

VEHICLE FLEET MAINTENANCE PLAN

FORMAL APPROVAL OF POLICY

This Plan has been approved by the Board or Governing Body.

Authorized Signature

Date of Approval

AGENCY OR SUBRECIPIENT

Physical Address

Phone Number

E-mail Address(es)

VEHICLE FLEET MAINTENANCE PLAN

INTRODUCTION

(Agency Name) in its continuous development and concern for the safety of its staff and community members has developed this maintenance plan. This is a living document that will be updated on an “as needed” basis and reviewed annually for compliance to new rules, regulations, and laws.

This plan is designed to keep all vehicles and related equipment in safe, reliable, and operational condition. It requires management, drivers, and related staff to be well trained and accountable for specific roles.

Specific roles

MANAGEMENT

(Agency Title of Staff) will make sure that all staff is properly trained and certified as deemed appropriate to perform preventive maintenance on the vehicles and will document all maintenance related activities.

DRIVERS

The drivers must be certified according to State laws. Driver must know the proper starting, shifting, and braking procedures to extend the life of the vehicle and must be vigilant in reporting his/her observations. No vehicle should be sent into service low on oil, antifreeze, automatic transmission, or power steering fluid. Unsealed batteries and windshield washer fluid must also be checked and filled. Drivers should be alert for unusual noises, bad tires, noisy or poor brakes, and clutch adjustments.

All drivers should be completely familiarized with the vehicles including engine compartment, driver controls, and passenger safety devices. Drivers should be trained to recognize unusual noises and describe basic mechanical problems to the supervisor and/or mechanic.

VEHICLE FLEET MAINTENANCE GOALS AND OBJECTIVES

(Agency Name) will use the maintenance plan to obtain the goals listed below:

- 1)
- 2)

Our objectives to complete the goals listed above include:

- 1)
- 2)
- 3)
- 4)

(Agency Name) has the means to carry out the goals and objectives by:

- 1)
- 2)

GENERAL AGENCY AND VEHICLE FLEET INFORMATION

(Describe the type of vehicles in the fleet, the basic kind of transportation provided by the Agency, basic area that is covered, specific location(s) where the vehicle(s) is/are parked, and state how many vehicle(s) is/are ADA-serviceable.)

PREVENTIVE MAINTENANCE INSPECTIONS AND SERVICES

INTRODUCTION

Vehicle and component (e.g., handicapped access equipment) manufacturers manuals are an important part of the vehicle maintenance plan as they define specific maintenance intervals and provide critical information when the maintenance work is actually to be performed.

Preventive maintenance (PM) inspections and Scheduled services should follow the recommended intervals by the manufacturer. If preventive maintenance services are not being done according to the guidelines of the manufacturer, the agency may jeopardize any claim to a warranty.

(See Appendix A: Preventive Maintenance Schedule)

Services eligible for warranty payment must be made by the appropriate personnel and filed with the manufacturer. Documentation of such services should remain in the vehicle file.

(Agency Name) operates a warranty recovery program to ensure that cost of parts and repairs on warranty-covered items are recovered.

Return to manufacturer/vendor

Authorization for warranty return and labor claims, if applicable, are obtained from the manufacturer or vendor. Information is supplied to the vendor on the circumstances of the failure, if known. The item is then returned to the vendor warranty department for repair or replacement. **(Agency Name)** retains copy of the warranty claim form for tracking purposes. The Agency will also notify TDOT of all warranty returns.

DOCUMENTATION

Preventive maintenance (PM) inspections and Scheduled services should be performed, and documented according to a proper schedule. All documentation including maintenance forms, logs, receipts, inspections, and trip logs should be kept through the life of the vehicle plus 3 years. Whenever a mechanic or tow truck is dispatched to a vehicle in service, documentation should be submitted and placed in the vehicle file. **(Agency Title of Staff)** is responsible for maintaining the vehicle documentation.

(See Appendix B: Information for Onsite Mechanic/Tow)

PM INSPECTIONS

Preventive maintenance (PM) inspections are basic inspections to help provide an opportunity to detect and repair damage or wear conditions before major components need repairs.

These inspections generally cover:

- A list of specific items to be checked
- Record repairs and the routine application of fluids
- Indicate inspection interval (i.e., daily or weekly); and mileage
- Indicate if repair/replacement needed for an item.

