box with illuminated functions
- Durable redesigned baseplate reduces lift weight, and allows for quicker and easier service
- Bridging feature permits the wheelchair user to board the lift from sidewalks
- Equipped with an adjustable anti-rattle feature
- Lift-Tite™ system stows the lift platform securely while the vehicle is in transit
- Pump module with removable cover offers easy access to all components
- Integrated back-up pump

## BRAUNABILITY'S UNRIVALED SERVICE

Every BraunAbility® commercial mobility product comes with our team of commercial mobility experts. They will work to find the ideal mobility transportation solution, no matter the requirements, complexity, or scale. And after you make a purchase, they will continue to work just as hard to offer you all the service and repair support you need.

## The NCL1000-2 Century Series Wheelchair Lift from BraunAbility

With dual hydraulic lift arms, and a design that has withstood the test of time, the Century Series offers all the benefits and quality of a BraunAbility wheelchair lift in a streamlined, economical package. The simplified electrical system offers trouble-free operation, while the non-hydraulic spring-loaded outer barrier keeps the wheelchair safely and securely on the wheelchair lift platform throughout the lifting cycle. In addition to all these standard features, the NCL1000-2 also comes equipped with an increased lifting capacity of 1000 pounds.



The NCL1000-2 Century Series also features new and improved inboard barriers, baseplates, vertical channels, and lower parallel arms for a more rigid and stable ride.

BraunAbility offers several models of the Century 2 Wheelchair Lift to address the right application, including usable platforms of 33" x 51", 34" x 51", 34" x 54", as well as 37" x 51" and 37" x 54". The models also vary based on the placement of the front or rear pump module, the lifting capacity (1,000 pounds), and the overall floor-to-ground lift height (up to 48"). The Century 2 Wheelchair Lift is available with or without the handrail belt. See your BraunAbility dealer or [braunability.com](http://braunability.com) for lift models available for your specific application.

 **BraunAbility®**

 **MADE IN THE USA**

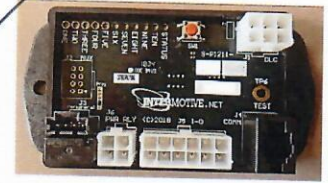
631 West 11th Street • Winamac, IN 46996  
(574) 946-6153 | 1-800-THE-LIFT  
[www.braunability.com/commercial](http://www.braunability.com/commercial)

All illustrations, descriptions and specifications in this brochure are based on the latest product information at the time of publication. BraunAbility reserves the right to make changes at any time without notice. © 2019 The Braun Corporation 405245



**B-GTWY508 Fast Idle, Shift Interlock, I/O**  
**2020 - 2022 Ford F250-F550 - 6.2L and 7.3L Engine**  
**2020 Ford F250-F550 - 6.7L Diesel (B-GTWY508-G)**  
**2021 Ford F650-F750 - 7.3L Engine**  
**2021 Ford F650-F750 - 6.7L Diesel (B-GTWY508-G)**  
**2021 - 2022 Ford E-Series**

OK for 2023/24



## Introduction

The Gateway 508 is a wheelchair lift safety interlock which will only work with the ignition on. It will enable the lift when certain vehicle safety conditions are met, and will lock the transmission shifter in Park when the lift door is open and/or the Park Brake is applied. The Advanced Fast Idle System (AFIS) elevates engine idle speed in response to a number of triggers in order to assist electrical or mechanical systems on the vehicle. The Brakemax option (B-GTWY508-B) will automatically engage the OEM Tow Haul mode whenever the vehicle is started. The GTWY508 can also be installed with the Park Crank Only Module (PCOM) which will allow the vehicle to only be started in the Park position (GTWY508-C).

## Installation Instructions

**Disconnect the vehicle's battery before proceeding with installation.**



### WARNING

Disconnect the battery to prevent setting a check engine light.

## CAUTION

All electronic products are susceptible to damage from Electrostatic Discharge or ESD. Ground yourself before handling or working with the module and harnessing by first touching chassis ground, such as the barrel of the cigarette lighter.



## IMPORTANT—READ BEFORE INSTALLATION

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers. Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

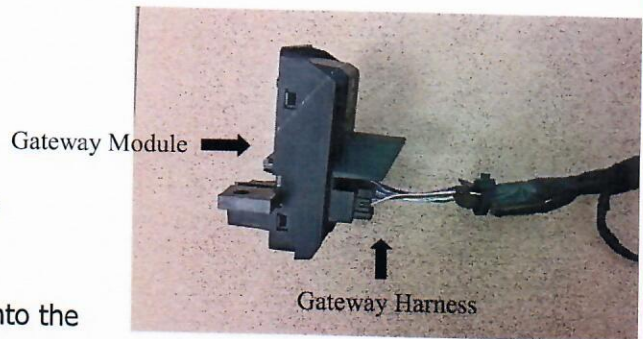
## Gateway 508 Module

Remove the lower dash panel below the steering column and find a suitable location to mount the module. Verify this location is in an area away from external heat sources (engine heat, heater ducts, etc. Do not mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module. When installing the harnesses, leave several inches of take-out in order to remove the module if necessary.



### Ford 24-pin Data Link Harness (6-pin connector)

1. Locate the vehicles Gateway Module. It will be mounted below the lower left dash panel.
2. Remove the harness behind the Gateway module by pressing the locking tab and pulling outward.
3. Plug the Female side of the Intermotive Gateway Harness into the back of the Gateway module. Ensure the connection is fully seated and secured by the locking tab.
4. Plug the Male side of the Intermotive Data Link Harness into the Gateway harness.
5. Plug the free end of the Data Link harness into the mating 6-pin connector "DLC" on the GTWY508 module.
6. Secure the Gateway harness so that it does not hang below the lower dash panel.



### LED Display Panel

1. Locate a suitable position on the dashboard within view of the driver for mounting the LED Display Panel. The length of the display harness is 40". This is the maximum distance the display can be mounted from the GTWY508 module.
2. Drill a 5/8" hole in the dashboard where the center of the display will be located. Use caution not to damage anything behind the dashboard.
3. Attach the 4-Pin LED display harness to the GTWY508 Module's 4-pin connector.
4. Run the free end of the display harness under the dash and out through the 5/8" hole.
5. Attach the end of the display harness to the LED Display Panel.
6. Ensure panel is level, and secure using the supplied screws.





## Control Outputs, Input, and Lift Inhibit Connections - 12-pin I/O connector

The GTWY508 provides three ground side configurable outputs and one configurable input/output. The outputs can provide vehicle information such as Vehicle Speed, Park, Park Brake, etc., and are configured per customer requirements at InterMotive prior to shipping. These outputs can be used to control upfitter circuits and can sink up to 1/2 amp. The input pin can be connected to a ground side switch to activate Fast Idle or Shift Lock. Grounding the Lift Inhibit Pin 2 input will prevent GTWY508 from supplying power on Vehicle Secure/Lift Power Output pin (4 pin connector). In addition to the above, there is also a dedicated Shift Lock ground activated input on pin 11 which can be connected to an emergency door switch or other equipment. **Note:** The PCOM option requires one of these outputs to provide Park.

A 12 pin mating connector and seven terminals (two extra) are provided. To use any of these outputs, properly crimp a connector terminal provided to the installer supplied wire using the correct crimping tool (Molex Part# 11-01-0197), and insert into the correct connector pin housing. The pin **MUST** be properly oriented for it to fully seat and click into place. The largest wire that can be used with these terminals is 16 AWG. Plug this connector into the GTWY508 module's 12-pin connector.

### Shift Lock Control Input

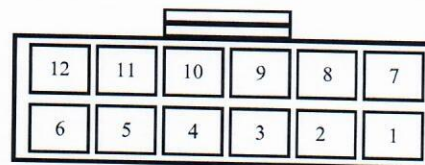
Grounding Pin # 11 on the 12 Pin connector will lock the transmission shifter if the vehicle is in Park. This can be used to prevent the vehicle from driving when equipment has not been properly stowed or an emergency door is open, etc.. This can be connected to any number of grounding switches (connected in parallel) which can effectively "lock the vehicle down".

### 12-pin Input Output connector pin out definition

- Pin #1 - Yellow - Shift Lock Solenoid
- Pin #2 - Inhibit input - Ground to Inhibit Lift
- Pin #3 - I/O 2 - Configured output
- Pin #4 - I/O 3 - Configured output
- Pin #5 - Green - Door Ajar Input - Ground Signal (Door Ajar Panel Option)
- Pin #6 - Not Used
- Pin #7 - Red - To Pin #12
- Pin #8 - White - Tow Haul Switch Input (BrakeMax Option)
- Pin #9 - I/O 1 - Configured output
- Pin #10 - I/O 4 - Configured I/O Pin
- Pin #11 - Dedicated Shift Lock input - ground to activate Shift Lock
- Pin #12 - Red - To Pin #7



12 Pin I/O Connector



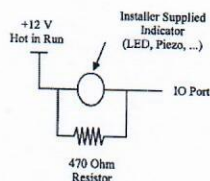
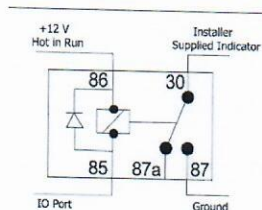
Back of Connector



## Control Outputs, Input, and Lift Inhibit Connections - 12-pin I/O connector (continued)

**Note:** When using the I/O port outputs to drive installer supplied low current devices, such as LED's or Piezo buzzers, a small amount of current leakage may cause the low current device to activate when the pin is inactive. This is indicated by the LED turning on dimly or the Piezo buzzer sounding faintly when the output is inactive (Conditions not met).

To correct this, install a 470 Ohm 1W resistor across the low current device (**Digikey Part # 470WCT-ND**). Or, drive a relay with the I/O output to switch ground to the low current device (**Digikey Part # PB682-ND**).



## Shift Lock Harness

1. Remove the upper and lower steering column covers by removing the 3 screws in the lower column cover.
2. Locate the Shift Lock (4-pin) harness.
3. Unplug the Shift Lock connector.
4. Plug the OEM Shift Lock connector into the mating connector on the GTWY508 harness.
5. Plug the 4-pin connector on the GTWY508 harness into the mating connector on the OEM Shift Lock harness.



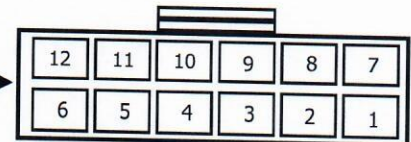
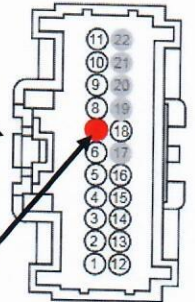


## Fast Idle

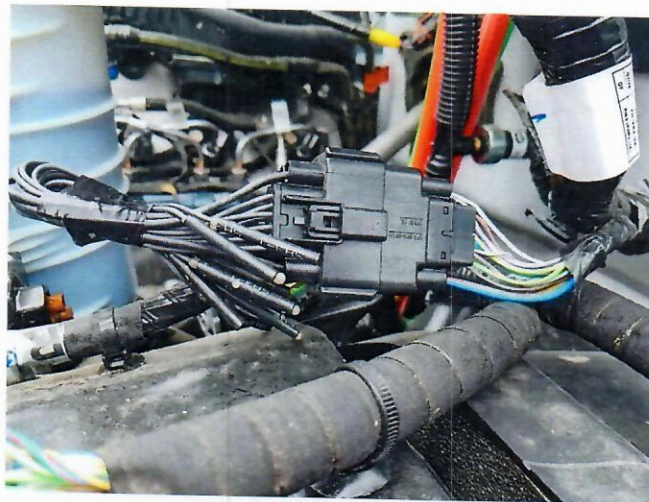
Fast Idle is done over the CAN network on all vehicles **except** the F250-F750 with a 6.7L diesel engine (B-GTWY508-G). Please follow the instructions below to install the discrete wires to enable Fast Idle.

### 6.7L Diesel ONLY

1. Locate the Customer Access 22-pin harness. It will be located behind the passenger kick panel on the F250-F550 and under the hood on the F650/F750. (see picture below)
2. The mating 22-pin pigtail is included with the vehicle and should be located in the vehicle's glovebox.
3. Using solder and heat shrink, connect the following wires together:
  - \*One of the outputs must be configured to SEIC
  - White wire from the Intermotive harness (840-00058) to the White/Brown wire of the OEM 22-pin pigtail.
  - Yellow wire from the Intermotive harness (840-00058) to the Yellow/Green (Pin 7) wire of the OEM 22-pin pigtail.
  - Green wire from the Intermotive harness (840-00058) to the Green wire of the OEM 22-pin pigtail.
  - Plug the terminal on the end of the Yellow wire into either pin 3, 4, 9, or 10 (depending on how the module is configured) on the 12 pin connector.



Back of Connector



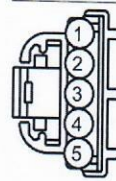
Location of Customer Access 22-pin harness on F650/F750 (under hood)

## BrakeMax (B-GTWY508-B Option)

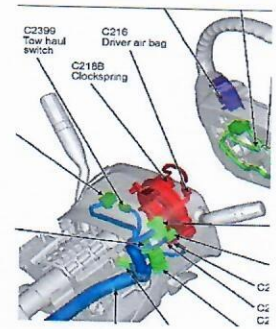
The BrakeMax option will automatically engage Tow Haul mode when the vehicle is started. This is done over the CAN network on all vehicles **except** the Ford E-Series. Please follow the instructions below to install the discrete wires to enable the BrakeMax option (Ford E-Series only).

### **2021 Ford E-series and Ford F650/F750 ONLY**

1. Locate the OEM Black 5-pin tow-haul switch connector (C2399) located on top of the steering column. Locate Pin #2, Brown/Green wire.
2. Attach the GTWY508 12 Pin connector Pin #8 White wire to the OEM Black 5-pin tow-haul switch connector Pin #2, Brown/Green wire. Solder and heat shrink or tape the connection point.
3. Route the wire harness and connect to Pin #8 at the 12-pin connector.



Front of Connector



OEM connection for Brake-Max option.

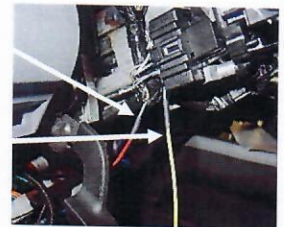
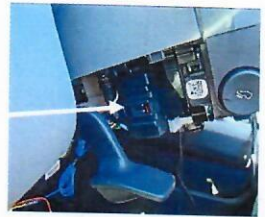


### PCOM - (Park Crank Only GTWY508-C Option)

The GTWY508 can be installed with the Park Crank Only Module (PCOM) which will allow the vehicle to only be started in the Park position (GTWY508-C).

#### PCOM Ignition Switch Connectors

1. Remove the under dash panel and the steering column shroud.
2. Locate the OEM 7-pin connector attached to the ignition switch under the steering column.
3. Locate the Blue-White wire pin #7. This wire is located on the bottom of the connector.
4. Cut the Blue-White wire between the harness and the connector.
5. Attach the harness side of the Blue-White wire to the Yellow wire from the PCOM Module using solder and the supplied heat shrink tubing.
6. Attach the connector side of the Blue-White wire to the Red wire from the PCOM Module using solder and the supplied heat shrink tubing.
7. Attach the PCOM Black Park Input wire to the GTWY508-C I/O port that provides a ground signal when in Park. The actual pin# depends on the customers configuration of GTWY508-C.
8. Secure the PCOM501B module, ensuring there is not strain on the wires.
9. Reinstall the steering column shroud.



### Lift Connector 4-pin

This 12 inch harness contains the ignition power, lift power/vehicle secure, and lift door circuits. The mating harness is to be fabricated by the installer. The recommended mating connector is Molex Part #0050841040. The recommended mating terminals are Molex Part Number 0002081003. The recommended terminal extractor tool is Molex Part Number 0011010168. The recommended hand crimp tool is Molex Part Number 0638116800.

1. Ignition Circuit – Connect the Yellow wire Pin 2 of the white 4-pin connector to an 8A (or less) fused source which provides 12V when the key is on. This circuit provides the power for the Vehicle Secure output below.
2. Lift Power/Vehicle Secure Circuit - Connect the Orange wire Pin 1 of the white 4-pin connector to the Vehicle Secure input on the lift. This circuit must only activate the vehicle secure input on the lift and must not draw more than 8.0 amps max. (see lift manufacturers installation instructions).  
**Note:** Do not power any other loads (i.e.: lights, motors, etc.) from this circuit that could cause the total current draw to exceed 8.0 amps.
3. Lift Door Circuit – Locate the lift door switch circuit. Connect the Gray wire, Pin 4 of the white 4-pin connector to this circuit. **Note:** The door switch must provide a ground when the lift door is open. A switch that provides power with the door is open will not operate correctly.
4. Plug the White 4-pin connector from the Lift Harness into the GTWY508 module connector marked "PWR RLY".

### GTWY508 Module Mounting

Ensure all harnesses are properly connected and routed and are not hanging below the dash area. Mount the module as described on page one and secure using supplied screws or double sided tape.

### Reconnect Vehicle Battery

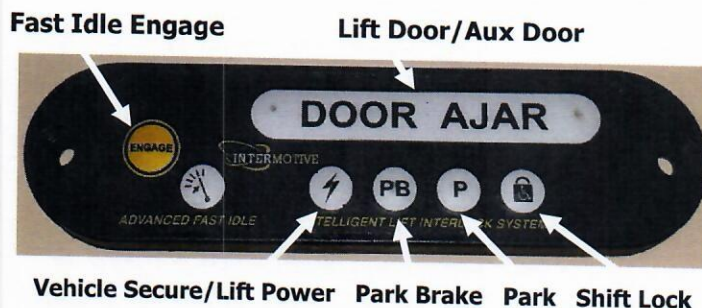


## Post Installation / Check List

The following checks must be made after installation of the system, to ensure correct and safe operation of the lift. If any of the checks do not pass, do not deliver the vehicle. Recheck all connections as per the installation instructions.

Begin the checklist with the vehicle in the following state:

- Lift stowed
- Lift Door Closed
- Park Brake set (PB)
- Transmission in Park (P)
- Ignition off (Key off). Wait until the module goes into "Sleep" mode which takes approximately 40 seconds.



1. Turn ignition key on (to "Run"), verify the module wakes up and all 5 LEDs illuminate for approximately 2 seconds, then turn off.
2. Verify that the Park LED, the Park Brake LED, and the Shift Lock LED remain illuminated.
3. Attempt to deploy the Lift. The Lift must not deploy with the Lift Door closed.
4. With key on, Lift Door open, Park Brake set and transmission in Park, all 5 LEDs will be illuminated. Attempt to deploy the Lift. Verify lift deploys, then stow the lift. **Note:** If the Lift does not operate, check the GTWY508 LIFT connector. Pin 4 should have 12V (Lift power input), and pin 2 should have 12V (Lift Power/Vehicle Secure output).
5. With key on, Lift Door open, transmission in Park, release Park Brake. Verify that the Park Brake (PB) LED goes out.
6. Attempt to deploy the Lift. The Lift should not deploy.
7. With key on, Lift Door closed, Park Brake set, attempt to shift transmission out of Park. Verify transmission will not shift out of Park.
8. With key on, Lift Door open, Park Brake released, attempt to shift transmission out of Park. Verify transmission will not shift out of Park.
9. With key on, Lift Door closed, Park Brake released and the Service Brake applied, attempt to shift transmission out of Park. The transmission shift lever will now shift out of Park.

When an additional door (Aux Door), is open, the Door Ajar LED will blink on the display panel until the door is closed. If the **Lift Door** is open, the Door Ajar LED will stay on steady, taking priority over the additional door input.

**DO NOT PUT VEHICLE IN SERVICE IF IT DOES NOT PASS ALL OF THE ABOVE TESTS!**  
**Contact InterMotive at 530-823-1048 for technical assistance.**



## Post Installation (continued)

### Fast Idle

The Fast Idle option has several "auto triggers" that will increase engine RPM. These include low battery voltage, air conditioner on, engine cold, and external switch input on pin #10 of the 12 Pin connector (I/O 4).

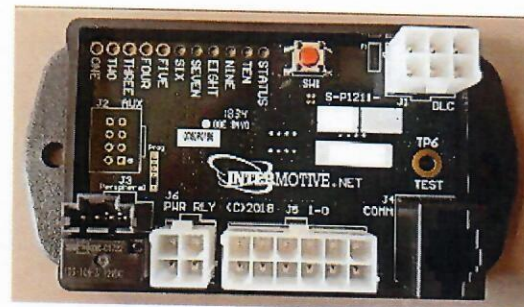
1. Press the Service Brake for 1 second. Fast idle will temporarily disengage anytime the brake pedal is pushed, but will automatically reengage after approximately 2 seconds once the Service Brake pedal is released.
2. Exit Fast Idle mode by pressing the Service Brake and the Yellow Manual ENGAGE button together. Fast Idle will cancel and the Green LED will turn off. This will disable Fast Idle until the key or transmission range is cycled.
3. Shut down the engine and verify that all LED's turn off, which may take a few minutes. Do not activate any vehicle controls during this time (windows, mirrors, doors, etc.).

### Setting Fast Idle RPM Speeds (900 RPM - 2000 RPM)

The GTWY508 has two separate configurable RPM settings (heater boost and the default setting). The heater boost is triggered on engine start-up and aids in warming up the engine quickly. The default setting is triggered by low battery voltage, air conditioner On, or external switch inputs. The two settings are changed by doing the following procedure:

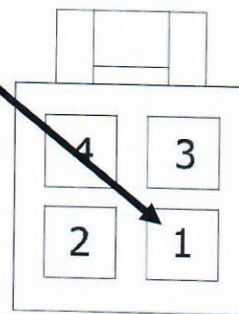
#### Heater Boost Configuration (Auto Triggers Enabled)

1. Momentarily press the Red "Test" button **TWO** times. The Status LED on the module will flash a 2-2 code (two short flashes, a pause, and two more short flashes).
2. The vehicle RPM will increase to the currently configured setting.
3. To raise the RPM by 50, momentarily ground pin 1 on the 4-pin connector until the desired RPM is set.
4. Momentarily press the Red "Test" button **TWO** more times until no LED's are lit on the module.



#### Default Configuration

1. Momentarily press the Red "Test" button **THREE** times. The status LED on the module will flash a 3-3 code (three short flashes, a pause, and three more short flashes).
2. The vehicle RPM will increase to the currently configured setting.
3. To raise the RPM by 50, momentarily ground pin 1 on the 4-pin connector until the desired RPM is set.
4. Momentarily press the Red "Test" button **ONE** more time until no LED's are lit on the module.



Back of Connector

## **Post Installation (continued)**

### **BrakeMax (optional)**

The BrakeMax option automatically engages Tow Haul mode when the vehicle is started.

1. Set the Park Brake and start the engine.
2. Verify that the "Tow/Haul" light illuminates on the shifter handle.
3. Press the Tow-Haul button. Verify Tow-Haul light is no longer illuminated. Mode is now deactivated
4. Turn off and restart vehicle. Verify tow-haul mode automatically reengaged.

### **Park Crank Only (optional)**

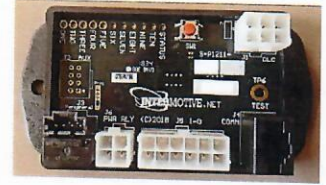
The PCOM option only allows the vehicle to be started with transmission in Park.

1. Verify the starter will crank only when the transmission is in the "Park" position.

**DO NOT PUT VEHICLE IN SERVICE IF IT DOES NOT PASS ALL OF THE ABOVE TESTS**  
**Contact InterMotive at 530-823-1048 for technical assistance.**



**B-GTWY508 Fast Idle, Shift Interlock, I/O**  
**2020 - 2022 Ford F250-F550 - 6.2L and 7.3L Engine**  
**2020 Ford F250-F550 - 6.7L Diesel (B-GTWY508-G)**  
**2021 Ford F650-F750 - 7.3L Engine**  
**2021 Ford F650-F750 - 6.7L Diesel (B-GTWY508-G)**  
**2021 - 2022 Ford E-Series**



## Gateway 508

The Gateway 508 initializes when the vehicle ignition is on. During initialization, the LED display panel connected to the Gateway 508 performs a prove-out for 2 seconds. After the initialization, the Gateway 508 obtains various vehicle data over the OBDII connector/network and all control logic is performed. When the Gateway 508 has been running and the vehicle ignition is turned to the off or accessory position, the module goes into a very low current consumption "sleep" mode. This may take up to 5 minutes.

In order to not interfere with possible scan tool communication, GTWY508 will refrain from transmitting CAN messages for 10 seconds if scan tool CAN communication is detected. If during these 10 seconds another scan tool message is received, an additional 10 seconds will be added to the end of the first 10 second timeout. When no scan tool messages have been detected for at least 10 seconds, GTWY508 will resume operation.

## Advanced Fast Idle

The Advanced Fast-Idle System (AFIS) option of the Gateway 508 includes Charge-Protect as well as fully-automatic and manual engage modes. Charge-Protect is a feature that maintains vehicle charging system voltage by increasing and controlling vehicle idle speed when necessary. Whenever charging system voltage falls below a minimum voltage (determined by each bus manufacturer), this AFIS feature will increase idle speed and maintain fast idle until the user cycles the shifter, a safety condition is violated or the user manually disengages fast idle. The fully-automatic and manual engage modes also require that all safety conditions are met.

Safety conditions that must be met to engage or maintain Fast Idle operation

- Vehicle NOT moving
- Service Brake NOT pressed
- Vehicle Transmission in Park
- RPM inside of safe operating range
- Transmission Fluid Temperature below 250° F
- Engine Coolant Temperature below 230° F

## Control / Display Panel

The left side of the Control/Display Panel consists of one LED and a Manual Engage Switch. The green LED will illuminate when Fast Idle is in progress. The LED is also used for diagnostic code retrieval by an authorized service technician. The Manual ENGAGE button can be used to engage Fast Idle operation if all safety conditions are met.

## Fast Idle Operation

Fast Idle may be initiated by either a manual or automatic Fast Idle trigger. The AFIS strategy can only command elevated idle when certain safety conditions are met (see above). Fast Idle operation will be terminated by a safety condition violation, or an automatic trigger going away. If a Fast Idle operation terminates due to a safety condition violation, automatic Fast Idle is unavailable until the transmission is cycled out of Park and back. Default Fast Idle RPM is 1500.



## **GTWY508 Operating Instructions (continued)**

### **Manual Fast Idle Start Triggers**

- LED panel manual ENGAGE button.
- Fast Idle Input – ground applied to 12 Pin I-O connector Pin 10 (if configured - such as from an A/C unit).

### **Automatic Fast Idle Start Triggers**

- Charge Protection - Battery voltage drops below bus manufacturer set minimum voltage.
- Chassis A/C Boost - OEM A/C clutch engaged with ambient temperature above 70° F.  
Note: shutting off A/C does not disable Fast Idle until transmission range cycled.
- Heater Boost – Ambient air temperature below 70° F and Engine Coolant Temperature below.

### **Fast Idle Disengagement**

- Safety Condition Violation.
- Heater Boost - Engine Coolant Temperature > 120° F. Removes Heater Boost trigger.
- Fast Idle I/O 4 (pin 10) is no longer grounded.
- Transmission Fluid Temperature above 250° F. Overheating condition.
- Ambient Temperature below 70° F (Only in A/C Boost).

**NOTE:** Fast idle will temporarily stop anytime the brake pedal is depressed, but will automatically reengage after approximately 2 seconds once the brake pedal is released. Fast idle may be manually cancelled by depressing the service brake pedal while simultaneously pressing the manual engage switch.

### **Manual Operation**

To manually engage Fast Idle, the manual ENGAGE button must be pressed for at least a quarter second and released. The Fast Idle operation will begin when the button is released, not when first pressed. Holding down the button for more than five seconds will initiate a diagnostic routine that displays stored status codes from previous operations. If the driver accidentally enters this routine, it can be exited by cycling the vehicle's ignition off and then back on. To exit Fast Idle operation, the driver can simply press the service brake while simultaneously pressing the ENGAGE button.

Note: When Fast Idle is engaged, the OEM PCM will try to maintain the RPM constant regardless of engine load. There may be some RPM variations observed as loads are increased/decreased.

### **Lift Operation**

The GTWY508 Intelligent Lift Interlock System is a microprocessor based system for controlling wheelchair lift operation. Lift operation will only be allowed when all of the following conditions are met:

- The vehicle is in Park.
- The Park Brake is applied.
- The vehicle ignition is on.
- The lift door is open.
- The Lift inhibit switch (if installed) is not activated.

GTWY508 will not allow the vehicle to be shifted out of Park if the lift door is open, or if the Park Brake is set. GTWY508 does not lock the shifter when the passenger door is open.

The shift lock can also be activated through the 12 Pin connector Pin #10, if the proper configuration is installed.

**If the vehicle has Daytime Running Lights, they will be activated when the Park Brake applied and the Ignition is On.**



## GTWY508 Operating Instructions (continued)

When the vehicle is first started, or if the key is turned to the "Run" position, the five upper LED's on the display panel will illuminate for 2 seconds as a prove out of the LED's. The lower Icon LED's are backlit and will remain illuminated whenever the Gateway 508 module is awake. The module will stay awake for several minutes after the ignition is turned off. After prove out, the operation of the LED panel is as follows:

**Fast Idle indicator** - (Tachometer icon) Illuminates green when Fast Idle active.

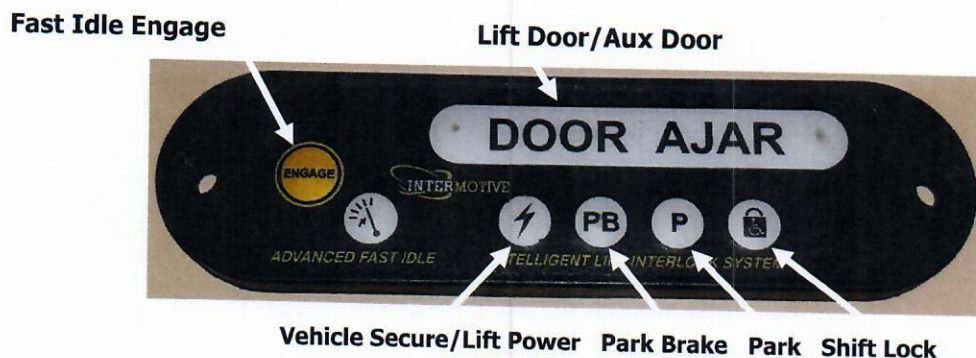
**Vehicle Secure/Lift Enable** – (Lightening Icon). Illuminates green if the lift is enabled. This means that all conditions for lift operation have been met and the lift has been supplied a Vehicle Secure signal.

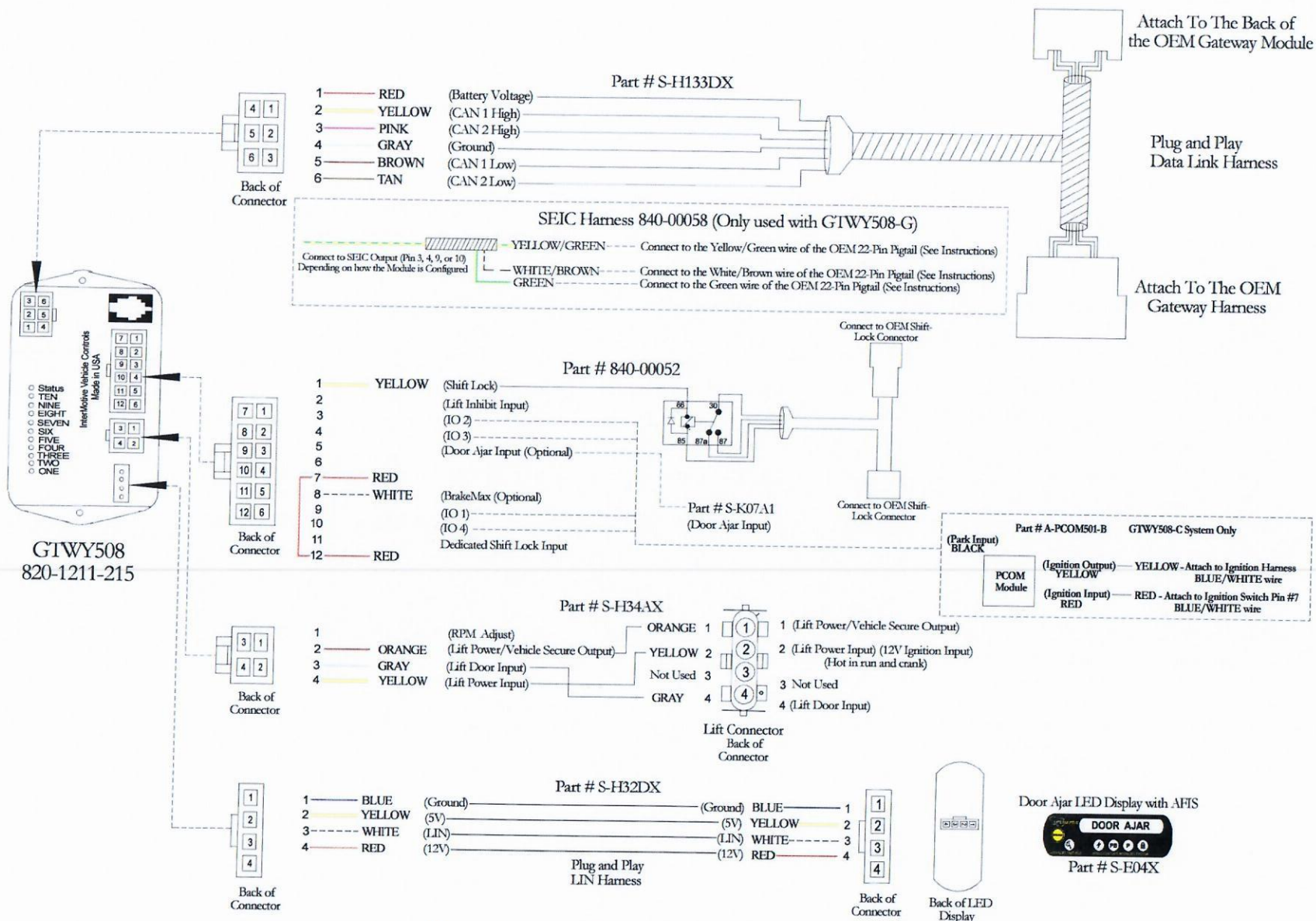
**Door Ajar** - Illuminates in red when the lift door is open.

