General Specification, Chassis (Standard)

Alternator

175 Amp Leece Neville, 12 Volt, High-Output. Output at idle is 139 amps @ 200°F

Axles, Front

Axle. Hendrickson, 12,000 lbs rating. Petroleum lubed bearings. Integrated design axle with 50 degree turning angle. Hubcaps with window seal.

Shock Absorbers. SACH direct acting, 1.75 diameter bore double-action piston type with long life bonded bushings.

Springs. 4" x 60" Hendrickson "Softek" variable rate tapered springs with Anti-Wear liner. 5,000 lb capacity each at the ground. Maintenance free rubber bushings.

Axles, Rear

Axle. Meritor RS21145, 21,000 lb capacity single speed with 5.29 ratio. Petroleum lubed bearings.

Shock Absorbers. Direct acting 1.75 diameter bore double-action piston type with long life bonded bushings.

Springs. 3" wide, 2-stage, variable rate, flat leaf springs (2) with total rated capacity of 17,000 lb at ground on Body Model 2311; capacity of 19,000 lb at ground on Body Models 2610, 2807, 3011; and capacity of 21,000 lb at ground on Body Models 3303 & 3310. 2-stage provides a soft spring rate for part load conditions and a firmer rate for full load conditions. Maintenance free, rubber bushed radius leaf permits axle adjustment for dog tracking.

Batteries

Three Group 31 batteries, 12 v, 2850 CCA. 2/0 battery cables. Batteries in an enclosed sliding tray with locking hinged door.

Braking System

Emergency/Parking. Internal expanding, transmission mounted, 9" diameter x 3" wide. Mechanical operation with hand control application at driver's left.

Service. Front and rear 15" diameter x 1.438" thick Meritor Quadraulic Hydraulic brakes at all wheels. 70MM dual system 4 pistons per caliper. Self adjusting design. Meritor ABS.

Bumpers

Smooth front bumpers are one piece 1/4" thick steel plate. Front and rear bumpers are die-formed, 12" high with 90° flanges, top and bottom. Rear bumper has 14" wraparound at corners with double "A" frame bracing. Rear bumpers is one piece 3⁄16" thick steel plate.

Controls

Electronically operated throttle. Hydraulic brake pedal. Hand applied parking brake with warning light. Transmission selector. Dimmer switch. Instrument panel rheostat-controlled lighting. Key-type starter switch.

Cooling System

Charge air and down-flow radiator mounted in tandem at vehicle front. 24" diameter nylon cooling fan with nine blades equipped with a "Fully-On" or "Fully-Off" electromagnetic fan clutch driven by polyvee fan belt with spring loaded tensioner. Fan controlled by Engine ECM. Transmission fluid synthetic cooled by heat exchanger in lower radiator tank. 55/45 Long Life Coolant mix provides anti-freeze protection to -40° F. Gates Blue Stripe hose with constant torque clamps.

Drive Line

Spicer SPL series 70 with protective guard around shaft with lubed for life components. 3 1/2" diameter shaft. SPL Series 140 is used with the optional PTS 3000 Transmission.

Engine

CAT C-7 190 HP @ 2200 RPM; 520 ft lb @ 1440 RPM; 800 RPM Idle. Fully "off" fully "on" electric fan clutch. All Cat engines for the BBCV include the primer pump.

Exhaust

4" O.D. 16 Gauge aluminized steel tubing from engine turbo-charge to in line muffler. Stainless steel muffler with catalitic converter. 4" O.D. 16 gauge aluminized steel tailpipe. Wide band exhaust clamps used at all joints. Tailpipe exits behind rear wheel on road side.

Frame

Main Frame. Dual C-channels, 10 1/8" high with 3" flanges made of 5/16" thick, 50,000 psi steel, Section Modulus = 13.24 cu in. RBM =662,000 in lb per rail.
All permanent fixtures on frame are attached with hi-tensile strength Huck-Spin fasteners with swaged lock nuts.

Fuel System

Fuel Tank. 60 gallon capacity aluminized steel, safety tank mounted between frame rails behind rear axle. Includes a sender inspection plate and right hand fill opening with spring loaded locking door.
Primary fuel filter/water Separator. Racor 690R30, rated @ 90 GPH, 30 Micron filter, with see-thru bowl and self-venting drain; filter head includes integral check valve on inlet side, 200 watt heater. Secondary fuel filter is mounted on engine and supplied by engine manufacturer.

Horn

Electrical dual with non-glare horn button emblem.

Instruments / Gauges

Gauges. Speedometer with English Major and Metric Minor, Seven Digit Odometer, Resettable Trip Odometer, Tachometer, Oil pressure, Fuel Level, Coolant Temperature, Front and Rear Air Pressure. Voltmeter. Automatic self - test at power up. Rheostat for gauges and switch dimmer.

Warning Bank Indicators. Right and Left Turn (Green), High Beam (Blue), Park Brake (Red), Stop Engine (Red) Wait to Start (Green), Check Transmission (Red), Range Inhibit (Amber), ABS (Amber), High Hydraulic Oil Temperature (Amber), Engine Retarder (Red), Stop Light (Red), Hydraulic Brake Failure (Red), Low Coolant Level (Amber), High Transmission Temperature (Amber), Engine Warning (Amber), Engine Maintenance (Amber).

Dash Mounted Switches. Headlights with Parking Light position, Gauge and switch Dimmer /Rheostat, High Idle, Engine Diagnostics, Cruise On/Off, Cruise Set/Resume, Exhaust Brake.

Steering

Full power Ross TAS-55 integral unit with 20.4 to 1 ratio. TRW Power Steering Pump. 18" diameter, two-spoke, padded tilt telescoping steering column.

Tires

Michelin 11R 22.5 G tubeless XZE LRG

Transmission

Allison 2500 PTS Series transmission, 5 Forward speeds- 1 reverse, "Transynd" fluid

Wheels

Hub Piloted steel 10 stud disc wheels, single front, dual rear, 22.5 x 8.25 rims.

Wiring

Multiplex chassis wiring with LED readout in drivers dash area.

General Specification, Body (Standard)

Access Panel

Exterior. A 27" x 16" hinged door below driver's window provides access to electrical junctions, circuit breakers, and terminals for body. Includes keyed locked latch.

Compartment

Battery. Enclosed 23 ½" x 15 ½" x 10 ¼" high compartment with slide-out tray. Hinged locking door located on left side under driver's window.

Driver Storage. 11" X 6.5" compartment above windshield on right hand side. 6 x 8 driver storage compartment behind switch panel on left. Glove compartment in center of driver dash, with door and lock.

Doors

Emergency. Rear center emergency door with 37.7" wide x 52.5" high opening. Latching mechanism includes single-point bar lock with inside handle and guard, and outside 6" chrome-plated recessed handle. Upper and lower tempered clear glass. Doors marked as "EMERGENCY DOOR" with 2" black letters, above the door on the outside of the bus. Emergency door arrows inside and outside 6" long x ¾" wide black arrow on the emergency door near the handles to indicate direction of turn for opening. Outside, arrow points up and approximately 45° inboard of door. Inside, the arrow points up. Arrows are in addition to standard "OPERATING INSTRUCTIONS" decal. DOT warning buzzer activated by movement of the door latching mechanism. Includes cover for protruding stem of RED buzzer switch. 5" black ProForm upholstery header pad. Telescopic prop support holds door open at approx. 95°.

Entrance. Outward Opening Door, Manual Operation. Two panels open outward and close to seal against outside edge of lower step. Clear tempered glass. Ball bearing suspended for ease of operation and wear resistance. 4" black Pro Form upholstery header pad over inside door opening. Stainless steel assist rail at the rear of the stepwell. Manual over-center control with an automatic latching device built into the handle. Driver manually disengages the latch as the door is opened. Oil-impregnated bronze Pivot bearings.

