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ERGONOMIC WEAVING TOOL CONSTRUCTION GUIDELINE

December 2022

WEBSITE kopernik.info **LINKEDIN** Kopernik **FACEBOOK** @thekopernik **INSTAGRAM** @kopernik.info

Kopernik, with support from Polish Aid and TORAJAMELO, collaborated with Harness Loom to develop an ergonomic weaving tool prototype.

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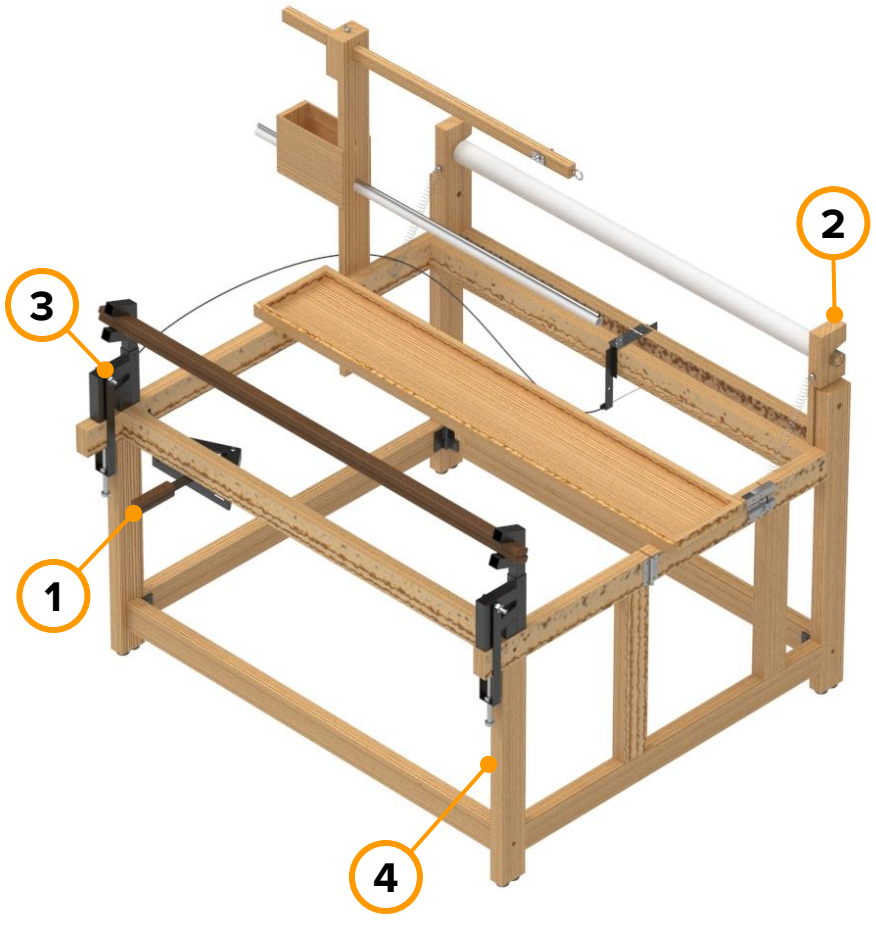
THE ERGONOMIC WEAVING TOOL



The ergonomic weaving tool is designed to reduce back pain and increase comfort while weaving. It includes several features that complement the traditional technique passed down from generation to generation.

1 2 **Lever mechanism and swing arm**
Adjusting the fabric tension replaces the use of the waist and soles of the feet, which are typically used on traditional weaving tools.

3 **Rotator block**
Incorporating the *neket** feature into the ergonomic weaving tool with a rotator block allows for the execution of two distinct weaving processes.

4 **Higher position**
Making *neket* and weaving activities possible while sitting on a chair. So it is more comfortable and less painful.

*Neket: *the initial process of preparing yarn by strand based on color and pattern.*

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COMPONENTS OF ERGONOMIC WEAVING TOOL

Here are 15 components of an ergonomic weaving tool and their quantity:

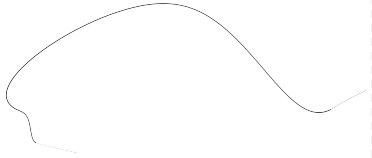
Right Frame
1 unit

Left Frame
1 unit

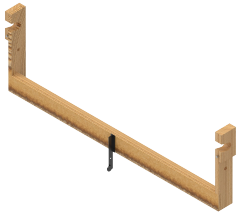
Front Frame
2 units

Rear Frame
2 units

Lamp Bar & Lamp
1 unit

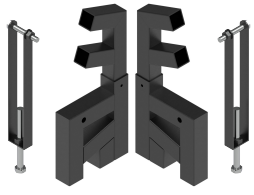


Wire Rope
1 set

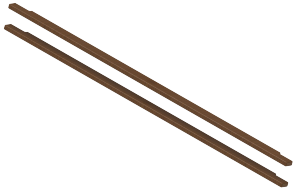


Swing Arm
1 unit

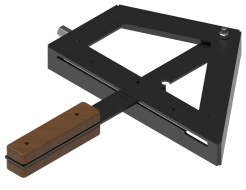
Front Loom Bar
1 unit



Rotator Blocks & Fork Lock
2 units (left and right)



Rear Loom Bar
1 set (2 units)

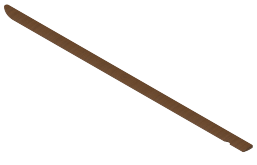


Lever Mechanism
1 set

***Neket* Post**
1 unit

Yarn Table
1 unit

PVC Pipe & Aluminum Pipe
1 unit each



Weaving Sword
1 unit

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MATERIALS REQUIRED

Part Name	Material(s)	Size (mm)
Right Frame	Pine Wood	5,080 x 80 x 40
Left Frame	Pine Wood	3,970 x 80 x 40
Front Frame	Pine Wood	2,620 x 80 x 40
Front Frame Iron	Iron Plate 3 mm	270 x 25 x 3
Rear Frame	Pine Wood	2,620 x 80 x 40
Swing Arm	Pine Wood	1,290 x 90 x 40
	Pine Wood	1,140 x 90 x 20
Front Loom Bar	Aluminum Pipe 40 mm	120
	PVC Pipe 2 inch	1,240
	Pine Wood	1,360 x 12 x 20
	Pine Wood	1,360 x 20 x 43
Weaving Rotator Block	Hollow Iron 34 mm	542 x 34 x 34
Neket Rotator Block	Hollow Iron 30 mm	440 x 30 x 30
Rear Loom Bar	Coconut Wood	2,900 x 50 x 20
Lever Mechanism	Iron Plate 3 mm	1,843 x 30 x 3
	Coconut Wood	250 x 30 x 15

MATERIALS REQUIRED

Part Name	Material(s)	Size (mm)
Neket Post	Multiplex 5 mm	470 x 170 x 5
	Pine Wood	1,420 x 90 x 20
	Pine Wood	170 x 90 x 15
Lamp Bar	Pine Wood	1,000 x 35 x 25
Fork Lock	Iron Plate 3 mm	642 x 25 x 3
PVC Pipe	PVC Pipe ¾ inch	1,200
Aluminum Pipe	Aluminum Pipe 10 mm	1,200
Yarn Table	Multiplex 5 mm	1,450 x 250 x 5
	Pine Wood	4,070 x 30 x 20
Weaving Sword	Coconut Wood	1,200 x 50 x15

TOOLS REQUIRED

Here are the tools required to build an ergonomic weaving tool:

Table Saw Machine

Air Compressor Machine

Drill press machine

Hand Drill Machine

Router Machine

Welding Machine

Electric Planer Machine

Iron Cutting Grinder

Wood Sanding Grinder

Wood Sanding Machine

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TOOLS REQUIRED

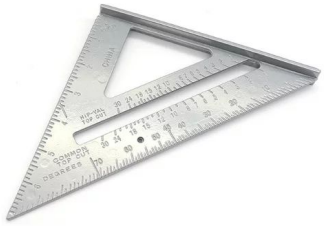
Here are the tools required to build an ergonomic weaving tool:

Wood Saw

Hacksaw

Paint Spray Gun

Brush



Ruler

Waterpass

Protractor

Hammer

Crowbar

Wood Chisel

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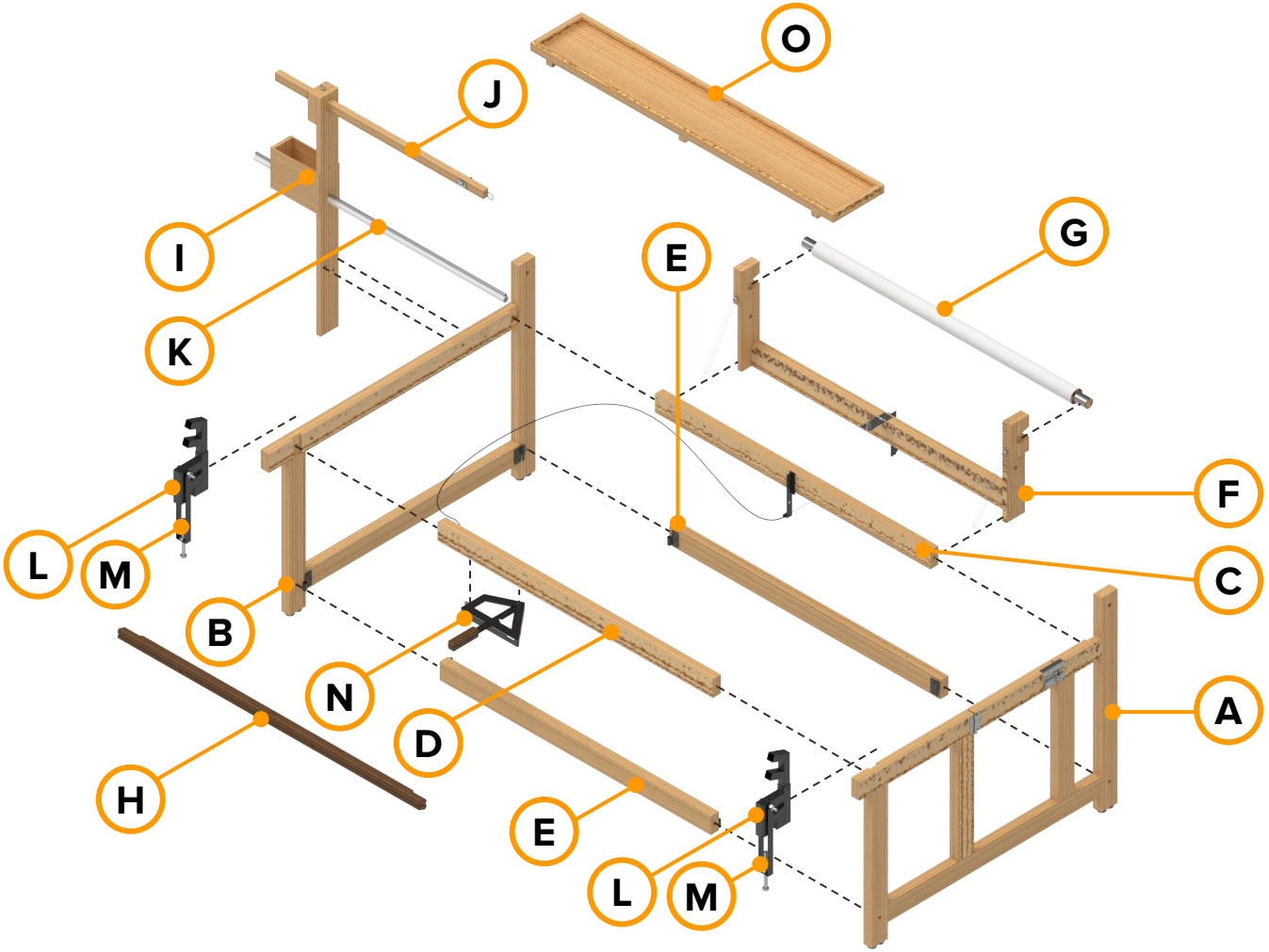
EXPLODED VIEW OF ERGONOMIC WEAVING TOOL



Code	Component Name
A	Right Frame
B	Left Frame
C	Top Front Frame
D	Top Rear Frame
E	Bottom Front Frame & Bottom Rear Frame
F	Swing Arm
G	Front Loom Bar
H	Rear Loom Bar
I	*Neket* Post
J	Lamp Bar
K	PVC Pipe & Aluminum Pipe
L	Rotator Blocks
M	Fork Locks
N	Lever Mechanism
O	Yarn Table

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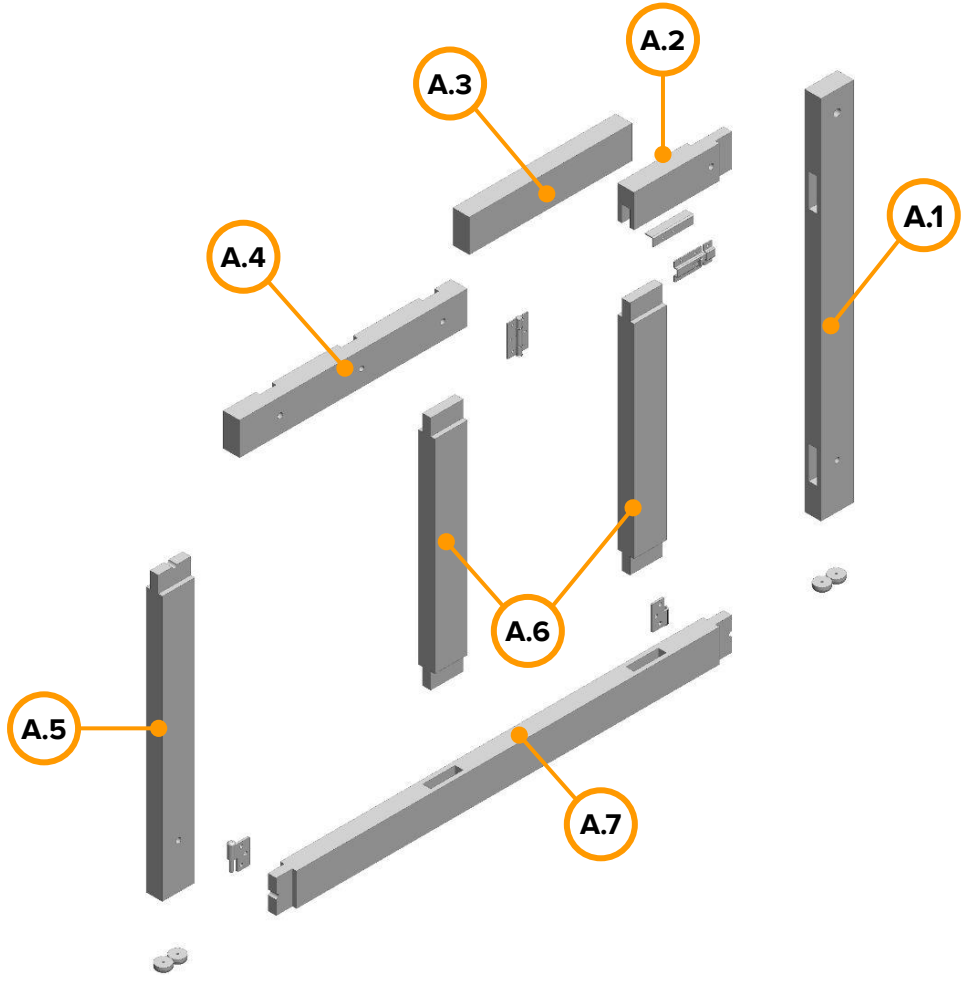
RIGHT FRAME
T80
N80
T100
N120

RIGHT FRAME - A



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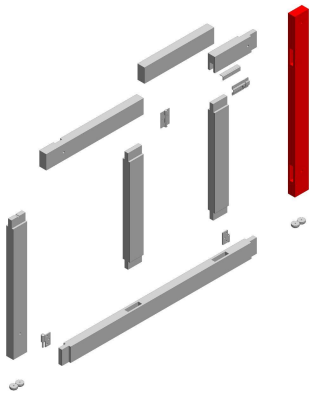
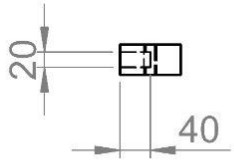
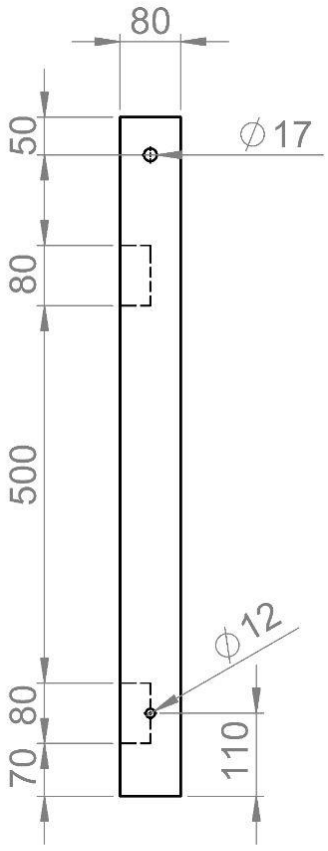
RIGHT FRAME - A.1

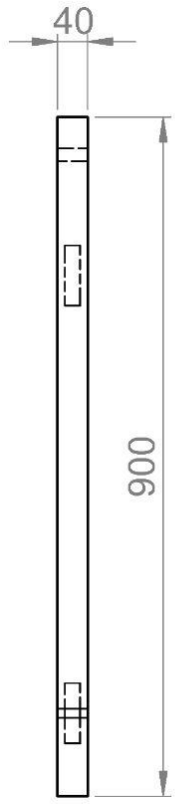




Top View



Front View



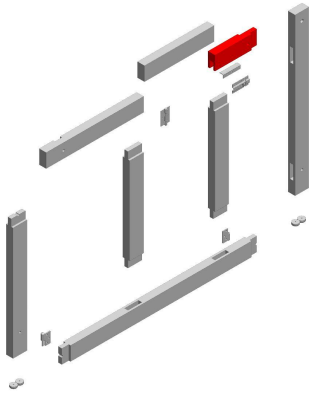
Side View

No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

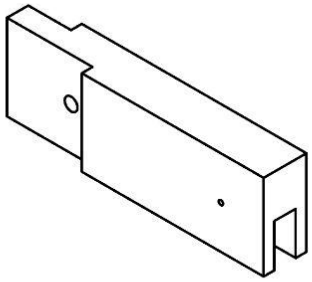
Scale 1:10
Unit: millimeter

No	Material	Size (mm)	Quantity
1	Pine wood	900 x 80 x 40	1 unit

RIGHT FRAME - A.2

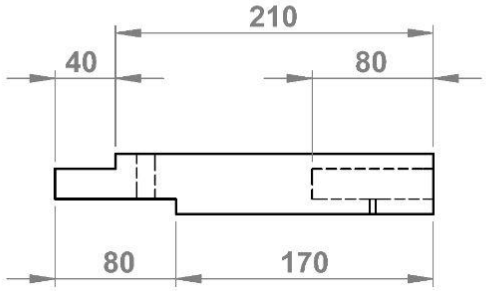


No	Material	Size (mm)	Quantity
1	Pine wood	250 x 80 x 40	1 unit

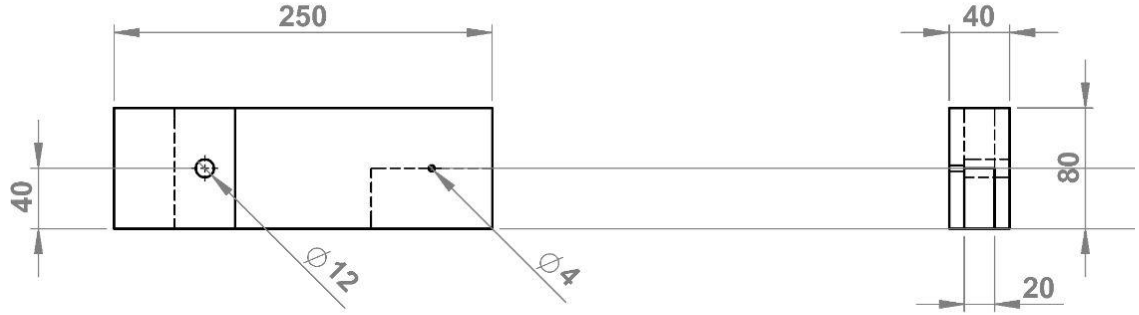


No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

Scale 1:5
Unit: millimeter



Top View



Front View **Side View**

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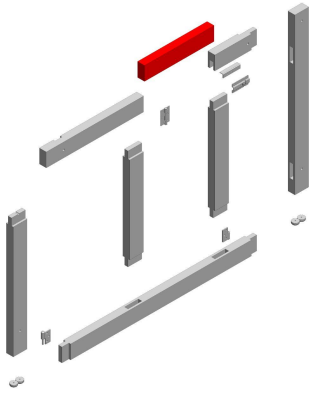
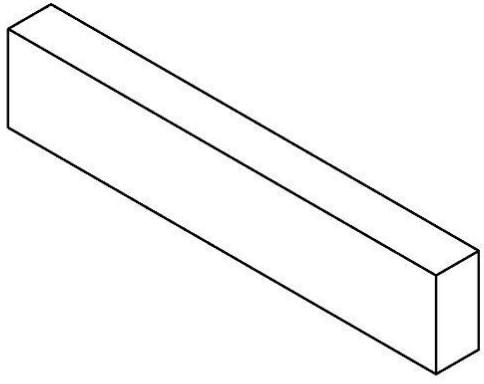
RIGHT FRAME - A.3

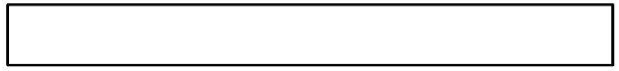


No	Material	Size (mm)	Quantity
1	Pine wood	400 x 80 x 40	1 unit

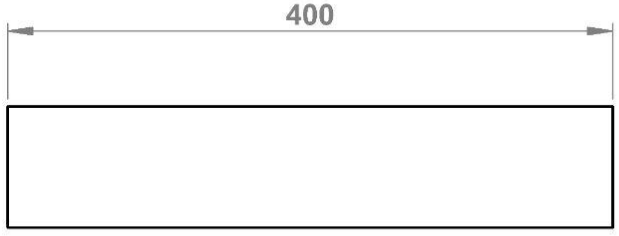


No	Tool
1	Saw

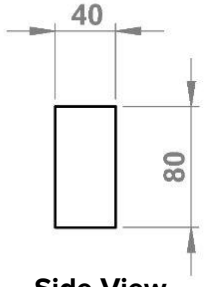
Scale 1:5
Unit: millimeter



Top View



Front View



Side View

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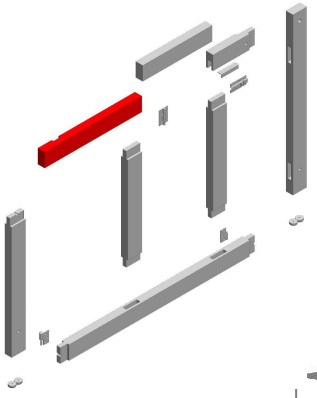
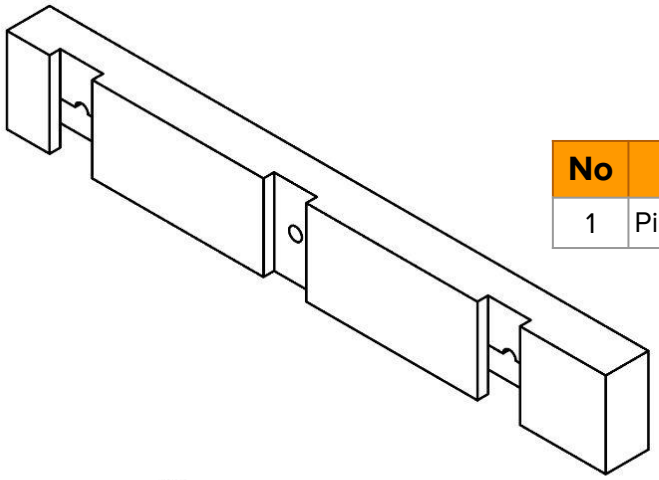
RIGHT FRAME - A.4

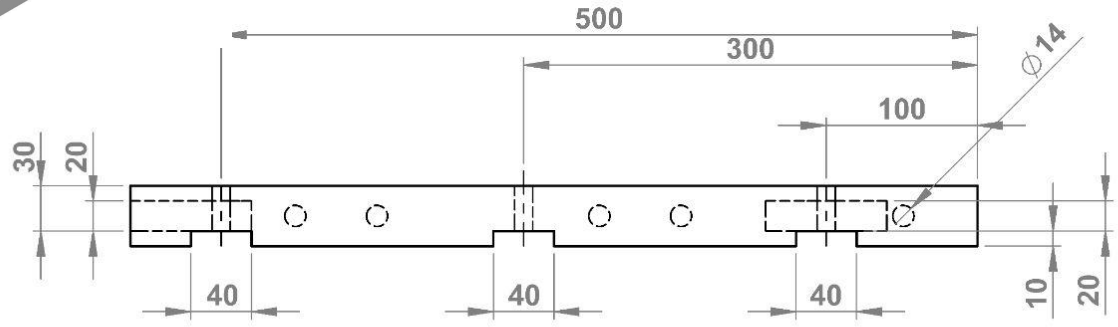




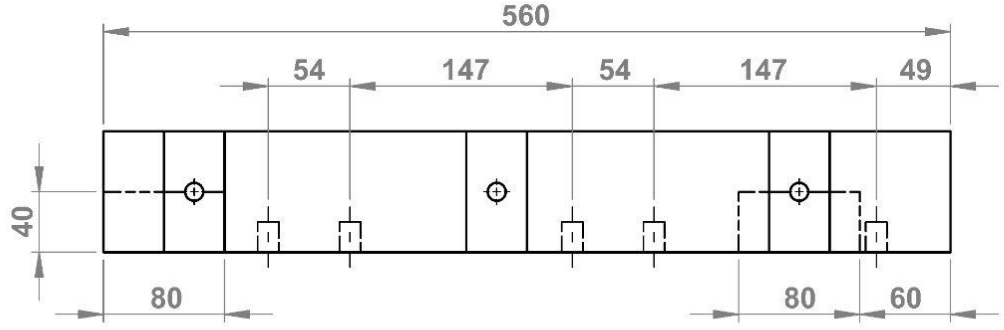
No	Material	Size (mm)	Quantity
1	Pine wood	560 x 80 x 40	1 unit

No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

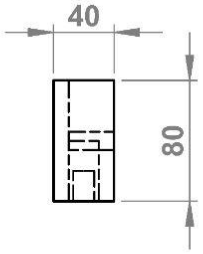
Scale 1:5
Unit: millimeter



Top View



Front View



Side View

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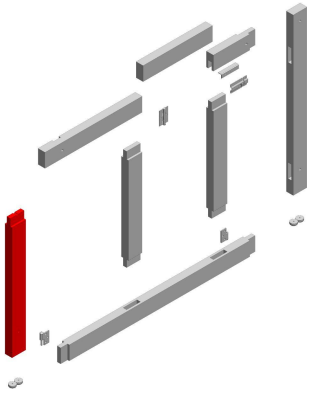
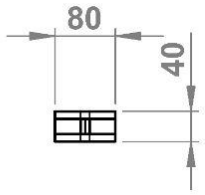
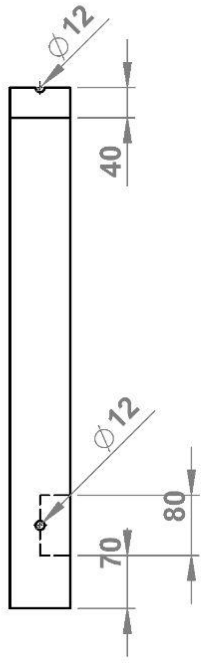
RIGHT FRAME - A.5

