

# VEHICLE FLEET MAINTENANCE PLAN

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## FORMAL APPROVAL OF POLICY

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

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Authorized signature

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Date of Approval

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**(AGENCY NAME)**

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**(List the Complete Address, phone number and email for Agency)**

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# VEHICLE FLEET MAINTENANCE PLAN

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## INTRODUCTION

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**(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.

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## VEHICLE FLEET MAINTENANCE GOALS AND OBJECTIVES

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**(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)

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## GENERAL AGENCY AND VEHICLE FLEET INFORMATION

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**(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 parked, and state how many vehicles is ADA complimentary.)**

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# PREVENTIVE MAINTENANCE INSPECTIONS & SERVICES

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## 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 F: Preventative & Scheduled Maintenance Chart)**

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 A: Information for Onsite Mechanic/Tow Sheet)**

## 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 B: 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 C: 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 D: 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 G: Pre-Trip Inspection Report and Appendix H: 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, 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.

- *Seat Belts – If the vehicle has seat belts, 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 complete cycle.
- Emergency Equipment – Should be present and operational:
  - Flares
  - First Aid Kits
  - Blood Borne Pathogens Clean-Up Kit
  - Reflective Vest for Driver
  - Fire Extinguishers
  - Flashlight W/Batteries
  - Reflective Triangle
  - Clean-Up Kit for Cleaning & Sanitizing the Vehicle

A post-trip checklist should include as 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 E: 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.

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## ADA ACCESSIBILITY EQUIPMENT

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### INTRODUCTION

The American Disability Act (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 L: 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)

3)

**(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:

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**INFORMATION FOR ONSITE MECHANIC/TOW**

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- 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) In-Service Repair    Bus Exchange    Towed  
(Circle one)

3) Time Repair/Exchange Completed \_\_\_\_\_

4) Nature of Trouble \_\_\_\_\_

\_\_\_\_\_

5) Remarks \_\_\_\_\_

Operator's Signature \_\_\_\_\_

Agency Staff Signature \_\_\_\_\_

## APPENDIX B: DAILY INSPECTION CHECKLIST

VIN \_\_\_\_\_

Odometer \_\_\_\_\_

Vehicle Number: \_\_\_\_\_

Date \_\_\_\_\_

INTERIOR INSPECTION			EXTERIOR INSPECTION		
1	All Seats and Seat Belts		20	Exterior Body And Components	
2	Doors/ Hinges/Latches/locks		21	Tires / Wheels – Lug Nuts, Tire Pressure	
3	Flooring/Headliner/Side Panels		22	Access Doors/Emergency Doors	
4	Mirrors		23	Fuel Cap And Port	
5	Interior Lights		24	Engine Oil /Trans. Fluid Check	
6	Exterior Lights <ul style="list-style-type: none"> <li>• Directional</li> <li>• Step/door</li> <li>• Emergency flashers</li> <li>• Clearance</li> <li>• Head lights</li> <li>• Panel lights</li> <li>• Tail lights</li> <li>• Back up lights</li> <li>• Brake lights</li> </ul>		25	Power Steering Fluid Level	
7	Warning System/Horn/radio		26	Battery	
8	Starter System/Automatic Choke/Backup Alarm		27	Radiator Fluid Level	
9	Windshield Wiper/ Washers/ Windshield		28	Belts/Hoses/Wiring	
10	Windows/Emergency Windows		29	Under hood/Exhaust System	
11	AC/Heater/defroster – front /rear		30	Brakes/Brake Fluid/Brake Pedal	
12	GAUGES: Fuel/Oil/Volt/Temp		31	Parking Brake/Emergency Brake	
13	Roof Hatch		32	Acceleration/Steering/Tracking	
14	Fare Box		33	Suspension - Shocks/Springs	
15	Clean		34	Water/Fluid Leaks	
16	Required Stickers/posters displayed		35	Lift/Ramp	
			36	Wheelchair Lift/Ramp – Cycled Y/N - Smooth Operation	
			37	Interlock System Lift Fluid Levels	
			38	4 Tie Downs Per Position	
			39	4 Min. Safety Loop Strap Per Vehicle	
			40	Other	
			41	Fire Extinguisher/First Aid Kit/Safety Triangles	
			42	Blood borne Kits /Seat Belt Cutter	
			43	License Plate/Operators Manual	
			44	Registration/Insurance	

