Installation manual

Product Information

Passenger side brake serial number:

_____

SCM serial number: _____

Installer: _____

_____

_____

Date Installed: _____

Technical & customer support:
1 888 370 5050

Info@tarsussystems.com

(i) Introduction

This manual outlines the installation and maintenance of the Tarsus passenger-side brake and accelerator system. The Tarsus passenger-side brake is a universal product designed to be mounted to the passenger-side accelerator floor or firewall of a vehicle. It actuates the brake on the driver's side using a cable and pulley system.

Caution: Before installation read fully and understand the steps required for installation, we recommend this product is installed by a professional mechanic. The installer assumes all liability if installed incorrectly.

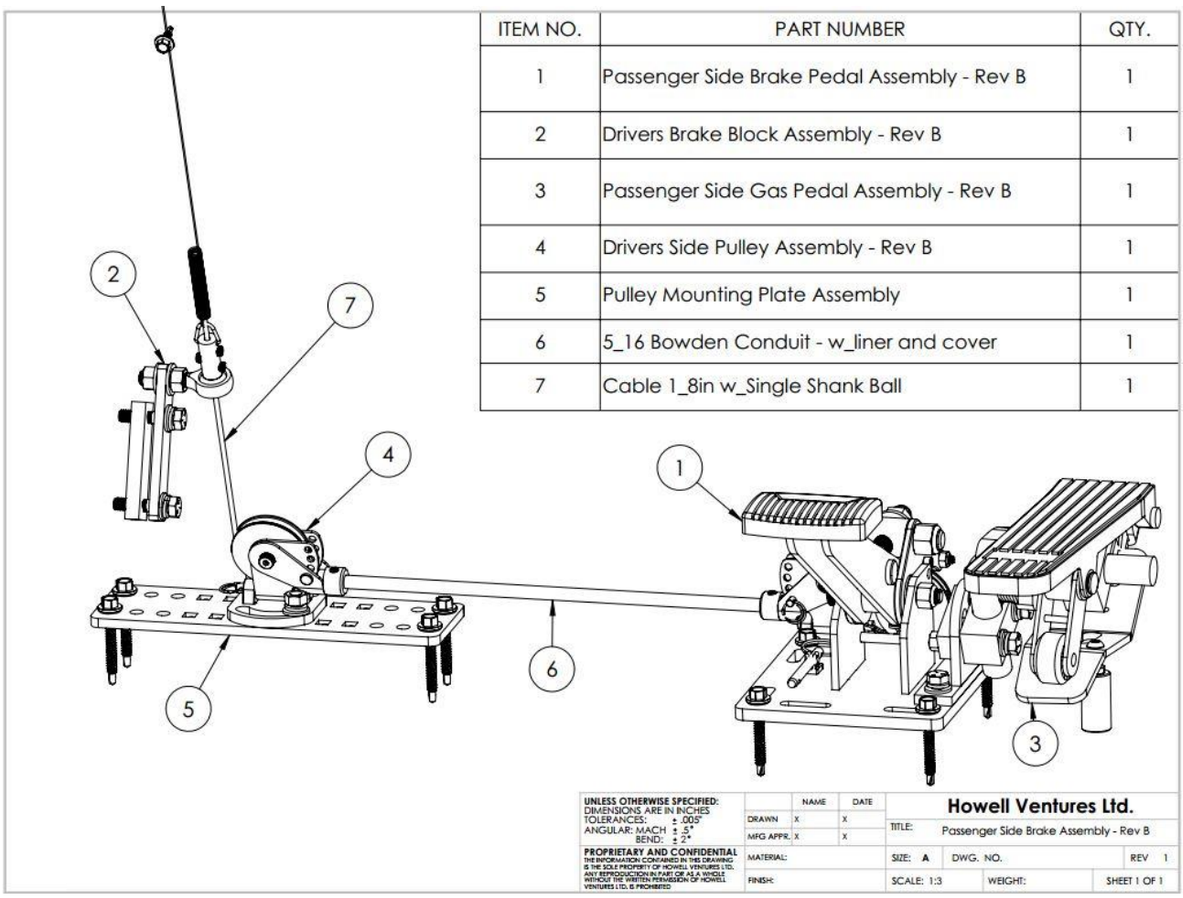
(ii) Tools required

The following is a tool list for install and adjustment of the Tarsus passenger-side brake and accelerator system. This does not include a tool list for the removal and install of OEM vehicle components.

Combination Wrenches 3/4”, 5/8”, 9/16”, 1/2”, 7/16”
3/8” ratchet drive + extension
1/4” ratchet drive + extension
Socket 1/2”, 9/16”, 7/16”, 3/8”,
Allen key 1/8”, 5/32”, 3/16”, 1/4”
Drill (right angle pneumatic drill suggested)
Drill bit 21/64th
Impact Drive (suggested)
Hack saw
16mm hole saw
Digital Volt Ohm Multimeter (DVOM)
#2 Phillips screwdriver

(iii) Assembly Drawing

For component breakdown please see Appendix. (item 3 is optional)



ITEM NO.	PART NUMBER	QTY.
1	Passenger Side Brake Pedal Assembly - Rev B	1
2	Drivers Brake Block Assembly - Rev B	1
3	Passenger Side Gas Pedal Assembly - Rev B	1
4	Drivers Side Pulley Assembly - Rev B	1
5	Pulley Mounting Plate Assembly	1
6	5_16 Bowden Conduit - w_liner and cover	1
7	Cable 1_8in w_Single Shank Ball	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES: ± .005"
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

	NAME	DATE
DRAWN	X	X
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Passenger Side Brake Assembly - Rev B

SIZE: A | DWG. NO. | REV 1

SCALE: 1:3 | WEIGHT: | SHEET 1 OF 1

1.0 Safety Precautions

Observe All safety precautions. Failure to do so could result in damage to the vehicle, property and/or personal injury, or death.

- Observe all safety precautions when using all tools.
- Correct PPE for automotive work must be worn throughout the install.
- Installation should only be performed by a certified technician.
- Final fittings and adjustments must be performed before allowing the user to operate the passenger-side brake.

2.0 Pre-installation Check

Check the vehicle's OEM braking system.
Take the vehicle on a test drive to ensure that brakes are operating correctly, and other vehicle modifications do not interfere with normal brake operation. Visually check all braking components for wear. If any issues are found, they need to be addressed before installing the Tarsus passenger side brake and accelerator.

Installation instructions have been read completely, if there are any questions about the content please contact us at 1 888 370 5050

WARNING

Vehicle must meet all motor vehicle safety standards.

Installation of the *Sure Grip* on modified vehicles is not authorized.

"Modified" is defined as changes not made or authorized by the vehicle's manufacturer. These changes include:

- oversized, undersized or un-treaded tires
- modified suspension systems
- additional or modified carburetors or linkages
- small steering wheels not supplied by the vehicle's manufacturer
- any change that tends to make the vehicle difficult or dangerous to drive.

3.0 Installation overview

Overview of Installation steps is as follows:

- Mounting for pedal assembly
- Run a cable from passenger-side accelerator to the driver-side
- Mount driver-side pulley
- Driver-side cable attachment
- Auxiliary accelerator mounting
- Electronic component installation

4.0 Pedal base prep

Slide cable through captive bolt.

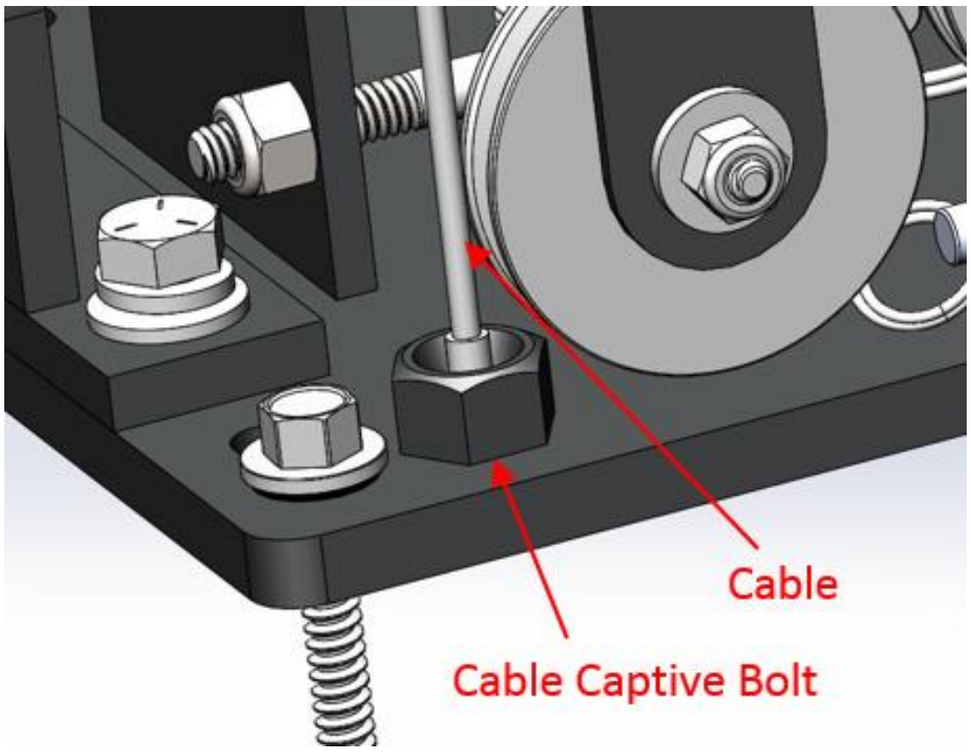


Figure 1: captive bolt.

The captive bolt allows you to remove the cable from the pedal assembly without unbolting the pedal. When shipped It is already attached to the pedal base. Simply unbolt the captive bolt if cable replacement is required.

4.1 Passenger-Side Accelerator Attachment

This section is only applicable if the passenger side accelerator is required, move to *sec. 5.0 If no accelerator is being installed.*

Bolt swivel bracket to the base using 5/16 hex bolts, lock washers and flat washers. Final torque 17 ft/lb.

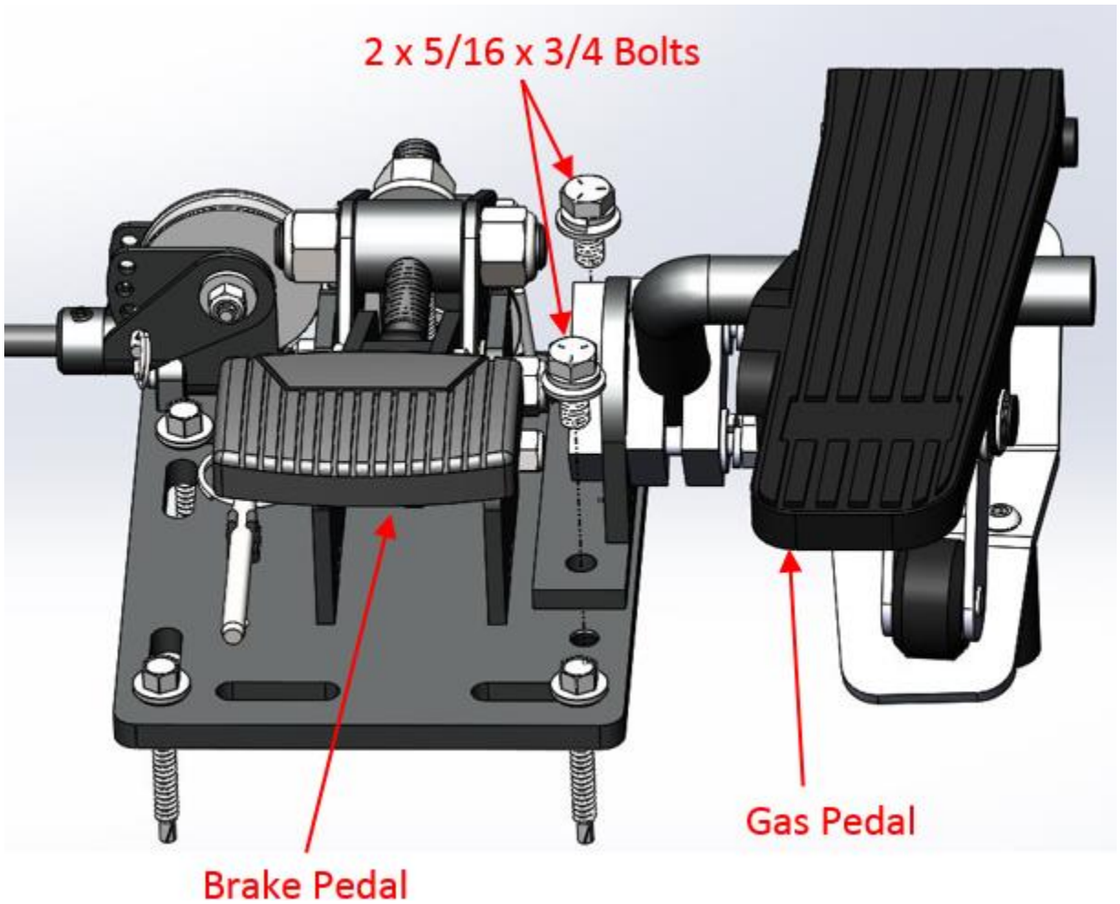


Figure 2: accelerator attachment.

