CRUISE MASTER™

BCS

BODY CONTROL SYSTEM

Installation Manual

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Revision	Revision Detail	Date
1	Draft	28/10/2024
1.1	Draft – XT installation details added	1/11/2024
2	Production Release	16/12/2024
3	General Update	18/02/2024

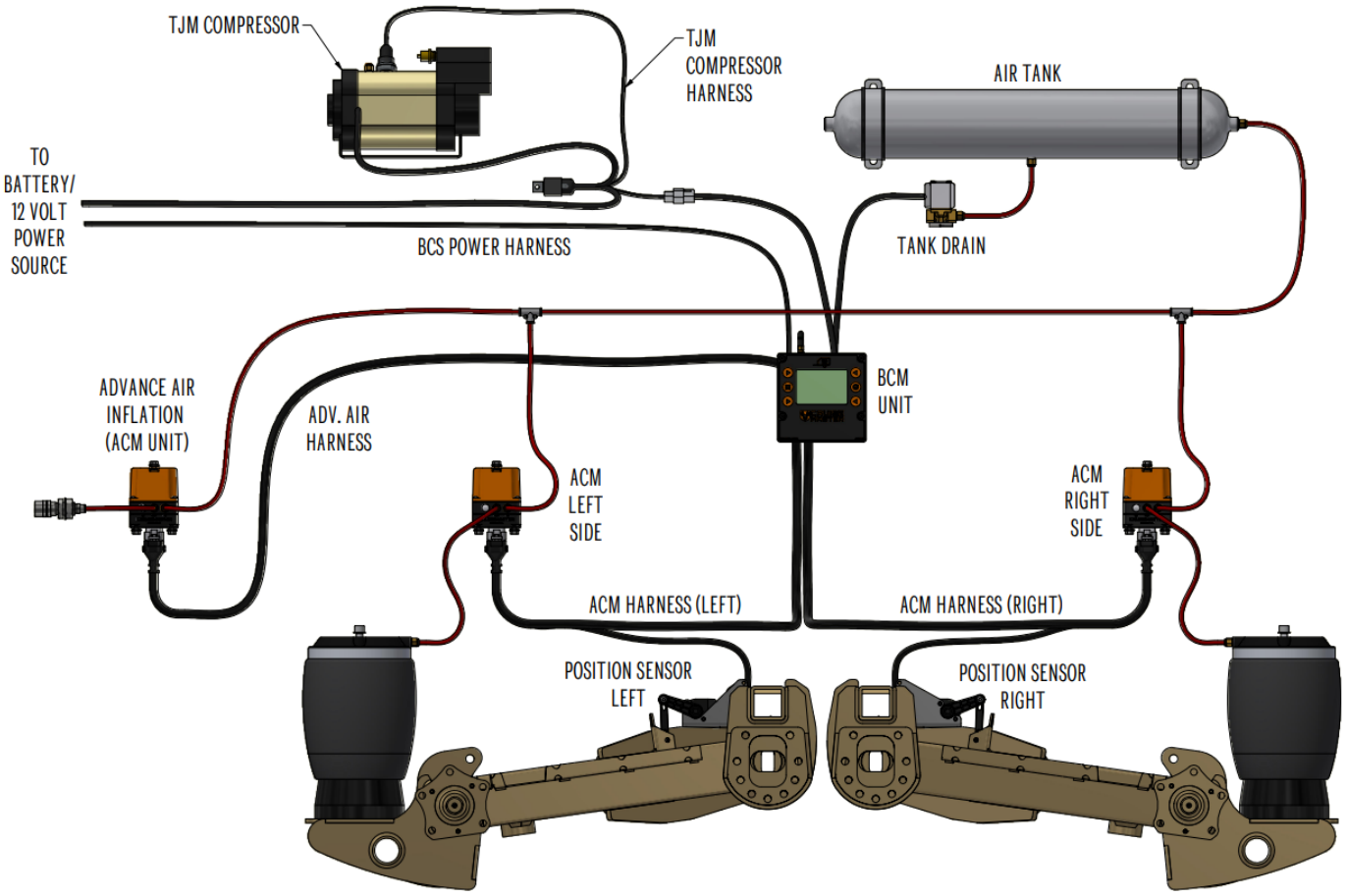
The Cruisemaster Body Control System

The Cruisemaster Body Control System (BCS) is a fully electronic control system for the Cruisemaster Air suspension system fitted to your trailer or caravan. The Cruisemaster BCS allows automatic setting of ride height when setting off, and levelling of the trailer when setting up on uneven ground.

The Cruisemaster BCS has Bluetooth™ capability, allowing you to use the Cruisemaster BCS App to remotely control the system and access new features and usability improvements as the product evolves.

The Cruisemaster BCS consists of the *Body Control Module (BCM)* which is the user interface, *Air Control Modules (ACM)* which control air flow, *Air Compressor*, *Air Tank* and Air *Tank Drain Solenoid*. The BCS can be optioned with the *Advanced Inflation* kit which allows automatic tyre inflation and deflation, and an *Odometer* kit to keep track of travel distances and maintenance.

System Overview



Warnings And Safety Instructions

SAVE THIS GUIDE: Before commencing installation or use of the Cruisemaster Body Control System (BCS), please ensure you have read, understood and saved this Installation and User Guide. Also ensure that all the components listed in this guide are supplied.
DISCLAIMER: Cruisemaster accepts no liability for injury, loss or property damage which may occur due to improper or unsafe installation and/or use of the Cruisemaster Body Control System.

WARNING

1. Compressed air can be dangerous. This system must only be operated by a competent person, in compliance with the operating procedures and recognizing the risks outlined in this document.
2. Always operate the system in a safe manner.
3. Keep all persons and pets clear of the trailer during operation.
4. Always be aware of the surroundings of yourself and the trailer prior to operation.
5. Ensure all persons and pets are clear before releasing air from the tank drain valve.
6. Do not use any function of the system on or toward people, children or pets.
7. Air venting from the system (via Quick Connect port, ACM exhaust or Air Tank Drain solenoid exhaust) may be loud.
8. Ensure you have read and fully understood the instructions in the Inflator Menu section prior to using the inflation function.
9. Ensure installation or repair of the system or any of its components is carried out by a competent person.
10. Ensure the system is de-energised prior to commencing installation or repair of the system and/or its components.
11. ALWAYS use jack stands and ensure the trailer is safely secured and wheels chocked prior to installation, repair and operation. DO NOT work under insecure loads.
12. Do not remove, modify or bypass the pressure relief valve. Pressure relief valve may only be replaced by an equivalent rated (155psi) valve.
13. All Air Control Modules (ACM) MUST be vented to external atmosphere.
14. Use the supplied airline cutter for cutting all airline in the system.

CAUTION

1. Ensure a fuse is installed at the power supply source for the Body Control System (BCS) (5A) and air compressor (refer to the manufacturers user manual for fuse size).
2. Ensure all electrical connections are insulated.
3. Ensure all harnesses/cables are secured at regular intervals and are protected from sharp edges to prevent chafing and wear.
4. DO NOT use thread tape on any fittings or components as it may result in component failure. Cruisemaster recommends the correct use of thread sealant. Wear the correct PPE and follow the manufacturers specifications and procedures for correct application.
5. Periodically check the safety relief valve (usually installed on compressor) by ensuring air is released when the manual override is pulled.
6. Periodically check all airlines and fittings for leaks.
7. Periodically check all fasteners and mounting hardware are securely installed.
8. Follow the manufacturer's instructions for the installation and use of the air compressor. ALWAYS use the appropriate fuse for the application and ensure the compressor is properly mounted to reduce vibration and noise.
9. Exercise caution when performing water crossings to not submerge the air compressor (if it is mounted externally or beneath the trailer)
10. Do not replace the Bluetooth antenna with an alternate part.

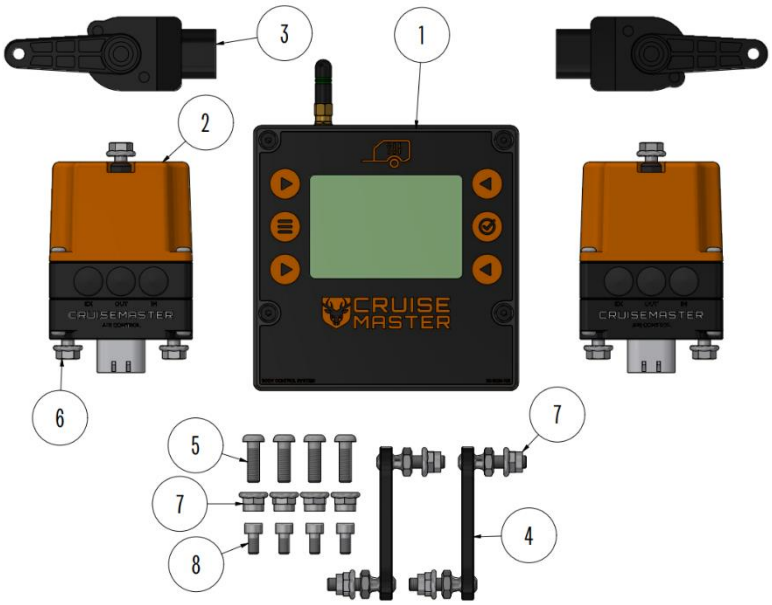
PERSONAL SAFETY MEASURES: Please follow the preceding measures to ensure the safe installation and use of the BCS.

1. Use the appropriate PPE for the task being completed while using the BCS.
2. Use eye protection whenever there is a risk of dust being blown into the vicinity of the user and bystanders. Dirt particles can irritate the eyes, skin and respiratory system.
3. Use heat-proof gloves when working with hot equipment. The air compressor may get very hot during use.
4. Parts of the system may create loud noise and vibration. Use hearing protection if exposed to loud noise

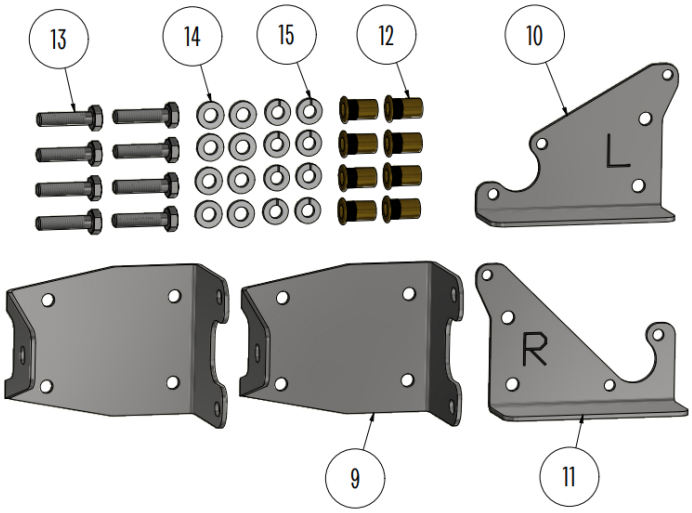
Contents

Kit Contents

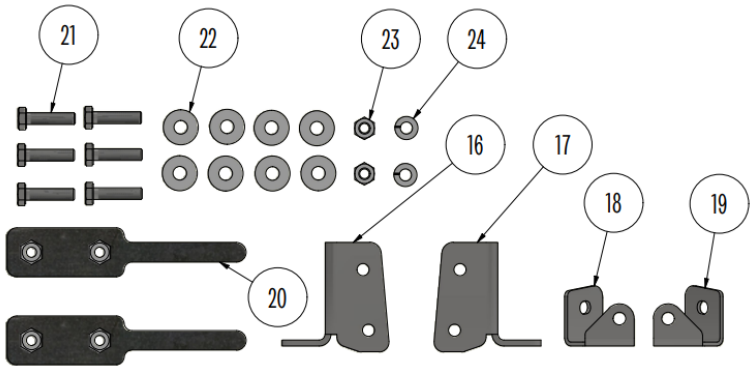
BCS BASE KIT

ITEM	COMPONENT NAME	QTY	DIAGRAM
1	BODY CONTROL MODULE (BCM)	1	
2	AIR CONTROL MODULE (ACM)	2	
3	POSITION SENSOR	2	
4	POSITION LINKAGE	2	
5	M6x20mm BUTTON HEAD BOLT	6	
6	M6x10mm HEX HEAD FLANGE BOLT	4	
7	M6 FLANGE NUT	8	
8	M5x10mm SOCKET HEAD CAP SCREW	4	

