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Invicta[™] Sim Racing Clutch Manual



Invicta

Thank you for purchasing the Asetek SimSports[™] Invicta[™] Clutch.

You have made an excellent choice! We are sure the Invicta[™] Clutch will help you take your sim racing career to the next level. Whether you are a beginner or an experienced racer, you will now be able to reach ultimate immersion.

Prepare for the sensation of being in a real race car.

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Foreword

About This Document

This manual is written for the end-user of the Asetek SimSports[™] Invicta[™] Clutch and contains all information required to correctly and safely install, use and maintain the following models:

Model Name	P-C-1
Product Name	Invicta™ Clutch
Product Code	40-010-0000002

This manual was authored in English. All other languages are translations of the original document.

Please make sure that you have thoroughly read and understood all contents of this manual before installing, using, or performing maintenance on the pedals. If anything in this manual is unclear, please contact Asetek SimSports™ Support (available on www.asetek.com/simsports/support/).

Please note the serial number on your product before contacting the support. The serial number can be found on the bottom of the base plate and written here for your convenience:



Serial Number	
Asetek Denmark A/S Assensvej 2 9220 Aalborg East Denmark www.asetek.com	ASETEK SIM SPORTS

Other Relevant Documents

These documents may assist you in your quest for faster lap times:

Mounting patterns, software, DoC and other installation manuals can be found here:

www.asetek.com/simsports/product/invicta-pedals-clutch/



Symbols Used

Make sure you pay attention to all warnings and symbols on the product and packaging.

CAUTION

Indicates that minor to moderate injuries may be sustained if the instruction is not followed correctly

This indicates that the product could be damaged if the instruction is not followed correctly



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1. Introduction

Thank you for purchasing the Asetek SimSports[™] Invicta[™] Clutch. We strongly encourage you to read through this manual thoroughly in its entirety. The Invicta[™] pedals are a premium product made to fit each user. They have an excellent baseline adjustment out of the box, and we strongly encourage you to drive for 5+ hours with the baseline adjustments before changing anything. After that, your full immersion racing experience is unlocked when they are adjusted to your personal preference.



1.1 Box Contents

The box contains the following components and accessories:

- Invicta[™] Clutch pedal
- Safety brief
- Manual (This document)
- Warranty statement
- Asetek SimSports[™] sticker sheet
- M6x5 set screw (x2)
- M6x20 bolt (x2)
- M6 Slot nut (x2)
- Washer (x2)
- M6 Hex nut (x2)
- Guiding pin (x2)
- Forte[™] Clutch Pedal Face Plate





12 Videos

On the Asetek SimSports[™] YouTube channel

(https://www.youtube.com/aseteksimsports), you will be able to find tutorial videos which, in detail, demonstrates numerous ways the pedals can be set up and used. You will also find additional information about the development and ambition for the Invicta[™] Pedals.

1.3 Manual version

This manual is version 1.2.

You will always be able to find the latest version of the manual at https://www.asetek.com/simsports/product/invicta-pedals-clutch/

1.4 Support & Contact

Should you stumble upon further questions that are not covered in this manual or any of our detailed instruction videos, we encourage you to contact our friendly support staff at support@aseteksimsports.com

2. Product

2.1 Intended Use

Thank you for purchasing the Asetek SimSports™ Invicta™ Clutch pedal; you have made an excellent choice! Asetek SimSports[™] Invicta[™] pedals will bring you to the next level of your Sim Racing career. Whether you are a beginner or experienced gamer, you will feel the immersion of being in a real race car while racing the tracks across the globe in the virtual space.

The Asetek SimSports[™] Invicta[™] Clutch pedal is designed to be used in competitive sim racing. The clutch can be directly connected to the Asetek SimSports[™] Invicta[™] Brake & Throttle, with seamless and intuitive installation. The Asetek SimSports™ Invicta[™] Brake & Throttle pedals can be bought in our webshop or at an Asetek SimSports[™] authorized dealer. Do not use the pedals without mounting, for they may shift during use.