Attach clamping block to swivel bracket assembly using thread block and hardware supplied with clamping block kit. Leave loose until final fitment. Final torque to 17 ft/lb. Reference Fig. 2 for placement.

The other clamping block kit is attached to the inside of the passenger side accelerator pedal base plate, using holes in Fig. 3. Cycle pedal to make sure there is no interference with the clamping block throughout its travel.

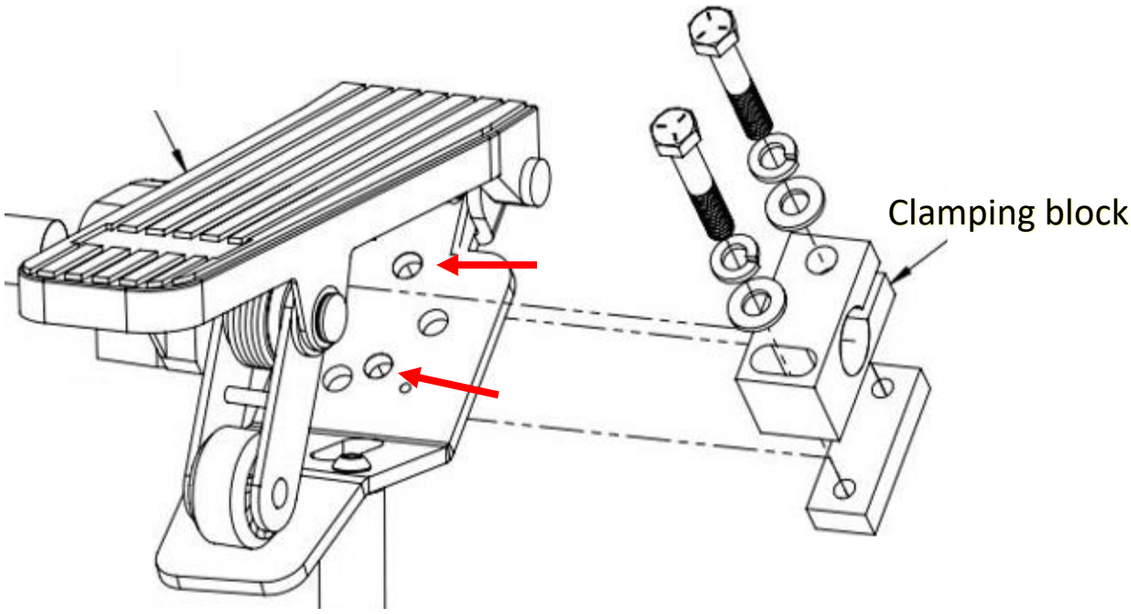


Figure 3: accelerator pedal clamping block.

The harness clamps on the pedal and the base must be removed using #2 Phillips. Figure 4

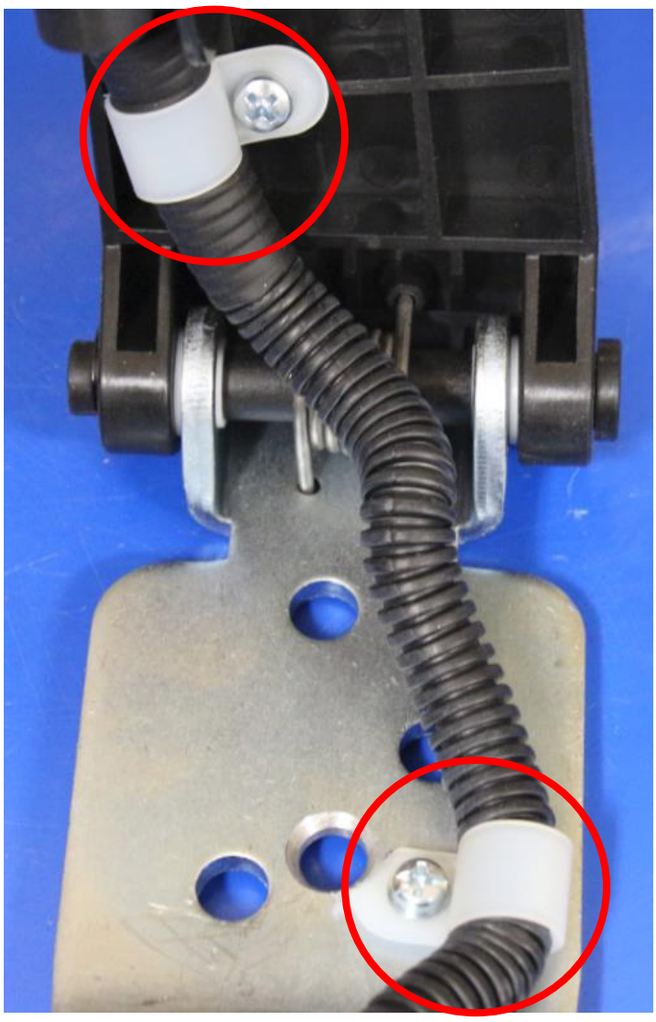


Figure 4: accelerator base “P” clamps.

Use zip ties to secure to support rod as shown in Figure 5

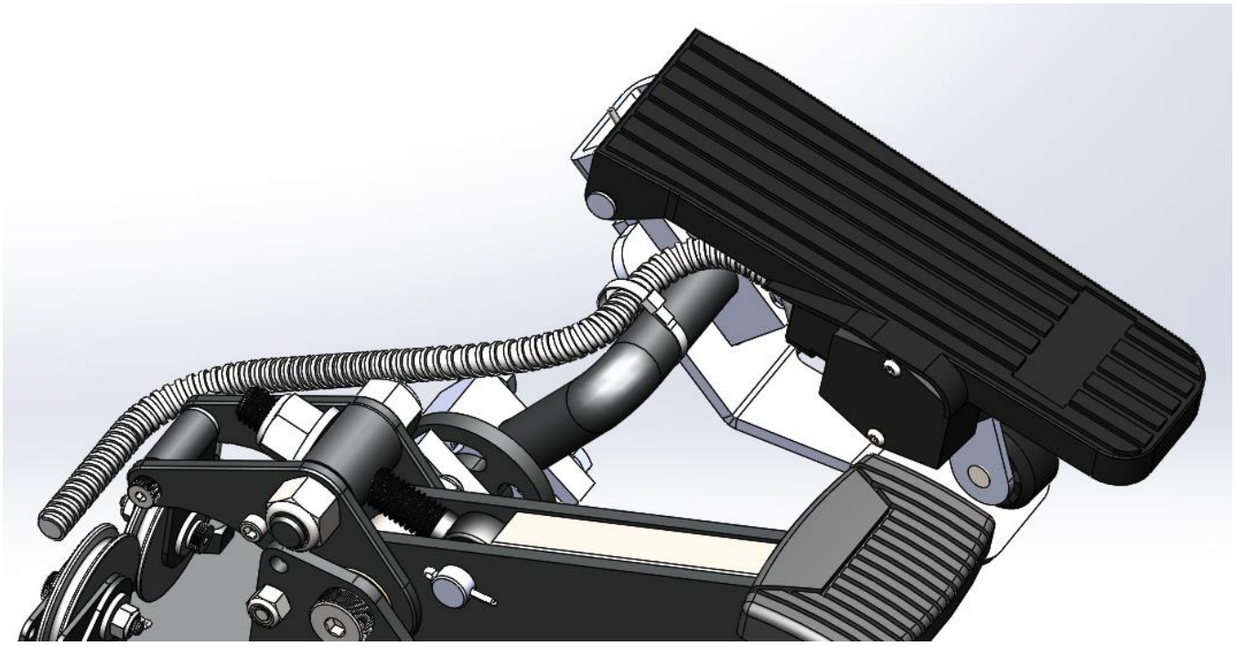


Figure 5: Harness routing.

Once both clamping blocks are mounted attach the passenger-side accelerator to the swivel bracket using the supplied support rod. Tighten enough to hold assemblies in place but allow for movement when test fitting into the vehicle.

5.0 Choosing Suitable Mounting Location

The Tarsus brake is to be mounted to the floor or the firewall ensures using 4 mounting points on the pedal base. You will have to inspect from under the vehicle and from the top side under the carpet. Check for obstructions such as:

- Wiring harnesses
- Fuel lines
- Break lines
- Foam/ composite floors

Caution: failure to check for obstructions can lead to malfunction of OEM components or failure of the Passenger side brake to operate correctly.

The pedal must be mounted to a solid floor or firewall, it is preferable to use through bolts. In cases where there is no access to the bottom side due to subframe or converging body panels, self-taping screws can be used.

If there is a foam spacer or composite floor a custom plate will have to be fabricated or alternate mount location. Please call Tarsus tech support 1 (506) 799-5071

It is important to place the pedal in an area that does not intrude on occupant leg space when not in use and is easy for passengers to operate.

Pedal location will vary when paired with the passenger side accelerator, place assembly as far to the right as possible.

Cable routing must be considered when choosing a location, the straighter the cable, the easier the pedal is to operate. Plan where the cable will be fed behind the dash.

6.0 Pedal Height Adjustment

Once a suitable location is found it is important to adjust the pedal height for comfortable and safe operation. The quickest way to ensure this is to copy the spacing of the OEM brake and gas on the driver's side of the vehicle.

- The brake pedal pad must be on a higher plane than the gas pedal
- The brake pedal and gas pedal must be separated a minimum of 2.5"

Further the distance is between the two pedals will decrease the chance of using the gas and brake at the same time. The same goes for the height of the pedal, the higher the brake pedal is compared to the accelerator it lessens the chance of unintentional throttle. However, must make sure separation is not so great as to make use of pedal uncomfortable to use.

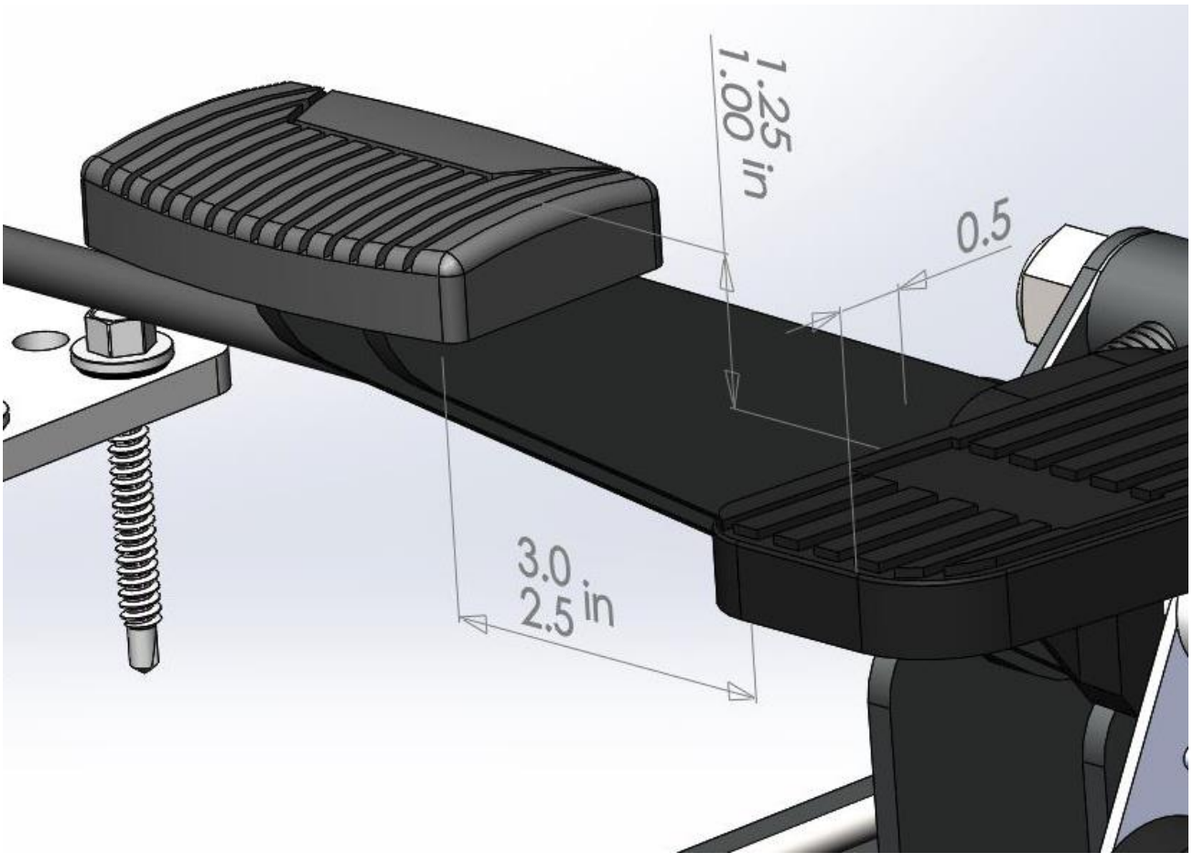


Figure 6: pedal height.

