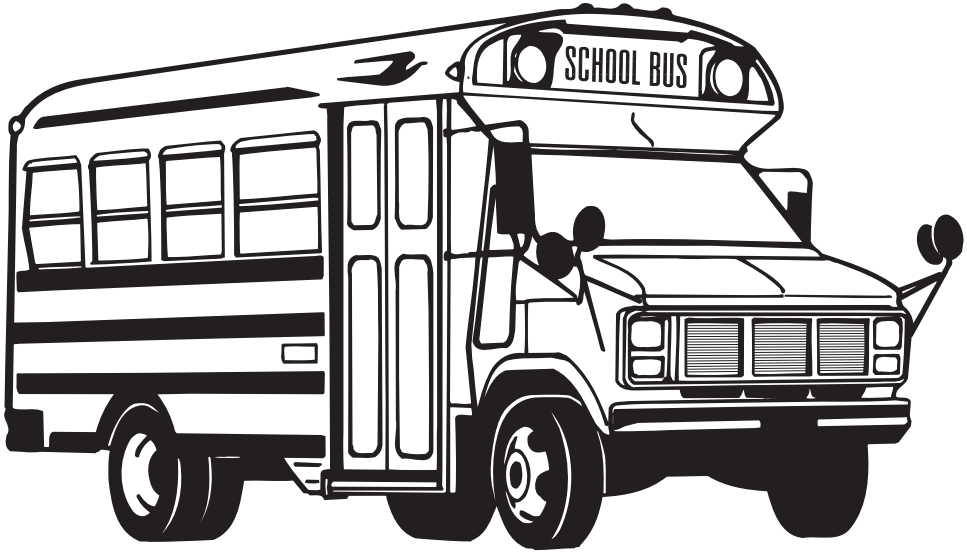
BLUE BIRD



MICRO-BIRD OPERATOR'S MANUAL

TABLE OF CONTENTS

REPORTING SAFETY DEFECTS

If you believe your vehicle has a safety defect which could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Blue Bird Body Company.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Blue Bird Body Company.

To contact NHTSA, you may either call the Auto Safety Hotline toll free at 1-800-424-9393 (or 366-0123 in Washington D.C. area). Or write to: NHTSA, U.S. Department of Transportation, Washington D.C. 20590. You can also obtain other information about Motor Vehicle Safety from the hotline.

FORWARD

This Operator's Manual provides some general, as well as specific information regarding safe operation and maintenance of your Blue Bird bus. It does not address all items or situations that may arise and is not a substitute for proper driver and mechanic training. The exercise of care, common sense, and good driver and working practices are required for safe operation.

If specific questions or concerns arise that are not adequately addressed in this manual please contact your Blue Bird distributor. The distributor will answer your questions or put you in contact with the proper factory personnel. Throughout this guide, you will find **CAUTIONS** and **WARNINGS**. **WARNINGS** remind you to be especially careful to avoid personal injury. **CAUTIONS** are given to prevent you from making an error which could damage the vehicle and possibly cause personal injury.

Blue Bird Body Company offers many items as standard and optional equipment to insure reliable and safe transportation of passengers.

Some examples of this safety equipment are: stop arms, crossing guards, warning lights, warning light monitors, mirrors, first aid kits, fire extinguishers, warning reflectors, fusees, directional and brake lights, warning buzzers, vandal locks, emergency exits, and seat belts.

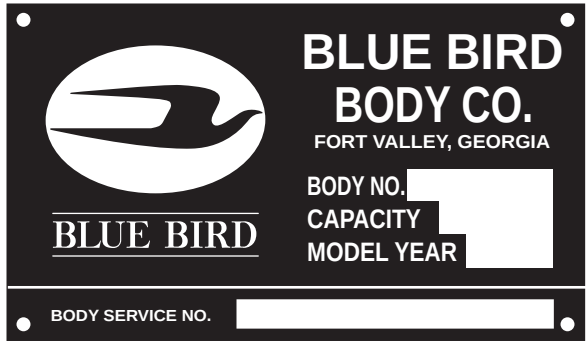
It is the drivers responsibility to insure that the safety items are in proper order. Equipment relating to should be checked for operation on a daily basis. Safety equipment may vary due to state and federal specifications.

In addition, the driver/operator must insure that the loading area around the bus is clear of pedestrians before stopping and that all unloaded passengers are a safe distance away from the bus before moving.

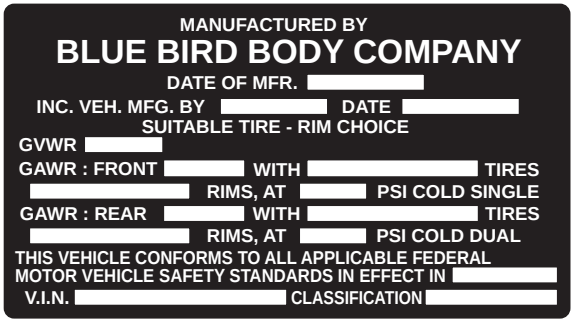
Blue Bird has mounted the bus body on the chassis you have received. You should have also received an operator's manual with your vehicle from the chassis manufacturer. If you have failed to receive such a manual, contact the chassis manufacturer's closest dealership to obtain one. **Please read this manual and the chassis manual carefully before operating or repairing your bus.**

BODY IDENTIFICATION

The **Body Serial Number Plate** and **Body Service Number Plate** are located above the windshield on the right side of the unit. Refer to the data on these plates for registration purposes or for replacement part information.



The **Vehicle Certification Plate** certifies that the vehicle conforms to all applicable Federal Motor Vehicle Safety Standards in effect at the date of manufacture. Do not remove or deface this plate. This plate is located over the drivers window.



DAILY CHECK LIST

In order to keep your bus in the best operating condition from the standpoint of safety, convenience, service, and operating expense, it is recommended the following inspection procedures be followed on a daily basis. Any malfunctions or defects should be corrected **before** the next trip. Report needed services to responsible maintenance personnel.

Look outside the bus:

* Windshield, mirrors, front windows, headlights - wipe clean.
* Exhaust - tailpipe clear?
* Bump tires OK? Lug nuts in place?
* Drain air brake tanks.
* Look under bus - all clear?
* General outside appearance, clean for school bus identification?
* Mirrors, clean and adjusted?

Look inside the bus:

* Seat, floor - housekeeping.
* Emergency exits open & close, side door, windows.
* Emergency equipment.
* Fire extinguisher pressure.
* First aid kit.
* Driver's area - windshield, windows, clean?
* Mirrors - clean and adjusted?

Starting the engine:

* Make sure the emergency brakes are on.
* Put in Neutral.
* Fuel gauge OK? Check brake warning buzzer or light, neutral safety switch.
* Start engine - look, listen for trouble signs, check gauges

With the engine running, check (from driver's seat):

* Mirrors, interior and stepwell lights, service door seal.
* Steering feel OK? Noise?
* Horn, defroster and heater blower, windshield wiper operation.
* Brakes - pedal height and feel, gauge reading OK? Parking brake release, reset.

Outside checks required before you drive away:

* Turn signals - right and left, front and rear - clean and flashing?
* Flasher warning lights - front and rear - clean and flashing?
* Stop arm (if used) - clean and working?
* Headlights hi-lo beams.
* Stoplights and taillights - clean and working?
* Hazard flasher working?

Final check as you move the bus:

* Seat belt fastened?
* Brakes. Stop and hold?
* Steering feel OK? Unusual noises? Bus under control - tracking straight?
* Brake to a stop. All gauges OK?

Remember: Safety on the road also depends on you. Observe weather and road conditions and drive according. Be physically and mentally alert. Look around before driving away from where you are parked and observe all traffic rules and regulations.

QUARTERLY MAINTENANCE CHECK LIST

* Inspect fire extinguisher to see if fully charged.
* Check first aid kits to see if fully equipped.
* Oil all hinges and window latches for ease of operation.
* Lubricate all window channels with silicone or graphite.
* There is one drain hole in each floor section under windows.
* Be sure hole is clear of debris so any water may escape.
* Clean all rubber door seal and lubricate with rubber lubricant.
* All rear and side emergency door latch slide bars to be lubricated with light grease to reduce friction.
* Tighten all body tie down bolts to 38 foot pounds torque at 1,000 miles, 2,000 miles, and quarterly thereafter.
* Grease emergency door hinges.