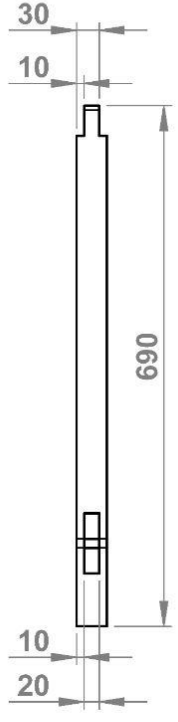




Top View



Front View



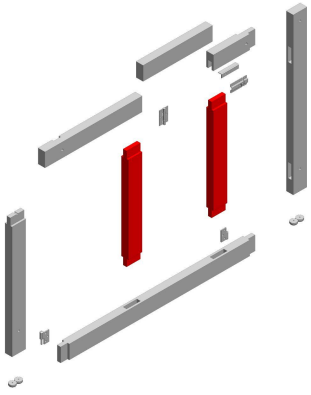
Side View

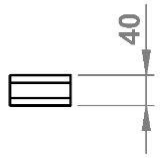
No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

Scale 1:10
Unit: millimeter

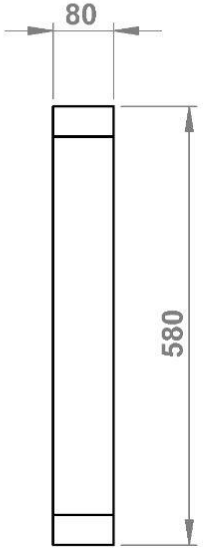
No	Material	Size (mm)	Quantity
1	Pine wood	690 x 80 x 40	1 unit

RIGHT FRAME - A.6

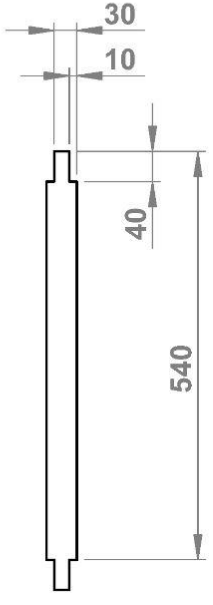




Top View



Front View



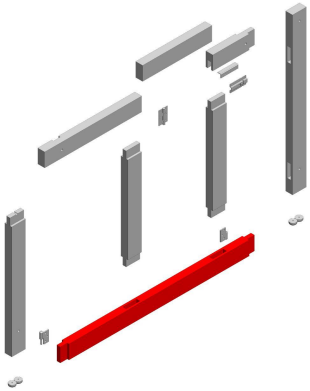
Side View

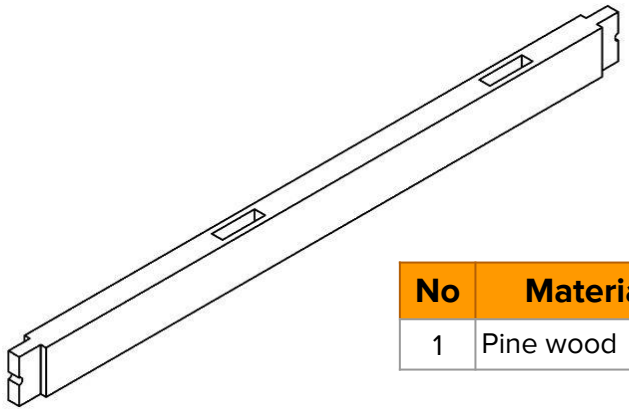
No	Tools
1	Saw
2	Wood chisel
3	Hammer

Scale 1:10
Unit: millimeter

No	Material	Size (mm)	Quantity
1	Pine wood	580 x 80 x 40	2 units

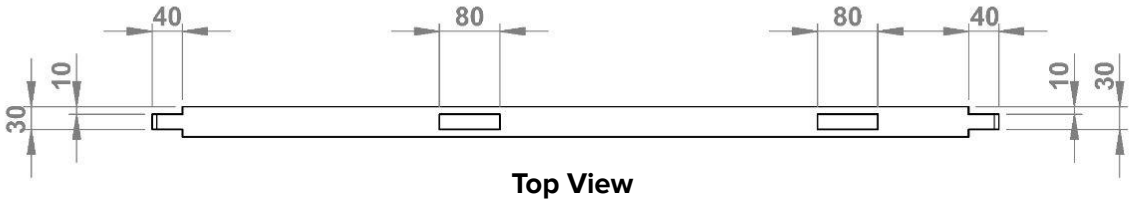
RIGHT FRAME - A.7



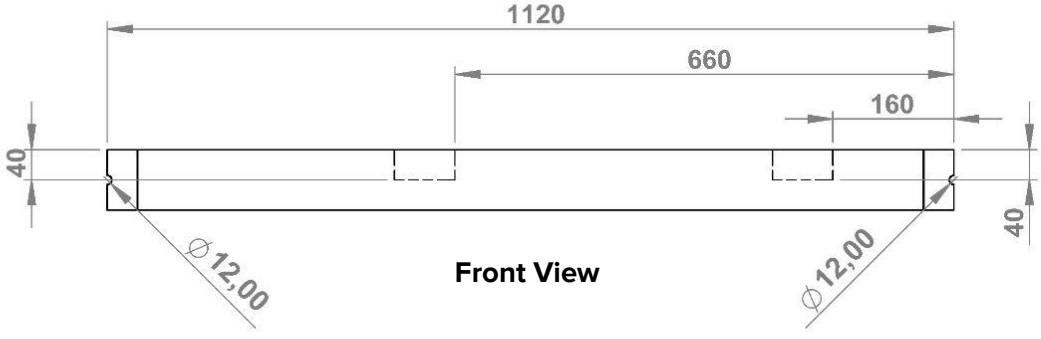


No	Material	Size (mm)	Quantity
1	Pine wood	1,120 x 80 x 40	1 unit

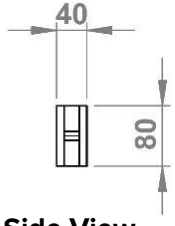
No	Tools
1	Saw
2	Router/drill
3	Wood chisel
4	Hammer



Top View



Front View



Side View

Scale 1:10
Unit: millimeter

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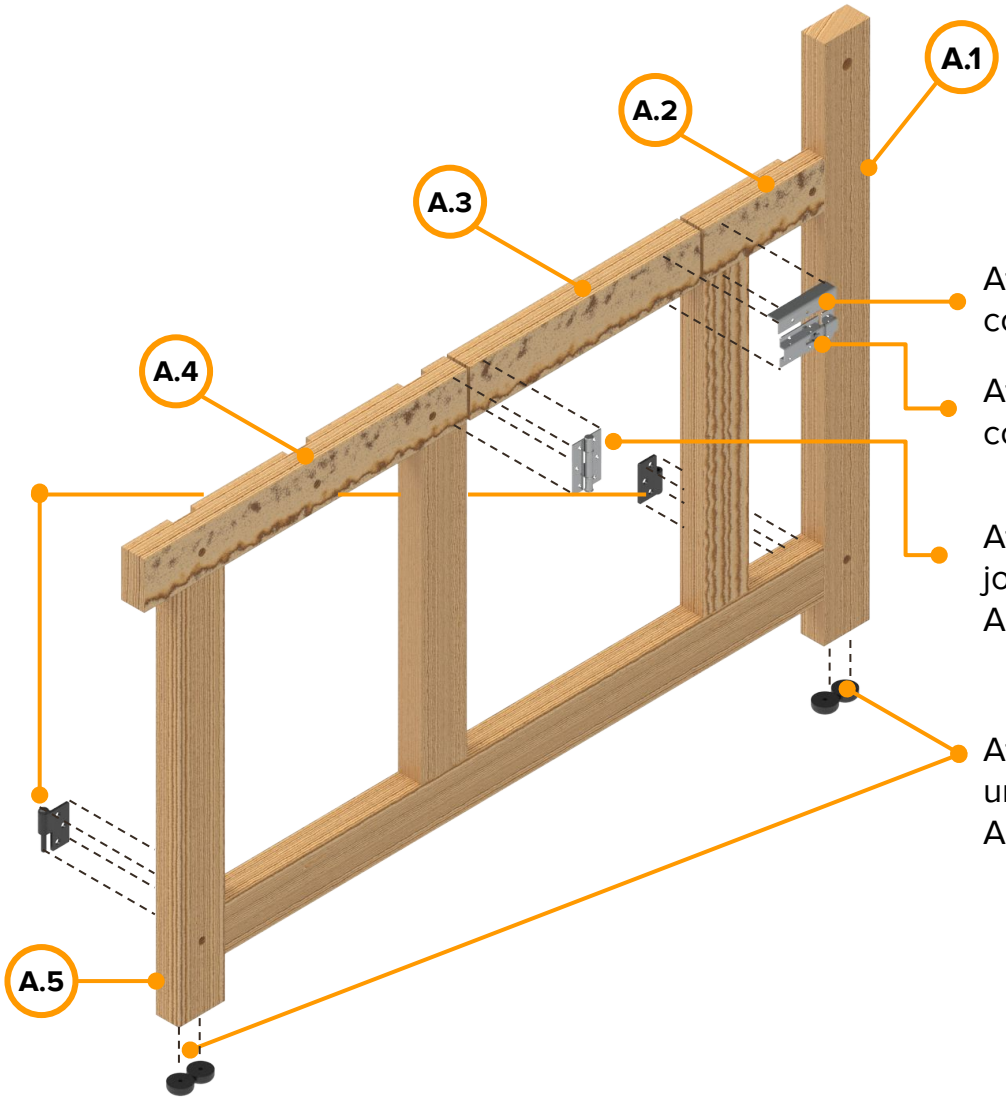
RIGHT FRAME - ASSEMBLY

Attach the frame hinges on the inner side of the right frame



Attach L-angle iron on component A.3

Attach latch slot to component A.2 and A.3

Attach door hinge to the joints of component A.3 and A.4

Attach rolling-door rubbers under frame legs of A.1 and A.5

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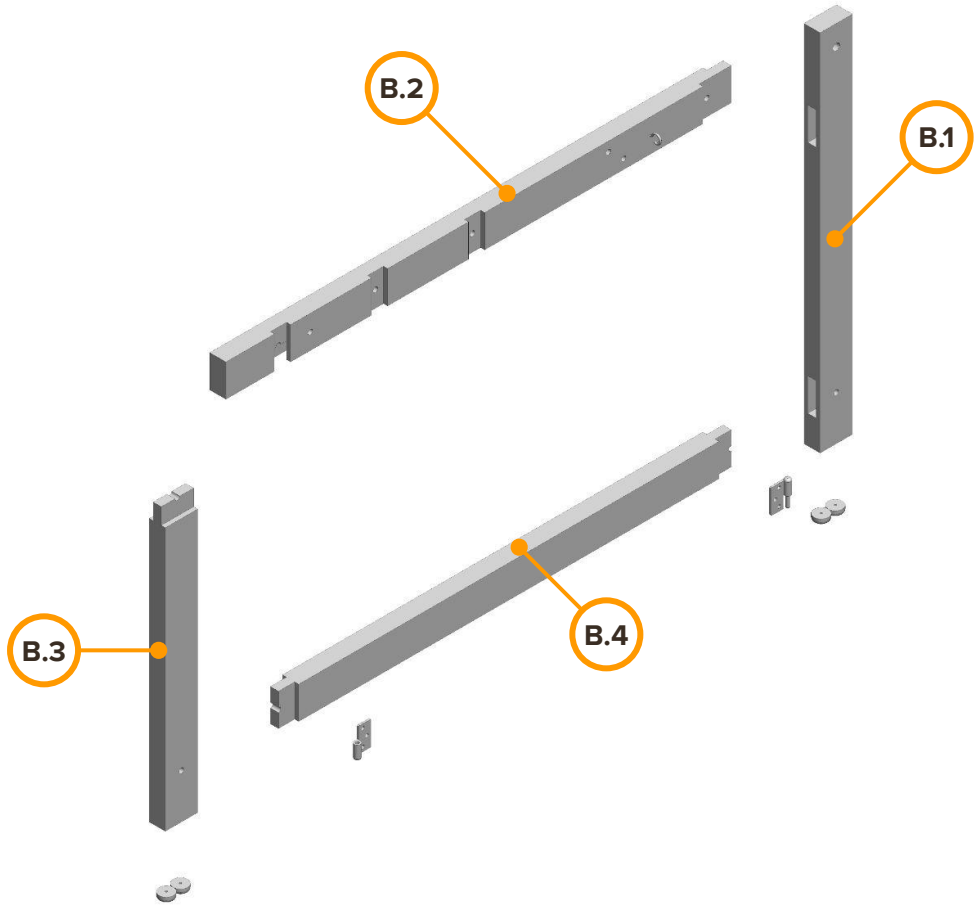
LEFT FRAME

LEFT FRAME - B



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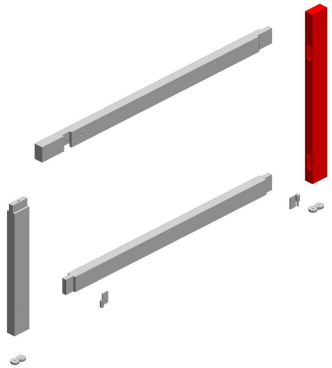
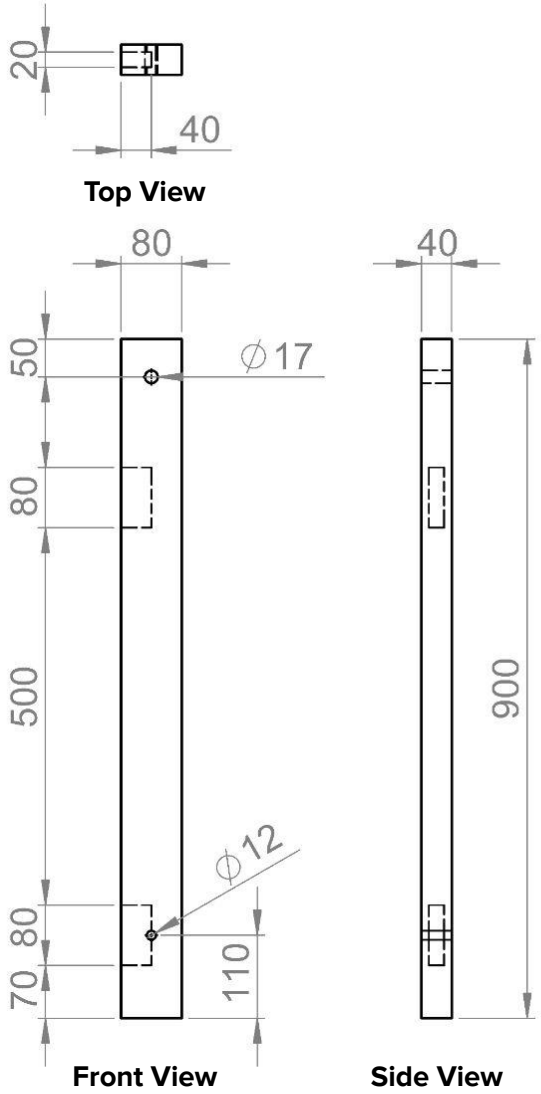
LEFT FRAME - B.1





No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

Scale 1:10
Unit: millimeter

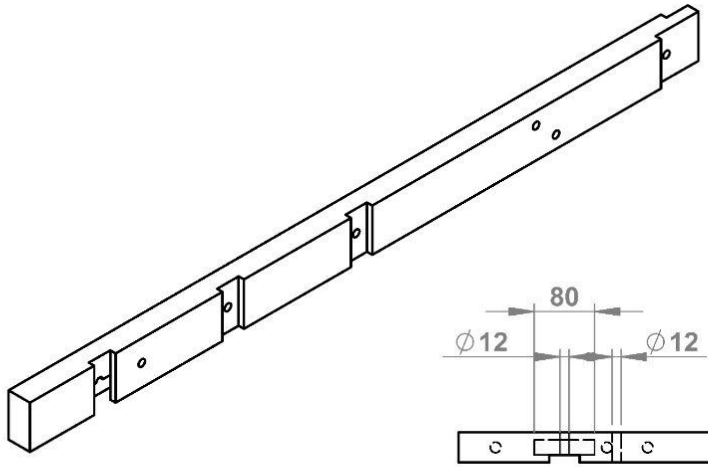
No	Material	Size (mm)	Quantity
1	Pine wood	900 x 80 x 40	1 unit

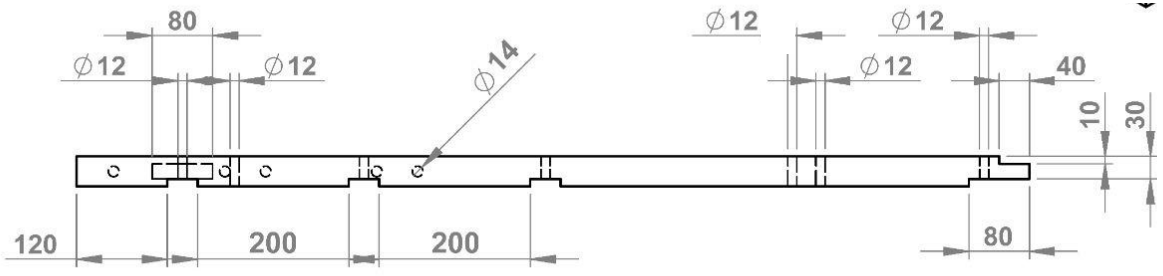
LEFT FRAME - B.2

No	Material	Size (mm)	Quantity
1	Pine wood	1,260 x 80 x 40	1 unit

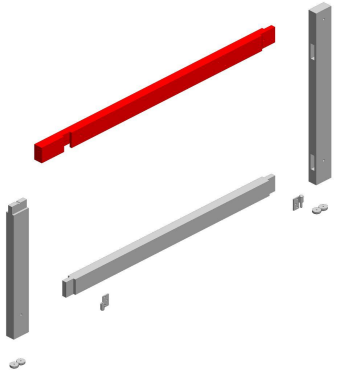
No	Tools
1	Saw
2	Router/drill
3	Wood chisel
4	Hammer

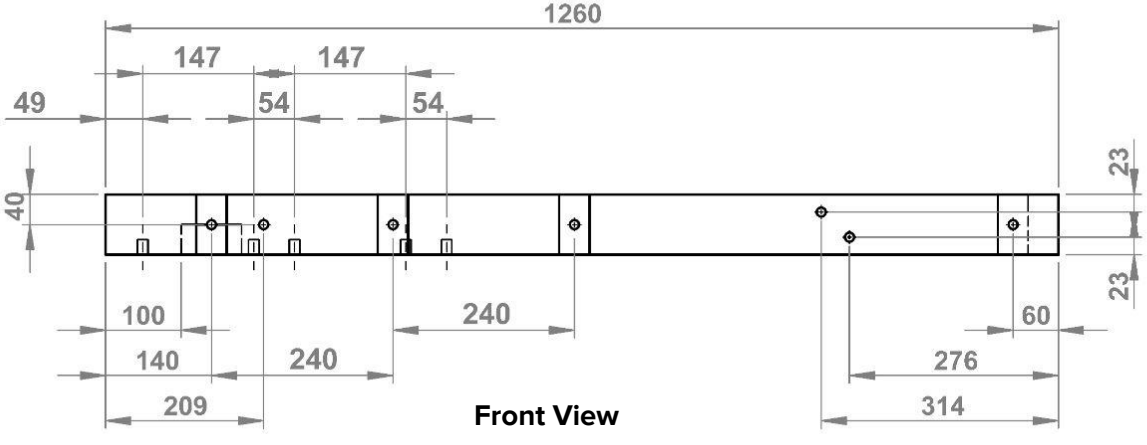
Scale 1:10
Unit: millimeter



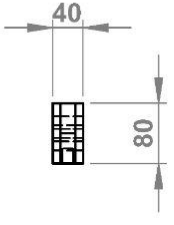


Top View





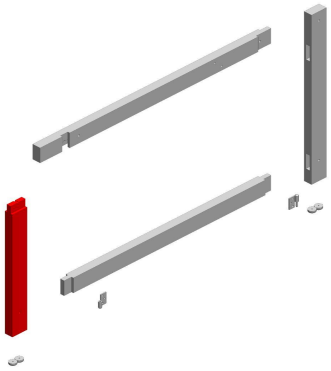
Front View

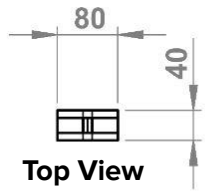


Side View

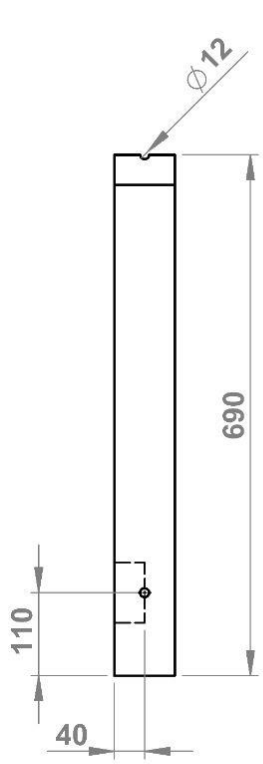
KOPERNIK
FINDING WHAT WORKS

LEFT FRAME - B.3

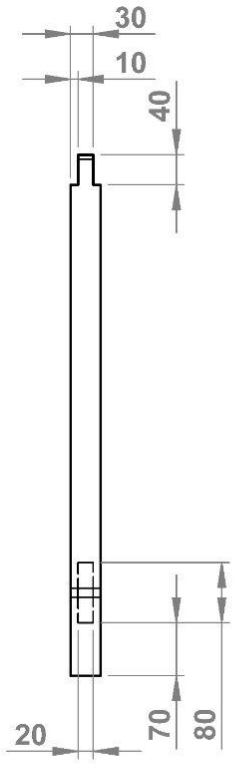




Top View



Front View



Side View

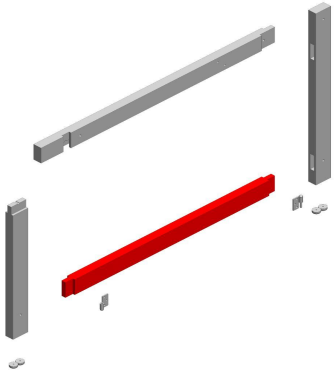
No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

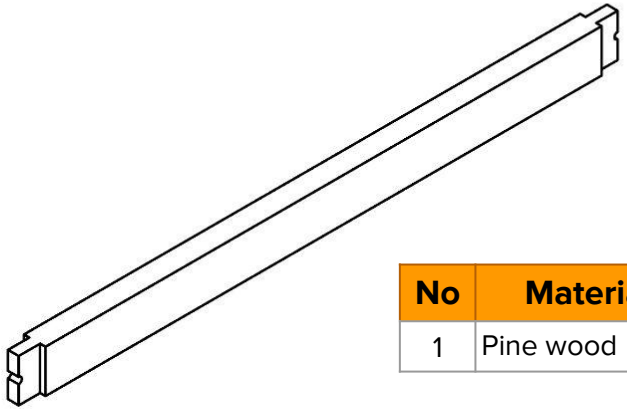
Scale 1:10
Unit: millimeter

No	Material	Size (mm)	Quantity
1	Pine wood	690 x 80 x 40	1 unit

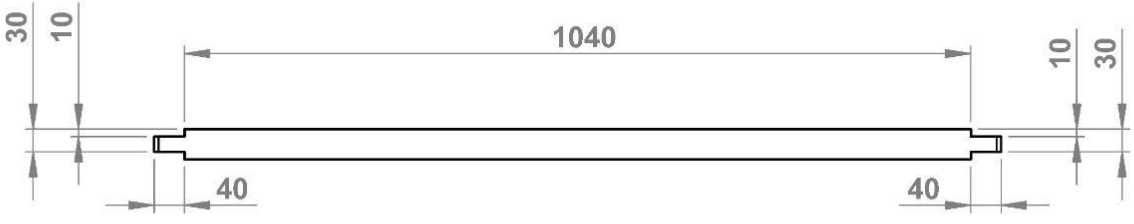
KOPERNIK
FINDING WHAT WORKS

LEFT FRAME - B.4



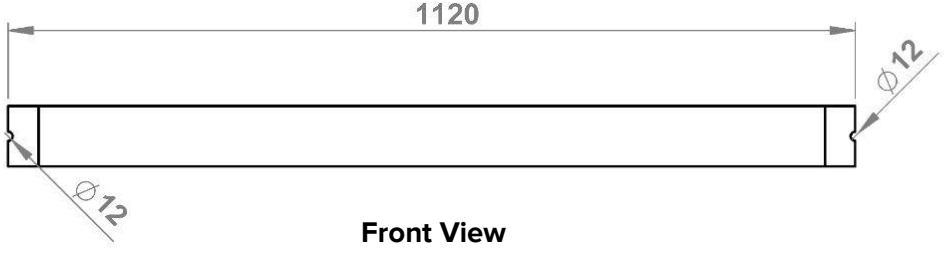


No	Material	Size (mm)	Quantity
1	Pine wood	1,120 x 80 x 40	1 unit

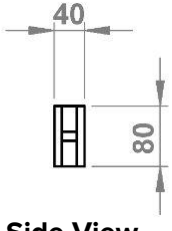


Top View

No	Tools
1	Saw
2	Router/drill
3	Wood chisel
4	Hammer



Front View

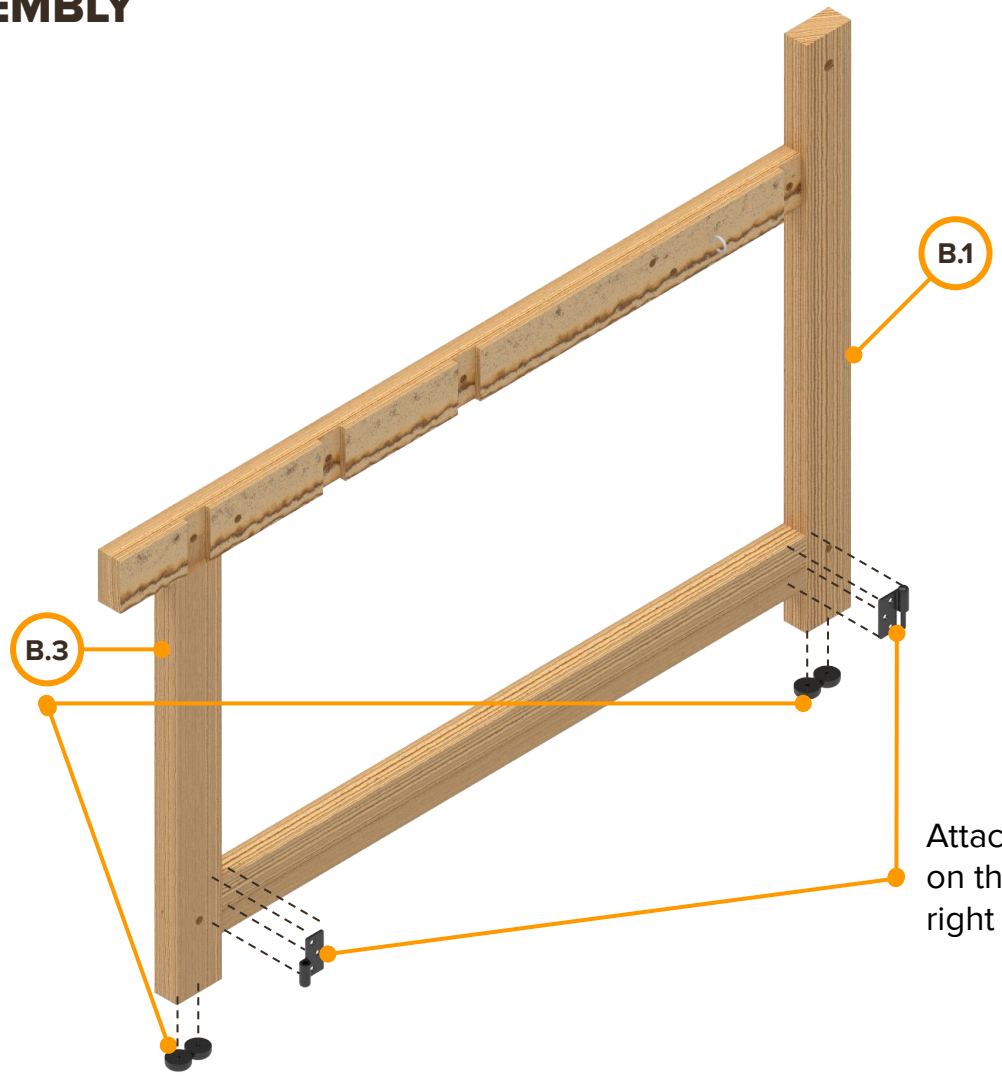


Side View

Scale 1:10
Unit: millimeter

LEFT FRAME - ASSEMBLY

Attach rolling-door rubbers under frame legs of B.1 and B.3.