6.1 Brake Pedal Adjustment

Loosen nylock nuts on the sides of the pedal arm using a 3/4 wrench or socket (1). Using a deep socket or wrench adjust the height by loosening or tightening the adjustment nut (2). Tighten the nylock nuts on the side of the pedal arm once the desired height is achieved. See Figure 7

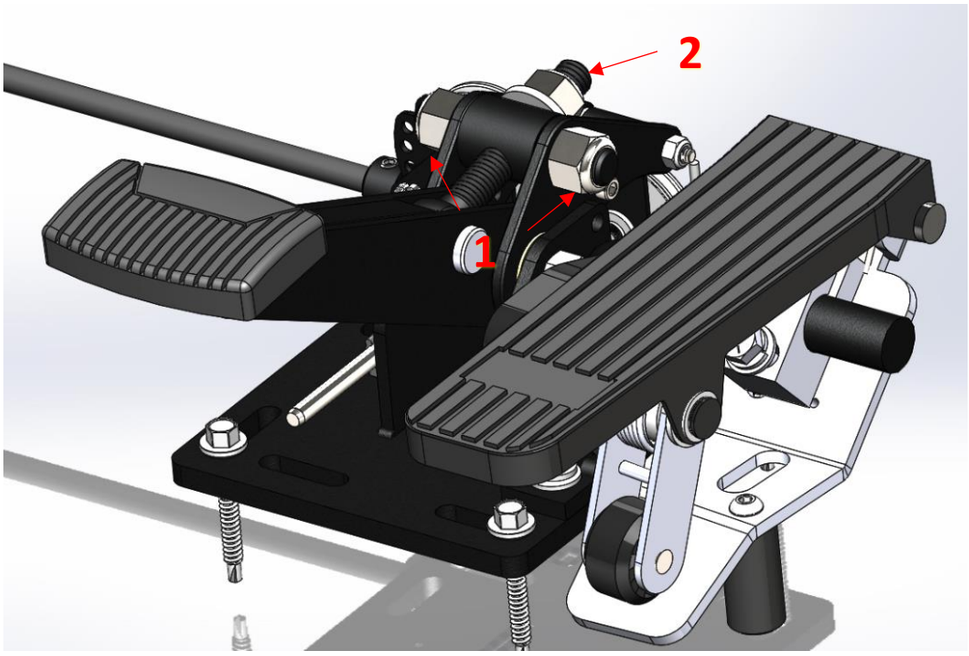


Figure 7: Brake pedal adjustment

6.2 Gas pedal adjustment

The gas pedal location is largely determined by the support rod. The location of the accelerator can be adjusted by:

- Rotation of clamping block in the swivel bracket
- Sliding support rod in and out of clamping block
- Rotating the pedal on the support rod
- Sliding pedal on the support rod

The support rod can be cut or bent to fit any floor shape or space constraint. Clamping blocks only need 3/4” of a rod inserted for securement (flush with the end of the clamping clock).

The gas pedal base must be in contact with the floor of the vehicle. This can be adjusted depending on the height or angle that is desired.

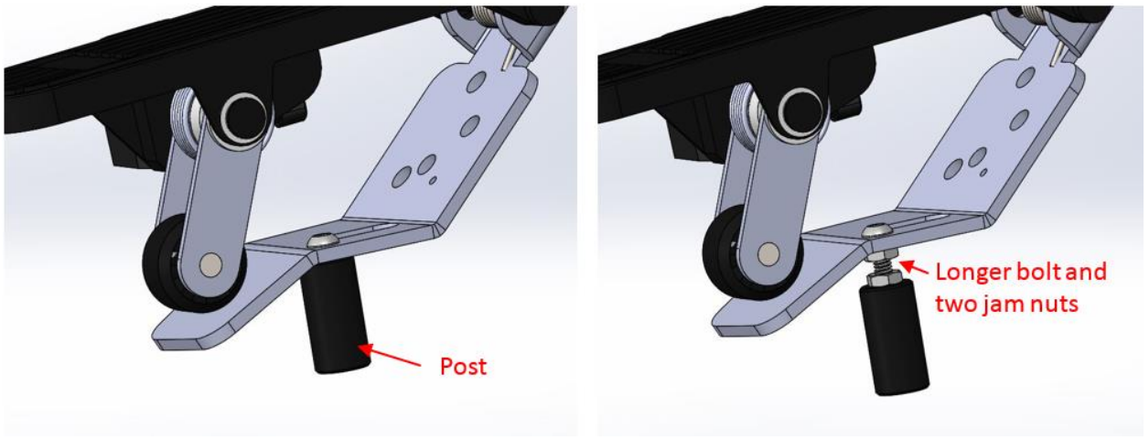


Figure 8: Post adjustment.

The post attached to the bottom of the pedal base can be removed completely if the edge of the pedal base can touch the floor if a lower height is required. If the pedal height requires the pedal to be raised add the longer bolt and jam nuts that are included in the swivel bracket package.

7.0 Pedal Mounting

Once a suitable location has been chosen that allows for the following:

- Solid mounting
- No obstructions
- Comfortable use
- Safe use

The pedal is attached using any of the 4 slots in the brake pedal base plate. The most desirable 4 mounting points are as close to the corners of the base plate as possible.

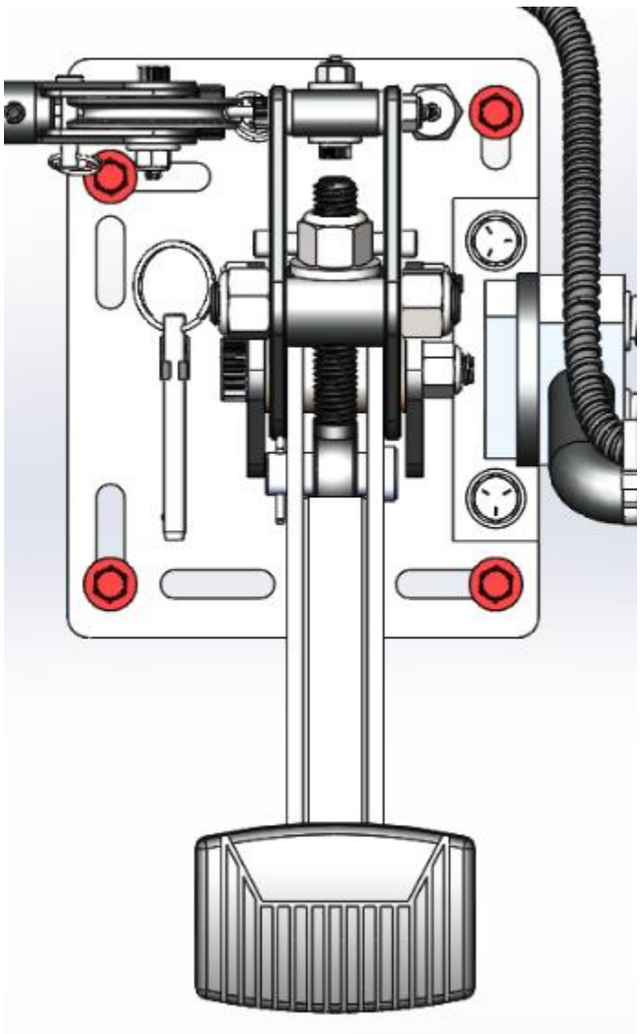


Figure 9: Pedal mounting points

Use the supplied self-taping screws to attach to the vehicle. Attach using a 3/8 socket and a drill, a right-angle drill may make the operation easier for upper mounting locations. Through bolts are preferred mounting hardware but 4 self-tapping screws are acceptable for installs that it is not possible to use through bolts.

Ensure the mount is solid

8.0 Cable

Run the cable through the pulley on the pedal arm and then through the base plate pulley assembly. See figure 9

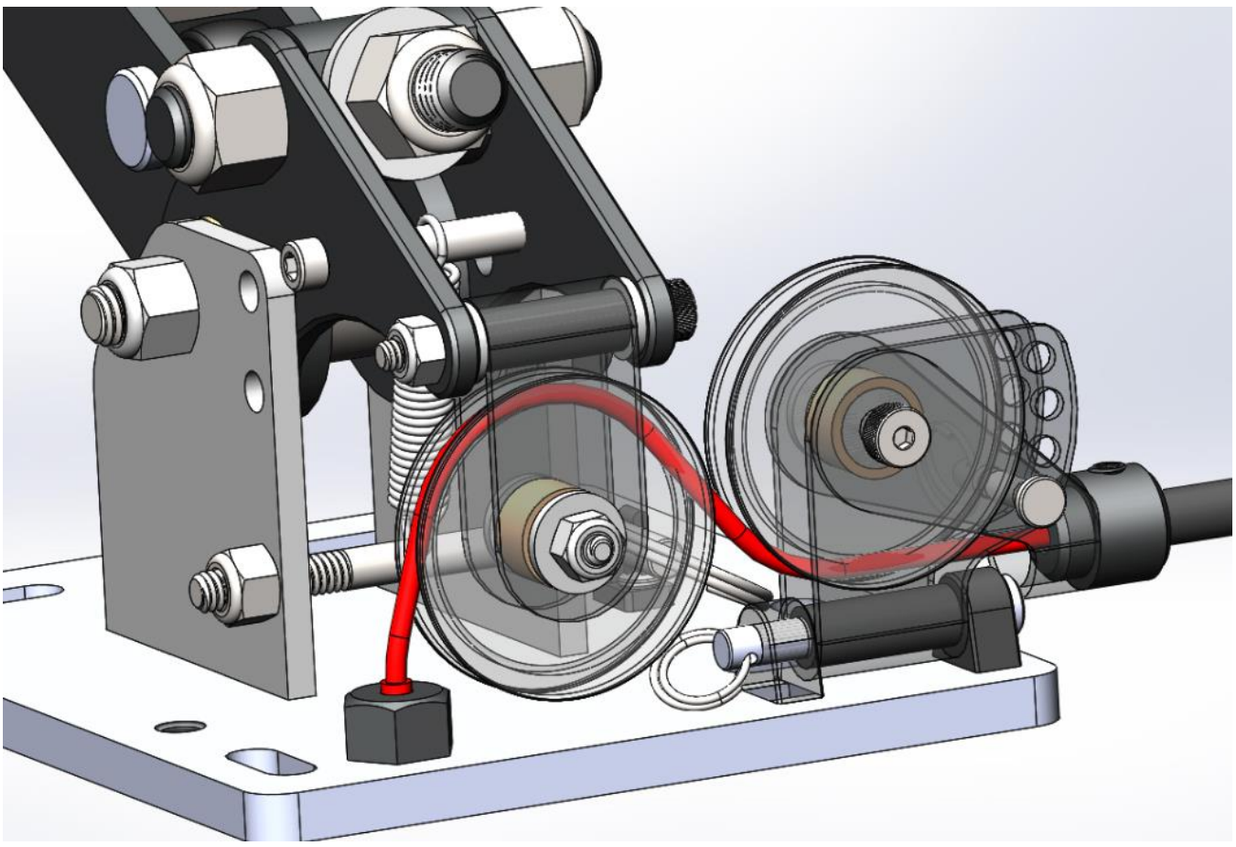


Figure 10: Cable routing.