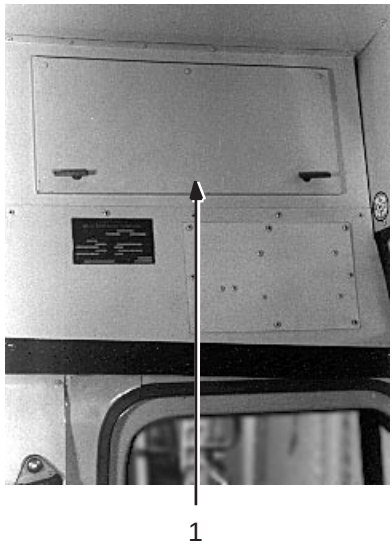
ANNUAL MAINTENANCE CHECK LIST

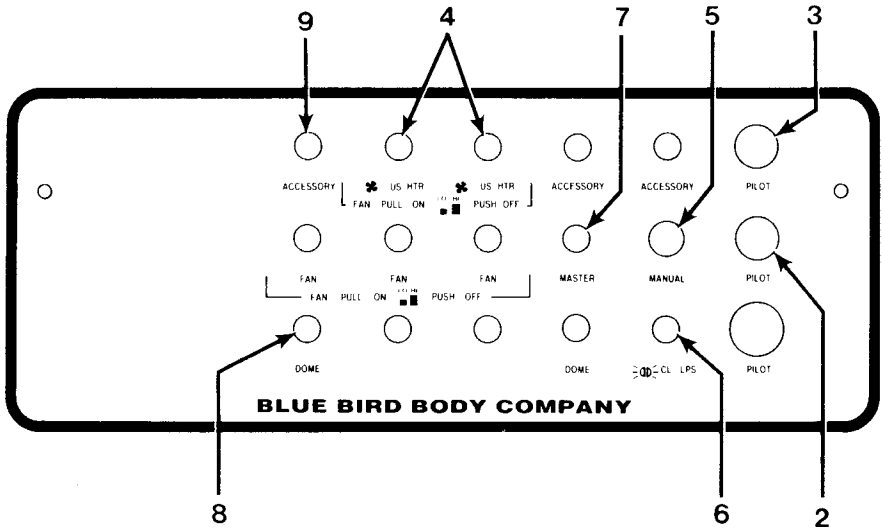
* Complete Quarterly Maintenance Check List.
* Remove all seat cushions, thoroughly clean with upholstery cleaner, and reinstall on a rotating basis.
* Adjust door control rod and closing mechanism to entrance doors.
* Thoroughly clean all front heater cores.
* Bleed all air from heaters.
* Tighten all heater hose clamps.

Note: These check lists are suggested. They do not replace or supersede local or state required driver inspection procedure.

SWITCH PANEL

1. Driver's Compartment.
2. Pilot - shows red warning lights are flashing.
3. Pilot - shows amber warning lights are flashing.
4. Underseat heaters - 2-speed (may not exist on some units).
5. Manual warning light starter.
6. Clearance lights on outside of body.
7. Master warning light starter. Systems may vary on some units.
8. Dome lights.
9. Accessories - such as lighted destination signs, extra dome lights, etc.
10. Heater pump - auxiliary water circulating pump for heating systems. (Not Indicated)





SEATS & SEAT BELTS

DRIVER'S SEAT BELT OPERATION

For driver's seat belt operation refer to chassis manual. if you failed to receive such a manual, contact the chassis manufacturer's closest dealership immediately to obtain one.

PASSENGER SEAT BELT OPERATION IF SO EQUIPPED

Individual lap belts for passengers are of the non-retracting design. Insert the catch into the buckle, test for the assurance of a latch fit, and pull the loose end of the buckle-end strap until the belt fits snugly across the lower hips. The buckle can be released depending on the buckle type, by either lifting the outboard edge, or by pushing button in the center of buckle. The adjustable end can be moved outward on its strap by turning 90 degrees to the strap and pulling.

SEAT BELT INSPECTION AND MAINTENANCE

Inspect seat belt assembly frequently. Anytime assembly does not work properly, or if there are any defects in the webbing (i.e. torn or frayed), the seat belt must be replaced as soon as possible to insure passenger safety.

Hand wash webbing with warm water and mild soap. Rinse thoroughly and dry in the shade. Do not bleach or redye, because such processing may severely weaken the assembly.

WARNING: Be sure the lap belt is fitted snugly across the hips, not the waist. Failure to do so may increase the chance of injury in the event of a collision.

WARNING: If seat cushions are removed for maintenance, they must be installed using the following instructions. Failure to comply with these instructions could result in injury from unattached seat cushions in the event of an accident.

SEAT CUSHION REMOVAL & INSTALLATION - DOT SEATS

Removal

1. Loosen the two front swivel type clamps at the front underside of the cushion with a phillips type screw driver.
   Caution - Do not remove clamps.

2. Rotate the swivel clamps so as to clear the front retaining channel frame.
3. Lift the forward edge of the cushion 2 to 3 inches and pull cushion forward to remove.

Installation

1. Place the rear edge of the cushion down on the base portion of the seat frame. Lifting the forward edge of the seat frame 2 to 3 inches, slide the cushion to the rear to engage the positive type clamp into the rear retaining channel.
2. Lower the forward edge to the frame making sure the swivel clamps are inside the frame and the positive type clamps are secure on the rear retaining channel.
3. Rotate the swivel clamp to engage the forward retaining channel frame.
4. Tighten with phillips type screw driver until clamps do not rotate.

SEAT CUSHION REMOVAL & INSTALLATION - DOT SEAT BELT SEATS

Removal

1. Loosen the two front swivel type clamps at the front underside of the cushion with a phillips type screw driver. **Caution - Do not remove clamps.**
2. Rotate the swivel clamp located at the rear underside of the seat cushion.
3. While lifting at the rear edge of the cushion, pull the cushion to the rear and remove.

Installation

1. Place the forward edge of the cushion 2 inches to the rear of the front retaining clamps. Slide the cushion forward engaging the positive clamps onto the forward retaining channel.
2. Lower the rear edge of the frame and rotate the swivel clamps so they engage the square tube crossmember.
3. Tighten with phillips type screw driver until clamps do not rotate.

MIRRORS & MIRROR ADJUSTMENTS

WARNING: Mirrors provide additional driver visibility on buses. To be effectively used mirrors must be properly adjusted for each driver and the driver must be aware of the limitations on the viewing area that exists even when the mirrors are properly used. Mirrors are not a substitute for proper driver training and the exercise of driver care in operating the vehicle and loading and unloading passengers.

WARNING: Do not move the bus until you have accounted for each passenger that has disembarked and have confirmed that the passenger of the bus. Failure to follow these procedures could cause serious injury or death.

Left and right front fender mounted convex crossview and left and right front fender mounted rearview mirrors are required equipment on all Micro-Bird, Type (A), buses.

INSIDE MIRRORS

Inside rearview mirrors are adjustable by loosening the bolts and nuts in slotted holes. Adjust the mirror to afford the operator a good view of bus interior and roadway to the rear.

WARNING: Many school bus passengers are energetic children who are small and playful and do not understand the hazards of buses. After unloading, some children could be outside the field of vision of your mirrors or could quickly dart into such a place. Do not move your bus after unloading passengers until you have confirmed the location of every child who got off and have confirmed that each child is completely clear of the bus. Failure to follow this procedure could cause serious injury or death.

8" DIA. SUPPLEMENTAL OUTSIDE REARVIEW MIRROR

Some units may be equipped with two (2) 8" elliptical mirrors, one on the LH side and one on the RH side, which are designed to supplement the view provided by the outside rearview driving mirrors. The RH 8" elliptical mirror is attached to the RH outside rearview mirror mounting bracket as illustrated, and is viewed through the RH windshield. The LH 8" elliptical mirror is attached to the bus body and is located so as to be viewed through the LH windshield.

Proper adjustment is necessary for any mirror system to perform as designed. The following adjustment should be used to allow the driver to obtain the maximum viewing area with the mirror system.

Position the RH 8" elliptical mirror in the location illustrated. Adjust the 8" elliptical mirrors on both the RH and LH side to provide the seated driver a view of the ground directly below the outside rearview driving mirrors, and rearward to overlap the view provided by the outside rearview convex driving mirrors.

CAUTION: A convex mirror has a curved surface and is designed to provide a wide view with minimum distortion. However, persons or objects seen in a convex mirror will look smaller and appear farther away than when seen in a flat mirror or viewed directly. Therefore, use care when judging the size or distance of a person or object seen in a convex mirror. Wait until you can view the person or object in a flat mirror or direct view to determine their size and distance.