Note: The clutch cannot be used as a standalone product



The pedals are intended for indoor use only.

Recommended ages 15 and above.



2.2 Compatibility

Platform(s)	PC (Windows 10, 11)
Games	Assetto Corsa Assetto Corsa Competizione DiRT Rally DiRT Rally 2.0 F1 Series iRacing Project Cars 2 rFactor 2 + many other games that accept direct input devices

2.3 Reasonably Foreseeable Unintended Use

The following is considered misuse and may void the warranty:

- · Use of adaptors or extension sets for cables;
- Use of other cables than provided with the product;
- Use in an environment that varies from or exceeds the given environmental conditions;
- Use that varies from or exceeds the given operating conditions;
- · Failure to comply with the instructions in this manual;

- Failure to eliminate faults, malfunctions, or defects of the product that impose safety risks;
- Unauthorized removal or modification of parts or safety devices of the product;
- Use of spare parts or accessories that Asetek SimSports[™] has not approved;
- Mounting and/or use of any parts in a vehicle;
- · Adjusting pedal settings during operation;
- · Operation in a flammable and/or explosive environment.
- Dropping the clutch (quickly and completely removing your foot) from the point of full actuation.
 - This would not be a use in a real car, and the pedals are not designed withstand these forces.

2.4 General Specifications

Dimensions (D x W x H)	406 x 115 x 256 mm
Weight	1,6 kg
Materials	Pedals: Aluminum
Sensor Types	Hall sensor
Operating Temperatures	15°C to 35°C, room temperature



3. Product Overview



4. Getting Started

This section will teach you how to get your clutch set up and running. Later in the manual, you will learn much more about the fine-tuning and software.

4.1 Installing your Pedals

4.1.1 Tools Required

To mount the pedals in your cockpit, you will need the following tools:

- Allen key, 3 mm (not included)
- Allen key, 5 mm (not included)
- Key wrench (not included)

Note: Use the allen keys supplied with the Asetek SimSports™ Invicta™ Brake & Throttle

4.1.2 Optional Tools

Depending on your rig and mounting preference, you may also need the following tools:

- Pencil or marker
- Screwdriver
- Power drill

4.1.3 Mounting to your Rig

The pedals are intended to be solely used while mounted to a sim racing rig.

The clutch has two (2) mounting holes in fixed positions. As such, all adjustments to the positioning of the base must be handled by your rig.





The baseplate is designed to be used with M6 screws, and holes in your rig should be with \emptyset 6,4 diameter. It is also compatible with the included M6 slot nuts.

The Asetek SimSports[™] Invicta[™] pedals are designed to withstand an extreme amount of force. Therefore, it is paramount that you install them on a very rigid base. Ideal conditions are aluminium profile cockpits or a thick metal baseplate (as a minimum, we recommend: 3 mm, steel).

Mounting your pedals:

- 1. Carefully remove excess dust and debris from the installation location.
- 2. Dismount the Invicta[™] Brake & Throttle
- 3. Unscrew the M6x5 set screws from the brake & throttle





4. Insert the connection pins in the connection holes of the clutch



- 5. Place the clutch next to your brake & throttle.
- 6. Use the guiding pins to align the clutch to the brake and throttle.
- 7. Insert the guiding pins of the clutch into the holes on the side of the brake & throttle.







8. Use the four (4) M6x5 set screws from above to secure the guiding pins in place.



9. Route the cable under the Invicta[™] Brake & Throttle through the bezel and insert the cable to the Invicta[™] Clutch



10. Align the holes in the clutch to the two existing mounting holes in your sim racing cockpit, if available.



11. Mount the clutch and brake & throttle to your sim racing rig.

If there are holes available:

 Mount the clutch to the existing holes using two (2) provided M6x20 bolts, two (2) washers, and two (2) hex nuts or two (2) M6 slot nuts (depending on your rig).