Slide cable through cable sheath and temporally run over to the other side of the vehicle. Most commonly there is a gap behind the dash where the center console is met. There may be a possibility that the cable has to be run higher in the dash assembly. See figure 10

When routing through the dash make sure there are no sharp bends

Loosen set screw in cable guide using 1/8 Allen and seat sheath in completely in the guide. The guide allows for the sheath to be inserted 1/2”

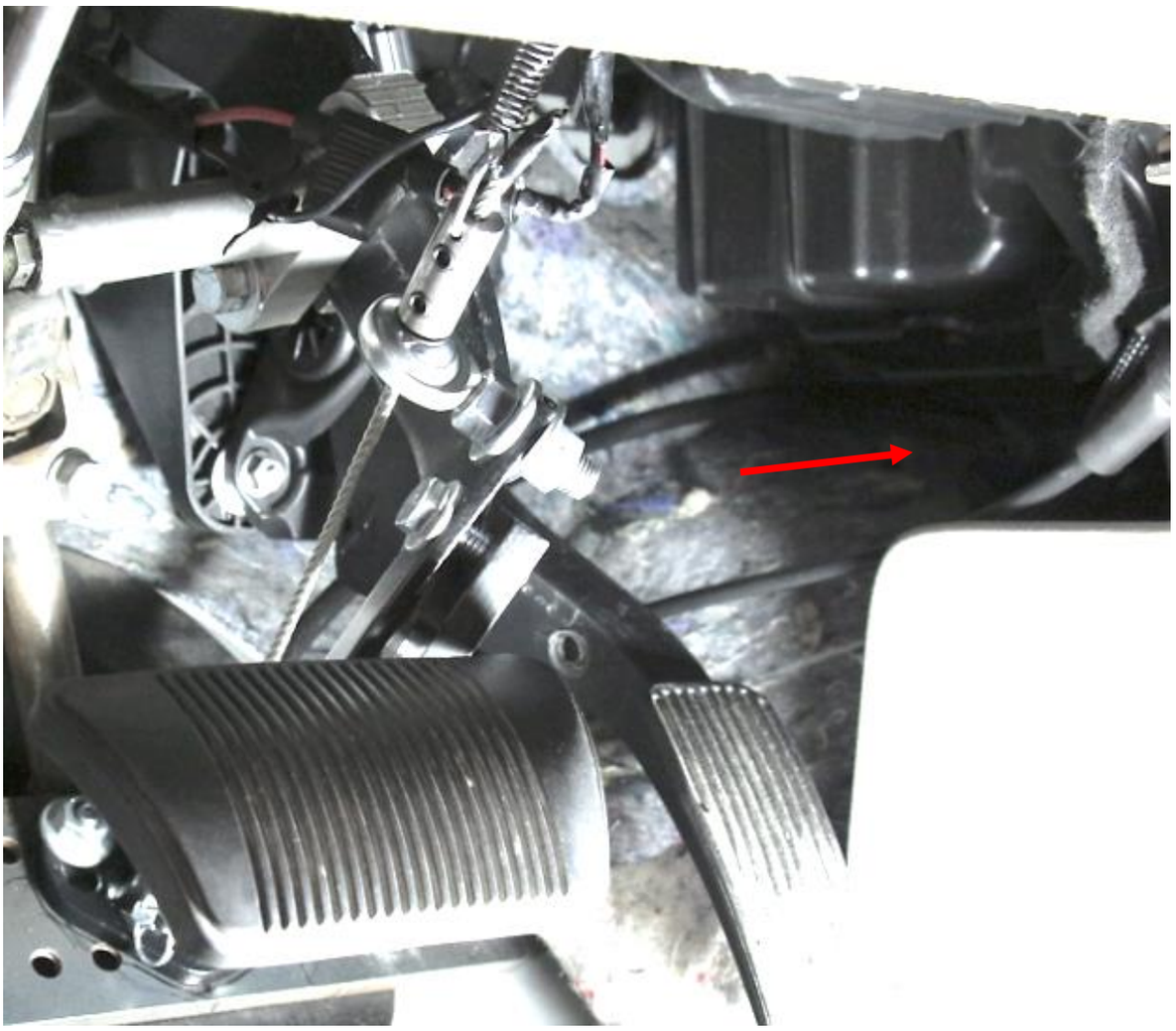


Figure 13: most common cable routing through the dash.

8.1 Pulley Guide Adjustment

The base plate pulley angle guide can be adjusted to give a better trajectory over the transmission tunnel or if the cable has to be routed higher in dash assembly.

First, loosen the pulley bolt using 1/8 Allen and 3/8 socket, only loosen enough to allow the guide to slide freely. Then remove the pin and slide the guide to the desired position, each hole offers 15 degrees of adjustment.

Replace the pin and cotter ring when the adjustment is complete. The guide is shipped in the second lowest hole.

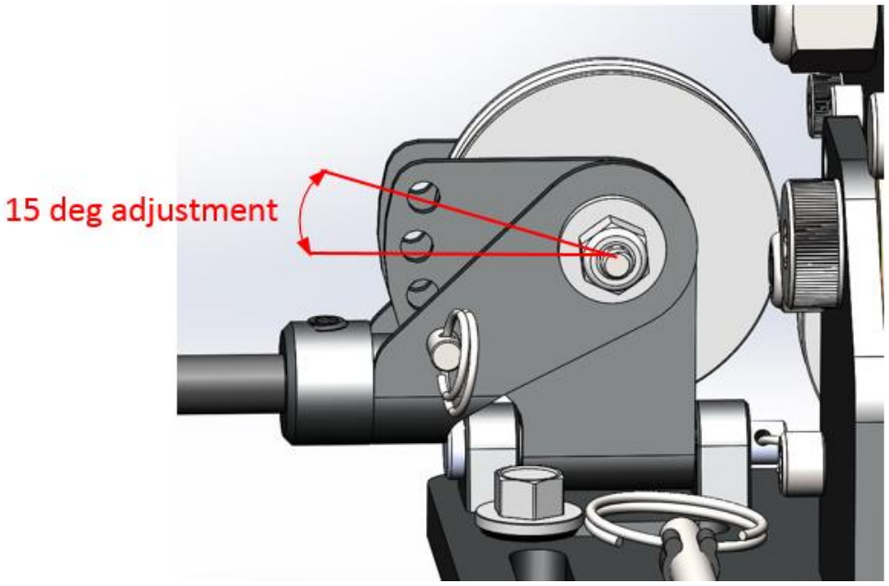


Figure 12: Pulley angle adjustment

Once the final trajectory is determined, tighten the pulley bolt to 20in/lb (hand tight) Using 1/8” Allen and 3/8 socket.

9.0 Brake Pedal Block Attachment

Attach the brake block assembly to the driver’s side pedal arm, leave hand tight at this time so you are able to slide on the OEM brake arm for adjustment. We do not want the driver’s feet to come in contact with any component of the brake block. Final torque 17 ft/lb

To help with cable alignment the ball joint attached to the pedal block can be adjusted by threading the attached bolts. Ensure bolts are tight once the final location is determined.

Note: the lower the brake block is mounted on the pedal arm the easier it is to apply the brakes, but this increases the travel. The higher the brake block is mounted on the pedal arm the more difficult it is to apply the brake, but this decreases the pedal travel.

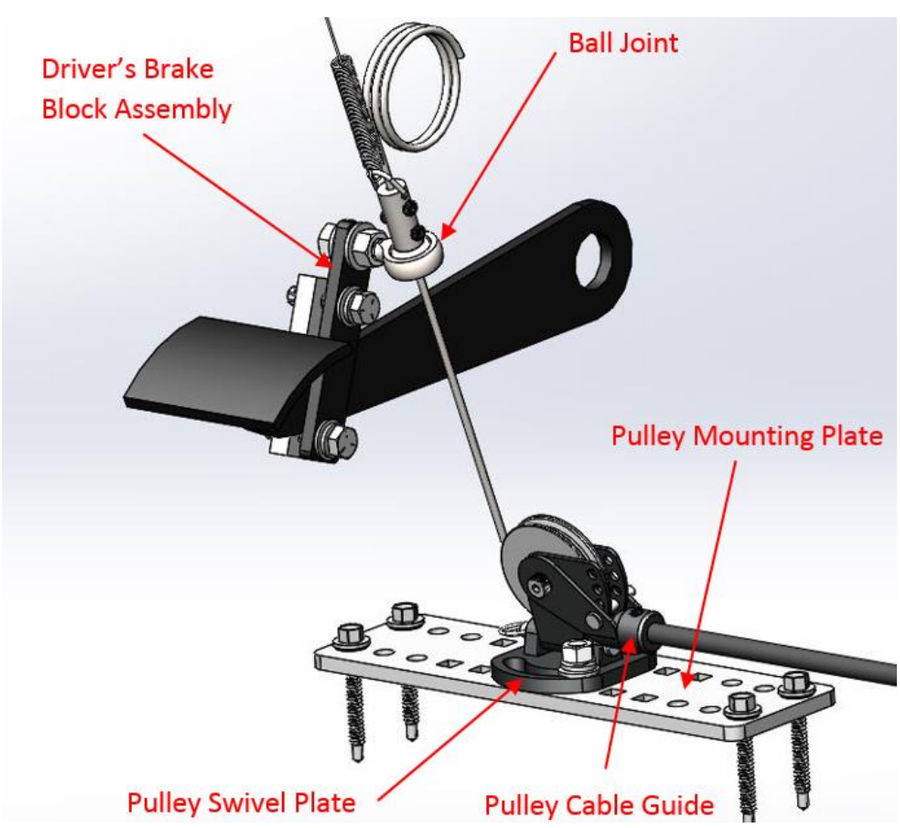


Figure 13: Driver side assembly

9.1 Drivers-side Pulley Mounting

The driver-side pulley must be mounted directly in line with the ball joint on the pedal block assembly. As straight as possible pull throughout the pedal travel is imperative to longevity and smooth operation.

Note: using the cable to line up the pulley can make for easy visualization of where the pulley needs to be mounted

If the firewall is suitable for mounting the pulley using through bolts the two supplied 5/16” x 2” Grade 5 bolts can be used. Hold the swivel bracket in place and mark for holes to be drilled, using a 21/64″ drill bit. Self-taping screws alone cannot be used in pulley swivel plates and require a pulley mounting plate.

There must be one bolt in each slot on the swivel pulley bracket, use washers on both sides and final and torque 17 ft/lb

Caution: Check for obstructions. See sec 5.0

When the firewall is not suitable for mounting swivel block directly because of gaps e.g. steering shaft boots or if it is not possible to access the back side of the subframe or converging panels. Use the pulley mounting plate. See Fig.14.

The pulley swivel plate is mounted using two plow bolts in the square holes in the mounting plate, this allows for tightening from one side after the plate has been mounted. See Fig 13

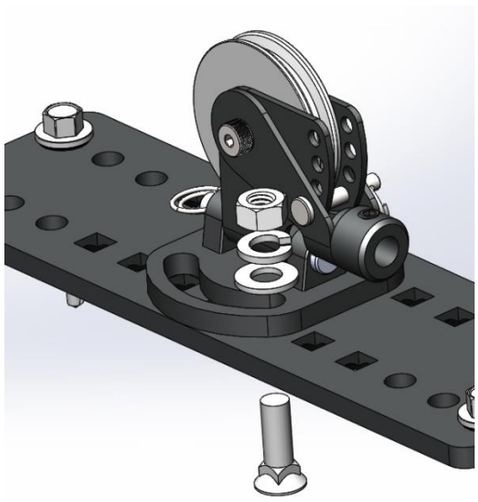


Figure 14: Pulley mounting plate assembly

To mount the plate to the vehicle using any hole is suitable for the self-tappers. A minimum of 4 self-tappers are required. The plate may also require trimming to fit in some areas.

If possible, mount the plate under the carpet and cut the section for the pulley to protrude. This is just for aesthetics and if it is not possible the plate can be mounted on top of the carpet.

