

# RAZOR

# POWER LIFT

## OWNERS MANUAL



### CONTENTS

Safety Cautions	1
Installation Instructions	1
Electrical Schematic	4
Operation	5
Light Indication	6
Reset	6
Maintenance	6
Warranty	7
Appendix – Trailer Wiring	7

# INSTALLATION INSTRUCTIONS

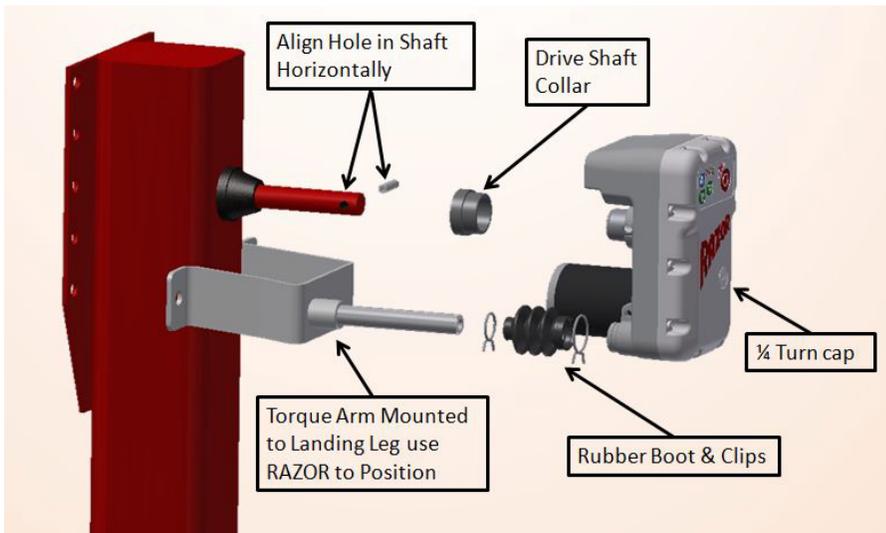


## SAFETY CAUTIONS

1. This RAZOR POWER LIFT unit MUST NOT be installed on a trailer used for transporting flammable goods without approval from the relevant authority.
2. A brake interlock can be optionally installed to ensure that the legs will not lower unless the trailer brakes are engaged. *Note: If the legs are already raising the interlock will still permit the legs to continue rising even after the brakes are released. Once the brakes are released RAZOR is required to be re-activated before it can be used again. The loop in interlock must be included to make the circuit.*
3. The RAZOR POWER LIFT in conjunction with landing legs can create high forces. These forces can be as high as 25,000 lbs /12 tonnes per leg and can easily crush limbs. The installer, the trailer owner and the operator must ensure that during operation all care is taken to ensure that personnel are clear of the landing leg feet. Suitable signage is supplied to install on the legs and this must be displayed and be clearly visible near the leg with all users educated on the risks involved.

## RAZOR Drive Installation Instructions

1. Read the entire instructions thoroughly prior to starting. This will assist to ensure you have all the tools and equipment required.
2. Remove landing leg crank handle. Clean drive shaft to ensure the RAZOR drive can slide on and off. Filing and or wire brushing may be necessary.
3. Bolt the applicable torque arm on to the leg then slide the RAZOR into position before tightening torque arm bolts to ensure proper alignment.



