



Safe Operating Procedure Guide

PORTABOOM® SETUP AND OPERATIONS

Product:

PORTABOOM®
Patent number 2015901729

Model Number:

PB2000L

Document:

SOP Guide PORTABOOM® Setup and Operations

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Product Owner:

Traffic & Access Solutions Pty Ltd

Contact Details:

Address: Unit 1/610 Great Western Hwy, Girraween NSW 2145
Phone: 1300 329 738
Email: info@trafficaccess.com.au
Web: www.trafficaccess.com.au



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1. Document control

Version	Date	Author	Details
1	25/08/2016	Traffic & Access Solutions	SOP developed.
2	29/10/2019	Traffic & Access Solutions	SOP updated to include traffic and pedestrian light accessories, template updated.



2. Risk management

2.1. Risk assessment and resources

It is strongly recommended that users of this product and accessories conduct their own risk assessment and refer to the video resources for additional guidance. The following information is provided as a guide.

Traffic & Access Solutions Pty Ltd accepts no liability for any accidents, errors or omissions or any losses incurred by anyone who fails to operate the product safely.

General guidelines:

- Complete a risk assessment and train users in assembly and operational procedures.
- Wear appropriate personal protective equipment for setup and operations.
- Complete daily inspections of the product, do not use if damaged or not fit for purpose.
- Apply manual handling controls or manual aid when moving the product.
- Ensure the product is installed on a level surface and is stable.

Video resources:

Instruction	Link
Safe operating procedure training, assemble, operate and disassemble	https://www.youtube.com/watch?v=onMmkHssMyc&feature=youtu.be
Best practice guide for traffic controllers	https://www.youtube.com/watch?v=uvq1r1omjtE&feature=youtu.be
Traffic and pedestrian light accessory	https://www.youtube.com/watch?v=oaPN7W04UGI&feature=youtu.be
Safe operating procedure training and maintenance	https://www.youtube.com/watch?v=PrUu32ddp7I&feature=youtu.be





Note:

The product refers to the PORTABOOM[®] (PB) unit, the terms "Product" and "PB unit" may be used interchangeably throughout this document and other supporting resources.

3. Safe operating procedure

3.1. Personal protective equipment

It is recommended that you are wearing the following personal protective equipment when using the product or fitting / handling accessories.

Diagram	Recommendation
	Safety glasses worn on work areas.
	Steel cap boots worn in work areas.
	Gloves worn when handling equipment.
	Hard hat worn while working.

3.2. Pre-operational checks


- Ensure that the product is inspected prior to utilisation as it must be in a safe and working condition prior to use.
- Faulty equipment must not be used. Immediately report suspect equipment to your Supervisor.
- **Note** – if something is not working it is most likely one of the mode switches not registering. Turn the product off, turn mode switches off (down), turn required mode switch on (up) and turn the product on (be patient as this will take approximately 5-10 seconds).

3.3. Site instructions



- Deliver product and accessories at the designated setup location, ensuring that it is in a safe location and on a level surface.
- It is recommended manual aid be adopted if lifting the product.
- Ensure relevant approvals have been obtained, risk assessments completed and personnel trained on the relevant safe operating procedures.
- Ensure the product is switched off prior to fitting and connecting any accessory.
- Ensure that the product and accessories is assembled in a safe location.