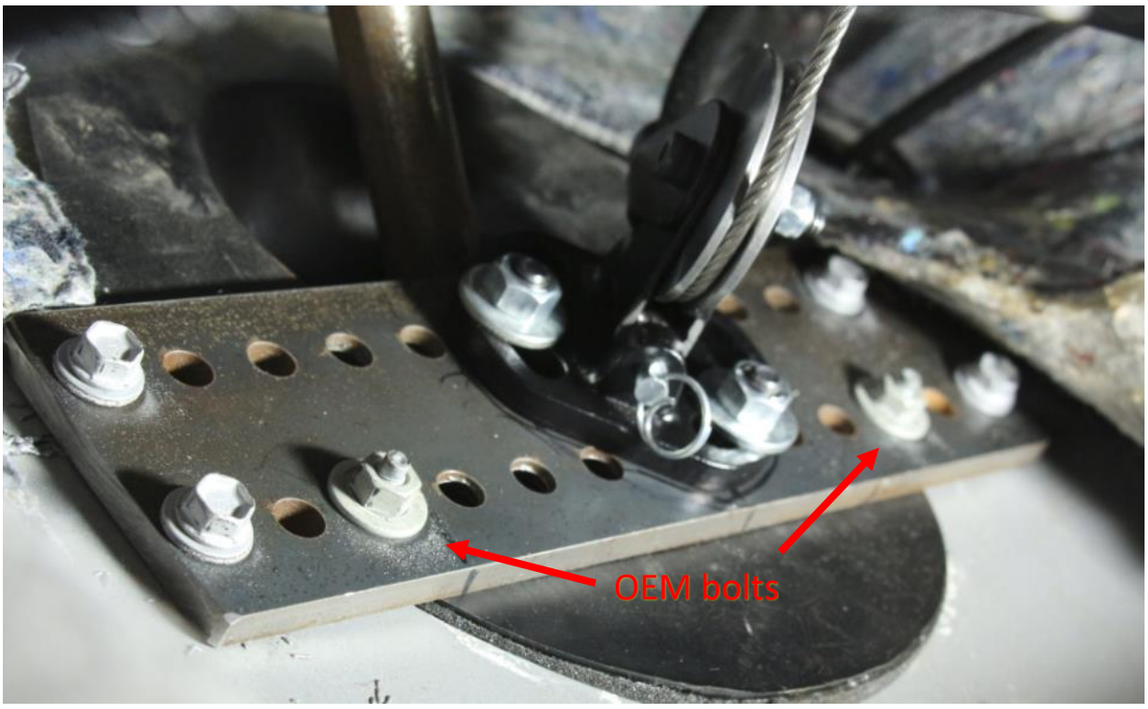


Figure 15: Pulley mounting pate.

Caution: Check OEM pedal travel with the vehicle started and cycle fully. The brake cannot come in contact with the driver-side pulley.

Caution: If spanning the steering shaft boot, test clearance by completing full left and right rotations of the steering wheel (lock to lock). The shaft must not come in contact with the plate.

Note: The OEM bolts were only used because they were conveniently placed. They are not required for pulley mount.

9.2 Drivers-side Pulley Guide Adjustment

As with the passenger-side accelerator pulley, you can change the trajectory using the pin in the pulley, follow the steps in sec 8.1

Along with the pulley guide the slots in the base allow the pulley to be positioned in a fashion that does not put too sharp of a bend in the cable sheath.

10.0 Cable Sheath

With driver-side pulley assembly and instructor pedal mounted, make sure the cable sheath is seated in the cable guide.

Routed to the driver-side pulley with no kinks and does not contact moving components.

Hold the cable sheath up to the driver-side cable guide and mark where to cut. The sheath sits 1/2” in the cable guide.

Remove the sheath from the vehicle and cut with a hack saw and remove all burs from the inner edge. Make sure the heat from deburring does not damage the inner plastic liner. If a deburring tool is used it must spin in the counterclockwise direction to avoid opening the metal spiral layer of conduit.

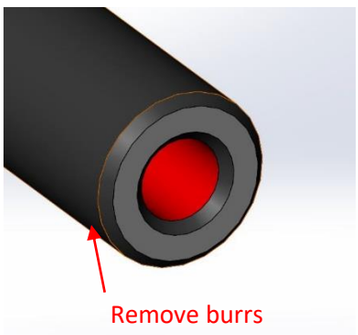


Figure 16: cable sheath

Refit cable conduit into the vehicle, first in the cable guide on the passenger-side accelerator and tighten the set screw using 1/8 Allen key.

Route cable through to the driver's side of the vehicle.

Pass the cable through the drive side pulley and insert the cable sheath to the cable guide and tighten the set screw using the 1/8 Allen key.

11.0 Cable Termination Lug

Route cable through the center of the ball joint.

Slide cable termination lug with “D” ring facing away from the ball joint onto the cable.

Pull all slack from the assembly’s place cable termination lug against the ball joint and tighten set screws. The final torque spec for set screws is 20 in/lb (hand tight)

Affixed the return spring to the “D” ring on top of the cable termination lug by spreading the halves eyelet and rotating the spring on.

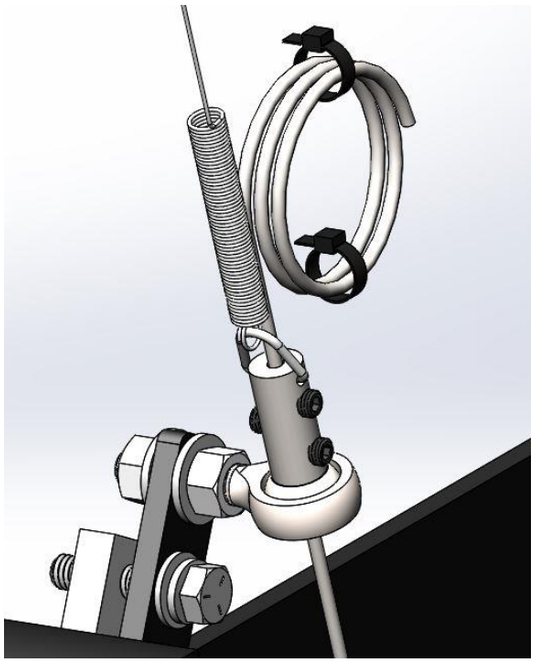


Figure 17: Cable termination lug

The purpose of the spring is to hold the cable taught while the OEM brake pedal is depressed, and the passenger side brake is not. This is so cable damage does not occur or interfere with OEM brake operation. The spring also acts as a secondary return spring for the OEM pedal, helping it return to the neutral position.

The other end of the spring is attached to vehicle's dash structure using the supplied self-tapping screw (5/16 socket) and wrapping the spring around it. OEM bolt or stud can be used if there is a suitable location

Note: The lower dash panel may require removal for easy access to the dash structure.

Coil up excess cable and attach to self, using supplied zip tires. See example fig.16, it is not recommended to cut the cable. Excess cable cannot be attached to other components as it must move freely with the cable termination lug.

If the installer chooses to cut the cable it should be cut a minimum of 1” above the cable termination lug and a suitable method must be used to prevent the cable from fraying

Caution: Cable termination lug, spring or excess cable must not come in contact with other components or vehicle occupants.

13.0 Passenger-side Brake Final Checks

- Cycle passenger side brake multiple times with vehicle started while in park to test operation. Ensure there is no contact with OEM components throughout travel.
- With the vehicle started and OEM brake must return to neutral position. Make sure the brake lights turn off.
- Test the vehicle with a partner in the parking lot to make sure the vehicle can be brought to a full stop.
- Test drive the vehicle for 10min to ensure OEM braking function is not affected.
- Quick-release Lock-out pin placed in a holder on base.

14.0 Maintenance

The system should be checked annually, all components should be inspected for wear and replaced as required. If the passenger side brake is used as a primary driving brake, an inspection is required every 6 months.

Inspect cable for Fraying. If any fraying is detected the cable must be replaced.

It is normal for cable to stretch up to 1/4” from the initial install, which will require slack to be removed at the cable termination lug. Once the slack is removed make sure set screws are tightened and thread locking compound is applied See section 11.

Inspect pulleys to wear in cable grooves and the bushing. Assemblies must operate smoothly.

Removable pins on pulleys should be lubricated using a small amount of white lithium grease.

Cycle brake with the vehicle running to check use.

Users should check the brake daily before use, to ensure all components are operating correctly.

For warranty information please visit the website.

https://www.tarsussystem.com/warranty

15.0 Tarsus Electrical Installation Overview

Figure 18 depicts the Tarsus connector layout for the electrical system

Note: When installing any of the electrical components, ensure the vehicle is not powered.

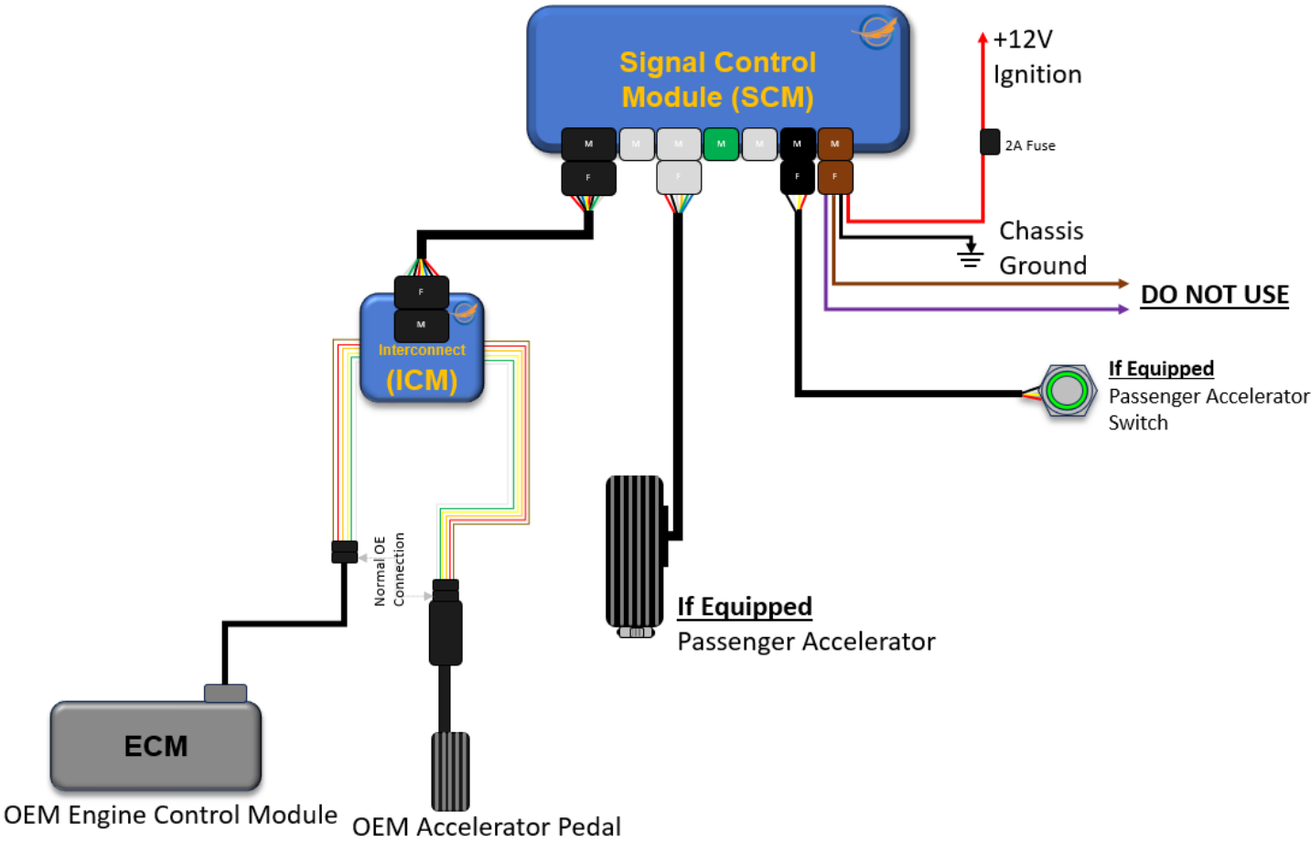


Figure 18: Electrical Overview

16.0 Power Harness

Solder the red wire from the Power Harness to the 12V ignition source. The recommended source will be given on the Interconnect module configuration sheet, available online. Always test the power source using a digital voltmeter to ensure it is 12V with the ignition on and 0V with the ignition turned off.

Install the Black wire to the chassis ground. If possible, use a pre-existing OEM ground location.

Warning: The brown and purple wires are not used during the Tarsus installation. Secure and tie off the cable. (See section 24.0)

Caution: Do not use Scotch locks or any style of wiretaps, system requires a good connection.

Note: Power take-off fuse(add-a-Fuse) holders can be used if the fuse block is easily accessible. A fuse with the correct amperage rating for a tapped circuit must be used.

Note: Crimped connectors can be used if proper Crimping pliers are used. Soldered connections are preferred.