ADDITIONAL COMMENTS:

SYMBOLS	
✓	OK
X	REPAIRS REQUIRED
R	REPAIRED
O	NOT APPLICABLE

Driver: \_\_\_\_\_

## APPENDIX C: 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

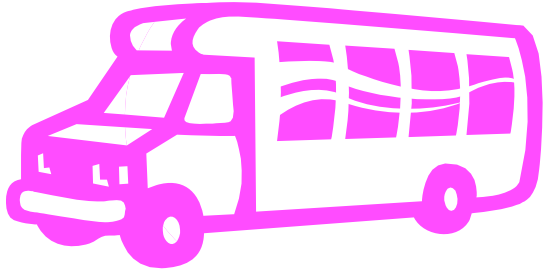
Engine	Transmission	Tires
Stop Light	Low Power	Transmission Light
Check Light	Won't Start	Won't Shift
Overheats	Oil Leak	No Forward
Smokes	Fuel Leak	No Reverse
Vibrates	Water Leak	Slips
Stalls	Noisy	Leaks
		Flat
		Damaged
		Low Air
		Low Tread
		Uneven Wear
		Loose Lugs

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

Repair Action: \_\_\_\_\_

\_\_\_\_\_

Body Damage (Circle Damage Area(s))



Driver's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Agency Staff Signature \_\_\_\_\_ Date \_\_\_\_\_

## APPENDIX D: PM SERVICE SCHEDULE

Preventive Maintenance Level – Schedule by Mileage

VIN \_\_\_\_\_

Date \_\_\_\_\_

PM Level	Cum. Mileage	PM Description	Date of Service	Comments--Note if Added Comments on Back
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 inspection of 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: Preventative Maintenance Schedule chart

Miles on Vehicle	?	?	?	?	?	?	?	?	?	?
Months of Vehicle in Active Service	?	?	?	?	?	?	?	?	?	?
Change engine oil & filter	X	X	X	X	X	X	X	X	X	X
Rotate tires, inspect tire wear and 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 Wheel-Chair 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 & filter	X	X	X	X	X	X	X	X	X	X
Rotate tires**, inspect tire wear and 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 Wheel-Chair 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 F: Scheduled Maintenance Chart:

Every 15,000 miles	Replace cabin air filter (if equipped)
	Wheelchair Lift: Conduct the 750 cycle maintenance schedule
Every 30,000 miles	Replace climate-controlled seat filter (if equipped)
	Replace engine air filter
Every 37,500 miles	Inspect valve clearances; adjust as necessary (Transit Connect CNG vehicles)
Every 60,000 miles	Change automatic transmission fluid and filter on 5-speed TorqShift transmission; consult dealer for requirements
	Replace front wheel bearing grease/ grease seal if non-sealed bearings are used (2WD vehicles)
	Wheelchair Lift: Conduct the 1,500 cycle maintenance schedule
Every 97,500 miles	Replace spark plugs
Every 105,000 miles	Change engine coolant <sup>1</sup>
	Change manual transmission fluid (except Escape)
	Change rear axle fluid (Dana axles)
	Inspect accessory drive belt(s) <sup>2</sup>
	Wheelchair Lift: Conduct the 4,500 cycle maintenance schedule
Every 150,000 miles	Change automatic transmission fluid and filter (except 5 speed TorqShift transmission) (filter not required on 6F35, 6F50, DPS6, AND AWF-21 transmissions); consult dealer for requirements
	Change front axle fluid (4WD vehicles)
	Change manual transmission fluid (Escape)
	Change rear axle fluid (RWD vehicles)
	Change transfer case fluid (4WD vehicles)
	Replace accessory drive belt(s) if not replaced within the last 100,000 miles
	Replace front wheel bearings and seals if non-sealed bearings are used (2WD vehicles)

