

# JOURNEYMAN



## OPERATOR'S MANUAL

*Columbia Vehicle Group, Inc.*

A Nordic Group Company | Business Ventures Since 1947



**COLUMBIA**



**TOMBERLIN**

## **⚠ WARNING**

- THE COLUMBIA JOURNEYMAN IS CAPABLE TO OPERATE AT A TOP SPEED OF 25 MPH (40KPH) AND MAY BE INTENDED FOR USE AS A LOW-SPEED VEHICLE OR AS A PTV WITH A MAXIMUM SPEED OF 19 MPH. NEVER OPERATE THE VEHICLE ON ANY ROAD PUBLIC OR PRIVATE WITH A POSTED SPEED LIMIT ABOVE 35 MPH.

## **⚠ WARNING**

### **WHEN OPERATING VEHICLE ON PUBLIC ROADS**

**THIS VEHICLE OFFERS MUCH LESS CRASH PROTECTION THAN A REGULAR CAR, VAN, OR TRUCK. THIS MEANS A HIGHER RISK OF INJURY OR DEATH IN COLLISIONS, EVEN AT LOW SPEEDS. THE HIGHER THE SPEED OF THE TRAFFIC AROUND YOU, THE HIGHER THE RISK OF INJURY.**

#### **To reduce these risks:**

- Obey all traffic regulations.
- Avoid roads with regular traffic, even if the speed limit is low.
- Whenever possible, stay on roads and lanes limited to low speed vehicles.
- Wear your safety belts at all times.
- Avoid operating the vehicle at night, because your vehicle may be hard for others to see.
- To reduce the chance of the vehicle tipping over, reduce speed when turning and maneuvering thru curves and hills.
- Never drink and drive. Not only is drinking and driving unsafe, but may violate state and local laws.

## **⚠ WARNING**

**THIS PRODUCT CONTAINS OR EMITS CHEMICALS OR SUBSTANCES THAT HAVE BEEN DETERMINED BY THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.**

**⚠ WARNING**

- This vehicle is not designed to be used in conjunction with child safety seat.
- Do not use or install child safety seat in any seat or position in the vehicle.
- Always obey and follow laws and regulations regarding the transportation of children.
- Children that require the use of a child safety seat in a regular type automobile should not be transported in this vehicle.



# FOREWORD

Thank you for the purchase of your Columbia Journeyman. Your satisfaction with your new vehicle is important to all of us at Columbia.

Please take the time to review the Operator's Manual and abide by all safety and operation warnings before allowing anyone to operate your new Journeyman. Familiarizing yourself with the Operator's Manual and warnings will help avoid possible personal injury and property loss.

We hope that you will consider the manual as an indispensable part of the vehicle.

The information contained in this document is subject to change without obligation to make these changes on units previously sold.

## IMPORTANT OPERATING NOTES:

- **ALWAYS OPERATE YOUR JOURNEYMAN IN COMPLIANCE WITH YOUR STATE AND LOCAL VEHICLE REGULATIONS INCLUDING REGISTRATION, TITLING, INSURANCE, SEAT BELT USAGE, AND OPERATOR'S LICENSING.**
- **SWITCH VEHICLE TO OFF POSITION, REMOVE KEY AND SET PARKING BRAKE PRIOR TO EXITING DRIVER'S SEAT.**
- **OBEY ALL TRAFFIC LAWS.**
- **ALWAYS FASTEN YOUR SEAT BELTS!**
- **TO EXTEND THE LIFE OF YOUR BATTERIES:**
  - KEEP BATTERIES FULLY CHARGED WHENEVER POSSIBLE.
  - AVOID DEEP DISCHARGING OF BATTERIES WHENEVER POSSIBLE.
  - CHECK BATTERY ELECTROLYTE LEVELS OFTEN, ADD DISTILLED WATER AS NECESSARY.
  - FOLLOW ALL BATTERY MANUFACTURE SAFETY, CARE AND MAINTENANCE GUIDANCE.

## Table of Contents

<b>Precautions .....</b>	<b>1</b>
<b>Safety Regulations .....</b>	<b>1</b>
<b>General Warnings.....</b>	<b>2</b>
<b>Appearance.....</b>	<b>4</b>
<b>Controls .....</b>	<b>5</b>
Key Switch .....	5
High/Low Speed Switch .....	5
Direction Selector .....	6
Headlight Switch .....	6
Emergency/Hazard Warning Light Switch .....	6
Dome Light .....	7
Glove Box .....	7
Brake Pedal .....	7
Accelerator Pedal.....	7
Battery Discharge Indicator (BDI) .....	8
Turn Signal Switch.....	9
Horn.....	9
Headlamp Operation.....	9
Windshield Wiper .....	10
Speedometer/Odometer .....	10
Fuse Box.....	10
Safety Belts.....	11
<b>Pre-operation Inspection .....</b>	<b>12</b>
<b>Operation Inspection.....</b>	<b>13</b>
<b>Driving Instructions .....</b>	<b>14</b>
<b>Towing .....</b>	<b>15</b>
<b>Storage .....</b>	<b>16</b>
<b>Maintenance .....</b>	<b>17</b>
Scheduled Maintenance .....	18
Battery Care .....	20
<b>Charging.....</b>	<b>23</b>
<b>Cleaning and Appearance .....</b>	<b>27</b>
<b>Vehicle Specifications .....</b>	<b>28</b>
<b>Warranty .....</b>	<b>29</b>

## **PRECAUTIONS**

The Journeyman is designed and manufactured as a PTV or LSV. It is important that every Operator become familiar with safe operation of the vehicle as described in this Operating Manual and also with all applicable State, Local, and Community regulations governing the use of and LSV or PTV.



Safety warning signs may appear shocking at first glance. Safety Warnings are there to remind you to avoid serious accidents and personal injury.

## **SAFETY REGULATIONS**

It is required to read the Owner's Manual completely before operating the vehicle or attempting repair work. Any violations of instructions in the manual may lead to property loss, serious injury, or even death.

Pay special attention to important statements with the words such as "Danger", "Warning", "Attention" etc...

If any of the operation/warning decals are damaged, defaced, destroyed, or illegible it is important that they be replaced with new decals. Please contact the manufacturer or your dealer to obtain new decals.

### **DANGER**

- DANGER indicates an immediate hazard that if ignored, will result in severe personal injury or death.

### **WARNING**

- WARNING indicates an immediate hazard that if ignored, could result in severe personal injury or death.

### **CAUTION**

- CAUTION indicates a hazard or unsafe practice that if ignored, could result in minor personal injury or product or property damage.

## GENERAL WARNINGS

Any reference to Battery Care or maintenance is intended as general safety guidelines. Always consult and follow the recommendations of your battery manufacturer if contrary to those expressed herein. Never exceed your skill level by performing services you are not trained to accomplish. When in doubt stop and call a professional.