OUTSIDE REARVIEW

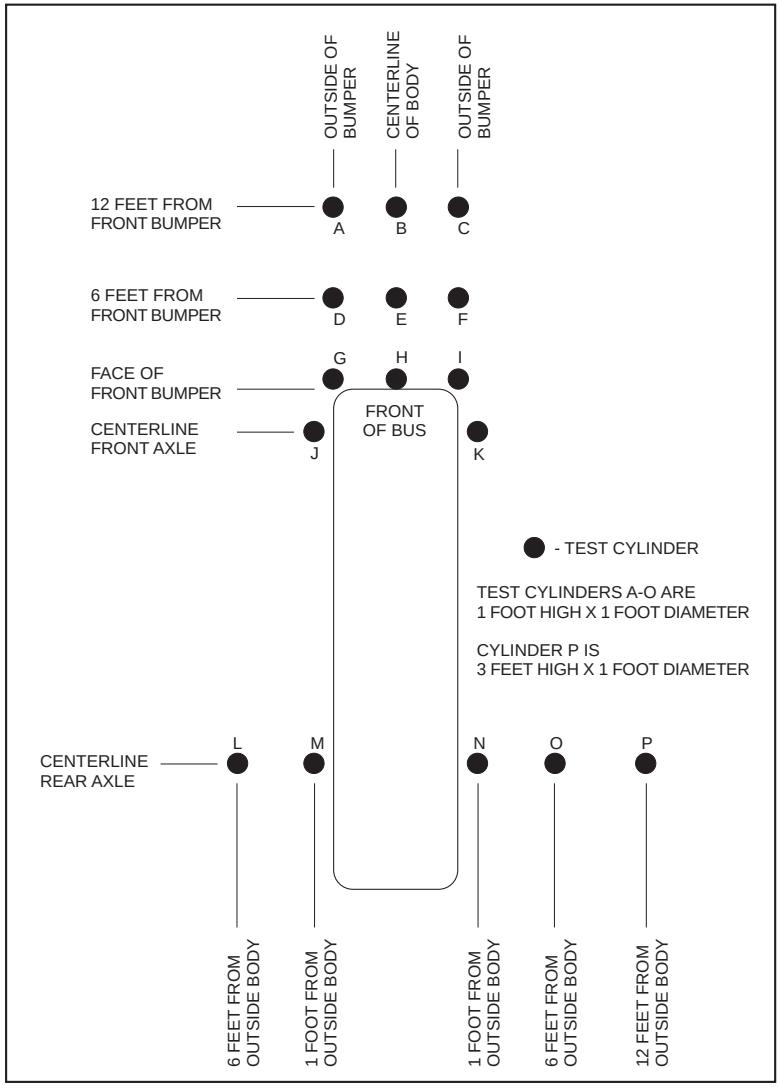
Standard equipment on all school buses is comprised of 4 outside rearview driving mirrors. (2 per side), and 2 elliptical crossview mirrors, (1 per side). The outside rearview driving mirrors include (1) 6.5"x 10" flat mirror and (1) 6.5"x10" convex mirror each side. The outside rearview driving mirrors are designed to provide the seated driver a view of the roadway to the rear and to the sides of the bus. The elliptical crossview mirrors are designed to provide a seated driver a view of all areas around the front of the bus not directly visible to the driver. The elliptical crossview mirrors are designed to be used to view pedestrians while bus is stopped.

DO NOT USE THE ELLIPTICAL CROSSVIEW MIRRORS TO VIEW TRAFFIC WHILE BUS IS MOVING. AS IMAGES IN SUCH MIRRORS DO NOT ACCURATELY SHOW ANOTHER VEHICLE'S LOCATION.

Proper adjustment is necessary for any mirror system to perform as designed. The following adjustment sequence should be used to allow the driver to obtain the maximum viewing area with the mirror system.

1. Adjust the driver's seat to the desired position.
2. Adjust the RH flat driving mirror so that the tops of the side windows are visible in the upper edge of the mirror, and so that the RH side of the bus body is visible in the inside edge of the RH flat mirror.
3. Adjust the RH convex driving mirror so that the view in the top of the convex mirror overlaps the view provided by the RH flat driving mirror, and so that the RH side of the bus body is visible in the inside edge of the RH convex mirror.
4. Adjust the LH flat driving mirror and the LH convex driving mirror following the same procedures described for the RH mirrors. Refer to steps #2 and #3 above.
5. Adjust the elliptical crossview mirrors by positioning each mirror head so that the "arrow" embossed in the top of the elliptical mirror housing is pointed directly at the eyes of the seated driver.
6. A final adjustment should be made to the mirror system so that the seated driver can view the areas required by FMVSS III, including the entire top surface of cylinders M and N (when located as illustrated and rearward a minimum of 200 feet (measured from the mirror surface) using the outside rearview driving mirrors. The elliptical crossview mirrors should be adjusted to provide the seated driver a view of the entire

surface of any cylinder A thru P (when located as illustrated) not visible by direct view of the driver. The view provided by the elliptical crossview mirrors must overlap the view provided by the outside rearview driving mirror system.



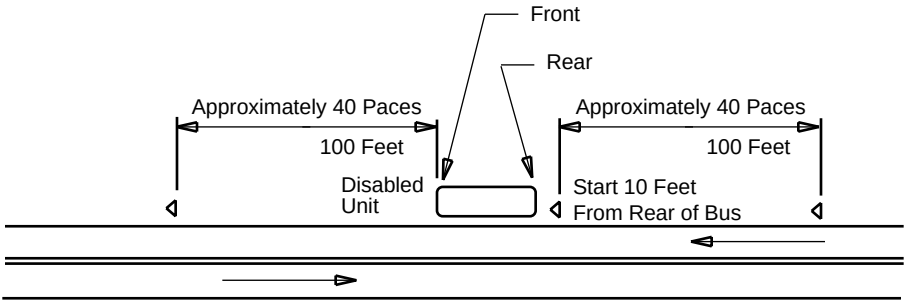
EMERGENCY EQUIPMENT

The fire extinguisher is located in the right front corner of the bus body near the floor. Your unit may be equipped with a 2 3/4, 4 1/2, 5 or 6 pound extinguisher. Check quarterly to make sure it is fully charged.

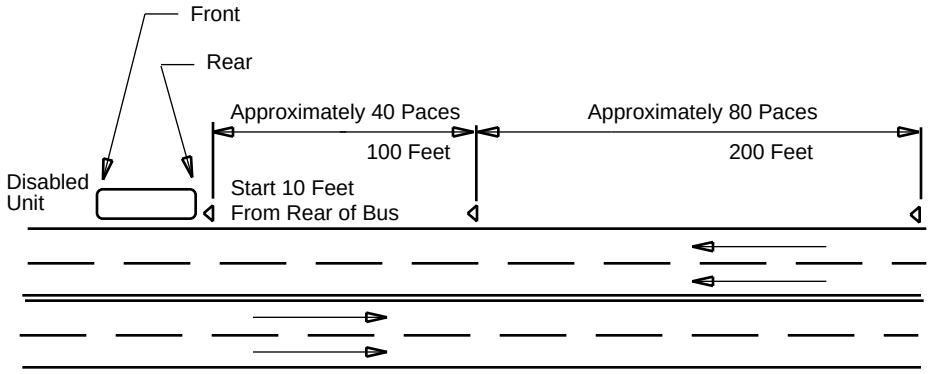
If your unit is supplied with triangular reflectors and fusees, they are located to the left of the driver's seat.

The first aid kit is mounted above the windshield on the right hand side of the bus body. Different size kits are supplied in various bodies because of different state specifications. Check quarterly to see if fully equipped.