**Caution: Drive not to be operated without torque arm**

**Fig1. Razor Drive fitted to Landing Leg**

# INSTALLATION INSTRUCTIONS

**RAZOR**

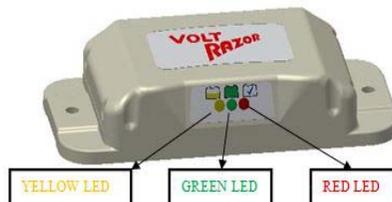
4. The RAZOR must be free enough on the torque arm to allow the landing leg gearing to be changed between HIGH and LOW leg gear. No lubrication is required on the torque arm.
5. The alignment of the torque arm can be checked by sliding the RAZOR in and out on the leg drive shaft before the drive pin is inserted.
6. Prior to fitting the drive unit, the rubber boot and spring clips need to be slid onto the torque arm
7. Loosely fit drive shaft collar to RAZOR (this nests in boss at rear of unit). The collar is a firm fit and will require leverage to press home fully after the drive pin is fitted.
8. Fit spring clips to rubber boot then the boot to the torque arm.
9. Fit RAZOR to landing leg crankshaft ensuring drive pin holes are aligned. *Note: the RAZOR shaft can be rotated by removing the front ¼ turn cap and using the manual override handle supplied. (Refer to Page 3 for details on manual override handle)*
10. Use a hammer and punch to drive the pin into the aligned holes. *Note: There are two cross holes in the output shaft always use where possible the hole closer to the RAZOR body. Typically, an inboard mount leg uses the outer hole.*
11. Slide drive shaft collar over the drive pin and press into the boss on the back of the RAZOR. Finally fit the boot and retaining clips.
12. Connect the electrical wiring as per the enclosed wiring schematic(Fig7).

## RAZOR Power Kit Installation Instructions (where supplied)

13. The maintenance free sealed 12V lead acid battery is supplied and clamped inside the battery box provided (Fig2). This must be fitted to a sturdy location on the trailer close enough for wiring harnesses to connect to the Razor drive unit. Chassis members that are prone to considerable vibration can affect battery life. (Main structural sections are preferred). Refer enclosed wiring schematic(Fig7).



**Fig2. Battery Kit**



**Fig3. Battery Charger**

14. Your RAZOR has a separate battery charger (Fig3) located inside the battery cover and has three LED lights. Note: the battery cover is shown as transparent

## INSTALLATION INSTRUCTIONS

**RAZOR**

for the purpose of clarity. For indication of the condition of battery and of power supply from the trailer their functions are as per the table below:

Red LED	This indicates the supply voltage connected and the charger is enabled.
Yellow LED	This indicates that the battery is charging.
Green LED	This indicates that the battery is fully charged.

15. The charge circuit harness must be connected to both the positive and negative points on the trailer electrical circuit (white (-), blue (+) and brown (+) wires). Typically the supply should come from the trailer clearance (brown) lights and the stop (red) circuit if connected. Alternatively the brake light circuit could be utilized. (Refer to wiring circuit).
16. It is important that the electrical connections are robust preferably soldered connections into the trailer wiring harness. An acceptable alternative is fitment to the 7 pin plug at the front of the trailer. After charge harness wiring fitting is completed, check the charge circuit is operational.

### RAZOR Wireless Remote Keypad Installation (offside leg keypad)

17. The remote keypad panel(Fig4) mounts on the opposite side of the trailer adjacent to or on the offside leg.

**Fig4. Wireless Remote keypad**



### RAZOR Manual Override Handle

18. Razor is supplied with a manual override handle (Fig5) that is located behind the battery cover. This handle is for use in an emergency should either the battery or RAZOR drive unit have a fault.

