



CBB OPERATION AND SERVICE MANUAL

VERSION 1.4 - 2024

www.chrissbodybuilders.com.au

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INTRODUCTION

This manual has been prepared to provide critical service and maintenance information for Chris's Body Builders equipment to both owners and operators. This manual provides general information identifying minimum inspection requirements to keep equipment functioning efficiently and safely for the life of the trailer. It is intended to be used as a management tool to guide to develop bespoke maintenance schedules for the vehicle. All information is to be supplemented with proprietary information of sub-components to ensure optimal servicing requirements are met.

Chris's Body Builders (CBB) is a quality manufacturer of Hardox™ and aluminum truck and trailer tipping bodies to cover all areas of tipping transport industry. Located in Melbourne's North-West, CBB is within close proximity to the Western Metropolitan Ring Road and Melbourne's Tullamarine Airport. Whether it is rigid tipping bodies, 2,3,4,5 or 6 axle tipping dogs, semi tippers, B double, dollies, road train combinations, Chris's Body Builders can provide a solution to meet your requirements.

Recognized in the transport industry as a leading manufacturing of tipping equipment, CBB's reputation has been built upon the use of the highest quality materials and workmanship to provide a quality long lasting product that stands the test of time.

DISCLAIMER

These instructions are provided by *Chris Debono Pty Ltd* (ACN 006 524 803) trading as Chris's Body Builders ('CBB') for the purposes of assisting with the operation, repair and or servicing of your new Chris's Body Builders equipment ('the equipment'). Operation, repair or servicing of this equipment should be undertaken by a person who has the appropriate professional training and suitable qualifications.

The owner and operators are wholly responsible for ensuring that an appropriately qualified person undertakes the proposed work outlined in this manual in a safe and diligent manner with all appropriate equipment. Any unqualified works or tampering of systems will void warranty if deemed to have caused undue wear and tear, fault, damage or any premature failure.

To the maximum extent permitted by law, *CBB*, and its related entities, directors, other officers, employees, advisers and agents, will not be liable in any way for, and you hereby release *CBB* from and indemnify *CBB* against, any direct, indirect or consequential liability (including negligence) loss (including loss of profits and lost opportunity), damage, expense, injury, death or claim of whatever description arising from or relating to any improper use of the equipment and any failure to comply with these instructions. *CBB* may amend or replace these instructions at any time without notice.

Please refer to the Chris's Body Builders website www.chrissbodybuilders.com.au for the latest version.

TRAILER SAFETY INFORMATION

The Health and Safety of operators, maintenance personal and the public must always priority when operating tipping equipment. Accidents can result in serious injury or deaths.

Because of the variety of applications, there is a heavy reliance on the requirement for a driver to have the following knowledge:

- Be trained in correct tipping procedures. It is recommended that owner/operators have all delivery sites inspected before tippers are used on site, the hazards are then to be identified in a site specific SWMS, this includes checking for the following from a safety perspective:
 1. *Ground conditions in the tipping area which may affect stability*
 2. *Look for overhead obstructions or hazards which may be contacted by a raised body*
 3. *Ensure safe distance from other vehicles whilst loading or unloading*
 4. *CBB recommend that quick release semi tippers should be only operated on a stabilized quick release turntable*
 5. *If tipping a semi-trailer on a non-stabilized turntable ensure that the prime mover and the trailer are in a straight line at all times whilst tipping*
 6. *At all times when leaving the cabin of the prime mover, ensure that the park brakes are applied*
 7. *Ensure tipper exclusion zone for pedestrians, plant, light vehicles, and traffic management are in place prior to raising body on sites where downgrades and cross falls are not present.*
 8. *Carry out the tasks in accordance with any local, company and government procedures or instructions, including height restrictions*
- Do not stand or reach under a raised body without mechanical fail safe measures (body prop) in place to prevent accidental lowering of the body.
- Never attempt to raise the hoist of a semi tipper unless the trailer is securely connected to the prime mover fifth wheel
- Always watch the tipping operation to ensure that the tipping trailer lifts squarely
- Never modify hydraulic components or circuits unless a trained professional is used
- Ensure that replacement items are of equivalent specification to original equipment specification
- Ensure correct personal protective equipment is worn

These instructions are intended to be a basis for individual operators to produce bespoke instructions to suit their own unique operations. Operators need to ensure they practice due diligence when operating equipment and are aware and compliant with local and federal legislation that is applicable to their organization. Chris's Body Builders takes no liability as the above instructions are the purpose for a general safety guide only.

UNIT INFORMATION PACK

Equipment Information

Unit Type:

Unit VIN:

Owner Details

Company Name:

Address:

..... Postcode:

Contact Name:

Contact Number:

Email:

PROPOSED TRAILER MAINTENANCE SCHEDULE

Maintenance Schedule

This schedule is a general guide for the inspection, service and maintenance procedures for Chris's Body Builders tipping equipment and should form the basis for a larger maintenance scheme over the lifespan of the equipment. Operators should check propriety component supplier /manufacturer information for product-specific recommendations for components fitted to their equipment. These are the minimum recommended service requirements, depending on the operation conditions additional service items and more frequent service intervals may be required for correct operation. Operators should monitor components for wear rates and modify inspection intervals accordingly.

Item	After 1 ST 1,000km	Daily	Weekly	Mth <u>or</u> 10,000km	6 Mth <u>or</u> 25,000km	Annually
Check Daily						
Lighting functionality		X				
Drain moisture from air tanks		X				
Service brake function		X				
Test emergency brakes		X				
Tailgate operation and integrity check		X				
Trailer coupling engagement is full		X				
Visual inspection for hoist oil leaks & damaged hoses		X				
Tyre condition & pressures		X				
Hydraulic oil level check		X				
Check Weekly						
Tyre pressure & condition	X		X			
Wheel nut tension *	500km		X			
Air lines & fittings for damage and leaks			X			
Hoist feet & clevis connection bolt tensioning, clearance of rod eye, hydraulic connections and hose integrity	X		X			
Brake slack adjustment	X		5000km			
Check Monthly <u>or</u> 10,000km intervals						
Drawbar pivot bush condition	X			X		
Draw arms, pivot bars, hoist feet and tailgate pins	X			X		
Hydraulic cylinder leak and damage	X					
Tow coupling wear, ball race turntable fasteners & wear	X			X		
Pivot bar wear	X			X		
Chassis general visual inspection for cracks and damage	X			X		
Check Annually						
Change hydraulic fluids and filters						X

Grease						
Trailer and body pivot points (drawbar arms, pivot bars, tailgate hinges etc)				X		
Hoist feet, lifting brackets, piston eye, cradle			X			
Ball race turntable					25000km	
King pin and skid plate				X		
Axle and suspension components					25000km	
Brake camshafts and slack adjusters					X	
Tarp shafts and bearings				X		
Landing legs				X	X	

* Wheel nut tension must be re-checked within 100km after any removal / replacement of a wheel.