### **DANGER**

- The Journeyman contains batteries which can emit quantities of explosive gasses. Keep the vehicle in a well ventilated area and away from sparks and open flames.
- Ventilate when charging or operating the vehicle in enclosed areas.
- Do not perform service or maintenance on batteries while the vehicle is charging.
- The Journeyman does not offer protection from lightning, flying debris, or other storm hazards. Upon indication of severe weather conditions, seek appropriate shelter immediately.

### **WARNING**

- Inspect battery terminals, cables and batteries before each use.
- Always wear a full face shield, rubber gloves and rubber apron when working with or in close proximity to batteries.
- Turn the ignition switch to the off position, remove the key, unplug the charger and place the run/tow switch to the tow position before inspecting or performing any type of service on the vehicle.
- Connections should be tight and free of corrosion.
- Utilize insulated tools when working with electrical connections.
- The tightness of the battery terminal nut should be between 95-105 inch pounds of torque. Do not over tighten. Loose and/or overtightened connections can cause battery failure, explosion and fire.
- Do Not Overfill the Batteries and keep batteries clean and free of moisture.
- If any high heat conditions or burning smell is noticed immediately park the vehicle in a safe location, place the ignition in the off position, move yourself and passengers away quickly to a safe distance from the vehicle

and call your dealer for assistance and repair. If fire or smoke is detected contact your local fire department immediately. Do not store your vehicle inside if any of the conditions exist.

- Only use recommend batteries of the correct size.

** WARNING**

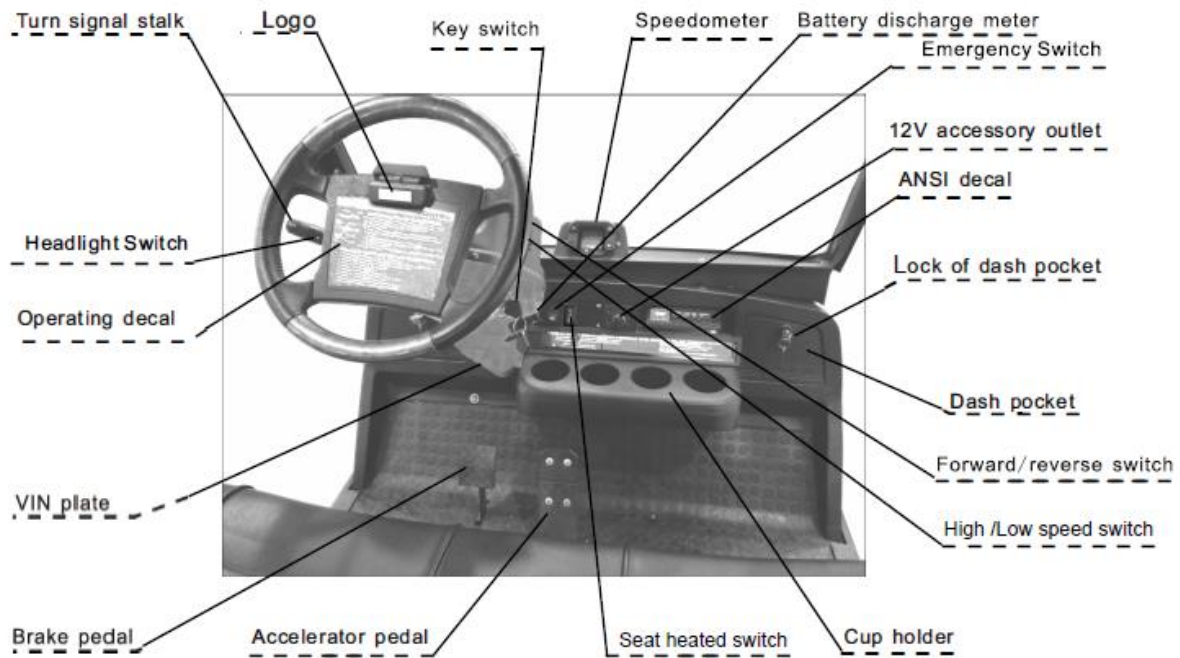
1. Only authorized technicians should preform maintenance or repair on the Journeyman. It is required to abide by all regulations and safety decals on the vehicle while performing any type of maintenance or repairs.
2. To carry out repair work: turn the run/tow switch to the middle position (see figure 1). Turn off the vehicle while preforming any type of maintenance or repairs.



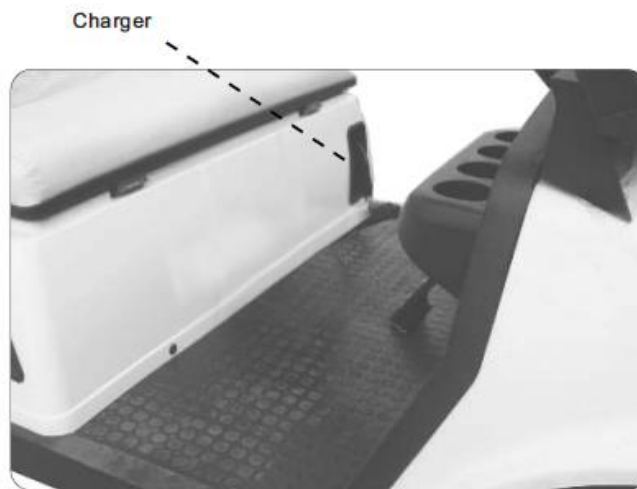
**Figure 1** - Run/Tow switch in middle position

3. Use only insulated tools to handle the battery pack and electrical components. Remove all jewelry and loose items before performing maintenance procedures.
4. Improper application or maintenance will lead to deterioration of vehicle performance and reduce the overall life of the vehicle.
5. Do not attempt to alter the vehicle in any manner which would affect stability, control, or top speed. Such alterations may lead to serious injury or death, violate State and Local laws, and will void the manufacturer's warranty.

## APPEARANCE OF THE E-MERGE CONTROLS



**Figure 2**



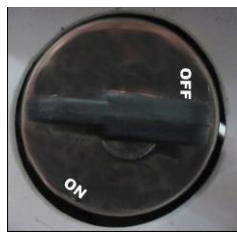
**Figure 3**

## CONTROLS

1. It is imperative that all operators of the Journeyman be familiar with the controls prior to operation.
2. To avoid unintentional acceleration and vehicle damage, do not turn the direction selector switch (forward/reverse) until the vehicle has come to a complete stop.

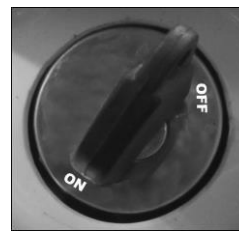
### Key Switch

The key switch is located on the right side cover of the *steering stem* and has *two* positions OFF/ON. The key can only be removed in the OFF position.