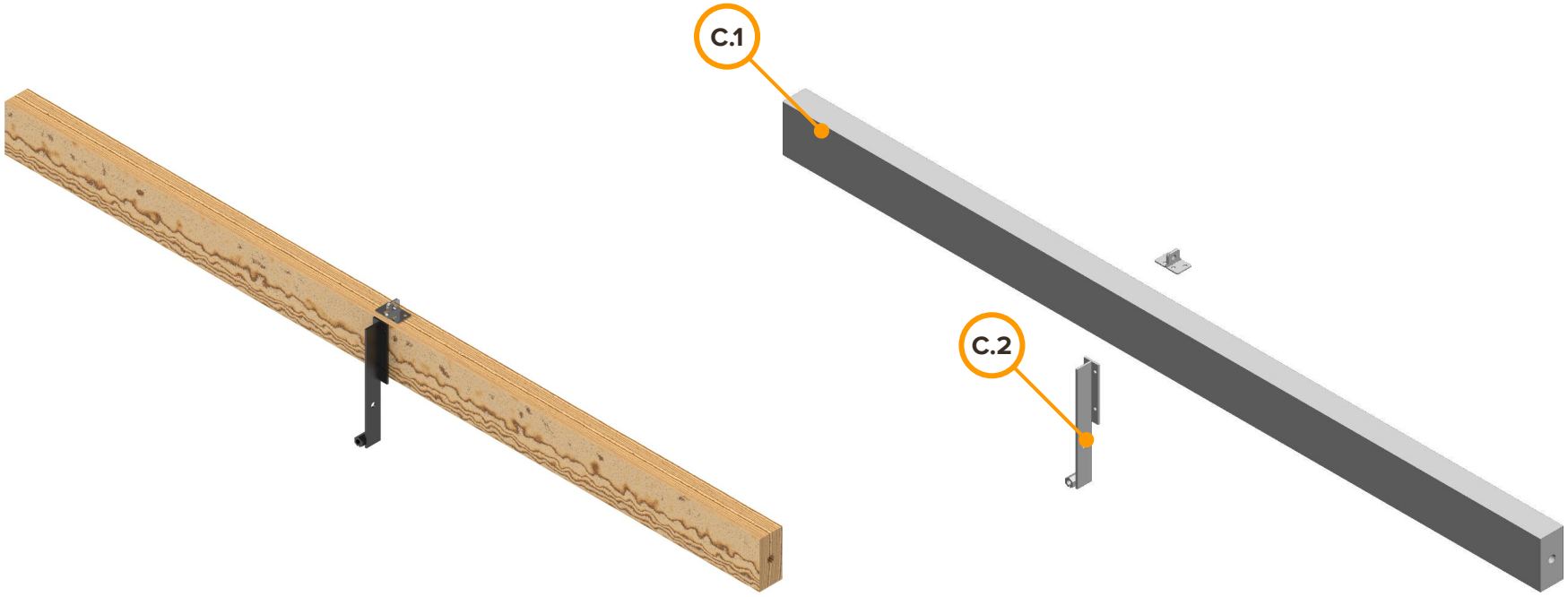


Attach the frame hinges on the inner side of the right frame.

KOPERNIK
FINDING WHAT WORKS

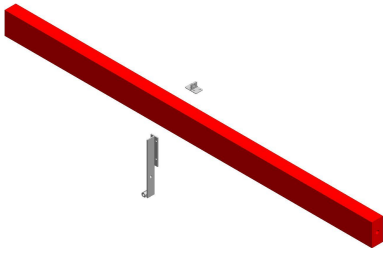
FRONT & REAR FRAMES

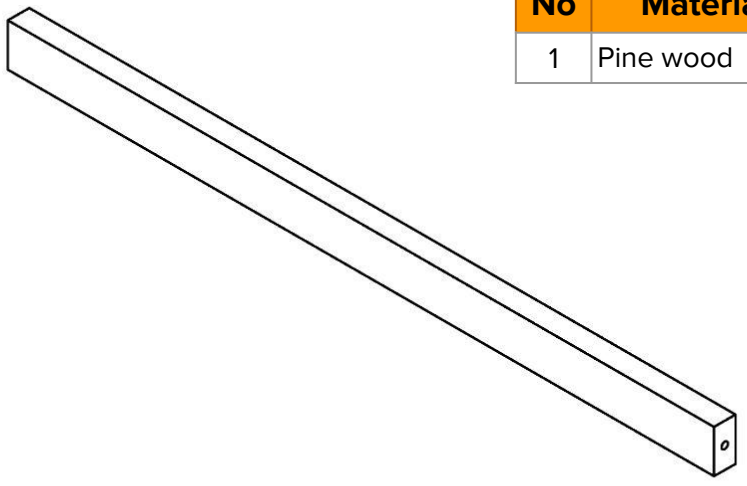
TOP FRONT FRAME - C



KOPERNIK
FINDING WHAT WORKS

TOP FRONT FRAME - C.1

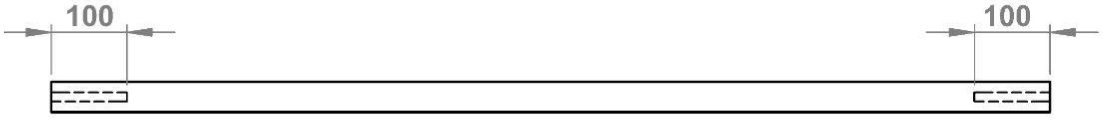




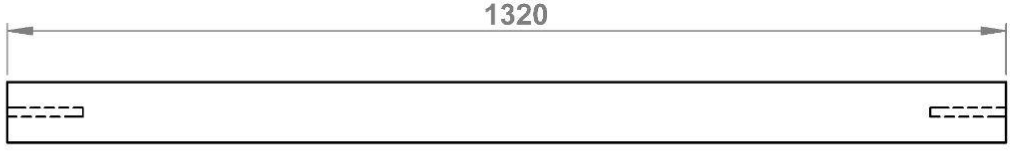
No	Material	Size (mm)	Quantity
1	Pine wood	1,320 x 80 x 40	1 unit

No	Tools
1	Saw
2	Drill press machine

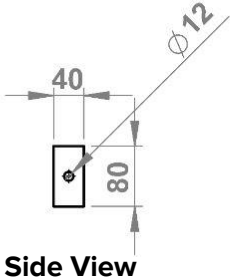
Scale 1:10
Unit: millimeter



Top View



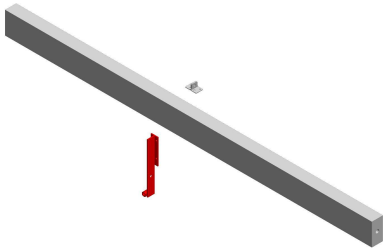
Front View

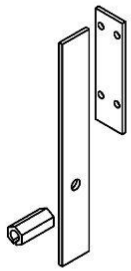


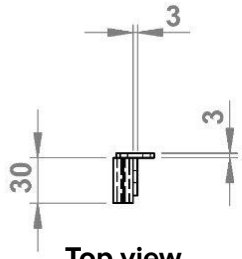
Side View

KOPERNIK
FINDING WHAT WORKS

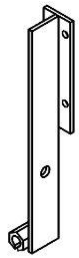
TOP FRONT FRAME'S IRON - C.2

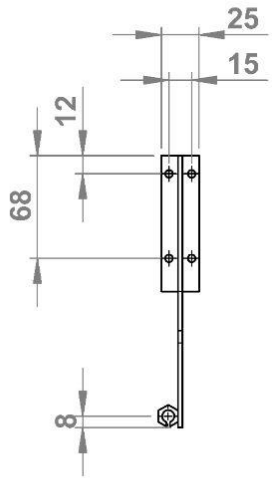




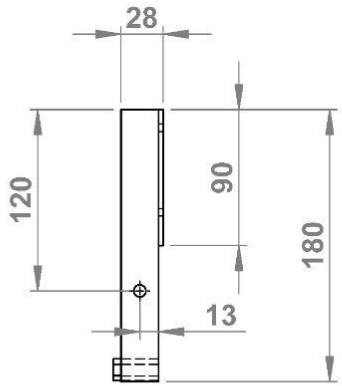


Top view





Front View



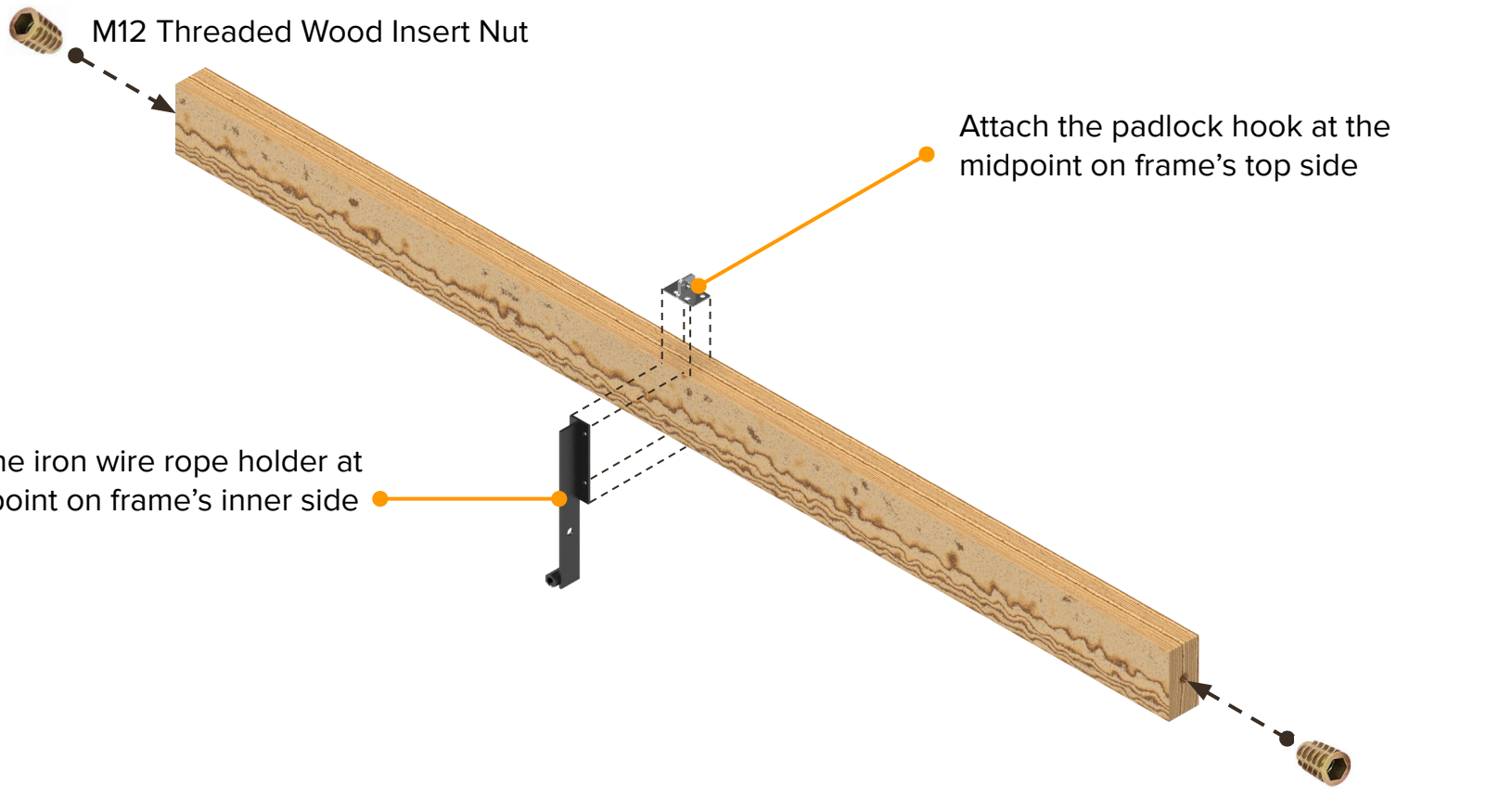
Side View

No	Tools
1	Iron cutting grinder
2	Welding machine
3	Air compressor
4	Paint spray gun

Scale 1:5
Unit: millimeter

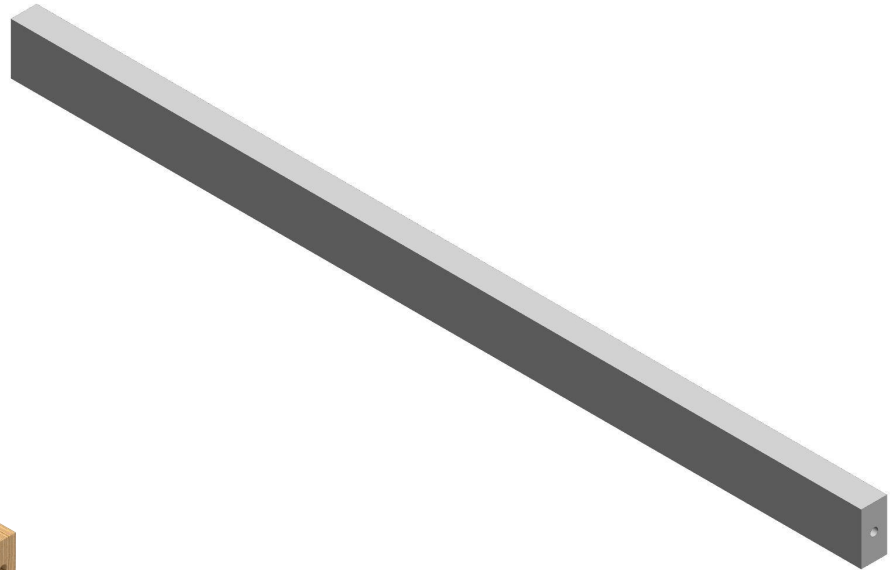
No	Materials	Size (mm)	Quantity
1	Iron plate 3mm	270 X 25	1 unit
2	Long M8 nut	30 mm	1 unit

TOP FRONT VIEW (ASSEMBLY)



KOPERNIK
FINDING WHAT WORKS

TOP REAR FRAME - D

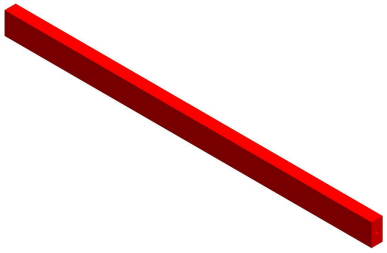


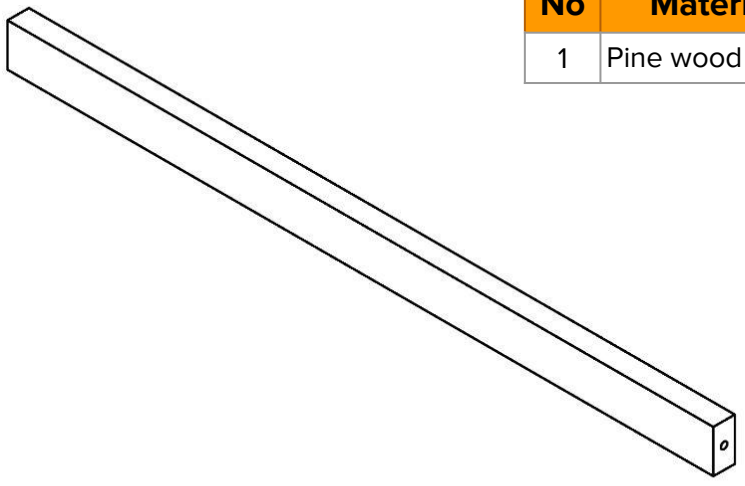
TOP REAR FRAME - D

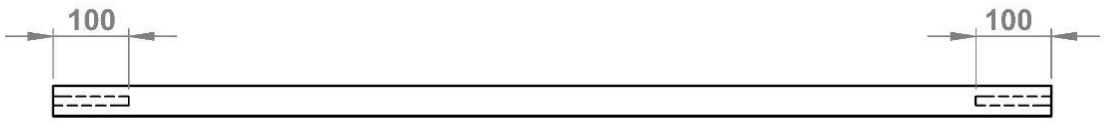
No	Material	Size (mm)	Quantity
1	Pine wood	1,320 x 80 x 40	1 unit

No	Tools
1	Saw
2	Drill press machine

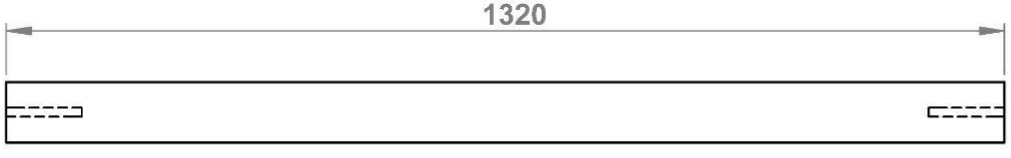
Scale 1:10
Unit: millimeter



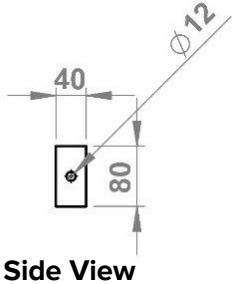




Top View



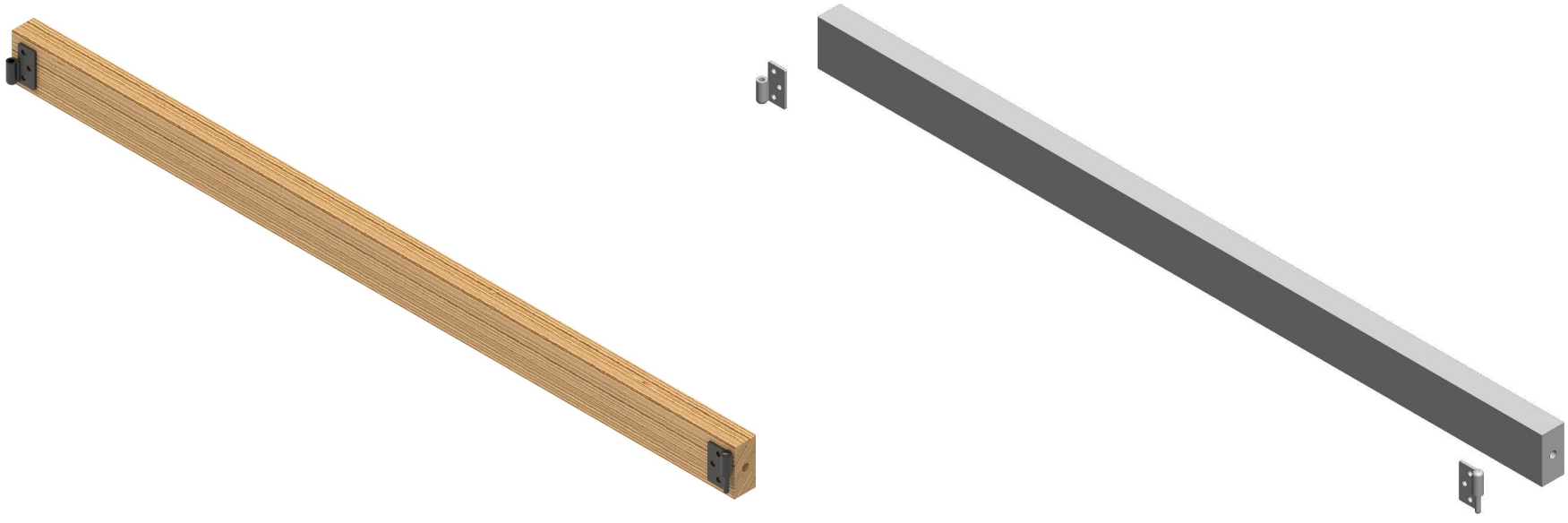
Front View



Side View

KOPERNIK
FINDING WHAT WORKS

BOTTOM FRONT FRAME & BOTTOM REAR FRAME - E



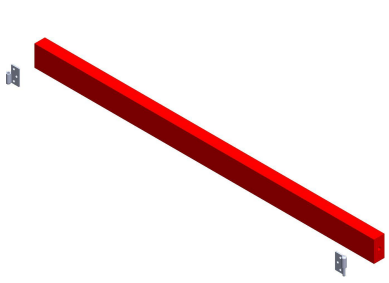
KOPERNIK
FINDING WHAT WORKS

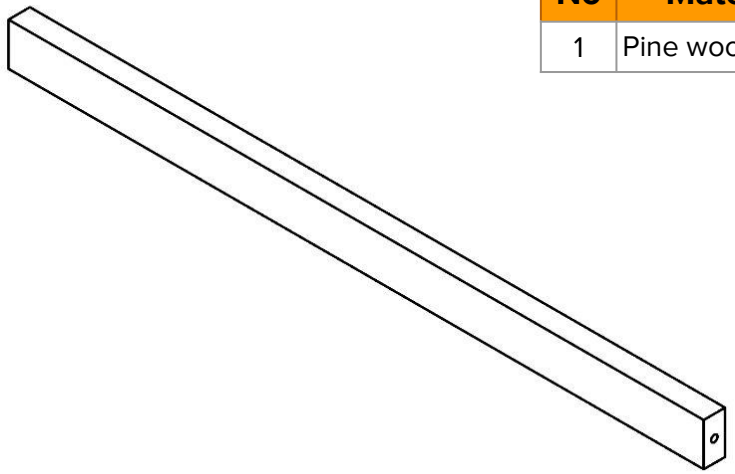
BOTTOM FRONT FRAME - E

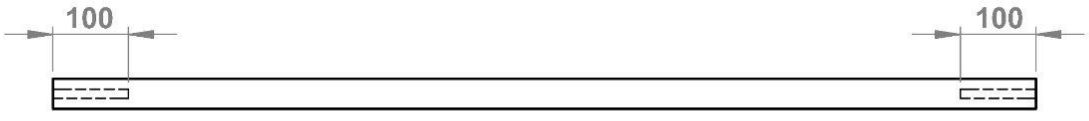
No	Material	Size (mm)	Quantity
1	Pine wood	1,300 x 80 x 40	1 unit

No	Tools
1	Saw
2	Drill press machine

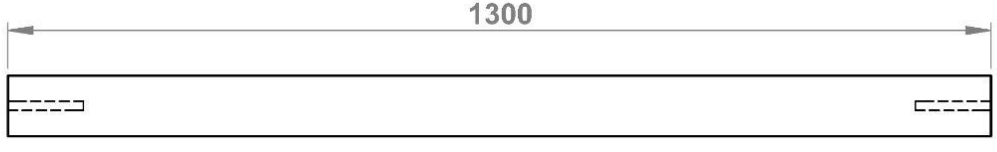
Scale 1:10
Unit: millimeter



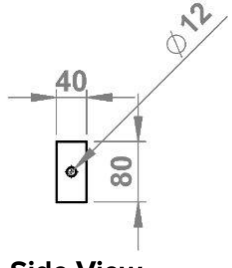




Top View



Front View



Side View

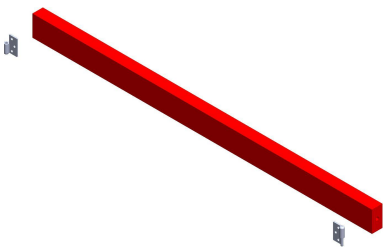
KOPERNIK
FINDING WHAT WORKS

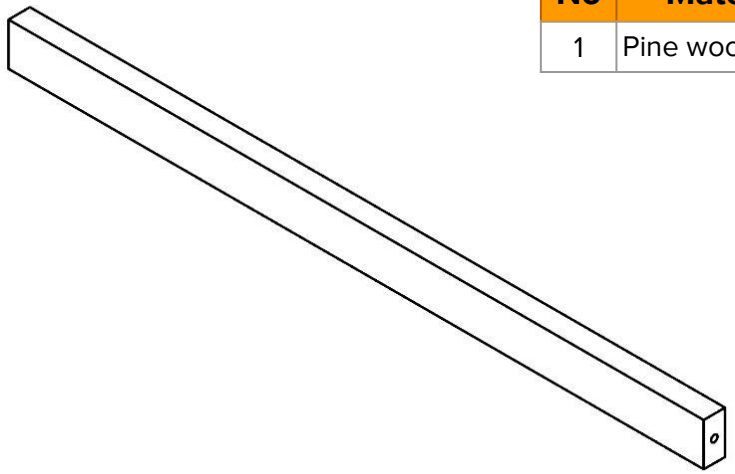
BOTTOM REAR FRAME - E

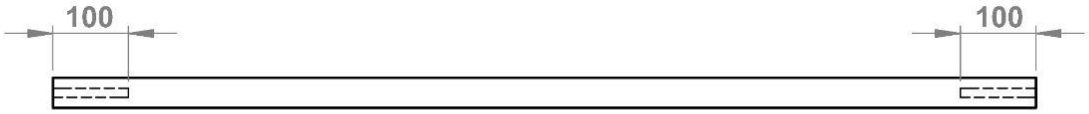
No	Material	Size (mm)	Quantity
1	Pine wood	1,300 x 80 x 40	1 unit