* See proprietary item service manuals for further details on service intervals

Trailer Brakes

Chris's Body Builders recommends that both the trailer and the prime mover be checked by a qualified service centre and adjusted if necessary, at appropriate service intervals. It is the responsibility of the owner or operator to ensure that the braking systems of the trailer and prime mover are compatible.

Towing Equipment

Towing equipment includes kingpins, turntables, tow couplings, drawbar eyes and ball coupling assemblies. Regular inspection, maintenance and replacement of these items are essential. Please refer to manufacturer's maintenance recommendations for details.

Lubricant Guide

Chris's Body Builders recommends a Heavy-Duty Grease or equivalent for all body grease points. The recommended hydraulic oil is ISO grade 68 mineral oil or equivalent. For proprietary items refer back to the manufacturer's manuals for details.

Recommended Torques

Refer to the proprietary component supplier information manuals for recommended tightening torques.

Tyre Maintenance

Operators should consult with their own tyre suppliers to establish the correct pressures and procedures for their particular application. All tyres fitted at Chris's Body Builders are inflated to the manufacturer's recommendation by them and should be checked shortly after delivery to ensure pressure has been maintained. Tyres should be regularly inspected at appropriate intervals determined by the operator based on factors such as environment, usage and tyre type. Tyre bolt torque and pressure should be checked 100km after any wheel changes.

PROPRIETARY ITEM – WEB LINK

For proprietary items information on service interval and product care, please view attached web links to the relevant manuals and service information

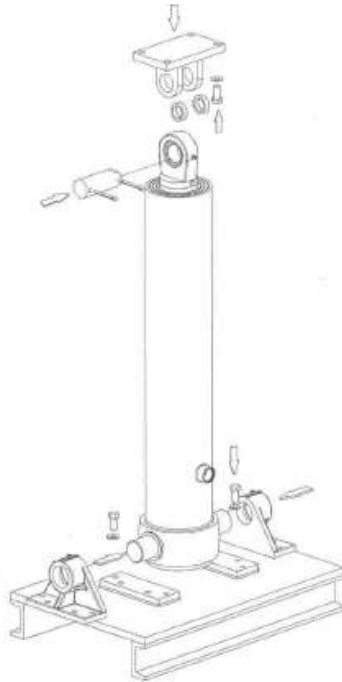
YORK TRANSPORT	www.yorktransport.com
JOST	www.jostaustralia.com.au
SAF HOLLAND	www.safholland.com
BPWTRANSPEC	www.bpwtranspec.com.au
AIR BRAKE CORPORATION	www.airbrakecorp.com.au
HENDRICKSON	www.hendrickson.com.au
BRIDGESTONE	www.bridgestone.com.au
BARTLETT TARPS	www.bartlett.net.au
RAZOR INTERNATIONAL	www.razorinternational.com
GROENEVELD	www.groeneveld-beka.com
FUWA K HITCH	www.khitch.com.au

Hydraulic, Pneumatic, Body and Chassis Maintenance

Repairs on any of these systems should be undertaken by Chris's Body Builder dealerships or other appropriate qualified repairers. Tampering with these systems may void warranty or cause serious injury or death.

Hoist Maintenance

Chris's Body Builders uses single acting telescopic cylinders in its semi, dog and truck bodies. These cylinders come with all stages hard chromed and machined from ST 52BK+S cold drawn steel. These cylinders are not designed for side loads and precaution should be taken to not impose any side forces. Poor maintenance practice and abuse will void warranty on hoist and equipment.



Working Pressure: 170 Bar
Max Pressure: 190 Bar
Working temperature: -30°C/+100°C
Filter Size: 10-25µm


Note:

- No filter should be present on the suction line. A return filter or pressure filter should be used
- When the cylinder is first filled, it is important the air bleeding bolt is loosened to allow air in the cylinder to escape as the cylinder is filled. This bolt is to be tightened to spec again to prevent leakage during operation
- The cylinder naming convention provides a recognition system for the following hoist characteristics. Please record and quote this number when requesting parts or service.

GHS175-5-5550C

CYLINDER STYLE	OUTER DIAMETER OF 1ST STAGE	NUMBER OF STAGES	CYLINDER STROKE	CONNECTION STYLE

RECOMMENDED OPERATING PROCEDURES FOR POWER TAKE-OFF, DIRECT OR SHAFT DRIVE APPLICATIONS

 When applying the parking brake, follow vehicle manufacturer parking instructions. Failure to follow these instructions could cause unintended vehicle movement resulting in death, serious injury or damage to property.

PTO Operation - Manual Transmission

Engaging the PTO - Stationary Operation

1. With the transmission in neutral.
2. Apply the parking brake.
3. Depress clutch fully.
4. Shift transmission into 1st Gear (this ensures countershaft rotation stops for PTO engagement).
5. Engage the PTO via the dash switch.
6. Shift transmission into Neutral.
7. Release clutch pedal slowly (approximately 3 seconds).
8. Slowly raise engine speed (if required) to operate the PTO.

Engaging the PTO - Mobile Operation

 Gear changes must not be performed whilst the PTO is in operation.

1. With the transmission in neutral.
2. Apply the service brake.
3. Depress clutch fully.
4. Shift transmission into appropriate gear that will allow the vehicle to take off and will provide the appropriate engine and road speed to perform the work.
5. Engage the PTO via the dash switch.
6. Release the service brake.
7. Release clutch pedal slowly.
8. Raise engine speed as required to move vehicle / operate PTO.

Disengaging the PTO:

1. Apply the parking brake.
2. Depress clutch fully.
3. Shift transmission into 1st Gear (this stops countershaft rotation for PTO disengagement).
4. Disengage the PTO via the dash switch.
5. Shift transmission into Neutral.
6. Release clutch pedal.

PTO Operation - Automated Manual Transmissions (AMT's)

These instructions are generic and may differ by transmission model, always check with the transmission/vehicle manufacturers instructions.

Engaging the PTO - Stationary Operation

1. Apply the parking brake.
2. Depress the service brake.
3. Select "D" on the Shift Control (this stops countershaft rotation).
4. Engage the PTO via the dash switch.
5. Select "N" on the Shift Control.
6. Release the service brake to engage the clutch and power the PTO.

Engaging the PTO - Mobile Operation

This application provides limited mobile operation in the start gears.

