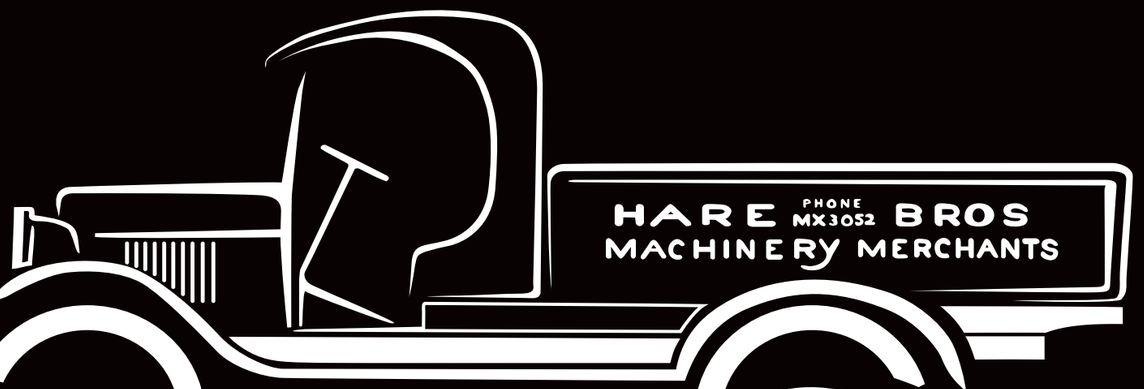

Flatbed Felix

PEDAL CAR BUILD

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CHASSIS ASSEMBLY

PLAN 1	DRAWING: 1
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
Chassis: 6000mm (34.93x19.05x1.6 Rect Commercial ERW Tube Rectangular Box RHS)
Running Board Supports: 1200mm (13x13x1.6mm Mill Finish Primed MS Square Box SHS)
Nut Inserts: 2 x M6 x 1.0mm Metal Nut Inserts
Brackets: 340 x 70 (1.6mm Thick Sheet Mild Steel)
Crank Base Plate: 470mm (40 x 5mm Thick Mild Steel Flat Bar)
Steering Column Support: 260 x 140mm approx. (1mm Thick Sheet Mild Steel)
Steering Pivots: 100mm x (Ø21mm x NB15 Round Pipe)

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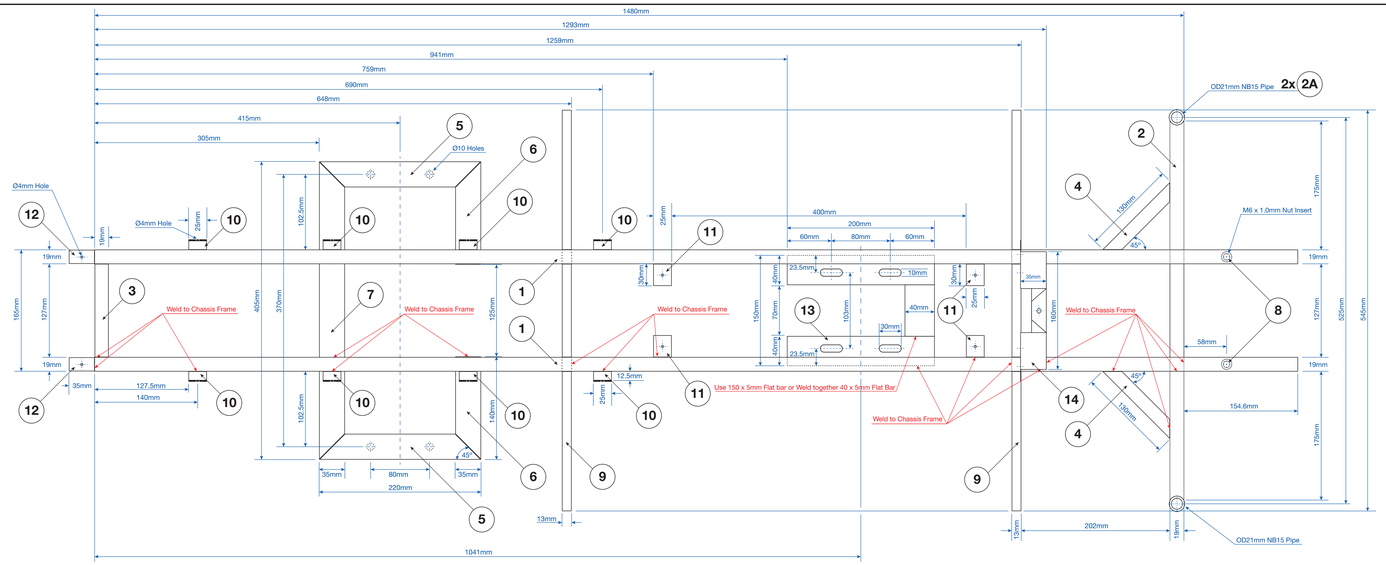
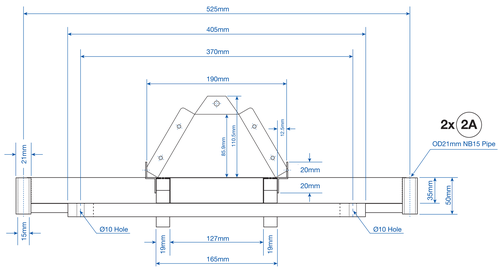
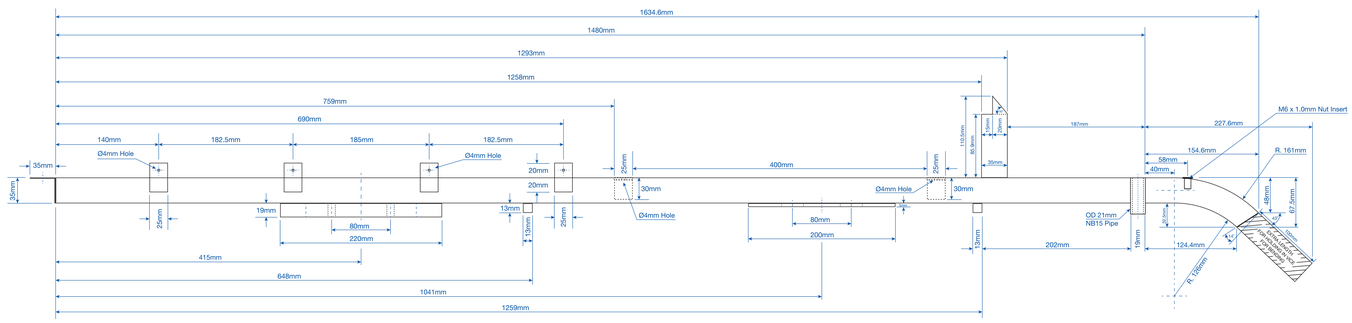


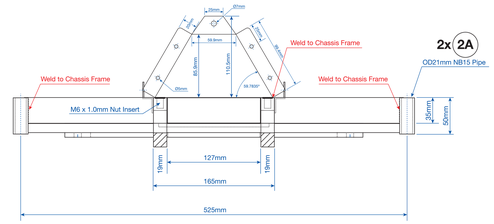
TOP VIEW



REAR VIEW



SIDE VIEW



FRONT VIEW

PARTS LIST

1x 3 — 2x 4 — 2x 5 — 2x 6

1x 2 — 1x 7

2x 2A — NB15 Round Pipe, OD 21mm

Frame: 34.93x19.05x1.6 ERW Commercial Tube Rectangular Box (RHS)

2x 1 — EXTRA LENGTH FOR HOLDING IN VICE FOR BENDING

2x 9 **Running Board Supports:** 2 x 13x13x1.6mm Mill Finish Primed MS Square Box SHS

2x 8 **Metal Nut Inserts** M6 x 1.0mm

8x 10 **Side Brackets** 1.6mm Thick Sheet Steel

4x 11 **Floor Brackets** 1.6mm Thick Sheet Steel

2x 12 **End Brackets** 1.6mm Thick Sheet Steel

1x 13 **Crank Base Plate** 5mm Thick Sheet Steel

1x 14 **Steering Column Support:** 1mm Thick Sheet Steel

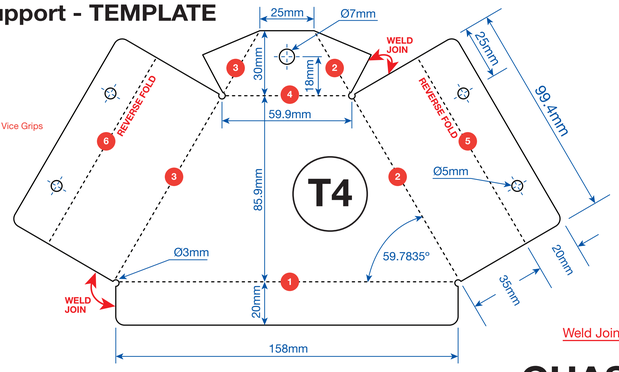
Steering Column Support - TEMPLATE

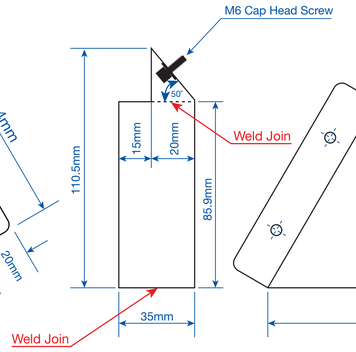
1mm Thick Sheet Steel

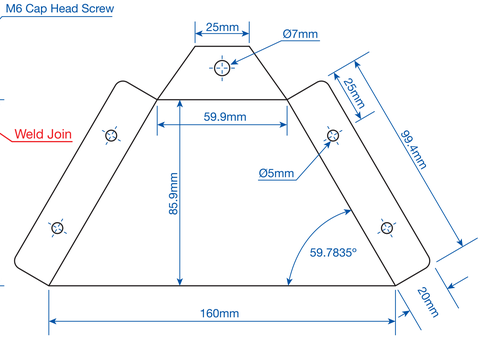
FORMING INSTRUCTIONS

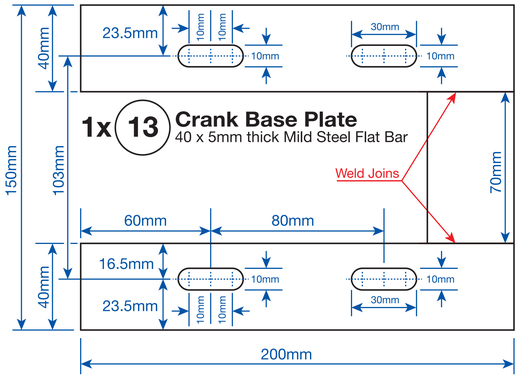
1. Use a Folder or Vice Brake Bender
2. Use a Folder or Vice Brake Bender
3. Use a Folder or Vice Brake Bender
4. Use a Vice, Vice Brake Bender or Sheetmetal Wide Vice Grips
5. Use a Folder or Vice Brake Bender - Reverse Fold
6. Use a Folder or Vice Brake Bender - Reverse Fold
7. Weld Joins

1x 14









Flatbed Felix — PEDAL CAR BUILD

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Chassis Parts

TEMPLATE	DRAWING: 2
SCALE: 1:1	TOLERANCE ± 2mm

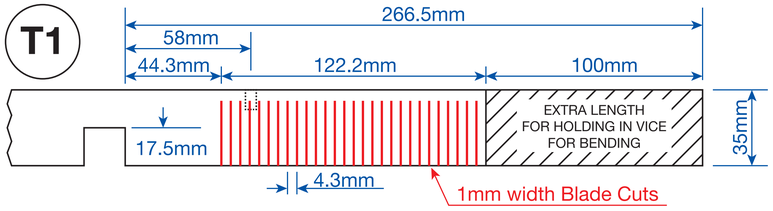
MATERIALS LIST:
Chassis: 6000mm (34.93x19.05x1.6 ERW - Tube Rectangular Commercial Box RHS)
Running Board Supports: 1200mm (13x13x1.6mm Mill Finish Primed MS Square Box SHS)
Nut Inserts: 2 x M6 x 1.0mm Metal Nut Inserts
Brackets: 340 x 70 (1.6mm Thick Sheet Mild Steel)
Crank Base Plate: 470mm (40 x 5mm Thick Mild Steel Flat Bar)
Steering Column Support: 260 x 140mm approx (1mm Thick Sheet Mild Steel)
Chassis Nose Bending Template: 107 x 600mm (19mm thick plywood)

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

CHASSIS NOSE CUTTING TEMPLATE

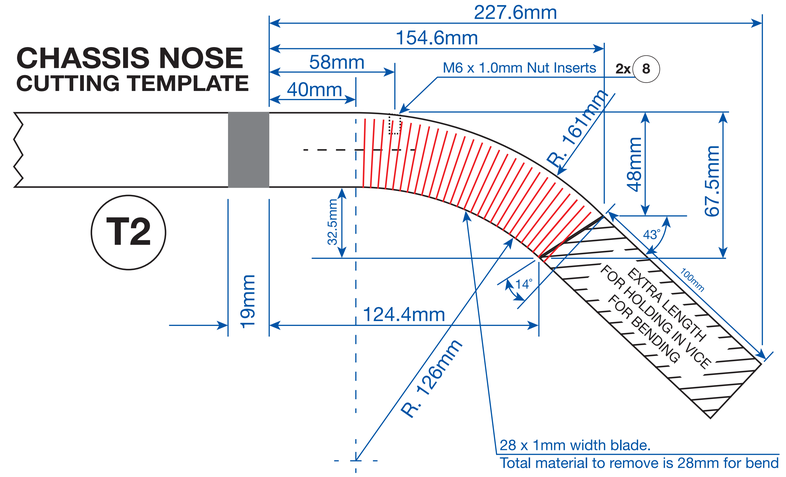
28 cuts with a 1mm width blade. Total material to remove is 28mm for bend

T1



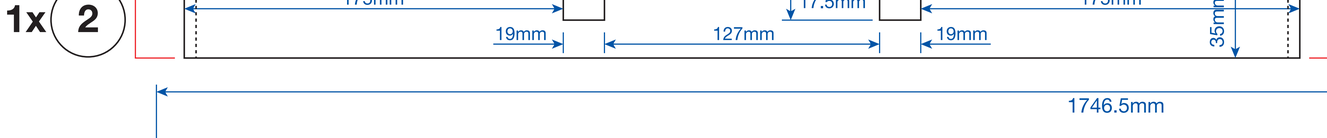
CHASSIS NOSE CUTTING TEMPLATE

T2

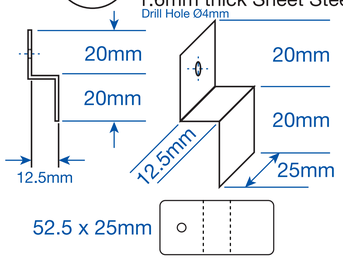


2x 8 **Metal Nut Inserts:**
2 x M6 x 1.0mm

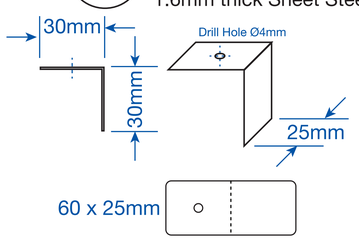
2x 9 **Side Running Board Supports:**
2 x 13x13x1.6mm Mill Finish Primed MS Square Box SHS



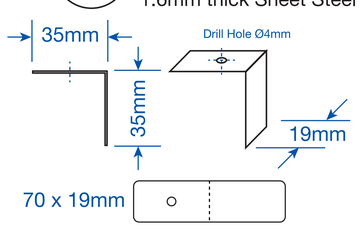
8x 10 **Side Brackets**
1.6mm thick Sheet Steel



4x 11 **Floor Brackets**
1.6mm thick Sheet Steel



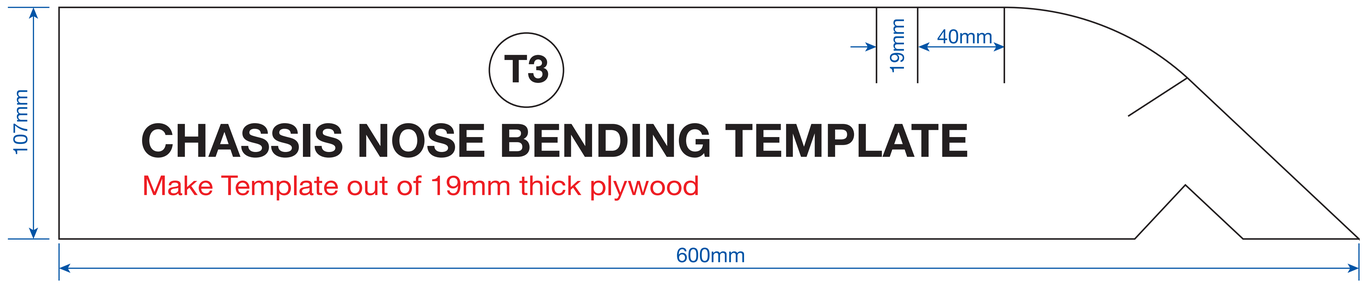
2x 12 **End Brackets**
1.6mm thick Sheet Steel



CHASSIS NOSE BENDING TEMPLATE

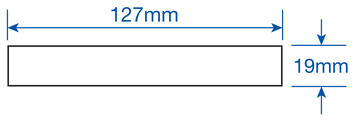
T3

Make Template out of 19mm thick plywood

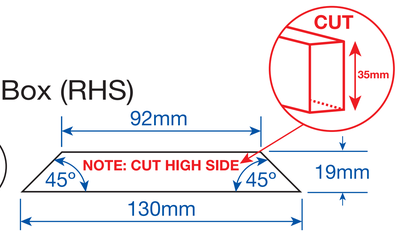


Chassis Frame:
34.93x19.05x1.6 ERW - Tube Rectangular Commercial Box (RHS)

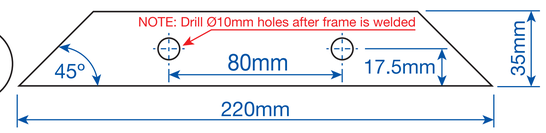
1x 3



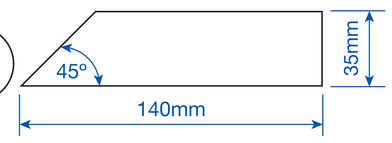
2x 4



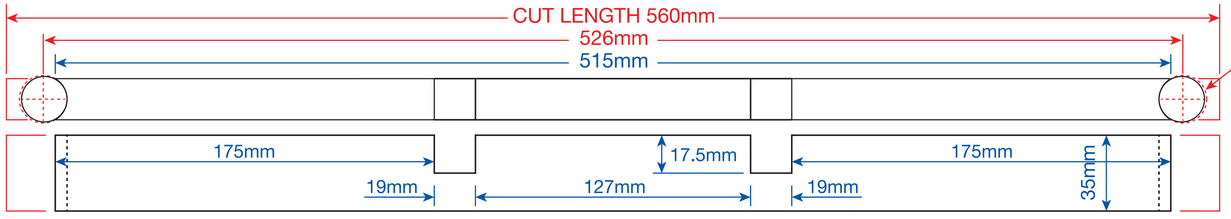
2x 5



2x 6

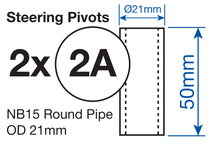


1x 2

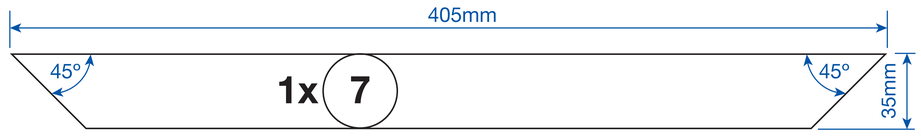


Drill Ø22mm Hole Saw @ 526mm BC to weld on Ø21mm Pipe @ 525mm BC

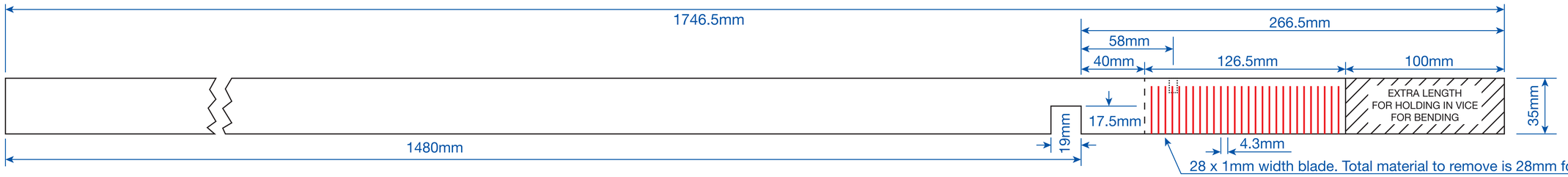
Steering Pivots
2x 2A
NB15 Round Pipe
OD 21mm



1x 7



2x 1



DRIVE & STEERING ASSEMBLY

PLAN 2	DRAWING: 3
SCALE:	TOLERANCE ± 2mm

Flatbed Felix — PEDAL CAR BUILD

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MATERIALS LIST:

Steering Wheel:
- Wooden Steering Wheel 2 x (285x285x19mm Pinewood Board)
- 8 x 7G x 20mm Drywall scews + Wood Glue
- Wheel Frame Ø60mm (3mm thick Sheet Steel)
- Wheel Frame 30 x 3mm x 536mm Flat Bar
- Outer Ring 10 x 3mm x 1000mm Flat Bar
- Steering Boss Ø35mm x 30mm (Ø35mm Bright Mild Steel Round Bar 1020)
- 2 x M6x12mm Grub Screws

Steering Column:
- 605mm x (Ø38.1 x 1.6mm Round Commercial ERW Tube CHS)
- 850mm x (Ø10mm Bright Mild Steel Round Bar 1020)
- 50mm x (Ø35 Plastic Bushes)
- 1 x M10 x 1.5mm Dome Nut
- 1 x 3/8"x2"x12G Washer
- 1 x M10 x 1.5mm Nut
- 1 x M10mm x 2mm Washer
- 2 x M6 x 1.0mm Nut Inserts

Steering Brackets:
- 125mm x (3mm x 40mm Flat Bar)
- 45 x 170mm (1.6mm Sheet Steel)
- 2 x M6 x 16mm Socket Cap Head Screws
- 2 x M6 Washers
- 200 x (3mm x 25mm Flat Bar)
- 2 x M8 x 50mm Socket Head Cap Screws
- 2 x M8 x Nylock Nuts
- 4 x M8 x Washers

Front Stub Axles:
- 1200mm x (Ø12.7mm Bright Mild Steel Round Bar 1020)
- 28mm x (Ø20mm Bright Mild Steel Round Bar 1020)
- 2 x (1/2" UNC Nylock Nuts)
- 4 x (1/2" Washers)
- 2 x (1/2" x 5/32" Thick Washers)
- 100mm x (Ø16mm Plastic Conduit)

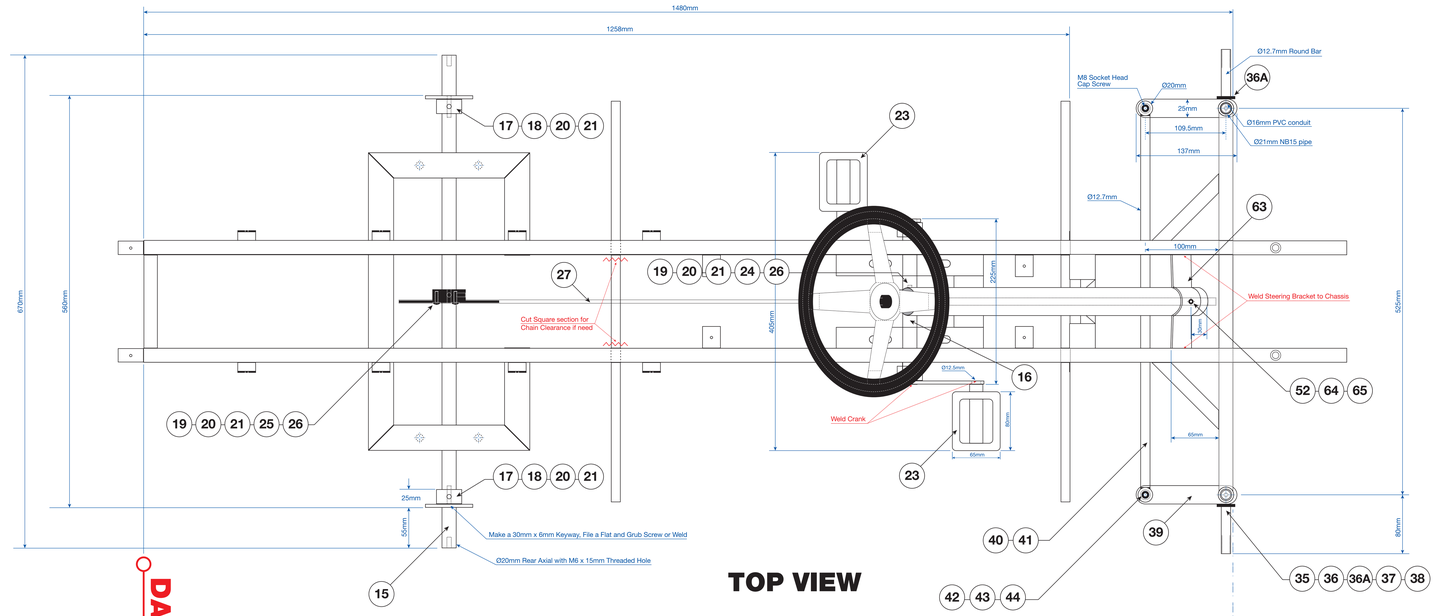
Crank Axle:
- 225mm x (Ø20mm Bright Mild Steel Round Bar 1020)
- 200mm (5mm x 20mm Flat Bar)
- 3 x (M6 x 6mm Grub Screws)
- 3 x (6 x 6 x 30mm Key Steel)
- 30mm x (Ø35mm Bright Mild Steel Round Bar 1020)
- 15mm (Ø45mm Bright Mild Steel Round Bar 1020)
- 3 x M6 x 16mm SS Button Socket Head Screws
- 232mm (6mm x 32mm Flat Bar) Crank Arms
- 2 x Pedals (80 x 65mm with Ø12.5mm Shaft)

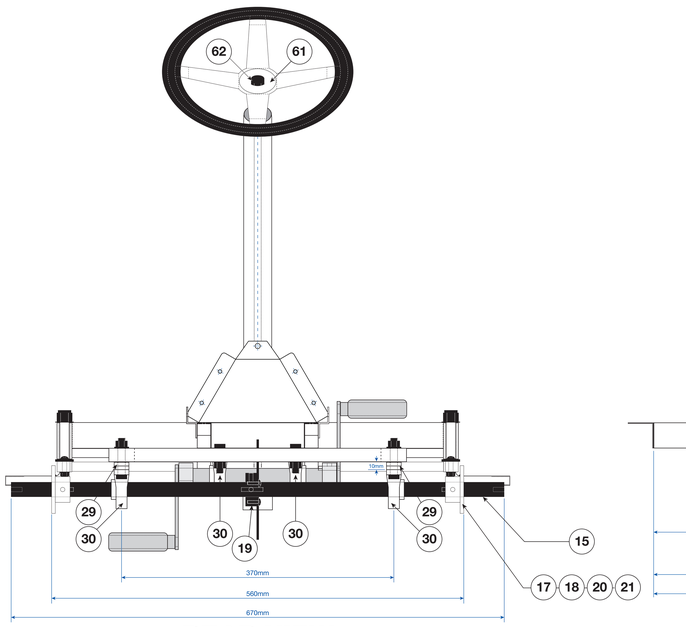
Rear Axle:
- 670mm x (Ø20mm Bright Mild Steel Round Bar 1020)
- 65 x 195mm (5mm thick Mild Steel Plate)
- 90mm x (Ø35mm Bright Mild Steel Round Bar 1020)
- 15mm (Ø45mm Bright Mild Steel Round Bar 1020)
- 3 x M6 x 16mm SS Button Socket Head Screws
- 3 x (M6 x 6mm Grub Screws)
- 3 x (6 x 6 x 30mm Key Steel)
- 3 x M6 x 15mm Socket Head Cap Screws
- 3 x M6 x Nylock Nuts
- 3 x M6 Washers

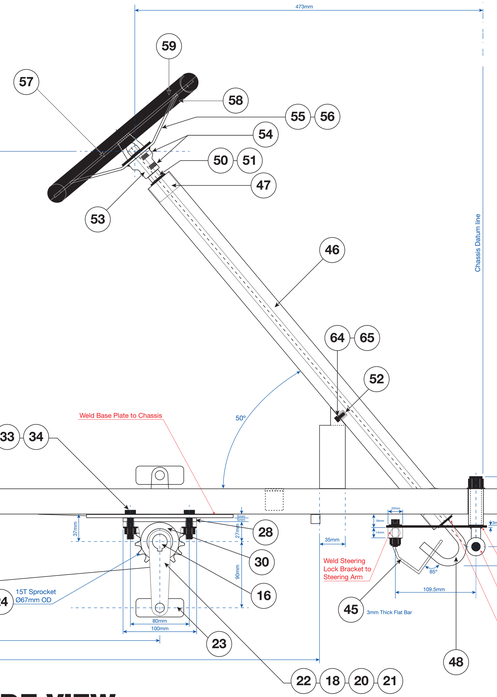
Bearings:
- 4 x (20mm Bore Pillow Block Bearing)
- 4 x (M10 x 35mm Bolts)
- 4 x (M10 x 50mm Bolts)
- 8 x (M10 Nylock Nuts)
- 8 x (M10 Washers)

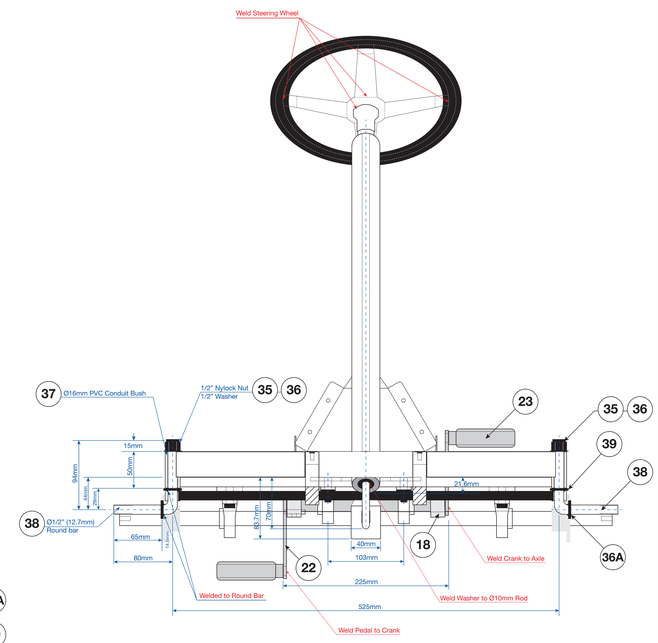
Spockets
- Front Sprocket - 15T OD Ø67mm, Ø20mm Bore, 6mm Keyway
- Rear Sprocket - 32T OD Ø132mm, Ø20mm Bore, 6mm Keyway

Chain:
- Bike Chain - 1/2" Pitch, approx Length 1560mm









PARTS LIST

1x (15) Rear Axle - 670mm (Ø20mm Round Bar)

1x (16) Crank Axle 225mm (Ø20mm Round Bar)

Drive Wheel Hubs
- 2x (17) 5mm thick Plate Steel
- 4x (18) 6mm Keyway
- Ø35 x 20mm Round Bar
- 2x (19) 6mm Keyway 3xM6 PCD Ø34mm
- Ø45 x 15mm Round Bar
- 10x (20) M6 x 6mm Grub Screw
- 6x (21) 6 x 6 x 30mm Key Steel

Front Sprocket
- 1x (24) 15 Teeth Ø67mm (OD) 6mm Keyway Weld to Hub
- 3 x M6 Screws 1 x M6 Grub Screw
- 6x (26) M6 x 16mm SS ButtonSocket Head Scews

Rear Sprocket
- 1x (25) 32 Teeth OD Ø136mm 6mm Keyway Bolt to Hub
- PCD Ø34mm
- 32T 1/2P
- 3 x M6 Screws 1 x M6 Grub Screw
- 1x (27) **Chain 1/2" Pitch** Approx Length: 1560mm

Crank Spacers
- 2x (28) 5mm thick Plate Steel

Rear Axle Spacers
- 4x (29) 5mm thick Plate Steel

Bearing Blocks
- 4x (30) Ø20mm Bore

Cranks
- 2x (22) 5mm thick Plate Steel

Pedals
- 2x (23)

- 4x (31) M10 x 50mm Bearing Bolts Rear Axle
- 4x (32) M10 x 35mm Bearing Bolts Front Axle
- 8x (33) M10 Nylock Nuts
- 8x (34) M10 Washers

- 2x (35) 1/2" UNC Nylock Nuts
- 4x (36) 1/2" Washers
- 2x (36A) 1/2" x 5/32" Thick Washers
- 2x (37) PVC Conduit Bush 2 x 50mm x Ø16mm

Front Stub Axles
- 2x (38) 1/2" (12.7mm) Round Bar

1x (40) Steering Arm Ø12.7mm steel rod

- 2x (41) Ø20mm Bar

Steering Arm Brace
- 2x (39) 3mm thick steel plate
- 2x (42) M8 x 50mm Socket Head Cap Screws
- 2x (43) M8 Nylock Nut
- 4x (44) M8 Washers

Steering Lock Bracket 3mm thick Flat Bar
- 1x (45)

1x (57) 3mm thick Flat Bar
- 1x (55)
- 4x (56) 3mm thick Flat Bar
- 3mm thick Steel Frame Welded together

2xHalves 13mm Thick Wooden Steering Wheel Glue and Screw together

1x (58) **1x (59)**

8x (60) (7G x 20mm Drywall Screws)

1x (61) 3/8"x2"x12G Washer

1x (62) M10 x 1.5mm Dome Nut

1x (63) 3/8"x2"x12G Washer

M6x12mm Grub Screws **2x (54)**

M10 x 1.5mm Nylock Nut **1x (50)** M10 Washer **1x (51)**

Ø38.1 x 1.6mm Round Tube **1x (46)**

2x (52) M6 x 1.0mm Nut Inserts

1x (49) 1 x M10mm 2mm Washer

Weld Washer to Ø10mm Rod

850mm x Ø10mm 1020 Bright Mild Rod **1x (48)**

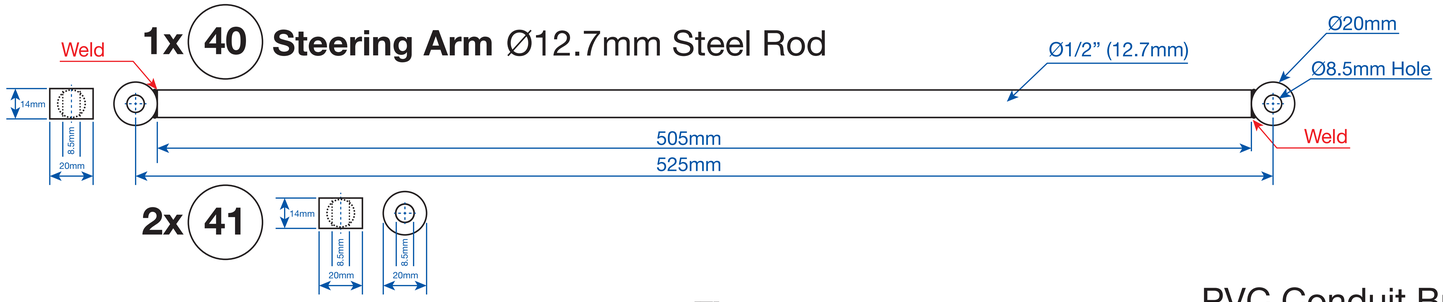
2x (47) Ø35 x 25mm width Plastic Bush

Steering Lock - Ø35 Bright MS Round Bar x 30mm Wide Ø35 – Ø24mm with shamfers, Threaded M10, with 2 x M6 Threaded Holes **1x (53)**

Weld Steering Lock to 3mm thick Steering Wheel Frame

Steering Column Bracket
- 1x (63) 1.6mm thick steel sheet
- 2x (64) M6 x 16mm Cap Head Screws
- 2x (65) M6 Washers

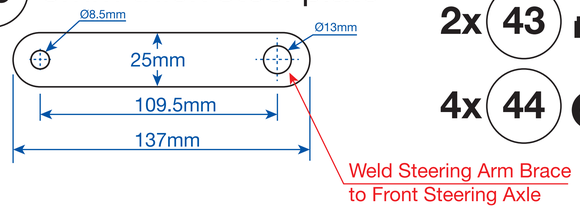
1x 40 Steering Arm Ø12.7mm Steel Rod



2x 41

Steering Arm Braces

2x 39 3mm thick steel plate



2x 42 M8 x 50mm (Cut to suit) Socket Head Cap Screw

2x 43 M8 Nylock Nut

4x 44 M8 Washers

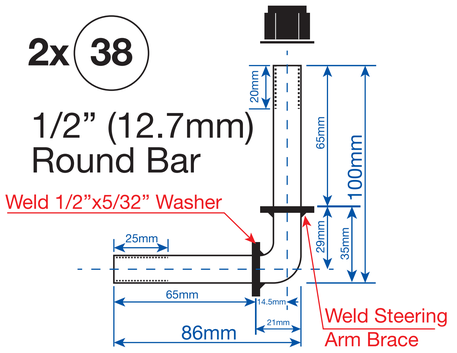
PVC Conduit Bush

50mm x OD Ø16mm x ID Ø12.7mm

2x 37

Front Stub Axles

2x 38 1/2" (12.7mm) Round Bar



4x 35 1/2" UNC Nylock Nuts

4x 36 1/2" Washers

2x 36A 1/2" x 5/32" Thick Washers

TEMPLATES
Drive & Steering Parts

TEMPLATE	DRAWING: 4
SCALE: 1:1	TOLERANCE ± 2mm

Flatbed Felix — Pedal Car Build

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MATERIALS LIST:

Steering Brackets: 125mm x (3mm x 40mm Flat Bar)
260 x 140mm approx. (1mm Sheet Steel)
45 x 145mm (1.6mm Sheet Steel)
2 x M6 x 15mm Socket Head Cap Screws
2 x M6 Washers
200 x (3mm x 25mm Flat Bar)
2 x M8 x 50mm Socket Head Cap Screws
2 x M8 x Nylock Nuts
4 x M8 x Washers

Front Stub Axles: 1200mm x (Ø12.7mm Bright Mild Steel Round Bar 1020)
28mm x (Ø20mm Bright Mild Steel Round Bar 1020)
15mm x (Ø45mm Bright Mild Steel Round Bar 1020)
2 x (1/2" UNC Nylock Nuts)
4 x (1/2" Washers)
2 x (1/2" x 5/32" Thick Washers)
100mm x (Ø16mm Plastic Conduit)
100mm x (Ø21mm x NB15 Round Pipe)
65 x 130 (5mm thick Mild Steel Plate)

Rear Axle: 670mm x (Ø20mm Bright Mild Steel Round Bar 1020)
130 x 130 (5mm thick Mild Steel Plate)
60mm x (Ø35mm Bright Mild Steel Round Bar 1020)
3 x M6 x 16mm SS Button Socket Head Screws
3 x (M6 x 5mm Grub Screws)
3 x (6 x 6 x 30mm Key Steel)

Crank Axle: 225mm x (Ø20mm Bright Mild Steel Round Bar 1020)
60mm x (Ø35mm Bright Mild Steel Round Bar 1020)
15mm x (Ø45mm Bright Mild Steel Round Bar 1020)
200mm (5mm x 20mm Flat Bar)
232mm (5mm x 32mm Flat Bar) for Crank Arms
2 x Pedals (80x65mm with Ø12.5mm Shaft)
3 x M6 x 16mm SS Button Socket Head Screws
3 x (M6 x 5mm Grub Screws)
3 x (6 x 6 x 30mm Key Steel)

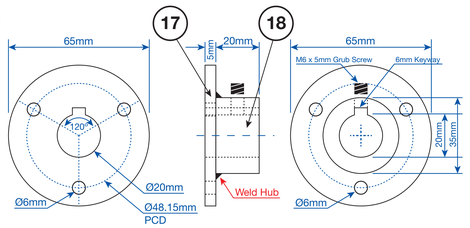
Sprockets: Front - 15T OD Ø67mm, Ø20mm Bore, 6mm Keyway
Rear - 32T OD Ø136mm, Ø20mm Bore, 6mm Keyway

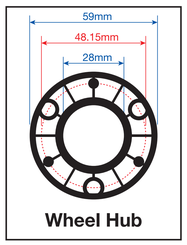
Chain: O6B Transmission Roller Chain approx Length 1560mm

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

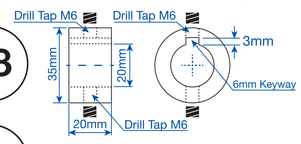
Drive Hubs

2x 17 5mm thick Plate Steel





4x 18 Ø35mm x 20mm wide Round Bar with 6mm keyway

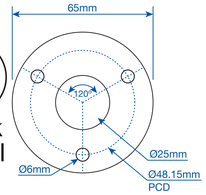


10x 20 M6 x 5mm Grub Screw

6x 21 6 x 6 x 30mm Key

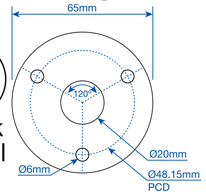
Front Hub Caps

2x 67 5mm thick Plate Steel

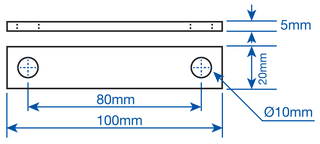


Rear Hub Caps

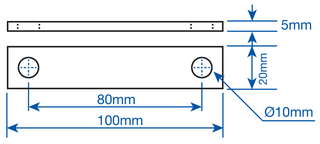
2x 68 5mm thick Plate Steel



2x 28 Crank Bearing Spacers
5mm thick Plate Steel

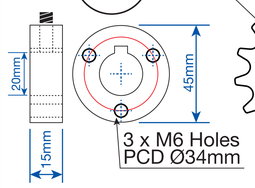


4x 29 Rear Axle Bearing Spacers
5mm thick Plate Steel



Hubs

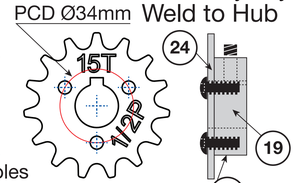
2x 19



6mm Keyway
20mm Bore
M6 Grub Screw
3xM6 PCD Ø34mm
Ø45mm Mild Steel Bar

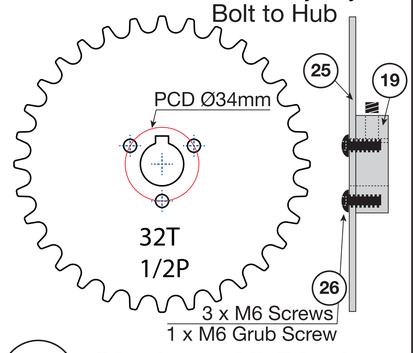
Front Sprocket

1x 24 15T x 3mm plate Ø67mm (OD) 6mm Keyway Weld to Hub



Rear Sprocket

1x 25 32T x 3mm plate OD Ø136mm 6mm Keyway Bolt to Hub



6x 26 M6 x 16mm SS Button Socket Head Screw

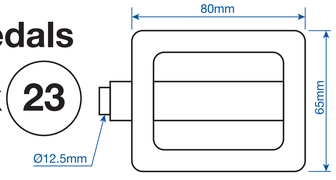
1x 27 Chain 1/2" Pitch
Approx: 122 Links, 1560mm

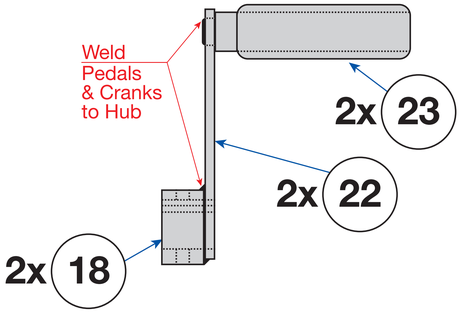
Cranks

2x 22 5mm thick Plate Steel

Pedals

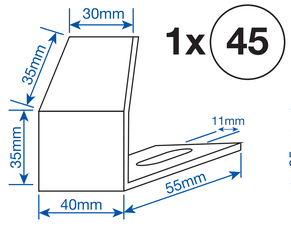
2x 23

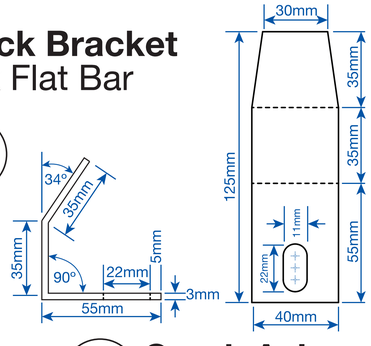


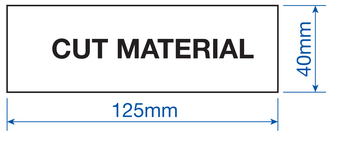


Steering Lock Bracket
3mm thick Flat Bar

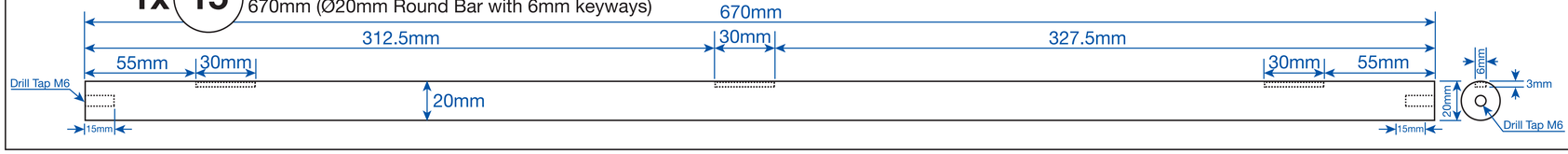
1x 45



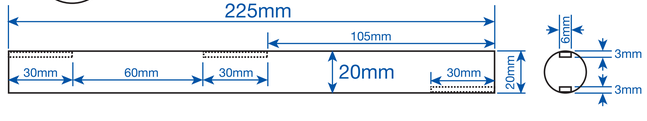




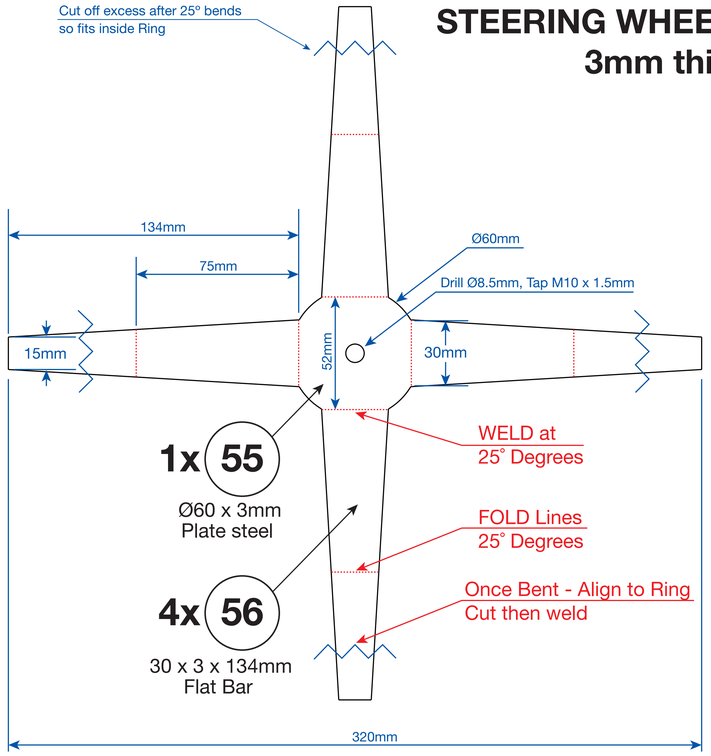
1x 15 Rear Axle
670mm (Ø20mm Round Bar with 6mm keyways)

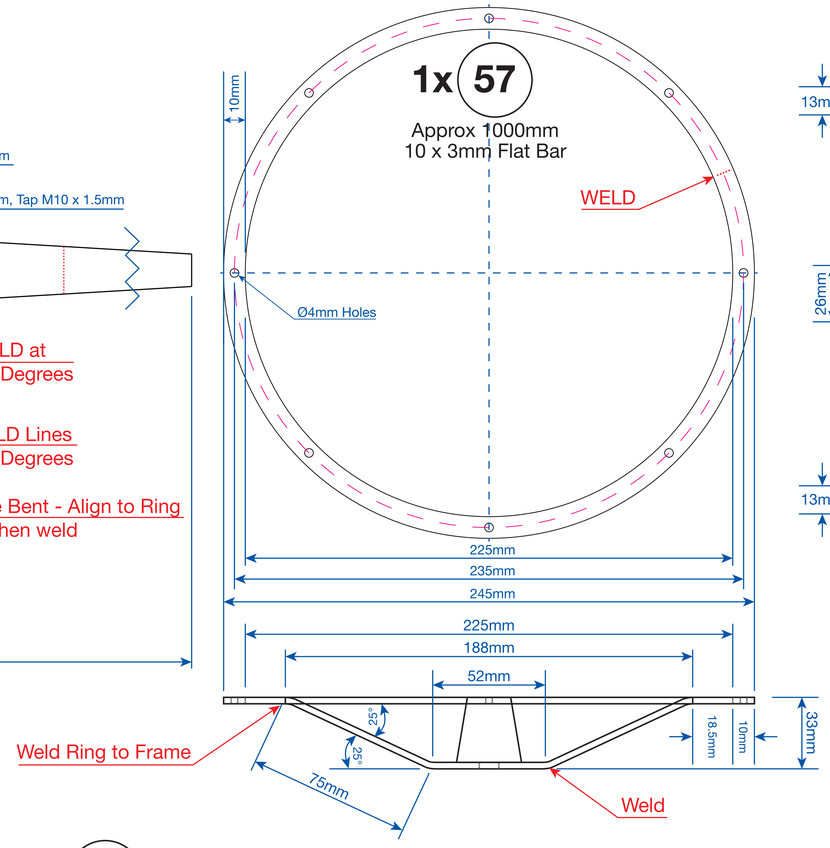


1x 16 Crank Axle
225mm (Ø20mm Round Bar with 6mm keyways)



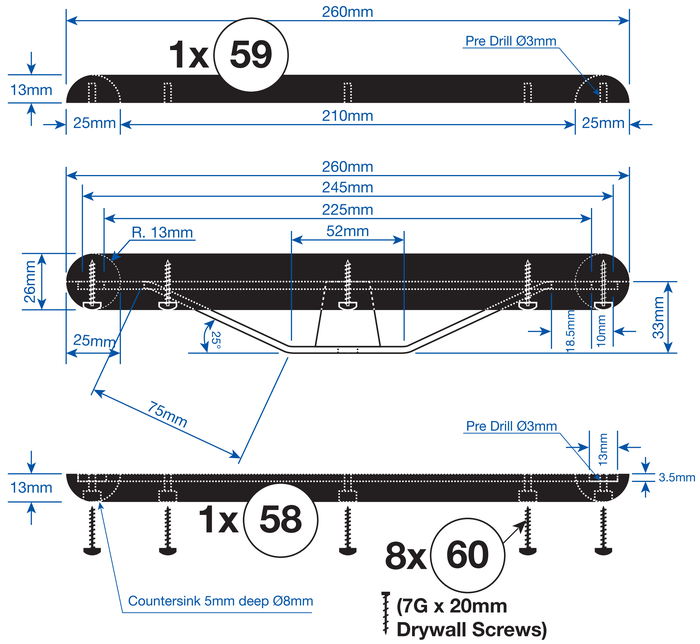
STEERING WHEEL METAL FRAME
3mm thick steel

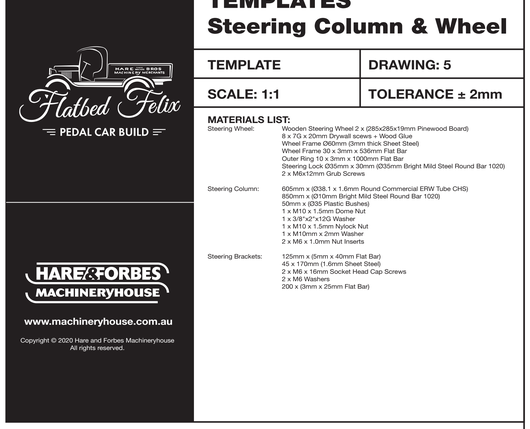




REFER to A3 Router Guide Sheet for more info

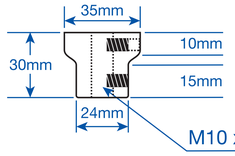
STEERING WHEEL
19mm thick Pinewood board





1x 53 Steering Wheel Boss

Ø35 Bright MS Round Bar x 30mm Long
Ø35 ~ Ø24mm with shamfers, Threaded M10 x 1.5mm,
with 2 x M6 Threaded Holes for Grub Screws

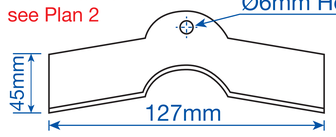


2x 54 M6x10mm Grub Screws

Steering Column Bracket

1x 63 1.6mm thick steel sheet

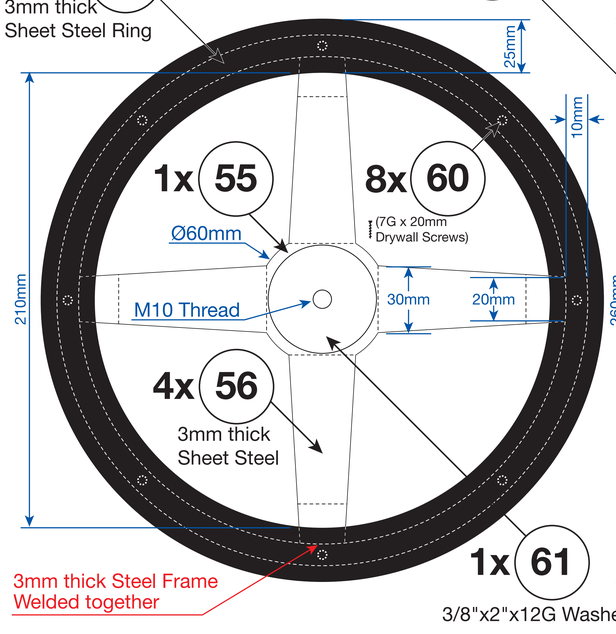
Weld Bracket to Chassis
see Plan 2

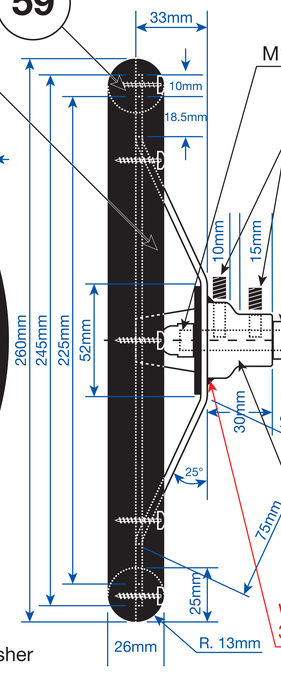


CUT MATERIAL
Bend Centre then Cut ends to Fit 127mm Wide
45mm
170mm

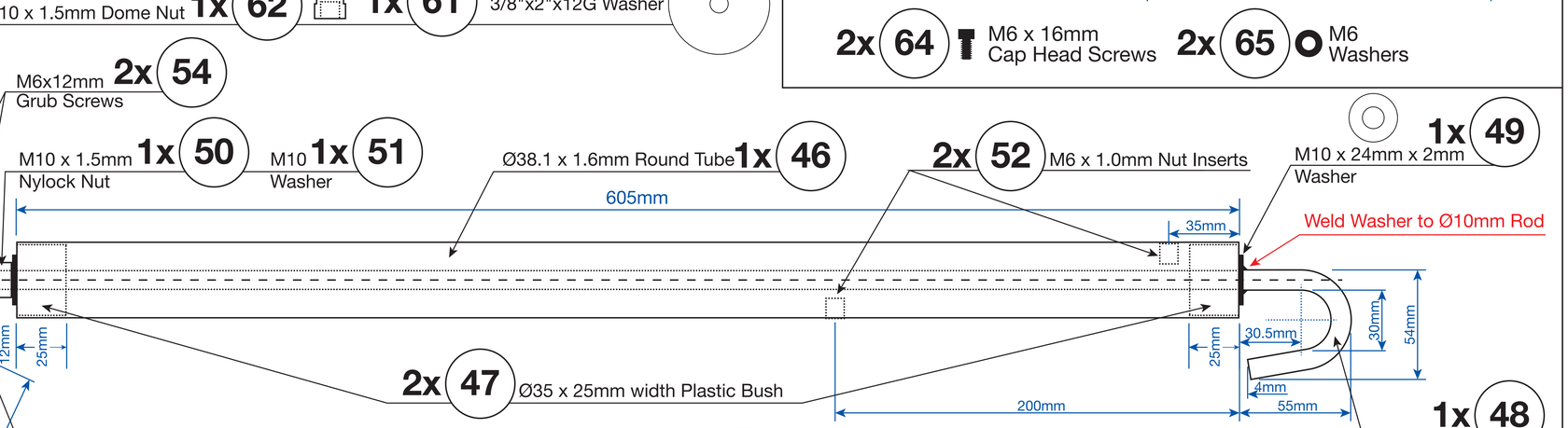
2x 64 M6 x 16mm Cap Head Screws
2x 65 M6 Washers

1x 57 3mm thick Sheet Steel Ring
2 Haves 13mm Thick Wooden Steering Wheel
1x 58 **1x 59**
1x 55 Ø60mm
8x 60 (7G x 20mm Drywall Screws)
4x 56 3mm thick Sheet Steel
1x 61 3/8"x2"x12G Washer
3mm thick Steel Frame Welded together

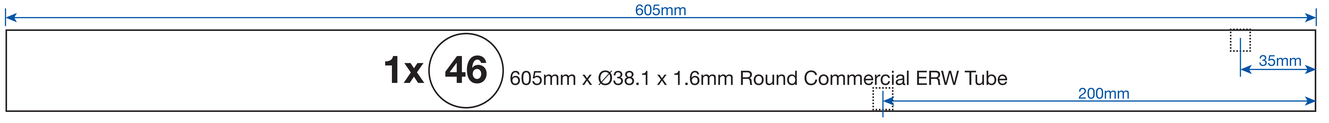




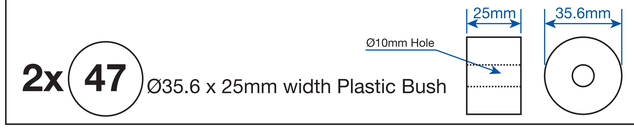
M10 x 1.5mm Dome Nut **1x 62** **1x 61** 3/8"x2"x12G Washer
M6x12mm **2x 54** Grub Screws
M10 x 1.5mm **1x 50** Nylock Nut
M10 **1x 51** Washer
Ø38.1 x 1.6mm Round Tube **1x 46**
2x 52 M6 x 1.0mm Nut Inserts
1x 49 M10 x 24mm x 2mm Washer
Weld Washer to Ø10mm Rod



2x 47 Ø35 x 25mm width Plastic Bush
Steering Lock - Ø35 Bright MS Round Bar x 30mm Wide
Ø35 ~ Ø24mm with shamfers, Threaded M10, with 2 x M6 Threaded Holes **1x 53**
1x 48 850mm x Ø10mm 1020 Bright Mild Rod
Weld Steering Lock to 3mm thick Steering Wheel Frame



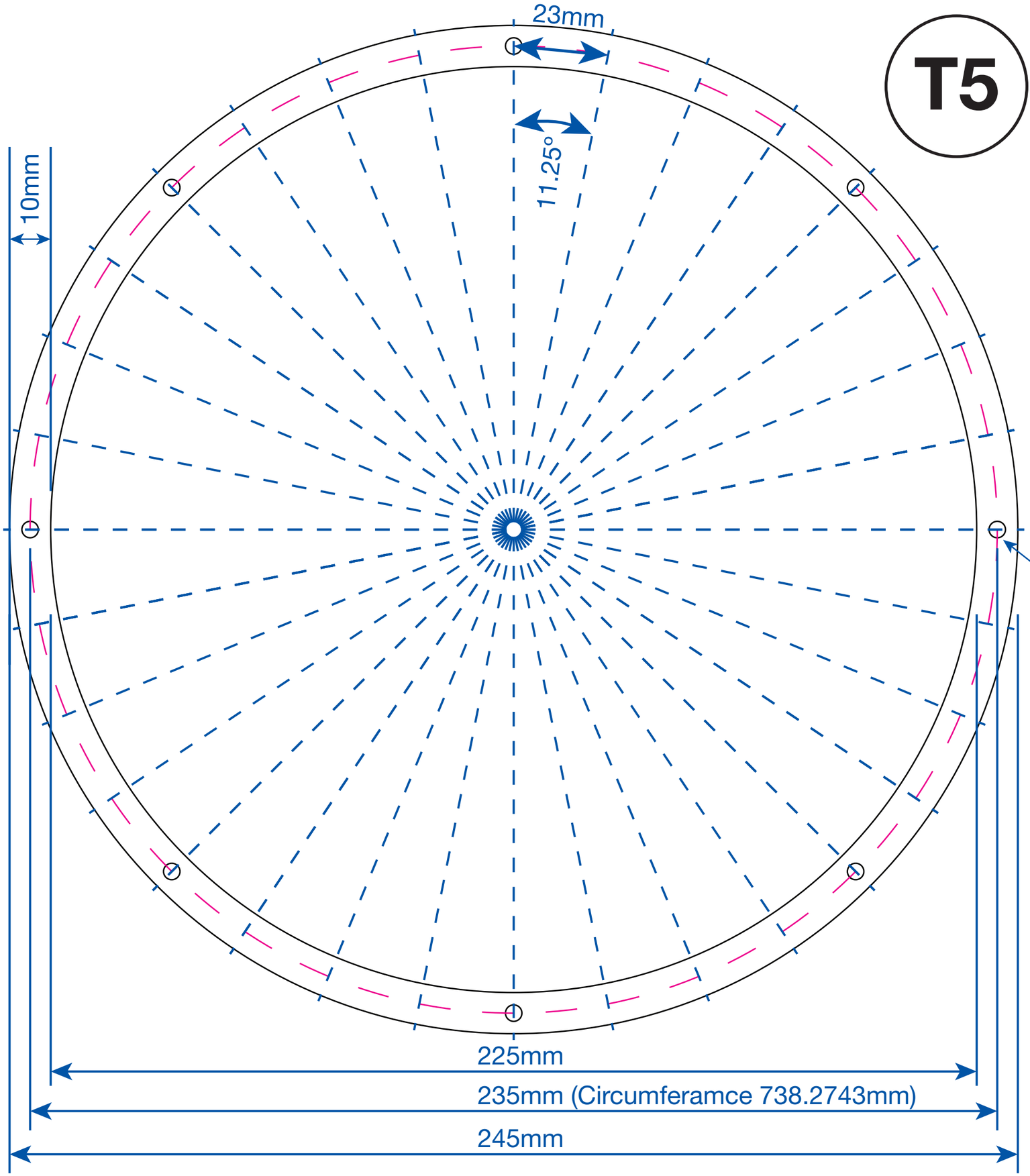
1x 46 605mm x Ø38.1 x 1.6mm Round Commercial ERW Tube



2x 47 Ø35.6 x 25mm width Plastic Bush

Cut to length once Steering Wheel in place

1x 48 850mm x Ø10mm Bright Mild Rod 1020



T5

Ø4mm Holes

STEERING WHEEL METAL RING TEMPLATE

FORMING INSTRUCTIONS

1. Cut to 858mm allowing 60mm clamping either side of the 738mm
2. Maker material every 23mm to make up 738mm
3. Use are bar bender to bend 11.25° every 23mm increments
4. Use a hammer to finally correct the angle over vice jaws
5. Place over template till to get a perfect radius
6. Hammer the distortion flat
7. Cut the excess off for perfect join
9. Weld Join
10. Drill 8 x 4mm holes

Flatbed Felix
PEDAL CAR BUILD

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STEERING WHEEL RING TEMPLATE

TEMPLATE	DRAWING: 6
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
10 x 3mm thick Flat Bar (1000mm)

0 10 20 30 40 50
Scale (mm)

STEERING WHEEL
Octagon - Template

TEMPLATE	DRAWING: 7
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
64 x 19 x 1200mm Premium Pine (8 x Octagon shapes)
(Top & Bottom of Steering Wheel 58 & 59)

Octagon Inner Guide - 200 x 200 x 19mm Plywood (RIG)

Router Base Guide - 400 x 400mm x 19mm Plywood (RBG)

M8 x 60mm Hex Head Zinc Bolt (RG1)
M8 Washer (RG2)
M8 nut & washers for Centre of Router Guide (RG3)

Wood Glue

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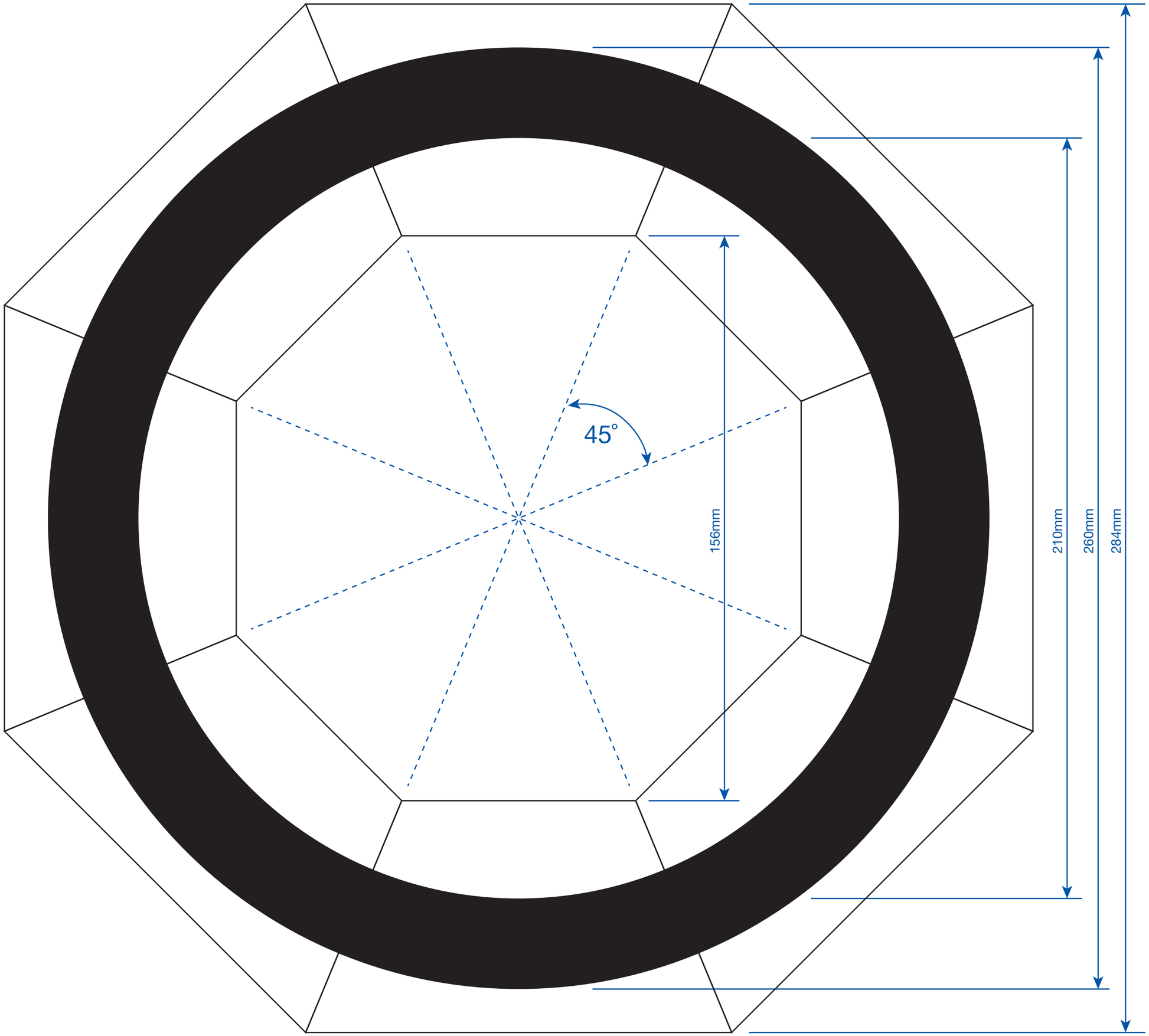
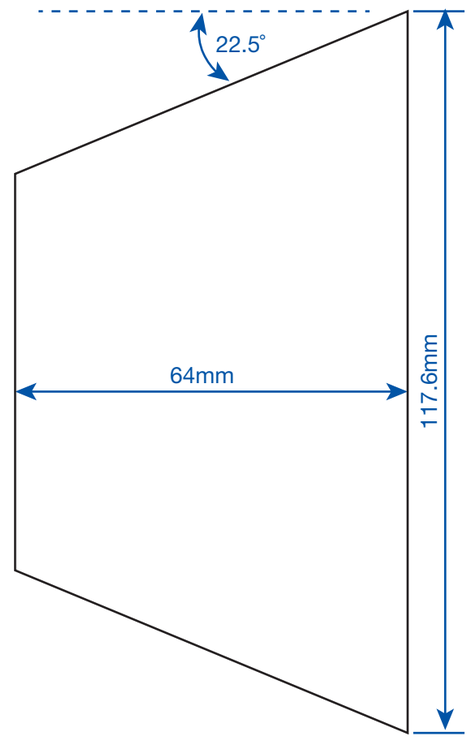
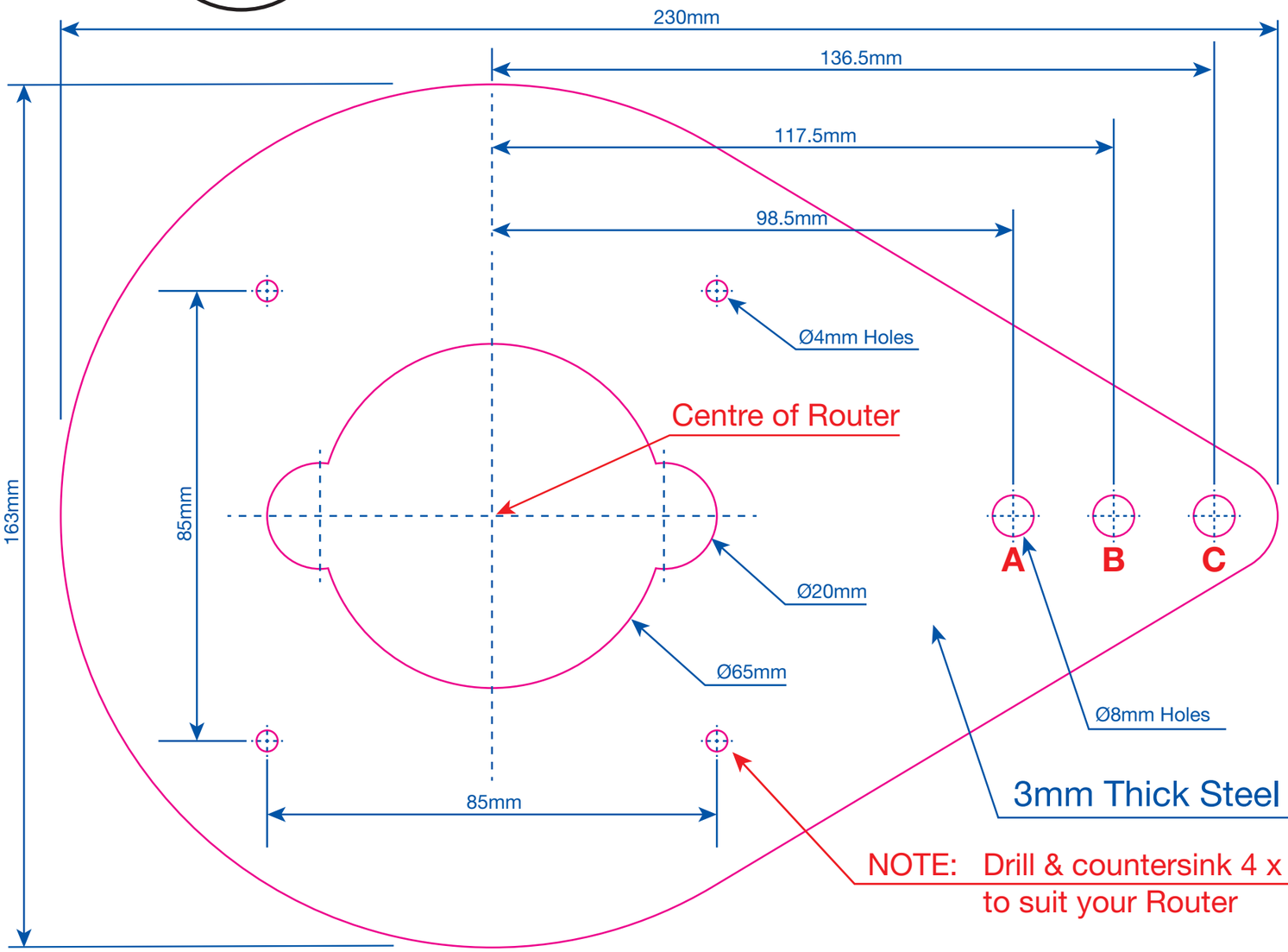
0 10 20 30 40 50
Scale (mm)

T6





T7 STEERING WHEEL ROUTER GUIDE



STEERING WHEEL ROUTER GUIDE

TEMPLATE	DRAWING: 8
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Router Guide: 230 x 163mm (3mm thick Sheet MS)
Steering Wheel - 2 x (285 x 285 x 19mm Pinewood Boards)

Router Base Guide - 400 x 400mm x 19mm Plywood (RBG)

M8 x 60mm Hex Head Zinc Bolt (RG1)
M8 Washer (RG2)
M8 nut & washers for Centre of Router Guide (RG3)

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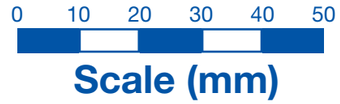

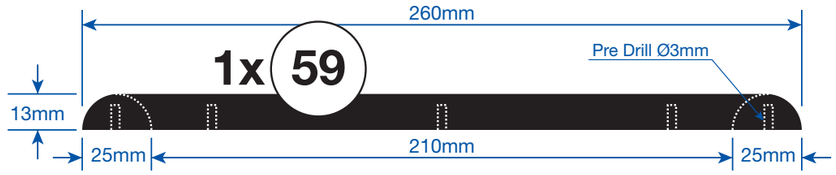

Wooden Steering Wheel (2 x Halves) - Step by Step Instructions using Router Guide (Guide for 19mm Thick Plywood)

1. Setup Guide in (Hole C, 136.5mm) - use a 13mm straight Cutter. Cut Outer Diameter to Ø260mm
2. Setup Guide in (Hole A, 98.5mm) - use a 13mm straight Cutter. Plunge 14mm depth Inner Diameter to Ø210mm
3. Setup Guide in (Hole C, 136.5mm & Hole A, 98.5mm) - use a 13mm Radius Cutter with no Roller. Radius Outer Ø260mm & Inner Ø210mm Diameter Edges

FLIP over

4. (1 Half Only) Setup Guide in (Hole B, 117.5mm) - use a 13mm straight Cutter. Plunge 3.5mm and router cut slot for the 3mm thick Metal plate Ring
5. Setup Guide in (Hole C, 136.5mm & Hole B, 117.5mm) - use a 19mm straight Cutter. Thickness material down to leave 13mm of Material at bottom
6. Setup Guide in (Hole A, 98.5mm) - use a 19mm straight Cutter. Thickness material down to leave 13mm Material at bottom, *Wheel will breakaway from JIG
7. (Bottom Half Only). Cut 4 x 20mm Slots for Metal Ring Arms - using a sharp chisel. NOTE: do by hand only, do not use a hammer.
   Drill 8 x 3mm Holes, use 8mm Drill to countersink for screw heads. Screw together 2 Wheel halves. Glue/screw varnish once frame is painted.