OFF

**Figure 4**

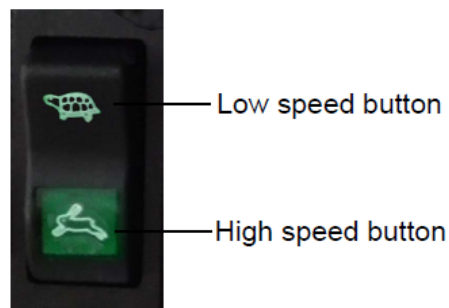


ON

**Figure 5**

### High/low speed switch (See figure 6)

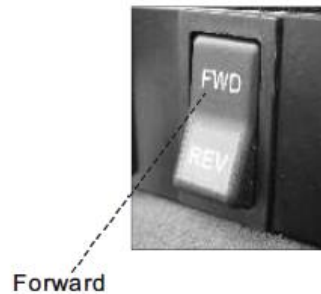
The high/low speed switch is located on the right side cover of the steering stem.



**Figure 6**

## Direction Selector

The direction selector is located on the right side of the steering stem. It has three selections FWD for Forward, REV for Reverse and a Neutral toggle position located halfway between the forward and reverse positions



**Figure 7**



**Figure 8**



**Figure 9**

## Headlight Switch

The Headlight Switch is located on the left side of the steering stem.

(See Figure 10)

## Emergency/Hazard Light Switch

The Emergency/Hazard Light Switch is located on the dashboard. (See Figure 11)



**Figure 10**



**Figure 11**

## **Dome Light Switch of the Inner Mirror**

The switch is located above the Inner Mirror. (See Figure 12)

## **Dash Pocket/ Glove Box:**

Is located on the Dash Pocket Door. Insert the key into the key hole, turn the key to the right, then press the key in, and then clasp under the key with middle finger, and pull to outside. (See Figure 13)



**Figure 12**



**Figure 13**

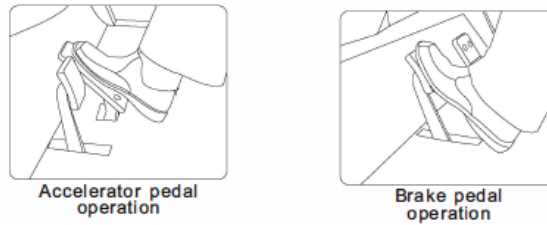
## **Brake Pedal**

The brake pedal is the larger foot pedal located to the left of the accelerator pedal. The brake pedal engages all four of the Journeyman wheels for shorter stopping distances. To slow the vehicle down, the operator should depress the brake pedal.

## **Accelerator Pedal**

The accelerator pedal is the smaller pedal to the right of the brake pedal. When depressed, the accelerator pedal will engage the drive motor in the direction the FWD/REV switch is set.

- The vehicle will accelerate up to its top speed of just under 25 mph at which time power will be reduced to the motor.
- If the vehicle speed begins to exceed 25 mph, automatic motor braking will occur.
- When the reverse position is selected, vehicle top speed is reduced.
- Smooth, slow acceleration will substantially increase the vehicle range.



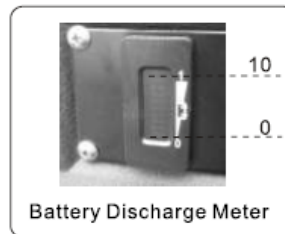
**Figure 14**

## **Battery Discharge Meter**

The Journeyman is equipped with a Battery Discharge Meter. It functions similarly to a fuel gage in an automobile. The Battery Discharge Meter is an indicator of the remaining power in the battery pack.

The Battery Discharge Meter has 10 indicator lights:

- When the light bar is at the top of the indicator, the battery pack contains a full charge.
- When the battery discharge is down by 70%, the two remaining lights will flicker as a warning.
- When the vehicle is at 80% discharge, reduced performance will occur indicating the immediate need to recharge the batteries. Continued operation beyond this discharge state will result in reduced battery life and possible damage to the batteries.



**Figure 15**

## Multi-Function Stalk---Turn Signals/Horn/High Beam/Low Beam

The Multi-Function Stalk is a multi-feature control. It is located on the left side of the steering wheel and functions similar to an automobile for turn signaling but also includes the high beam and horn control.

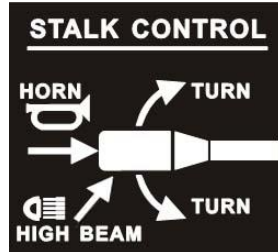


Figure 16

**Turn Signal** – Pushing down on the stalk indicates a left turn, pushing up a right turn. *Note: The turn signal stalk will not automatically return to the off position after turn, the operator should manually move the stalk to the center position upon completing each turn.*

### Horn

To activate the horn, the operator should press the end of the stalk.

### Headlamps

Turn on the master headlamp switch (See page 6 Figure 10) to activate the headlamps. Pulling the multi-function stalk down will initiate the low beam, while pushing the multi-function stalk down initiate the high beam; at the same time, the blue indicator on the speedometer will light to show that the headlamp is on.

## Windshield wiper

The windshield wiper switch is on the wiper motor which is located on at the left corner of the windshield frame. When the power is in the “ON” position, pull out the wiper switch then the wiper motor starts to work, push it forward then it stops.



**Figure 17**

## Speedometer/Odometer

The speedometer is located on top of the vehicle dash and will read vehicle speeds from 0 to 25 mph. The gauge will also record the total distance traveled. Within the speedometer is a trip odometer which can be set by depressing the set buttons. This feature is especially useful in measuring the distance between each charge cycle. The reading of the speedometer can be programmed to read out in either in miles or kilometers. To change the display simply press and hold the small button on the left.



**Figure 18**

## Fuse box

For your convenience, all the fuses have been consolidated in a central location under the seat. All fuses in the fuse box are marked with their names and functions.

## Safety Belts

The two passenger Journeyman (2X & 2XL) has one bench seat and is equipped with two safety belts, one for the driver and one for the passenger. The 4-passenger Journeyman (4 & 4+2) has a second, forward facing bench seat with two additional seat belts. The safety belts should be used at all times while operating the vehicle.

The Journeyman is not equipped for child safety seats or infant carrying seats. Children under 12 years of age should not be transported in the Journeyman. Children under 12 years of age should be transported in a full size car with appropriate child restraints.

Pregnant, disabled, or injured persons should consult their doctor for specific recommendations before operating the Journeyman.

To properly secure the seatbelts, pull the metal tab out away from the retractor and insert into one of the two buckles located near the center of the seat. A click will be heard when the tab is securely latched. Position the lap belt as low as possible on the hips not the waist. Properly adjust and ensure a snug fit by pulling the shoulder portion forward.