17.0 Interconnect Module (ICM)

The Interconnect module is installed between the accelerator pedal and the accelerator pedal harness (between the engine control module).

The ICM is shipped with accelerator pedal connectors plugged into each other. Use this to learn how the locks on the APC work before you try to unplug the ones in the vehicle.

Locate the OEM accelerator pedal connector and disconnect it.
CAUTION: If vehicle power is not turned off this will code the vehicle.

Connect ICM in line with the accelerator pedal. Ensure the ECM side of the ICM is plugged into the harness going to the vehicle. Ensure the Pedal side of ICM is going to the accelerator pedal. See Figure 19

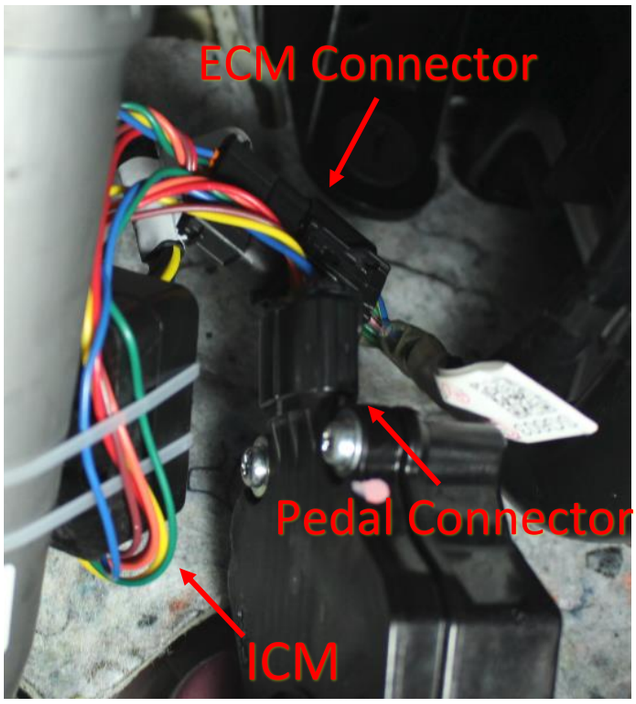


Figure 19: ICM mounting.

Connect the ICM harness (Figure 20) and secure the ICM out of the way using cable tires. Ensure ICM will not interfere with OEM components or is close to heat sources such as heater vents. Please read section 24.0 before mounting the ICM module.

Figure 20: ICM harness

18.0 AA Switch

Find a location where the AA switch can be mounted. The location should be in an area that is easily accessible by the passenger. Keep in mind that the AA button will be illuminated when active so the location should be an area that does not obscure vision when driving at night. Verify that the location can be drilled out and that the location does not have any metal behind it that will contact the switch when mounted. A 16mm hole saw should be used to mount the AA switch. Insert the switch into the hole and secure it with the included nut.

Plug the AA switch into the SCM.

19.0 Extension Harness (SCM.EXT)

The extension harness is packaged with the AA switch.

Plug SCM.EXT into the pedal.

Run SCM.EXT through the dash to the mounting location for SCM.

20.0 Signal Control Module (SCM)

See Figures 18 and 21 for reference.

SCM can be mounted high up in the vehicle dash to avoid moisture damage. The best-suited location will depend on where power is being tapped.

Plug power harness 4-Pin connector into SCM plug (#1)

Connect ICM harness 8-pin connector into SCM plug (#2)

Insert SCM.EXT 8-pin connector into SCM plug (#3)

Plug 4 pin selector switch into SCM plug (#4)

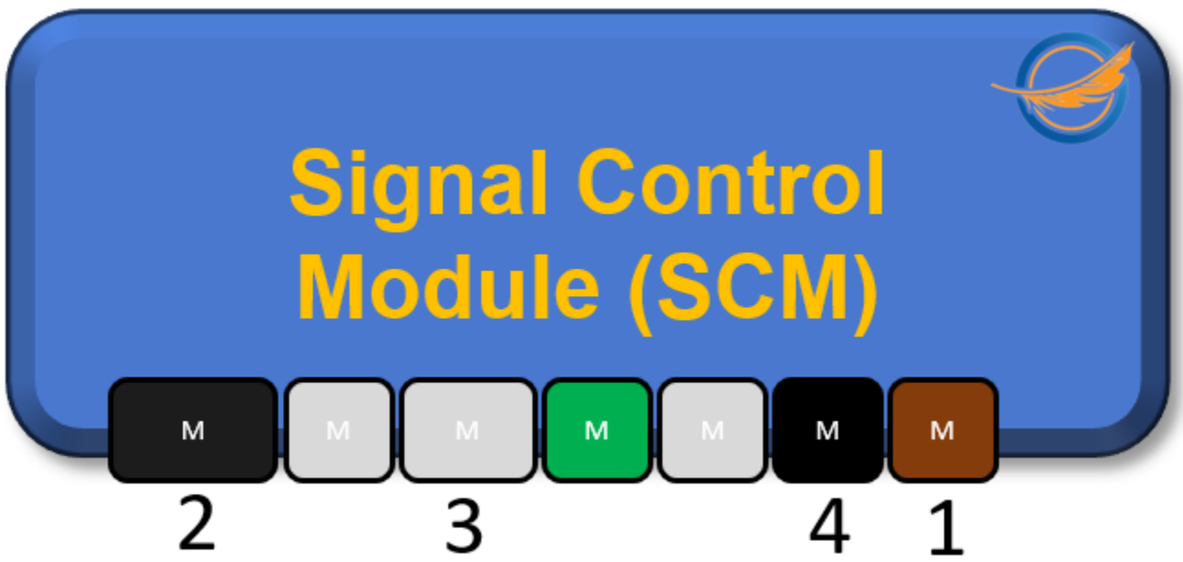


Figure 21: SCM layout

Once all connectors are attached to SCM it is recommended to calibrate the system before mounting SCM under dash (See section 22.0). If connectors are not plugged in correctly, it will become apparent when calibrating the system.

After completing the calibration, attach SCM under the dash using zip ties, Velcro, automotive double-sided tape (if there is a suitable flat surface) or Self-tapping screws. Please read section 24.0 before mounting.

22.0 Calibration Process

1. Start the vehicle.

2. Ensure the OEM pedal and passenger side accelerator are at the idle position.

3. Press the AA push button one time. The LED on the AA switch push button illuminates solid.

4. Bring the OEM accelerator from the idle position to the 100% wide open throttle (WOT) position. Be sure to bring it to the 100% WOT position in one fluid motion. Hold the OEM accelerator at 100% WOT for a minimum of one second.

5. Return the OEM side accelerator to the idle position. The system will beep once.

6. Bring the AA (Additional Accelerator) pedal to the 100% WOT position. Be sure to bring it to the 100% WOT position in one fluid motion. Hold the AA pedal at 100% WOT for a minimum of one second.

7. Bring the AA pedal to the idle position. The system will beep once. The system is now calibrated and ready for testing.

8. Arm the AA pedal by pressing the AA push button 1 time. The AA push button should illuminate green.

9. Test the factory pedal by pressing on it slightly. Ensure that the engine is responsive to the factory pedal and that no warning lights appear on the dash.

10. Test the passenger side accelerator by pressing it slightly. Ensure that the engine is responsive to the passenger side accelerator and that no warning lights appear on the dash.

NOTE: If there are any issues with the calibration process it will be apparent by step 10. If the engine idle RPM changes a recalibration must be performed (Section 23)

23.0 Recalibration

If the initial calibration is performed incorrectly, or the system is put into a different vehicle, a recalibration may be necessary. A special procedure must be followed to clear the current calibration.

To recalibrate the system:

1. Turn off the ignition and verify the system is not powered. Vehicles with timed ignitions may require the door to be opened.

2. Hold the AA switch and the passenger side accelerator at 100% WOT.

3. Turn on the ignition while keeping the passenger side accelerator at 100% WOT and the selector switch depressed. The LED on the selector switch will blink rapidly.

4. Keep holding the passenger side accelerator at 100% WOT and the selector switch depressed until the selector switch has stopped blinking and remains illuminated.

5. Bring the passenger side accelerator to idle THEN release the push button. The LED on the selector switch will turn off.

6. Press the selector switch once. The LED will blink rapidly to notify the calibration has been cleared.

7. Perform a new calibration by following steps 4-10 in section 22.

Note: Once the calibration is cleared, the system will always start up ready to be calibrated. The passenger-side accelerator will be unusable until a full calibration is performed.

24.0 House Keeping

Ensure all unused wires are cut and individually isolated with either heat shrink tubing or electrical tape and zip ties.

Make sure all connections made to the vehicle wiring are properly insulated from the vehicle chassis.

Check that all loose wires from the wire harness are fastened securely to the vehicle with zip ties or similarly permanent means. (See section 16.0)

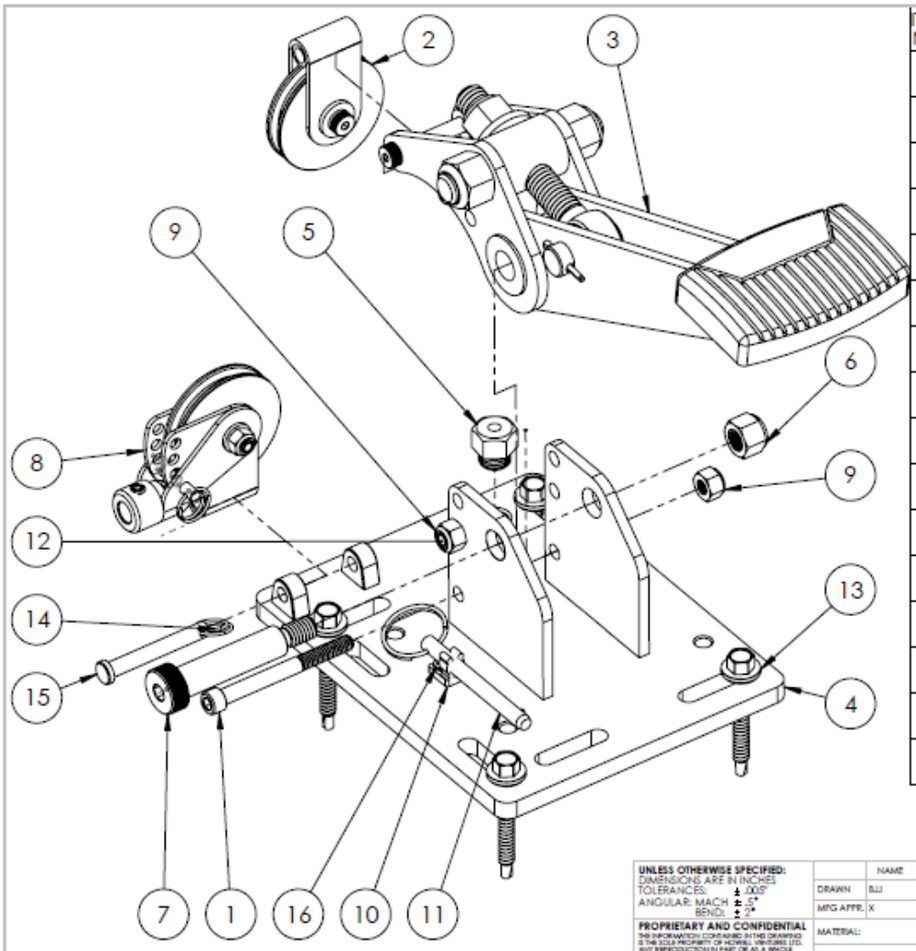
Be sure not to fasten wires to any moving parts of the vehicle.

The SCM has two mounting flanges for easy installation. This box should be fastened to the vehicle chassis using either zip ties or screws. It is recommended to mount the box high under the dash to minimize the risk of water damage. Both flanges should be securely fastened to guarantee the SCM does not shift during operation.

Warning

Do not place any of the components in direct contact with any of the HVAC vents or modules. Failure to do so can result in failure of the system.