No	Tools
1	Saw
2	Drill press machine

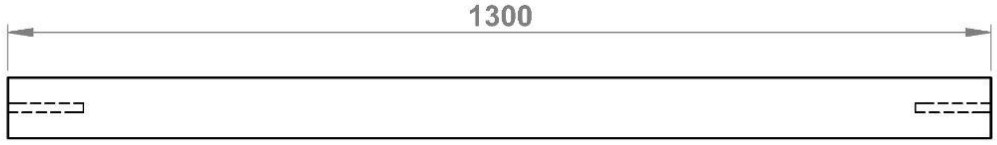
Scale 1:10
Unit: millimeter



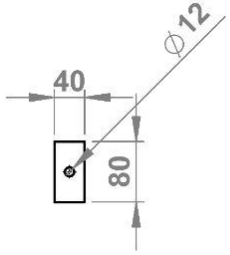




Top View



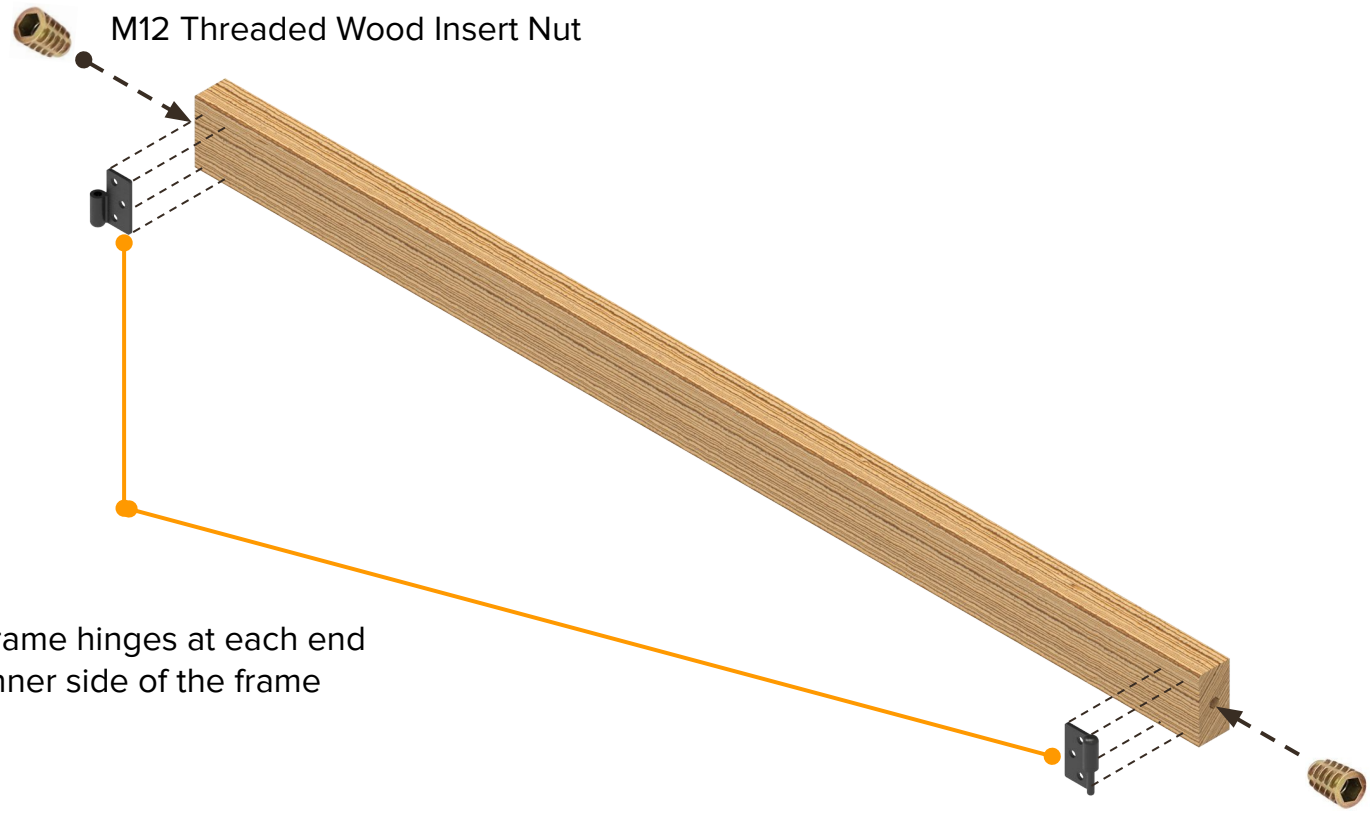
Front View



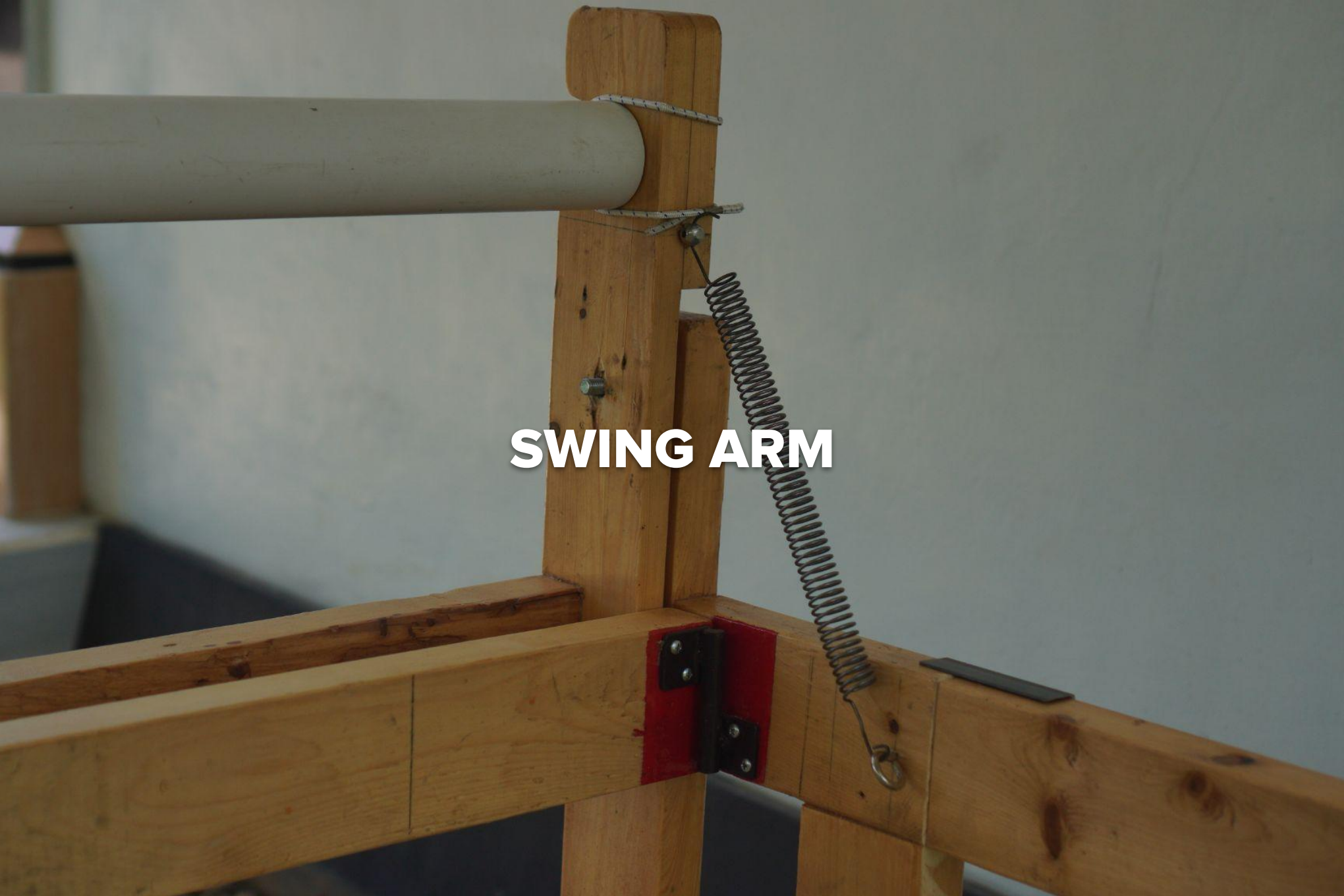
Side View

KOPERNIK
FINDING WHAT WORKS

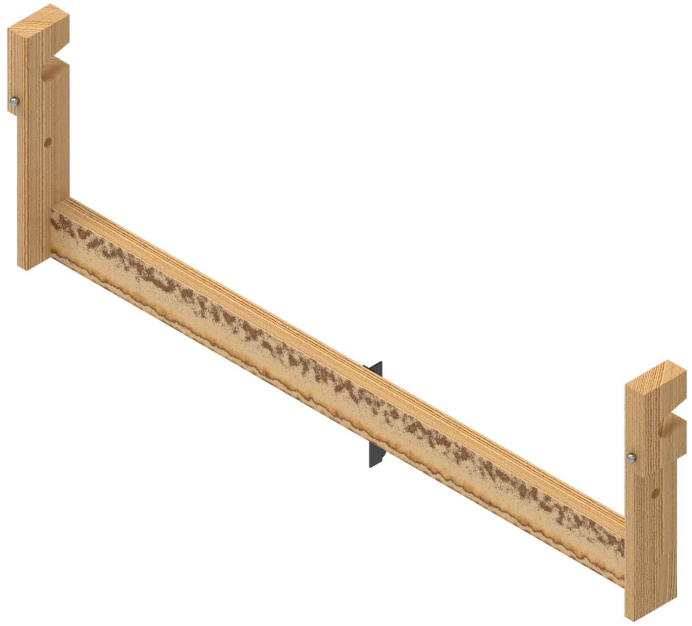
BOTTOM FRONT FRAME & BOTTOM REAR FRAME (ASSEMBLY)

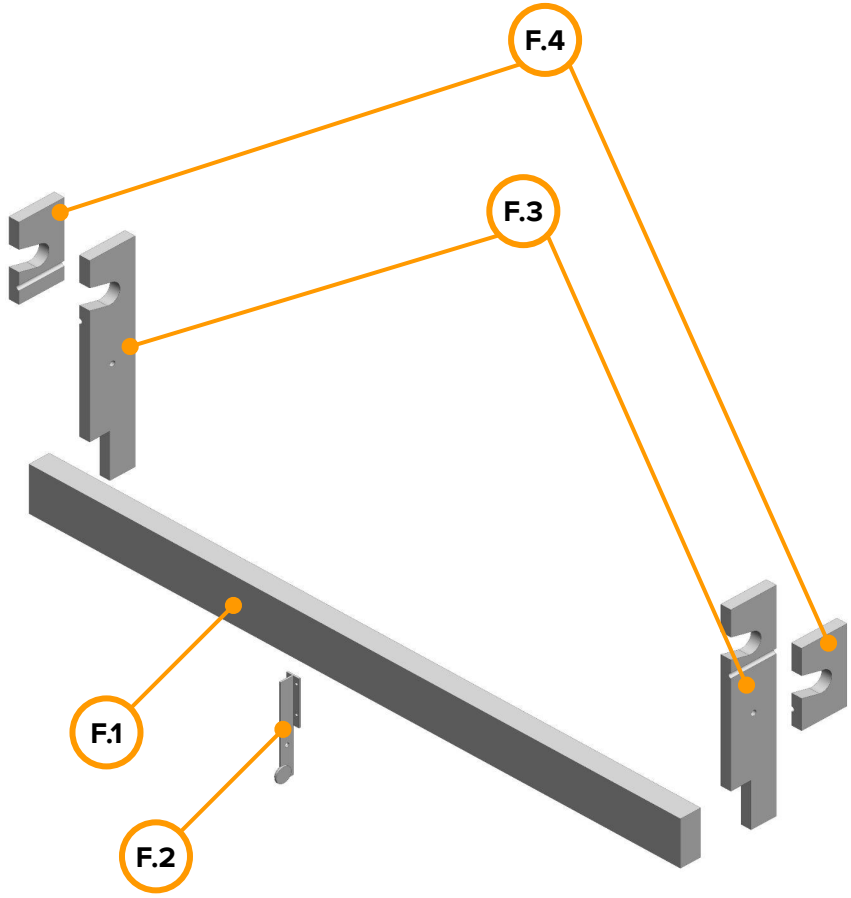


KOPERNIK
FINDING WHAT WORKS


SWING ARM

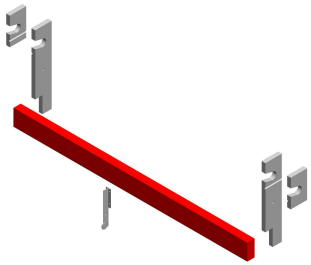
SWING ARM - F





KOPERNIK
FINDING WHAT WORKS

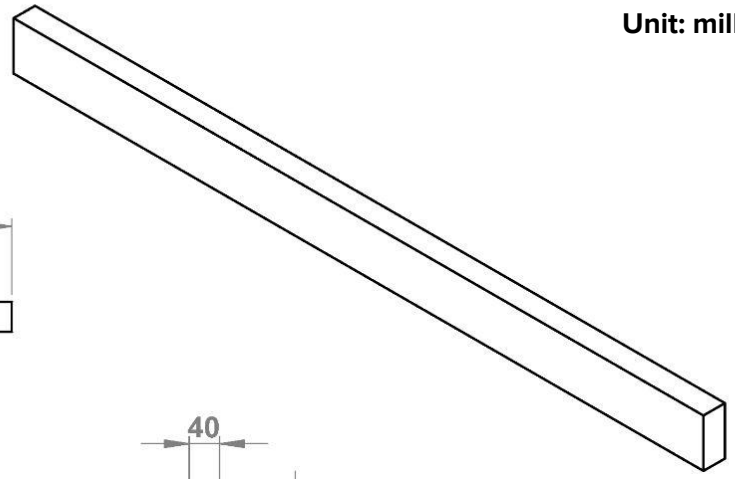
SWING ARM - F.1

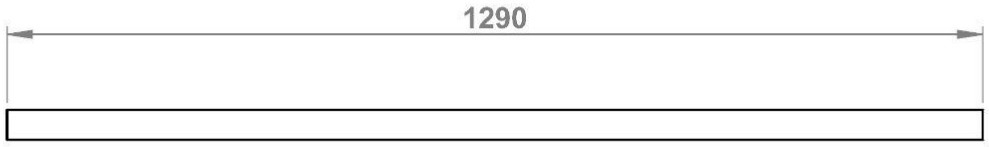


No	Material	Size (mm)	Quantity
1	Pine wood	1,290 x 90 x 40	1 unit

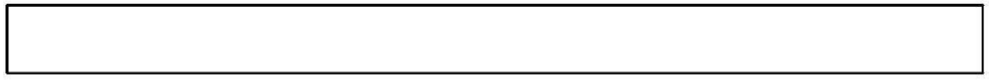
No	Tool
1	Saw

Scale 1:10
Unit: millimeter

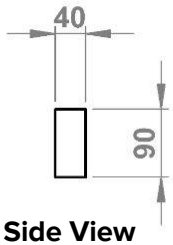




Top View



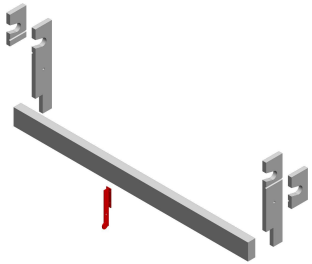
Front View



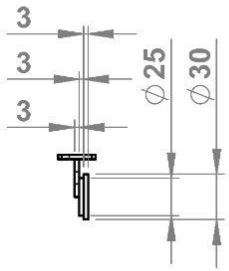
Side View

KOPERNIK
FINDING WHAT WORKS

SWING ARM'S IRON - F.2



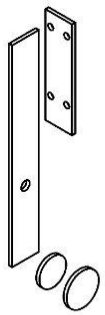
No	Material	Size (mm)	Quantity
1	Iron plate 3mm		

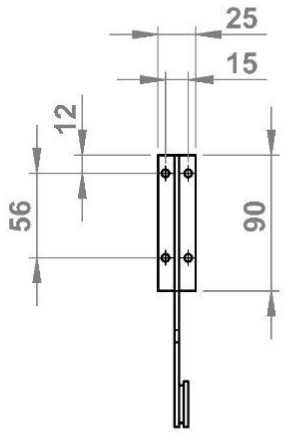


Top View

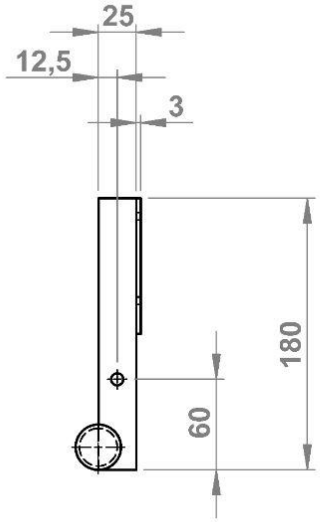
No	Tools
1	Iron cutting grinder
2	Welding machine
3	Air compressor
4	Paint spray gun

Scale 1:5
Unit: millimeter





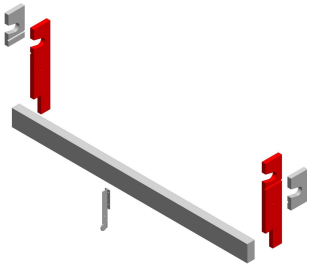
Side View

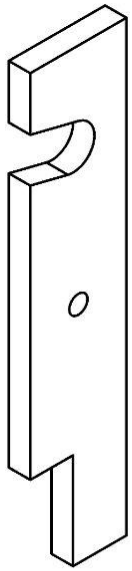


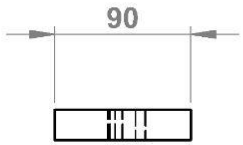
Front View

KOPERNIK
FINDING WHAT WORKS

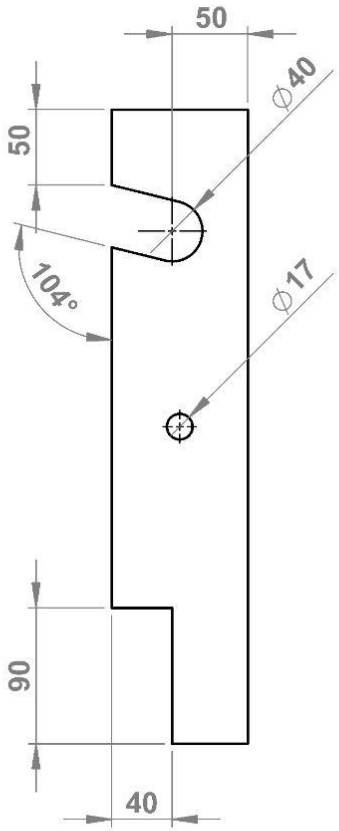
SWING ARM - F.3



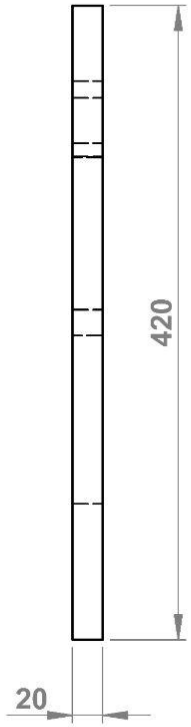




Top View



Front View



Side View

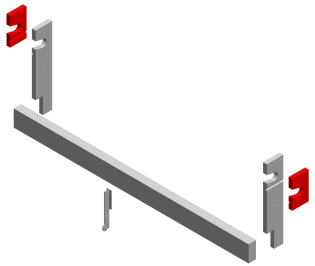
No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

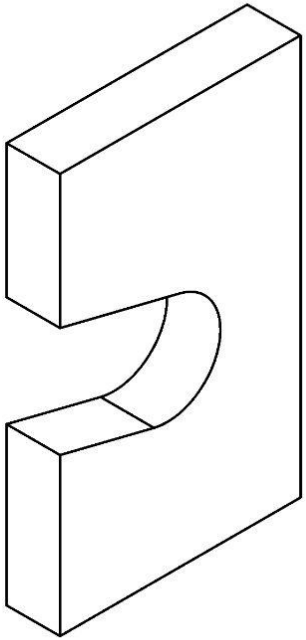
Scale 1:10
Unit: millimeter

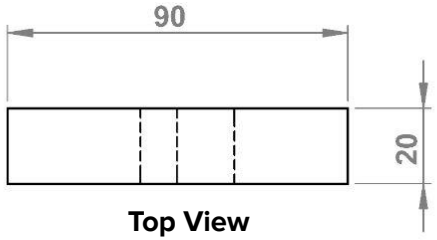
No	Material	Size (mm)	Quantity
1	Pine wood	420 x 90 x 20	2 units

KOPERNIK
FINDING WHAT WORKS

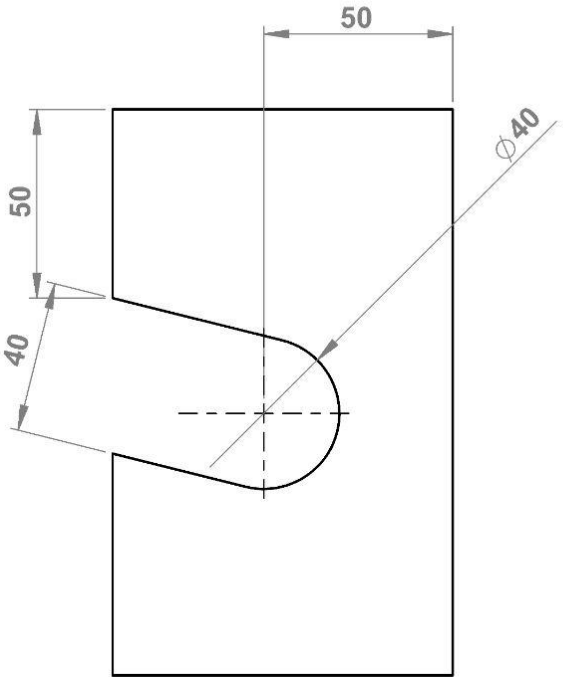
SWING ARM - F.4



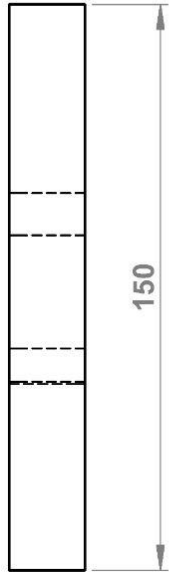




Top View



Front View



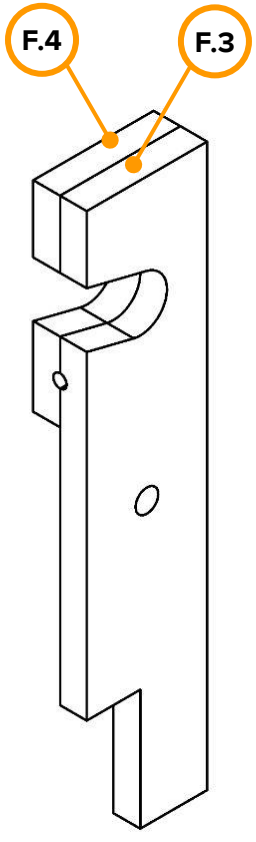
Side View

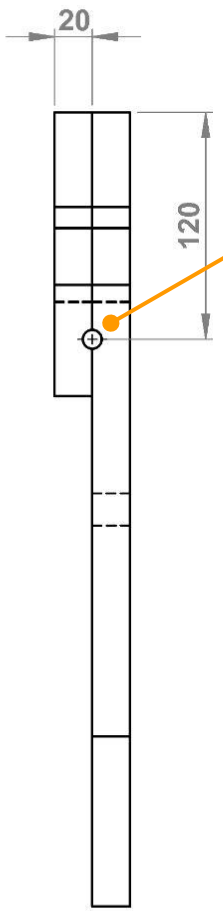
No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

Scale 1:2
Unit: millimeter

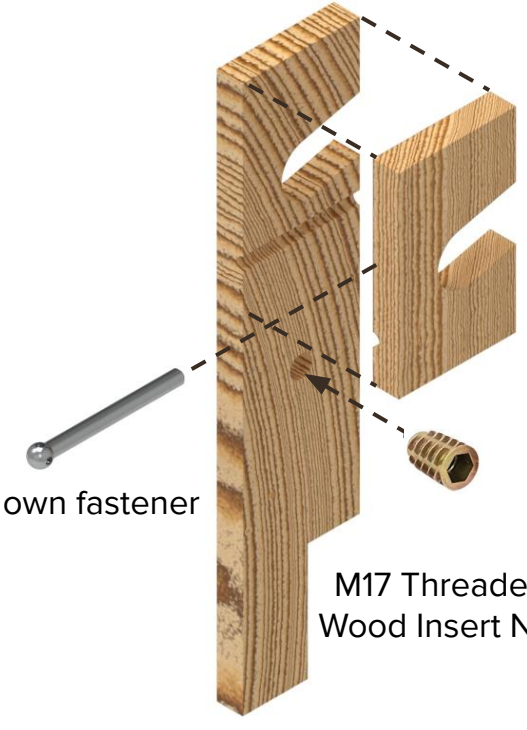
No	Material	Size (mm)	Quantity
1	Pine wood	150 x 90 x 20	2 units

SWING ARM - ASSEMBLY





Once components F.3 and F.4 are joined, drill a hole in the middle of the two components



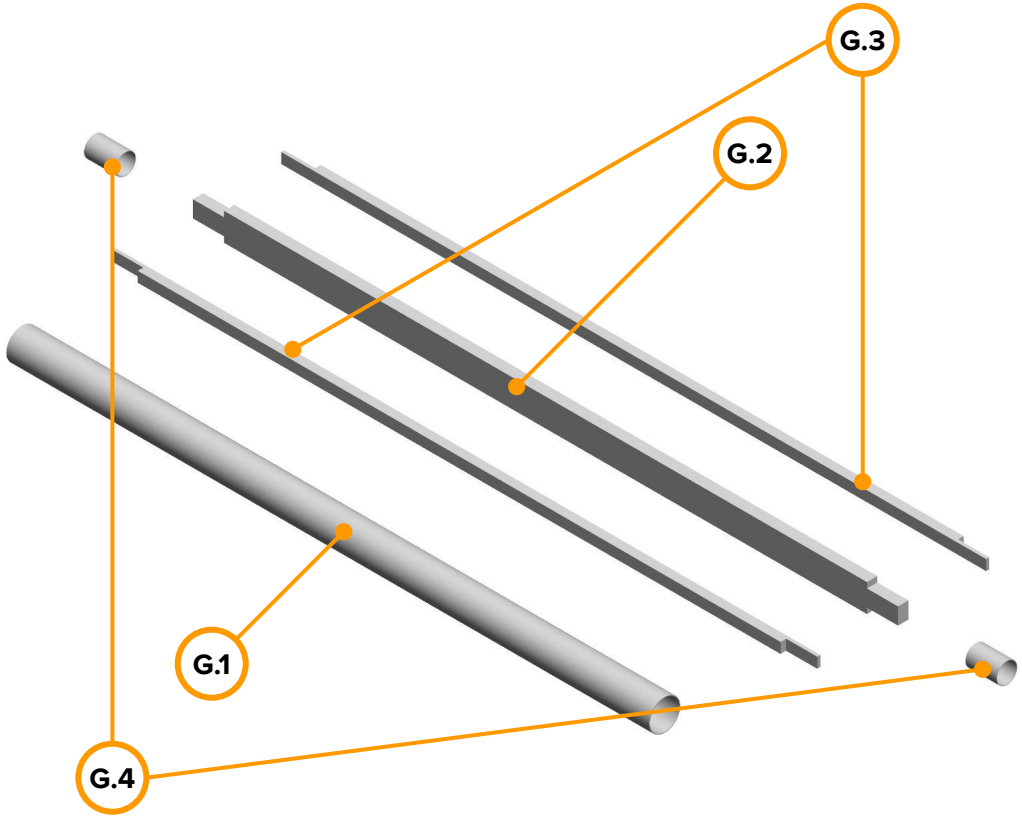
Knockdown fastener

M17 Threaded Wood Insert Nut

KOPERNIK FINDING WHAT WORKS

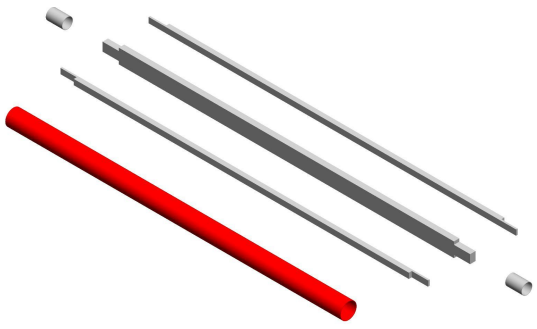

FRONT LOOM &
REAR LOOM BARS

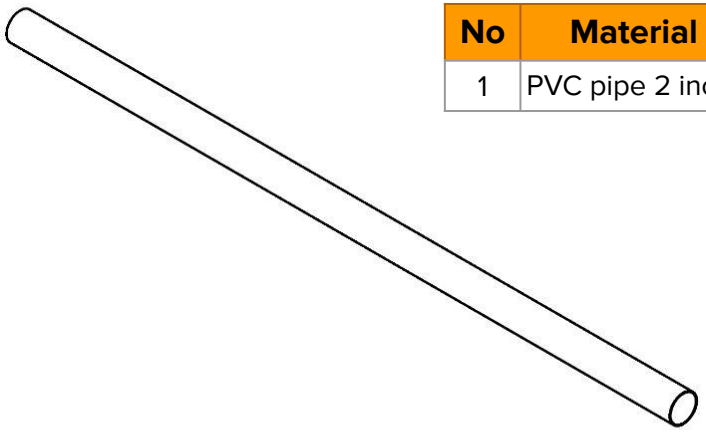
FRONT LOOM BAR - G



KOPERNIK
FINDING WHAT WORKS

FRONT LOOM BAR - G.1

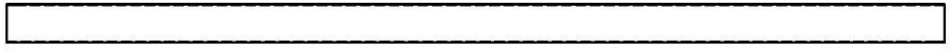




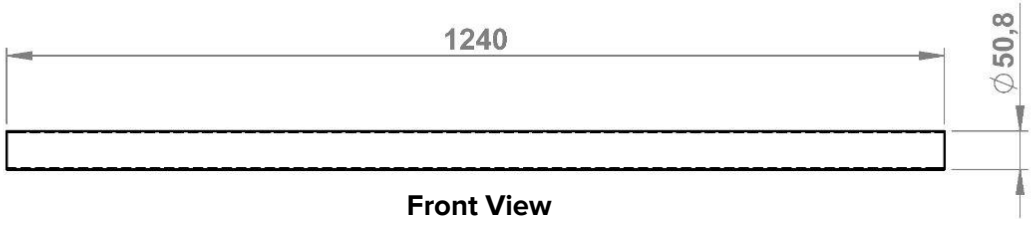
No	Material	Size (mm)	Quantity
1	PVC pipe 2 inch	1,240 x 50.8 x 50.8	1 unit