RECOMMENDED WARNING DEVICE POSITIONING



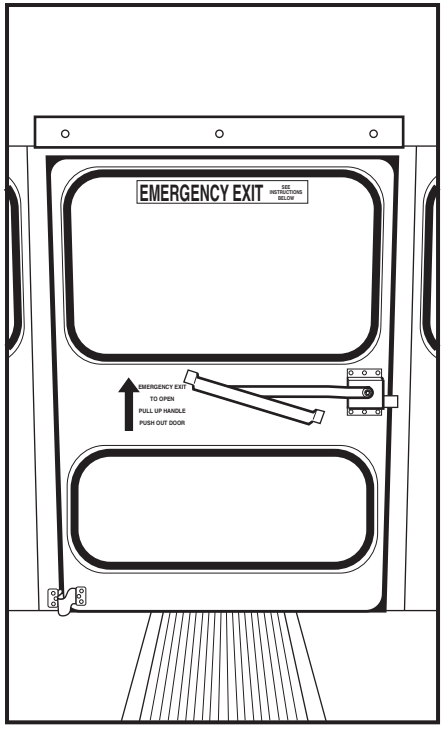
Two Lane Traffic



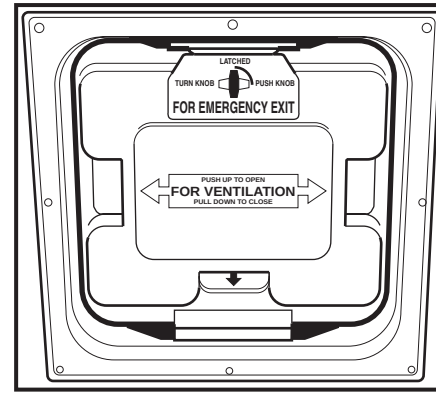
Four Lane Traffic

EMERGENCY EXITS

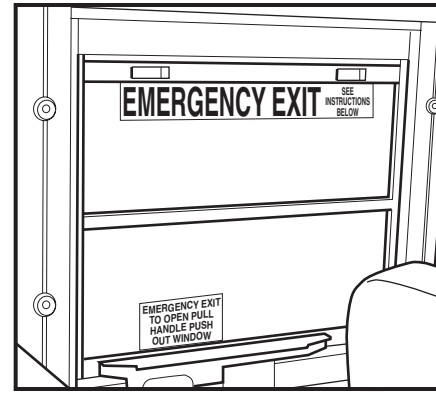
Emergency exits are clearly identified by the words "Emergency Exit". Operating instructions are written close to each exit. Some units are equipped with an audible alarm device signifying an emergency exit is open. If when turning the ignition switch on, a buzzer sounds, check emergency exits to see that they are completely closed. All emergency exits meet Federal Motor Vehicle Safety Standard 217 "Bus Window Retention and Release". All emergency exits should be inspected and operated daily to insure they are labeled and operate properly per the instructions provided.



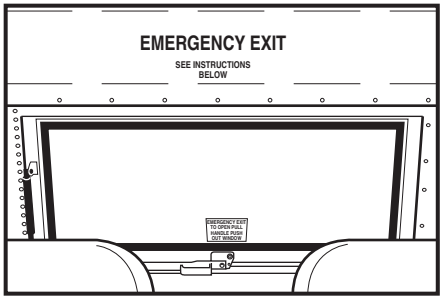
Rear Emergency Door



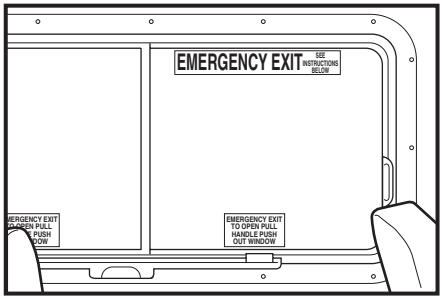
Roof Hatch



Split Sash
Pushout Window



Rear Emergency Window



Transit Sliding Pushout Window

STOP ARMS - AIR & ELECTRIC

Stop arms are required on school buses per FMVSS 131.

Stop arm assemblies have several moving parts and they require occasional cleaning and lubrication.

For air operated stop arms, an electric solenoid valve controlling the flow of air is activated by the warning lamp system.

Electric stop arms, are activated by the warning lamp system thru a control relay.

The "STOP" sign must extend and if equipped with lights, the lights must be operating at anytime the red lights of the warning light system are flashing. There are some unique, state-designed warning light/stop arm systems that permit the stop arm to be withdrawn while warning lights are in operation. For those situations an audible alarm sounds to alert the driver of the condition

HEATERS

GENERAL INFORMATION

Blue Bird heaters are hot water type which depend on heat generated by the engine for their function. Heat from the engine is picked up by the engine coolant which is pumped through the heaters inside the body and back to the engine. A typical heater inside the body is made of a heater exchanger core and fans which

move air across the core. Air moving across the core picks up heat from the engine coolant and transfers it into the body.

Satisfactory performance of the body heaters is basically dependent upon:

1. Adequate engine (coolant) temperature — this can be altered by thermostat rating, which should never be higher than recommended by the engine manufacturer, and/or shutters.
2. Adequate coolant flow — this varies with engine speed and can be increased if necessary by the use of an auxiliary water pump. The heaters are rated at six gallons per minute.
3. Proper fan operation — all motors are two speed and can most easily be checked for function by operating the motor switches individually and listening for the speed variations.

Many other factors affect performance, but the three mentioned are most basic.

HEATER OPERATION

Be sure the engine radiator is full and all coolant flow valves are open. **For your own safety, do not leave the engine running while opening or closing valves.** Warm up the engine to operating temperature with the engine at fast idle, if possible, and turn on the heater fans and the auxiliary water pump if unit is equipped with one. Under extremely cold weather conditions, turning on the heater fans will cause the engine temperature to drop noticeably as heat from the engine is being transferred into the body, but as air temperature inside the body rises, engine temperature also rises. More heat will also be generated by the engine when it is caused to work in moving the vehicle. Once the engine is warm, heater fan motor speeds and subsequent air volumes across heater cores can be controlled at the discretion of the driver for best defrosting and ultimate passenger comfort.

***Note:** See Heater Bleeding Instructions for completely filling cooling system.

DEFROSTING

Windshield fogging and frosting is caused by warm, humid air coming in contact with a cold windshield which causes the moisture in the air to condense and possibly freeze if the windshield is cold enough. The warmer the windshield, the less moisture will condense on it. During initial warm up the defroster blowers should be operated at maximum to heat the inside of the windshield glass as much as possible.

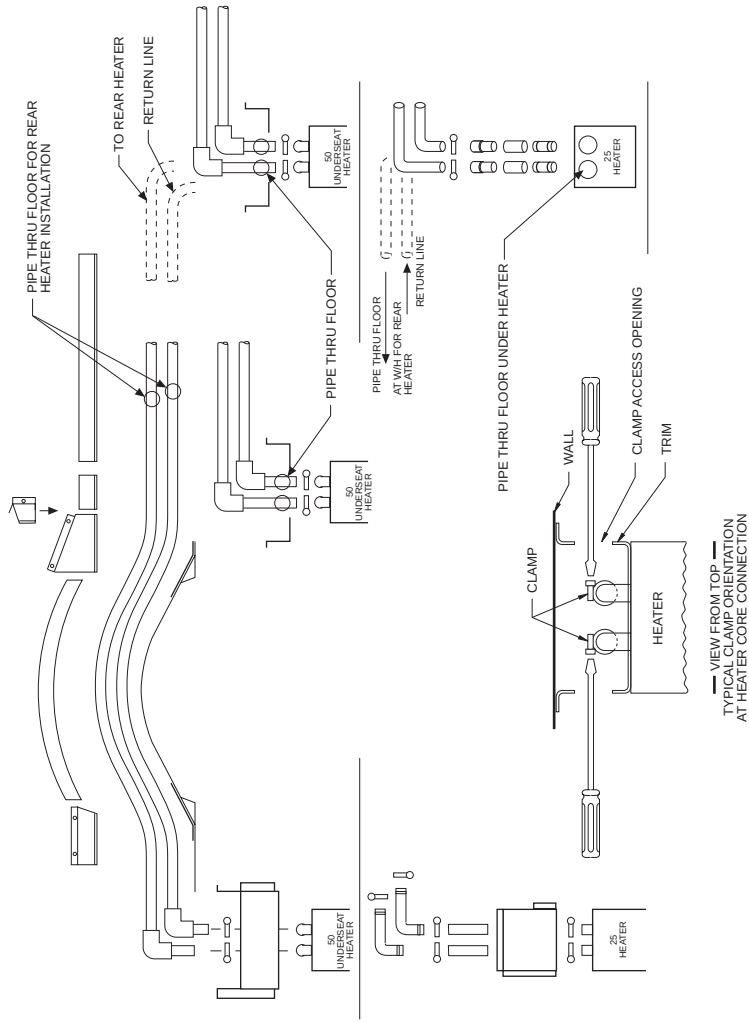
If the defrosters are not turned on until the condensation starts, it is more difficult to heat the glass and overcome condensation. As passengers are loaded onto the bus, the moisture content of the air inside the bus increases. The most difficult conditions will be encountered when there is a large passenger load which must remain on the bus for extended periods of time, such as on a charter or over the road activity trip. Travelling at highway road speeds causes accelerated heat dissipation through the windshield glass, and each passenger continually adds to the moisture content of the air within the bus. After a period of time the moisture concentration can become quite high. This condition can be improved by slightly opening the forward driver's window, allowing the moist air to escape into the low pressure area outside the bus at that location and by operating all defroster blowers at high speed. If bus is equipped with adjustable static air vents in the roof, they should be kept open, and exhaust fans, if so equipped, should be used.

Auxiliary fans mounted on the dash or overhead may be helpful in windshield defrosting when used to force warm air from inside the body against the glass to warm it and evaporate moisture. They should not be directed to oppose the flow of air from the defroster outlets but to assist that flow if possible. Many different variations of auxiliary fan directions have been found to be effective under different conditions and their use on your unit can probably best be determined by trial.