Electrical

Accessory power socket with cap provides 12 volt power for connecting electrical accessories such as cellular phones, CB radios, etc.

Floor

Aisle. 3/16" thick ribbed black rubber in aisles and at entrance aisle area. Aluminum aisle trim over joint in floor covering, full length of body.

Under seats. ⅛" Smooth Black rubber.

Wheelhousing. Rear molded black smooth rubber.

Plywood. ½" Fir, attached with screws.

Headroom

Full 74", over floor covering and plywood floor, measured at center aisle.

Heater / Defroster

90,000 BTU front system with continuous defroster duct under windshield and driver window. Driver selects recirculating of fresh air into system as conditions require. Washable filter. Dual ball type heater cut-off valves isolate heater system from engine / radiator. Manual ball type water flow control valve on heater next to driver, for temperature control. Goodyear Hi-Miler heater hose with constant torque clamps at all joints.

Insulation

Roof, front, and rear, including corners, insulated with fiberglass batts. Side walls below windows insulated with mineral wool batts. Added insulation in bow cavities except two bows adjacent to either exit doors or lift doors.

Lettering

"SCHOOL BUS" 8" black vinyl letters on yellow background on roof caps, front and rear.

Lights

Back-Up. Two 5" clear incandescent right and left rear.
Clearance. Two amber front and two amber rear single. Switch operates clearance, cluster and side marker lights.
Cluster. Three amber front and three red rear with shields
Daytime Running. Head lamps, tail, license plate, parking, clearance & marker lights Activated when engine is running.
Directional. Two 4" plain amber fender mounted. Two 7" amber lights mounted on rear.
Dome. 6 candlepower Single row equally spaced at center over aisle; single switch
Headlights. Four rectangular, Halogen single-sealed beam.
Side Marker. Amber right and left intermediate side marker lights.
Stepwell. 14 Candlepower. Wired to operate with ID lights with entrance door open.
Stop and Tail. Two combination lights, 4" right and left rear license panel in combination with 7" stop and tail lights with clear red lens.
Warning System. Weldon 8 light sequential system with dual hoods.

Mirrors, Exterior

Crossview. Rosco Mini-Hawkeye crossview mirror system allows seated driver to view pedestrians while the bus is stopped. Crossview mirror system is comprised of a 10.8" x 12.5" elliptical mirror with tinted upper portion to reduce glare. Supported by a center mounting post with ball stud mounted, both sides. Mounting posts attached to the front cowls. Breakaway pivot to reduce damage in the event of accidental contact. Crossview mirror system allows for viewing all areas along the front and sides of the bus which are not visible by direct view.

Rearview. Rosco Avia non-detent rearview mirror system provides view of the roadway to the rear, and view of the ground along both sides. Rearview mirror system comprised of a 74 sq. in. flat and a 38 sq. in. convex, 36" radius, mirrors on both sides. RH mirrors located so as to be visible through the wiped area of the windshield. LH mirrors located so as to be visible through the driver's window. The rearview mirrors on both RH and LH sides feature a breakway indexed pivot and are adjustable without tools.

Mirrors, Interior

Rearview. 6" x 30" with 3⁄16" clear safety glass laminated to steel backing plate. 1 ¾" radius rounded corners. Perimeter edged with ⅝" diameter rubber padding. Installed above the seated driver on the front upper inner panel. Provides clear view of the interior of the vehicle and of the roadway to the rear.

Paint

Exterior. National school bus yellow with black trim and black bumpers. OEM heat cured polyurethane.

Interior. Astro White, hot sprayed-on baked enamel, except on aluminized inner side panels. Black seat frames, heaters and trim. Medium gray switch console and dash.

Rust Proofing. Body parts thoroughly rust-proofed after fabrication and before assembly.

Undercoat. Underside of body floor, skirt and wheelhousings thoroughly undercoated prior to body mount on chassis.

Warning Light Background. A minimum area of 3" band of black background is painted around warning lights, front and rear.

Panels

Exterior. 16 ¼" skirt. Outside side panels constructed of 20 gauge form fluted steel. Side panels extend from below the side windows to 16 ¼" below the floor (16 ¼" skirt). Rear corner panels constructed of 20 gauge steel. License plate emboss, both sides. Left hand emboss includes nylon nuts and slot-head screws for license plate mounting.

Roof Caps. Front roof cap formed from 18-gauge steel. Rear roof cap formed from 20 gauge steel.

Roof sheets. 20-gauge steel. Span width of the bus from window header to window header. Includes embossed rain visor over side windows.
Front Cowl. 11-gauge steel.
Floor panels. 14-gauge steel, reinforced with full width "U" channel cross members. All riveted floor joints reinforced with full width 3⁄16" x 1 ½" x 2" structural steel angles and ⅛" flat bar.
Interior. Removable 18 gauge steel front upper inner panel for access to the front roof cap area. Removable 20 gauge steel rear upper inner panel for access to the rear roof cap area. Removable composite sectional wire moldings. Textured aluminized fully hemmed steel inside side panels, extending from the window sill to floor gusset seat ledge, entire length of the body on both sides. Acoustic headlining in Driver's and first sections. Solid headlining in second section rearward, spanning width of bus (window header to window header), are 22-gauge steel, double-hemmed for additional joint strength.

Reflectors

Two 3" red mounted on side of body near rear.
Two 3" red, mounted on rear of body.
Two 3" amber right and left intermediate side reflectors.
Reflective Tape. One inch minimum width strip around each emergency exit (roof hatch/pushout window when ordered). One-inch wide strip of yellow reflective vinyl around the perimeter of the rear emergency door.

Rubrails

Body Side. Four double-ribbed 16 gauge steel rubrails. Installed below side windows, at seat (Passenger) level, near the floor level, and at the bottom of the body skirt.
Bumper Rubrail. Installed below the rear emergency door immediately above the rear bumper.

SEATS

Driver's. National Driver's Seat. Model NS2000 Pedestal. 4 inch manual height adjustment, 6" fore and aft seat slides, infinitely adjustable recline angle, two position front cushion, mechanical lumbar adjustment. Mor-Dura III Charcoal seating surface with Rontex 1401 NPoint carpet on the back of the seat.
Passenger Seat Upholstery. All Passenger seats and barriers are optional. Upholstered in 42 oz polyester backed vinyl, solid gray.

Stepwell

Three-step riser. National standard 10" to 14" ground to lower step height. Stainless steel step treads with non-abrasive black rubber with white nosing. Three inch wide white ribbed rubber with metal backing wearplate located at floor level step. Stainless steel assist rail at rear of stepwell.

Stop Arm

Specialty solid state electric. High intesnity reflective octagonal stop arm, red with white border and 6" lettering on both sides. Includes red incandescent lights over and under the word "STOP" visible from both sides.

Sun Visor

Transparent dark green tint 6.5" x 30" smooth edge plastic. Located in front of driver. Vertically adjustable.

Switch Panel

Mounted on left of driver with rocker-type illuminated switches for electrical equipment. Brightness of illumination is controlled by headlight switch rheostat.

Ventilation

Air Intake. Heater intake left front below windshield level provides up to 100% fresh air through heater.

Vent. Static non-closing type in front roof.

Windows

Auxiliary Saftey-View Vision Panel. Fresnel Broad Vision 7 ½" Wide x 13 ½" High

Driver's. Double sliding aluminum sash with security fastener for locking both sash, clear tempered glass.

Side. 9" split sash, clear tempered glass in aluminum frame, provides 9" opening when lowered.

Rear Vision. Clear tempered.

Windshield

Four piece flat shaded safety plate glass. Shaded band at the upper portion for glare reduction. Fold up step at each side on body front cowls to facilitate cleaning of the windshield from the outside.