The retractor will lock the belt during sudden stops. It may also lock if the person leans forward too quickly. Slow, easy motions will allow for free travel.

To release the safety belt, press the buckle release button and allow the belt to retract. If the belt does not retract, check for kinks or twists.

### **WARNING**

- Always operate the vehicle with seat belts properly fastened.
- Make sure the seat belts are latched securely and are free from twists or kinks.
- Position the shoulder belt across the top of the shoulder. Do not place the shoulder belt under the arm.
- Loose fitting safety belts significantly reduce protection. Keep belts snug and positioned low on the hips.

- Do not exceed the recommended number of occupants for the vehicle;
  - Maximum occupants on the single bench Journeyman: Two (2X, 2XL)
  - Maximum occupants on the two bench Journeyman: Four (4, 4+2)

### **CAUTION**

- Inspect the safety belt webbing and hardware periodically. Check for cuts, frays or loose parts. Replace components if excessive wear or damage is noticed.
- Keep safety belts clean and dry. To clean, use mild soap and warm water. Do not use bleach, dye or abrasive cleaners as this will weaken the belt webbing material.
- Do not insert any foreign objects into the retractor mechanism. Periodically check for smooth operation and replace if the mechanism is not operating properly

### **PRE-OPERATION INSPECTION**

Each vehicle has been thoroughly inspected by both the manufacturer and dealer. Before the initial operation, it is important that the user inspect the vehicle using the following guidelines:

- **General** – Check all parts are securely fastened to the vehicle, no parts are missing and all screws or nuts are properly tightened.
- **Decals** - Review all warning decals and placement on the vehicle.
- **Safety Belts** - Visually inspect and test for safe operation
- **Tires** - check for proper inflation as identified on the vehicle certification label.
- **Batteries** - check electrolyte level in all cells of each battery. If any cell is low, add distilled water as described in the Battery Care section of this manual. All wires should be free of corrosion. Batteries should be fully charged before first use of vehicle.
- **Brakes** – Check hydraulic fluid level. If it is low, immediately call a qualified technician for service.
- **Charger cord, Plug, and Receptacle** – Inspect for cracks, loose connections, or frays.

## OPERATION INSPECTION

The following items should be checked on a daily basis prior to vehicle operation:

- **Forward/Reverse Switch** – ensure proper operation.
- **Brakes** – make sure the brake pedal is operating smoothly. It should not go more than half way to the floor when depressed. The vehicle should come to a smooth stop when operating. If excessive or low pedal pressure, pulling to one side, or unusual noise is noticed while braking, have the vehicle serviced immediately.
- **Reverse Buzzer** – the reverse buzzer should sound when the key is in the on position and the direction is set to reverse.
- **Steering** – steering should be smooth and consistent with no excessive play in the steering wheel.
- **General** – listen for any unusual noises such as squeaks or rattles. Check the vehicle's ride and performance. Have a certified Columbia Dealer or authorized technician investigate anything unusual.

## GENERAL OPERATION

- **Automatic Parking Brake** - with the run/tow switch in the run position, the Journeyman's motor will inhibit the vehicle from rolling until the accelerator is depressed.
- **Motor Braking** - the top speed of the Journeyman is limited even while going down an incline. The motor will engage to limit the top speed of the vehicle. The motor acts as a generator, transferring some of the excess energy into recharging the batteries.
- **Pedal-Up Braking** - the Journeyman will also apply some slight motor braking while stopping. A slight extra force may be felt while coming to a complete stop. This indicates a transfer of some of the excess energy back into the batteries.

## DRIVING INSTRUCTIONS

### **WARNING**

- All drivers must have a valid driver's license.
- No more than two occupants at one time on a 2-Passenger (one single bench seat) Journeyman and four occupants on 4-Passenger (two forward facing seats) Journeyman. A Journeyman 4+2 can carry a maximum of 6 occupants.
- Do not carry children on your lap or between the seats.
- Do not allow anyone to hang onto any part of the vehicle while operating.
- Obey all traffic regulations.
- Ensure all persons have read the operator's manual and can properly operate the vehicle.
- Ensure the passengers can properly operate the safety belts before allowing them to ride.
- Avoid operating at night because the vehicle may be difficult to see by others. If the vehicle must be operated at night, make sure you use headlamps and tail lamps.
- Bring the vehicle to a complete stop prior to shifting between FWD/REV. Failure to do so may injure an unsuspecting passenger and/or damage to the vehicle.
- Operate the vehicle from the driver's seat only.
- To help prevent the risk of serious injury, driver and passenger should keep all body parts inside the vehicle at all times.
- To reduce the chance of the vehicle tipping over, reduce speed while making sharp turns.
- Never drink and drive. Not only is drinking and driving unsafe, but it may also violate state and local laws.

### **Starting the Vehicle**

1. Study and understand the controls.
2. Remove the battery charger cable if connected
3. Make sure everyone is seated with seat belts properly fastened.
4. Adjust rear view mirrors.
5. Read the safety decals on the steering wheel and dash areas.
6. Place the key in the on position and turn the wheels in the desired direction of motion.
7. Select direction of motion with the FWD/REV switch.

8. Slowly apply the accelerator.
9. Use the brake to stop and limit vehicle speed.

 **WARNING**

- Avoid driving through water as doing so may damage the drive motor and also reduce braking performance. If driving through water cannot be avoided, check the brake operation by gently applying pressure to ensure normal operation occurs.

 **CAUTION**

- When stationary on a hill, use the footbrake or allow the automatic motor brake to hold position. Do not use the accelerator pedal. Holding the accelerator pedal will reduce the life of the batteries and motor.

## **TOWING**

 **WARNING**

- Do not tow behind an automobile or truck on any public roads. To tow the vehicle on public roads, use a trailer with a minimum load rating of 1,500lbs.
- To tow the vehicle, turn the ignition switch to the off position and place the FWD/REV switch in neutral.
- Place the Run/Tow switch located under the seat to the tow position.
- Do not exceed 5 mph (8 kph).
- Use extreme caution while turning.
- Do not allow occupants in the vehicle while being towed.
- Avoid stopping on a hill while towing. Do not allow vehicle to roll backwards as this may cause the vehicle to overturn.
- Do not tow the vehicle behind any type of automobile on public roads unless it is on an approved trailer with a minimum load rating of 1,500lbs.