(See Appendix C: Daily Inspection Checklist)

IDENTIFIED DEFECTS

Identified defects should be reported to **(Agency Title of Staff)**. Defects must be reviewed and repaired based on the categories listed:

- **SAFETY DEFECT**
The vehicle cannot be released until the repairs are completed, except in case of an emergency. Safety cannot be compromised.
- **MECHANICAL DEFECT**
A defect that will worsen and increase cost. The vehicle cannot be released until the repairs are completed, except in case of an emergency.
- **ELECTIVE MECHANICAL DEFECT**
A defect that does not compromise safety will not cause further damage if operated but needs to be corrected prior to the next PM cycle. Repair should be scheduled. Due to transportation costs and disruption to operations, this decision should not be made lightly.
- **ELECTIVE OR COSMETIC DEFECT**
The defect will not compromise safety and will not cause further damage or cost as it is an aesthetic defect. The vehicle should be scheduled for an off-peak time in the future, as determined by management, or at the next scheduled PM Service.

(See Appendix D: Reporting Defects sheet)

TYPES AND DESCRIPTIONS OF PM INSPECTIONS

The manufacturer's recommended service schedule should be adhered to by either mileage or months. Basic PM Services are 4 levels that are listed below:

(Note: See Manufacturer's Manual for mileage/month intervals)

Level A – Conducted at (**? Miles/ ? months interval**). Change oil and filter, inspect tires, electrical system, service all fluid levels, lubricate chassis and doors, check A/C, hoses, fire extinguishers, belts, brakes, lights, test drive, body damage, etc. Inspect and test vehicle lift.

Level B – Conducted at (**? Miles/ ? months interval**). Includes all items in level A. Check coolant, specific gravity, and pH .

Level C – Conducted at (**? Miles/ ? months interval**). All items in levels A and B, plus change fuel filter, replace air filter, and inspection of braking system.

Level D – Conducted at (**? Miles/ ? months interval**). All items in levels A, B, and C, plus inspection and repack of wheel bearings.

(See Appendix E: PM Service Schedule sheet)

PRE/POST TRIP INSPECTIONS

An important aspect of preventive maintenance is the establishment of strong communication between drivers and management. An easy way to ensure and document this communication link is through the use of the driver's daily vehicle inspection checklist that is either a pre-trip or post-trip inspection.

The driver should identify any defects and report them to (**Agency Title of Staff**). All checklists are to be maintained in the vehicle's permanent file.

The pre- and post-trip inspection forms shall be legibly completed and signed by the vehicle driver. A pre-trip inspection should include as a minimum:

(See Appendix F: Pre-Trip Inspection Report and Appendix G: Post-Trip Inspection Report)

- Cleanliness – Properly maintained and free of loose articles.
- Lights and reflectors – High/low beams, tail lights, turn signals,
- 4-way hazard flashers, marker lights, license plate light, and reflectors should be cleaned as needed
- Brakes – Both foot and emergency brakes should be capable of effectively stopping or restraining the vehicle. Brake pedal should be firm after 1–2 inch free play on a single down stroke. No noises, vibration, or steering changes should result from applying the brakes while moving.
- Horn – Gives an adequate and reliable warning signal.
- Windshield, washer reservoir, wipers, and defroster – Surfaces must be clean and unobstructed, inside and outside. Washer reservoirs are to be filled as needed.

- Mirrors – All rear vision mirrors must be clean, properly adjusted, and unobstructed. Outside mirrors must be mounted on both sides.
- Tires – Must be of adequate load capacity when vehicle is fully loaded. Tires shall be inflated to recommended pressures and compatible with each set (i.e., all radials or all bias ply; no mixed sets.) Tire wear surfaces and sidewalls shall be inspected daily for debris, damage, and wear. Tires shall be replaced prior to revealing the “wear bars” between the treads at the contact surface.
- Speedometer – Shall be operational and accurately record speed.
- Seatbelts – If the vehicle has seatbelts, they must be in good operating condition and used by all passengers and drivers. Wheelchair passenger restraints and securement systems shall be fully operational.
- Doors – Capable of being opened, shut, and locked as required.
- Fluids – All fluid levels must be checked each time the vehicle is fueled and maintained at the manufacturers recommended operating levels. This includes engine coolant, oil, brake fluid, power steering fluid, transmission fluid, and washer solvent.
- Wheelchair lifts – Check operating and structural condition by operating through one (1) complete cycle.
- Emergency Equipment – Should be present and operational:
 1. Flares
 2. First aid kits
 3. Bloodborne pathogens cleanup kit
 4. Reflective vest for driver
 5. Fire extinguishers
 6. Flashlight with batteries
 7. Reflective triangle
 8. Cleanup kit for cleaning and sanitizing vehicle

A post-trip checklist should include at a minimum:

- Service brakes including trailer brake connections
- Parking/hand brake
- Steering mechanism
- Lighting devices and reflectors
- Tires
- Horn
- Windshield wipers
- Rear vision mirrors
- Emergency equipment
- Wheelchair lift

(See Appendix H: Post-Trip Checklist)

The inspection shall identify the vehicle and list any defect or deficiency discovered by or reported to the driver which would affect the safety of operation of the vehicle or result in its mechanical breakdown. If no defect or deficiency is discovered by or reported to the driver, the report shall so indicate. In all instances, the driver shall sign the report. Driver needs to sign the driver vehicle inspection report.