Windshield / Wipers

Electric, intermittent single switch, wet arm wipers. Bottom-mounted with remote control, non-glare arms and blades. Electric windshield washer with hard plastic one gallon capacity reservoir located under engine hood, washer outlets mounted on wiper arms.

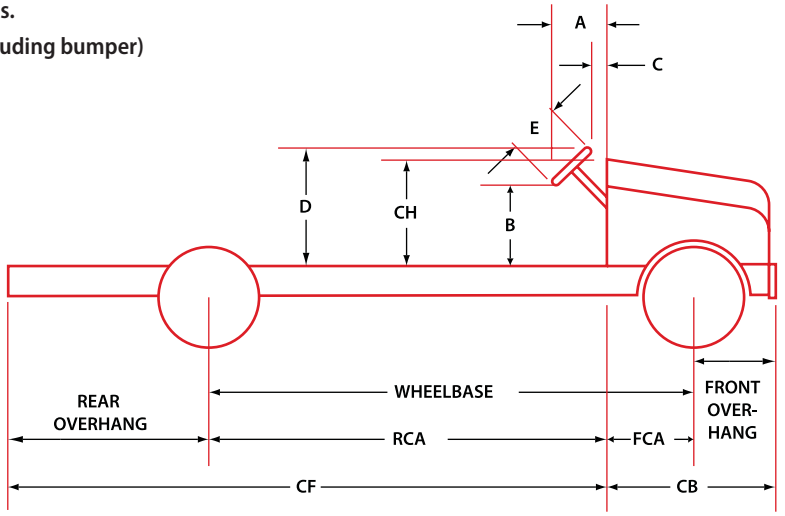
Wiring

Colored and continuously number-coded. Routed in molding on top of side windows for access to harness without removing window. Body wiring protected by automatic resetting circuit breakers.

Dimensions

The dimensions shown exclude exterior mirrors, marker and signal lights, bumpers, fender skirts, washers, wipers, ad frames and rub rail; and are taken under static conditions at design height. Overall maximum height varies from 117″ to 118″ depending upon choice of tires, suspension system, and body model. Add 3″ for roof vents and 3″ for 77″ headroom. Rear bumper adds 1.25″ to overall body length. Front bumper adds 2″ to overall body length.

Length:	**289″- 471″**
Width:	**96″**
Interior Width:	**90 ¾″**
Height:	**120″- 124″**
Skirt Length:	**16 ¾″**
Wheelbase:	**189″ / 217″ / 238″ / 252″ / 273″**
Interior Headroom:	**74″- 77″**
Front Door:	**27″ wide, 78″ high**
Rear Emergency Door:	**52.5″ x 37.7″**
Wheel Cut:	**50°**
Tire Size:	**11R22.5 highway tread Michelin XZE**
GVWR:	**30,000 lbs.**
Front Overhang:	**36.5 (including bumper)**
FCA (Front Cowl to Axle):	**25″**
CB (Cowl to Bumper):	**64.5″**
CH (Cowl Height):	**33″**
A:	**21.17″**
B:	**26.75″**
C:	**9.5″**
D:	**41.97″**
E:	**18″**



Dimensions & Payload Weight (standard equipment)

WHEELBASE	BODY MODEL	CAPACITY	PAYLOAD	CURB WEIGHT	TOTAL WEIGHT	OVERALL LENGTH	REAR OVERHANG	TURN RADIUS	RCA	CF
189″	BBCV2311	48	5910	15,100	21,010	351	122.25	25.9′	164	286.25
217″	BBCV2610	54	6630	16,100	22,730	386	129.25	28.9′	192	321.25
238″	BBCV2807	60	7350	16,300	23,650	407	129.25	31.1′	213	342.25
252″	BBCV3011	66	8070	17,400	25,470	435	143.25	32.6′	227	370.25
273″	BBCV3303	72	8790	18,000	26,790	463	150.25	34.9′	248	405.25
273″	BBCV3310	78	9510	18,400	27,910	470	157.25	34.9′	248	405.25

Pupil weight @ 120 lb each. Driver @ 150 lb.
Approximate curb & total weights are based on standard equipment units. Optional equipment may significantly increase these estimated weights.

Fastener Grades

The following information defines chassis fastener grades to be used for the installation of various items on the Blue Bird chassis. The fastener grades shown are minimums, and the information applies to Blue Bird installed fasteners only. It does not apply to vendor supplied or installed fasteners, except where noted. Chassis fasteners not specified below must be grade 2 at a minimum. The grade of the hexnut used must be equal to the grade of the bolt to which it is assembled.

Grade 8 Category

- Alternator to brace, and alternator mounting bracket and brace to engine
- Air compressor to mounting bracket and mounting bracket to engine
- Power steering pump to engine
- Fan to fan pulley
- Steering gear to mounting frame rail
- Air pump to mounting bracket and mounting bracket to engine
- Idler pulley bracket to engine
- All suspension parts and hardware
- All frame structure cross members, outriggers and related hardware
- All bumper and tow hook/eye mounting hardware.

Grade 5 Category

- Transmission to engine
- Driveline yoke
- Driveline flange yoke to companion flange
- uel tank brackets and brace to frame hardware
- Starter to engine
- Alternator to mounting bracket

General Torque Procedure

Grade 8 and Grade 5 fasteners must be tightened to the recommended torque values listed in the Designated Fastener table below. When the washer is on the threaded (hex nut) side, hold the bolt head and tighten the hex nut while reading the torque. Observe the torque to ensure it is in the specified range. When there are washers on both sides of the bolt (capscrew), or it is assembled into a threaded hole, torque the bolt head to the specified value. Do not lubricate the components when applying torque.

Designated Fasteners Torque Chart (Plated Fasteners) U.S. Standards						
	SAE GRADE 2 (FT-LBS)		SAE GRADE 5 (FT-LBS)		SAE GRADE 8 (FT-LBS)	
SIZE	Min	Max	Min	Max	Min	Max
1/4"–20	3	4	5	6	8	9
1/4"–28	4	5	6	7	9	10
5/16"–18	7	8	12	13	16	18
5/16"–24	8	13	17	19	24	27
3/8"–16	13	15	17	19	24	27
3/8"–24	15	17	23	26	33	37
7/16"–14	21	24	33	37	46	52
7/16"–20	24	27	37	41	52	58
1/2"–13	33	37	50	57	70	80
1/2"–20	37	41	57	64	80	90
9/16"–12	47	53	73	82	101	115
9/16"–18	53	59	82	91	115	129
5/8"–11	63	73	106	112	138	159
5/8"–18	73	83	112	128	159	180
3/4"–10	116	129	177	200	250	282
3/4"–16	129	144	200	223	282	315
7/8"–9	112	125	289	322	407	454
7/8"–14	125	138	322	355	454	501
1"–8		188	437	483	618	682
1"–12	188	205	483	529	682	746
1"–14	205	210	529	541	746	764

Designated Metric Class 10.9		
	TORQUE (FT-LBS)	
SIZE	Min	Max
M4	2.6	2.9
M5	5	6
M6	9	10
M8	22	25
M10	53	58
M12	75	83
M14	1210	133
M16	176	196
M20	302	336
M24	598	664

Non Designated Fasteners Torque Chart (Plated Fasteners) U.S. Standards						
	SAE GRADE 2 (FT-LBS)		SAE GRADE 5 (FT-LBS)		SAE GRADE 8 (FT-LBS)	
SIZE	Min	Max	Min	Max	Min	Max
1/4″–20	2	4	4	6	6	9
1/4″–28	3	5	5	7	7	10
5/16″–18	6	8	9	13	12	18
5/16″–24	7	9	10	14	14	20
3/8″–16	10	15	16	23	23	33
3/8″–24	12	17	18	26	26	37
7/16″–14	17	24	25	37	46	52
7/16″–20	19	27	28	41	52	58
1/2″–13	25	37	40	57	70	80
1/2″–20	28	41	44	64	70	90
9/16″–12	47	53	73	82	101	115
9/16″–18	53	59	82	91	115	129
5/8″–11	63	73	106	112	138	159
5/8″–18	73	83	112	128	159	180
3/4″–10	116	129	177	200	250	282
3/4″–16	129	144	200	223	282	315
7/8″–9	112	125	289	322	407	454
7/8 ″–14	125	138	322	355	454	501
1″–8		188	437	483	618	682
1″–12	188	205	483	529	682	746
1″–14	205	210	529	541	746	764

Non Designated Metric Class 10.9		
	TORQUE (FT-LBS)	
SIZE	Min	Max
M4	2.0	2.9
M5	4.2	6
M6	7	10
M8	17	25
M10	33	58
M12	58	83
M14	93	133
M16	137	196
M20	235	336
M24	465	664

Service Precautions

This section proscribes safe working practices which must be followed in order to minimize the risk of personal injury and/or damage to the vehicle. Additional Warnings and Cautions appear throughout this manual.