No	Tool
1	Hacksaw

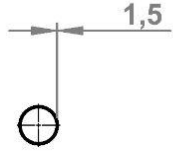
Scale 1:10
Unit: millimeter



Top View



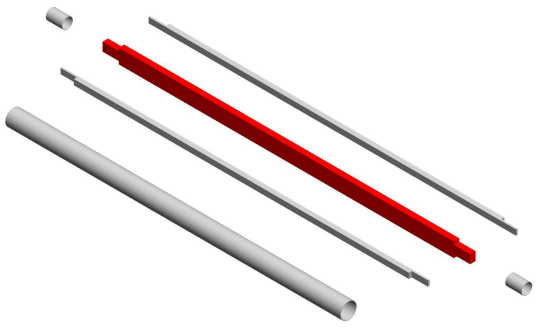
Front View



Side View

KOPERNIK
FINDING WHAT WORKS

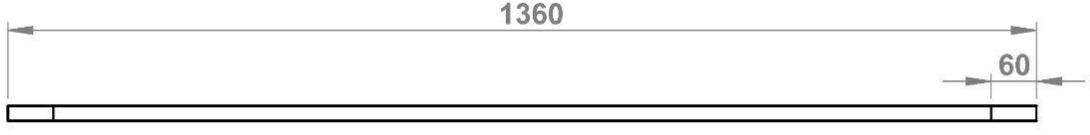
FRONT LOOM BAR - G.2



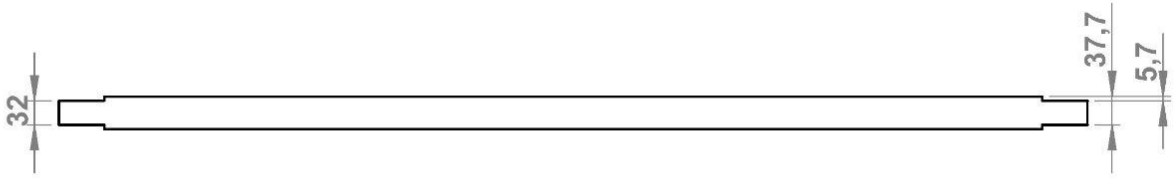
No	Material	Size (mm)	Quantity
1	Pine wood	1,360 x 20 x 43	1 unit

No	Tools
1	Saw
2	Wood chisel
3	Hammer

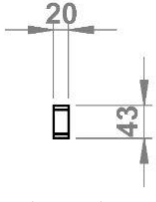
Scale 1:10
Unit: millimeter



Top View



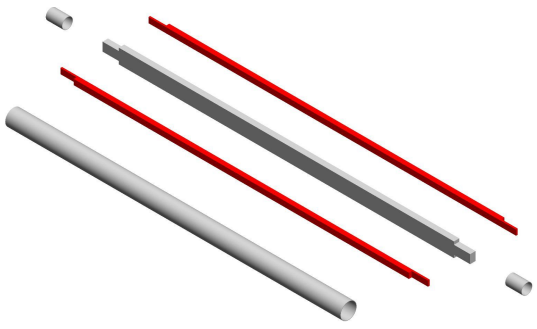
Front View

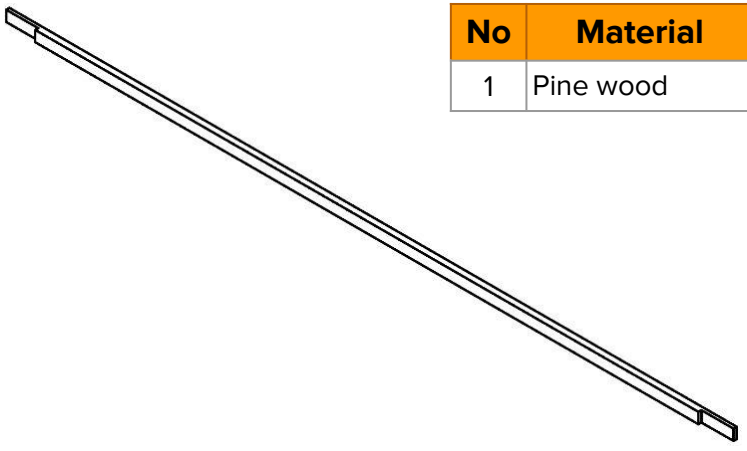


Side View

KOPERNIK
FINDING WHAT WORKS

FRONT LOOM BAR - G.3

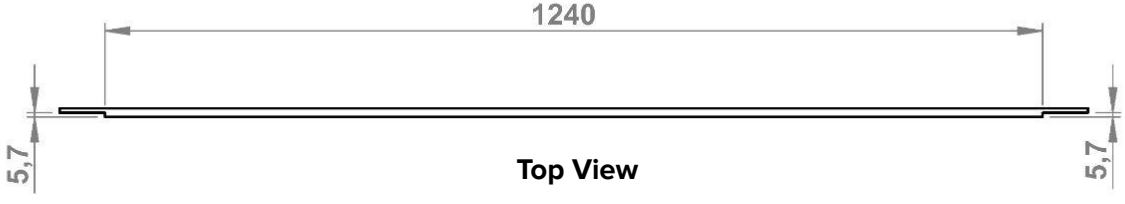




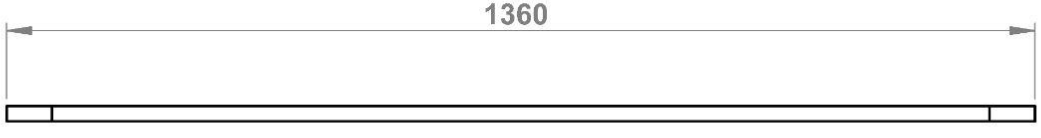
No	Material	Size (mm)	Quantity
1	Pine wood	1,360 x 12 x 20	2 units

No	Tools
1	Saw
2	Wood chisel
3	Hammer

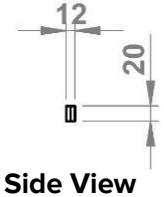
Scale 1:10
Unit: millimeter



Top View



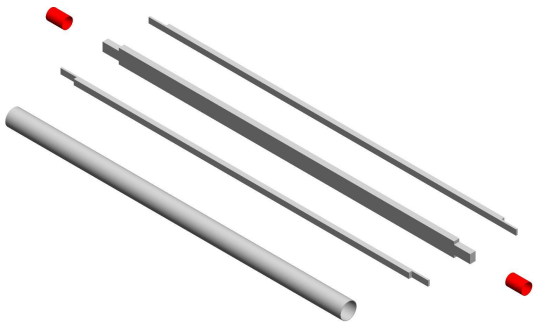
Front View



Side View

KOPERNIK
FINDING WHAT WORKS

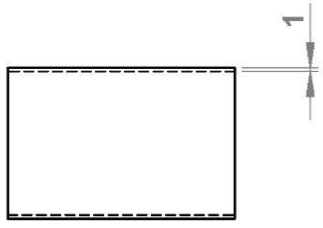
FRONT LOOM BAR - G.4



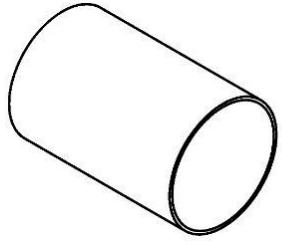
No	Material	Size (mm)	Quantity
1	Iron pipe	40 x 60	2 unit

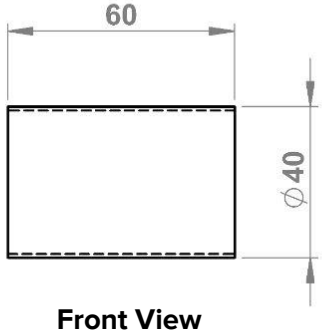
No	Tool
1	Hacksaw

Scale 1:2
Unit: millimeter

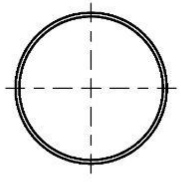


Top View





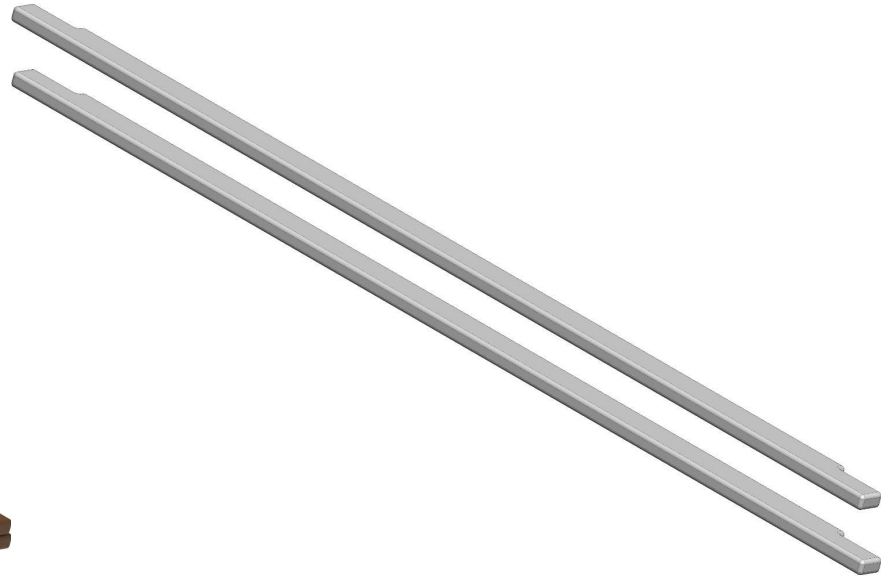
Front View



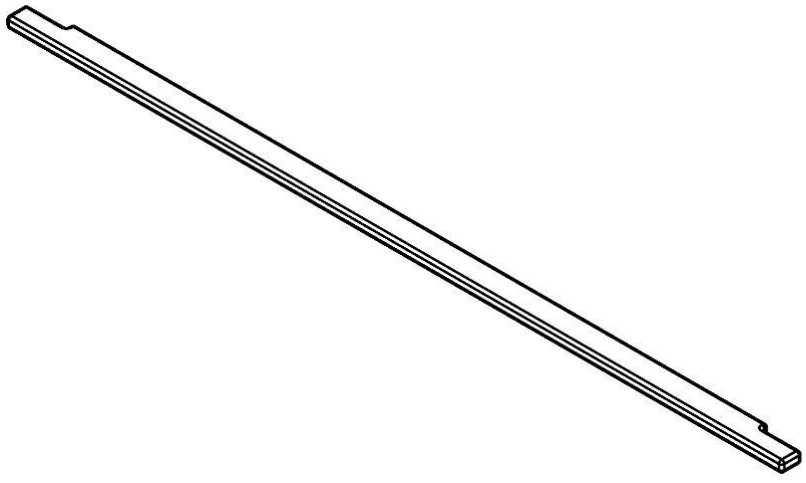
Side View

KOPERNIK
FINDING WHAT WORKS

REAR LOOM BAR - H



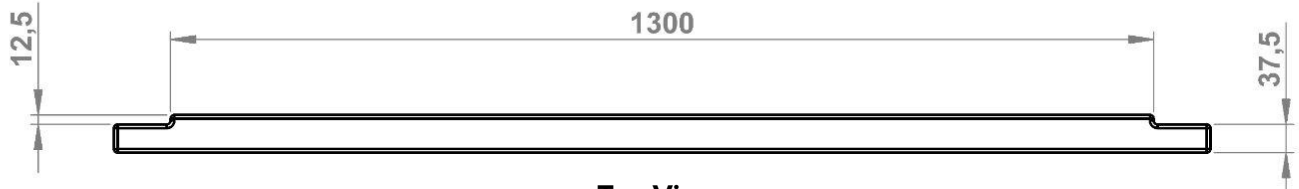
REAR LOOM BAR - H



No	Material	Size (mm)	Quantity
1	Coconut wood	1,450 x 50 x 20	2 units

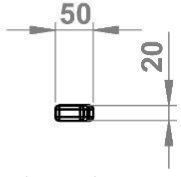
No	Tools
1	Saw
2	Wood chisel
3	Hammer

Scale 1:10
Unit: millimeter



Top View

Front View

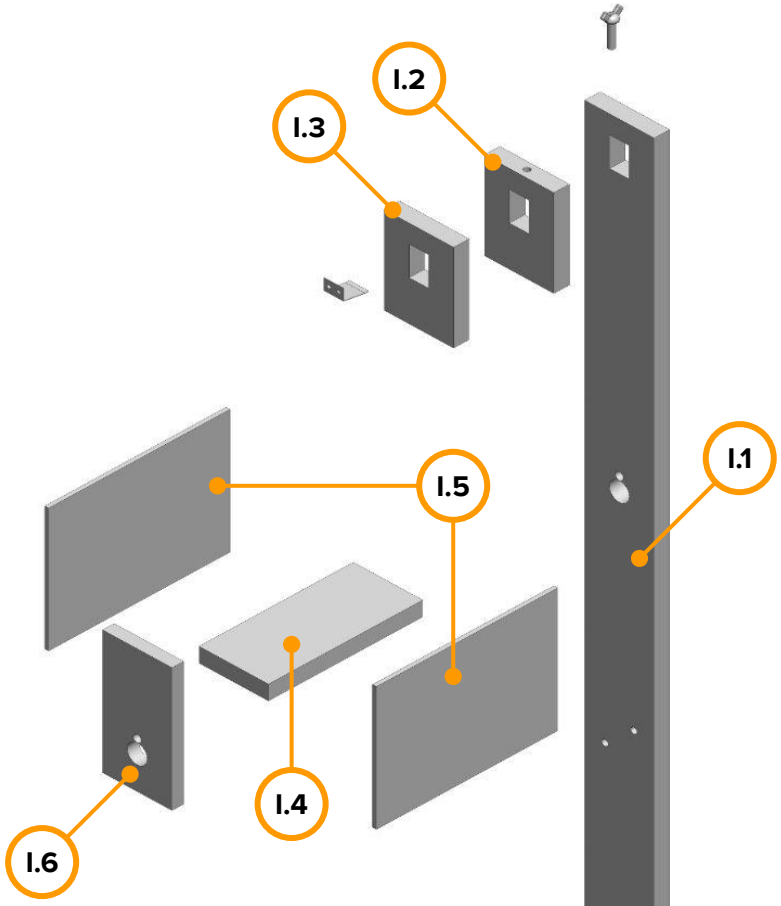


Side View

KOPERNIK
FINDING WHAT WORKS

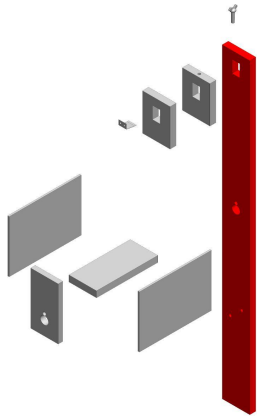

NEKET POST

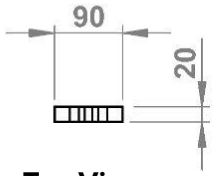
NEKET POST - I



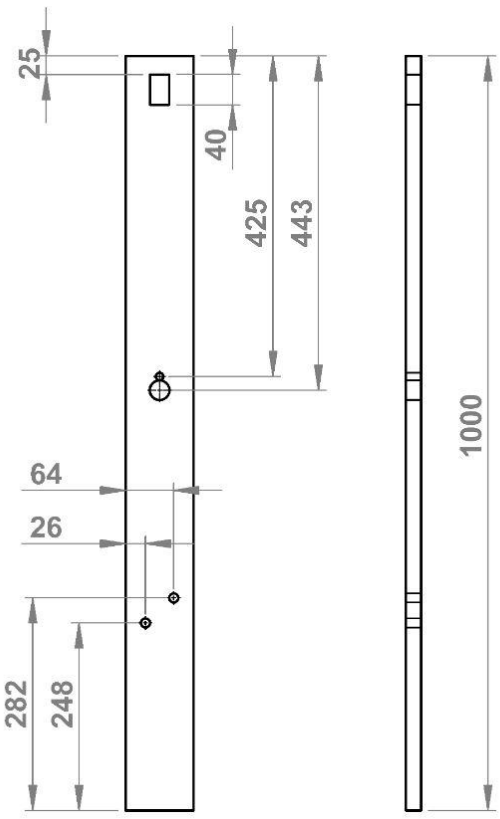
KOPERNIK
FINDING WHAT WORKS

NEKET POST - I.1



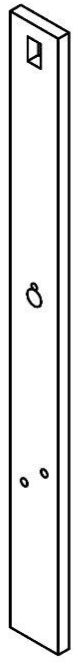


Top View



Front View

Side View

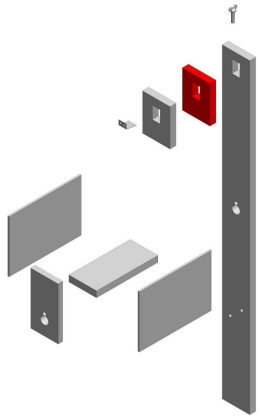


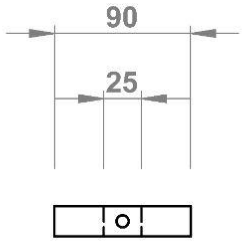
No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

Scale 1:10
Unit: millimeter

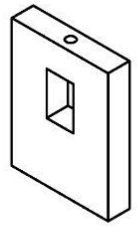
No	Material	Size (mm)	Quantity
1	Pine wood	1,000 x 90 x 20	1 unit

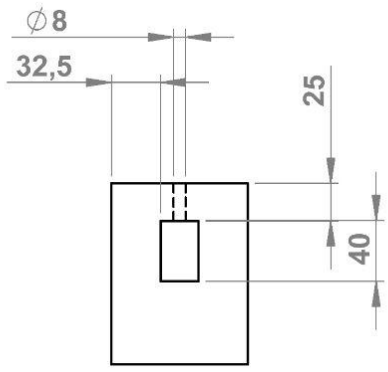
NEKET POST - I.2



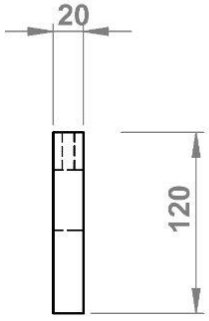


Top View





Front View



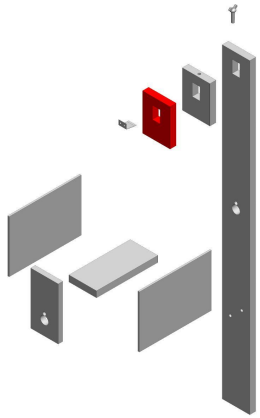
Side view

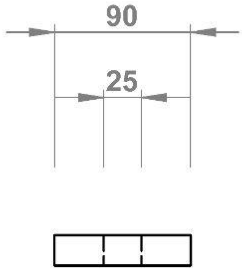
No	Tools
1	Saw
2	Router
3	Wood chisel
4	Hammer

Scale 1:5
Unit: millimeter

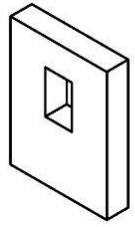
No	Material	Size (mm)	Quantity
1	Pine wood	120 x 90 x 20	1 unit

NEKET POST - I.3



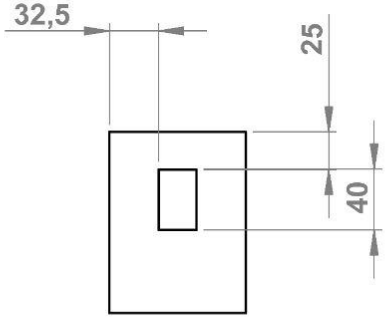


Top View

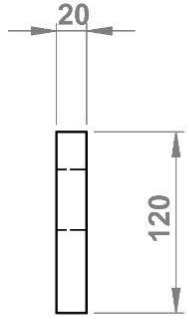


No	Tools
1	Saw
2	Router
3	Wood Chisel
4	Hammer

Scale 1:5
Unit: millimeter



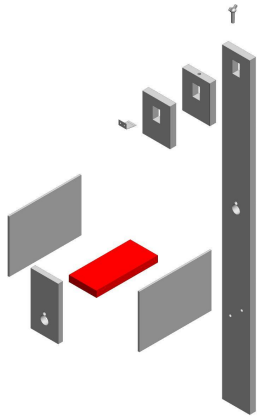
Front View



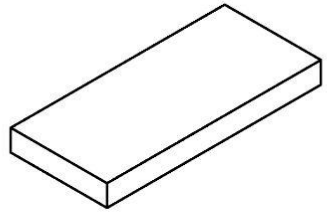
Side View

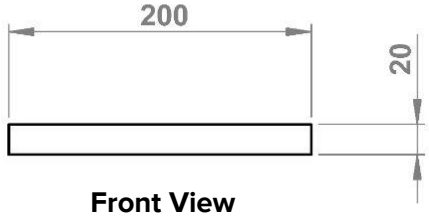
No	Material	Size (mm)	Quantity
1	Pine wood	150 x 90 x 20	1 unit

NEKET POST - I.4

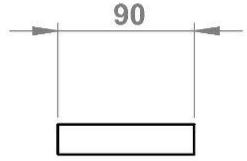


Top View





Front View



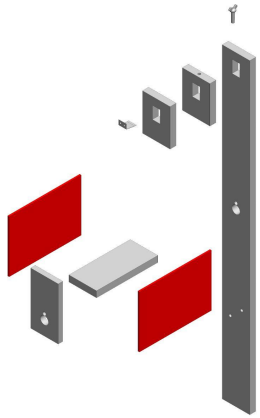
Side View

No	Tool
1	Saw

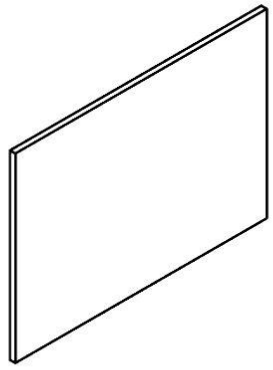
Scale 1:5
Unit: millimeter

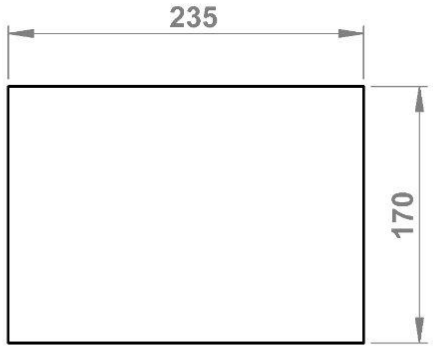
No	Material	Size (mm)	Quantity
1	Pine wood	150 x 90 x 20	1 unit

NEKET POST - I.5

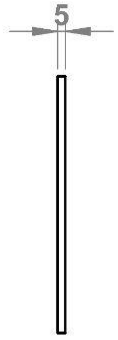


Top View





Front View



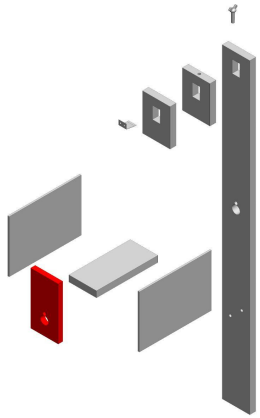
Side View

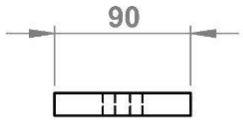
No	Tool
1	Saw

Scale 1:5
Unit: millimeter

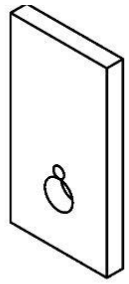
No	Material	Size (mm)	Quantity
1	Pine wood	235 x 170 x 5	2 unit