ADA ACCESSIBILITY EQUIPMENT

INTRODUCTION

The Americans with Disabilities Act of 1990 (ADA), Title 49 CFR Section 37.161, Subpart G, requires that transportation services maintain the ADA features of their facilities and vehicles in operative condition. These ADA features include but are not limited to:

- Lifts and other means of access to vehicles;
- Securement devices;
- Signage or systems to aid communications with persons who have impaired vision or hearing.

Accessibility features must be repaired promptly if they are damaged or out of order. When an accessibility feature is out of order, **(Agency Name)** shall take reasonable steps to accommodate persons with disabilities who would otherwise use the feature.

ADA Title 49 CFR Section 37, 163 requires the establishment of regular and frequent maintenance checks of the lifts. The vehicle drivers must report, by the most immediate means available, any failure of a lift. The vehicle lift should be repaired as soon as possible.

ADA Title 49 CFR Section 37, 173 requires all personnel to be trained to proficiency in the use of ADA equipment, as appropriate to their duties.

PREVENTIVE MAINTENANCE PLAN

A preventive maintenance plan for ADA accessibility features should be in place; including a system of maintenance checks based on manufacturers recommended guidelines within number of cycles or yearly, whichever comes first.

(See Appendix I: Wheelchair Lift Maintenance Policy)

MANAGEMENT OF VEHICLE FLEET

PHYSICAL INVENTORY

(Agency Name) will conduct a physical inventory check on all vehicles and lifts annually.

VEHICLE HISTORY FILE

Each vehicle will have a written record documenting preventive maintenance, regular maintenance, inspections, lubrications, and repairs performed.

(See Appendix J: Maintenance Log and Appendix K: Mechanic Service Sheet.)

A minimum of the following information will be maintained in the records:

- Identification of the vehicle
 - Serial/VIN number
 - Year
 - Make
 - Model type
 - License plate number
- Date
- Mileage
- Description of each inspection, maintenance, repair, lubrication performed
- The name of the business/shop performing an inspection, maintenance, lubrication, or repair to the vehicle or lift.

(Agency Name) will use the businesses or shops listed below for vehicle maintenance. **(Agency Name)** has confirmed with the businesses and shops listed below that the mechanics are certified and qualified to perform maintenance work on a vehicle.

1) Name and full address required

2)

(Agency Name) will use the businesses or shops listed below for lift maintenance. **(Agency Name)** has confirmed with the businesses and shops listed below that the mechanics are certified and qualified to perform maintenance work on a lift.

1) Name and full address required

2)

Appendix A: Preventive Maintenance Schedule

Miles on Vehicle										
Months of Vehicle in Active Service										
Change engine oil and filter	X	X	X	X	X	X	X	X	X	X
Rotate tires, inspect tire wear, measure tread depth	X	X	X	X	X	X	X	X	X	X
Inspect wheels and related components for abnormal noise, wear, looseness, or drag	X	X	X	X	X	X	X	X	X	X
Inspect wheelchair lift if applicable	X	X	X	X	X	X	X	X	X	X
Perform multi-point inspection (recommended)	X	X	X	X	X	X	X	X	X	X
Inspect automatic transmission fluid levels (if equipped with dipstick); consult dealer for requirements		X		X		X		X		X
Inspect brake pads, shoes, rotors, drums, brake linings, hoses, and parking brake		X		X		X		X		X
Inspect engine cooling system concentration and hoses		X		X		X		X		X
Inspect exhaust system and heat shields		X		X		X		X		X
Inspect front axle and U-joints; lubricate if equipped with grease fittings (4WD vehicles)		X		X		X		X		X
Inspect half-shaft boots (if equipped)		X		X		X		X		X
Inspect steering linkage, ball joints, suspension, tie rod ends, driveshaft and U-joints; lubricate if equipped with grease fittings		X		X		X		X		X
Torque rear U-bolts (Transit Connect)		X		X		X		X		X
Inspect cabin air filters (if equipped)	X		X		X		X		X	