Also follow all warnings and cautions printed in the various manuals from component manufacturers, included in this manual as chapter Appendixes.

Whenever Working Under the Bus:

Never move under a bus supported only by a hydraulic jack. Use only proper jackstands or lifts. Always check lifting equipment thoroughly to verify proper working condition before each use. Ensure that the lifting equipment is rated for lifting the weight of the bus. Ensure that the surface under all jacks, stands, or lifts is hard, level, and secure enough to support the weight of the bus concentrated on the footprint of the jack. Chock all wheels to prevent rolling in either direction. Disconnect battery cables to ensure the vehicle cannot be started.

About Modifications:

School busses are built in conformance with several levels of stringent governmental regulations. Any user-performed modification of the bus may potentially result in a non-conformance. For this reason, it is Blue Bird's policy that end users should not perform any equipment modifications to the bus. Contact your Athorized Blue Bird Distributor for advice and consultation before adding any electrical accessories or non-standard mechanical equipment.

Whenever Working Around Moving Parts:

Use extreme caution to avoid accidental entaglement. Do not wear loose clothing. Remove all jewelry including watches and rings. Securely cover long hair. Wear eye, hearing, and respiratory protection.

Whenever Working Inside the Engine Compartment:

Disconnect batteries to prevent accidental engine starting. Exercise extreme caution around hot components, and wear sufficiently protective clothing. Whenever possible, allow components to cool completely before working. Be mindful of any system which operates under pressure, and ensure that pressure is released before working on that system.

When closed system components (such as those associated with the fuel system, cooling system, or charge air system) have been removed, always take appropriate measures to prevent contamination of the system by dust, dirt, or debris.

Replacing Fasteners

Do not re-use fasteners in high-torque locations. Replace with new fasteners of appropriate hardness grade.

Performing Structural Repairs:

Welding. Modern school buses are equipped with sensitive electronic equipment such as the multiplex system and the ECUs of engine, transmission, and ABS brakes. Such components can be permanently damaged by current fluctuations. In addition to the welding precautions you would normally take to isolate components which may be damaged by heat, the repair technician must also bear in mind the potential for expensive damage to electronic systems. It is highly recommended that the multiplex Main Bus Controller and other such electronic control units be disconnected before performing any welding anywhere on the body or chassis.

Whenever Rendering Roadside Assistance:

Take measures to ensure the safety of passengers first. Move passengers away from the disabled bus to a safe location in an organized fashion. Use the roadside emergency markers to clearly warn traffic of the hazard. Call for help and alternate passenger pick-up immediately. If at all possible, avoid performing service procedures roadside, and instead have the bus towed to a proper and safe service facility.

Hazardous Materials

Vehicle fluids, including engine coolant, transmission fluid, engine oil and power steering fluid, are hazardous to the environment and to the individual performing maintenance and repair on the vehicle.. The handling, storage, and disposal of these fluids are subject to government regulation. Read and strictly follow the warnings and instructions on the labels of all fluids and compounds.

The anti-freeze in engine coolant is Ethylene Glycol. This is a skin, eye and respiratory irritant, and is toxic to humans and animals.

Certain other materials, such as plastics, rubber compounds, solvents and paints, are also considered environmental hazards. Always exercise caution to protect your health and the environment when working with, or disposing of, any chemically active material or compound, including cleaning materials.

Protective Gear

Always wear proper eye protection and other required personal protective equipment to help prevent personal injury when performing vehicle maintenance, repair, or service. These include, but are not limited to:

- **Skin protection.** Long sleeves, appropriate gloves, an appropriate apron, etc.
- **Eye protection:** Safety glasses, a facemask, serviceable eye wash equipment, etc.
- **Respiratory protection:** A filter mask appropriate for the material being used, properly ventilated work area, emergency breathing aids, etc.
- **Hearing protection:** Earplugs, earmuffs, etc.

Jacking and Towing

Jack Points

WARNING ***Proper jacking procedures and basic safety measures must be observed to ensure the safety of personnel while working under the bus. Always check the serviceability of any lifting equipment prior to use. Ensure that the lifting device is of sufficient strength to handle the bus, and that the surface provides the necessary firmness to support the weight of the bus concentrated on the footprint of the jack. Never move under a bus supported only by a hydraulic jack.***

1. Park the bus on a flat, level surface of sufficient firmness to support the jack.

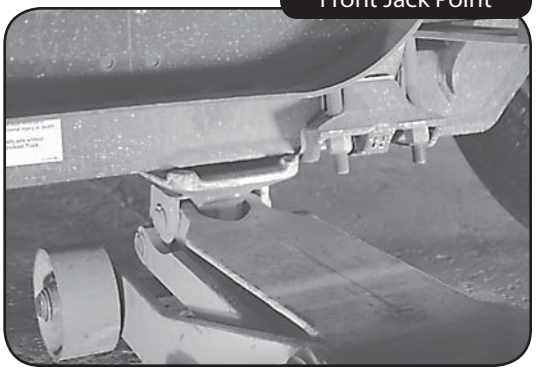
2. Chock the wheels in both directions.

3. Use only jacks and jack stands of sufficient capacity to support the bus. Following the jack manufacturer's recommendations, place the jack securely under the axle at the spring or suspension beam, or under the lower axle wrap nearest the tire/wheel to be repaired.

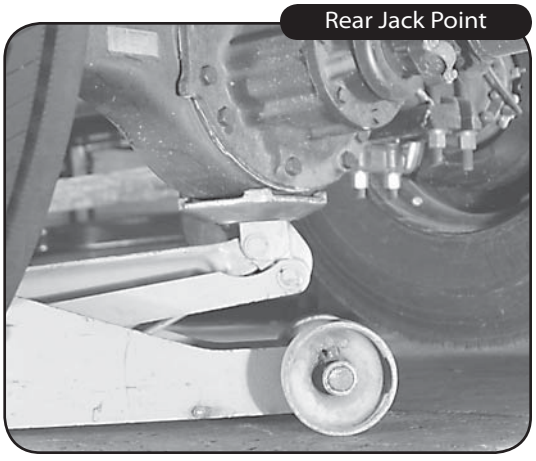
4. Jack the bus only to the height necessary to service.

5. Support the bus with blocks or jack stands under the frame rails.

Front Jack Point



Rear Jack Point



Towing

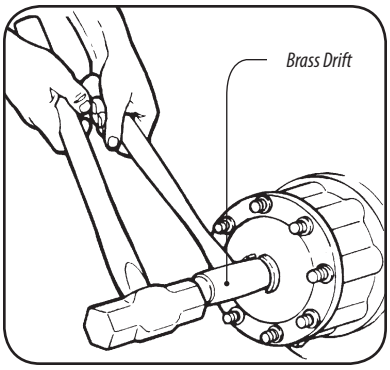
If the bus is towed with the rear wheels on the road, the driveshaft must be prevented from turning in order to avoid possible damage to the automatic transmission. This is accomplished by removing the rear axle shafts, and covering their openings with caps to prevent rear axle lubricant spillage.