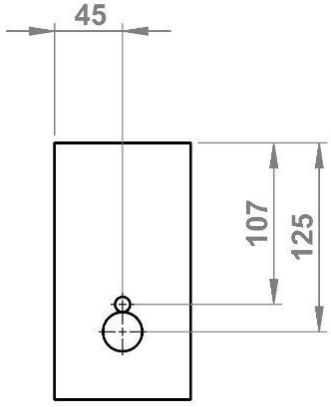
NEKET POST - I.6



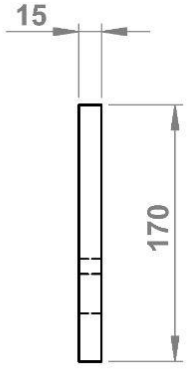


Top View





Front View



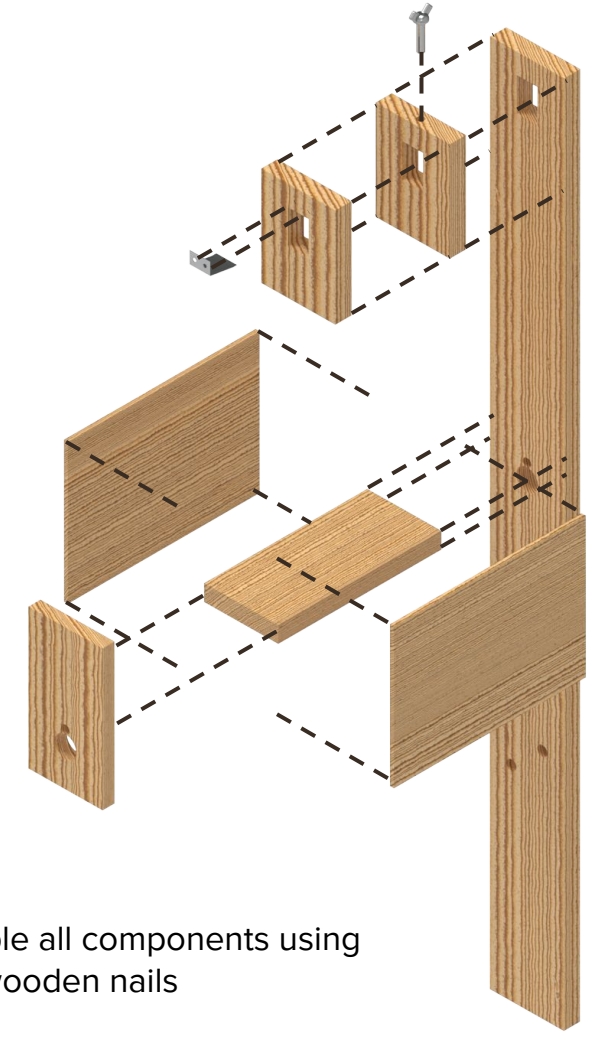
Side View

No	Tools
1	Saw
2	Hand drill machine

Scale 1:5
Unit: millimeter

No	Material	Size (mm)	Quantity
1	Pine wood	170 x 90 x 15	1 unit

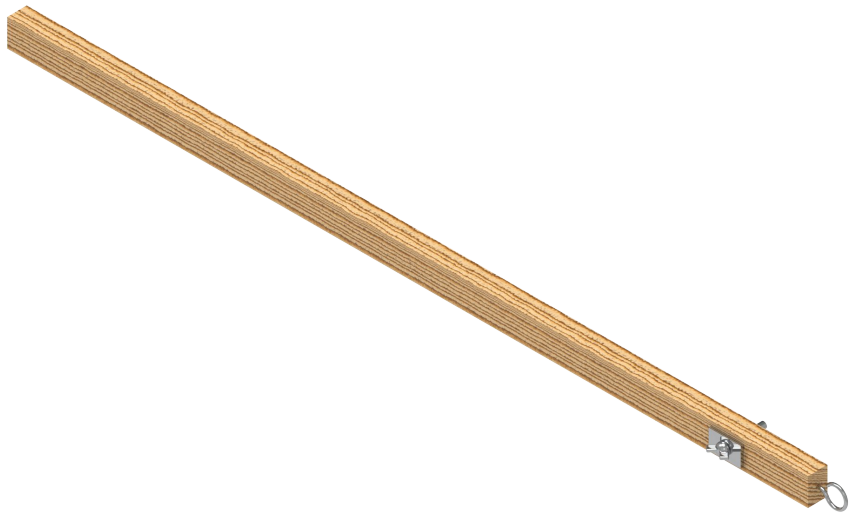
NEKET POST - ASSEMBLY



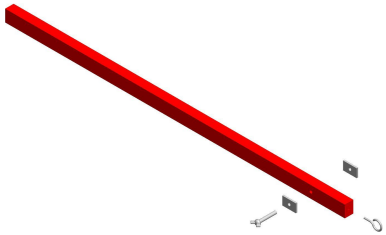
Assemble all components using
15mm wooden nails

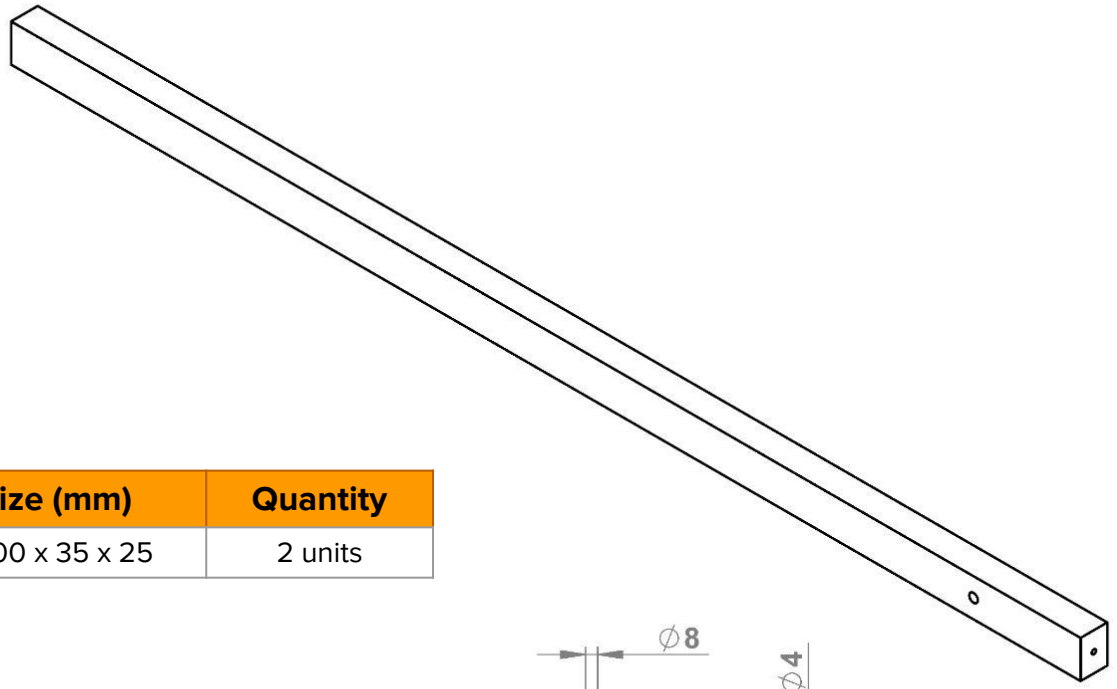

LAMP BAR & PIPE

LAMP BAR - J



LAMP BAR - J



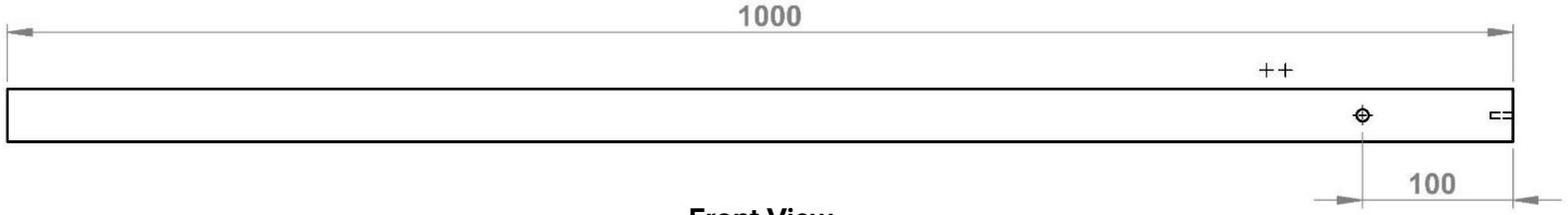


Scale 1:5
Unit: millimeter

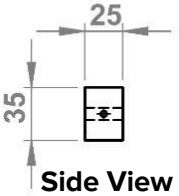
No	Tools
1	Saw
2	Drill

No	Material	Size (mm)	Quantity
1	Pine wood	1,000 x 35 x 25	2 units

Top View

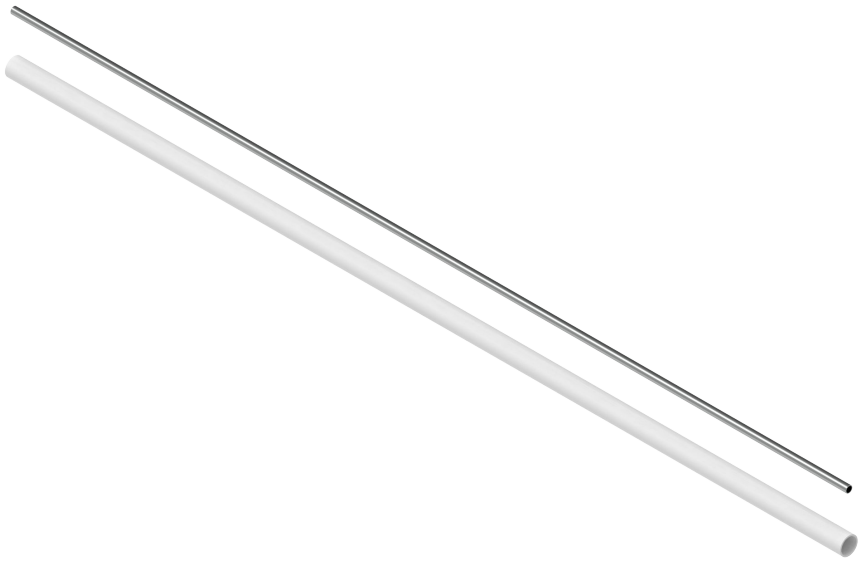


Front View

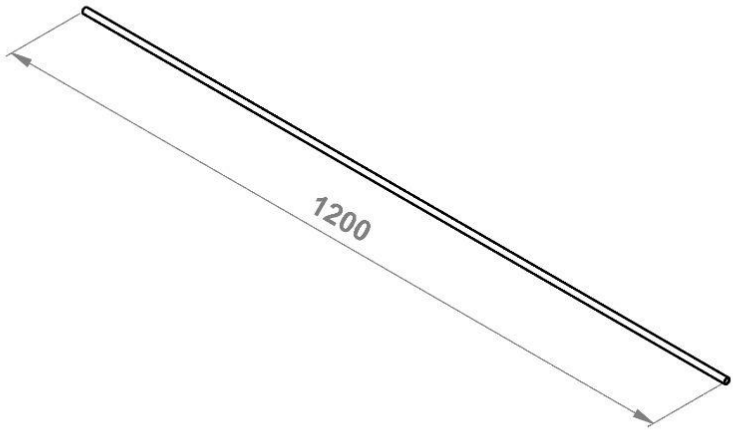


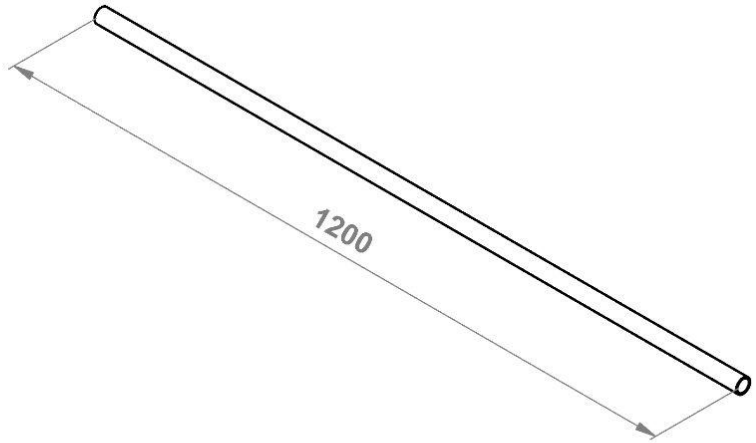
Side View

PVC PIPE & ALUMINUM PIPE - K



PVC PIPE & ALUMINUM PIPE - K

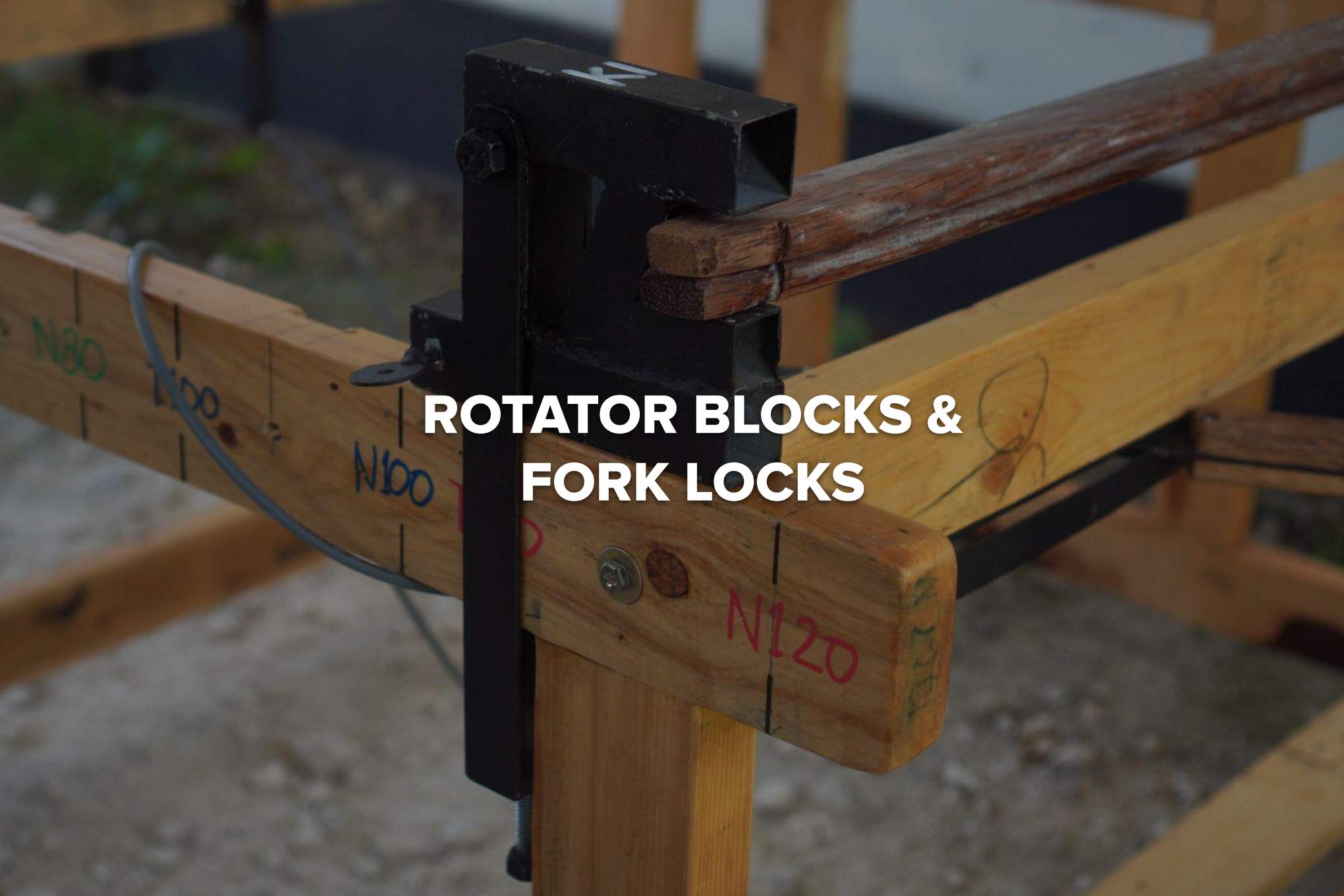




No	Tool
1	Hacksaw

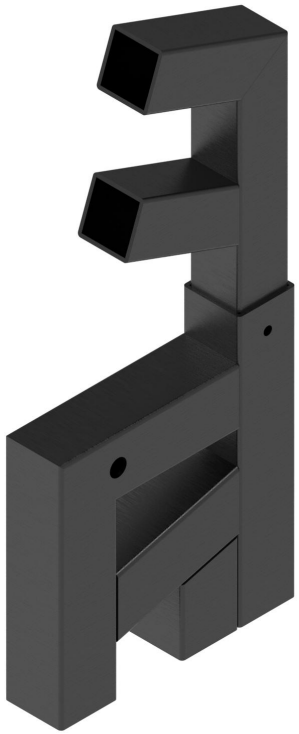
Scale 1:5
Unit: millimeter

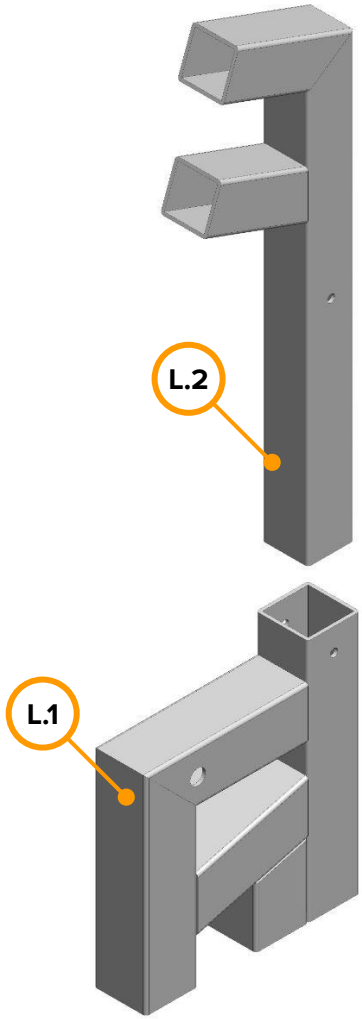
No	Materials	Size (mm)	Quantity
1	PVC pipe ¾ in	1,200	1 unit
2	Aluminum pipe 10 mm	1,200	1 unit



ROTATOR BLOCKS & FORK LOCKS

ROTATOR BLOCKS - L





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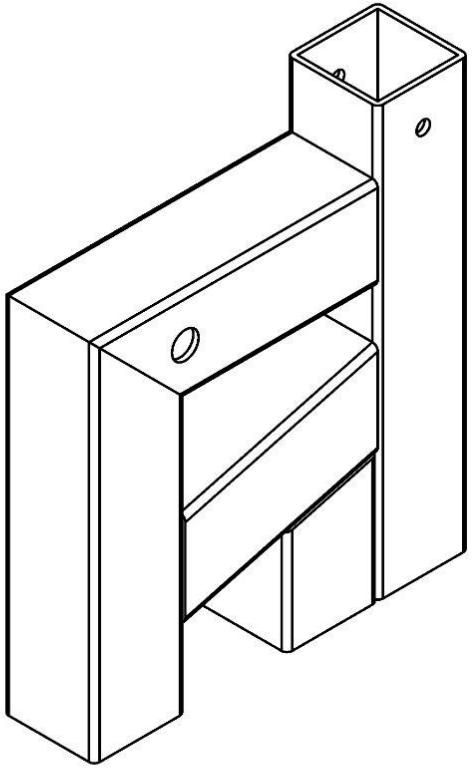
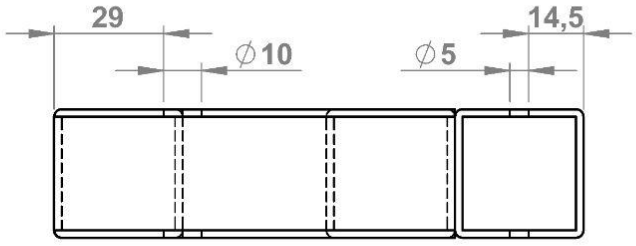
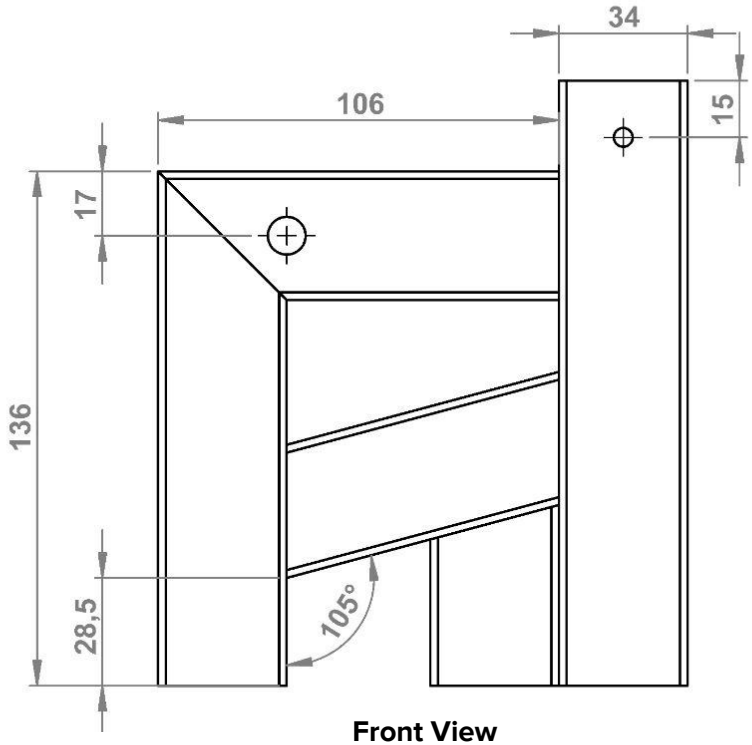
ROTATOR BLOCKS - L.1

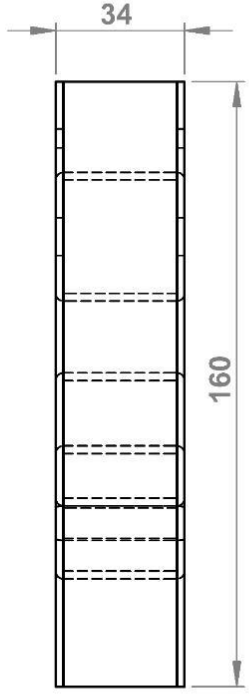




Top View



Front View



Side View

Scale 1:2
Unit: millimeter

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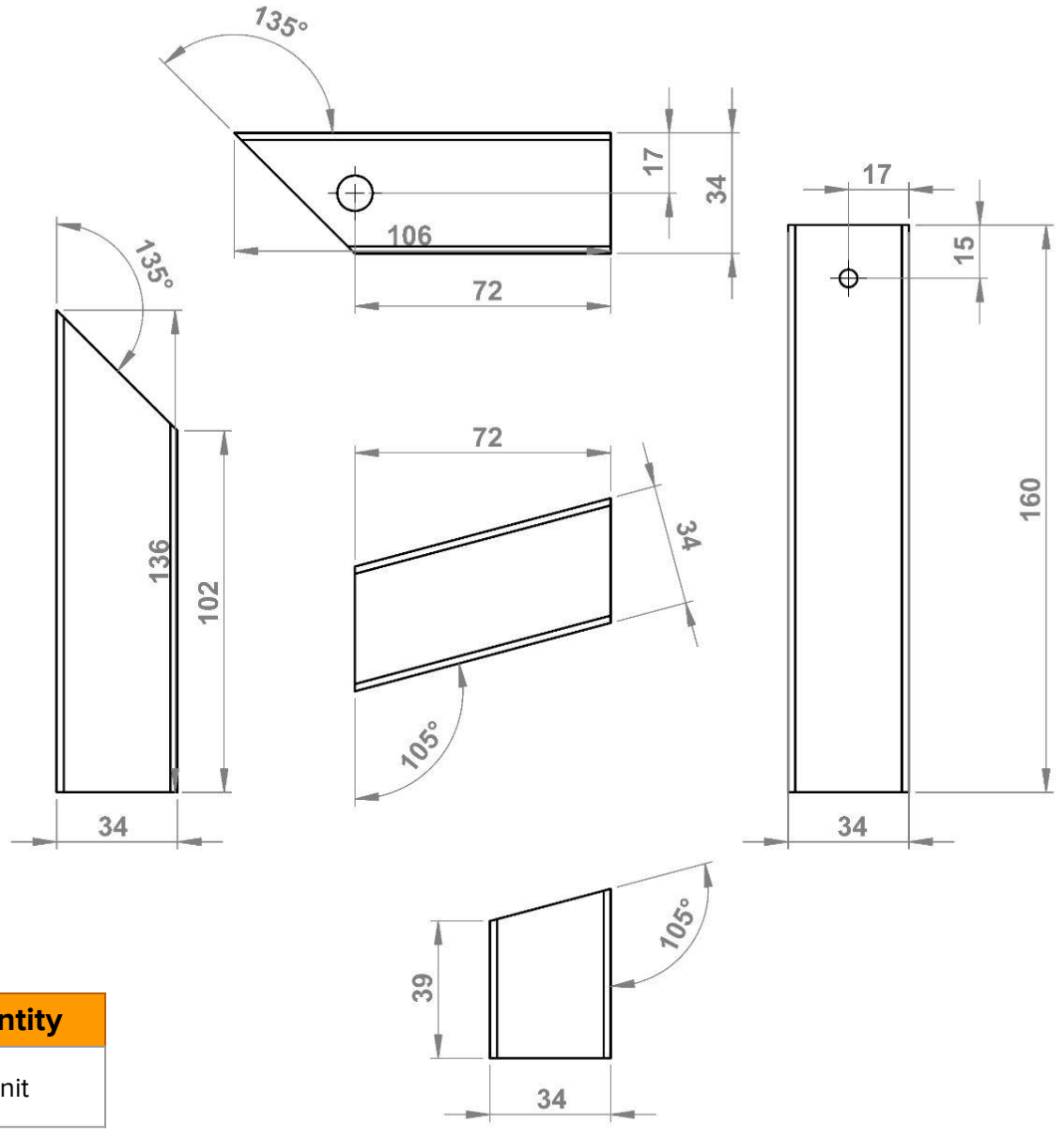
ROTATOR BLOCKS - L.1

No	Tools
1	Iron cutting grinder
2	Hand drill machine
3	Protractor
4	Welding machine
5	Air compressor
6	Spray gun

Scale 1:2
Unit: millimeter

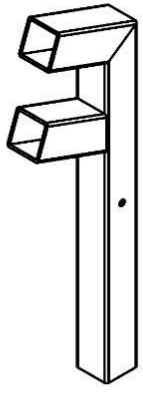
No	Material	Size (mm)	Quantity
1	Hollow iron box 3.4 cm	150 x 90 x 20	1 unit



Exploded Front View

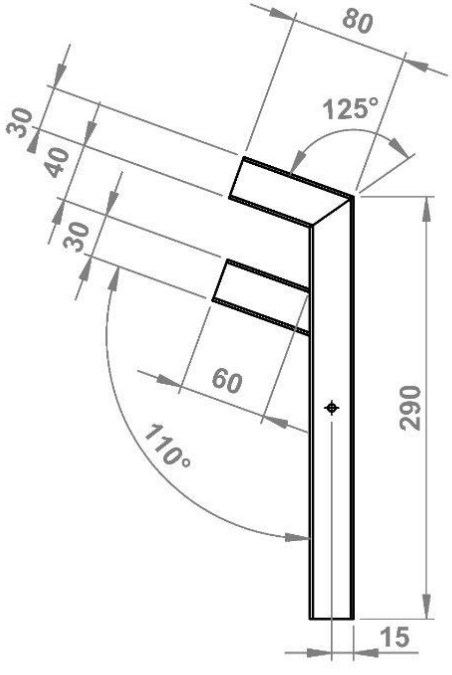
ROTATOR BLOCKS - L.2

No	Tools
1	Iron cutting grinder
2	Hand drill machine
3	Protractor
4	Welding machine
5	Air compressor
6	Spray gun