WHEELS, WOOD BASE & BULKHEAD ASSEMBLY

PLAN 3	DRAWING: 9
SCALE:	TOLERANCE ± 2mm

Flatbed Felix — PEDAL CAR BUILD

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MATERIALS LIST:
Cab: 558 x 885mm (12mm AA Grade Mixed Hardwood Marine Plywood)

Buck: 320 x 340mm (12mm AA Grade Mixed Hardwood Marine Plywood)
8 x (8G x 20mm Chipboard Screws)
4 x (7G x 20mm Panhead Drywall Screws)

Top Cap: 558mm (42 x 30mm Pine DAR Timber)
4 x (8G x 25mm Chipboard Screws)
Timber Glue

Wooden Chassis & Cross Rails: 4400mm x (90 x 45mm Untreated Pine Framing Timber)
10 x (8G x 25mm Stitch Button Screws)
8 x (100mm Batten Bulge Head Timber Screws)

Floor Base: 499 x 170mm (12mm AA Grade Mixed Hardwood Marine Plywood)
4 x (8G x 13mm Galvanised Stitching Screws)

Kick Board: 650 x 190mm (12mm AA Grade Mixed Hardwood Marine Plywood)
6 x (8G x 25mm Chipboard Screws)

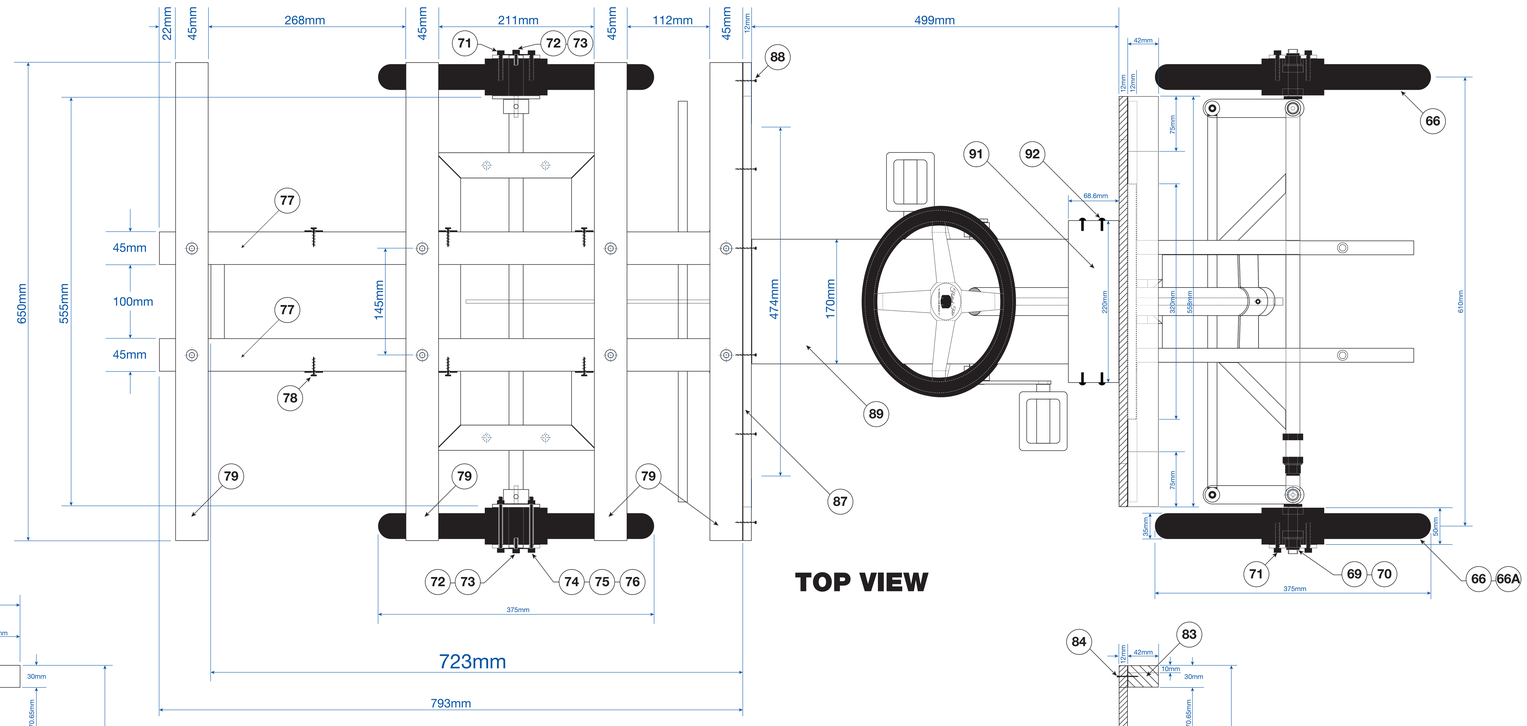
Wheels: 4 x (Syneco 378 x 378 x 51mm Plastic Centre Wheels & Bushes Ø20/Ø28x9mm)

Rear Wheel End Screws: 2 x M6 x 16mm Socket Head Cap Screws
2 x 1/4" x 1 1/4" Washers
3 x M6 Washers
3 x M6 x 70mm Socket Head Cap Screws
3 x M6 Nylock Nuts
3 x M6 x 35mm Socket Head Cap Screws

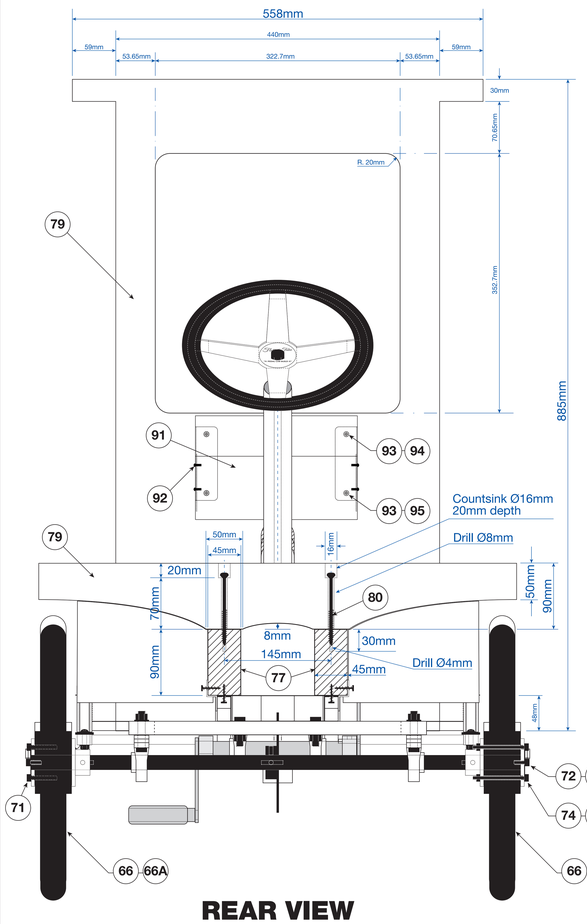
Front Wheel End Screws: 2 x 1/2" UNC Nylock Nuts
2 x 1/2" Washers
6 x M6 x 35mm Socket Head Cap Screws

Wheel Hub Caps: 4 x Ø65mm 5mm thick steel Hubs

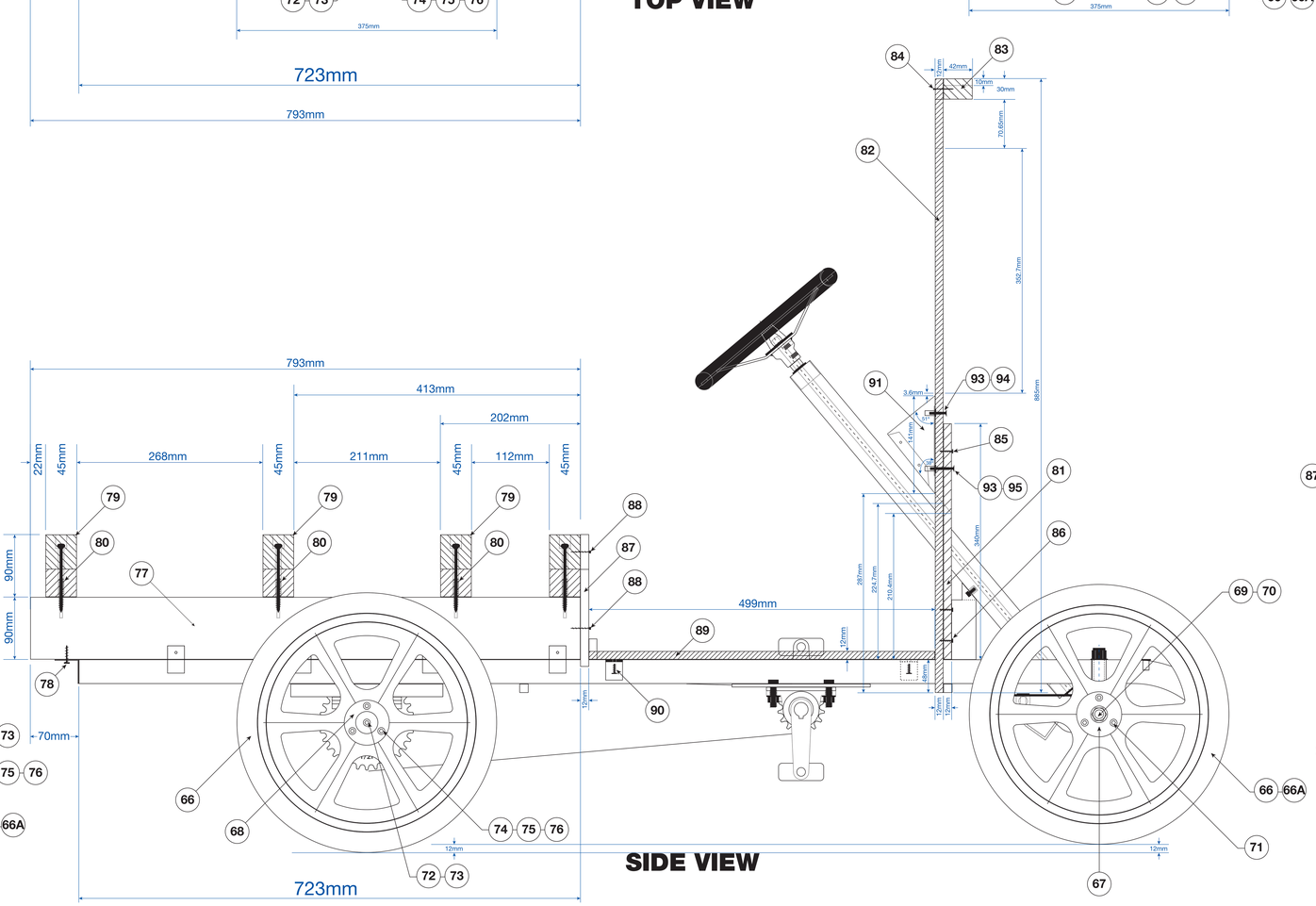
Dash: 440 x 208mm (1mm thick sheet steel)
4 x (Ø3.2mm pop rivets)
4 x (M5 Nut inserts)
2 x (M5 x 25mm Countersunk Head Socket Screws)
2 x (M5 x 35mm Countersunk Head Socket Screws)



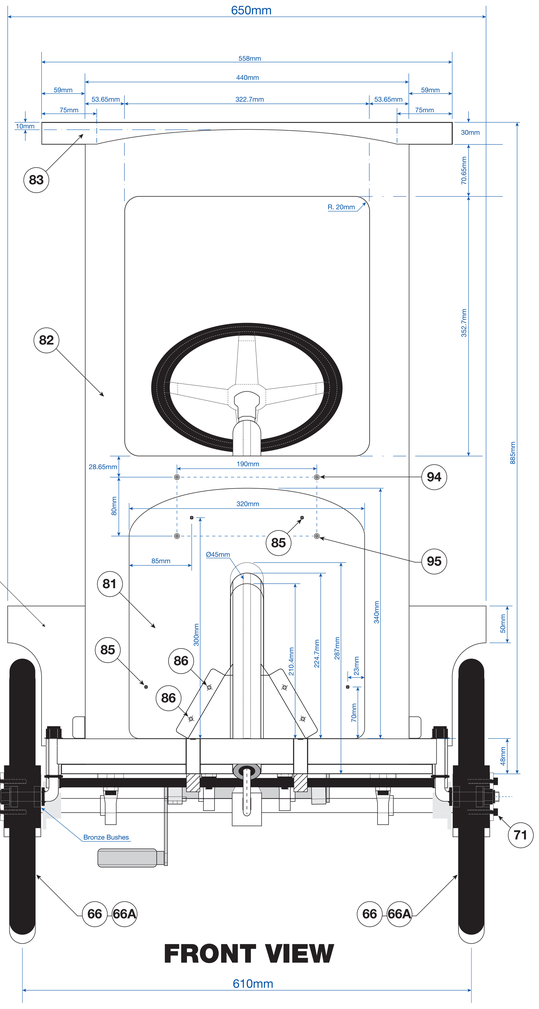
TOP VIEW



REAR VIEW



SIDE VIEW



FRONT VIEW

PARTS LIST

- 4x (66) Wheels — Syneco 378x378x51mm Plastic Centre Wheels
- 4x (66A) Bronze Bushing — ID Ø20 / OD Ø28mm x 9mm wide
- Front Hub Caps: 2x (67)
- Rear Hub Caps: 2x (68)
- 2x (69) 1/2" UNC Nylock Nuts
- 2x (70) 1/2" Washers
- 9x (71) M6 x 35mm Socket Head Cap Screws
- 2x (72) M6 x 16mm Socket Head Cap Screws
- 2x (73) 1/4" x 1 1/4" Washers
- 3x (74) M6 x 70mm Socket Head Cap Screws
- 3x (75) M6 Nylock Nuts
- 3x (76) M6 Washers
- 2x (77) Wooden Chassis Rails — 2 x 793 (90 x 45mm Untreated Pine Framing Timber)
- 10x (78) (8G x 25mm Stitching Button Head Screws)
- 4x (79) Wooden Cross Rails — 4 x 650mm (90 x 45mm Untreated Pine Framing Timber)
- 8x (80) TImber Screws — 100mm Batten Bulge Head Timber Screws
- 8x (85) 8G x 20mm Chipboard Screws
- 1x (81) Firewall
- 1x (82) Bulkhead — 12mm AA Grade Mixed Hardwood Marine Plywood
- 4x (86) 7G x 20mm Panhead Drywall Screws
- 1x (83) Top Cap — 42 x 30mm Pine DAR Timber
- Mount Top Cap to Cab with Glue & Screws
- 4x (84) 8G x 25mm Chipboard Screws
- 1x (87) Kick Board — 12mm AA Grade Mixed Hardwood Marine Plywood
- 6x (88) 8G x 25mm Chipboard Screws
- 1x (89) Timber Floor — 12mm AA Grade Mixed Hardwood Marine Plywood
- 4x (90) (8G x 13mm Galvanised Stitching Screws)
- 4x (92) Ø3.2mm Pop Rivets
- 4x (93) M5 x 0.8mm Nut Rivet Inserts
- 2x (94) M5 x 25mm Countersunk Head Socket Head Screws
- 2x (95) M5 x 35mm Countersunk Head Socket Head Screws
- 1x (91) Dash — 1mm Thick Sheet Steel

Mount Top Rail to Firewall/Bulkhead with Glue & screws

4x (84) 8G x 25mm Chipboard Screws

1x (83) **Top Rail** (T8)

42 x 30mm
Pine DAR Timber

1x (82) **Bulkhead** 12mm AA Grade Mixed Hardwood Marine Plywood (T9)

1x (81) **Firewall** (T10)

12mm AA Grade
Mixed Hardwood
Marine Plywood

Mount Firewall to Bulkhead

8x (85) 8G x 20mm Chipboard Screws

Glue & Screw

NOTE:
Chamfer Allowance
for Steering Column 50°

Ø45mm

R. 20mm

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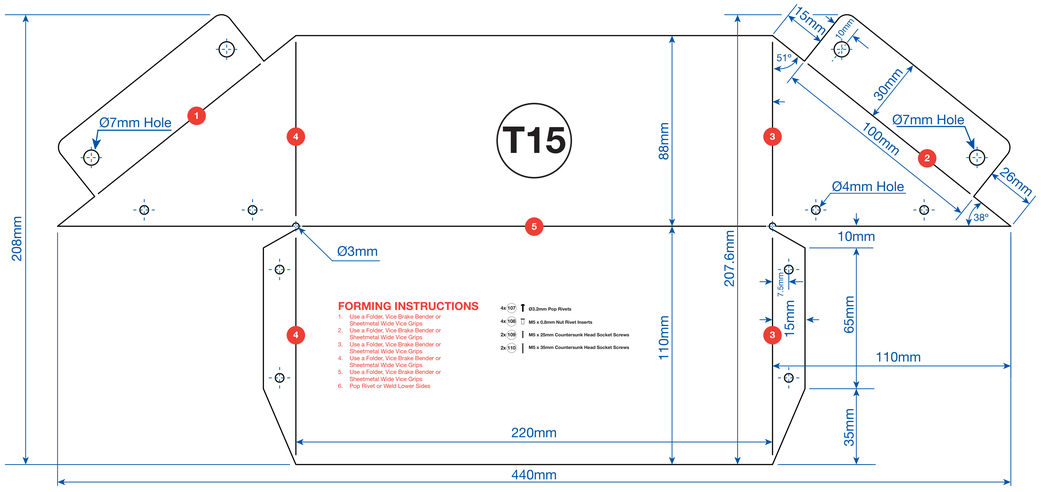
TEMPLATES
Firewall, Bulkhead, Top Rail

TEMPLATE	DRAWING: 10
SCALE: 1:1	TOLERANCE ± 2mm

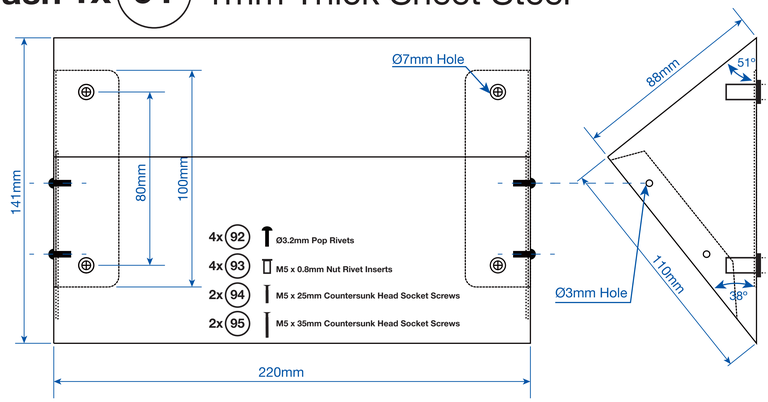
MATERIALS LIST:
Bulkhead: 558 x 885mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
Firewall: 320 x 340mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
8 x 8G x 20mm Countsunk Philips Drive Ribbed Head Chipboard Screws

Top Cap: 558mm (42 x 30mm Pine DAR Timber)
4 x 8G x 25mm Countsunk Philips Drive Ribbed Head Chipboard Screws

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)



Dash 1x 91 1mm Thick Sheet Steel



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TEMPLATES
Wood Rails, Floor, Dash

TEMPLATE	DRAWING: 11
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Timber Chassis & Cross Rails: 4400mm x (90 x 45mm Untreated Pine Framing Timber)

Floor Base: 499 x 170mm (12mm AA Grade Mixed Hardwood Marine Plywood)
4 x (8G x 13mm Galvanised Stitching Screws)

Kick Board: 650 x 190mm (12mm AA Grade Mixed Hardwood Marine Plywood)
6 x (8G x 30mm Chipboard Screws)

Dash: 440 x 208mm (1mm thick sheet steel)
4 x (Ø3.2mm pop rivets)
4 x (M5 Nut inserts)
2 x (M5 x 25mm Countersunk Head Socket Screws)
2 x (M5 x 35mm Countersunk Head Socket Screws)

Wheel Hub Caps: 4 x (Ø65mm x 5mm thick steel Hubs)

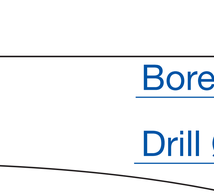
Rear Wheel End Screws: 2 x M6 x 15mm Button Head Socket Screws
2 x M6 x 32mm Washers
3 x M6 Washers
3 x M6 x 70mm Button Head Socket Screw
3 x M6 Nylock Nuts
3 x M6 x 35mm Button Head Socket Screws

Front Wheel End Screws: 2 x 1/2" UNC Nylock Nuts
2 x 1/2" Washers
6 x M6 x 35mm Button Head Socket Screws

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

Front Hub Caps 2x 67

T11



2x 69 1/2" UNC Nylock Nuts
2x 70 1/2" Washers
6x 71 M6 x 35mm Socket Head Cap Screw

Rear Hub Caps 2x 68

T12

2x 72 M6 x 15mm Socket Head Cap Screw
2x 73 M6 x 32mm Washers
3x 74 M6 x 70mm Socket Head Cap Screw & Nut
3x 75 M6 Nylock Nuts
3x 76 M6 Washers
3x 71 M6 x 35mm Socket Head Cap Screw

Kick Board
1x 87 12mm AA Grade Mixed Hardwood Marine Plywood

6x 88 6 x (8G x 30mm Chipboard Screws)

8x 80 TImber Screws
100mm Batten Bulge Head Timber Screws

4x 79 Wooden Cross Rails
90 x 45mm Pine framing timber

PEDAL CAR
Wood Floor

1x 89
12mm AA Grade Mixed Hardwood Marine Plywood

4x 90 (8G x 13mm Galvanised Stitching Screws)

RUNNING BOARDS & MUD GUARD ASSEMBLY

PLAN 4	DRAWING: 12
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
Rear Mud Guard: 2 x 780 x 100mm (1mm thick sheet mild steel)

Rear Mud Guard Brackets: 2 x 305 x 40mm (1.6mm thick sheet mild steel)

Front Mud Guard: 2 x 630 x 100mm (1mm thick sheet mild steel)

Running Boards: 2 x 650 x 205mm (1mm thick sheet mild steel)

Screws : 4 x (8G x 12mm Wafer Head Philps Drive Metal Screws)
4 x (8G x 25mm Stitching Button Head Screws)

Nuts and Bolts: 18 x (M4 x10mm SS Button Socket Head Scews)
18 x (M4 SS Nylock Nuts)
18 x (M4 SS Washers)

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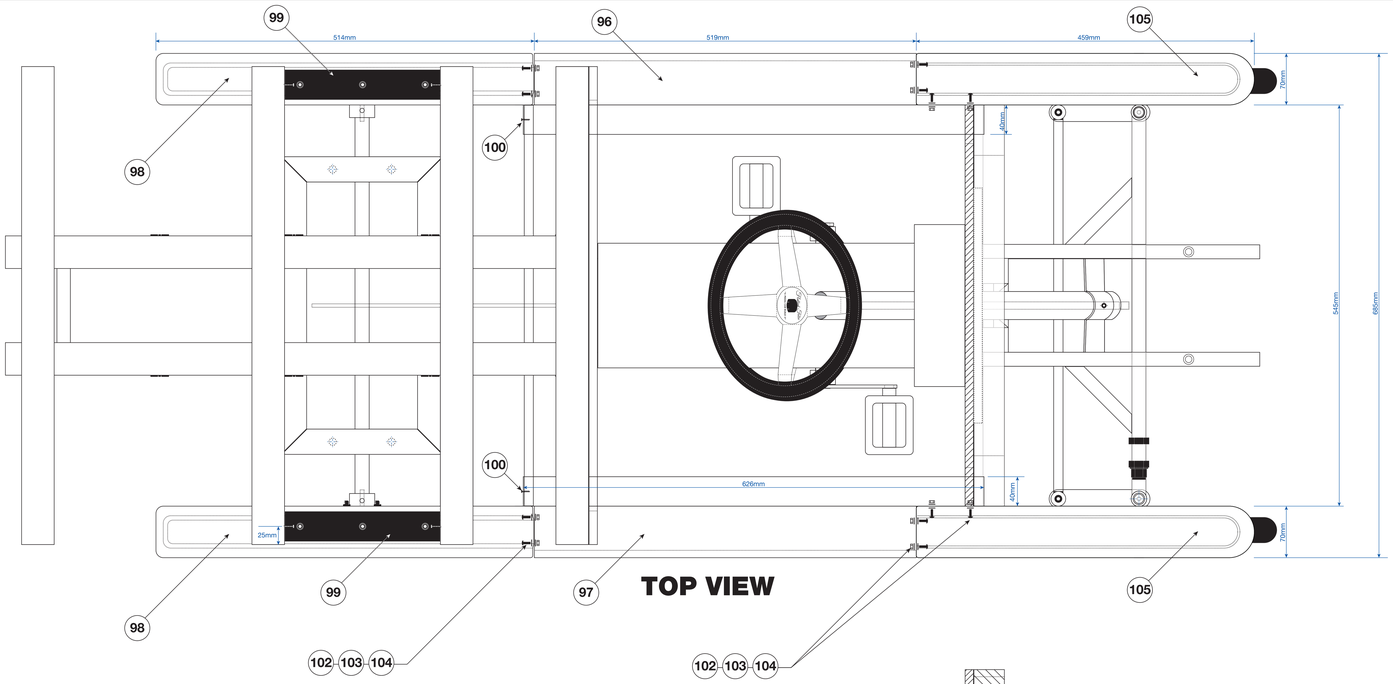
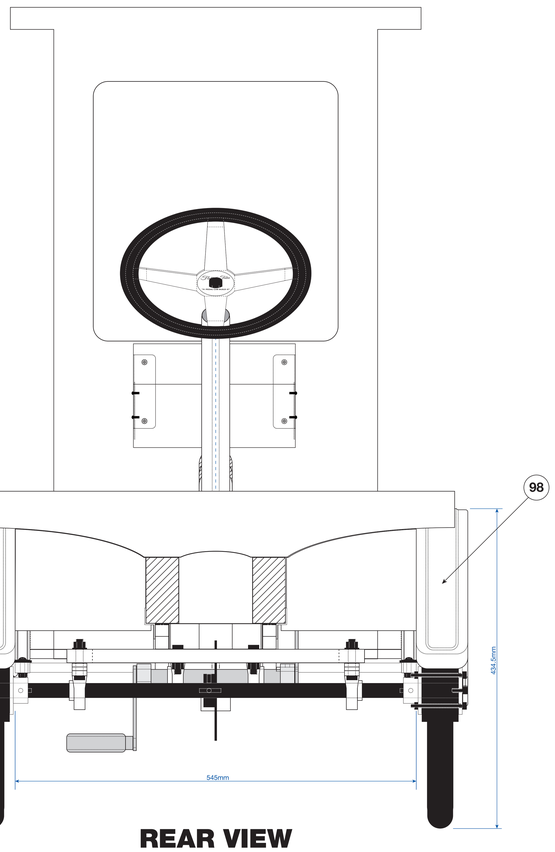
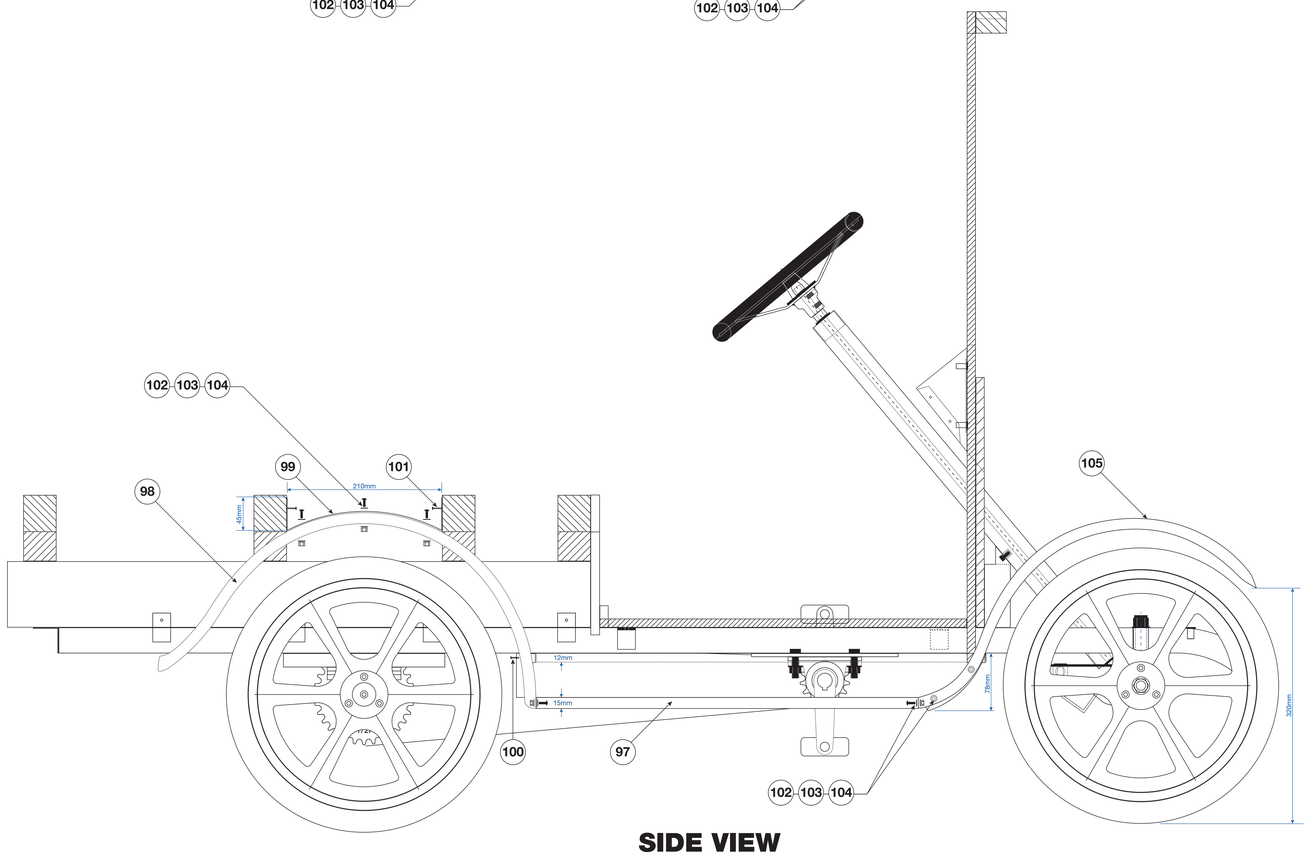


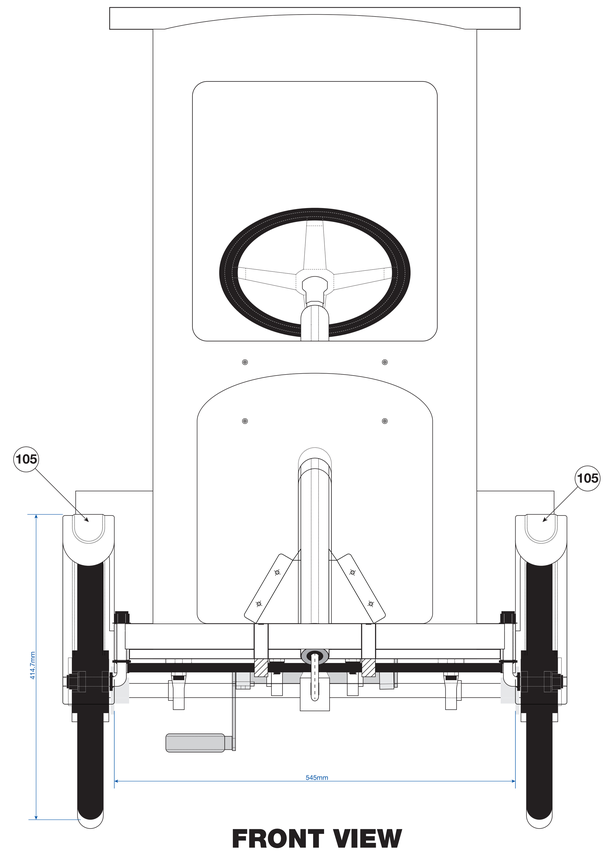
TOP VIEW



REAR VIEW



SIDE VIEW



FRONT VIEW

PARTS LIST

1x 96
Left Running Board
1mm thick steel sheet

1x 97
Right Running Board
1mm thick steel sheet

Rear Mud Guards
2x 98
1mm thick Sheet Steel

Rear Mud Guard Brackets
2x 99
1.6mm thick steel sheet

4x 100 — 8G x 12mm Wafer Head Philips Drive Metal Screws

4x 101 — 8G x 25mm Stitching Button Head Screws

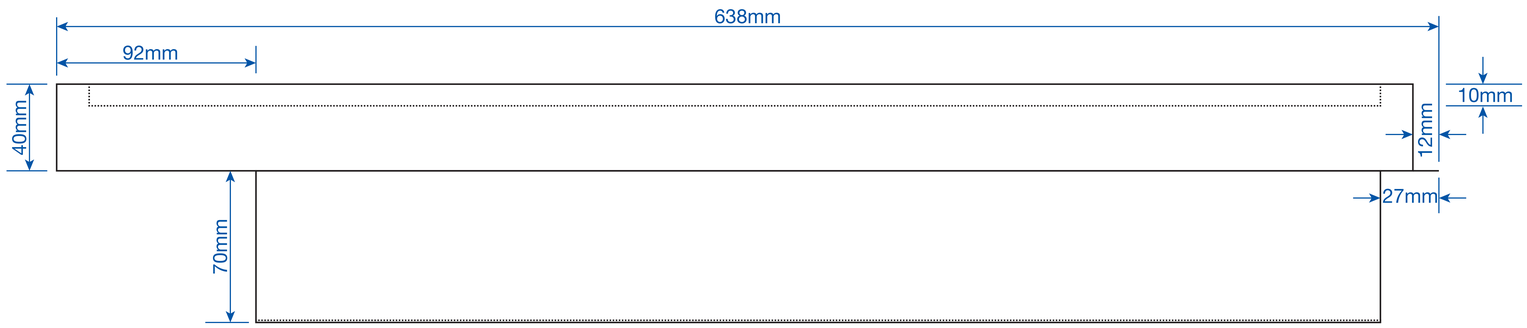
18x 102 — M4 x10mm SS Button Socket Head Scews

18x 103 — M4 SS Washers

18x 104 — M4 SS Nylock Nuts

Front Mud Guards
2x 105
1mm thick Sheet Steel

TOP VIEW



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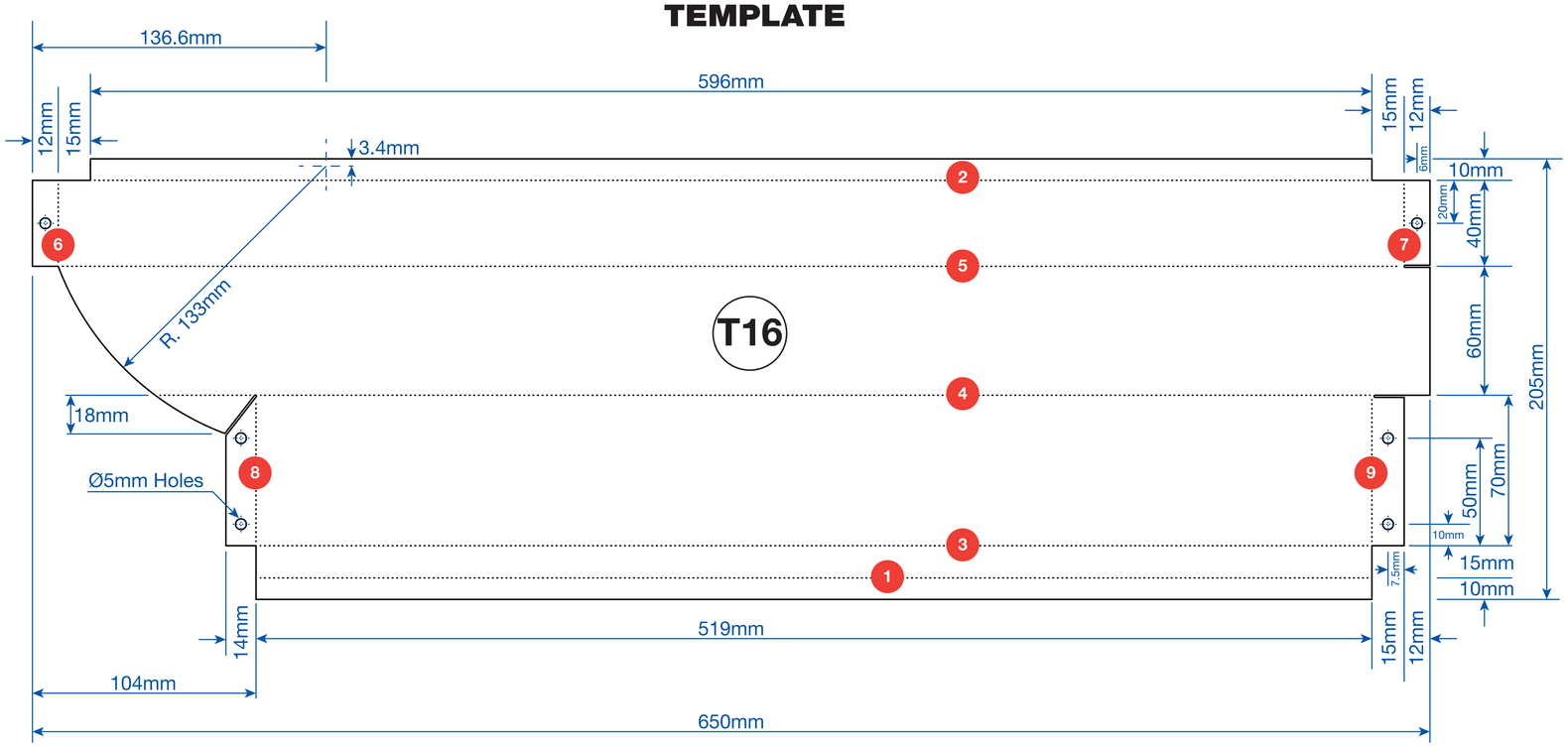
TEMPLATES
Left Running Board

TEMPLATE	DRAWING: 13
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
650 x 205mm (1mm Thick Sheet Mild Steel)

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

TEMPLATE



1x 96

Left Running Board
1mm Thick Sheet Steel

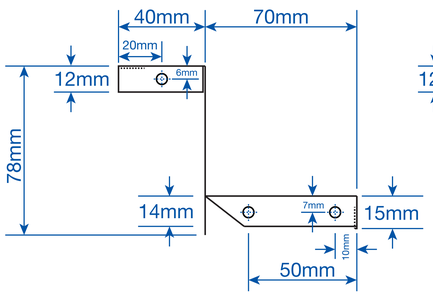
FORMING INSTRUCTIONS

NOTE: Mark fold lines 1-3, 5-7 on back side

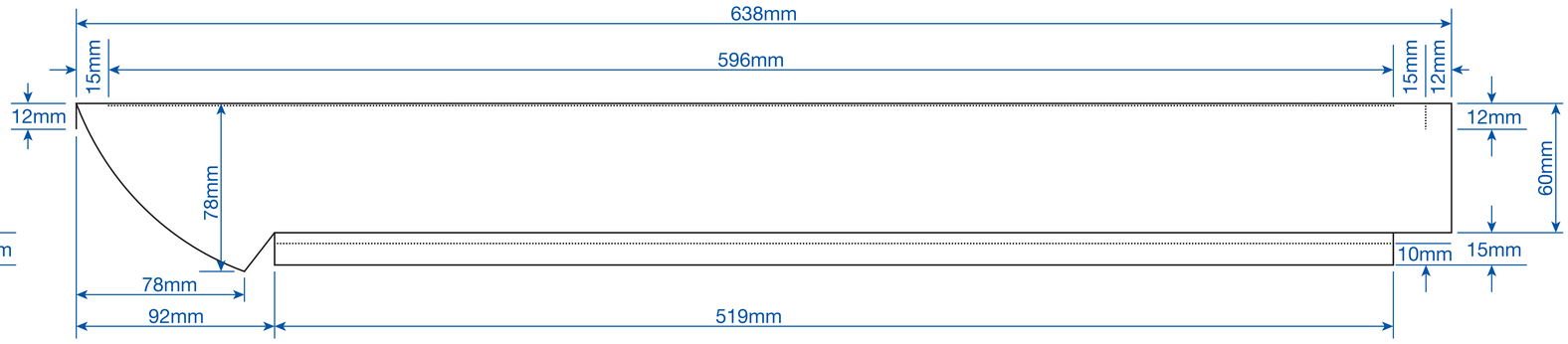
1. Use a Folder & Hammer - Turn over & Fold + Safety Fold
2. Use a Folder & Hammer - Turn over & Fold + Safety Fold
3. Use a Folder - Turn over & Fold
4. Use a Folder - Front Fold
5. Use a Folder - Turn over & Fold
6. Use a Folder - Turn over & Fold
7. Use a Folder - Turn over & Fold
8. Use Vice Grips & Hammer
9. Use Vice Grips & Hammer

See Video for more details.