1. Depress the service brake.
2. Release the parking brake.
3. Select "D" on the Shift Control (this stops countershaft rotation).
4. Engage the PTO via the dash switch.
5. Select "D", "MANUAL" or "Reverse", as required for vehicle movement.
6. Release the service brake to engage the clutch and power the PTO.
7. Raise the engine speed as required to move vehicle / operate PTO.

Disengaging the PTO:

1. Ensure the vehicle is at a complete stop.
2. Depress and hold the service brake.
3. Select "D" on the Shift Control (this stops countershaft rotation).
4. Disengage the PTO via the dash switch.
5. Continue with normal vehicle operation.

Hot Shift PTO Operation (all transmission types)

Engaging the PTO:

1. With the vehicle moving at constant speed; under no load. PTO output speed at 1000rpm or less.
2. Engage the PTO via the dash switch.
3. Raise engine speed as required to achieve desired speed / operate PTO.

Disengaging the PTO:

1. Slow the vehicle down to a constant speed; under no load. PTO output speed at 1000rpm or less.
2. Disengage the PTO via the dash switch.
3. Continue with normal vehicle operation.

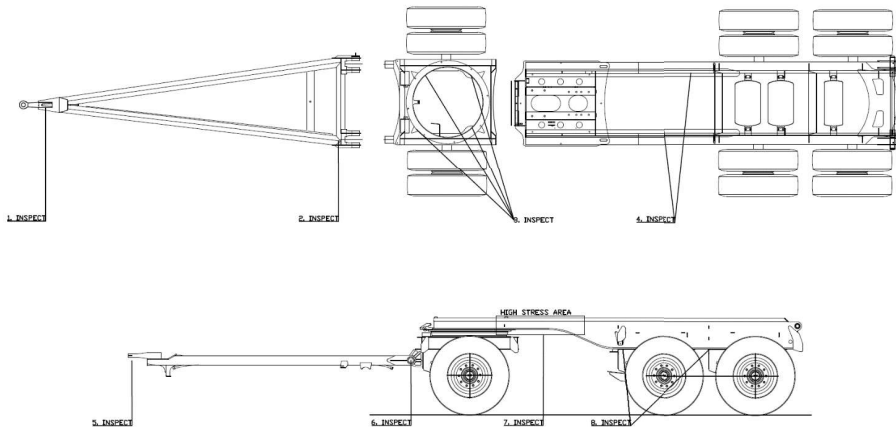
Hoist Troubleshooting			
	Problem	Reason	Solution
A	Valve is in position but Cylinder is not working	1) PTO not engaged	Engage PTO
		2) No oil in the tanks	Fill tank with oil
		3) Ball valve on tank is closed or suction line kinked	Open valve or change suction line
		4) Loss of air pressure	Check air connections or increase supplied pressure
		5) Connection between spool valve and cylinder compromised	Check connections to the spool valve
		6) Hose connections loose	Check hose connections
		7) Pressure line restricted	Check pressure line
		8) Air connections reversed	Check the air hose connections
		9) Coupling is not connected to trailer	Check the trailer coupling is connected
B	All stages of the telescopic cylinder cannot be opened	1) Pressure cartridge in spool valve overloaded	Load must be removed or reduced
		2) Spool valve is now in lowering position due to excessive load	Contact valve manufacturer
		3) Not enough oil in tank	More oil should be added to tank
		4) Knock off valve angle is not ideal	Knock off valve bolts should be tightened
C	Directional valve is not working even though air is supplied from control	1) Spool valve malfunctioning	Replace spool valve
		2) Bolts on the have been tightened	Check valve bolts
		3) Insufficient air pressure	Air pressure should be checked
D	Stages are opening very slowly	1) Pump not suitable	Change pump
		2) Efficiency of the pump isn't sufficient	Contact pump manufacturer
		3) Pressure regulator is broken	Contact pump manufacturer
		4) Oil Leakage	Check connections

E	Telescopic Cylinder is knocked while stages are open	1) Air is mixing with the oil	Change oil and check connections aren't allowing air in
		2) Not enough oil in tank	More oil should be added to tank
		3) Connections are too tight	Loosen fittings
		4) Suction line is restricted	Replace suction line or free restriction
F	When clutch pedal is pushed, the body comes down	1) Spool valve restricted	Contact valve manufacturer
G	Cylinder won't come down even with valve in close position	1) Contamination of the pressure valve	Filter must be changed to prevent contamination
H	Telescopic cylinder is working slowly	1) Return line filter broken	Change filter
		2) Damaged air Lines	Change air lines
		3) Spool valve restricted	Contact valve manufacturer
		4) Return line is too small	Increase diameter of return line
		5) Return line restricted	Check return line
I	Oil is coming to controls	1) Seal of valve has been damaged	Contact valve manufacturer
		2) Seal on PTO has been damaged	Contact PTO manufacturer
J	Cylinder is closing fast	1) Line size is large	Reduce line size
K	Oil is leaking on cylinder	1) Seal kit in cylinder is damaged	Contact cylinder manufacturer
		2) Stage of cylinder is damaged	Contact cylinder manufacturer
		3) Dirty hydraulic oil	Change oil

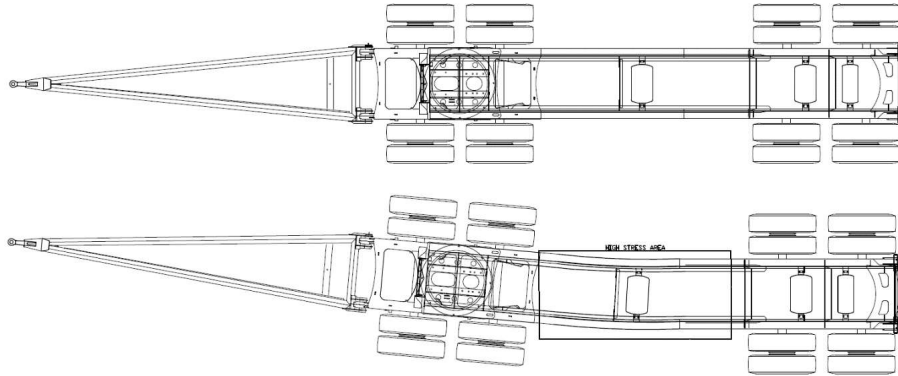
Chassis Maintenance

Chris's Body Builders recommends regular visual inspections of major chassis components for signs of wear and cracking. The below diagram is intended as a guide to conduct these inspections. Intervals for these inspections should be determined by the conditions which the unit operates in. Immediate action should be taken at the first detection of cracks to prevent further damage or catastrophic failure. Some areas which should have particular attention paid to include:

1. Suspension Components
2. Dolly Welds
3. Chassis and Crossmember Welds
4. High Stress Areas
5. Drawbar Welds
6. Drawbar Bushes
7. Ballrace



NEVER apply side loading to a tipping trailer with the body raised by turning while tipping, this imparts significant stress into the chassis rails and can potentially damage the structure leaving them deformed. To prevent this, always lower the body into the resting position before turning a vehicle.