Also, on Vision's equipped with air brakes, if full normal air pressure is not present in the air system, the spring brakes must be mechanically caged to prevent their engagement.

1. Apply the parking brake and chock the wheels while preparing the vehicle for towing.

2. Remove the stud nuts and washers from the center hub.

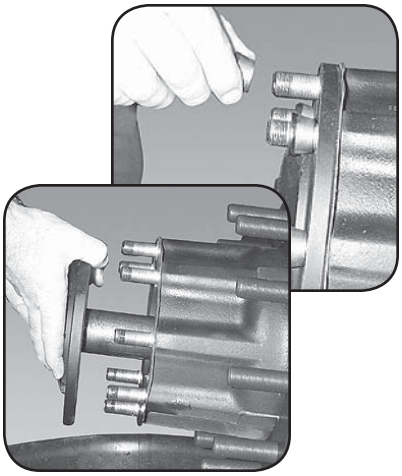
3. To loosen the tapered dowels which surround each stud, use a 1.5" diameter brass drift and 5-6 lb hammer. Hold the brass drift against the center of the axle shaft flange, inside the round driving lugs. Firmly striking the end of the brass drift with the hammer will dislodge the tapered dowels.



CAUTION ***Do not use a chisel or wedge to loosen the axle shaft and tapered dowels. Doing so can damage the axle shaft, gasket, seal, or axle hub.***

4. Mark the axle shaft so that it can easily be identified for reinstallation on the side of the axle from which it is removed. Carefully remove the axle shaft, taking measures to catch the axle lubricant which may spill. Install a cover plate over the open end of the hub to prevent dirt contamination and lubricant spillage during towing.

5. Repeat the above procedure to remove the other axle shaft.



6. If the bus is equipped with air brakes, and if full working air pressure is not present in the system, the spring brakes must be mechanically caged before the vehicle can be towed. Proceed as follows:

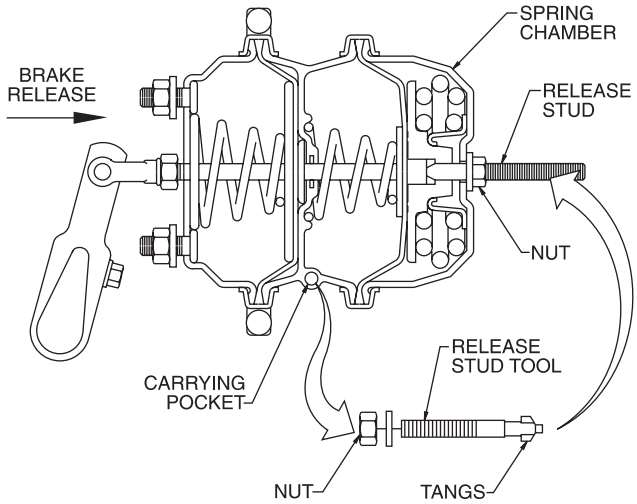
WARNING ***Caging the spring brakes disables the parking brake. Ensure that the bus is completely secured against rolling by wheel chocks before caging the spring brakes.***

6.1 On each of the rear combination brake chambers, a special release stud tool is carried in a storage socket cast into the body of the chamber. Remove the nut and washer from the end of the release stud tool, and remove the tool from its socket.

6.2 Remove the rubber dust cap from the access hole in the upper end of the spring brake chamber. Insert the toggle end of the release stud tool into the access hole. Be sure that the tapered end of the tool has entered the hole in the piston inside the chamber. Insert the tool until it bottoms.

6.3 Rotate the release stud tool a quarter turn clockwise and pull outward, to engage the toggle end with the piston. While holding the bolt in its engaged position, install the washer and nut onto the end of the tool. Turn the nut down against the flat washer until finger tight.

6.4 Using a 3/4" hand wrench, (do not use an impact-type wrench), turn the release nut clockwise until the internal spring is fully caged.



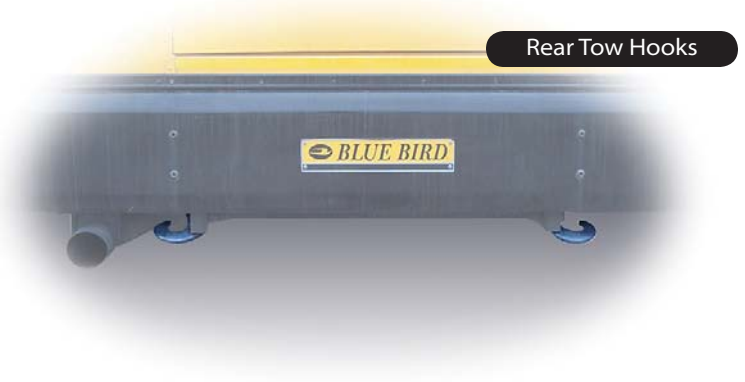
6.5 Repeat the procedure for the spring brake chamber on the opposite side of the bus. The spring brakes are now released, having their springs compressed by the release bolts.

7. With the axle shafts removed and air spring brakes caged, the bus is prepared for towing. The Vision may be equipped with optional tow hooks, located just inside the access openings of the front and/or rear bumper. Appendix 1 of the Front Axle & Suspension chapter contains additional information about towing procedure.

WARNING ***The tow hooks are designed for horizontal pulling only; not for lifting. Never attempt to lift the bus by the tow hooks.***

Front Tow Hooks

Rear Tow Hooks



Fluids & Filters

Fluids & Filters				
Fluid	Type	Capacity	Filter	Comments
Engine Oil Shallow Oil Sump	Caterpillar DEO	With Filter Change: 19 Quarts (18 Liters) Without FIlter Change: 17 Quarts (16 Liters)		*Use only engine oil labeled Low Ash (category PC-10 (CJ-4). SAE 10W-30 viscosity when ambient temperature is above 0° F (-18° C) and below 104° F (40° C). See Engine Oil Viscosity chart, below, for other temperature ranges.*
Engine Oil Deep Oil Sump	Caterpillar DEO	With Filter Change: 27 Quarts (25 Liters) Without FIlter Change: 25 Quarts (23 Liters)		
Engine Coolant	John Deere Cool-Gard 50/50 premix (standard only)	7 ½ Gallons (excluding heater system)	BB 0064641 Wix 24070	*Caterpillar and Cummins equipped buses may have optional extended-life coolant installed. Never mix different coolant colors, types, or brands. See Engine Cooling System section for details.*
Transmission Fluid	Transynd™	7.4 Quarts (7 liters)	BB 0033381	*Transmission refill capacity is substantially less than the initial fill because some fluid remains in the transmission cavities after draining.*
Rear Axle Oil	Hypoid Gear Oil	35 pints (16.9 liters)		*See Rear Axle Viscosity Chart for appropriate viscos-*
Front Axle Grease	Chevron Dura Lith Grease EP NLGI 2			
Front Axle Oil	Chevron RPM Synthetic Transmission Fluid SAE 50			*If equipped with optional front oil lubricated bearings.*
Brake Fluid	DOT 3		BB 0067254	*DOT 3 and DOT 5 must not be mixed. If brake system becomes contaminated with DOT 5, the system must be flushed, and major components may require replacement.*
Brake Interlock	DOT 5		BB 1940881	*On units with hydraulic brakes and brake interlock feature**
Hydraulic Steering	Dexron III™	2 Quarts (approximate)		
AD-9 Air Dryer Element			BB 0020138	*On units with air brakes.*
AD-IP Air Dryer Element			BB 0066221	*On units with air brakes.*
Fuel Filter / Water Separator			BB 1967009	
Windshield Washer Fluid		1.05 Gallons		