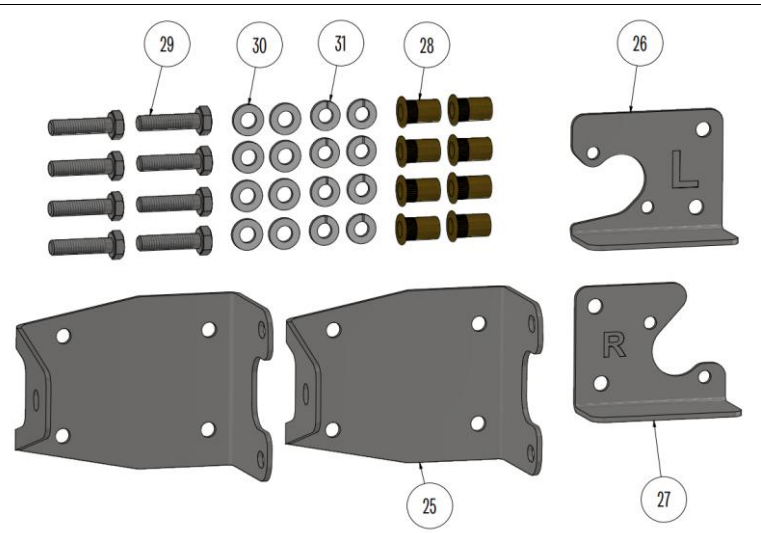
ATX BCS BRACKET KIT (STANDARD WITH ATX)

ITEM	COMPONENT NAME	QTY	DIAGRAM
9	ACM BOLT-ON BRACKET	2	
10	ATX POSITION SENSOR BRACKET L	1	
11	ATX POSITION SENSOR BRACKET R	1	
12	M6 RIVET NUT	8	
13	M6x25mm HEX HEAD BOLT	8	
14	M6 FLAT WASHER	8	
15	M6 SPLIT WASHER	8	

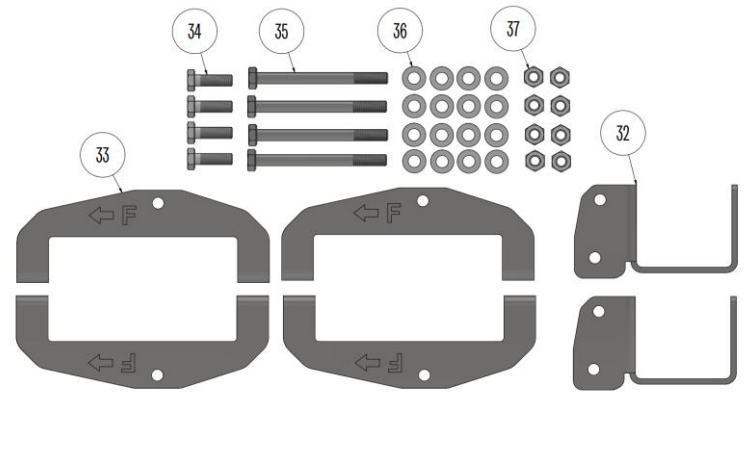
ATX BCS RETROFIT BRACKET KIT (OPTIONAL)

ITEM	COMPONENT NAME	QTY	DIAGRAM
16	ATX RETROFIT ARM BRACKET R	1	
17	ATX RETROFIT ARM BRACKET L	1	
18	ATX RETROFIT HINGE BRACKET R	1	
19	ATX RETROFIT HINGE BRACKET L	1	
20	ATX RETROFIT NUT PLATE	2	
21	M6x25mm HEX HEAD BOLT	6	
22	M6 FLAT WASHER	8	
23	M6 NYLOC NUT	2	
24	M6 SPRING WASHER	2	

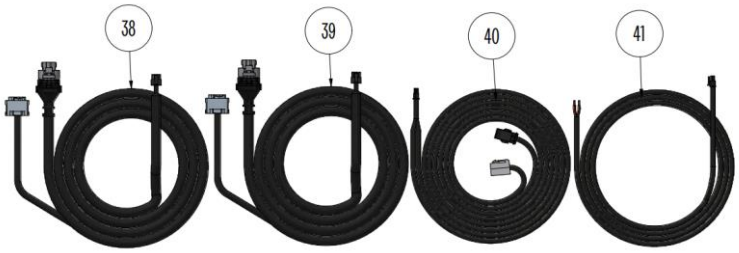
XT BCS BRACKET KIT (STANDARD WITH XT)

ITEM	COMPONENT NAME	QTY	DIAGRAM
25	ACM BOLT-ON BRACKET	2	
26	XT POSITION SENSOR BRACKET L	1	
27	XT POSITION SENSOR BRACKET R	1	
28	M6 RIVET NUT	8	
29	M6x25mm HEX HEAD BOLT	8	
30	M6 FLAT WASHER	8	
31	M6 SPLIT WASHER	8	

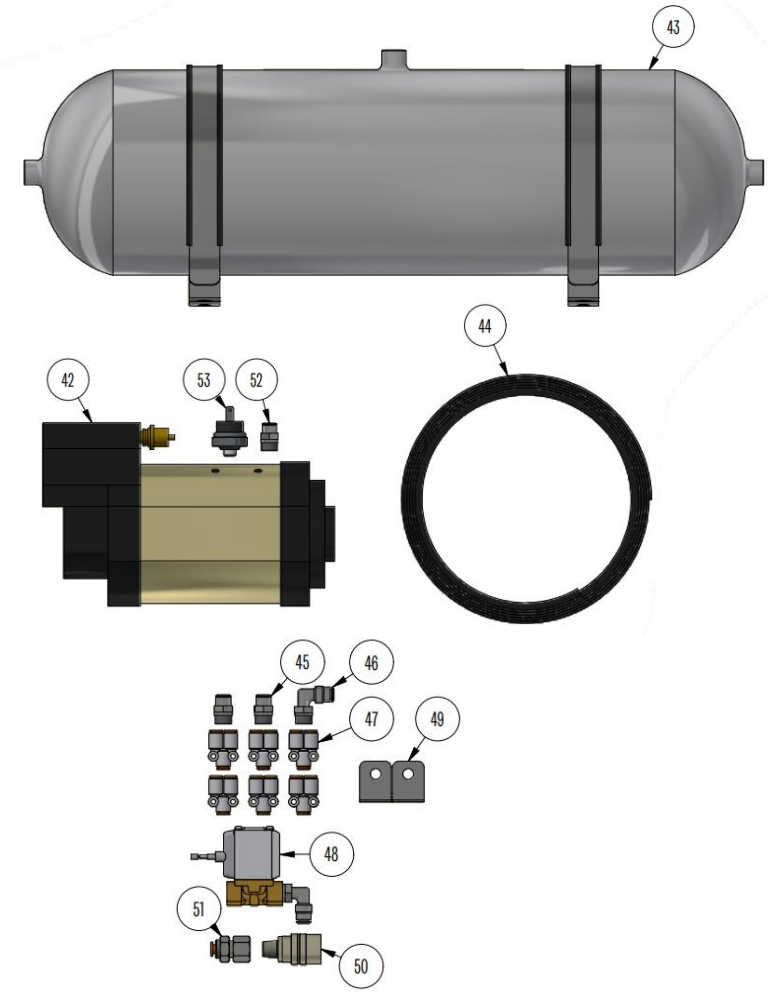
XT BCS RETROFIT BRACKET KIT (OPTIONAL)

ITEM	COMPONENT NAME	QTY	DIAGRAM
32	XT RETROFIT HINGE BRACKET	2	
33	XT RETROFIT ARM BRACKET	4	
34	M6x25mm HEX HEAD BOLT	4	
35	M6x70mm HEX HEAD BOLT	4	
36	M6 FLAT WASHER	16	
37	M6 NYLOC NUT	8	

SHORT/LONG BCS HARNESS KIT

ITEM	COMPONENT NAME	QTY	DIAGRAM
38	SHORT/MEDIUM ACM HARNESS	1	
39	MEDIUM/LONG ACM HARNESS	1	
40	COMPRESSOR DRAIN HARNESS	1	
41	BCM POWER HARNESS	1	

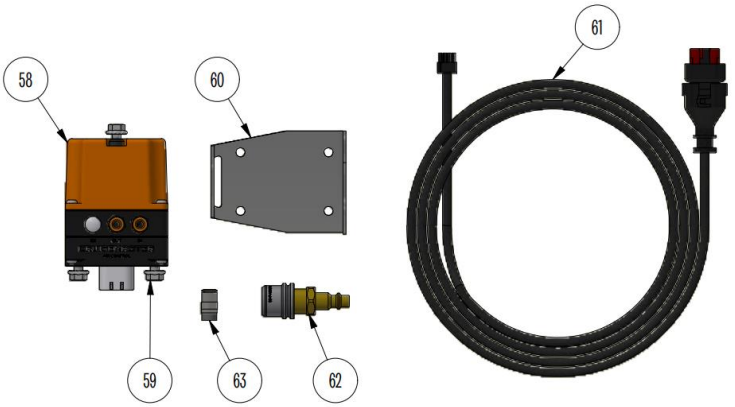
BCS AIR SUPPLY KIT

ITEM	COMPONENT NAME	QTY	DIAGRAM
42	TJM PRO SERIES COMPRESSOR	1	
43	ALUMINIUM AIR TANK 3G/11L	1	
44	¼” NYLON TUBE 10M RED	1	
45	STRAIGHT FITTING ¼” PTC x ¼” NPT	2	
46	ELBOW ¼” PTC x ¼” NPT	1	
47	Y-PIECE ¼” PTC	6	
48	TANK DRAIN SOLENOID	1	
49	MANUAL INFLATION BRACKET	1	
50	QUICK RELEASE COUPLING	1	
51	BULKHEAD CONNECTOR ¼” NPT	1	
52	STRAIGHT FITTING ¼” PTC x ⅛” BSPT	1	
53	PRESSURE SWITCH 110-130PSI	1	

BASIC AIR ACCESSORY KIT

54	INFLATION WAND & COIL	1	

ODOMETER KIT (OPTIONAL)			
55	MAIN BCM WSS HARNESS	1	
56	BCM WSS HARNESS – WITH ABS	1	
57	BCM WSS HARNESS – WITHOUT ABS	1	

ADVANCED INFLATION ACCESSORY KIT (OPTIONAL)			
ITEM	COMPONENT NAME	QTY	DIAGRAM
58	AIR CONTROL MODULE	1	
59	M6x10mm HEX HEAD FLANGE BOLT	3	
60	ACM BOLT-ON BRACKET	1	
61	INFLATOR ACM HARNESS	1	
62	AIR CHUCK	1	
63	STRAIGHT FITTING ¼” x ⅛”	1	

Preparation

1. Ensure the system is de-energised by releasing all air from the lines and tank and disconnecting any power source, prior to commencing installation or repair of the system and/or its components.
2. ALWAYS use jack stands and ensure the trailer is safely secured and wheels chocked prior to installation, repair and operation. DO NOT work under insecure loads.
3. Use the appropriate PPE, such as eye and hearing protecting, for the task being completed while installing the BCS.
4. Ensure installation of the system or any of its components is carried out by a competent person.
5. Ensure all fasteners are torqued to the correct specifications, refer to appendix 3 for correct bolt torque values.

Body Control Module Mounting

Location

The Body Control Module (BCM) (item 1) is to be located with consideration for the passage of cables between the BCM and other system components (ACMs, Air Compressor, Tank Drain Solenoid, Inflator ACM and Wheel Speed Sensor).
To operate correctly, the BCM must be mounted:

- To a surface that is aligned with either the longitudinal (fore-aft) or lateral (left-right) axis of the trailer
- With the antenna pointing vertically upward.

For best Bluetooth performance, it is recommended that the area around the Antenna should be free from metal.
The preferred position is inside an external hatch, viewable from the passenger side of the trailer.
The front face of the BCM is splash resistant, however the unit is not waterproof and should be protected from the elements.

Warning

- The BCM should be mounted in a lockable enclosure or hatch, to prevent unauthorised use.
- Cruisemaster does not recommend installing the BCM internal to the trailer, due to the reduction in spatial awareness required to operate the system safely.