3.4. Review the location and conditions

Step	Instruction	Diagram															
<p>1.</p>	<p>Once on site, review TCP and identify the required positions of the PB units.</p> <p>The “PORTABOOM AHEAD” sign is to be placed at a distance of ‘D’ from the Flagman sign.</p> <p>The diagram shown is a NSW TCP setup – please refer to relevant TCP or equivalent for your respective state.</p>																
<p>2.</p>	<p>Prior to commencing the setup, an assessment of overhead hazards must be conducted. Look for low lying power lines, tree branches, street lights, road signage which the boom arm may come in contact with in its setup and operation.</p> <p>Identify other hazards that may impact the effective and safe operation of the PB unit such as uneven surfaces or obstructions.</p> <p>It is not recommended to use the PB unit on uneven ground.</p> <p>Where hazards have been identified, the operator (Traffic Controller), in consultation with the Team Leader / Supervisor, may be able to reposition the PB unit in order to remove the hazard.</p> <p>If a new position has been identified, ensure that scope of works can be maintained and the TCP is amended to show the revised location of the PB unit(s).</p>	<table border="1"> <thead> <tr> <th>Hazard</th> <th>Risk</th> <th>Control Measure</th> </tr> </thead> <tbody> <tr> <td>Power Lines</td> <td> <ul style="list-style-type: none"> Electrocution Damage to powerlines Damage to PORTABOOM[®] </td> <td> <ul style="list-style-type: none"> Reposition PORTABOOM[®] to a different area to remove powerline hazard </td> </tr> <tr> <td>Trees (Branches etc)</td> <td> <ul style="list-style-type: none"> Branch falls from height, hitting TC, member of the public or client Damage to PORTABOOM[®] </td> <td> <ul style="list-style-type: none"> Reposition PORTABOOM[®] to remove hazard Diligent PORTABOOM[®] setup to ensure arm does not hit the tree </td> </tr> <tr> <td>Uneven Ground</td> <td> <ul style="list-style-type: none"> Slip/trip/fall resulting in injury PORTABOOM[®] damage from tipping over due to uneven ground/platform </td> <td> <ul style="list-style-type: none"> Risk assessment conducted Identify if PORTABOOM[®] can be moved to an area of even ground to reduce risk Vigilance when on-site and setting up PORTABOOM[®] / signage etc </td> </tr> <tr> <td>Street Signs / Lights etc</td> <td> <ul style="list-style-type: none"> Damage to PORTABOOM[®] Damage to sign / light etc </td> <td> <ul style="list-style-type: none"> Reposition PORTABOOM[®] to remove hazard Diligent PORTABOOM[®] setup to ensure arm does not hit street signs and/or lights </td> </tr> </tbody> </table>	Hazard	Risk	Control Measure	Power Lines	<ul style="list-style-type: none"> Electrocution Damage to powerlines Damage to PORTABOOM[®] 	<ul style="list-style-type: none"> Reposition PORTABOOM[®] to a different area to remove powerline hazard 	Trees (Branches etc)	<ul style="list-style-type: none"> Branch falls from height, hitting TC, member of the public or client Damage to PORTABOOM[®] 	<ul style="list-style-type: none"> Reposition PORTABOOM[®] to remove hazard Diligent PORTABOOM[®] setup to ensure arm does not hit the tree 	Uneven Ground	<ul style="list-style-type: none"> Slip/trip/fall resulting in injury PORTABOOM[®] damage from tipping over due to uneven ground/platform 	<ul style="list-style-type: none"> Risk assessment conducted Identify if PORTABOOM[®] can be moved to an area of even ground to reduce risk Vigilance when on-site and setting up PORTABOOM[®] / signage etc 	Street Signs / Lights etc	<ul style="list-style-type: none"> Damage to PORTABOOM[®] Damage to sign / light etc 	<ul style="list-style-type: none"> Reposition PORTABOOM[®] to remove hazard Diligent PORTABOOM[®] setup to ensure arm does not hit street signs and/or lights
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Step	Instruction	Diagram
3.	<p>Assess the weather conditions prior to setup by checking the Bureau of Meteorology radar (BOM) www.bom.gov.au/australia/radar/ for current and forecasted weather conditions.</p> <p>If the current or forecasted weather advises of windy conditions then add weight to the Stability Legs using sandbags, refer to section 3.6. If in doubt, add sandbags for increased stability.</p> <p>Important note:</p> <ul style="list-style-type: none"> - Remain diligent and vigilant with regards to environmental changes on worksites. - Environmental changes could result in having to add weight to the stability legs. - Monitor the BOM for forecasted weather conditions every 2 hours. 	