During possible high stress applications such as spreading or paving, due care should be taken to not overload or damage the chassis. When spreading, the body should be raised only the minimum amount required to begin spreading before the tailgate is released. When paving, ensure that the brakes are released on the truck and trailer before the paver engages the rear of the trailer. A more regular chassis inspection routine should be conducted in these circumstances as a precautionary measure.

OPERATING INSTRUCTIONS

Startup/Daily Check:

- ✓ Check that all lights are operational
- ✓ Drain moisture from air tanks
- ✓ Check that service brakes are operational
- ✓ Check emergency brakes are operational
- ✓ Check the trailer coupling is fully engaged and secure
- ✓ Check that the tailgate is closed correctly
- ✓ Check for oil leaks and damaged to both hydraulic hoses and cylinder
- ✓ Check tyre condition and pressures

Tarp:

Follow instructions for the particular system installed (See P21 - Tarp Procedure & Service Guide)

Before Tipping:

Check site / surroundings for:

- ✓ Overhead hazards - Low wires, overhead structures and trees
- ✓ Safe tipping area - Clear of people and or equipment in the vicinity of tipping area
- ✓ Ground - Soft spots in tipping area, consistency, underground works
- ✓ Level - Preferred tip position for trailers is level across the vehicle or facing uphill along the vehicle
- ✓ Load consistency – Consistent flow of product during tipping

Coupling Procedure

When coupling a truck and trailer, please ensure the following is incorporated into your normal procedure;

Tipping Semi-Trailer

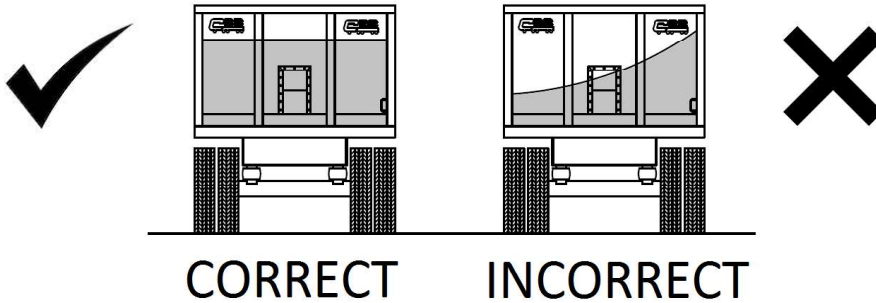
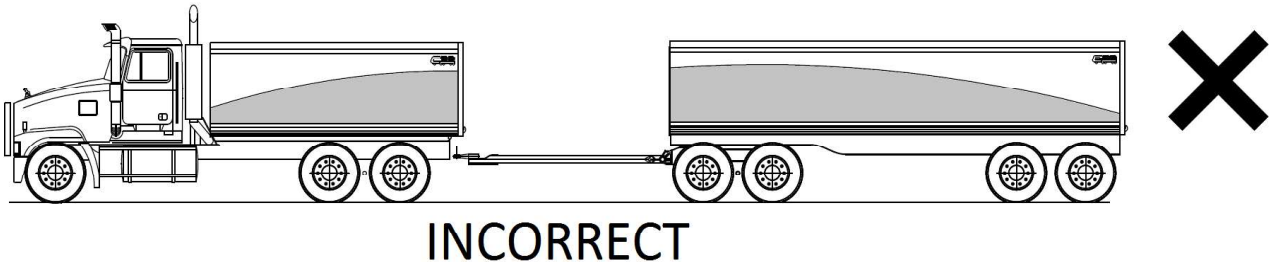
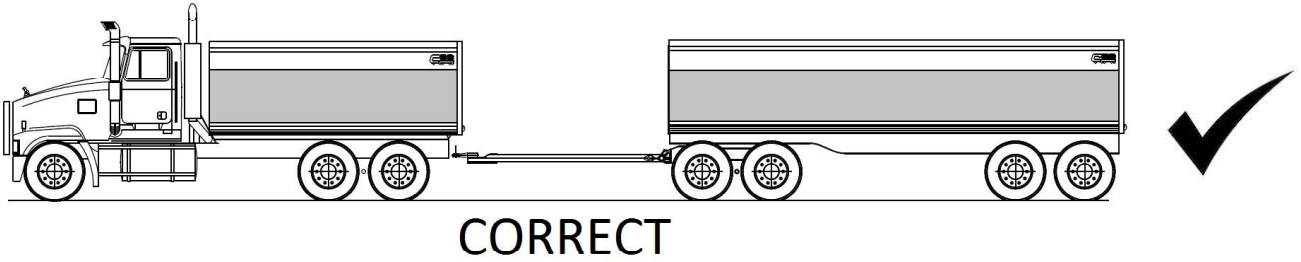
1. Slowly reverse the prime mover under the semi-trailer as you would with any standard semi-trailer connection
2. Ensure that the turntable and kingpin fully engage by inspecting the turntable handle and conducting a 'tug test'
3. Connect the air and electrical lines as you would with any standard semi-trailer
4. Ensure the cab controls are in the 'lower' position
5. Clean both the male and female hydraulic couplings and connect the truck to the trailer
6. Check that there is adequate hose length and clearances for when the truck and trailer are in the jack knifed position
7. Connect any other lines- air tailgates, air diverters, hydraulic return lines etc as required
8. Retract the landing legs and check there is adequate clearance between rear of truck and landing legs
9. Check all functions are working and your startup procedure is complete prior to pulling away

Tipping Dog Trailer

1. Check the coupling on the truck is compatible to that on the trailer (ie, 50mm toweye connects to 50mm tow hitch)
2. Check the coupling is open to accept the trailer
3. Slowly reverse the truck up the trailer so that the two coupling points connect, for example;
 - a. The 50mm coupling pin engages the 50mm toweye and the handle is in the fully lowered position
 - b. The Bartlett Hood sits squarely over the Bartlett Ball, so the cap and locking spring can be fitted
 - c. The Pintle Eye lowers over the Pintle Hook and the top clasp and snubber are engaged (if fitted)
4. Connect the air and electrical lines
5. Ensure the cab controls are in the 'lower' position
6. Clean both the male and female hydraulic couplings and connect the trailer to the truck
7. Check that there is adequate hose length and clearances for when the truck and trailer are in the jack knifed position
8. Connect any other lines- air tailgates, air diverters, hydraulic return lines etc as required
9. Connect any safety chains (if fitted)- ensure that the left hand chain of the trailer connects to the right hand side of the truck and vice versa. By crossing the chains, it will effectively 'catch' the drawbar should it dislodge from the coupling, preventing it spiking into the road being travelled
10. Check the dolly lock isn't engaged
11. Check the drawbar leg is stowed
12. Check all functions are working and your startup procedure is complete prior to pulling away