HEATER HOSE CLAMP SERVICE

Tighten heater hose clamps after first 1,000 miles and annually thereafter.

Heater hose clamps are located as indicated in diagram.



HEATER BLEEDING INSTRUCTIONS

The following procedure must be followed to insure adequate heater bleeding. During the bleeding process, it will be necessary to remove the radiator cap and refill cooling system several times to insure adequate coolant is available to replace purged air and coolant lost when bleeding.

CAUTION: Extreme care must be used when removing radiator cap. As coolant becomes hot, pressure is built up in the cooling system. Rapid venting and / or removal of radiator cap will cause coolant to boil up and spray out and can result in serious burns. Slowly vent of pressure before removing radiator cap.

Procedure

1. With engine off, shut engine heater return gate valve or clamp closed heater return hose as close to engine as possible. Close temperature control on dash by turning clockwise.
2. Fill cooling system completely, including recovery tank with coolant and run engine for a few minutes to bleed air from cylinder block and heads.
3. Open heater hose supply line by turning temperature control on dash counterclockwise. Turn on heater water pump if equipped.
4. Using a suitable container to catch the coolant, run the engine between 2,000 and 3,000 RPM, loosen bleeder valve located in heater hose return line. Bleed air and coolant through bleeder valve until air is eliminated from heater system. (Stop bleeding when condones stream of coolant comes from bleeder valve.)

   Note: It will be necessary every few moments to refill the radiator.

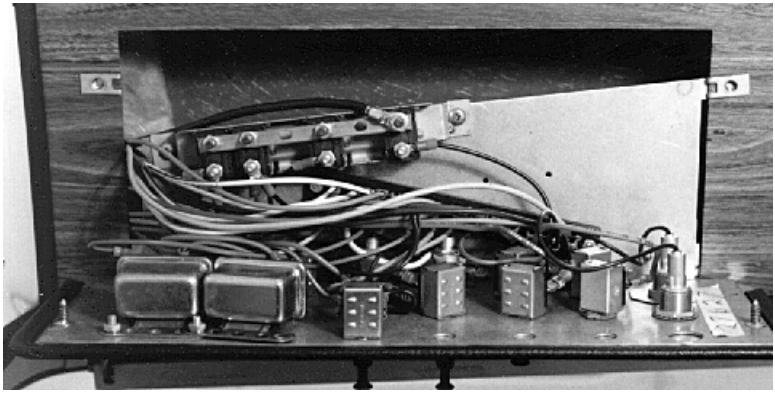
5. When all of the air has been purged from the heater system, open gate valve in heater hose return line or unclamp return hose.
6. Run engine between 2,000 and 3,000 RPM until thermostats open. To assist in deaerating the entire cooling system, accelerate the engine a few times before and after the thermostats open.
   Note: Thermostats have opened when upper radiator tank and radiator hose becomes hot.
7. Refill cooling system including radiator and coolant recovery tank.

WARNING: Never idle engine in closed areas. Never sit in a parked vehicle for an extended period of time with the engine running. Exhaust gases, particularly carbon monoxide may build up. These gases are harmful and potentially lethal.

Carbon monoxide is colorless and odorless, but can be present with all other exhaust fumes. Therefore, if you ever smell exhaust fumes of any kind inside your vehicle, have it inspected immediately by your dealer and have the condition corrected. Do not drive with exhaust fumes present.

CIRCUIT BREAKERS

Blue Bird uses circuit breakers instead of fuses. The circuit breakers are a quick resetting type and are located behind the switch panel. The advantage of this type circuit safety device is that no replacement (as with fuses) is required. When the breaker opens a circuit, follow standard electrical troubleshooting procedures with in the circuit to determine the cause of overload. Exposed wires and electrical shorts are the most common causes. The photograph below shows the location of the circuit breakers.



NORMAL CURRENT USAGE

STANDARD EQUIPMENT

Constant Load

Item	No. Items	Amps
Cluster Lamps	6	4.14
Clearance Lamps	4	2.76
Intermediate Side Mkr.	2	1.38
*Tail Lamp	2	1.18
Ignition	1	2.50
Instrument Panel		1.00
Headlamps		
(Dual Low Beam)	2	8.40
Parking Lamps	2	1.18
^90-FC & MB Heater	1	27.00
^90-Conv. Heater	1	31.50

Intermittent Load

Item	No. Items	Amps
Stepwell Light	1	.44
*Stop Lamp	2	4.20
Dome Lamps (each)	Varies	.58 ea.
Back-up Lamps	2	4.20
Electric Wipers	2	8.00

*Combined Stop and Tail Lamp
^Use Applicable Heater

OPTIONAL EQUIPMENT

Note: To figure current draw, add constant load and 35% of intermittent load.

Policy

1. Warning light options include lights, standard flasher and pilot light. If optional flasher unit is desired, add current draw of that option.
2. Directional light options include lights and standard thermal flasher.