**Park Brake** – (PB icon) Illuminates in red when the parking brake is applied.

**Park** - (P icon) Illuminates in red when the vehicle transmission is in the park range.

**Shift Lock** - (Lock icon) Illuminates in Red when transmission shifter is locked in Park. This occurs when the lift door is open and/or the Park Brake is applied. It can also be illuminated from an external command through the I/O 4 input at Pin #10 of the 12 pin connector (proper configuration required). If illuminated, the driver will not be allowed to shift out of Park.





**Submit product registration at [www.intermotive.net](http://www.intermotive.net)**

If the GTWY508 fails any step in the Post Installation Test, review the installation instructions and check all connections.  
If necessary, call InterMotive Technical Support at (530) 823-1048.





**Trans/Air**  
Manufacturing Corporation

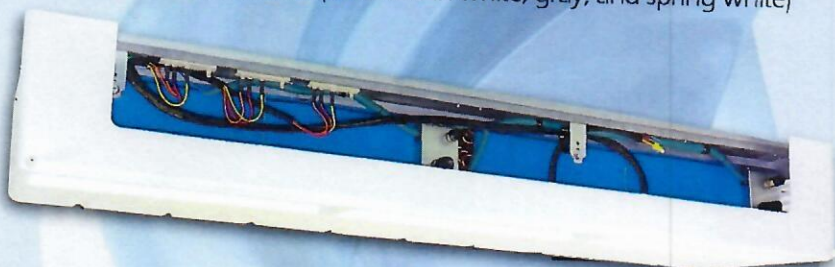
# TA77 Evaporator

Industry  
exclusive 2  
year, unlimited  
mileage, limited  
warranty

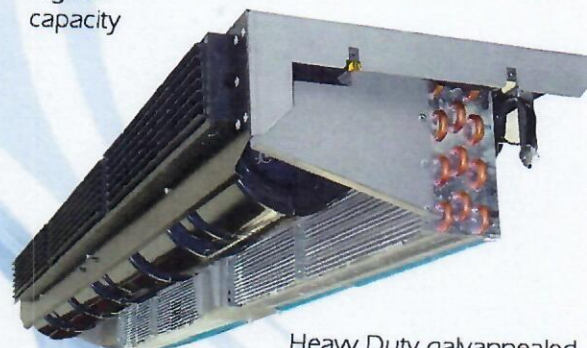
**A rear mounted  
freeblow  
evaporator that  
can be used as  
a tie-in with OEM  
components  
or as part of a  
complete  
Trans/Air system**



Durable ABS cover with unique drain pan that promotes proper condensate removal (available in white, gray, and spring white)



Enhanced tube  
& fin design provides  
highest  
capacity



Heavy Duty galvanized  
steel enclosure for reduced  
air leakage and maximum  
durability



Blower assemblies come equipped  
with larger blower wheels for maximum  
air flow and motors utilize custom  
wound armatures for lower current  
draw and greater efficiency



4 Ton externally equalized,  
thermostatic expansion valves that  
precisely control refrigerant and prevent  
liquid slugging to the compressor(s)  
or starved evaporator(s)



*School & Commercial Bus Climate Control* Design | Manufacture | Install | Service

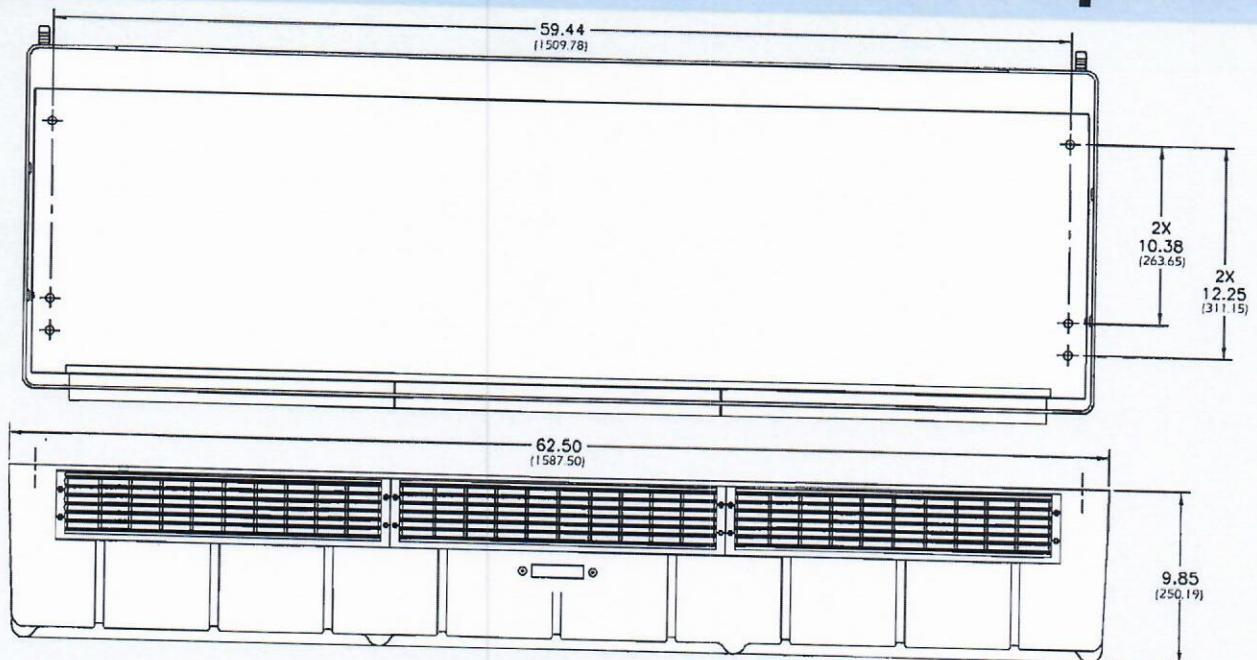
Trans/Air Manufacturing Corporation is an ISO 9001 registered firm committed to providing world class climate control products and services to the bus and commercial vehicle markets.



FM 39947



# TA77 Evaporator



## General

- Freeblow air distribution
- Weight lb (kg): 100 (45)
- Box Size in (mm): 66 x 20 x 16 (1676 x 508 x 406)
- Cube ft<sup>3</sup> (m<sup>3</sup>): 12.22 (.34)

## Cooling Capacity

- BTU/hr: 57,458 (SAE) to 96,826 (IMACA) \*

## Heating Capacity

- BTU/hr: 67,374 (Actual capacity varies based on engine operating temperature and hot water flow rate)

## Cover

- ABS cover
- Integral drain pan
- (3) Multi-directional louvers
- Washable / reusable filter
- (2) 5/8 in ID drain hoses

## Blower Assemblies

- (6) 4.5 in diameter blower wheels
- Amperage draw: 20.0 Amps @ 13.5 Vdc (10.0 Amps @ 27 Vdc)
- Total air flow 2220 ft<sup>3</sup>/min (3772 m<sup>3</sup>/hr) @ 0 static
- (3) Double shafted, single speed, permanent magnet motors

## Evaporator Coil

- (2) Coils
- Each coil face area in<sup>2</sup> (cm<sup>2</sup>): 204 (1316)
- 3/8 in enhanced copper tubing
- Fins: 0.006 in raised lance, 10 FPI
- (3) Row

## Electrical

- Color coded in fire retardant loom
- Low and high pressure switches

## Expansion Valve

- (2) 4 Ton externally equalized thermostatic type

## Available Options

- Metal cover for use with OEM installation
- Heat coil used with positive isolator valve. Isolator valve and heater hose not included.
- Coil corrosion protection

## Warranty

- 2 year unlimited mileage limited warranty within the continental U.S. and Canada. Terms of Trans/Air's domestic and export warranty policies are available upon request.

\* Actual BTU/hr is dependant on system combination and rating conditions used

- Specifications subject to change without notice
- All measurements in standard (metric)
- Contact Trans/Air for more information



# SMC Condensers



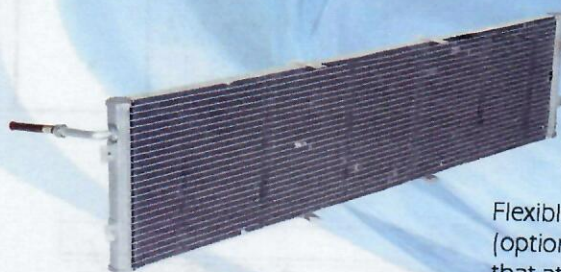
**Trans/Air**  
Manufacturing Corporation

Industry  
exclusive 2  
year, unlimited  
mileage, limited  
warranty

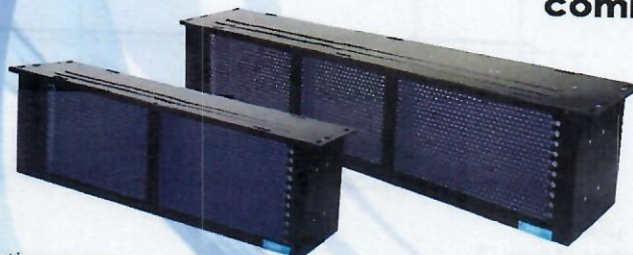
**SMC3L  
& SMC2S  
microchannel  
skirt mounted  
condensers  
that can be  
used with  
almost every  
standard  
Trans/Air  
evaporator/  
compressor  
combination**



Constructed of  
corrosion-resistant,  
powder-coated,  
galvannealed steel



Lightweight  
microchannel coils  
increase condenser efficiency and  
require less refrigerant



Flexible mounting pattern  
(optional channels available  
that attach condenser to  
vehicle stringer in lieu of  
standard floor mounting)

Optional non-powder  
coated screens, stacking  
kits, and winter cover kits



24 cubic inch filter drier with sight glass  
mounted in the rear for easy serviceability



10" weather-proof condenser  
fans provide maximum air flow

*School & Commercial Bus Climate Control* Design | Manufacture | Install | Service

8/31/11 JP

Trans/Air Manufacturing Corporation is an ISO 9001 registered firm committed to providing world class climate control products and services to the bus and commercial vehicle markets.





# SMC Condensers



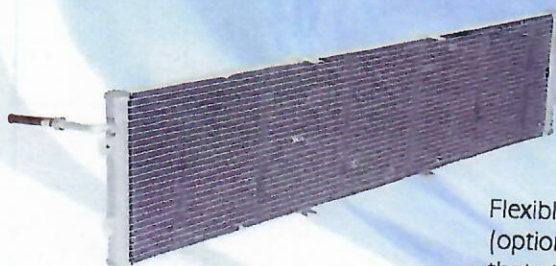
**Trans/Air**  
Manufacturing Corporation

Industry  
exclusive 2  
year, unlimited  
mileage, limited  
warranty



Constructed of  
corrosion-resistant,  
powder-coated,  
galvannealed steel

**SMC3L  
& SMC2S**  
microchannel  
skirt mounted  
condensers  
that can be  
used with  
almost every  
standard  
Trans/Air  
evaporator/  
compressor  
combination



Lightweight  
microchannel coils  
increase condenser efficiency and  
require less refrigerant



Flexible mounting pattern  
(optional channels available  
that attach condenser to  
vehicle stringer in lieu of  
standard floor mounting)

Optional non-powder  
coated screens, stacking  
kits, and winter cover kits



24 cubic inch filter drier with sight glass  
mounted in the rear for easy serviceability



10" weather-proof condenser  
fans provide maximum air flow

*School & Commercial Bus Climate Control* Design | Manufacture | Install | Service

Trans/Air Manufacturing Corporation is an ISO 9001 registered firm committed to providing  
world class climate control products and services to the bus and commercial vehicle markets.





**<sup>1</sup> = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR  
\*\*RECOMMENDED BY A/C MFR**

**<sup>1</sup> TA773 SUPER 13**

**FORD 7.3 LITRE PREMIUM GAS ENGINE**

05

10479

1

1

Comprised of 13 CID additional compressor, TA && evaporator and 3 fan skirt condenser

Ford OEM dash heat and AC nominally rated at additional 18K BTU's supplied by Ford fed coolant and a an OEM compressor. See pic below and attached spec sheets for TransAir TA733 system



**DESCRIPTION**

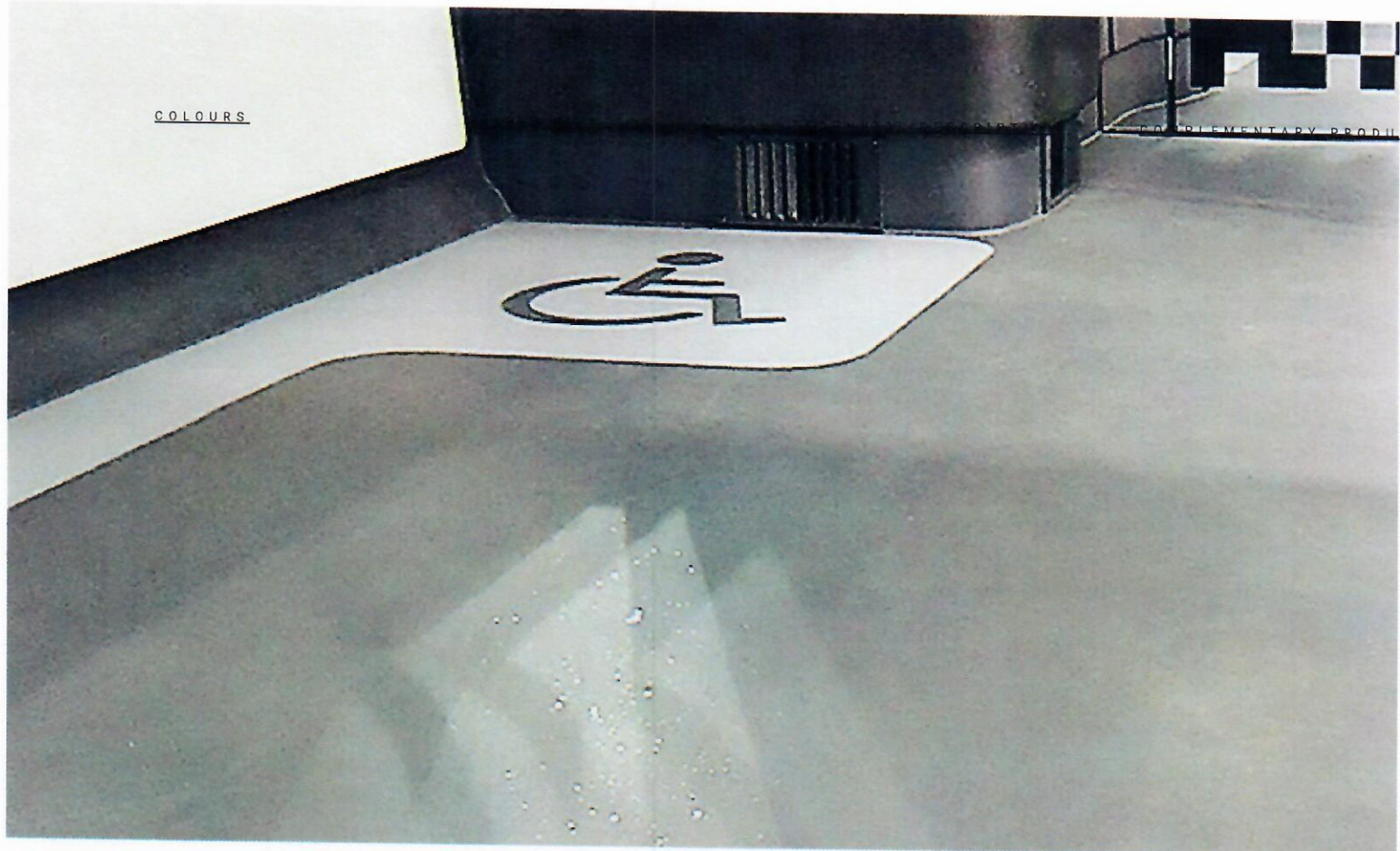
Backing			NT
Thickness	ISO 24 346	mm	2.25 ± 0.15
Weight	ISO 23 997	kg/m <sup>2</sup>	2.20 ± 0.15
Roll width		cm	200 (-0 +1)
Roll length		lm	24

**PERFORMANCE**

Dimensional stability	ISO 23 999 ASTM D 1204	%	≤ 0.2
Abrasion resistance	TABER ISO 9352	mg	300 ± 50
Slip resistance	DIN 51130		R10
Indentation test	ISO 24 343-1	mm	≤ 0.2
Low temperature resistance	D 42 1235 A	°C	- 20
Phonic insulation	ISO 717/2	dB	ΔI = 5
Colour fastness	ISO 105 B02 ISO 4582/80 ASTM D 4459		≥ 7
Fire resistance	ISO 3795/76	mm/mn	0
	FMVSS 302		Conform
	ASTM E648	W/cm <sup>2</sup>	(CRF) > 0.50
	95/28/CE		Conform
	R118		Conform
Resistance to chemicals	ISO 26 987	-	Unaffected by diluted acids and bases Unaffected by domestic products (excluding solvents for plasticized PVC)



COLOURS



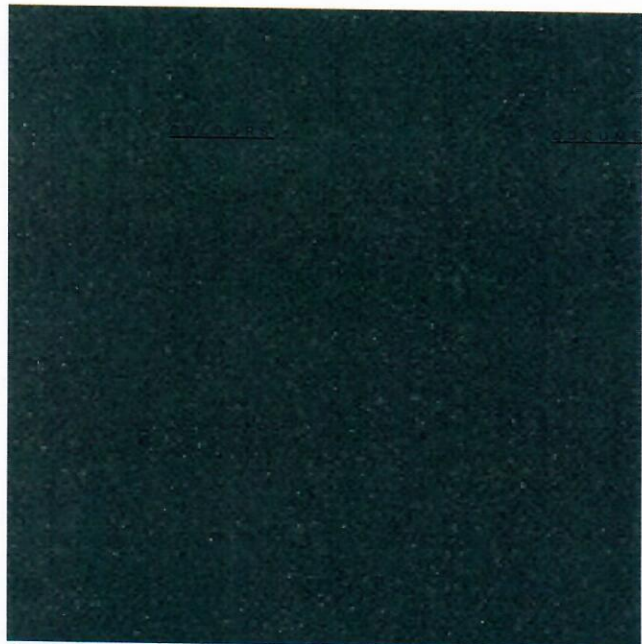
## Description

High performance floor covering designed for high traffic.

- Glass fiber web : dimensional stability
- Textile backing : gluing capabilities
- Emboss : antisliding
- Compact Wear layer : durability, easy maintenance
- Silicon carbide particles : maximum durability and antisliding, aesthetic
- **Weight reduction** (<https://www.tarabusbygerflor.com/media/25-tarabus/documents/tarabus-light-annonce.pdf>) for Sirius NT :  
Fuel Savings / Lower CO<sup>2</sup> emissions

Select a colour

SIRIUS

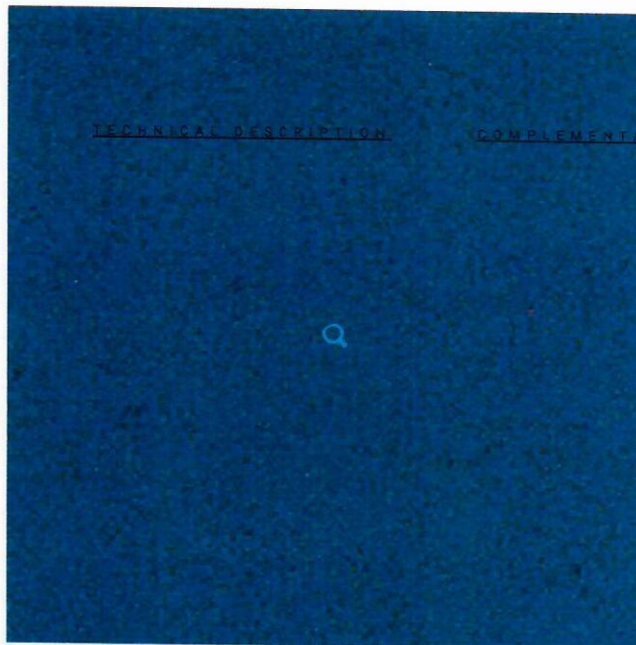


TECHNICAL DESCRIPTION

COMPLEMENTARY PRODUCTS

([https://www.tarabusbygerflor.com/products/color/400127503.html?color\\_product\\_id=400148452](https://www.tarabusbygerflor.com/products/color/400127503.html?color_product_id=400148452)).

6727 Anthracite NT/MK



TECHNICAL DESCRIPTION

COMPLEMENTARY PRODUCTS

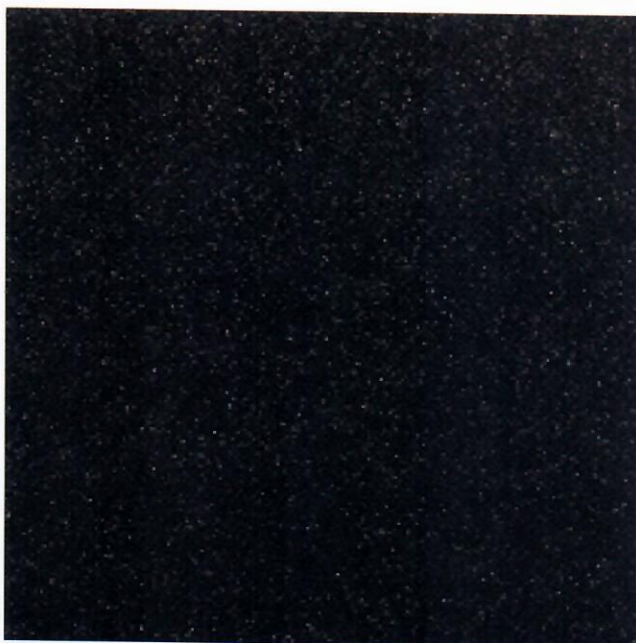
([https://www.tarabusbygerflor.com/products/color/400127535.html?color\\_product\\_id=400148449](https://www.tarabusbygerflor.com/products/color/400127535.html?color_product_id=400148449)).

6451 Corsaire NT



([https://www.tarabusbygerflor.com/products/color/400127551.html?color\\_product\\_id=400148453](https://www.tarabusbygerflor.com/products/color/400127551.html?color_product_id=400148453)).

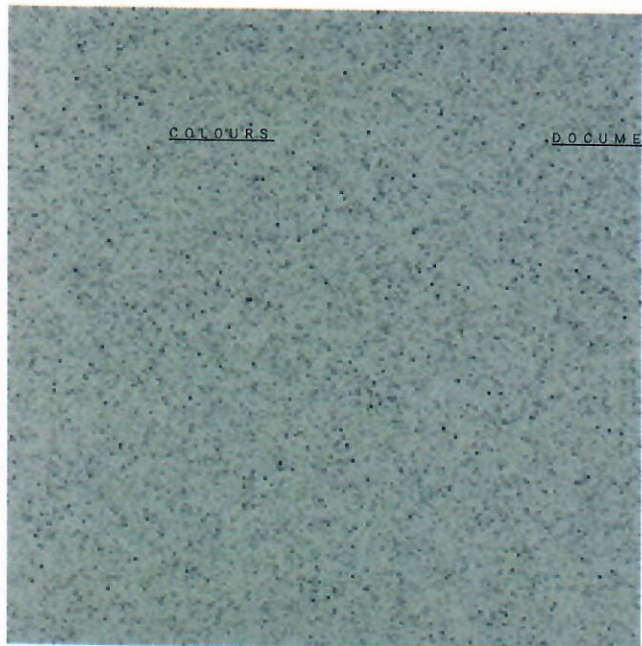
6782 Dune NT/MK



([https://www.tarabusbygerflor.com/products/color/400127648.html?color\\_product\\_id=400148451](https://www.tarabusbygerflor.com/products/color/400127648.html?color_product_id=400148451)).

6801 Graphite NT



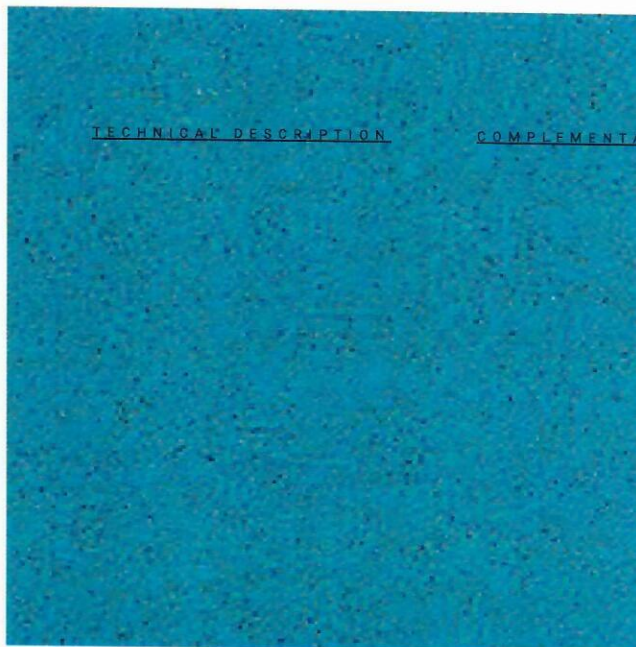


C O L O U R S

D O C U M E N T S

[https://www.tarabusbygerflor.com/products/color/400127656.html?color\\_product\\_id=400148454](https://www.tarabusbygerflor.com/products/color/400127656.html?color_product_id=400148454)

6768 Griffon NT/MK



T E C H N I C A L   D E S C R I P T I O N

C O M P L E M E N T A R Y   P R O D U C T S

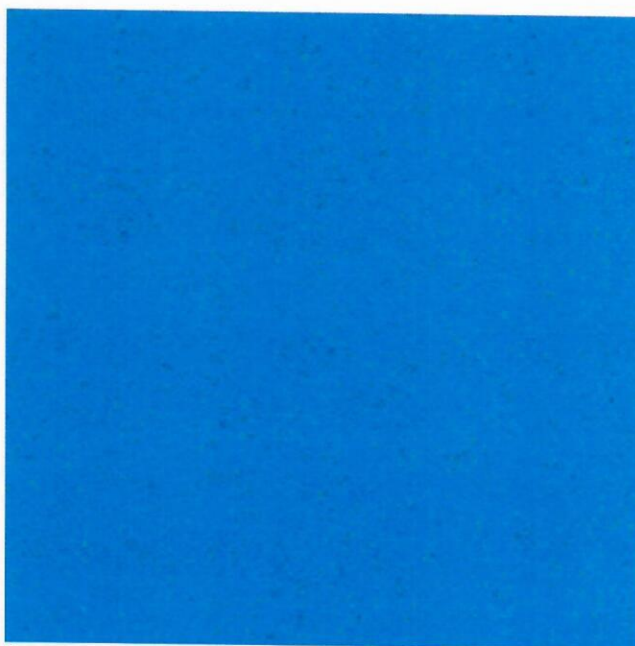
[https://www.tarabusbygerflor.com/products/color/400127709.html?color\\_product\\_id=400148450](https://www.tarabusbygerflor.com/products/color/400127709.html?color_product_id=400148450)

6434 Light Blue NT



[https://www.tarabusbygerflor.com/products/color/400127887.html?color\\_product\\_id=400148448](https://www.tarabusbygerflor.com/products/color/400127887.html?color_product_id=400148448)

6132 Rubis NT



[https://www.tarabusbygerflor.com/products/color/400127953.html?color\\_product\\_id=400148447](https://www.tarabusbygerflor.com/products/color/400127953.html?color_product_id=400148447)

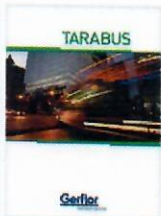
4461 Seram NT

## Documents

## Cards & guides

Tarabus - card





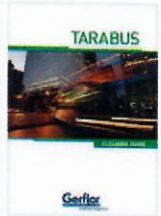
[COLOURS](#)

[DOCUMENTS](#)

[TECHNICAL DESCRIPTION](#)

[COMPLEMENTARY PRODUCTS](#)

([https://it2v7.interactiv-doc.fr/html/gerflor-tarabus-card\\_pdf\\_348](https://it2v7.interactiv-doc.fr/html/gerflor-tarabus-card_pdf_348))



Tarabus - cleaning guide

3.76 Mo



(<https://www.tarabusbygerflor.com/media/25-tarabus/documents/tarabus-cleaning-guide.pdf>)

## Technical datasheet

Tarabus Sirius - Technical datasheet

184 Ko



(<https://www.tarabusbygerflor.com/media/25-tarabus/ft/gerflor-tech-datasheet-tarabus-sirius.pdf>)

## Product construction

- 1 - Wear layer: Durability, easy maintenance
- 2 - Emboss: Antisliding
- 3 - Anti slip particles: Maximum durability, antisliding
- 4 - Glass fiber web: Dimensional stability
- 5 - Backing layer
- 6 - Textile backing: Gluing capabilities

## Complementary products

In addition to the product Sirius, we also recommend you to take a look at the complementary products





**Welding rods**

(<https://www.tarabusbygerflor.com/products/products-list/welding-rods.html>)



**Venus**

(<https://www.tarabusbygerflor.com/products/products-list/venus.html>)



**TARABUS Logo**

(<https://www.tarabusbygerflor.com/products/products-list/tarabus-logo.html>)



**Stepbus**

(<https://www.tarabusbygerflor.com/products/products-list/stepbus.html>)

[COLOURS](#)

[DOCUMENTS](#)

[TECHNICAL DESCRIPTION](#)

[COMPLEMENTARY PRODUCT](#)



### **Safebus**

<https://www.tarabusbygerflor.com/products/products-list/safebus.html>

**Gerflor**

theflooringgroup

<https://www.tarabusbygerflor.com/>

Gerflor Group designs & manufactures innovative, decorative and sustainable flooring solutions for all types of applications. As the leader in floorcoverings for bus & coach, Gerflor has been providing the ground transportation industry with high quality flooring solutions and service for over 60 years. Our Tarabus floorings are specially engineered for passenger vehicles, they offer outstanding durability and slip resistance properties.