Loading:

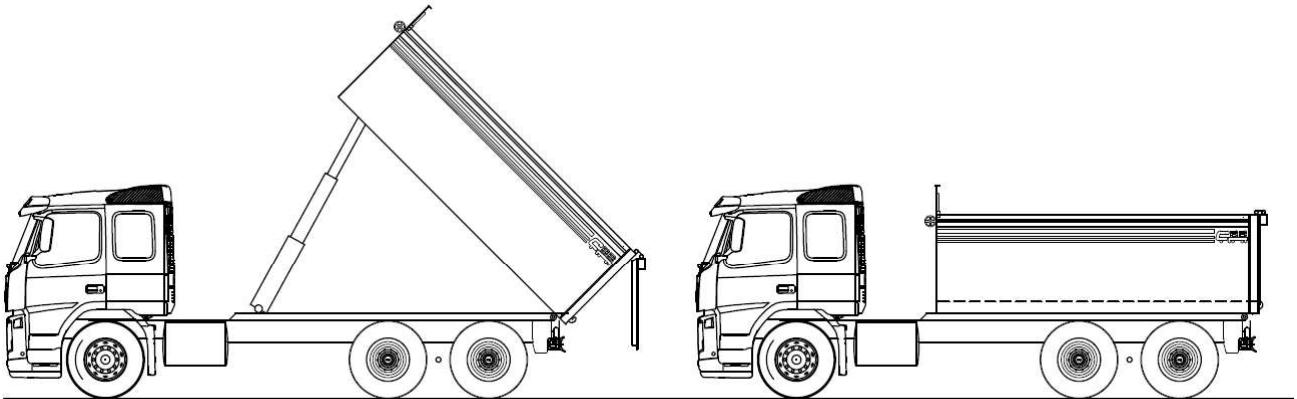
- ✓ Ensure that the load does not exceed legal limits
- ✓ Ensure that the load is correctly positioned for weight distribution (See P17 - Tipping - General Instructions)
- ✓ Ensure that the load is within the tipper body and even across the trailer (See P17 - Tipping - General Instructions)
- ✓ Clean off spillage from body top rails, mudguards and drawbar
- ✓ Do not walk on edge of drawbar and top rails of tipping body



WARNING:

**Truck and Trailer must be in line when tipping Semi Tipper
Spreading is NOT permitted with Tip Over Axle Semi trailers or Tip Over Axle Dog trailers**

Tipping - General Instructions



Preperation

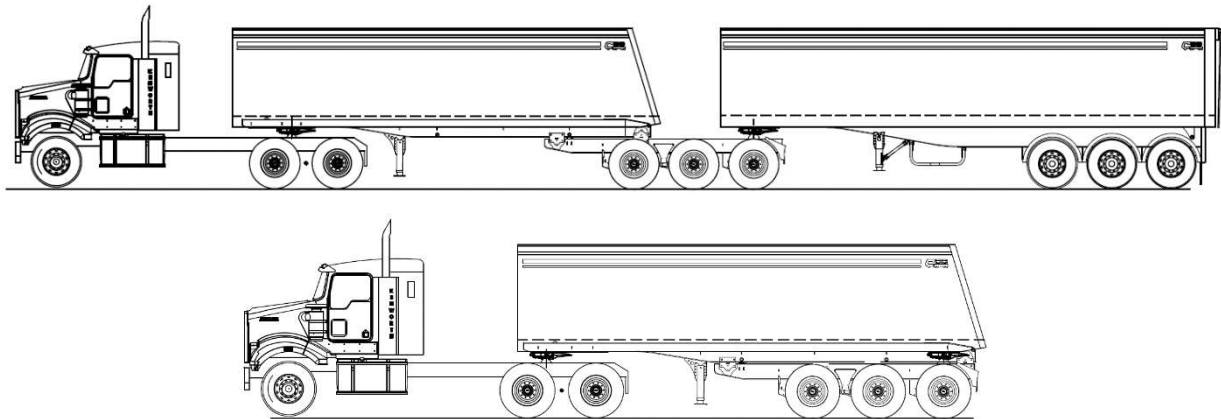
1. Position the vehicle in tipping area
2. Apply all park brakes before leaving the vehicle
3. Release tarp if fitted (See P21 - Tarp Procedure & Service Guide)
4. Release tailgate lock – manual or with air control valve
5. Driver should not leave the vehicle unattended during the tipping process

Note: During the tip the RPM of the vehicle should not be changed by the driver to prevent damage to the hydraulic system. Consistent rpm should be maintained during the entire process

When ready to tip:

1. Have all park brakes applied
2. For multi-body combinations, divert oil to the body to be tipped
3. Engage PTO
4. Commence tipping, checking that the tipper is still on stable ground and is lifting squarely, not leaning sideways as the load is discharging
5. Continue tipping the body / trailer making sure that the tailgate does not get caught in the discharge load/stock pile or on the ground
6. After discharge has stopped, disengage PTO
7. Drive forward carefully until all material is out of the tipper and the tailgate is clear of the discharged load / stock pile
8. Lower the tipper fully and engage the tailgate locking bar teeth
9. Leave control in the hold position when not in use
10. Move the truck clear of the tipping area, clean any split material from around the tailgate, lights and mudguards etc.

Trailer with Sliding Suspension



These trailers are designed to permit a B-Double lead trailer to tip in between the 1st & 2nd axles or over the end of the trailer chassis frame as per a conventional chassis tipper by moving the suspension “forward” in relation to the body.

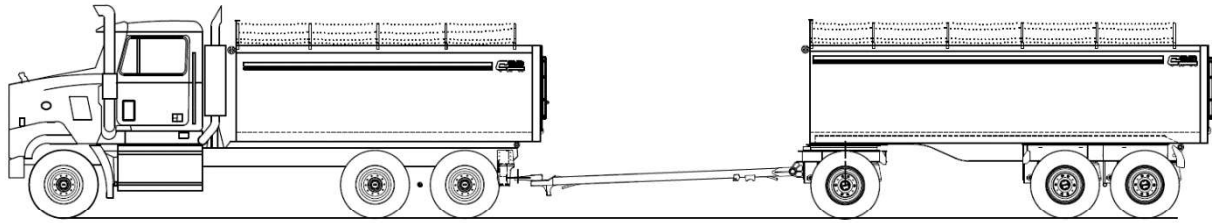
Adjustment of the suspension is achieved by applying the trailer brakes releasing suspension sub-frame “locking pins” and using the prime mover, reversing to allow the tipping position to be achieved, or driving forward to establish the B-Double position.