Appendix



ITEM NO.	PART NUMBER	QTY.
1	Screw, Socket Head, 1_4-20 x 2 1_2 (20FAS0154)	1
2	Pulley Assembly for Pedal (30A928)	1
3	Brake Pedal Assembly (30A929)	1
4	Base Plate Assembly (30A930)	1
5	Cable Captive Bolt (30A950)	1
6	Nut_Lock_Nylon_3_8-16 (20FAS0087)	1
7	Bolt, Shoulder, 1_2 x 2 (3_8-16 Thread) (20FAS0155)	1
8	Pulley Assembly (30A931)	1
9	Nut, Lock, Nylon, 1_4-20 (20FAS0156)	2
10	Plastic Clip for 1_4in Pin (20FAS0157)	1
11	Pin, Quick Release, 1_4 x 2-1_16 (20FAS0158)	1
12	Screw, Socket Head, 1_4-20 x 1_2 (20FAS0159)	1
13	Screw_Self-Drilling_1_4-20 x 2_w_Washer (20FAS0049)	4
14	Cotter Ring, 3_16 - 1_4 (20FAS151)	1
15	Clevis Pin, 1_4 x 1-11_16 (20FAS0150)	1
16	Screw_Pan head_Philips_6-32 x 7_16 (20FAS0118)	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH ± .5°
BEND: ± .5°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

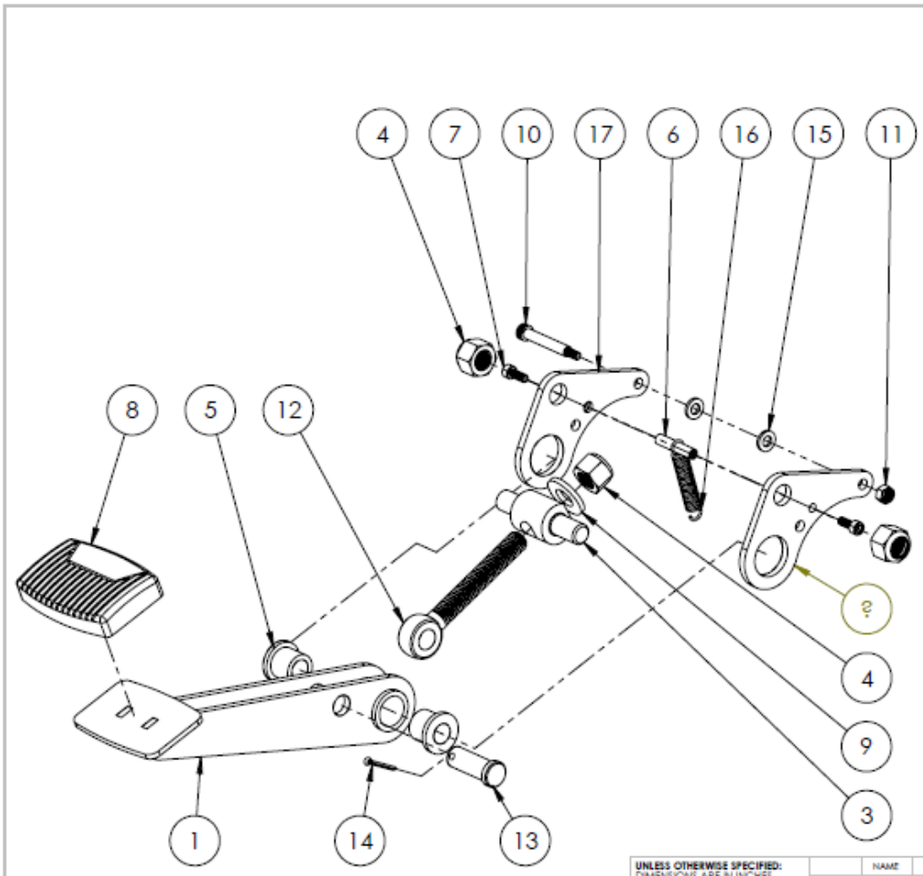
	NAME	DATE
DRAWN	ELIJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Brake Pedal Assembly, Passenger Side (30A923)

SIZE: A | DWG. NO. | REV 1

SCALE: 1:10 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Pedal Strut Assembly (30A932)	1
2	Pedal Lever (30A933)	1
3	Swivel Bolt (30A949)	1
4	Nut, Lock, Nylon, 1_2-13 (20FAS0165)	3
5	Sleeve Bearing, 1_2 ID x 3_4 OD (20COM0003)	2
6	Round Standoff (30A964)	1
7	Screw, Socket Head, #10-32 x 1_2 (20FAS0166)	2
8	Brake Pedal Cover (20MIS0021)	1
9	Washer, Flat, 1_2, SAE (20FAS0167)	1
10	Bolt, Shoulder, 1_4 x 1 1_2 (#10-24 Thread) (20FAS0168)	1
11	Nut_Lock_Nylon_10-24 (20FAS0102)	1
12	Bolt, Rod End, 1_2-13 x 3 1_2, Full Thread (20FAS0169)	1
13	Clevis Pin, 1_2 x 1-3_16 (20FAS0170)	1
14	Pin, Cotter, 3_32 x 3_4 (20FAS0179)	1
15	Washer, Nylon, 1_4 (20FAS0172)	2
16	Spring, Extension, 3_8 OD x 2.25 (20SPR0012)	1
17	Pedal Lever (30A933)	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH ± .5°
BEND: ± .5°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

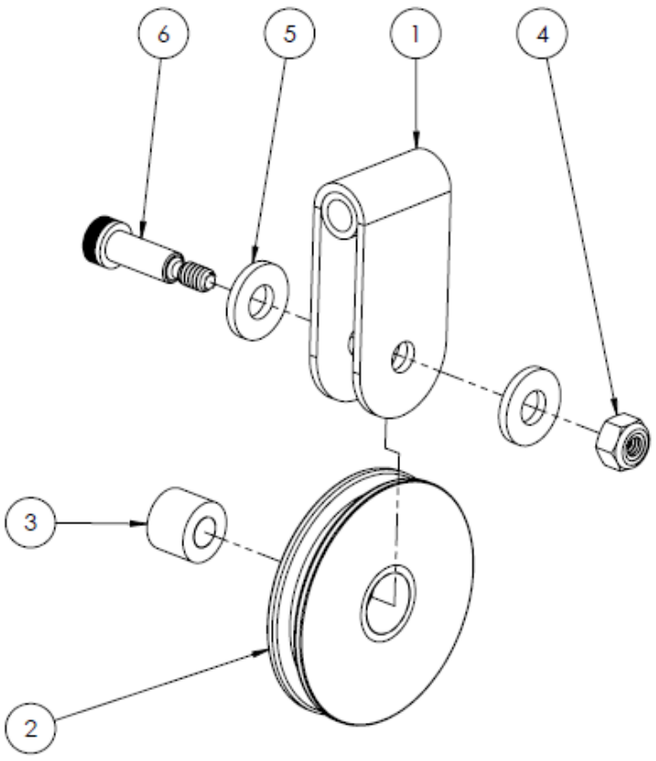
	NAME	DATE
DRAWN	ELIJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Brake Pedal Assembly (30A929)

SIZE: A | DWG. NO. | REV 1

SCALE: 1:3 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Pulley Pivot Assembly (30A939)	1
2	Pulley 2in OD Assembly (30A940)	1
3	Pulley Spacer (30A941)	1
4	Nut_Lock_Nylon_10-24 (20FAS0102)	1
5	Washer_Flat_1_4_SAE (20FAS0116)	2
6	Bolt_Shoulder_1_4 x 5_8 (#10-24 Thread) (20FAS0018)	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES: ± .005"
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

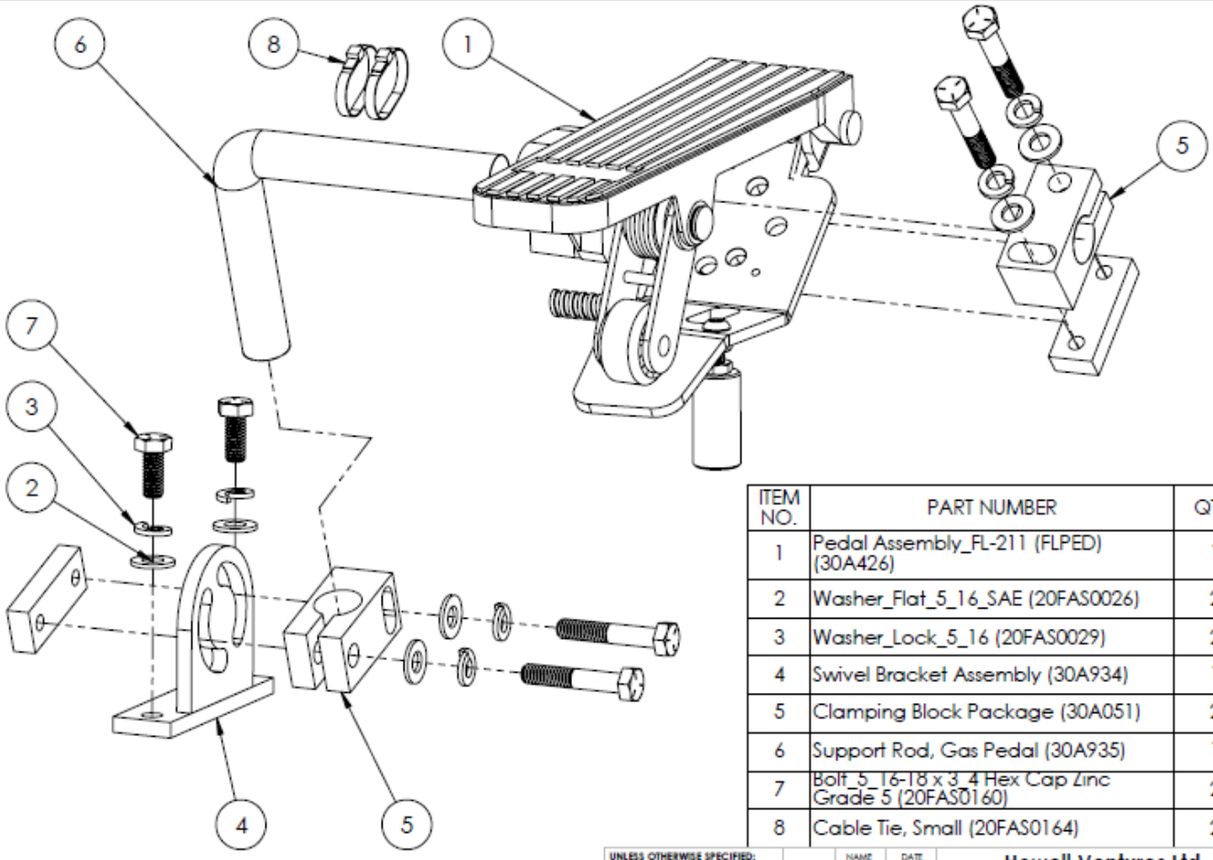
	NAME	DATE
DRAWN	BJJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Pulley Assembly for Pedal (30A928)

SIZE: A | DWG. NO. | REV 1

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Pedal Assembly_FL-211 (FLPED) (30A426)	1
2	Washer_Flat_5_16_SAE (20FAS0026)	2
3	Washer_Lock_5_16 (20FAS0029)	2
4	Swivel Bracket Assembly (30A934)	1
5	Clamping Block Package (30A051)	2
6	Support Rod, Gas Pedal (30A935)	1
7	Bolt_5_16-18 x 3_4 Hex Cap Zinc Grade 5 (20FAS0160)	2
8	Cable Tie, Small (20FAS0164)	2

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES: ± .005"
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