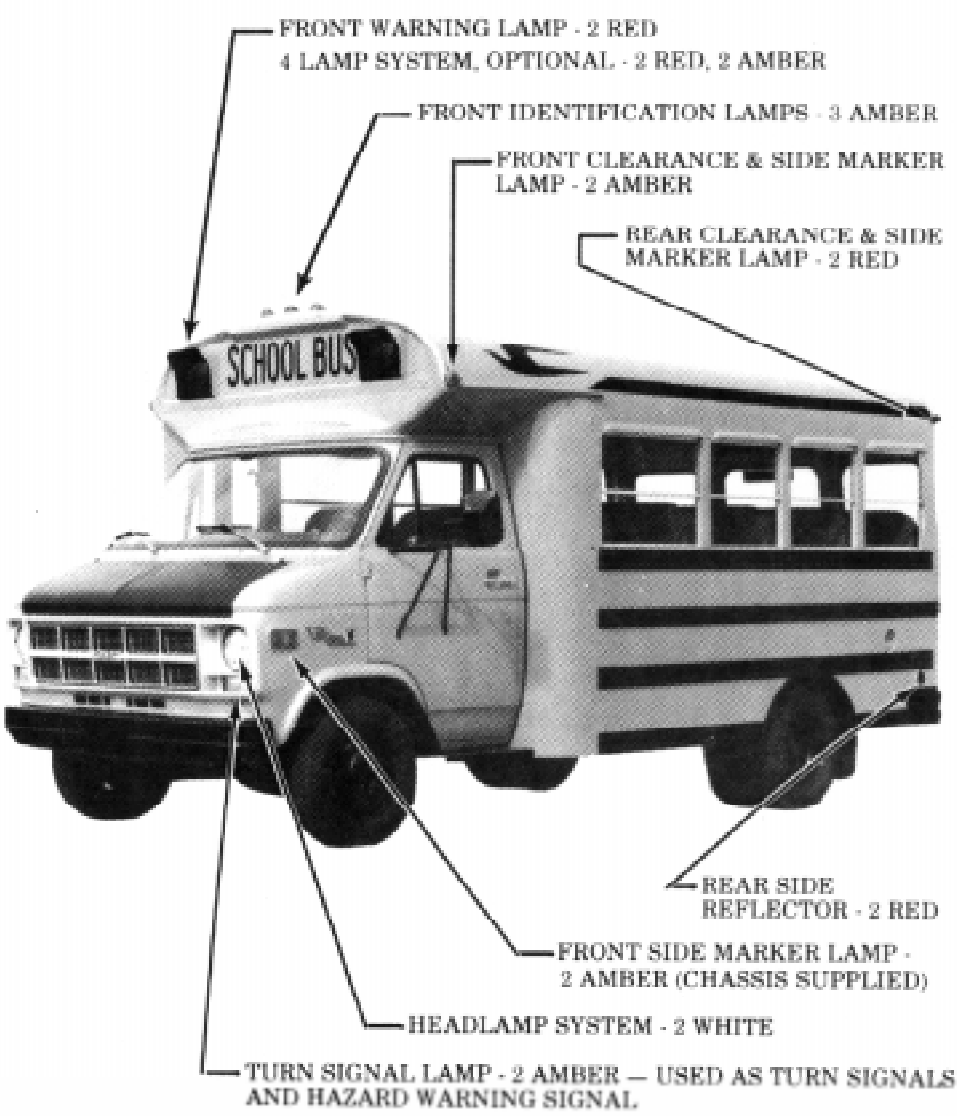
Constant Load

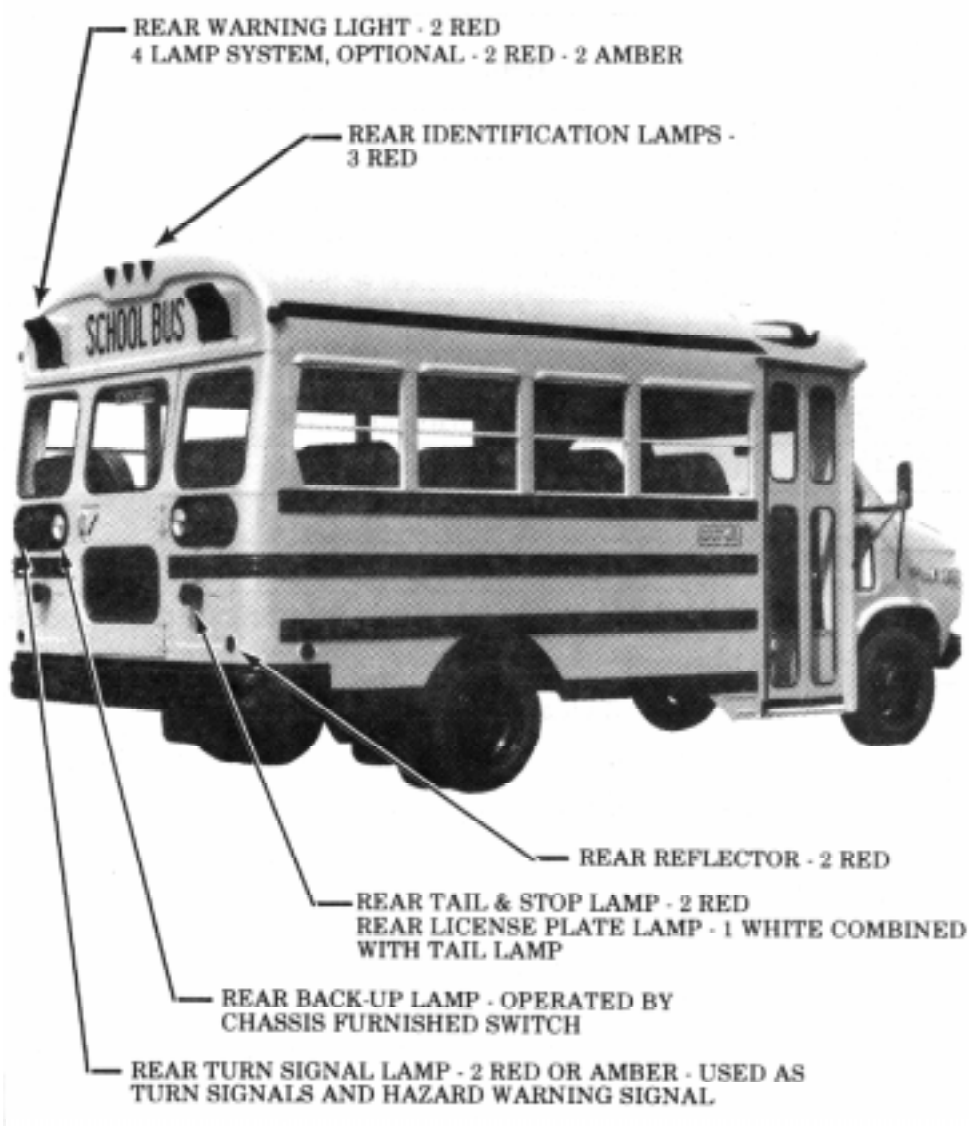
Item	Opt. No.	Amps
Auxiliary Fan	0525	3.0
	0530	6.0
	0532,0546	3.0
Exhaust Fan	0552	2.0
Heater	1145	31.5
	1153	9.0
	1230	2.5
	1325,1330	4.5
	1336,1342	9.0
Heater Pump	1416	6.75
Clearance Light	1576	2.16
	1581	1.08
	1591	.54
Cluster Light	1642	1.62
Door Light	1878-01	.59
	1878-02	1.18
	1878-03	1.77
Dest. Sign	3050,3052,3053	4.06
Dest. Sign (Roll)	3059	4.06
School Bus Sign	3064	4.06
Frt. & Rear		
School Bus Sign	3065	8.12

Intermittent Load

Item	Opt. No	Amps
Directional Lights	1676,1681,1686	
	1697,1701,1707,	
	1719,1723,	
	1727,1731,	2.10
	1740	.27
	1788,1790	
	1796,1798	4.20
	1820	.27
Dome Lights	1825,1828,	
	1831**	
(**Per Lamp)	1832**	
	1840	.58
7" Stop Lights	1931	4.79
	1940	
	6728	4.20
Warning Lights	1987,1990,1992,	
	2013,2016,2017	12.50
	2025	10.00
Solenoid Switch	2130,2131	.75
DOT Buzzer	3001-01	1.00
	3001-02	1.50
	3001-03	2.00
Chime System	3040	1.00
Stop Arm w/Lights	3135,3143,3146,	
	3148,3155,3162,	1.80
Stop Arms Dual		
w/Lights	3149	3.60
Pushout Windows		
w/Buzzer	3343	.50
Sanders	4015,4475	1.50
56" Wheelchair Lift	0467	48.00
35" Wheelchair Lift	0469	48.00
42" Wheelchair Lift	0465,0466	90.00

VISIBILITY EQUIPMENT REQUIRED BY FMVSS




REAR WARNING LIGHT - 2 RED
4 LAMP SYSTEM, OPTIONAL - 2 RED - 2 AMBER
REAR IDENTIFICATION LAMPS - 3 RED
SCHOOL BUS
REAR REFLECTOR - 2 RED
REAR TAIL & STOP LAMP - 2 RED
REAR LICENSE PLATE LAMP - 1 WHITE COMBINED WITH TAIL LAMP
REAR BACK-UP LAMP - OPERATED BY CHASSIS FURNISHED SWITCH
REAR TURN SIGNAL LAMP - 2 RED OR AMBER - USED AS TURN SIGNALS AND HAZARD WARNING SIGNAL

PREVENTIVE MAINTENANCE CHECK LIST

Page Ref.	Item
16	Fire Extinguisher
16	First Aid Kit
33	Adjust Warning Light Door Switches
42	Lubricate Window Latches & Seal
42	Lubricate Exterior Hinges
42	Lubricate Interior Hinges
39-42	Lubricate Door Control Hardware
39-42	Lubricate Upper Door Control Rod
43	Sweep Floor Covering
44	Clear Drain Holes
--	Clean All Rubber Door Seals & Lubricate with Rubber
--	Lubricant
21	Tighten All Heater Hose Clamps
45	Inspect Outer Surface for Cleanness & Wash as Needed
--	Check Under Floor & Underside Structures for De-Icing
--	Chemical Buildup. Keep These Areas Free of Chemical
--	Deposits
28-29	Check All Lights & Signals
--	Check for Component Part Damage,
--	Loose Screws, Rivets, & Have Corrected Immediately
--	Check Brakes Before Each Run
17	Check All Emergency Exits for Operation and Labels
12-15	Check All Mirror Adjustments
17	All Rear & Side Emergency Door Latch Slide Bars
--	to be Lubricated with Light Grease to Reduce Friction
39-42	Adjust Entrance Door

	1000 Miles, 2000 Miles & Yearly Thereafter	Daily	Quarterly	Annually	30 Days
			✓		
			✓		
				✓	
					✓
					✓
					✓
			✓		
			✓		
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		✓			
		✓			
		✓			
			✓		
				✓	