Engine Oil Viscosity		
Viscosity Grade	Minimum Ambient Temperature	MaximumAmbient Temperature
SAE 0W-20	-40° F (-40° C)	50° F (10° C)
SAE 0W-30	-40° F (-40° C)	86° F (30° C)
SAE 0W-40	-40° F (-40° C)	104° F (40° C)
SAE 5W-30	-22° F (-30° C)	86° F (30° C)
SAE 5W-40	-22° F (-30° C)	122° F (50° C)
SAE 10W-30	0° F (-18° C)	104° F (40° C)
SAE 10W-40	-0° F (-18° C)	122° F (50° C)
SAE 15W-40	15° F (-9.5° C)	122° F (50° C)

Rear Axle Viscosity /Temperature Chart				
Meritor Lubricant Specification	Description	Cross Reference	Minimum Outside Temperature	Maximum Outside Temperature
0-76-A	Hypoid Gear Oil	GL-5, S.A.E. 85W/140	+10° F (-12.2° C)	*
0-76-B	Hypoid Gear Oil	GL-5, S.A.E. 80W/140	-15° F (-26.1° C)	*
0-76-D	Hypoid Gear Oil	GL-5, S.A.E. 80W/90	-15° F (-26.1° C)	*
0-76-E	Hypoid Gear Oil	GL-5, S.A.E. 75W/90	-40° F (-40° C)	*
0-76-J	Hypoid Gear Oil	GL-5, S.A.E. 75W	-40° F (-40° C)	+35° F (+1.6° C)
0-76-L	Hypoid Gear Oil	GL-5, S.A.E. 75W/140	-40° F (-40° C)	*
** No upper limit on these temperatures. However, axle sump temperature must never exceed + 250° F (121° C).*				

General Maintenance Schedules

The following charts list maintenance procedures which should be performed with regularity to maintain the Blue Bird Vision. For convenience, some of these tables are also provided in their respective areas throughout the manual.

About Service Intervals

The charts show recommended minimum service intervals. More frequent service intervals should be considered if the vehicle is operated in extreme conditions such as high humidity and/or dusty environments.Time intervals are shown in terms of months or mileage. The correct interval will be whichever is the first to occur. Some of the components used in the Blue Bird Vision require inspection and/or servicing at intervals specified by their respective manufacturers.

Some components should be regularly inspected, but do not lend themselves to universal intervals, because their normal service life is highly dependent upon local conditions. For these components, any estimated interval would result in overservicing in some locales and underservicing in others. Such intervals are left to the judgement of the local technican, and the service interval indicated is *As Required*. It is important to understand that this designation should not be taken as an optional inspection. Every item in the following tables should be considered mandatory, and an As Required interval should be viewed as emphasizing the importance of the local service operation first determining, and then strictly adhering to, an appropriate interval. Regardless of the interval determined appropriate, the operation must not be overlooked.

Vendor-Supplied Maintenance Guidelines

The technician should bear in mind that many of the components which are installed on the Vision by Blue Bird, are neither manufactured nor serviced by Blue Bird. Service and Maintenance information more detailed than that presented in this manual may be available from the component manufacturer or may be included in the chapter appendixes. Wherever practical and available, component-specific material from our vendors has been included on the CD which accompanies this manual, and references to those documents are given in the maintenance charts.

Please be aware that these supplemental documents are provided as a courtesy, and are reproduced in their entirity. Therefore, they may include information pertaining to additional component models offered by the vendor, but not actually installed on the Vision. Always be certain that you are using those portions of these documents which correctly pertain to the specific component model installed. Also note that some of the manufacturer-supplied component manuals may contain rebuild procedures. As a general rule, Blue Bird does not recommend rebuilding of components, especially in safety-critical sytems such as air or hydraulic control valves; but strongly recommends replacement over rebuild in the case of failure or defect.

First Month Then Every 3 Months or 3000 Miles	
Cooling System	
Inspect & Tighten Hose Clamps	Tighten radiator hose clamps to 90 in lb. Tighten heater hose clamps to 45 in lb.

First 100 Miles Then Every 10,000 Miles	
Tires & Wheels	
Inspect & Tighten Lug Nuts	Torque to 450-500_ft lb with calibrated torque wrench. Do not over-tighten. Do not lubricate nuts or studs. Operating conditions may require more frequent checks.

First 1000 Miles Then Every 3 Months or 6000 Miles	
Frame	
Inspect & Tighten Body Tie Downs Body Tie Down Clamps	Inspect for missing, damaged rubber pads. Tighten clamps to 37–41 ft lb.
Inspect & Tighten Body Tie Downs Firewall Box Isolator Mounts	Inspect rubber discs for cracking or damage. Inspect spring & fastener for damage. Tighten to 52–56 ft lb.
Inspect & Tighten Body Tie Downs Front Isolator Mounts	Inspect rubber blocks for cracking or damage. Inspect spring & fastener for damage. Tighten to 52–56 ft lb.
Inspect & Tighten Body Tie Downs Rear Isolator Mounts	Inspect rubber discs for cracking or damage. Inspect spring & fastener for damage. Tighten bracket to 70–80 ft lb. Tighten Isolator to 54–58 ft lb.

First 1000 Miles Then Every 6 Months or 6000 Miles	
Axle & Suspension, Front	
Inspect & Tighten SofTek Spring Suspension U-Bolts	Tighten to 285–305 ft lb.
Axle & Suspension, Rear	
Inspect Comfort Air Suspension Ride Height	Shock length, eye-to-eye: 22.68" +- .25"

First 1000 Miles Then Every 6 Months or 10,000 Miles	
Axle & Suspension, Rear	
Inspect & Tighten Comfort Air Suspension U-Bolts	Tighten 7/8" U-Bolts to 400–450 ft lb. Tighten 3/4" U-Bolts to 260–320 ft lb.

First 1000 Miles Then Every 12 Months or 12,000 Miles	
Heaters & Defrosters	
Inspect Front Heater Hoses & Clamps	Inspect for evidence of leaks or deterioration. replace with proper parts.
Axle & Suspension, Front	
Inspect & Tighten AirTek Suspension Axle To Suspension Fasteners	Tighten to 285–305 ft lb.

First 5000 Miles Then Every 12 Months or 24,000 Miles
Transmission
Replace Transmission Sump Filter

First 5000 Miles Then Every 24 Months or 24,000 Miles
Transmission
Replace Transmission Main Fluid Filter

First 11,000 Miles Then Every 6 Months or 6000 Miles	
Cooling System	
Inspect Charge Air Cooler	Inspect for clogging debris.

As Specified by Engine Manufacturer	
Cooling System	
Replace Coolant	See your Engine Ooperator's Manual. Use only premixed coolant(s) approved by the engine manufacturer. Never mix different types or brands of coolant.
Engine	
Replace Oil & Filter	See Engine operators manual for oil and filter specifications and maintenance interval.
Adjust Valves	See Engine manufacturer's Service Manual for interval.

As Specified by Transmission Manufacturer	
Transmission	
Adjust Transmission Shift Cable	See Transmission Chapter.

Every Day	
Doors	
Test Wheelchair Lift	Follow the manufacturers recommendations.
Emergency Equipment	
Inspect Fire Extinguisher Charge	Ensure that Extinguisher Charge is not expired.
Inspect Fire Extinguisher Mounting Bracket	Ensure that Extinguisher bracket is secure and operates correctly.
Inspect First Aid Kit Contents	Ensure that kit supplies are fully replenished, clean, and not expired.
Inspect First Aid Kit Mounting Bracket	Ensure that mounting bracket is secure and operates correctly.
Emergency Exits	
Inspect All Emergency Exits	Test all emergency exits for proper operation, including warning buzzer.
Warning Devices & Signs	
Test Stop Arms & Crossing Arms	
Windows	
Inspect All Mirrors	Clean, adjust mirrors.
Inspect All Windows	Clean Windshield, door glass, driver's window, rear vision windows, rear door windows.
Brakes	
Inspect Air Brakes Air Lines & Fittings	Inspect for leaks or physical damage.
Drain Air Brakes Air Tanks	Drain daily in cold weather; weekly in warm weather.
Inspect Air Brakes Brake Chambers	See Air Brakes Chapter for inspection criteria.
Inspect Air Brakes Brake Shoes	Wear depends upon application environment. See Meritor Cam Brakes Appendix in Air Brakes Chapter for guidelines.