Miles on Vehicle										
Months of Vehicle in Active Service										
Change engine oil and filter	X	X	X	X	X	X	X	X	X	X
Rotate tires, inspect tire wear, measure tread depth	X	X	X	X	X	X	X	X	X	X
Inspect wheels and related components for abnormal noise, wear, looseness, or drag	X	X	X	X	X	X	X	X	X	X
Inspect wheelchair lift if applicable	X	X	X	X	X	X	X	X	X	X
Perform multi-point inspection (recommended)	X	X	X	X	X	X	X	X	X	X
Inspect automatic transmission fluid levels (if equipped with dipstick); consult dealer for requirements		X		X		X		X		X
Inspect brake pads, shoes, rotors, drums, brake linings, hoses, and parking brake		X		X		X		X		X
Inspect engine cooling system concentration and hoses		X		X		X		X		X
Inspect exhaust system and heat shields		X		X		X		X		X
Inspect front axle and U-joints; lubricate if equipped with grease fittings (4WD vehicles)		X		X		X		X		X
Inspect half-shaft boots (if equipped)		X		X		X		X		X
Inspect steering linkage, ball joints, suspension, tie rod ends, driveshaft and U-joints; lubricate if equipped with grease fittings		X		X		X		X		X
Torque rear U-bolts (Transit Connect)		X		X		X		X		X
Inspect cabin air filters (if equipped)	X		X		X		X		X	

Appendix B: Information for Onsite Mechanic/Tow

1) Today's Date _____ 2) Last 5 digits of VIN _____

3) Time Called _____ 4) Driver _____

5) Route _____

6) Location of Vehicle: Be specific – street address, cross street, highway marker

7) Reported Trouble: Ask specific questions and be as precise as possible.

10) Replacement vehicle _____ 11) Call received by: _____

MANAGEMENT REPORT

1) Time Arrived at Bus: _____

2) Circle One: In-Service Repair Bus Exchange Towed

3) Time Repair/Exchange Completed _____

4) Nature of Trouble _____

5) Remarks _____

Operator's Signature _____

Agency Staff Signature _____

Appendix C: Daily Inspection Checklist

VIN _____

Odometer _____

Vehicle Number _____

Date _____

Interior Inspection		
1	Seats and seatbelts	
2	Doors/hinges/latches/locks	
3	Flooring/headliner/side panels	
4	Mirrors	
5	Interior lights	
6	Exterior lights <ul style="list-style-type: none"> • Directional • Step/door • Emergency flashers • Clearance • Headlights • Panel lights • Tail lights • Backup lights • Brake lights 	
7	Warning system/horn/radio	
8	Starter system/automatic/choke/backup alarm	
9	Windshield wipers/washers/windshield	
10	Windows/emergency windows	
11	AC/heater/defroster – front/rear	
12	Gauges: fuel/oil/volt/temp	
13	Roof hatch	
14	Fare box	
15	Clean	
16	Required stickers/posters displayed	

Exterior Inspection		
1	Exterior body and components	
2	Tires/wheels – lug nuts, tire pressure	
3	Access doors/emergency doors	
4	Fuel cap and port	
5	Engine oil/transmission fluid check	
6	Power steering fluid check	
7	Battery	
8	Radiator fluid level	
9	Belts/hoses/wiring	
10	Under hood/exhaust system	
11	Brakes/brake fluid/brake pedal	
12	Parking brake/emergency brake	
13	Acceleration/steering/tracking	
14	Suspension – shocks/springs	
15	Water/fluid leaks	
Lift/Ramp		
16	Wheelchair lift/ramp – cycled Y/N – smooth operation	
17	Interlock system/lift fluid levels	
	Four tie downs per position	
	Four minute safety loop strap per vehicle	
Other		
18	Fire extinguisher/first aid kit/safety triangles	
19	Bloodborne pathogens kits/seatbelt cutter	
20	License plate/operators manual	
21	Registration/insurance	

Additional Comments:

Legend	
✓	OK
X	Repairs required
R	Repaired
O	Not applicable

Appendix D: Reporting Defects

VIN _____

Date _____

Mileage _____

Please circle all that apply:

Doors	W/C Lift	A/C or Heat	Exterior Lighting
Stick	No Power	Defroster	Headlights
Too fast	Deploy	No Heat	Tail Lights
Too Slow	Platform	No A/C	Turn Signals
Won't Close	Restraint	A/C Light	Flashers
Won't Open	Stow	Blowers	Clearance

Electrical	Suspension	Brakes	Body Damage
Dome Lights	Air Leak	Pull L/R	Bumpers
Gauges	Leans	Lock Up	Front End
Telltale Lamps	Won't Raise	Soft	Rear End
Horn	Kneeler	Noisy	Left Side
Chime	Noisy	Parking Brake	Right Side