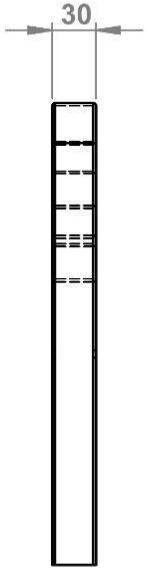


Scale 1:5
Unit: millimeter

Top View



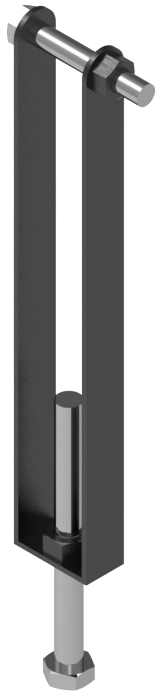
Front View

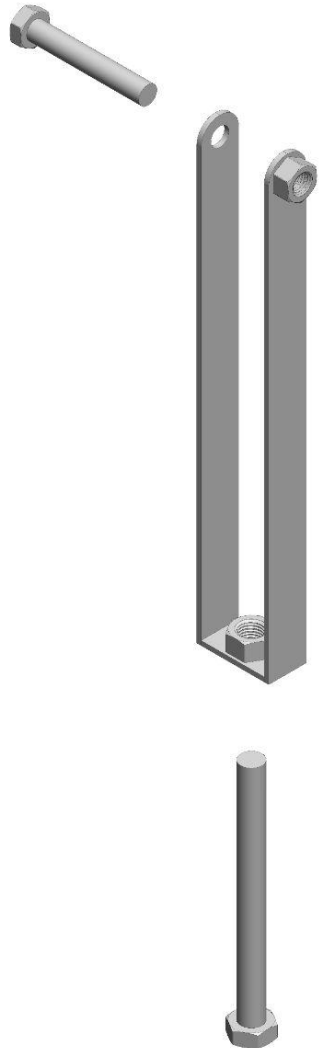


Side View

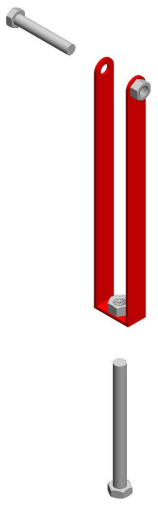
No	Material	Size (mm)	Quantity
1	Hollow iron box 3 cm	150 x 90 x 20	1 unit

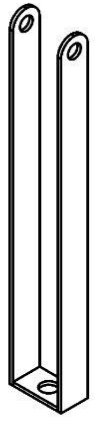
FORK LOCKS - M

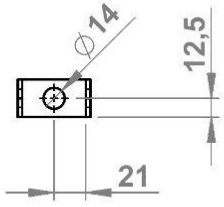




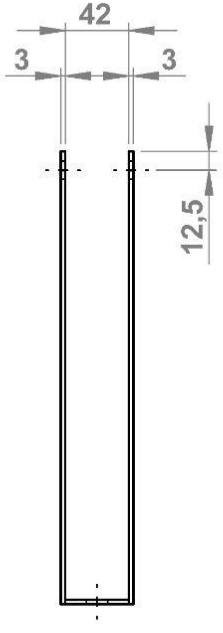
FORK LOCKS - M



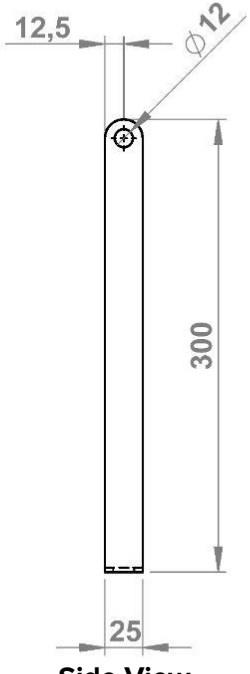




Top View



Front View



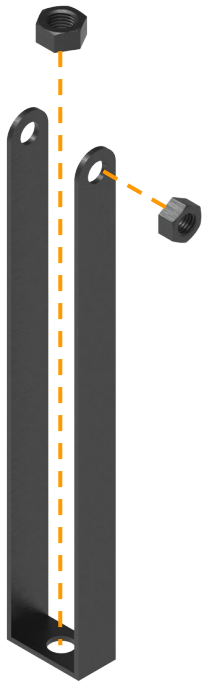
Side View

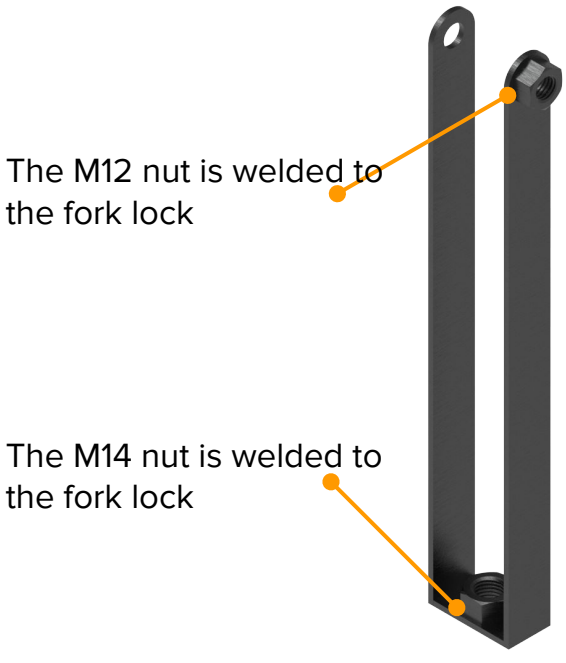
No	Tools
1	Iron cutting grinder
2	Hand drill machine
3	Protractor
4	Welding machine
5	Air compressor
6	Spray gun

Scala 1:5
Unit: millimeter

No	Material	Size (mm)	Quantity
1	3mm-thick iron plate	642 x 25 x 3	2 units

FORK LOCKS - ASSEMBLY





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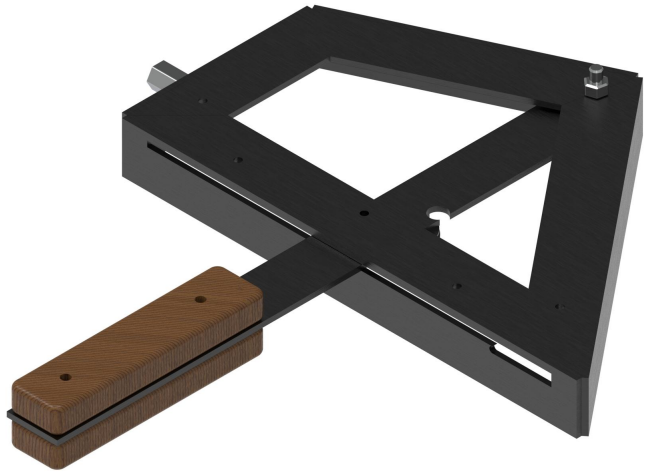
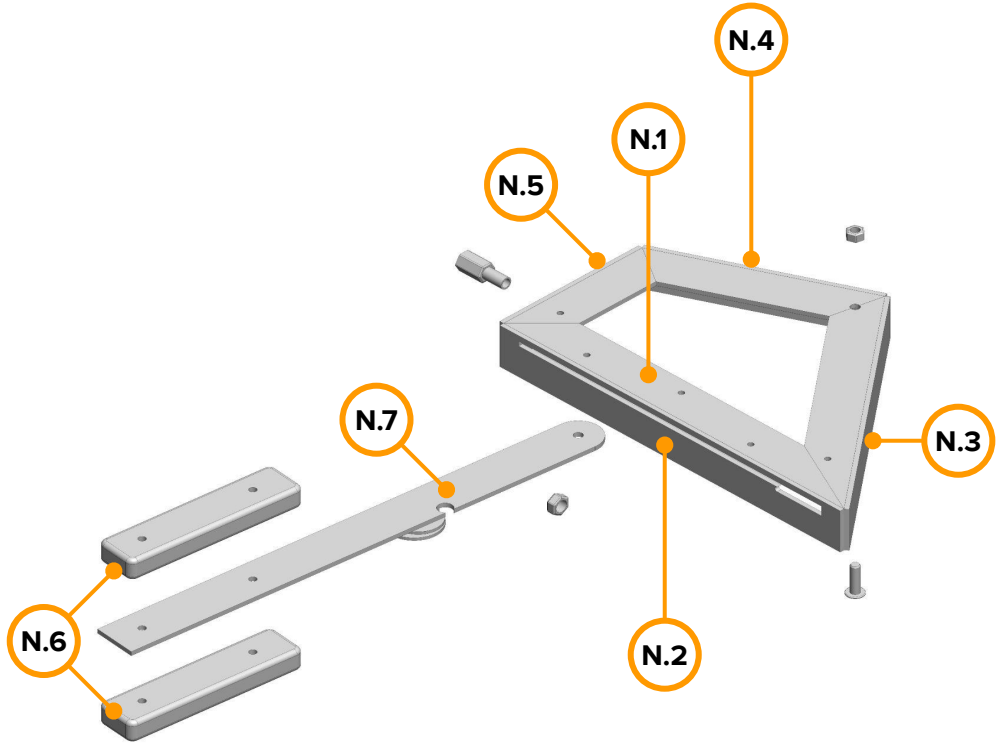
LEVER MECHANISM

LEVER MECHANISM - N





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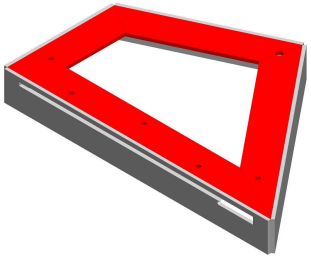
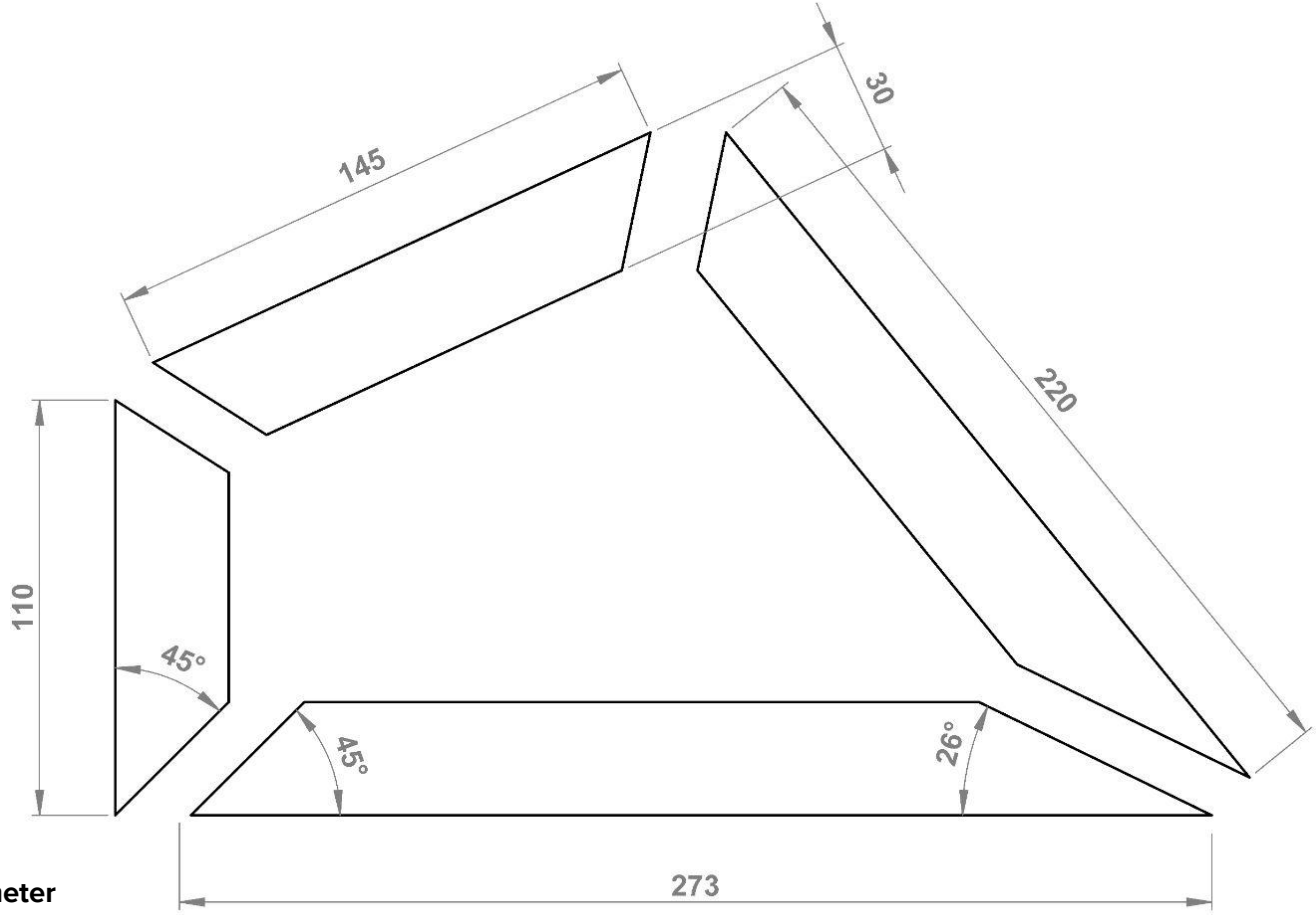
FINDING WHAT WORKS

LEVER MECHANISM - N.1



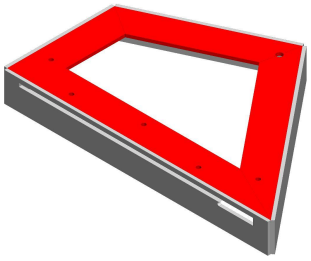
No	Tools
1	Iron cutting grinder
2	Hand drill machine
3	Protractor
4	Welding machine
5	Air compressor
6	Spray gun

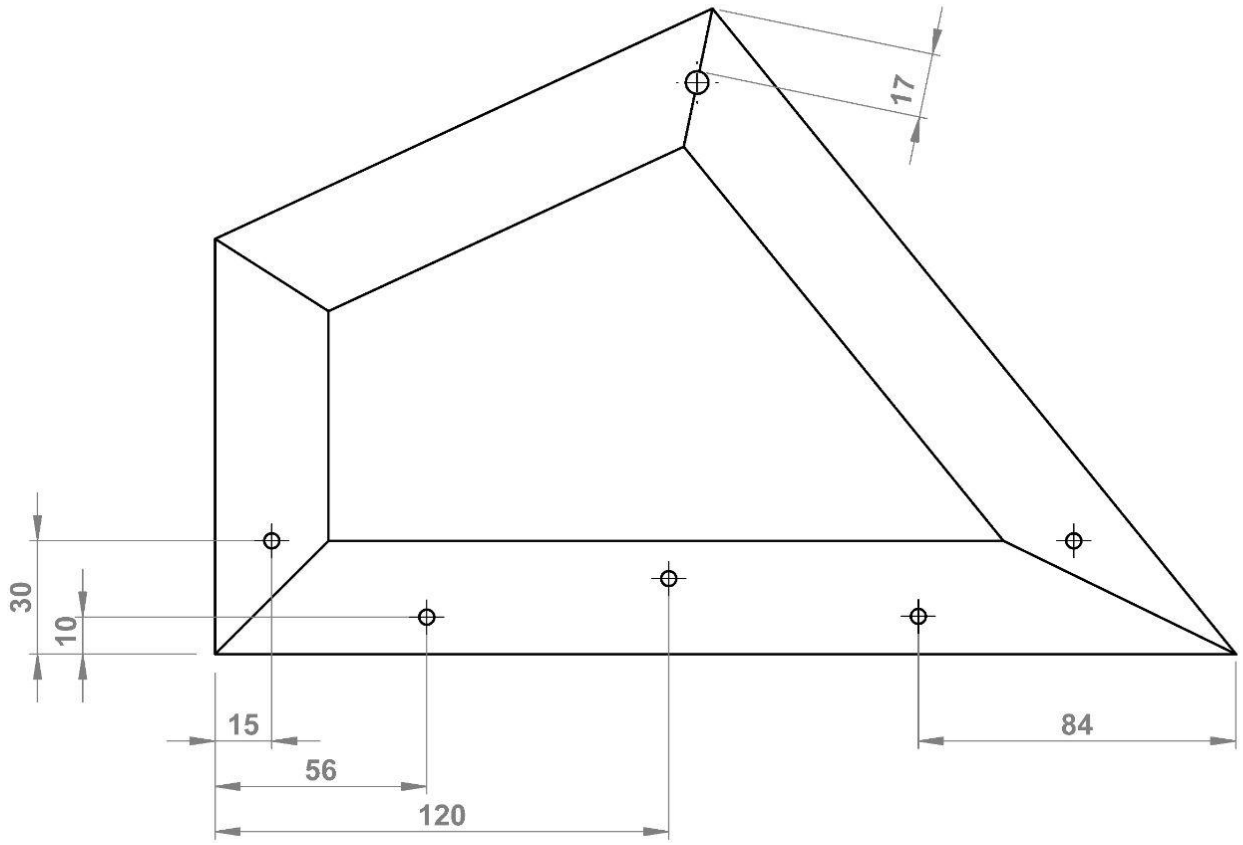


Scale 1:2
Unit: millimeter

No	Material	Size (mm)	Quantity
1	3mm-thick iron plate	649 x 30 x 3	1 unit

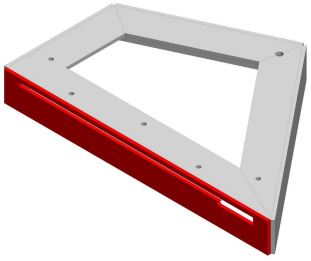
LEVER MECHANISM - N.1

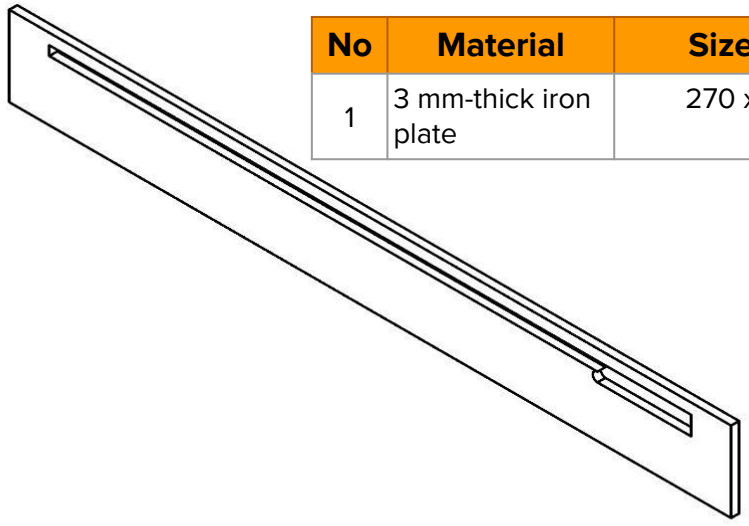




Scale 1:2
Unit: millimeter

LEVER MECHANISM - N.2



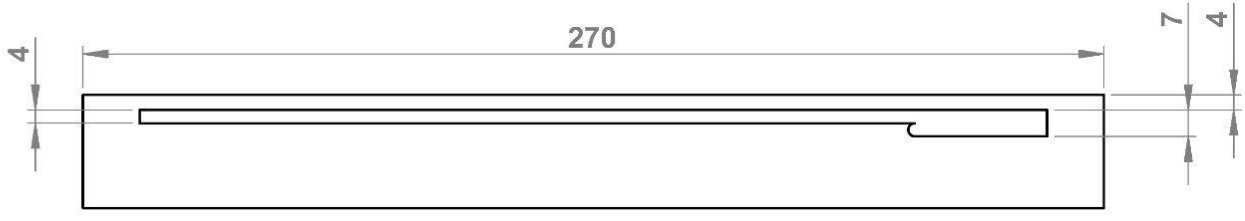


No	Material	Size (mm)	Quantity
1	3 mm-thick iron plate	270 x 30 x 3	1

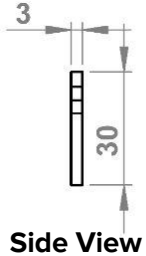
No	Tools
1	Iron cutting grinder
2	Air compressor
3	Spray gun

Scala 1:2
Unit: millimeter

Top View



Front View



Side View

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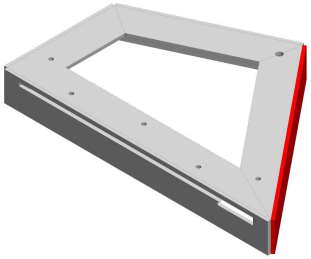
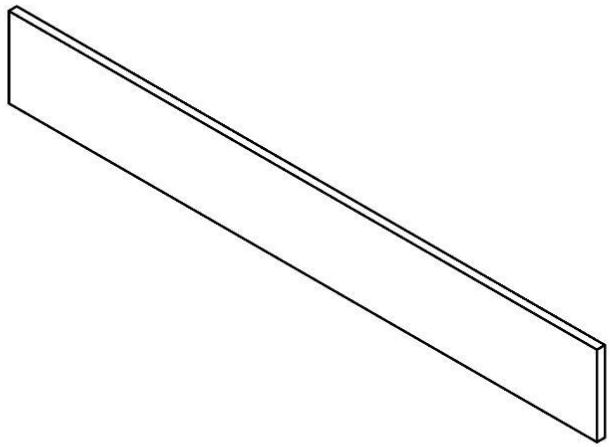
FINDING WHAT WORKS

LEVER MECHANISM - N.3



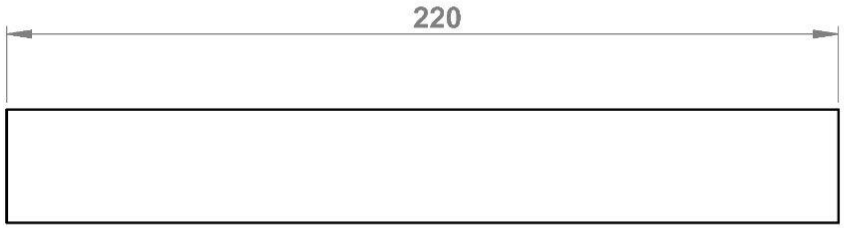
No	Material	Size (mm)	Quantity
1	3 mm-thick iron plate	220 x 30 x 3	1



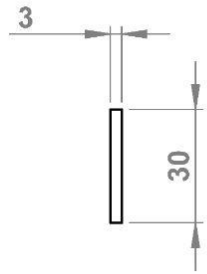
No	Tools
1	Iron cutting grinder
2	Air compressor
3	Spray gun

Scale 1:2
Unit: millimeter

Top View



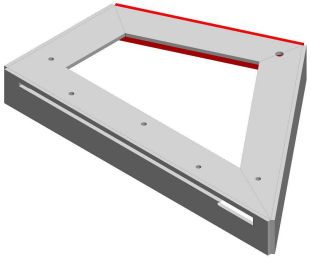
Front View



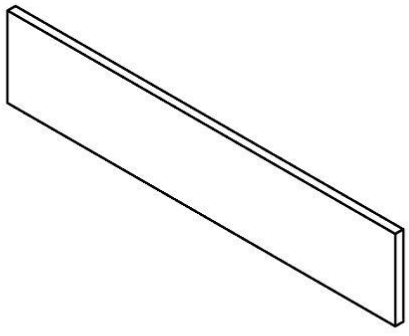
Side View

KOPERNIK
FINDING WHAT WORKS

LEVER MECHANISM - N.4



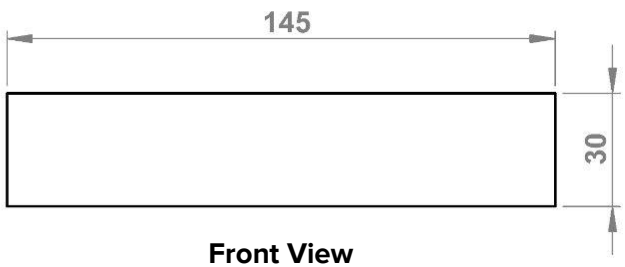
No	Material	Size (mm)	Quantity
1	3 mm-thick iron plate	145 x 30 x 3	1



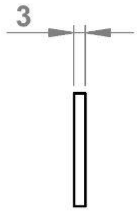
No	Tools
1	Iron cutting grinder
2	Air compressor
3	Spray gun

Scale 1:2
Unit: millimeter

Top View



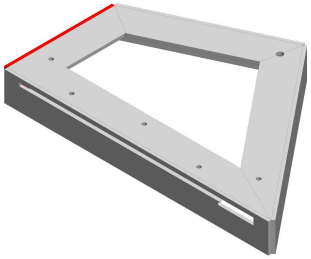
Front View



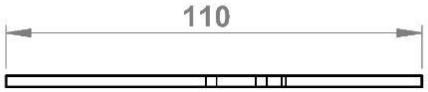
Side View

KOPERNIK
FINDING WHAT WORKS

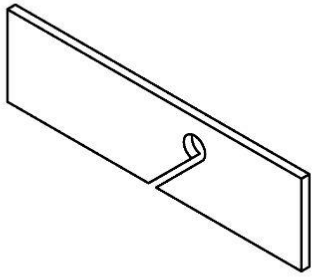
LEVER MECHANISM - N.5



No	Material	Size (mm)	Quantity
1	3 mm-thick iron plate	110 x 30 x 3	1

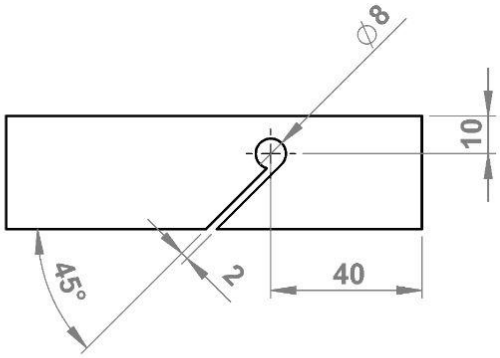


Top View

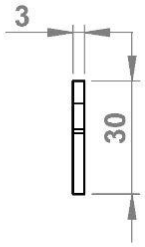


No	Tools
1	Iron cutting grinder
2	Air compressor
3	Spray gun

Scale 1:2
Unit: millimeter



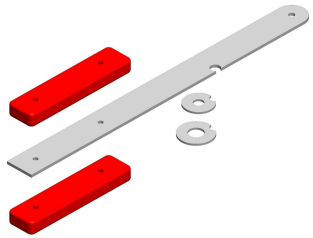
Front View

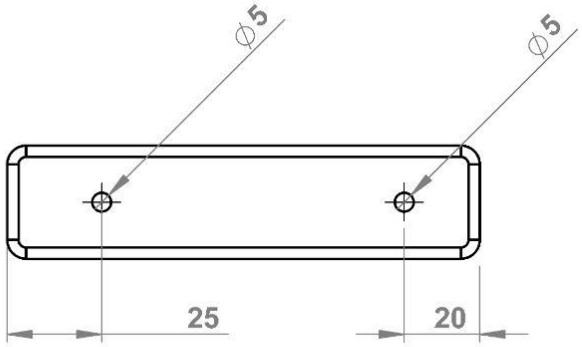


Side View

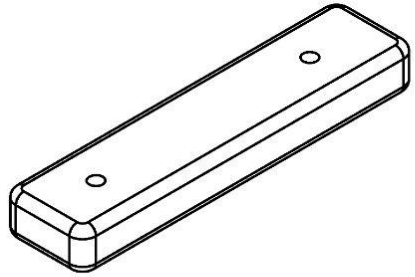
KOPERNIK
FINDING WHAT WORKS

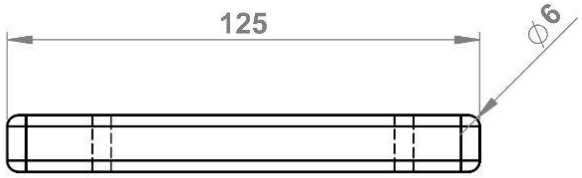
LEVER MECHANISM - N.6



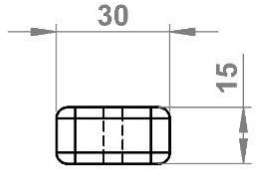


Top View





Front View



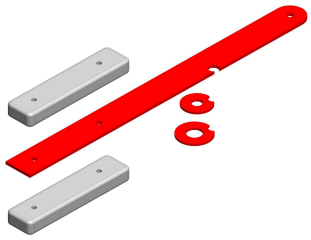
Side View

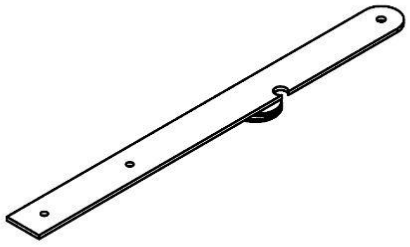
No	Tools
1	Saw
2	Hand drill machine

Scale 1:2
Unit: millimeter

No	Material	Size (mm)	Quantity
1	Coconut wood	125 x 30 x 15	2 units

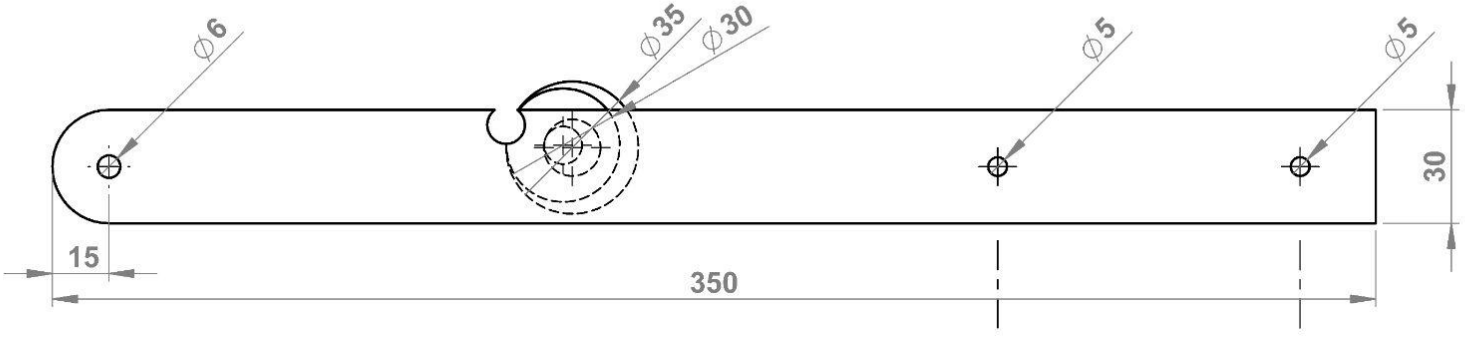
LEVER MECHANISM - N.7





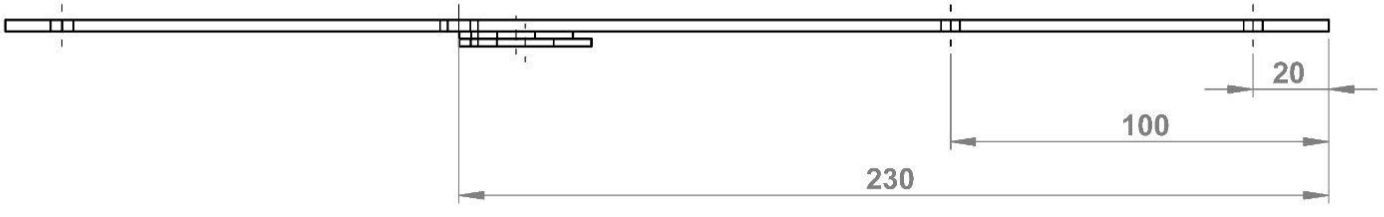
No	Materials	Size (mm)	Quantity
1	3 mm-thick iron plate	350 x 30 x 3	1 unit
2	Ring 35 mm	35	1 unit
3	Ring 30 mm	30	1 unit

No	Tools
1	Iron cutting grinder
2	Air compressor
3	Spray gun

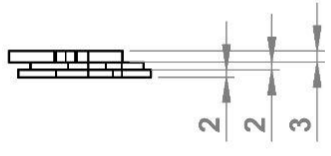


Top View

Scale 1:2
Unit: millimeter



Front View

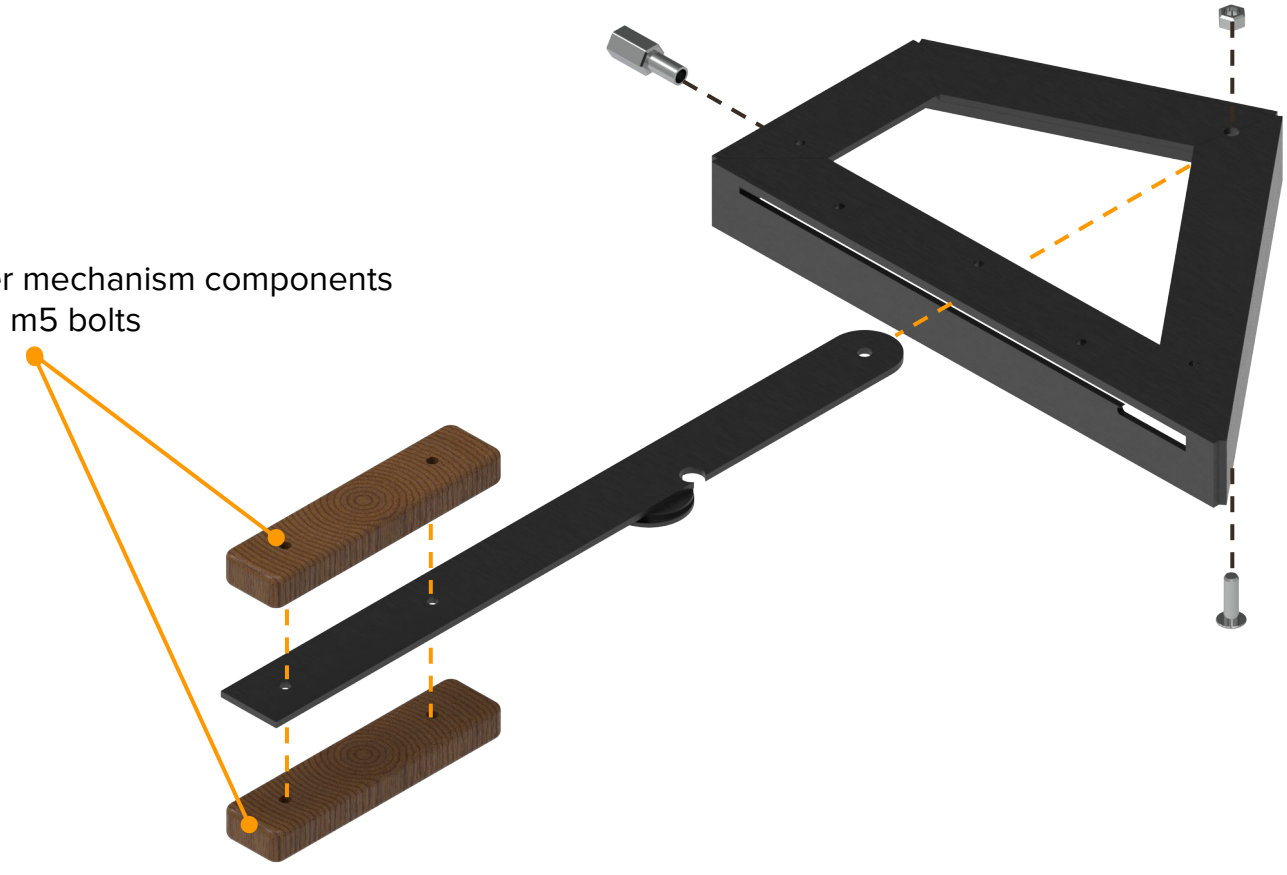


Side view

KOPERNIK
FINDING WHAT WORKS

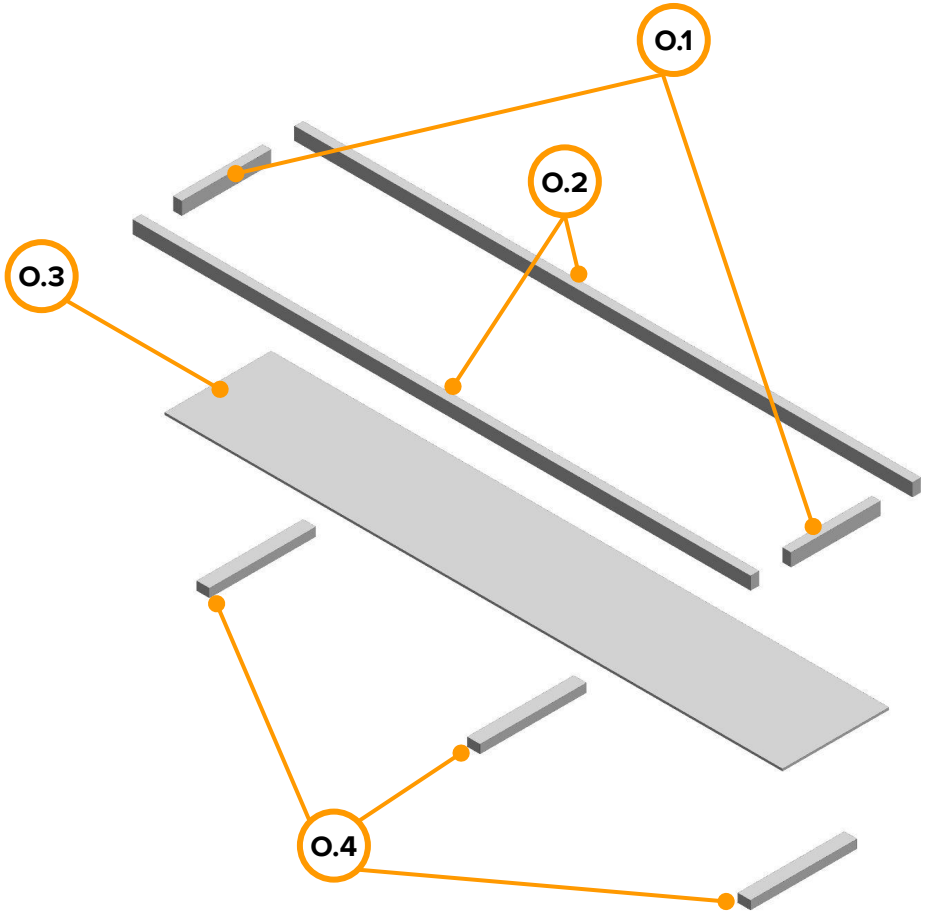
LEVER MECHANISM - ASSEMBLY

Assemble lever mechanism components using nuts and m5 bolts



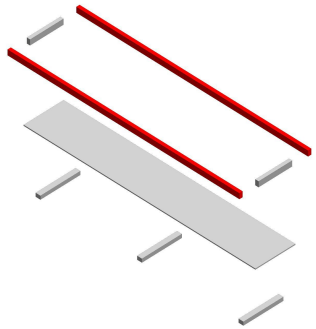

YARN TABLE

YARN TABLE - O



KOPERNIK
FINDING WHAT WORKS

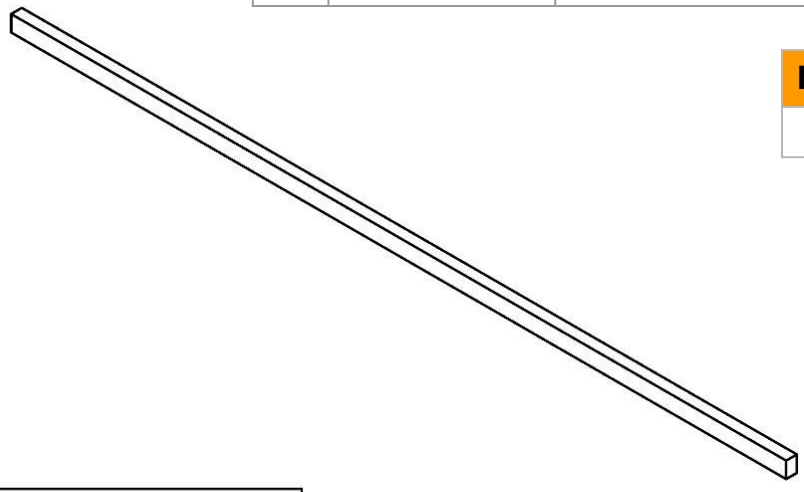
YARN TABLE - 0.1

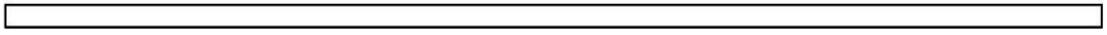


No	Material	Size (mm)	Quantity
1	Pine wood	1,450 x 30 x 20	2 units

No	Tools
1	Saw

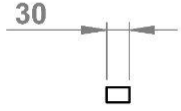
Scale 1:10
Unit: millimeter





Top View

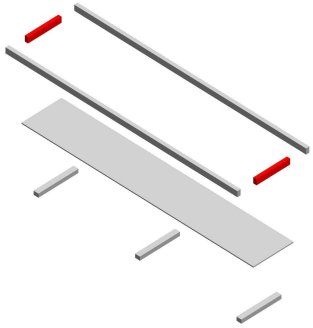
Front View



Side View

KOPERNIK
FINDING WHAT WORKS

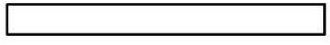
YARN TABLE - 0.2



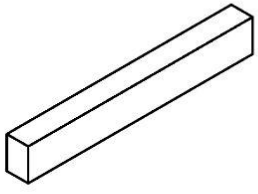
No	Material	Size (mm)	Quantity
1	Pine wood	210 x 30 x 20	2 units

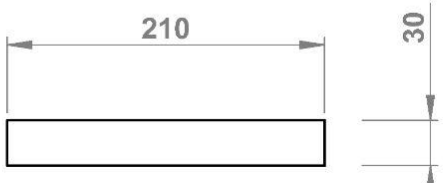
No	Tool
1	Saw

Scale 1:5
Unit: millimeter

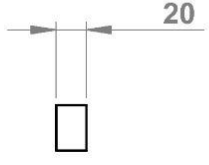


Top View





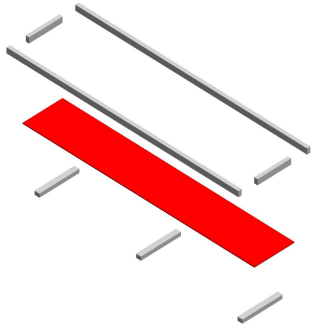
Front View

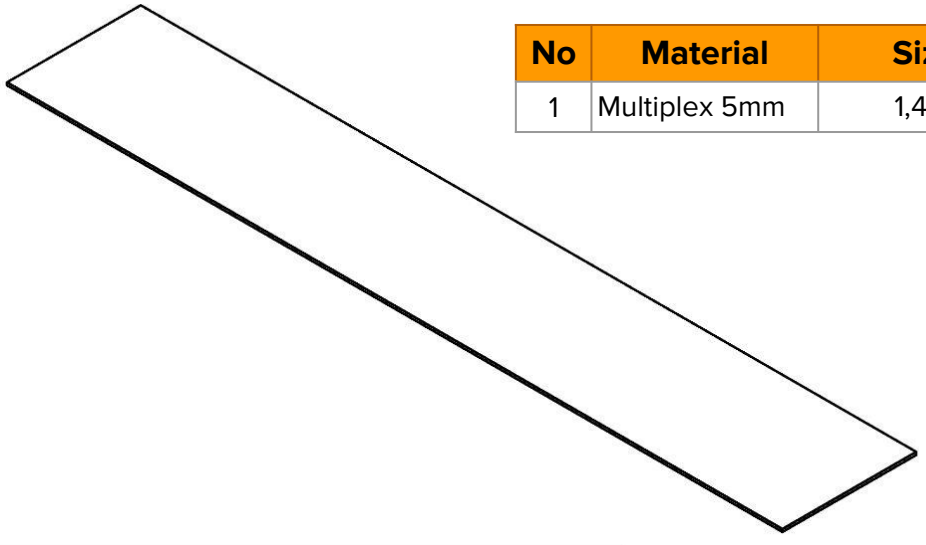


Side View

KOPERNIK
FINDING WHAT WORKS

YARN TABLE - 0.3



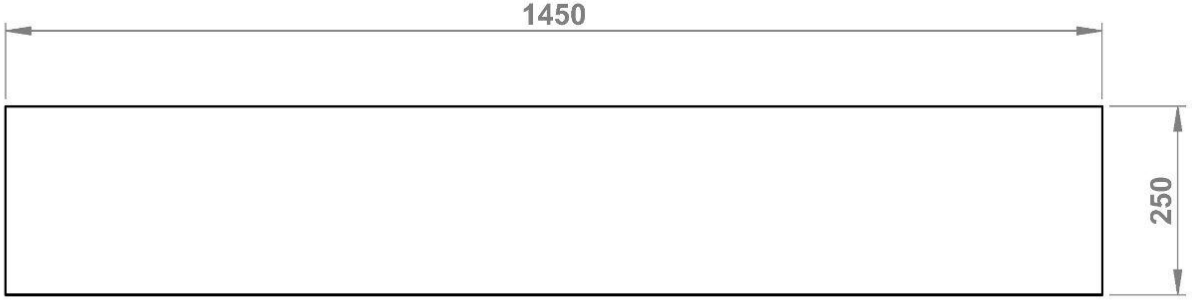


No	Material	Size (mm)	Quantity
1	Multiplex 5mm	1,450 x 250	1 unit

No	Tool
1	Saw

Scale 1:10
Unit: millimeter

Top View

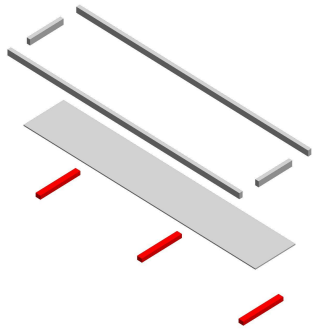


Front View

Side View

KOPERNIK
FINDING WHAT WORKS

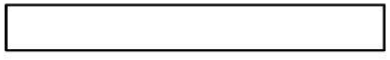
YARN TABLE - 0.4



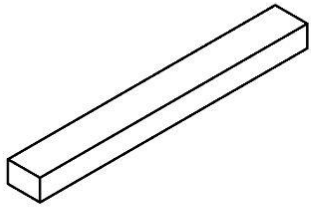
No	Material	Size (mm)	Quantity
1	Pine wood	250 x 30 x 20	3 units

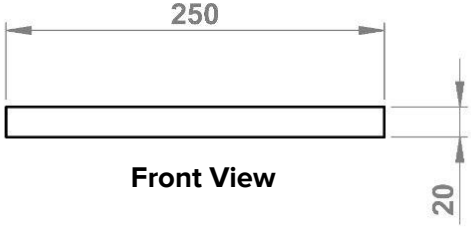
No	Tool
1	Saw

Scale 1:5
Unit: millimeter

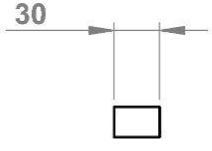


Top View



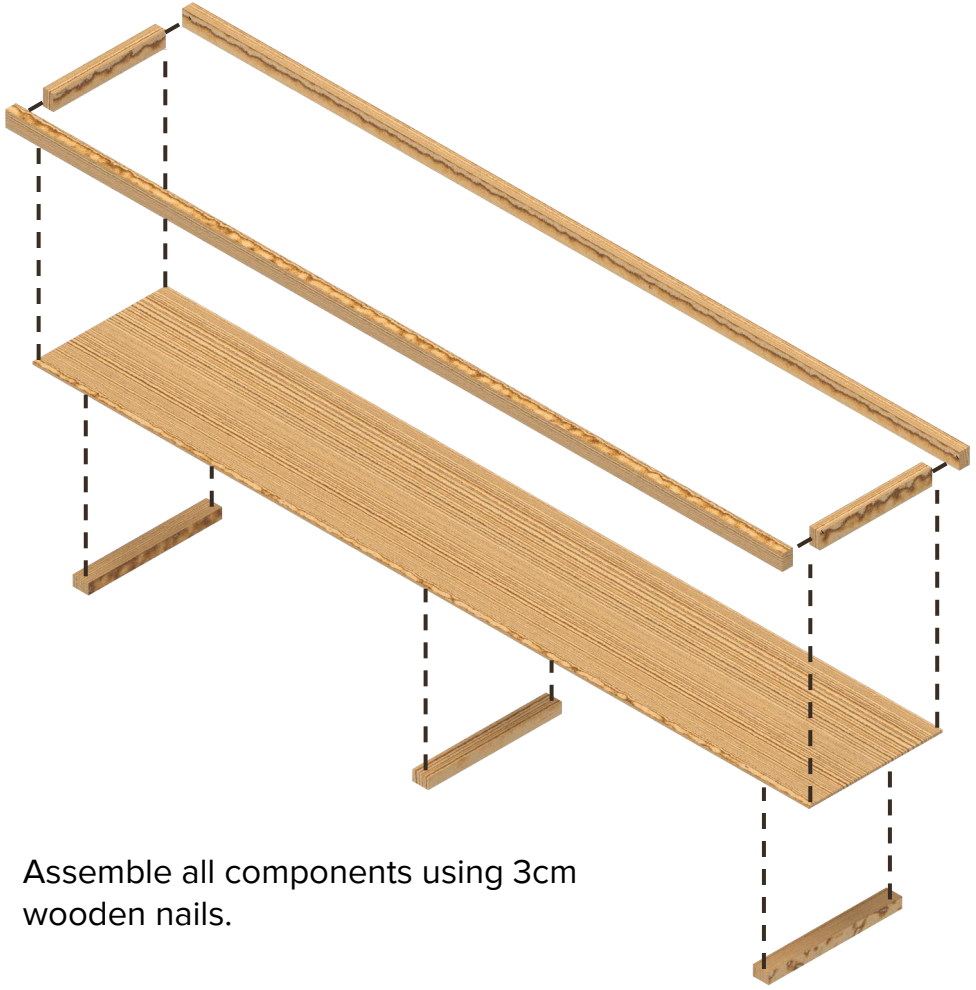


Front View



Side View

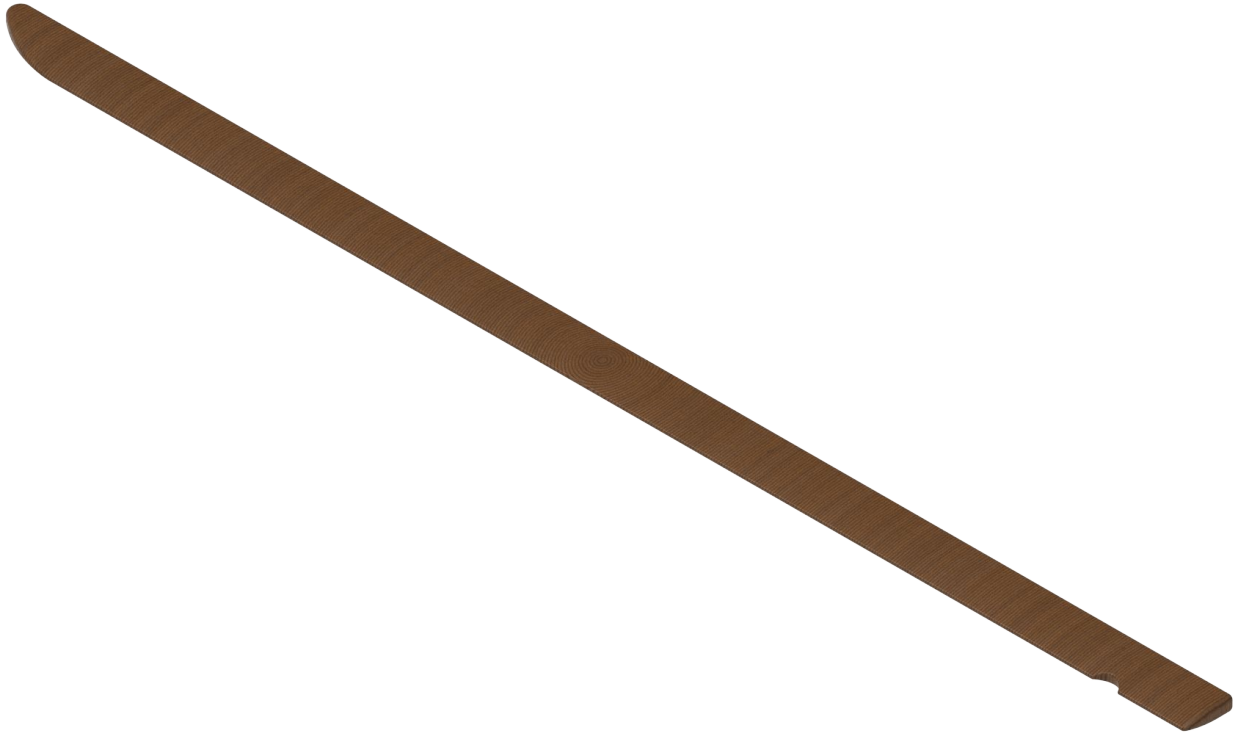
YARN TABLE - ASSEMBLY



Assemble all components using 3cm wooden nails.


WEAVING SWORD

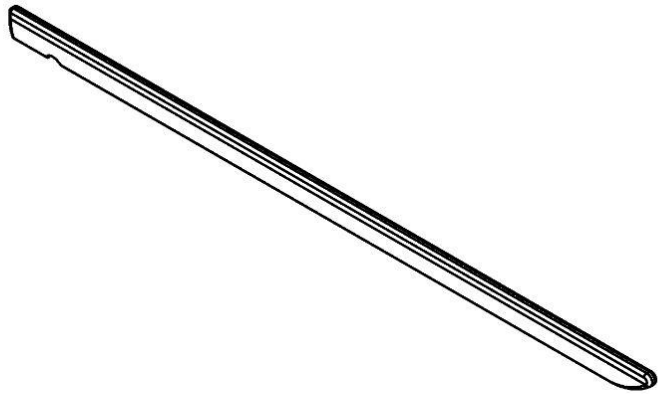
WEAVING SWORD - P



WEAVING SWORD - P

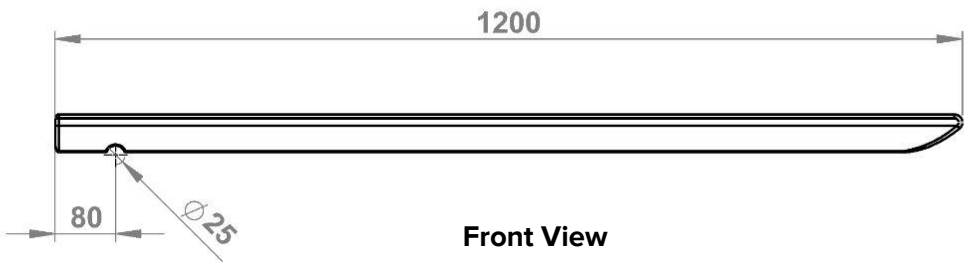
No	Material	Size (mm)	Quantity
1	Coconut wood	1,200 x 50 x 15	2 units

No	Tools
1	Saw
2	Wood chisel
3	Hammer

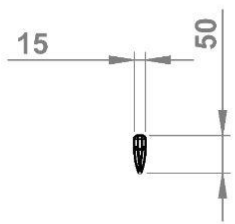


Scale 1:10
Unit: millimeter

Top View



Front View



Side View

This project is implemented by:

Supported by:

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