[ABOUT TARABUS\(/ABOUT/ABOUT-TARABUS.HTML\)](#)

[CONTACT US\(/CONTACT.HTML\)](#)

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# TARABUS

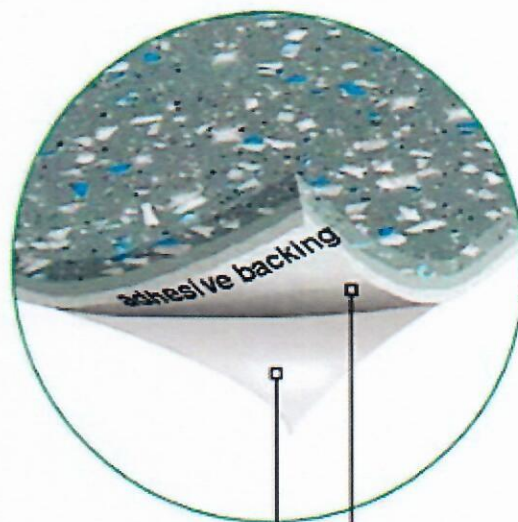
## Self-Adhesive

- Ready to bond • No curing time
- Safer work conditions • Easy to use

- Prêt à coller • Pas de temps de gommage
- Conditions de travail plus saines • Facile à utiliser

- Fertig zum Verkleben • Keine Trocknungszeit
- Sicherere Arbeitsbedingunge • Einfach anzuwenden

- Listo para pegar • Sin tiempo de curado
- Más seguridad en el trabajo • Fácil de utilizar



Protective layer  
Film protecteur  
Schutzfolie  
Papel de protección

Acrylic Adhesive layer  
Film adhésif acrylique  
Acryl Klebefolie  
Adhesivo acrílico



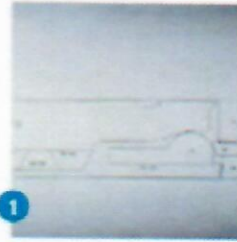
# Kin System

- Ready to fit • Minimised wastage
- Precise dimensions • Easy to use

- Prêt à installer • Déchets minima
- Découpes précises • Facile à utiliser

- Fertig zum Verlegen • Geringfügiger Verschleiß
- Genaue Abmessungen • Einfach anzuwenden

- Listo para instalar • Minimización del desperdicio
- Dimensiones exactas • Fácil de utilizar



1

Send us your cutting layout  
Envoyez-nous vos plans de découpe  
Schicken Sie uns Ihre Zuschnittsmuster zu  
Envíenos su plano de corte



2

We cut with high precision  
Nous découpons avec précision  
Wir schneiden präzise zu  
Cortamos con precisión



3

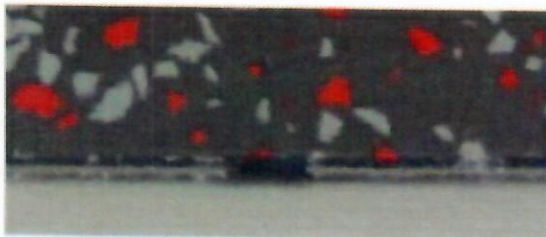
We weld carefully  
Nous soudons avec soin  
Wir schweißen sehr  
sorgfältig  
Soldamos con mucho  
cuidado

## Back WELDING

for Tarabus NT

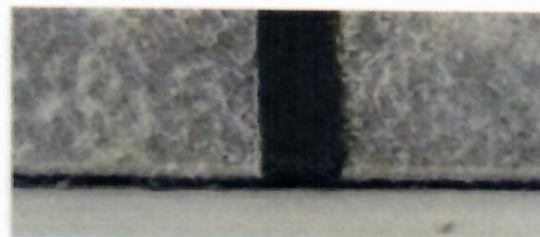
- **Aesthetics**  
The welded seam is no longer visible
- **Easy to clean**  
No trap for dirt
- **Durability**  
The welded seam is no longer exposed to foot traffic

- **Estética**  
El cordón de soldadura ya no es visible
- **Facilidad de limpieza**  
No quedan puntos de acumulación de suciedad
- **Durabilidad**  
La soldadura ya no queda expuesta al tránsito



- **Esthétique**  
Le cordon de soudure n'est plus visible
- **Facilité d'entretien**  
Pas de points d'encrassement
- **Durabilité**  
La soudure n'est plus soumise au trafic

- **Ästhetik**  
Die Schweißnaht ist nicht mehr sichtbar
- **Erleichtert die Wartung**  
Keine Verschmutzung im Bereich der Schweißnaht
- **Langlebigkeit**  
Die Schweißnaht wird nicht mehr direkt durch Abnutzung beeinflusst





# FEATHER WEIGHT

**MID-HI SEAT  
"ROCK SOLID"**



## Sustainable Seating Solutions

Freedman Seating Company's Feather Weight seats are designed to be like feathers on a bird: light and airy to satisfy weight restrictions and ensure a smooth ride, yet durable for years of service and low maintenance.

Freedman Seating Feather Weight seats are the most severely tested in the company's history, and meet all applicable federal motor vehicle safety standards for strength and safety (including 210 for seat belts). Less weight means one thing to bus builders and operators: they can get more passengers per bus. And when we say more passengers, ***we mean more happy passengers.***



Not Just Seats



Seating Solutions™

THE FEATHER WEIGHT SERIES BY

**FREEDMAN**

SEATING COMPANY

an ISO 9001:2000 certified company



# FEATHER WEIGHT

## MID-HI SEAT "ROCK SOLID"



### Sustainable Seating Solutions

Whether your bus is for tour/charter, para-transit, or shuttle, Feather Weight Mid-Hi works for you. Optional adjustable headrests and reclining back-rests give you luxuries for long journeys, while grab rails and ABS plastic backs provide the function and safety required for shorter trips. The ultra-thin backrest gives outstanding support and creates more hip-to-knee room than any other seat in its class. The steel frame system meets or exceeds all applicable government standards for safety and durability. And, it's light as a feather!

#### Feather Weight Mid-Hi features include:

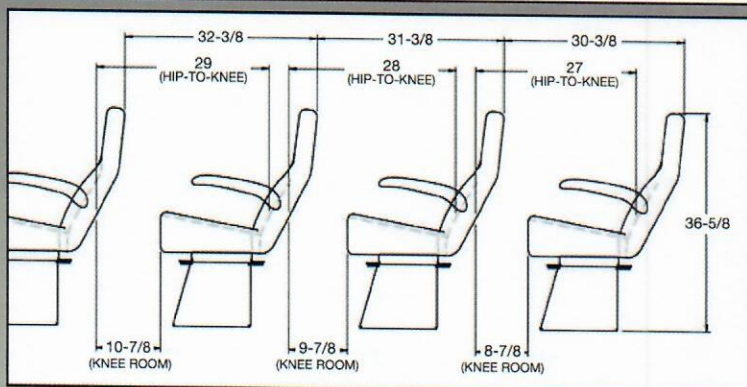
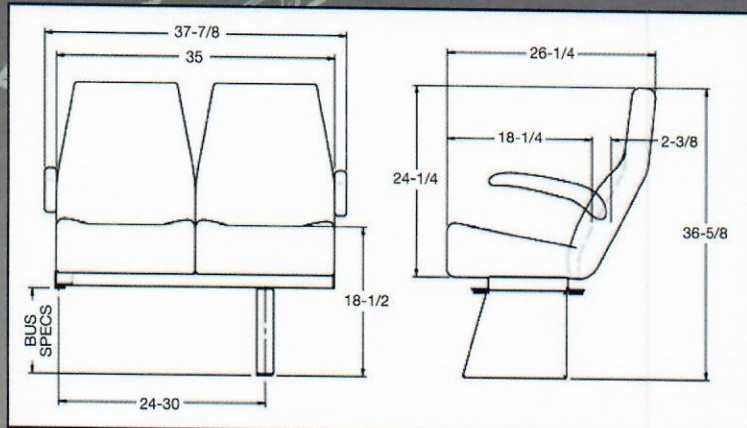
- An ultra-thin *Knee-Saver* type backrest for added hip-to-knee room and lumbar support
- Molded polyurethane seat and back cushions for comfort and long lasting support
- 17½" wide seat cushions
- 22½" back height off the seat cushion, 37" off the floor
- Wire mesh-grid seat springs for even support
- FMVSS 210 compliance—all *Feather Weight* seats are seat belt ready
- Transit style—rigid backrests (starting weight without options—43 lbs.)
- Touring style—reclining backrests (starting weight without options—47 lbs.)
- Covers that can be removed and replaced easily and without the use of special tools

#### Feather Weight Mid-Hi options include:

- Black molded U.S. Arms or upholstered flip-up armrests
- Adjustable headrests
- Black or yellow corner AV grab rails
- Black or yellow top AV grab rails
- ABS plastic backs
- Mesh map pockets
- Vertical stitching
- FTA foam
- Snack trays
- Aluminum folding footrests
- Pillow seat cushions
- Rear row quick disconnect
- Side sliders
- 16", 18" or 19" wide seats available
- Rigid or reclining backrests
- Seat belts
  - Non-retracting seat belts
  - Retracting seat belts
  - USR (Under Seat Retractors)
- S3 Bio-Cushions (Made with vegetable oil)
- A wide variety of cloths and vinyls
- S3 cloths (Made with recycled yarn)

We are constantly updating and improving our seats; therefore we reserve the right to change or modify specifications or materials without notice. All Freedman Seating Company seats meet or exceed FMVSS standards.

ISO 9001:2000 registered



#### OPTIONS



PILLOW SEAT



SNACK TRAY



FOOTREST



Not Just Seats



Seating Solutions™

**FREEDMAN**  
SEATING COMPANY

an ISO 9001:2000 certified company

4545 W. Augusta Blvd., Chicago, IL 60651  
(773) 524-2440 (800) 443-4540 Fax (773) 252-7450  
e-mail: sales@freedmanseat.com  
WWW.FREEDMANSEATING.COM



# FEATHER WEIGHT

## FOLDAWAY BV & AM STYLES

Freedman Seating gives you the largest selection of Foldaways in the industry. Whether you need space for luggage or wheel chairs, we have the right seat. Easy to install and easier to operate, our Foldaways will provide you with miles and miles of happy riders and drivers. Maybe we should say, "smiles and smiles". Freedman Seating, "Not just seats — seating solutions."



Notch-Back, standard Bench-Back and High-Back are shown.

Not Just Seats



THE FEATHER WEIGHT SERIES BY

**FREEDMAN**

SEATING COMPANY

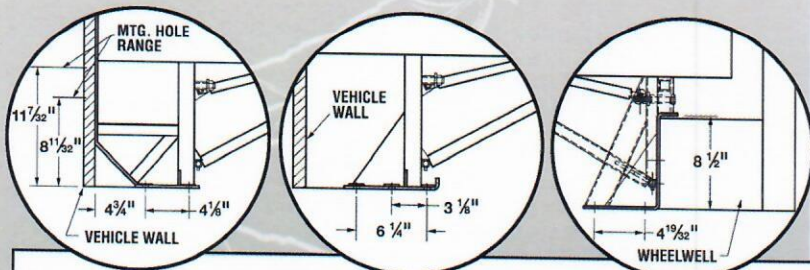
an ISO 9001:2000 certified company

Seating Solutions™



# FEATHER WEIGHT

## Foldaway BV & AM STYLES



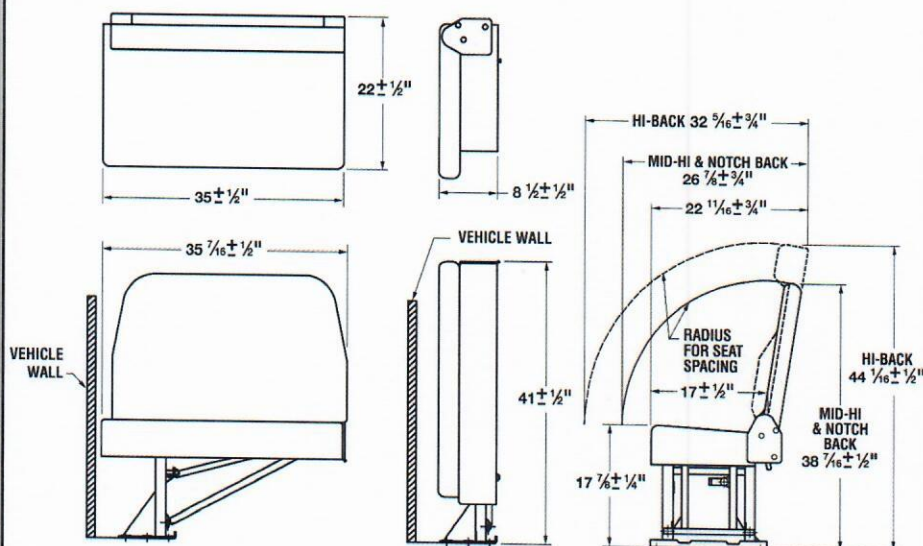
### Standard Features:

- BV Foldaways mount to the vehicle with four bolts to the floor (no wall mount)
- AM Foldaways mount to the vehicle with four bolts to the floor and two to the wall mount
- Seat belt ready (FMVSS 210 compliant with no leg or tether)
- Ultra-thin backrest for added hip-to-knee room and lumbar support
- High quality molded polyurethane seat and back cushions

AM2 Floor/Wall Mount

BV Floor Mount

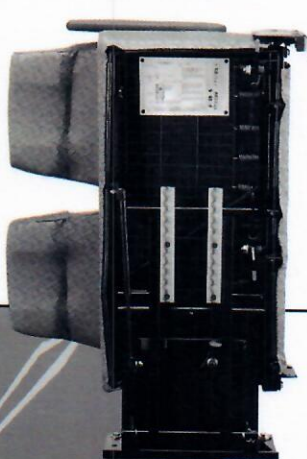
BVWW3 Floor Mount



Corner Grabs

TDSS with belts

TDSS without belts



Belts not included.

- Folds up to less than 10" thick when in the stowed position
- Cantilever design provides reduced installation time; no floor cutting for aisle leg and easy vehicle clean up
- Wire mesh grid seat springs for even support
- 2 locking mechanisms to hold seat in stowed position

### Options:

- Single or double seats
- Bench back, notch back or high back
- Wheel well seats
- Wide variety of vinyl's or cloths
- Molded U.S. arms or upholstered arms
- Black or yellow top grabs (not on high backs)
- Black or yellow corner grabs (black side only on high back)
- Vertical stitching
- FTA foam
- ABS backs (Notchback only)
- Adjustable headrests (Single and Notchback only)
- Shrouds to cover the Foldaway when stowed
- USR seat belts (Under Seat Retractors)
- CRS-225 hooks and tethers
- TDSS (Tie Down Storage System)

## Not Just Seats



THE FEATHER WEIGHT SERIES BY

**FREEDMAN**  
SEATING COMPANY

an ISO 9001:2000 certified company

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(773) 524-2440 (800) 443-4540 Fax: (773) 252-7450  
WWW.FREEDMANSEATING.COM  
e-mail: sales@freedmanseat.com

We are constantly updating and improving our seats; therefore we reserve the right to change or modify specifications or materials without notice. All Freedman Seating Company seats meet or exceed FMVS standards.

Seating Solutions™



# FREEDMAN SEATING ICS

(Integrated Child Seat)

## KIDS & SAFETY

**WHAT COULD  
BE MORE  
IMPORTANT?**

Also available  
the ICS-10,  
for children  
up to 10 years old.

Not Just Seats



THE FEATHER WEIGHT SERIES BY

**FREEDMAN**  
SEATING COMPANY

Seating Solutions™



# FREEDMAN

# SEATING ICS

## (Integrated Child Seat)

Kids and safety, what could be more important? Nothing!

That's the underlying principle behind the Freedman ICS (Integrated Child Seat) and ICS-10.

The ICS is designed for children from 22–51 lbs. and the ICS-10 can accommodate children up to 10 years old, 22–78 lbs. Both ICS seats are comfortable for adults and safe for children.

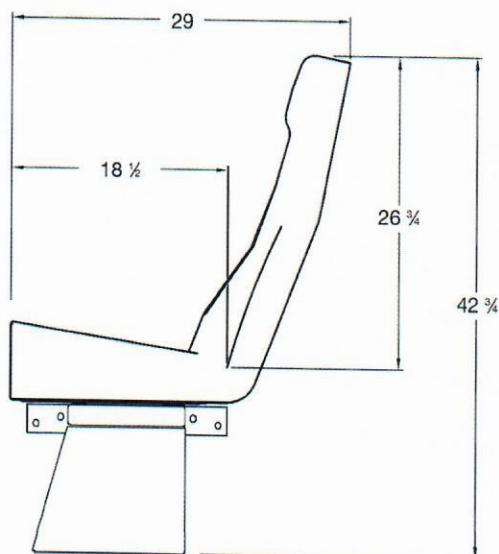
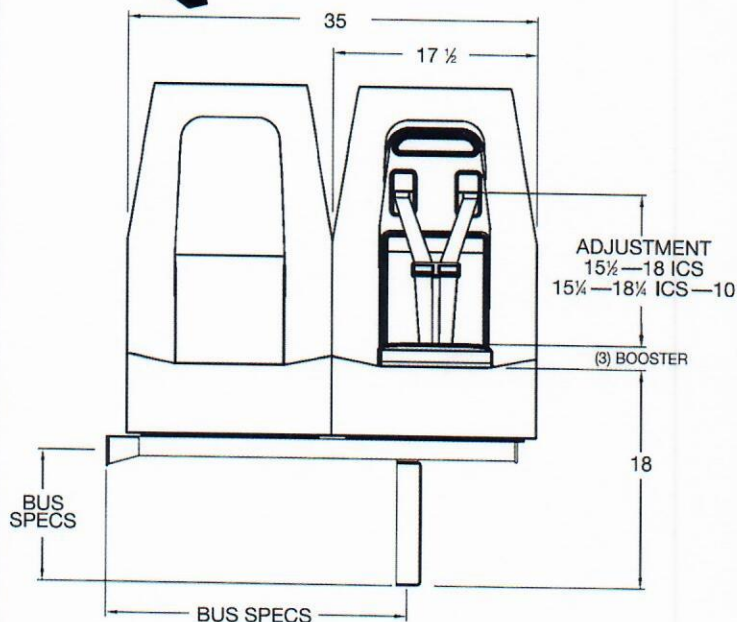
A tapered back provides unrestricted viewing for drivers, and best of all, the shoulder belts can be adjusted in seconds without taking the seat apart or clumsy operations.

### Standard Features:

- Accommodates children 22–51 lbs. (22–78 lbs for the ICS-10)
- Matching companion seat available
- Fold down tongue can be folded to act as a booster seat
- Easily adjustable shoulder straps
- Standard with FMVSS 213 and 210 seat belt anchorage compliance
- Retrofittable; Fits on most Feather Weight frames!

### Options:

- Available in a wide variety of vinyls and cloths
- Upholstered or US Arms
- Adjustable footrests
- Freedman USR (Under Seat Retractor)
- Available as a single or double
- Grab rails



Not Just Seats



Seating Solutions™

THE FEATHER WEIGHT SERIES BY

**FREEDMAN**  
SEATING COMPANY

4545 W. Augusta Blvd., Chicago, IL 60651  
(773) 524-2440 (800) 443-4540 Fax (773) 252-7450  
WWW.FREEDMANSEATING.COM  
e-mail: sales@freedmanseat.com

We are constantly updating and improving our seats; therefore we reserve the right to change or modify specifications or materials without notice. All Freedman Seating Company seats meet or exceed FMVS standards.



# AV GRAB RAIL

Black

Part # 55836380





# SHIELD DRIVER RECLINER SEAT

---

Shield driver seats are designed and tested to meet all applicable safety standards including 202A for superior head and neck support while providing superior comfort and style. The Shield recliner is the preferred driver seat for 2011 and later Ford & Chevy cutaway buses. The Shield recliner mounts directly to the OEM base & slides on seat delete chassis.





## 4 QRT-360 Retractors with L-Track Fittings and HR131 Retractable Lap & Shoulder

---

Condition: New

Quantity:

1

More than 10 available



## Mobility Aids



General Accessories

Q5-7590



General Accessories

Q5-7580



Rosco offers high serviceability and up to 100 square inches of mirror surface for both transit and school bus applications.



## REMOTE-READY REAR VIEW MIRROR SYSTEM

Equally effective on Transit or school bus applications, The American Eagle® offers high performance and serviceability wherever a dual lens, single housing, remote-ready mirror is desired.

### **A Better Single-Housing Mirror**

- Up to 100 sq. Inches Mirror Surface

- Larger Convex View
- Highly Serviceable
- Two Sizes to Choose From
- Convenient Options

## Two Size Choices both 15 and 17-inch versions.

Part #	Description
130-10	8x15" Top Mount Black, Non-Heated
130-20	8x15" Top Mount Black, Heated
130-30	8x15" Top Mount Black, Non-Heated, Remote
130-40	8x15" Top Mount Black, Heated, Remote
131-10	8x15" Bottom Mount Black, Non-Heated
131-20	8x15" Bottom Mount Black, Heated
131-30	8x15" Bottom Mount Black, Non-Heated, Remote
131-40	8x15" Bottom Mount Black, Heated, Remote
132-10	8x17" Bottom Mount Black, Non-Heated
132-20	8x17" Bottom Mount Black, Heated
132-30	8x17" Bottom Mount Black, Non-Heated, Remote
132-40	8x17" Bottom Mount Black, Heated, Remote
133-10	8x17" Top Mount Black, Non-Heated
133-20	8x17" Top Mount Black, Heated
133-30	8x17" Top Mount Black, Non-Heated, Remote
133-40	8x17" Top Mount Black, Heated, Remote





# TRANSIGN

YOUR DESTINATION BEGINS HERE



The LED Destinator™ Series - perfect for fleets of all types - is available in a variety of sizes and colors to fit your installation and display needs. These versatile and highly adaptive signs offer full integration into Destination, Route, and Next Stop announcement services, always keeping your customers pointed towards their next destination.



## STANDARD FEATURES

- Destination Messages
- Next Stop Announcements
- Public Relations Messaging
- Scrolling/Flashing/Stacked Messages

## SOFTWARE AND PROGRAMMING

Our signs and control modules are pre-programmed and include FREE software. Advanced controllers are available for J1708/J1587 system integration and Hands-Free operation, ensuring the safest and most reliable performance for any fleet.



## AVAILABLE ADVANCED FEATURES INCLUDE:

- Automated GPS message progression
- Hands-Free operation for safety
- Voice Announcements
- J1708/J1587 integration compatible
- Automatic brightness control
- Basic programming software included (USB)
- Maintenance free- ZERO cost of ownership
- Many OCU options to suit your needs



## BUY AMERICA - MADE IN U.S.A.

Using the highest quality parts, our LED Destinator™ Signs are proudly made in Detroit, Michigan USA in full compliance with the **Buy America Act**.

## LED DESTINATOR™ WARRANTY INFO

With a lifetime warranty that outlasts the lifetime of most vehicles (100,000 hours at full brightness), our signs will exceed your expectations in reliability and performance.



## ABOUT TRANSIGN

Established in 1959, Transign is a leading provider of high-quality signage for the transit industry. We remain committed to providing world-class U.S. based customer service and technical support.

Transign LLC, 281 Collier Rd., Auburn Hills, Michigan 48326  
Toll Free: 855.535.7446 | Main: 248.623.6400 | Fax: 248.623.2930  
[www.transignllc.com](http://www.transignllc.com)



## LED Destinator™ Electronic Signs - Dimensions

Signs	Pixel Count H x W (pixels)	Display H x W (in)	Enclosure H x W x D (in)
LD16160	16 x 160	6 1/2 x 63 1/8	9 1/2 x 64 3/8 x 2 3/8
LD16128	16 x 128	6 1/2 x 50 1/2	9 1/2 x 52 x 2 3/8
LD16112	16 x 112	6 1/2 x 44 1/8	9 1/2 x 45 3/4 x 2 3/8
LD1696	16 x 96	6 1/2 x 37 7/8	9 1/2 x 39 3/8 x 2 3/8
LD1680	16 x 80	6 1/2 x 31 5/8	9 1/2 x 33 x 2 3/8
LD1632	16 x 32	6 1/2 x 12 3/4	9 1/2 x 14 x 2 3/8
LD12112	12 x 112	4 7/8 x 44 1/8	8 x 45 3/4 x 2 3/8
LD1280	12 x 80	4 7/8 x 31 5/8	8 x 33 1/8 x 2 3/8
LD1232	12 x 32	4 3/4 x 12 3/4	8 x 14 x 2 3/8
LD896	8 x 96	3 1/4 x 37 7/8	6 3/8 x 39 3/8 x 2 3/8
LD864	8 x 64	3 1/4 x 25 1/4	6 3/8 x 26 3/4 x 2 3/8

Be sure to check out our other great products!



**Stop Request Signs**

- Flush, ceiling or surface mount
- Any font/color combination
- Back-lit by efficient LED's



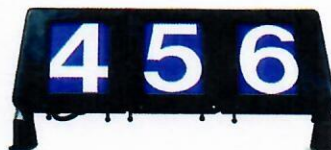
**Interior Passenger Information Sign**

- Easy to install
- ADA compliant
- LED's rated at 100K hours



**Roller Curtain Signs**

- High-res logos & graphics
- Perfect for large fleets
- Virtually maintenance free
- Reliable, efficient LED backlight
- Available in 12 and 24 VDC
- Up to 120 destinations



**Run Number Box**

- Metal or plastic frame
- Available in 2, 3, or 4 digits
- Easy to read 4" lettering
- Spring loaded return
- Reliable, efficient LED backlight
- Virtually maintenance free



**LED Run Number Box**

- Steel enclosure
- ADA compliant
- Reliable LED's
- Multiple colors
- Automatic brightness
- 12 and 24 VDC

**Join Our Mailing List**

[www.transignllc.com/subscribe](http://www.transignllc.com/subscribe)

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[www.transignllc.com](http://www.transignllc.com)



Stop Request components assembled by Forest River and covered under their 3 year 36000 mile warranty

Includes:

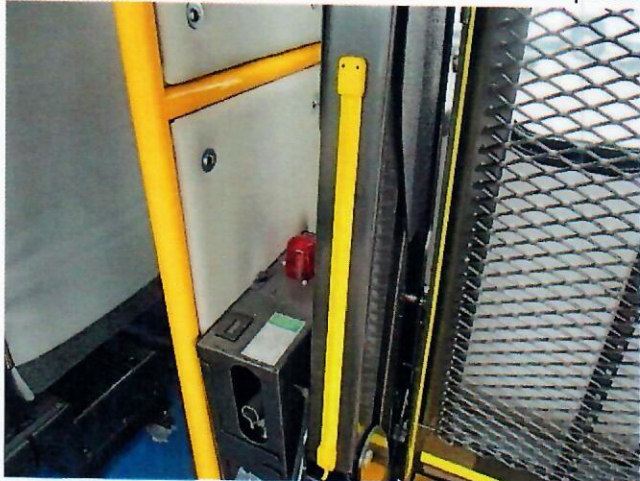
1. Sign mounted at front header



2. Request cabling for ambulatory passengers



3. Touch tape and or push buttons for wheelchair passengers





PA compatible with JensenD1130 radio that was previously documented

<b>Jensen JHD1130 AM/FM/RBDS/WB Radio With Clock &amp; 4 Speakers</b>
---

<b>JPA600 PA System w/ Hand Held Mic &amp; Clip Integrated with JHD1130 Radio</b>
---

Fare box provision includes Forest river installed:

- Additional stanchion connecting to driver's modesty behind right hand shoulder of driver and a power and ground wire to allow for fare boxes with illumination lighting to be easily wired by agency

Radio install prep includes forest River installed:

- Ground Plane on roof for antennae mounting, pull cord and channel for routing cabling, ground wire, Constant power and ignition power all coiled behind drive left should at ground level for agency install

Strobe light

- See literature next page

Dual Purpose safety vent by Safe Fleet

The Safe Fleet – Transpec family of ventilators and escape hatches – designed to meet the wide-ranging needs of today's transit fleet.



### Dual Purpose Safety Vent

The Dual Purpose Safety Vent is a combination roof ventilator/emergency exit that provides 5-position, fresh air ventilation and a simple release handle for emergency exit.

- Multi position fresh air vent
- Emergency exit
- Most popular model



# LED Strobe Light

Enhanced Bus Visibility



Provides more down angle light to gain attention of pedestrians and motorists



4" model shown

- Exceeds SAE J845 Class II rating
- Same hole pattern as Specialty Manufacturing's 515 model
- Composite base with rubber gasket adapts to various mounting surfaces



## Safety

Significantly improves vehicle visibility in any light conditions



## Adaptable

Composite base with rubber gasket adapts to various roof surfaces



## Moisture

Water resistant design exceeds SAE J845/575



## Down Beam

Optical design provides more down angle light to gain attention of pedestrians and motorists



## Maintenance

LED tower and circuit board are field replaceable for simplified maintenance



## Warranty

5 year warranty provided as standard offering



## Extreme Temp

Certified operation between -30°F and 130°F



## Shock and Vibration

Rough roads, potholes, and day-to-day jarring are no match for the solid state electronics. Tested to SAE J845/575 standards



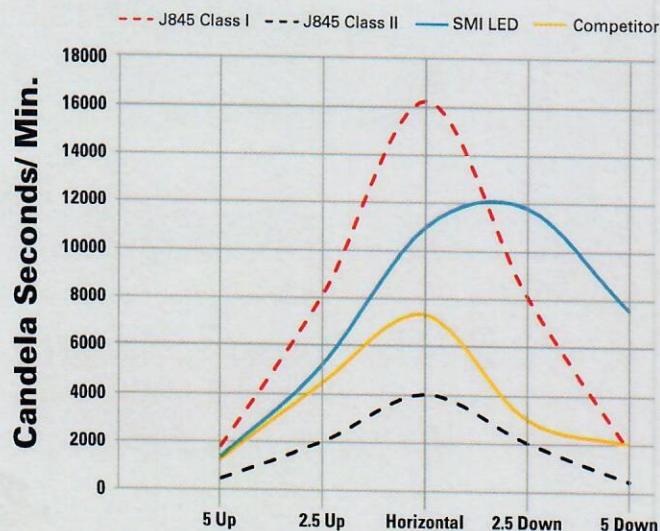
Driving Safety Forward™



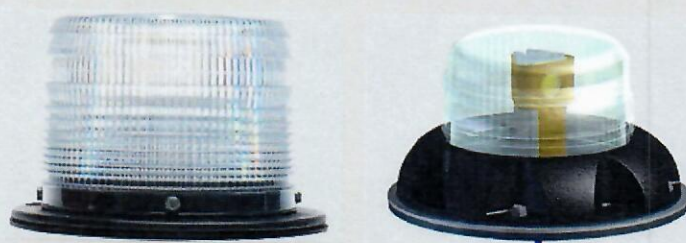
# LED Strobe Light

## The Specialty Difference

### OPTICAL POWER

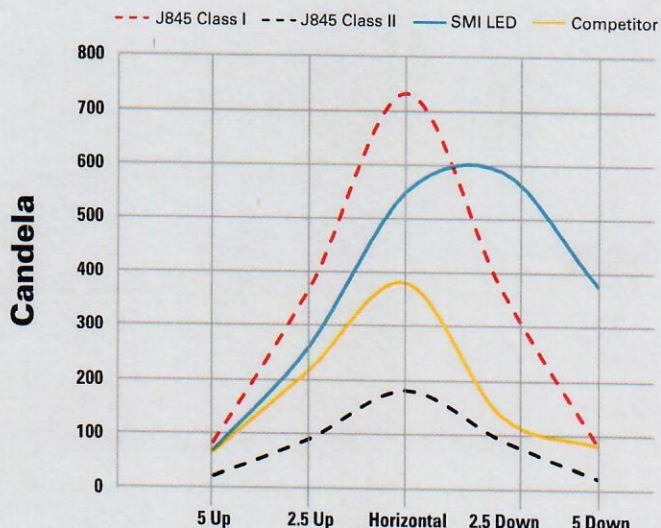


Optical Power is part of SAE J845. The purpose of this graph is to show the total energy emitted in a given length of time.



New Low profile LED Strobe

### PEAK INTENSITY



This graph illustrates how the Specialty LED Strobe outperforms the leading competitor + SAE J845 requirements.

The optical design of the Specialty strobe provides 4x's more down angle light than the competitive solution which enhances bus visibility to motorists and pedestrians. It provides nearly 5x's more down angle light than SAE J845 requirements for Class II strobes.



1269-Strobe-Light-BR-SB-021522

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1.877.630.7366  
safefleet.net

SAFE FLEET  
Driving Safety Forward™





# VX5AI

## MDVR

### Vulcan™ Series VX5AI MDVR

The five-channel VX5AI is ideal for smaller buses and transport vans and records up to five camera views: four HD channels at D1, 720P or 1080P—plus one IP channel at up to 1080P resolution, for a key location where IP clarity is needed most. Video is stored on a locking hard drive, with a microSD card slot for redundancy.

- 5-channel system
- 4 channels D1, 720P, or up to 1080P + 1 channel IP up to 1080P
- 1TB (standard) 2.5" SATA or solid-state drive, up to 2TB
- microSD card slot for redundant recording
- Five (5) year limited warranty

Storage Compartment – Will either be in front header in conjunction with access to front destination sign or in area above passenger door header. Subject to pre-production review of bus order

Training – Fully understand that award of this contract obligates bidder to fully participate in annual training events for both transit agencies and 53-10 agencies. Generally these are held at two or three locations around the state.

Overhead luggage rack – See picture below





# FEATHER WEIGHT

## HIGH-BACK SEAT

Freedman Seating Company's Feather Weight seats are designed to be like feathers on a bird: light and airy to satisfy weight restrictions and ensure a smooth ride, yet durable for years of service and low maintenance.

