



STANDARD FEATURES & OPTIONAL EQUIPMENT

COMMERCIAL DUAL REAR WHEEL MICRO BIRD[®] D-Series



MICRO BIRD INC.

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Specifications subject to change without notice.



MICRO BIRD® D-Series STANDARD FEATURES & OPTIONAL EQUIPMENT

AISLE

The aisle of the bus shall be no less than 21" wide measured between two double commercial seats.

BATTERY COMPARTMENT (IF SO EQUIPPED)

Battery(ies) shall be located on the right side of the vehicle, immediately behind the main entrance door. Battery(ies) shall be mounted on a galvanized steel tray. Tray shall be equipped with an integrated spring pin locking mechanism when stowed. Compartment shall be weather-sealed by door mounted on stainless steel piano hinge.

BUMPERS

▪ **Front Bumper**

The bus shall be equipped with an OEM-supplied front bumper.

▪ **Rear Bumper**

Bumper shall be 3/16" pressed steel channel, 10" wide (high), and flanged 2" at top and bottom. The bumper shall wrap around the back corners of the bus and shall extend 12" forward, measured from the rearmost point of the body at the floor line. The bumper shall also extend 1" beyond the rearmost part of the body surface, including taillights, measured at the floor line. The bottom of the rear bumper above ground level shall not be more than FMVSS maximum height allowance when measured on a flat surface and in an unloaded condition. The ends of the rear bumper shall be flush-mounted to the body sides and protected.

COLORS

▪ **Exterior**

The bus body shall be painted white with high gloss acrylic urethane paint. Optional colors are available.

▪ **Interior**

The interior shall be white. Plastic trims and head pads shall be grey.

CONSTRUCTION

Main structure shall be assembled with corrosion resistant fasteners and structural rivets. Only front and rear structures may be welded assembly.

▪ **Corrosion Protection**

Butyl or membrane shall be used as a barrier wherever dissimilar metals are in contact with each other in order to prevent galvanic reaction.

▪ **Body Structure**

Roof bows shall be one piece, floor-to-floor, hat section type and shall be made of 16-gauge galvanized steel. Two, 18-gauge roll formed structural linear beams and aluminum extrusions shall extend the full length of the body.



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- **Side Impact Barrier**

Reinforced side impact barriers shall be incorporated into body design to enhance passenger protection in the event of a side impact. These shall be made of galvanized steel and shall be riveted to sub-floor. A 3/16" thick L-shaped reinforcement shall be integrated into the seat rail and run the full-length of the body.

- **Floor structure**

- Aluminum**

Longitudinal "C" shaped sub frames shall be mounted to the OEM chassis frame rails using a double action energy-absorbing soft mount OEM pucks system. Transversal "C" floor sections shall be made of 14-gauge aluminum riveted with 3/16" zinc plated steel "L" shaped cross-members and fastened to the sub frame. All passenger seats shall be fastened to floor with 16-gauge galvanized steel reinforcement channels and reinforced side impact barriers.

- Steel**

Longitudinal "C" shaped sub frames shall be mounted to the OEM chassis frame rails using a double action energy-absorbing soft mount pucks system. Transversal "C" floor sections shall be made of 14-gauge galvanized steel linked with 3/16" zinc plated steel "L" shaped cross-members and fastened to the sub frame. All passenger seats shall be fastened to floor and reinforced side impact barriers.

- **Exterior Panels**

- Exterior Side Panels**

Exterior side panels shall be made with 14-gauge pre-primed aluminum for superior corrosion protection and paint adhesion. Side panels shall extend below centre line of rear axle to reduce the risk of pedestrian under riding.

- Exterior Rear Panels**

Rear of vehicle shall be made of a one-piece fibreglass reinforced composite panel with waterproof recessed locations for lights. Front fibreglass panels shall be designed to accommodate recessed lights.

- Roof Panel**

The roof panel shall be made of two pieces 18-gauge aluminum running from the top of the side windows to a central joint to prevent water infiltration. Panels located immediately above shall incorporate a drip rail that will run the full length of the body.

- **Exterior Rear Wheel Trims**

There shall be a wheel trim on each side of the bus over the rear wheels. They shall be made of 1/8" thick high quality injection plastic for good impact resistance and wide range of temperature flexibility.

- **Front and Rear End Structures**

The front and rear end structures shall be made of steel square tubing protected against corrosion. Front and rear structures shall be mechanically affixed to sub-floor and roof bows.