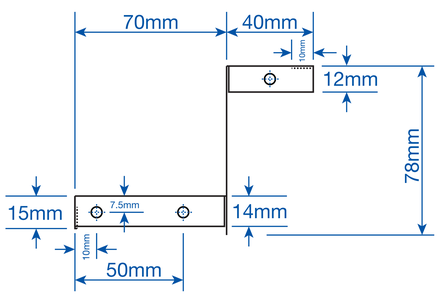
FRONT VIEW



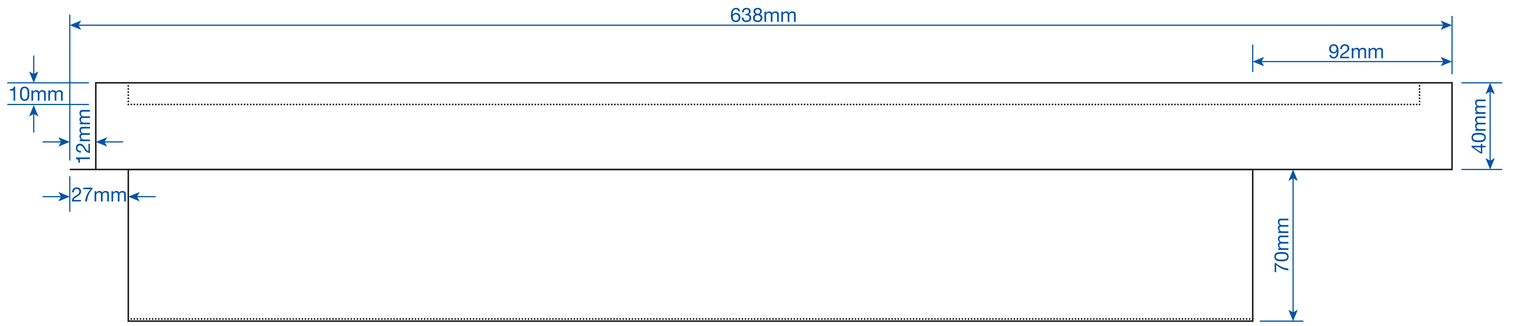
SIDE VIEW



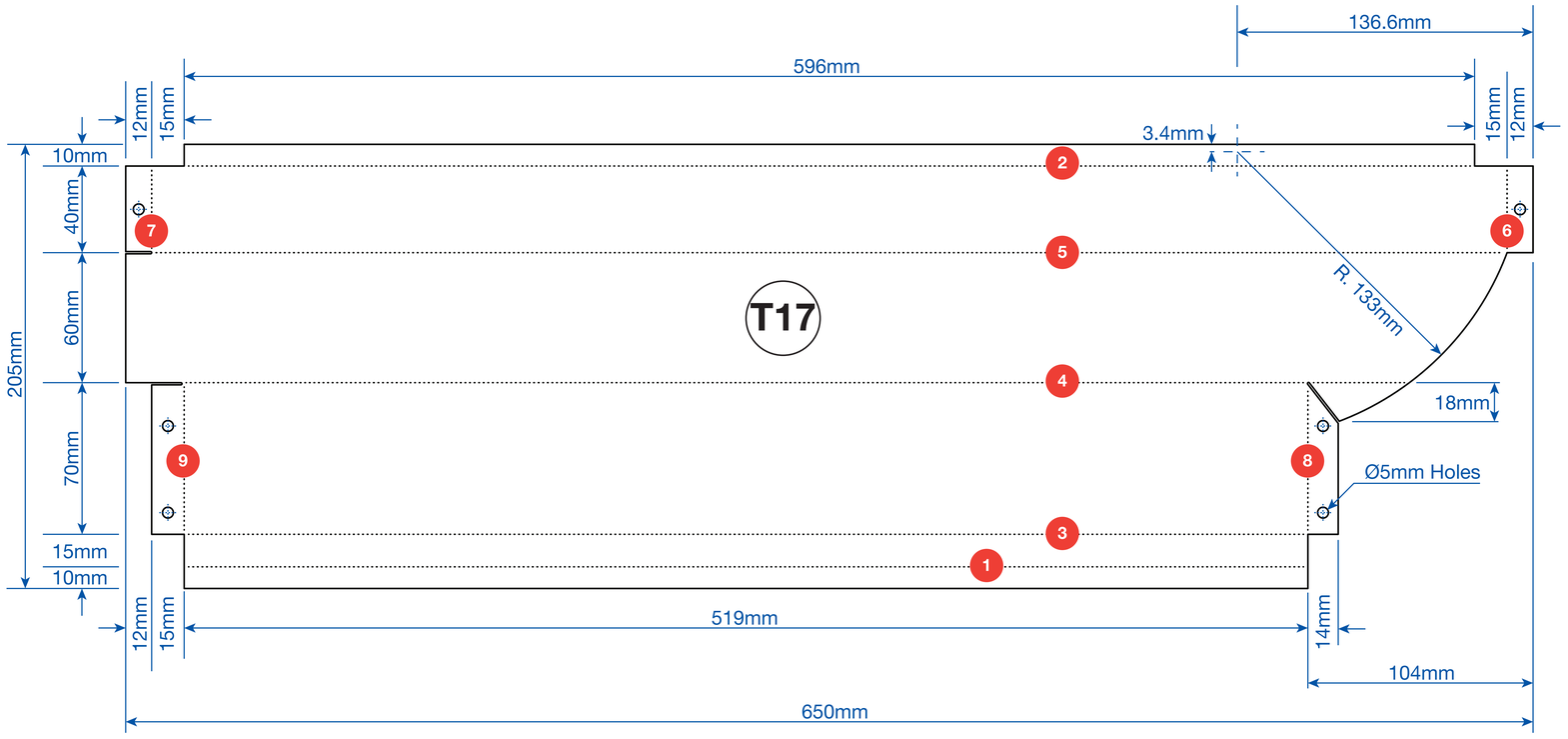
REAR VIEW



TOP VIEW



TEMPLATE



1x 97

Right Running Board

1mm Thick Sheet Steel

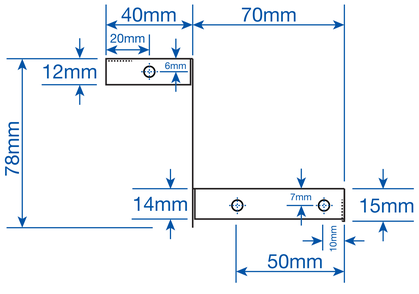
FORMING INSTRUCTIONS

NOTE: Mark fold lines 1-3, 5-7 on back side

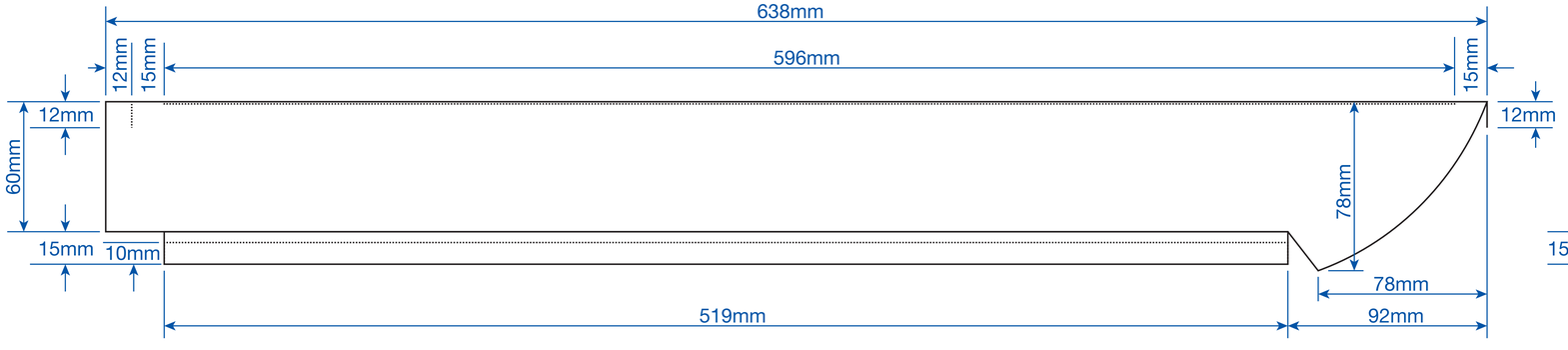
1. Use a Folder & Hammer - Turn over & Fold + Safety Fold
2. Use a Folder & Hammer - Turn over & Fold + Safety Fold
3. Use a Folder - Turn over & Fold
4. Use a Folder - Front Fold
5. Use a Folder - Turn over & Fold
6. Use a Folder - Turn over & Fold
7. Use a Folder - Turn over & Fold
8. Use Vice Grips & Hammer
9. Use Vice Grips & Hammer

See Video for more details.

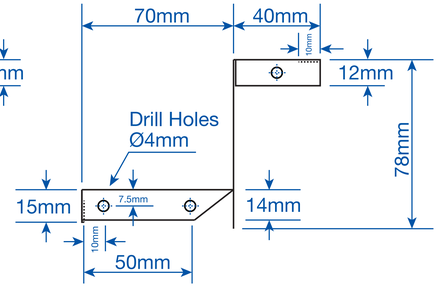
REAR VIEW



SIDE VIEW



FRONT VIEW



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TEMPLATES
Right Running Board

TEMPLATE	DRAWING: 14
SCALE: 1:1	TOLERANCE ± 2mm

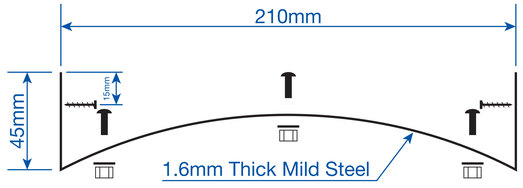
MATERIALS LIST:
650 x 205mm (1mm Thick Sheet Mild Steel)

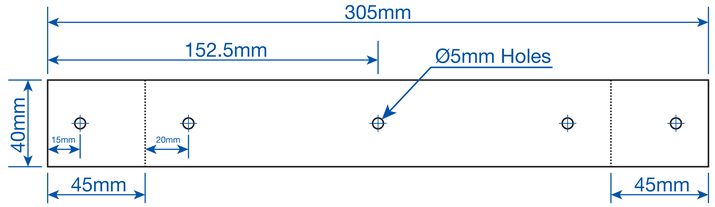
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

Brackets

2x (99)

1.6mm Thick Sheet Steel





4x (100) 8G x 25mm Stitching Button Head Screws

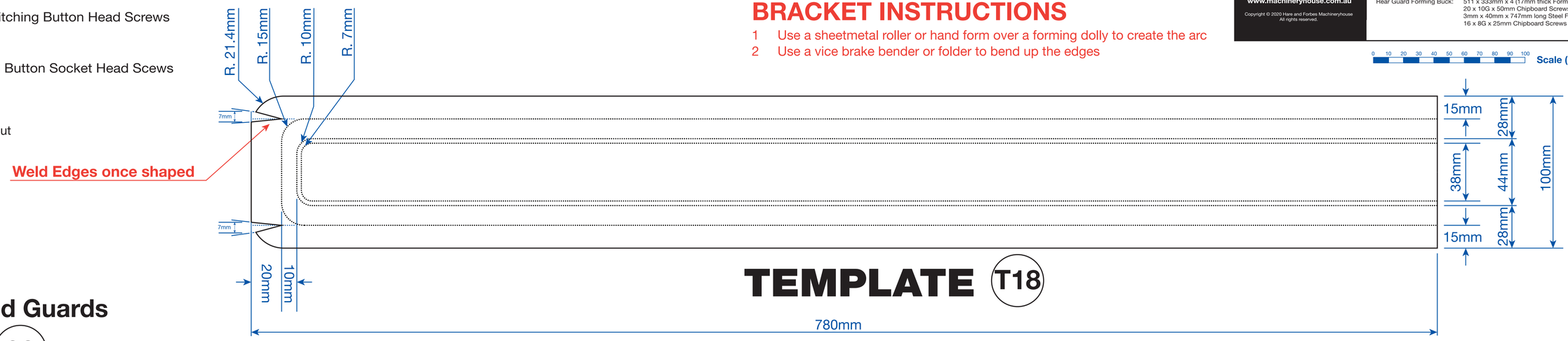
10x (102) M4 x10mm SS Button Socket Head Scews

10x (103) M4 SS Washers

10x (104) M4 SS Nylock Nut

BRACKET INSTRUCTIONS

1 Use a sheetmetal roller or hand form over a forming dolly to create the arc
2 Use a vice brake bender or folder to bend up the edges

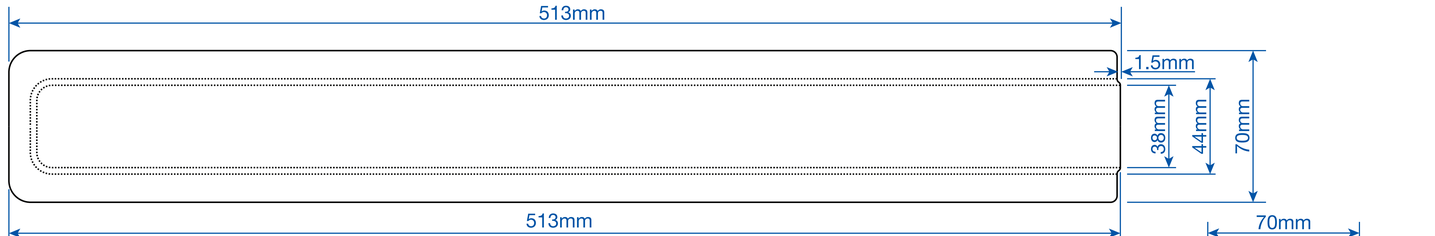


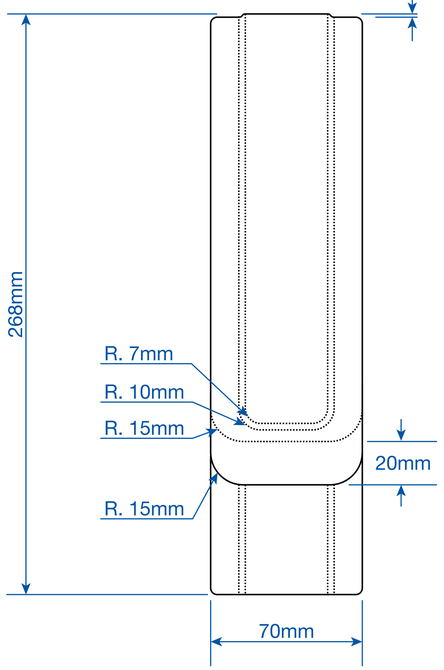
TEMPLATE (T18)

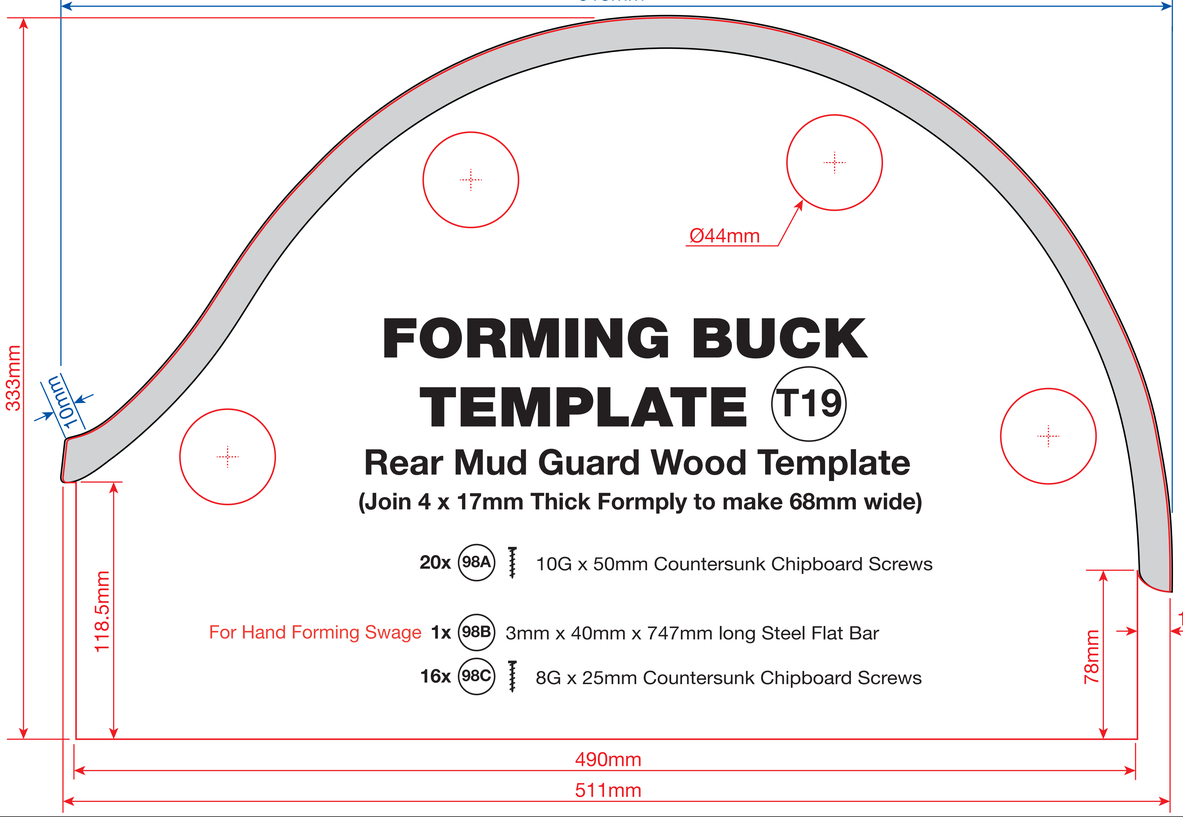
Rear Mud Guards

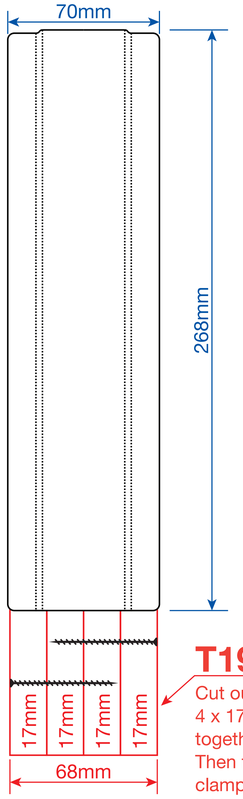
2x (98)

1mm Thick Sheet Steel









FORMING BUCK TEMPLATE (T19)

Rear Mud Guard Wood Template

(Join 4 x 17mm Thick Formply to make 68mm wide)

20x (98A) 10G x 50mm Countersunk Chipboard Screws

For Hand Forming Swage **1x (98B)** 3mm x 40mm x 747mm long Steel Flat Bar

16x (98C) 8G x 25mm Countersunk Chipboard Screws

HAND FORMING METHOD

using T19, 98B & 98C

2 Hand form Rear Guard edges over buck
3 Attach Flat bar 105B & 105C to Buck T21
4 Hand form swage over flat bar
5 Use Hand Tools to fold and form the tail end
6 Weld and finish the tail end

MACHINERY METHOD

1 Use a 1" wide English Wheeling Machine to form a covex crown using a 5" lower radius die
2 Use a Folder to fold the side edges
3 Use a Bead Roller to create the swage using a 1/8" step die
4 Use a Shrinker/Stretcher on the side edges to from the radius
5 Repeat Step 1 - using a 2" lower radius die
6 Use Hand Tools to fold and form the tail end
7 Weld and finish the tail end

T19 INSTRUCTIONS

Cut out the T19 Template and trace onto 4 x 17mm Formply boards. Cut out and join together 4 pieces with 50mm long 10G wood screws. Then finally holesaw out 4 x Ø44mm holes for clamping points for the mud guards.
If Hand Forming Swage - screw on Flat Bar. ref part 98B & 98C

Flatbed Felix — Pedal Car Build

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TEMPLATES
Rear Mud Guards

TEMPLATE	DRAWING: 15
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Mud Guard - 780 x 200mm (1mm Thick Mild Sheet Steel)
Bracket - 305 x 80mm (1.6mm Thick Mild Sheet Steel)

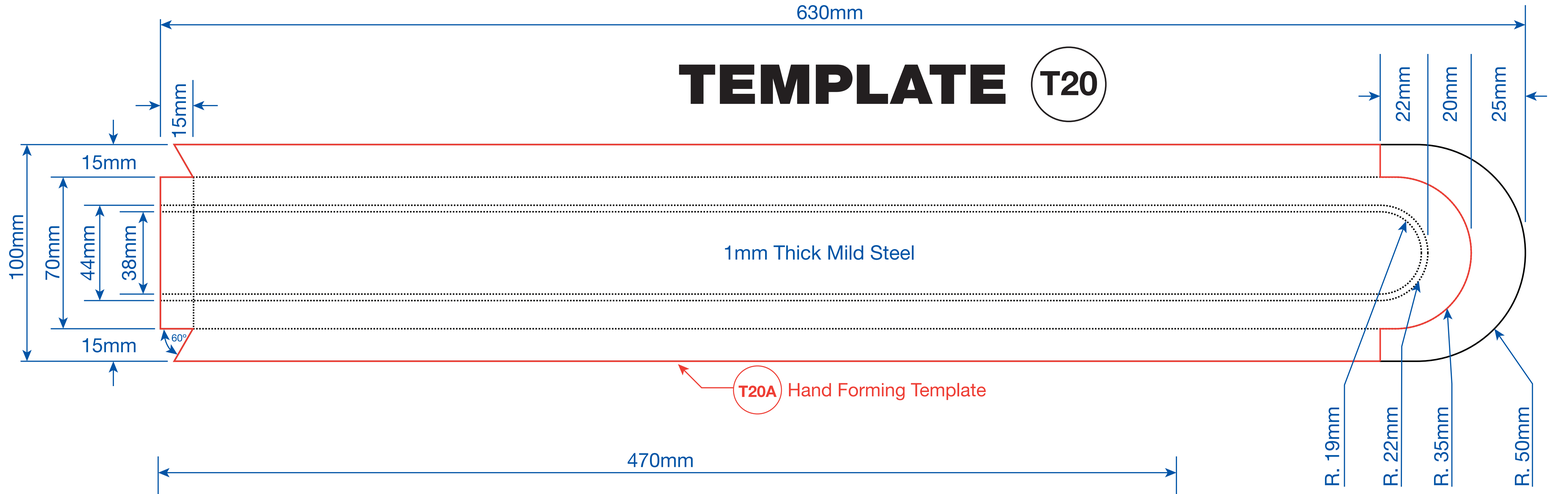
Screws : 4 x (8G x 25mm Stitching Button Head Screws)

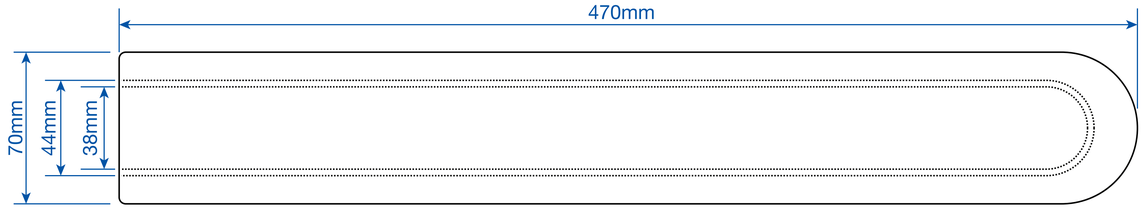
Nuts and Bolts: 10 x (M4 x10mm SS Button Socket Head Scews)
10 x (M4 SS Nylock Nuts)
10 x (M4 SS Washers)

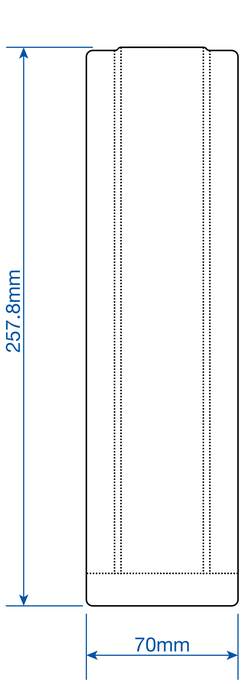
Rear Guard Forming Buck: 511 x 333mm x 4 (17mm thick Formply)
20 x 10G x 50mm Chipboard Screws
3mm x 40mm x 747mm long Steel Flat Bar
16 x 8G x 25mm Chipboard Screws

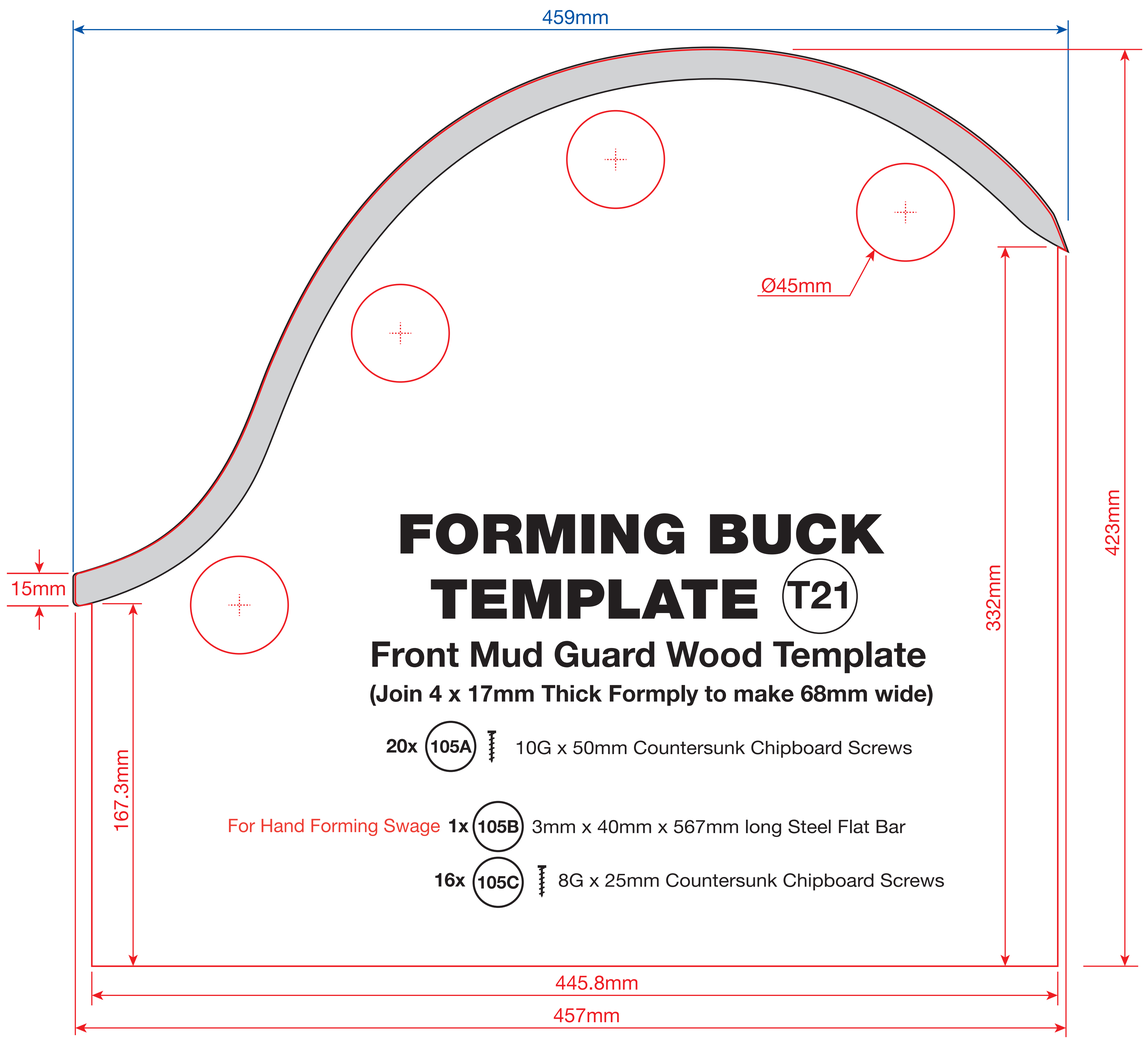
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

TEMPLATE T20









FORMING BUCK TEMPLATE T21

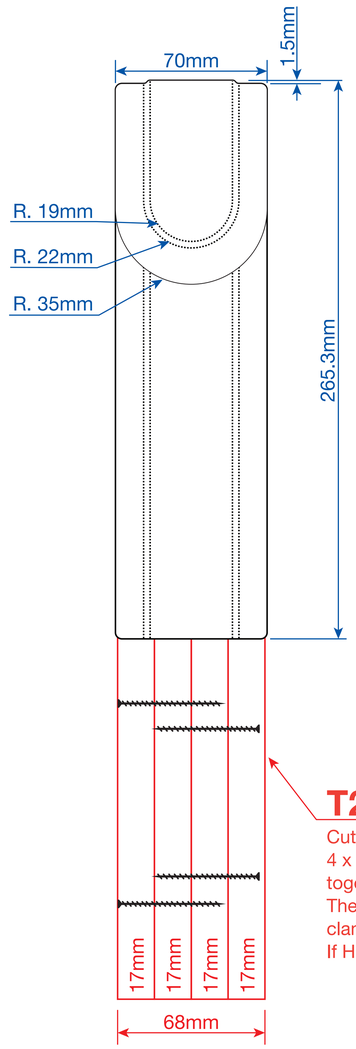
Front Mud Guard Wood Template

(Join 4 x 17mm Thick Formply to make 68mm wide)

20x 105A 10G x 50mm Countersunk Chipboard Screws

For Hand Forming Swage **1x** 105B 3mm x 40mm x 567mm long Steel Flat Bar

16x 105C 8G x 25mm Countersunk Chipboard Screws



Flatbed Felix
PEDAL CAR BUILD

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TEMPLATES
Front Mud Guards

TEMPLATE	DRAWING: 16
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Front Mud Guards: 630 x 200mm (1mm Thick Mild Sheet Steel)
Hand Form Nose 120 x 62mm (1mm Thick Mild Sheet Steel)

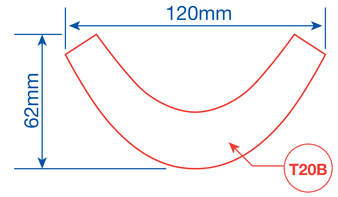
Nuts and Bolts: 8 x (M4 x10mm SS Button Socket Head Scews)
8 x (M4 SS Washers)
8 x (M4 SS Nylock Nuts)

Front Guard Forming Buck: 468 x 414mm x 4 (17mm thick Formply)
20 x 10G x 50mm Chipboard Screws
3mm x 40mm x 567mm long Steel Flat Bar
16 x 8G x 25mm Chipboard Screws

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

HAND FORMING METHOD
using T20A, T20B, T21, 105B & 105C

1 Cut out Front Guard and Nose piece using T20A & T20B
2 Hand form Front Guard edges over buck
3 Attach Flat bar 105B & 105C to Buck T21
4 Hand form swage over flat bar
5 Hand form Nose Piece T20B using hammer & dolly
6 Weld Nose Piece to Front Guard and finish off



MACHINERY METHOD

1 Use a 1" wide English Wheeling Machine to form a convex crown using a 5" lower radius die.
2 Use a Folder to fold the side edges.
3 Use a Bead Roller to create the swage using a 1/8" step die.
4 Use Tin Snips cut tail edges then fold up tail using Seaming Pliers
5 Use a Shrinker/Stretcher on the side edges to from the radius. Form Nose using Shrinker, Hammer & Dolly
6 Weld and finish the tail end.