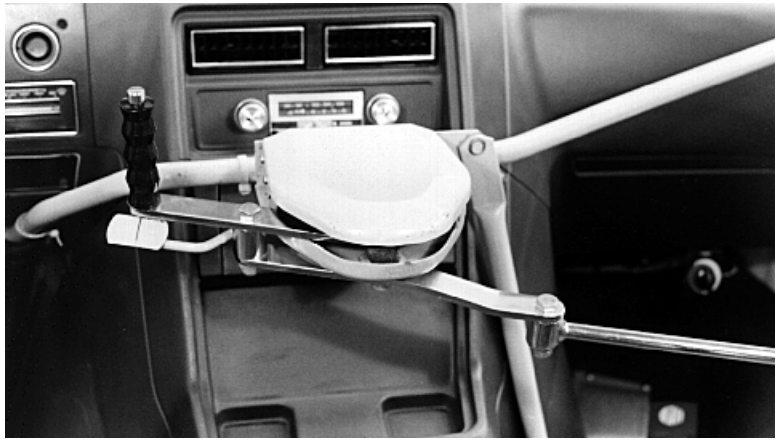
LIGHT BULB DATA

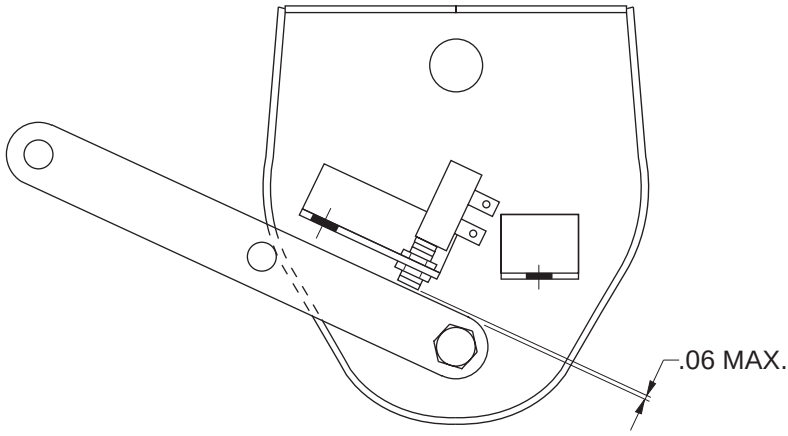
Lamp Description	Trade Name	Trade No.	Color	Bulb No.
INTERIOR LIGHTS				
Dome	Weldon	8005	(Standard)	89
	Weldon	8010	(Deluxe)	93
Stepwell	Arrow	35		67
Emerg. Door Light	Weldon	8025		67
Switch Panel Pilots	Cole Hersee	PL19		53
	Dial	41204-1211		68
Switch Panel Illuminator		2007367		53
EXTERIOR LIGHTS				
Directional	KD	772-9105		1156
	Weldon	1010 Series	Red & Amber	
			Plain & w/Arrow	1156
	Signal Stat	1604		1156
Warning Light Cluster & Marker	Weldon	1020 Series	Red & Amber	4636
	Weldon	5050	Amber & Red	904
	Peterson	122	Amber & Red	194
Side Directional	Peterson	122		194
	Arrow	059-9900021CP		1073
Stop/Tail/Tag	Dominion	70-6128-71		1157
	Signal Stat	2103		1157
Back-Up	KD	854-5301		1156
	Weldon	7-1010-1		1156
Stop	Weldon	1010	Red	1156
	Arrow	438		1157
	Signal Stat	1605		1156
	KD	772-9105		1156

WARNING LIGHT DOOR SWITCH ADJUSTMENT

Warning light door switches should be checked at least once a year to see if they are securely tightened and adjusted correctly.

Remove four screws securing cover. Adjust switches so that when the door is closed the switch button in depressed position should extend no more than .06 past the bezel surface as shown but never flush with the bezel surface.





BODY WIRING IS IDENTIFIED WITH COLORS AND NUMBERS

4 GA	Blk/Red w/o SAE	11
4 GA	Blk/Wht w/o SAE	12
4 GA	Blk/SAE Stamp	13
6 GA	Black	14
6 GA	Red	15
6 GA	White	17
8 GA	Black	21
8 GA	Red	22
10 GA	Black	23
10 GA	Black/Yellow	24
10 GA	Red	25
10 GA	Yellow	27
10 GA	Yellow/Black	31
14 GA	Black	32
14 GA	Black/Yellow	33
14 GA	Blue/Black	34
14 GA	Brown	35
14 GA	Brown/Tan	37
14 GA	Brown/White	41
14 GA	Green	42
14 GA	Green/Black	43
14 GA	Green/White	44
14 GA	Lt. Blue	45
14 GA	Orange/Black	47
14 GA	Orange/Brown	51
14 GA	Purple	52
14 GA	Red	53
14 GA	Red/White	54
14 GA	Tan/Black	55
14 GA	White	57
14 GA	White/Black	71
14 GA	White/Orange	72
14 GA	Yellow	73
14 GA	Yellow/Black	74
14 GA	Yellow/Green	75
16 GA	Black	111
16 GA	Black/White	112
16 GA	Brown	113
16 GA	Brown/Orange	114
16 GA	Gray	115
16 GA	Green/Black	117
16 GA	Lt. Blue	121
16 GA	Orange	122
16 GA	Pink	123
16 GA	Red/Black	124
16 GA	Tan	125
16 GA	Tan/Orange	127
16 Ga	White/Green	131

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INTENTIONALLY

GLASS REPLACEMENT

The glass used in your bus meets Federal Motor Vehicle Safety Standards 201 and 217. Therefore, when a glass is broken, it should be replaced with identical glass.

The following instructions are for replacing glass in the side split sash window, rear and rear side vision, entrance door.

WARNING: When replacing broken or damaged glass use extreme care at all times to prevent personal injury. This includes the use of proper replacement parts, tools, and personal protective equipment such as gloves and safety eyeglasses.

SPLIT SASH

1. Remove four screws securing window to bow (Fig. 1).
2. Pull window to inside of body and remove (Fig. 2).
3. Remove six screws (three on each side of window) holding main assembly together (Fig. 3).
4. On bottom glass simply pull aluminum channel off top and bottom of glass (Fig. 4).
5. To remove glass from top part of window, remove six screws holding frame around glass (Fig. 5).
6. Reassemble window by reversing above procedure.
7. Apply weather seal caulking around window frame on outside of body to prevent leaking.

Fig. 1

Fig. 2

Fig. 3

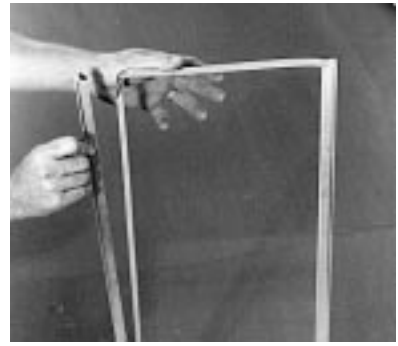


Fig. 4

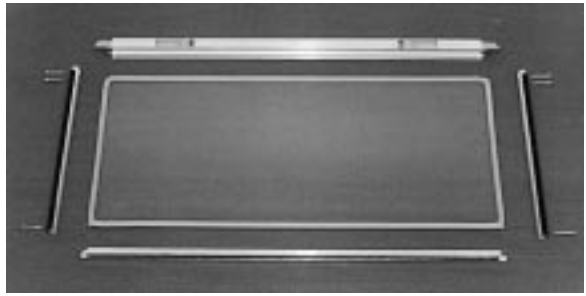
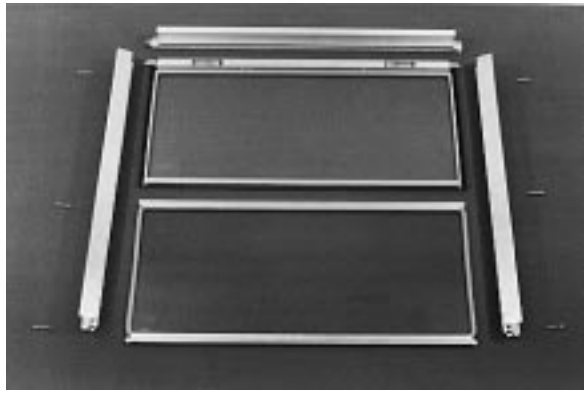


Fig. 5



WINDOW SHOWN WITH
FRAME DISASSEMBLED

REAR VISION

1. Remove filler strip from channel in glazing rubber.
2. Apply pressure against glass from the outside of the bus starting at a corner, push glass and glazing rubber off of metal flange.
3. Remove glazing rubber from around glass.
4. Replace glass and place glazing rubber on new glass.
5. Apply soapy solution to the flange on the bus body and to the filler strip channel on the glazing rubber. This act as a lubricant for easier installation. Wrap a cord around the glazing rubber and rest glass on bottom window flange from the inside of bus body. Pull cord slowly and work glazing rubber onto the window flange (Fig. 7).
6. Apply pressure from the inside of bus body to insure glass is seated properly.
7. Using filler strip tool, insert filler strip into channel on glazing rubber (Fig. 8). (Filler strip tool is available from your distributor).
8. Apply clear caulking around glass and window flange on the outside of bus body to insure that no leaks occur.

Fig. 7

Fig. 8

ENTRANCE DOOR

1. Apply pressure against glass from the outside of the bus starting at a corner, push glass and glazing rubber off of metal flange.
2. Remove glazing rubber from around glass.
3. Replace glass and put glazing rubber around new glass.
4. Wrap a cord around the glazing rubber and rest glass on the bottom flange from the inside of bus.
5. Pull cord slowly and work glazing rubber onto metal flange
6. Apply pressure to glass from inside of bus to insure proper seal.

