OSR R3001 SIM RIG

assembly documentation 231213

check **qr code** or

www.open-source-racing.com

/osr-r3001/

CONTENTS

TABLE OF CONTENTS

OSR R3001 Sim Rig with accessories
(not included, must be acquired
separately)

OSR R3001 Sim Rig
(assembly documentation in
this document)

INTRODUCTION

Simracing

Simracing is a major growth area. After all, racing enthusiasts have the opportunity to race like their idols, but without having to spend a huge budget. It is this accessibility that allows just about anyone to experience and become a part of the sim racing community.

OSR Philosophy

Open-Source-Simracing.com (short OSR) is a small "Do It Yourself" community project by me, Attila Kiss. I am a automotive engineer from europe, a hobby racer on real race tracks and virtual race tracks in sim racing simulators. Sim racing is booming and every day new products coming on the market. Sometimes they are just not affordable or don't offer the solution you are looking for. My idea with OSR is creating individual solutions from the community for the community. I am hoping you find the content helpful and you will enjoy following my journey.

visit me at

www.open-source-simracing.com

Sim Racing in general

SUPPORT OSR

SUPPORT THE OPEN SOURCE PROJECT

OSR & Simracing

The whole open source racing / OSR project is a sim racing community project for the sim racing community. The creation of the content takes a lot of my private time. Expenses such as the concept, design and implementation, ordering and purchasing the materials, assembly, evaluation and the creation of a review video are carried by myself by me privately. All the more I am happy about your input and support for the realization of further DIY community projects. If you use the affiliate link on the open-source-simracing.com website to buy a materials from a supplier partner, you support the OSR.There are no additional costs for you.

Support OSR

check **qr code** or
**www.open-source-raci
ng.com/support**

Hockenheim 2016 with my Aprilia RSV 1000 Factory

OSR R3001 SIM RIG

INTRODUCTION OSR R3001 SIM RIG

OSR R3001

The idea with the OSR R3001 was to serve a wide range of vehicle ergonomics for a high performance sim rig. The OSR R3001 High End Sim Rig / Racing Simulator frame has a freely adjustable geometry with which the seat position can be set like in a Formula 1, GT3 racing car / DTM or road vehicle. The positions of the seat, steering wheel and pedals are freely adjustable (see pictures). The base frame is equipped with solid 120x40mm aluminum system profiles to meet the highest rigidity requirements without flexing with professional simulation equipment. The mounts for attaching a steering wheel/wheelbase, pedals and seat are also freely adjustable so that as many different manufacturers of steering wheels/pedals as possible can be attached to the Sim Rig.
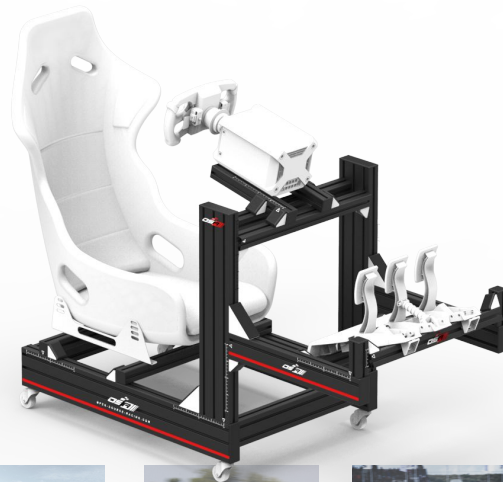
Order your OSR Simrig

check **qr code** or list of supplier

partners for kits

www.open-source-racing.com

/osr-r3001/

ECONOMICAL CONFIGURATIONS

Road Car Ergonomie

GT3 Race Car Ergonomie

F1 / LMP Race Car Ergonomie

OSR 3001 SIM RIG

INTRODUCTION OSR 3001 SIM RIG

OSR R3001

One of the most important things in simracing is the simrig. Especially when using direct drive wheels or load cell pedals, you can't get around a sim rig. If you also have demands on the ergonomics, e.g. Formula 1 / Indycar, LMP or GT cars, it quickly becomes special and expensive. The OSR R3001 is the attempt by the community to offer a sim rig for the higher requirements as well as variance regarding the different vehicle geometries. And open source means open source. You have accessibility to cad files, parts lists, decals, instructions etc. and if needed you can modify them by your needs. You can buy it from the recommended suppliers to support the project or decide by yourself where to buy the parts.

Check Youtube Video

check **qr code or**
www.open-source-raci
ng.com/osr3001

Order your OSR Simrig

check **qr code** or list of
supplier partners for kits
www.open-source-raci
ng.com/osr3001

DISCLAIMER

DISCLAIMER OF LIABILITY AND WARRANTY EXCLUSION

Presented hardware and ideas are not products. The presented constructions can also not be purchased ready assembled from a dealer. This is DIY (do it yourself) documentation how I assembled a possible solutions personally. How the solutions are assembled by third parties is their responsibility and may differ from mine.

Showed ideas are not developed by professionals or experts regarding sim racing hardware. OSR is a community project, where the community presents possible solutions for the community. If you are rebuilding a solution from OSR and you are not an expert or do not have the necessary qualifications to assemble a solution, it is strongly recommended to consult an expert. The claim for completeness of the parts (displayed part list at the dealer) lies with the supplier itself. Although the parts list was created by me. I do not assume any claim for completeness of the parts list. The part list is only a proposal which worked for me and should be finally checked by yourself.

I am keeping regular contact with supplier partners who already have parts lists for DIY projects ready, which should contain all parts to build your own solution. So all parts to build your solution can be purchased by the community with a simple click and delivered to your home. Through the OSR website, all supplier partners that offer OSR inspired solutions are listed. To make sure that the parts lists are up to date and the newest community version, we recommend you to purchase the kits via open-source-simracing.com from our supplier partners.

If you use the affiliate link on the open-source-simracing.com website to buy a kit from a supplier partner, you support the OSR with a referral fee, which the supplier partner pays to OSR. There are no additional costs for you. Whether you order directly through the supplier or through the affiliate link on the OSR website makes no difference - the costs remain the same. In the end you only pay for the material and always the same amount.

Even if I build, introduce and test some solutions as examples, I can not guarantee the correct function or safety of these solutions as I am not an expert, they are not fully tested and only within a small scope for my own use. All in all presented solutions are "do it yourself" projects and should inspire to start your self individual "do it yourself" project.

OSR data (CAD files, graphics, etc.) and media (images, logos, etc.) may be used freely for reporting purposes. However, the use of OSR images, data and media is prohibited, e.g. for the commercial sale without consultation and agreement with OSR.

If you know of any abuse or have suggestions for improvement, report it to OSR.

Contact OSR

check **qr code** or newest disclaimer

www.open-source-racing.com/contact

or contact@open-source-racing.com

SAFETY

RECOMMENDED SAFETY PRECAUTIONS

Use arts and crafts materials safely
Using arts and crafts materials can be fun, but some may pose health risks. Always follow all of the safety instructions on the product label.

Health risks
Cuts are the most common injury from working with arts and crafts materials. Some materials can also cause:

- poisonings, if swallowed
- burns or irritation to skin or eyes
- poisonings, if toxic dust or fumes are inhaled (breathed in)

These dangers are even greater for young children, who are naturally curious and put things in their mouths.

Leave the arts and crafts project for a while if you:

- feel ill
- have headaches, dizzy spells or severe mood swings

Get fresh air to see if you feel better. These symptoms could be warning signs that you need to take more steps to protect your health. If symptoms continue or return, get medical advice.

Risks if you are pregnant
Arts and crafts materials may pose additional risks if you're pregnant. If you're pregnant or planning to get pregnant, talk to your health care provider about the risks of these products.

General safety tips
- Learn the right techniques. Learn all you can about the materials and techniques you're using. Take classes or get professional advice.
- Look for safer alternatives. Look into the potential hazards before you try (or buy) new arts and crafts materials.
- Keep materials in their original containers. You'll be able to read label instructions and emergency advice.
- Always follow the safety instructions on the labels.
- Do arts and crafts in an area where the air circulates well. Work outside, open a window or use a fan.
- Install a smoke detector in your work area. Keep a fire extinguisher close by.
- Know emergency numbers. Keep the phone number of your nearest poison centre handy. Call right away if you suspect a poisoning.
- Use personal protective equipment. This includes:
  - **goggles** or prescription eyeglasses to protect your eyes from splashes or small objects
  - earplugs to protect against loud noises
  - **rubberized gloves** to avoid getting solvents or acids on your skin
  - dust masks or respirators to prevent breathing in dust or fumes
  - any other equipment recommended in product instructions
- Remove your contact lenses when you work. They can trap dust or splashed liquids, which could damage your eyes. Use your prescription glasses instead.
- Keep arts and crafts materials away from food and drink. You will reduce the risk of swallowing dangerous materials by mistake.
- Wash up. Wash your hands (and clothing, if needed) after you finish working.
- Store carefully. Keep hazardous materials out of the sight and reach of children and pets.
- Dispose of materials carefully. Contact your municipal waste facility for information on safe disposal of any hazardous materials.

SAFETY

RECOMMENDED SAFETY PRECAUTIONS

Tips to help keep children safe
- Keep materials not meant for children out of their sight and reach.
- Buy kid-friendly products. Choose products labeled for children's use.
- Pay attention. Stay in the room and be attentive when children use arts and crafts materials.
- Do not use slime recipes that contain boric acid.
- Keep children away from:
  - shellac
  - boric acid
  - craft dyes
  - paint strippers
  - ceramic glazes
  - copper enamel
  - solder for stained glass
  - powdered clays and paints
  - paint that's not clearly labelled as safe for kids
- Check the label for the ingredients of the product before you buy.

Source:
https://www.canada.ca/en/health-canada/services/home-garden-safety/use-arts-crafts-materials-safely.html (government of canada, 15.02.2023)

Other recommend safety instructions:
https://www.familyeducation.com/entertainment-activities/arts-crafts/rules-safe-crafting
(familyeducation.com, 15.02.2023)

PREPARATION

ESSENTIAL TOOLS

1x Hammer

Hammer to install profile caps

1x Ruler, Folding Ruler or Inch Stick

Ruler to identify aluminum profiles by their lenght. Attention: check if you stick to the metrical system or united states customary units (e.g. inch)

1x small piece of Wood

for support to install profile caps

1x Imbus Keys, Hex Keys, Allen Wrench,

to tighten the screws or insert the slot nuts. Attention: check if you stick to the metrical system or united states customary units (e.g. inch)

Buy Tools

check **qr code** to order essential tools or visit **www.open-source-racing.com/tools**

PREPARATION

BASIC KNOWLEDGE

Slot Nut:

You can insert a slot nut by pushing it form the side of the aluminum profile into the groove

If you insert a wrench / screwdriver into the hole of the groove nut, you can carefully align it.
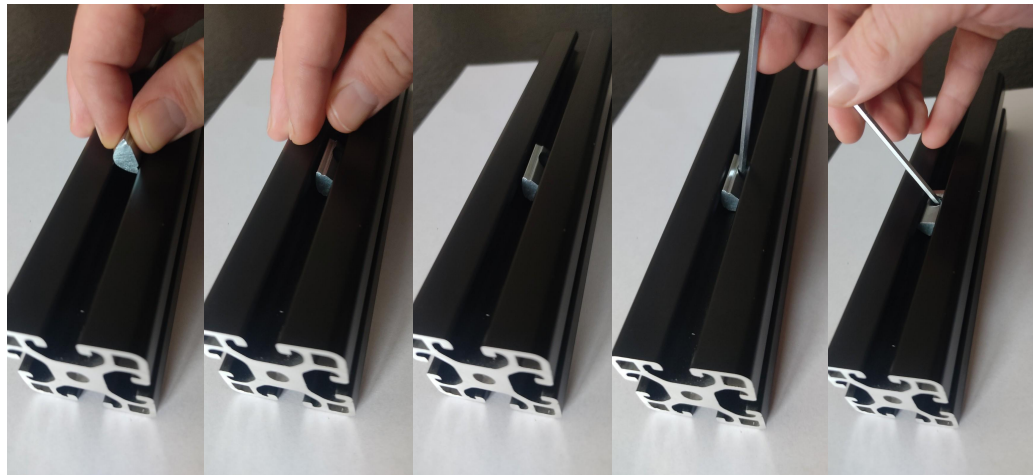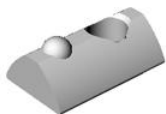
BASIC KNOWLEDGE

Inner Connector:

An inner connector has two sides, a short and a long one.