Front Mud Guards

2x 105

1mm Thick Sheet Steel

8x 102 M4 x10mm SS Button Socket Head Scews
8x 103 M4 SS Washers
8x 104 M4 SS Nylock Nuts

T21 INSTRUCTIONS

Cut out the T21 Template and trace onto
4 x 17mm Formply boards. Cut out and join
together 4 pieces with 50mm long 10G wood screws.
Then finally holesaw out 4 x Ø44mm holes for
clamping points for the mud guards.
If Hand Forming Swage - screw on Flat Bar. ref part 105B, 105C

BONNET ASSEMBLY

PLAN 5	DRAWING: 17
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:

Bonnet: 290 x 460mm (1mm Mild Sheet Steel)
Hinge: 300mm Piano Hinge
Magnetic Strip: 2 x 235mm (13mm wide Self-Adhesive Magnetic Strip)
Hinge Brakets: 16 x 40mm (1.6mm thick sheet steel) weld on Ø5mm x 16mm pipe
15 x 45mm (1.6mm thick sheet steel) weld on Ø5mm x 15mm pipe
2 x (M4 x 10mm Countersunk Socket Head Screws)
2 x (M4 SS Washers)
2 x (M4 SS Nylock Nuts)

Valance: 150 x 300mm (1mm Mild Sheet Steel)
2 x (M4 x 16mm SS Button Socket Head Screws)
2 x (M4 Washers)

Bonnet Side Panels: 650 x 600mm (1mm Mild Sheet Steel)
4 x (7G x 12mm Drywall Screws)
4 x (M6 x 16mm SS Button Socket Head Screws)

Wheel Arches: 300 x 900mm (1mm Mild Sheet Steel)
4 x (8G x 12mm Wafer Head Philips Drive Metal Screws)

Radiator: 35 x 780mm (1mm Mild Sheet Steel)
70 x 1000mm (1mm Mild Sheet Steel)
4 x (M6 x 1.0mm Nut Inserts)
2 x (M6 x 16mm SS Button Socket Head Screws)

Radiator Grill: 322 x 190mm (1.6mm Aluminium Perforated Pattern 218 - 3.2mm Round Holes. 4.8mm staggered pitch)

Light Support Bar: 585mm x (Ø12.7 x 1.2mm Round Commercial ERW Tube)
60mm x (3mm x 13mm Steel Flat Bar)
2 x (M6 x 16mm SS Button Socket Head Screws)
2 x (M6 SS Nylock Nuts)
2 x (M4 x 16mm SS Button Socket Head Screws)
2 x (M4 SS Washers)
2 x (M4 SS Nylock Nuts)

Head Lights: 2 x (3xLED Vintage Headlight with mounting Bracket)

Radiator Cap: 100mm x (Ø31.75mm Rod C385 Brass)
100mm x (Ø12.7mm Rod C385 Brass)
1 x (M5 x 40mm Stainless Steel Button Head Screw)

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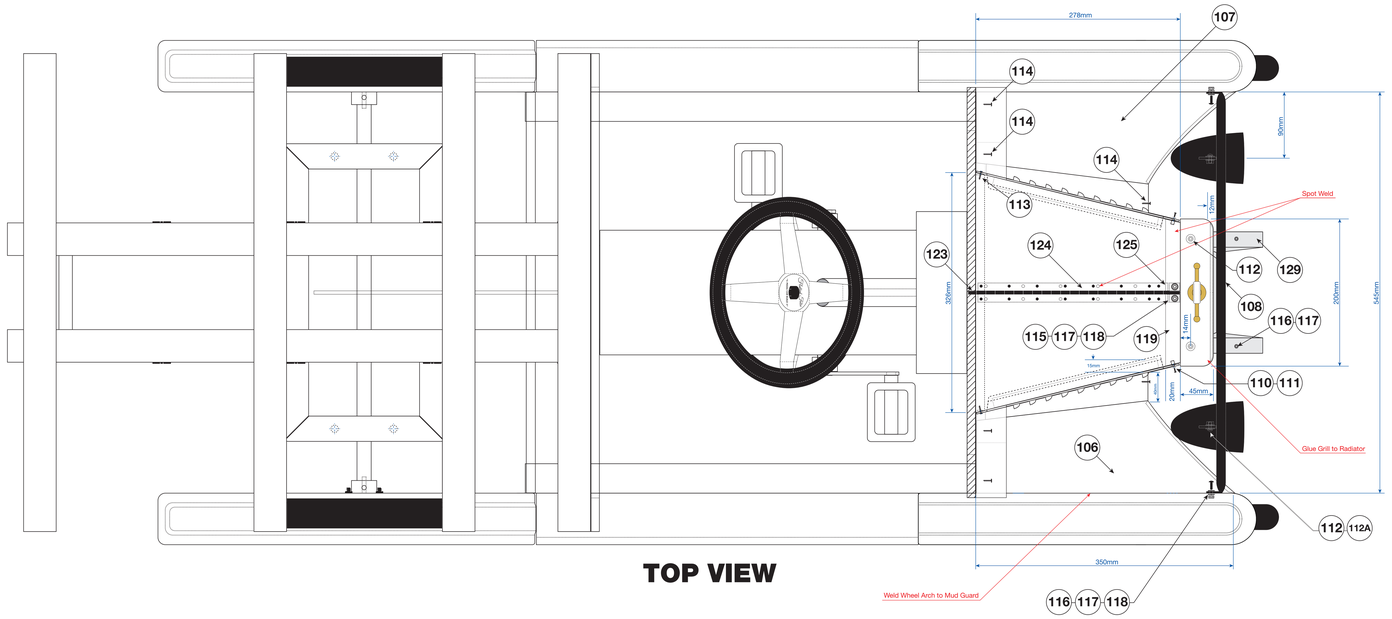
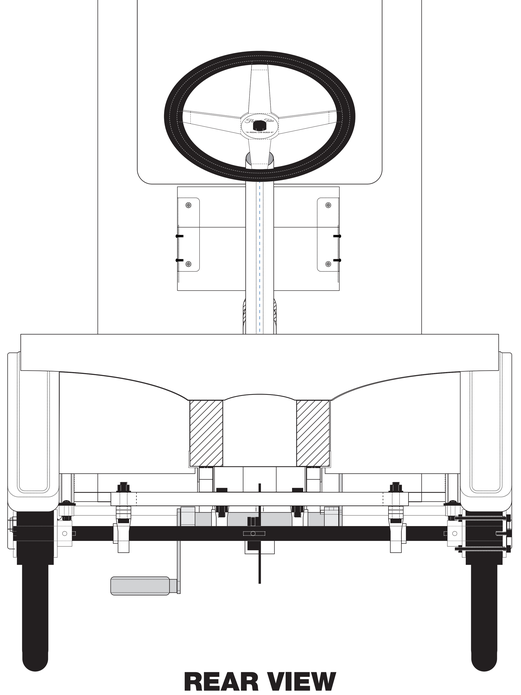
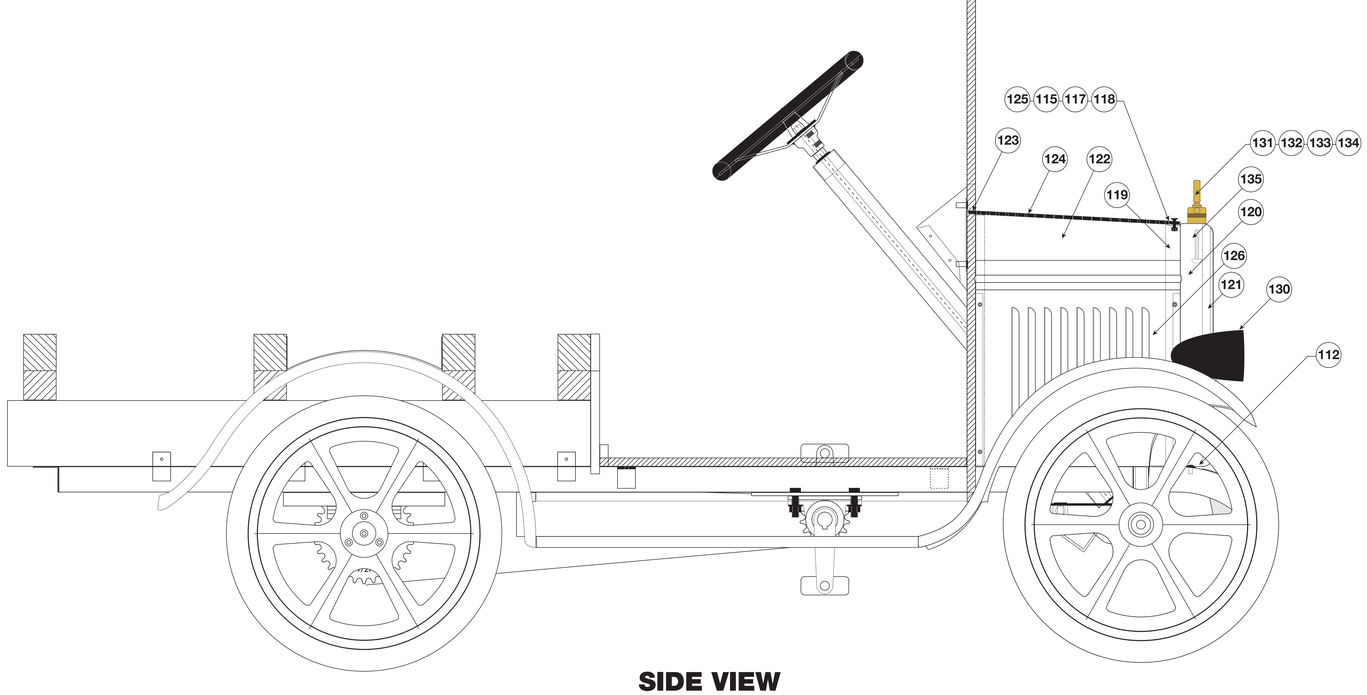
TOP VIEW



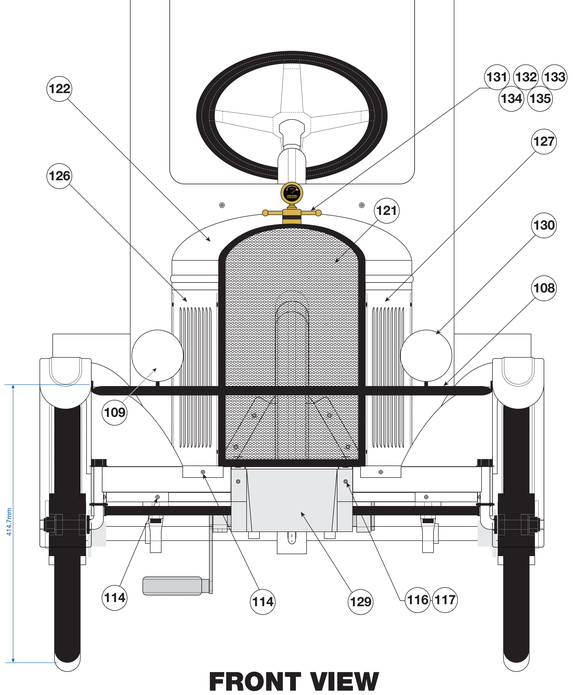
REAR VIEW



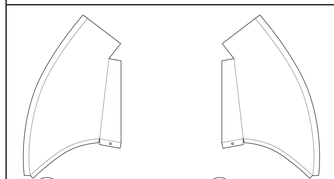
SIDE VIEW



FRONT VIEW

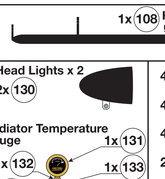


PARTS LIST



1x (106) Right Wheel Arch

1x (107) Left Wheel Arch



1x (108) Head Light - Support Bar
Ø12.7mm Tube x 1.2mm Wall

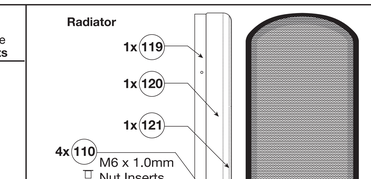
2x (109) 3mm thick steel plate
Head Light Brackets

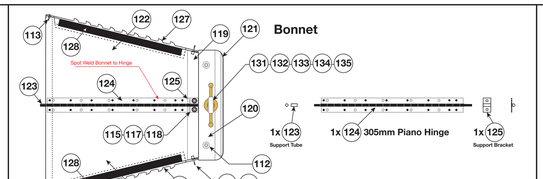
Head Lights x 2
2x (130)

Radiator Temperature Gauge
1x (131)
1x (132)
1x (133)
2x (134)
1x (135)

4x	(110)	M6 x 1.0mm Nut Inserts	4x	(114)	8G x 12mm Wafer Head Philips Drive Metal Screws
4x	(111)	M6 x 16mm SS Button Socket Head Scews	2x	(115)	M4 x 10mm Countersunk Socket Head Scews
4x	(112)	M6 x 16mm SS Button Socket Head Scews	4x	(116)	M4 x 16mm SS Button Socket Head Scews
2x	(112A)	M6 SS Nylock Nut	4x	(117)	M4 SS Washers
4x	(113)	7G x 12mm Drywall Screws	4x	(118)	M4 SS Nylock Nuts

Radiator
1x (119)
1x (120)
1x (121)
4x (110) M6 x 1.0mm Nut Inserts





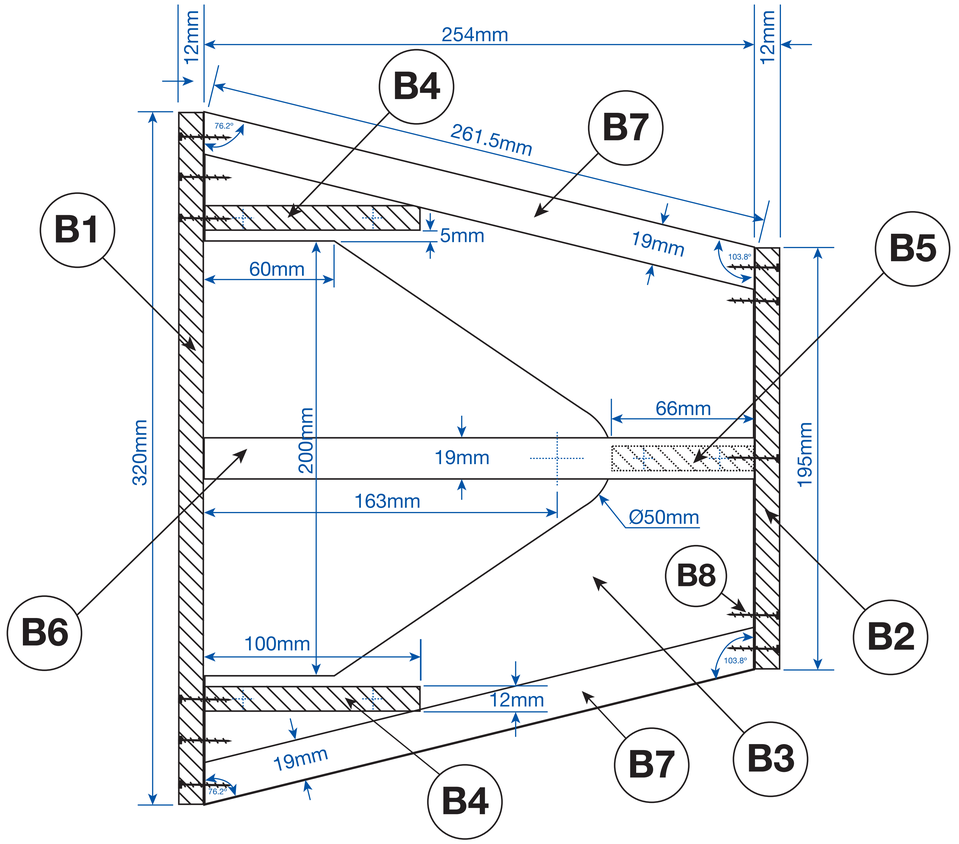
2x (128) Magnetic Strip 235 x 13mm

1x (126) RIGHT Bonnet Side Panel

1x (127) LEFT Bonnet Side Panel

1x (129) Valance

BUCK ASSEMBLY



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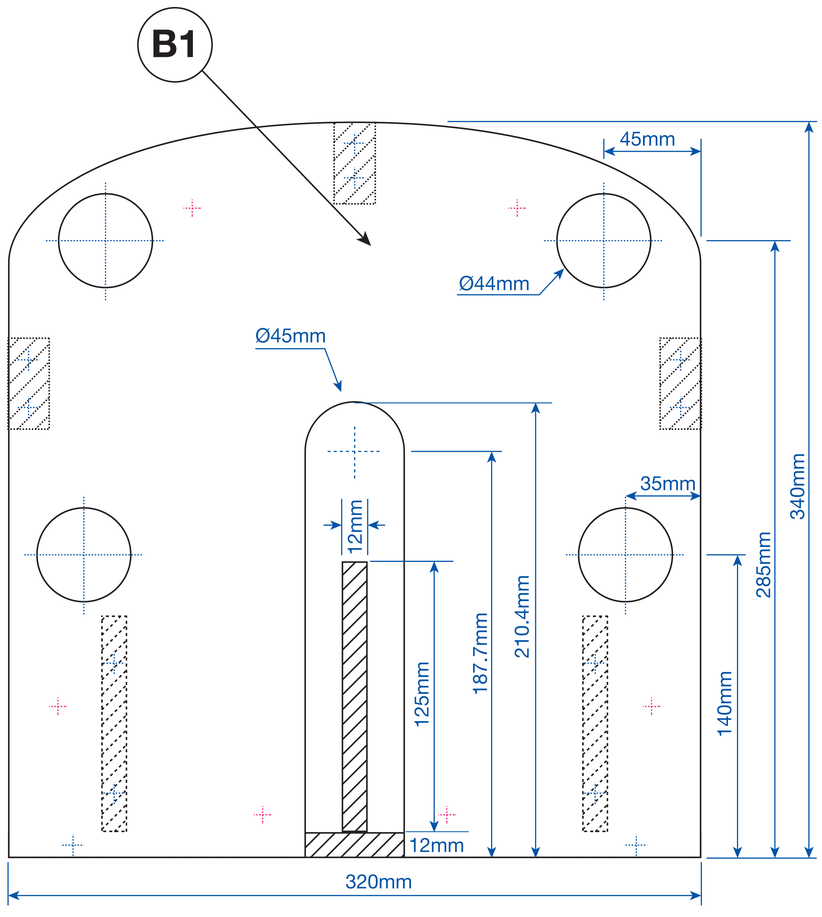
Buck Assembly

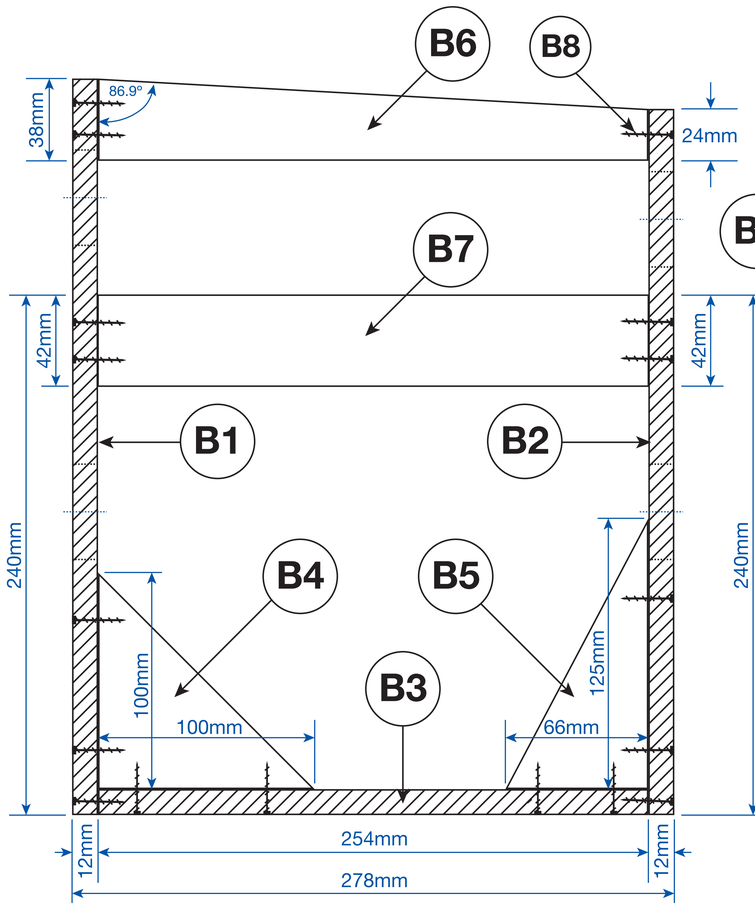
TEMPLATE	DRAWING: 18
SCALE: 1:1	TOLERANCE ± 2mm

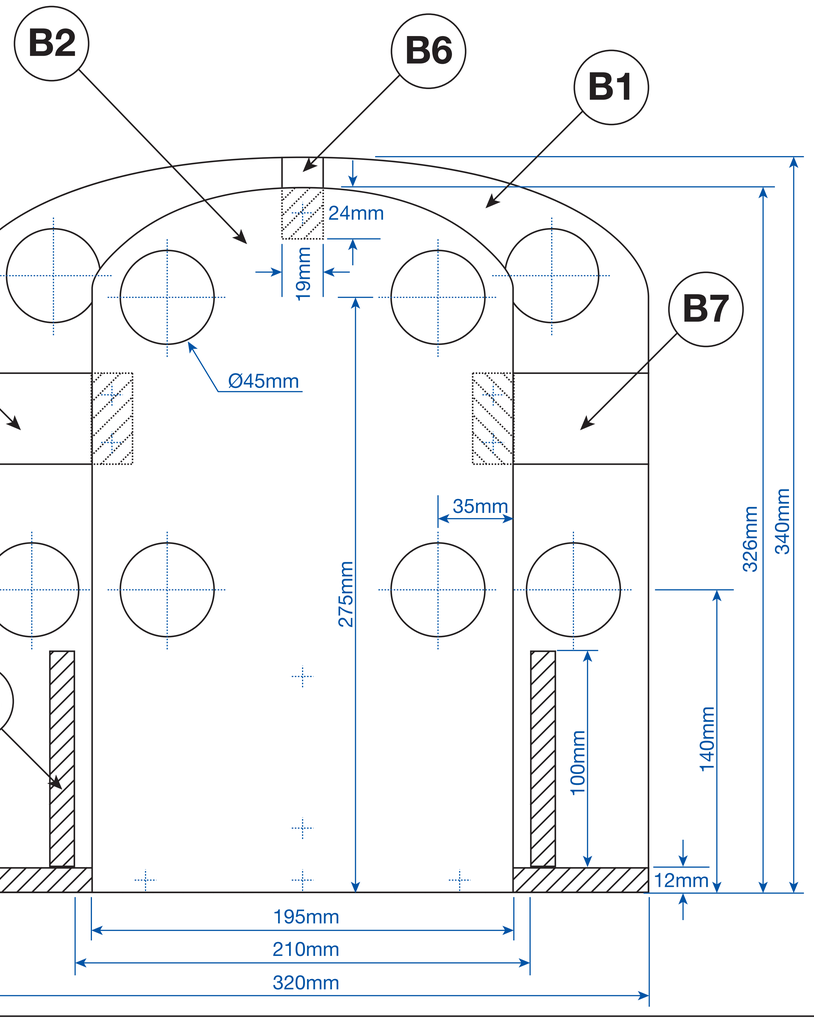
MATERIALS LIST:
Buck Base & Walls: 320 x 1000mm (12mm AA Grade Mixed Hardwood Marine Plywood)
Triangle Supports: 166 x 125mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
Side Supports: 800mm x (42 x 19mm Premium Grade Dressed Pine)
Wood Screws: 28 x (8G x 25mm Countersink Rib Head Chipboard Screws)

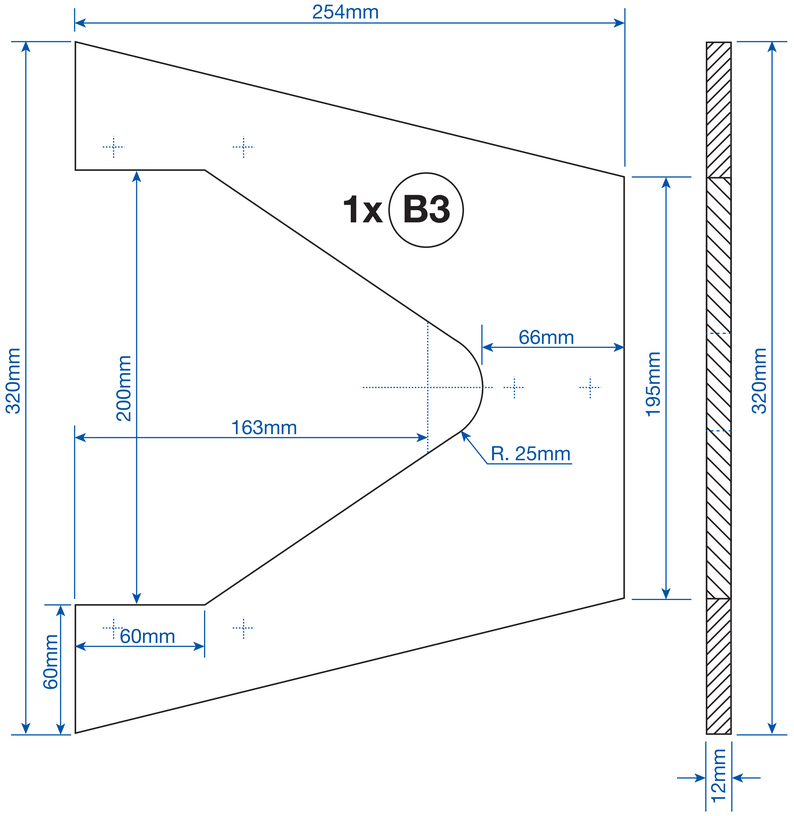
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

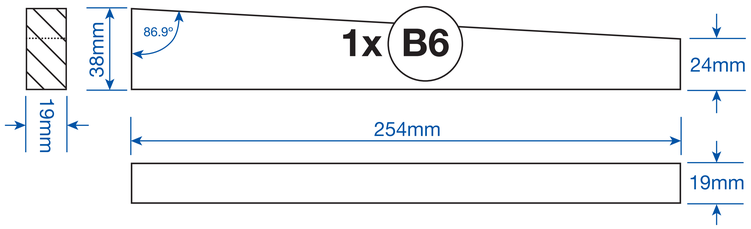
28x B8 (8G x 25mm Chipboard Screws)



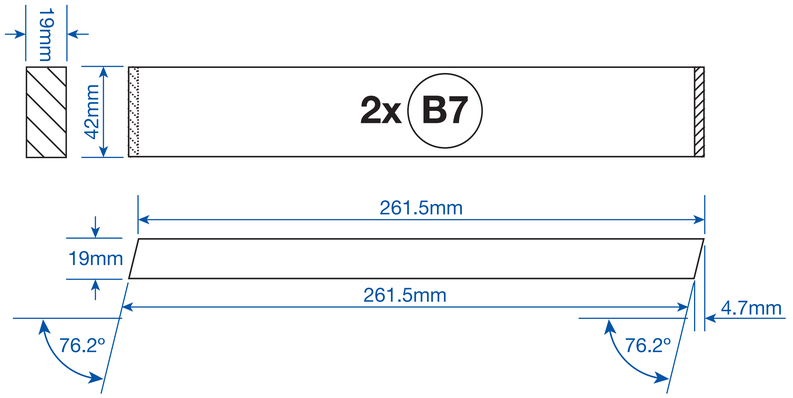


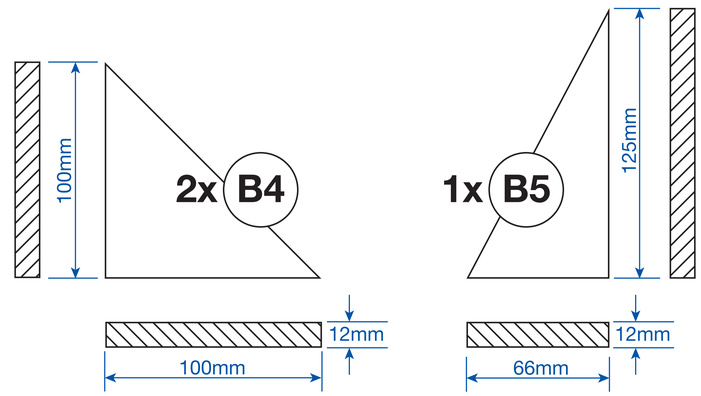




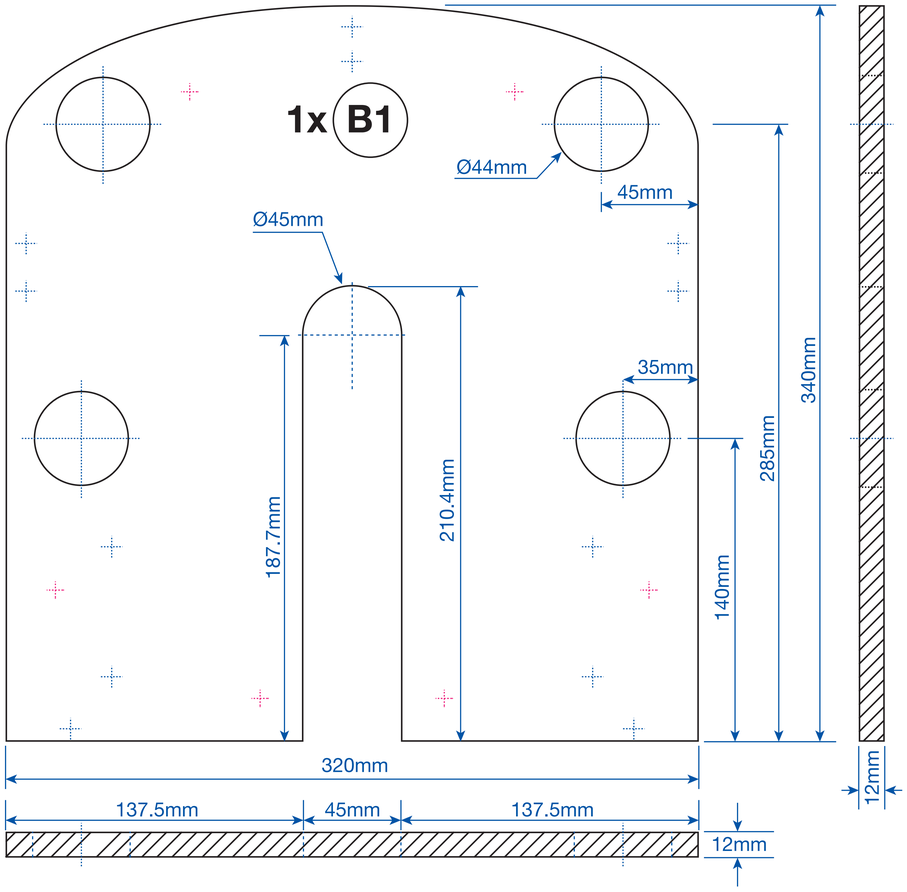


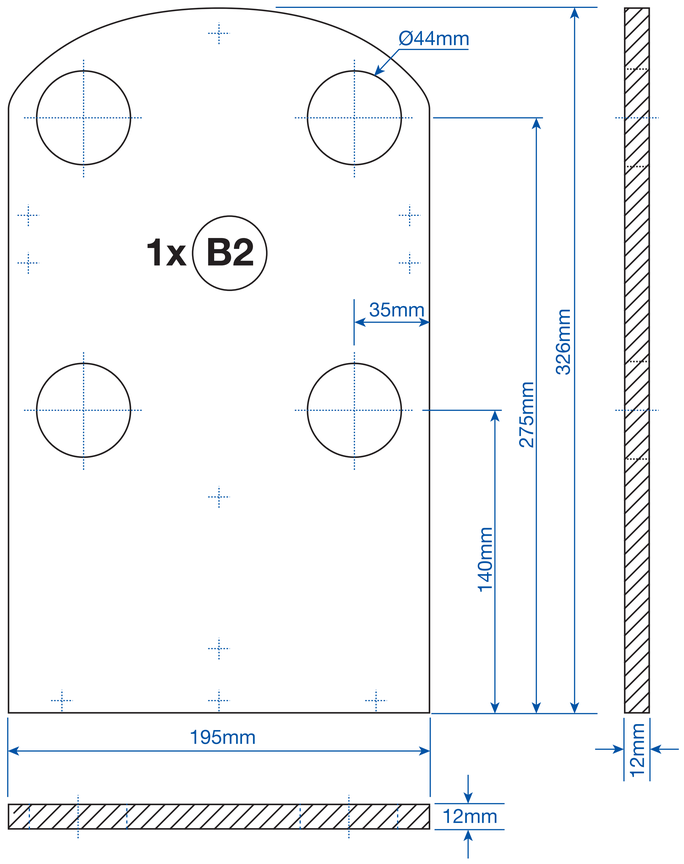
42 x 19mm Premium Grade Dressed Pine





12mm AA Grade Mixed Hardwood Marine Plywood





28x B8

(8G x 25mm Chipboard Screws)

BUCK PARTS

Flatbed Felix
PEDAL CAR BUILD

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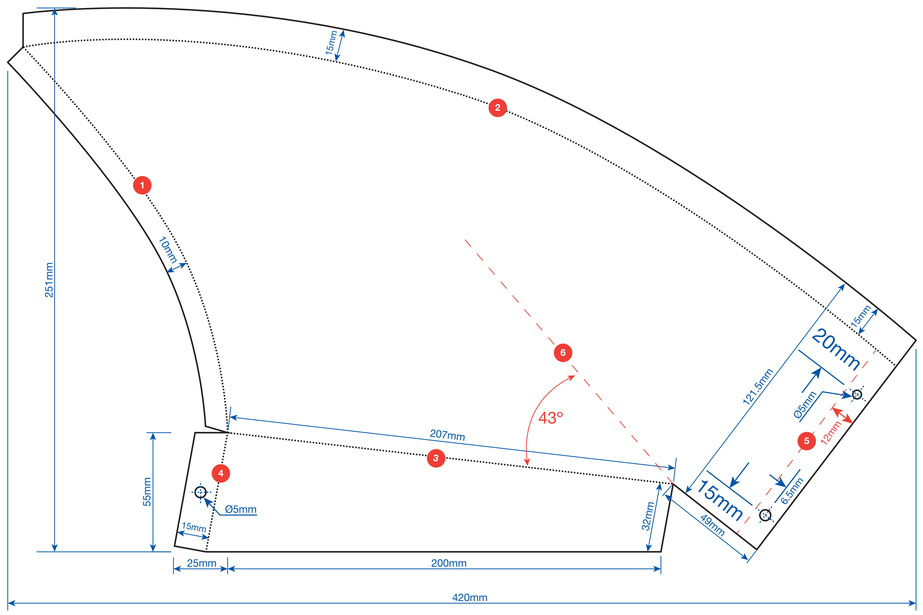
TEMPLATES
Buck Parts

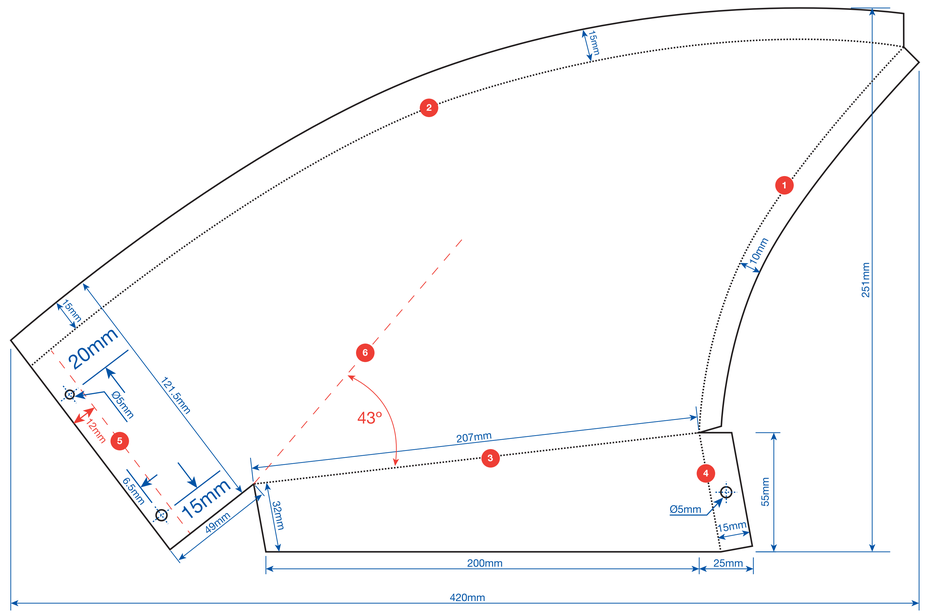
TEMPLATE	DRAWING: 19
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Buck Base & Walls: 320 x 1000mm (12mm AA Grade Mixed Hardwood Marine Plywood)
Triangle Supports: 166 x 125mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
Side Supports: 800mm x (42 x 19mm Premium Grade Dressed Pine)
Wood Screws: 28 x (8G x 25mm Countersink Rib Head Chipboard Screws)

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)



1x 106 Right Wheel Arch TEMPLATE T28



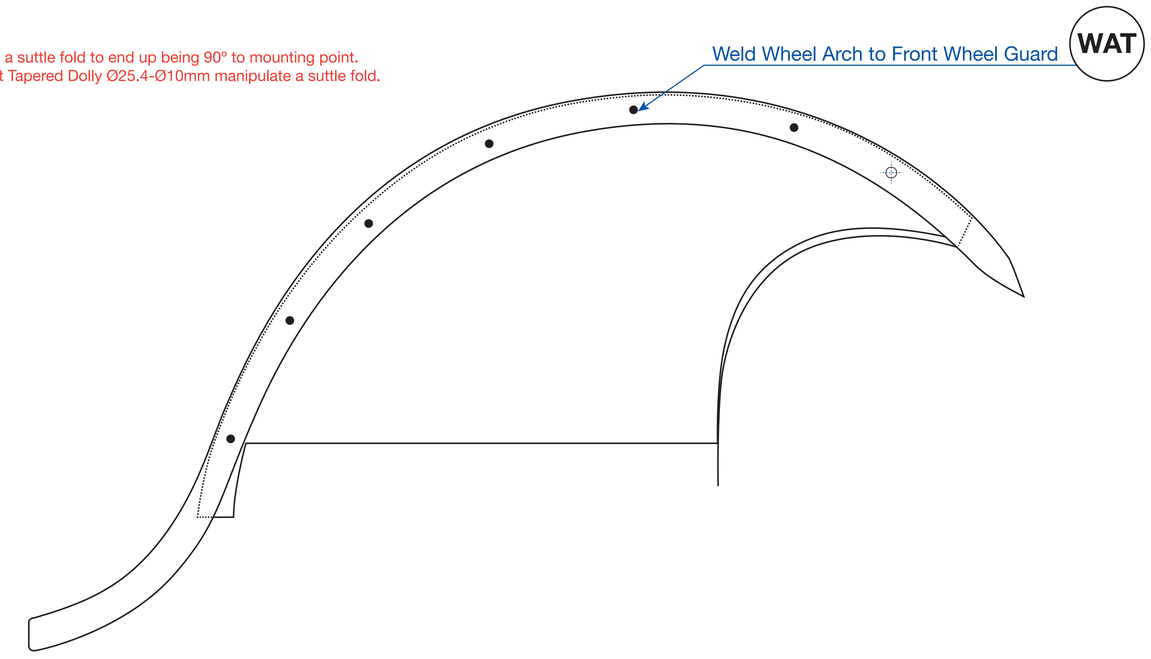
1x 107 Left Wheel Arch TEMPLATE T29

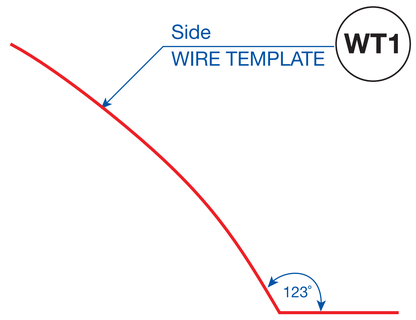
HAND TOOL METHOD - Instructions

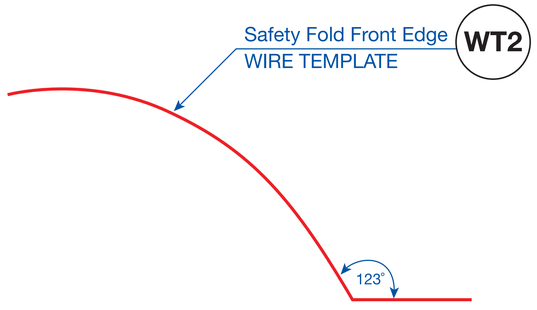
1. FOLD DOWN - Using combination pliers fold down to 90º then using 2 Shifters in conjunction, shrink to shape of WT2 profile.
2. FOLD UP - Using combination pliers fold flange up then stretch flange using a hammer and dolly, and caulk flat using hand tools to the shape of WAT.
3. FOLD UP - Use a Folder or Vice Brake Bender
4. FOLD DOWN - Use a Vice Brake Bender or Sheetmetal Wide Vice Grips
5. BEND DOWN - Draw a line 12mm up from base. Using seaming pliers - initiate a suttle fold to end up being 90º to mounting point.
6. BEND DOWN - Draw a 150mm long line 43º up from Fold 3. Using the smallest Tapered Dolly Ø25.4-Ø10mm manipulate a suttle fold.