## STORAGE

### **DANGER**

- Do not attempt to charge frozen batteries or batteries with bulged cases. Discard the battery. Frozen batteries can explode.
- Batteries in a low state of charge are more likely to freeze. Charge the batteries fully before storing the vehicle.
  1. Turn the key off, place FWD/REV switch in Neutral, and chock the wheels to prevent rolling
  2. Fully Charge the batteries. **If possible, keep the battery charger hooked up to the vehicle so that the batteries will not discharge. A computer on the charger will automatically monitor and charge the batteries.** If a reliable AC power supply is not available, disconnect the charger from the vehicle and disconnect the batteries.
  3. Dirty battery tops can conduct small amounts of electricity and hasten the discharging of the batteries. Clean battery tops and terminals with a solution of water and baking soda (1 gallon of water for 1 cup of baking soda). Do not allow this solution to enter the batteries.
  4. Inspect and clean battery wires. Damaged or frayed wires should be replaced.
  5. Store the vehicle in a cool, dry location.
  6. Adjust the tire pressure to the recommended levels.
  7. Lubricate front suspension and all other periodic lubrication points.
  8. Use floor jacks and stands to remove weight off of the tires.

### **Returning Car to Service**

1. Check battery electrolyte levels, add distilled water if necessary.
2. Fully charge the batteries.
3. Adjust the tire pressure to the recommended levels.
4. Perform the Pre-Operation inspections before each use.

## MAINTENANCE

### **WARNING**

- A. Only a qualified technician should repair or inspect the vehicle. It is important to abide by all procedures described in this manual and all safety signs such as “Danger”, “Warning”, or “Caution”.
- B. If a problem is found during the routine maintenance or inspection, do not operate the vehicle until the problem has been repaired.
- C. Wear proper safety apparel while operating the vehicle. Proper safety apparel includes but is not limited to: safety goggles or approved eye protection, insulated gloves, and a face mask.
- D. Remove all jewelry and loose apparel items.
- E. Use insulated tools while working on any electrical components.
- F. Set the key switch to OFF and the FWD/REV switch to NEUTRAL. Use chocks to secure the tires.
- G. Components such as the motor and controller may become hot during operation. To avoid burns, allow these components time to cool before performing service on the vehicle.

## Scheduled Maintenance Procedures

Scheduled inspection procedures for electric vehicle		
<b>Routine</b> Inspection by Owner	<b>Inspection</b>	
	Accelerator pedal	Freely moving, returns to fully raised position when not pressed.
	Battery pack	Keep charged.
	Service brake system	Brakes should stop car in safe distance. Pedal should travel freely, no more than half way to floor, and should return to fully raised position when not pressed.
	Charger and Receptacle	Should be secure, not loose or rotated. All pins must be present and not showing signs of arcing (black). Keep clean.
	Reverse	Unit should travel smoothly in reverse, and slower than in forward.
	Key switch and drive select	Key should go in and out smoothly. Direction select should allow travel function in Forward or Reverse only.
	Tires	Tires should be properly inflated. Note any uneven wear patterns to your dealer.
	Warning signs on vehicle	Warning decals should be securely affixed and legible.
	Lighting	All lighting should work when activated. All lights should go off with vehicle power turned off.
<b>Weekly</b> Inspection by Owner	Battery Pack	Tops of batteries should be clean.
	Wiring	There should be no loose or hanging wires.
	Overall Vehicle	No vehicle parts should be loose or damaged.
	Also check routine inspection items as listed above.	
<b>Monthly</b> Inspection by Owner or Technician	Battery Pack	If standard flooded lead acid battery, ensure water level is above lead plates and below inside ridge of vent caps.
	Tires	Lug nuts should be tightened to 65ft lbs.
	Also check routine and weekly inspection items as listed above.	
<b>Quarterly</b> Inspection by Owner or Technician	Driving System	Vehicle should operate smoothly during acceleration and deceleration. Top speed should be limited to 19mph for non-LSV or 25mph for LSV.
	Brake Fluid	Brake fluid should be filled and free from contaminants.
	Overall Vehicle	Should be no unserviced body damage.
	Also check routine, weekly and monthly inspection items as listed above.	
<b>Semi-Annual</b> inspection by Qualified Technician (or each 50 hours of operation)	Battery Pack	Test specific gravity of each cell. Should be above 1.200
	Service Brakes	When stopping, should be no pulsation. Brake pads and shoes should have at least 2mm of material.
	Wiring	Inspect for damaged wiring, repair as needed.
	Direction Selector	Verify proper operation of switch, and vehicle responds.
	Alignment	Front wheels should have 0 camber and 1/8" toe in.
	Overall Vehicle	Rotate tires. Perform lubrication as per service manual.
	Also check routine, weekly, monthly and quarterly inspection items as listed above.	
<b>Annual</b> inspection by Qualified Technician (or each 100 hours of operation)	Accelerator Pedal	When fully depressed, should register a smooth transition from 0-100% pedal push.
	Battery Pack	Perform load test/discharge test.
	Motor	Motor connections should be secure and clean.
	Front Wheel Bearings	Repack and tighten per standard bearing practices.
	Rear Axle Assembly	Drain and refill fluid. Verify no leaks from axle or tubes.
	Overall Vehicle	Perform lubrication as per service manual.
	Also check routine, weekly, monthly, quarterly and semi-annual inspection items as listed above.	

Scheduled lubrication procedures for electric vehicle			
Scheduled Interval	Item Requiring Lubrication	Position	Recommended Lubricating Oil
Quarterly lubrication by Owner or Qualified Technician.	Brake pedal main shaft	1	General-purpose lithium base grease
	Shaft, accelerator pedal	2	General-purpose lithium base grease
	Reservoir	3	Brake fluid (DOT3)
	Front suspension	4	General-purpose lithium base grease
Annual lubrication by a Qualified Technician.	Check the driving axle and fill 37oz Gear lube	5	GL-5 Gear lube
	Check the front-wheel bearing	6	General-purpose lithium base grease

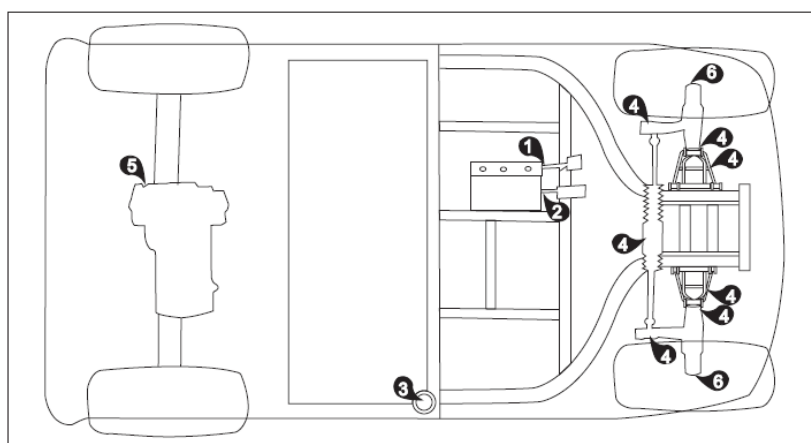


Figure 19

## CHECKING HYDRAULIC BRAKE FLUID LEVELS

### **DANGER**

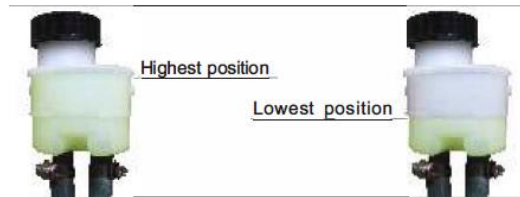
- Never operate your Journeyman if the brake pedal does not feel firm or extends more than halfway to the floor.
- Immediately stop operation if your vehicle pulls severely to one side while braking. Do not continue operation.