Cooling System	
Inspect Coolant Level	Top off with premixed coolant of same type as installed. Never mix coolants of different colors, types, or brands. See engine Operator's Manual for details.
Inspect Entire Cooling System	Visually inspect for any signs of leakage.
Electrical	
Inspect All Lights	Check all running, stop, marker, hazard, and warning lights for proper operation.
Engine	
Inspect Oil Level	See Engine operators manual for oil specifications.
Fuel System	
Inspect Fuel Cap	
Inspect Water Separator Petcock Drain	Check for water contamination.
Intake System	
Inspect Intake Tract Duct & Elbow	Visually inspect for proper fit and sealing, cuts, abarsions, signs of dirt contamination.
Inspect Intake Tract Restriction Indicator	Replace filter element if indicator is red.
Steering	
Inspect Power Steering Fluid Level	Replinish to full mark. Dextron III.
Tires & Wheels	
Inspect All Tires & Wheels	Check air pressure. Visually inspect tires, tread wear, lug nuts, including spare.
Transmission	
Inspect Transmission Fluid Level	Check production order for proper type of fluid to be added.

Every Week	
Seats	
Inspect & Tighten Passenger Seats Cusion Screws	Inspect for loose cushions clips.
Inspect Passenger Seats Seat Belts	Lubricate buckles, clean webbing as required. Replace any damaged webbing straps.
Inspect Passenger Seats Upholstery	Inspect for cuts, tears, wear and soiled areas.
Brakes	
Inspect Hydraulic Brakes Pads	Replace if worn to within 1/8" lining remaining.

Every Month or 3000 Miles	
Doors	
Lubricate All Doors Vandal Locks	Spray Apply lubricant into key locks. Use LPS #1 for sliding bolt locks.
Adjust Jack Knife Door Air Pressure	See Body Construction / Doors / Jack Knife Door
Lubricate Jack Knife Door Hinge Pins	LPS 1
Adjust Jack Knife Door Roller Bracket	Adjust for proper open/closed position.
Adjust Jack Knife Door Switch	See Body Construction / Doors / Jack Knife Door
Adjust Outward Opening Door Control Rod	
Adjust Outward Opening Door Control Rod Bracket	Adjust for full and secure closure without binding.
Adjust & Lubricate Outward Opening Door Linkage	Adjust linkage for firm closure, and to ensure rear panel closes first.
Lubricate Outward Opening Door Pivots	Lubricate pivot pins with LPS 1.
Adjust Outward Opening Door Roller Bracket	Adjust for full and secure closure without binding.
Lubricate Wheelchair Lift Lube Points	See model-specific literature provided with lift.
Emergency Exits	
Lubricate All Emergency Exits Hinges	LPS #1
Lubricate Rear Emergency Door Hinges	Lubricate at hinge grease fittings.
Lubricate Rear Emergency Door Hold-Open	Apply ASTM D4950 GC-LB Grade 2
Lubricate Roof Hatch Hatch Seal and Latch	Silicone lubricant to prevent sticking of rubber seal. Spray silicon lubricant into latch mechanism.
Floor	
Inspect Floor Drains	Check drawin hole in each body section under window for debris obstruction.

Seats	
Lubricate Driver's Seat	Lubricate per manufactuers recommendation.
Inspect & Tighten Passenger Seats Mountings	Use standard torque for bolt size , tread type and grade.
Warning Devices & Signs	
Lubricate Stop Arm, Electric 4-Point Pivot	Lubricate four hinge pivot ponts with Try-Flow lubricant
Inspect & Tighten Stop Arm, Electric Fasteners	Check interior and exterior fasteners for loosening.
Windows	
Lubricate Passenger Windows Latches & Slides	Use silicone lubricant.
Electrical	
Inspect Battery Electrolyte Level	Replenish with distilled water.
Every Month or 6000 Miles	
Warning Devices & Signs	
Adjust Stop Arm, Air Air Pressure	Adjust for full deployment and retraction
Every Month or 10,000 Miles	
Axle & Suspension, Rear	
Inspect Rear Axle Lubricant Level	If low, refil to bottom of filler opening. Use same lubricant type as already installed.
Inspect Spring Suspension Whole Assembly	Visually inspect for damage.
Every Month or 300,000 Miles	
Brakes	
Inspect Hydraulic Brakes Fluid	DOT-3 brake fluid.
Every 3 Months or 3000 Miles	
Cooling System	
Inspect Radiator Fins	Clean debris from fins.
Inspect Water Pump Belt	Inspect condition and tension of belt.

Every 3 Months or 5000 Miles	
Brakes	
Lubricate Air Brakes S-Cam	See Meritor Cam Brakes Appendix in Air Brakes Chapter for guidelines.
Lubricate Hydraulic Brakes Calipers	Lube per meritor specs.
Driveline	
Lubricate Driveshafts Slip Joint	NLGI Grade #1 or #2 multipurpose grease.
Lubricate Driveshafts U-Joint Bolts	NLGI Grade #1 or #2 multipurpose grease.
Inspect & Tighten Driveshafts U-Joint Bolts	Tighten to 45–50 ft lb.
Electrical	
Inspect Alternator Connections	Inspect for loose wires, damaged terminals, damaged insulators.
Inspect Battery Ground Strap	Check for solid connection, tight fasteners and absense of corrosion.
Fuel System	
Inspect Fuel Lines	Inspect for leaks or signs of abrasion.
Inspect Fuel Tank Vent	Inspect for obstruction.
Intake System	
Inspect Air Cleaner Filter Element	Inspect for proper seating, secure lid. Replace if soiled, wet, or damaged.
Inspect Intake Tract All Fasteners	Inspect for signs of contaminate infiltration, loose clamps, wear spots, holes in piping
Inspect Intake Tract Charged Air Tubing	Inspect for signs of contaminate infiltration, loose clamps, wear spots, holes in piping
Inspect & Tighten Intake Tract Hose Clamps	Tighten to 10 in lb.
Inspect & Tighten Intake Tract Spring Loaded Clamps	Tighten to near full spring compression.
Inspect Intake Tract Support Bracket	Visual inspection. Repair damaged parts immediately.

Inspect & Tighten Intake Tract T-Bolt Clamps	Tighten to 50 in lb.
Inspect & Tighten Intake Tract Worm Gear Clamps	Tighten to 38–42 in lb.

Steering

Lubricate Axle Steering Linkage Drag Link	NLGI #2 EP multipurpose grease rated GC-LB or equivalent.
Lubricate Axle Steering Linkage King Pins	NLGI #2 EP multipurpose grease rated GC-LB or equivalent.
Lubricate Axle Steering Linkage Tie Rod Ends	NLGI #2 EP multipurpose grease rated GC-LB or equivalent.
Lubricate Intermediate Steering Shaft Slip Joint	Lubricate splines with multipurpose grease.

Every 3 Months or 24,000 Miles

Brakes

Inspect Air Brakes Air Dryer	See Bendix appendix for specific model in Air Brakes Chapter.
Inspect Hydraulic Brakes Booster & Master Cylinder	Inspect for signs of leakage or physical damage.