Operation:

1. Disconnect B-Trailer
2. Ensure that the turntable skid plate is flat (horizontal) and “straight” along trailer (ball race pinned if present)
3. Apply all park brakes
4. Push in “Lock Pin Release Air Valve Button” or in cabin release valve to disengage suspension “Lock Pins”
5. In cabin, apply trailer brakes, release prime mover park brakes and reverse prime mover until pins are engaged for the tipping position.
6. If using in road train applications, ensure suspension position is in a road train accepted location and a secondary road train bar has been inserted into the locking mechanism.
7. Tip as per General Instructions nominated
8. Leave control in the hold position when not in use
9. To reposition the suspension for B-Double operation, reverse the above procedure

These instructions are intended to be a basis for individual operators to produce bespoke instructions to suit their own unique operations. Operators need to ensure they practice due diligence when operating equipment and are aware and compliant with local and federal legislation that is applicable to their organization. Chris’s Body Builders takes no liability as the above instructions are the purpose for a general guide only.

Truck and Dog Trailer

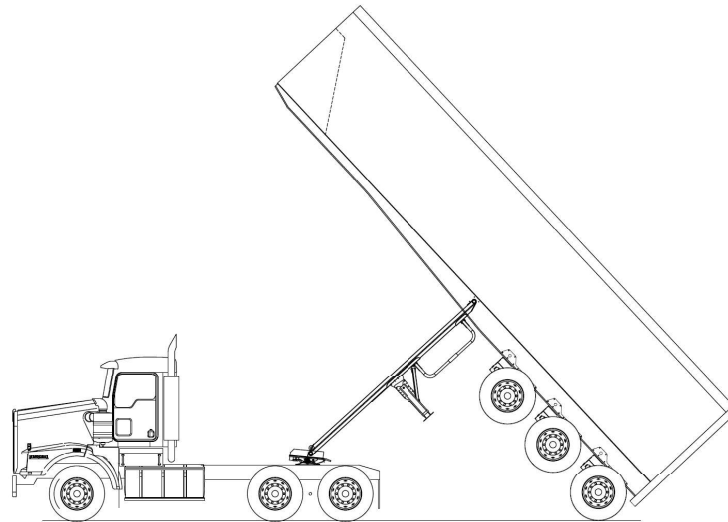
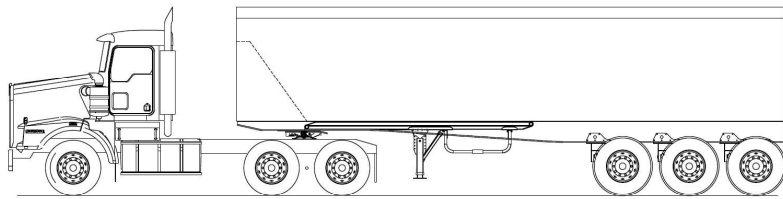


Operation:

1. Position the vehicle and trailer in the tipping area
2. Turntable locks must only be engaged when truck and trailer are in a straight line and only used in straight line reversing
3. Apply all park brakes on vehicle
4. Release tarp if fitted (See P21 - Tarp Procedure & Service Guide)
5. Ensure that both grain locks have been undone if fitted
6. Ensure that only one of the ground operated handle or the bottom pin is removed to prevent tailgate damage
7. Release tailgate lock – manual or with air control valve
8. Ensure Dolly is in straight line during tipping activity
9. Tip as per General Instructions nominated
10. Lower the tipper fully and engage the tailgate locking bar teeth
11. Leave control in the hold position when not in use
12. Disengage PTO

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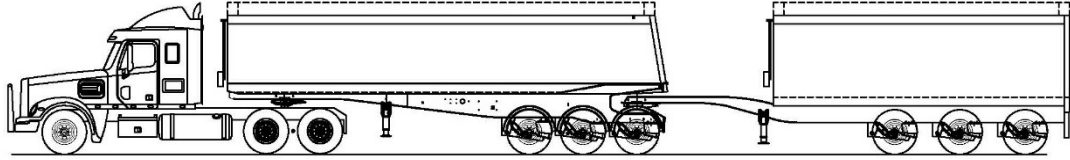
Tip Over Axle Semi



1. Position the vehicle and trailer in the tipping area, check ground for stability and angle and ensure truck is aligned with trailer.
2. Apply Park brakes on truck or trailer only, leave one set left off. Please not, the vehicles contract during tipping operation so please ensure ground is level within the travel range of the tipper.
3. Check rear tyre condition and ensure tires are inflated to manufacturers recommendations
4. Release tarp if fitted (See P21 - Tarp Procedure & Service Guide)
5. Ensure that both grain locks have been undone if fitted and tailgate is going to be opened. Leave grain locks closed if grain door is to be used
6. Release tailgate lock – manual or with air control valve
7. Tip as per General Instructions nominated
8. Lower the tipper fully and engage the tailgate locking bar teeth
9. Leave control in the hold position when not in use
10. Disengage PTO

These instructions are intended to be a basis for individual operators to produce bespoke instructions to suit their own unique operations. Operators need to ensure they practice due diligence when operating equipment and are aware and compliant with local and federal legislation that is applicable to their organization. Chris's Body Builders takes no liability as the above instructions are the purpose for a general guide only.