Figure 20

## Your Journeyman is equipped with 4+ Wheel Brakes

- The main pedal braking is done on all four wheels with a hydraulic brake system which includes front wheel disc brakes and rear wheel drum brakes. This system requires periodic inspection for brake pad wear, drum/rotor wear and hydraulic fluid loss. Consult your Columbia Dealer or qualified technician if excess wear or fluid loss is noted. Do not attempt to move the vehicle.



**Figure 21**

- The second braking system is an electronic motor brake that will activate when the Journeyman comes to a complete stop, the key is turned off or the batteries are below 24 volts.
- Additional braking utilizes the Journeyman's electric motor. It will limit your top speed when going downhill by transferring some of the excess energy back into the batteries. It will also engage to slow the vehicle if it starts to roll away once stopped.

## BATTERY PACK CARE AND MAINTENANCE

### **DANGER**

1. While charging, batteries emit hydrogen which is an explosive gas. Keep the vehicle in well ventilated areas while charging.
2. Do not smoke or expose sparks or open flames near the vehicle.
3. The electrolyte in the batteries is highly acidic and poisonous. Avoid contact with skin, eyes, and clothing. Severe burning and scarring may result.
4. Remedial measures in case of contact with battery acid.
  - External: Flush with water for 15 minutes. Call physician immediately.
  - Internal: Drink large quantities of milk or water followed with milk of magnesia or vegetable oil. Call physician immediately.
  - Eyes: Flush with water for 15 minutes. Call physician immediately.

 **WARNING**

- Wear safety glasses while working on the vehicle or charger. Wear a full face shield and rubber gloves while working on or near the batteries.
- Use insulated tools while working on any electrical components.

 **CAUTION**

- Turn the vehicle and all accessories off while charging.

The batteries in this vehicle are specifically designed deep-cycle batteries. Automotive batteries should never be used in this vehicle. The same type and size flooded lead-acid batteries should be used if replacements are necessary. Alternative batteries such as sealed or AGM batteries will require a different charging profile and should not be used without prior consultation with your dealer or battery manufacture for proper care and maintenance.

It is important to properly condition new batteries. New batteries will take numerous charges to reach their full potential. During this period it is important not to exceed a 50% discharge level. Batteries should be fully charged before first use of vehicle, before removal from storage, and before use each day.

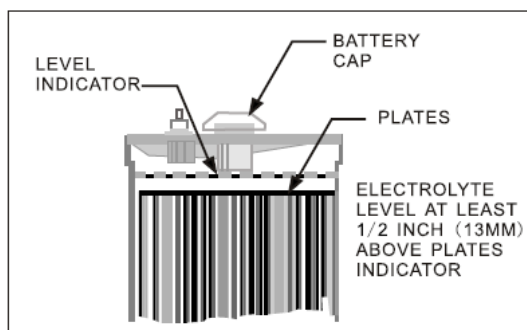
Charge batteries whenever possible; avoid deep discharging of batteries as it will shorten their life.

### **Battery Care**

1. Keep batteries clean. Ensure the battery cell tops are secure. Wash the battery tops and terminals with a solution of 1 gallon water to 1 cup baking soda. Do not allow solution to enter the batteries. Rinse off residual solution.
2. Standard flooded lead acid batteries should have the electrolyte level in the batteries checked weekly by removing the battery caps and visually inspecting the level as shown below. **(Do not remove caps from AGM batteries).**

**⚠ WARNING**

Batteries are capable of delivering high current. Do not overfill or allow water to stand on top of the batteries. Doing so could result in personal injury and or property damage.



**Figure 22**

**Use only distilled or deionized water, do not use well water.**

Add water only after charging unless the electrolyte level is below the top of the battery plates. Add water to cover plates then check the electrolyte levels once again following a complete charge cycle.

*Note, a battery watering device or bottle is available at many auto parts dealers.*

3. Inspect the wires and terminal connections for corrosion, fraying, or damage. Replace wires if necessary. Ensure battery wire terminal connector nuts are tightened to 100 in-lbs.

**⚠ CAUTION**

- If the battery wires or terminals are damaged or corroded, they should be replaced or cleaned. Failure to do so may cause them to overheat during operation.
4. Torque battery hold down straps to 40 in-lbs to insure the batteries are held in place securely.
  5. After each use, the Journeyman should be placed on charge. The batteries should never be left discharged longer than absolutely necessary.

## BATTERY CHARGING

### **DANGER**

- Batteries emit hydrogen which is an explosive gas. While charging, keep the vehicle in well ventilated areas.
- Do not cover the vehicle while charging as an accumulation of hydrogen gas could result in an explosion.

### Charger

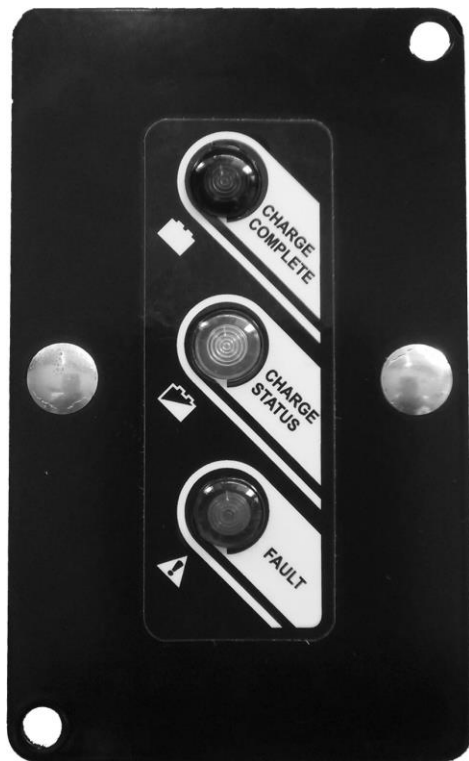
The charger is controlled through an internal computer. This vehicle is equipped with a charger interlock feature. This feature prevents vehicle operation when the charger is connected to an AC power source.