If there are no holes available or they do not line up, you can use the mounting schematics available here: https://www.asetek. com/simsports/product/invicta-pedals-clutch/ or continue to step 13.

- 13. Mark the drilling locations.
- 14. Remove the pedal and drill two (2) Ø6.4 mm holes.
- Mount the pedal to the holes using the two (2) provided Móx20 bolts, two (2) washers, two (2) hex nuts or two (2) Mó slot nuts (depending on your rig).

Remember to attach the Invicta[™] Clutch to the Invicta[™] Brake & Throttle before mounting, described from step 4 to 11.

Congratulations. You have successfully mounted your Asetek SimSports[™] Invicta[™] pedals to your rig. Enjoy the ride!







4.2 Adjusting the Pedals

🛕 CAUTION

Avoid eye contact with the lubrication grease and wash hands thoroughly after adjustment.

The Asetek SimSports[™] Invicta[™] Clutch feature multiple mechanical adjustments, that can be made to increase the precision, performance, and experienced immersion. In this section we will teach you have to easily make these adjustments and further unleash your passion for sim racing.

The clutch is a crucial part when the race begins, and the drivers needs to get in front of the grid. We have developed a clutch which features a proper bite point. In development, we have tried to replicate the release baring of a real car, which gives a proper kick back of the clutch. The bite point is the exact moment where the clutch connects, and your race car moves forward.

It is essential to make sure you have the correct pedal angle in any racing style. Setting this correctly will allow you to use musclememory to your advantage, and make you go even faster around the track!

The clutch is set up in its default configuration (out of the box) to give you maximum immersion. In other words, they are set up to be

focused on realism – like what you would find in a real race car. In combination with the Invicta[™] Brake & Throttle, the Invicta[™] Clutch is as default position, further forward from the brake to ensure that you will hit the brake pedal as the first thing in an emergency on track.

The setup of the Invicta[™] pedals (clutch and brake & throttle) is how it works in a real race car. We recommend you drive for several hours first and try to adapt. In a real race car, where you often have different drivers in the car (as well as in many endurance sim races), the pedals are adjusted like the above, and there is no opportunity to change that specifically to any driver.

If you prefer settings otherwise, the pedal angle can easily be adjusted, due to the easily adjustable toolless system.



4.2.1 Pedal Face Plate Adjustments



Do not use a power drill, as this may damage the screws.

Invicta[™] pedal face plates can be adjusted along the X and Y-axis. It will allow the pedals to accommodate a variety of different shoe sizes and increase performance and comfort for anyone using the pedals.

To adjust the position, follow these easy steps:

- 1. Remove the screws with an allen key from the pedal face plates
- 2. Align the pedal arms' holes with the pedal face plates' desired holes.



3. Insert and fasten the screws with an allen key.

Note: The screws can bite hard, so be careful not to overtighten or have the tool slip. Recommended torque: 2nm





4.2.2 Clutch Pedal Angle Adjustment

To make sure your pedals are set up just the way you like them, the Invicta[™] Clutch pedal offer the possibility of adjusting the angle of the pedal. The adjustment is a simple process. Simply follow the instructions below:

1. You can adjust the pedal stops on the clutch pedal by loosening the locking thumbnut



2. Push the pedal slightly forward, and rotate the thumbscrew (Clockwise to move the pedal forwards, counterclockwise to move the pedal backwards)



3. Once you have achieved your desired position, tighten the locking thumbnut





 Recalibrate your clutch in RaceHub[™] (see section 5.3 Pedal Calibration)

We suggest that you have the brake pedal arm tilted a bit more forward that the throttle and clutch, as in a real car. Imagine driving a race car and things go wrong and you are losing your car, you would rather press the brake than the throttle to avoid a potential crash.

4.2.3 Clutch Preload Adjustment

Adjusting the preload on the clutch spring will shorten the overall spring length, increasing the amount of force needed to activate the clutch initially. Doing so will keep the clutch curves the same but change the initial power required to activate it.