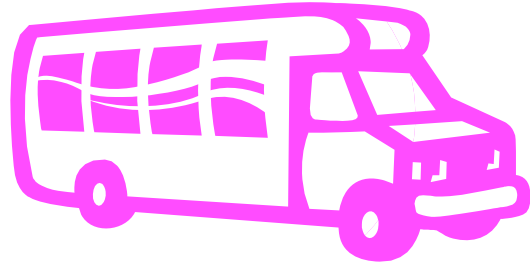
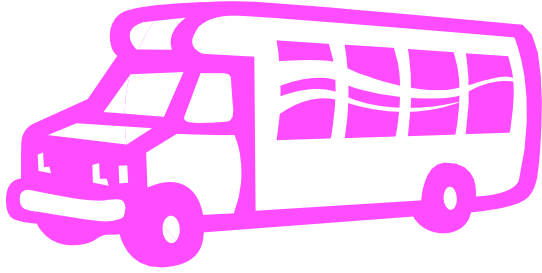
Windows	Mirrors	Steering	Radio
Broken	Broken	Hard	Dead
Etched	Too Loose	Shimmies	Static
Won't Open	Too Tight	Excessive Play	Volume
Won't Close	Won't Adjust	Pulls Left	Won't Transmit
Need Cleaning	Spot Mirror	Pulls Right	Won't Receive

Engine	Transmission	Tires
Stop Light	Low Power	Transmission Light
Check Light	Won't Start	Won't Shift
Overheats	Oil Leak	No Forward
Smokes	Fuel Leak	No Reverse
Vibrates	Water Leak	Slips
Stalls	Noisy	Leaks

Other			
Wipers	Accelerator	Sensitive Edge	Emergency Exits
Interior Dirty	Exterior Dirty	Graffiti	Interlock
Seats	Other (specify):		

Repair Action:

Body Damage (circle or designate damaged areas):



Driver's Signature: _____

Date: _____

Agency Staff Signature: _____

Date _____

Appendix E: PM Service Schedule

Preventive Maintenance Level – Schedule by Mileage

	VIN		Date	
PM Level	Cumulative Mileage	PM Description	Date of Service	Comments (use back or other paper and attach as necessary)
A				
A				
A				
B				
A				
A				
A				
C				
A				
A				
A				
B				
A				
A				
A				
D				

Repeat the schedule.

Level A: Conducted at **? miles/months** interval. Change oil and filter, inspect tires, electrical system, service all fluid levels, lubricate chassis and doors, check A/C, hoses, fire extinguishers, belts, brakes, lights, test drive, body damage, etc. Inspect and test vehicle lift.

Level B: Conducted at **? miles/months** intervals. Includes all items in level A, plus transmission fluid and filter change. Check coolant, specific gravity, and pH.

Level C: Conducted at **? miles/months** intervals. All items in levels A and B, plus change fuel filter, perform complete engine tune-up, replace air filter, drain and refill differential lubricant, and inspect braking system.

Level D: Conducted at **? miles/months** intervals. All items in levels A, B, and C, plus inspection and repack of wheel bearings.

Appendix F: Pre-Trip Inspection Report

VIN:	VIN:
Driver 1:	Driver 2:
Start Miles:	Start Miles:

Daily Check List: Place a **check mark** (✓) to indicate the item was inspected. Place an **X** if a problem is detected with an item. All items with an **X** must be detailed at the bottom of the sheet.

Item to Inspect	Driver 1	Driver 2	Item to Inspect	Driver 1	Driver 2
Oil level			A/C heater defroster		
Water coolant level			Passenger door		
Water/oil leaks			Emergency exits/lights		
Tires/lug nuts			Fire extinguisher		
Head lamps			Emergency reflectors		
Turn signals			First aid/accident kit		
Hazard lights			Wheel chair restraints		
Clearance lights			W/C interlock system		
Brake lights			W/C lift		
Backup lights			Handrails		
Glass (all) and mirrors			Seatbelts		
Clean exterior			Modesty panels		
Proper decals			Registration		
Brake pedal			Insurance info		
Emergency brake			Radio		
Backup beeper			Horn		
Wipers/washers			Clean interior		

Body Damage Description:

Explanation or Comments:

Appendix G: Post-Trip Inspection Report

VIN:	VIN:
Driver 1:	Driver 2:
Ending Miles:	Ending Miles:

Daily Check List: Place a **check mark** (✓) to indicate the item was inspected. Place an **X** if a problem is detected with an item. All items with an **X** must be detailed at the bottom of the sheet.

Item to Inspect	Driver 1	Driver 2	Item to Inspect	Driver 1	Driver 2
Water/oil leaks			Passenger door		
Tires/lug nuts			Emergency exits/lights		
Head lamps			Fire extinguisher		
Turn signals			Emergency reflectors		
Hazard lights			First aid/accident kit		
Clearance lights			Clean interior		
Brake lights			Clean exterior		
Backup lights			Wipers/washers		
Glass (all) and mirrors			Other:		

Body Damage Description:

Explanation or Comments:

Appendix H: Post-Trip Checklist

Driver _____

Date _____

VIN _____

Time/End of Trip _____

Check items that have been inspected following trip completion:

- | | |
|---|--|
| <input type="checkbox"/> parking/hand brake | <input type="checkbox"/> horn |
| <input type="checkbox"/> steering mechanism | <input type="checkbox"/> tires |
| <input type="checkbox"/> lighting devices and reflectors | <input type="checkbox"/> coupling devices |
| <input type="checkbox"/> windshield wipers | <input type="checkbox"/> wheels and rims |
| <input type="checkbox"/> emergency equipment | <input type="checkbox"/> rear vision mirrors |
| <input type="checkbox"/> service brakes including trailer brake connections | |

List any defect or deficiency discovered or reported that would affect the safety or operation of the vehicle or result in its mechanical breakdown (indicate if none, as well):

Driver's Signature

Driver's Printed Name

Describe correction action taken:

Corrective action:

1. Agency shall certify on the original driver vehicle inspection report which lists any defect or deficiency that the defect or deficiency has been repaired or that repair is unnecessary before the vehicle is operated again.
2. Every transit agency shall maintain the original driver vehicle inspection report, the certification of repairs, and the certification of the driver's review for three (3) months from the date the written report was prepared.

Printed Name

Signature

Date

Appendix I: Wheelchair Lift Maintenance Policy

Wheelchair lifts shall be serviced based on duty cycles. A duty cycle is one (1) full cycle from stowed position back to stowed position. The number of cycles a lift is operated in a given shift will be documented on the daily trip sheet. The supervisor will keep a running tally of the lift cycles for each vehicle, and send the vehicle in for the next designated service prior to reaching the maximum number of lift cycles allowed between services.

Two (2) different maintenance schedules for wheelchair lifts/ramps exist:

1. Schedule A (**Braun**)
2. Schedule B (**Ricon**).

Braun: Schedule A; includes inspection and service at 150, 750, 1,500 and 4,500 cycles with service and inspection at consecutive 750 cycles.

Ricon: Schedule B; includes inspection and service every 150 cycles, with additional services required at 1,800 cycles. This schedule also requires service at 3,600 cycles to be performed by a certified technician.

Lift Maintenance Schedule A - Braun

Braun 150 Cycles

Overall condition	Listen for abnormal noises as lift operates (e.g., grinding or binding noises).
Control pendant	Verify that control pendant is undamaged and cable connector is tight.
Threshold warning system	Verify that system properly detects objects in threshold area and actuates the audible alarm.
Bridge plate load sensor	Verify that sensor inhibits downward movement of platform when a weight is present on lowered bridge plate.
Hydraulic fluids	Check for obvious hydraulic leaks

Braun 750 Cycles

Inboard roll stop hinge	Apply light oil - See Lubrication Diagram
Platform hinges (2)	Apply light oil - See Lubrication Diagram
Outboard roll stop clevis pin pivot points (4)	Apply light oil - See Lubrication Diagram
Outboard roll stop pin roller bearings (2)	Apply light oil - See Lubrication Diagram
Outboard roll stop foot bearings (2)	Apply light oil - See Lubrication Diagram
Outboard roll stop arm slots (2)	Apply light grease - See Lubrication Diagram
Lift-Tite™ latches tower pivot points (2 latches-2 points)	Apply light oil - See Lubrication Diagram
Lift-Tite™ latch gas (dampening) spring pivot points (2 springs-4 points)	Apply light oil - See Lubrication Diagram
Inspect Lift-Tite™ latches and gas springs for wear or damage (bent, deformed or misaligned), positive securement (external snap rings) and proper operation.	Re-secure, replace damaged parts or otherwise correct as needed. Note: Apply light grease to Lift-Tite™ latch tower pivot point if replacing latch.
Inspect inboard and outboard roll stops for proper operation	Correct or replace damaged parts.
Inspect outboard roll stop foot pivot for proper operation, positive securement, and detached or missing spring.	Correct or replace damaged parts and/or lubricate. See Lubrication Diagram
Platform turnbuckle pivot points (2 turnbuckles-4 points)	Apply light oil - See Lubrication Diagram
Inspect lift for wear, damage, or any abnormal condition.	Correct as needed.
Inspect for rattles	Correct as needed.
Adjust fold pressure and outer barrier fold pressure (if applicable).	See applicable service manual.

Braun Consecutive 750 Cycle Intervals

Repeat all previously listed inspections, lubrication, and maintenance procedures at 750 cycle intervals.

Braun 1,500 Cycles: Perform all procedures listed in previous section.