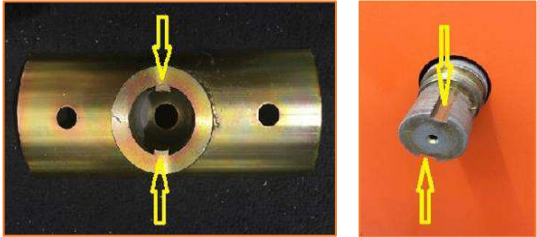


3.5. Setup of PB unit tower, boom arm and accessory lights

Step	Instruction	Diagram
1.	<p>Position the PB unit in the shoulder/kerb for set up, ensuring the shaft is facing the footpath.</p>	
2.	<p>Once in position, enable the brakes by pushing down on brake pedals at the bottom of the PB unit tower.</p>	





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Step	Instruction	Diagram
3.	<p>If the PB unit is fitted with all-terrain wheels, shift the spring loaded locking pins into the locking position for both wheels.</p>	
4.	<p>The carry bag contains:</p> <ul style="list-style-type: none"> - Boom arm - Remote controls x2 - Sandbag hooks x4 - Magnet x1 - Charging cable x1 - Keys for access panel x2 <p>Remove the boom arm from the carry bag.</p>	
5.	<p>Using the access panel key provided, align the cut out on the key with the red dot on the lock and open up the small compartment panel.</p> <p>Note: If the cut out on the key isn't lined up with the red dot on the lock you will not be able to open the panel.</p>	
6.	<p>Turn the PB unit on, once the self-testing cycle is complete, the power light will illuminate green indicating that it is ready.</p> <p>Ensure green lights are on and in the raised position, refer to the sticker on the unit.</p>	



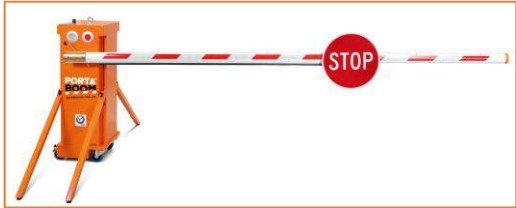

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Step	Instruction	Diagram
7.	Position the boom arm at approximately 45 degrees to the tower.	
8.	Align the boom arm billet tabs with the channels on the shaft.	
9.	<p>Once aligned, connect the boom arm to the tower by pushing firmly forward.</p> <p>Note:</p> <ul style="list-style-type: none"> - Do not use excessive force. - Do not grease or oil the shaft - If you are using force to push on you are doing it incorrectly, stop and start again. 	
10.	Once connected, manually push the boom arm clockwise into a vertical position.	


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Step	Instruction	Diagram
11.	<p>Pull the boom arm away from the unit (towards body) to lock the connection.</p> <p>Secure boom arm into place using the locking mechanism on the tower, turn counter clockwise, hand tighten only.</p>	
12.	<p>Turn the PB unit on, once the self-testing cycle is complete, the power light will illuminate green indicating that it is ready.</p> <p>Push the "RED PUSH BUTTON" in the top left hand corner of the control panel to move the boom arm into a horizontal position.</p>	
13.	<p>Once the boom arm is horizontal, loosen the two (2) boom arm tightening screws.</p> <p>Note:</p> <ul style="list-style-type: none"> - Only loosen to the point where screw feels loose, further loosening will cause screws to fall out. 	
14.	<p>Extend the Boom Arm to the span required.</p> <p>Note:</p> <ul style="list-style-type: none"> - Ensure that the end of the boom arm is at least 500mm from the centre line of the road when two-way traffic operational. 	

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Step	Instruction	Diagram
15.	<p>Once the correct span is established, hand tighten using the two (2) boom arm tightening screws.</p>	
16.	<p>Attach "STOP" sign using the buckles straps to secure the sign.</p> <p>Ensure that one buckle is on the fixed boom arm and the other buckle is on the extension.</p> <p>Note:</p> <ul style="list-style-type: none"> - Be careful not to place straps over the screws as this will cause damage to the strap over time. 	
17.	<p>Ensure the stop sign is positioned in the direction of oncoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> - Stop signs may vary from stage/region. - Refer to your relevant state approvals i.e. NSW uses octagonal stop signs whilst all other states use a round stop sign. 	
18.	<p>Check manual operation of the unit (UP, DOWN, STOP, ACCESSORY LIGHTS) using the "RED PUSH BUTTON" in the top left hand corner of the control panel.</p> <p>All switch functions are to be switched off (in down position) for manual boom operation.</p>	