Adjusting the clutch preload can be done in three (3) simple steps:

1. Turning clockwise, loosen the uppermost thumbnut, which locks the lowermost thumbnut in place. It is the one closest to the pedal itself



- 2. Adjust preload on the spring by turning the bottom thumbnut (in contact with the spring):
 - a. Counterclockwise to tighten the preload, making the clutch require more force to engage.
 - b. Clockwise to reduce the preload, making the clutch require less force to engage.





3. Turn the uppermost thumbnut counterclockwise to retighten it, locking the bottom thumbscrew in its position.



4. Recalibrate your clutch in RaceHub[™].



Remember to adjust the pedal stop, to make sure the pedal arm rests on the pedal stop and not

the spring.



4.2.4 Clutch Travel Distance Adjustment

The clutch can have its travel distance adjusted. This allows you to set a new pedal stop of your clutch pedal – essentially reducing the distance of activation and the feeling of resistance as you move through less of the available spring distance.

The process can be done in four (4) simple steps:

1. Loosen the thumbnut on the pedal stop, behind the pedal arm, by rotating it counterclockwise.





2. Use an allen key to adjust the height of the allen screw.



3. Re-tighten the thumbnut by rotating it clockwise.



4. Recalibrate your clutch in RaceHub™.

4.2.5 Change Clutch Pedal Curves

The clutch often has a light force at end of the travel before the pedal kicks back. The Asetek SimSports[™] Invicta[™] Clutch allow the end-user to switch between different the force curve settings. You can adjust the clutch pedal curves by switching between the four available holes in the pivot bracket, visualized in the above illustration.





Each individual curve tells mechanically when you hit the real bite-point feeling, which is reached at the peak of the increase, before the curve declines again. The Y-Axis describes the force required, and X-axis describe the travel.





These options give you the power of determining, which force curve suits you the best, to get fastest out of the grid.

To adjust the clutch curve:

1. Loosen the spring tension locknut completely.



2. Remove the spring locking pins.



3. Remove the clutch pivot pin and bushing to release the clutch tension spring.



4. Align the clutch tension spring to the desired hole in the pivot bracket.





- 5. Re-insert the bushing and pivot pin through the pivot bracket and clutch tension spring.
- 6. Lock the clutch pivot pin in place with the spring locking pins.
- 7. Recalibrate your clutch in RaceHub™

Make sure the mounting of the pedal is set and all parts are secured rightly before use

4.2.6 Adjust Clutch Pivot Bracket

You can choose to have the clutch pivot in two positions. As default, the pivot bracket is mounted in the most forward position, furthest away from the pedal arm. By moving the clutch pivot bracket, you can change the bite point relative to pedal travel.



Please be aware that edges on the rod clevis can be sharp



1. Remove the rod clevis lock pin.





2. Lift the rod.



3. Unscrew the four screws underneath the clutch baseplate.



4. Align the pivot bracket with the adjacent holes underneath the baseplate.



- 5. Screw the four screws underneath the baseplate back into the pivot bracket.
- 6. Make sure to have the pedal angle in the most backwards position (see section 4.2.2.)
- 7. Lower the rod and re-insert the rod clevis lock pin.

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8. Adjust your pedal angle to the desired position.

4.3 Start Racing!

Your pedals are ready for racing – even without adjusting them in the software. There are several adjustment options – but before changing anything, try to drive for several hours and adapt to the feeling of a real race car.

Assign the pedals in your favorite simulator game and you are ready to go.

5. RaceHub[™] Adjustments

All Asetek SimSports[™] products come with an extremely powerful yet easy-to-use piece of software that we have developed from the ground up. It is called RaceHub[™] and will take care of your every need. RaceHub[™] unlocks things you would not dare to dream and is continuously updated.

5.1 RaceHub™ Download

RaceHub[™] is available for download, in its newest version, on our website (www.asetek.com/simsports/racehub/).