### **WARNING**

- Do not attempt to service the charger. If the charger requires service, take it to an authorized Columbia Dealer or approved technician.
- Do not overload the AC circuit. The voltage of the circuit should be between 100-240 volt and the minimum current rating should 20 amps.
- The AC side of the charger uses a three prong plug. While charging, use a three pronged wall receptacle with a proper ground. Do not attempt to alter the plug in any way.
- Do not use an adapter plug to go from three prongs to a two prong outlet. This will result in an ungrounded condition and increase the risk of an electrical shock and/or fire.
- If an extension cord is used, it must also be a three prong extension cord with 12AWG wires, no longer than 30- feet (10 m).
- Inspect and replace the charger if it appears damaged in any way. Inspect the cords and connectors for cracks and fraying. If cracks or frays are detected, replace immediately.
- Do not use the charger near volatile liquids such as gasoline, paints, thinners, and other flammables. The charger can ignite flammable materials and vapors.
- Do not expose the charger to rain or liquids. Keep the charger dry.
- Do not place anything near the charger cooling vents. Severe electrical shock may occur.
- Do not cover or block the cooling slots on the charger as it could potentially overheat.

## Operating instructions

1. Always connect the charger to a GROUNDED outlet. When using an extension cord, avoid excessive voltage drops by using a grounded, 3-wire, 12-AWG cord no longer than 30 feet (10 m).
2. Never connect a charger to the same outlet as any other device. Recommended circuits are rated at a minimum of 20 amps.



**CHARGE COMPLETE:** the LED light is green, it means absorption phase complete or charger in Maintenance mode.

**CHARGE STATUS:** the LED light is amber, it means in absorption stage.

**FAULT:** the LED light is red and flashing, it means charge error. Reset charge power and refer to Troubleshooting below.



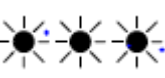

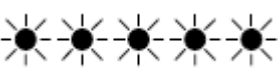

**Figure 23**

## Maintenance Instructions

1. For flooded lead-acid batteries, regularly check water levels of each battery cell after charging and add distilled water as required to level specified by battery manufacturer. Follow the maintenance and safety instructions recommended by the battery manufacturer.
2. Make sure charger connections to battery terminals are tight and clean.
3. Do not expose charger to oil, dirt, mud or direct heavy water spray when cleaning vehicle.

## Troubleshooting Instructions

If fault occurs, count the number of red flashes between pauses and refer to the table below:

Red Flashes	Cause	Solution
	Battery high voltage	Check battery size and condition and reset charger (interrupt AC power for 15 seconds).
	Battery low voltage	Check battery size and condition and reset charger (interrupt AC power for 15 seconds).
	Charge timeout caused by battery pack not reaching required voltage. Charger output was reduced to high temperatures.	Check connections: Operate charger at a lower ambient temperature.
	Check battery: battery could not be trickle charged up to minimum voltage.	Check for shorted or damaged cells.
	Over-temperature: charger shut down due to high internal temperature.	Ensure sufficient cooling air flow and reset charger (interrupt AC power for 15 seconds).
	Charger internal fault	Reset charger (interrupt AC power for 15 seconds). Return to qualified service depot if fault persists.

If the charger is left connected to AC power supply, a refresh charge will occur after 10 days if the battery voltage has dropped below a pre-programmed level. If a refresh charge tries to start, but the AC power is disconnected, the charger will wait 8 days for AC to be restored. At this point, the charger will go into sleep mode and a DC disconnect will be required to reset the charger.

The charger can be connected to any three prong 110-240 volt home outlet with an available minimum 20 amps of current. To avoid the risk of electrical shorting, the battery charger must be grounded through a properly installed three prong outlet. Do not use a two prong adapter.

Locate all cords and wires in locations that will not be driven over, covered or present a tripping hazard.

### **Charging the Journeyman**

#### **DANGER**

- Do not use the charger if:
  - The plug is loose or does not make good contact.
  - The plug or wires get hot.
  - The connector pins are bent or corroded.
  - The plug, receptacle, or connector is damaged in any way.
- Using the charger with any of the above issues could result in a fire or personal injury.
- Always utilize a charger cord sized for heavy power loads, consult and electrician in the event of any doubt.

#### **WARNING**

- Inspect cords and connections for cracks and fraying. Replace if any problems are found. Make sure all connectors are clean and dry.
- Never use a damaged charger plug to connect to the vehicle receptacle. Do not pull on the charger wires.

With the charger plugged into the AC outlet, the charger will read the battery condition and activate within two to ten seconds. The charger indicative light will display one by one and then returns to charging state.



**Figure 24**

*Note: The charger is built into the vehicle. Due to the heat caused when charging, the seat should be raised when charging in hot weather conditions.*

The charger will automatically apply sufficient power to bring the Journeyman's batteries to full charge. It will also automatically shut itself off when they are fully charged. If left connected, the charger will occasionally check the batteries' condition and apply enough power to maintain a full charge.

It is recommended to plug the charger in even after short trips (10 minutes). This will assist in getting the maximum life from your Journeyman batteries.

## **CLEANING AND APPEARANCE**

It is recommended to use automobile car wash soaps and mild household cleaners. Use a garden hose with a sponge or towel. Do not use a pressure washer as the overspray may damage some of the electrical components.

Use non-abrasive automotive type wax products. Battery acid, bugs, asphalt, and tar should be washed away with mild non-reactive solvents to prevent possible staining.

## **QUESTIONS**

Should you have any questions regarding the care maintenance, repair or operation of your Journeyman, contact your Columbia Dealer.

## VEHICLE SPECIFICATIONS

Specifications		2-passenger	4-passenger
Dimensions length*width*height(mm)	No load	2500*1200*1860	3280*1200*1870
	Full load	2500*1200*1840	3280*1200*1850
Dimensions length*width*height(in)	No load	98.5*47.28*73.28	129.23*47.28*73.68
	Full load	98.5*47.28*72.50	129.23*47.28*72.89
Wheelbase(mm)		1630	2450
Wheelbase(in)		64.2	96.5
Wheel tread(mm)	Front wheel/rear wheel	980 / 1060	980 / 1060
Wheel tread(in)	Front wheel/rear wheel	38.61 / 41.76	38.61 / 41.76
Weight without batteries and load(kg)		360	480
Weight without batteries and load(lb)		793.8	1058.4
Weight of load(kg)	Weight of passengers(kg)	2X90=180	4X80=320
	Weight of batteries(kg)	240	240
Weight of load(lb)	Weight of passengers(lb)	2X198.45=396.9	4X176.4=705.6
	Weight of batteries(lb)	529.2	529.2
Overall weight(kg)		780	1040
Overall weight(lb)		1719.9	2293.2
Weight on the axles for no load(kg)	Front axle/rear axle	200/340	270/450
Weight on the axles for no load(lb)	Front axle/rear axle	441/749.7	595.35/992.25
Weight on the axles for full load(kg)	Front axle/rear axle	265/455	400/640
Weight on the axles for full load(lb)	Front axle/rear axle	584.33/1003.28	882/1411.2
AC motor(kw/R.min)		5.0/5000	5.0/5000
AC motor(hp/R.min)		6.803/5000	6.803/5000
Controller(A/V)		450/48	450/48
Batteries	Batteries	6V 8	6V/8
	Capacity(AH@20Hrs)	1800	1800
Maximum speed(km/h)		≤ 32	≤ 32
Maximum speed(mile/h)		≤ 19.9	≤ 19.9
Approximate drive distance(km)		55~70	55~70
Approximate drive distance(mile)		28~37.26	34~43.47
Minimum turning radius(m)		≤3	≤5
Minimum turning radius(ft)		≤9.84	≤16.41
Minimum ground clearance(mm)		≥80	≥80
Minimum ground clearance(in)		≥3.15	≥3.15
Angle of approach for no load(°)		≥35	≥35
Front wheel alignment (no load)	Camber angle(°)	1	1
	Steering axis inclination angle(°)	12	12
	Caster angle(°)	5	5
	Toe in(mm)	3~5	5~8
	Toe in(in)	0.12~0.20	0.20~0.32
The maximum noise(db)		≤70	≤70