If you put the inner connector first with the long side into the groove, you have a stop at the beginning of the aluminum profile
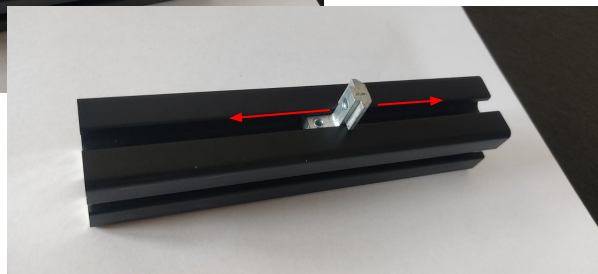
If you put the inner connector first with the short side into the groove, you can move it along the aluminum profile. So check the assembly briefly.

PREPARATION

BASIC KNOWLEDGE

Aluminum profile angles

Some aluminum profile angles have raised teeth. These are used for alignment when attaching the aluminum profile angles to the aluminum profiles lengthwise. However, if you want to align the aluminum profile angles differently, it is necessary to break out the teeth with a slotted screwdriver.

! Attention: 2x break out teeths on one side to have a flat side on.

flat side without teeth
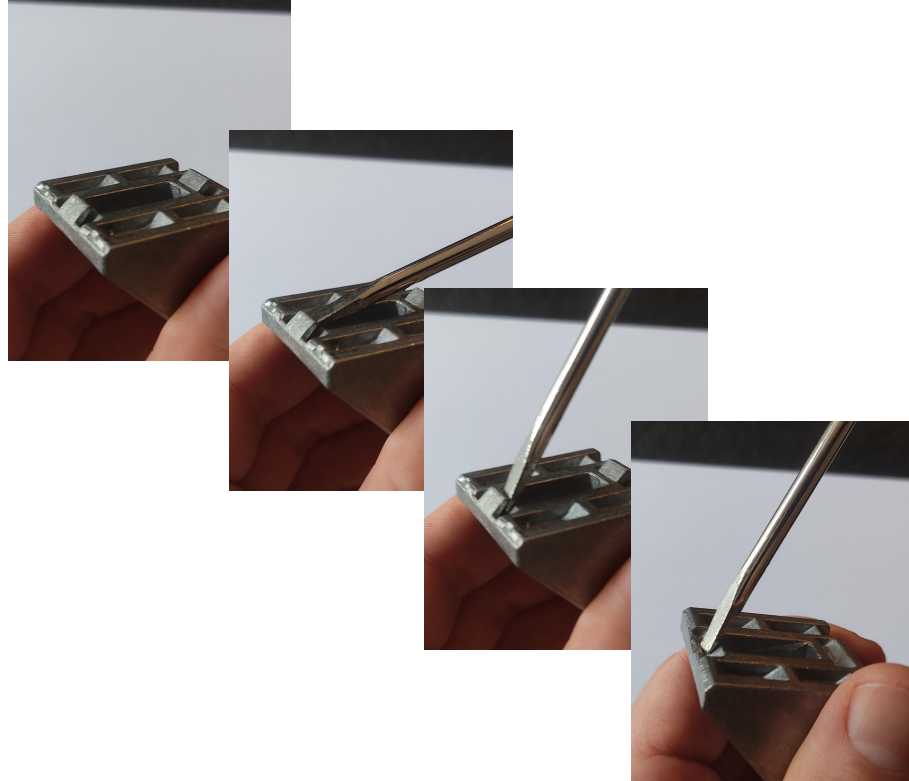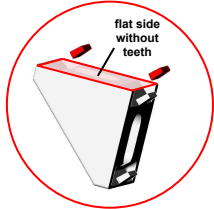
PREPARATION

BASIC KNOWLEDGE

Screw tightening torque

How tight a screw should be tightened can be influenced by the lever arm. The larger the lever arm, the tighter the screw can be tightened. the examples given are only intended as a rough guide. it is recommended that the exact tightening torques for the connectors be obtained from the respective suppliers or that a qualified person be consulted.

tighten screws **slightly**

tighten screws **medium**

tighten screws **tightly**
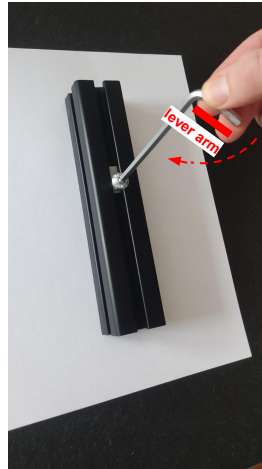
(lever arm two fingers)

(lever arm four fingers)
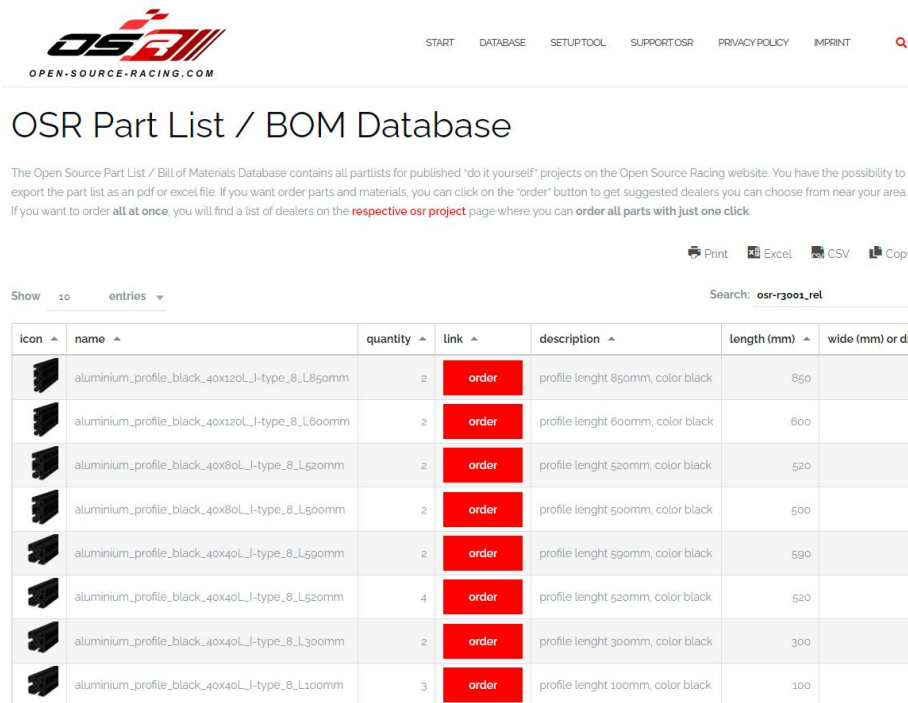
(lever arm four and thumb fingers)

ASSEMBLY DOCUMENTATION

GETTING STARTED

Part list

Before we start assembling the sim rig, it is important to check the components for completeness and to unpack and prepare them for assembly. To check if you have all parts, use the online bill of materials / part list (check link).

Check Part List

check **qr code** or visit
www.open-source-raci
ng.com/osr-r3001

OSR Part List / BOM Database

The Open Source Part List / Bill of Materials Database contains all partlists for published "do it yourself" projects on the Open Source Racing website. You have the possibility to export the part list as an pdf or excel file. If you want order parts and materials, you can click on the "order" button to get suggested dealers you can choose from near your area. If you want to order **all at once**, you will find a list of dealers on the **respective osr project** page where you can **order all parts with just one click**.

🖶 Print   📄 Excel   📄 CSV   📋 Copy

Show 10 entries

Search: osr-r3001_rel

icon	name	quantity	link	description	length (mm)	wide (mm) or dia
	aluminium_profile_black_40x120L_I-type_8_L850mm	2	order	profile lenght 850mm, color black	850	
	aluminium_profile_black_40x120L_I-type_8_L600mm	2	order	profile lenght 600mm, color black	600	
	aluminium_profile_black_40x80L_I-type_8_L520mm	2	order	profile lenght 520mm, color black	520	
	aluminium_profile_black_40x80L_I-type_8_L500mm	2	order	profile lenght 500mm, color black	500	
	aluminium_profile_black_40x40L_I-type_8_L590mm	2	order	profile lenght 590mm, color black	590	
	aluminium_profile_black_40x40L_I-type_8_L520mm	4	order	profile lenght 520mm, color black	520	
	aluminium_profile_black_40x40L_I-type_8_L300mm	2	order	profile lenght 300mm, color black	300	
	aluminium_profile_black_40x40L_I-type_8_L100mm	3	order	profile lenght 100mm, color black	100	

BASE PROFILE

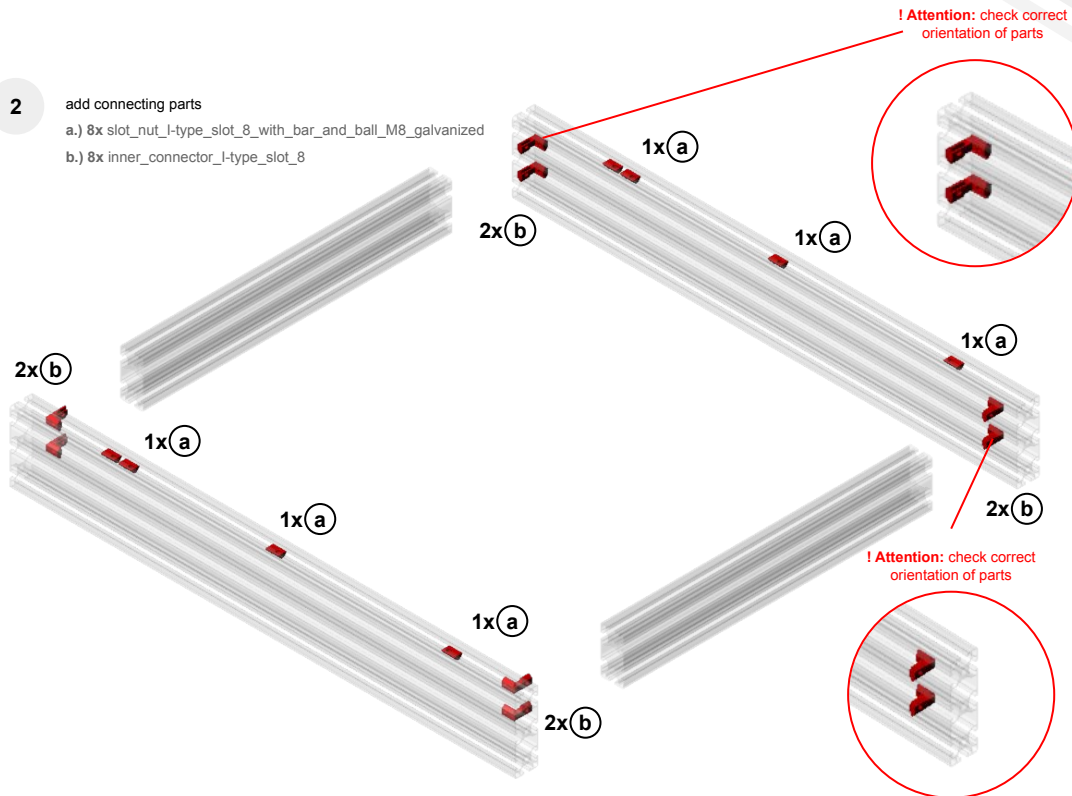**1** position aluminium base profiles

a) 2x aluminium_profile_black_40x80L_I-type_8_L520mm

b) 2x aluminium_profile_black_40x120L_I-type_8_L850mm
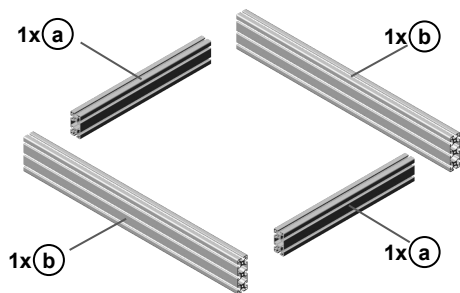
2 add connecting parts

a.) 8x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

b.) 8x inner_connector_I-type_slot_8

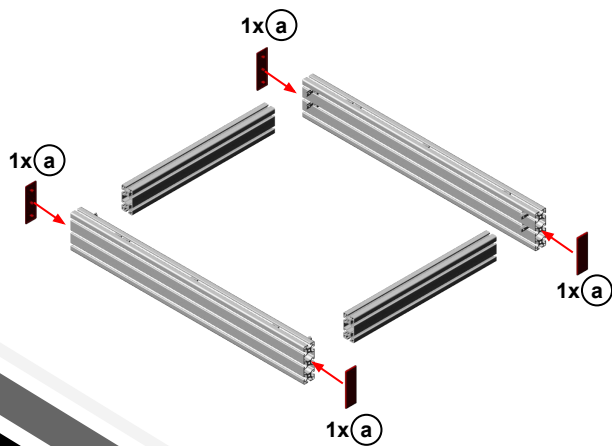**! Attention:** check correct orientation of parts

! Attention: check correct orientation of parts

1x (a)

1x (b)

1x (b)

1x (a)

1x (a)

1x (a)

2x (b)

2x (b)

1x (a)

1x (a)

1x (a)