DOORS

DOOR CONTROL MAINTENANCE & ADJUSTMENT

Continuing Maintenance Requirements

1. Keep working parts of control tightened.
2. Lubricate all working parts periodically, including hinges and overhead controls. (See Lubrication - Hinges & Windows)
3. Repair or replace worn seals.
4. Maintain proper door opening and closing adjustment (adjustment should be done annually).

DOOR ADJUSTMENT PROCEDURES

Outward opening

Doors are mounted in a pre-fabricated framework which eliminates effect of body construction variations on door and seal operation. Doors are suspended completely on scaled ball bearings located at the top corners of the framework, inside the body. The interlink connection between the doors is a single assembly with oppositely threaded spherical bearing rod-end connectors on each end providing simple link length adjustment without disassembly. Simply loosen the lock nut, turn the tube, and retighten the nut when satisfactorily adjusted. The geometry of the mechanical link between the doors causes the rear door to close well ahead of the front door, so that the front nosing seal rubber always overlaps the rear. Oil impregnated bronze bearings serve as pivots, not supports, in the lower corners of the framework. All controls and mechanisms and the complete lower step tread are sealed inside the bus and out of the weather when the door is closed.

In the interest of safety through maximized driver visibility, the doors have been designed to have as much clear glass opening as possible. A four inch wide pad is mounted to the header cover over the opening.

The manual control is the Blue Bird cover over center locking type with built-in saf-latch. The door ease-of-operation facilitates use of a short handle arm, so the handle is six inches closer to the driver in the open position than with the jack-knife door.

The air operator is a simple linear cylinder connected to a lever on each door and located inside the header cover. The interconnecting link remains in place to control operation sequence. A safety release valve is located over the door and stepwell and warning lights are operated by air pressure switches inside the header cover.

The electric operator is also the linear motion type with a ball-screw drive. It is connected to a lever off the front door. Mechanically operated switches control automatic stop positions as well as stepwell and warning lights.

Jackknife Door - Standard or Deluxe Cleveland Control

1. Remove the roller bracket at the top of the rear door.

2. Adjust the length of rod (between the door control and the door) and the location of the rod end bracket on the door for proper open and closed position. (Fig. 10)
   A. Lengthen the rod if the door opens too far and does not close against the top seal.
   B. Shorten the rod if the door closes to hard and does not open far enough.
   C. Move the rod end bracket forward if the door does not close against the seal and does not open far enough.
   D. Move the rod end bracket rearward if the door opens and closes too far.
3. Attach the roller bracket to the rear door and adjust. (Fig. 11)
   A. If the rear door hangs in the track when starting to close the door, move the bracket to the rear.
   B. If the rear door does not open to the front enough, move the roller forward.

Fig. 10

Fig. 11

4. Perform the following adjustments and maintenance for ease of operation. The top of door should be approximately 3/8" below door header.
   A. Move door upwards so that rubber door sweeps do not drag on stepwell treads. Adjust door height by loosening bolts and nuts that attach front door panel to front hinge. Holes in hinge are slotted. This permits vertical adjustment of door.
   B. Assure that top edge of door nosing rubber does not drag on door stop header rubber. Remove the first three upper

screws in the inner and outer nosing rubber retainer strips and force the nosing rubber downward. Replace screws after the rubber nosing has been adjusted.

C. The rear upper corner of the rear door panel should not drag on rubber door stop on the header. To provide the required clearance, move the rear door roller bracket towards the rear of the bus. This effectively will move the door panel away from the door stop rubber.

D. Clean stepwell rubber treads and lower door rubber sweeps regularly. Cleaning these surfaces will reduce friction as the door is operated.

5. Assure that the door control rod end bracket is mounted squarely on door. If bracket is not square to the door, the yoke end pivot will bind. Adjust by loosening screws and tighten after bracket has been squared up.
6. Inspect the pivot nut on rod end bracket for burrs or other surface irregularities. Grind or file pivot nut so that its upper and lower surface is smooth.
7. Lubricate door hinge pin with spray type lubricant (LPS No. 1). Lubricant should penetrate behind each hinge lug. Door hinge will operate quietly if properly lubricated.

LUBRICATION - WINDOWS, HINGES & LOCKS

1. Lubricate latches and sliding seal of top window with silicone every thirty days.
2. Entrance door and all exterior hinges should be lubricated every thirty days with a light weight oil.
3. Inside hinges and door control hardware should be lubricated quarterly with a light weight oil.
4. A heavy grease should be used on the upper door control quarterly.
5. Luggage compartment latches should be lubricated every thirty days with a silicone type grease.
6. Luggage compartment lock cylinders should be lubricated with a graphite lubricant every thirty days.
7. A heavy grease should be used on the emergency door hinges quarterly.

FLOOR COVERING

Good floor covering maintenance is essential for long service. The covering should be swept daily, if at all possible, to avoid dirt from being ground into the covering.

Do not use sweeping compounds as this may cause a deterioration of the covering.

Do not let such substances as road salt build up. Mop the floor frequently as you think it is needed. Use a mild detergent with water and rinse thoroughly.

Do not use solvent-type cleaners. Mop any excess water up as soon as possible, because this may cause the covering to separate from the sub-floor. If separation does occur and "bubbles" appear, cut the material to gain access to the underside. Clean the underside of the covering and sub-floor where separated and re-bond with a good quality contact cement.

DESTINATION SIGNS

Hinged Sign Front - Mounted on outside of front roof cap with internal control for changing sign. Periodically lubricate hinges and lever assembly.

Hinged Sign Rear - Mounted on outside of rear roof cap, manually changed from outside. Periodically lubricate hinges.

One Station Lighted Curtain - Replace bulbs as needed. To tighten curtain loosen bolts, pull curtain tight, retighten bolts.

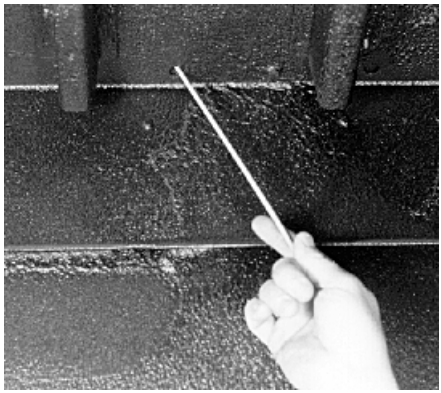
Roller Destination Sign with Lighted Curtain - Replace bulbs as needed. Periodically grease roller gears and hinges on interior door.

Two Station Sign - Front lighted, sign material masonite with lettering on both sides. Lubricate interior door hinge.

Lighted "School Bus" Sign - Back lighted yellow plexiglass sign. Replace bulbs as needed. Lubricate interior door hinge.

DRAIN HOLES

There are two drain holes located in each floor section; one right hand side under window, and one left hand side under window. These holes should be cleared of all debris quarterly to allow for water drainage.



JACKING INSTRUCTIONS

See the manual provided by the chassis manufacturer for proper jacking instructions, procedures and locations.

WARNING: Due to unitized chassis frame construction, never lift the rear of the vehicle by the rear bumper.

WARNING: Never idle engine in closed area. Never sit in a parked or stopped vehicle for any extended amount of time with the engine running. Exhaust gases, particularly carbon monoxide may build up. These gases are harmful and potentially lethal.

Carbon monoxide is colorless and odorless, but it can be present with all other exhaust fumes. Therefore, if you ever smell exhaust fumes of any kind inside your vehicle, have it inspected immediately by your dealer and have the condition corrected. Do not drive with exhaust fumes present.

KEEPING YOUR VEHICLE LOOKING NEW

WASHING YOUR VEHICLE

The best way to preserve your vehicle's finish is to keep it clean by frequent washings. Wash the vehicle in lukewarm or cold water. Do not use hot water or wash in the direct rays of the sun. Do not use strong soap or chemical detergents. All cleaning agents should be promptly flushed from the surface and not allowed to dry on the finish.

POLISHING AND WAXING YOUR VEHICLE

Polishing with non-abrasive wax is recommended to remove accumulated residue and eliminate any "weathered" appearance.

FOREIGN MATERIAL DEPOSITS

Calcium chloride and other salts, ice-melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys and other foreign matter may damage vehicle finishes if allowed to remain on painted surfaces. Prompt washing may not completely remove all of these deposits. Additional cleaners may be needed. When using chemical cleaners developed for this purpose, be certain they are safe for use on painted surfaces.

FINISH DAMAGE

Any stone chips, fractures or deep scratches in the finish should be repaired promptly. Exposed metal will corrode quickly and may develop into a major repair expense.

INDEX

Part Number: 1864289
Blue Bird Corporation • P.O. Box 937 • Fort Valley, GA 31030