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Step	Instruction	Diagram
19.	<p>Check the operation of both remote controls (UP, DOWN, STOP, ACCESSORY FUNCTIONS) using the 2x single button remote controls provided.</p> <p>Note:</p> <ul style="list-style-type: none">- All remotes are labelled (front and back) with a unit number to match the PB tower unit number.	

3.6. Setup of traffic light and pedestrian light accessories

Step	Instruction	Diagram
1.	<p>Traffic light and pedestrian light accessories are available as an additional enhancement to the Portaboom product.</p> <p>Select the relevant accessory noting that a similar process for installation applies.</p>	
2.	<p>Insert the accessory attachment rod / arm into the connection point.</p> <p>If using the traffic light, position the traffic light in the direction of oncoming traffic.</p> <p>If using the pedestrian light, position the pedestrian light in the direction of pedestrians.</p> <p>Secure this position with a minimum of two wing nuts (hand tighten only).</p>	
3.	<p>Use the white marks to line up the cable plug to the connector for easy alignment.</p> <p>Line up pins and connect the accessory cable plug to the L1 port.</p> <p>Note that the L1 Port is the primary Light and is predominantly used for 1 light operation, the L2 Port is secondary.</p> <p>Ensure the plug is pushed in and connected.</p>	
4.	<p>To establish functionality, access the control panel and select the required mode (switch up for on).</p> <ul style="list-style-type: none"> - Auto Open (AO) will activate an automatic cycle commencing with the traffic light green and boom open. - Auto Close (AC) will activate an automatic cycle commencing with the traffic light red and the boom closed. <p>Turn the product on, once the self-testing cycle is complete (5-10seconds), the power light will illuminate green indicating that it is ready.</p>	

Step	Instruction	Diagram
5.	<p>If utilising the duel pedestrian and traffic light accessory and functionality, fit the attachment bracket to the traffic light then connect the pedestrian light to the bracket.</p> <p>The PB unit must be firmly secured to a level surface (bolted through stability legs).</p> <p>Note: Consider appropriate manual handling controls when fitting attachment.</p> <p>Insert the accessory attachment rod / arm into the connection point and secure with a minimum of two wing nuts (hand tighten).</p> <p>Position the traffic and pedestrian light in the direction of oncoming traffic and pedestrian.</p>	
6.	<p>Line up pins and connect the traffic light cable plug to the L1 port (primary) and the pedestrian light cable plug to the L2 port (secondary).</p> <p>Ensure that both plugs are pushed in and fully connected.</p>	
7.	<p>To establish functionality, access the control panel and select the required mode (switch up for on).</p> <ul style="list-style-type: none"> - Auto Open (AO) will activate an automatic cycle commencing with the traffic light green, pedestrian light red and boom open. - Auto Close (AC) will activate an automatic cycle commencing with the traffic light red, pedestrian light green and the boom closed. <p>Turn the product on, once the self-testing cycle is complete (5-10 seconds), the power light will illuminate green indicating its ready.</p>	
8.	<p>IMPORTANT NOTE:</p> <ul style="list-style-type: none"> - If the boom arm is not required, switch deactivate boom (DB) off and detach it from the product. - If you are intending on using any of the other accessories, connect them prior to turning the PB unit on. <p>Refer to the relevant section of this SOP or the user manual for instructions.</p>	<p style="text-align: center;">OTHER ACCESSORIES</p>

3.7. Positioning for live operation

Step	Instruction	Diagram
1.	Ensure the boom arm is in the vertical position.	
2.	Disable brakes (standard or all-terrain mechanism).	
3.	Reposition PB unit into "LIVE" Operational Position.	
4.	Enables brakes (standard or all-terrain mechanism).	