MACHINERY METHOD - Instructions

1. FOLD DOWN - Use a Bead Roller with Top Tipping Wheel & Blank Lower Die, roll to 90º then use a Shrinker to shape to WT2 profile.
2. FOLD UP - Use a Bead Roller with Top Tipping Wheel & Blank Lower Die
3. FOLD UP - Use a Folder or Vice Brake Bender
4. FOLD DOWN - Use a Vice Brake Bender or Sheetmetal Wide Vice Grips
5. BEND DOWN - Draw a line 12mm up from base. Using seaming pliers - initiate a suttle fold to end up being 90º to mounting point.
6. BEND DOWN - Draw a 150mm long line 43º up from Fold 3. Using the smallest Tapered Dolly Ø25.4-Ø10mm manipulate a suttle fold.







Flatbed Felix
PEDAL CAR BUILD

TEMPLATES
Wheel Arches

TEMPLATE	DRAWING: 20
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Wheel Arches: 300 x 900mm (1mm Thick Mild Sheet Steel)

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0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

Bonnet - Assembly

TEMPLATE	DRAWING: 21
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Bonnet Parts: 1mm Thick Mild Sheet Steel
Bonnet Piano Hinge: 1 x 305mm Piano Hinge
Radiator Grill: 190 x 320mm (1.6mm Aluminium Perforated Pattern 218 - 3.2mm round holes 4.8mm staggered pitch, 40% open area)
Magnetic Strip: 2 x 230mm (13mm wide Self-Adhesive Magnetic Strip)

Nuts Bolts and Scews:
4 x (M6 x 1.0mm Nut Inserts)
4 x (M6 x 16mm SS Button Socket Head Screws)
4 x (7G x 12mm Drywall Screws)
2 x (M4 x 10mm Countersunk Socket Head Screws)
4 x (M4 x 16mm SS Button Socket Head Screws)
4 x (M4 SS Washers)
4 x (M4 SS Nylock Nuts)

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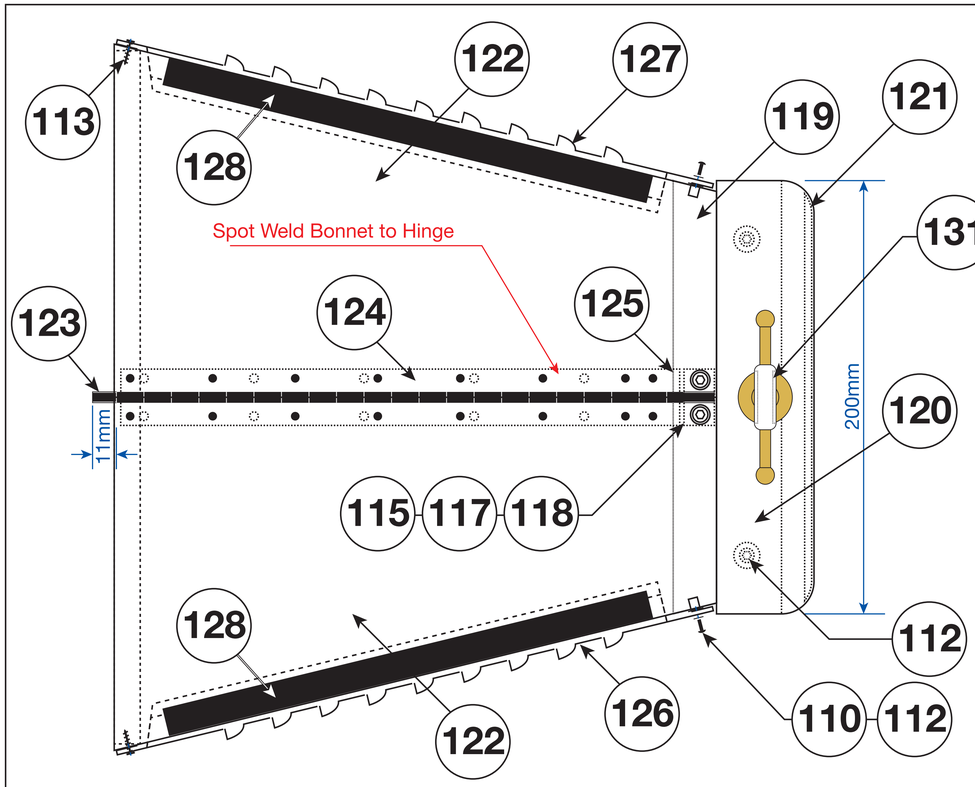
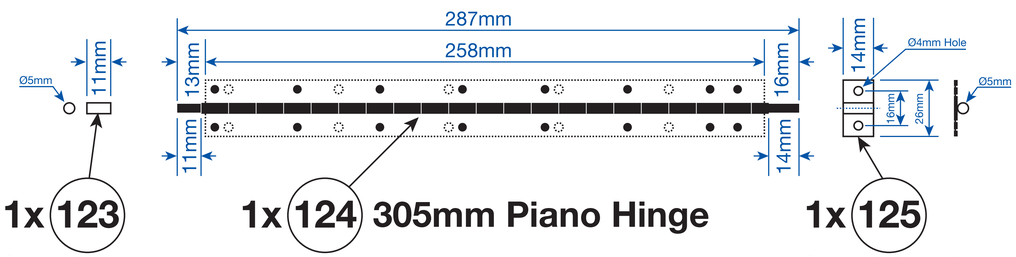
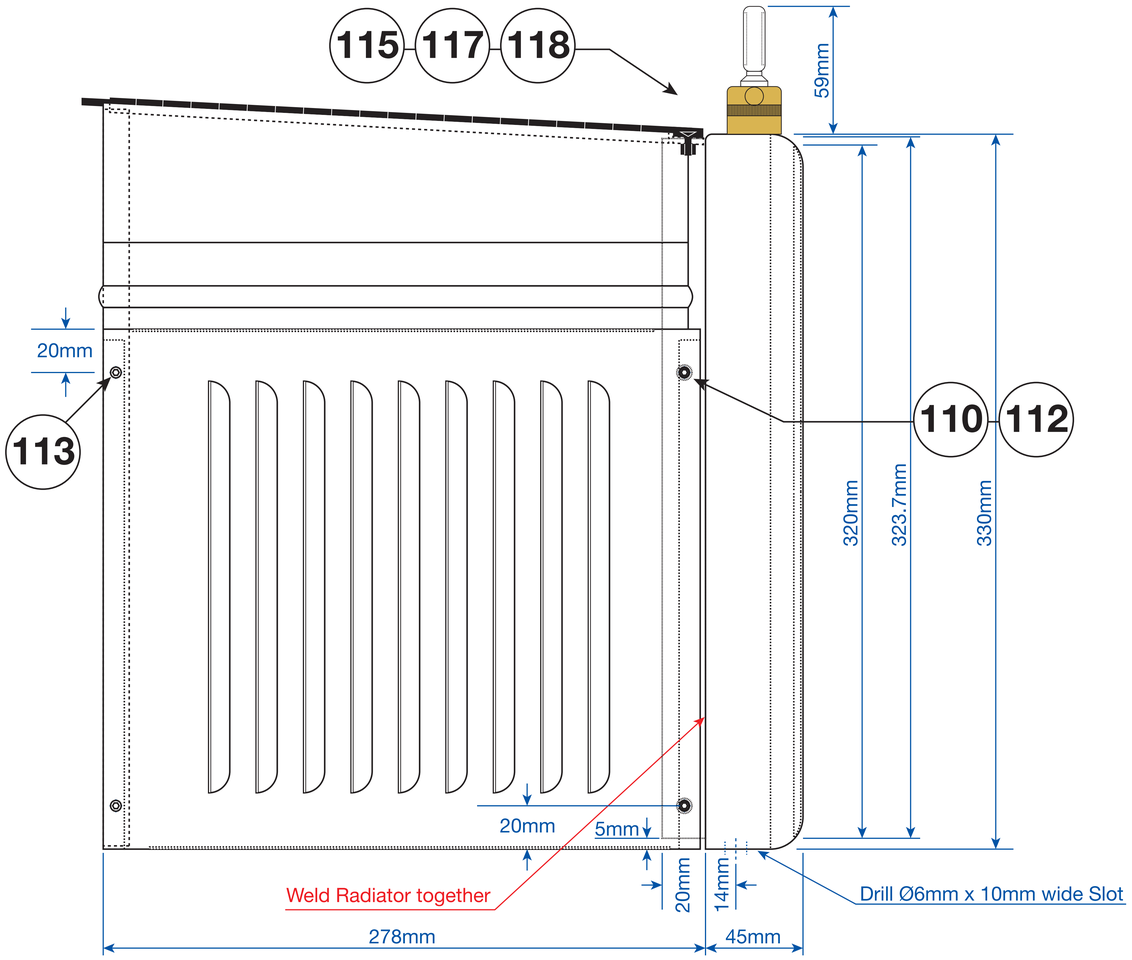
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

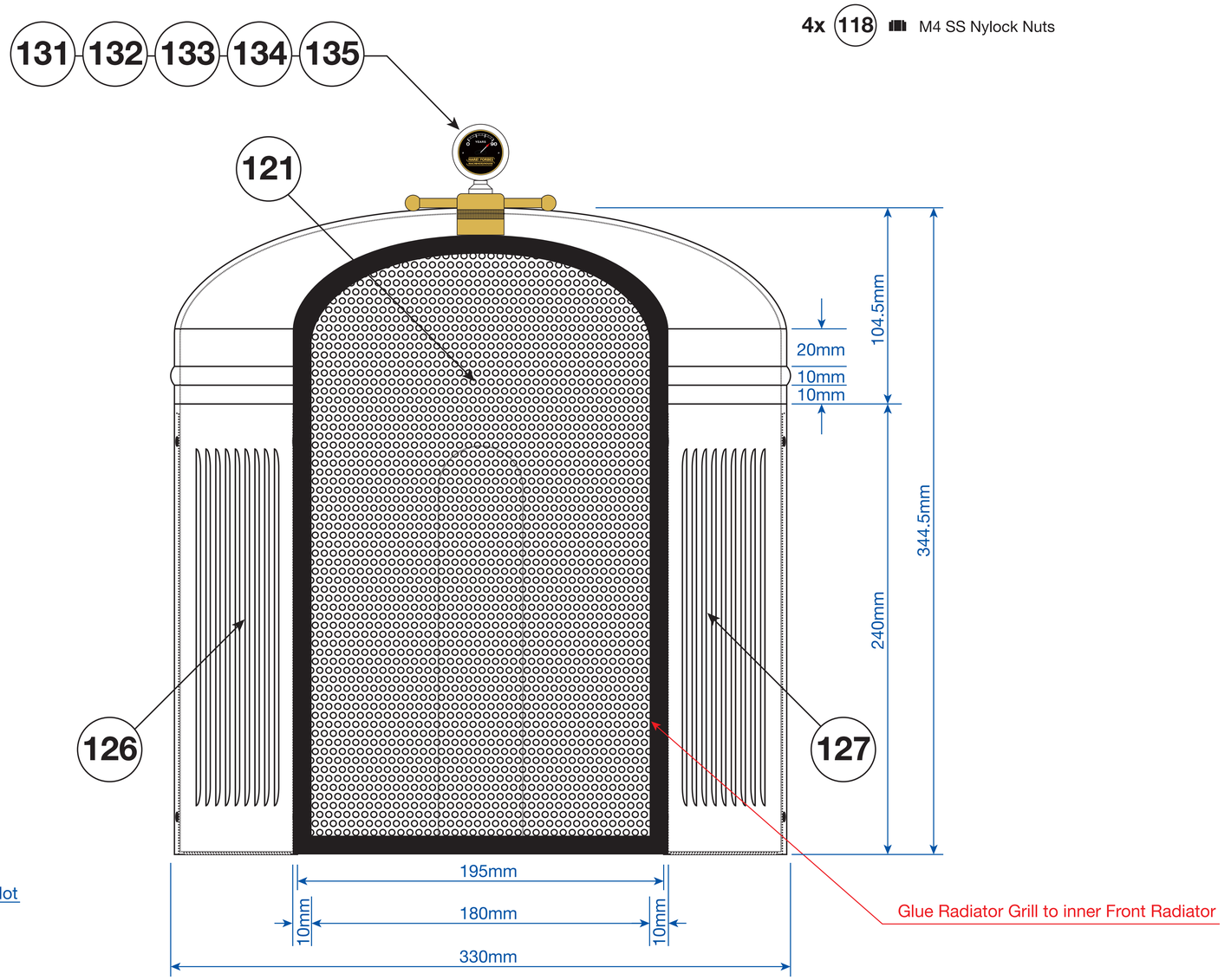
4x 110 M6 x 1.0mm Nut Inserts
4x 112 M6 x16mm SS Button Socket Head Scews
4x 113 7G x 12mm Drywall Screws
2x 115 M4 x10mm Countersunk Socket Head Scews
4x 116 M4 x16mm SS Button Socket Head Scews
4x 117 M4 SS Washers
4x 118 M4 SS Nylock Nuts



2x 128 **Magnetic Strip 230 x 13mm**
13mm wide Self-Adhesive Magnetic Strip

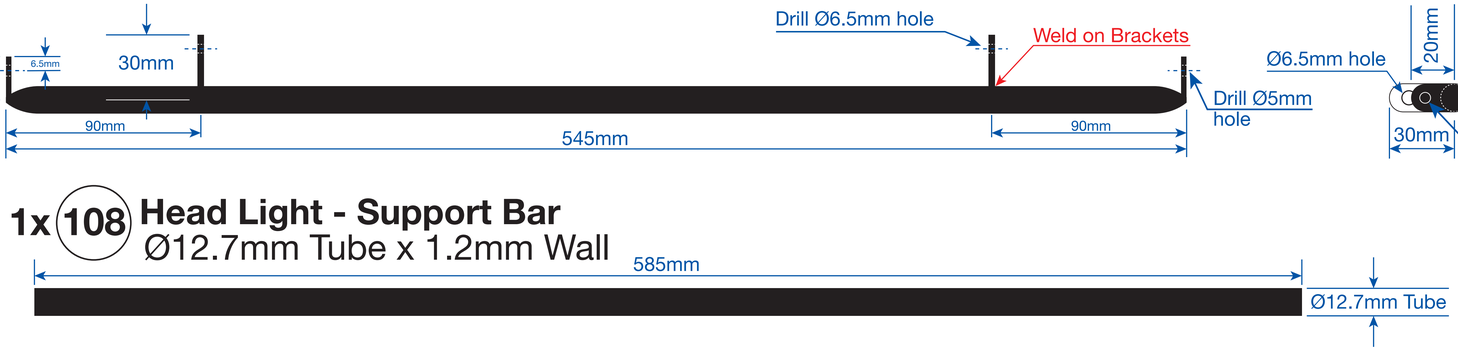






TEMPLATES

1x 108 Head Light - Support Bar
Ø12.7mm Tube x 1.2mm Wall



2x 109 3mm thick steel plate Head Light Brackets

TEMPLATES
Radiator & Grill

TEMPLATE	DRAWING: 22
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Radiator: 35 x 784mm (1mm Mild Sheet Steel)
62 x 200mm (1mm Mild Sheet Steel)
62 x 784mm (1mm Mild Sheet Steel)
4 x (M6 x 1.0mm Nut Inserts)

Radiator Grill: 318 x 188mm (1.6mm Aluminium Perforated Pattern 218 - 3.2mm Round Holes, 4.8mm staggered pitch)

Light Support Bar: 585mm x (Ø12.7 x 1.2mm Round Commercial ERW Tube)
60mm x (6mm x 19mm Steel Flat Bar)

Raiditor Buck: 390 x 325mm x (17mm thick Timber Board Formply)
198 x 328mm x (6mm thick Timber Marine Ply)
20 x (8G x 30mm Countersunk Chipboard Screws)

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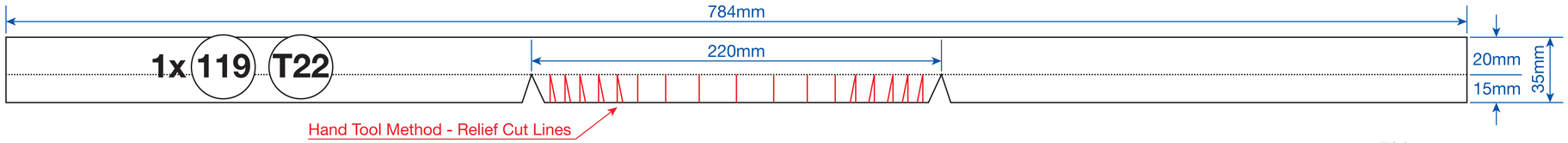
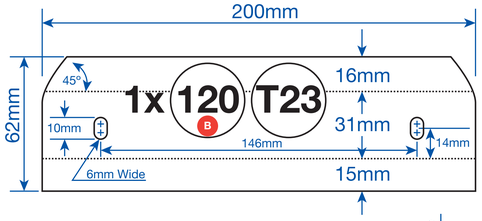
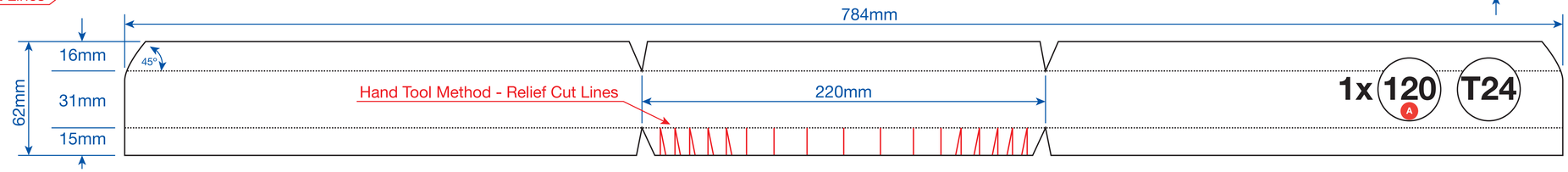
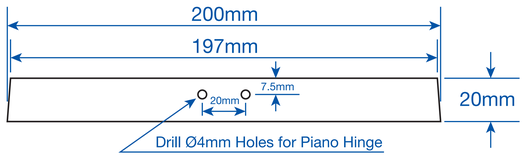
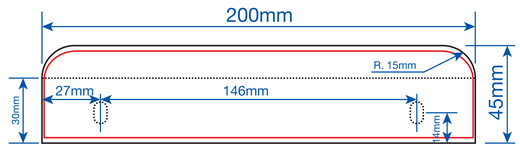
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)











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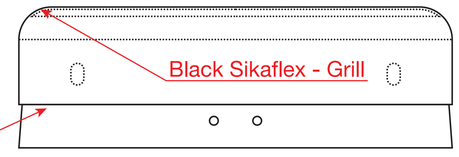
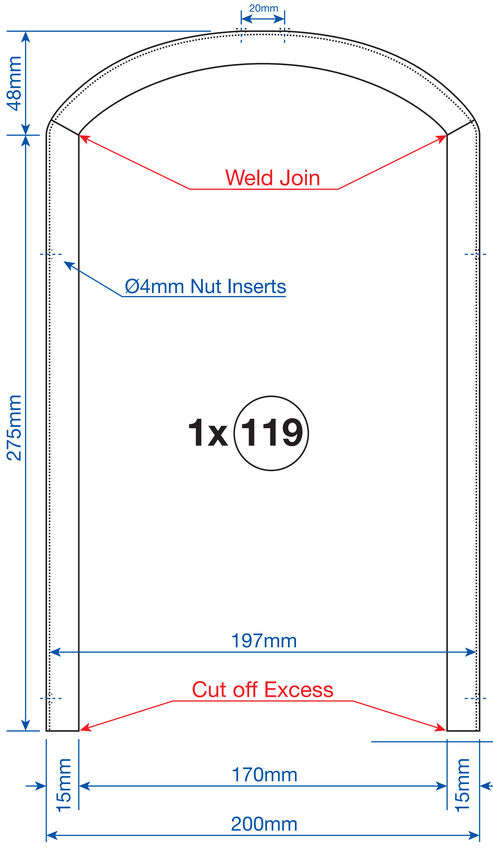
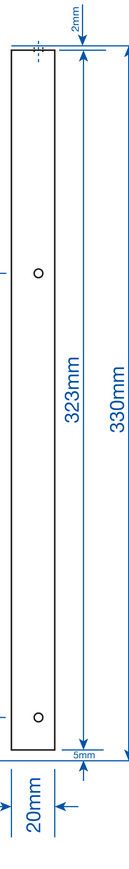
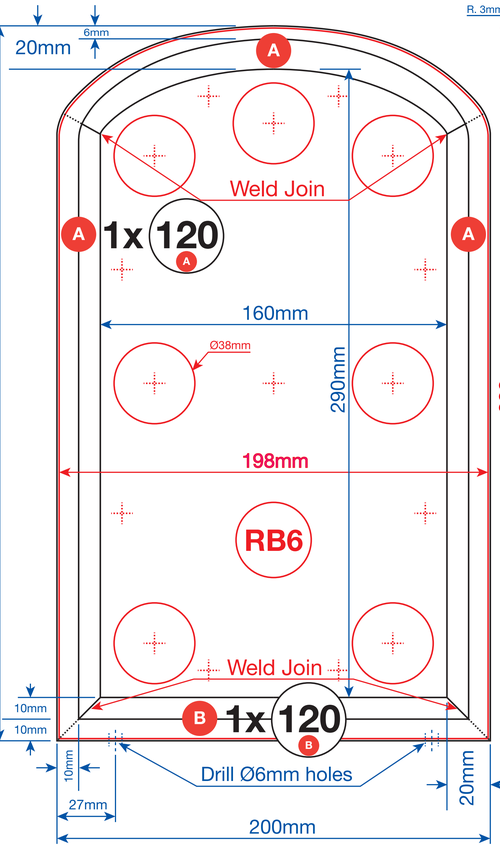
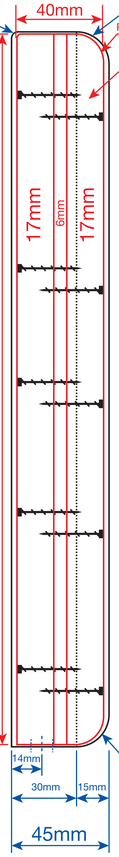


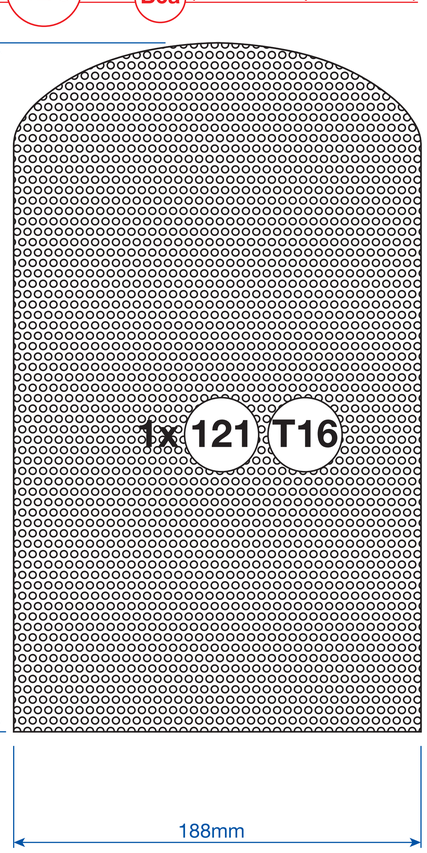
RB6 2x 17mm FormPly & 1x 6mm Marine Plywood
20x B6a (8G x 30mm Chipboard Screws)

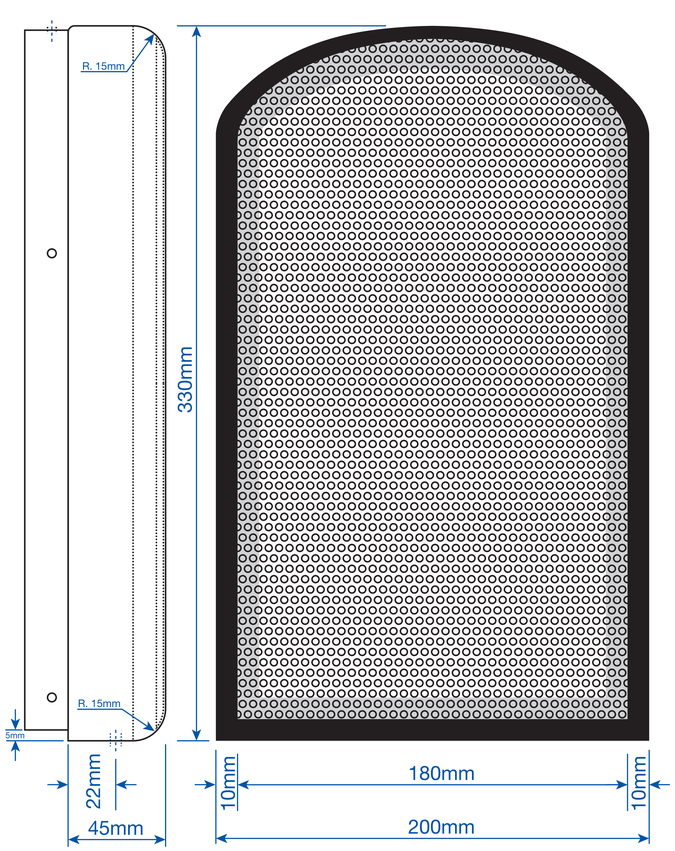


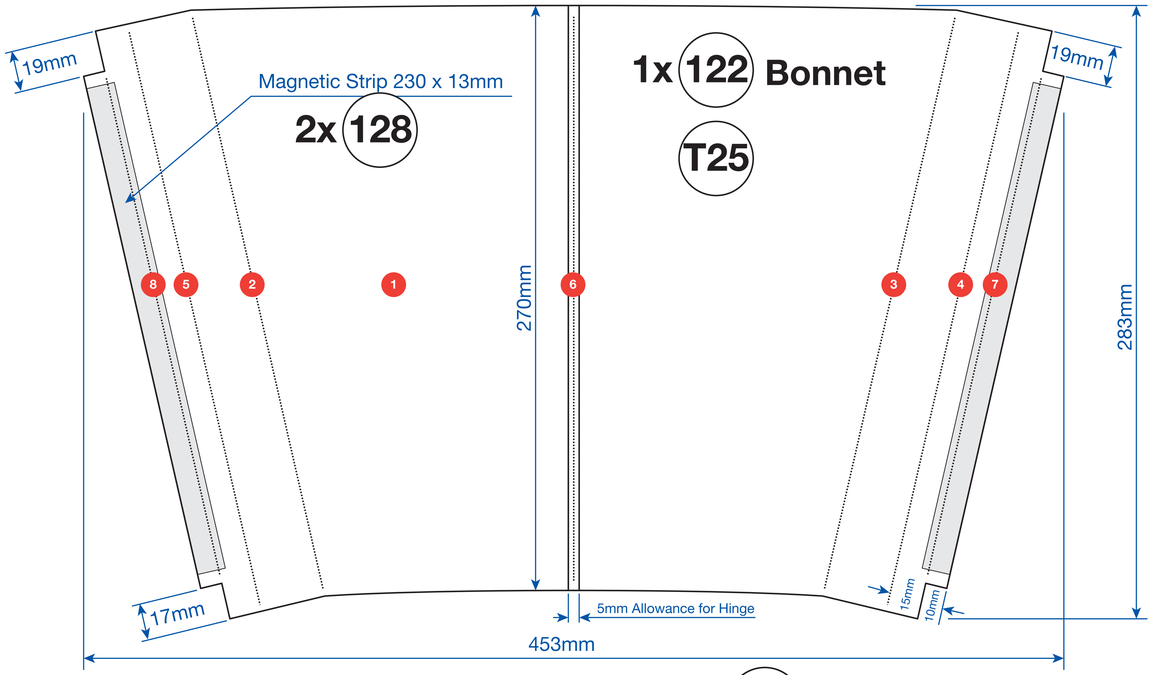




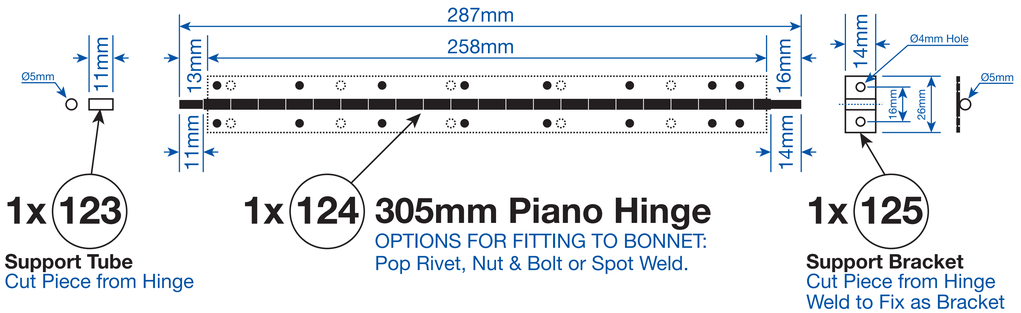








TEMPLATE T25

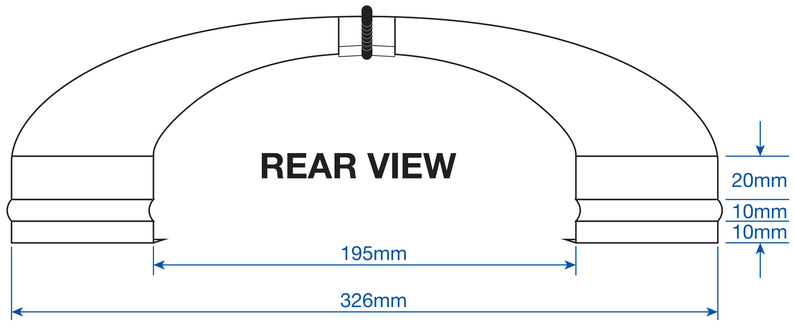


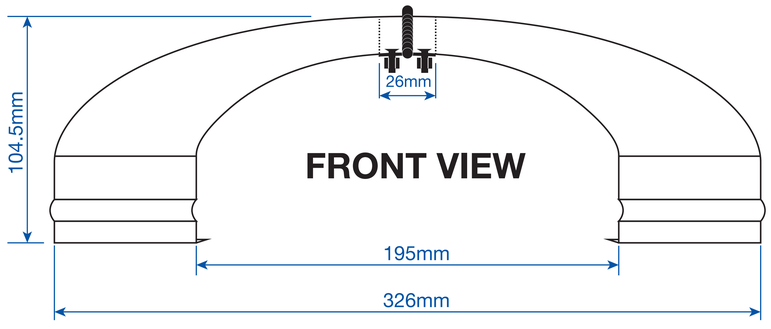
1x 123 Support Tube
Cut Piece from Hinge

1x 124 305mm Piano Hinge
OPTIONS FOR FITTING TO BONNET:
Pop Rivet, Nut & Bolt or Spot Weld.