Freedman Seating Feather Weight seats are the most severely tested in the company's history, and meet all applicable federal motor vehicle safety standards for strength and safety (including 210 for seat belts). Less weight means one thing to bus builders and operators: they can get more passengers per bus. And when we say more passengers, **we mean more happy passengers.**



Not Just Seats



THE FEATHER WEIGHT SERIES BY

**FREEDMAN**  
SEATING COMPANY

Seating Solutions™



# FEATHER WEIGHT

## HIGH-BACK SEAT

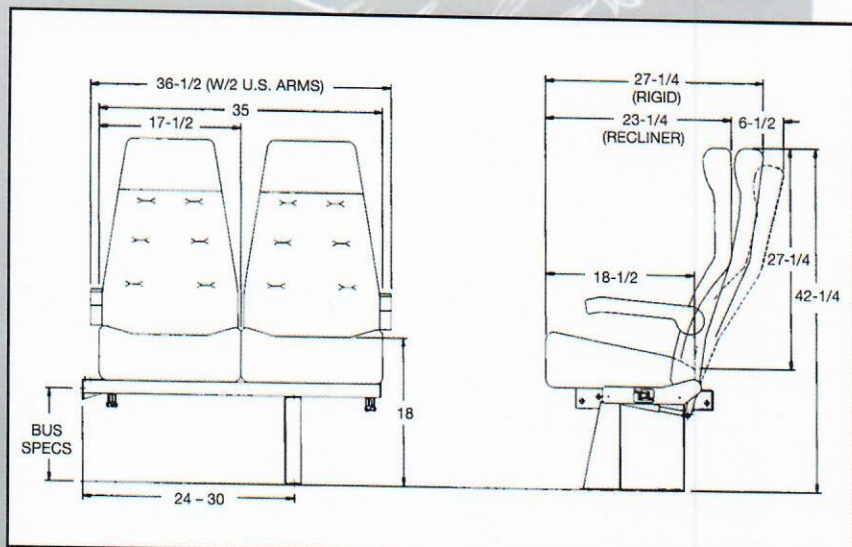
Cross-country or cross-town, the Freedman Feather Weight High-Back gets you there in safety and comfort. The headrest actually cradles your head, and provides unrestricted viewing. The ultra-thin backrest gives out-standing support and creates more hip-to-knee room than any other seat in its class. The steel frame system meets or exceeds all applicable government standards for safety and durability. And, it's light as a feather!

### Feather Weight High-Back features include:

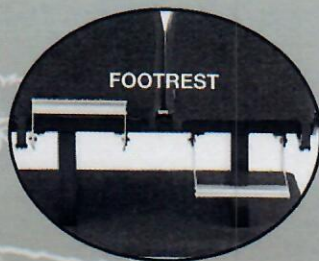
- An ultra-thin *Knee-Saver* type backrest for added hip-to-knee room and lumbar support
- Molded polyurethane seat and back cushions for comfort and long lasting support
- 17½" wide seat cushions
- 27¼" back height off the seat cushion, 42¼" off the floor
- Wire mesh-grid seat springs for even support
- FMVSS 210 compliance—all *Feather Weight* seats are seat belt ready
- Covers that can be removed and replaced easily and without the use of special tools

### Feather Weight High-Back options include:

- Black molded U.S. Arms or upholstered flip-up armrests
- Mesh map pockets
- Vertical stitching
- FTA foam
- Snack trays
- Aluminum folding footrests
- Pillow seat cushions
- Pillow headrests
- Side grab rail
- U.S.R.—Under Seat Retractors
- 16" or 19" wide seats available
- Rear row quick disconnect
- CRS-225 hooks and tethers
- Side sliders
- Cup holders
- Seat belt loops



### OPTIONS



### Not Just Seats



Seating Solutions™

THE FEATHER WEIGHT SERIES BY

**FREEDMAN**  
SEATING COMPANY

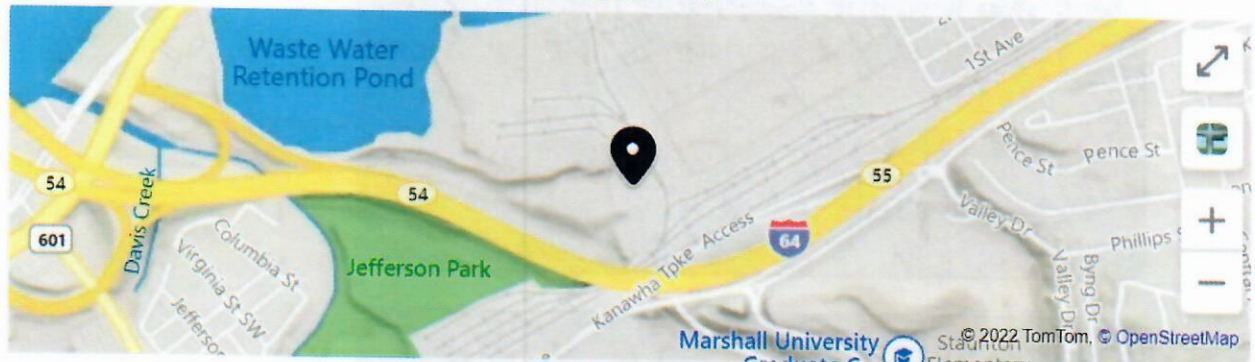
4545 W. Augusta Blvd., Chicago, IL 60651  
(773) 524-2440 (800) 443-4540 Fax: (773) 252-7450  
WWW.FREEDMANSEATING.COM  
e-mail: sales@freedmanseat.com

We are constantly updating and improving our seats; therefore we reserve the right to change or modify specifications or materials without notice. All Freedman Seating Company seats meet or exceed FMVS standards.



## Warranty providers in West Virginia and nearby locations

### 1. Fleet Pride PDI center near Charleston WV



#### FleetPride Parts

[branches.fleetpride.com](https://branches.fleetpride.com)

3204 Maccorkle Ave SW, South Charleston, WV 25303

(304) 746-2000

Closed · Opens tomorrow 7:30 AM ▼

Website

Directions

Contact us

### 2. Truck Certified Ford Dealers

#### Jenkins Ford, Inc.

★★★★★ Facebook (201) · Car dealer  
8 Billingsley Dr, Buckhannon · (800) 400-7770  
Open · Closes 7 PM



WEBSITE



VEHICLES

#### Jim Robinson Ford

★★★★★ Facebook (84) · Car dealer  
95 Robinson Dr, Triadelphia · (304) 232-2400  
Open · Closes 7 PM



WEBSITE



VEHICLES

#### Chenoweth Ford Inc

★★★★★ Facebook (132) · Car dealer, Used car dealer  
1564 E Pike St, Clarksburg · (800) 344-1108  
Closes in 20 mins



WEBSITE



VEHICLES

#### Thornhill Ford Lincoln

★★★★★ Facebook (124) · Car dealer  
500 Ford Fairlane US-119, Chapmanville · (304) 855-8300  
Open · Closes 7 PM



WEBSITE



VEHICLES

#### Elkins Fordland

★★★★★ Facebook (98) · Used car dealer, Car dealer  
696 Beverly Pike, Elkins · (800) 296-2486  
Closed · Opens tomorrow 8 AM



WEBSITE



VEHICLES

AC certified



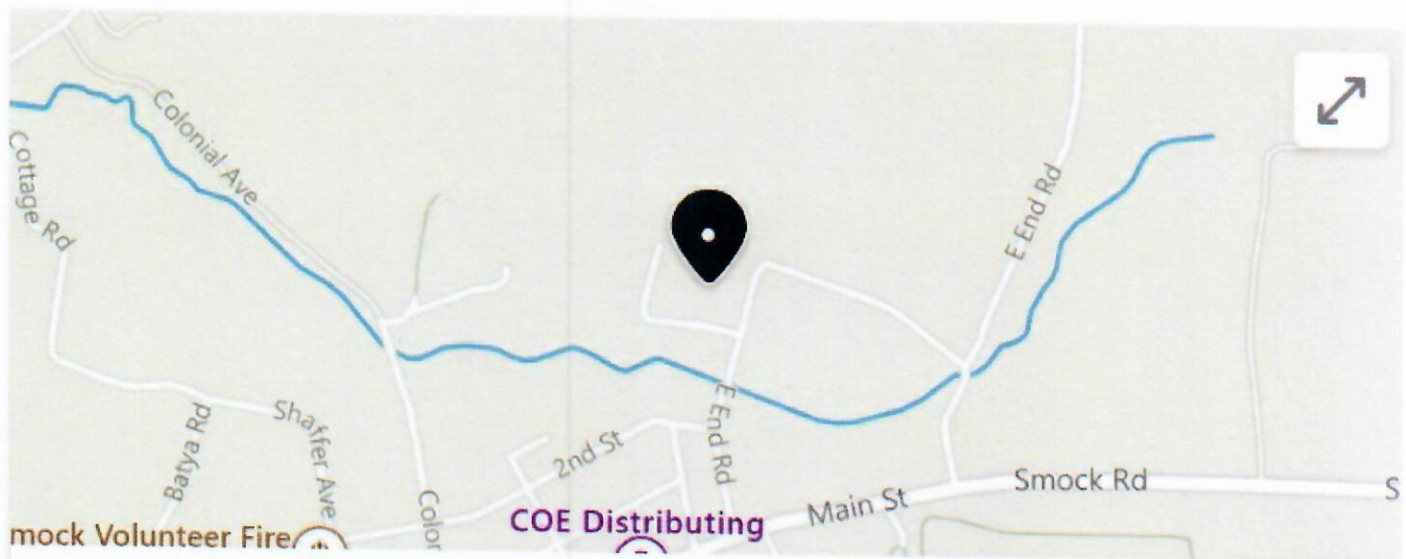
## Worldwide Equipment

Ph: 304-736-3401

5650 US Rt 60E

Huntington, WV 25705

All around warranty center for Rohrer Bus near Morgantown WV



## Rittenhouse Bus Lines

Bus station



Website



Directions



31 E End Rd, Smock, PA 15480



(724) 677-9900



**Closed** · Opens tomorrow 6 AM ▼



AC certified

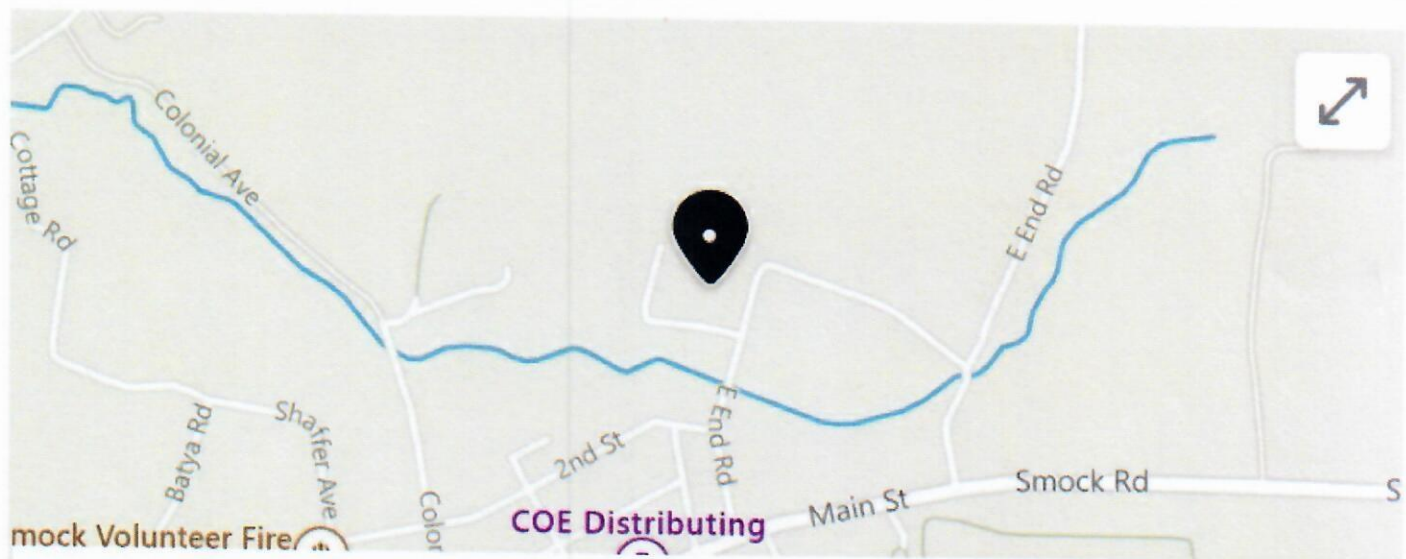
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## Rittenhouse Bus Lines

Bus station



Website



Directions

 31 E End Rd, Smock, PA 15480

 (724) 677-9900

 **Closed** · Opens tomorrow 6 AM ▼

### QUICK REFERENCE: WARRANTY COVERAGE

This chart gives a general summary of your warranty coverage provided by Ford Motor Company under the **New Vehicle Limited Warranty**. Please refer to the description of warranty coverage for more specific information.

For each type of coverage, the chart shows two measures:

- years in service
- miles driven

Your New Vehicle Limited Warranty	
TYPE OF COVERAGE	YEARS IN SERVICE/MILES DRIVEN
BUMPER TO BUMPER	3/36,000
POWERTRAIN	5/60,000
SAFETY RESTRAINT SYSTEM	5/60,000
CORROSION (Perforation only)	5/UNLIMITED
DIESEL ENGINE	5/100,000
HYBRID/ELECTRIC UNIQUE COMPONENT	8/100,000

The measure that occurs first determines how long your coverage lasts. For example: Your Bumper to Bumper Coverage lasts for three years - unless you drive more than 36,000 miles before three years elapse. In that case, your coverage ends at 36,000 miles.

For more details on coverage, see:

- ➔ **What is Covered?** (pages 9-13)
- ➔ **What is Not Covered?** (pages 13-16)





## Warranty Overview

*Please refer to specific warranties for details & exclusions*

<b>ELDORADO</b>	
Base Warranty	3 Year/36,000 Miles
Body Structure	5 Year/100,000 Miles
Electrical System	3 Year/36,000 Miles
Paint	≤36 months and ≤36,000 miles = 100% materials and 100% labor ≤48 months and ≤70,000 miles = 50% material and 50% labor ≤60 months and ≤100,000 miles = 25% material and 25% labor
<b>CHASSIS</b>	
Ford Motor Co.	3 Year/36,000 Miles      E & F Series Chassis
	5 Year/60,000 Miles      Drivetrain
	5 Year/Unlimited Miles      Corrosion
	5 Year/100,000 Miles      Diesel Engine
General Motors	3 Year/36,000 Miles      G3500 & G4500 Chassis
	5 Year/60,000 Miles      Drivetrain for End Users w/o FAN
	5 Year/100,00 Miles      Drivetrain for FAN End Users
	3 Year/36,000 Miles      Corrosion
International	6 Year/100,000 Miles      Rust-Through
	1 Year/Unlimited Mileage      (from delivery date) TC
	5 Year/100,000 Miles      TC Chassis Cab Coverage
	6 Year/Unlimited Miles      TC Corrosion
	2 Year/Unlimited Miles      TC ISB Engine
<b>AIR CONDITIONING AND HEAT</b>	
ProAir A/C (formerly A.C.T.)*	3 Year/Unlimited Mileage
ACC Climate Control	3 Year/75,000 Mile (with min 2 Year/Unlimited mileage for original owner)
Mobile Climate Control (MCC)	2 Year Unlimited Mileage (from Original In-Service Date)
Thermo King A/C	2 Year/Unlimited Mileage, Parts, Labor 1 Year on Compressors
Trans Air	2 Year/Unlimited Mileage (from Original In-Service Date)
ProAir Heaters*	2 Years/Unlimited Mileage
<b>ALTERNATOR</b>	
Alternator	See Chassis Warranty
<b>AUDIO VISUAL</b>	
ASA Radio Components	2 Year/Unlimited Mileage
Echovision	1 Year (from original purchase date)



**Ford Motor Company**

*Is proud to recognize*


***Eldorado National-Kansas (REV)***

*as a participant in the*

***Transit Bus***

***Qualified Vehicle Modifier Program***



  
\_\_\_\_\_  
Ryan A. Delaney -- SVE Quality Programs Mgr.

***June, 2018***





**Orion Registrar, Inc.**

**Thorough and Fair Auditing**

## **Certificate of Certification**

*This is to certify the Quality Management System of:*

**EIDorado National (Kansas), Inc.**

**1655 Wall Street  
Salina, KS 67401 USA**

*Has been assessed by Orion Registrar and found to be in  
compliance with the following Quality Standard:*

**ISO 9001:2015**

*The Quality Management System is applicable to:*

**Design, Manufacture and Sale of Customized  
Buses and Multipurpose Passenger Vehicles**

*The Certification period is from*

**August 17, 2018 to October 30, 2021**

*This certification is subject to the company maintaining its system to the  
required standard, and applicable exceptions, which will be monitored by Orion.*

Client ID: 342

Certificate ID: 1014899



  
Paul M. Burck, President  
August 17, 2018  
Date





# ROHRER

*School & Commercial Bus Sales*

---

## Company History

### **Rohrer Bus... four generations of transportation experience.**

Rohrer's history all began in the early 1920's when Howard E. Rohrer Sr. started transporting school children with his horse and wagon in Allen's Cove, just south of Duncannon, Pennsylvania. The early horse-and-wagon evolved to a few wooden school bus bodies being built on car chassis'. Over the years, the need for student transportation grew. That's the way Rohrer Bus began.

Now fast forward to 1975. Howard E. Rohrer Jr. was running the business and our school bus fleet had grown to 70 buses. In addition to our growing school transportation service, Rohrer Bus added a Sales company and teamed up with Wayne school buses to represent their products. It was soon apparent that our **school bus company** was quickly outgrowing the facility on the family farm. So, in 1976, ground was broken for a new sales and service facility where our headquarters remain today.

By 1981, the 3rd generation of the Rohrer family was well on their way to continuing our company's transportation legacy. H.E. "Skip" Rohrer III and his brother-in-law John Schrantz, who continue to oversee the business operations today, took over the company from H.E. Rohrer Jr. By this time, our operating fleet had grown to over 200 buses and, in 1982, we became a dealer for Champion Bus selling commercial buses.

In the fall of 1999, Rohrer Bus Sales proudly became the Thomas Built Bus dealer for the much of the state of Pennsylvania. Our experience in the sale and operation of school and commercial buses, along with our reputation for providing outstanding customer service made Rohrer the logical choice when Thomas Built Buses was looking for a full-service dealership to partner with. And in 2006, just one year after receiving the Pennsylvania School Bus Association's (PSBA) Platinum Bus Award for 75 years of service to the transportation industry, Rohrer Bus was celebrated as the Thomas Built Bus Dealer of the Year.

Today, the 4th generation of the Rohrer transportation legacy is now in place with Tahva Rohrer Wylie and David Schrantz continuing our family's dedication to the transportation industry. We currently sell vehicles throughout the mid-Atlantic states of Pennsylvania, Maryland, New Jersey, Delaware, and Virginia. Rohrer Bus offers a complete lineup of vans and buses ranging from small, wheelchair-accessible passenger vans to 90-passenger buses. On top of that, we are a FULL service dealer with factory-trained, ASE certified technicians providing factory approved service and warranty repairs for the ENTIRE bus.

In addition to our dealership growth, over fifteen (15) Pennsylvania school districts, intermediate units, and other entities rely on our fleet of over 500 vehicles to provide them with safe transportation services for their students. Our Duncannon headquarters has expanded several times, now with over 30,000 square feet, offering complete support along with the latest tools and equipment. With that, we are proud to be recognized as Perry County's largest employer. In addition to our Duncannon facility, Rohrer Bus has instituted several satellite facilities located throughout our growing sales territory.

Although we may have grown much larger over our many years in business, our Rohrer Bus family still prides itself on one thing: providing the very best transportation products and services available. With over 1000 years of combined industry experience, we can handle just about any transportation need, while consistently demonstrating our commitment to the highest level of quality, safety, and customer service. So, as **"The Transportation Company You Can Depend On"**, we look forward to a very long and successful relationship as your partner in safe and reliable transportation!

---

1515 State Road, P.O. Box 100, Duncannon, Pennsylvania 17020 • OFFICE 717.957.2141 • TOLL FREE 800.735.3900 • FAX 717.957.4884

[rohrerbus.com](http://rohrerbus.com)



# **ROHRER**

*School & Commercial Bus Sales*

---

## **Warranty Service & Product Recalls**

When buying a vehicle from Rohrer Bus, you can rest assured that you will be taken care of long after the sale. Our dedicated account representatives, Ryan Renninger (warranty) and Greg Kline (parts), are committed to service. They are here to help you from 8am – 4:30pm Monday thru Friday. Mr. Renninger is hands on and our most knowledgeable employee regarding warranty. Mr. Renninger and Mr. Kline can be reached at 1-800-735-3900.





# **ROHRER**

*School & Commercial Bus Sales*

## **Statement of Qualifications**

Rohrer Enterprises is a third generation business founded in the mid-1920s who employs over 800 employees. Our facility is open 5 days a week, 18 hours a day with service advisors available 24/7. The commercial sales division represents Champion Bus in Maryland, Pennsylvania, Delaware, Virginia, and New Jersey, the District of Columbia and the GSA / United States federal government. Our knowledge and experience with transit system maintenance operations, practices and control system technology relates directly to our own operation of over 700 daily school bus routes. We are also operating as a certified third party tester for the Commercial Driver's License (CDL).

Rohrer Bus Sales has represented Champion Bus since 1982 and has consistently been one of their top dealers, primarily due to their quality of manufacturing and support they offer their dealer network. Rohrer Bus Sales has recently been recognized as a Platinum Level Dealer for 2009, 2010 and 2012 and also recognized as having the longest standing dealer relationship with Champion Bus. We also represent Thomas Bus in the state of Pennsylvania and have been recognized as a "Gold Level" dealer.

Rohrer Bus Sales held the contract for the Commonwealth of Pennsylvania in the light/medium duty shuttle bus categories including Ford, Chevrolet, Freightliner and International chassis. In addition to the light/medium duty shuttle buses, Rohrer Bus Sales has also held similar contracts with the Commonwealth of Pennsylvania for light duty minivan conversions, Ford cargo/passenger van conversions and the VPG purpose built vehicle.

Management of this IFB would be conducted by specific key personnel of Rohrer Enterprises, Inc. d/b/a/ Rohrer Bus Sales. This would include all processes from the initial contact, oversight of the ordering and production process, quality control, and final delivery of the completed unit. Our service department will administer all warranties implied in this response along with offering technical support for the products offered.

1515 State Road, P.O. Box 100, Routes 11 & 15, Duncannon, Pennsylvania 17020

OFFICE 717.957.2141 • TOLL FREE 800.735.3900 • FAX 717.957.0158

[rohrerbus.com](http://rohrerbus.com)



# Complete Mechanical Description

## The Advantage Ford E350/E450



### Customizable and Affordable Mid-Size Bus

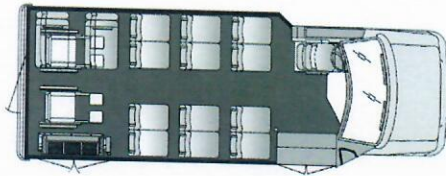
Since the Advantage's 2012 inception, this affordable mid-size bus was one of the first fully integrated steel cage body produced at Eldorado. Built on the Ford E-Series chassis, this model can be customized to comfortably seat up to 28 passengers, or designed for non-CDL applications. If mid-size is what you are needing, while being mindful of a budget, the Advantage is one to check out.

# ELDORADO

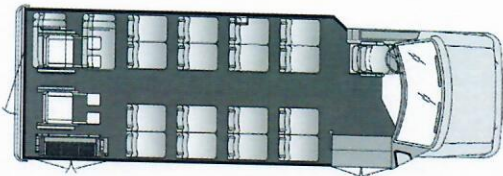
Meeting America's Transportation Needs  
One Customer at a Time



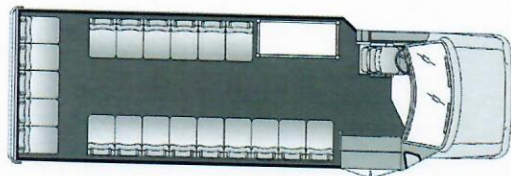
# The Advantage Ford E350/E450



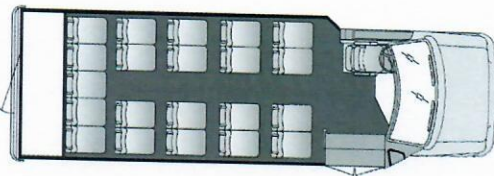
12 Passenger 2 Wheelchair with Foldaway Seats Plus Driver



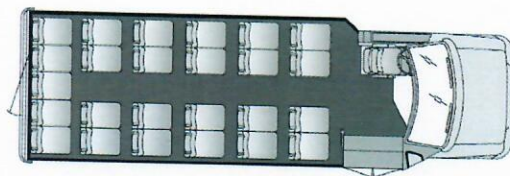
16 Passenger 2 Wheelchair with Foldaway Seats Plus Driver



20 Passenger with Interior Luggage Plus Driver



21 Passenger with Rear Luggage Plus Driver



25 Passenger Plus Driver

## Standard Exterior Feature Highlights

- Fully welded steel cage construction meeting all applicable FMVSS requirements
- "Starview" drivers visibility window in front of entry door
- Electric actuated passenger entry door with full length glass
- 36" wide x 36" high upper double T-Slider tempered safety glass windows with climate control tint
- Black powder coated steel rear bumper
- Rear mud flaps
- Pre-painted white aluminum sidewall and skirts
- Fiberglass front and rear caps
- One-piece seamless FRP (fiberglass reinforced plastic) roof
- Breakaway rearview mirrors with built-in convex
- Sealed LED stop, tail, and turn signal lights with LED back-up lights
- LED front and rear marker lights

## Standard Interior Feature Highlights

- 93" interior width
- 80" interior floor to ceiling height with standard floor (raised floor is 75")
- Floor and wall seat track for flexible seating
- Black slip resistant floor covering
- 5/8" exterior grade plywood flooring
- Ceiling and rear wall fabric for sound abatement
- FRP (fiberglass reinforced plastic) sidewalls for ease of cleaning
- White step nosing
- 1.25" left hand vertical passenger assist rail at entry door
- Intermotive FlexTech Electrical System
- LED entry door step well lights
- LED driver and passenger area lighting
- Non-retractable seat belts

## Popular Option Highlights

- Stainless steel wheel inserts
- Luggage Storage areas (overhead luggage racks with reading lights, interior luggage racks, rear luggage area)
- Rear emergency door with window(s)
- Passenger area rear heat and air conditioning
- Passenger grab rails
- Padded vinyl or cloth walls and ceiling
- Audio and video systems
- Mid back or high back seating
- ADA and FMVSS compliant wheel chair lifts and securement systems
- Fiberglass side walls and skirts

# ELDORADO



## ELDORADO ADVANTAGE & ADVANCE STANDARD EQUIPMENT

### EXTERIOR STANDARD FEATURES/ITEMS

#### EXTERIOR LIGHTING

L.E.D. THINLINE RECTANGULAR FRONT & REAR CLEARANCE & MARKER LAMPS (5 FRONT AMBER, 7 REAR RED), L.E.D. RED STOP/TAIL AND TURN SIGNAL/RUNNING LAMPS, L.E.D. BACK UP LAMPS, L.E.D. LICENSE PLATE LAMP. 2 OF THE 7 THINLINE RED LIGHTS ARE SURFACE MOUNTED ON THE REAR SKIRT (OPTIONAL ARMORING IS AVAILABLE). THE OTHER 5 ARE INSTALLED IN THE REAR CAP RECESSES. AN ADA COMPLIANT SURFACE MOUNTED EXTERIOR ENTRY DOOR LIGHT IS NOW STANDARD WITH OPTIONAL CHOICES AVAILABLE. LIGHT SUPPLIER IS ELDORADO OEM - OPTIONAL BRANDS MAY BE AVAILABLE AT ALTERNATE PRICING - CHECK WITH YOUR ELDORADO REPRESENTATIVE

#### EXTERIOR MIRRORS

ROSCO ACCUSTYLE MANUAL EXTERIOR BREAKAWAY MIRRORS ARE USED. SINGLE DOOR CHASSIS HAVE CHASSIS MOUNTED DRIVER SIDE AND USE THE ROSCO PATENTED FENDER MOUNT CURBSIDE. OVERALL HEAD SIZE IS APPROXIMATELY 7" X 14" WITH A FLAT LENS 7"W X 10"H AND CONVEX LENS 7"W X 4"H (BOTH APPROXIMATE). A FULL ARRAY OF POWER, HEAT AND TURN SIGNAL OPTIONS IS AVAILABLE. ALTERNATE BRAND MIRRORS MAY BE AVAILABLE AT AN ADDITIONAL CHARGE - CHECK WITH YOUR ELDORADO REPRESENTATIVE

#### EXTERIOR FRONT CAP & BODY WINGS

FIBERGLASS FRONT CAP WITH RECESSED MOUNTING FOR THINLINE AMBER RECTANGULAR L.E.D. MARKER/CLEARANCE LAMPS. FRONT FIBERGLASS CURBSIDE WING WITH LARGE 361 SQ. IN. VIEWING WINDOW TINTED AS-2 PER FMVSS REGULATIONS. FRONT STREETSIDE FIBERGLASS WING MATING TO CHASSIS "B" PILLAR.

#### EXTERIOR REAR ONE-PIECE CAP

ONE-PIECE FIBERGLASS REAR CAP WITH ANTI-RIDE FEATURE, RECESSED MOUNTING FOR 4" ROUND L.E.D. GROMMET MOUNT STOP/TAIL/TURN AND BACK UP LAMPS. RECESSED MOUNTING FOR 5 EACH THINLINE RED SURFACE MOUNT L.E.D. MARKER/CLEARANCE LAMPS. INCLUDES A 30" X 48" NOMINAL REAR EGRESS WINDOW AS STANDARD.

#### EXTERIOR ROOF

5.2mm THICK LUAN IS SECURED BY FASTENERS TO EACH ROOF BOW, THEN A ONE-PIECE .040" THICK FRP ROOF IS BONDED WITH ADHESIVE TO THE LUAN. EXTRA REINFORCEMENT AT THE ROOF RADIUS IS PROVIDED BY A .050" THICK BLACKBOARD.

#### EXTERIOR SIDEWALL & SKIRT METAL

.060" THICK PRE-PAINTED ALUMINUM UPPER SIDEWALL METAL (FROM ROOF FRP TO FLOOR MOLDING) AND .040" THICK PRE-PAINTED ALUMINUM SKIRTS FORMED WITH A 4" RADIUS ON THE BOTTOM ARE USED. UPPER SIDEWALL IS INSTALLED USING A STRUCTURAL ADHESIVE TO THE STEEL FRAME AND IS ISOLATED FROM THE FRAME TO PREVENT GALVANIC CORROSION. MATING UPPER & LOWER PANELS ARE TRIMMED USING A TWO PIECE ALUMINUM TRIM HELD IN PLACE WITH STAINLESS SCREWS

#### EXTERIOR REAR BUMPER

A HEAVY DIE-FORMED STEEL BUMPER WITH TOP AND BOTTOM REINFORCING RIBS AND BLACK POWDER COAT PAINT IS INSTALLED USING 316 STAINLESS STEEL BOLTS.

## INTERIOR STANDARD FEATURES/ITEMS

#### DRIVER OVERHEAD AREA



## ELDORADO ADVANTAGE & ADVANCE STANDARD EQUIPMENT

GREY PADDED VINYL DRIVER OVERHEAD PANEL, ELECTRICAL COVER PANEL & ACCESS DOOR, ENTRY DOOR AND "B" PILLAR COVERING. PANELS ARE SECURELY ATTACHED TO FRAME COMPONENTS USING FASTENERS.

### CEILING AND REAR WALL

5.2mm THICK LUAN IS ATTACHED TO STRUCTURE WITH FASTENERS. SEASPRAY FABRIC IS INSTALLED WITH AN ADHESIVE TO THE LUAN.

### UPPER INTERIOR SIDEWALL

VANDAL RESISTANT FRP LAMINATED TO LUAN IS INSTALLED ABOVE THE SEAT TRACK TO THE TRANSITION PANEL. MATING PANELS ARE TRIMMED USING A VINYL "T" LOCK WITH SMOOTH EDGES

### LOWER INTERIOR SIDEWALL

DIRECTIONLESS WEAVE CHARCOAL COLOR FABRIC IS INSTALLED ON LUAN USING AN ADHESIVE FROM BELOW THE SEAT TRACK TO THE FLOOR.