## Appendix G: 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		
Back-Up Lights			Hand Rails		
Glass (All) & Mirrors			Seatbelts		
Clean Exterior			Modesty Panels		
Proper Decals			Registration		
Brake Pedal			Insurance Info		
Emergency Brake			Radio		
Back-up Beeper			Horn		
Wipers/Washers			Clean Interior		

Body Damage Description:

Explanation or Comments:

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## Appendix H: 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		
Back-Up Lights			Wipers/Washers		
Glass (All) & Mirrors			Other:		

Body Damage Description:

Explanation or Comments:

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# 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: \_\_\_\_\_

## **Basic Service List**

- Change Engine Oil & 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 shields
- 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 & Lube] if installed in vehicle

## **Parts/Materials Used:**

## **Additional Service List**

- Replace Cabin Air filter
- Replace Climate controlled seat filter
- Replace engine air filter
- Inspect valve clearances
- Change automatic transmission fluid & filter on 5 speed TorqShift
- 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

## **Comments:**

Mechanic Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix L: Wheelchair Lift Maintenance Policy & Schedules

Wheelchair lifts shall be serviced based on duty cycles. A duty cycle is one 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.

There are two different maintenance schedules for wheelchair lifts/ramps: Schedule A (Braun) and 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 of 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:	
Wear or damage	Re-secure, replace or correct as needed. See Platform Angle instructions and Microswitch Adjustment Instructions.
Proper operation. Roll stop should just rest on top surface of the base plate.	
Positive securement (both ends)	
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.
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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.
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Inspect turnbuckle assemblies for wear or damage, proper operation and positive securement	Re-secure, replace or correct as needed. Apply light oil
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Remove pump module cover and inspect:

Hydraulic hoses, fittings and connections for wear or leaks	Re-secure, replace or correct as needed.
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Harness cables, wires, terminals and connections for securement or damage

Relays, fuses, circuit breakers and power switch for securement or damage

### Braun 4,500 Cycles

Perform all procedures listed in previous section

Inspect cotter pins on platform pivot pins (2)	Re-secure, replace or correct as needed.
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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.	Use Braun 32840-QT hydraulic fluid (Exxon® Unavis 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.
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Inspect cylinders, fitting and hydraulic connections for wear, damage or leaks	Tighten, repair or replace if needed.
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Inspect parallel arm pivot pin mounting bolts (8)	Replace if needed.
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Inspect platform pivot pin, bearings and vertical arms for wear, damage and positive securement	Replace damaged parts and Re-secure as needed. Apply Light Grease during reassembly procedures.
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Inspect upper/lower fold arms, saddle, saddle support and associated pivot pins, bushings, and bearings for visible wear or damage.	Replace if needed.
Inspect gas springs (cylinders) for wear or damage, proper operation and positive securement	Tighten, replace or correct as needed
Inspect saddle bearings (buttons-4)	Apply Door-Ease or replace if needed. See Lubrication Diagram.
Inspect vertical arm plastic covers	Re-secure or replace as needed.
Inspect power cable	Re-secure, repair or replace as needed.
Mounting	Check to see that the lift is securely anchored to the vehicle and there are no loose bolts, broken welds or stress fractures
Decals and Anti-skid	Replace decals if worn, missing or illegible. Replace anti-skid if worn or missing.

## Lift Maintenance Schedule B - Ricon

### Ricon 150 Cycles

Over all condition	Listen for abnormal noises as lift operates: (i.e. 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 of 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

Hydraulic cylinder hoses and fittings

### CAUTION!

A Ricon authorized dealer must perform the following safety check.

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

Under Carriage

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.