Mounting

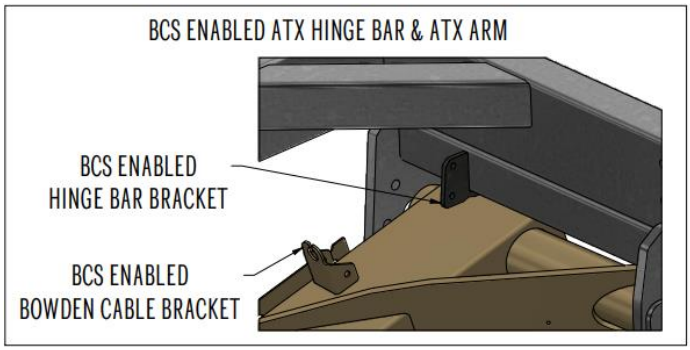
- Use the provided cutting template in Appendix 1: BCM Cut Template. If Printing, ensure scale is 1:1 or 100% on A4 sized paper/card. Before cutting or drilling, check the dimensions of the printed template against the dimensions in Appendix 2: BCM Mounting Drawing.
- If mounting directly to cabinetry, cutting the hole for the fuse is not necessary as the BCM will need to be removed from the cabinet to access the fuse. If mounting to an intermediate plate, it is recommended to make the cut out for fuse access.
- Allow a minimum of 30mm of depth behind the BCM to prevent cable damage by bending.
- Cables require minimum passage dimension of 20mm in the smallest dimension.
- Bolt holes will need to be drilled if using a bolted connection, instead of screws into cabinetry.
- Use bolts included or an 8G countersunk screw.
- DXF cut template available at www.cruisemaster.com.au/downloads/

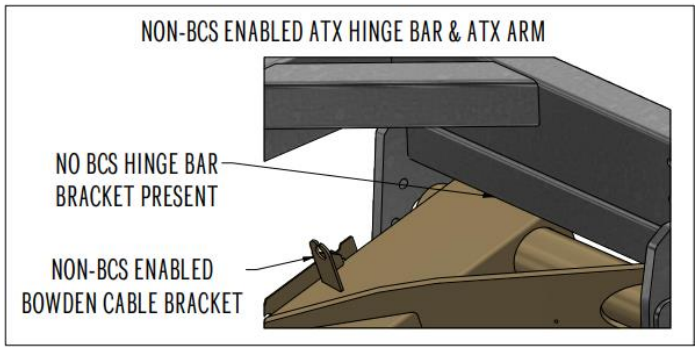
Cruisemaster ATX Component Mounting

Warning

For multi-axle trailers, the BCS components (brackets, Position Sensors and ACMs) are to be mounted to the rearmost axle of the trailer only.

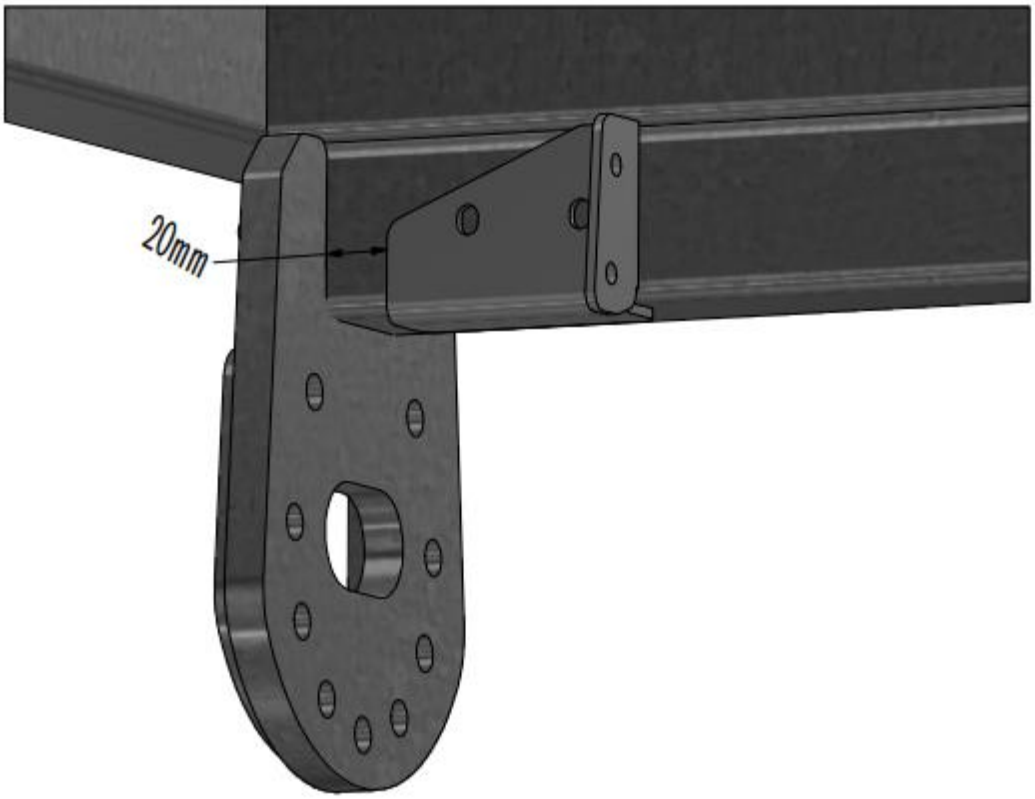
Confirm that your suspension is BCS enabled by checking if the BCS brackets are pre welded to the ATX hinge and the ATX arm, on the rearmost axle. If no brackets are present, proceed from step 1 to fit the retrofit brackets. If you have BCS enabled components already installed, proceed from step 7.



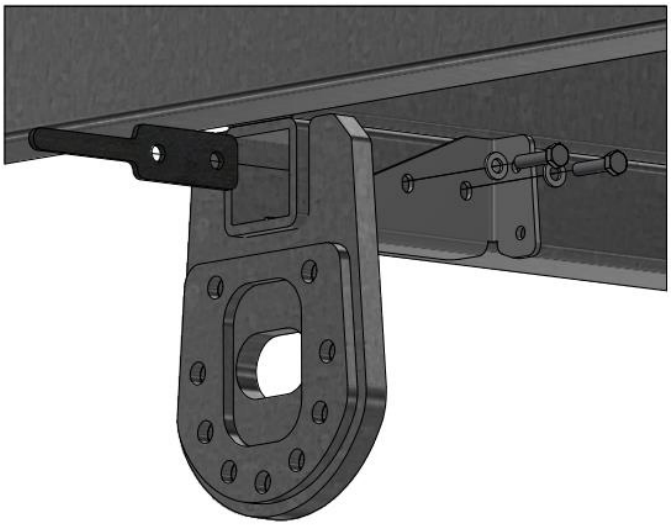


ATX Retrofit Bracket Instructions

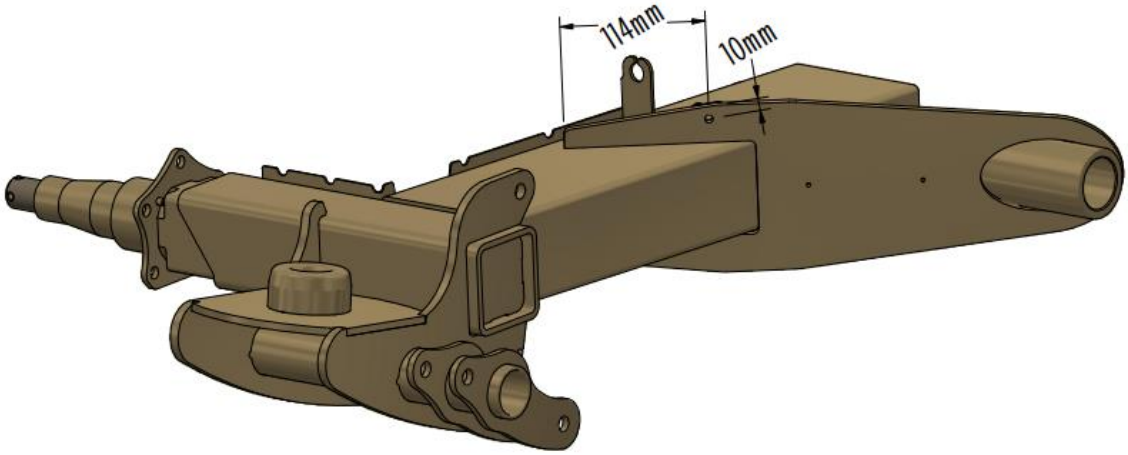
1. On the rearmost axle, remove the ATX arms from the hinges or remove the lower shock, rebound cable bolts and airbag lower nut to allow the arms to droop as far as possible.
2. Starting on the LH side of the suspension system, place the ATX Retrofit Hinge Bracket L (item 17) in position by measuring 20mm from the inside of the outer hinge plate to the edge of the bracket (shown below). Ensure the bottom flange of the bracket is hard up against the bottom of the hinge bar. Mark out the holes in the bracket onto the hinge bar and drill out marked holes using a 7mm drill bit.



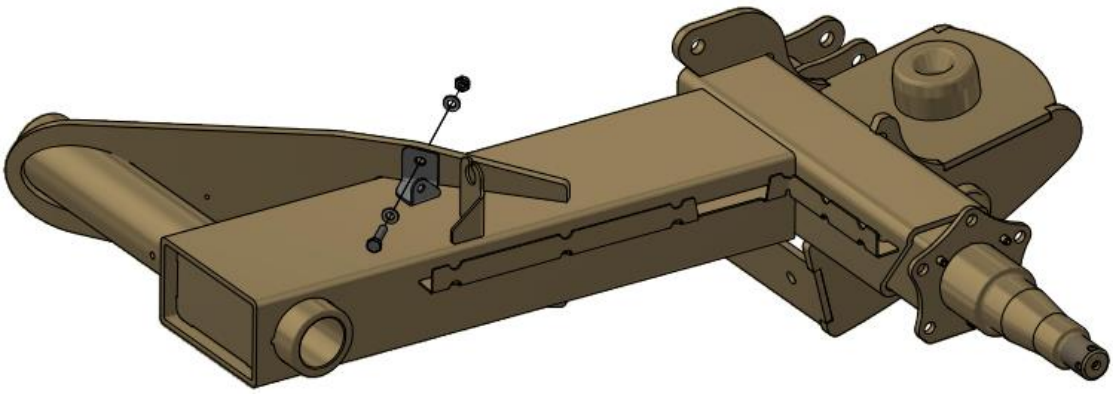
3. Slide the provided nut plate (Item 20) through the ATX hinge bar and fasten the ATX retrofit hinge bracket to the arm using the provided M6x25mm button head bolts and flat washers (Item 21 & 22).



4. Using the dimensions below, drill a 6.5mm hole on the back side of the ATX arm brace. **It is critical to mark this hole accurately, use a centre punch and high-quality drill bit to ensure hole position is accurate.**



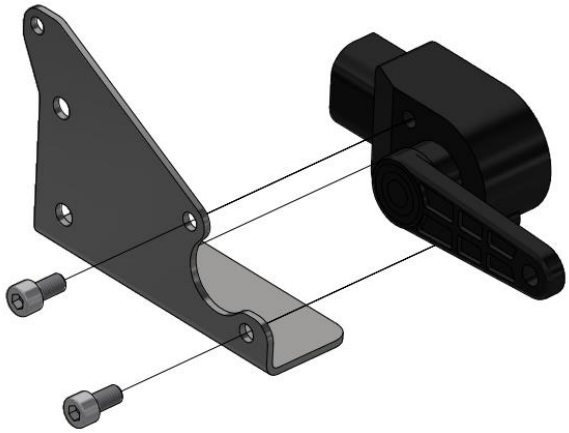
5. Place the ATX Retrofit Arm Bracket L (Item 19) in position by aligning with the hole drilled in the previous step. Ensure the bottom flange of the bracket is hard up against the top of the arm and the back of the bracket is hard up against the brace. Attach the bracket to the hinge by drilling through the bracing plate and bolting the bracket into position, using M6 hex head bolt, M6 flat washers and M6 nyloc nut (items 21, 22 & 23).