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- **Gravel Shields**

High quality injection plastic gravel shields shall be installed on the lower front section of each body side. Shields shall be 12 inches in height and flanged 3 ¾ inches underneath the body.

DRIVE SHAFT PROTECTION

The forward portion of the drive shaft shall be protected by a metal guard around its circumference to eliminate the possibility of it whipping through the floor or dropping to the ground, if broken.

DRIVER AREA

- **Driver's Side Window**

Shall be as supplied by the OEM chassis manufacturer.

- **Driver's Door**

Shall be as supplied by OEM chassis manufacturer.

- **Driver's Lap and Shoulder Belts**

Shall be as supplied by the OEM chassis manufacturer.

ELECTRICAL SYSTEM

- **Electrical Compartment**

Electrical compartment shall be located above the driver door. This compartment shall have a door equipped with a latch for protection and serviceability of the electrical components.

The compartment shall enclose the body electrical control panel, the air conditioning control panel (if so equipped, an 80-amp continuous-duty relay and fuses holder.

- **Accessory Switch**

An 80-amp continuous-duty relay shall be installed and activated by the ignition switch for the purpose of providing electrical current to the body accessories.

- **Body Electrical Control Panel**

Body equipment fuses shall be mounted in a purposely built fuse holder

- **Body Instrument Panel**

The body instrument panel shall be located to the right of the driver and integrated to the OEM-supplied engine console cover. It shall not impede or obscure the driver's visibility of the loading zone, including the "More-view" window.

A cup holder shall be provided on the body instrument panel. Instrument panel shall not prevent use of OEM supplied document holder.

- **Circuit Protector**

Every circuit shall be protected by ATO type fuses. There shall be a fusible link close to the batteries adding protection to the body circuits.



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- **Switches**

Body accessory switches shall be of rocker-type with a pilot light integrated into each switch. Switches shall be back lighted and shall work in conjunction with OEM chassis dimmer switch.

- **Wiring**

All wiring shall conform to SAE J1128 and be rated to 125°C.

- **Wiring Diagram**

A complete body-wiring diagram shall be provided with every body.

- **Body Wiring Harness**

Main body harness(es) shall be color and number coded. Harness(es) shall be protected with loom under the body and in the engine compartment. Grommets shall be installed to protect every wire passing through metal openings. Wiring harness(es) shall be located within the passenger compartment, for easy access.

EMERGENCY EXIT

Bus shall be equipped with a single center rear emergency exit door. The emergency door shall be equipped with a 3 point-fastening device. The emergency door hinge shall be stainless steel piano type, shall extend the full height of the door and provide an unobstructed opening of 53" (height) by 33" (width). The emergency door shall be weather-sealed with a bulb-type seal trim made of EPDM rubber.

An upper and lower glass shall be incorporated into the rear emergency door. Upper glass surface shall be 638 in² and lower glass surface shall be 377 in². Both windows shall be tempered AS3 safety glass with 26% light transmittance. Glass shall be bonded to prevent water infiltration.

The emergency door shall be equipped with padding at the top edge of the door opening. This padding shall have a smooth and even surface and no fasteners shall be visible on the surface of the padding. Padding shall be easily removable to facilitate maintenance. A vinyl covered button shall hide the fastener on the rear emergency door and the lift door (if so equipped).

ENTRANCE DOOR

The entrance door shall be electrically operated under the driver's control to improve the visibility through the loading/unloading area. The entrance door shall be equipped with a positive locking of the mechanism as to avoid strain of the electrical motor when the door is closed. Electrical motor assembly shall have passed a ten (10) year, 200,000-cycle test.

The entrance door switch shall be installed on the body instrument panel. The operation of the electrical mechanism shall require the driver to hold the switch while opening and closing the doors.

The entrance door shall have a minimum horizontal opening of 32" and a minimum vertical opening of 77". The entrance door shall be split-type and shall open outward. The entrance door shall have 2 full-length clear



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glass panels with a minimum unobstructed area of 1,872 in². Glass shall be bonded to prevent water infiltration.

The entrance door shall lead to a two-step entrance. The entrance door shall close over the outer face of the bottom step as to prevent infiltration of exterior elements into the step well. All doors shall be weather-sealed with a bulb type seal trim EPDM rubber.

The vertical closing edges on the entrance door shall be equipped with enough flexible material, so as to prevent crushing fingers. Furthermore, when the two door panels are closed, the vertical closing edges of the entrance door shall not create a blind spot larger than 5 ½" wide.

The upper bearings of the door mechanism shall be maintenance-free type.