1x 125 Support Bracket
Cut Piece from Hinge
Weld to Fix as Bracket
Drill Ø4mm Holes and countersink

2x 128 Magnetic Strip 230 x 13mm
Everhang 10m x 13mm Self-Adhesive Magnetic Strip





FORMING INSTRUCTIONS

1. Roll Curve into Bonnet
2. Fold down approx 20 degrees to fit buck
3. Fold down approx 20 degrees to fit buck
4. Swage using 3/8” Bead Rolls
5. Swage using 3/8” Bead Rolls
6. Cut Centre of Bonnet - with 5mm allowance for hinge
7. Fold down 90 degrees
8. Fold down 90 degrees

Flatbed Felix
PEDAL CAR BUILD

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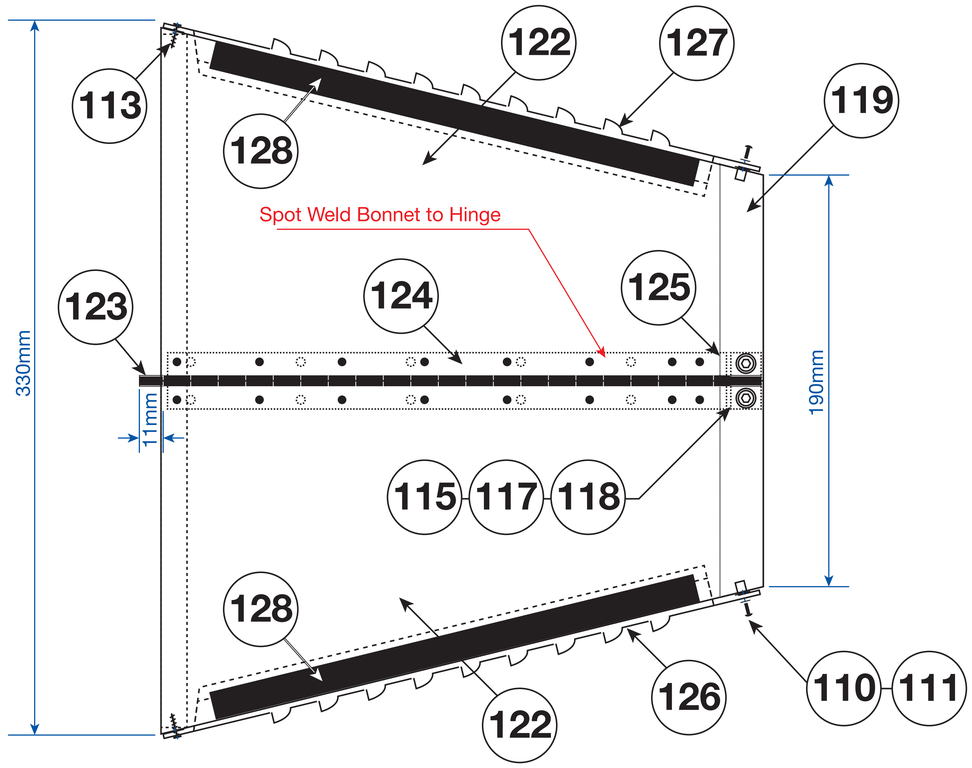
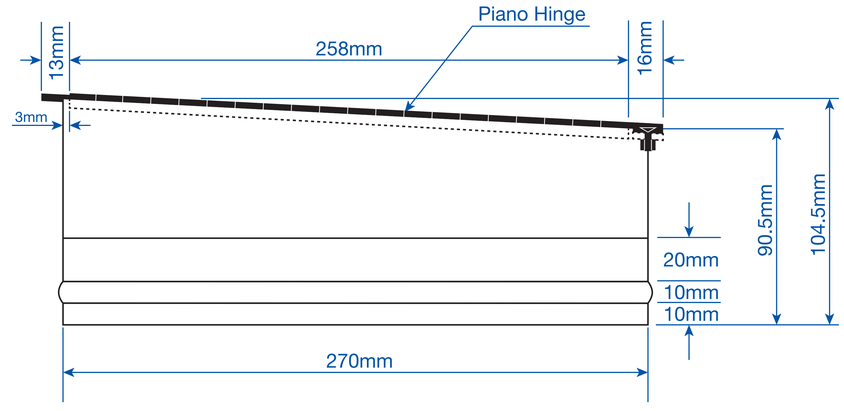
TEMPLATES
Bonnet Parts

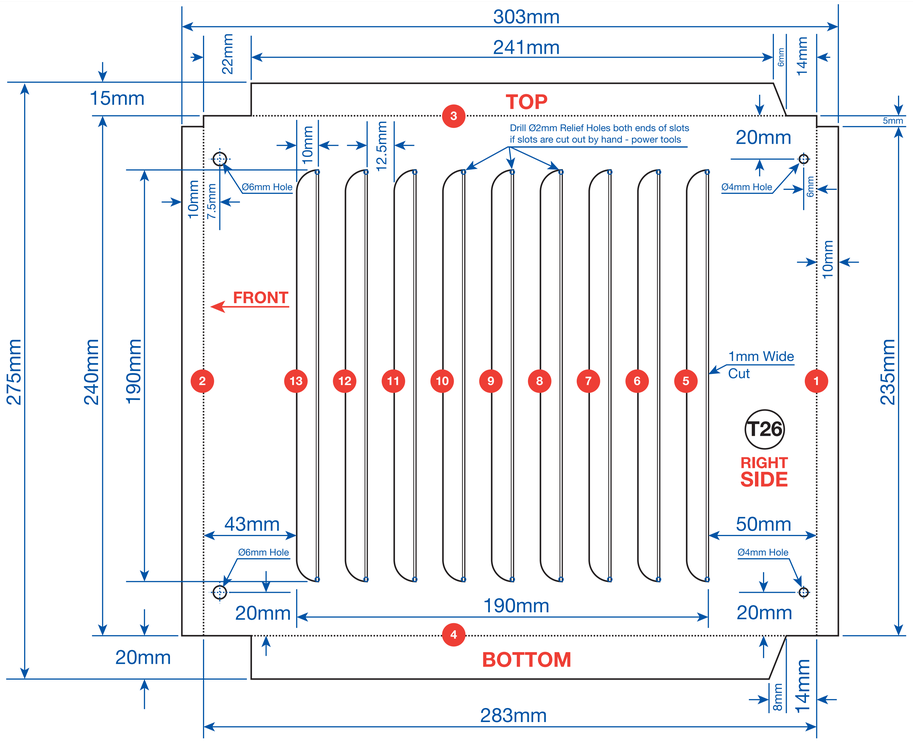
TEMPLATE	DRAWING: 23
SCALE: 1:1	TOLERANCE ± 2mm

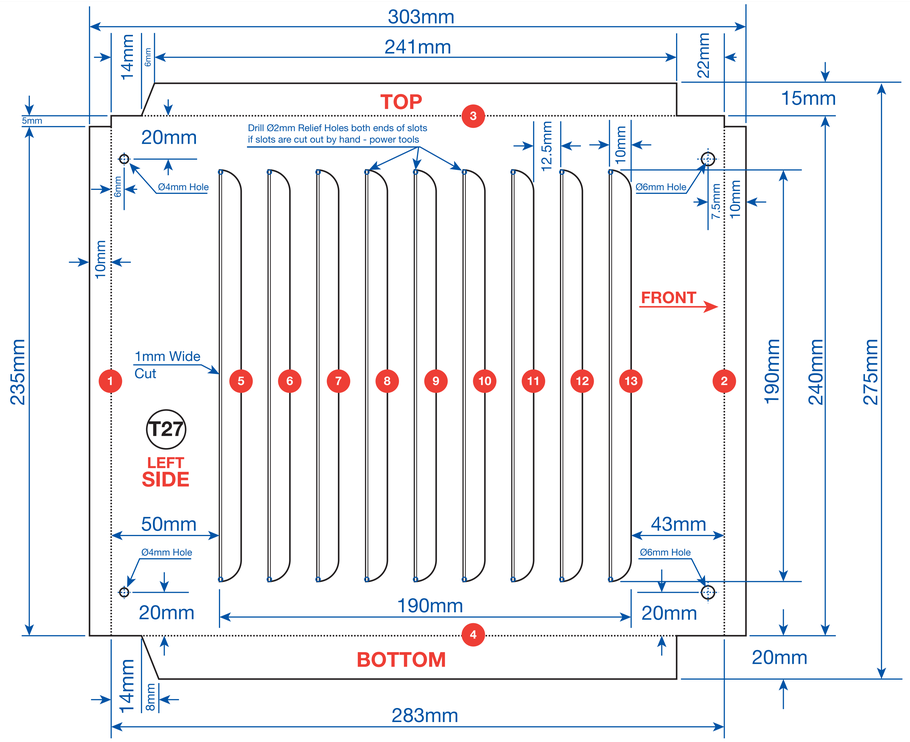
MATERIALS LIST:
Bonet Parts: 453 x 290mm (1mm Thick Mild Sheet Steel)
Bonnet Piano Hinge: 305mm Piano Hinge
Magnetic Strip: 2 x 230mm (13mm wide Self-Adhesive Magnetic Strip)

0 10 20 30 40 50 60 70 80 90 100 Scale (mm)









1x 126 RIGHT SIDE TEMPLATE T26

INSIDE VIEW

1x 127 LEFT SIDE TEMPLATE T27

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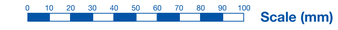
TEMPLATES
Bonnet Side Panels

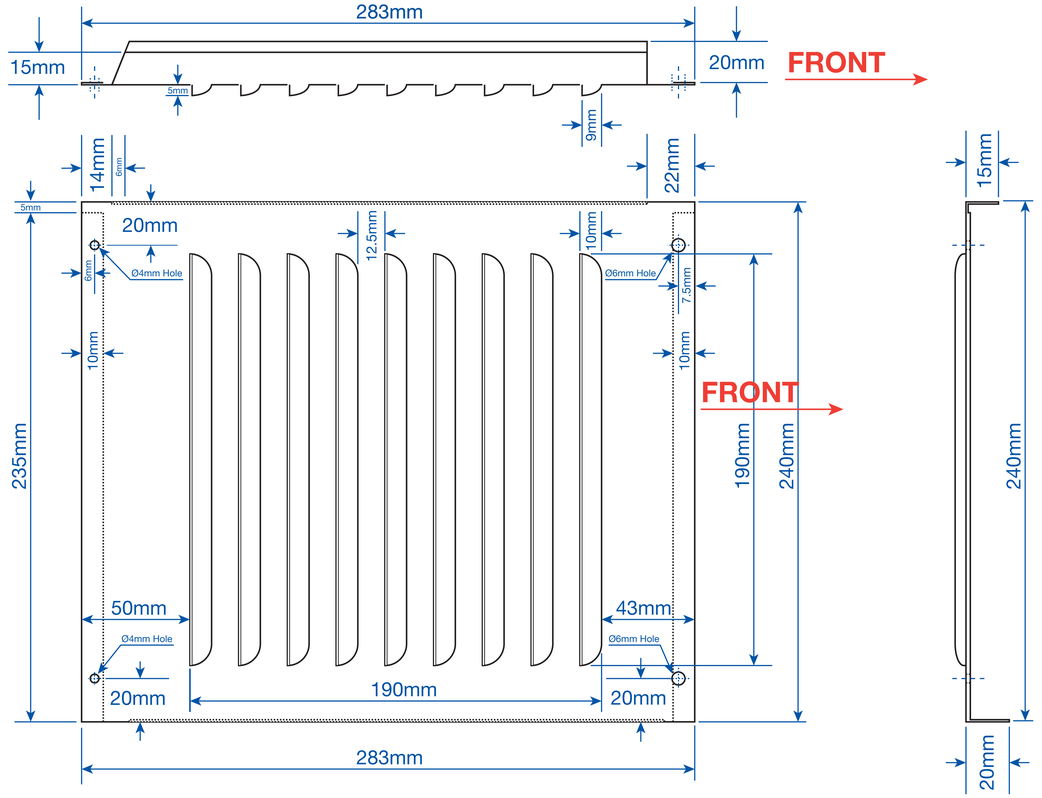
TEMPLATE	DRAWING: 24
SCALE: 1:1	TOLERANCE ± 2mm

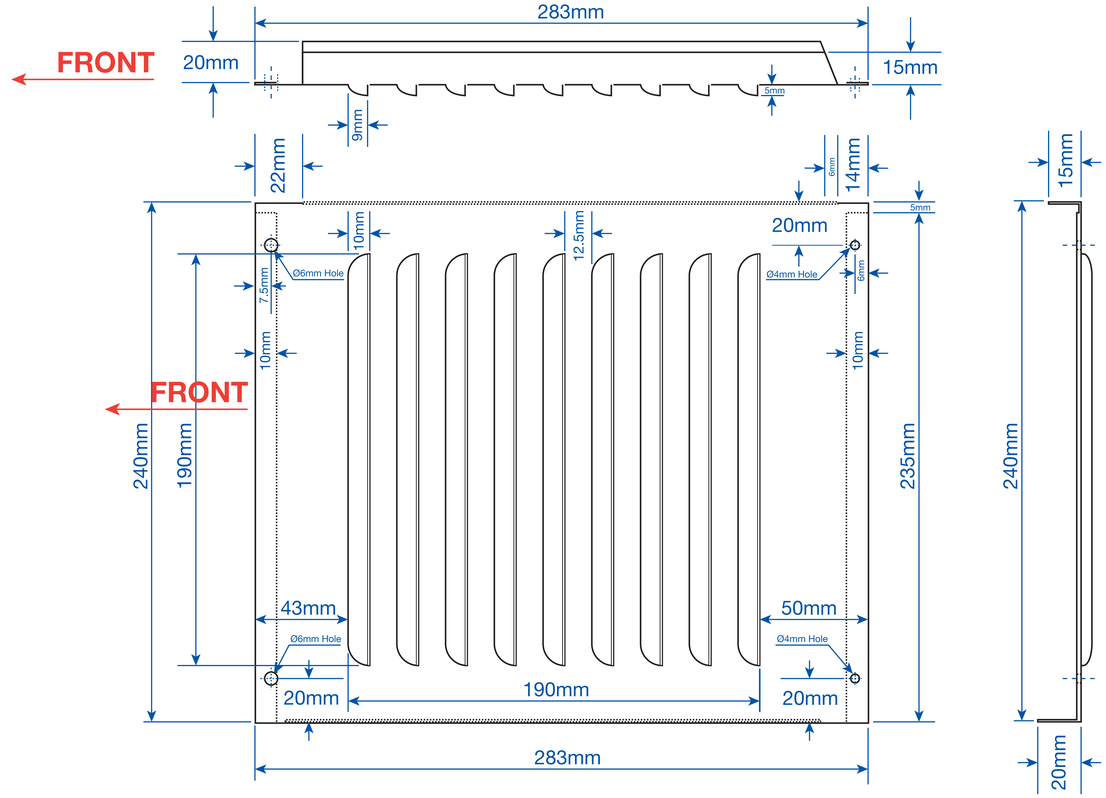
MATERIALS LIST:
Bonnet Side Panels: 610 x 275mm of 1mm Thick Mild Sheet Steel



FORMING INSTRUCTIONS

1. Fold up safety fold and form flat
2. Fold up safety fold and form flat
3. Fold up 90 degrees
4. Fold up 90 degrees
5-13. Use the Lourve Hammer Form to Form all Lourves down with a forming tool and hammer.
   - Right Side Template - work Right-Left on hammer form
   - Left Side Template - work Left-Right on hammer form





1x 126 RIGHT - BONNET SIDE PANEL

FRONT VIEW

1x 127 LEFT - BONNET SIDE PANEL

BONNET SIDE PANEL
LOUVRE HAMMER FORM

BONNET SIDE PANELS
LOUVRE HAMMER FORM

TEMPLATE	DRAWING: 25
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
240 x 115mm (35mm thick hardwood)
240 x 40mm (5mm Plate steel for End Cap)
188 x 25mm (1mm Thick Sheet steel for Louvre Stop)
238mm (13x13mm Square Tube for Louvre Stop)
7 x (8G x 20mm Countersunk Rib Head Chipboard Screws)

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0 10 20 30 40 50
Scale (mm)

240mm

115mm

Using 1mm Thick Cut-off Disc with Angle Grinder
Make 1mm x 6mm deep x 190mm wide Slot

TEMPLATE

1x B9 — TB9

240 x 115mm (35mm thick hardwood)

190mm

23mm

22.5mm

9mm

Use a 10mm Cove
Router Cutter

14mm

25mm

190mm

25mm

238mm

1x B12 13x13mm x 238mm Square Tube

13mm

TEMPLATE

TB13

1x B13 188mm x 25mm x 1mm Thick Steel Sheet

5mm
13mm
7mm
25mm

10mm
15mm
10mm

6mm
35mm
40mm
5mm

7x B11 8G x 20mm Countersunk
Rib Head Chipboard Screws

Make 1mm x 6mm deep x 190mm wide Slot
for inserting a 1mm thick sheet steel Louvre Stop

22.5mm
7mm
9mm
6mm
10mm
15mm
10mm
35mm
40mm
5mm

Use a 10mm Cove
Router Cutter

1x B12 1x B13 Make Louvre Stop
Tack-Weld sheet steel to top
side of square tube

1x B10 240mm x 40mm x 5mm Thick Steel Plate
End Cap

VALANCE - TEMPLATE

TEMPLATE	DRAWING: 26
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Valance: 150 x 300mm
(1mm sheet mild steel)

Flatbed Felix PEDAL CAR BUILD
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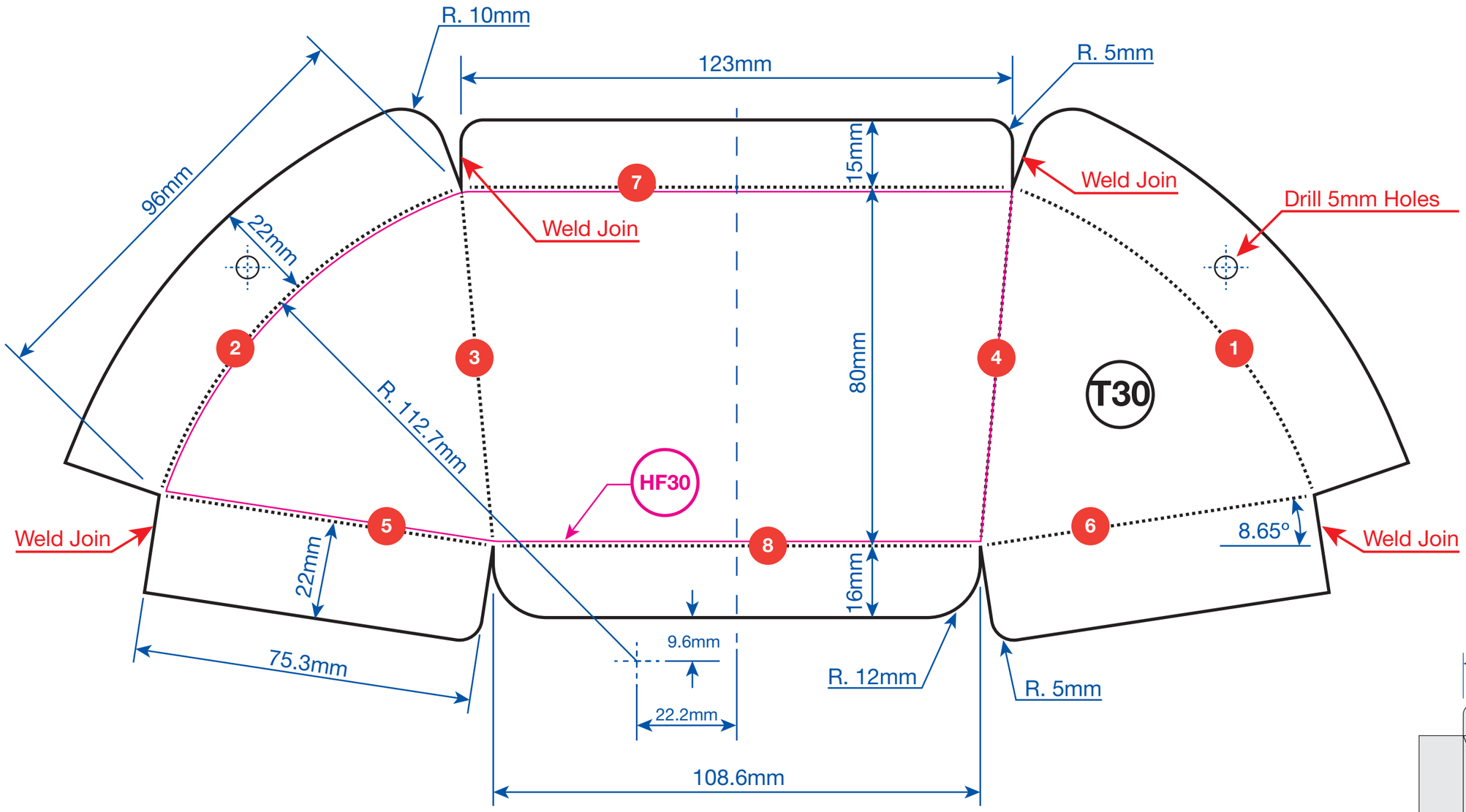
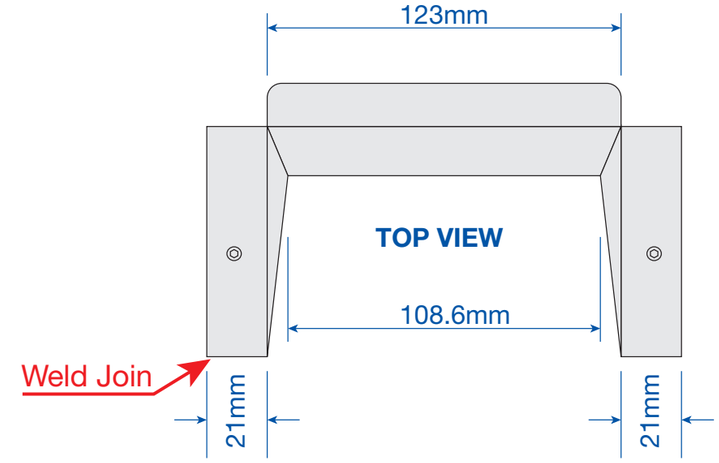
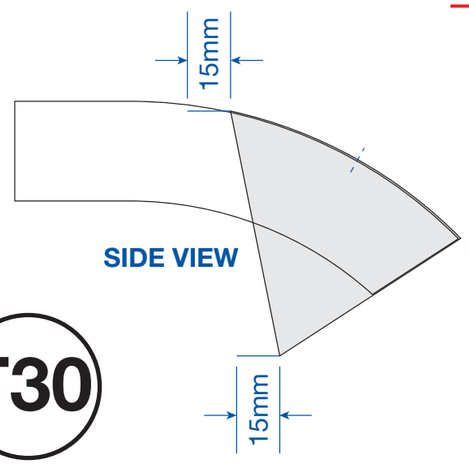


0 10 20 30 40 50
Scale (mm)

1x129





Machine Method - INSTRUCTIONS

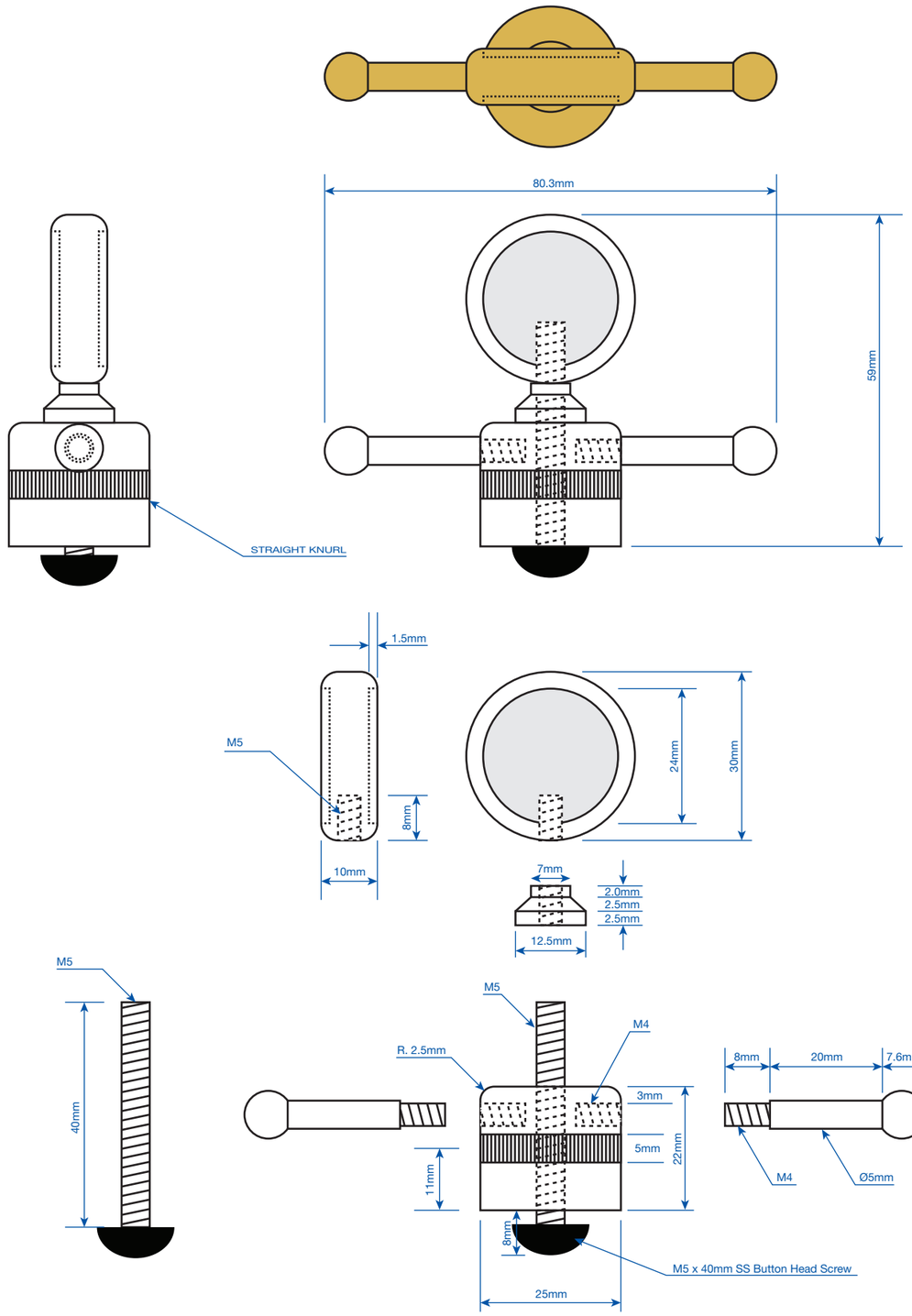
1. Fold 1 & 2, initiate the fold with the Electric Bead Roller with Top Tipping Wheel & Blank Lower Die. Use Round Jaw Shrinker to form the radius curve.
2. Fold 3 & 4, Use 100mm Vice Brake Jaws with Bench Vice
3. Fold 5 & 6, Use 100mm Vice Brake Jaws with Bench Vice
4. Fold 7 & 8, Use 100mm Vice Brake Jaws with Bench Vice
5. Requires metal finishing with hand tools & seaming pliers if required

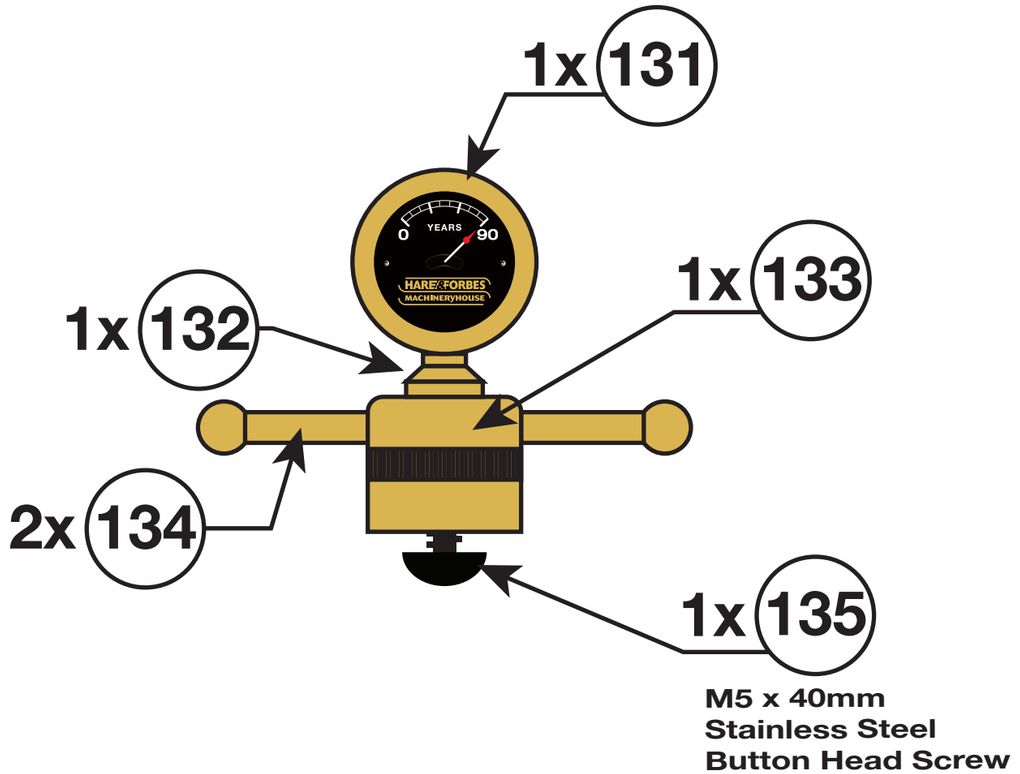
Hand Tool Method - INSTRUCTIONS

1. Cut out HF30 Template and make 2 x 17mm thick Timber pieces
2. Using a Bench Vice - Clamp the Valance Metal piece in the middle of 2 x HF30 Hammer Forms Timber pieces
3. Fold 1, 5, 6, & 7 using Hand Tools fold down
4 Release and re-postion Hammer Form - Folds 2 & 8 using Hand Tools fold down
5. Re-Position Hammer Form and fold up Folds 3 & 4 - refer to video for reference
6. Requires metal finishing with hand tools

VALANCE TEMPLATE T30

RADIATOR CAP TEMPERATURE GAUGE





Flatbed Felix
PEDAL CAR BUILD

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RADIATOR CAP TEMPERATURE GAUGE

TEMPLATE	DRAWING: 27
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
100mm x (Ø31.75mm Rod C385 Brass)
100mm x (Ø12.7mm Rod C385 Brass)
1 x (M5 x 40mm Stainless Steel Button Head Screw)

0 10 20 30 40 50
Scale (mm)

WOOD TRAY & DOOR ASSEMBLY

PLAN 6	DRAWING: 28
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
Tray Base: 1200 x 845mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
9 x (8G x 30mm Chipboard Screws)
4 x (8G 20mm Chipboard Screws)
6 x (8G 25mm Chipboard Screws)

Latch Plate: 2 x (100 x 33mm x 1mm Thick Mild Sheet Steel)
Slide Brackets: 2 x (15 x 39mm x 1mm Thick Sheet Steel)
Female Brackets: 2 x (13 x 47mm x 1mm Thick Sheet Steel)
Sliding Bar: 2 x (138 x 13 x 3mm Thick Mild Steel Flat Bar)
Door Handles: 4 x (Ø14mm x 22mm Matte Black Finger Post - Tap out to M6)
Threaded Rod: 2 x (94mm length x M6 Threaded Rod)
Screws: 8 x (7G x 12mm Yellow Zinc Plated Drywall Screws)
4 x (4G x 12mm Timber Screws)

Tray Hinges: 6 x (Hinges 60 x 100mm)
36 x (8 GA x 1/2" STS Countersunk Screws)

Toggle Latches: 2 x (60mm Toggle Latch)
10 x (8 GA x 1/2" STS Countersunk Screws)
4 x (8G 25mm Chipboard Screws)
2 x (Wooden Spacers 30 x 40 x 12mm AA Grade MHM Plywood)
Door Stops 2x 30x45mm 12mm thick plywood with 4 x 8G x 25mm Chipboard Screws

Door Frame: 550 x 810mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
108 x 810mm x (12mm AA Grade Mixed Hardwood Marine Plywood)
8 x 8G x 25mm Chipboard Screws & Timber Glue

Door Bottom Brace & Wedges: 1200mm x (Porta 30 x 30mm Pine DAR Timber)

Door Check: 360mm (12mm Leather Strap)
4 x (4.5mm Eyelets)
4 x (7G x 12mm Yellow Zinc Plated Drywall Screws)

Door Hinges: 2 x (610mm Nickel Plated Continuous Hinges)
48 x (4G 12mm Timber Screws)

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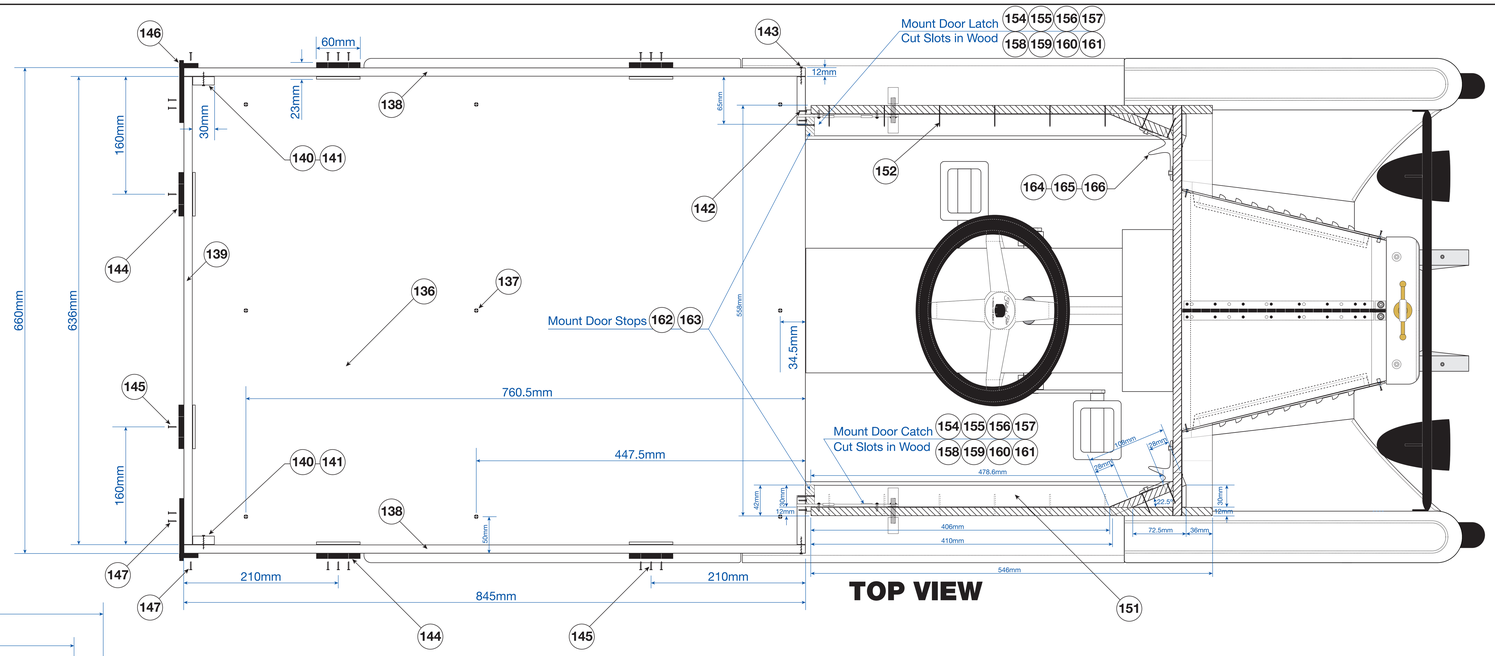
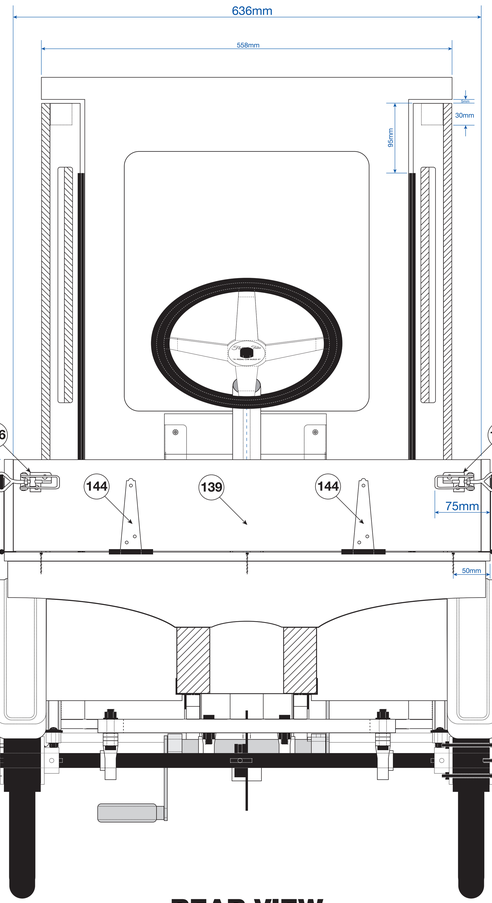
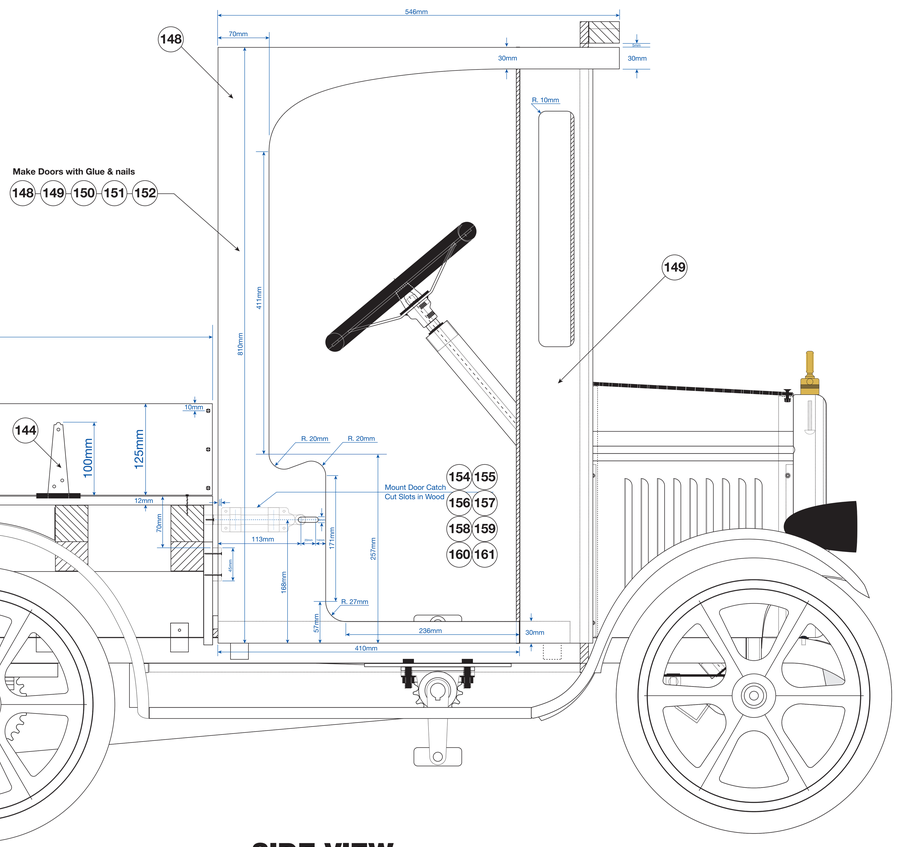


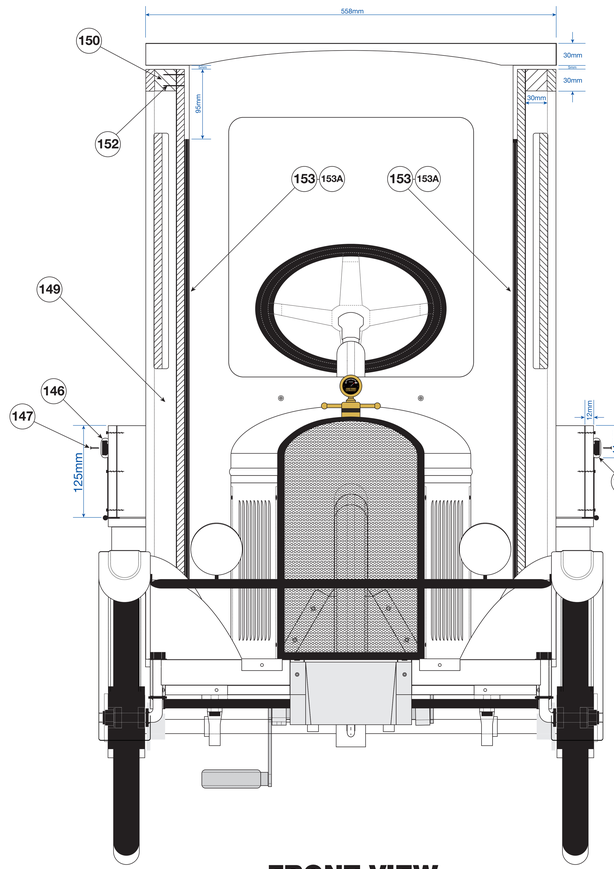
TOP VIEW



REAR VIEW



SIDE VIEW



FRONT VIEW

PARTS LIST

- 1x (136) **Wood Tray Base** 660 x 845mm
- 9x (137) **(8G x 30mm Chipboard Screws)**