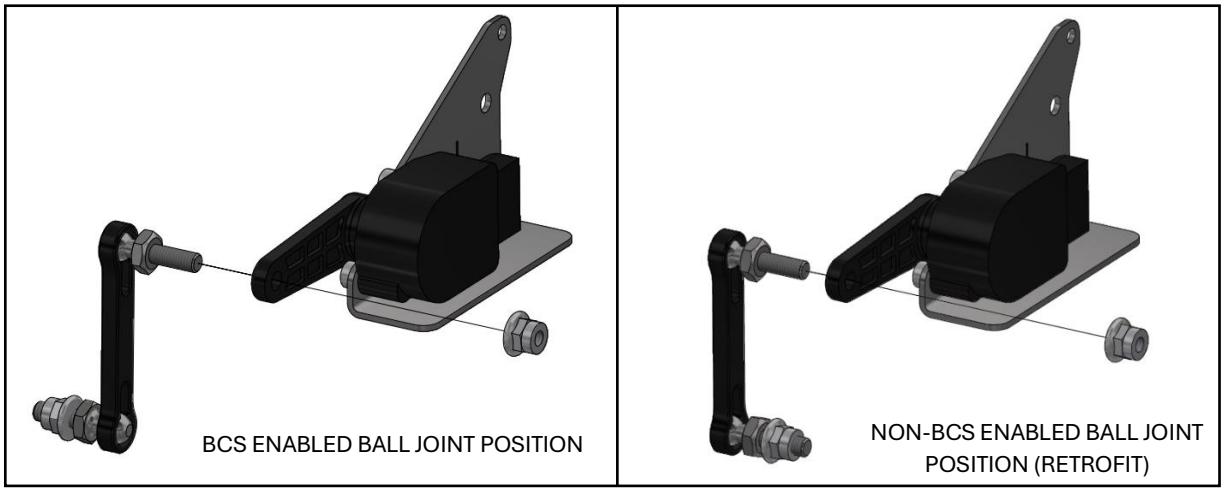
6. Repeat steps 2-5 for RH side using opposite side brackets (Items 16 & 18).

ATX Position Sensor Installation

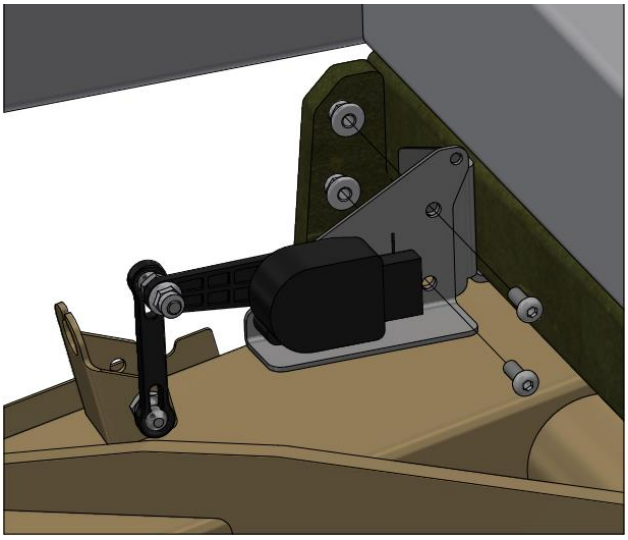
7. On the rearmost axle, install the position sensor (Item 3) to the position sensor bracket, marked with an L (Item 10), using 2xM5x10mm socket head cap screws (Item 8).



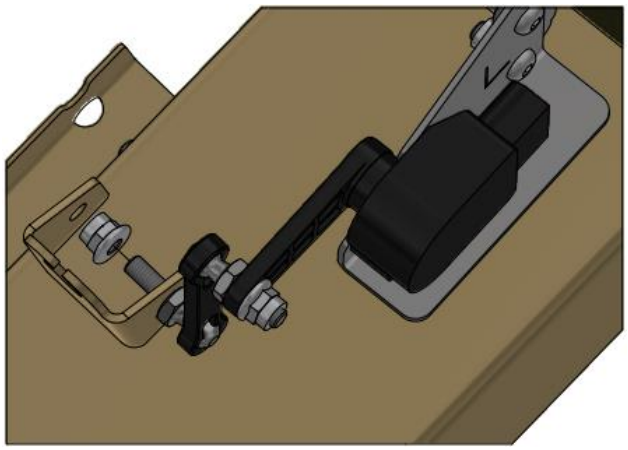
8. Attach one end of the linkage (Item 4) to the arm on the position sensor using the M6 flanged nyloc nut that comes pre-attached to the threaded ball stud on the linkage. Ensure the linkage is installed in the orientation as shown below for BCS enabled suspension systems. For Non-BCS enabled systems with the retrofit brackets installed, the ball on the lower end of the linkage will have be removed and installed in the opposite direction.



9. Install the position sensor and bracket onto the bracket attached to the LH ATX hinge using 2x M6x20mm button head bolts (Item 5) and 2x flanged nyloc nuts (Item 7). **Note: do not use washers. This will inhibit ability to plug connector into sensor.**

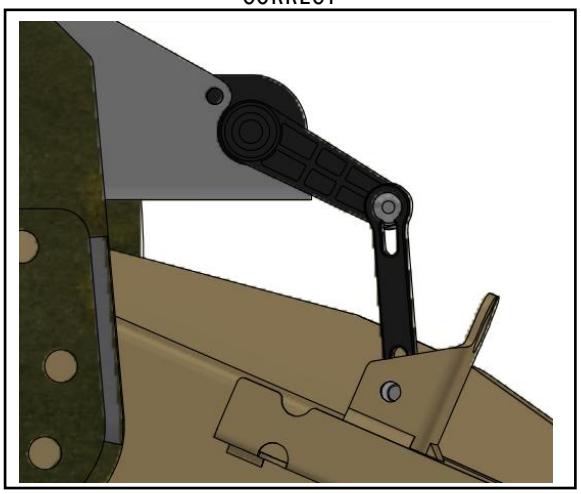


10. Attach the opposite end of the linkage to the Bowden cable bracket attached to the RH ATX arm using the M6 flanged nyloc nut that comes pre-attached to the threaded ball stud on the linkage.

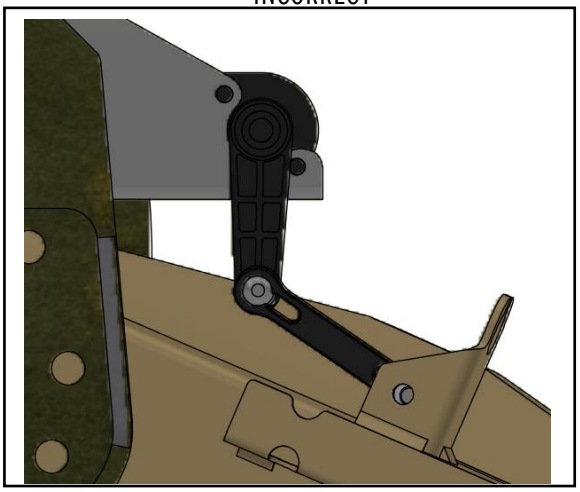


NOTE: WHEN INSTALLING THE POSITION SENSOR/LINKAGE, ENSURE THE POSITION SENSOR ARM IS ORIENTATED CORRECTLY AS SHOWN BELOW:

CORRECT



INCORRECT



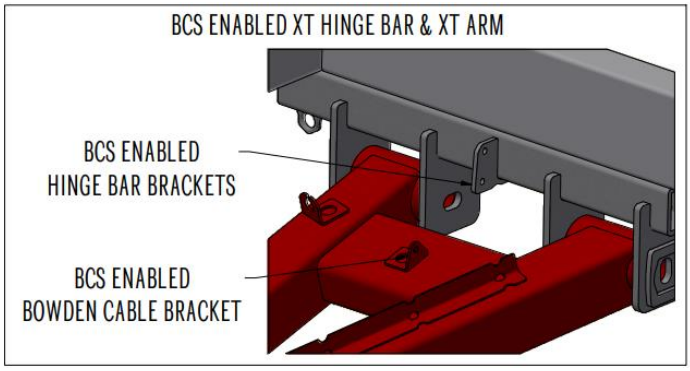
11. Repeat steps 7-10 for the RH side of the chassis and then continue onto the ACM Unit Installation on page 17.

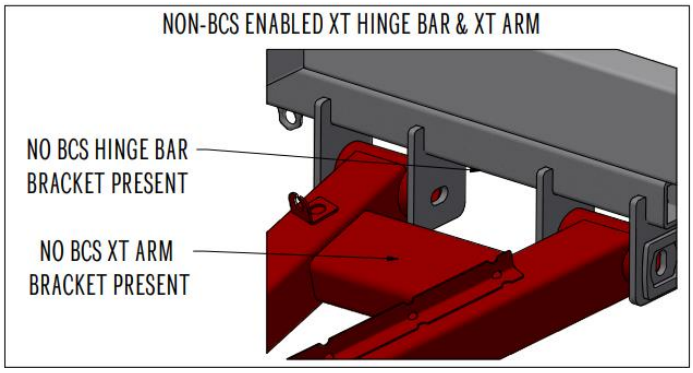
Cruisemaster XT Component Mounting

Warning

For multi-axle trailers, the BCS components (brackets, Position Sensors and ACMs) are to be mounted to the rearmost axle of the trailer only.

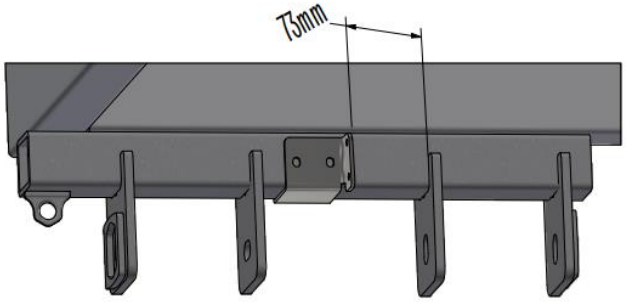
Confirm that your suspension is BCS enabled by checking if the BCS brackets are pre welded to the XT hinge and the XT arm, on the rearmost axle. If no brackets are present, proceed from step 1 for the retrofit bracket fitment. If you have BCS enabled components already installed, proceed from step 6.



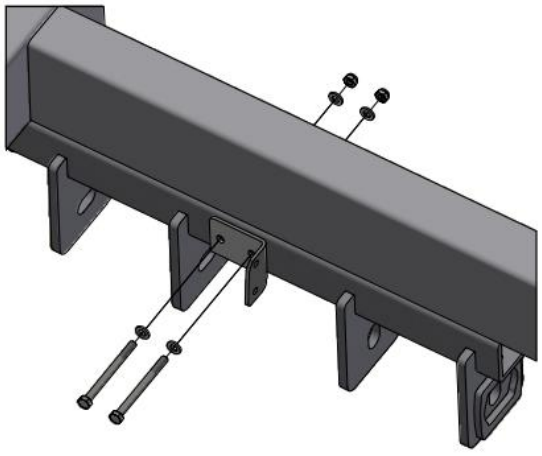


XT Retrofit Bracket Instructions

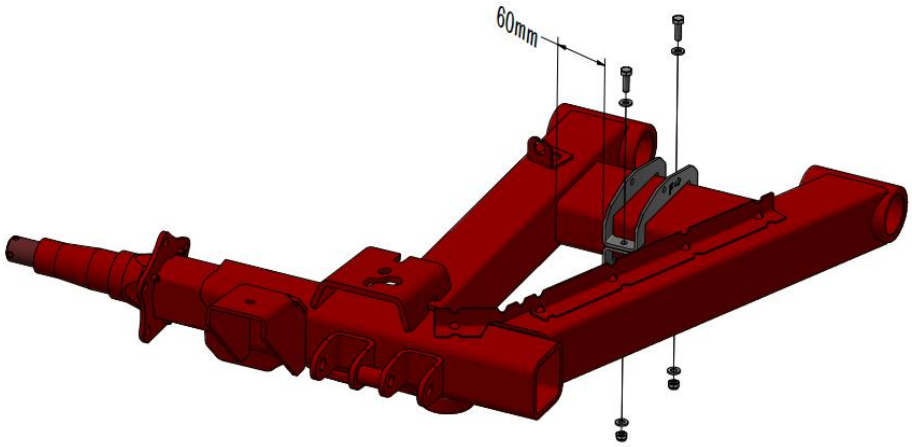
1. On the rearmost axle, remove the XT arms from the hinges or remove the lower shock bolts and allow the arms to droop as far as possible.
2. Starting on the LH side of the suspension system, place the XT Retrofit Hinge Bracket (item 32) in position by measuring 73mm from the inside of the outer hinge plate to the edge of the bracket (shown below). Ensure the bottom flange of the bracket is hard up against the bottom of the hinge bar. Mark the holes in the bracket onto the hinge bar **ON BOTH SIDES** and drill using a 7mm drill bit from either side of the hinge bar.



3. Using the M6x70mm hex head bolts, flat washers and nyloc nuts (Items 35, 36 & 37) included in the XT retrofit bracket kit, attach the XT retrofit hinge bracket to the hinge tube and torque to spec.