### SIDEWALL/CEILING TRANSITION PANELS

ATTRACTIVE CONVEX RADIUS DIE FORMED ALUMINUM TRANSITION PANELS ARE COVERED WITH SEA SPRAY FABRIC AS THE CEILING AND REAR WALL. THE PANELS ARE HELD IN PLACE BY AN EXTRUDED ALUMINUM "J" RAIL THAT IS ANODIZED WITH AN ATTRACTIVE, GLARE-FREE SATIN FINISH. PANELS STAY IN PLACE BUT CAN BE REMOVED WITHOUT TOOLS FOR ANY SERVICE

### INTERIOR LIGHTING

L.E.D. PASSENGER DOME LAMPS (THE QUANTITY VARIES WITH BODY LENGTH), L.E.D. DRIVER OVERHEAD DOME LAMP, L.E.D. ENTRY STEP LAMPS. LIGHT SUPPLIER IS ELDORADO OEM - OPTIONAL BRANDS MAY BE AVAILABLE AT ALTERNATE PRICING - CHECK WITH YOUR ELDORADO REPRESENTATIVE

### PLYWOOD SUB-FLOOR DECKING

5/8" THICK PLYWOOD IS INSTALLED OVER THE FLOOR STEEL STRUCTURE AFTER THE APPLICATION OF A STRUCTURAL ADHESIVE ON ALL FLOOR STRUCTURE PARTS. THE PLYWOOD IS HELD IN PLACE UNTIL THE ADHESIVE CURES BY COUNTERSUNK SELF DRILLING #14 SCREWS

### INTERIOR & STEP FLOORING

GERFLOR SIRIUS NT 2.25mm THICK GRAPHITE (BLACK) UPGRADE, PVC FLOORING IS INSTALLED USING A HIGH TEMPERATURE, PLASTICIZER RESISTANT ADHESIVE, THEN ROLLED WITH A HEAVY WEIGHT TO REMOVE ANY AIR BUBBLES. ALL SEAMS ARE HEAT WELDED TO FORM A VIRTUAL ONE-PIECE PASSENGER AREA COVERING AND SIDEWALL MATING EDGES ARE FULLY CAULKED. WHITE STEP NOSING IS STANDARD. YELLOW IS AVAILABLE AS AN OPTION.

### ENTRY GRAB RAILS & STANCHION PANELS

A VERTICAL STAINLESS STEEL GRAB RAIL IS INSTALLED ON THE LOWER LEFT HAND SIDE OF THE ENTRY STEPS. A MODESTY PANEL/STANCHION ASSEMBLY IS INSTALLED AT THE TOP OF THE ENTRY STEPS ON THE LEFT HAND SIDE OF THE ENTRY WAY AND A STAINLESS STEEL GRAB RAIL IS INSTALLED FROM THE ENTRY WAY WALL TO THE VERTICAL STANCHION AT THE END OF THE ENTRY STEPS. A GREY PADDED VINYL MODESTY PANEL IS STANDARD.

## STANDARD DOOR AND WINDOW INFORMATION

### PASSENGER WINDOWS

36" TALL X 36" WIDE UPPER T SLIDE WINDOWS TINTED TO FMVSS COMPLIANT AS-3 USING 3mm THICK GLAZING THAT PROVIDES 23% VISIBLE LIGHT TRANSMITTANCE, MOUNTED IN AN ALUMINUM EXTRUDED FRAME THAT IS BLACK POWDER COATED. 36" HIGH X 24" WIDE WINDOWS MAY BE NECESSARY AS "FILLERS" ON CERTAIN BODY LENGTHS TO MAXIMIZE PASSENGER VIEWING AREA. A REAR 30" TALL X 48" WIDE (NOMINAL) EGRESS WINDOW. FMVSS 217 COMPLIANT SIDE EGRESS WINDOWS ARE SUPPLIED. 1 PER SIDE IS STANDARD, BUT PASSENGER COUNTS MAY REQUIRE ADDITIONAL WINDOWS TO BE ORDERED. CHECK WITH YOUR ELDORADO REPRESENTATIVE.



**ELDORADO ADVANTAGE & ADVANCE STANDARD EQUIPMENT****PASSENGER ENTRY DOOR**

36" WIDE ROUGH OPENING WELDED ENTRY ASSEMBLY. A&M MANUFACTURING PRODUCED ENTRY DOOR LEAVES AND A&M ELECTRIC DOOR HEADER MECHANISM (MANUAL IS AVAILABLE - OPTIONS MAY DICTATE DIFFERING DOOR SIZE). FULL HEIGHT 1/8" THICK TEMPERED SAFETY GLASS IN EACH DOOR LEAF IS FMVSS COMPLIANT AS-2 TINTED. LEAF FRAMES ARE INTERLOCKED ALUMINUM EXTRUSIONS WITH TOUGH, CLEAR COAT ANODIZED 204 R1 RATED FINISH FOR CORROSION PROTECTION AND INTEGRATED, OVERLAPPING FLEXIBLE SEALS (APPROXIMATELY 2.5" EACH). FRONT LIFT 138/139" WB MODELS CAN ONLY USE A 32" WIDE DOOR.

*Note: Required features of specification may override standard features listed above.*



## ELDORADO BUS STANDARD WARRANTY FOR ADVANTAGE AND ADVANCE BUSES

### Notice

Please ensure that the warranty registration is completed online in Dealer Connect by your purchasing dealer. Electronic entry into the warranty system registers the warranty with Eldorado Bus so that Eldorado Bus has record of your rights under this limited warranty and to assure prompt assistance. Your dealer will provide the warranty info for you to sign in order for entry into this system. If you do not remember signing a Eldorado Bus warranty registration at the time of delivery, please contact your dealer.

### Definition of Terms

**Authorized Eldorado Bus Dealer ("Dealer"):** This agreement is applicable only in the United States, Puerto Rico and Canada. Any Authorized Dealer of the owner's choice may perform warranty service work under the Eldorado Bus Warranty Agreement. This vehicle should be delivered to the authorized dealer during normal service hours. A reasonable time should be allowed after taking the vehicle to the authorized dealer for performance of the repair.

**Eldorado Bus, Division of Forest River, Inc. ("Warrantor"):** The party obligated to perform under this Agreement.

**Original Purchaser:** Person or entity that is a recipient of this product provided by a dealer under a purchase order or contract sales.

**Wear and Tear:** The deterioration of a part or material beyond the manufacturer's specified tolerances that occur naturally over time and under normal operating conditions.

### 1. Who Warrants The Product

The product, as described and limited here, is warranted by the manufacturer and installer of the body: Eldorado Bus, Division of Forest River, Inc., hereinafter referred to as Eldorado Bus, 2367 Century Drive, Goshen, Indiana and is administered by the Forest River Bus Customer Service Department, Goshen, Indiana 46528.

### 2. Who Is Covered

Eldorado Bus, the warrantor, extends this limited warranty agreement to the original owner only of the vehicle during the Warranty Period.

### 3. What Is Covered

Eldorado Bus, your warrantor, extends the following limited warranty to you; in which the limited warranty covers your conversion only pertaining to material defects in all materials and workmanship supplied by or performed by Eldorado Bus.

### 4. Warranty Period

The Eldorado Bus limited warranty is for a period of three (3) years from the date of first delivery or 36,000 miles, whichever occurs first, except for other coverages listed under "Other Warranties That May Apply" and items listed under "Exclusions and Limitations" and "Limits of the Warranty."

### 5. Extended Warranty on Structural Items

Warrantor warrants to the original purchaser for a period of five (5) years from the date of first delivery or 100,000 miles, whichever comes first, that this produce shall be free of SUBSTANTIAL DEFECTS arising out of or relating to the structural portion of the product. THIS STRUCTURAL WARRANTY IS INTENDED TO COVER ONLY THE PERFORMANCE OF THE STEEL CAGE STRUCTURE OF THE BUS BODY, INCLUDING CORROSION DAMAGE TO THE BODY STRUCTURE.

### 6. Exterior Paint

Exterior Paint, performed by Eldorado Bus, is fully warranted to be free of substantial defects in workmanship by Eldorado Bus for the first three (3) years (50,000 miles) from date of original purchase, 50% warranted four (4) years (70,000 miles), and 25% warranted five (5) years (100,000 miles) from date of original purchase.

### 7. Other Warranties That May Apply

Eldorado Bus does not warrant the base chassis itself. The vehicle engine, chassis, drive-train, suspension system, battery and other chassis components are covered by a separate warranty offered by the manufacturer of the chassis and administered by the chassis manufacturer's authorized dealers. The tire manufacturer separately warrants tires. In addition, all aftermarket springs, suspensions, driveline retarders, etc., such as Liquid Springs, Mor Ryde, Kelderman, Telma, etc. are not covered by Eldorado Bus. These items are covered by their original manufacturer and their warranties may vary.

### 8. Owner's Responsibility

Proper preventative maintenance of the exterior and interior of the vehicle is the responsibility of the owner. See the owner's manual(s) for proper care instructions. Defects or damage as a result of improper care or maintenance are not covered by this warranty agreement.

### 9. Exclusions and Limitations

Damage caused by abuse, misuse, failure to observe reasonable required maintenance practices, acid rain, accidents, natural disasters, acts of war, facing of fabrics, carpeting and/or fiberglass are not covered. Light bulbs and fuses are not covered.



Damage to the unit if such damage is the result of deterioration due to normal use, wear and tear, or exposure to the elements.

Damages that may occur to the chassis, frame, other parts or components that occur due to overloading will not be covered and may invalidate portions of the Eldorado Bus warranty agreement.

Cosmetic or surface corrosion resulting from stone chips or scratches in paint are not covered.

Replacement parts provided under terms of the warranty agreement will whenever possible, match original equipment. When necessary, Eldorado Bus will substitute parts of comparable function and value. Defective items may be replaced with new, remanufactured, reconditioned or repaired components.

Modifications, alterations or repairs performed by unauthorized personnel may invalidate portions of the Eldorado Bus warranty. In addition, using the vehicle to tow another vehicle is prohibited and may void warranty. Contact Eldorado Bus Customer Service before you make modifications, alteration or repairs.

#### **10. Recovery Limitations**

No person shall be entitled to recover from warrantor for any consequential or incidental damages arising out of or relating to any defect in the product. These limitations include but are not limited to, loss of time; loss of use; loss of revenues, salaries or commissions; towing charges; bus fares; bus rentals; car rentals; gasoline expenses; telephone charges; inconvenience or other incidental damages.

#### **11. How To Get Warranty Service**

To obtain warranty service, contact or visit the dealership where you originally purchased your vehicle or another warranty service facility designated by Eldorado Bus. The dealership must contact Eldorado Bus Customer Service Department for authorization to have a warranty claim submitted. If you or your dealer has moved, or if your dealer is no longer in business, contact Eldorado Bus Customer Service Department (see address and telephone numbers below) for the name of an Eldorado Bus dealer nearest to you. Your claim must be made within 14 days of the discovery of the defect. Eldorado Bus will determine authorization based on and subject to the terms of the warranty agreement. All warranty claims must be reported within the warranty period. Warranty personnel must authorize all warranty service prior to performance. Warranty service may be reported directly to the warrantor or to one of their authorized dealers. If warranty personnel approve warranty service, you must leave the unit at the appropriate warranty service location for a sufficient time to perform service.

#### **12. Who Performs Warranty Service**

It is recommended you obtain warranty service at the dealership where you originally purchased your bus. If the dealership cannot perform the service work, they should call Eldorado Bus Customer Service Department for assistance (see number below). If you are unable to visit your original dealer, contact Eldorado Bus Customer Service Department (address below) for the name and location of an Eldorado Bus dealer near you.

#### **13. Dispute Resolution**

Should you be unable to resolve a disagreement with your dealer regarding your right to pursue warranty coverage for a needed repair, contact the Eldorado Bus Customer Service Department (see address below). If a dispute about warranty service arises between Eldorado Bus and you, the owner, the disagreement will be resolved in accordance with the customary procedures of the American Arbitration Association relating to commercial transactions, or the dispute will be submitted to a panel of three (3) arbitrators for decision. The panel will be made up of one member appointed by Eldorado Bus, one member appointed by the complainant/owner, and one member from the arbitrator group mentioned above. Any and all legal remedies shall be available to the owner after pursuing this informal dispute resolution if a ruling is entered against Eldorado Bus and Eldorado Bus fails to abide by the ruling. The expenses of arbitration will be paid by the party against whom the arbitrator(s) rule.

#### **14. Limits Of Warranty**

This written statement of limited warranty represents the entire warranty authorized and offered by Eldorado Bus. There are no warranties or representations beyond those expressed in this written document. Any dealership, salesperson or agent cannot amend it. It expressly limits all warranties, including, but not limited to, by way of specification, both express and implied warranties, including warranties of merchantability and fitness for a particular purpose along with all other liabilities or obligations of Eldorado Bus.

#### **FEDERAL COMPLIANCE**

THE TERMS OF THE WARRANTOR'S UNDERTAKING EXPRESSED IN THIS LIMITED WARRANTY ARE DRAFTED TO COMPLY WITH THE MAGNUSON MOSS WARRANTY LEGISLATION, P.L. 93-637 OF 1974, AND OTHER APPLICABLE LAW. ANY WARRANTY PROVISIONS PROMULGATED BY THE FEDERAL TRADE COMMISSION PURSUANT TO RULES OR ANY OTHER LAW RELATIVE THERETO ARE EXPRESSLY INCORPORATED HEREIN. TO THE EXTENT ANY PROVISIONS OF THIS LIMITED WARRANTY ARE INCONSISTENT WITH STATE LAWS, ONLY THOSE PARTS INCONSISTENT ARE VOID.

ELDORADO BUS  
Division of Forest River, Inc.  
CUSTOMER SERVICE DEPT.  
2367 Century Drive  
Goshen, IN 46528  
Phone: 574.642.3112  
Toll Free: 800.348.7440  
Fax: 574.970.6815



Class A

ORDER#: FR SHORT VIN: 

ADVANTAGE 22 158" WB E-450 7.3L Premium Gas Engine W/240 Amp Ford Alt	E	1008	C	1
<b>SPECIAL INSTRUCTIONS OR NOTES</b>				
2 sets 11x17 laminated as-built schematics - Rohrer to complete (3.16.1)				1
Graphics - Rohrer to subcontract				1
Chains, jack and lug wrench - Rohrer to supply				1
<b>SPECIAL BUILD OPTIONS</b>				
Gerflor Stepbus Extruded Anodized Aluminum step nosing with Yellow Insert	ST	99		3
Gerflor "Watch Your Step" Inlaid in Riser	ST	99		2
Lift Master Power Switch on Dash. Also Activates Rear Amber Lights to Flash	ST	99		1
Mylar Blanket	ST	99		2
Safety Vest	ST	99		1
FASTENAL WHEEL CHOCKS (PAIR)	ST	99		1
Angel Trax Vulcan Series Camera System w/ 6 Cameras & GPS Antenna	ST	99		1
Front end alignment with caster & camber kit. Include documentation & warranty.	ST	99		1
Perko Hood Vents	ST	99		2
Exterior screws and bolts to be stainless steel (3.19.4)	ST	99		1
Black Rubber Rub Rail ilo Standard.	ST	99		1
Miscellaneous decals- Dial 911, warning lift doors, frequent stops, railroad crossing,	ST	99		1
White reflective tape around all egress windows and rear door window	ST	99		1
Sportworks DL2 Bike Rack Mounting Hardware Only (No Rack)	ST	99		1
Price option for Intermotive Flex Speak separately, not in base bus	ST	99		0
<b>WARRANTY</b>				
Optional Eldorado 3 Year / 36,000 Mile Limited Warranty	05	STD		1
<b>ELECTRICAL SYSTEM</b>				
Intermotive Flex Tech Electrical System	05	STD		1
<b>SIDEWALL / REARWALL / CEILING</b>				
Sidewall: Grey FRP	05	STD		1
Rearwall: Grey Seaspray Fabric	05	STD		1
Ceiling: Grey Seaspray Fabric	05	STD		1
Driver Area: Grey Padded Vinyl	05	STD		1
<b>FLOORING - WHITE NOSING IS STANDARD</b>				
Other Color Gerflor Sirius NTCOLOR: TBD STEPS & AISLE / TBD UNDER SEATS	05	2827		1
5/8" MarineTech Plywood Floor	05	2202		1
Lighter color Gerflor flooring under seats to provide contrasting color from aisle		NOTE		1
<b>CHASSIS</b>				
Front Mud Flap (1), Passenger Side Only (to be used with Running Board) - NOT AVAILABLE ON FORD TRANSIT	05	2340		1
Heavy Duty Anti-Slip Aluminum Running Board on Driver Side (Large) (NOT AVAILABLE ON FORD TRANSIT)	05	2623		1
Mor-Ryde RS Suspension (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	99		1
Galvanized Belly Metal (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	2275		1
Exterior Mirror Set, Remote/Heated, Ford	05	2444		1
Romeo Rim Rear Bumper	05	2156		1
Spare Tire and Wheel - Ford E-Series & Chevy Chassis	05	8004		1
Valve Stem Extender Inner Dual Rear Wheel, pair	05	8606		1
Galvanized Steel Entry Step Lower Sides Only - Does NOT Include Upper Sides & Header	05	22388		1
Metal Locking Door for Fuel Fill	05	22045		1
<b>ENVIRONMENTAL CONTROL</b>				
<b>TRANS/AIR AIR CONDITIONING SYSTEMS</b>				
DUAL COMPRESSOR SYSTEMS CEILING MOUNT EVAPORATOR				1
<sup>1</sup> = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR				1
**RECOMMENDED BY A/C MFR				1
TA773 SUPER 80K - TA77 EVAP - SMC3L COND - 13.4 C.I.D. COMP NOTE: UPGRADE TO TA774C OR TA77R90 FOR HOT CLIMATES (SELECT CHASSIS/ENGINE BELOW)				1
<sup>1</sup> TA773 SUPER 13 FORD 7.3 LITRE PREMIUM GAS ENGINE	05	10479		1
<b>HEATERS</b>				
				1



ORDER#: FR SHORT VIN: 

Hot Water Heater, 35K BTU 3 Speed Low Profile	05	8044	1
<b>MISCELLANEOUS</b>			1
Defroster Fan - Mount Location: <b>Right Side of Bulkhead aimed at Driver</b>	05	20092	1
<b>ELECTRICAL</b>			
Door Ajar Buzzer on Rear Door	05	22079	1
Door Ajar Warning on Wheelchair Door - Buzzer and Light in Driver Area	05	22082	1
Window Ajar Alarm Buzzer on Egress Window, each	05	8679	3
Stainless Steel Battery Box & Tray <b>IS 304 REQUIRED? NO</b>	05	2527	1
Light in Engine Area	05	2316	1
ADA Stop Request, Pull Cord, Dual Auditory Tones, Dual Face Sign w/LED for ADA Request	05	2785	1
Touch Tape at WC area for ADA Stop Request - Activates 2nd Auditory Tone (Ea.)	05	2786	2
Heated Entry Step, Electric	05	22098	1
Laminated Wiring Schematic ***AS BUILT*** ON ELECTRICAL PANEL DOOR	05	22101	1
Wiring Diagram "AS BUILT" ON USB Flash Drive		STD	1
<b>DESTINATION SIGNS/I.D. SIGN/FRONT VIEW WINDOW</b>			1
Transign LD12112 Front LED Sign 12x112 Display w/OCU	05	20122	1
Transign LD1280 Side LED Sign 12x80 Display-Requires Front Sign	05	20123	1
<b>FAREBOXES</b>			1
Half Stanchion w/ Elbow to Driver Stanchion	ST	99	1
<b>EXTERIOR LIGHTS</b>			
Surface Mount LED Entry Door Exterior Light - STD Choose Optional Below or Special builds	05	STD	1
LED Rear Center Mount Brake Light, <b>Rectangular</b>	05	20136	1
LED Mid-Ship Turn / Marker Lights	05	20138	1
Independent <b>RED</b> Brake & <b>AMBER</b> Turn Signal Lights	05	20139	1
Strobe Light, Roof Mounted COLOR: <b>WHITE</b>	05	20140	1
<b>BRANCH GUARD FOR STROBE LIGHT</b>	ST	99	1
<b>INTERIOR LIGHTS</b>			1
Door Activated Interior Lights	05	8810	1
<b>AUDIO / VISUAL</b>			1
Deluxe AM/FM/AUX Radio With Clock & 4 Speakers <b>PA Ready</b>	05	99	1
Hand Held Mic & Clip Added to PA Ready Radio	05	8139	1
Additional Speaker(s), Each	05	20157	3
Ground Plane for 2-Way Radio, Pull Cord, Conduit Terminates B Pillar Floor	05	20160	1
External Speaker with ON/OFF Switch (each)	05	20162	1
<b>FOR ADDITIONAL SPEAKERS: 2 IN MAIN CABIN, 1 IN DRIVER DOOR</b>		NOTE	1
<b>DOORS / HATCH / WINDOWS</b>			
Electric Entry Door is Standard. Add Option #2056 if Manual is Desired			
Passenger Door Electric (standard)	05	20163	1
Passenger Door 36" ROUGH OPENING (STANDARD)	05	2063	1
Exterior Passenger Entrance Door Key	05	8133	1
Rear Door, (1) Window - Standard Left Hand Hinge	05	8016	1
Additional Window for Rear Door	05	8682	1
Twin Windows Either Side of Rear Door	05	20175	1
Roof Hatch - Transpec 1070 Series Dual Purpose Safety Vent II	05	20179	1
Extra Egress Window(s) <b>Total Number of Egress Windows: 2 SS, 1CS</b>	05	20188	1
<b>LUGGAGE RACK / STORAGE</b>			1
Driver Storage in Cab Overhead	05	20191	1
<b>PARATRANSIT OPTIONS</b>			1
Double W/C Doors w/ Windows, LED Interior Light, Leaf Spring, LED Exterior Lighting	05	20206	1
<b>IS THE LIFT IN THE FRONT OR REAR OF THE UNIT? REAR</b>			1
<b>BRAUN LIFTS</b>			1
Braun Century NCL 1000 3454HB-2 1000# (34"x54") *N/A FRONT LIFT 138/139"WB	05	20230	1
Seat Belt on Braun Lift - Installed	05	8801	1
<b>LIFT FAST IDLE WITH 403 INTERLOCK</b>			1
Intermotive Gateway 508-F Ford E or 517-F Transit Fast Idle with Lift Interlock	05	99	1
<b>SureLok W.C. Securement Kits, Accessories</b>			1
FE200750-16 16" Quick Strap (each)	05	20239	4
<b>Q Straint W.C. Securement Kits, Accessories</b>			1
Q10007 - 4 QRT 360 Retractor Tie Down L track & Q8-6326-A1 Comb-Lap/Shldr	05	8826	2
<b>Miscellaneous Accessories</b>			1



ORDER#:

FR SHORT VIN:

Priority Seating Sign **Required for ADA Compliance**	05	8104	2
Wheelchair Decal (International Symbol of Accessibility) Each	05	8105	1
<b>SAFETY OPTIONS</b>			
5 Lb Fire Extinguisher	05	8089	1
16 Unit First Aid Kit	05	8090	1
Body Fluid Kit	05	20264	1
Emergency Triangle Kit	05	8091	1
Fire Blanket	05	20266	2
Back-Up Alarm SAE Type C 97 db(A)	05	20267	1
STANDARD ROSCO STSK4750 BACK-UP CAMERA SYSTEM W/ 7" REARVIEW MONITOR / MIRROR COMBO	05	STD	1
Interior Flat Mirror, 6" x 16" (N/A ON DUAL DOOR CHASSIS)	05	20277	1
Wide Angle Lens 11"x14", Fresnel	05	20278	1
Red Light Over Emergency Exit Ea: ON: 2 doors, 3 windows	05	8155	5
"NO SMOKING" Sign	05	20282	1
Yellow "Standee" Line	05	8802	1
Decal "Please Fasten your Seat Belt"	05	20286	1
Decal Vehicle Height Sticker	05	20289	1
<b>GRAB RAIL / STANCHION / PANELS</b>			
Ceiling Grab Rail - Install on Both Sides	05	99	1
Left Hand Entry Vertical Grab Rail - 1 1/4"		STD	1
1 1/4" Dual Entry Grab Rails Parallel to Entrance Steps (both sides)	05	8130	1
Stanchion and Modesty Panel at Entry Door		STD	1
Stanchion and Modesty Panel Behind Driver	05	20301	1
Padding on Stanchion - Gray - Per 40" Max Length Each (note location(s) below)	05	20304	3
PAD STANCHIONS AT DRIVER AISLE-SIDE, ENTRY MOD PANEL & EXTRA STANCHION.		NOTE	1
Add Tinted Plexiglass Upper Panel LOCATION: driver	05	8146	1
FLOOR TO BULKHEAD STANCHION AT TOP OF STEPWELL. SEE F/P.	ST	99	1
<b>SEATING - DRIVER</b>			
SHIELD Recliner(GM&Ford), RH Arm, 4 Position Lumbar, Mesh Pocket	05	2064	1
Adnik 6 Way Driver Seat Power Base	05	2205	1
<b>FREEDMAN SHIELD DRIVER SEAT FABRICS</b>			
Driver Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2043	1
<b>SEATING - PASSENGER</b>			
<b>STD RIGID SEATS</b>			
Mid High Double Seat	05	8067	4
<b>FOLDAWAY SEATS</b>			
Foldaway Seat - Mid-High Notch Back Double AM (non-wheelwell)	05	2336	1
ICS & 3POINT SEATS **REQUIRES WEIGHT ANALYSIS FOR APPROVAL**			1
Double Seat with (1) Integrated Child Seat and (1) Mid High Back 2nd Seat	05	2331	2
<b>PASSENGER SEAT FABRICS</b>			
Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2074	14
<b>SEAT OPTIONS</b>			
ABS Seat Backs Per Person (Mid-High Rigid and Notchback Folds Only)	05	2664	12
Anti-Vandal Grab Handle, Black Ea on: all but last row of seats	05	2311	10
Black US Armrest - Each - on: all aisle seats	05	2077	7
Child Restraint System CRS225 Clips - Per Person	05	2554	2
<b>SEAT BELTS</b>			
Seat Belt, Retractable ** NOT AVAILABLE WITH FOLDAWAY OR FLIP SEATS			1
**ORDER USR BELTS	05	2087	12
Seat Belt, Freedman USR Retractable (Per Person)	05	2282	2
Seat Belt Extension, 12" FOR STANDARD SEAT BELTS	05	2250	4
Seat Belt Extension, 12" (P/N 56410) FOR USR SEAT BELTS	05	8771	1







ORDER#:

FR SHORT VIN:

Class B

**ADVANTAGE - FORD E450 - 14,500 GVWR - CONVERSION ONLY PRICING**

ADVANTAGE 22 158" WB E-450 7.3L Premium Gas Engine W/240 Amp Ford Alt

E 1008 C 1

**SPECIAL INSTRUCTIONS OR NOTES**

2 sets 11x17 laminated as-built schematics - Rohrer to complete (3.16.1)

Graphics - Rohrer to subcontract

Chains, jack and lug wrench - Rohrer to supply

NOTE

1

NOTE

1

NOTE

1

**SPECIAL BUILD OPTIONS**

1

Gerflor Stepbus Extruded Anodized Aluminum step nosing with Yellow Insert

ST 99

3

Gerflor "Watch Your Step" Inlaid in Riser

ST 99

2

Lift Master Power Switch on Dash. Also Activates Rear Amber Lights to Flash

ST 99

1

Mylar Blanket

ST 99

2

Safety Vest

ST 99

1

FASTENAL WHEEL CHOCKS (PAIR)

ST 99

1

Angel Trax Vulcan Series Camera System w/ 6 Cameras &amp; GPS Antenna

ST 99

1

Front end alignment with caster &amp; camber kit. Include documentation &amp; warranty.

ST 99

1

Perko Hood Vents

ST 99

2

Exterior screws and bolts to be stainless steel (3.19.4)

ST 99

1

Black Rubber Rub Rail ilo Standard.