Every 6 Months or 6000 Miles	
Warning Devices & Signs	
Lubricate Destination Sign Hinges	
Lubricate Destination Sign Roller Gears	Lightweight grease such as White Lube.
Axle & Suspension, Front	
Inspect AirTek Suspension Air Spring	Inspect for wear, abrasions, cuts, or other damage.
Lubricate AirTek Suspension Grease Fittings	Use NLGI #2 EP or equivalent. Lube with suspension loaded.
Inspect AirTek Suspension Ride Height	Shock length, eye-to-eye: 18.5" +-.25"
Inspect & Tighten AirTek Suspension Ride Height Control Valve Bolts	Tighten to 8–10 ft lb.
Inspect & Tighten AirTek Suspension Shackle Bracket Pivot Bolts	Tighten to 300–325 ft lb.
Inspect & Tighten AirTek Suspension Shock Absorbers	Inspect for signs of leakage, wear, or damage. Tighten mounting bolts to (125 ft.lbs - 135 ft,lbs)
Inspect AirTek Suspension Whole Assembly	Visually inspect for damage.
Lubricate SofTek Spring Suspension Grease Fittings	Use NLGI #2 EP or equivalent.
Inspect & Tighten SofTek Spring Suspension Shackle Bracket Pivot Bolts	Tighten to 380–420 ft lb.
Inspect & Tighten SofTek Spring Suspension Shock Absorbers	Inspect for signs of leakage, wear, or damage. Tighten mounting bolts to 215 ft lb.
Inspect & Tighten SofTek Spring Suspension Spring Pin Lock Bolts	Tighten to 380–420 ft lb.
Inspect SofTek Spring Suspension Whole Assembly	Visually inspect for damage.

Axle & Suspension, Rear	
Inspect & Tighten Comfort Air Suspension Shock Absorbers	Inspect for signs of leakage, wear, or damage. Tighten upper shock mounts to 50–70 ft lb. Tighten lower shock mounts to 150–180 ft lb.
Inspect Comfort Air Suspension Whole Assmebly	Visually inspect for damage.
Brakes	
Replace Air Brakes Air Compressor Filter	
Clean Air Brakes Check Valves	
Clean & Lubricate Air Brakes Treadle Valve	See Bendix Treadle Valve Appendix in Air Brakes Chapter.
Clean Air Compressor Governor	
Inspect Hydraulic Brakes Calipers	Inspect for signs of leakage or physical damage.
Adjust Hydraulic Brakes Park Brake Lever	Adjust engagement pressure at the lever to 90–100 lb.
Cooling System	
Replace Coolant Filter	
Electrical	
Inspect Battery Battery Posts	Clean and apply anti corrosion agent.
Exhaust System	
Inspect Exhaust Pipe Joints	Inspect for loose clamps, leaks, damage.
Fuel System	
Replace Fuel Filter Filter Element	
Clean Fuel Filter Inlet Screen	Clean. Replace if damaged.
Steering	
Lubricate Steering Gear Pitman Arm Pivot	NLGI #2 EP multipurpose grease rated GC-LB or equivalent. Use hand-operated grease gun.

Every 6 Months or 10,000 Miles	
Axle & Suspension, Rear	
Inspect & Tighten Comfort Air Suspension Air Spring Anchor Bolts	Tighten to 20–30 ft lb.
Inspect & Tighten Comfort Air Suspension Air Spring Fasteners	Torque to 30–35 ft lb.
Inspect & Tighten Comfort Air Suspension Leveling Valve Mount Bolt	Tighten to 60–85 in lb.
Inspect & Tighten Comfort Air Suspension Lever Linkage Locknut	Tighten to 100–150 in lb.
Inspect & Tighten Comfort Air Suspension Lower Shock Mount	Tighten to 260–320 ft lb.
Inspect & Tighten Comfort Air Suspension Quick Align Bolts	Tighten to 525–575 ft lb.
Brakes	
Lubricate Air Brakes Cam Shaft Housing	NLGI #2 EP multipurpose grease rated GC-LB or equivalent. Use hand-operated grease gun.
Lubricate Air Brakes Haldex Slack Adjusters	See Haldex lubricant specs in Air Brakes chapter.
Lubricate Air Brakes Meritor Slack Adjusters	See Meritor lubricant specs in Air Brakes chapter.
Engine	
Inspect Belt & Tensioner	Closely inspect Belt & Tensioner
Clean Crankcase Breather	Clear breather hose of debris or obstruction.
Test Engine Oil	Perform oil sample analysis per Caterpillar specifications.
Steering	
Lubricate Steering Column	Vision manual says to lubricate steering column. Where? With what? Check model applicability

Every 12 Months	
Intake System	
Test Intake Tract Restriction Indicator	Test indicator with vaccuum gauge and pump.

Every 12 Months or 12,000 Miles	
Heaters & Defrosters	
Tighten Front Heater Fasteners	All fasteners holding such heaters in place in unit. For details on fasteners check installation prints.
Clean Front Heater FIlter & Core	Clean dust from cores. Replace filter elements.
Axle & Suspension, Front	
Inspect & Tighten AirTek Suspension Air Spring Fasteners	See a instl. diagram for torque spec's.
Inspect & Tighten AirTek Suspension Pin Lock Bolts	Tighten to 380–420 ft lb.
Axle & Suspension, Rear	
Inspect Comfort Air Suspension Ride Height	Shock length, eye-to-eye: 24.68" +- .25"
Inspect Comfort Air Suspension Ride Height	Shock length, eye-to-eye: 21.75" +- .25"
Inspect & Tighten Comfort Air Suspension Shock Absorbers	Inspect for leakage or damage. Torque upper mount bolts to 50–70 ft lb. Torque lower mount bolts to 160–180 ft lb.
Inspect & Tighten Comfort Air Suspension Torque Arm Bolts	Torque to 150–205 ft lb.
Inspect & Tighten Comfort Air Suspension U-Bolts	Torque 7/8" bolts to 400–450 ft lb. Torque 3/4" bolts to 260–320 ft lb.
Inspect & Tighten Rear Axle U-Bolts	Tighten to 300–350 ft lb.
Inspect Spring Suspension Rebound Pins	Verify that cotter pins are installed.
Inspect & Tighten Spring Suspension Shock Absorbers	Inspect for signs of leakage, wear, or damage. Tighten locknuts to 75–100 ft lb.
Inspect & Tighten Spring Suspension Spring Radius Fasteners	Tighten locknuts to 100–125 ft lb.

Cooling System	
Test Entire Cooling System	Pressure Test Cooling system.

Steering	
Inspect Hydraulic Pump Body & Seals	Inspect for leaks.
Inspect Steering Gear Body & Seals	Inspect for leaks.

Every 12 Months or 24,000 Miles

Brakes	
Clean Air Brakes Pop Off Valves	

Steering	
Replace Hydraulic Reservoir Filter Element	Replace element and fluid. Replace more frequently in severe operating conditions. Dextron III.

Transmission	
Inspect Transmission Vent	Clear vent hose of debris or obstruction.

Every 12 Months or 50,000 Miles

Axle & Suspension, Rear	
Replace Rear Axle Petroleum Based Lubricant	Hypoid Gear Oil. Viscosity depends upon operating climate. See Viscosity/Temperature chart.

Every 12 Months or 100,000 Miles

Axle & Suspension, Rear	
Replace Rear Axle Synthetic Lubricant	Viscosity depends upon operating climate. See Viscosity/Temperature chart.

Every 18 Months or 20,000 Miles

Cooling System	
Lubricate Shutters Pivots	Use Never Seize spray lubricant.

Every 24 Months or 24,000 Miles

Brakes	
Clean Air Brakes Parking Brake Valve	See Bendix Appendixes in Air Brakes Chapter.
Clean Air Brakes Quick Release Valves	See Bendix Appendixes in Air Brakes Chapter.
Clean Air Brakes Relay Valves	See Bendix Appendixes in Air Brakes Chapter.
Clean Air Brakes Spring Brake Valve	See Bendix Appendixes in Air Brakes Chapter.