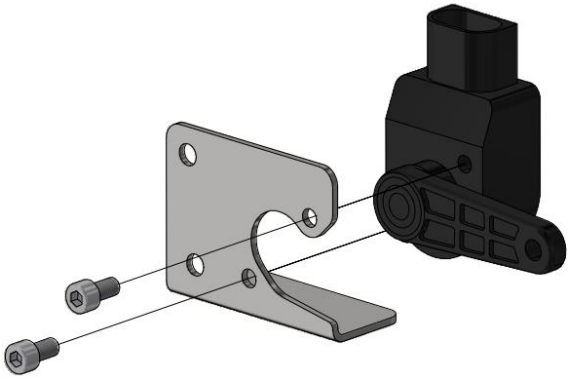
4. On the XT arm, place 1x XT retrofit arm bracket above and 1x XT retrofit arm bracket (item 33) below the cross-tube in the arm, as shown below, take note of the arrow on the bracket and ensure it is facing towards the front of the trailer. Then fasten the brackets to the arm using the provided M6x20mm hex head bolts, flat washers and nyloc nuts provided (Items 34, 36 & 37), only tighten to finger tight at this stage.
   Once the brackets are lightly attached to the arm, adjust their position along the cross-tube until the outside face of the bracket is 60mm away from the inside face on the straight RHS member of the XT arm and fully torque the bolts to spec, as shown below.



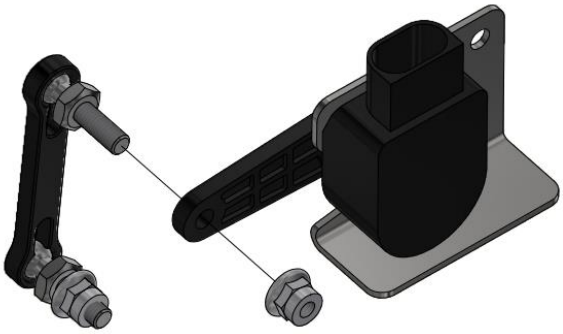
5. Repeat steps 2-4 for right hand side.

XT Position Sensor Installation

6. On the rearmost axle, install the position sensor (item 3) to the position sensor bracket, marked with an L (item 26), using 2xM5x10mm socket head cap screws (item 8).



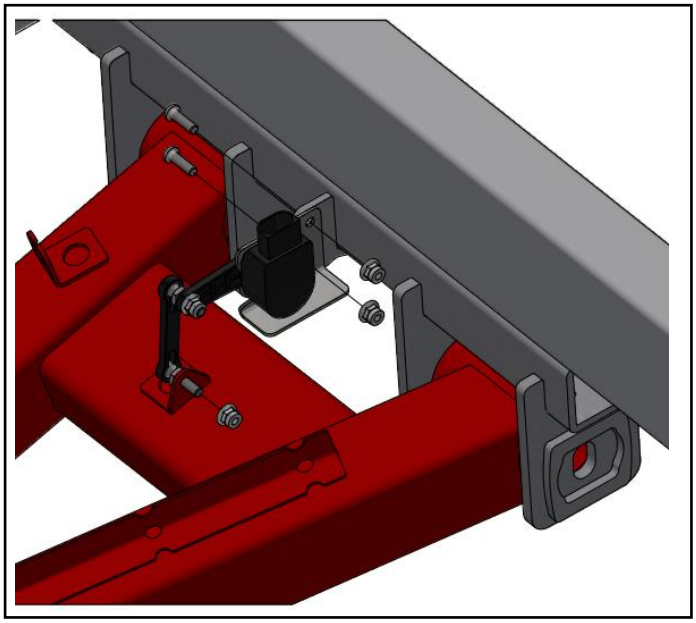
7. Attach one end of the linkage (item 4) to the arm on the position sensor using the M6 flanged nyloc nut that comes pre-attached to the threaded ball stud on the linkage. Ensure the linkage is installed in the orientation as shown below.



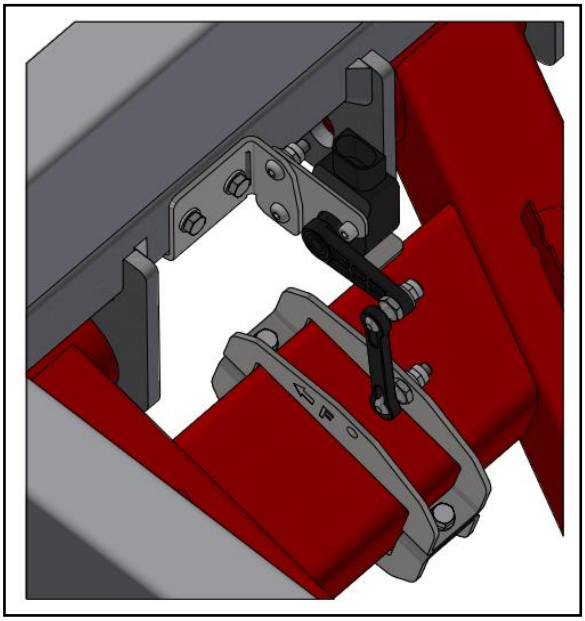
8.

9. Install the position sensor and bracket onto the bracket attached to the LH XT hinge using 2x M6x20mm button head bolts and 2x flanged nyloc nuts (items 5 & 7). Then attach the opposite end of the linkage to the linkage bracket attached to the LH XT arm using the M6 flanged nyloc nut that comes pre-attached to the threaded ball stud on the linkage.

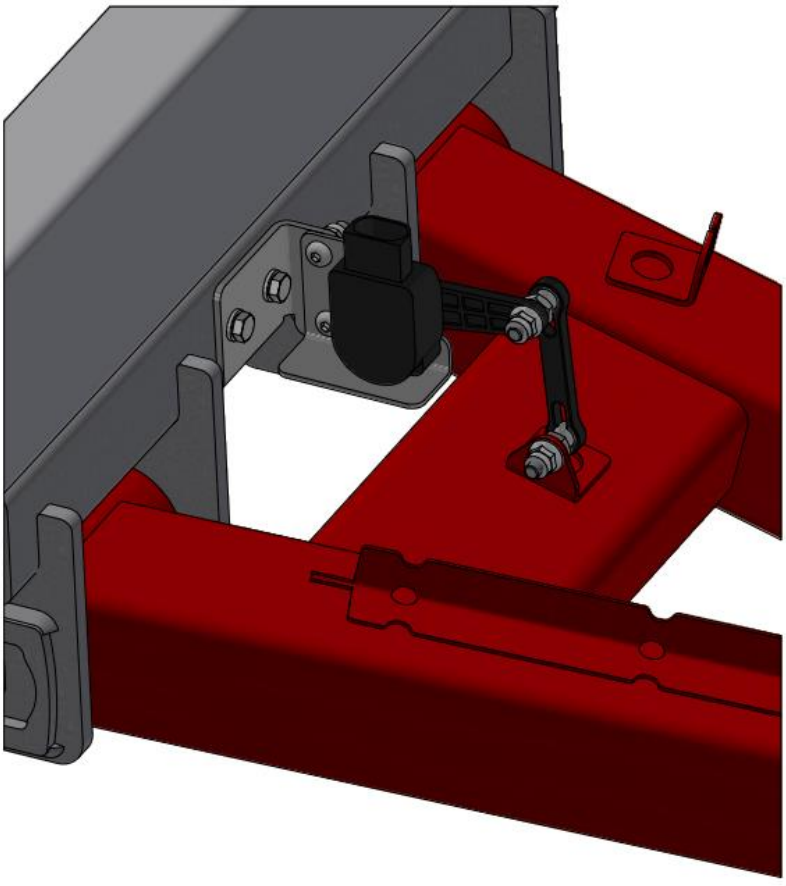
FOR BCS ENABLED



FOR RETROFIT



10. Repeat steps 6-8 for the opposite side of the chassis and then continue onto the ACM Unit Installation on page 17. See the below image of how the right-hand side should be installed.

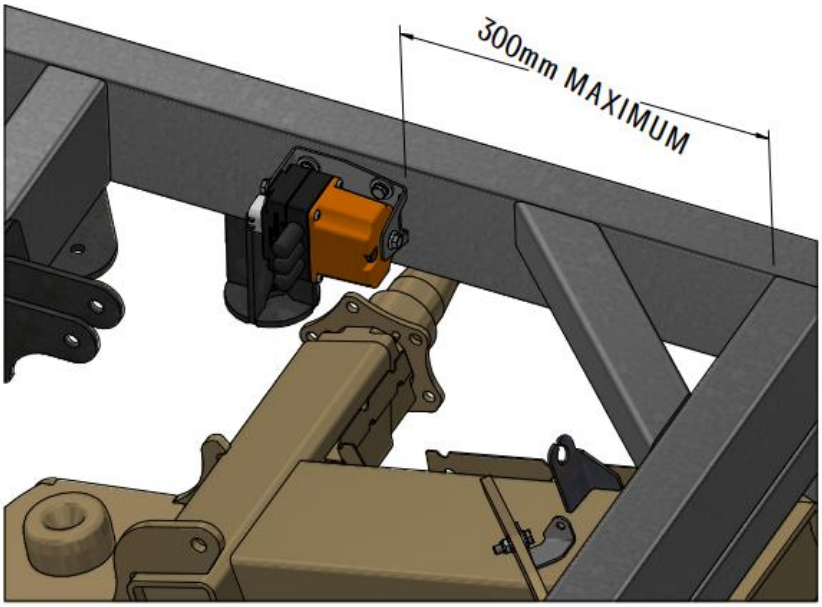


ACM Unit Installation

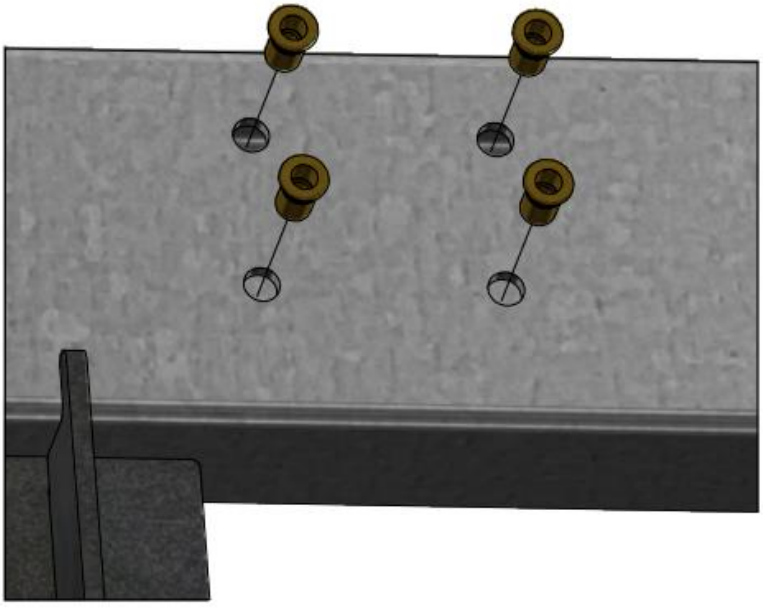
1. Position the ACM bracket (Item 9) on the chassis member in the desired location of the ACM units. The ACM should be mounted:

- Above the ATX/XT arm on the rearmost axle
- No more than 300mm rearward from the cross member the position sensor is mounted to
- As high up on the chassis rail as possible (for protection)
- Electrical connector can face forwards or backwards depending on chassis configuration.
- Ensure consideration for routing of the air and electrical connections
- Allowing visual inspection of the vent on the top of the ACM unit.

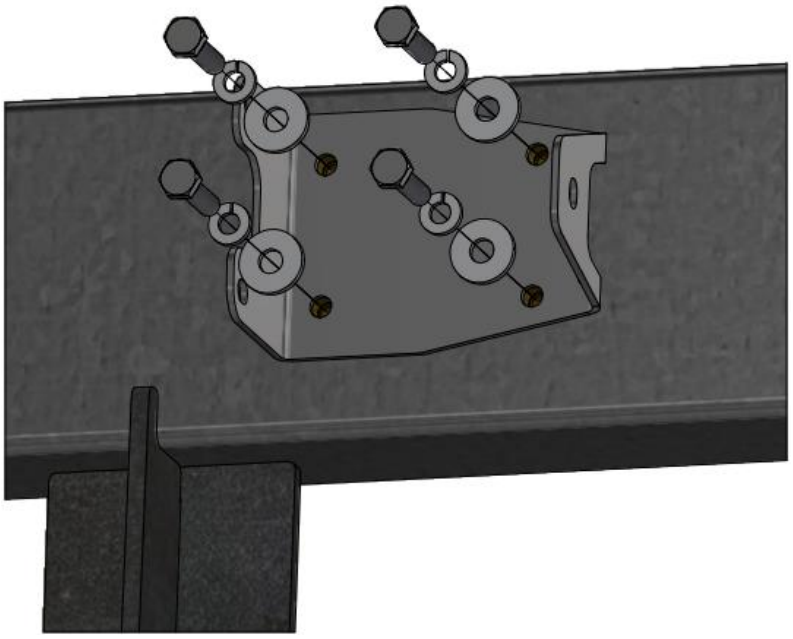
See below for preferred mounting location.