ST 99

1

Miscellaneous decals- Dial 911, warning lift doors, frequent stops, railroad crossing,

ST 99

1

White reflective tape around all egress windows and rear door window

ST 99

1

Sportworks DL2 Bike Rack Mounting Hardware Only (No Rack)

ST 99

1

Price option for Intermotive Flex Speak separately, not in base bus

ST 99

0

**WARRANTY**

Optional Eldorado 3 Year / 36,000 Mile Limited Warranty

05 STD

1

**ELECTRICAL SYSTEM**

Intermotive Flex Tech Electrical System

05 STD

1

**SIDEWALL / REARWALL / CEILING**

Sidewall: Grey FRP

05 STD

1

Rearwall: Grey Seaspray Fabric

05 STD

1

Ceiling: Grey Seaspray Fabric

05 STD

1

Driver Area: Grey Padded Vinyl

05 STD

1

**FLOORING - WHITE NOSING IS STANDARD**

Other Color Gerflor Sirius NTCOLOR:

TBD STEPS &amp; AISLE / TBD UNDER SEATS

05 2827

1

5/8" MarineTech Plywood Floor

05 2202

1

Lighter color Gerflor flooring under seats to provide contrasting color from aisle

NOTE

1

**EXTERIOR**

Paint Skirt \*\* COLOR CODE:

05 8011

1

Gloss Black Out Window Paint

05 8784

1

**CHASSIS**

Front Mud Flap (1), Passenger Side Only (to be used with Running Board) - NOT AVAILABLE ON FORD TRANSIT

05 2340

1

Heavy Duty Anti-Slip Aluminum Running Board on Driver Side (Large) (NOT AVAILABLE ON FORD TRANSIT)

05 2623

1

Mor-Ryde RS Suspension (SUBJECT TO WEIGHT ANALYSIS APPROVAL)

05 99

1

Galvanized Belly Metal (SUBJECT TO WEIGHT ANALYSIS APPROVAL)

05 2275

1

Exterior Mirror Set, Remote/Heated, Ford

05 2444

1

Romeo Rim Rear Bumper

05 2156

1

Spare Tire and Wheel - Ford E-Series &amp; Chevy Chassis

05 8004

1

Valve Stem Extender Inner Dual Rear Wheel, pair

05 8606

1

Galvanized Steel Entry Step Lower Sides Only - Does NOT Include Upper Sides &amp; Header

05 22388

1

Metal Locking Door for Fuel Fill

05 22045

1

**ENVIRONMENTAL CONTROL****TRANS/AIR AIR CONDITIONING SYSTEMS**

1

DUAL COMPRESSOR SYSTEMS CEILING MOUNT EVAPORATOR

1

1 = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR

\*\*RECOMMENDED BY A/C MFR

1



ORDER#: FR SHORT VIN: 

<b>TA773 SUPER 80K - TA77 EVAP - SMC3L COND - 13.4 C.I.D. COMP</b>				<b>NOTE:</b>	
<b>UPGRADE TO TA774C OR TA77R90 FOR HOT CLIMATES</b>					
<b>(SELECT CHASSIS/ENGINE BELOW)</b>					
1 TA773 SUPER 13	FORD 7.3 LITRE PREMIUM GAS ENGINE	05	10479	1	1
<b>HEATERS</b>					
Hot Water Heater, 35K BTU 3 Speed Low Profile		05	8044	1	1
<b>MISCELLANEOUS</b>					
Defroster Fan - Mount Location:	Right Side of Bulkhead aimed at Driver	05	20092	1	1
<b>ELECTRICAL</b>					
Door Ajar Buzzer on Rear Door		05	22079	1	1
Door Ajar Warning on Wheelchair Door - Buzzer and Light in Driver Area		05	22082	1	1
Window Ajar Alarm Buzzer on Egress Window, each		05	8679	3	1
Stainless Steel Battery Box & Tray	IS 304 REQUIRED? NO	05	2527	1	1
Light in Engine Area		05	2316	1	1
ADA Stop Request, Pull Cord, Dual Auditory Tones, Dual Face Sign w/LED for ADA Request		05	2785	1	1
Touch Tape at WC area for ADA Stop Request - Activates 2nd Auditory Tone (Ea.)		05	2786	2	1
Heated Entry Step, Electric		05	22098	1	1
Laminated Wiring Schematic ***AS BUILT*** ON ELECTRICAL PANEL DOOR		05	22101	1	1
Wiring Diagram "AS BUILT" ON USB Flash Drive			STD	1	1
<b>DESTINATION SIGNS/I.D. SIGN/FRONT VIEW WINDOW</b>					
Transign LD12112 Front LED Sign 12x112 Display w/OCU		05	20122	1	1
Transign LD1280 Side LED Sign 12x80 Display-Requires Front Sign		05	20123	1	1
<b>FAREBOXES</b>					
Half Stanchion w/ Elbow to Driver Stanchion		ST	99	1	1
<b>EXTERIOR LIGHTS</b>					
Surface Mount LED Entry Door Exterior Light - STD Choose Optional Below or Special builds		05	STD	1	1
LED Rear Center Mount Brake Light, Rectangular		05	20136	1	1
LED Mid-Ship Turn / Marker Lights		05	20138	1	1
Independent RED Brake & AMBER Turn Signal Lights		05	20139	1	1
Strobe Light, Roof Mounted COLOR:	WHITE	05	20140	1	1
BRANCH GUARD FOR STROBE LIGHT		ST	99	1	1
<b>INTERIOR LIGHTS</b>					
Door Activated Interior Lights		05	8810	1	1
<b>AUDIO / VISUAL</b>					
Deluxe AM/FM/AUX Radio With Clock & 4 Speakers PA Ready		05	8287	1	1
Hand Held Mic & Clip Added to PA Ready Radio		05	8139	1	1
Additional Speaker(s), Each		05	20157	3	1
Ground Plane for 2-Way Radio, Pull Cord, Conduit Terminates B Pillar Floor		05	20160	1	1
External Speaker with ON/OFF Switch (each)		05	20162	1	1
FOR ADDITIONAL SPEAKERS: 2 IN MAIN CABIN, 1 IN DRIVER DOOR			NOTE	1	1
<b>DOORS / HATCH / WINDOWS</b>					
Electric Entry Door is Standard. Add Option #2056 if Manual is Desired					
Passenger Door Electric (standard)		05	20163	1	1
Passenger Door 36" ROUGH OPENING (STANDARD)		05	2063	1	1
Exterior Passenger Entrance Door Key		05	8133	1	1
Rear Door, (1) Window - Standard Left Hand Hinge		05	8016	1	1
Additional Window for Rear Door		05	8682	1	1
Twin Windows Either Side of Rear Door		05	20175	1	1
Roof Hatch - Transpec 1070 Series Dual Purpose Safety Vent II		05	20179	1	1
Extra Egress Window(s)	Total Number of Egress Windows: 2 SS, 1 CS	05	20188	1	1
<b>LUGGAGE RACK / STORAGE</b>					
Driver Storage in Cab Overhead		05	20191	1	1
<b>PARATRANSIT OPTIONS</b>					
Double W/C Doors w/ Windows, LED Interior Light, Leaf Spring, LED Exterior Lighting		05	20206	1	1
IS THE LIFT IN THE FRONT OR REAR OF THE UNIT?	REAR			1	1
<b>BRAUN LIFTS</b>					
Braun Century NCL 1000 3454HB-2 1000# (34"x54") *N/A FRONT LIFT 138/139"WB		05	20230	1	1
Seat Belt on Braun Lift - Installed		05	8801	1	1
<b>LIFT FAST IDLE WITH 403 INTERLOCK</b>					
Intermotive Gateway 508-F Ford E or 517-F Transit Fast Idle with Lift Interlock		05	99	1	1



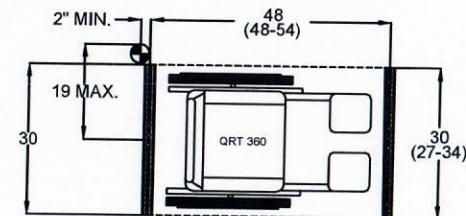
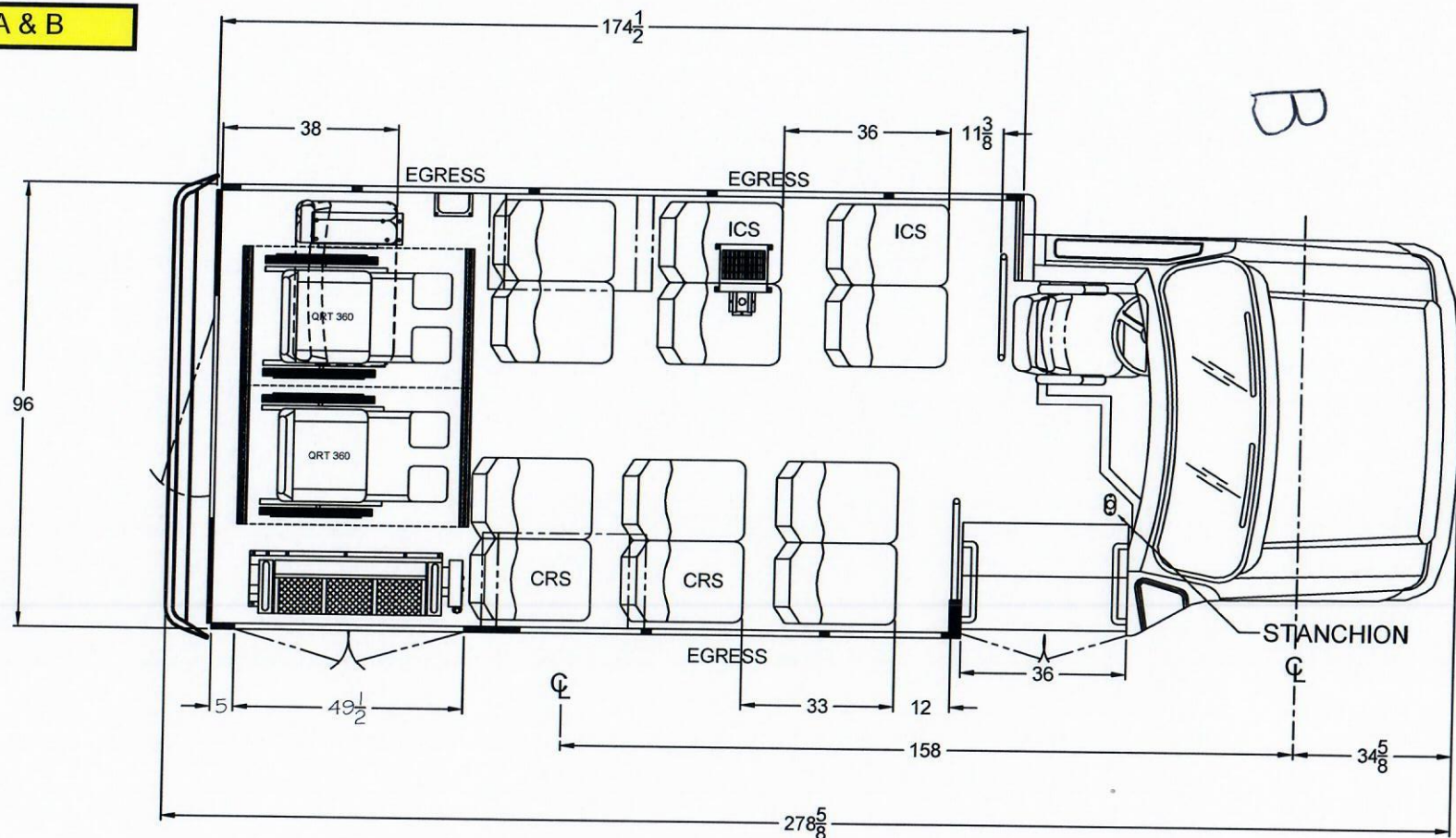
ORDER#:

FR SHORT VIN:

<b>SureLok W.C. Securement Kits, Accessories</b>				1
FE200750-16 16" Quick Strap (each)	05	20239	4	1
<b>Q Straint W.C. Securement Kits, Accessories</b>				1
Q10007 - 4 QRT 360 Retractor Tie Down L track & Q8-6326-A1 Comb-Lap/Shldr	05	8826	2	1
<b>Miscellaneous Accessories</b>				1
Priority Seating Sign **Required for ADA Compliance**	05	8104	2	1
Wheelchair Decal (International Symbol of Accessibility) Each	05	8105	1	1
<b>SAFETY OPTIONS</b>				
5 Lb Fire Extinguisher	05	8089	1	1
16 Unit First Aid Kit	05	8090	1	1
Body Fluid Kit	05	20264	1	1
Emergency Triangle Kit	05	8091	1	1
Fire Blanket	05	20266	2	1
Back-Up Alarm SAE Type C 97 db(A)	05	20267	1	1
<b>STANDARD ROSCO STSK4750 BACK-UP CAMERA SYSTEM W/ 7" REARVIEW MONITOR / MIRROR COMBO</b>	05	STD	1	1
Interior Flat Mirror, 6" x 16" (N/A ON DUAL DOOR CHASSIS)	05	20277	1	1
Wide Angle Lens 11"x14", Fresnel	05	20278	1	1
Red Light Over Emergency Exit Ea: ON: 2 doors, 3 windows	05	8155	5	1
"NO SMOKING" Sign	05	20282	1	1
Yellow "Standee" Line	05	8802	1	1
Decal "Please Fasten your Seat Belt"	05	20286	1	1
Decal Vehicle Height Sticker	05	20289	1	1
<b>GRAB RAIL / STANCHION / PANELS</b>				
Ceiling Grab Rail - Install on Both Sides	05	99	1	1
Left Hand Entry Vertical Grab Rail - 1 1/4"		STD	1	1
1 1/4" Dual Entry Grab Rails Parallel to Entrance Steps (both sides)	05	8130	1	1
Stanchion and Modesty Panel at Entry Door		STD	1	1
Stanchion and Modesty Panel Behind Driver	05	20301	1	1
Padding on Stanchion - Gray - Per 40" Max Length Each (note location(s) below)	05	20304	3	1
PAD STANCHIONS AT DRIVER AISLE-SIDE, ENTRY MOD PANEL & EXTRA STANCHION.		NOTE	1	1
Add Tinted Plexiglass Upper Panel LOCATION: driver	05	8146	1	1
FLOOR TO BULKHEAD STANCHION AT TOP OF STEPWELL. SEE F/P.	ST	99	1	1
<b>SEATING - DRIVER</b>				1
SHIELD Recliner(GM&Ford), RH Arm, 4 Position Lumbar, Mesh Pocket	05	2064	1	1
Adnik 6 Way Driver Seat Power Base	05	2205	1	1
<b>FREEDMAN SHIELD DRIVER SEAT FABRICS</b>				1
Driver Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2043	1	1
<b>SEATING - PASSENGER</b>				1
<b>STD RIGID SEATS</b>				1
Mid High Double Seat	05	8067	4	1
<b>FOLDAWAY SEATS</b>				1
Foldaway Seat - Mid-High Notch Back Double AM (non-wheelwell)	05	2336	1	1
<b>ICS &amp; 3POINT SEATS **REQUIRES WEIGHT ANALYSIS FOR APPROVAL**</b>				1
Double Seat with (1) Integrated Child Seat and (1) Mid High Back 2nd Seat	05	2331	2	1
<b>PASSENGER SEAT FABRICS</b>				1
Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2074	14	1
<b>SEAT OPTIONS</b>				1
ABS Seat Backs Per Person (Mid-High Rigid and Notchback Folds Only)	05	2664	12	1
Anti-Vandal Grab Handle, Black Ea on:	05	2311	10	1
Black US Armrest - Each - on:	05	2077	7	1
<b>SEAT BELTS</b>				1
Seat Belt, Retractable ** NOT AVAILABLE WITH FOLDAWAY OR FLIP SEATS	05	2087	12	1
<b>**ORDER USR BELTS</b>				
Seat Belt, Freedman USR Retractable (Per Person)	05	2282	2	1
Seat Belt Extension, 12" FOR STANDARD SEAT BELTS	05	2250	4	1
Seat Belt Extension, 12" (P/N 56410) FOR USR SEAT BELTS	05	8771	1	1



CLASS A & B



### DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

NOTE: SHOWN WITH MID HI FREEDMAN SEATS  
E-450 14,500 GVWR  
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.  
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.  
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A  
COMPLETED ORDER WITH ALL OPTIONS SHOWN.  
OPTIONAL EQUIPMENT MAY BE SHOWN.  
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

SCALE  
IN INCHES



THIS DRAWING AND THE INFORMATION THEREON ARE THE EXCLUSIVE PROPERTY OF FOREST RIVER BUS, A DIVISION OF FOREST RIVER. IT SHALL NOT BE COPIED OR DUPLICATED IN ANY MANNER, NOR SHALL IT BE SUBMITTED TO OUTSIDE PARTIES FOR EXAMINATION WITHOUT OUR WRITTEN CONSENT. IT IS LOANED FOR USE WITH REFERENCE TO WORK UNDER CONTRACT WITH, OR PROPOSALS SUBMITTED TO FOREST RIVER BUS, A DIVISION OF FOREST RIVER.

REV.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
LET.					

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
± 1/8"	± 1/16"
± 1"	± 1/2"



TITLE:

12 2 WC 158" WB 163 BDY  
MODEL 22

FOREST RIVER BUS

NAME: DH DATE: 4/19/22

DWG. No. 12 2 WC 1 DB FOLD 158 163-8 USA



ORDER#: FR SHORT VIN: 

Class C

**ADVANTAGE - FORD E450 - 14,500 GVWR - CONVERSION ONLY PRICING**

ADVANTAGE 25 176" WB E-450 7.3L Premium Gas Engine W/240 Amp Ford Alt \*\*

E 1010 C 1

**SPECIAL INSTRUCTIONS OR NOTES**

2 sets 11x17 laminated as-built schematics - Rohrer to complete (3.16.1)

Graphics - Rohrer to subcontract

Chains, jack and lug wrench - Rohrer to supply

NOTE

NOTE

NOTE

**SPECIAL BUILD OPTIONS**

Gerflor Stepbus Extruded Anodized Aluminum step nosing with Yellow Insert

Gerflor "Watch Your Step" Inlaid in Riser

Lift Master Power Switch on Dash. Also Activates Rear Amber Lights to Flash

Mylar Blanket

Safety Vest

FASTENAL WHEEL CHOCKS (PAIR)

Angel Trax Vulcan Series Camera System w/ 6 Cameras &amp; GPS Antenna

Front end alignment with caster &amp; camber kit. Include documentation &amp; warranty.

Perko Hood Vents

Exterior screws and bolts to be stainless steel (3.19.4)

Black Rubber Rub Rail ilo Standard.

Miscellaneous decals- Dial 911, warning lift doors, frequent stops, railroad crossing,

White reflective tape around all egress windows and rear door window

Sportworks DL2 Bike Rack Mounting Hardware Only (No Rack)

Price option for Intermotive Flex Speak separately, not in base bus

**WARRANTY**

Optional Eldorado 3 Year / 36,000 Mile Limited Warranty

**ELECTRICAL SYSTEM**

Intermotive Flex Tech Electrical System

**SIDEWALL / REARWALL / CEILING**

Sidewall: Grey FRP

Rearwall: Grey Seaspray Fabric

Ceiling: Grey Seaspray Fabric

Driver Area: Grey Padded Vinyl

**FLOORING - WHITE NOSING IS STANDARD**Other Color Gerflor Sirius NTCOLOR: **TBD STEPS & AISLE / TBD UNDER SEATS**

5/8" MarineTech Plywood Floor

Raised Floor 3 Step Flat to Front \*\* ADVANTAGE OPTION ONLY - NOT AVAILABLE

ON CHEVY CHASSIS

Lighter color Gerflor flooring under seats to provide contrasting color from aisle

**CHASSIS**Front Mud Flap (1), Passenger Side Only (to be used with Running Board) - **NOT AVAILABLE ON FORD TRANSIT**Heavy Duty Anti-Slip Aluminum Running Board on Driver Side (Large) (**NOT AVAILABLE ON FORD TRANSIT**)

Mor-Ryde RS Suspension (SUBJECT TO WEIGHT ANALYSIS APPROVAL)

Galvanized Belly Metal (SUBJECT TO WEIGHT ANALYSIS APPROVAL)

Exterior Mirror Set, Remote/Heated, Ford

Romeo Rim Rear Bumper

Spare Tire and Wheel - Ford E-Series &amp; Chevy Chassis

Valve Stem Extender Inner Dual Rear Wheel, pair

Galvanized Steel Entry Step Lower Sides Only - Does NOT Include Upper Sides &amp; Header

Metal Locking Door for Fuel Fill

**ENVIRONMENTAL CONTROL****TRANS/AIR AIR CONDITIONING SYSTEMS**

DUAL COMPRESSOR SYSTEMS CEILING MOUNT EVAPORATOR

1 = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR

\*\*RECOMMENDED BY A/C MFR

TA773 SUPER 80K - TA77 EVAP - SMC3L COND - 13.4 C.I.D. COMP NOTE:  
UPGRADE TO TA774C OR TA77R90 FOR HOT CLIMATES  
(SELECT CHASSIS/ENGINE BELOW)



ORDER#: FR SHORT VIN: 

<sup>1</sup> TA773 SUPER 13	FORD 7.3 LITRE PREMIUM GAS ENGINE	05	10479		1
<b>HEATERS</b>					
Hot Water Heater, 35K BTU 3 Speed Low Profile					1
<b>MISCELLANEOUS</b>					
Defroster Fan - Mount Location:	Right Side of Bulkhead aimed at Driver	05	20092		1
<b>ELECTRICAL</b>					
Door Ajar Buzzer on Rear Door		05	22079		1
Door Ajar Warning on Wheelchair Door - Buzzer and Light in Driver Area		05	22082		1
Window Ajar Alarm Buzzer on Egress Window, each		05	8679		3
Stainless Steel Battery Box & Tray	IS 304 REQUIRED? NO	05	2527		1
Light in Engine Area		05	2316		1
ADA Stop Request, Pull Cord, Dual Auditory Tones, Dual Face Sign w/LED for ADA Request		05	2785		1
Touch Tape at WC area for ADA Stop Request - Activates 2nd Auditory Tone (Ea.)		05	2786		2
Heated Entry Step, Electric		05	22098		1
Laminated Wiring Schematic ***AS BUILT*** ON ELECTRICAL PANEL DOOR		05	22101		1
Wiring Diagram "AS BUILT" ON USB Flash Drive			STD		1
<b>DESTINATION SIGNS/I.D. SIGN/FRONT VIEW WINDOW</b>					
Transign LD12112 Front LED Sign 12x112 Display w/OCU		05	20122		1
Transign LD1280 Side LED Sign 12x80 Display-Requires Front Sign		05	20123		1
<b>FAREBOXES</b>					
Half Stanchion w/ Elbow to Driver Stanchion		ST	99		1
<b>EXTERIOR LIGHTS</b>					
Surface Mount LED Entry Door Exterior Light - STD Choose Optional Below or Special builds		05	STD		1
LED Rear Center Mount Brake Light, Rectangular		05	20136		1
LED Mid-Ship Turn / Marker Lights		05	20138		1
Independent RED Brake & AMBER Turn Signal Lights		05	20139		1
Strobe Light, Roof Mounted COLOR:	WHITE	05	20140		1
BRANCH GUARD FOR STROBE LIGHT		ST	99		1
<b>INTERIOR LIGHTS</b>					
Door Activated Interior Lights		05	8810		1
<b>AUDIO / VISUAL</b>					
Deluxe AM/FM/AUX Radio With Clock & 4 Speakers PA Ready		05	99		1
Hand Held Mic & Clip Added to PA Ready Radio		05	8139		1
Additional Speaker(s), Each		05	20157		3
Ground Plane for 2-Way Radio, Pull Cord, Conduit Terminates B Pillar Floor		05	20160		1
External Speaker with ON/OFF Switch (each)		05	20162		1
FOR ADDITIONAL SPEAKERS: 2 IN MAIN CABIN, 1 IN DRIVER DOOR			NOTE		1
<b>DOORS / HATCH / WINDOWS</b>					
Electric Entry Door is Standard. Add Option #2056 if Manual is Desired					
Passenger Door Electric (standard)		05	20163		1
Passenger Door 36" ROUGH OPENING (STANDARD)		05	2063		1
Exterior Passenger Entrance Door Key		05	8133		1
Rear Door, (1) Window - Standard Left Hand Hinge		05	8016		1
Additional Window for Rear Door		05	8682		1
Twin Windows Either Side of Rear Door		05	20175		1
Roof Hatch - Transpec 1070 Series Dual Purpose Safety Vent II		05	20179		1
Extra Egress Window(s)	Total Number of Egress Windows: 3	05	20188		1
<b>LUGGAGE RACK / STORAGE</b>					
Driver Storage in Cab Overhead		05	20191		1
<b>PARATRANSIT OPTIONS</b>					
Double W/C Doors w/ Windows, LED Interior Light, Leaf Spring, LED Exterior Lighting		05	20206		1
IS THE LIFT IN THE FRONT OR REAR OF THE UNIT?	FRONT				1
<b>BRAUN LIFTS</b>					
Braun Century NCL 1000 3454HB-2 1000# (34"x54") *N/A FRONT LIFT 138/139"WB		05	20230		1
Seat Belt on Braun Lift - Installed		05	8801		1
<b>LIFT FAST IDLE WITH 403 INTERLOCK</b>					
Intermotive Gateway 508-F Ford E or 517-F Transit Fast Idle with Lift Interlock		05	99		1
<b>SureLok W.C. Securement Kits, Accessories</b>					
FE200750-16 16" Quick Strap (each)		05	20239		4

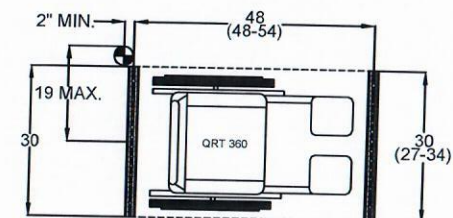
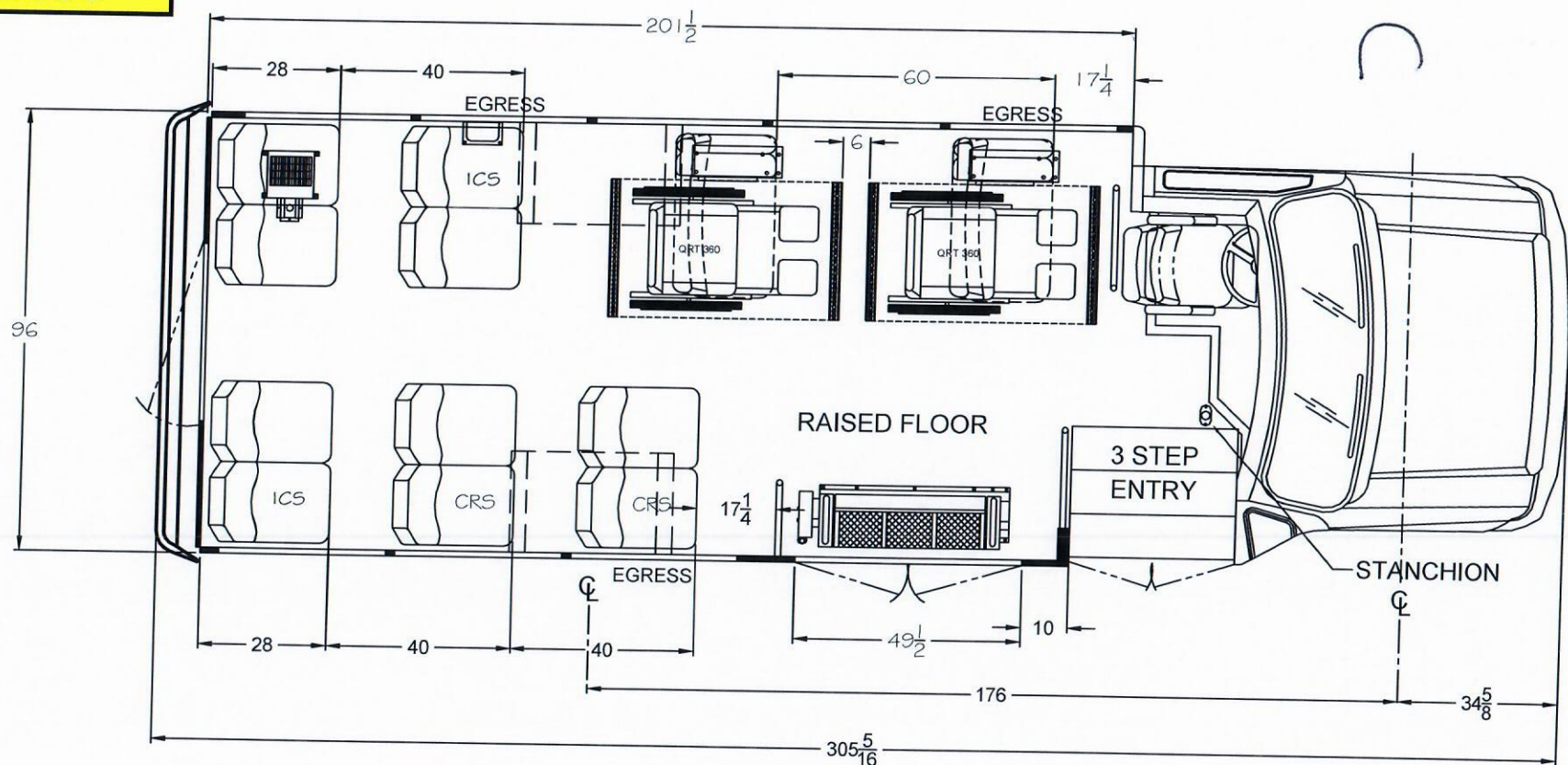


ORDER#: FR SHORT VIN: 

<b>Q Straint W.C. Securement Kits, Accessories</b>				1
Q10007 - 4 QRT 360 Retractor Tie Down L track & Q8-6326-A1 Comb-Lap/Shldr	05	8826		2
<b>Miscellaneous Accessories</b>				1
Priority Seating Sign **Required for ADA Compliance**	05	8104		2
Wheelchair Decal (International Symbol of Accessibility) Each	05	8105		1
<b>SAFETY OPTIONS</b>				
5 Lb Fire Extinguisher	05	8089		1
16 Unit First Aid Kit	05	8090		1
Body Fluid Kit	05	20264		1
Emergency Triangle Kit	05	8091		1
Fire Blanket	05	20266		2
Back-Up Alarm SAE Type C 97 db(A)	05	20267		1
<b>STANDARD ROSCO STSK4750 BACK-UP CAMERA SYSTEM W/ 7" REARVIEW MONITOR / MIRROR COMBO</b>	05	STD		1
Interior Flat Mirror, 6" x 16" (N/A ON DUAL DOOR CHASSIS)	05	20277		1
Wide Angle Lens 11"x14", Fresnel	05	20278		1
Red Light Over Emergency Exit Ea: <b>ON: 2 doors, 3 windows</b>	05	8155		5
"NO SMOKING" Sign	05	20282		1
Yellow "Standee" Line	05	8802		1
Decal "Please Fasten your Seat Belt"	05	20286		1
Decal Vehicle Height Sticker	05	20289		1
<b>GRAB RAIL / STANCHION / PANELS</b>				
Ceiling Grab Rail - Install on <b>Both Sides</b>	05	99		1
Left Hand Entry Vertical Grab Rail - 1 1/4"		STD		1
1 1/4" Dual Entry Grab Rails Parallel to Entrance Steps (both sides)	05	8130		1
Stanchion and Modesty Panel at Entry Door		STD		1
Stanchion and Modesty Panel Behind Driver	05	20301		1
Padding on Stanchion - Gray - Per 40" Max Length Each (note location(s) below)	05	20304		3
<b>PAD STANCHIONS AT DRIVER AISLE-SIDE, ENTRY MOD PANEL &amp; EXTRA STANCHION.</b>		NOTE		1
Modesty Panel at Wheelchair Lift (extend from floor to ceiling)	05	20306		1
Add Tinted Plexiglass Upper Panel <b>LOCATION: driver</b>	05	8146		1
<b>FLOOR TO BULKHEAD STANCHION AT TOP OF STEPWELL. SEE F/P.</b>	ST	99		1
<b>SEATING - DRIVER</b>				1
SHIELD Recliner(GM&Ford), RH Arm, 4 Position Lumbar, Mesh Pocket	05	2064		1
Adnik 6 Way Driver Seat Power Base	05	2205		1
<b>FREEDMAN SHIELD DRIVER SEAT FABRICS</b>				1
Driver Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2043		1
<b>SEATING - PASSENGER</b>				1
<b>STD RIGID SEATS</b>				1
Mid High Double Seat	05	8067		4
<b>FOLDAWAY SEATS</b>				1
Foldaway Seat - Mid-High Notch Back Double AM (non-wheelwell)	05	2336		2
<b>ICS &amp; 3POINT SEATS **REQUIRES WEIGHT ANALYSIS FOR APPROVAL**</b>				1
Double Seat with (1) Integrated Child Seat and (1) Mid High Back 2nd Seat	05	2331		2
<b>PASSENGER SEAT FABRICS</b>				1
Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2074		14
<b>SEAT OPTIONS</b>				1
ABS Seat Backs Per Person (Mid-High Rigid and Notchback Folds Only)	05	2664		8
Anti-Vandal Grab Handle, Black Ea on: <b>all but last row of seats</b>	05	2311		10
Black US Armrest - Each - <b>on: all aisle seats</b>	05	2077		7
Child Restraint System CRS225 Clips - Per Person	05	2554		2
<b>FREEDMAN SEATING SPECIAL BUILD OPTIONS</b>				1
<b>2664 No ABS on rear row of seats or ICS seat</b>	ST	99		1
<b>SEAT BELTS</b>				1
Seat Belt, Retractable <b>** NOT AVAILABLE WITH FOLDAWAY OR FLIP SEATS</b>				
<b>**ORDER USR BELTS</b>	05	2087		12
Seat Belt, Freedman USR Retractable (Per Person)	05	2282		4
Seat Belt Extension, 12" FOR STANDARD SEAT BELTS	05	2250		4
Seat Belt Extension, 12" (P/N 56410) FOR USR SEAT BELTS	05	8771		1



CLASS C & D



NOTE: SHOWN WITH MID HI FREEDMAN SEATS  
E-450 14,500 GVWR  
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.  
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.  
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A  
COMPLETED ORDER WITH ALL OPTIONS SHOWN.  
OPTIONAL EQUIPMENT MAY BE SHOWN.  
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

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IN INCHES



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REV.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
LET.					