Upper/lower fold arms (2)	Apply grease (synthetic) to contact areas between upper/lower fold arms. See Lubrication Diagram.
Platform pivot pin bearings (4)	Apply light oil - See Lubrication Diagram
Platform fold axles (2)	Apply light oil - See Lubrication Diagram
Inboard roll stop lever bearings (2)	Apply light oil - See Lubrication Diagram
Inboard roll stop lever upper slots (2)	Apply light oil - See Lubrication Diagram
Saddle support bearings (8)	Apply light oil - See Lubrication Diagram
Parallel arm pivot bearings (8)	Apply light oil - See Lubrication Diagram
Handrail pivot pin bearings (4)	Apply light oil - See Lubrication Diagram
Hydraulic cylinder bushings (8)	Apply light oil - See Lubrication Diagram
Inspect inboard roll stop for: 1. Wear or damage 2. Proper operation. Roll stop should just rest on top surface of the base plate. 3. Positive securement (both ends)	Re-secure, replace or correct as needed. See Platform Angle instructions and Microswitch Adjustment Instructions.
Inspect handrail components for wear or damage, and for proper operation	Replace damaged parts.
Inspect Microswitches for securement and proper adjustment.	Re-secure, replace, or adjust as needed. See Microswitch Adjustment Instructions.
Make sure lift operates smoothly.	Realign towers and vertical arms. Lubricate or correct as needed.
Inspect outboard roll stop clevis pin securement; set screws	Re-secure or replace (apply Loctite 217).
Inspect external snap rings:	
Platform slide/rotate pivot pins (2 per pin)	Re-secure or replace as needed.
Platform fold axles (1 per axle)	
Inboard roll stop lever bracket pins (1 per pin)	
Lift-Tite™ latch gas (dampening) spring (2 per spring)	
Outboard rolls top clevis pins(1 per pin)	
Outboard roll stop foot pins (2)	
Platform pivot pins (2)	
Inspect platform fold axles and bearings for wear or damage and positive securement.	Replace damaged parts and re-secure as needed. Apply light oil.
Inspect turnbuckle assemblies for wear or damage, proper operation, and positive securement	Re-secure, replace or correct as needed. Apply light oil.

<p>Remove pump module cover and inspect:</p> <ol style="list-style-type: none"> 1. Hydraulic hoses, fittings, and connections for wear or leaks 2. Harness cables, wires, terminals, and connections for securement or damage 3. Relays, fuses, circuit breakers, and power switch for securement or damage 	<p>Re-secure, replace or correct as needed.</p>
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Braun 4,500 Cycles

Perform all procedures listed in previous section.

<p>Inspect cotter pins on platform pivot pins (2).</p>	<p>Re-secure, replace, or correct as needed.</p>
<p>Hydraulic fluid (pump) - check level; Note: Fluid should be changed if there is visible contamination. Inspect the hydraulic system (cylinder, hoses, fitting, seals, etc.) for leaks if fluid level is low.</p>	<p>Use Braun 32840-QT hydraulic fluid (Exxon® Unisolv HVI 26). Do not mix with Dextron III or other hydraulic fluids. Check fluid level with platform lowered fully. Fill to maximum fluid level indicated on reservoir (specified on decal). Do not overfill. If fluid level decal is not present, measure 35 mm from the fill port to locate fluid level.</p>
<p>Inspect cylinders, fitting, and hydraulic connections for wear, damage, or leaks</p>	<p>Tighten, repair, or replace if needed.</p>
<p>Inspect parallel arm pivot pin mounting bolts (8).</p>	<p>Replace if needed.</p>
<p>Inspect platform pivot pin, bearings, and vertical arms for wear, damage, and positive securement.</p>	<p>Replace damaged parts and re-secure as needed. Apply light grease during reassembly procedures.</p>
<p>Inspect upper/lower fold arms, saddle, saddle support, and associated pivot pins, bushings, and bearings for visible wear or damage.</p>	<p>Replace if needed.</p>
<p>Inspect gas springs (cylinders) for wear or damage, proper operation, and positive securement</p>	<p>Tighten, replace, or correct as needed.</p>
<p>Inspect saddle bearings (buttons-4).</p>	<p>Apply Door-Ease or replace if needed. See Lubrication Diagram.</p>
<p>Inspect vertical arm plastic covers.</p>	<p>Re-secure or replace as needed.</p>
<p>Inspect power cable.</p>	<p>Re-secure, repair, or replace as needed.</p>
<p>Mounting</p>	<p>Check to see that the lift is securely anchored to the vehicle and there are no loose bolts, broken welds, or stress fractures</p>
<p>Decals and Antiskid</p>	<p>Replace decals if worn, missing, or illegible. Replace Antiskid if worn or missing.</p>