1x (a)

2x (b)

2x (b)

17

BASE PROFILE

3 add end caps

a.) 4x profile_cover_cap_120x40_I-type_8

4 join base aluminum profiles

insert the inner connectors of the 40x120 profiles
in the inner groove of the 40x80 profiles

5 tighten all inner connector grub screws

! Attention: tighten all inner connector grub screws, 4x in each corner

tighten
screws
tightly

1x (a)

1x (a)

1x (a)

1x (a)
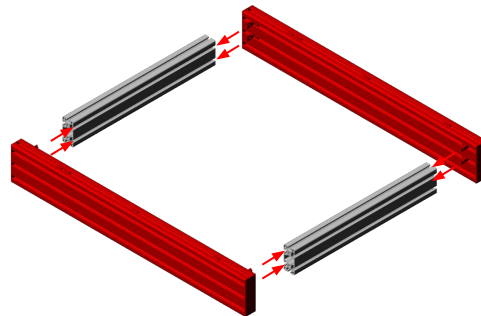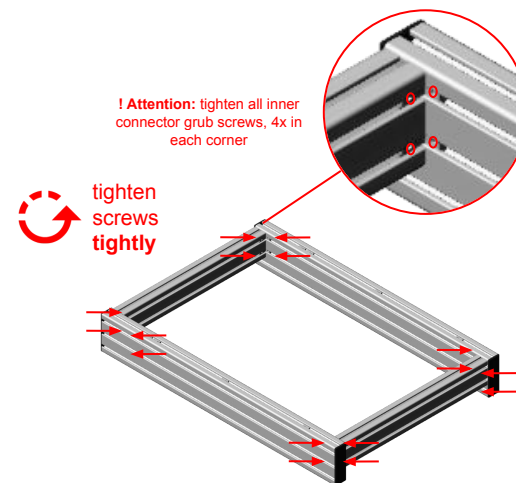
SEAT PROFILES

6 add connecting parts to assembly the seat profile

2x aluminium_profile_black_40x40L_I-type_8_L590mm
8x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized
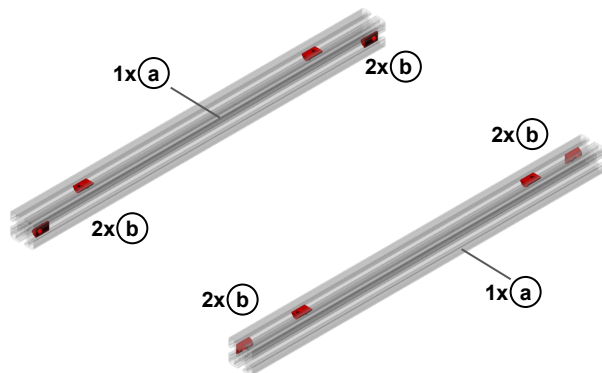
7 add caps to seat profile

a.) 4x profile_cover_cap_40x40_I-type_8

1x(a)   2x(b)

2x(b)

2x(b)

2x(b)   1x(a)

2x(a)

2x(a)
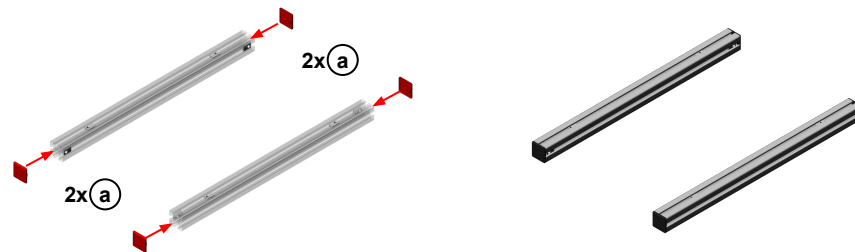
ASSEMBLY DOCUMENTATION

SEAT PROFILES

6 position angles above slot nuts and fix them with screws

a.) 4x angle_40x40_I-type_8
b.) 4x screw_M8x16_half_rounded_galvanized

1x a

tighten
screws
medium

2x b

1x a

! Attention: 4x break out teeths on one side to have a flat side on.

tighten
screws
medium

1x a

2x b

1x a

flat side without teeth
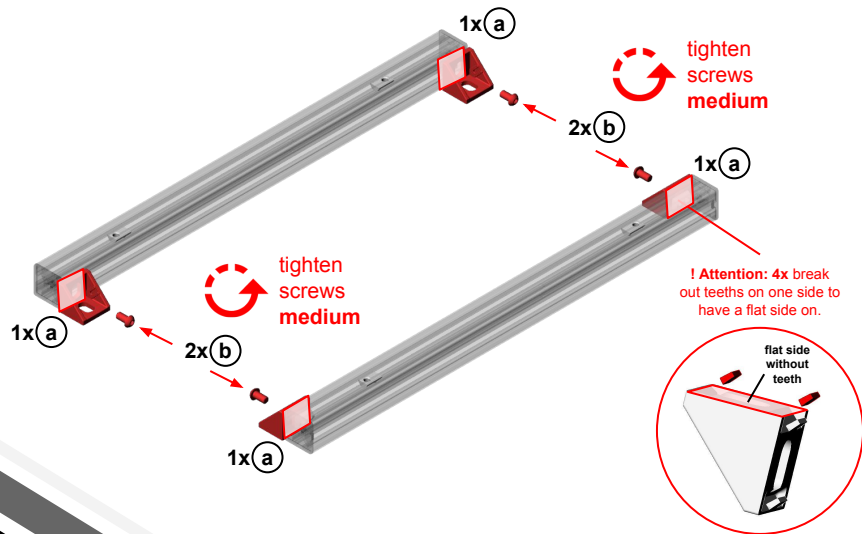
8 position seat profiles above your base profiles
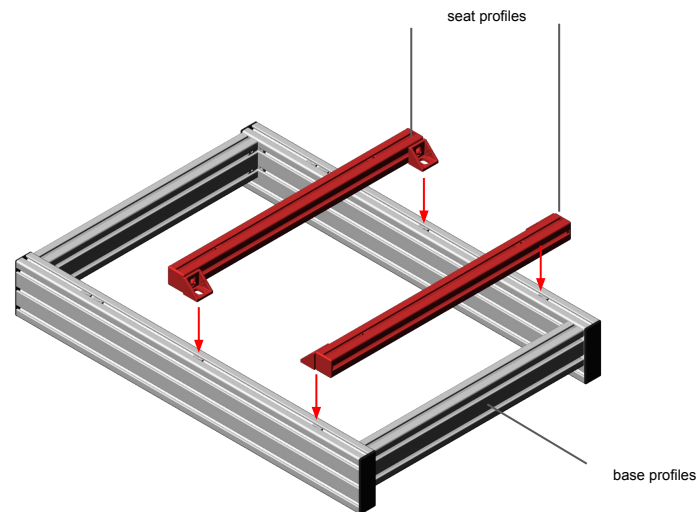
seat profiles

base profiles

SEAT PROFILES

8 add screws to fix the seat profiles on the base profiles

a.) 4x screw_M8x16_half_rounded_galvanized

! **Attention:** angles must be aligned with before placed slot nuts in the base profiles

tighten screws **medium**

4x (a)
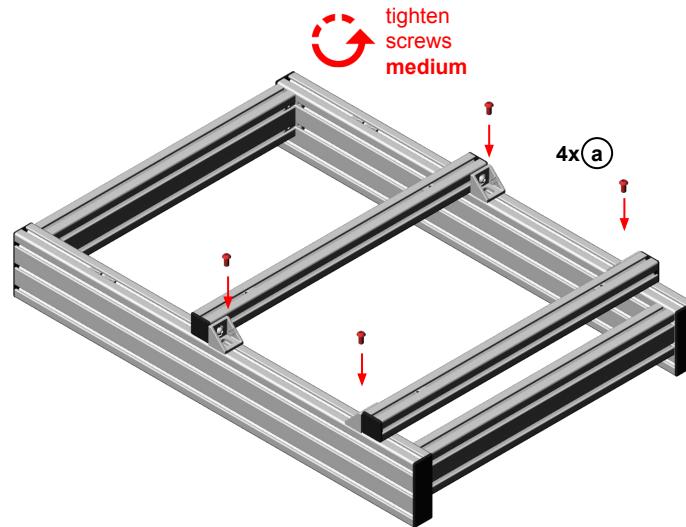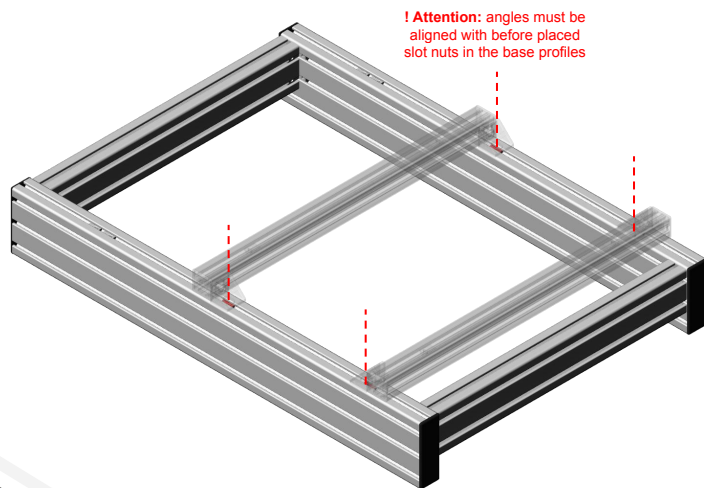
ASSEMBLY DOCUMENTATION

SEAT PROFILES

10 add caps to angles

a.) 4x angle_80x40_cover_cap_l-type_8

4x (a)
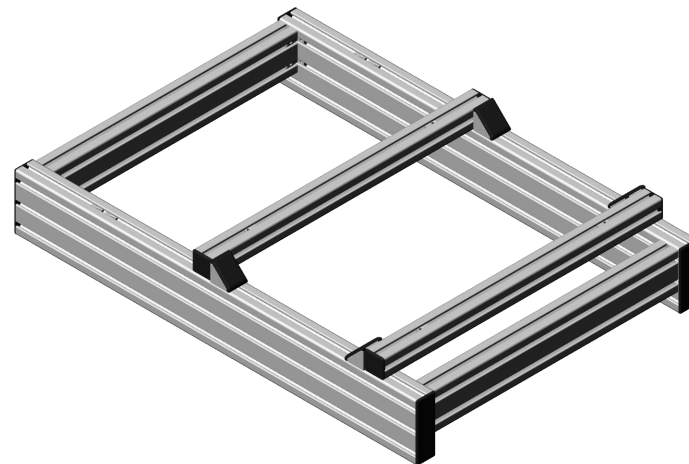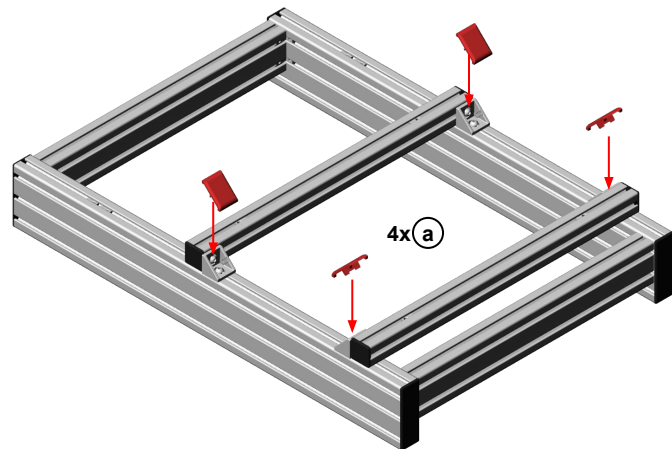
VERTICAL PROFILES

11 add end caps to vertical profiles
a.) aluminium_profile_black_40x120L_I-type_8_L600mm
b.) 2x profile_cover_cap_120x40_I-type_8

1x ⓐ

1x ⓑ

1x ⓐ

1x ⓐ
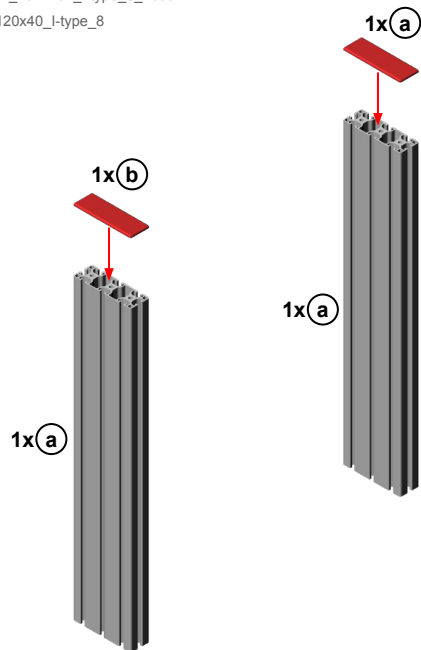
12 add slot nuts to vertical profiles
a.) 14x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

14x ⓐ
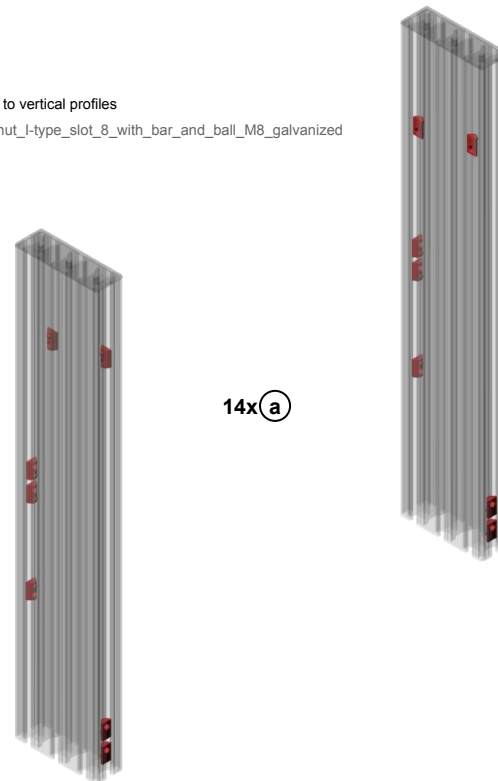
VERTICAL PROFILES

12   place vertical profiles on base profiles

vertical profiles
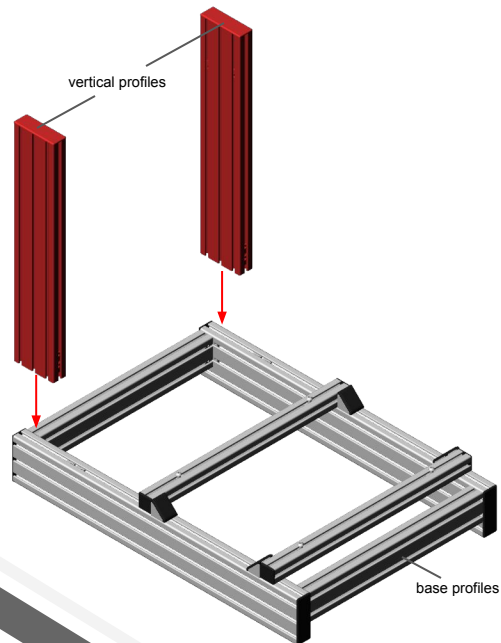
base profiles

13   add angles to connect vertical profiles with base profiles

a.) 2x angle_80x40_I-type_8

2x (a)

! Attention: slot nuts holes must be aligned with the holes of the angle
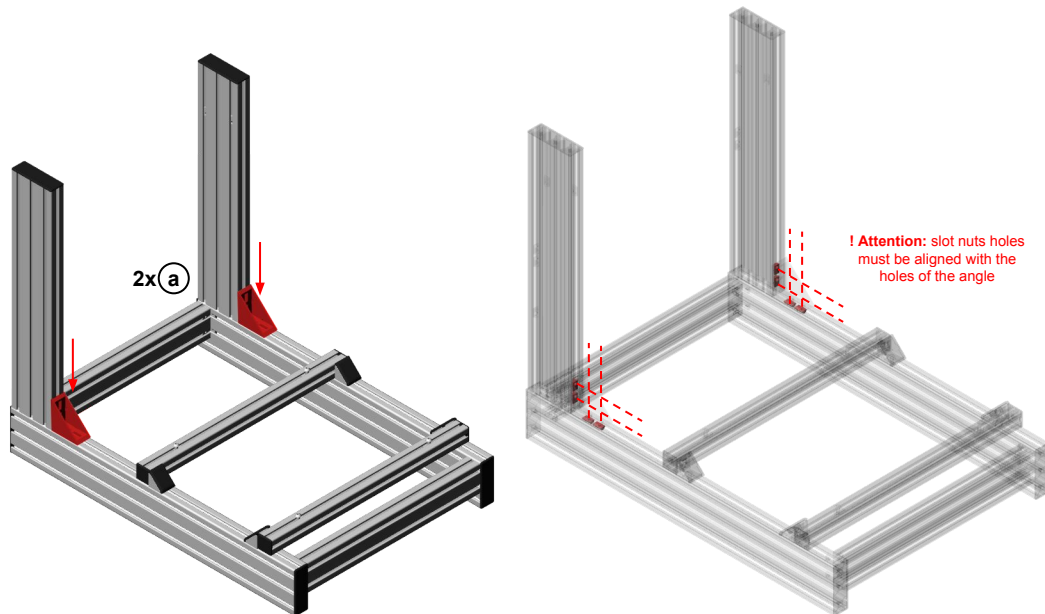
VERTICAL PROFILES

14 add screws to fix vertical profiles with base profiles
a.) 8x screw_M8x16_half_rounded_galvanized
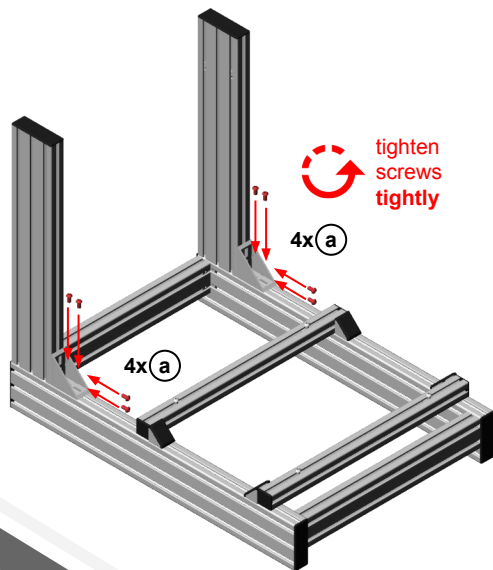
15 add caps to angles
a.) 2x angle_40x40_cover_cap_l-type_8

tighten
screws
tightly

4x (a)

4x (a)

2x (a)
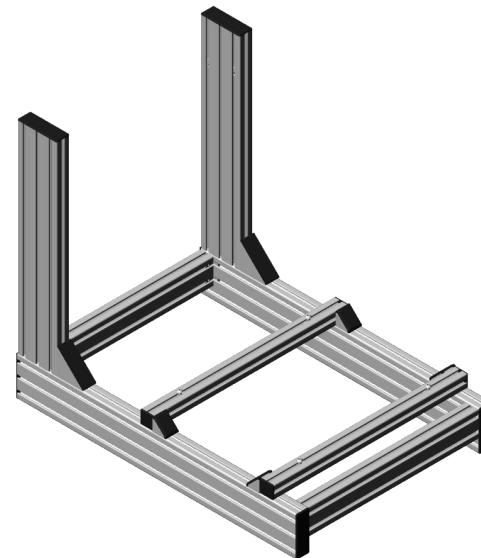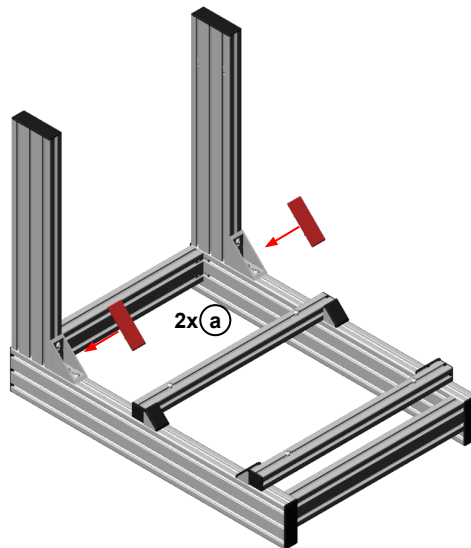
PEDAL PROFILES

16 start assembly the pedals profiles with the caps

a.) 2x aluminium_profile_black_40x80L_I-type_8_L500mm

b.) 2x profile_cover_cap_80x40_I-type_8
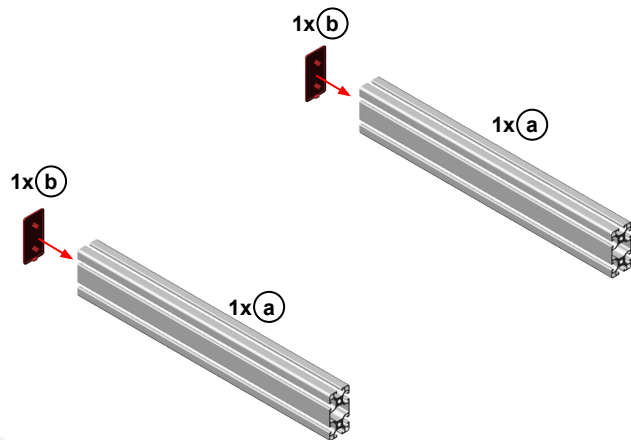
17 insert slot nuts and inner connectors to the pedal profiles

a.) 8x inner_connector_I-type_slot_8

b.) 8x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

1x b

1x a

1x b

1x a

! Attention: check correct orientation of parts

1x a

1x a

4x b

1x a

4x b
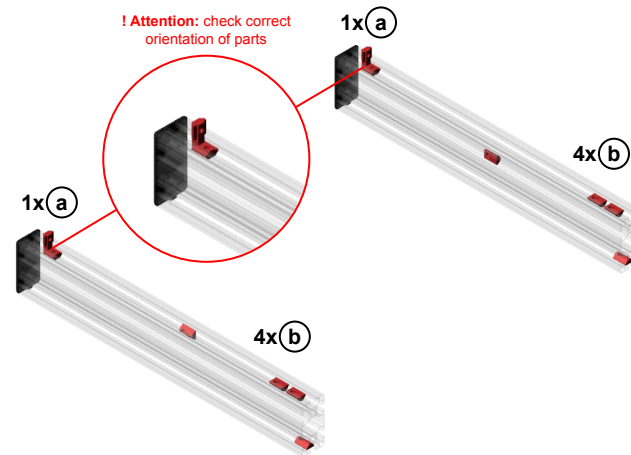
PEDAL PROFILES

18 add angles to pedal profile
a.) 2x angle_80x40_l-type_8
b.) 2x angle_40x40_l-type_8
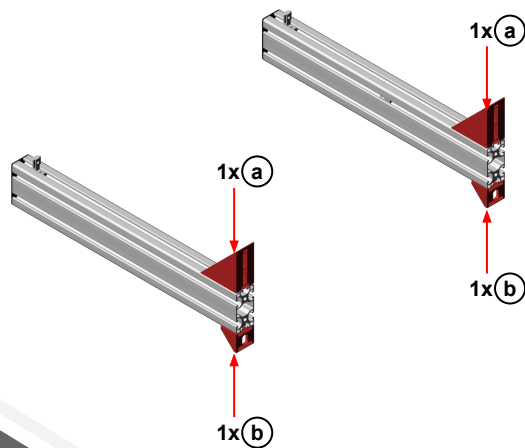
19 add caps to angles
a.) 6x screw_M8x16_half_rounded_galvanized

1x (a)

1x (a)

1x (b)

1x (b)

! **Attention:** slot nuts holes must be aligned with the holes of the angle

tighten screws **tightly**

3x (a)

3x (a)

tighten screws **tightly**
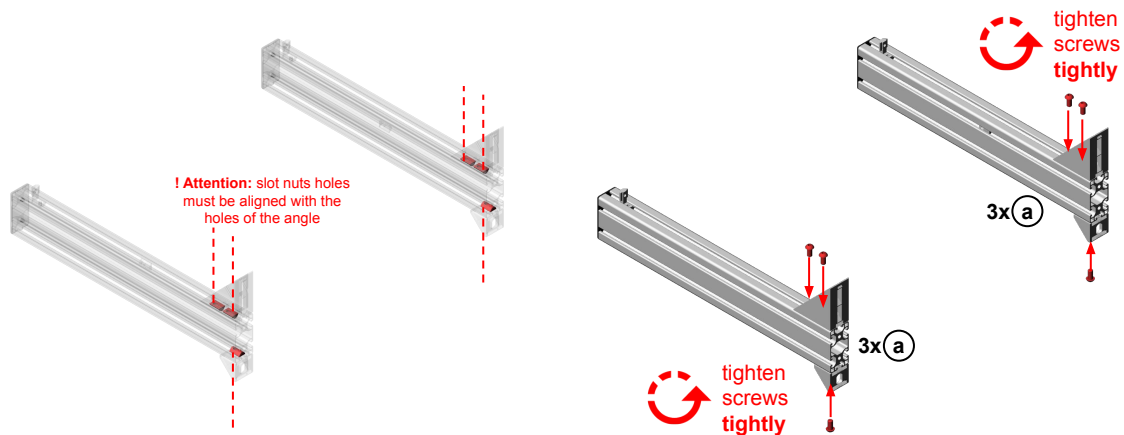
PEDAL PROFILES

20 add caps to small pedal profile
a.) 2x profile_cover_cap_40x40_I-type_8

21 insert slot nuts into small pedal profile
a.) 2x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

1x a

1x a

1x a

1x a

PEDAL PROFILES

22 add caps to small pedal profile
a.) 2x profile_cover_cap_40x40_l-type_8

small pedal profiles
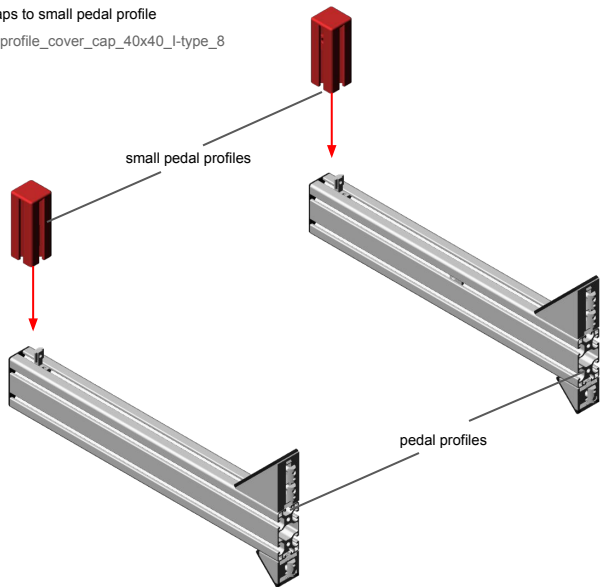
pedal profiles

23 tighten inner connectors to connect pedal profiles with small pedal profiles

tighten screws **medium**

tighten screws **medium**
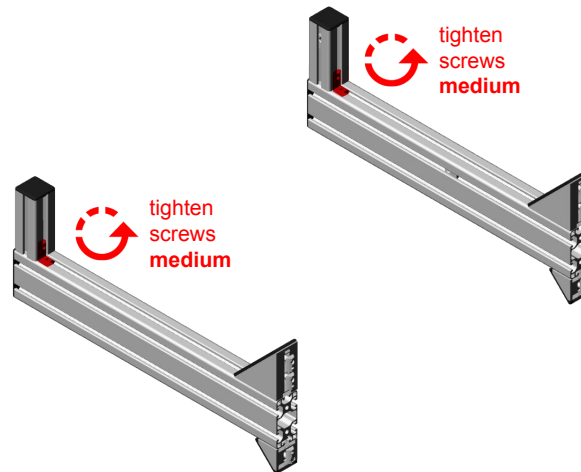
PEDAL PROFILES

24 place the pedal profiles to the base profiles
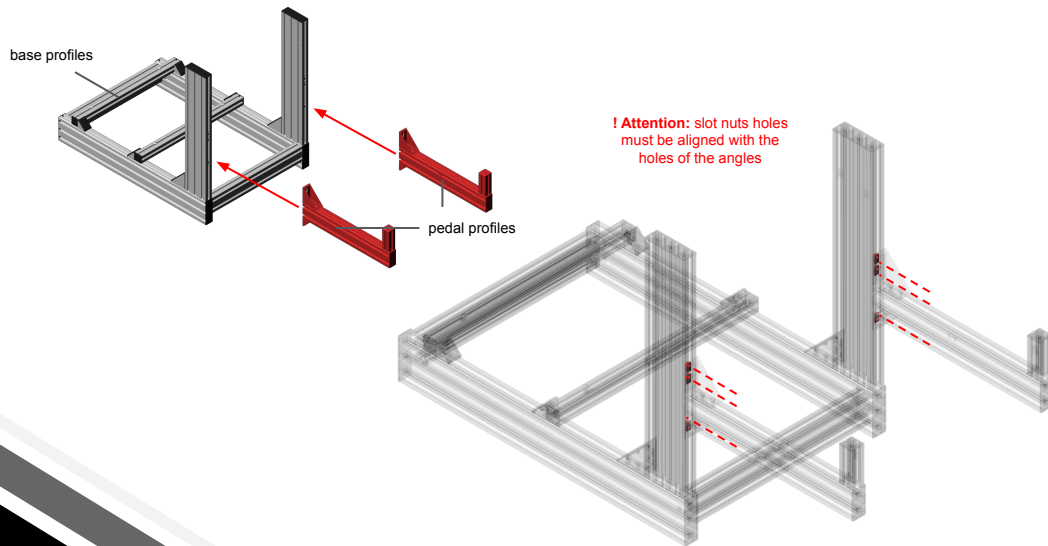
25 fit the pedal profiles to your base profiles
a.) 6x screw_M8x16_half_rounded_galvanized

base profiles

! **Attention:** slot nuts holes must be aligned with the holes of the angles

pedal profiles

tighten screws **tightly**

tighten screws **tightly**
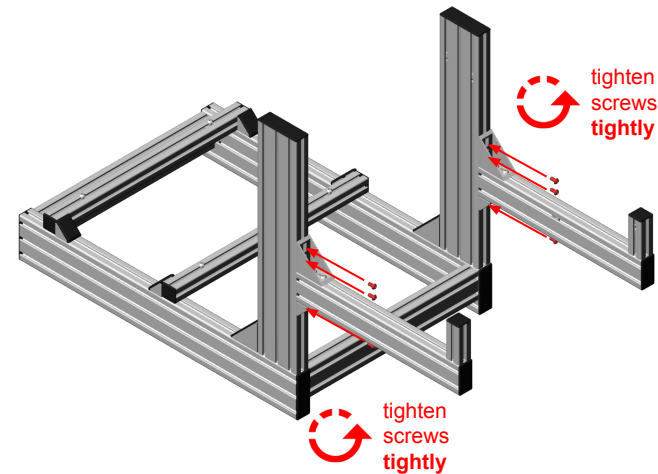
PEDAL PROFILES

26 place the pedal profiles to the base profiles

a.) 2x angle_40x40_cover_cap_I-type_8

b.) 2x angle_80x40_cover_cap_I-type_8

1x(a)

1x(a)

1x(b)

1x(b)
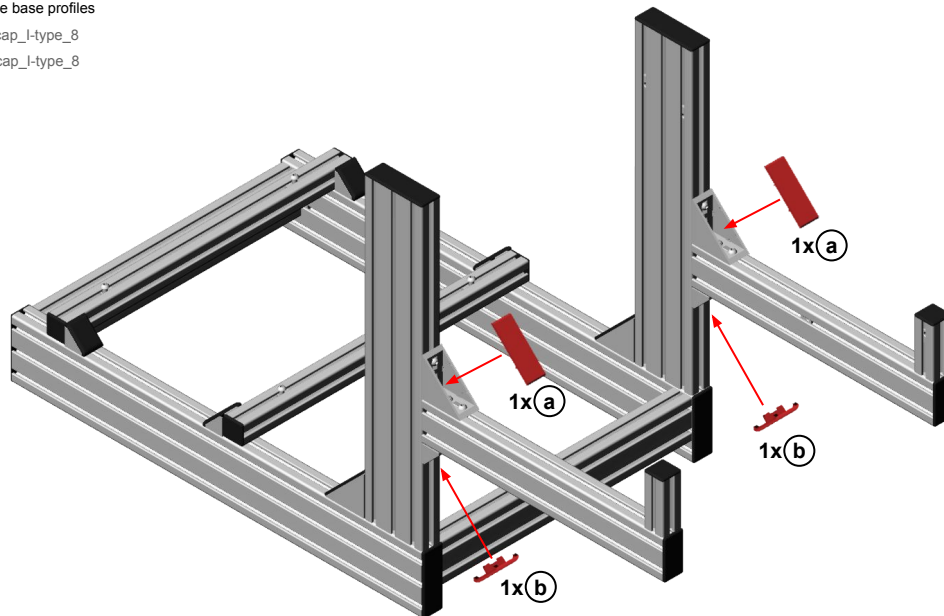
PEDAL RECEIVER PROFILES

27 start assembly the pedal receiver profiles

a.) 2x aluminium_profile_black_40x40L_I-type_8_L520mm

b.) 8x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

2x (b)

2x (b)

2x (a)

2x (b)

2x (b)
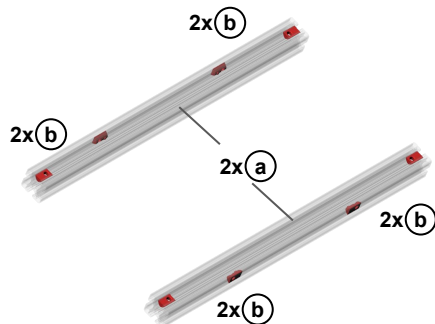
28 add caps to angles

a.) 8x angle_40x40_I-type_8

! Attention: 2x break out teeths on one side to have a flat side on.

flat side without teeth

8x (a)

! Attention: 2x break out teeths on one side to have a flat side on.

flat side without teeth

! Attention: 4x break out teeths on one side to have a flat side on.

flat side without teeth

! Attention: slot nuts holes must be aligned with the holes of the angle
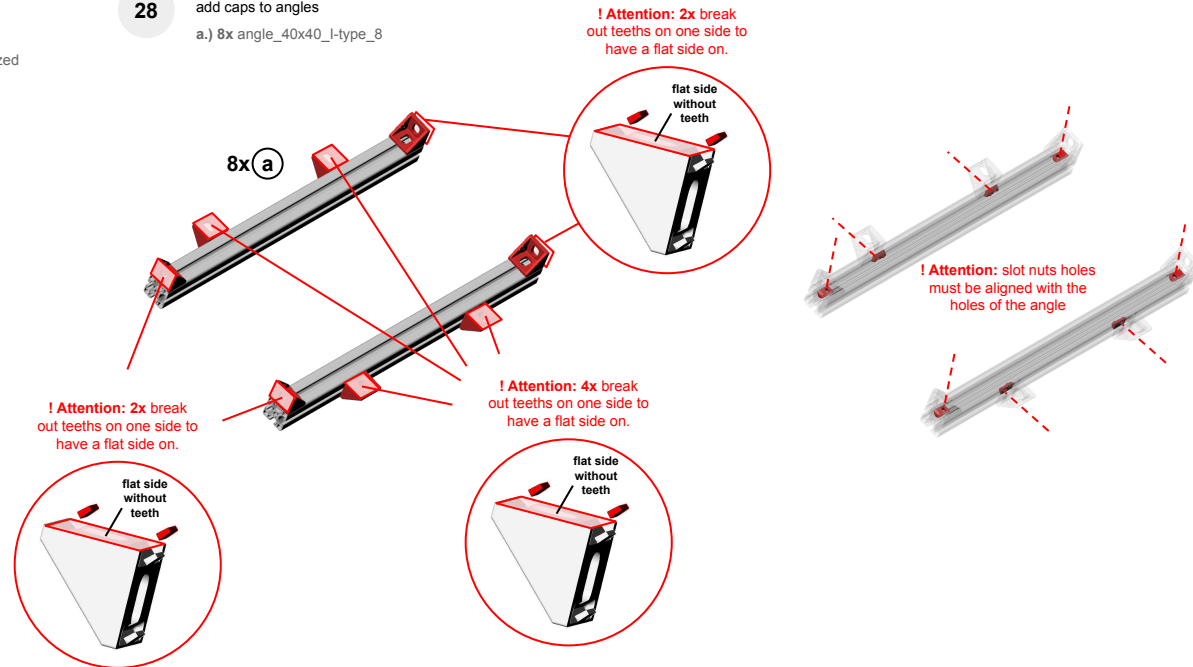
PEDAL RECEIVER PROFILES

27 fix the angles with screws to the pedals receiver profiles
**a.) 8x** angle_40x40_I-type_8

8x (a)

tighten
screws
medium
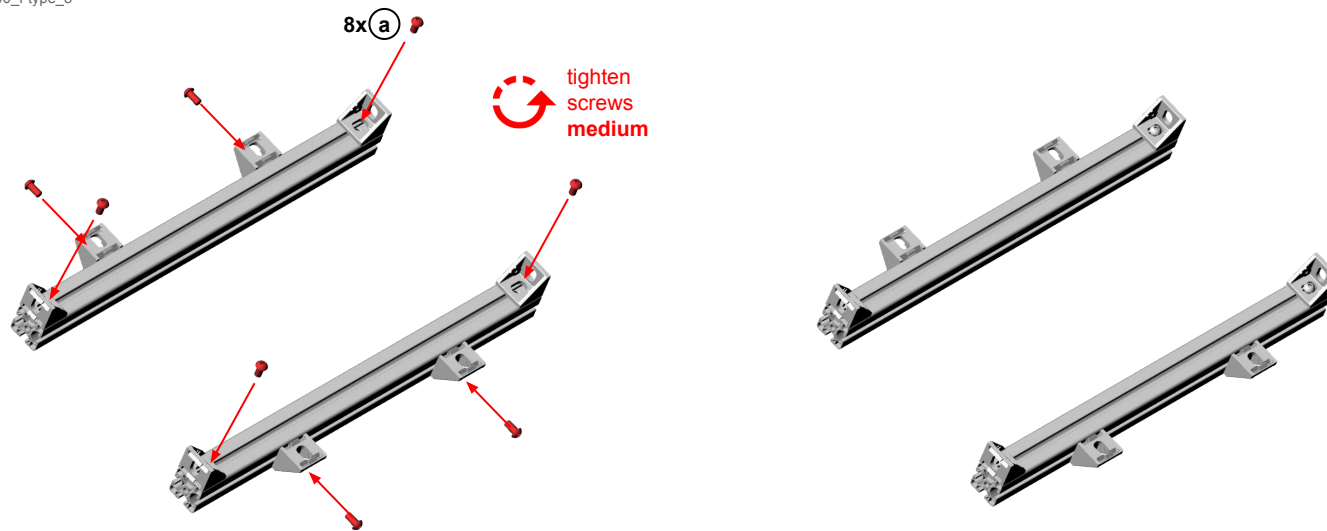
PEDAL RECEIVER PROFILES

27 place the pedal receiver profiles in the pedal profiles

pedal receiver profiles

pedal profiles

! **Attention:** slot nuts holes must be aligned with the holes of the angle
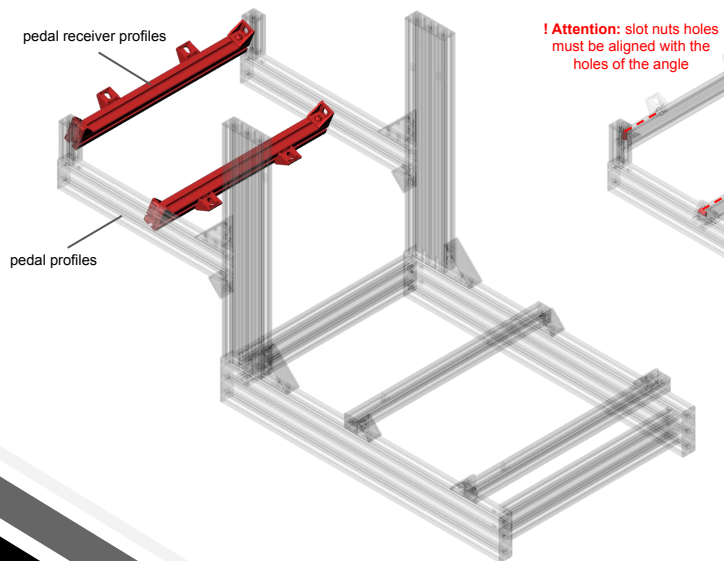
25 fit the pedal receiver profiles to your pedals profiles

a.) 4x screw_M8x16_half_rounded_galvanized

4x (a)

tighten screws **medium**
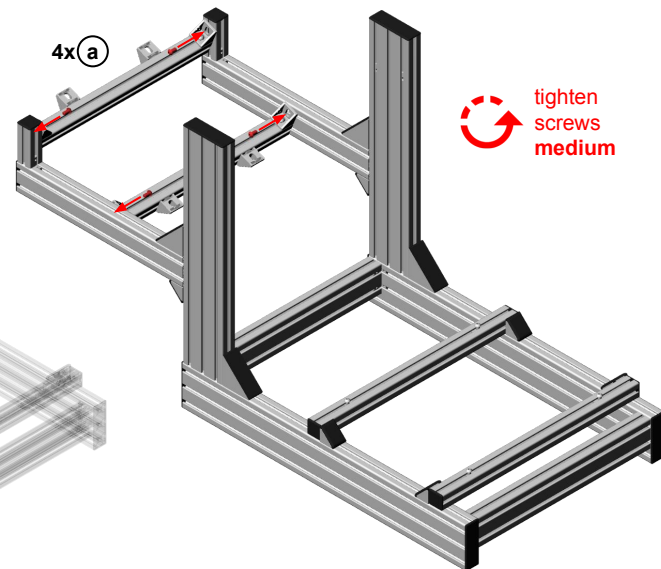
ÜBERSCHRIFT

27 place the caps on the angles
a.) 4x angle_80x40_cover_cap_I-type_8
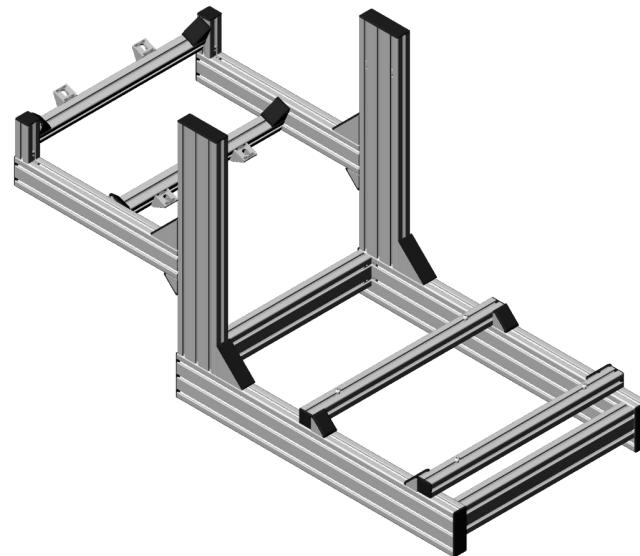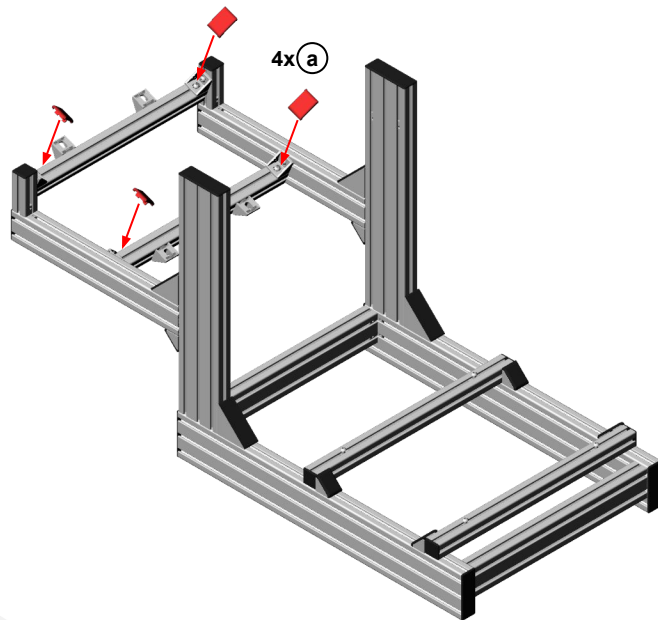
4x (a)

WHEELBASE PROFILES

27 place the slot nuts in the wheelbase profiles

a.) 2x aluminium_profile_black_40x40L_I-type_8_L520mm

b.) 8x slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

15 place angles on the wheelbase profiles
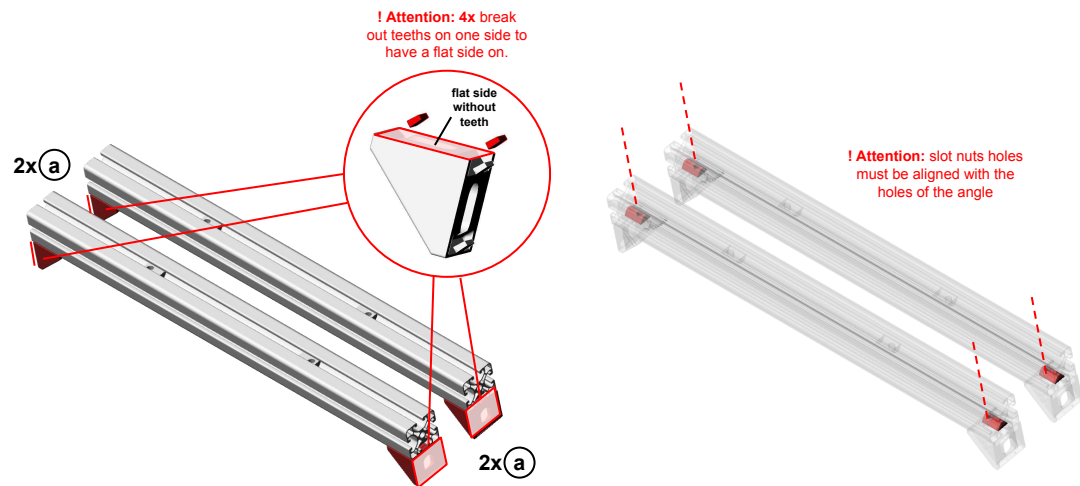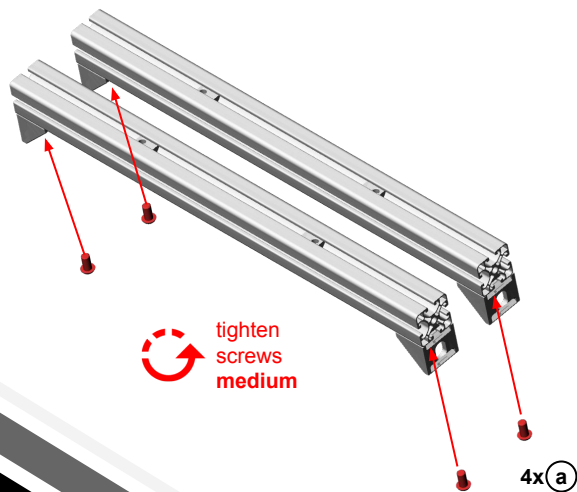
a.) 4x angle_40x40_I-type_8

2x (a)

1x (a)

2x (a)

2x (a)

1x (a)

2x (a)

2x (a)

2x (a)

2x (a)

! Attention: 4x break out teeths on one side to have a flat side on.

flat side without teeth

! Attention: slot nuts holes must be aligned with the holes of the angle

WHEELBASE PROFILES

27 place the slot nuts in the wheelbase profiles
a.) 4x screw_M8x16_half_rounded_galvanized

15 place angles on the wheelbase profiles
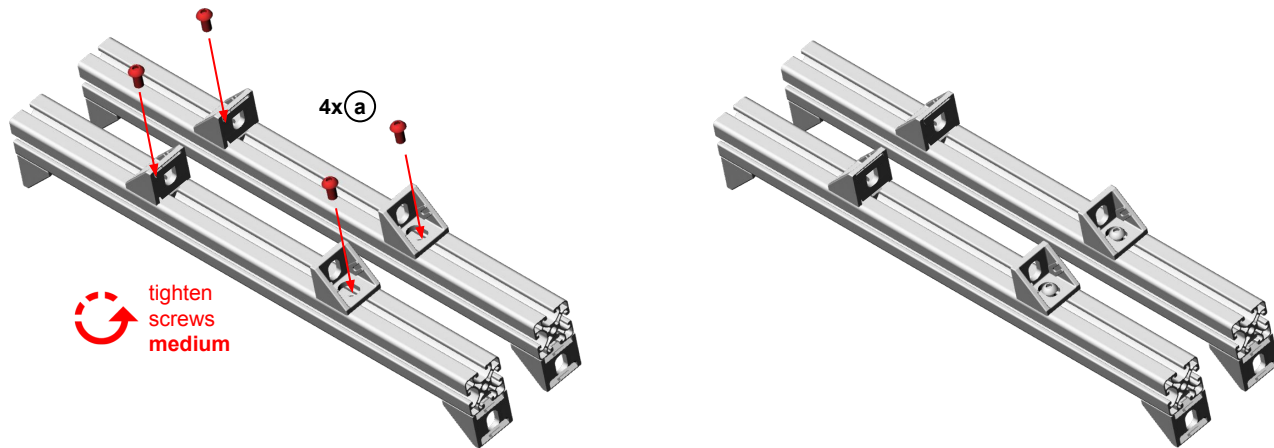**a.) 4x** angle_40x40_I-type_8

! Attention: 4x break out teeths on one side to have a flat side on.

flat side without teeth

4x a

! Attention: slot nuts holes must be aligned with the holes of the angle

tighten
screws
medium

4x a

4x a
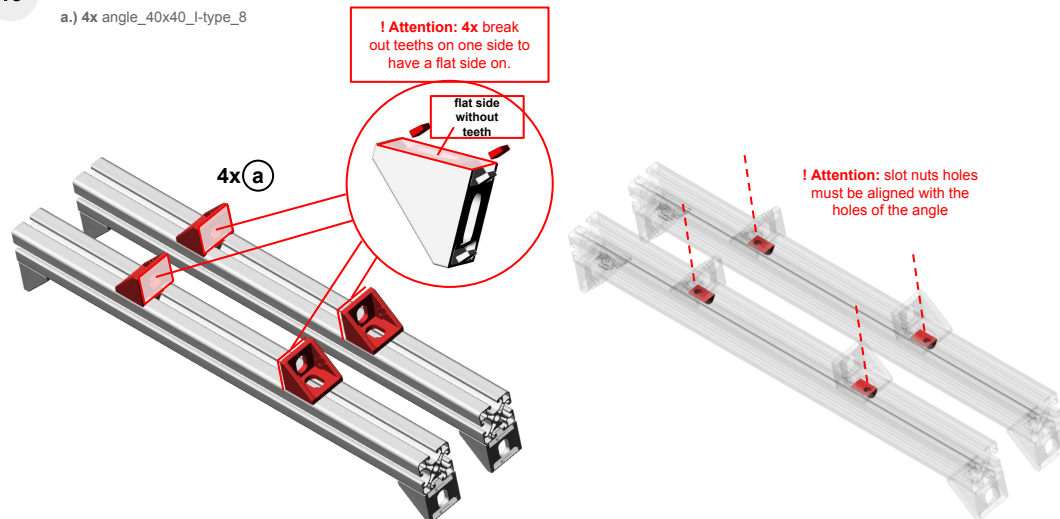
WHEELBASE PROFILES

27 fit the angles to your wheelbase profiles

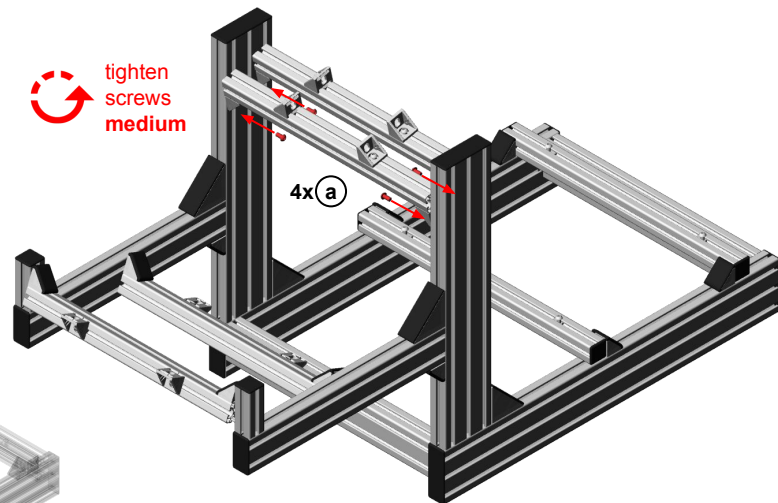**a.) 4x** screw_M8x16_half_rounded_galvanized

4x (a)

tighten
screws
medium

WHEELBASE PROFILES

27 place the wheelbase profiles to the vertical profiles
a.) 4x screw_M8x16_half_rounded_galvanized

wheelbase profiles

vertical profiles

! Attention: slot nuts holes must be aligned with the holes of the angle
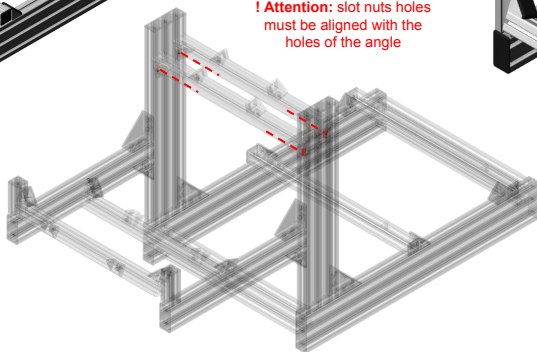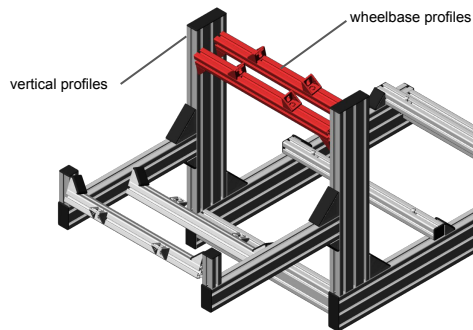
15 fit the angles to your wheelbase profiles
a.) 4x screw_M8x16_half_rounded_galvanized

tighten screws **medium**

4x (a)

SMALL WHEELBASE PROFILES

27 add caps to small wheelbase profiles

a.) 2x aluminium_profile_black_40x40L_I-type_8_L300mm

b.) 4x profile_cover_cap_40x40_I-type_8
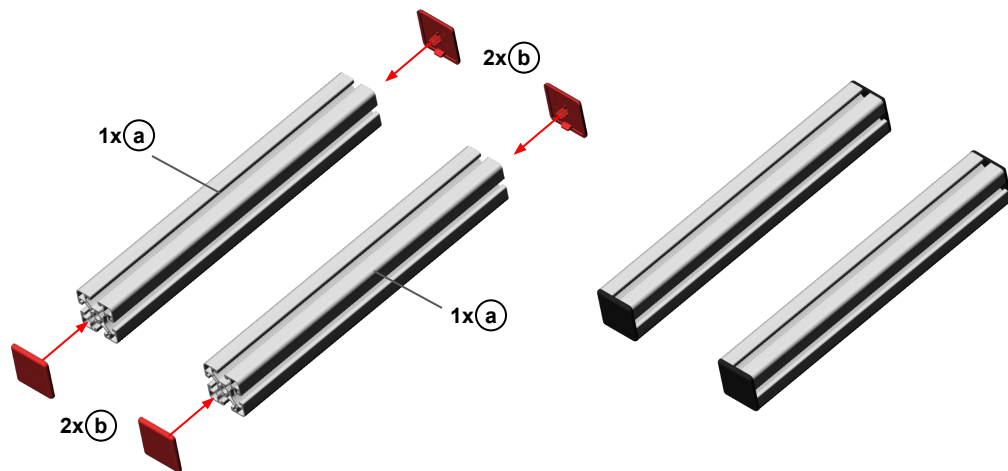
15 inser slot nuts to small wheelbase profiles

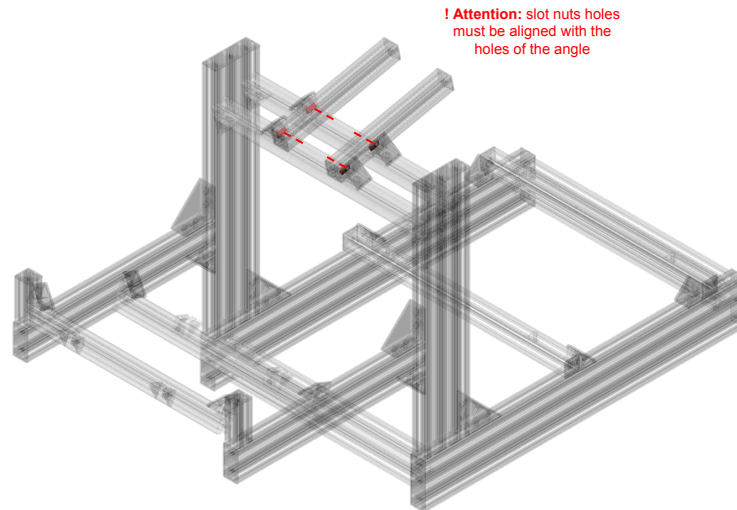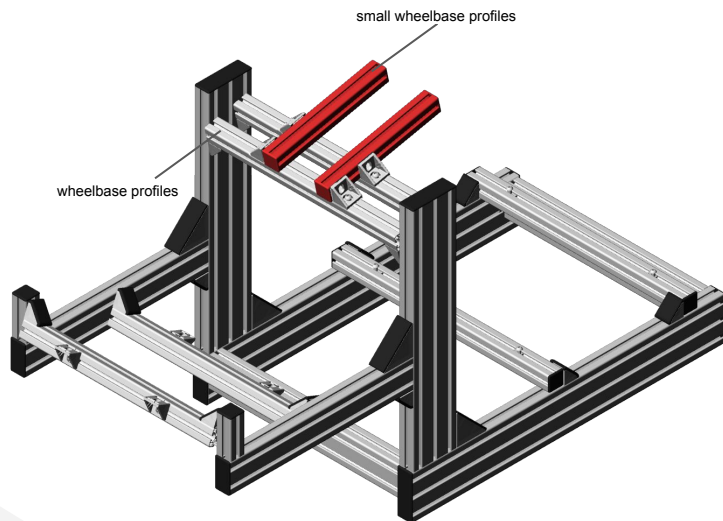**a.) 4x** slot_nut_I-type_slot_8_with_bar_and_ball_M8_galvanized

2x ⓑ

1x ⓐ

1x ⓐ

2x ⓑ

SMALL WHEELBASE PROFILES

27 place the small wheelbase profiles to the wheelbase profiles
a.) 4x screw_M8x16_half_rounded_galvanized

small wheelbase profiles

wheelbase profiles

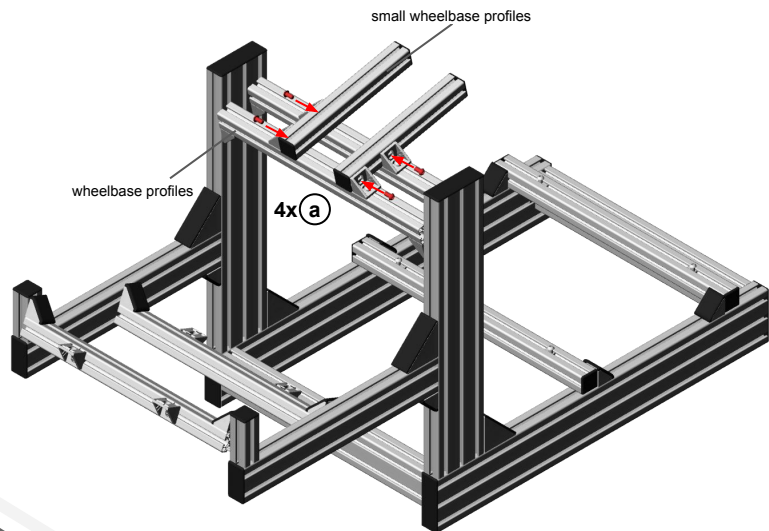**! Attention:** slot nuts holes must be aligned with the holes of the angle
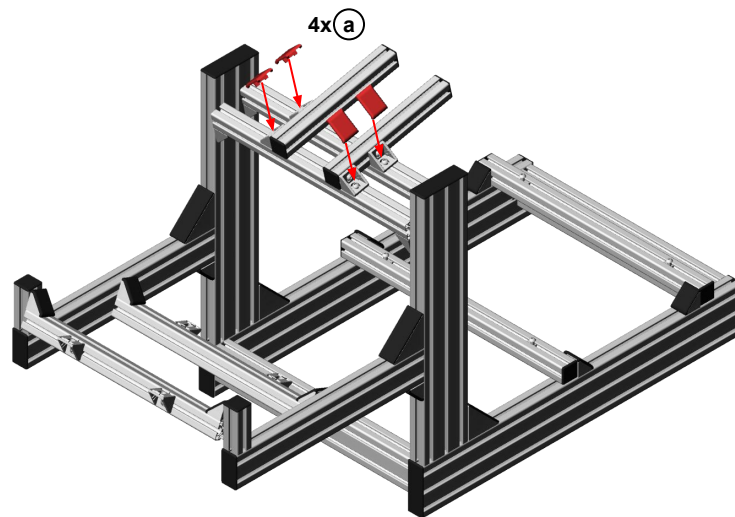
ASSEMBLY DOCUMENTATION

SMALL WHEELBASE PROFILES

27 fix small wheelbase profiles to wheelbase profiles with screws
a.) 4x screw_M8x16_half_rounded_galvanized

small wheelbase profiles

wheelbase profiles

4x (a)

15 add caps to angles
a.) 4x angle_80x40_cover_cap_l-type_8

4x (a)

SMALL WHEELBASE PROFILES
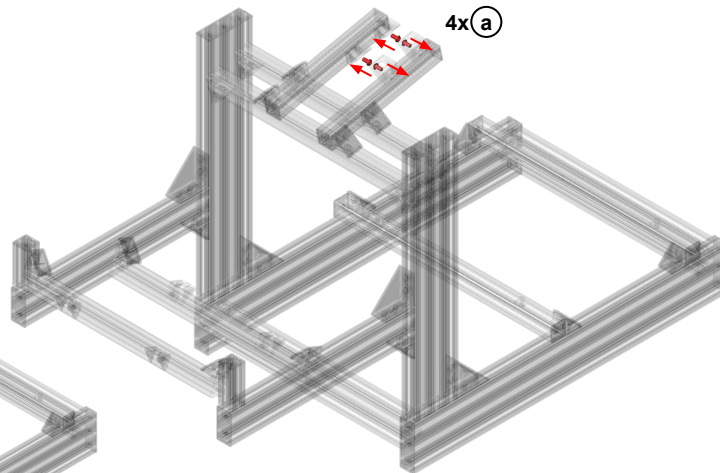
27 add angles to small wheelbase profiles
a.) 4x angle_80x40_cover_cap_I-type_8

4x (a)
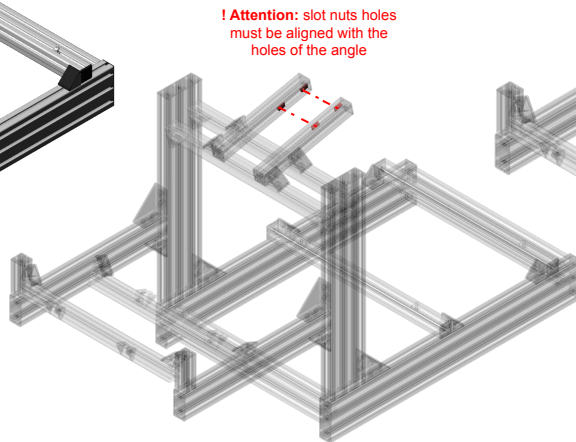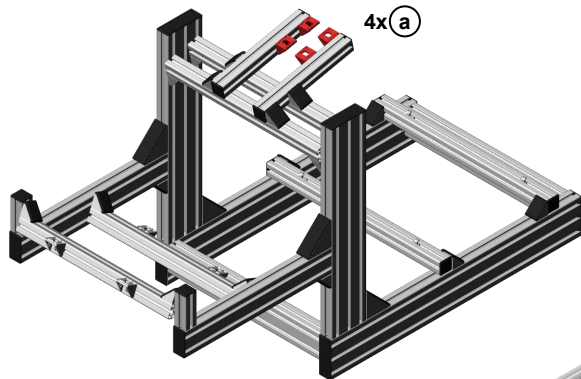
15 fix the angles to small wheelbase profiles
a.) 4x screw_M8x16_half_rounded_galvanized

4x (a)

! **Attention:** slot nuts holes
must be aligned with the
holes of the angle
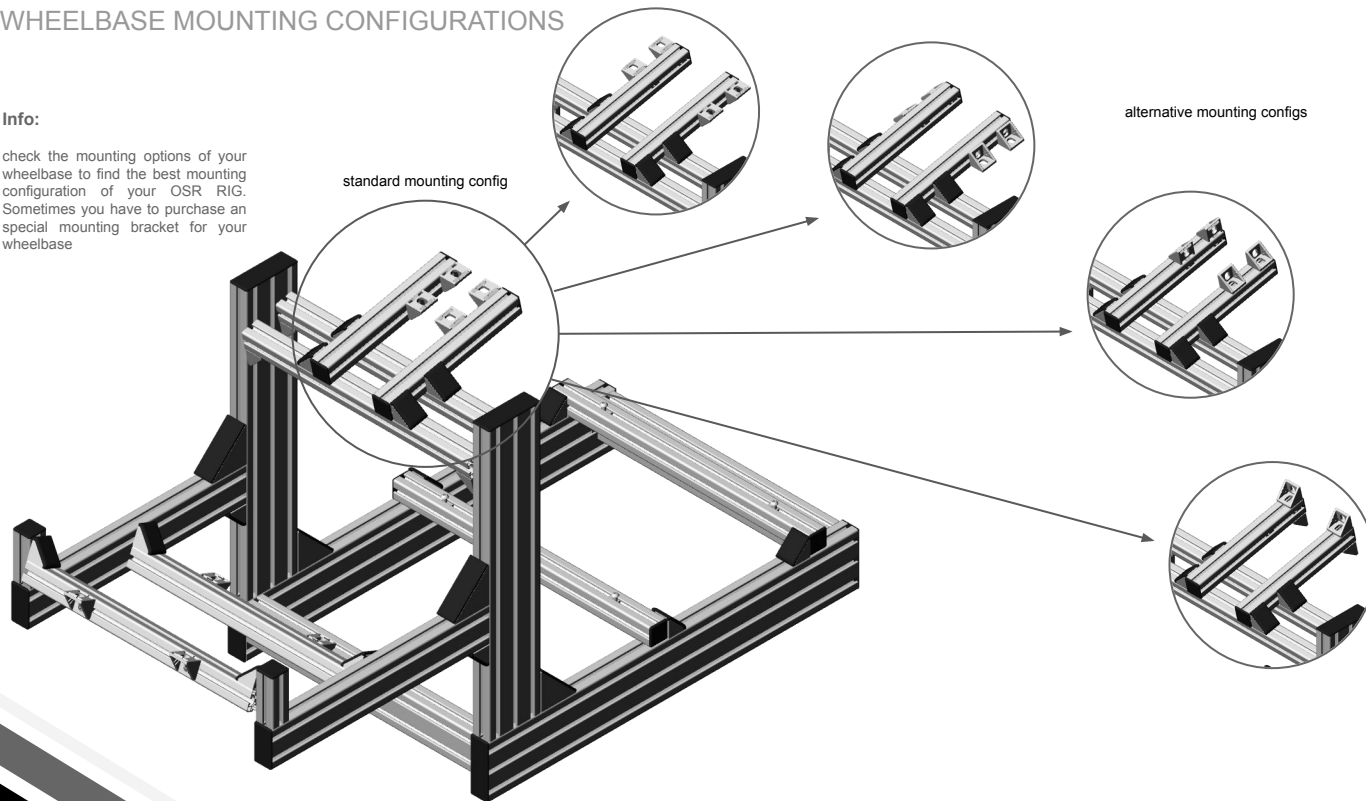
WHEELBASE MOUNTING CONFIGURATIONS

Info:

check the mounting options of your wheelbase to find the best mounting configuration of your OSR RIG. Sometimes you have to purchase an special mounting bracket for your wheelbase

alternative mounting configs

standard mounting config

DECALS
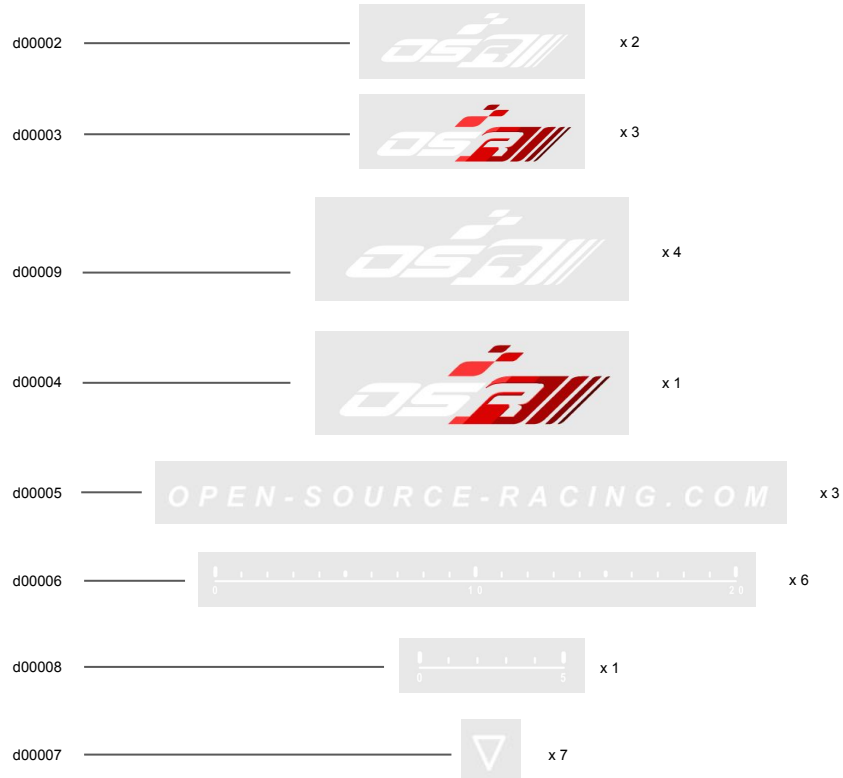
DECAL SET OSR D3001

Decals

For the OSR R3001 sim rig you have the options to print the decals set OSR D00001. You must print it two times. You can download the decals set on the links below.

Format

You can download the decals set in ISO international paper format or US letter format for your printer. There is also a reference size on the decal set, so you can also scale and print the decals set in every letter format on all printers.

Paper or Foile

You can print the decals on paper or transparent foil sheets. If you print on white paper, you must use decals set with black background.

d00002 ——————— x 2

d00003 ——————— x 3

d00009 ——————— x 4

d00004 ——————— x 1

d00005 ——— OPEN-SOURCE-RACING.COM x 3

d00006 ——————— x 6

d00008 ——————— x 1

d00007 ——————— x 7

Download OSR R3001 Decal Set

check **qr code** or link
www.open-source-racing.com
/osr-r3001/

DECALS

view: left

view: right

DECALS

d0007

d0003

d0007

d0008

d0007

d0006

d0004

d0005

view: front

view: back

DECAL MOUNTING INSTRUCTIONS

d0007

d0006

view: top

MOUNTING & ERGONOMIC ADJUSTMENTS

seat postion adjustment
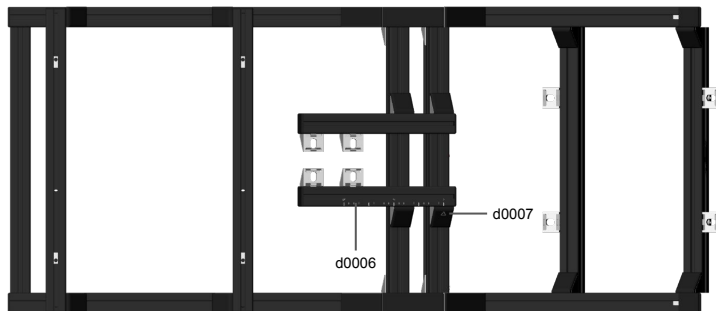
pedal height adjustment

MOUNTING & ERGONOMIC ADJUSTMENTS

wheelbase height,
angle & position
adjustment

pedal angle & position
adjustment

wheelbase mounting
adjustment
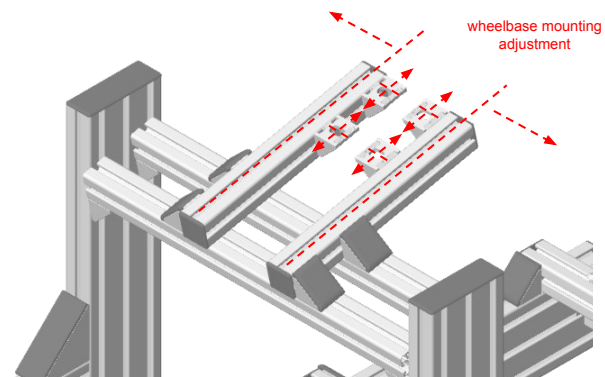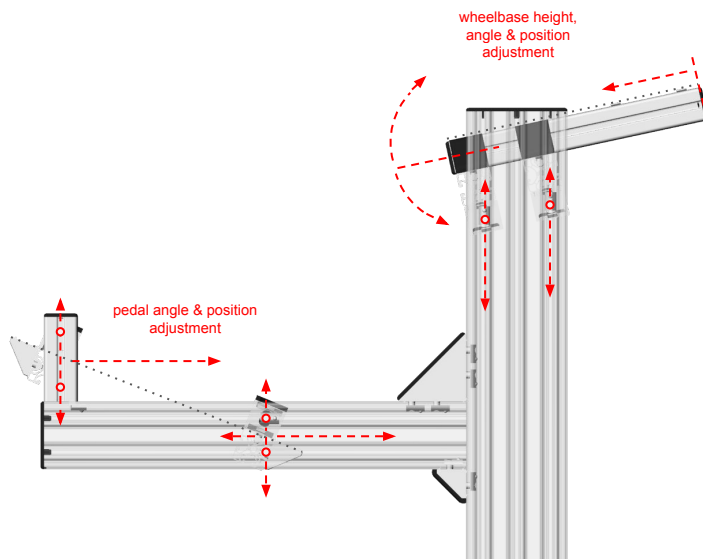
ADDITIONAL SIM ACCESSORIES

for illustration purposes
only - **not included**

OSR R3001 Sim Rig

for illustration purposes
only - **not included**

for illustration purposes
only - **not included**

for illustration purposes
only - **not included**

raising kit - **not included -**
check qr code or osr website
for suppliers

cover profile - **not included -**
check qr code or osr website
for suppliers

rolls - **not included -** check qr
code or osr website
for suppliers

stickers - **not included -**
check qr code or osr website

Check Accessories

check **qr code** or link
www.open-source-racing.com
/osr-r3001/

OSR R3001 SIM RIG

assembly documentation 231213