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
$\pm 1/8"$	$\pm 1/16"$
$\pm 1"$	$\pm 1/2"$



FOREST RIVER BUS

TITLE:  
10 2 WC 176" WB 190 BDY  
MODEL 25

DWG. No. 10 2 WC 2 DB FOLD 176 190 FRB

NAME DH DATE 4/20/22



ORDER#: FR SHORT VIN: 

Class D

**ADVANTAGE - FORD E450 - 14,500 GVWR - CONVERSION ONLY PRICING**

ADVANTAGE 25 176" WB E-450 7.3L Premium Gas Engine W/240 Amp Ford Alt \*\*

E	1010	C	1
<b>SPECIAL INSTRUCTIONS OR NOTES</b>			
2 sets 11x17 laminated as-built schematics - Rohrer to complete (3.16.1)			1
Graphics - Rohrer to subcontract			1
Chains, jack and lug wrench - Rohrer to supply			1
<b>SPECIAL BUILD OPTIONS</b>			
Gerflor Stepbus Extruded Anodized Aluminum step nosing with Yellow Insert	ST	99	4
Gerflor "Watch Your Step" Inlaid in Riser	ST	99	2
Lift Master Power Switch on Dash. Also Activates Rear Amber Lights to Flash	ST	99	1
Mylar Blanket	ST	99	2
Safety Vest	ST	99	1
FASTENAL WHEEL CHOCKS (PAIR)	ST	99	1
Angel Trax Vulcan Series Camera System w/ 6 Cameras & GPS Antenna	ST	99	1
Front end alignment with caster & camber kit. Include documentation & warranty.	ST	99	1
Perko Hood Vents	ST	99	2
Exterior screws and bolts to be stainless steel (3.19.4)	ST	99	1
Black Rubber Rub Rail ilo Standard.	ST	99	1
Miscellaneous decals- Dial 911, warning lift doors, frequent stops, railroad crossing,	ST	99	1
White reflective tape around all egress windows and rear door window	ST	99	1
Sportworks DL2 Bike Rack Mounting Hardware Only (No Rack)	ST	99	1
Price option for Intermotive Flex Speak seperately, not in base bus	ST	99	0
<b>WARRANTY</b>			
Optional Eldorado 3 Year / 36,000 Mile Limited Warranty	05	STD	1
<b>ELECTRICAL SYSTEM</b>			
Intermotive Flex Tech Electrical System	05	STD	1
<b>SIDEWALL / REARWALL / CEILING</b>			
Sidewall: Grey FRP	05	STD	1
Rearwall: Grey Seaspray Fabric	05	STD	1
Ceiling: Grey Seaspray Fabric	05	STD	1
Driver Area: Grey Padded Vinyl	05	STD	1
<b>FLOORING - WHITE NOSING IS STANDARD</b>			
Other Color Gerflor Sirius NTCOLOR: TBD STEPS & AISLE / TBD UNDER SEATS	05	2827	1
5/8" MarineTech Plywood Floor	05	2202	1
Raised Floor 3 Step Flat to Front ** ADVANTAGE OPTION ONLY - NOT AVAILABLE ON CHEVY CHASSIS	05	2103	1
Lighter color Gerflor flooring under seats to provide contrasting color from aisle		NOTE	1
<b>EXTERIOR</b>			
Paint Skirt ** COLOR CODE:	05	8011	1
Gloss Black Out Window Paint	05	8784	1
<b>CHASSIS</b>			
Front Mud Flap (1), Passenger Side Only (to be used with Running Board) - NOT AVAILABLE ON FORD TRANSIT	05	2340	1
Heavy Duty Anti-Slip Aluminum Running Board on Driver Side (Large) (NOT AVAILABLE ON FORD TRANSIT)	05	2623	1
Mor-Ryde RS Suspension (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	99	1
Galvanized Belly Metal (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	2275	1
Exterior Mirror Set, Remote/Heated, Ford	05	2444	1
Romeo Rim Rear Bumper	05	2156	1
Spare Tire and Wheel - Ford E-Series & Chevy Chassis	05	8004	1
Valve Stem Extender Inner Dual Rear Wheel, pair	05	8606	1
Galvanized Steel Entry Step Lower Sides Only - Does NOT Include Upper Sides & Header			
Metal Locking Door for Fuel Fill	05	22388	1
	05	22045	1
<b>ENVIRONMENTAL CONTROL</b>			
<b>TRANS/AIR AIR CONDITIONING SYSTEMS</b>			
<b>DUAL COMPRESSOR SYSTEMS CEILING MOUNT EVAPORATOR</b>			



ORDER#: FR SHORT VIN: 

<b><sup>1</sup> = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR</b>					1
<b>**RECOMMENDED BY A/C MFR</b>					
<b>TA773 SUPER 80K - TA77 EVAP - SMC3L COND - 13.4 C.I.D. COMP</b>					
<b>NOTE: UPGRADE TO TA774C OR TA77R90 FOR HOT CLIMATES</b>					
<b>(SELECT CHASSIS/ENGINE BELOW)</b>					
<b><sup>1</sup> TA773 SUPER 13 FORD 7.3 LITRE PREMIUM GAS ENGINE</b>					1
<b>HEATERS</b>					
Hot Water Heater, 35K BTU 3 Speed Low Profile					1
<b>MISCELLANEOUS</b>					
Defroster Fan - Mount Location: <b>Right Side of Bulkhead aimed at Driver</b>					1
<b>ELECTRICAL</b>					
Door Ajar Buzzer on Rear Door					1
Door Ajar Warning on Wheelchair Door - Buzzer and Light in Driver Area					1
Window Ajar Alarm Buzzer on Egress Window, each					3
Stainless Steel Battery Box & Tray <b>IS 304 REQUIRED? NO</b>					1
Light in Engine Area					1
ADA Stop Request, Pull Cord, Dual Auditory Tones, Dual Face Sign w/LED for ADA Request					1
Touch Tape at WC area for ADA Stop Request - Activates 2nd Auditory Tone (Ea.)					2
Heated Entry Step, Electric					1
Laminated Wiring Schematic ***AS BUILT*** ON ELECTRICAL PANEL DOOR					1
Wiring Diagram "AS BUILT" ON USB Flash Drive					1
<b>DESTINATION SIGNS/I.D. SIGN/FRONT VIEW WINDOW</b>					
Transign LD12112 Front LED Sign 12x112 Display w/OCU					1
Transign LD1280 Side LED Sign 12x80 Display-Requires Front Sign					1
<b>FAREBOXES</b>					
Half Stanchion w/ Elbow to Driver Stanchion					1
<b>EXTERIOR LIGHTS</b>					
Surface Mount LED Entry Door Exterior Light - STD Choose Optional Below or Special builds					1
LED Rear Center Mount Brake Light, Rectangular					1
LED Mid-Ship Turn / Marker Lights					1
Independent RED Brake & AMBER Turn Signal Lights					1
Strobe Light, Roof Mounted COLOR: <b>WHITE</b>					1
<b>BRANCH GUARD FOR STROBE LIGHT</b>					1
<b>INTERIOR LIGHTS</b>					
Door Activated Interior Lights					1
<b>AUDIO / VISUAL</b>					
Deluxe AM/FM/AUX Radio With Clock & 4 Speakers PA Ready					1
Hand Held Mic & Clip Added to PA Ready Radio					1
Additional Speaker(s), Each					3
Ground Plane for 2-Way Radio, Pull Cord, Conduit Terminates B Pillar Floor					1
External Speaker with ON/OFF Switch (each)					1
<b>FOR ADDITIONAL SPEAKERS: 2 IN MAIN CABIN, 1 IN DRIVER DOOR</b>					1
<b>DOORS / HATCH / WINDOWS</b>					
Electric Entry Door is Standard. Add Option #2056 if Manual is Desired					
Passenger Door Electric (standard)					1
Passenger Door 36" ROUGH OPENING (STANDARD)					1
Exterior Passenger Entrance Door Key					1
Rear Door, (1) Window - Standard Left Hand Hinge					1
Additional Window for Rear Door					1
Twin Windows Either Side of Rear Door					1
Roof Hatch - Transpec 1070 Series Dual Purpose Safety Vent II					1
Extra Egress Window(s) <b>Total Number of Egress Windows: 2 SS, 1 CS</b>					1
<b>LUGGAGE RACK / STORAGE</b>					
Driver Storage in Cab Overhead					1
<b>PARATRANSIT OPTIONS</b>					
Double W/C Doors w/ Windows, LED Interior Light, Leaf Spring, LED Exterior Lighting					1
<b>IS THE LIFT IN THE FRONT OR REAR OF THE UNIT? FRONT</b>					1
<b>BRAUN LIFTS</b>					
Braun Century NCL 1000 3454HB-2 1000# (34"x54") *N/A FRONT LIFT 138/139"WB					1
Seat Belt on Braun Lift - Installed					1



ORDER#: FR SHORT VIN: 

<b>LIFT FAST IDLE WITH 403 INTERLOCK</b>				1
Intermotive Gateway 508-F Ford E or 517-F Transit Fast Idle with Lift Interlock	05	99		1
<b>SureLok W.C. Securement Kits, Accessories</b>				1
FE200750-16 16" Quick Strap (each)	05	20239		4
<b>Q Straint W.C. Securement Kits, Accessories</b>				1
Q10007 - 4 QRT 360 Retractor Tie Down L track & Q8-6326-A1 Comb-Lap/Shldr	05	8826		2
<b>Miscellaneous Accessories</b>				1
Priority Seating Sign **Required for ADA Compliance**	05	8104		2
Wheelchair Decal (International Symbol of Accessibility) Each	05	8105		1
<b>SAFETY OPTIONS</b>				
5 Lb Fire Extinguisher	05	8089		1
16 Unit First Aid Kit	05	8090		1
Body Fluid Kit	05	20264		1
Emergency Triangle Kit	05	8091		1
Fire Blanket	05	20266		2
Back-Up Alarm SAE Type C 97 db(A)	05	20267		1
<b>STANDARD ROSCO STSK4750 BACK-UP CAMERA SYSTEM W/ 7" REARVIEW MONITOR / MIRROR COMBO</b>	05	STD		1
Interior Flat Mirror, 6" x 16" (N/A ON DUAL DOOR CHASSIS)	05	20277		1
Wide Angle Lens 11"x14", Fresnel	05	20278		1
Red Light Over Emergency Exit Ea: ON: <b>2 doors, 3 windows</b>	05	8155		5
"NO SMOKING" Sign	05	20282		1
Yellow "Standee" Line	05	8802		1
Decal "Please Fasten your Seat Belt"	05	20286		1
Decal Vehicle Height Sticker	05	20289		1
<b>GRAB RAIL / STANCHION / PANELS</b>				
Ceiling Grab Rail - Install on <b>Both Sides</b>	05	99		1
Left Hand Entry Vertical Grab Rail - 1 1/4"		STD		1
1 1/4" Dual Entry Grab Rails Parallel to Entrance Steps (both sides)	05	8130		1
Stanchion and Modesty Panel at Entry Door		STD		1
Stanchion and Modesty Panel Behind Driver	05	20301		1
Padding on Stanchion - Gray - Per 40" Max Length Each (note location(s) below)	05	20304		3
<b>PAD STANCHIONS AT DRIVER AISLE-SIDE, ENTRY MOD PANEL &amp; EXTRA STANCHION.</b>		NOTE		1
Modesty Panel at Wheelchair Lift (extend from floor to ceiling)	05	20306		1
Add Tinted Plexiglass Upper Panel <b>LOCATION: driver</b>	05	8146		1
<b>FLOOR TO BULKHEAD STANCHION AT TOP OF STEPWELL. SEE F/P.</b>	ST	99		1
<b>SEATING - DRIVER</b>				1
SHIELD Recliner(GM&Ford), RH Arm, 4 Position Lumbar, Mesh Pocket	05	2064		1
Adnik 6 Way Driver Seat Power Base	05	2205		1
<b>FREEDMAN SHIELD DRIVER SEAT FABRICS</b>				1
Driver Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2043		1
<b>SEATING - PASSENGER</b>				1
<b>STD RIGID SEATS</b>				1
Mid High Double Seat	05	8067		4
<b>FOLDAWAY SEATS</b>				1
Foldaway Seat - Mid-High Notch Back Double AM (non-wheelwell)	05	2336		2
<b>ICS &amp; 3POINT SEATS **REQUIRES WEIGHT ANALYSIS FOR APPROVAL**</b>				1
Double Seat with (1) Integrated Child Seat and (1) Mid High Back 2nd Seat	05	2331		2
<b>PASSENGER SEAT FABRICS</b>				1
Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2074		14
<b>SEAT OPTIONS</b>				1
ABS Seat Backs Per Person (Mid-High Rigid and Notchback Folds Only)	05	2664		8
Anti-Vandal Grab Handle, Black Ea on: <b>all but last row of seats</b>	05	2311		10
Black US Armrest - Each - on: <b>all aisle seats</b>	05	2077		7
Child Restraint System CRS225 Clips - Per Person	05	2554		2
<b>FREEDMAN SEATING SPECIAL BUILD OPTIONS</b>				1
2664 No ABS on rear row of seats or ICS seat	ST	99		1
<b>SEAT BELTS</b>				1
Seat Belt, Retractable <b>** NOT AVAILABLE WITH FOLDAWAY OR FLIP SEATS</b>	05	2087		12
<b>**ORDER USR BELTS</b>				



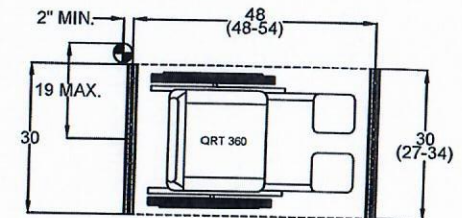
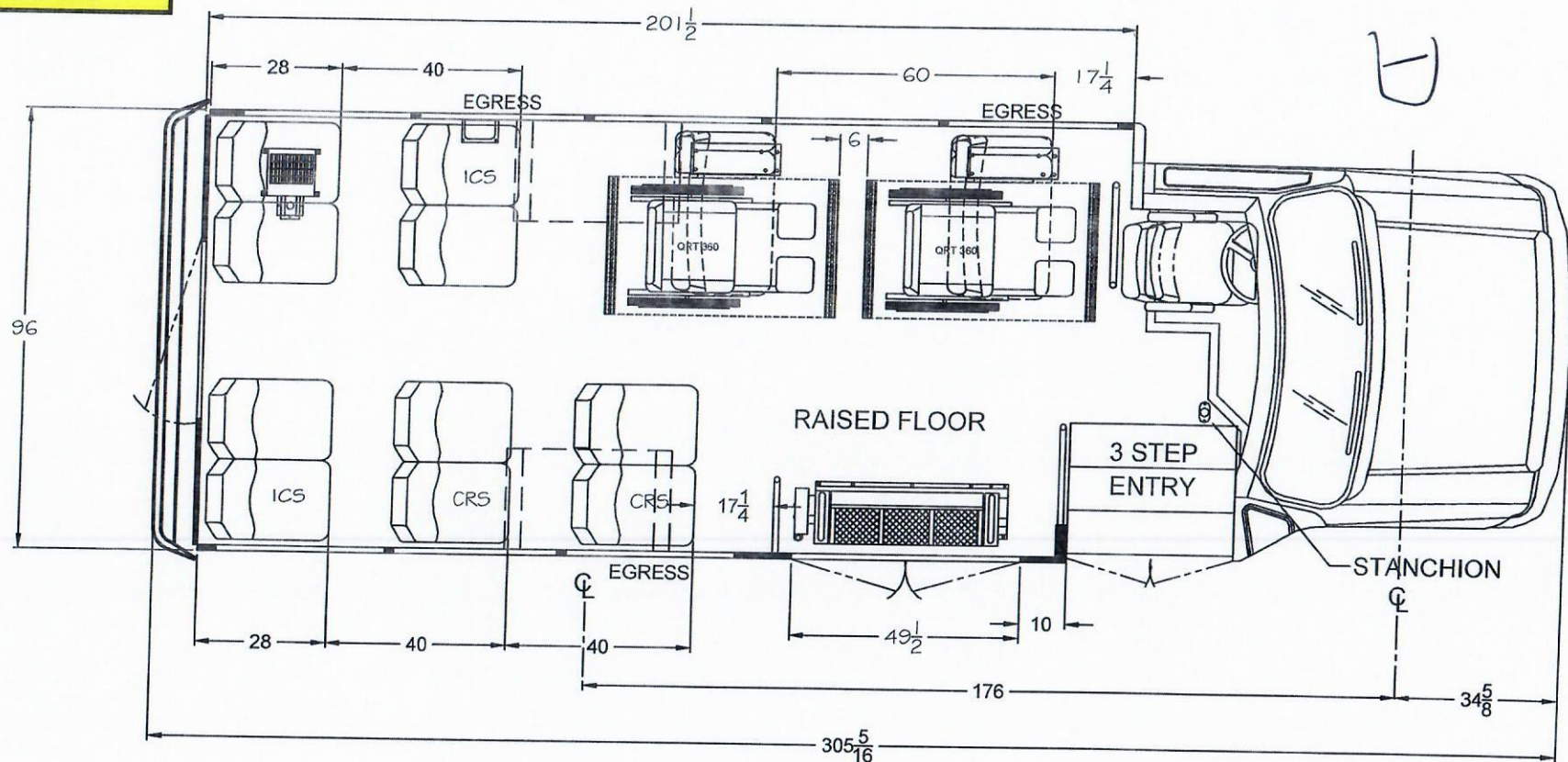
ORDER#:

FR SHORT VIN:

Seat Belt, Freedman USR Retractable (Per Person)	05	2282		4
Seat Belt Extension, 12" FOR STANDARD SEAT BELTS	05	2250		4
Seat Belt Extension, 12" (P/N 56410) FOR USR SEAT BELTS	05	8771		1



CLASS C & D



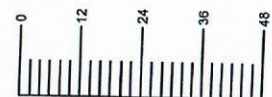
NOTE: SHOWN WITH MID HI FREEDMAN SEATS  
E-450 14,500 GVWR  
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.  
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.  
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A  
COMPLETED ORDER WITH ALL OPTIONS SHOWN.  
OPTIONAL EQUIPMENT MAY BE SHOWN.  
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

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REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
$\pm 1/8"$	$\pm 1/16"$
$\pm 1"$	$\pm 1/2"$



FOREST RIVER BUS

TITLE:  
10 2 WC 176" WB 190 BDY  
MODEL 25

NAME: DH DATE: 4/20/22

DWG. No. 10 2 WC 2 DB FOLD 176 190 FRB



ORDER#: FR SHORT VIN: 

Class E

**ADVANTAGE - FORD E450 - 14,500 GVWR - CONVERSION ONLY PRICING**

ADVANTAGE 25 176" WB E-450 7.3L Premium Gas Engine W/240 Amp Ford Alt \*\*

	E	1010	C	1
<b>SPECIAL INSTRUCTIONS OR NOTES</b>				
2 sets 11x17 laminated as-built schematics - Rohrer to complete (3.16.1)				1
Graphics - Rohrer to subcontract				NOTE 1
Chains, jack and lug wrench - Rohrer to supply				NOTE 1
				NOTE 1
<b>SPECIAL BUILD OPTIONS</b>				
Gerflor Stepbus Extruded Anodized Aluminum step nosing with Yellow Insert	ST	99		4
Gerflor "Watch Your Step" Inlaid in Riser	ST	99		2
Lift Master Power Switch on Dash. Also Activates Rear Amber Lights to Flash	ST	99		1
Mylar Blanket	ST	99		2
Safety Vest	ST	99		1
FASTENAL WHEEL CHOCKS (PAIR)	ST	99		1
Angel Trax Vulcan Series Camera System w/ 6 Cameras & GPS Antenna	ST	99		1
Front end alignment with caster & camber kit. Include documentation & warranty.	ST	99		1
Perko Hood Vents	ST	99		2
Exterior screws and bolts to be stainless steel (3.19.4)	ST	99		1
Black Rubber Rub Rail ilo Standard.	ST	99		1
Miscellaneous decals- Dial 911, warning lift doors, frequent stops, railroad crossing,	ST	99		1
White reflective tape around all egress windows and rear door window	ST	99		1
Sportworks DL2 Bike Rack Mounting Hardware Only (No Rack)	ST	99		1
Price option for Intermotive Flex Speak separately, not in base bus	ST	99		0
<b>WARRANTY</b>				
Optional Eldorado 3 Year / 36,000 Mile Limited Warranty	05	STD		1
<b>ELECTRICAL SYSTEM</b>				
Intermotive Flex Tech Electrical System	05	STD		1
<b>SIDEWALL / REARWALL / CEILING</b>				
Sidewall: Grey FRP	05	STD		1
Rearwall: Grey Seaspray Fabric	05	STD		1
Ceiling: Grey Seaspray Fabric	05	STD		1
Driver Area: Grey Padded Vinyl	05	STD		1
<b>FLOORING - WHITE NOSING IS STANDARD</b>				
Other Color Gerflor Sirius NTCOLOR: TBD STEPS & AISLE / TBD UNDER SEATS	05	2827		1
5/8" MarineTech Plywood Floor	05	2202		1
Raised Floor 3 Step Flat to Front ** ADVANTAGE OPTION ONLY - NOT AVAILABLE ON CHEVY CHASSIS	05	2103		1
Lighter color Gerflor flooring under seats to provide contrasting color from aisle		NOTE		1
<b>CHASSIS</b>				
Front Mud Flap (1), Passenger Side Only (to be used with Running Board) - NOT AVAILABLE ON FORD TRANSIT	05	2340		1
Heavy Duty Anti-Slip Aluminum Running Board on Driver Side (Large) (NOT AVAILABLE ON FORD TRANSIT)	05	2623		1
Mor-Ryde RS Suspension (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	99		1
Galvanized Belly Metal (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	2275		1
Exterior Mirror Set, Remote/Heated, Ford	05	2444		1
Romeo Rim Rear Bumper	05	2156		1
Spare Tire and Wheel - Ford E-Series & Chevy Chassis	05	8004		1
Valve Stem Extender Inner Dual Rear Wheel, pair	05	8606		1
Galvanized Steel Entry Step Lower Sides Only - Does NOT Include Upper Sides & Header	05	22388		1
Metal Locking Door for Fuel Fill	05	22045		1
<b>ENVIRONMENTAL CONTROL</b>				
<b>TRANS/AIR AIR CONDITIONING SYSTEMS</b>				
DUAL COMPRESSOR SYSTEMS CEILING MOUNT EVAPORATOR				1
<sup>1</sup> = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR				1
**RECOMMENDED BY A/C MFR				1
TA773 SUPER 80K - TA77 EVAP - SMC3L COND - 13.4 C.I.D. COMP				1
NOTE: UPGRADE TO TA774C OR TA77R90 FOR HOT CLIMATES (SELECT CHASSIS/ENGINE BELOW)				1



ORDER#:

FR SHORT VIN:

<sup>1</sup> TA773 SUPER 13	FORD 7.3 LITRE PREMIUM GAS ENGINE	05	10479	1
<b>HEATERS</b>				
Hot Water Heater, 35K BTU 3 Speed Low Profile				1
<b>MISCELLANEOUS</b>				
Defroster Fan - Mount Location:	Right Side of Bulkhead aimed at Driver	05	20092	1
<b>ELECTRICAL</b>				
Door Ajar Buzzer on Rear Door		05	22079	1
Door Ajar Warning on Wheelchair Door - Buzzer and Light in Driver Area		05	22082	1
Window Ajar Alarm Buzzer on Egress Window, each		05	8679	3
Stainless Steel Battery Box & Tray	IS 304 REQUIRED? NO	05	2527	1
Light in Engine Area		05	2316	1
ADA Stop Request, Pull Cord, Dual Auditory Tones, Dual Face Sign w/LED for ADA Request		05	2785	1
Touch Tape at WC area for ADA Stop Request - Activates 2nd Auditory Tone (Ea.)		05	2786	3
Heated Entry Step, Electric		05	22098	1
Laminated Wiring Schematic ***AS BUILT*** ON ELECTRICAL PANEL DOOR		05	22101	1
Wiring Diagram "AS BUILT" ON USB Flash Drive			STD	1
<b>DESTINATION SIGNS/I.D. SIGN/FRONT VIEW WINDOW</b>				
Transign LD12112 Front LED Sign 12x112 Display w/OCU		05	20122	1
Transign LD1280 Side LED Sign 12x80 Display-Requires Front Sign		05	20123	1
<b>FAREBOXES</b>				
Half Stanchion w/ Elbow to Driver Stanchion		ST	99	1
<b>EXTERIOR LIGHTS</b>				
Surface Mount LED Entry Door Exterior Light - STD Choose Optional Below or Special builds		05	STD	1
LED Rear Center Mount Brake Light, Rectangular		05	20136	1
LED Mid-Ship Turn / Marker Lights		05	20138	1
Independent RED Brake & AMBER Turn Signal Lights		05	20139	1
Strobe Light, Roof Mounted COLOR:	WHITE	05	20140	1
BRANCH GUARD FOR STROBE LIGHT		ST	99	1
<b>INTERIOR LIGHTS</b>				
Door Activated Interior Lights		05	8810	1
<b>AUDIO / VISUAL</b>				
Deluxe AM/FM/AUX Radio With Clock & 4 Speakers PA Ready		05	99	1
Hand Held Mic & Clip Added to PA Ready Radio		05	8139	1
Additional Speaker(s), Each		05	20157	3
Ground Plane for 2-Way Radio, Pull Cord, Conduit Terminates B Pillar Floor		05	20160	1
External Speaker with ON/OFF Switch (each)		05	20162	1
FOR ADDITIONAL SPEAKERS: 2 IN MAIN CABIN, 1 IN DRIVER DOOR			NOTE	1
<b>DOORS / HATCH / WINDOWS</b>				
Electric Entry Door is Standard. Add Option #2056 if Manual is Desired				
Passenger Door Electric (standard)		05	20163	1
Passenger Door 36" ROUGH OPENING (STANDARD)		05	2063	1
Exterior Passenger Entrance Door Key		05	8133	1
Rear Door, (1) Window - Standard Left Hand Hinge		05	8016	1
Additional Window for Rear Door		05	8682	1
Twin Windows Either Side of Rear Door		05	20175	1
Roof Hatch - Transpec 1070 Series Dual Purpose Safety Vent II		05	20179	1
Extra Egress Window(s)	Total Number of Egress Windows: 2 SS, 1 CS	05	20188	1
<b>LUGGAGE RACK / STORAGE</b>				
Driver Storage in Cab Overhead		05	20191	1
<b>PARATRANSIT OPTIONS</b>				
Double W/C Doors w/ Windows, LED Interior Light, Leaf Spring, LED Exterior Lighting		05	20206	1
IS THE LIFT IN THE FRONT OR REAR OF THE UNIT?	FRONT			1
<b>BRAUN LIFTS</b>				
Braun Century NCL 1000 3454HB-2 1000# (34"x54") *N/A FRONT LIFT 138/139"WB		05	20230	1
Seat Belt on Braun Lift - Installed		05	8801	1
<b>LIFT FAST IDLE WITH 403 INTERLOCK</b>				
Intermotive Gateway 508-F Ford E or 517-F Transit Fast Idle with Lift Interlock		05	99	1
<b>SureLok W.C. Securement Kits, Accessories</b>				
FE200750-16 16" Quick Strap (each)		05	20239	4



ORDER#:

FR SHORT VIN:

<b>Q Straint W.C. Securement Kits, Accessories</b>				1
Q10007 - 4 QRT 360 Retractor Tie Down L track & Q8-6326-A1 Comb-Lap/Shldr	05	8826		3
Q5-7580-4 18" Blue Webbing Loop (each)	05	20250		4
Q Straint Belt Storage Pouch	05	8102		3
<b>Miscellaneous Accessories</b>				1
Priority Seating Sign **Required for ADA Compliance**	05	8104		2
Wheelchair Decal (International Symbol of Accessibility) Each	05	8105		1
<b>SAFETY OPTIONS</b>				
5 Lb Fire Extinguisher	05	8089		1
16 Unit First Aid Kit	05	8090		1
Body Fluid Kit	05	20264		1
Emergency Triangle Kit	05	8091		1
Fire Blanket	05	20266		2
Back-Up Alarm SAE Type C 97 db(A)	05	20267		1
<b>STANDARD ROSCO STSK4750 BACK-UP CAMERA SYSTEM W/ 7" REARVIEW MONITOR / MIRROR COMBO</b>	05	STD		1
Interior Flat Mirror, 6" x 16" (N/A ON DUAL DOOR CHASSIS)	05	20277		1
Wide Angle Lens 11"x14", Fresnel	05	20278		1
Red Light Over Emergency Exit Ea: ON: 2 doors, 3 windows	05	8155		5
"NO SMOKING" Sign	05	20282		1
Yellow "Standee" Line	05	8802		1
Decal "Please Fasten your Seat Belt"	05	20286		1
Decal Vehicle Height Sticker	05	20289		1
<b>GRAB RAIL / STANCHION / PANELS</b>				
Ceiling Grab Rail - Install on Both Sides	05	99		1
Left Hand Entry Vertical Grab Rail - 1 1/4"		STD		1
1 1/4" Dual Entry Grab Rails Parallel to Entrance Steps (both sides)	05	8130		1
Stanchion and Modesty Panel at Entry Door		STD		1
Stanchion and Modesty Panel Behind Driver	05	20301		1
Padding on Stanchion - Gray - Per 40" Max Length Each (note location(s) below)	05	20304		3
<b>PAD STANCHIONS AT DRIVER AISLE-SIDE, ENTRY MOD PANEL &amp; EXTRA STANCHION.</b>		NOTE		1
Modesty Panel at Wheelchair Lift (extend from floor to ceiling)	05	20306		1
Add Tinted Plexiglass Upper Panel LOCATION: driver	05	8146		1
<b>FLOOR TO BULKHEAD STANCHION AT TOP OF STEPWELL. SEE F/P.</b>	ST	99		1
<b>SEATING - DRIVER</b>				1
SHIELD Recliner(GM&Ford), RH Arm, 4 Position Lumbar, Mesh Pocket	05	2064		1
Adnik 6 Way Driver Seat Power Base	05	2205		1
<b>FREEDMAN SHIELD DRIVER SEAT FABRICS</b>				1
Driver Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2043		1
<b>SEATING - PASSENGER</b>				1
<b>STD RIGID SEATS</b>				1
Mid High Double Seat	05	8067		3
<b>FOLDAWAY SEATS</b>				1
Foldaway Seat - Mid-High Notch Back Double AM (non-wheelwell)	05	2336		2
<b>ICS &amp; 3POINT SEATS **REQUIRES WEIGHT ANALYSIS FOR APPROVAL**</b>				1
Double Seat with (1) Integrated Child Seat and (1) Mid High Back 2nd Seat	05	2331		2
<b>PASSENGER SEAT FABRICS</b>				1
Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2074		14
<b>SEAT OPTIONS</b>				1
ABS Seat Backs Per Person (Mid-High Rigid and Notchback Folds Only)	05	2664		8
Anti-Vandal Grab Handle, Black Ea on: all but last row of seats	05	2311		10
Black US Armrest - Each - on: all aisle seats	05	2077		7
Child Restraint System CRS225 Clips - Per Person	05	2554		2
<b>FREEDMAN SEATING SPECIAL BUILD OPTIONS</b>				1
2664 No ABS on rear row of seats or ICS seat	ST	99		1
<b>SEAT BELTS</b>				1
Seat Belt, Retractable ** NOT AVAILABLE WITH FOLDAWAY OR FLIP SEATS **ORDER USR BELTS	05	2087		8
Seat Belt, Freedman USR Retractable (Per Person)	05	2282		6
Seat Belt Extension, 12" FOR STANDARD SEAT BELTS	05	2250		3



ORDER#:

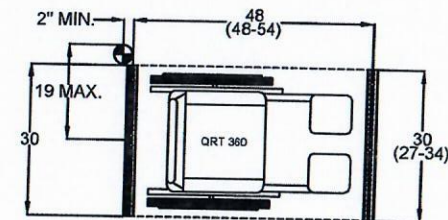
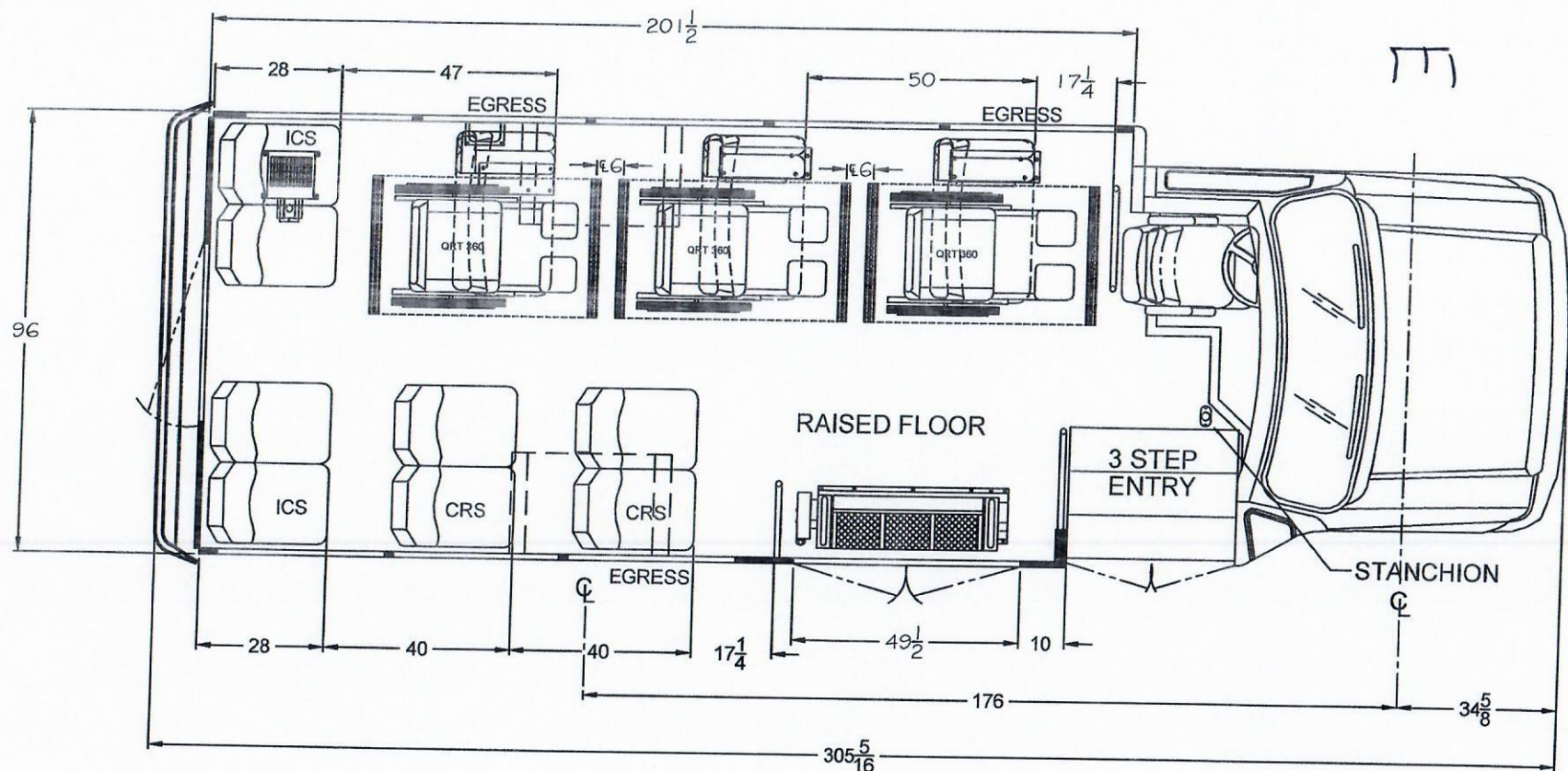
FR SHORT VIN:

Seat Belt Extension, 12" (P/N 56410) FOR USR SEAT BELTS

05	8771		2
----	------	--	---



CLASS E & F



DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

NOTE: SHOWN WITH MID HI FREEDMAN SEATS  
E-450 14,500 GVWR  
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.  
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.  
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A  
COMPLETED ORDER WITH ALL OPTIONS SHOWN.  
OPTIONAL EQUIPMENT MAY BE SHOWN.  
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

SCALE  
IN INCHES



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REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
$\pm 1/8"$	$\pm 1/16"$
$\pm 1"$	$\pm 1/2"$



FOREST RIVER BUS

DWG. No. 8 3 WC 3 DB FOLDS 176 190 FRB

TITLE:  
8 3 WC 176" WB 190 BDY  
MODEL 25

NAME: DH DATE: 4/20/22



ORDER#:

Class F

FR SHORT VIN:

**ADVANTAGE - FORD E450 - 14,500 GVWR - CONVERSION ONLY PRICING**

ADVANTAGE 25 176" WB E-450 7.3L Premium Gas Engine W/240 Amp Ford Alt \*\*

E	1010	C	1
<b>SPECIAL INSTRUCTIONS OR NOTES</b>			
2 sets 11x17 laminated as-built schematics - Rohrer to complete (3.16.1)			
Graphics - Rohrer to subcontract			
Chains, jack and lug wrench - Rohrer to supply			
<b>SPECIAL BUILD OPTIONS</b>			
Gerflor Stepbus Extruded Anodized Aluminum step nosing with Yellow Insert	ST	99	4
Gerflor "Watch Your Step" Inlaid in Riser	ST	99	2
Lift Master Power Switch on Dash. Also Activates Rear Amber Lights to Flash	ST	99	1
Mylar Blanket	ST	99	2
Safety Vest	ST	99	1
FASTENAL WHEEL CHOCKS (PAIR)	ST	99	1
Angel Trax Vulcan Series Camera System w/ 6 Cameras & GPS Antenna	ST	99	1
Front end alignment with caster & camber kit. Include documentation & warranty.	ST	99	1
Perko Hood Vents	ST	99	2
Exterior screws and bolts to be stainless steel (3.19.4)	ST	99	1
Black Rubber Rub Rail ilo Standard.	ST	99	1
Miscellaneous decals- Dial 911, warning lift doors, frequent stops, railroad crossing,	ST	99	1
White reflective tape around all egress windows and rear door window	ST	99	1
Sportworks DL2 Bike Rack Mounting Hardware Only (No Rack)	ST	99	1
Price option for Intermotive Flex Speak separately, not in base bus	ST	99	0
<b>WARRANTY</b>			
Optional Eldorado 3 Year / 36,000 Mile Limited Warranty	05	STD	1
<b>ELECTRICAL SYSTEM</b>			
Intermotive Flex Tech Electrical System	05	STD	1
<b>SIDEWALL / REARWALL / CEILING</b>			
Sidewall: Grey FRP	05	STD	1
Rearwall: Grey Seaspray Fabric	05	STD	1
Ceiling: Grey Seaspray Fabric	05	STD	1
Driver Area: Grey Padded Vinyl	05	STD	1
<b>FLOORING - WHITE NOSING IS STANDARD</b>			
Other Color Gerflor Sirius NTCOLOR: TBD STEPS & AISLE / TBD UNDER SEATS	05	2827	1
5/8" MarineTech Plywood Floor	05	2202	1
Raised Floor 3 Step Flat to Front ** ADVANTAGE OPTION ONLY - NOT AVAILABLE ON CHEVY CHASSIS	05	2103	1
Lighter color Gerflor flooring under seats to provide contrasting color from aisle		NOTE	1
<b>EXTERIOR</b>			
Paint Skirt ** COLOR CODE:	05	8011	1
Gloss Black Out Window Paint	05	8784	1
<b>CHASSIS</b>			
Front Mud Flap (1), Passenger Side Only (to be used with Running Board) - NOT AVAILABLE ON FORD TRANSIT	05	2340	1
Heavy Duty Anti-Slip Aluminum Running Board on Driver Side (Large) (NOT AVAILABLE ON FORD TRANSIT)	05	2623	1
Mor-Ryde RS Suspension (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	99	1
Galvanized Belly Metal (SUBJECT TO WEIGHT ANALYSIS APPROVAL)	05	2275	1
Exterior Mirror Set, Remote/Heated, Ford	05	2444	1
Romeo Rim Rear Bumper	05	2156	1
Spare Tire and Wheel - Ford E-Series & Chevy Chassis	05	8004	1
Valve Stem Extender Inner Dual Rear Wheel, pair	05	8606	1
Galvanized Steel Entry Step Lower Sides Only - Does NOT Include Upper Sides & Header	05	22388	1
Metal Locking Door for Fuel Fill	05	22045	1
<b>ENVIRONMENTAL CONTROL</b>			
<b>TRANS/AIR AIR CONDITIONING SYSTEMS</b>			
<b>DUAL COMPRESSOR SYSTEMS CEILING MOUNT EVAPORATOR</b>			



ORDER#: FR SHORT VIN: 

<b>1 = TA77 INDEPENDENT OF OEM DASH A/C W/LARGER COMPRESSOR</b>			
<b>**RECOMMENDED BY A/C MFR</b>			
<b>TA773 SUPER 80K - TA77 EVAP - SMC3L COND - 13.4 C.I.D. COMP NOTE:</b>			
<b>UPGRADE TO TA774C OR TA77R90 FOR HOT CLIMATES</b>			
<b>(SELECT CHASSIS/ENGINE BELOW)</b>			
<b>1 TA773 SUPER 13 FORD 7.3 LITRE PREMIUM GAS ENGINE</b>			
05	10479		1
<b>HEATERS</b>			
<b>Hot Water Heater, 35K BTU 3 Speed Low Profile</b>			
05	8044		1
<b>MISCELLANEOUS</b>			
<b>Defroster Fan - Mount Location: Right Side of Bulkhead aimed at Driver</b>			
05	20092		1
<b>ELECTRICAL</b>			
<b>Door Ajar Buzzer on Rear Door</b>			
05	22079		1
<b>Door Ajar Warning on Wheelchair Door - Buzzer and Light in Driver Area</b>			
05	22082		1
<b>Window Ajar Alarm Buzzer on Egress Window, each</b>			
05	8679		3
<b>Stainless Steel Battery Box &amp; Tray IS 304 REQUIRED? NO</b>			
05	2527		1
<b>Light in Engine Area</b>			
05	2316		1
<b>ADA Stop Request, Pull Cord, Dual Auditory Tones, Dual Face Sign w/LED for ADA Request</b>			
05	2785		1
<b>Touch Tape at WC area for ADA Stop Request - Activates 2nd Auditory Tone (Ea.)</b>			
05	2786		3
<b>Heated Entry Step, Electric</b>			
05	22098		1
<b>Laminated Wiring Schematic ***AS BUILT*** ON ELECTRICAL PANEL DOOR</b>			
05	22101		1
<b>Wiring Diagram "AS BUILT" ON USB Flash Drive</b>			
	STD		1
<b>DESTINATION SIGNS/I.D. SIGN/FRONT VIEW WINDOW</b>			
<b>Transign LD12112 Front LED Sign 12x112 Display w/OCU</b>			
05	20122		1
<b>Transign LD1280 Side LED Sign 12x80 Display-Requires Front Sign</b>			
05	20123		1
<b>FAREBOXES</b>			
<b>Half Stanchion w/ Elbow to Driver Stanchion</b>			
ST	99		1
<b>EXTERIOR LIGHTS</b>			
<b>Surface Mount LED Entry Door Exterior Light - STD Choose Optional Below or Special builds</b>			
05	STD		1
<b>LED Rear Center Mount Brake Light, Rectangular</b>			
05	20136		1
<b>LED Mid-Ship Turn / Marker Lights</b>			
05	20138		1
<b>Independent RED Brake &amp; AMBER Turn Signal Lights</b>			
05	20139		1
<b>Strobe Light, Roof Mounted COLOR: WHITE</b>			
05	20140		1
<b>BRANCH GUARD FOR STROBE LIGHT</b>			
ST	99		1
<b>INTERIOR LIGHTS</b>			
<b>Door Activated Interior Lights</b>			
05	8810		1
<b>AUDIO / VISUAL</b>			
<b>Deluxe AM/FM/AUX Radio With Clock &amp; 4 Speakers PA Ready</b>			
05	99		1
<b>Hand Held Mic &amp; Clip Added to PA Ready Radio</b>			
05	8139		1
<b>Additional Speaker(s), Each</b>			
05	20157		3
<b>Ground Plane for 2-Way Radio, Pull Cord, Conduit Terminates B Pillar Floor</b>			
05	20160		1
<b>External Speaker with ON/OFF Switch (each)</b>			
05	20162		1
<b>FOR ADDITIONAL SPEAKERS: 2 IN MAIN CABIN, 1 IN DRIVER DOOR</b>			
	NOTE		1
<b>DOORS / HATCH / WINDOWS</b>			
<b>Electric Entry Door is Standard. Add Option #2056 if Manual is Desired</b>			
<b>Passenger Door Electric (standard)</b>			
05	20163		1
<b>Passenger Door 36" ROUGH OPENING (STANDARD)</b>			
05	2063		1
<b>Exterior Passenger Entrance Door Key</b>			
05	8133		1
<b>Rear Door, (1) Window - Standard Left Hand Hinge</b>			
05	8016		1
<b>Additional Window for Rear Door</b>			
05	8682		1
<b>Twin Windows Either Side of Rear Door</b>			
05	20175		1
<b>Roof Hatch - Transpec 1070 Series Dual Purpose Safety Vent II</b>			
05	20179		1
<b>Extra Egress Window(s) Total Number of Egress Windows: 2 SS, 1 CS</b>			
05	20188		1
<b>LUGGAGE RACK / STORAGE</b>			
<b>Driver Storage in Cab Overhead</b>			
05	20191		1
<b>PARATRANSIT OPTIONS</b>			
<b>Double W/C Doors w/ Windows, LED Interior Light, Leaf Spring, LED Exterior Lighting</b>			
05	20206		1
<b>IS THE LIFT IN THE FRONT OR REAR OF THE UNIT? FRONT</b>			
<b>BRAUN LIFTS</b>			
<b>Braun Century NCL 1000 3454HB-2 1000# (34"x54") *N/A FRONT LIFT 138/139"WB</b>			
05	20230		1
<b>Seat Belt on Braun Lift - Installed</b>			
05	8801		1



ORDER#: FR SHORT VIN: 

<b>LIFT FAST IDLE WITH 403 INTERLOCK</b>				1
Intermotive Gateway 508-F Ford E or 517-F Transit Fast Idle with Lift Interlock	05	99		1
<b>SureLok W.C. Securement Kits, Accessories</b>				1
FE200750-16 16" Quick Strap (each)	05	20239		4
<b>Q Straint W.C. Securement Kits, Accessories</b>				1
Q10007 - 4 QRT 360 Retractor Tie Down L track & Q8-6326-A1 Comb-Lap/Shldr	05	8826		3
Q5-7580-4 18" Blue Webbing Loop (each)	05	20250		4
Q Straint Belt Storage Pouch	05	8102		3
<b>Miscellaneous Accessories</b>				1
Priority Seating Sign **Required for ADA Compliance**	05	8104		2
Wheelchair Decal (International Symbol of Accessibility) Each	05	8105		1
<b>SAFETY OPTIONS</b>				
5 Lb Fire Extinguisher	05	8089		1
16 Unit First Aid Kit	05	8090		1
Body Fluid Kit	05	20264		1
Emergency Triangle Kit	05	8091		1
Fire Blanket	05	20266		2
Back-Up Alarm SAE Type C 97 db(A)	05	20267		1
<b>STANDARD ROSCO STSK4750 BACK-UP CAMERA SYSTEM W/ 7" REARVIEW MONITOR / MIRROR COMBO</b>				1
Interior Flat Mirror, 6" x 16" (N/A ON DUAL DOOR CHASSIS)	05	20277		1
Wide Angle Lens 11"x14", Fresnel	05	20278		1
Red Light Over Emergency Exit Ea: ON: 2 doors, 3 windows	05	8155		5
"NO SMOKING" Sign	05	20282		1
Yellow "Standee" Line	05	8802		1
Decal "Please Fasten your Seat Belt"	05	20286		1
Decal Vehicle Height Sticker	05	20289		1
<b>GRAB RAIL / STANCHION / PANELS</b>				
Ceiling Grab Rail - Install on Both Sides	05	99		1
Left Hand Entry Vertical Grab Rail - 1 1/4"		STD		1
1 1/4" Dual Entry Grab Rails Parallel to Entrance Steps (both sides)	05	8130		1
Stanchion and Modesty Panel at Entry Door		STD		1
Stanchion and Modesty Panel Behind Driver	05	20301		1
Padding on Stanchion - Gray - Per 40" Max Length Each (note location(s) below)	05	20304		3
PAD STANCHIONS AT DRIVER AISLE-SIDE, ENTRY MOD PANEL & EXTRA STANCHION.		NOTE		1
Modesty Panel at Wheelchair Lift (extend from floor to ceiling)	05	20306		1
Add Tinted Plexiglass Upper Panel LOCATION: driver	05	8146		1
FLOOR TO BULKHEAD STANCHION AT TOP OF STEPWELL. SEE F/P.	ST	99		1
<b>SEATING - DRIVER</b>				1
SHIELD Recliner(GM&Ford), RH Arm, 4 Position Lumbar, Mesh Pocket	05	2064		1
Adnik 6 Way Driver Seat Power Base	05	2205		1
<b>FREEDMAN SHIELD DRIVER SEAT FABRICS</b>				1
Driver Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2043		1
<b>SEATING - PASSENGER</b>				1
<b>STD RIGID SEATS</b>				1
Mid High Double Seat	05	8067		3
<b>FOLDAWAY SEATS</b>				1
Foldaway Seat - Mid-High Notch Back Double AM (non-wheelwell)	05	2336		2
<b>ICS &amp; 3POINT SEATS **REQUIRES WEIGHT ANALYSIS FOR APPROVAL**</b>				1
Double Seat with (1) Integrated Child Seat and (1) Mid High Back 2nd Seat	05	2331		2
<b>PASSENGER SEAT FABRICS</b>				1
Seat Cover - Level 4 Ice Pinstripe; Mor-Care; Leathermate	05	2074		14
<b>SEAT OPTIONS</b>				1
ABS Seat Backs Per Person (Mid-High Rigid and Notchback Folds Only)	05	2664		8
Anti-Vandal Grab Handle, Black Ea on: all but last row of seats	05	2311		10
Black US Armrest - Each - on: all aisle seats	05	2077		7
Child Restraint System CRS225 Clips - Per Person	05	2554		2
<b>FREEDMAN SEATING SPECIAL BUILD OPTIONS</b>				1
2664 No ABS on rear row of seats or ICS seat	ST	99		1
<b>SEAT BELTS</b>				1

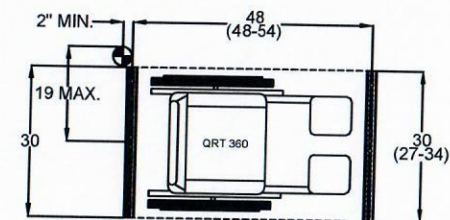
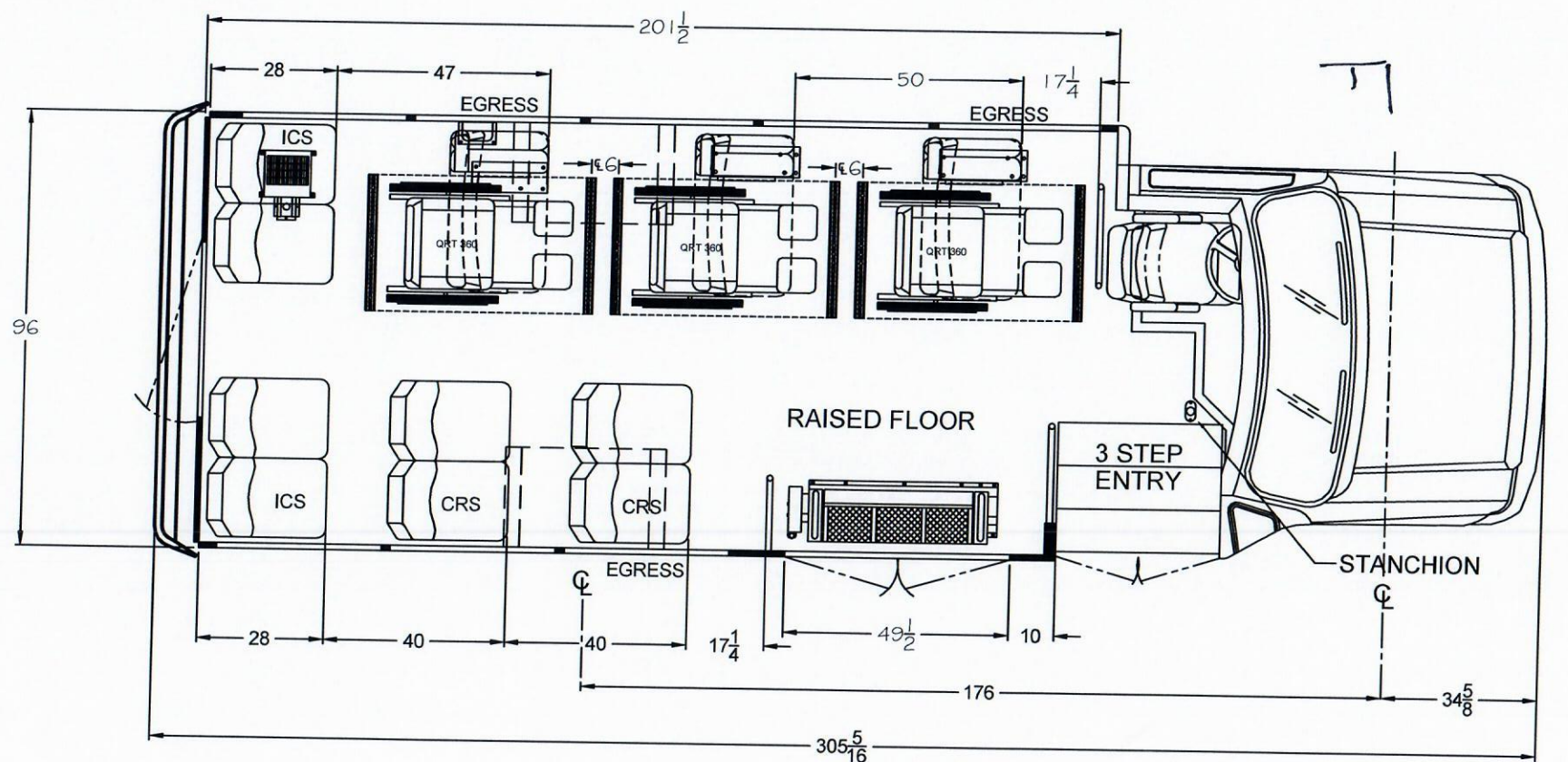


ORDER#: FR SHORT VIN: 

Seat Belt, Retractable ** NOT AVAILABLE WITH FOLDAWAY OR FLIP SEATS **ORDER USR BELTS	05	2087	8
Seat Belt, Freedman USR Retractable (Per Person)	05	2282	6
Seat Belt Extension, 12" FOR STANDARD SEAT BELTS	05	2250	3
Seat Belt Extension, 12" (P/N 56410) FOR USR SEAT BELTS	05	8771	2



CLASS E & F



DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

NOTE: SHOWN WITH MID HI FREEDMAN SEATS  
E-450 14,500 GVWR  
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.  
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.  
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A  
COMPLETED ORDER WITH ALL OPTIONS SHOWN.  
OPTIONAL EQUIPMENT MAY BE SHOWN.  
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

SCALE  
IN INCHES



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REV.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
LET.					

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
$\pm 1/8"$	$\pm 1/16"$
$\pm 1"$	$\pm 1/2"$



FOREST RIVER BUS

TITLE:  
8 3 WC 176" WB 190 BDY  
MODEL 25

NAME: DH DATE: 4/20/22

DWG. No. 8 3 WC 3 DB FOLDS 176 190 FRB



**GVWR of Proposed vehicles – 14,500 lbs**

Prebuild estimated curb weight by class of vehicles

Class A 12,000 lbs

Class B 12,200 lbs

Class C 12,300 lbs

Class D 12,500 lbs

Class E 12,700 lbs

Class F 13,000 lbs



## UNDERCOATING & CORROSION RESISTANCE PROCEDURE

The corrosion resistance process used by ElDorado begins with an application of Zinc Phosphate to a nominal 1.5–2.0 mil thickness. Zinc Phosphate is sprayed on the door post, step well, and the flange forward of the step well at the floor. The entire sub-frame is thoroughly sprayed protecting vent hoses and the fuel fill from overspray.

The undercoating process begins with a complete, hand-rolled and brushed application to a dry film thickness of 8-10 mils of a nonflammable water-based 76M Waterborn over 100% of the floor decking material, including edge sealing, prior to installation. This ensures the most critical areas, where it interfaces with the steel floor structure, are completely sealed and impervious to moisture penetration. The process also coats side panels below floor level (if metal), and fender wells.

Any component within 12" of the exhaust, or any part of the exhaust or related heat shields, fuel tank, fuel filler and vent tube, drive shaft or shock absorbers shall be excluded from undercoating. All added underbody steel on floor structure, frame stretch, drive line loops, etc will be sprayed with Zinc Phosphate.

After the body is installed, a second undercoating application is done to the entire floor structure to provide additional corrosion protection for all exposed steel. Note: care is taken to avoid the exhaust system and all other heat sources to avoid any potential fire hazard.

This two stage undercoating process is exclusive to ElDorado and when combined with the application of zinc phosphate provides superior undercarriage corrosion protection.





**Z TECHNOLOGIES CORPORATION**  
World Leaders in Corrosion Protection

9/12/2013

MB #LB005 V1

## Z GUARD 9902 STAR Film Properties

Performance testing reflects coating on unpolished Q panels with four day air-dried films at 3.0 – 4.0 mils dry.

Dry to touch at R.T., ASTM D1640	10 ± 2 minutes
Dry-to-Handle at R.T., ASTM D1640	20 ± 5 minutes
Pencil Hardness	6B
Flexibility 180° bend over conical mandral	Pass
Salt Spray, ASTM B117, 1000 hours	Field, scribe, edge clean; slight blistering
Salt Fog Resistance (463PB-10-01), 240 hours.	Pass (No rust)
♦ 500 F x 16 hours plus 240 hrs salt fog	Pass (No rust)
♦ 325 F x 16 hours plus 16 hours humidity.	Pass (No rust, nor blisters)
Salt Fog Resistance (WSS-M2P178-A), 240 hours.	
♦ 662°F x 1 hour; 1°C water quench; plus 240 hrs salt fog	Pass (#8-9 corrosion rating or <0.1% surface rust per ASTM D 610-95)
Salt Water Immersion, 5% NaCl, 100° F, 96 Hours	Pass
Detergent Immersion, 100° F, 48 Hours	Pass
Gravelometer, ASTM D3170, -20° F	Good(8A)
Poultice, GM 998-5470, 20 cycles	Pass
Q.U.V., ASTM G53, 3000 Hours	Pass
Q.U.V., 100 Hours + Salt Spray, 336 Hours	Pass
Q.C.T., 3000 Hours	Pass
Humidity Resistance, ASTM D2247, 2000 Hours	Pass
Sag resistance	≥5 mils
Impact (direct & reverse) ASTM D3281	160/40 inch-lbs.
Adhesion (FLTM B1 6-1 B) cross Hatch	5A Pass
Scab corrosion resistance, 20 cycles	Pass

### APPLICATION

For ultimate protection, apply films to clean metals at a thickness of at least four (4) mils dry, by any of the following methods:

Airless spray, with a 33:1 1.5 - 3.5 GPM, .013 - .026 tip at 50-75 psi line pressure, 20 - 40 fan

[www.ztechprotection.com](http://www.ztechprotection.com)

**Z TECHNOLOGIES CORPORATION**

World Leaders in Corrosion Protection

26500 Capitol Avenue, Redford, Michigan 48239-2597  
Telephone (313) 937-0710 • Fax (313) 937-1470



# **ROHRER**

*School & Commercial Bus Sales*

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## **REFERENCES**

### **REFERENCE #1: Pennsylvania Department of General Services**

Rohrer Bus Sales has held the state contract for Pennsylvania since 2007 and currently holds a contract which has been renewed until April 2019. This contract contains shuttle bus products from 21' – 31' in length and includes Ford, Chevrolet and Freightliner chassis. This contract also includes wheelchair minivan conversions.

Contact: John Levitsky, Program Manager  
Department of General Services  
Bureau of Procurement  
555 Walnut Street, 6<sup>th</sup> Floor Forum Place  
Harrisburg, PA 17101  
717-787-1206  
[jlevitsky@pa.gov](mailto:jlevitsky@pa.gov)

### **REFERENCE #2: Federal Government's General Service Administration**

For over ten years, Rohrer Bus Sales has provided Ford and Freightliner chassis to the Federal government. Our current contract is GS-30F-DA024 and is in process of being renewed for the 3<sup>rd</sup> of 4 option periods. The annual volume on this contract is generally in the 40-50 buses per year range

Contact: Craig D. Yokum, Contract Officer  
U.S. General Services Administration/Federal Acquisition Service  
Office of Travel, Transportation and Logistics  
Light Vehicles Branch - QMAAA  
1800 F Street, NW, 3rd Floor, Hub 3200  
Washington, DC 20405  
[craig.yokum@gsa.gov](mailto:craig.yokum@gsa.gov)  
Phone 703-605-9291  
Cell 571-748-8753



# ROHRER

School & Commercial Bus Sales

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## REFERENCE #3 - SCTA

Currently administering a state wide multi-year contract on behalf of all transit systems in the state of Pennsylvania. Rohrer holds both an F550 contract and a Ford Transit contract. Expect to sell and service 2-300 vehicles over life of contract

Contact: *Jeffrey H. Glisson*

*Director of Capital Projects/Planning*

*Telephone (717) 358-1928*

*Email [jglisson@sctapa.com](mailto:jglisson@sctapa.com)*



## REFERENCE #4 - Harrisburg International Airport

For over twenty years, Rohrer Bus Sales has provided Ford and Chevrolet cutaways, Freightliner M2, rear engine and low floor buses to HIA.

Contact: Robert Gardner, Vehicle Maintenance Supervisor  
513 Airport Drive  
Middletown, PA 17057  
717-948-3900  
[bobg@saraa.org](mailto:bobg@saraa.org)

## REFERENCE #5 - State of West Virginia

Contract history extends for over twenty years - Rohrer Bus Sales combined with David Clawson management experience has provided Dodge, Ford and Freightliner vans and buses to WV in excess of 900 vehicles.

Contact: Current Manager, John Caldwell  
West Virginia Division of Public Transit  
1900 Kanawha Blvd., East  
Building 5, Room 650

Previous Manager - Tim Thomas  
Now working for Mountain Transit Authority  
1096 Broad Street  
Summersville, WV 26651



**REQUEST FOR QUOTATION  
EXHIBIT A PRICING PAGE  
158" - 176" Wheelbase Cutway Vehicle**

**VENDOR NAME:** Rohrer Enterprises, Inc. DBA Rohrer Bus Sales

**MANUFACTURER/MAKE/MODEL:** 2024 FORD E450 ELDORADO/ ADVANTAGE

CLASS	VEHICLE DESCRIPTION	UNIT PRICE PER VEHICLE	ESTIMATED QUANTITY	EXTENDED PRICE
A	158" Vehicle, Six (6) Fixed Double Seats, Two (2) Wheelchair Positions with One (1) Fold Up Seat (Double), Rear Curbside Lift Location, Vinyl Logo and Stripes	\$142,900.00	5	\$714,500.00
B	158" Vehicle, Six (6) Fixed Double Seats, Two (2) Wheelchair Positions with One (1) Fold Up Seat (Double), Rear Curbside Lift Location, Full Bus Body Paint or 3/4 Bus Body Paint with Expanded Graphics	\$144,965.00	5	\$724,825.00
C	Vehicle, Five (5) Fixed Double Seats, Two (2) Wheelchair Positons with Two (2) Fold Up Seats (Double), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Vinyl Logo and Stripes	\$146,900.00	5	\$734,500.00
D	Vehicle, Five (5) Fixed Double Seats, Two (2) Wheelchair Positons with Two (2) Fold Up Seats (Double), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Full Bus Body Paint or 3/4 Bus Body Paint with Expanded Graphics	\$148,700.00	5	\$743,500.00
E	Vehicle, Four (4) Fixed Double Seats, Three (3) Wheelchair Positons with Three (3) Fold Up Seats (Double), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Vinyl Logo and Stripes	\$147,200.00	2	\$294,400.00
F	Vehicle, Four (4) Fixed Double Seats, Three (3) Wheelchair Positons with Three (3) Fold Up Seats (Doulbe), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Full Bus Body Paint or 3/4 Bus Body Paint with Expanded Graphics	\$149,550.00	2	\$299,100.00
AA	Option to Add on all Classes On Board Automatic Audio / Visual LED Display Voice Announcement System	\$5,980.00	2	\$11,960.00
<b>TOTAL BID FOR EVALUATION</b>				<b>3,522,785.00</b>

\*Complete form provided. The DPT may purchase more or less as needed.

Note: These are only estimated quantities and do not reflect any guarantee of purchase.

Please do not alter pricing page.



**REQUEST FOR QUOTATION  
EXHIBIT A PRICING PAGE  
158" - 176" Wheelbase Cutway Vehicle**

**VENDOR NAME:**

**MANUFACTURER/MAKE/MODEL:**

CLASS	VEHICLE DESCRIPTION	UNIT PRICE PER VEHICLE	ESTIMATED QUANTITY	EXTENDED PRICE
A	158" Vehicle, Six (6) Fixed Double Seats, Two (2) Wheelchair Positions with One (1) Fold Up Seat (Double), Rear Curbside Lift Location, Vinyl Logo and Stripes	\$142,900.00	5	\$714,500.00
B	158" Vehicle, Six (6) Fixed Double Seats, Two (2) Wheelchair Positions with One (1) Fold Up Seat (Double), Rear Curbside Lift Location, Full Bus Body Paint or 3/4 Bus Body Paint with Expanded Graphics	\$144,965.00	5	\$724,825.00
C	Vehicle, Five (5) Fixed Double Seats, Two (2) Wheelchair Positons with Two (2) Fold Up Seats (Double), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Vinyl Logo and Stripes	\$146,900.00	5	\$734,500.00
D	Vehicle, Five (5) Fixed Double Seats, Two (2) Wheelchair Positons with Two (2) Fold Up Seats (Double), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Full Bus Body Paint or 3/4 Bus Body Paint with Expanded Graphics	\$148,700.00	5	\$743,500.00
E	Vehicle, Four (4) Fixed Double Seats, Three (3) Wheelchair Positons with Three (3) Fold Up Seats (Double), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Vinyl Logo and Stripes	\$147,200.00	2	\$294,400.00
F	Vehicle, Four (4) Fixed Double Seats, Three (3) Wheelchair Positons with Three (3) Fold Up Seats (Doulbe), Extended Wheelbase to 176", Front Wheel Chair Lift Location, Full Bus Body Paint or 3/4 Bus Body Paint with Expanded Graphics	\$149,550.00	2	\$299,100.00
AA	Option to Add on all Classes On Board Automatic Audio / Visual LED Display Voice Announcement System	\$5,980.00	2	\$11,960.00
<b>TOTAL BID FOR EVALUATION</b>				<b>3,522,785.00</b>

**\*Complete form provided. The DPT may purchase more or less as needed.**

**Note: These are only estimated quantities and do not reflect any guarantee of purchase.**

**Please do not alter pricing page.**



**REQUEST FOR QUOTATION  
EXHIBIT A PRICING PAGE  
176" - 190" Wheelbase Cutway Vehicle**

**VENDOR NAME:  
MANUFACTURER/MAKE/MODEL:**

**REQUEST FOR QUOTATION  
EXHIBIT A PRICING PAGE  
176" - 190" Wheelbase Cutway Vehicle**

**VENDOR NAME:  
MANUFACTURER/MAKE/MODEL:**