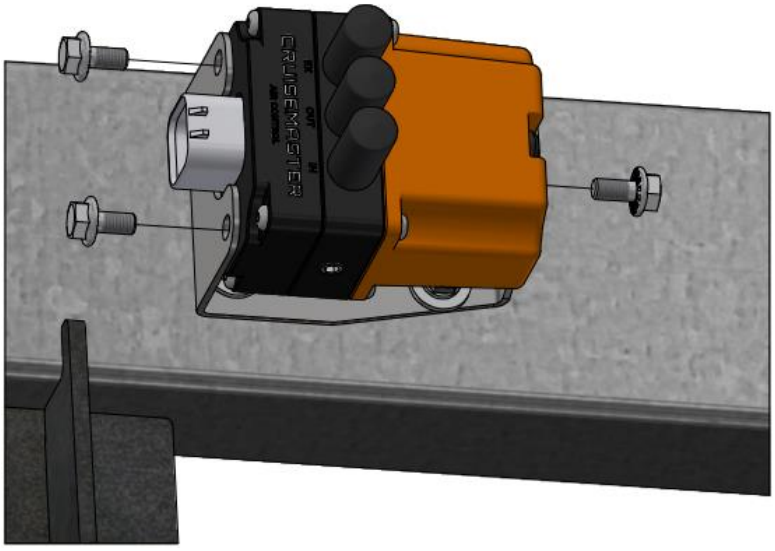
2. Using the ACM bracket as a guide, mark out the 4x bolt holes onto the chassis member. Drill out the 4x bolt holes using an 11mm drill bit. Install 4x M6 nut inserts (Item 12 OR 28) into the drilled holes.



3. Attach the ACM bracket to the chassis member using 4x M6x25mm hex bolts, flat washers and spring washers (Items 13, 14 and 15, or Items 29, 30 and 31).



4. Attach the ACM unit to the ACM bracket using 3x M6x10mm hex head flange bolts that are pre-installed into the ACM unit (Item 6), with a medium strength thread locking compound (e.g Loctite 243)



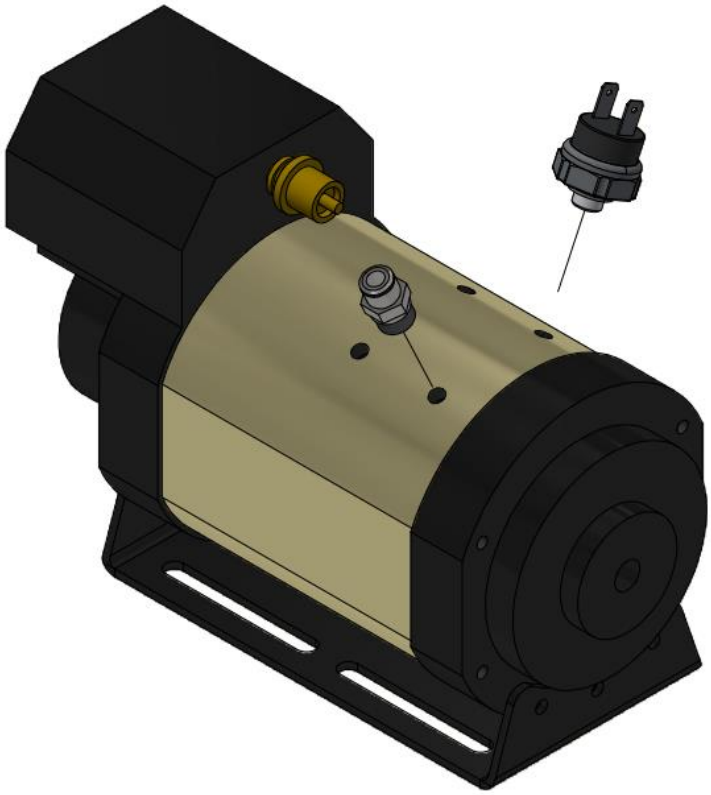
Air Supply Components

Note

The majority of trailer underbody damage occurs from gravel and sticks lifted from the road surface by the tow vehicle's tyres. Consider this when mounting the air supply components to the underbody, the safest locations are rearward of objects such as water tanks and chassis crossmembers. Air line should be routed to avoid large loops where sticks can lodge and pull the line. Shielding with corrugated split tube is recommended, particularly where installation location is not ideal.

TJM Pro-Series Single Air Compressor Installation

1. Remove one of the 1/8" BSP plugs in the TJM Compressor body using a 5mm hex key.
2. Install the Pressure Switch provided **(Item 53, labelled with 'ON:110PSI, OFF:130PSI')** into the open 1/8" BSP port. Apply thread sealant paste (e.g., Loctite 567) to one end of the threaded fitting before installing, allow 24 hours for thread sealant paste to cure before pressurising the system.
3. Remove one of the 1/4" BSP plugs in the compressor using a 6mm hex key.
4. Install the 1/4" straight hose fitting provided with the BCS Air Supply Kit (Item 52) into the open 1/4" BSP port. Apply sealant paste (e.g., Loctite 567) to one end of the threaded fitting before installing, allow 24 hours for thread sealant paste to cure before pressurising the system.



5. **Continue with the Air Compressor manufacturer's instructions for remainder of the Air Compressor installation. Note that the toggle switch supplied with the compressor is not used as the BCM is used to switch the compressor on/off. Refer Compressor and Tank Drain Cable section below.**

Air Tank Installation

Attach the air tank (Item 43) to the desired location using the included mounts, ensuring mounting structure is significant enough to support the weight of the tank. The port in the centre of the tank is for water drainage so this should point downward.

Tank Drain Solenoid Valve Installation

Mount the tank drain solenoid valve (Item 48) in the desired location, ensuring it is adequately protected from road debris. The valve should be near the Air Tank and in an accessible location for inspection/cleaning.

Quick Release Coupling

The Quick Release Coupling provides the accessory air supply from the system, used for inflating tyres or powering air tools. Screw the Quick Release Coupling (Item 50) into the Bulkhead Connector (Item 51), using thread sealant paste (e.g., Loctite 567) if no pre-applied sealant is present.
The bulkhead connector can then be secured through a drilled hole in the desired location. Consider the following when determining location of the Quick Release Coupling:

- Near working height, for ease of use
- Sheltered to prevent dirt ingress binding the coupling
- Allows passage of air line from the Air Tank
- Allows the installation of the Inflator ACM in the air line from the Air Tank.
- Near to the wheels, so hose extensions are not needed to inflate each side.

Manual Inflation Points

The manual inflation points consist of:

- 2x Schrader valves. **Note: these are included in the basic fittings kit supplied with every Cruisemaster Air Suspension Kit.**
- Manual Inflation Point brackets (Item 49)
- 2x Y-piece ¼" PTC (Item 47)

The manual inflation points are to be installed in the desired location, typically under the trailer, as access is not usually required.
The Schrader valves can be fitted to a drilled hole in sheet metal, or attached to the Manual Inflation Point brackets which can be fastened to the trailer structure. Connect an air line to a tee in the line from the ACM OUT Port to the airbag/s on each side. Connect each air line to a Schrader valve. Refer **Air System Diagram** below.

Inflator ACM

Position the ACM bracket (Item 60) in the desired location of the ACM units.
The Inflator ACM should be mounted:

- In the path of the line between the Air Tank and the Quick Release Coupling
- Considering routing of the air and electrical connections
- Allowing visual inspection of the vent on the top of the ACM unit.

Refer Steps 13 to 15 above, for correct installation of the ACM bracket to the chassis.
Alternately, the ACM can be mounted with the 2x M6 threads on the face opposite the air connections.

Warning

If the Inflator ACM is mounted in a habitable volume of the trailer; remove the silencer and replace with the supplied air fitting (Item 63, torque to 4 N.m.), attach air line and route outside the habitable volume of the trailer. This prevents potentially harmful tyre air or nitrogen being vented in the habitable area.

Air Line Installation

Route air line (Item 44) as shown in the **Air System Diagram** below.
Air line shall be cut to length using the cutter supplied with the base air suspension kit.
To prevent leaks at the push to connect fittings, the air line must be free from dust and dirt.
Air lines should be as short as practical, respecting the minimum bend radius of 30mm.
Air line can be secured in the routed position using P-clips or similar.
It is recommended to route air line through split tubing or similar to prevent damage.

Ensure that the air lines from Compressor to Tank, and Tank to ACMs are connected to the opposite ends of the Air Tank as shown in the diagram. This allows moisture in the compressed air to settle in the tank, providing dry air to the ACMs.

Warning

Ensure the end of the air line is capped when routing to prevent ingress of dust and dirt, these particles can impair the operation of the ACM units.

Electrical Cables

Note

The majority of trailer underbody damage occurs from gravel and sticks lifted from the road surface by the tow vehicle's tyres. Consider this when routing the electrical cables, the safest locations are rearward of objects such as water tanks and chassis crossmembers. Cables should be routed to avoid large loops where sticks can lodge and pull the cable. Shielding with corrugated split tube is recommended, particularly where installation location is not ideal.

Route cables as shown in the **Electrical System Diagram** below. Cables should be secured to the trailer structure near to the BCM to prevent cable strain and vibration being transmitted to the BCM circuit board.

Power Supply Cable

Item 41. Connect to constant 12V supply, fused at the source with a 5A fuse.
Remove the supply fuse until all wiring connections are made.

ACM Cables

Connect the ACM cables from the "Left ACM" and "Right ACM" ports on the BCM to the left and right side ACMs respectively.
Left and right sides are when facing in the direction of travel. The cables supplied are typically 2 different lengths, use the longer cable for the ACM furthest from the BCM.

Inflator ACM Cable

If the *Advanced Inflation* option is to be fitted:

- Connect the Inflator ACM cable (Item 61) between the "Inflator ACM" port and the Inflator ACM.

Compressor and Tank Drain Cable

The Air Compressor and Tank Drain control cable (Item 40) connects to the BCM and branches into 2 cables:

- Connect the cable marked "Air Compressor" to white plug on the TJM Air Compressor harness, where the TJM control switch harness would plug in.
- Connect the cable marked "Tank Drain" to the Tank Drain Solenoid. If the Tank Drain Solenoid has no connector fitted, cut the connector from the cable and splice directly to the Tank Drain Solenoid with an inline crimp connector or similar.

Wheel Speed Sensor Cables

If the Odometer option is to be fitted, the BCM must be connected to the Wheel Speed Sensor (WSS). Cruisemaster ABS enabled or ABS compatible (requires additional parts) suspension is required.
3 cables are provided with the kit:

- 32C-030 - Main WSS cable: Connects to the wheel speed sensor near the wheel.
- 32C-031 - WSS with ABS patch cable: Connects between the Main WSS cable and the BCM. This cable intercepts and measures the speed signal, then allows it to continue to the TSC/ABS system. Power and ground are provided by the TSC/ABS system.
- 32C-032 - WSS without ABS patch cable: Connects between the Main WSS cable and the BCM. This cable provides power and ground to the WSS, where no ABS system is fitted.

Connect the Main WSS Cable to the wheel speed sensor nearest the BCM. Then complete **ONE** of the following:

1. If **TSC/ABS is installed** on the trailer, plug the remaining connector on the BCS Wheel Speed Sensor Cable to the TSC wiring loom where the wheel speed sensor would have been plugged in. The BCS "piggybacks" off the TSC wiring loom.
2. If **TSC/ABS is not installed** on the trailer, leave the remaining connector unplugged and secure in a protected location.

Secure the Main WSS cable to the suspension arm and route to the BCM location.

To later fit a TSC/ABS system, plug the loose connector into the TSC/ABS loom and replace the 32C-032 patch cable with the 32C-031 patch cable.

CAN

This is a CAN communications port for future functionality.