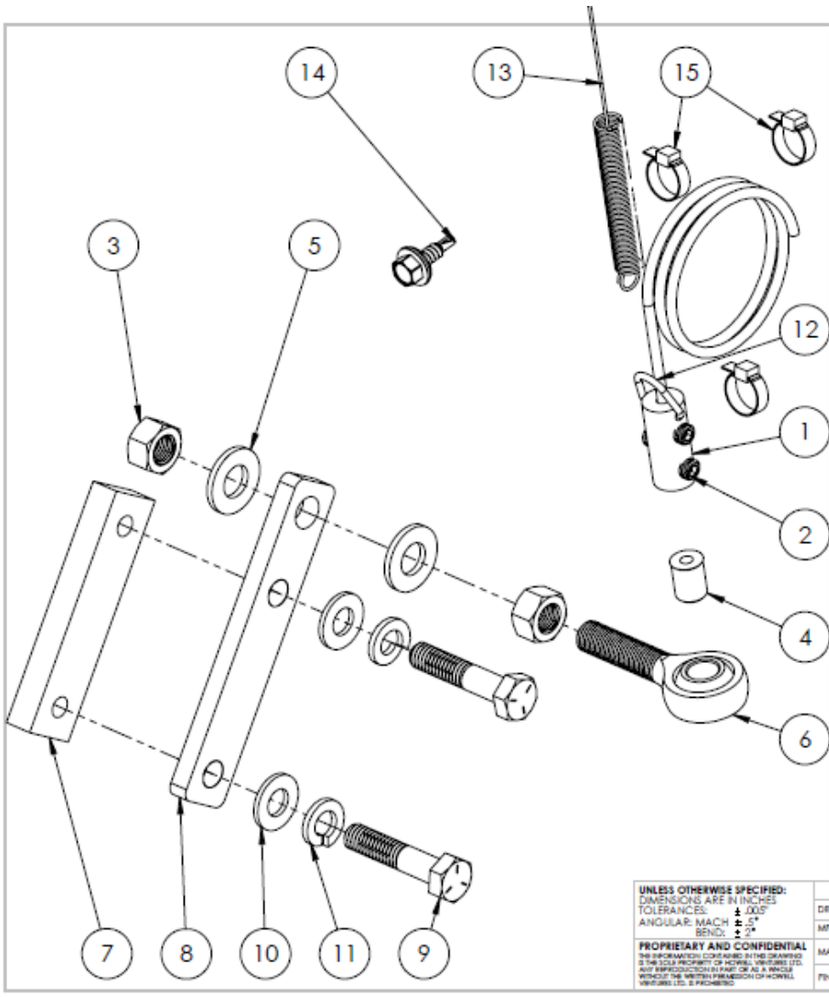
	NAME	DATE
DRAWN	BJJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Gas Pedal Assembly, Passenger Side (30A924)

SIZE: A | DWG. NO. | REV 1

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Cable Termination Lug (30A945)	1
2	Screw, Set, 1_4-28 x 1_4, Oval (20FAS0144)	3
3	Nut_Hex_3_8-24 (20FAS0039)	2
4	Rod End Cable Guide (30A937)	1
5	Washer, Flat, 3_8, SAE (20FAS0145)	2
6	Rod End, Ball Joint, 3_8-24 (20FAS0146)	1
7	Brake Block_Small (30A033)	1
8	Brake Block, PSBP (30A938)	1
9	Bolt 5_16-18 x 1 1_2 Hex Cap Zinc Grade 5 (20FAS0063)	2
10	Washer_Flat_5_16_SAE (20FAS0026)	2
11	Washer_Lock_5_16 (20FAS0029)	2
12	D-Ring, Light Duty (20FAS0147)	1
13	Spring_Brake Return (20SPR0010)	1
14	Screw_Self-Drilling_10-16 x 5_8 (20FAS0017)	1
15	Cable Tie, Small (20FAS0164)	3

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

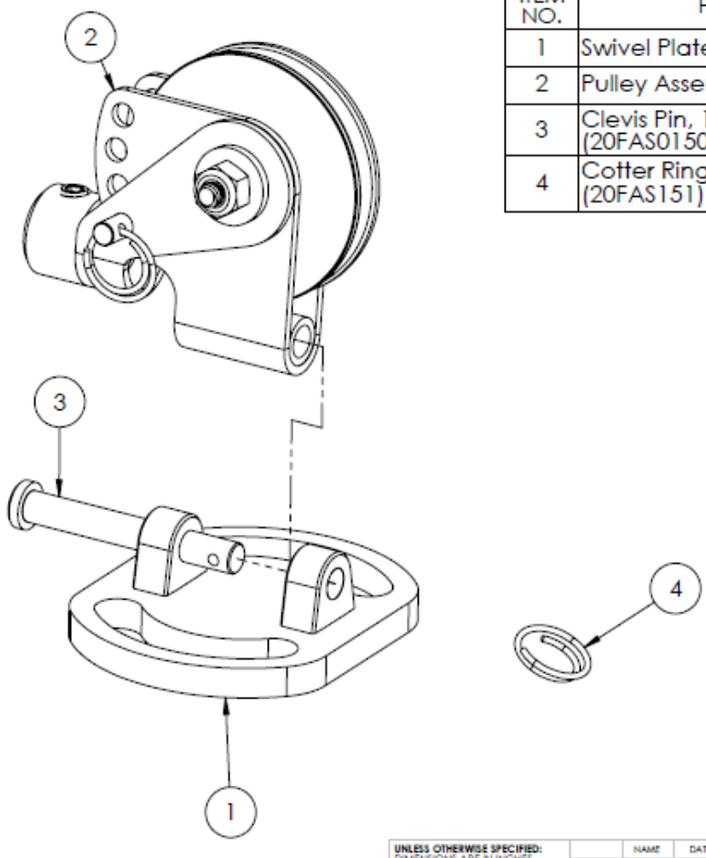
	NAME	DATE
DRAWN	BJJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Brake Block Assembly, Driver Side (30A925)

SIZE: A | DWG. NO. | REV 1

SCALE: 2:3 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Swivel Plate (30A944)	1
2	Pulley Assembly (30A931)	1
3	Clevis Pin, 1_4 x 1-11_16 (20FAS0150)	1
4	Cotter Ring, 3_16 - 1_4 (20FAS151)	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

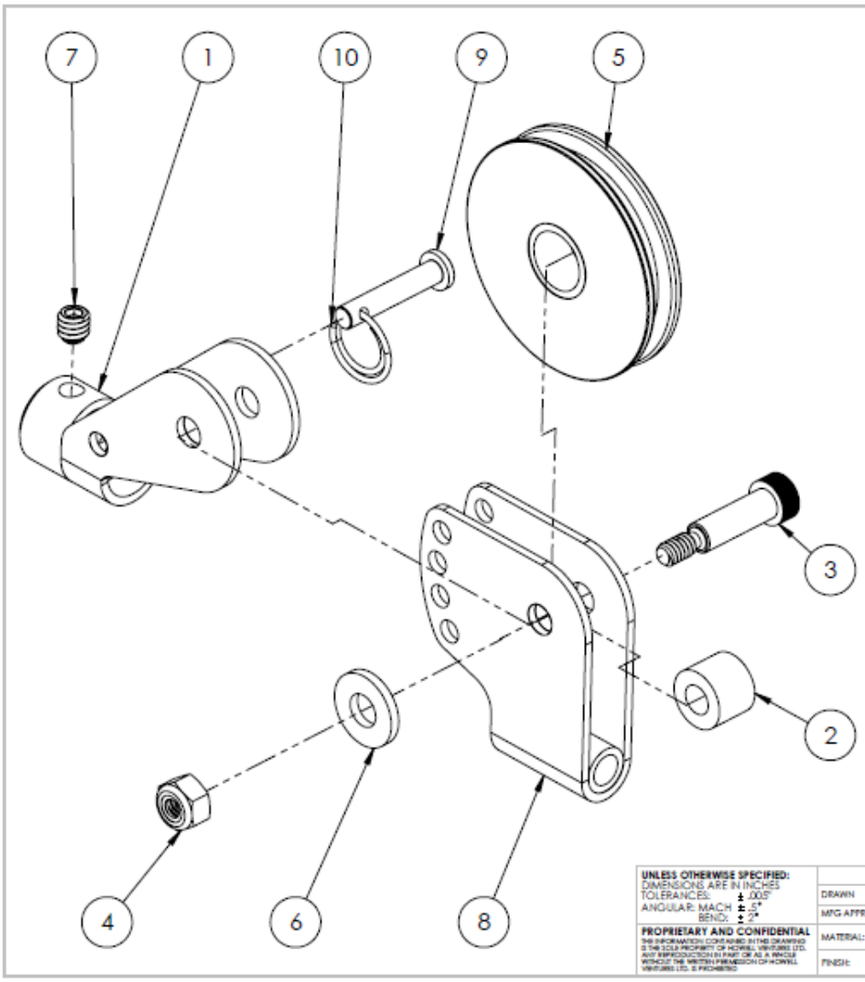
	NAME	DATE
DRAWN	BJJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Pulley Assembly, Driver Side (30A926)

SIZE: A | DWG. NO. | REV 1

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Cable Guide Assembly (30A942)	1
2	Pulley Spacer (30A941)	1
3	Bolt, Shoulder, 1_4 x 3_4 (#10-24 Thread) (20FAS0148)	1
4	Nut_Lock_Nylon_10-24 (20FAS0102)	1
5	Pulley 2in OD Assembly (30A940)	1
6	Washer_Flat_1_4_SAE (20FAS0116)	1
7	Screw, Set, 1_4-20 x 1_4, Knurled Cup Point (20FAS0020)	1
8	Pulley Pivot with Lock Holes Assembly (30A943)	1
9	Clevis Pin, 3_16 x 13_16 (20FAS0149)	1
10	Cotter Ring, 3_16 - 1_4 (20FAS151)	1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES: ± .005"
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

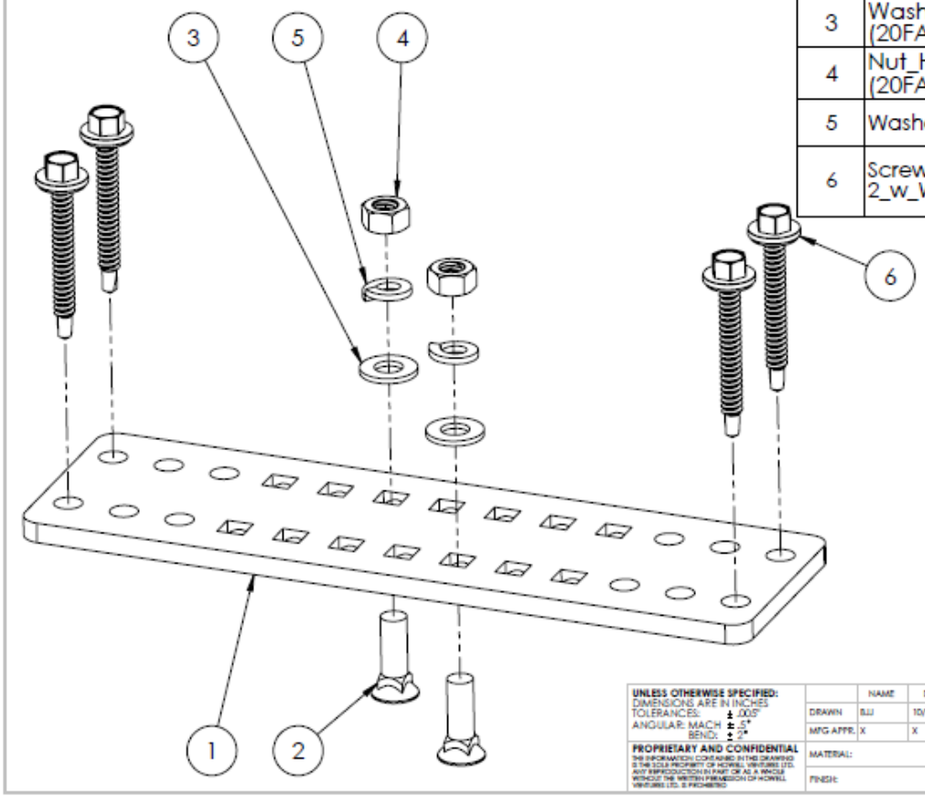
	NAME	DATE
DRAWN	BJJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Pulley Assembly (30A931)

SIZE: A | DWG. NO. | REV 1

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1



ITEM NO.	PART NUMBER	QTY.
1	Pulley Mounting Plate (30A947)	1
2	Bolt, Plow, 5_16-18 x 1 (20FAS0163)	2
3	Washer_Flat_5_16_SAE (20FAS0026)	2
4	Nut_Hex_5_16-18 (20FAS0023)	2
5	Washer_Lock_5_16 (20FAS0029)	2
6	Screw_Self-Drilling_1_4-20 x 2_w_Washer (20FAS0049)	4

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES: ± .005"
ANGULAR: MACH ± .5°
BEND: ± 2°

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF HOWELL VENTURES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF HOWELL VENTURES LTD. IS PROHIBITED

	NAME	DATE
DRAWN	BJJ	10/23/18
MFG APPR.	X	X
MATERIAL:		
FINISH:		

Howell Ventures Ltd.

TITLE: Pulley Mounting Plate Assembly (30A927)

SIZE: A | DWG. NO. | REV 1

SCALE: 2:3 | WEIGHT: | SHEET 1 OF 1

Service Record

DATE MM/DD/YY	Technician/ Facility	Comments

NOTES:

GO TO OUR SITE WWW.SUREGRIP-HVL.COM
TO FIND OUT MORE ABOUT OUR CONTROLS
FOR UTVS
AND OTHER RECREATIONAL VEHICLES!

SURE GRIP

Innovative Driving Solutions