Jack Knife B Double



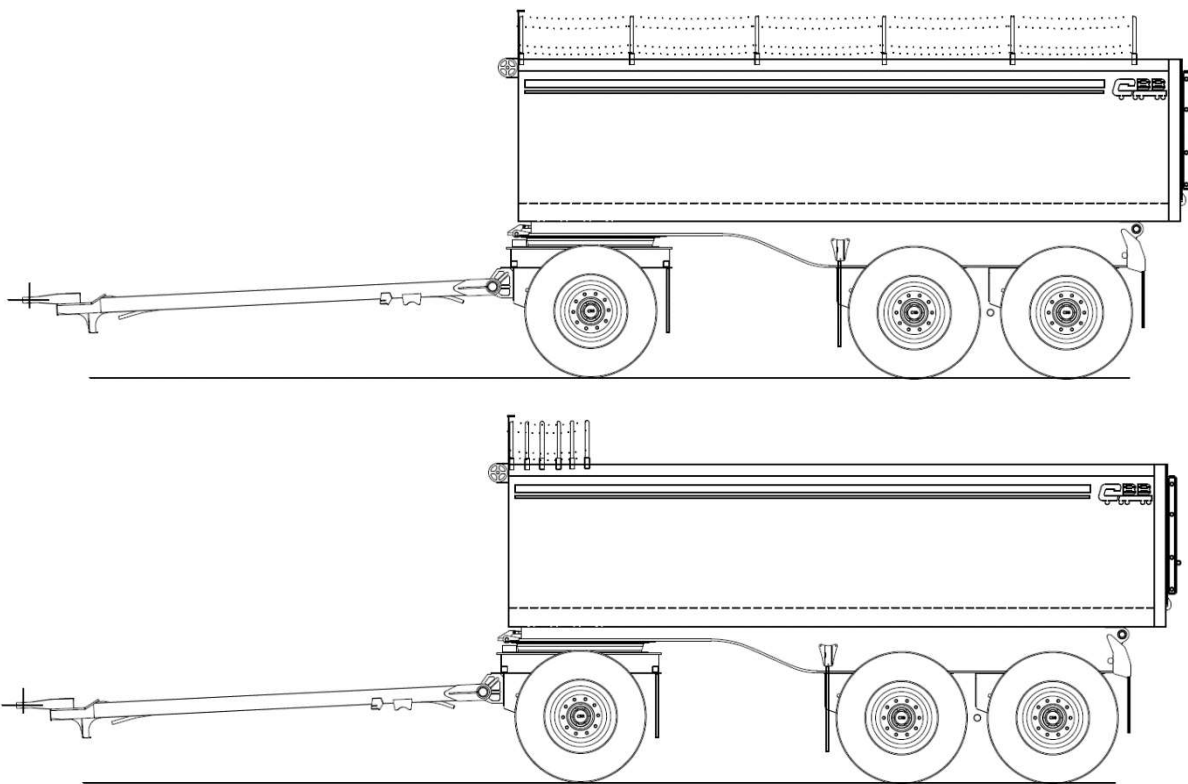
1. Position the vehicle and trailer in the tipping area, check ground for stability and angle and ensure truck is aligned with trailer.
2. Apply all Park brakes.
3. Release tarp if fitted (See P21 - Tarp Procedure & Service Guide).
4. Ensure that both grain locks have been undone if fitted and tailgate is going to be opened. Leave grain locks closed if grain door is to be used.
5. Release tailgate lock – manual or with air control valve.
6. Tip B trailer as per General Instructions nominated.
7. Lower the tipper fully and engage the tailgate locking bar teeth.
8. Jack Knife the B trailer around the back of the A trailer till 90 degrees. Ensure that area is clear of obstacles for the B trailer to swing around to the side of the A trailer.
Note: ensure there is clearance between the body and the Neck of the B trailer to tip the body to the fully raised position. If jack-knife indicator is fitted, an indicator light will illuminate when in the correct position.
9. Release tarp if fitted (See P21 - Tarp Procedure & Service Guide).
10. Ensure that both grain locks have been undone if fitted and tailgate is going to be opened. Leave grain locks closed if grain door is to be used.
11. Release tailgate lock – manual or with air control valve.
12. Tip B trailer as per General Instructions nominated.
13. Lower the tipper fully and engage the tailgate locking bar teeth.
14. Leave control in the hold position when not in use.
15. Disengage PTO.

TARP PRODECURE & SERVICE GUIDE

Safety:

- Ensure that hands and loose items are clear of cables and pulleys during operation.
- Cable/rope must not be wrapped around arms, legs or body during operation to avoid injury
- Visually check the tarp is in an operable condition before use to prevent further damage and potential harm
- When unloading, ensure that the tarp is open sufficiently to allow airflow into the body and/or to clear product as it discharges.
- It is essential that covers be in the fully closed/extended position when travelling in order that wear of the fabric is reduced.

GUIDE FOR FRONT TO REAR LOAD COVERING SYSTEMS



Description

Covers are made of PVC mesh fabric or PVC material depending on load protection required. The winding handle and pulley drives a V-belt which in turn rotates a shaft mounted across the top of the front panel of the body. Pulleys on the ends of the shaft drive cables on the outside of the top rails on each side of the trailer. The rear cross bar of the cover is attached to these cables. Operation of the cables opens/retracts or closes/extends the cover.

To open/retract the tarp

Front to Back Tarp

2. Ensure ropes must be released prior to opening the cover, and re-attached after closing the cover.
3. Engage the winding handle by pulling downward and twisting it to align with slots in the shaft and releasing it so that the pins engage in the shaft.
4. Wind the handle clockwise until the cover is fully open/retracted.
5. Continue to wind the handle in the same direction until the handle can be twisted and re-engaged into its mounting bracket.
6. Ensure that the handle is in the lock position when not in use

Roll Over Tarp

1. Ensure ropes must for rear flaps are released prior to opening the cover, and re-attached after closing the cover.
2. Disengage the roll tarp handle from the holder and slide out handle and angle away from the trailer till handle is approximately 45 degrees on uni joint.
3. Wind the handle until the cover is fully open/retracted, lifting the tarp pole to align it if necessary as it rolls over pelmet.
4. Continue to wind the handle in the same direction until the handle can be twisted and re-engaged into its mounting bracket on passenger side and material is tight.
5. Ensure that the handle is in the lock position with locking pin when not in use.

Note: Tarp shaft needs to be firmly locked into top coaming of body to remain sealed, ensure tarp material is thoroughly tensioned during closing procedure and lock handle in place.

Service & Maintenance Items:

To ensure continued satisfactory service of these tarping systems, it is recommended that the following items be checked periodically. The frequency of checking will need to be determined by the operator as it will be dependent on operating conditions.

1. Check the condition of the fabric cover, bows and attachments for damage.
2. Check the tension of the operating cables.
3. Cable should be able to be squeezed together at approximately 1m from bracket. Adjust, if necessary, at the rear pulley bracket on the top rail at each side at the rear of the tipper body.
4. Check the tension of v-belt. Adjust, if necessary, at the winder pulley bracket
5. Lubricate cross-shaft bearings
6. Inspect cables for damage and fraying, replace if necessary.
7. Replacement cable should be 8mm galvanised, steel core, wire rope.
8. Repairs to tarp covers should be undertaken to prevent further damage– Refer to tarp supplier.