First Start and Configuration

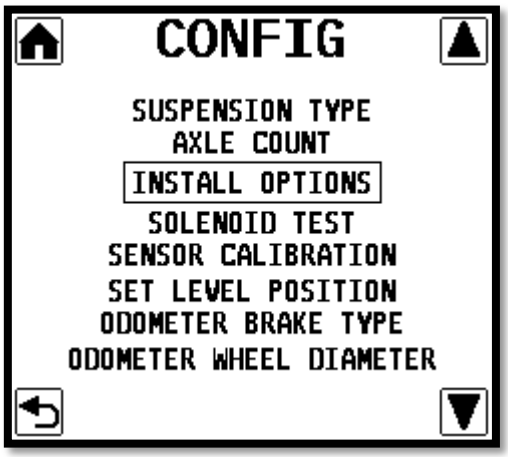
1. Ensure all connections are correct to the diagrams below.
2. Install the BCS supply fuse to power the system.
3. Download the Cruisemaster BCS mobile app, connect to the BCM and ensure the latest firmware is installed.
4. On the BCM, activate the Compressor Override to enable the Air Compressor to fill the tank.
5. The Air Compressor should run, then stop after a few minutes once the tank is at full pressure.
6. Check the system for leaks.
7. **Activate the Air Tank Drain function, allowing the tank to drain fully, venting any debris that may have been present in the tank from manufacture.**
8. Navigate to the Configuration Menu on the BCM and complete the below steps to configure the BCS before use.

Configuration Menu

This menu contains the configuration values and functions.

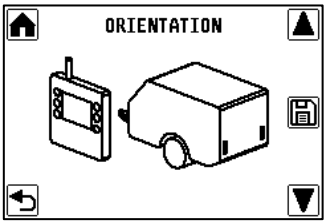
These functions are only required to be performed or altered on initial installation of the system, or if the mechanical configuration of the system changes (such as wheel alignment, BCM relocation, linkages or sensors removed and reinstalled).

On initial installation, progress through each function in the order listed.

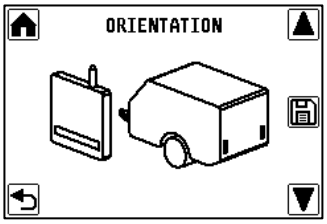


Install Orientation

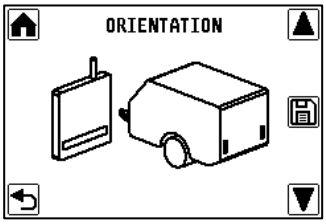
Set the orientation of the BCM relative to the trailer, this allows the BCM to correctly sense roll and pitch angles.



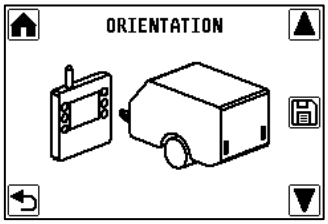
BCM facing left



BCM facing right



BCM facing front



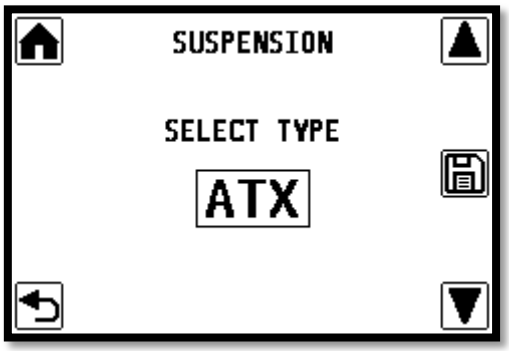
BCM facing rear

Note

For correct operation of the LEVEL function, the BCM should be mounted vertically, aligned with the trailers principle axes (longitudinal, lateral, vertical).

Suspension Type

Select the suspension fitted to the trailer. To identify the suspension fitted to the trailer, check the product badging on the suspension arm when viewed from the rear. Alternately, ATX suspension uses a Rolling Sleeve type airbag, XT suspension uses a Convoluted type airbag.



ATX Rolling Sleeve Airbag

XT Convoluted Airbag

Install Options

Wheel Speed Sensor

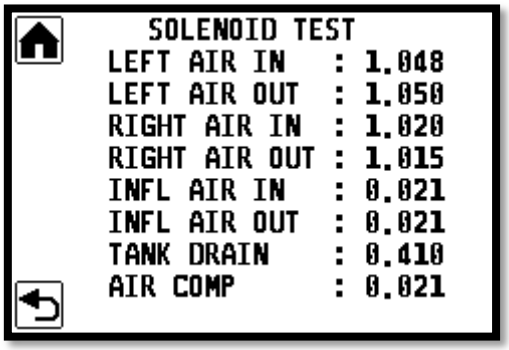
Select if a Wheel Speed Sensor is connected to the system, this activates the Odometer/Tripmeter and other speed sensitive functions.

Inflator

Select if *Advanced Inflation* is fitted to the system. This activates the Inflator function.

Solenoid Test

This function briefly activates each of the outputs of the system and records the electrical current draw in Amps for future reference & error checking. Press and hold the ✓ key to start the test.



Sensor Calibration

This function learns the suspension control and position sensor limits. **Before performing this function, the following conditions are critical**:

- BCM to be sturdily mounted to the trailer
- BCM to be aligned with the trailers principle axes (longitudinal, lateral, vertical)
- Trailer on flat and level ground
- Supported by the jockey wheel/jack.
- Wheel alignment performed
- Tyre pressure correct
- Nothing touching or moving the trailer
- Ample space around the trailer for suspension to raise, lower and roll.
- Air tank to be full. (This can be done by activating **Air Accessory Mode** function until the air compressor shuts off by the pressure switch)

This function cycles the suspension in the following sequence:

- Suspension at highest height.
- Suspension at lowest height.
- Suspension rolled to the left.
- Suspension rolled to the right.
- Suspension set to nominal ride height position.

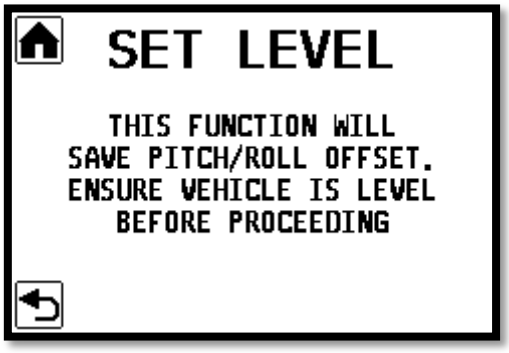
Once this function is complete, the **Set Level Position** function below may need to be performed.

Set Level Position

This function sets the true level position of the trailer, to compensate for the mounting angle of the BCM and manufacturing tolerances of trailer and suspension. The saved position (angles relative to the horizon) will be used as the target angles for the LEVEL mode.

The user adjusts the suspension until the surface of interest (floor, bench top, etc) is level with the ground in the roll and pitch axis directions.

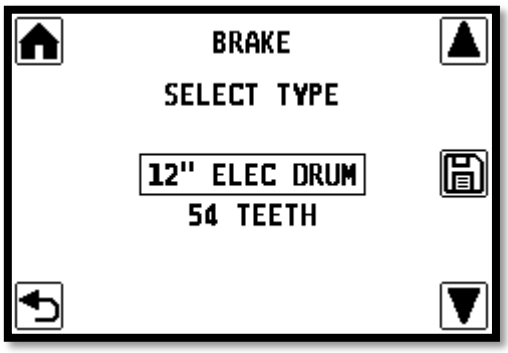
This is best done by using a spirit level on a flat surface while adjusting the suspension in MANUAL mode. It's recommended to set the roll axis level with MANUAL mode, then adjust the pitch axis to level with the jockey wheel.



Once the trailer is level, enter “Set Level Position” function and press ☑ to save the position.

Brake Type (if Wheel Speed Sensor fitted)

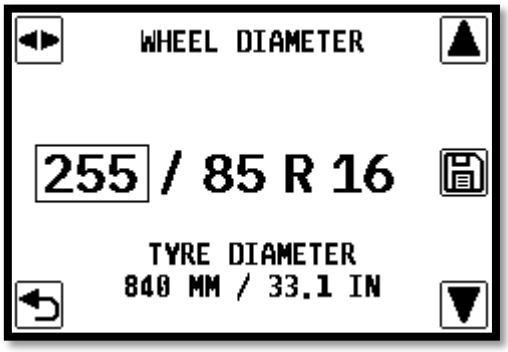
Set the type of brake system installed for correct calculation of wheel speed and odometer distance. Each brake type has a specific number of tone wheel teeth to be detected by the wheel speed sensor as the wheel turns.



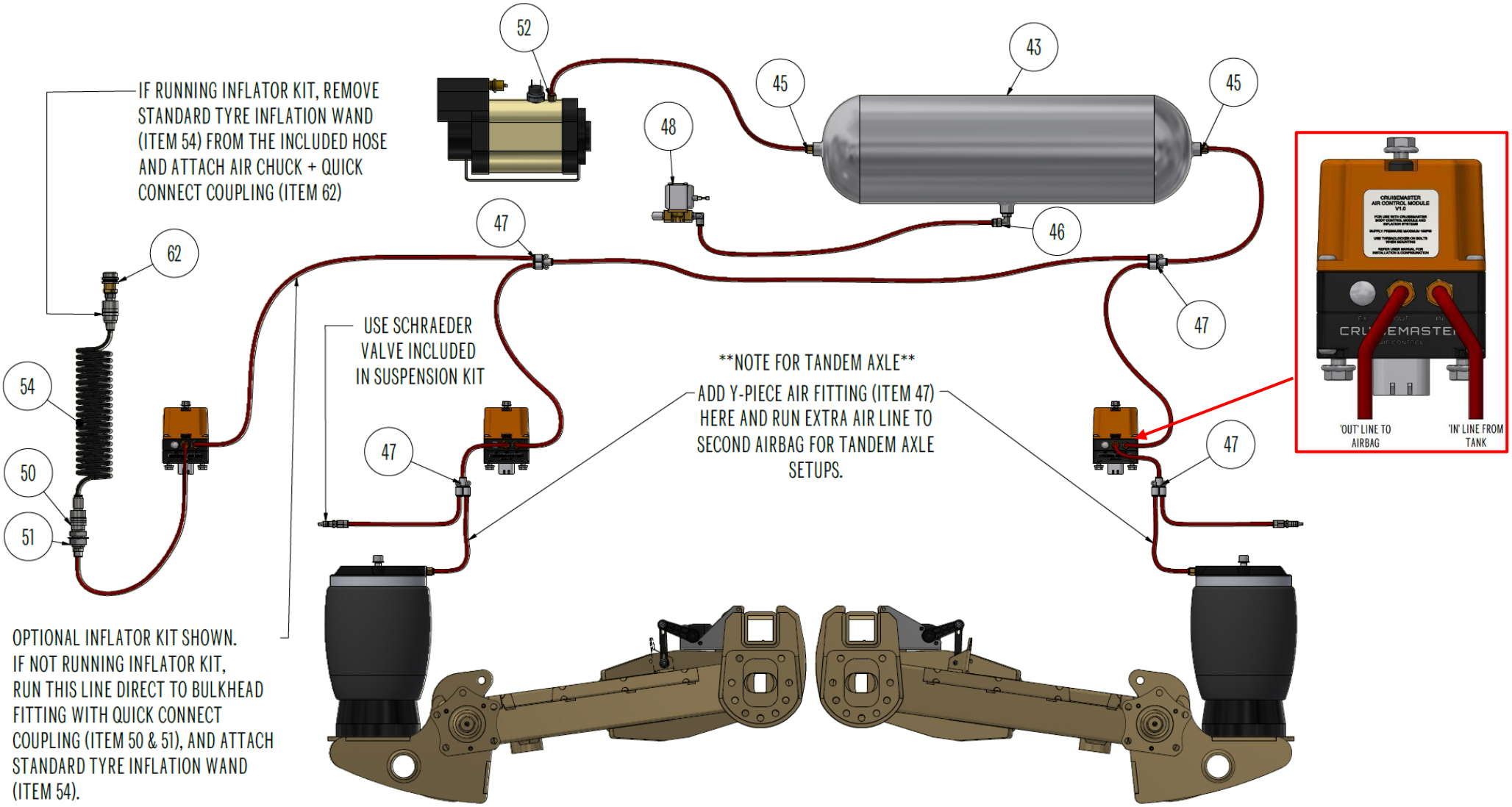
Wheel Diameter (if Wheel Speed Sensor fitted)

Set the tyre size for accurate calculation of wheel speed and odometer distance.