5.1.1 RaceHub[™] Installation

After completing the download from our website, double-click the downloaded file to initiate the installation. Follow the onscreen instructions and install them in your desired directory. Once installed, open RaceHub[™] using the shortcut on your desktop or in your programs folder.



5.1.2 RaceHub™ Updating

RaceHub[™] will automatically notify you if there are available updates. If you want to double-check, please go to www.asetek. com/simsports/racehub and download the newest version.

RaceHub[™] has a built-in feature that allows you to update the firmware on your devices automatically.

5.2 Introduction

Asetek SimSports[™] RaceHub[™] allows you to make a plethora of adjustments to your Asetek SimSports[™] products. On the Invicta[™] pedals, it will allow you to adjust pedal maps, calibrate your pedals, adjust the aRGB lighting, and much more.

Everything is available in a highly user-friendly interface that allows for quick and easy customization that not only gives you complete control but does it in a manner where you are constantly in focus – teaching you everything you need to know to become a power user and expert sim racer.

The settings that you choose in RaceHub[™] will be applied to all the supported games found in section 2.2, "Compatibility"— ensuring maximum performance and precision!

5.3 Pedal Calibration

To ensure your pedals are as precise as they can be, you should run the pedal calibration wizard in RaceHub[™]. It is a quick and straightforward process that takes you through a series of activations that calibrate your pedals.

- 1. Navigate to the pane in RaceHub[™] called Calibration
- 2. Push the calibrate button





- 3. Follow the on screen instructions
- 4. Done! Your calibration will carry over into all the supported games.

Once your pedals are calibrated, only a few unique scenarios will cause a need for recalibration:

- a. If so desired, you have adjusted mechanical stop of your clutch pedal.
- b. If so desired, you have adjusted the static angle of your clutch.
- c. If so desired, you have moved the pivot bracket

5.4 Deadzone Adjustments

In RaceHub[™], you will be able to set both top and bottom deadzones on all your pedals.

A bottom deadzone allows you to slightly activate your pedal without engaging the clutch. For example, if you rest your foot on the pedal. A top deadzone allows you to modify the point of full activation. In the case of a clutch pedal, this would allow you to reach 100% clutch before your clutch pedal reaches full activation and the mechanical pedal stop. This preference is individual and generally done by a race engineer before the car goes on track. RaceHub[™] allows you to fully customize it and we strongly encourage you to do it as well.

The top and bottom deadzones can be adjusted using these sliders marked here:





We suggest the following settings for deadzone when using the Asetek SimSports[™] Invicta[™] pedals, which is how it is calibrated from our factory.

Clutch:

- Top: 2%
- Bottom: 2%

5.5 Custom Pedal Mapping

One of the great features of RaceHub[™] is the ability to map the curves of your pedals precisely to your liking. In most racing simulator pedals, you will find a 1:1 relation between the amount pressed on the pedal and the response in-game. This is not how things work in real racing – so why should it be this way in your sim rig? The answer is, it should not, and our pedal maps help you avoid just that.

We have made a few preset curves that mimic typical scenarios, but RaceHub[™] also allows complete customization of your pedal curves. Click, drag and drop – it is that simple!



Similarly, you can adjust your curves based on your driving conditions—all in search of ultimate performance.





Please note that RaceHub[™] custom pedal maps work best when they are used exclusively and without the use of potential ingame settings. If your preferred simulator game offers a pedal mapping feature, we highly suggest you live it as linear and instead use the functionality in RaceHub[™].

6. Maintenance

Owning a set of Invicta[™] pedals means a minimum of maintenance needed. However, we do have a few suggestions that will help you keep your pedals feeling supreme.

6.1 Clutch Maintenance

We suggest you clean the clutch with regular intervals (6 months) with a soft, dry, clean cloth.

If unwanted rubbing sounds occur, we suggest using PTFE Dry Spray.