The lower bearings shall be maintenance-free IGLIDE® bushings with stainless steel pins to prevent corrosion.

FLOOR COVERING

The floor covering in the under-seat area, shall be a 1/8" grey smooth rubber material. The floor covering in the aisle, at all wheelchair positions (if so equipped), and the steps shall be 3/16" grey ribbed rubber covering.

The floor covering shall be cut to fit tightly along sidewalls, wheel housings (if so equipped) and center aisle, eliminating the need for center aisle trim. It shall be completely weather-sealed along all seams and edges with a thermoplastic sealant. The floor in the driver's area shall be insulated black rubber matting as supplied by the chassis manufacturer.

HANDRAILS

The handrail shall be made of 1.25" yellow powder coated steel or unpainted stainless steel mounted on interior left side of entrance door step well. It shall be designed to prevent entanglement in accordance with the NHTSA string and nut test. A right side, symmetrical handrail shall be available as an option.

HEATER

Front heater and windshield defroster shall be as supplied by the OEM chassis manufacturer. Rear heater(s) shall be hot water type and shall be located under seats or in a position that will not hinder passenger comfort, circulation inside the vehicle, or wheelchair placement.

INSIDE HEIGHT

Inside body height shall be 76", measured at the center aisle over the floor covering, at any point on longitudinal centerline from front vertical bow to rear vertical bow.

INSIDE WIDTH

Inside body width shall be 93", measured at the seat cushion and floor level.



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INSULATION

Body shall be insulated with 1½" thick fibreglass in the headlining, side, front and rear walls of the bus. All roof bows shall also be insulated with 1½" thick fibreglass. A 4-ply, 1/2" thick exterior-grade plywood shall be installed over existing steel or aluminum sub-floor so as to ensure adequate thermal insulation, sound abatement and moisture resistance. A sound deadening undercoating shall be applied to sub-floor prior to the installation of plywood. All exposed edges of the plywood shall be covered with plastic or aluminum trim. Screws shall securely fasten the plywood to the sub-floor.

INTERIOR

▪ Storage Compartment

A storage compartment shall be located next to the "More-View" window, under the right portion of the chassis dashboard. Capacity shall be 700 in³. The compartment door shall be equipped with a ¼-turn latch.

▪ Head Pads

Head pads shall be installed and shall be easily removable for servicing. The padding shall have a smooth and even surface, and no fasteners shall be visible. A vinyl covered button shall hide the fastener on the rear emergency door and the lift door (if so equipped).

▪ Interior Panels

All interior and ceiling panels shall be 22-gauge and 18-gauge pre-painted aluminum. ABS trim panels shall be installed over all doors. Full length, removable PVC service panels shall be located above side passenger windows and shall enclose the electrical harnesses to facilitate maintenance.

Ceiling panels shall be inserted into longitudinal aluminum extrusions for perfect alignment and enhanced safety. Extrusions shall also be able to receive accessories such as shoulder belts, shoulder belt rails, luggage racks, etc.

Below the windows, panels shall be made of 22-gauge embossed aluminum and hemmed on all sides.

LIGHTS

▪ Backup Lamps

The bus shall be equipped with two recessed 4" white rear backup lamps mounted on the rear of the bus.

▪ Dome Lamps

Four (4) dome lamps with polycarbonate lenses shall be mounted in the interior roof panels over the seats. Each lamp shall have an output of at least 15 candelas.



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- **Entrance Door Lamps**

The entrance door lamps shall operate when the key is in the on position and the entrance door is open.

- **Step well Lamp**

A LED (Light-Emitting Diode) step well lamp shall be mounted on the forward side of the step well to provide illumination of the lower steps.

- **Identification Lamps**

Three (3) recessed, red LED identification lamps shall be installed in the rear cap and three (3) recessed LED amber identification lamps shall be installed in the front cap. Identification lamps shall be mounted on horizontal plane.

- **License Plate Lamp**

License plate LED light shall be mounted on rear left side of the body immediately above license plate mounting area.

- **Side Marker/Clearance Lamps**

Two red rear and two amber front recessed LED type, combination side marker/clearance lamps shall be installed in each corner at a 45° angle for better view, reduced maintenance and prevention of water infiltration.

- **Stop/Tail Lamps**

Two recessed 4" red stop/tail LED lamps shall be mounted on the rear of the bus.

- **Turn Signal Lamps**

Front turn signal lamps shall be supplied by the OEM chassis manufacturer. The rear turn signal lamps shall be two recessed 4" Red LED lamps.