# JOURNEYMAN LIMITED WARRANTY

We warrant to the original consumer purchaser or lessee that our Commercial Vehicle will be free from defects in factory materials and workmanship under normal use and service in a non-rental application for the period stated below from date of purchase subject to the terms, provisions, and exclusions contained herein.

**1. LIFETIME – FRAME:**

A lifetime warranty on the frame. Damage due to rust, corrosion or abuse is specifically excluded.

**2. 24 MONTHS – PARTS AND LABOR ON COMPONENTS:**

Columbia Vehicle Group, Inc., (Columbia) warrants parts and labor to repair defective components for twenty-four (24) months from date of purchase, subject to the following terms and conditions.

**3. EXCLUDED COMPONENTS:**

Batteries and tires are excluded from this warranty as they are warranted by their respective manufacturers. Your authorized Columbia dealer will assist in processing these warranties if necessary. Consequential damage caused by defective batteries or tires are also excluded from this warranty.

**4. ADDITIONAL CONDITIONS:**

Columbia will warrant Columbia replacement parts provided under this warranty. All Columbia parts replaced under this warranty become the property of Columbia and, if requested by Columbia, must be returned to the factory for inspection.

- a) Any other expense incurred in obtaining warranty repairs, including transportation and labor, are the responsibility of the purchaser, unless otherwise stated in this warranty.
- b) To qualify for warranty coverage, the selling dealer must complete the warranty registration form online within ten (10) days after purchase or lease. If this information is not on file with Columbia, purchaser must provide proof of date of purchase with any warranty claim.
- c) To obtain warranty service, you must return your vehicle during the warranty period to any authorized Columbia vehicle repair facility. Dealers are able to provide service during their normal business hours and within a reasonable time. Further information regarding warranty service may be obtained from Columbia by writing our Custom Service Department, Columbia Vehicle Group, Inc., 1115 Commercial Ave., Reedsburg WI 53959.
- d) Any subsequent changes, updates or improvements in vehicle design and equipment shall not apply to vehicles previously manufactured or purchased.

**5. THIS WARRANTY SHALL NOT APPLY TO DAMAGE OR COST CAUSED BY:**

- a) Failure to operate, maintain and service vehicle, as specified in the applicable Owner's Manual.
- b) Abuse, misuse, neglect, accident, collision and operation at other than the specified design speed or rated capacity.
- c) Alteration or repair outside of factory specifications, including damage caused by unauthorized installation of aftermarket options or accessories.
- d) Use of components, including fluids or batteries, not specified in the applicable Owner's Manual, or avoidable with the proper use of specified Columbia components, including oil or batteries.

- e) Fading, deterioration or weathering seats, fabric enclosures, floor mats, bag racks, bag straps, body parts, paint or chrome caused by ordinary wear and tear exposure.
- f) Charges incurred to transport any vehicle to and from an authorized dealer for warranty service, and or travel charges incurred by an authorized dealer to or from the vehicle location to preform warranty service.

**6. WARRANTY DOES NOT APPLY TO:**

Normal maintenance shown in the Owner's Manual which the purchaser is expected to preform including, but no limited to, brake adjustment, battery maintenance (cleaning, maintaining proper fluid levels and battery charge), lubricant replacement in differential assemblies, wear items such as bearings, brake pads, and/or brake shoes are not covered by this warranty.

**7. USE OF NON-GENUINE PARTS:**

Columbia dealers are independently owned and operated, and may sell products other than those provided by Columbia. Therefore, you should understand that COLUMBIA IS NOT, AND CANNOT, BE RESPONSIBLE FOR THE QUALITY, SUITABILITY OR SAFETY OF ANY NON-GENUINE COLUMBIA PART, ACCESSORY OR DESIGN MODIFICATION, INCLUDING LABOR, WHICH MAY BE SOLD AND/OR INSTALLED BY DEALERS OR DAMAGE CAUSED THEREBY.

**8. SOLE REMEDY, NO OTHER WARRANTY:**

The purchaser and Columbia expressly agree that the remedy of replacement or repair of the defective vehicle or component thereof, is the exclusive sole remedy of the purchaser. Columbia makes no other representation or warranty of any kind, and no representative, employee, distributor or dealer of Columbia has the authority of any kind to make or imply representation, promise or agreement which in any way varies from the terms of this warranty.

THERE ARE NO OTHER EXPRESS WARRANTIES ON YOUR VEHICLE BEYOND THOSE SET FORTH HEREIN AND NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS. TO THE FULLEST EXTENT ALLOWED BY LAW, COLUMBIA AND ITS DEALERS SHALL NOT BE LIABLE FOR LOSS OF USE, INCONVIENCE, LOST TIME, COMMERCIAL LOSS OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES OR ECONOMIC LOSS.

**9. VEHICLES SOLD OUTSIDE OF THE UNITED STATES:**

In the case of vehicles sold outside of the U.S.A., defective parts must be returned to the selling dealer and transportation charges prepaid by the purchaser. The dealer will then replace all parts which his inspection shall show to be defective under the warranty. Columbia assumes no liability for the dealer's labor charges, if any, or any other expenses. For further information concerning export, please contact Columbia Vehicle Group, Inc., 1115 Commercial Ave. P.O. Box 60, Reedsburg, WI 53959 U.S.A. Attn: Customer Service, (608) 524-8888.

**10. STATE SPECIFIC RIGHTS:**

Some states do not allow the exclusion of limitation of incidental, consequential or other damages, or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

# **JOURNEYMAN**

*Columbia Vehicle Group, Inc.*

A Nordic Group Company | Business Ventures Since 1947



**COLUMBIA**



**TOMBERLIN**