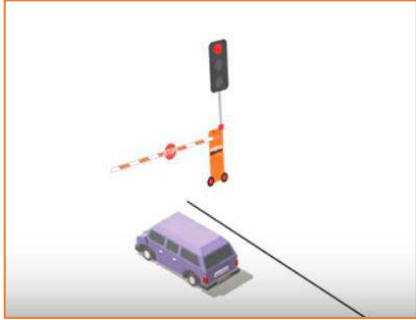


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Step	Instruction	Diagram
5.	Secure stability legs by first unwinding the wing nut to maximum (this ensures the stability leg unhitches freely).	
6.	Placing one hand on the wing nut bolt and the other hand at the base of the leg, pull up slightly and then slide leg into fixing position, ensuring the rubber stopper is firmly on the ground.	
7.	Once in position, tighten the wing nut to secure leg into position.	
8.	Apply the same process to all 4 stability legs to complete the setup.	

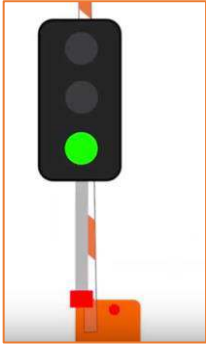

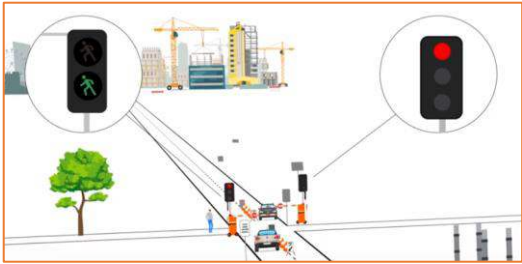
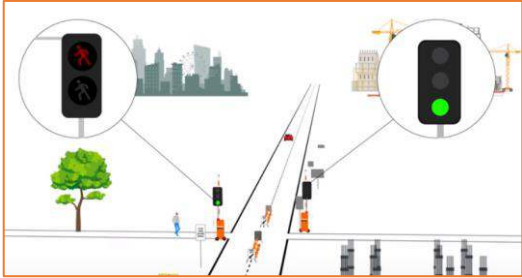
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Step	Instruction	Diagram
9.	<p>For increased stability and in the event of windy / forecasted windy conditions, sand bags MUST be applied to all 4 stability legs for additional stability.</p> <p>Take sandbag hooks out of the side pocket of the carry bag and fix hooks to all 4 stability legs by placing the hook through the hole at the back of the stability leg.</p> <p>Add sandbags to all stability legs.</p>	
10.	<p>Leave the boom arm in an upright operational position until you are ready to commence controlling traffic / site.</p> <p>Ensure advancing warning signs, "KEEP LEFT" signs and lead in cones are all positioned in accordance with the selected TCP.</p> <p>Repeat steps for setting up additional PB units.</p>	
11.	<p>If using the pedestrian button accessory, position the pedestrian button in close proximity to the PB unit (radius no greater than 4m).</p> <p>Ensure the plate is on a flat surface and secured to the ground to prevent it from falling.</p> <p>Ensure the button is visible and accessible to pedestrians.</p>	


3.8. Site operations

Step	Instruction	Diagram
1.	<p>Once all the PB units are setup, tested and ready for operation, position yourself in a safe area that will allow you to operate the PB units ensuring you adhere to all line of site and operational distances and radius.</p>	
2.	<p>When a single operator is operating multiple PB units, the PB units must be labelled with the supplied magnets.</p> <p>The magnets are numbered to correspond with the respective remote control.</p> <p>Operators must ensure they use remote control caddy at all times ensuring the remote controls are labelled the same as the PB unit magnets.</p>	
3.	<p>Ensure operators are positioned in a safe zone off the road / away from vehicle or plant movement paths.</p> <p>Operators should be positioned no further than 75m from the PB unit.</p> <p>Ensure operators have clear line of site (at least 120m visual on approach) for any PB units in operation.</p> <p>The traffic light accessory is synchronised with the operation of the boom arm.</p> <p>Standing in the safe zone, the operator activates the controller to stop the traffic.</p> <p>The traffic light changes from green to amber to red, after approximately 3 seconds the boom arm lowers securing the work zone and providing a physical barrier.</p>	