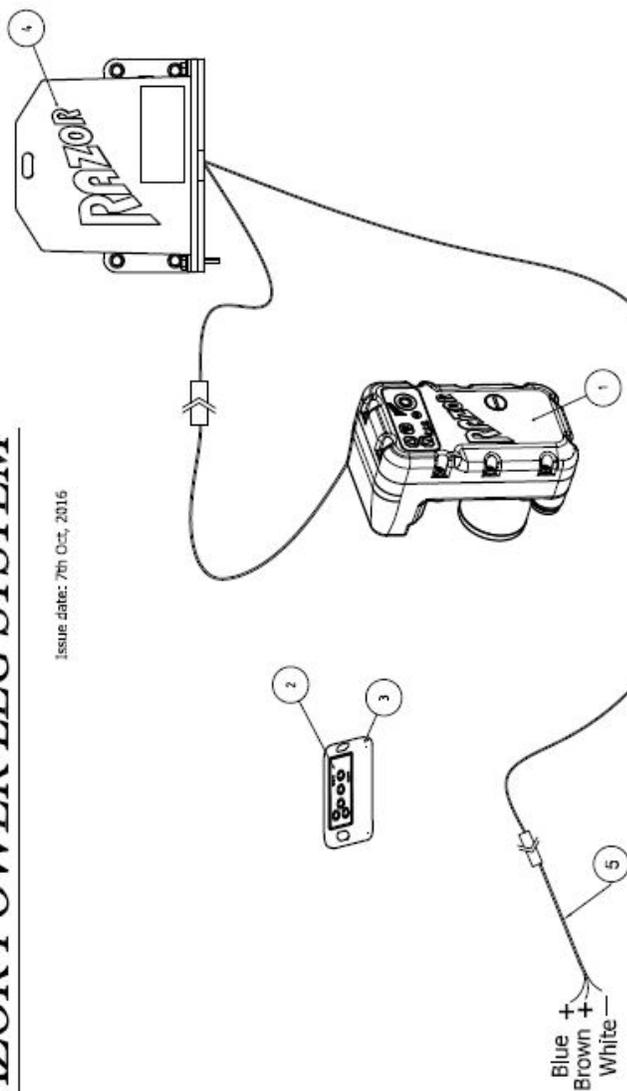


**Fig5. Manual Override Handle**

# INSTALLATION INSTRUCTIONS

## RAZOR POWER LEG SYSTEM

Issue date: 7th Oct, 2016



Item	Description	Part No.
1	Razor Leg Drive	LD14
2	Horizontal Remote	RCHAP14
3	Remote Bezel	RLAPBE
4	Battery Kit	BKRA14
5	Charge Harness	PH0005E

Note: Power is required (9 to 30VDC) to maintain Razor battery.  
Connect matching wire colours between Razor and Trailer Harness.  
i.e. Blue to Blue(auxiliary), Brown to Brown(clearance) and White to White(negative)

**Fig6. Wiring Schematic**

# OPERATING INSTRUCTIONS



- RAZOR is a push button replacement for your manual crank handle. It is an electronically controlled electric drive unit.
- Incorporated into the RAZOR unit are many features to ensure a trouble free operation. The wiring harnesses all have mating plugs so RAZOR cannot be connected in reverse polarity. Reverse polarity will damage the electronic controller beyond repair. The unit is sealed and only authorized service centres are permitted to carry out repairs of any nature. After installation if RAZOR does not operate as described below then you should refer the problem to your authorized service centre.

## ACTIVATE RAZOR

1. Once your RAZOR unit has been fully installed, it needs to be activated each time you operate it. This is a safety feature that can help prevent indiscriminate and unauthorized use.
2. RAZOR is activated by depressing the Red (STOP) button on either panel for 2 seconds. Enabling has been achieved when the ACTIVATE light (RED) illuminates twice.
3. The RAZOR will remain activated for 3 minutes from the time the unit was last operated. After this period of inactivity, the RAZOR will need to be activated once again prior to being operated.

## LOWER LANDING LEGS

1. Press the Green (LOWER) button.
2. RAZOR will lower the legs to the ground and turn off automatically. In some instances this may be all that is required prior to decoupling and the subsequent steps will not need to be carried out.
3. Once the legs are on the ground the Blue (RAISE) button will need to be pressed, followed by the Stop button, this removes load from the leg gear. Change the leg gear ratio by grasping RAZOR and moving the leg shaft and RAZOR in or out as the case may be, to change the leg gearing to low speed.
4. Press the Green TIMER button to lower the legs for 20 seconds. The legs can be stopped at any time by pressing the STOP button.
5. The Legs will automatically stop if they reach their end travel.

## RAISE LANDING LEGS

1. The legs will raise by pressing the Blue (RAISE) button. If the legs are not clear of the ground the legs will need to be in low gear. Once clear of the ground the leg gearing should be changed to high gear, this will bring the legs up quickly. The gearing in the leg is changed by using RAZOR as a grab handle and moving it in or out as the case may be. This should be done with the motor stopped.
2. The legs can be stopped at any time by pressing the STOP button.
3. The legs will stop automatically when they are fully raised.

**Important Note:** If the razor stops while running in the up direction, then the Green (LOWER) button must be pressed and stop before the Blue (RAISE) button will again activate.