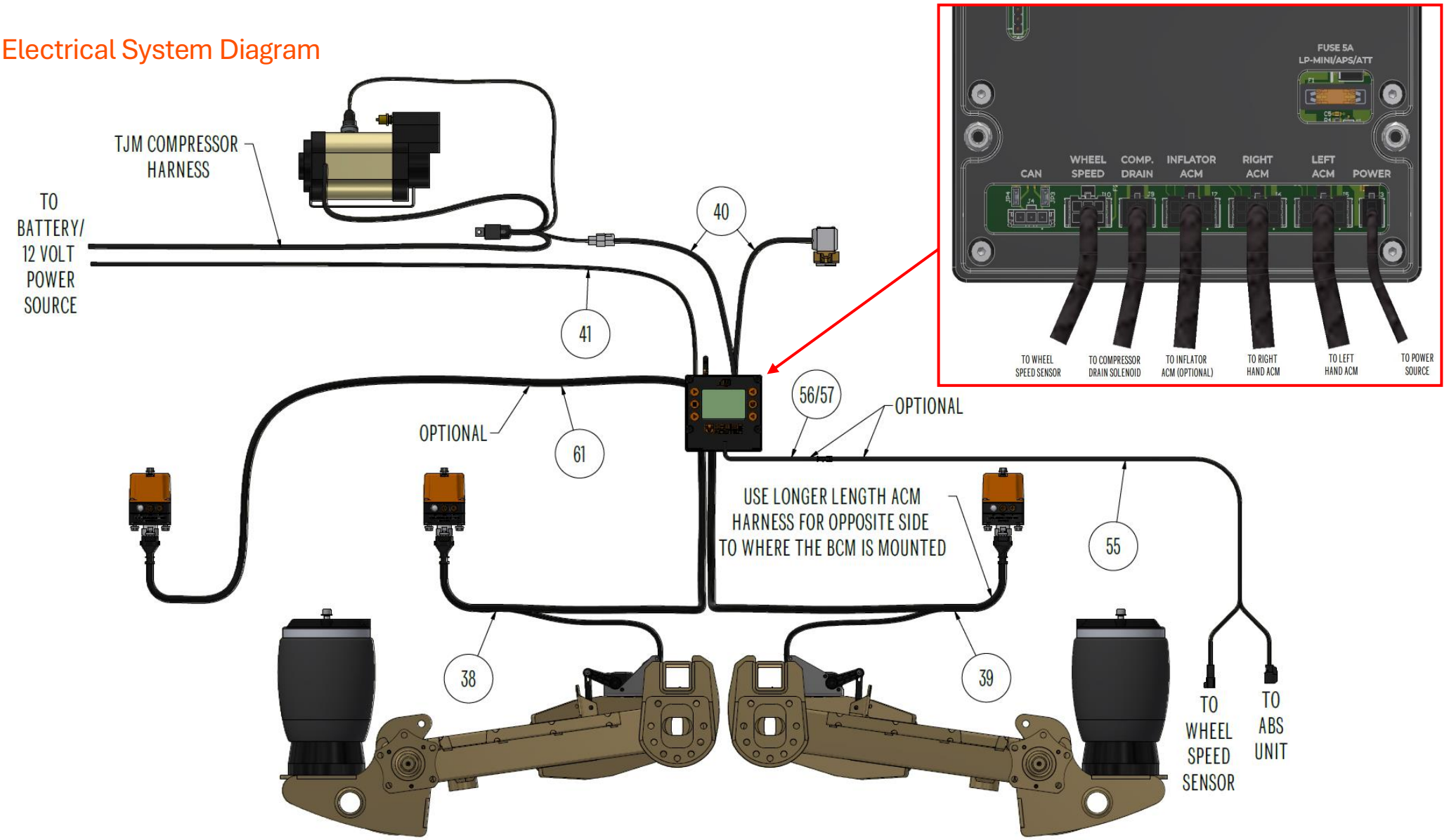
- Set the Section Width, Aspect Ratio and Wheel Diameter as per the fitted tyre.
- For commercial tyre sizing e.g; 195R15C, where aspect ratio is not given, select the blank. E.g. 195/ R15
- For other tyre sizing, adjust the Section Width, Aspect Ratio and Wheel Diameter combination until the tyre diameter most closely matches the diameter of the fitted tyre.



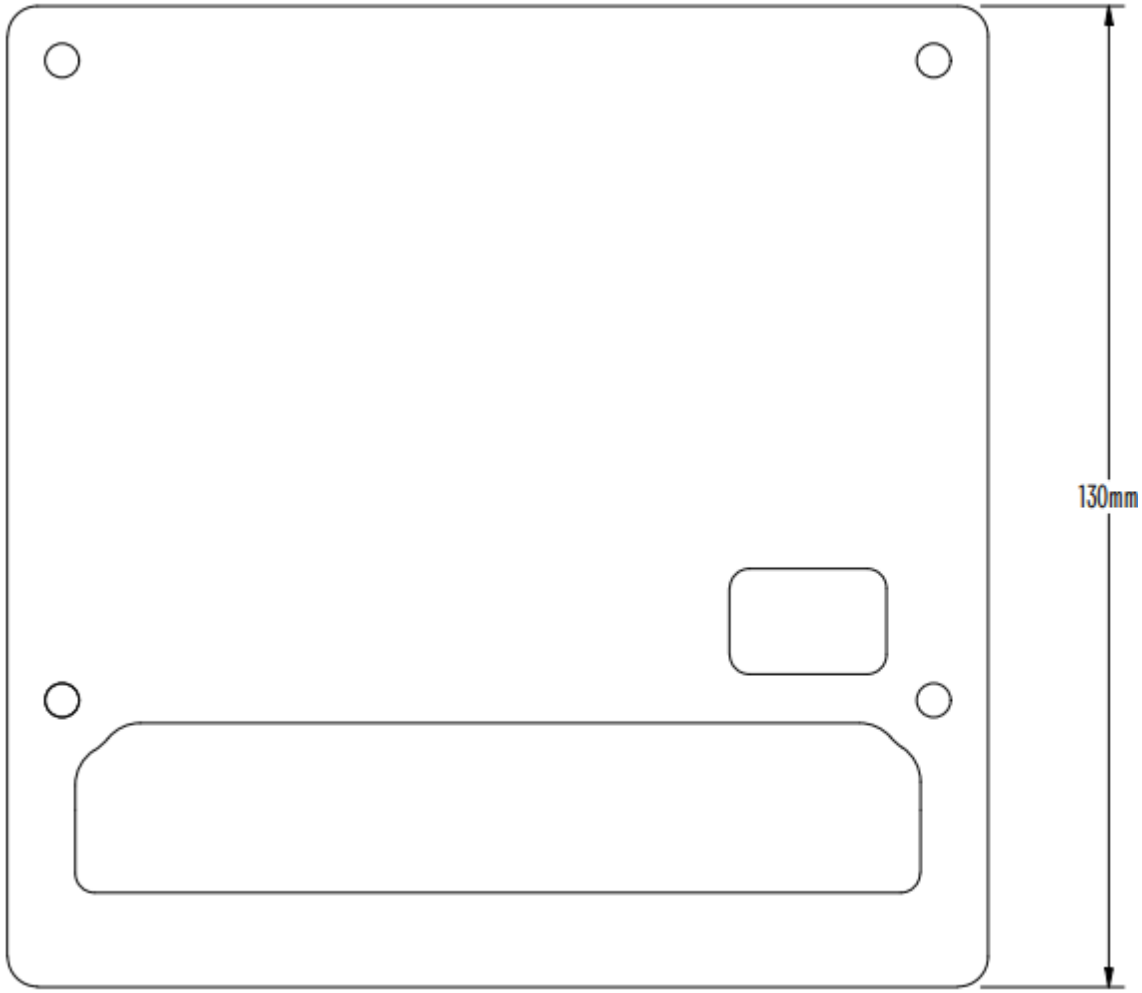
Air System Diagram



Electrical System Diagram

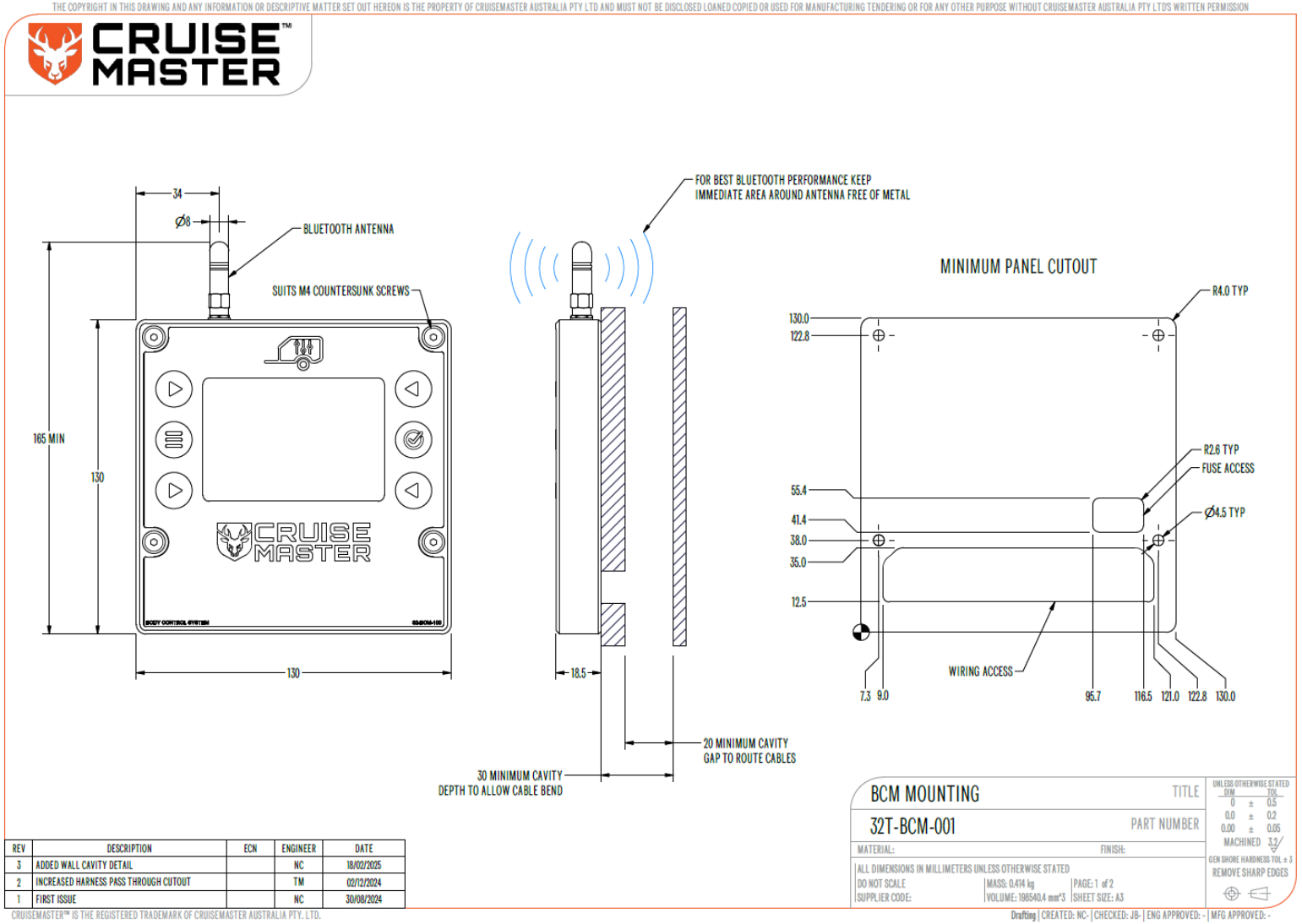


Appendix 1: BCM Cut Template



Scale 1:1 - Print on A4 paper

Appendix 2: BCM Mounting Drawing



REV	DESCRIPTION	ECN	ENGINEER	DATE
3	ADDED WALL CAVITY DETAIL		NC	18/02/2025
2	INCREASED HARNESS PASS THROUGH CUTOUT		TM	02/12/2024
1	FIRST ISSUE		NC	30/08/2024

BCM MOUNTING — TITLE
32T-BCM-001 — PART NUMBER
MATERIAL: — FINISH:
ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED
DO NOT SCALE | MASS: 0.414 kg | PAGE: 1 of 2
SUPPLIER CODE: | VOLUME: 1985404 mm^3 | SHEET SIZE: A3

UNLESS OTHERWISE STATED
DIM TOL
0 ± 0.5
0.0 ± 0.2
0.00 ± 0.05
MACHINED 3.2
GEN SHORE HARDNESS TOL ± 3
REMOVE SHARP EDGES

Drafting | CREATED: NC- | CHECKED: JB- | ENG APPROVED: - | MFG APPROVED: -

Appendix 3: Bolt Torque Specifications

BOLT SIZE	TORQUE SPECIFICATION
M5	5.3 NM (3.9 FT-LBS)
M6	9.0 NM (6.6 FT-LBS)
M8	22.0 NM (16.2 FT-LBS)