wnPlant

Manual V1.00

The OwnPlant is the wold first open source outdoor Growbox.
It was specially developed for everyone, no matter how small his balcony is, to allow the cultivation of plants without disturbing his neighbours. It has a high-quality and therefore very quiet ventilation system. By not using an LED lamp, the power consumption was reduced by approx 95%. Which makes him unbeatable in terms of environmental protection and operating costs compared to the competition. It needs No complicated cultivation methods only plants that start to flower automatically Plant and Play. Areas that were not previously suitable for growing plants can now be developed because the plant is also protected from the cold Weather and rain. No matter what may come your supply of the plant that is most important to you can now ensure regardless of governmental patronage and industrial additives. You own now your own means of production that change the structure the principle. They are also independent of spare parts producers because almost exclusively standard parts were installed and it can be assumed that they will be available for a very, very long time. You should need about 2 days to build. He is fully removable until to the last screw. All printed parts, drawings and instructions are free available for download. It was designed in such a way that creativity for extensions and backwards compatible upgrades are have no limits. Because each part is freely available, it is possible for everyone to implement their own ideas and to share them again. You can copy and change every part if you give me as a source.

Important! All information in the metric system!
No guarantee no warranty. All actions at your own risk

Contact information
ownplant@gmail.com

Donate
PayPal: paypal.me/OwnPlant

1. Print out all Printing parts under the following settings
   a. 0,6=Nozzle
   b. 0,4=Layer Height
   c. Extrusion width Support material=0.41mm
   d. All Speeds are Max=40mm/s (except Infill)
   e. Options for support material and raft: "Don,t support bridges" =No
   f. Pattern=Honeycomb

   I have use the Prusa I3 MK3s and I need the full 250mmx210mmx210mm space. I don't know whether and how the parts can be printed with other printers. But I am convinced that it is possible as long as the space is minimal 250mmx210mmx210mm.
   I have use the PrusaSlicer 2.2.0 when you use other Slicer the names of the settings may differ.

2. Put the insert in the printing parts they are all they the same.
   59x “M6,5x0,75 (Outside) M4x0,7 (Inside)”.

3. Saw all parts from the hardware store to the length specified in the list or in the cut plan
   Note Leave the protective films on the "Polycarbonate double wall sheets" until the end.

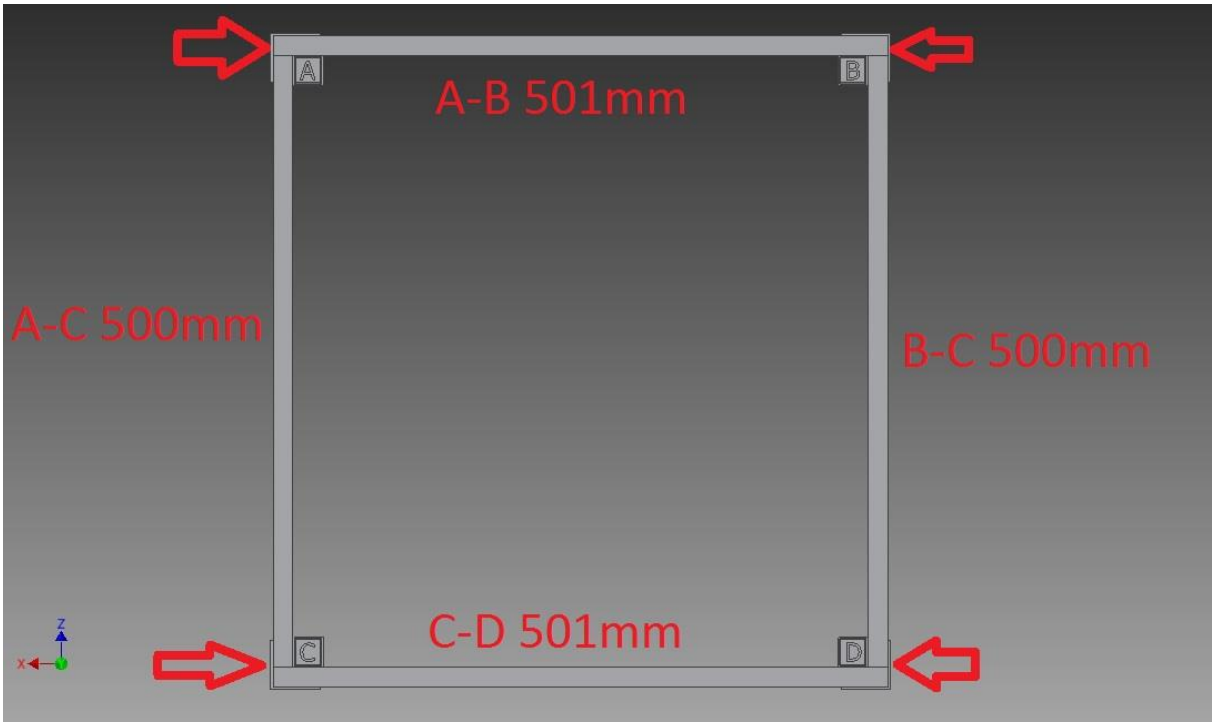
4. Screw the flap like in the "Flap" drawing.

5. Only drill the 135mm hole in the "Polycarbonate double wall sheets A-B" like in the drawing “Polycarbonate double wall sheets A-B”

6. Drill the 4x „Angle Profile Aluminum 40mmx40mmx2mm“ (A ,B C, und D) like in the drawing.

7. Clamp the „Polycarbonate double wall Sheets“ the „Angle profile Aluminum 40mmx40mmx2mm“ and the „Square tube Aluminum “ with the corresponding „Cover Mounting“ Make sure that everything is in place until it stops
   Note do <u>not</u> use an assembly hammer but push it by hand.

6.a It **matter** how you put them together pay attention to the position of the plates in the „Angle Profile Aluminum 40mmx40mmx2mm“



8. Clamp the Bottom part temporarily (see next picture)

9. Drill the pre-drilled Ø6mm holes in the "Angle Profile Aluminum 40mmx40mmx2mm" to 8 mm in the composite (except the top two which are fixed with the "Cover Mounting")

Important!!! The top and bottom holes are drilled from one side only! All in between are drilled completely See at in the drawing in the next picture

Note removing the burr from inside the „Square Tube Aluminum “

10. Screw the „Floor Mounting“ With 2x M4x30 and the washer together
11. Remove the „Cover Mounting“ and Clamp it temporarily
12. Drill the pre-drilled Ø6mm holes in the “Angle Profile Aluminium 40mmx40mmx2mm” to 8mm in the composite (only those from the "Cover Mounting")

13. Replace "cover mounting" and screw with 2x M4x30 and washer.

14. Repeat this procedure at A,B,C and D

Note at C + D you have to install the flap and "Flap holder D" before drilling

15. screw the „Holder“ (A,B,C,D) and 2x„Square tube aluminium A-C B-D“ und 2x„Square tube aluminium A-B C-D“ like Labelling with 8x M4x55 and washer together.

16. Apply the „EPDM cellular rubber“ on the „HPL Plate 6mm“ and then screw it together with the 4x M4x20 and the „Rubber foot 4904 25mmx15mm“.

17. Insert the Planters L44cm x B44cm x H38cm.

18. M4x210 Threaded Rod, Valve Flap, Valve Flap Holder and Handle like the drawing „Assembly Valve“ with 4xM4 nuts .

19. Screw the Vale with the 5x M4x10 together. An then screw it on the OwnPlant with 4xM4x55 wire the „Soler&Palau TD 160“with the „Rubber connecting cable“ on the lowest level.

20. Screw on the „Hinge A“ and „Hinge B“ on „Cover Mounting A“ and „Cover Mounting B“ with 4x M4x30 and 4x “M4x20 Countersunk screw”.

21. Clamp the Cover like the Labelling and then Srew it on „Hinge A“ and „Hinge B“ with 2xM6x70 and 2xM6 Nut.

22. Clamp „DO7 sealing profile“ on the Cover.

23. Screw “Lock part One” “Lock part Two” “Lock part Three” with 2xM5x70,2xM5 Mutter and 1xM4x40 and 1xM4 Mutter together

Standard Parts

Quantity	Part	DESCRIPTION	Norm
32	Ø4,3 Ø15	Washer (body)	DIN 9021
16	M4x30	Button-head screw with stamped hexagon socket - metric	ISO 7380 ANSI B18.3.4M
12	M4x55	Button-head screw with stamped hexagon socket - metric	ISO 7380 ANSI B18.3.4M
3	M4x50	Button-head screw with stamped hexagon socket - metric	ISO 7380 ANSI B18.3.4M
1	M4	Cap mother	DIN 1587
4	M4x20	Allen screw with countersunk head	ISO 10642
2	M6x70	Allen screw with cylinder head	ISO 4762 (DIN912)
2	M6	Hexagon nuts self-locking	ISO 6924
2	M6x20	Allen screw with cylinder head	ISO 4762
6	M4x30	Allen screw with cylinder head	ISO 4762
4	M5	Hexagon nuts self-locking	ISO 6924
4	M5x70	sechskantschraube	ISO4014
4	M4x20	Allen screw with cylinder head	ISO 4762
2	M4x40	Allen screw with cylinder head	ISO 4762
6	M4	Hexagon nuts	ISO 4032
5	M4x10	Allen screw with cylinder head	ISO 4762

Printing parts

for all parts are 0,6=Nozzle 0,4=LayerHeight Extrusion width Support material=0.41mm All Speeds are Max=40mm/s

Options for support material and raft: "Don,t support bridges" =No Pattern=Honeycomb

Quantity	Part	Materia Typ	Nozzle size	Layer height	infill in %	infill Typ	support	Material in grams	Time in Hours
1	Valve	PTEG	0,6	0,4	15	Gyroid	No	425	18,5
1	Valve Flap	PTEG	0,6	0,4	15	Gyroid	No	50	1,5
1	Valve Flap Holder	PTEG	0,6	0,4	15	Gyroid	No	4	0,3
1	Handle	PTEG	0,6	0,4	15	Gyroid	No	6	0,5
1	Fan Box	PTEG	0,6	0,4	15	Gyroid	No	220	9,5
1	Activated Carbon Filter Cover	PTEG	0,6	0,4	100	Rectilinear	No	80	5
1	Activated Carbon Filter	PTEG	0,6	0,4	15	Gyroid	No	300	16,5
1	Floor Mounting A	PTEG	0,6	0,4	15	Gyroid	No	12	0,75
1	Floor Mounting B	PTEG	0,6	0,4	15	Gyroid	No	12	0,75
1	Floor Mounting C	PTEG	0,6	0,4	15	Gyroid	No	12	0,75
1	Floor Mounting D	PTEG	0,6	0,4	15	Gyroid	No	12	0,75
1	Holder A	PTEG	0,6	0,4	15	Gyroid	Yes	18	1
1	Holder B	PTEG	0,6	0,4	15	Gyroid	Yes	18	1
1	Holder C	PTEG	0,6	0,4	15	Gyroid	Yes	18	1
1	Holder D	PTEG	0,6	0,4	15	Gyroid	Yes	18	1
1	Flap holder C1	PTEG	0,6	0,4	15	Gyroid	No	70	2,75
1	Flap holder C2	PTEG	0,6	0,4	15	Gyroid	Yes	13	0,5
1	Flap holder D	PTEG	0,6	0,4	15	Gyroid	No	70	2,75
1	Flap stopper D	PTEG	0,6	0,4	15	Gyroid	No	10	0,5
1	Cover Mounting A	PTEG	0,6	0,4	15	Gyroid	No	50	2,5
1	Cover Mounting B	PTEG	0,6	0,4	15	Gyroid	No	50	2,5
1	Cover Mounting C	PTEG	0,6	0,4	15	Gyroid	No	40	2
1	Cover Mounting D	PTEG	0,6	0,4	15	Gyroid	No	40	2
1	Hinge A	PTEG	0,6	0,4	15	Gyroid	Yes	40	2
1	Hinge B	PTEG	0,6	0,4	15	Gyroid	Yes	40	2
1	Exhaust Grille	PTEG	0,6	0,4	15	Gyroid	No	65	3
2	Lock Part One	PTEG	0,6	0,4	15	Gyroid	No	8	0,3
2	Lock Part Three	PTEG	0,6	0,4	15	Gyroid	No	17	0,75
2	Lock Part Two	PTEG	0,6	0,4	15	Gyroid	No	10	0,5
1	Flap Hinge	PLA	0,6	0,4	15	Gyroid	Yes	95	4,75
1	Doorknob	PLA	0,6	0,4	15	Gyroid	No	60	3
1	Cover Border A	PLA	0,6	0,4	15	Gyroid	Yes	70	4
1	Cover Border B	PLA	0,6	0,4	15	Gyroid	Yes	70	4
1	Cover Border C	PLA	0,6	0,4	15	Gyroid	Yes	60	3,75
1	Cover Border D	PLA	0,6	0,4	15	Gyroid	Yes	60	3,75
1	Cover Border C-D	PLA	0,6	0,4	15	Gyroid	Yes	60	3
1	Cover Border A-B	PLA	0,6	0,4	15	Gyroid	Yes	60	3
1	Cover Border B-D	PLA	0,6	0,4	15	Gyroid	Yes	60	3
1	Cover Border A-C	PLA	0,6	0,4	15	Gyroid	Yes	60	3
2	Flap Border	PLA	0,6	0,4	15	Gyroid	Yes	35	1,5

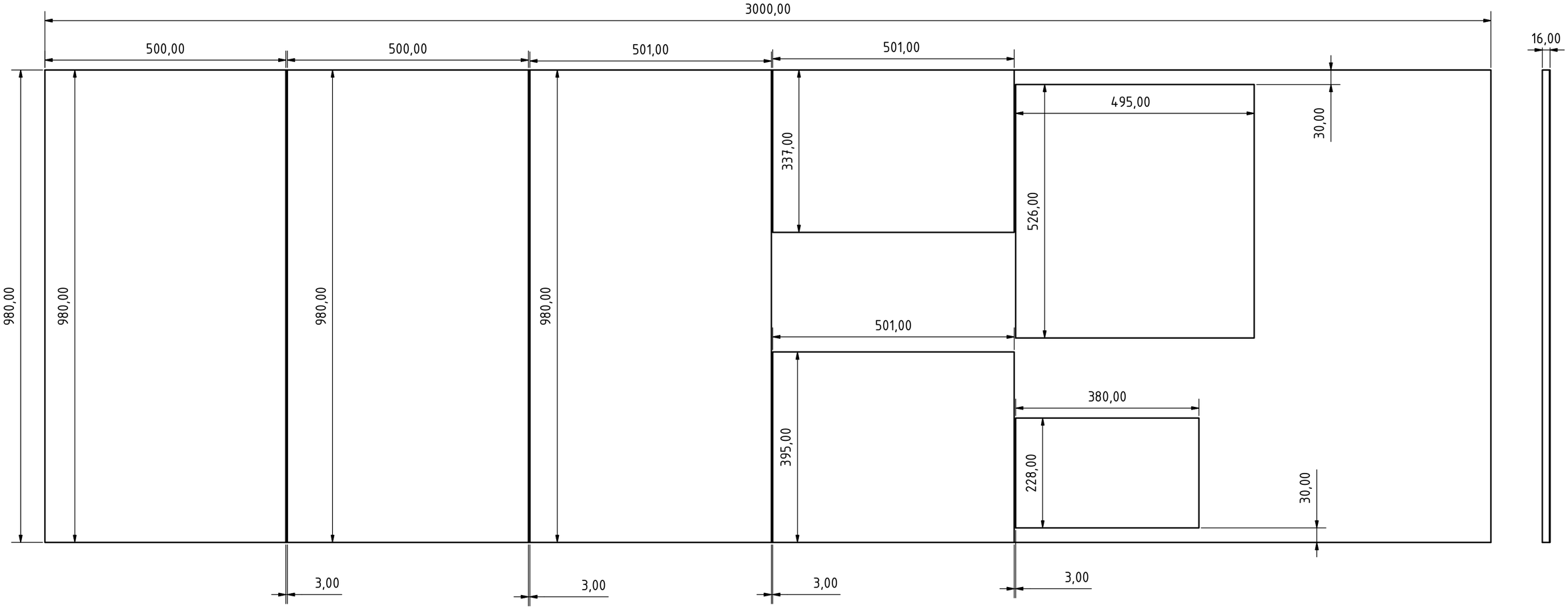
Time Total	**121,15**	**Hours**
PTEG	**1738**	**g**
PLA	**725**	**g**

Hardware store

Quantity	Part		costs (estimated)	
1	Polycarbonate Double wall sheet 3000mmx980mmx16mm		45	EURO
		(Cut in to)		
		2x500mmx980mm		
		2x501mmx980mm		
		1x495mmx980mm		
4	Angle profile aluminum silver 40mmx40mmx2mmx1m		36	EURO
		(Cut in to)		
		4x988mm		
5	Square tube aluminum 25mmx25mmx1,5mmx1m		31	EURO
		(Cut in to)		
		4x971mm		
		2x439mm		
1	Square tube aluminum 30mmx30mmx2mmx1m		12	EURO
		(Cut in to)		
		2x408mm		
1	Aluminum U-profile 16mmx3m (for Double wall sheets)		18	EURO
		(Cut in to)		
		2x415		
		2x390		
		2x359		
1	M4 Threaded rod 1m		0,6	EURO
		(Cut in to)		
		1x210mm		
1	High pressure laminate Plate 6mm		10	EURO
		(Cut in to)		
		500mmx530mm		
		Total	**152,6**	**EURO**

Amazon

Quantity	Part	Link	costs (estimated)	
2	Magnet N52 20mmx10mmx2mm	https://amzn.to/2zSvZ0V	12	EURO
1	Dehner or Eastwest Plant inserts L44cmxW44cmxH38cm	https://amzn.to/2WhD0jd	20	EURO
1	Soler&Palau TD 160 SILENT 160m³/h Ø100mm	https://amzn.to/35l0I2f	96	EURO
4	Rubber foot 4904 25mmx15mm	https://amzn.to/3d5got2	5	EURO
1	EPDM cellular rubber sealing tape on one side, self-adhesive foam rubber 15mmx5mmx5m	https://amzn.to/2L3OMIZ	3,7	EURO
3m	DO7 sealing profile edge protection profile with seal on top	https://amzn.to/3aVMKFh	15	EURO
2	304 stainless steel M6 internal thread 10mm x 45mm cylindrical parallel pin	https://amzn.to/3faaLLQ	6,29	EURO
1	Rubber connecting cable	https://amzn.to/2YnDVBd	8,5	EURO
59 (3x20)	Self-tapping thread insert 302 M6,5x0,75(Outside) M4x0,7 (Inside)	https://amzn.to/2Whojwr	16,5	EURO
1	Hole saw 135mm	https://amzn.to/2yiuEQq	14	EURO
2	1kg Fillament PTEG	https://amzn.to/2SqqVao	40	EURO
1	1kg Fillament PLA	https://amzn.to/3d4AMKP	18,5	EURO
		Total	**255,49**	**EURO**

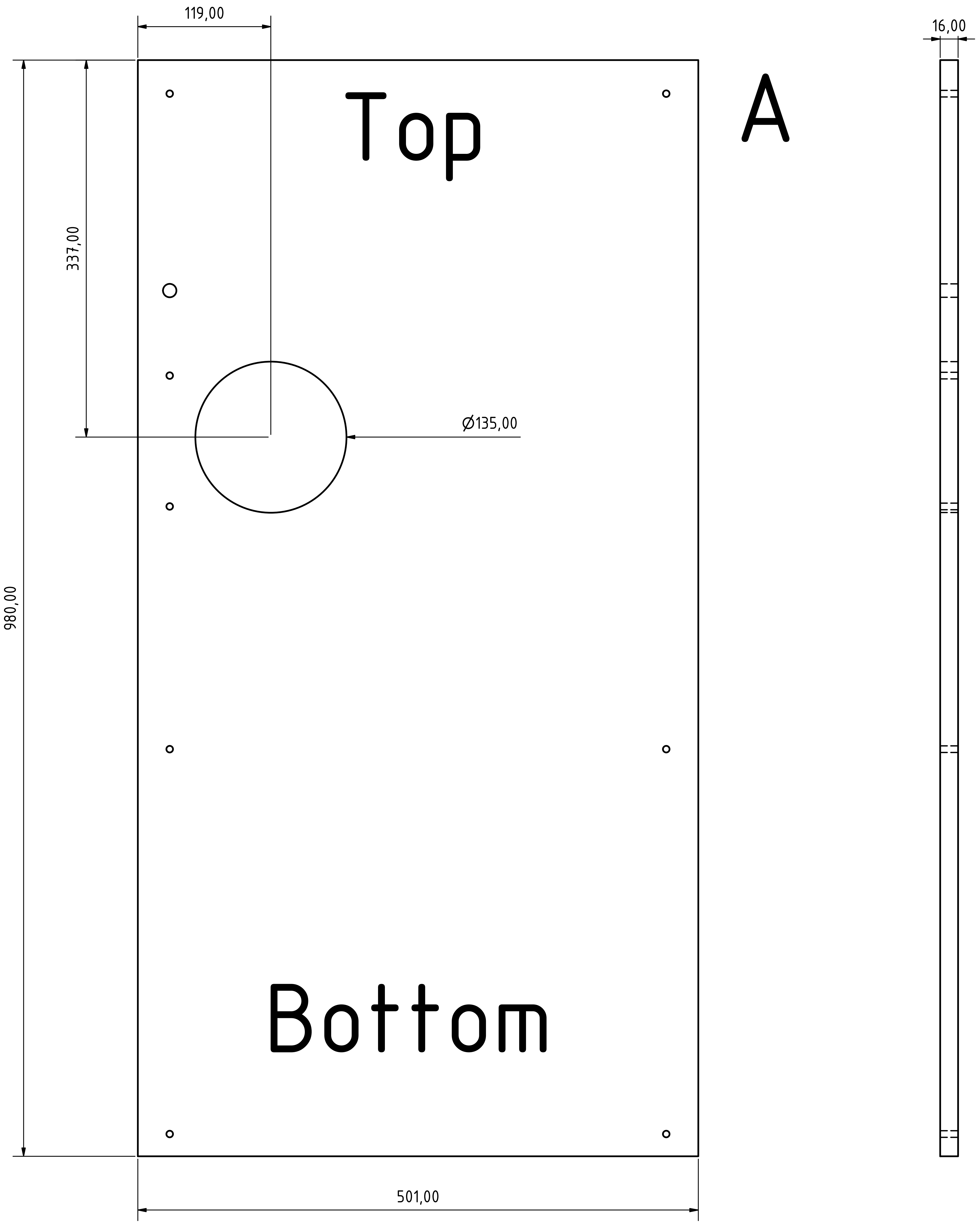


					Datum	Name
				Gezeichnet	02.05.2020	OwnPlant
				Kontrolliert		
				Norm		
Status	Änderungen	Datum	Name			

Cut Plan Double wall sheet

1

A2



					Datum	Name	
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				Kontrolliert			
				Norm			
							1
							A2
Status	Änderungen	Datum	Name				

A-A (1 : 1)

M6x20

10x45

10x45

M4x30

M6x20

M4x30

Magnets N52 20x10x2

A

A

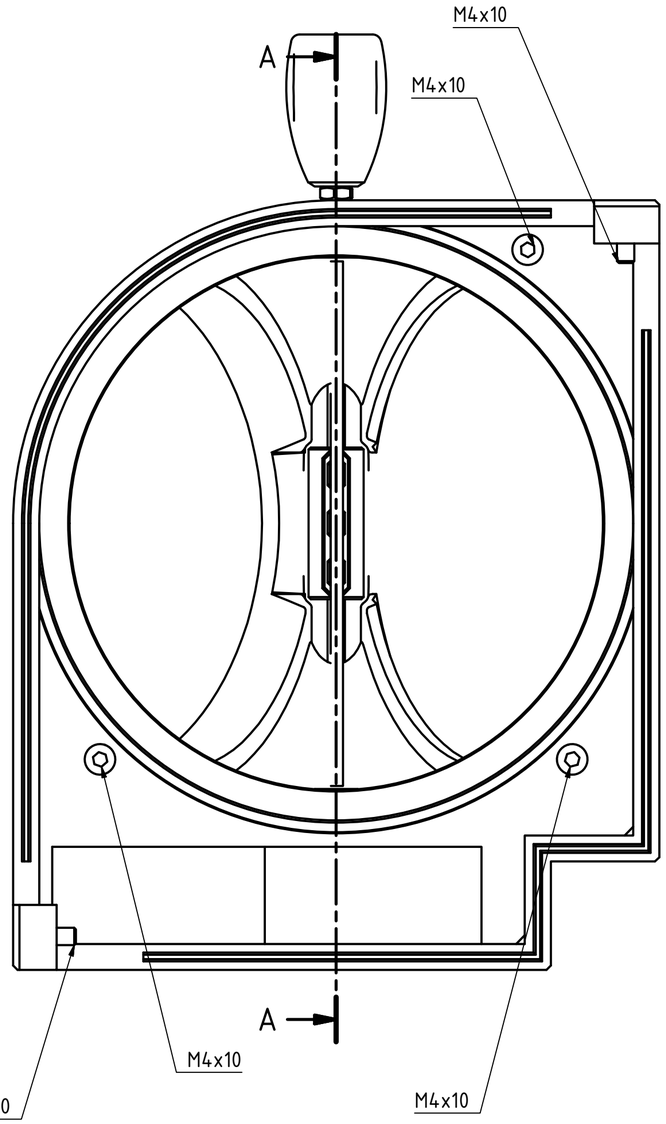
	Datum	Name
Gezeichnet	30.04.2020	OwnPlant
Kontrolliert		
Norm		

Flap

1

A2

Status	Änderungen	Datum	Name



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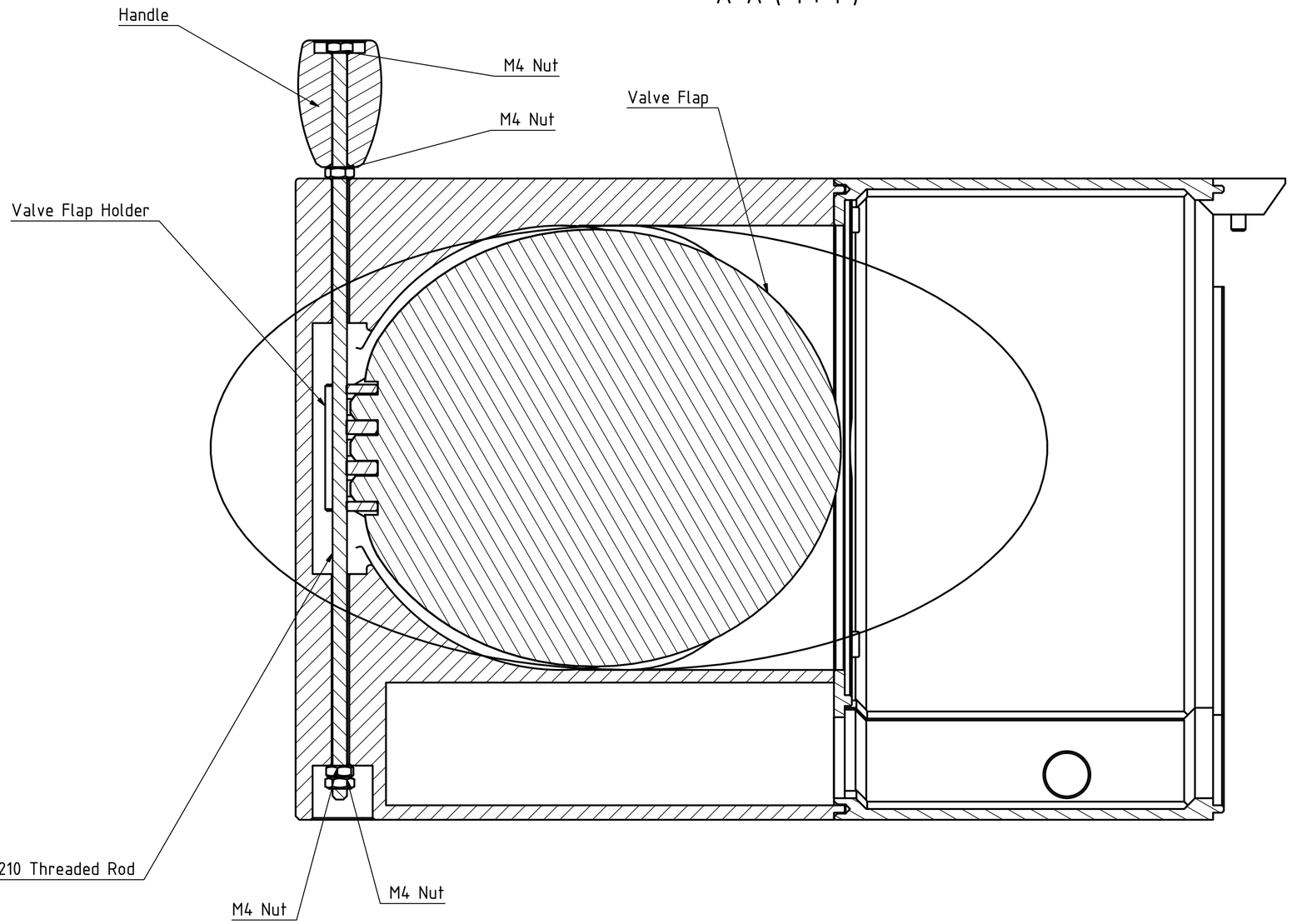


TEILELISTE			
OBJEKT	ANZAHL	BAUTEILNUMMER	BESCHREIBUNG
1	1	Valve	
2	1	M4x210 Threaded Rod	
3	1	Valve Flap	
4	1	Valve Flap Holder	
5	1	Handle	
6	1	Fan Box	
7	1	Activated Carbon Filter Cover	
8	5	ISO 4762 - M4 x 10	Innensechskantschraube
9	1	Activated Carbon Filter	
10	4	ISO 4032 - M4	Sechskantmuttern, Typ 1 - Produktklasse A und B
11	1	Soler Palau TD 160 Duct Fan	

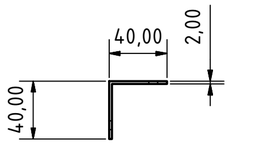
	Datum	Name
Gezeichnet	30.04.2020	OwnPlant
Kontrolliert		
Norm		

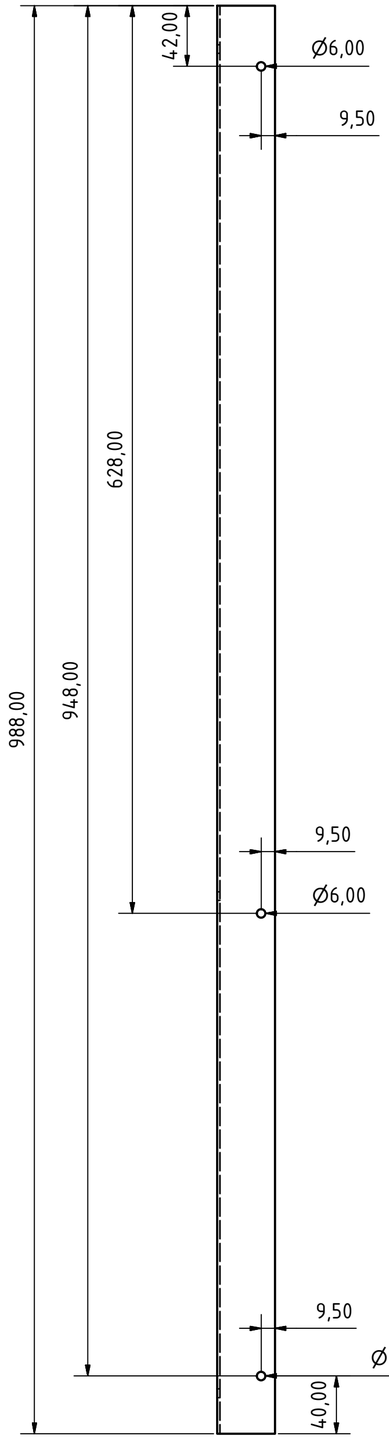
Assembly Valve

1

A2

Status	Änderungen	Datum	Name





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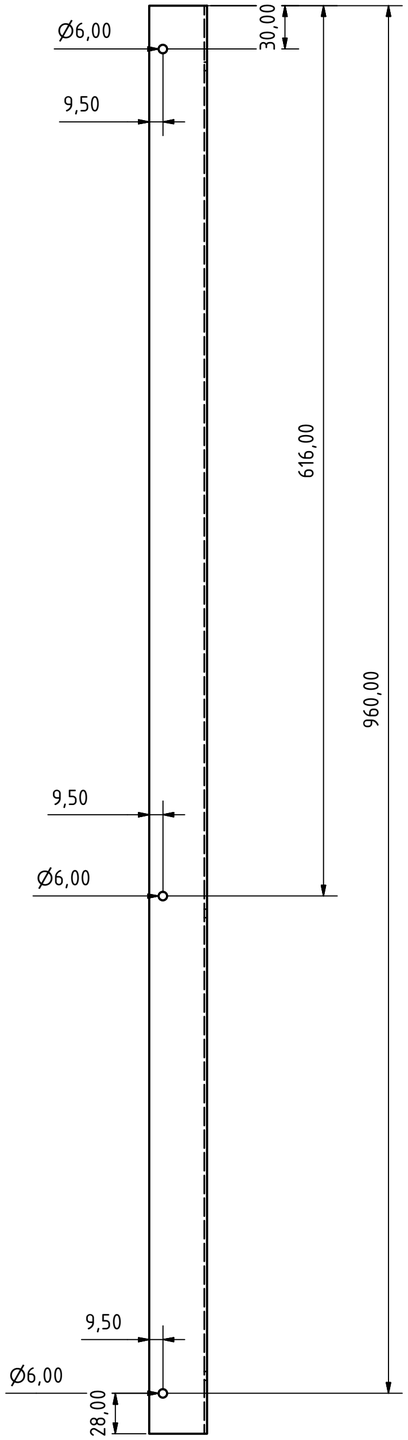

Bottom

					Datum	Name
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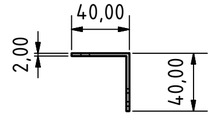
				Norm		
Status	Änderungen	Datum	Name			

Angle profile aluminum A

1

A2



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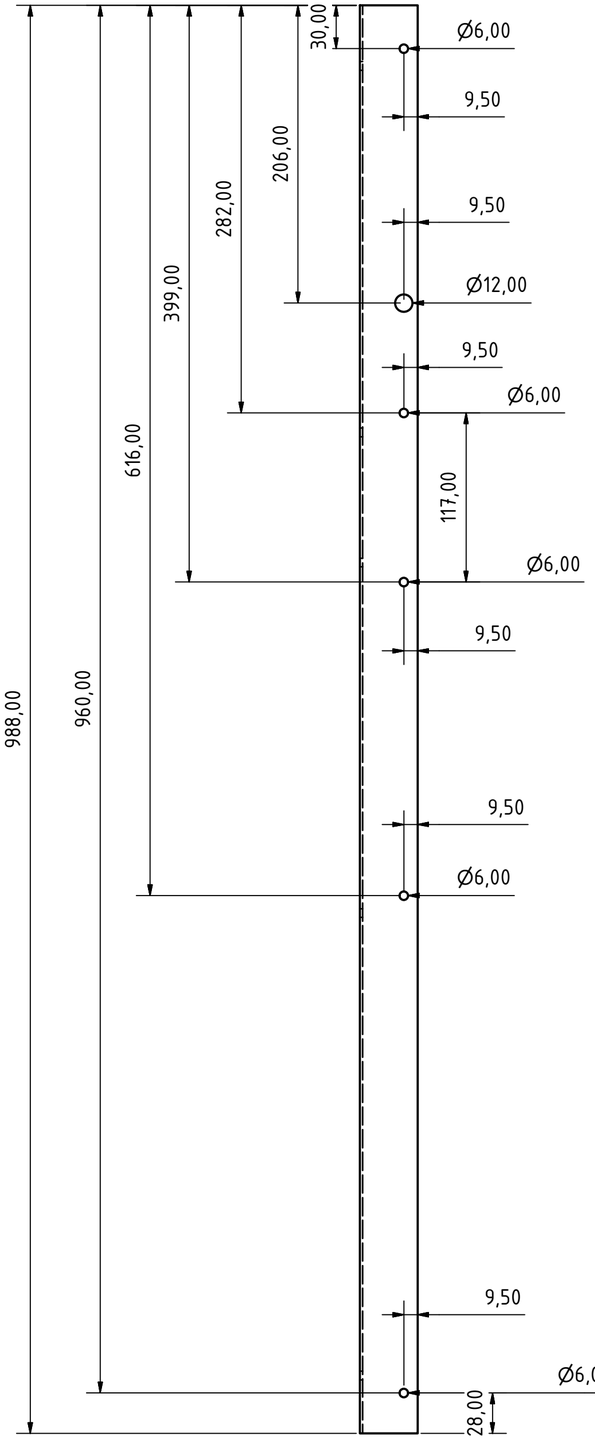

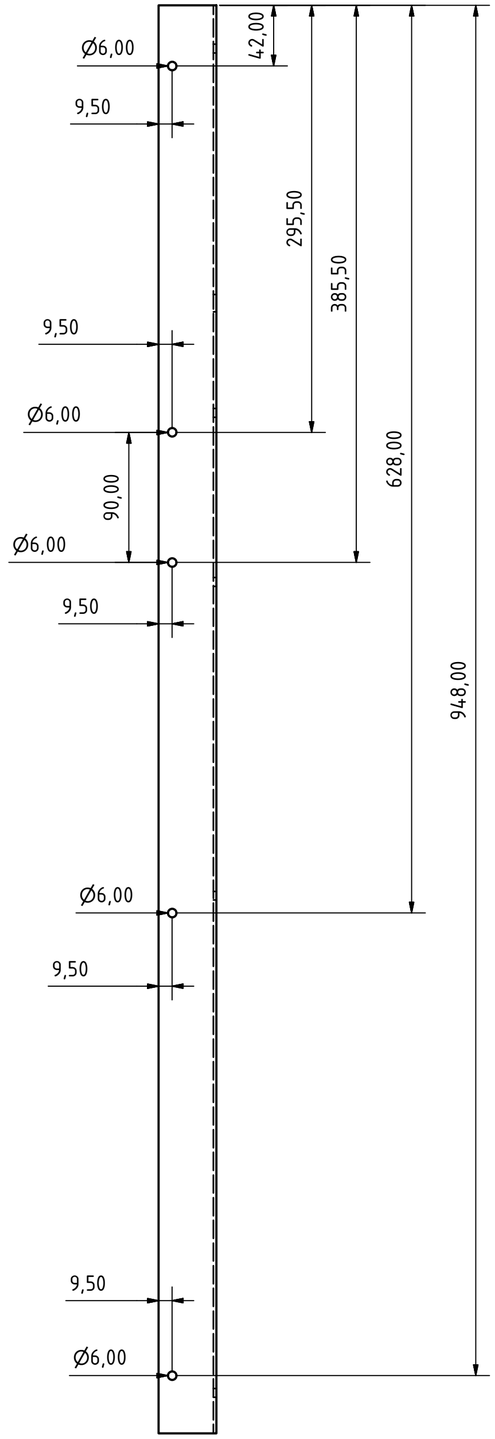

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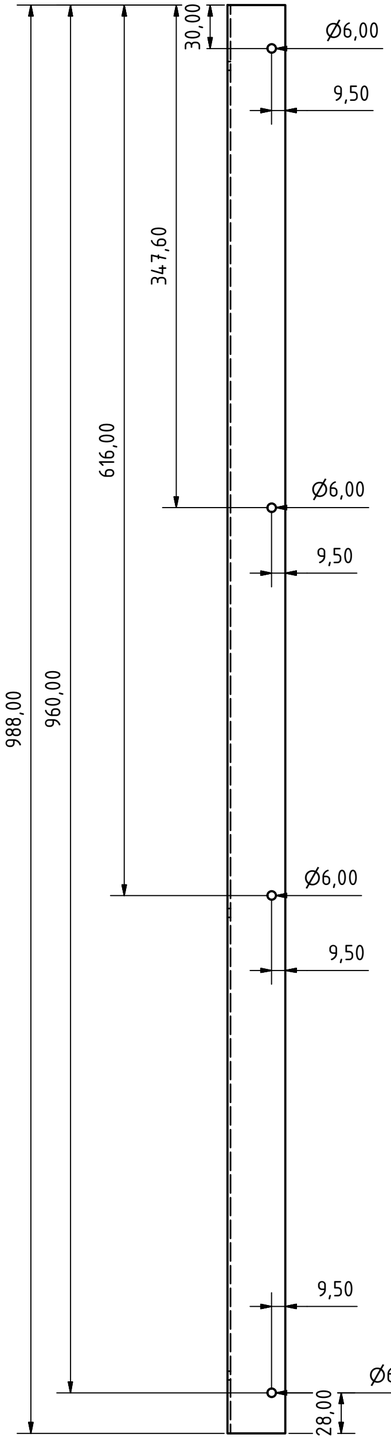
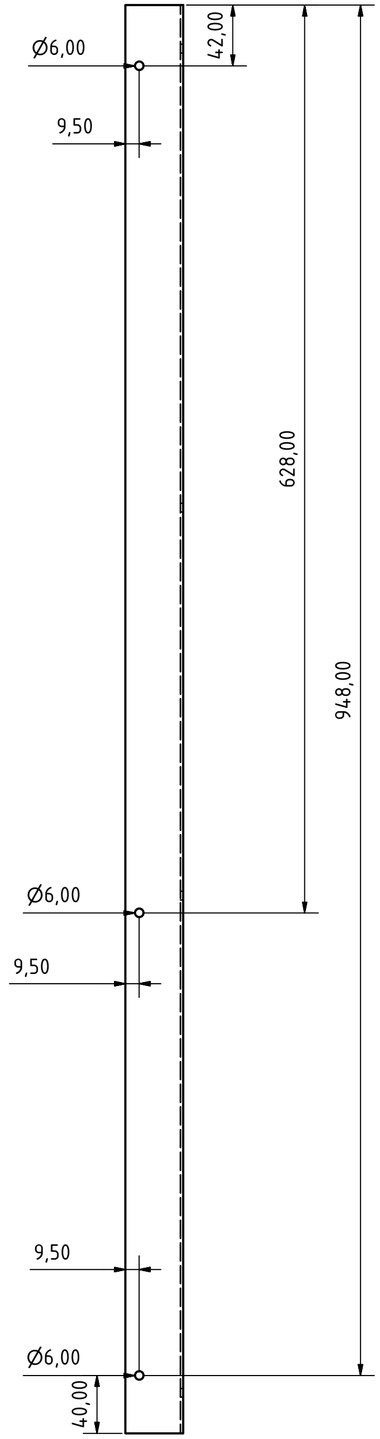
			Norm		
Status	Änderungen	Datum	Name		

Angle profile aluminum B

1
A2

Top





Bottom

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				Norm		

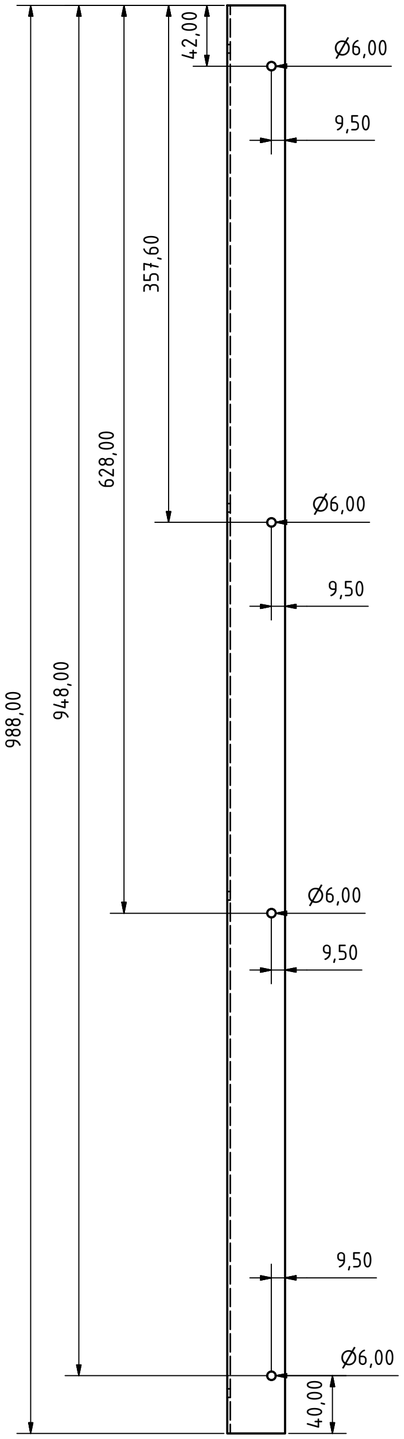
Angle profile aluminum C

1

A2

Status	Änderungen	Datum	Name

Top



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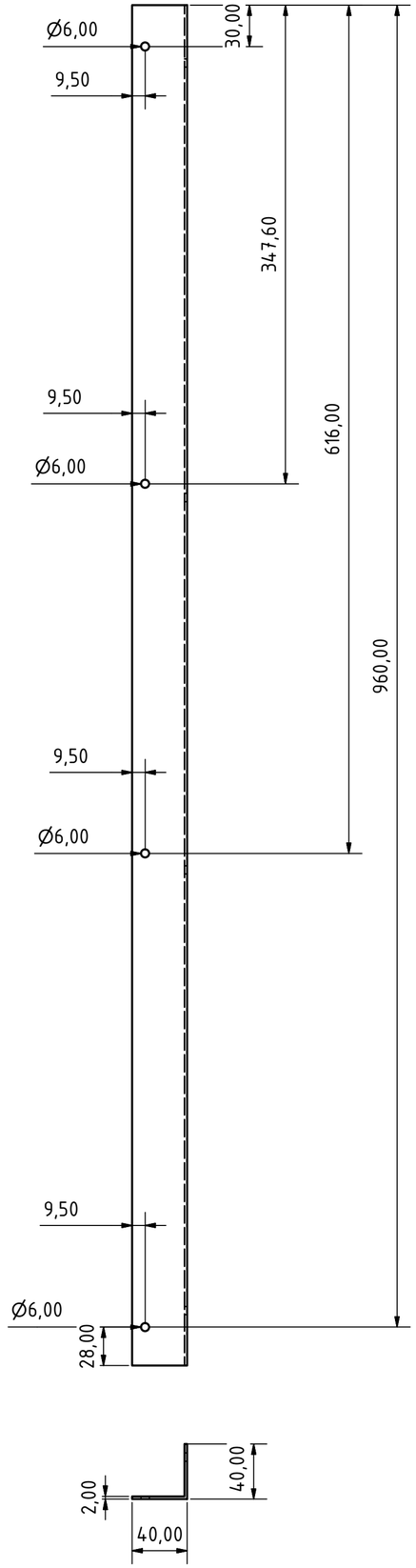

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				Kontrolliert		
				Norm		

Angle profile aluminum D

1

A2

Status	Änderungen	Datum	Name