# OPERATING INSTRUCTIONS



## LIGHT INDICATION

### **Code (Blue)**

This light is used to code in a new/replacement remote and records the activation of the wireless remote buttons by a continuous flashing of the blue light. If the internal short on motor drive occurs, the light will flash five times.

### **ACTIVATE (Red)**

This light will flash once when the light motor is operated in either direction or when max load/current exceeded. The light will flash again when the motor stops. In general the double flash is an indication that the unit has been initiated or the unit has stopped on sensitivity. The light will flash three times if short circuit (max current exceeded 63 amps) occurs.

### **SERVICE (Amber)**

This light will flash 5 times if low battery is detected(after motor has stopped)

Note: Low battery detect level=11V

If the voltage drops below 9V, the unit will not work.

Note: All lights flash 5 times if over temperature occurs

If the communication failure(with remote), Red then yellow light will flash twice.

## SERVICE

- *Check cable plugs periodically (6 months) that they are clean and dry inside. Faults can arise from bad electrical connections.*
- *If moisture is detected within the connector plugs or on the battery terminals, apply a suitable conductive moisture inhibitor.*
- *The operation relies on use of both gears in the leg and this is achieved by sliding the Razor in and out on torque arm. The rubber booty can be slid back and the torque arm checked for dirt ingress. To clean, the RAZOR needs to be removed from the leg drive shaft. The torque arm can now be cleaned and the RAZOR refitted (check this hand book for fitting instructions).*
- *All parts of the RAZOR are replaceable if damaged. Any authorized service centre can provide this service if required.*
- *Batteries have a limited life (up to 5 years). A well maintained battery will achieve the best life, that is, keeping the battery as fully charged as possible at all times. Long idle periods for the trailer (several months) could result in reduced battery life if the RAZOR is left connected.*

# WARRANTY



## WHAT'S COVERED

Razor International Pty Ltd (Razor) warrants to the original retail purchaser that all of its products sold as new and installed in accordance with Razor's fitting instructions, will be free from defects in material or workmanship under normal use and service for a period of 12 months from the date of purchase ("the warranty period").

## WHAT'S NOT

This warranty excludes damage from accidents, objects striking RAZOR, misuse of RAZOR, alterations to RAZOR, air-borne fallout, (such as loads carried on the trailer or thrown up from the road and road wheels), windstorm, lightning, hailstorm and improper maintenance.

## OTHER TERMS

To the greatest extent permitted by law any warranty or guarantee either expressed or implied which varies in any way from this written warranty is excluded.

Notwithstanding the provision of the warranty Razor and its authorised associates will not be responsible for any consequential loss or damage whatsoever and no such claims will be accepted.

Warranty repairs will be covered for a period of 90 days or until the end of the original warranty period, whichever is the longer.

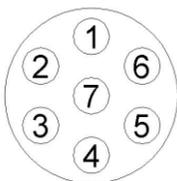
## WARRANTY ADJUSTMENTS

Razor or an authorised associate can only honour this warranty.

All warranty claims are to be submitted to Razor. Razor will investigate warranty claims and where possible respond to the customer within 7 days. Subject to Razor review and approval, all RAZOR parts or units found to be defective and within the warranty period, will be repaired or replaced with an unit, as appropriate, at the sole discretion of Razor.

This warranty gives you specific legal rights. You may also have other rights, which may vary from territory to territory.

## Appendix – Trailer Wiring



7 Pole Socket

(view from Rear)

<b>A.S. Pin</b>	<b>SAE Pin</b>	<b>Connect to</b>	<b>Colour</b>
1	5	Left Flasher	Yellow
2	6	Reversing	Black
3	1	Earth	White
4	3	Right Flasher	Green
5	7	Service Brakes (Auxiliary)	Blue
6	4	Stop	Red
7	2	Tail, Licence & Clearance	Brown

A.S. pin refers to the configuration in accordance with Australian Standard 2513-1982 and ADR 42/02. The SAE pin is where a SAE (American Standard) connector is used. Typically this is evidenced by the larger pin in the "1" position.