Lift Maintenance Schedule B - Ricon

Ricon 150 Cycles

Overall condition	Listen for abnormal noises as lift operates (e.g., grinding or binding noises).
Control pendant	Verify that control pendant is undamaged and cable connector is tight.
Threshold warning system	Verify that system properly detects objects in threshold area and actuates the audible alarm.
Bridge plate load sensor	Verify that sensor inhibits downward movement of platform when a weight is present on lowered bridge plate.
Hydraulic fluids	Check for obvious hydraulic leaks.
Electrical wiring	Inspect electrical wiring for frayed wires, loose connectors, etc.
Vehicle interlock	Place vehicle in non-interlock mode and verify that lift does not operate.
Decals	Verify that lift decals are properly affixed, clearly visible, and legible. Replace if necessary.
Armrests	Verify that armrest fasteners are properly tightened.
Lift mounting points	Verify that vehicle mounting and support points are undamaged
	Verify that mounting bolts are sufficiently tight and free of corrosion.
Main lifting pivots	Verify that link pins on arms are properly installed, free from damage, and locked in position.
Platform pivot points	Verify that platform moves freely without binding and does not wobble.
Bridge plate	Verify that bridge plate operates without binding during lift functions.
	Verify that bridge plate deploys fully when platform stops at floor level.
	Verify that bridge plate rests flat against base plate.
Front roll stop	Verify that roll stop is opened completely when platform is at ground level.
	Verify that roll stop closes and locks when platform leaves ground.

Ricon 150 Cycles (Continued):

Hydraulic power unit	CAUTION!
	Check and add fluid when platform is at ground level. Fluid that is added when platform is raised will overflow when platform is lowered.
	Verify that pump hydraulic fluid level is at full mark when platform is at ground level.
	Add Texaco 01554 Aircraft Hydraulic Oil or equivalent U.S. mil spec H5606G fluid.
	Verify there are no hydraulic fluid leaks.
	Verify that manual backup pump operates properly.

Ricon 1,800 Cycles

Cleaning and lubrication	1. Clean lift with mild soap and water and wipe dry. Prevent rust by coating all surfaces with light weight oil. Remove excess oil.
	2. Spray penetrating oil (Curtisol® Red Grease 88167 or WD-40®) where specified following directions on container. Remove excess grease from surrounding areas.

Ricon 3,600 Cycles

CAUTION!	A Ricon-authorized dealer must perform the following safety check.
Hydraulic cylinder hoses and fittings	Check hydraulic cylinder for evidence of leaks.
	Inspect hydraulic hoses for damage.
	Verify that all fittings are tight.

Lift Maintenance Schedule C - Ramp

DAILY	
Removable passenger seat	Be certain that removable passenger seat base is properly locked in position.
Foldaway middle seat	Be certain that folding seat is locked firmly in position (either folded or unfolded).
MONTHLY	
Sliding door	Wash lower door tracks and lightly lubricate contact surfaces.
Folding ramp	Clean and light lubricate pivot points and hinges.
SIX MONTH	
Removable passenger seat	Verify that locking mechanism on removable passenger seat operates properly by removing and reinstalling seat.
Electrical connections (under hood)	Be certain that circuit breaker connections are free of corrosion; clean and apply protective coating as required.
ANNUAL	
Undercarriage	Be certain undercoating is intact. Re-coat areas as required. Note: The rust inhibiting coating should provide years of trouble-free service. However, severe condition (frequent use on unimproved or heavily salted road surfaces, etc.) may cause premature corrosion. Any area where undercoating is bulging due to flaky crust should be cleaned using a wire brush, treated with primer, and re-coated.
Hoses and fittings	Be certain that all fuel lines are intact and not damaged. Be certain that fuel fill hoses are free of cracking and damage.

Appendix J: Maintenance Log for Year _____

 Van Number VIN Plate Number

Date	Mileage	Business/Shop Name	Type of Maintenance/Repair Conducted

 Staff Signatures Date

Appendix K: Mechanic Service Sheet

Date	VIN	Plate Number	Mileage
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Basic Services List

- Change engine oil and filter
- Tires: rotate and measure tread depth
- Tire pressure:
RF ____ LF ____ RR ____ LR ____
- Inspect wheels and related components
- Perform multi-point inspection
- Inspect automatic transmission fluid levels
- Inspect brake pads, shoes, rotors, drums, brake linings, hoses, and parking brake
- Inspect engine cooling system concentration and hoses
- Inspect exhaust system and heat shield
- Inspect front axle and U-joints, lubricate if equipped with grease fittings
- Inspect half-shaft boots (if applicable)
- Inspect steering linkage, ball joints, suspension, tie rod ends, driveshaft and U-joints; lubricate if equipped with grease fittings
- Torque rear U-bolts
- Inspect cabin air filters
- Lift – inspect and lube if lift installed

Additional Services List

- Replace cabin air filters
- Replace climate-controlled seat filter
- Replace engine air filter
- Inspect valve clearances
- Change automatic transmission fluid and filter
- Replace front wheel bearing grease
- Replace spark plugs
- Change engine coolant
- Change manual transmission fluid
- Change rear axle fluid
- Inspect accessory drive belt
- Change front axle fluid
- Change transfer case fluid
- Replace accessory drive belts
- Replace front wheel bearings

Parts/Materials Used:

Comments:
