

4MM Shims to go on top of pillow blocks – To get correct heights

25mm to BK center + 20mm to mid point of Ball nut – total 45mm = 12mm for Z Axis Face plate = 57mm

Total Table Cutting Span = 935mm – including both faceplates
Total Table Cutting Span = 911mm – including just inside faceplates

19mm MDF mounting plate

Table half 374.5mm

50mm from mounting plate to Face plate. Face Plate 12 mm – Total distance 62mm

Steel Table width

3.5mm ground to enable Nema 23 to sit flush and in alignment with drive train

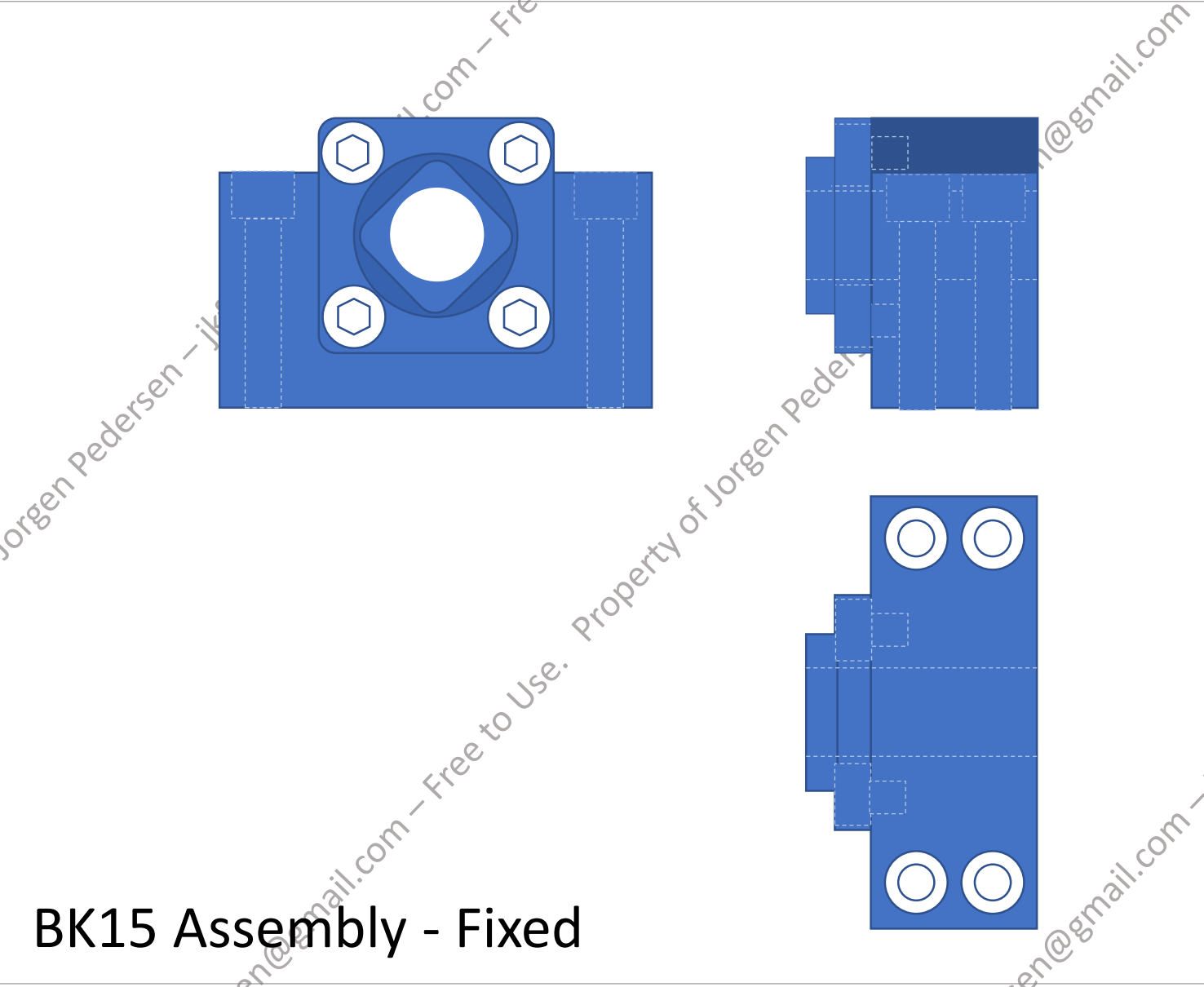
50mm

19mm

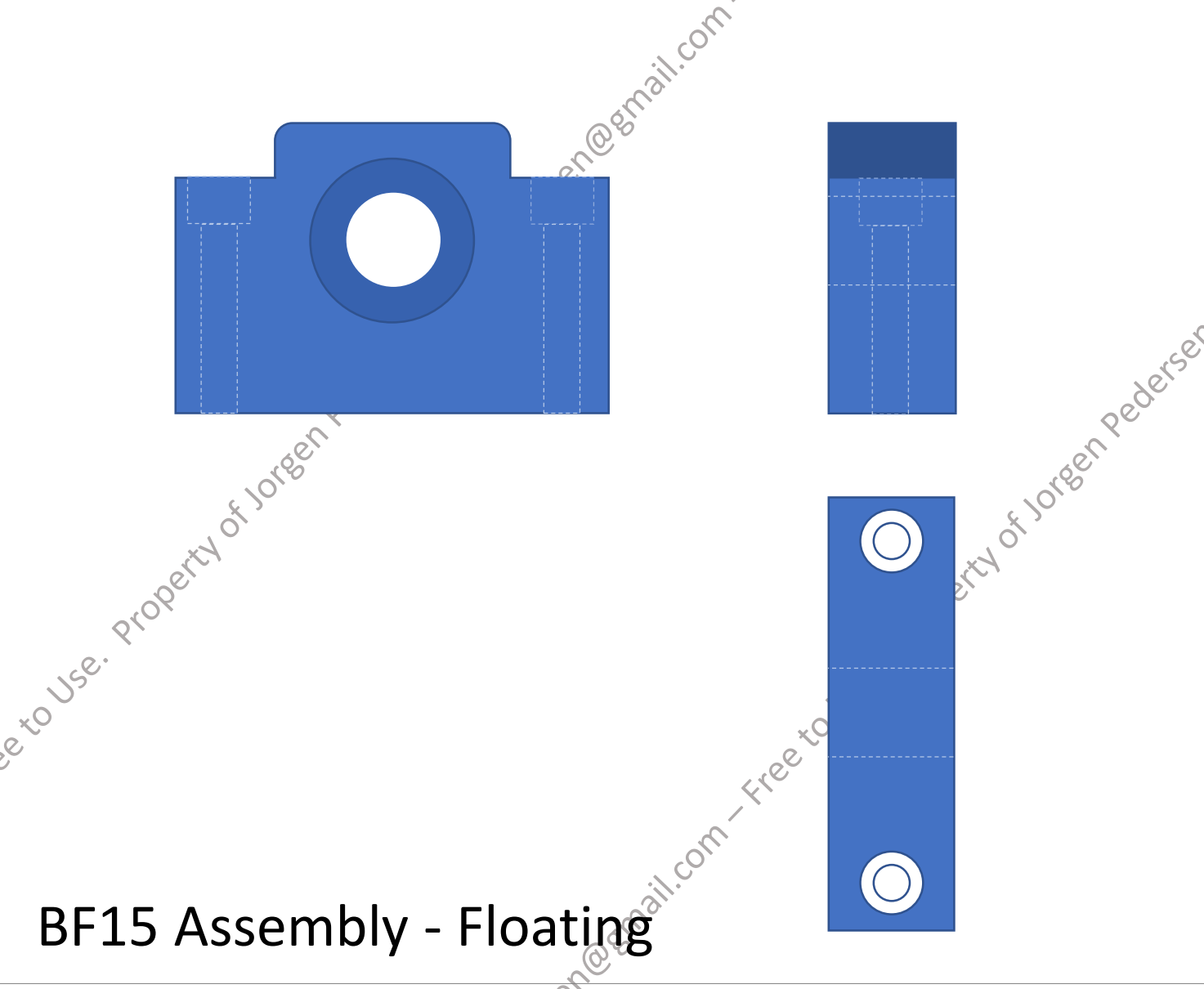
CNC Foam Cutting - Cutting Dimensions = 1700mm x 935mm
*CNC Routing/Carving – Cutting Dimensions = 1478.5mm x 935mm
*CNC Laser Cutting/Engraving – Cutting Dimensions = 1478.5mm x 840mm

- Distances do not include tool fixing widths or the half width of the tool. For example – if a CNC router is 100mm diameter and tool fixing is 10mm around the router - overall cutting dimensions will reduce by a total of 120mm
- Solid State 20-45W Laser modules are at present 80mm Square – therefore overall cutting dimensions of these will reduce by about 100mm

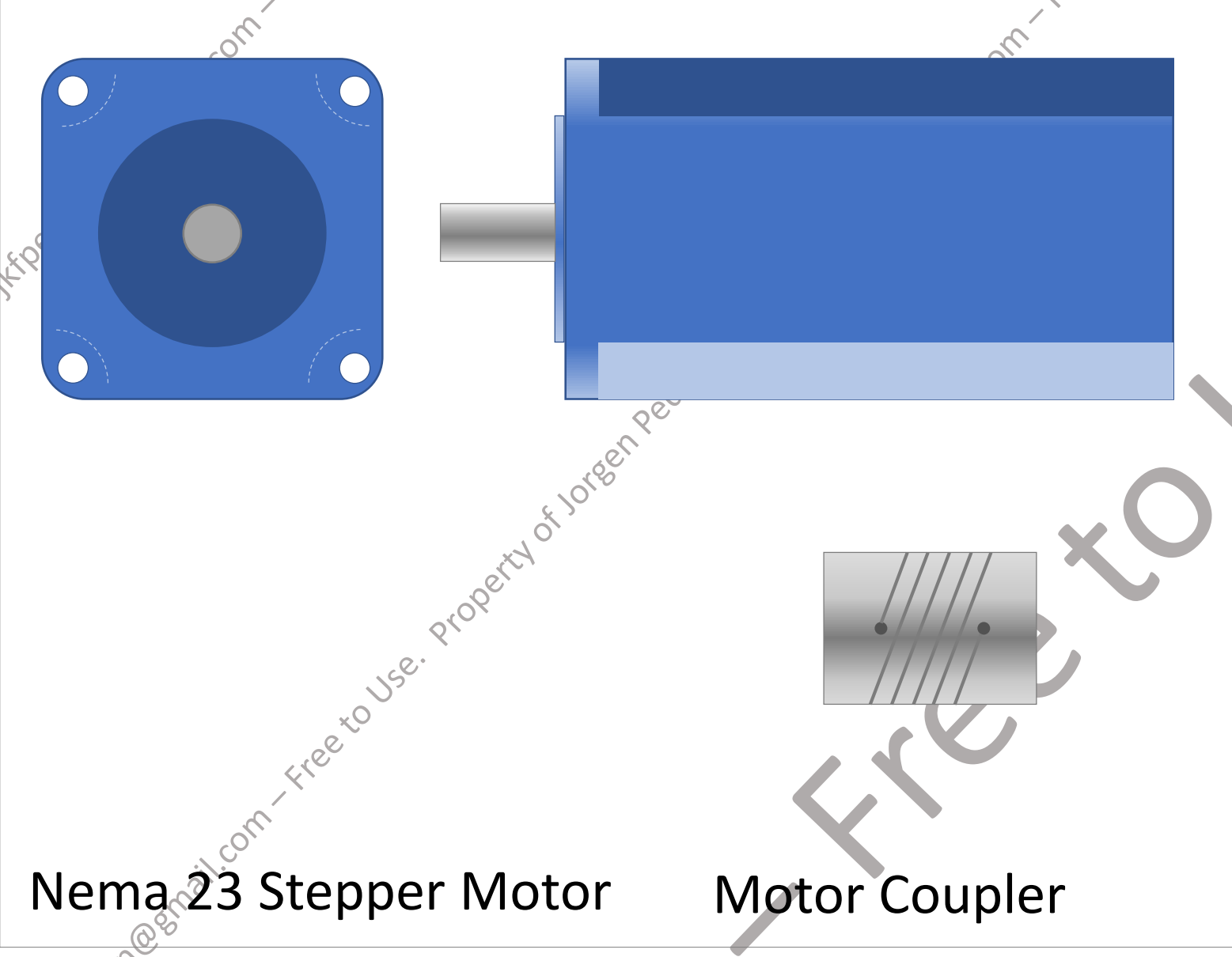
Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	General Concepts – Expected Cutting areas
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
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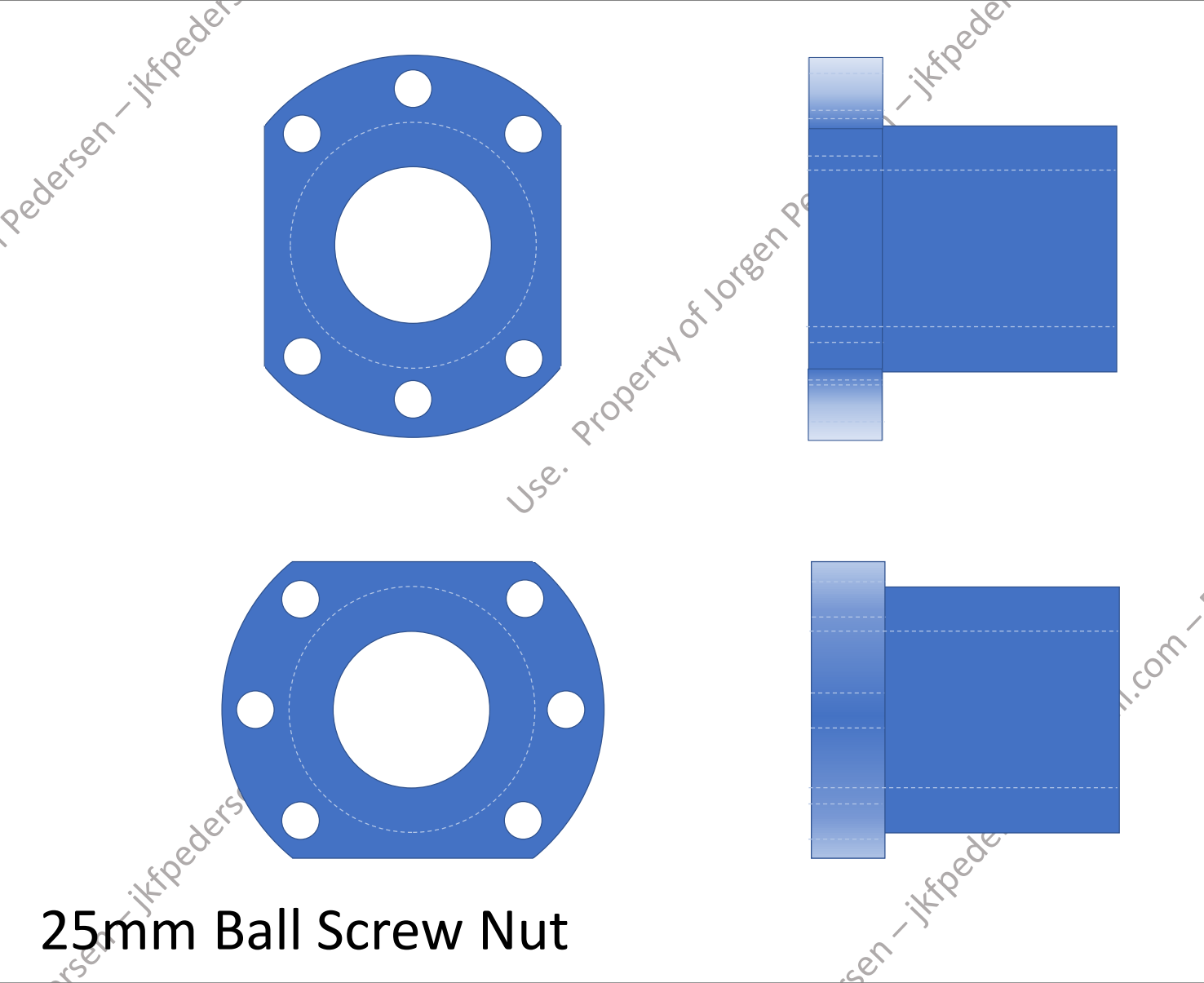
BK15 Assembly - Fixed



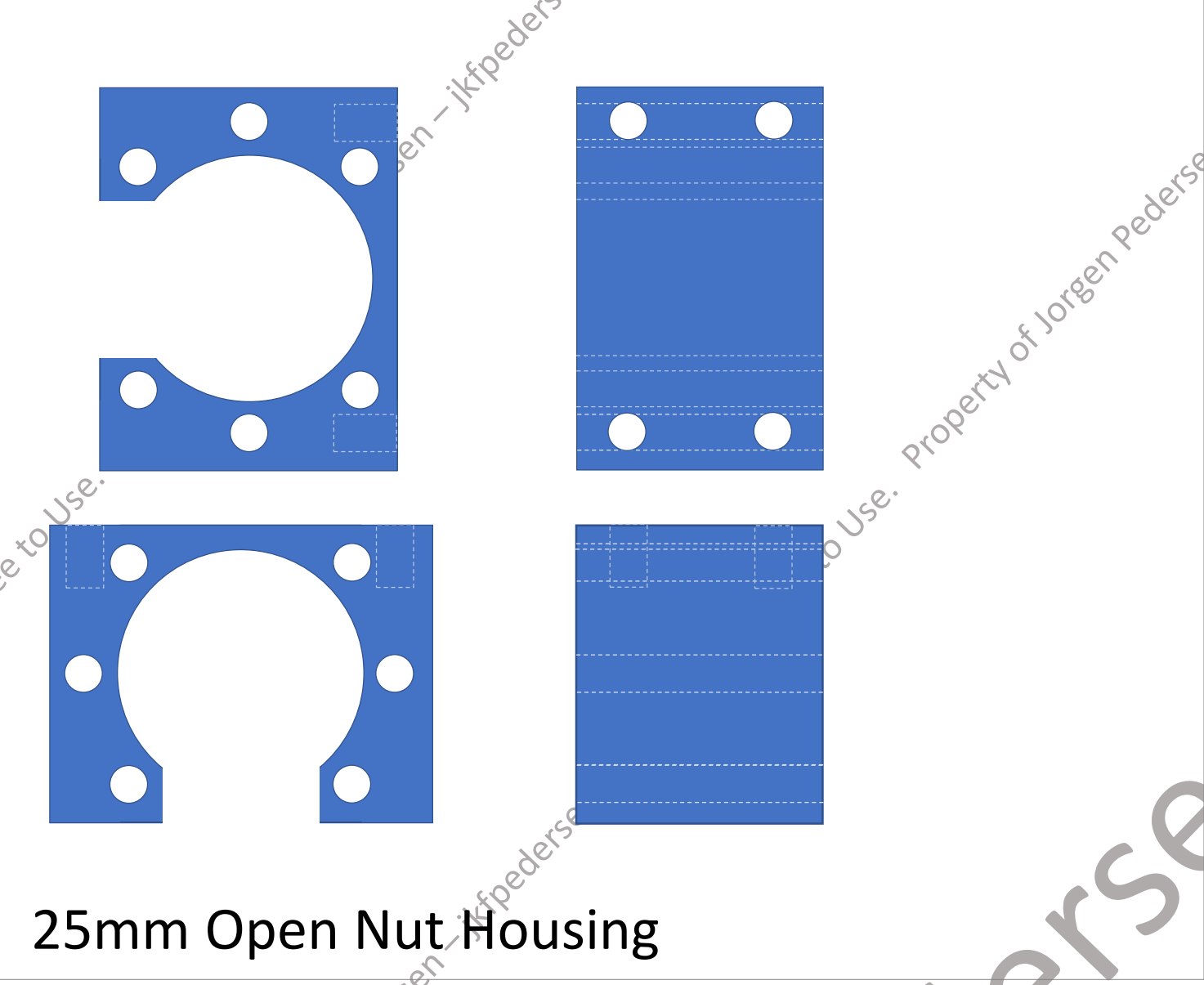
BF15 Assembly - Floating



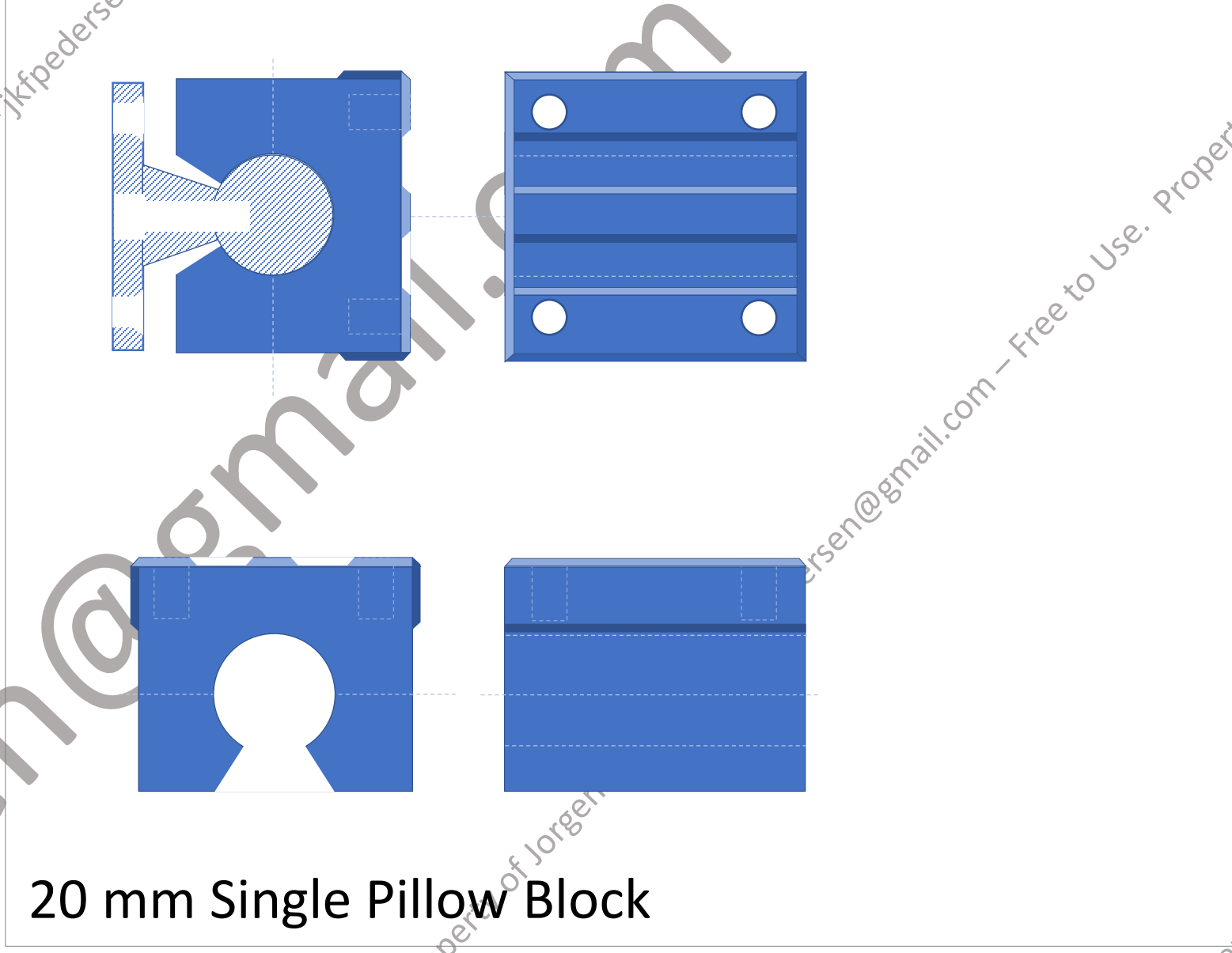
Nema 23 Stepper Motor Motor Coupler



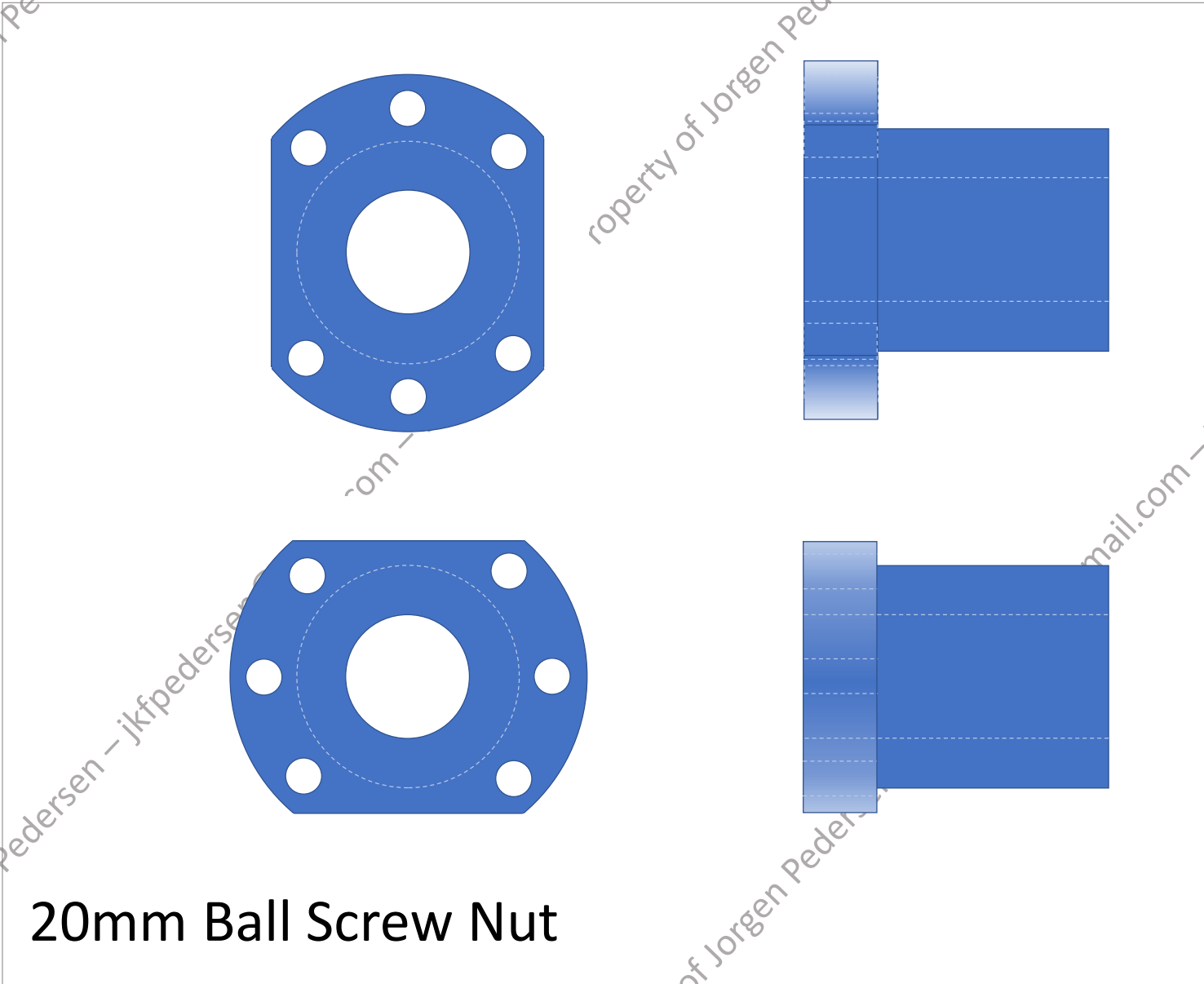
25mm Ball Screw Nut



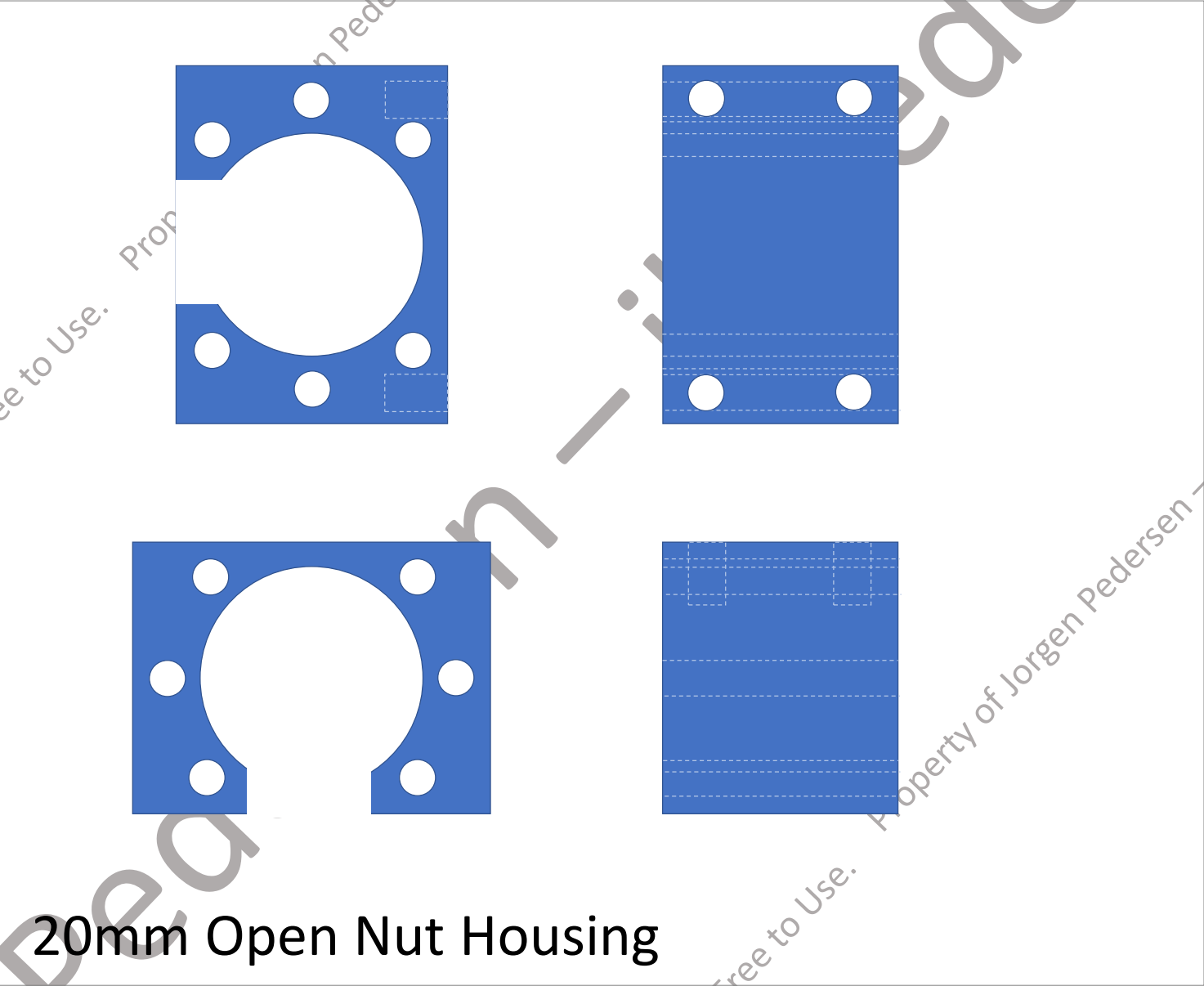
25mm Open Nut Housing



20 mm Single Pillow Block



20mm Ball Screw Nut

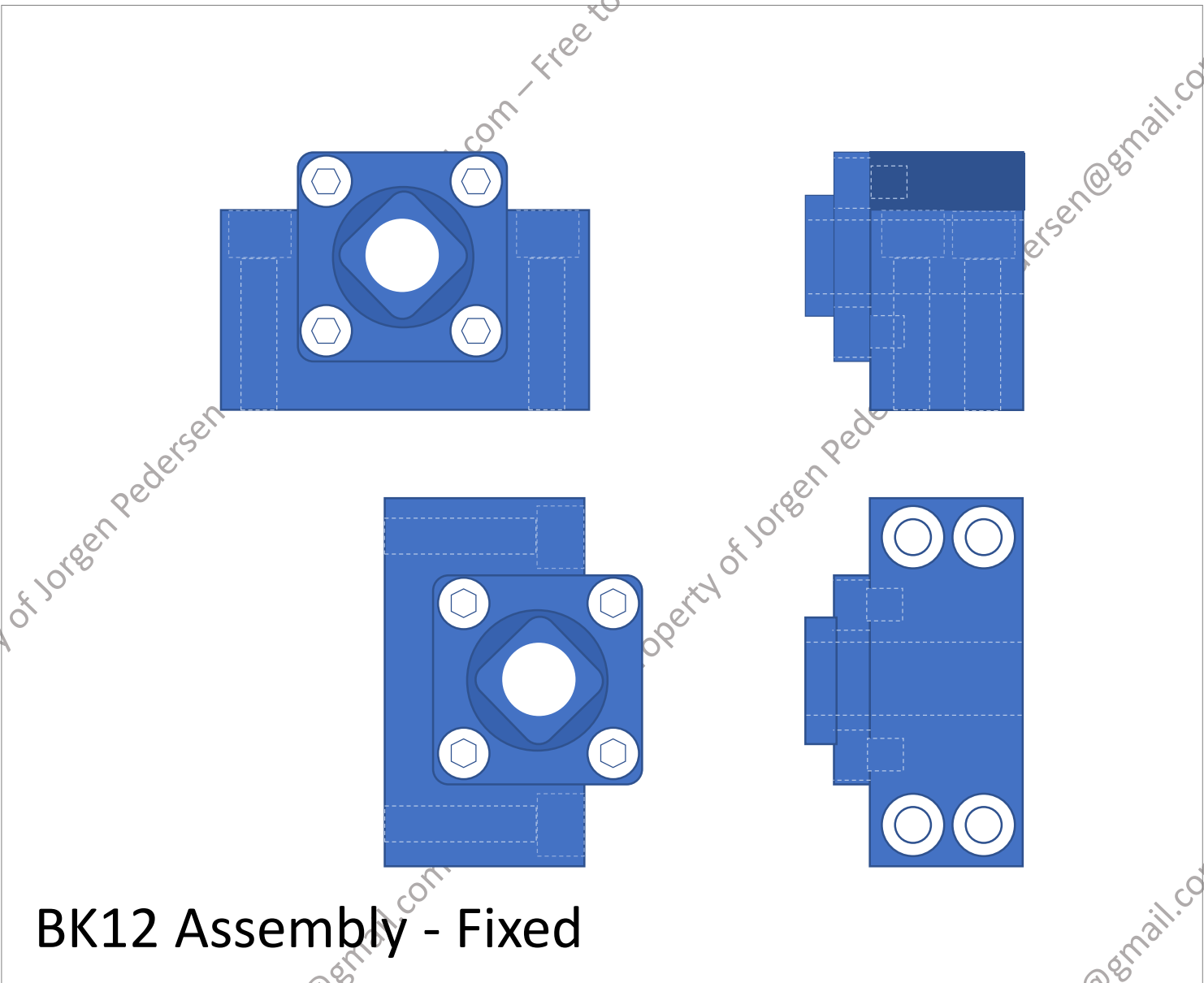


20mm Open Nut Housing

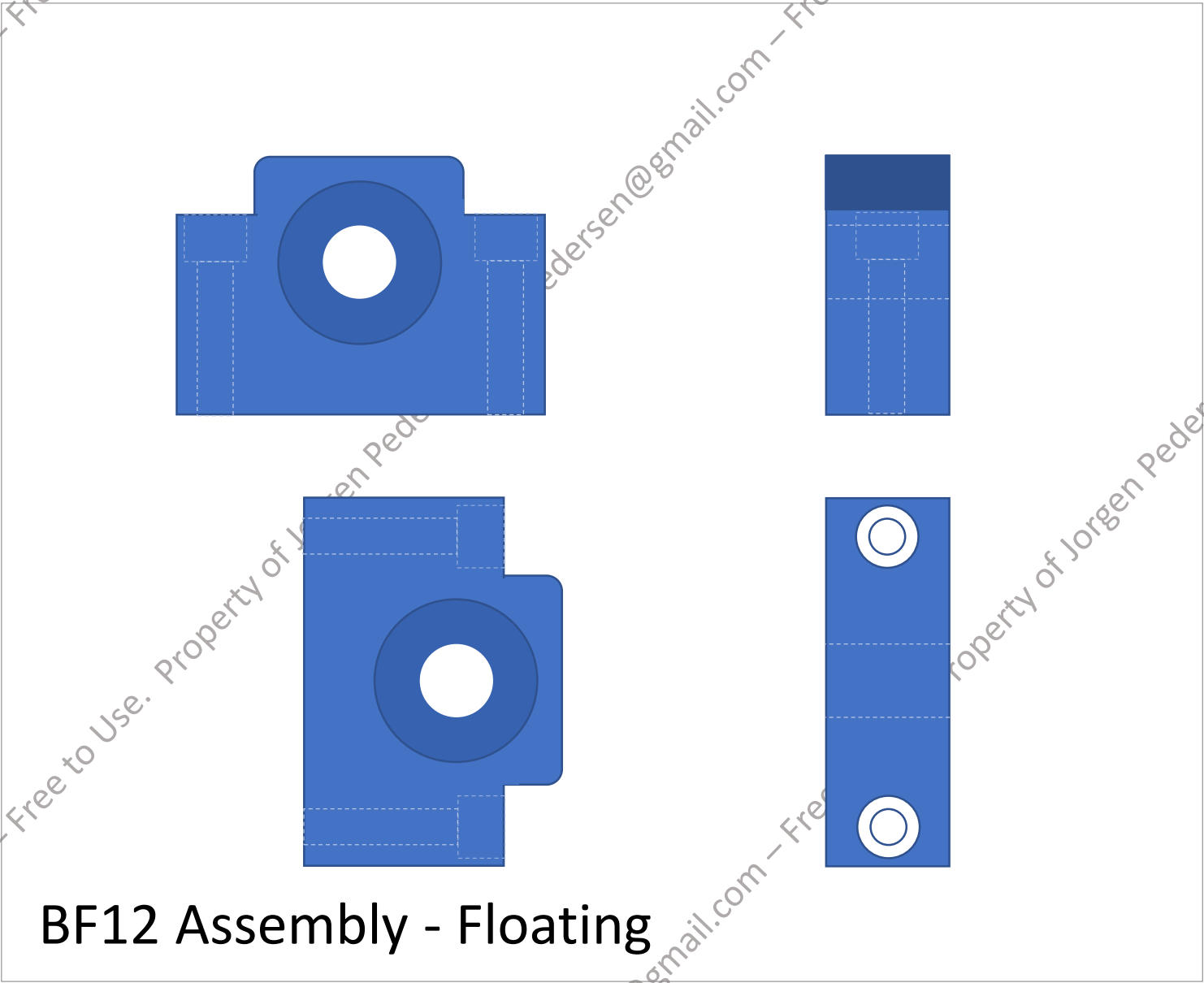
SBR20-350mm(2 fully-supported rails+4 SBR20UU bearing blocks)
SBR20-1600mm(2 fully-supported rails+4 SBR20UU bearing blocks)
SBR20-1700mm(2 fully-supported rails+4 SBR20UU bearing blocks)
2xRM2005-450 2x1700 2x1800mm-C7(6ballscrews+6ballnuts+6end-machinings)
6sets BK/BF15 with locknuts and circlips
6pcs 10mm*12mm couplers

SBR Components – Tolerance +/- 0.002”

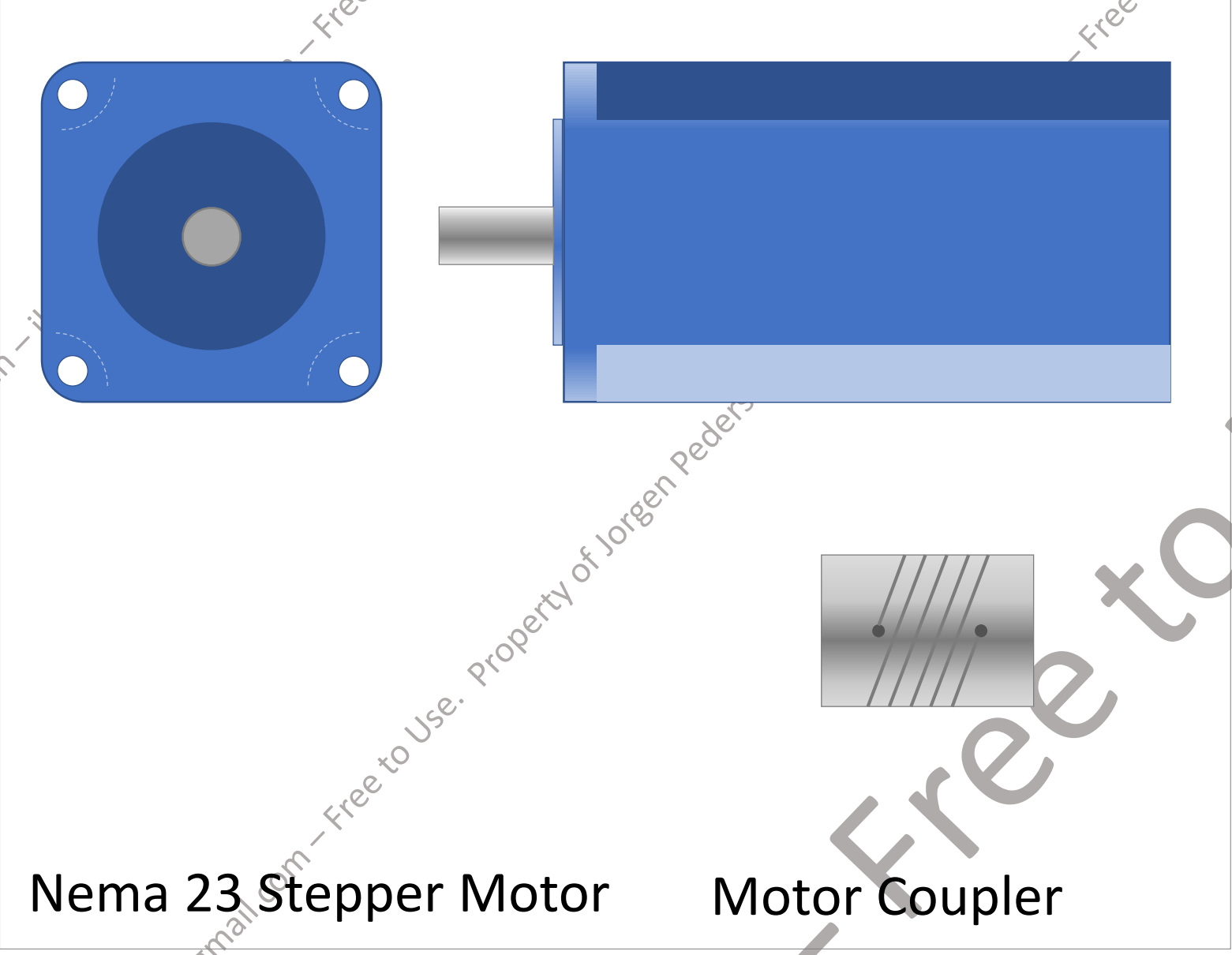
Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	SBR Components All off-the shelf items readily available Tolerance expected +/- 0.002”
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
Date : June 26 th 2018	Page: 2 of 14



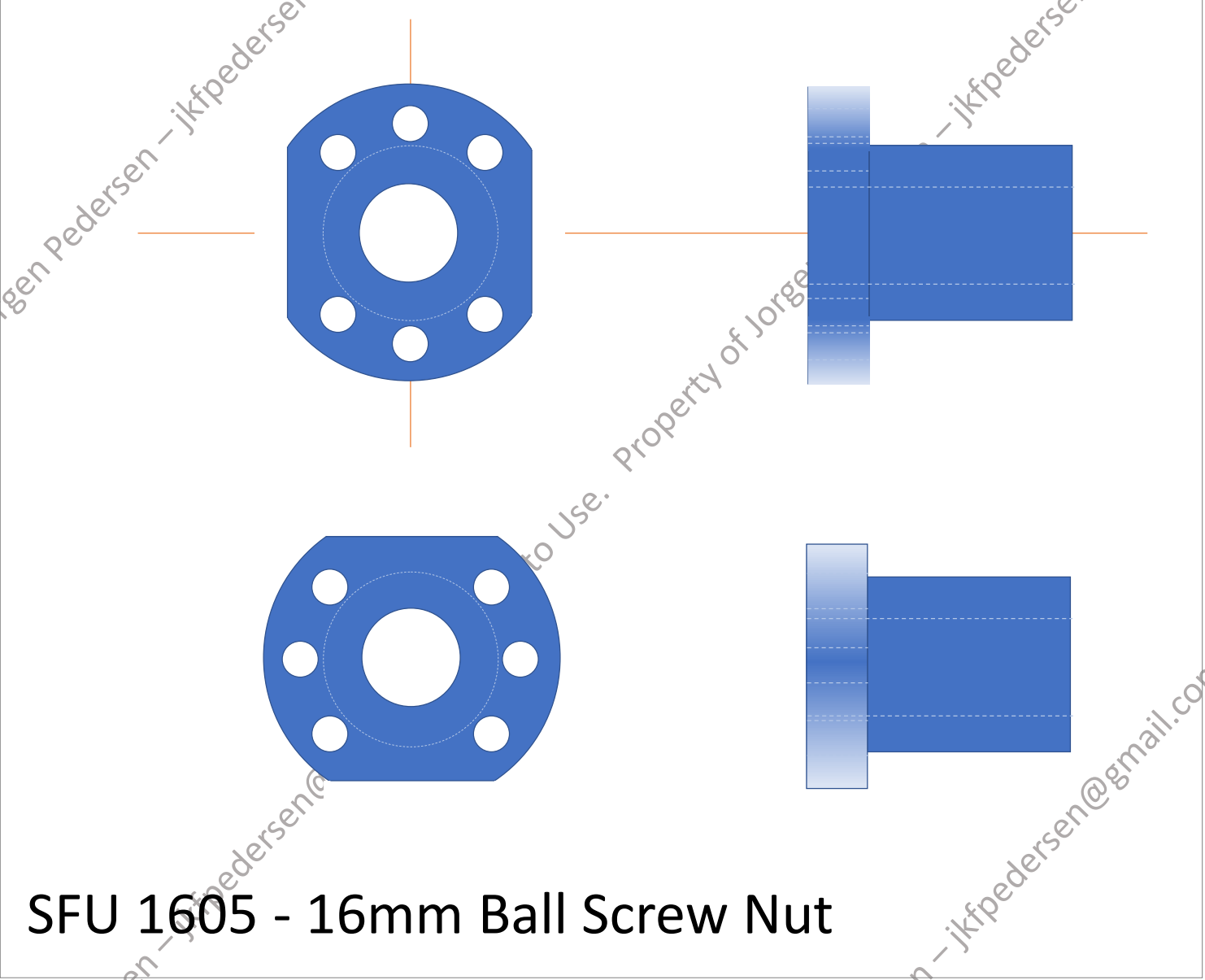
BK12 Assembly - Fixed



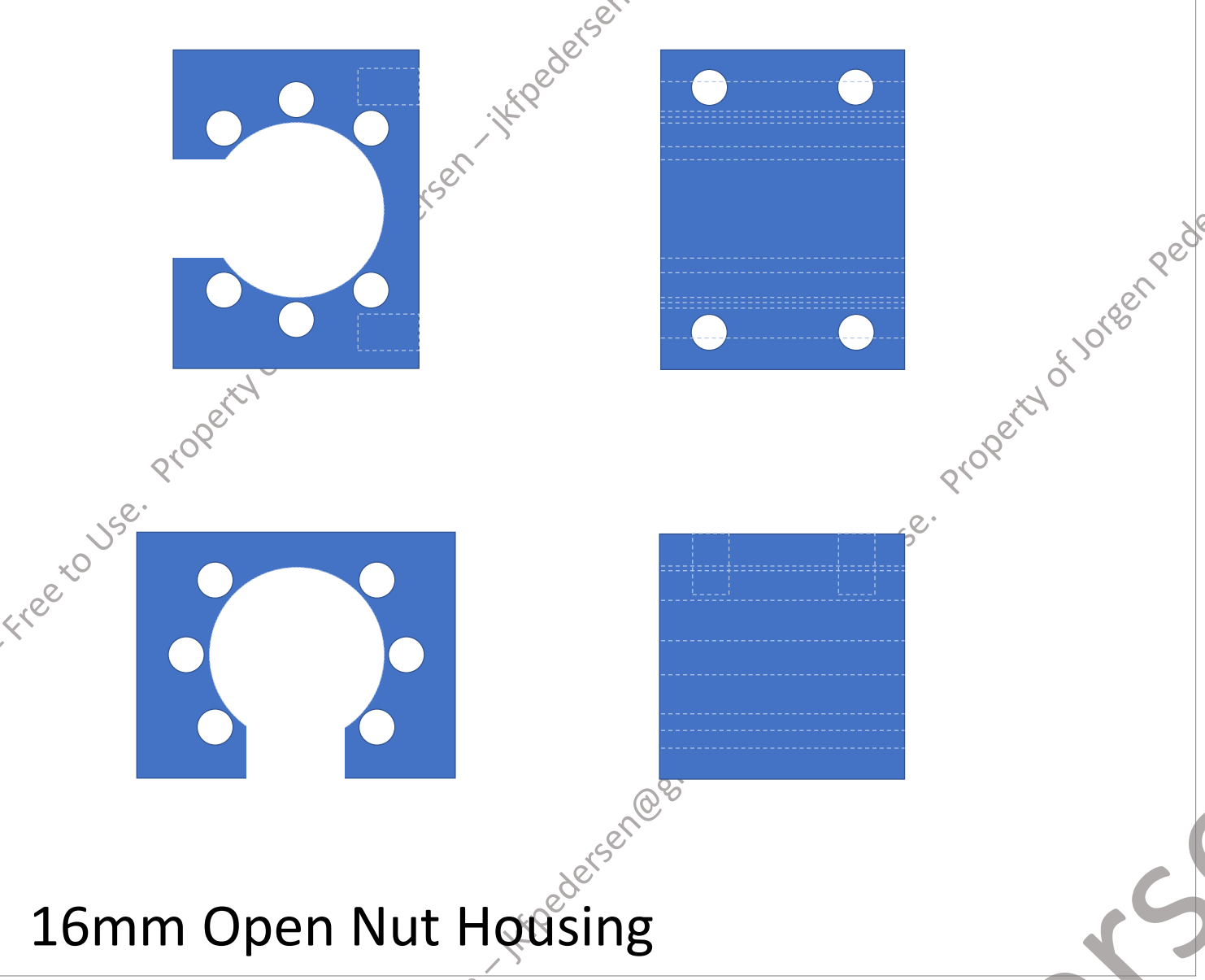
BF12 Assembly - Floating



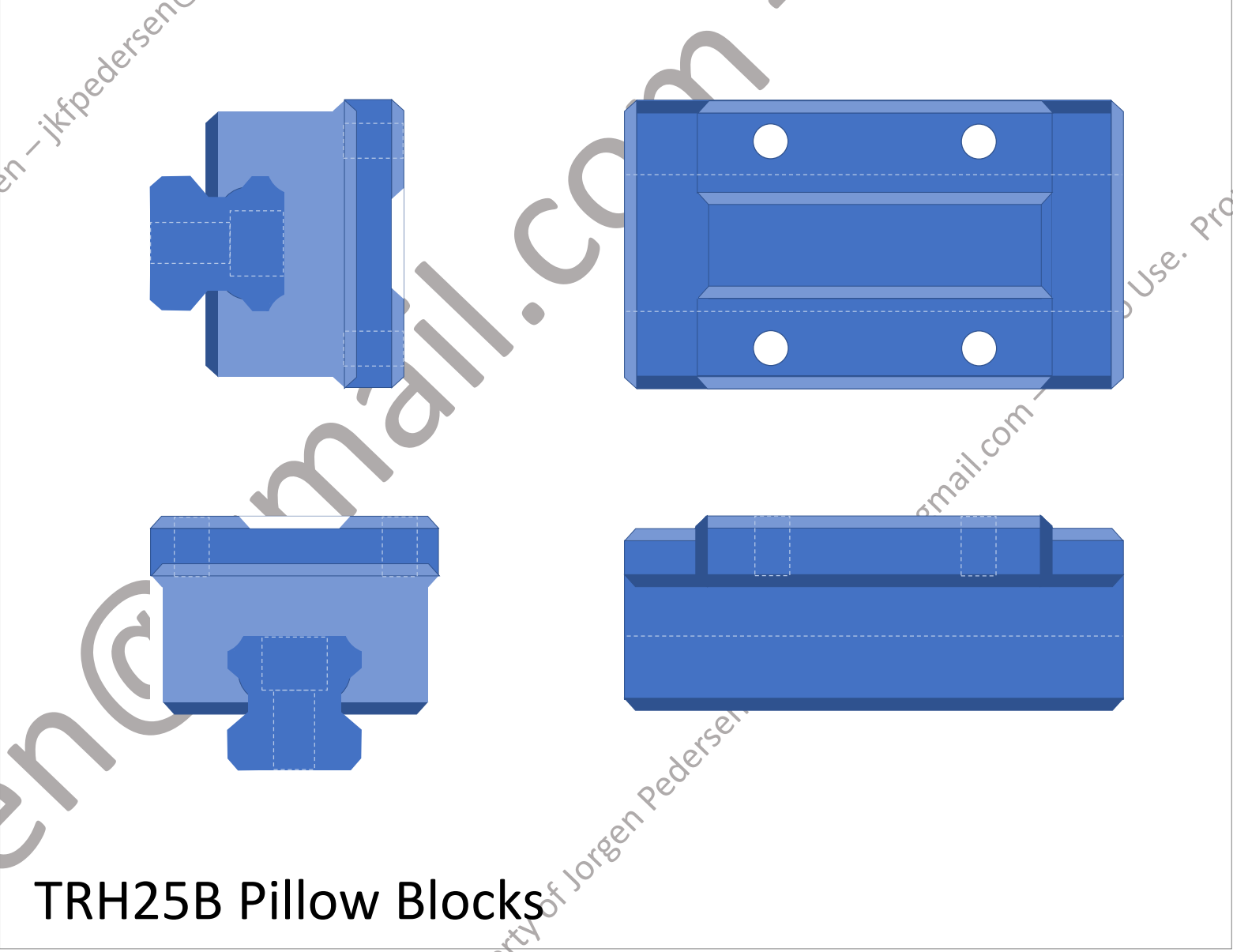
Nema 23 Stepper Motor Motor Coupler



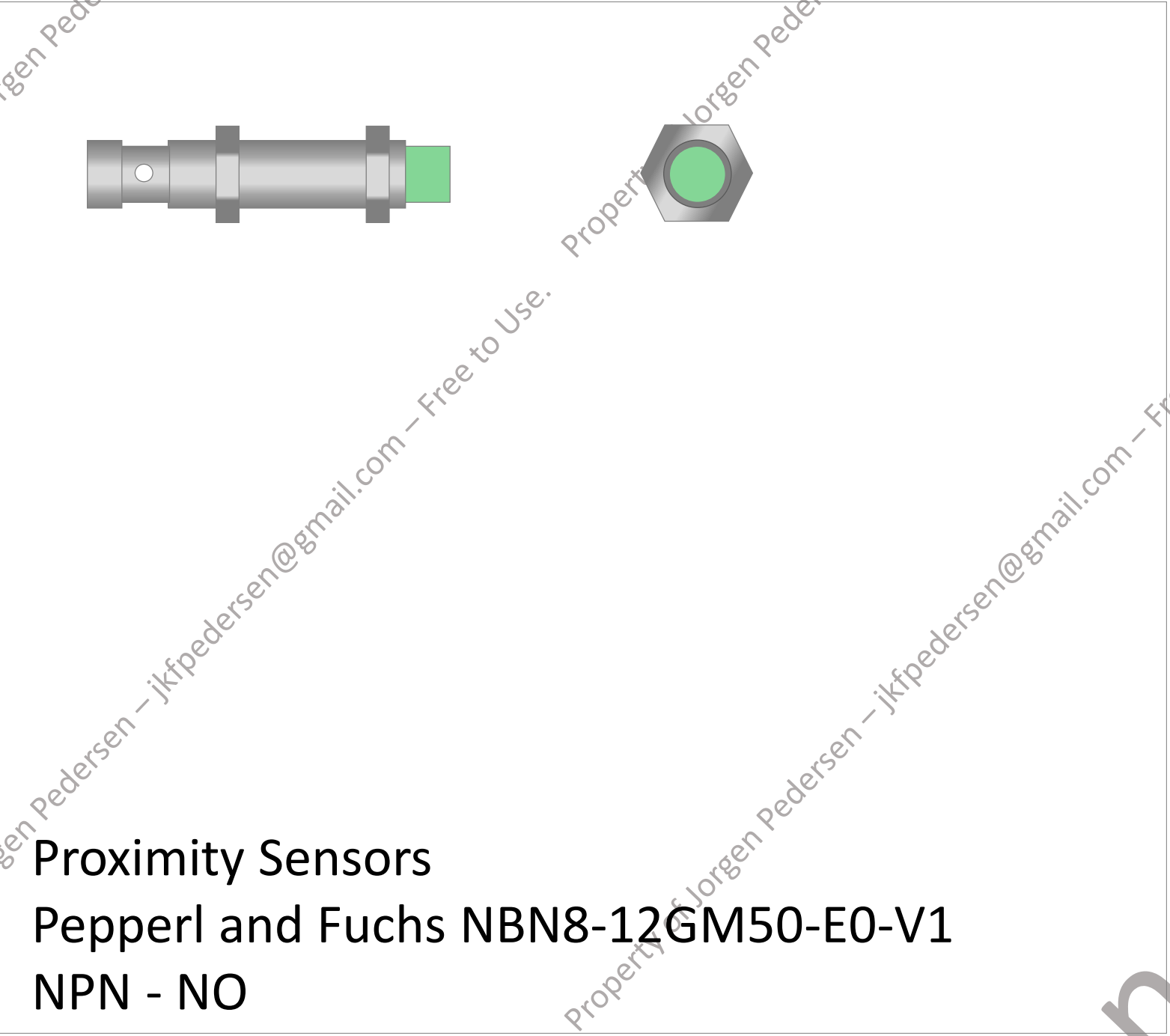
SFU 1605 - 16mm Ball Screw Nut



16mm Open Nut Housing

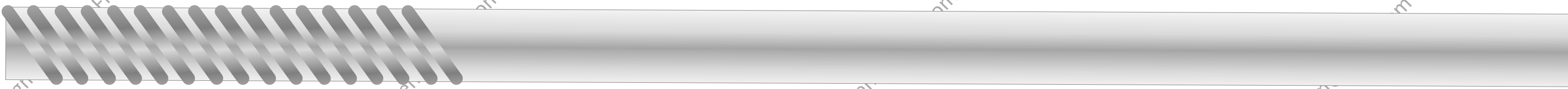


TRH25B Pillow Blocks

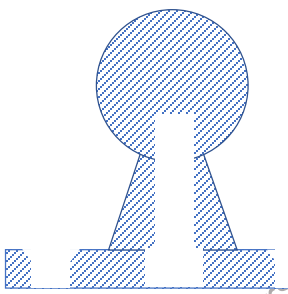
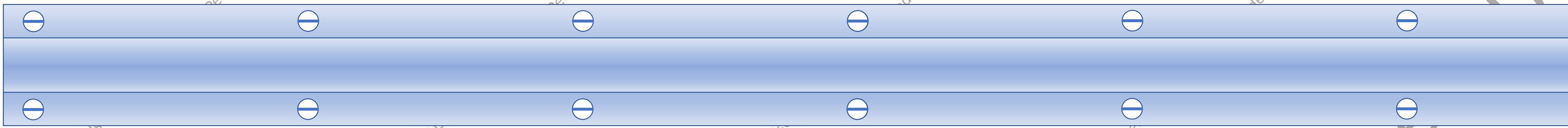
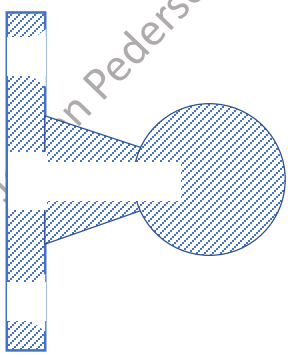


Proximity Sensors
Pepperl and Fuchs NBN8-12GM50-E0-V1
NPN - NO

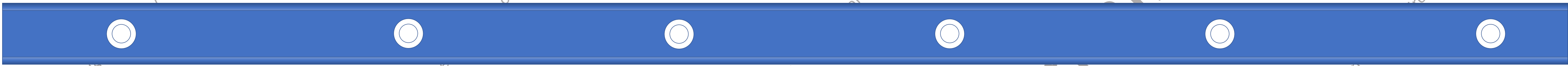
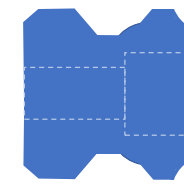
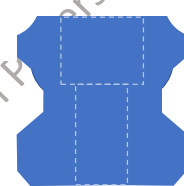
Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	THR Components All off-the shelf items readily available Tolerance expected +/- 0.001"
Materials:	Off-the Shelf Parts as defined – ¼" and ½" Aluminium Sheet - ¾" MDF for Side rail fixings
Author: Knud "Jorgen" Pedersen – jkfpedersen@gmail.com	
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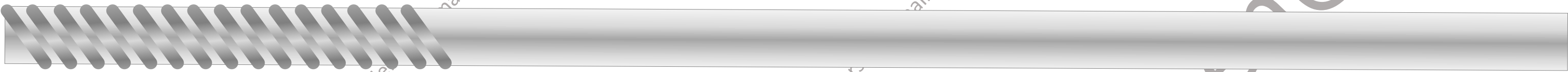
RM2005 – 20mm Lead Screw 5.00mm Pitch – 4 start



SBR20 – Fully Supported Rails – 100mm fixings between centers about 0.002 Accuracy

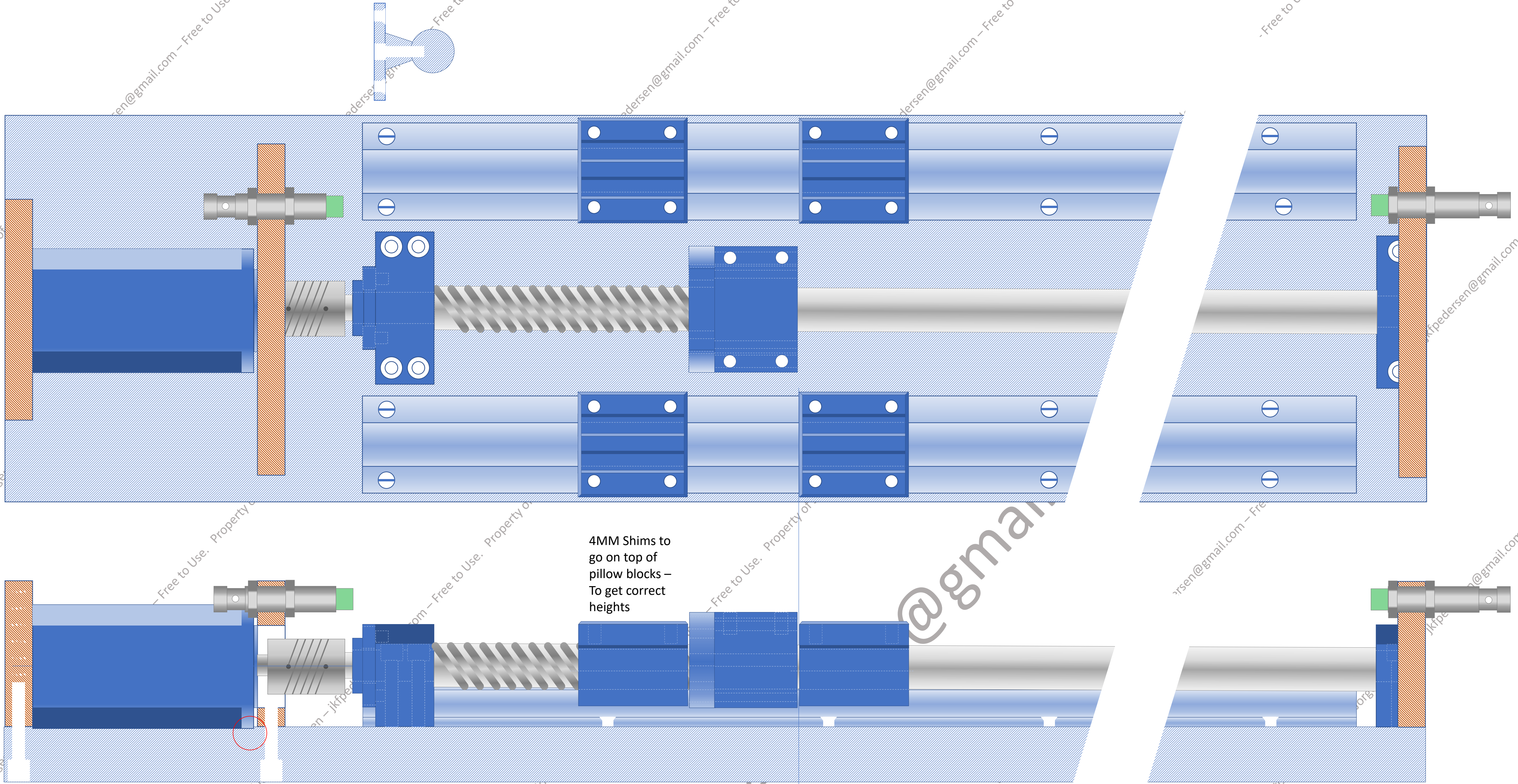


TRH25 – Fully Supported Rails – 100mm fixings between centers about 0.001 Accuracy

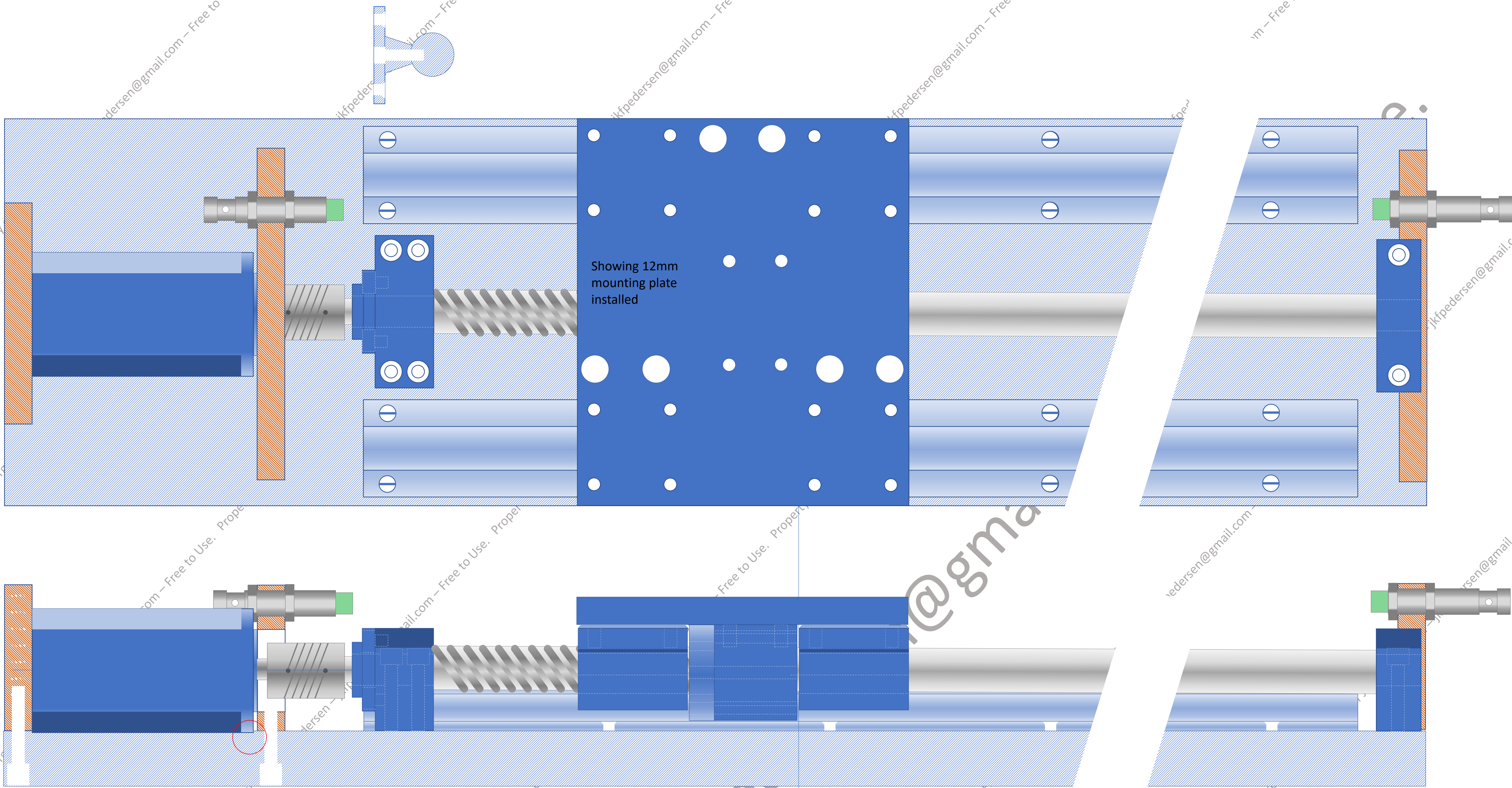


RM1605 – 16mm Lead Screw 5.00mm Pitch – 4 start

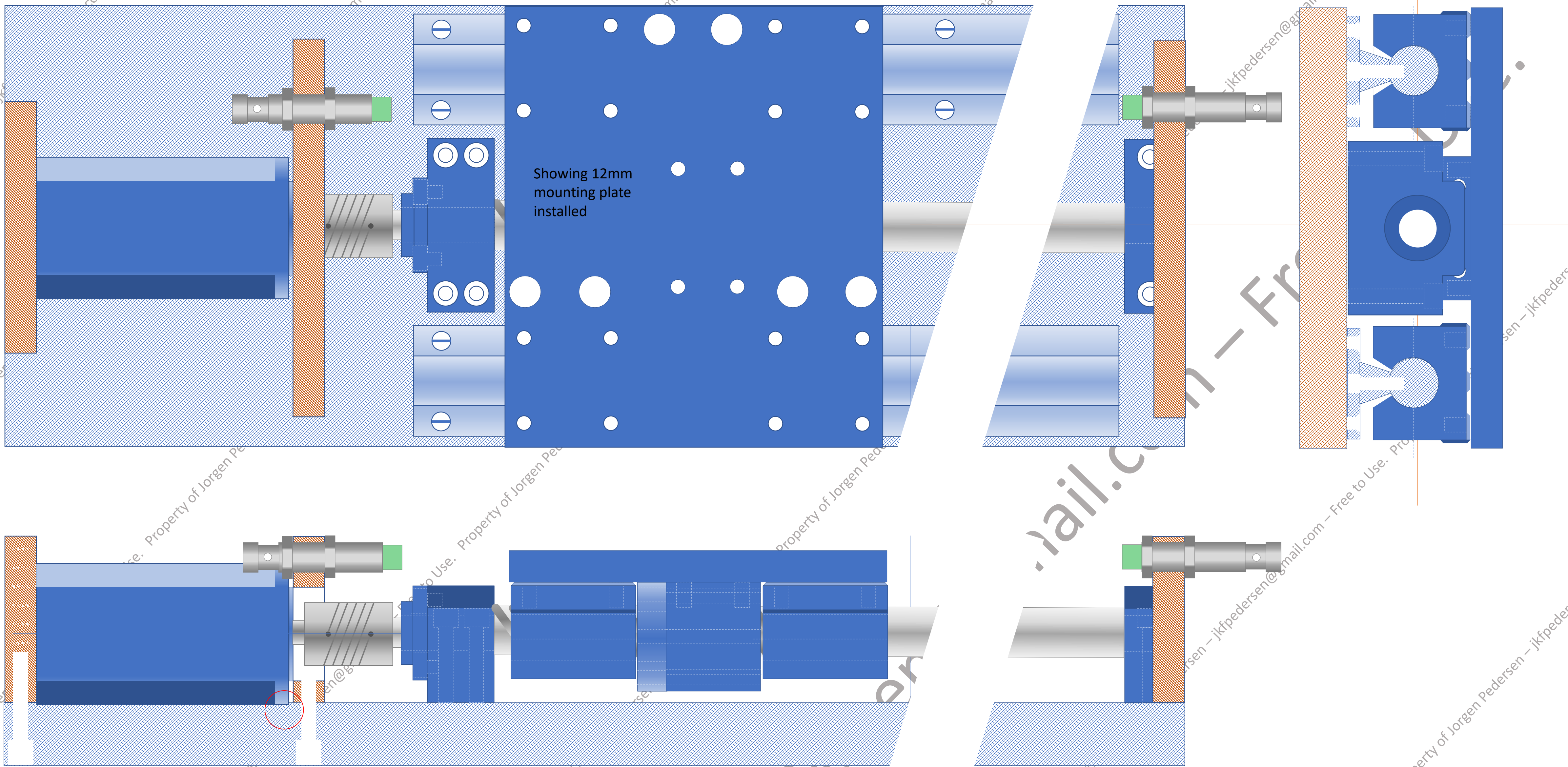
Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	SBR Fully Supported Rails 20mm TRH Fully Supported Rails 25mm 20 and 16mm Lead screws @ 5.00mm Rev
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
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Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail: X Axis Linear Rail Detail and Assembly	
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
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Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	X Axis Linear Rail detail and Assembly with faceplate
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jikfpedersen@gmail.com	
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Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	X Axis Linear Rail detail and Assembly with faceplate And Profile View
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
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Linear Units – Z Axis

Green Detail is
for Gantry
Fixing

Green Detail is
for Gantry
Fixing

4MM Shims to
go on top of
pillow blocks –
To get correct
heights

Showing 12mm
mounting plate
installed

3.5mm ground to
enable Nema 23
to sit flush and in
alignment with
drive train

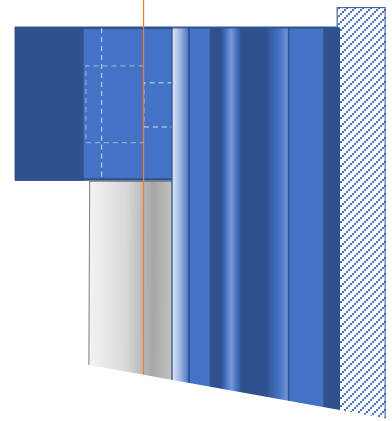
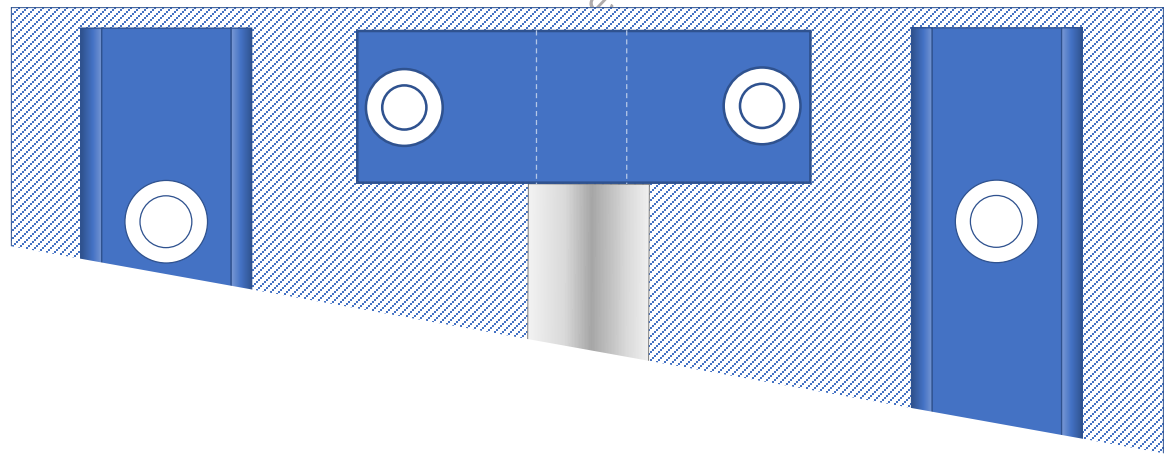
Title: CNC Foam Cutter – Router and Laser Cutter

Drawing Detail: Z Axis linear Rail Detail and Assembly
Z Axis would provide the CNC Foam Cutting Towers

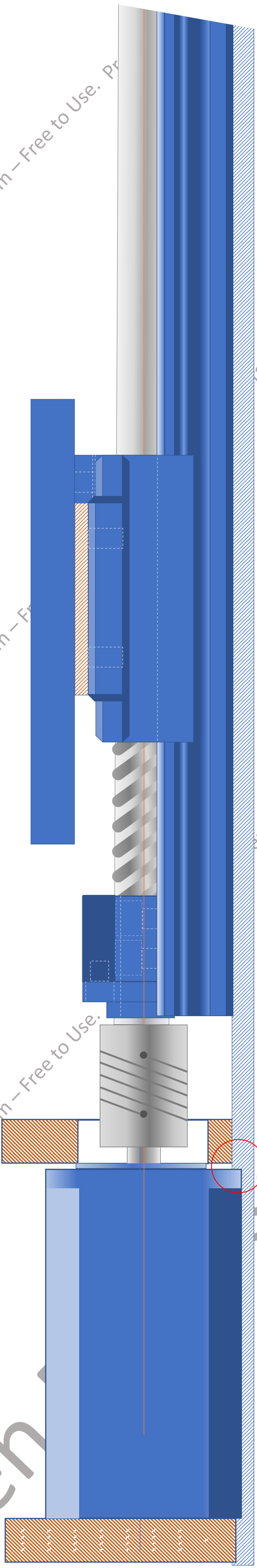
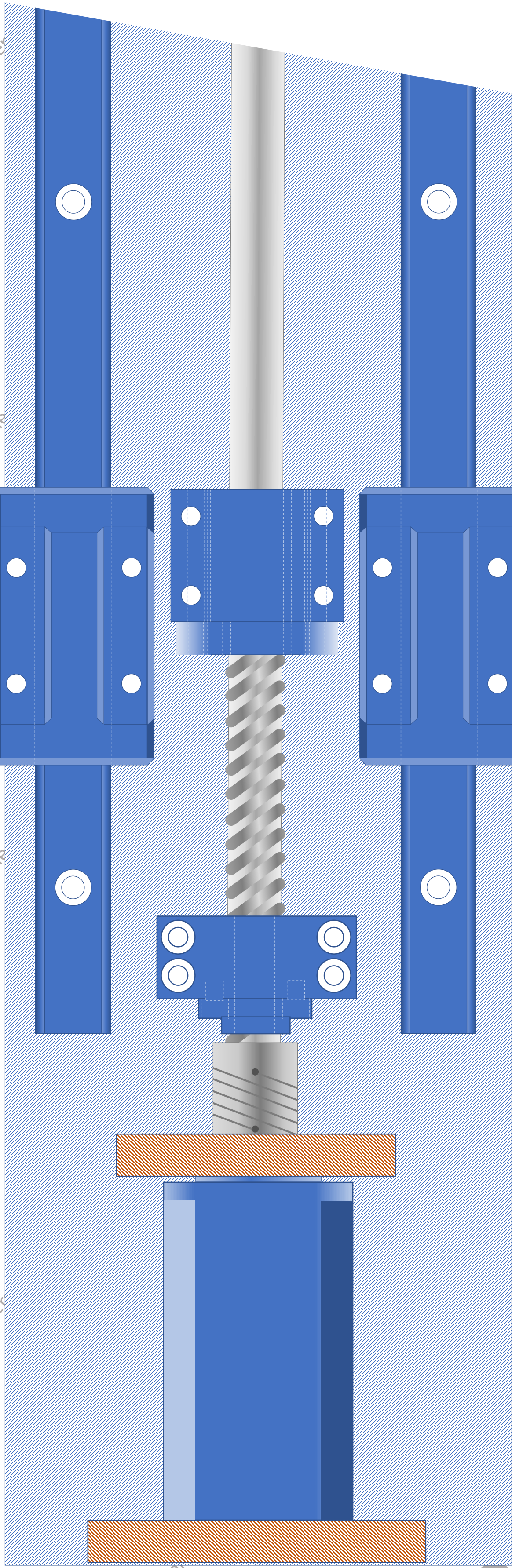
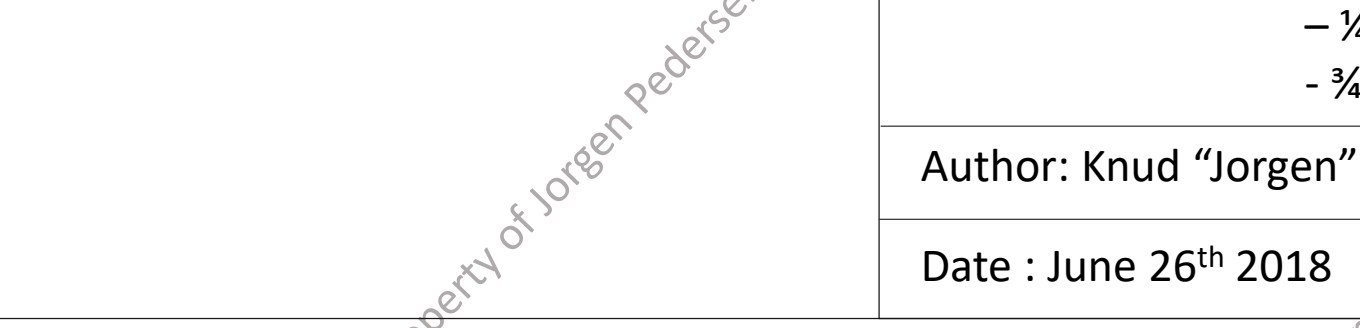
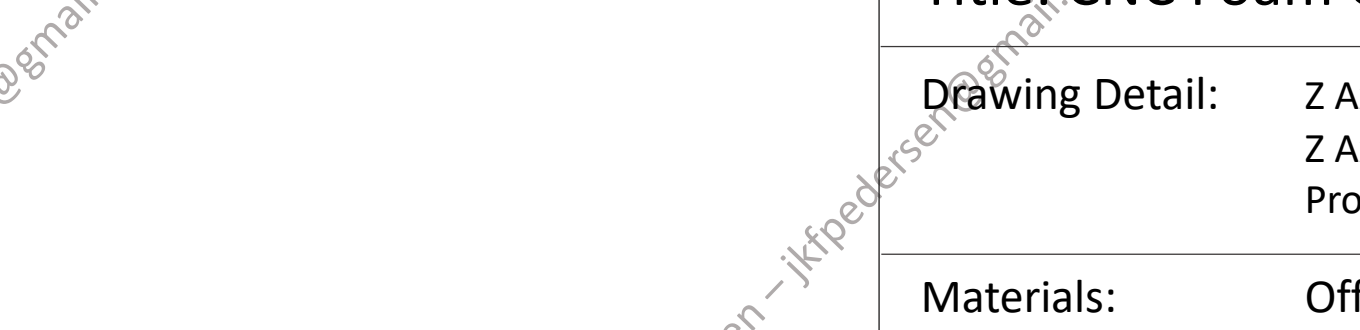
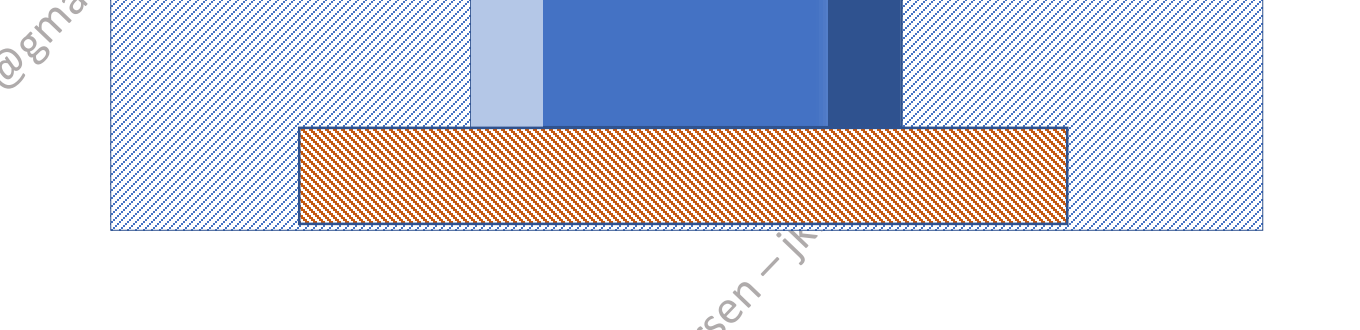
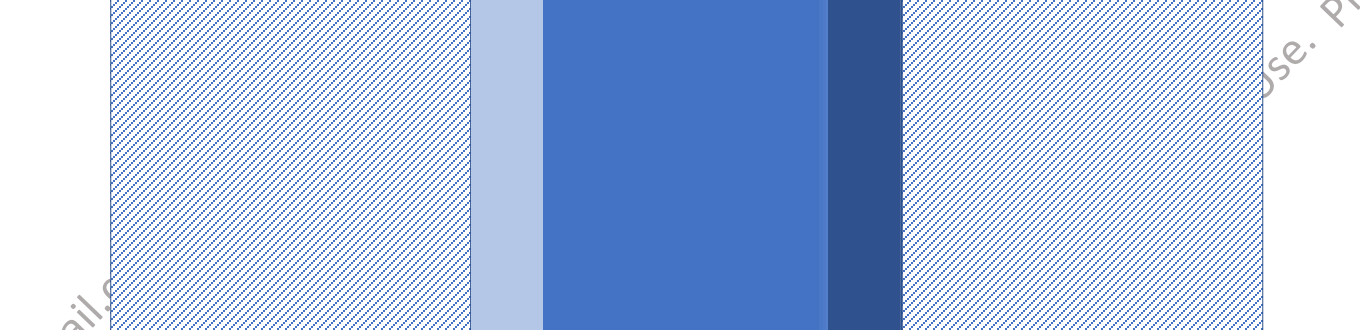
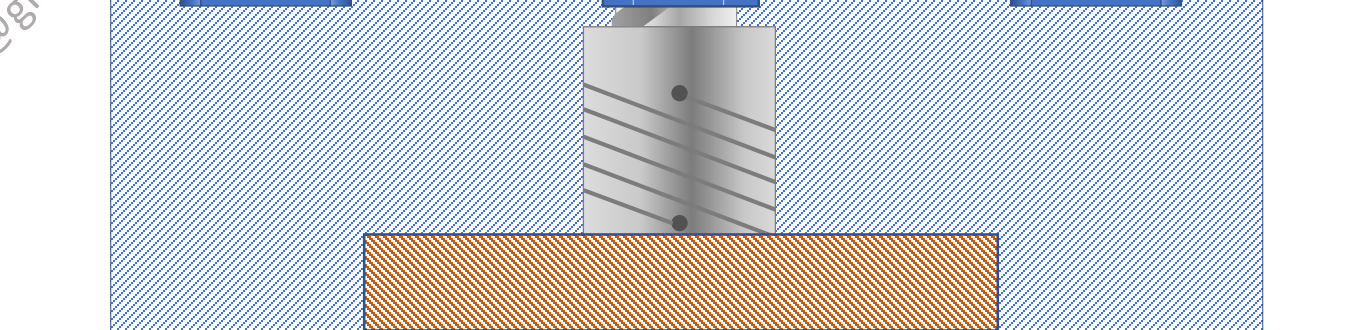
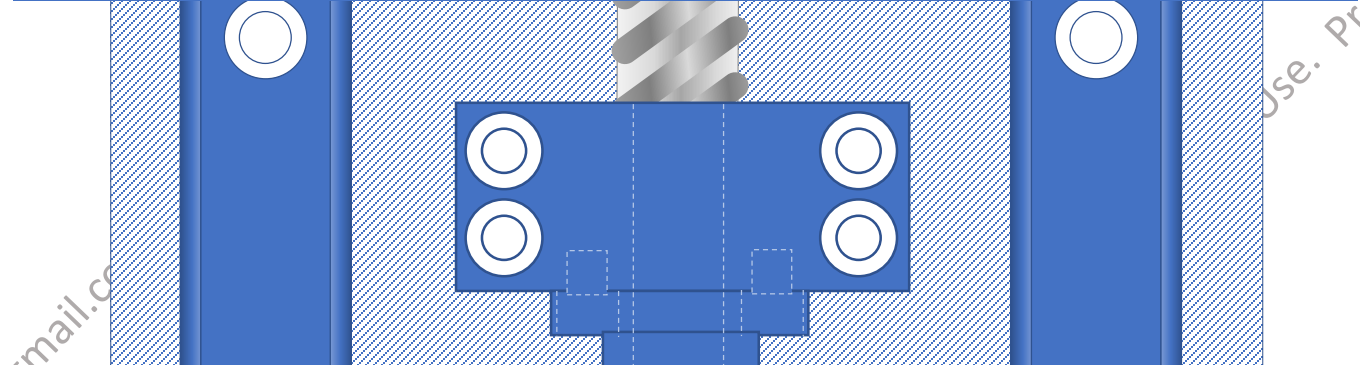
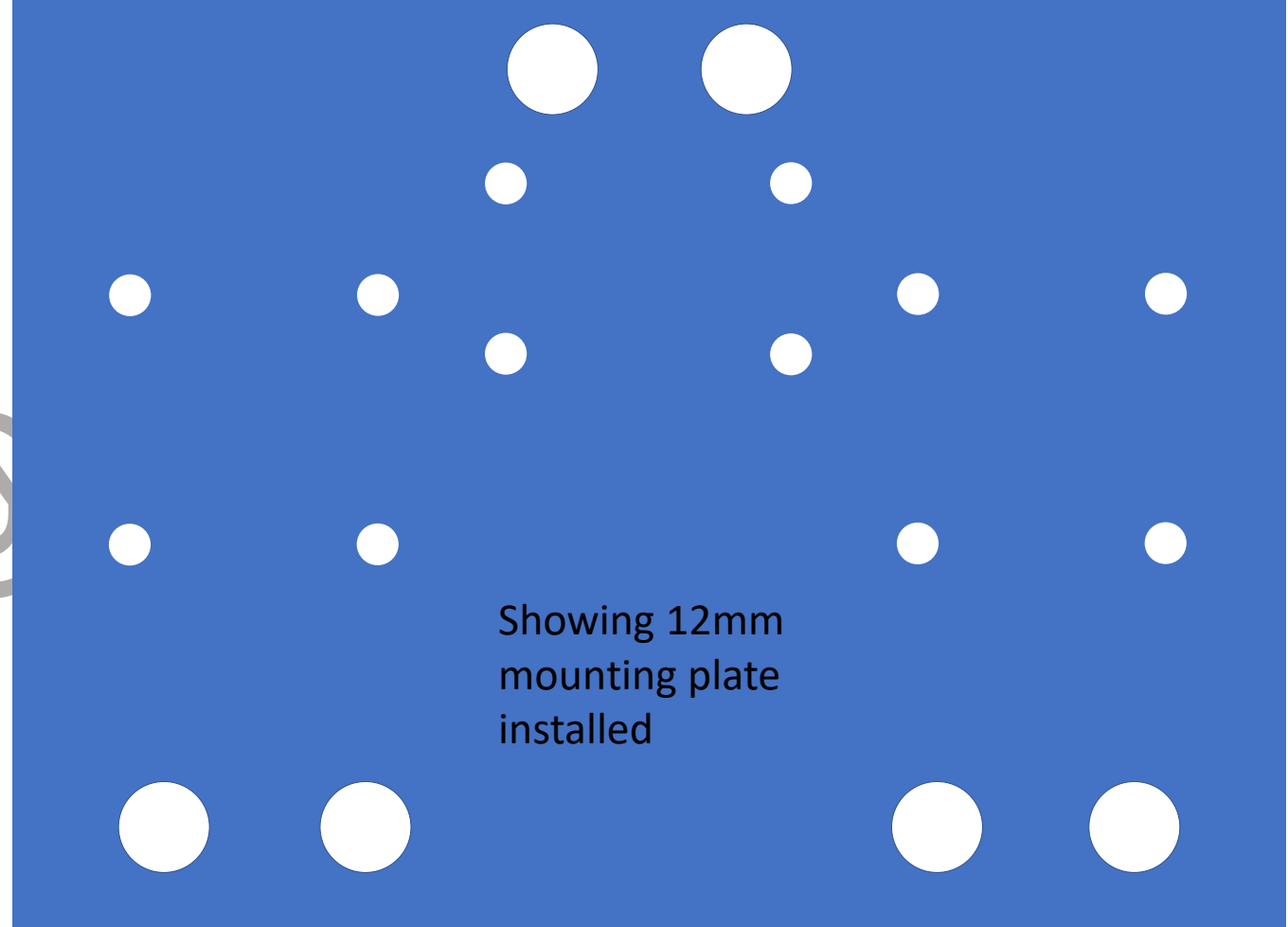
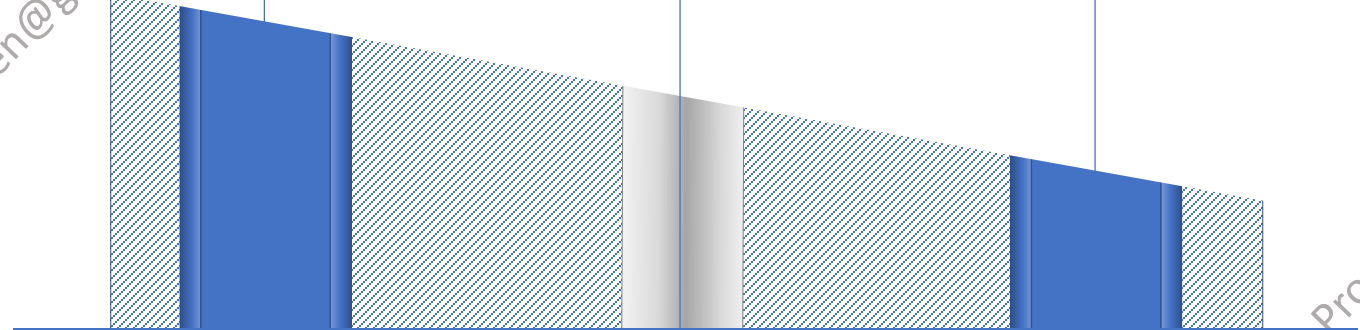
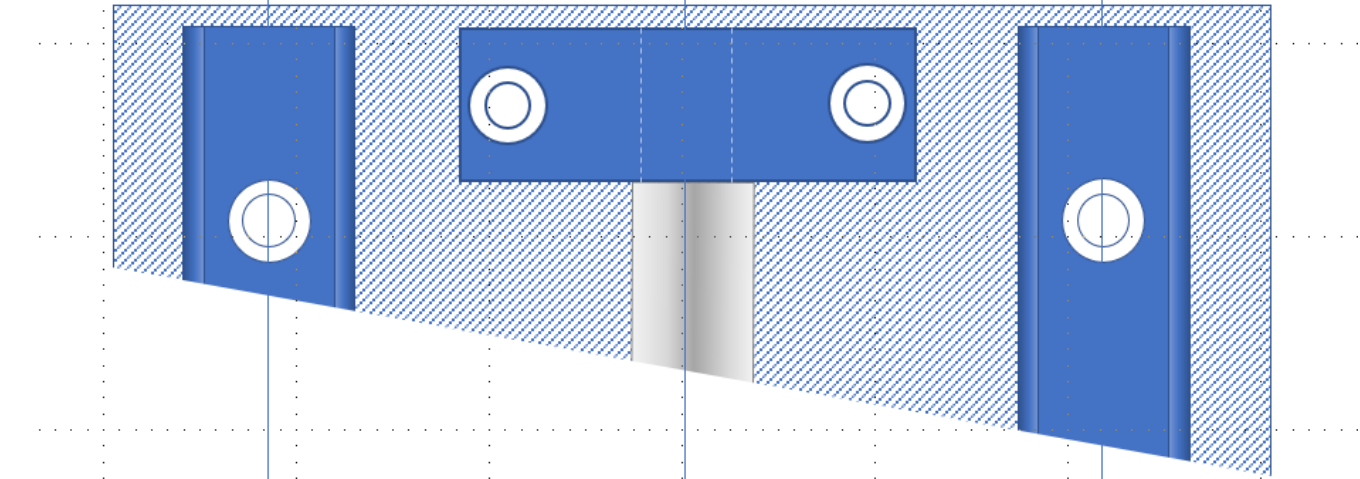
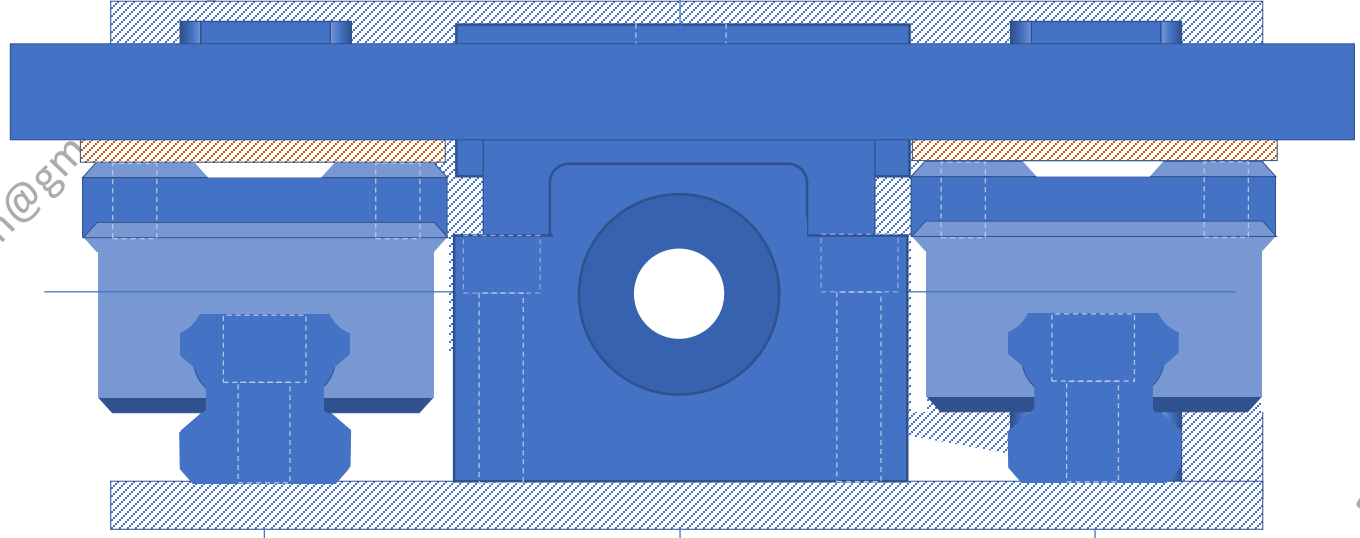
Materials: Off-the Shelf Parts as defined
– ¼” and ½” Aluminium Sheet
- ¾”MDF for Side rail fixings

Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com

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Tower Unit looking down
from above



Linear Units – Z Axis
Tower Units

4MM Shims to
go on top of
pillow blocks –
To get correct
heights

3.5mm ground to
enable Nema 23
to sit flush and in
alignment with
drive train

Showing 12mm
mounting plate
installed

Title: CNC Foam Cutter – Router and Laser Cutter

Drawing Detail: Z Axis linear Rail Detail and Assembly
Z Axis would provide the CNC Foam Cutting Towers
Profile View of top of Z Axis Unit

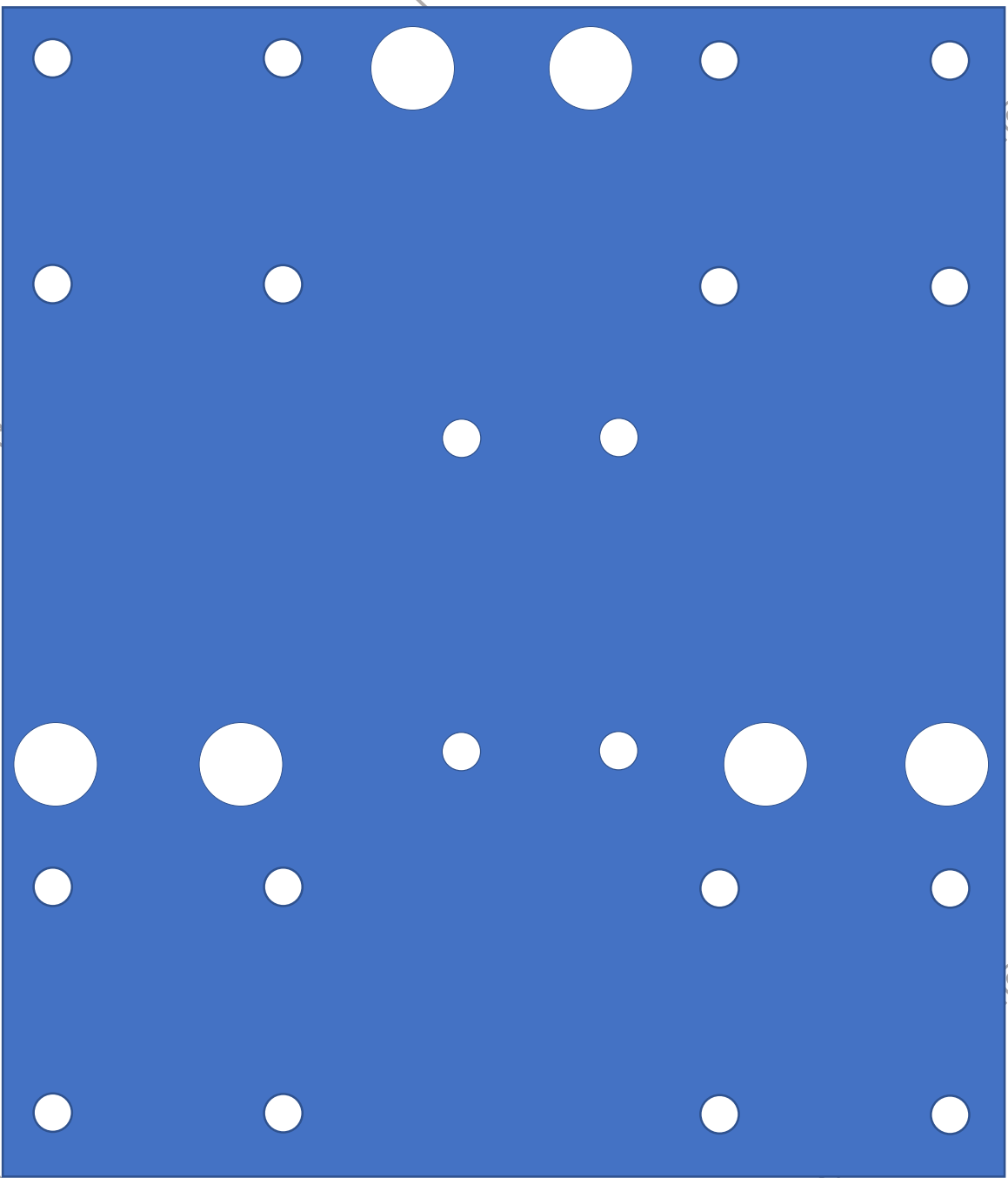
Materials: Off-the Shelf Parts as defined
– ¼” and ½” Aluminium Sheet
- ¾”MDF for Side rail fixings

Author: Knud “Jorgen” Pedersen – jikfpedersen@gmail.com

Date : June 26th 2018

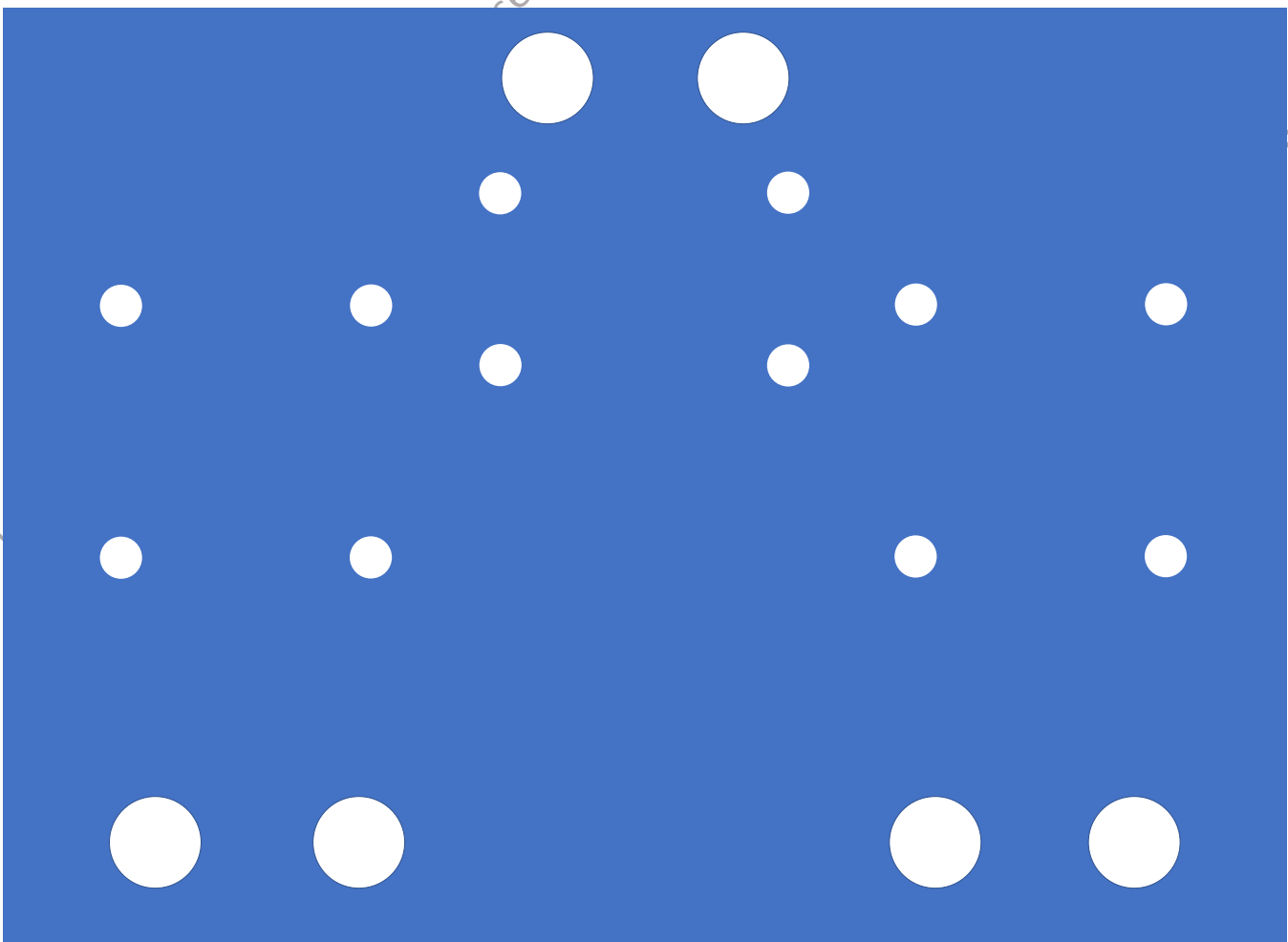
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6 x ½” Face Plate fixing holes



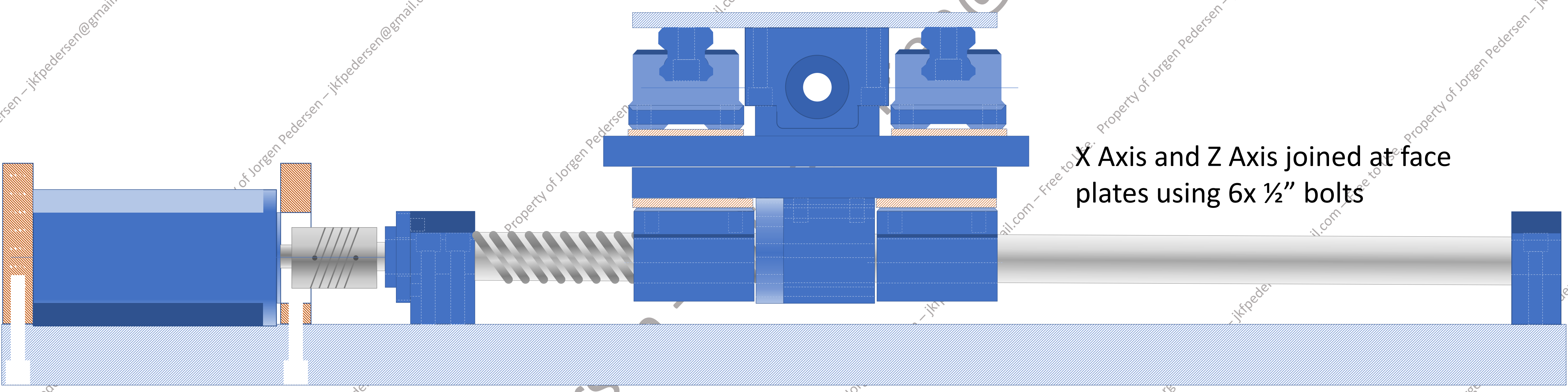
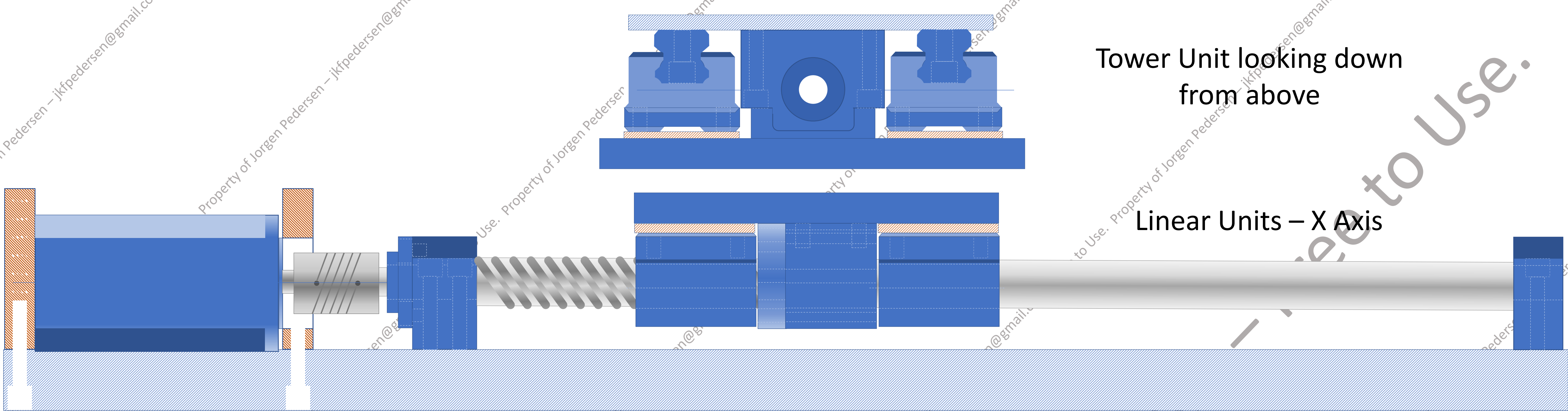
X Access – Face Plate

6 x ½” Face Plate fixing holes

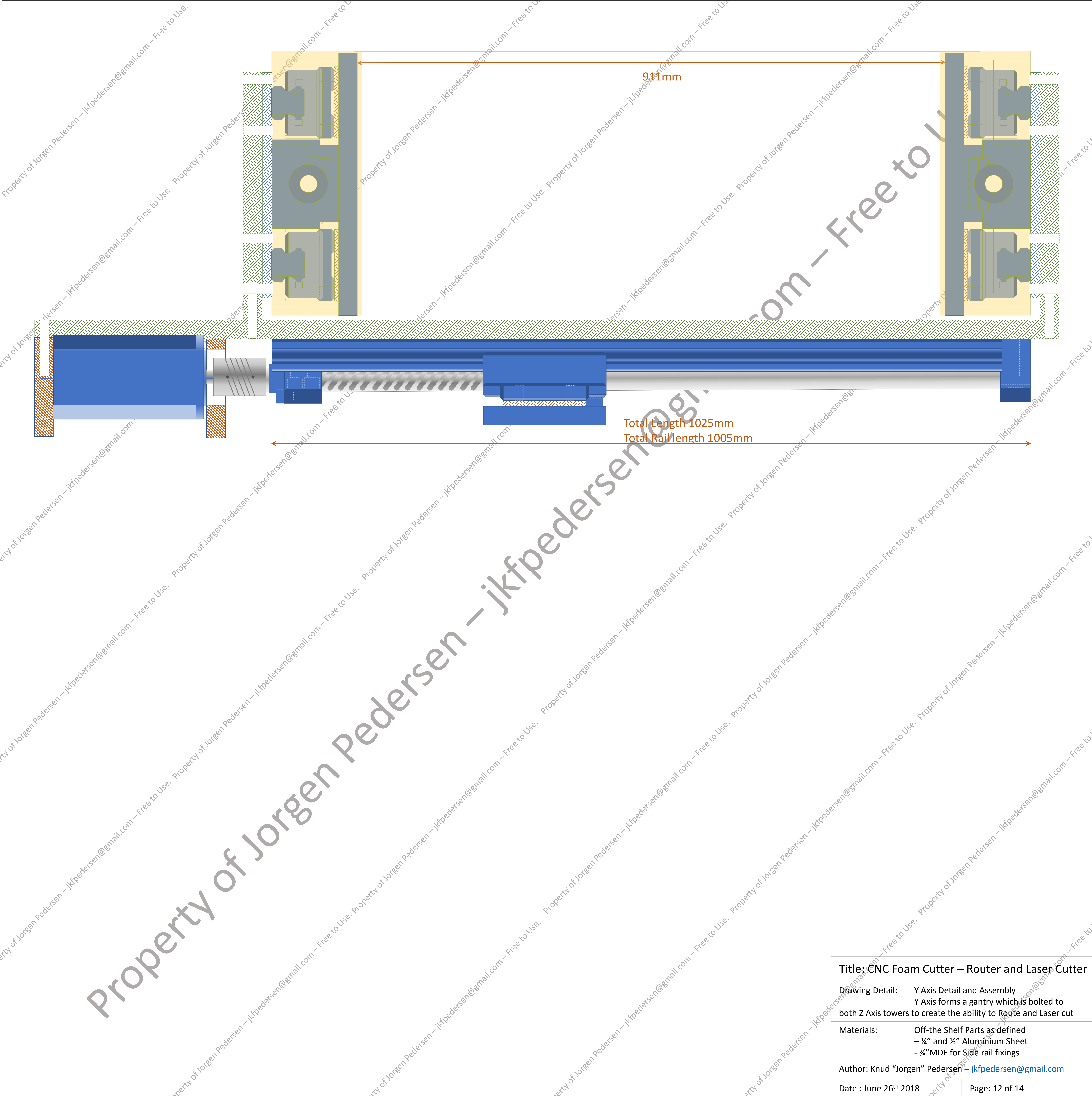


Z Access – Face Plate

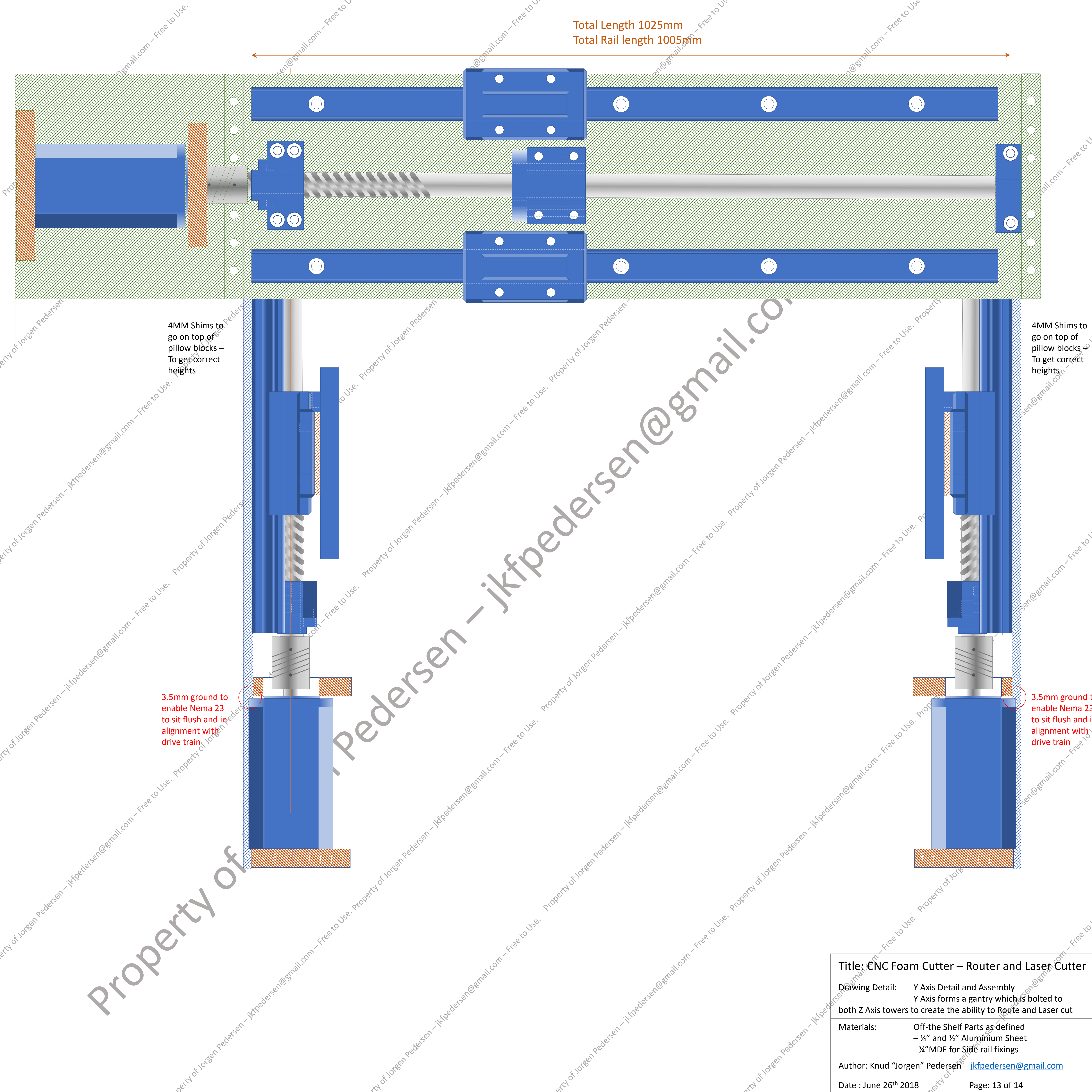
Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	Detail of Xaxis and Z Axis Face plated Connected using 6x ½” Stainless machine screws
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
Date : June 26 th 2018	Page: 10 of 14



Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail:	Connection Detail joining X axis and Z Axis faceplates
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
Date : June 26 th 2018	Page: 11 of 14

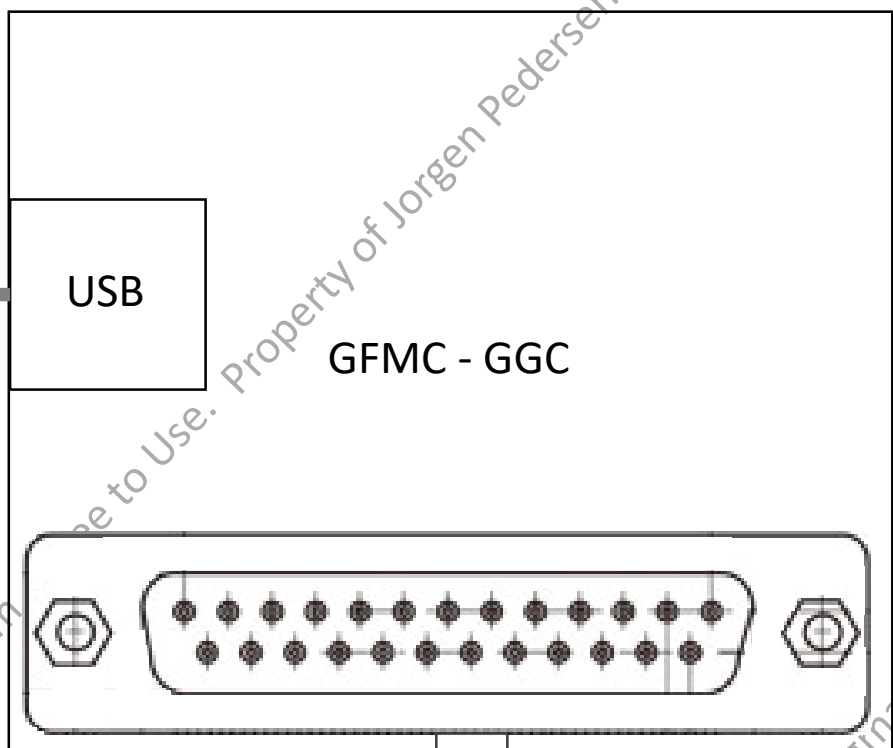


Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail: Y Axis Detail and Assembly Y Axis forms a gantry which is bolted to both Z Axis towers to create the ability to Route and Laser cut	
Materials:	Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
Date : June 26 th 2018	Page: 12 of 14



Title: CNC Foam Cutter – Router and Laser Cutter	
Drawing Detail: Y Axis Detail and Assembly Y Axis forms a gantry which is bolted to both Z Axis towers to create the ability to Route and Laser cut	
Materials: Off-the Shelf Parts as defined – ¼” and ½” Aluminium Sheet - ¾”MDF for Side rail fixings	
Author: Knud “Jorgen” Pedersen – jkfpedersen@gmail.com	
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32bit Windows 7 machine



All Proximity Detectors should be NPN – NO devices

X Axis –(1) (A+B)
Proximity Switches

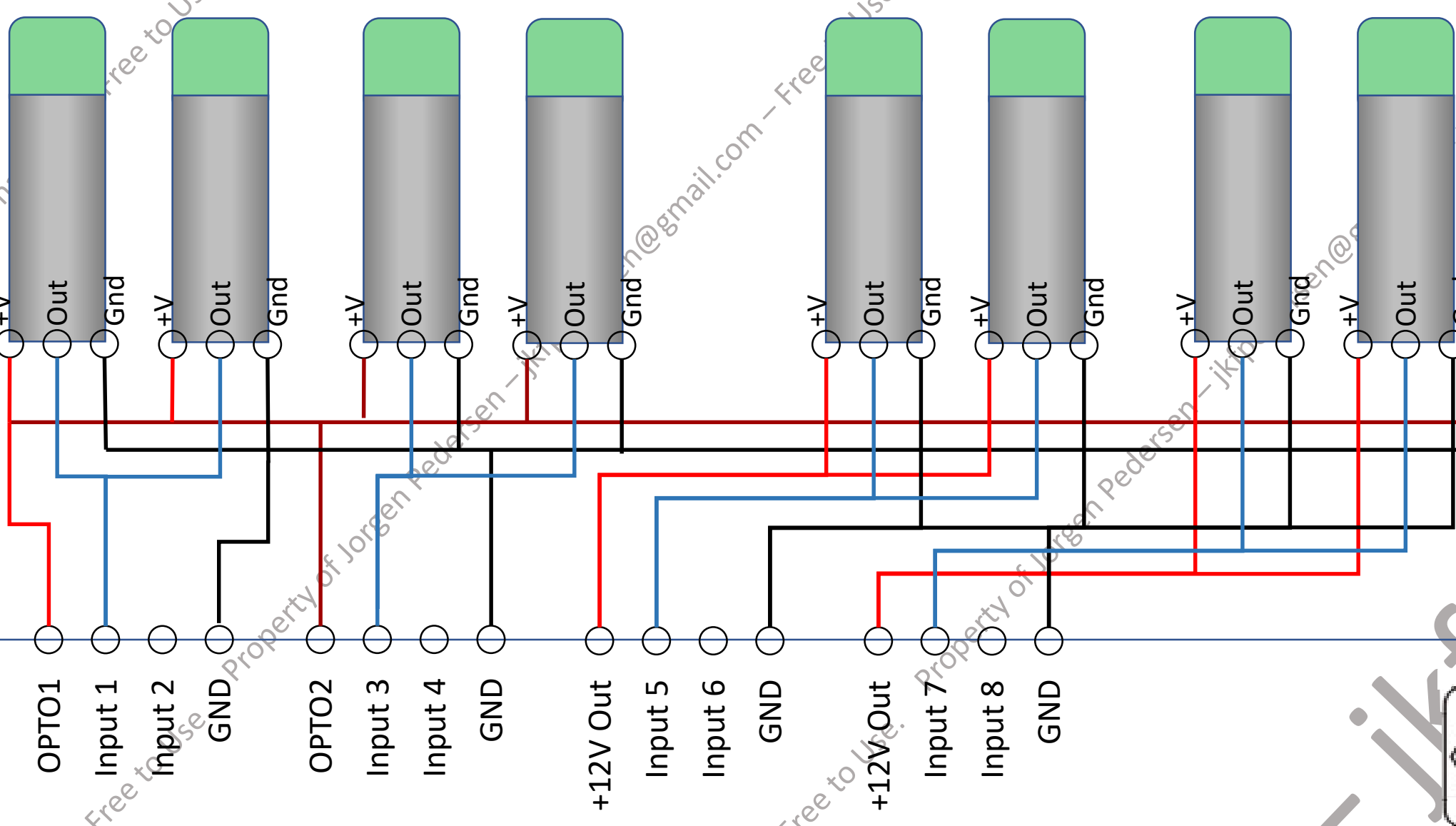
Y Axis –(2) (A+B)
Proximity Switches

Z Axis –(2) (A+B)
Proximity Switches

A Axis –(2) (A+B)
Proximity Switches

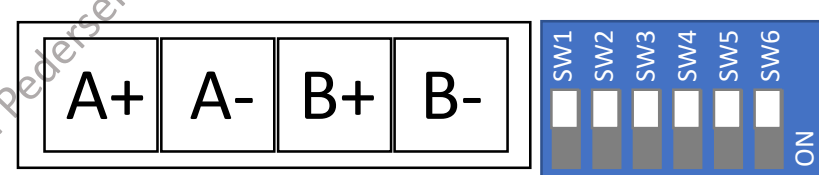


Estop+
Estop-

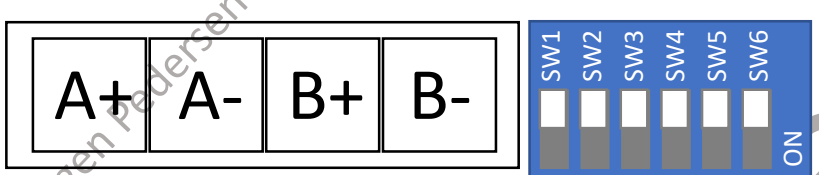


MX4660
4 Axis Controller

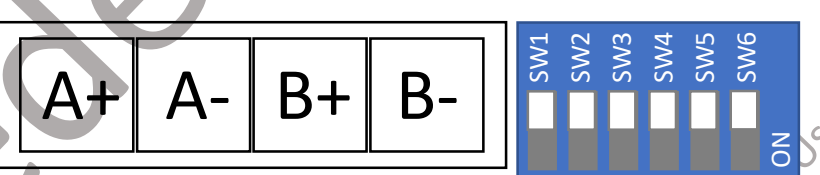
X Axis



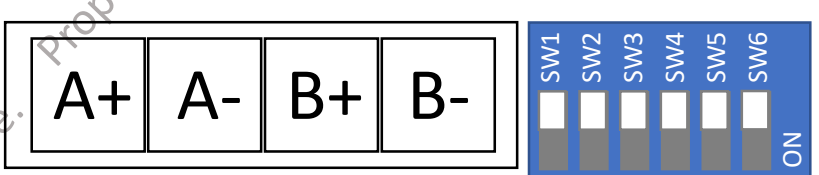
Y Axis



Z Axis



A Axis



Its really not necessary to install another power supply – The 12VDC can be collected from the Leadshine unit, and doubled up as needed by the probes.

If not using an additional power supply – all grounds must be tied together.

25 Pin DIN to 25 Pin DIN connector

+5v
+12v
Common

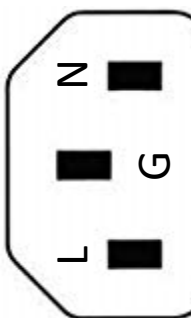
Auxiliary Power Supply
5V-12V

RD35A

Live 110-240v

Ground

Neutral



+20-60V VDC

+20-60V VDC

GND

GND

48V VDC

48V VDC

GND

GND

C2

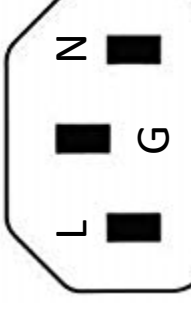
C1

110-240V AC Input

Live 110-240v

Ground

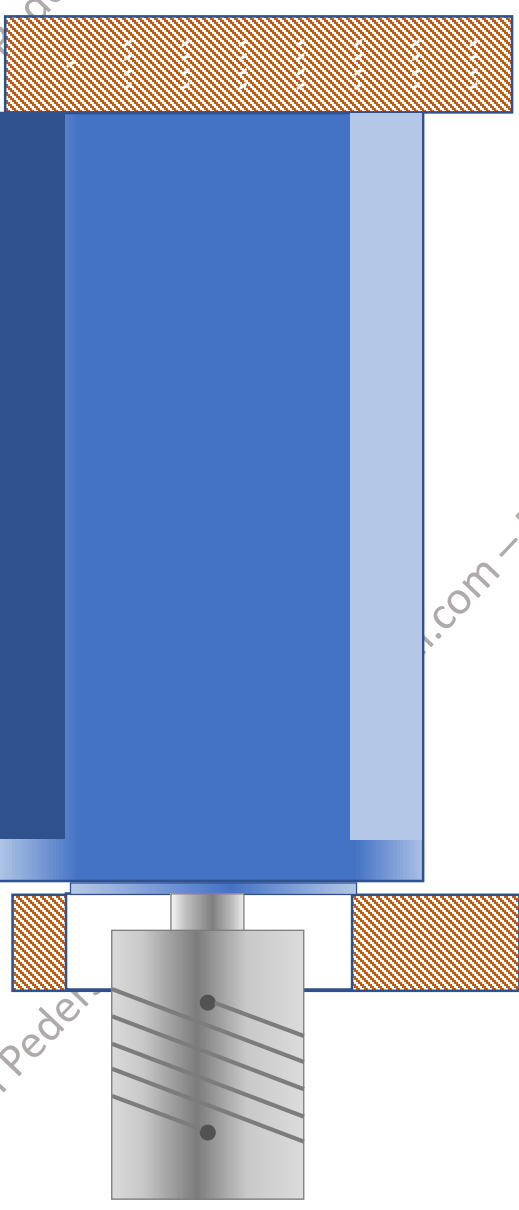
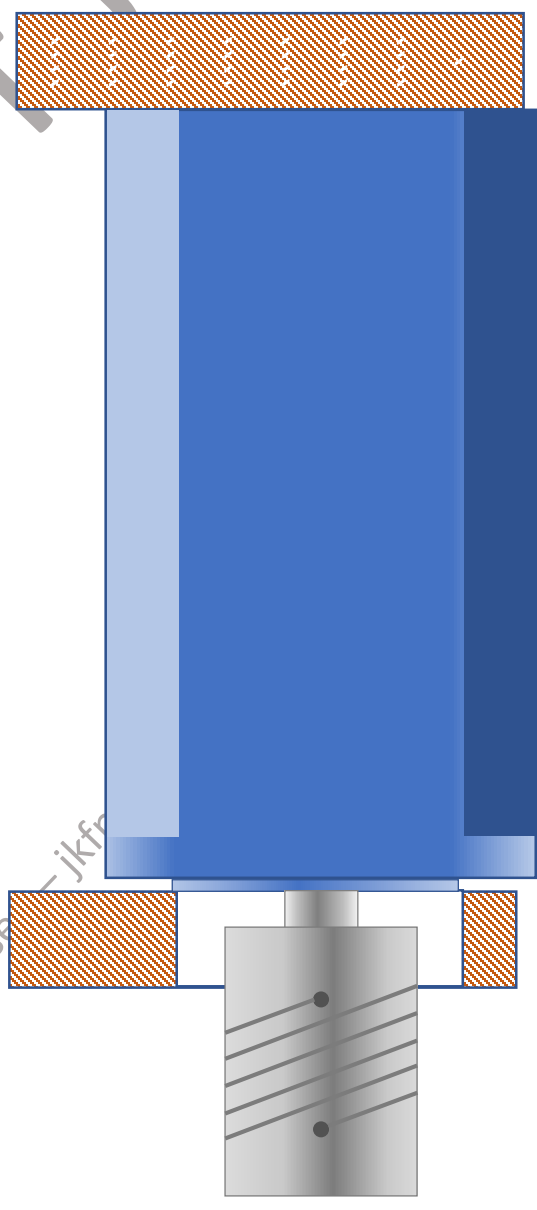
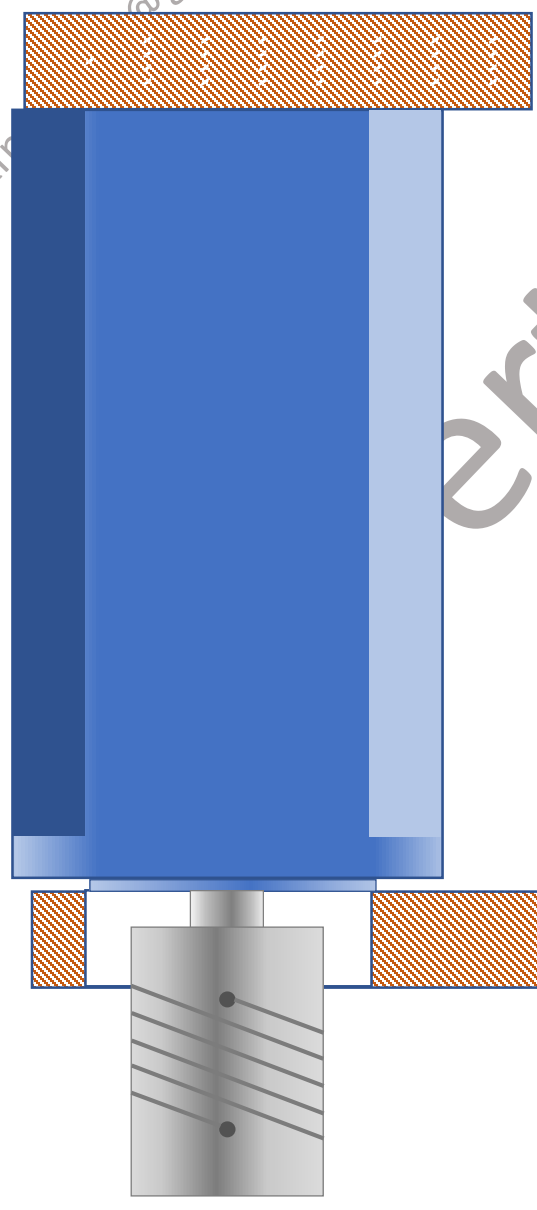
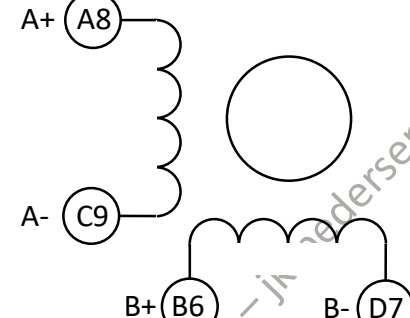
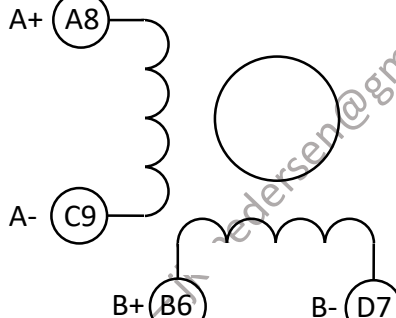
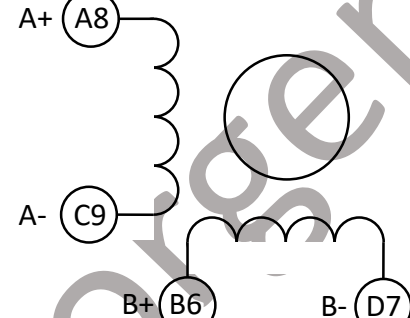
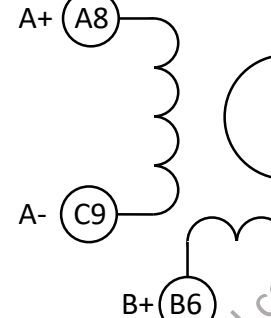
Neutral



DC Power Supply
20-54V

SE-600-48

C1 and C2 - Electrolytic Capacitor, Screw, 4200 µF, 75 V,



Title: CNC Foam Cutter – Router and Laser Cutter

Drawing Detail: Electronics- Traditional Foam Cutter

Materials: MX4660 Controller board
Running GPMC software

Author: Knud “Jorgen” Pedersen – jkpetersen@gmail.com

Date : July 3rd 2018 Page: 14 of 14