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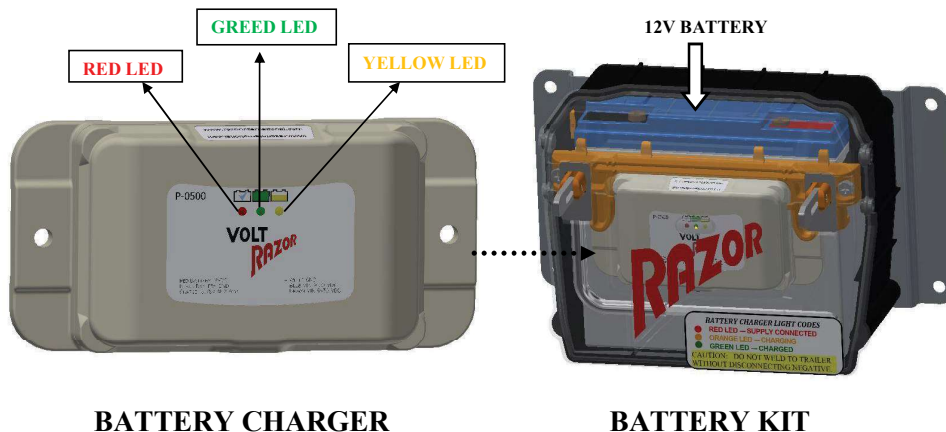
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RAZOR DELTA POWER TARP OPERATING INSTRUCTIONS

(FRONT TO BACK)

- **Basic Operation:** The Razor Delta Power tarp can be operated by way of the main control pad located on drive unit or by the remote
- **Main Keypad-** The blue arrow closes the tarp (covers the load). The green arrow opens the tarp (uncovers the load). The stop button can be used at any time to stop the tarp. The motor will automatically stop when the tarp reaches its full travel in or out.
- **Battery Charger-** The battery charger is located inside the battery kit and has three LED lights. Note: the battery cover is shown as transparent 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 that the charger is connected to a voltage that will keep the battery charged and charging of the battery will only occur when it is on.
Yellow LED	This indicates that the battery requires to be charged
Green LED	This indicates that the battery is fully charged



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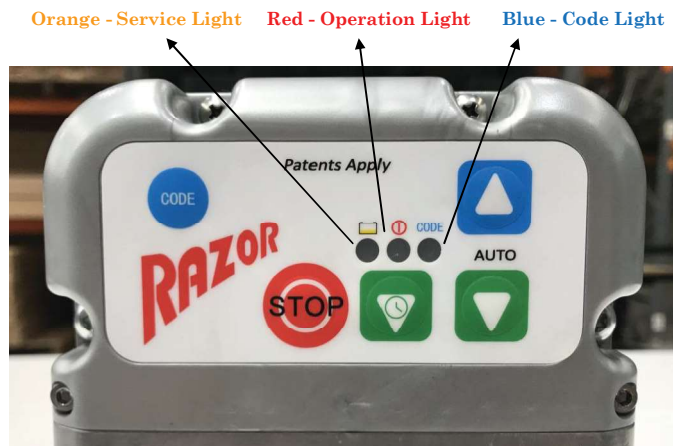
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- **Remote-** These buttons have identical function to the main keypad.

***NOTE:** The wireless remote operates off a momentary signal. The buttons are not to be held for longer than 2 seconds at a time as this may cause the remote to become inoperable.

LED Operation on Main Keypad: There are 3 LED's located on the main keypad. They are: **Orange-Service Light**, **Red-Operation Light** and **Blue-Code Light**. (See Pic)

- **Orange - Service Light-** 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 at all
- **Red - Operation Light-** This light will flash once when the motor is operated in either direction. The light will flash again when the motor stops.
- **Blue - Code Light-** This light is used to code in a new /replacement remote.



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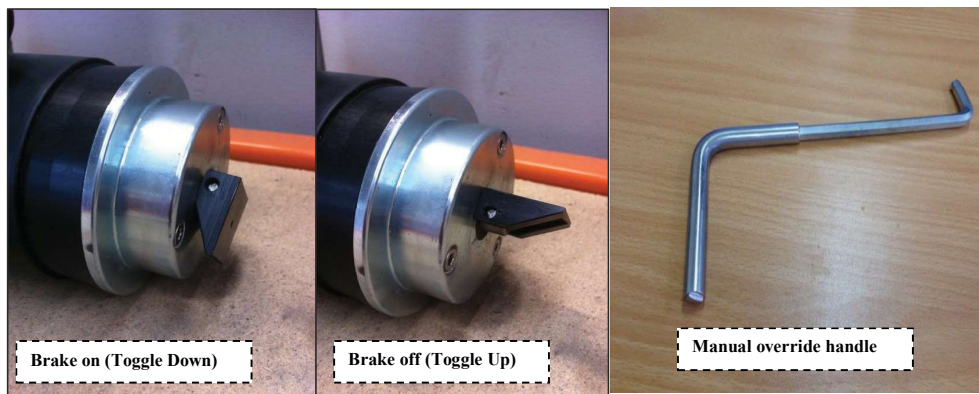
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- **Manual Override** - The Razor Delta Power Tarp can be manually operated in the situation where all the trouble shooting options are exhausted.

***Step one:** Flick up the toggle to release the brake at the rear of the motor

***Step two:** Remove 1/4 turn cap at the front of the gearbox with the manual handle hex end

***Step three:** Using hex key of manual handle, wind tarp in or out as required



The above is applicable only for brake models.



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WARNING – The manual override is only to be used as a last resort and Razor International take no responsibility for the tarp being operated in an unsafe manner. Contact your dealer immediately if the razor tarp happens to stop working.

Maintenance: Razor Delta Power Tarp requires 6 month interval maintenance; Refer to our website for further information in www.razorinternational.com

- **Battery** - To ensure trouble free operation. Regularly check LEDs to confirm charging, if there is an issue, then check supply(trailer wiring) and connectors.
- **Cable Tension**- As cables may stretch over time they may need to be adjusted to ensure the Razor Power Tarp cuts out when reaching the end of its travel. Loose cables can cause the motor to continue to run resulting in battery failure or motor damage.

***NOTE:** Cable tension is to be as per manufacturers specifications.
- **Tarp Alignment**- Sometimes Tarps can lose alignment or blocks or cables can become sticky. Ensure tarps are maintained at all times to ensure hassle free operation.

TO AVOID LOSS OF WARRANTY
- DO NOT CUT HARNESSES
- DO NOT BYPASS RAZOR BATTERY KIT

For any further information please contact your nearest authorized agent.

ENJOY SAFE & EASY TRUCKING WITH RAZOR POWER TARPS.

COMPANY TERMS AND CONDITIONS

All products or services provided by CBB are subject to CBB Standard Terms and Conditions of Quotation and Sale. These Terms and Conditions can be found at www.chrisbodybuilders.com.au

WARRANTY POLICY

A 12 month warranty applies to faulty parts and structural. All warranty work must be authorised by CBB prior to works commencing. All warranty claims must be submitted with photographic evidence of before and after repair. Other warranty terms are provided by proprietary suppliers- contact details are provided overpage.

Any unqualified works or tampering of systems will void warranty if deemed by CBB to have caused premature failure.



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