Do not use water or cleaning agents to clean the product.



6.2 Spare Parts

We strongly advise you only you original Asetek SimSports[™] spare parts. Failure to do so will void your warranty. If you have questions, or do not know if you have an original part, please refer to www.asetek.com/simsports/ or consult the Asetek SimSports[™] support via: www.asetek.com/simsports/ support

7. Troubleshooting

Sometimes unforeseen issues occur. But do not worry, we are here to help.

If you are having issues we suggest consulting the FAQ on www.asetek.com/simsports/product/invicta-pedals-clutch/

If you are not able to find a solution on the FAQ please consult our friendly and knowledgeable support staff via www.asetek. com/simsports/support or through our social channels.



8. Safety

- The device must not be exposed to rain or humidity to avoid the risk of fire and electric shock.
- We strongly advise you not to drive a vehicle immediately after racing simulation games.
- This product is not intended for children under the age of 15 years.
- · Contains small pieces. Danger of swallowing!
- Extended periods of gaming may cause health risks. Take a break of 5 minutes every 20 minutes, and do not play for more than 2 hours per day.
- Keep hands, fingers, hair, clothing, and jewelry away from the product when in use.
- Only one person may use the product at any given time. Keep other persons away from the product when in use.
- Keep the product and the power cord away from children and pets.

- This product contains components that the user cannot repair. Opening parts of the product may compromise the safe use of the product and will void the warranty.
- Do not disassemble this product beyond what is described in the product manual.
- Avoid eye contact with the lubrication grease and wash hands thoroughly after adjustment.
- Make sure the mounting of the pedal set and all parts are secured tightly before use.
- Check frequently that the pedals are mounted properly
- Be aware that the rod clevis has sharp edges



9. De-commissioning & Sustainability

At Asetek we are fiercely committed to making the world a sustainable place. You can read more about Asetek's sustainability efforts, including our sustainability reports, here: www.asetek.com/company/sustainability



This symbol indicates that this product should not be thrown away with other household waste throughout the EU. To prevent possible harm to the environment or human health by uncontrolled waste disposal, you are responsible for recycling it so that it can promote the sustainable reuse of raw materials. To return your used product, you can use the regular return and collection systems.

9.1 Packaging

All packaging is made out of paper and cardboard. All our cardboard and paper products are labeled with the FSC mark, ensuring maximum reusability and that the forests are sustainably forested. Furthermore, we regularly check our vendors to make sure they are upholding their commitments.

About FSC: www.fsc.org/en/fsc-labels

If you need to dispose of your packaging, please use the appropriate paper waste stream in your country, to dispose of the packaging. Naturally, we hope you want to keep it around – we are quite proud of it.

9.2 Product

Asetek SimSports[™] is committed to making products that will last. However, we also now that sometimes things break, and that should not result in a scrap and forget, producing even more e-waste to our planet. That is why we are dedicated to supporting you and all other users with spare parts where possible, and in case of parts of the product defuncting, we offer return shipping of the part along with a new service part. We will then make sure the original part is de-commissioned in an environmentally sound manner.

If you feel uncertain about how to recycle any Asetek SimSports[™] product, we suggest getting in touch with our dedicated customer support team, who will happily help you. Contact them here: www.asetek.com/simsports/support



9.3 Production

The Asetek SimSports[™] Invicta[™] Pedals are produced using primarily aluminum die-casting and forging techniques. As such, any waste aluminum is re-used minimizing waste.



Points de collecte sur www.quefairedemesdechets.fr Privilégiez la réparation ou le don de votre appareil !

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10. Declaration of Conformity

We, Asetek, as manufacturer, declare that the Invicta[™] products from the brand Asetek, produced in Denmark are tested according to all relevant CE standards/regulations and passed all tests.

The complete Declaration of Conformity can be found and downloaded via www.asetek.com/simsports/product/Invicta-pedals-clutch/





ETEK SPORTS^m