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Step	Instruction	Diagram
4.	<p>When it is safe for the motorists to proceed, the operator activates the remote control which raises the boom arm.</p> <p>When the boom arm is completely vertical, the traffic light turns green for the motorists to proceed.</p>	
5.	<p>If using the traffic light fitted with the pedestrian light accessory, this will be used to assist with managing pedestrians.</p> <p>The traffic light accessory controls the vehicles which have right of way and the pedestrian light assists with controlling pedestrians.</p>	
6.	<p>When a pedestrian pushes the crossing button, the traffic lights will activate changing the light to amber and red.</p> <p>Once the traffic light changes to red, the boom arm will lower to stop traffic, the pedestrian walk light then turns green for pedestrians to cross.</p>	
7.	<p>When the pedestrian crossing phase is complete, the pedestrian sign will flash red, then turn solid red.</p> <p>The traffic lights turn from red to green and the boom arm raises to the vertical position.</p>	

3.9. Contingency planning

Step	Instruction	Diagram
1.	<p>If a PORTABOOM® Tower fails ensure you are prepared to:</p> <ul style="list-style-type: none"> - manually operate the failed Tower and operate the “other” Tower by using the remote control. <p>OR</p> <ul style="list-style-type: none"> - perform STOP/SLOW in place of the failed Tower and operate the “other” Tower by using the remote control. 	



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3.10. Pack up summary

The following guide will assist with the pack up process:

Step	Instruction
1.	Raise the boom arm to vertical position.
2.	Turn PB unit off.
3.	Remove accessory cables from ports and sockets, detach accessories and stow appropriately.
4.	Remove sandbags from stability legs and stow on vehicle (if applicable).
5.	Remove sand bag hooks from stability legs and stow in the side pocket of the carry bag (if applicable).
6.	Remove the unit number magnet and put magnet and remote control in the side pocket of the carry bag.
7.	Loosen stability legs wing nut and with both hands and raise to the highest point and fasten into recess.
8.	Disable brakes and reposition the PB unit clockwise parallel to the curb.
9.	Enable brakes, turn PB unit back on and lower the boom arm.
10.	Unbuckle the STOP sign and stow away.
11.	Loosen boom arm wing nuts and slide the boom arm extension into the fixed section, hand tighten wing nuts.
12.	Turn PB unit off, switch accessories off and lock the control panel.
13.	Place remote into pocket of carry bag (ensuring the spare remote and small panel key are also stowed).
14.	Unwind boom arm locking mechanism.
15.	Holding the boom arm firmly push boom arm in towards the PB unit.
16.	Position boom arm anticlockwise to 45 degrees.
17.	Lift slightly and then carefully remove boom arm off the shaft.
18.	Place boom arm in the carry bag and zip to close.
19.	Disable brakes on PB unit.
20.	Reposition the PB unit to a safe level surfaced area ready for loading.
21.	Enable brakes.



4. Warning

WARNING

- Ensure only trained and competent personnel use the product and accessories.
- Ensure operators hold the appropriate tickets and licences for the work environment.
- Ensure operators and relevant personnel have read and understood the SOPs.
- Ensure appropriate plans, risk assessments and approvals are established.
- Ensure the PB product is on a stable and level surface and secure to prevent it from falling.
- Ensure product is turned off prior to fitting or adjusting any accessories.
- Some of the accessories are considered heavy or awkward, it is recommended that manual aid or a two person lift be adopted.
- Wear gloves when handling and fitting any of the accessories.
- Ensure accessories are appropriately secured to prevent them from falling.
- If any of the accessories are not working or damaged, do not use them, refer to the user manual or contact your distributor.
- Always remain vigilant around plant, vehicles and worksite activities.
- Closely monitor vehicle movements and traffic flow.
- Stay in your safe zone and away from the live lanes – never turn back on traffic.
- Ensure clear escape routes.