MIRRORS

- **Interior Mirrors**

A 2" x 10" interior mirror attached to windshield shall be supplied by chassis OEM.

A 6" x 16" mirror, with padded edges, shall be installed immediately above the driver.

- **Exterior Mirrors**

Bus shall be equipped with FMVSS/CMVSS certified mirrors.

REFLECTORS

Four (4) 3" red round reflectors, two (2) of which shall be located on the lower rear corners of each side, and two (2) of which shall be located on each lower side corner of the rear, in order to meet FMVSS/CMVSS 108 requirements.



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STEPS

The first step shall be no greater than 14" and the ground clearance under the first step shall not be less than 10" unloaded.

STEP THREADS

All steps, including the floor line platform area, shall be covered with a 3/16" grey ribbed rubber covering. The nose of the steps shall have a 2" wide contrasting color. The step covering shall be permanently bonded to a durable backing material made of 22-gauge satin coat steel.

SUN VISOR

An OEM-supplied sun visor shall be installed by the chassis manufacturer on the left side above the driver's seated position.

UNDERCOATING

The entire underside of the body, including but are not limited to floor, skirts, wheel housings, sub-floor structure, rear bumper mounting brackets and braces, shall be coated with rust-proofing material that meets the requirements of MIL-C-62218-92 rev A for salt spray resistance (5% salt and 1000h), abrasion resistance and fire resistance.

VENTILATION

A non-closing type static vent shall be in forward section of roof panel over driver area.

WATER INFILTRATION TEST

A positive pressure water infiltration test shall be performed to ensure proper water seal of joints, fasteners, and gaskets found on vehicle.

WHEEL HOUSINGS (IF SO EQUIPPED)

Wheel housings shall be made of 12-gauge aluminum, or 14-gauge satin coat powder painted steel. Wheel housings shall be properly sealed with proper sealant in order to prevent infiltration. Stainless steel rivets shall be used to attach wheel housings to the floor structure and floor sheets.

WINDOWS

▪ Side Windows

Side windows shall be split-sash type and made with black aluminum frames. The glass shall be made of tempered AS3 glazing with a 26% light transmittance. Side windows shall comply with FMVSS/CMVSS 205 and 217. Lower window ledge shall act as a dam preventing water from infiltrating passenger compartment. Exterior horizontal ledge shall be angled to evacuate water towards the exterior of the vehicle. Neoprene gaskets and sealant shall be used to ensure proper water seal. Optional T-Slider and Solid Pane windows available upon request.



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▪ **Rear Windows**

There shall be at the rear of the bus, on both sides of the emergency door, a window that has an unobstructed glass area of 470 in². The glass shall be made of tempered AS3 glazing with a 26% light transmittance. Glass shall be bonded to prevent water infiltration.

▪ **More-View Window**

All buses shall be equipped with a More-view window located between the A-pillar of the chassis and the entrance door. The glass shall be made with clear tempered AS2 glazing. Glass shall be bonded to prevent water infiltration.

This window shall have an unobstructed glass area of at least 411 in² on a Ford chassis and 551 in² on a GM chassis.

WINDSHIELD

Shall be as supplied by the OEM chassis manufacturer.

WIPERS

Shall be electric as supplied by chassis manufacturer. Intermittent: low & high settings. Windshield washer reservoir located under hood.



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OPTIONAL EQUIPMENT

SEATS AND MODESTY PANELS

All seats are optional and shall comply with the seating layout.

WHEELCHAIR LIFT DOOR

The wheelchair lift door shall be a 2 leaf-style door and shall have a clear opening of 68" high and 43 ½" wide, so as to meet ADA-requirements pertaining to the door height. Each leaf of the wheelchair lift door shall have a window of at least 490 in². The glass shall be made of tempered AS3 glazing with a 26% light transmittance. All doors shall be weather-sealed with bulb-type seal trim made of EPDM rubber.

The door hinge shall be of heavy-duty type and their openings shall be accessible for easy adjustment. Each door hinge shall have a non protruding integrated door stop to prevent the doors from hitting the side of the bus. Gas shock retainers shall also be installed to maintain the doors in the "open" position and shall not reduce the clear opening width.

A lamp shall be mounted on the interior roof panels directly over the lift entrance. The lens of the lamp shall be made of polycarbonate. The lamp shall have an output of at least 15 candelas.

A lamp shall be mounted outside of the bus just below the lift door. The lens of the lamp shall be made of polycarbonate. The lamp shall have an output of at least 32 candelas.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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