12mm AA Grade Mixed Hardwood Marine Plywood

- 2x (138) **Side Wood Tray** 845 x 125mm
- 1x (139) **Tailgate of Wood Tray** 636 x 125mm
- 2x (140) **Tailgate End Supports** 30 x 125mm
- 4x (141) **(8G x 20mm Chipboard Screws)**
- 2x (142) **Wood Tray Returns** 65 x 125mm
- 6x (143) **(8G x 25mm Chipboard Screws)**

- 6x (144) **Hinges 60 x 100mm**
- 36x (145) **8 GA x 1/2" STS Countersunk Screws**
- 2x (146) **60mm Toggle Latches**
- 10x (147) **8 GA x 1/2" STS Countersunk Screws**

- 2x (148) **Doors** 12mm AA Grade Mixed Hardwood Marine Plywood
- 2x (149)

- 2x (150) **Door Wedge** 30 x 30mm Pine DAR Timber
- 2x (151) **Door - Bottom Brace** 30 x 30mm Pine DAR Timber

Mount Bottom Brace to doors with Glue & Screws

- 8x (152) **8G x 25mm Chipboard Screws**

- 2x (153) **610mm Nickel Plated Continuous Hinges**
- 48x (153A) 4G x 12mm Timber Screws

Door Latch

- 2x (154) **LATCH PLATE** 1mm Thick Sheet Steel
- 4x (155) **SLIDE BRACKET TEMPLATE** 1mm Thick Sheet Steel
- 4x (157) **DOOR HANDLES** Ø14mm Finger Posts M6 Thread
- 2x (156) **SLIDING BAR** 13mm x 3mm Thick Flat Bar
- 2x (158) **M6 Threaded Rod** 94mm long
- 8x (160) 7G x 12mm Yellow Zinc Plated Drywall Screws
- 4x (161) 4G x 12mm Timber Screws
- 2x (159) **FEMALE BRACKET TEMPLATE** 1mm Thick Sheet Steel

Door Stops

- 2x (162) 12mm Thick Marine Plywood
- 4x (163) 8G x 25mm Chipboard Screws

Door Check - Leather Strap with eyelets

- 2x (164)
- 4x (165) 7G x 12mm Yellow Zinc Plated Drywall Screws
- 4x (166) Ø4mm eyelets

TEMPLATES
Doors

TEMPLATE	DRAWING: 29
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Door Frame: (12mm AA Grade Mixed Hardwood Marine Plywood) 2440 x 1220mm sheet

Door Wood Brace & Wedges: 1200mm x (Porta 30 x 30mm Pine DAR Timber)
8 (8G x 25mm Chipboard Screws)
Timber Glue

Door Hinges: 2 x (610mm Nickel Plated Continuous Hinges)
48 x (4G 12mm Timber Screws)

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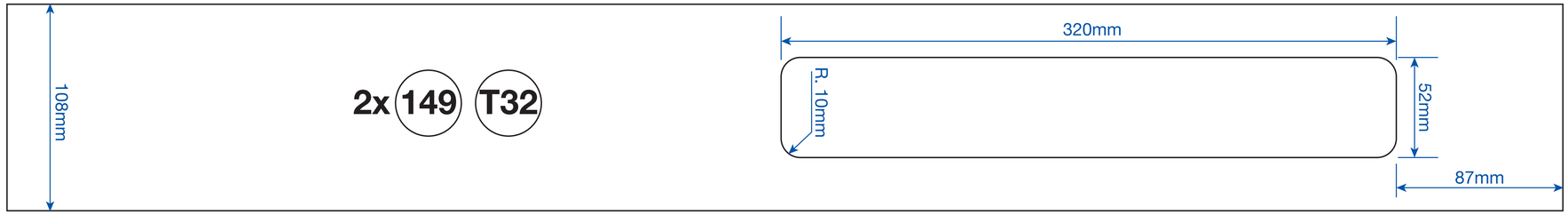
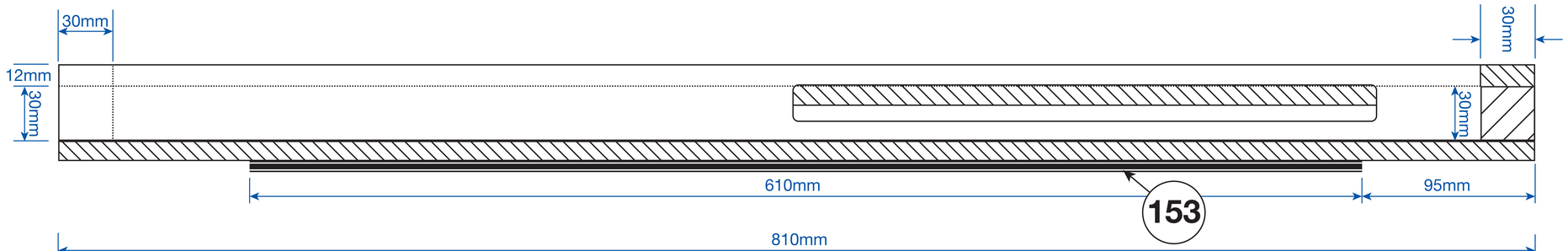
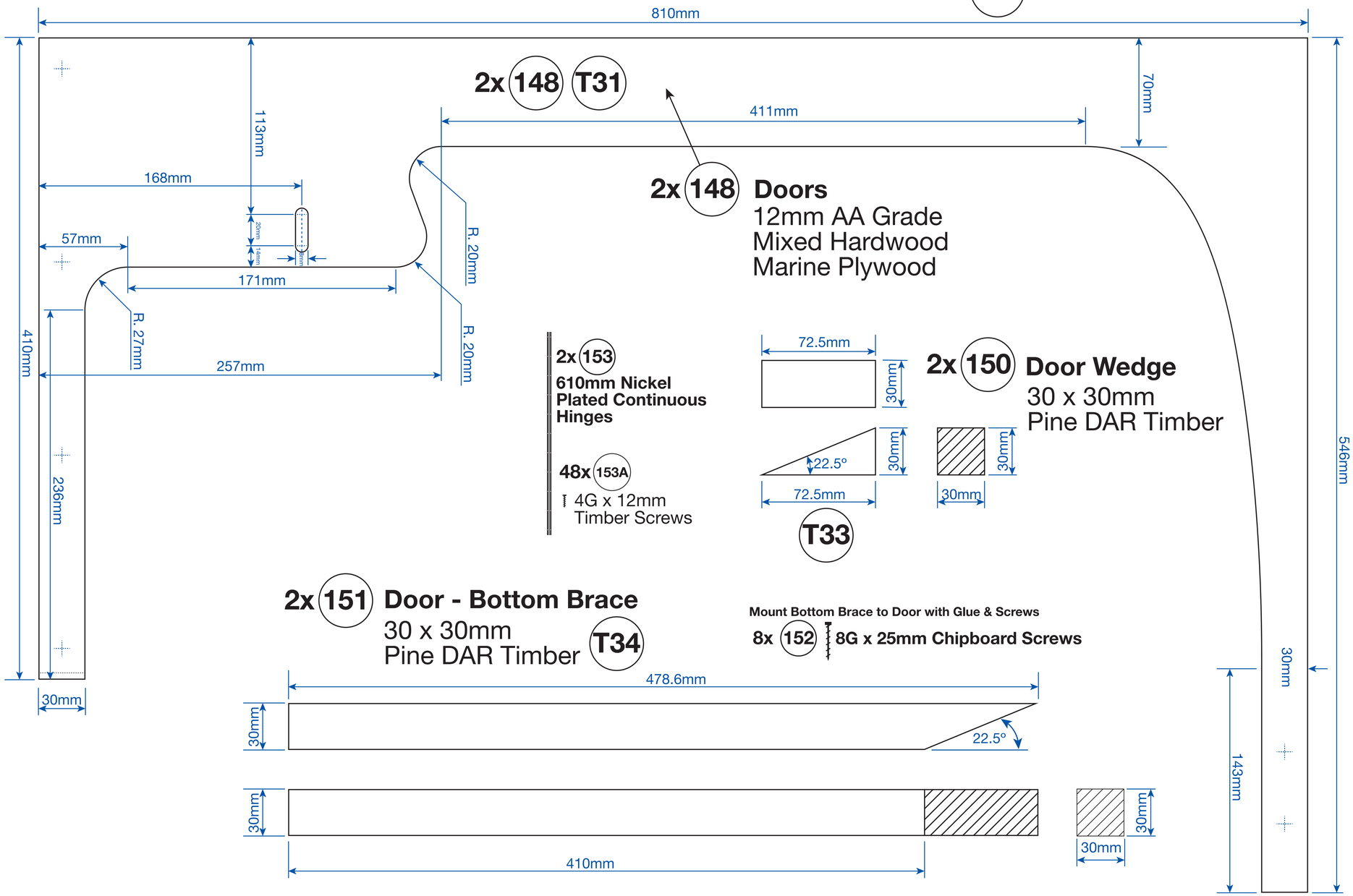
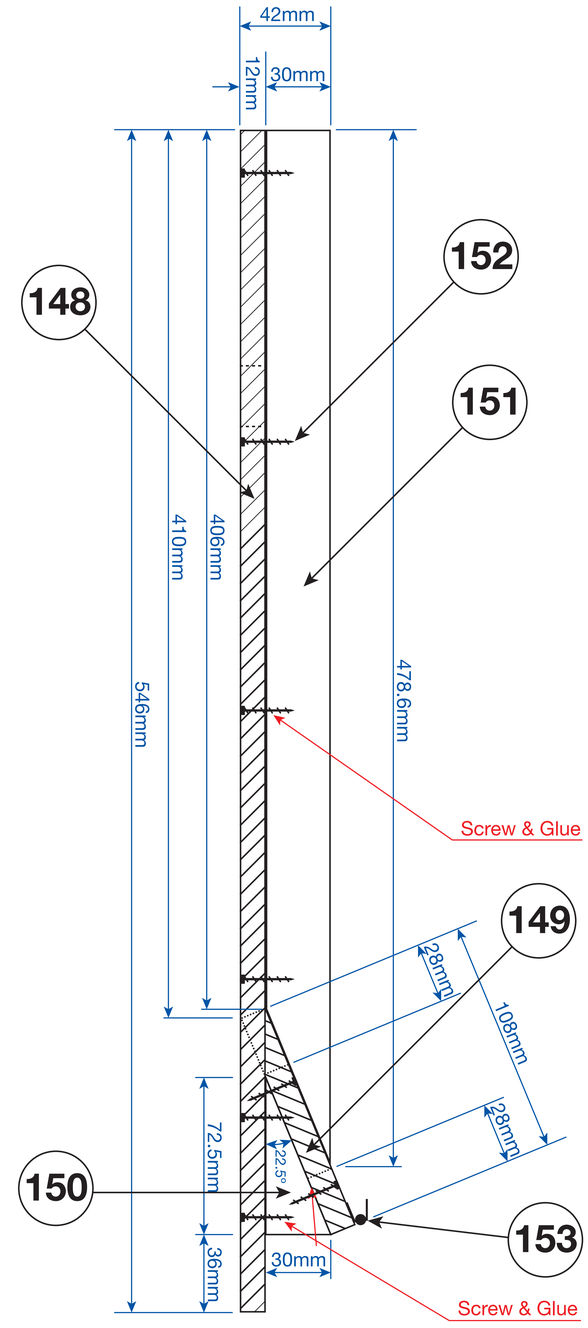
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)

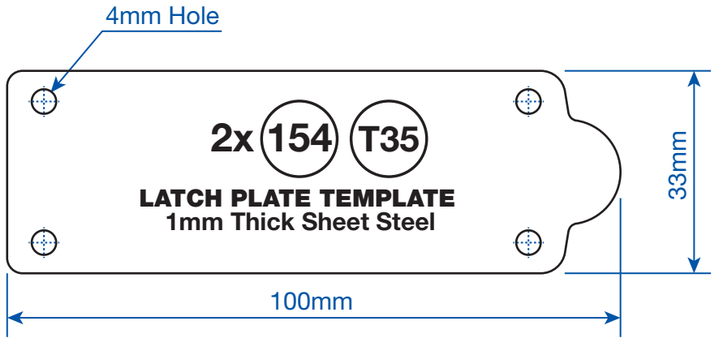


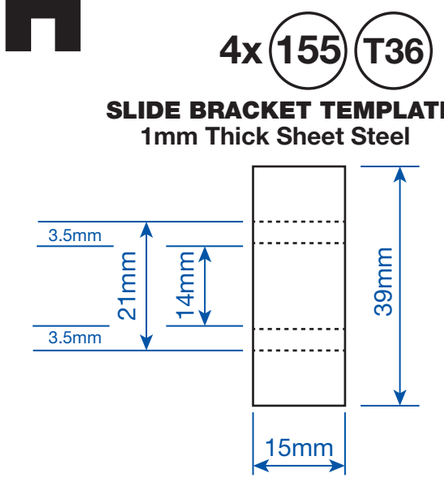


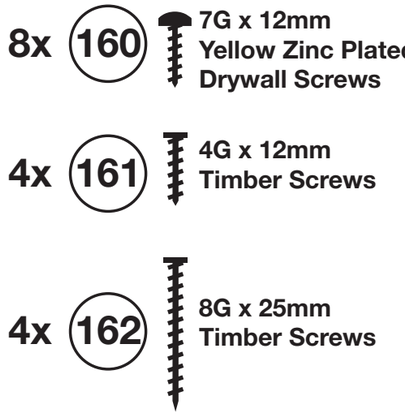


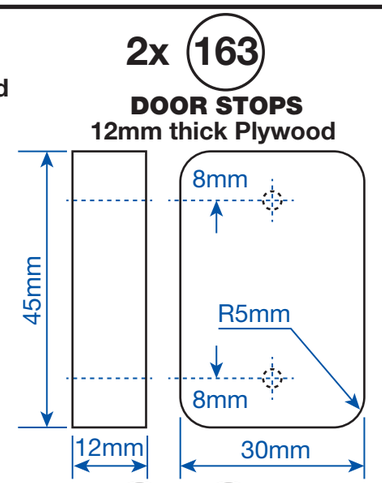


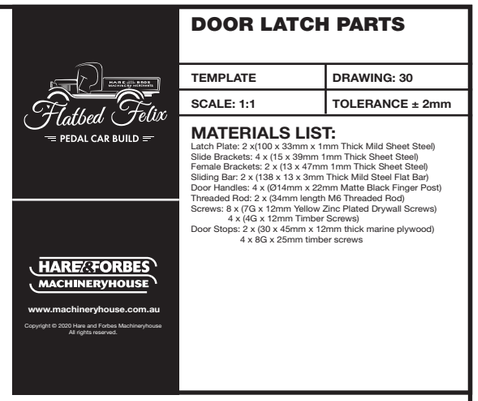
DOOR LATCH

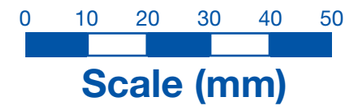




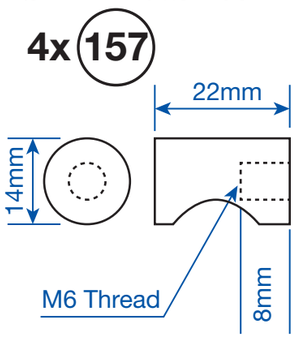


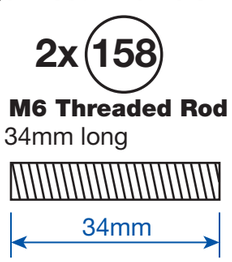


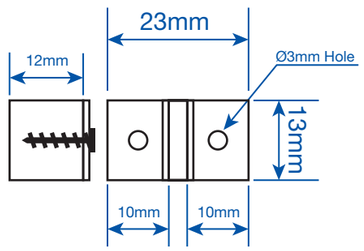


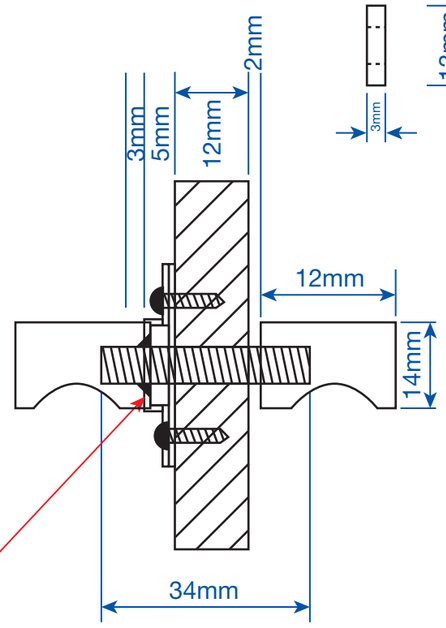


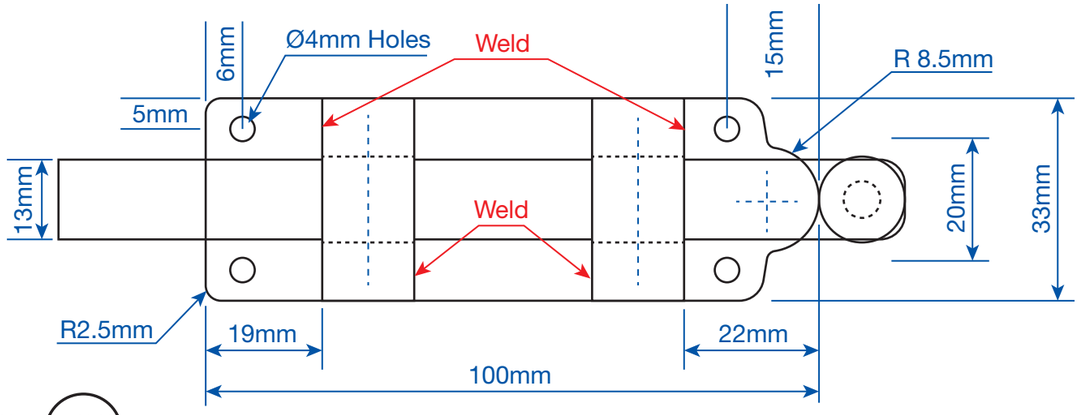
DOOR HANDLES
Ø14mm Matte Black Finger Post - M6 Hole

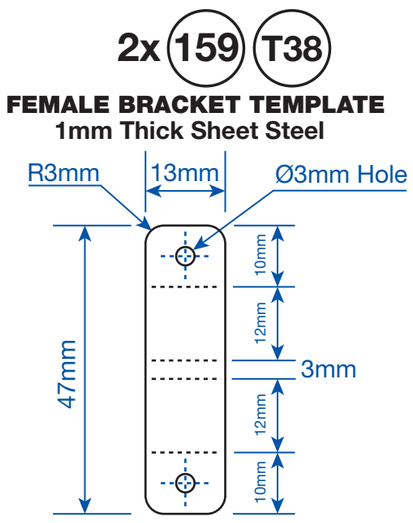


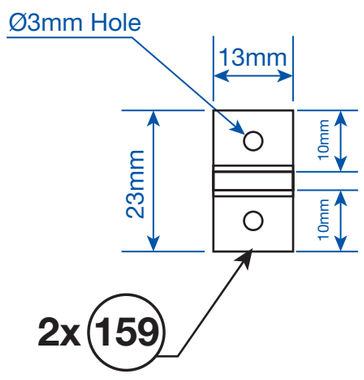


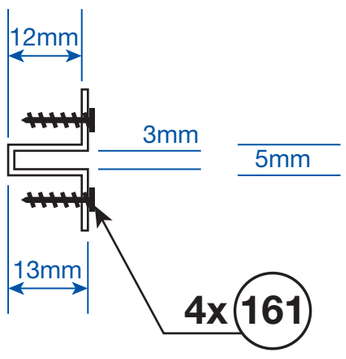


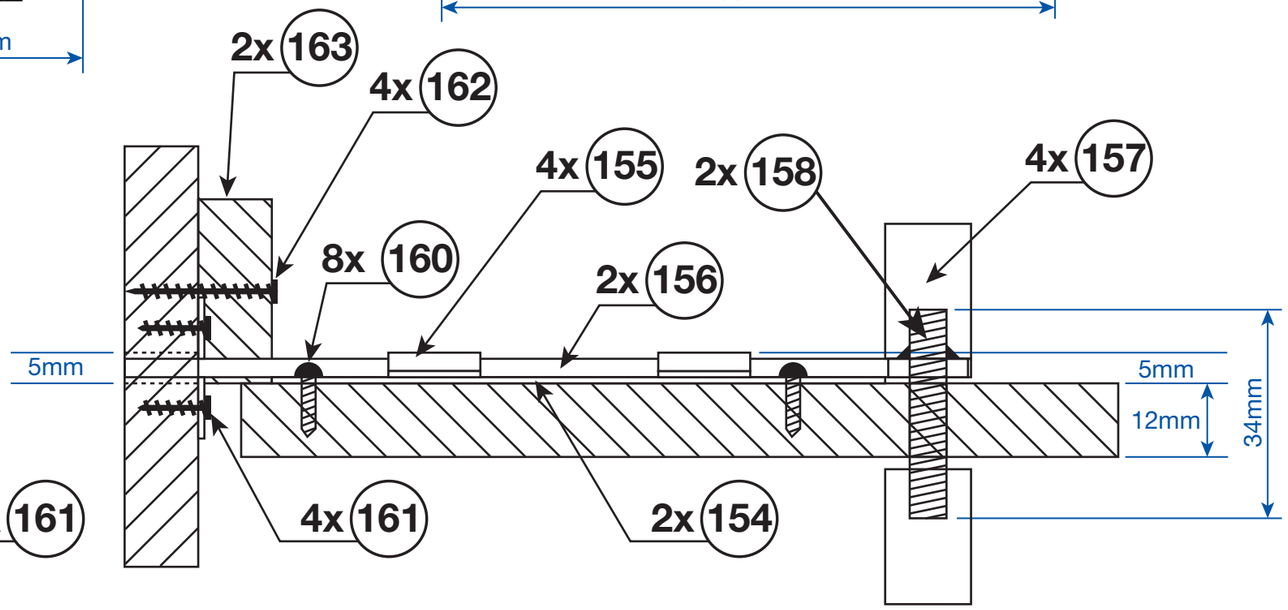












TEMPLATES
Seat

TEMPLATE	DRAWING: 31
SCALE: 1:1	TOLERANCE ± 2mm

MATERIALS LIST:
Seat Base: 490 x 460mm (19mm Thick Plywood)
6 x (8G 40mm Timber Screws)
Upholstery: 50mm thick Foam with stapled vinyl lining with double stiching.

Flatbed Felix PEDAL CAR BUILD

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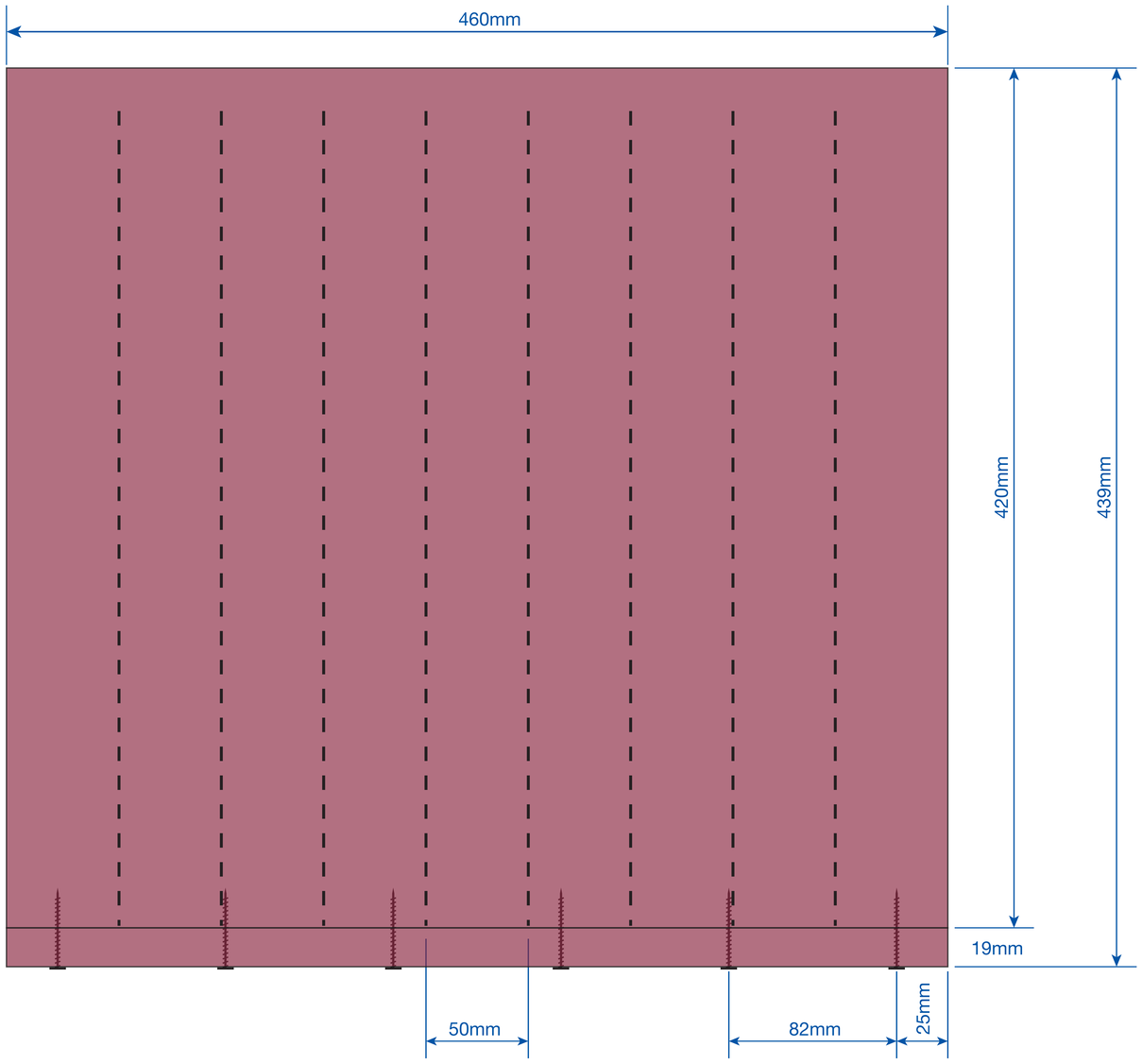
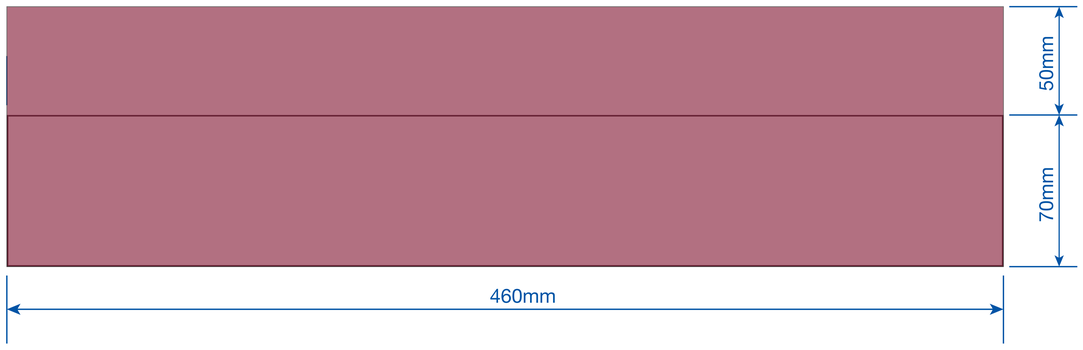
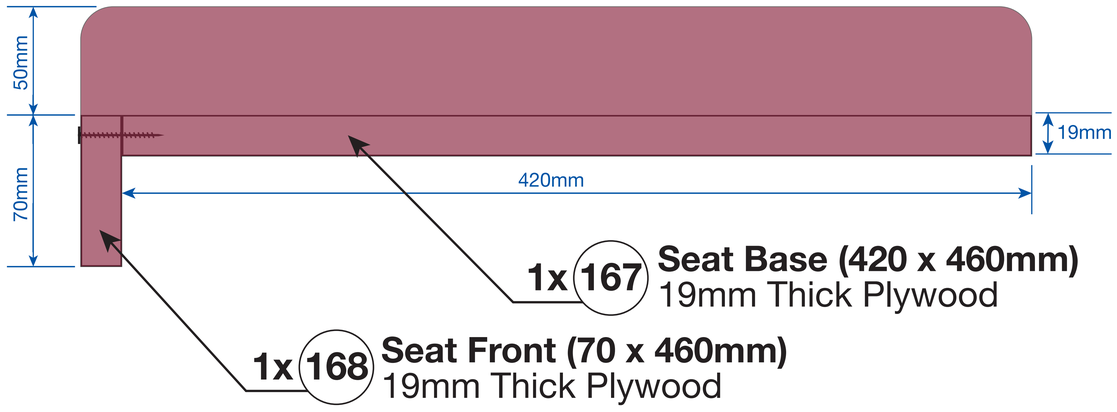
0 10 20 30 40 50 60 70 80 90 100 Scale (mm)



1x 169 Vinyl Trim Upholstery

6x 170 8G x 40mm Chipboard Screws





CUTTING GUIDE - 12mm Marine Plywood 1220 x 2440mm Sheet

TEMPLATE
12mm Plywood Sheet

TEMPLATE	DRAWING: 32
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
1220 x 2440mm - 12mm Marine plywood sheet

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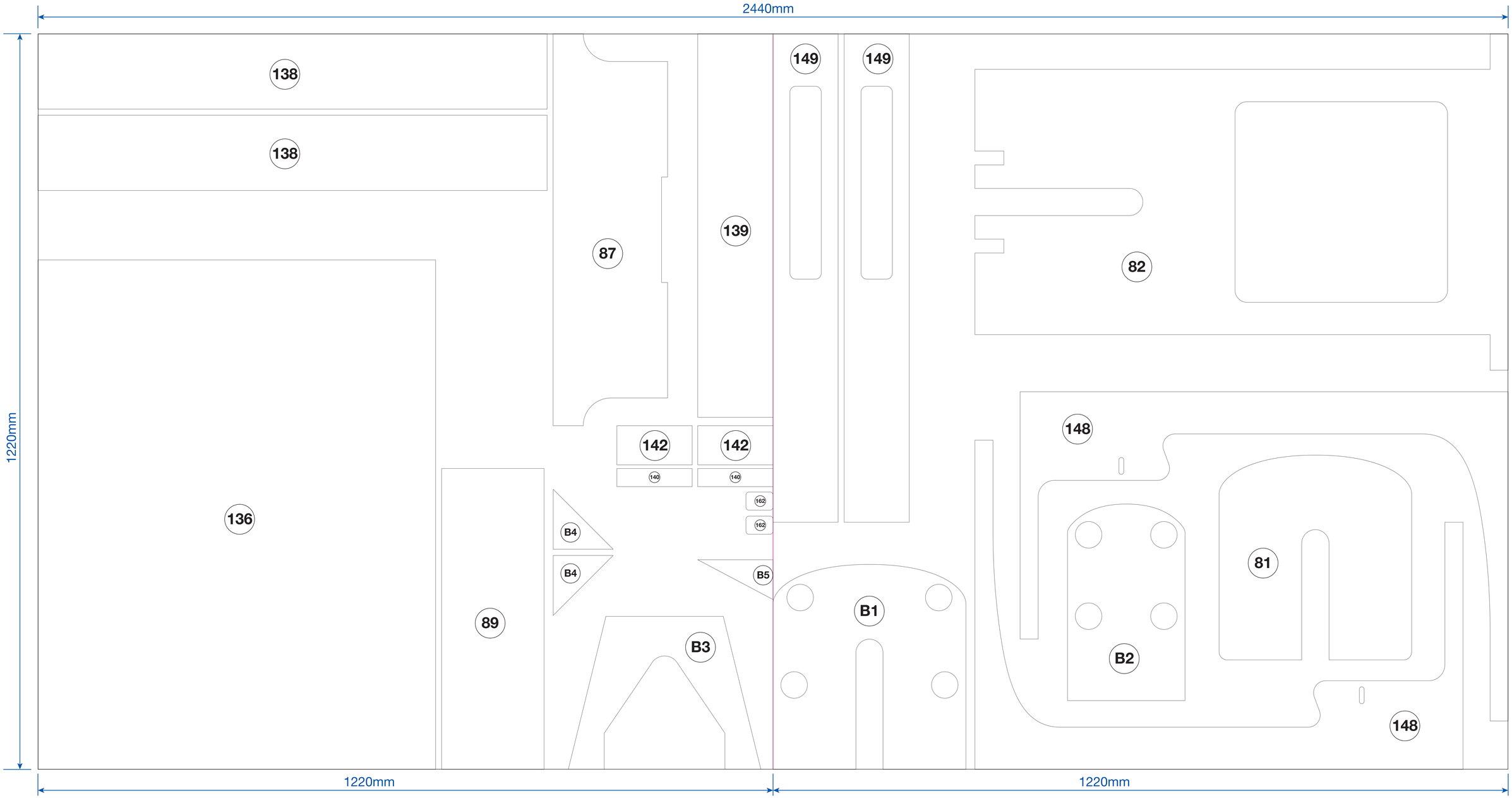
0 10 20 30 40 50
Scale (mm)



CUTTING GUIDE - 1mm Mild Steel Cold Rolled 1220 x 1220mm Sheet

TEMPLATE
1mm Mild Steel Sheet

TEMPLATE	DRAWING: 33
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
1220 x 1220mm - 1mm Mild Steel Cold Rolled sheet

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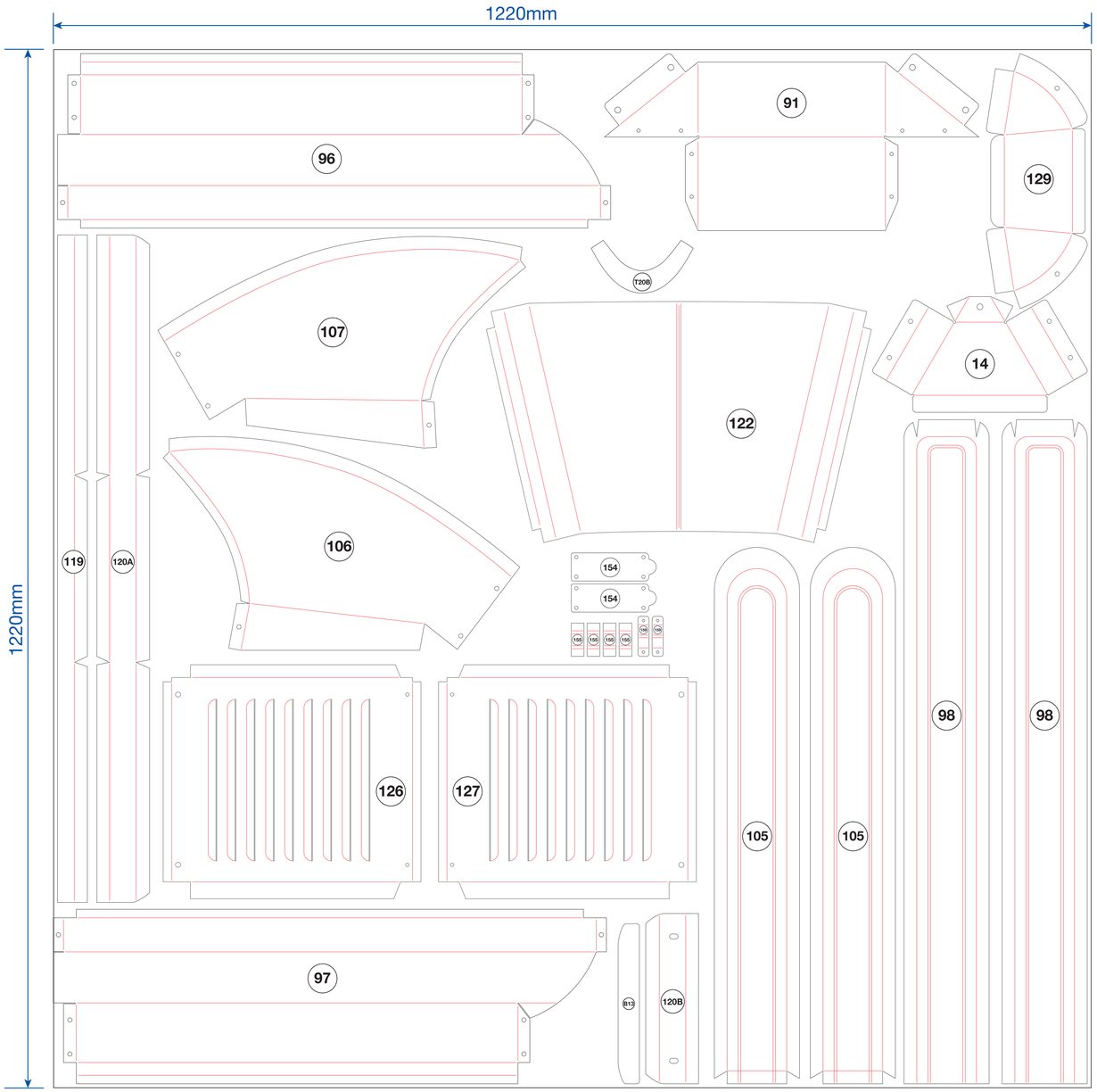
0 50 100 Scale (mm)



CUTTING GUIDE - 17mm Thick Formply 1220 x 2440mm Sheet

TEMPLATE
17mm Formply Sheet

TEMPLATE	DRAWING: 34
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
1220 x 2440mm - 17mm thick Formply Timber Sheet

Flatbed Felix PEDAL CAR BUILD

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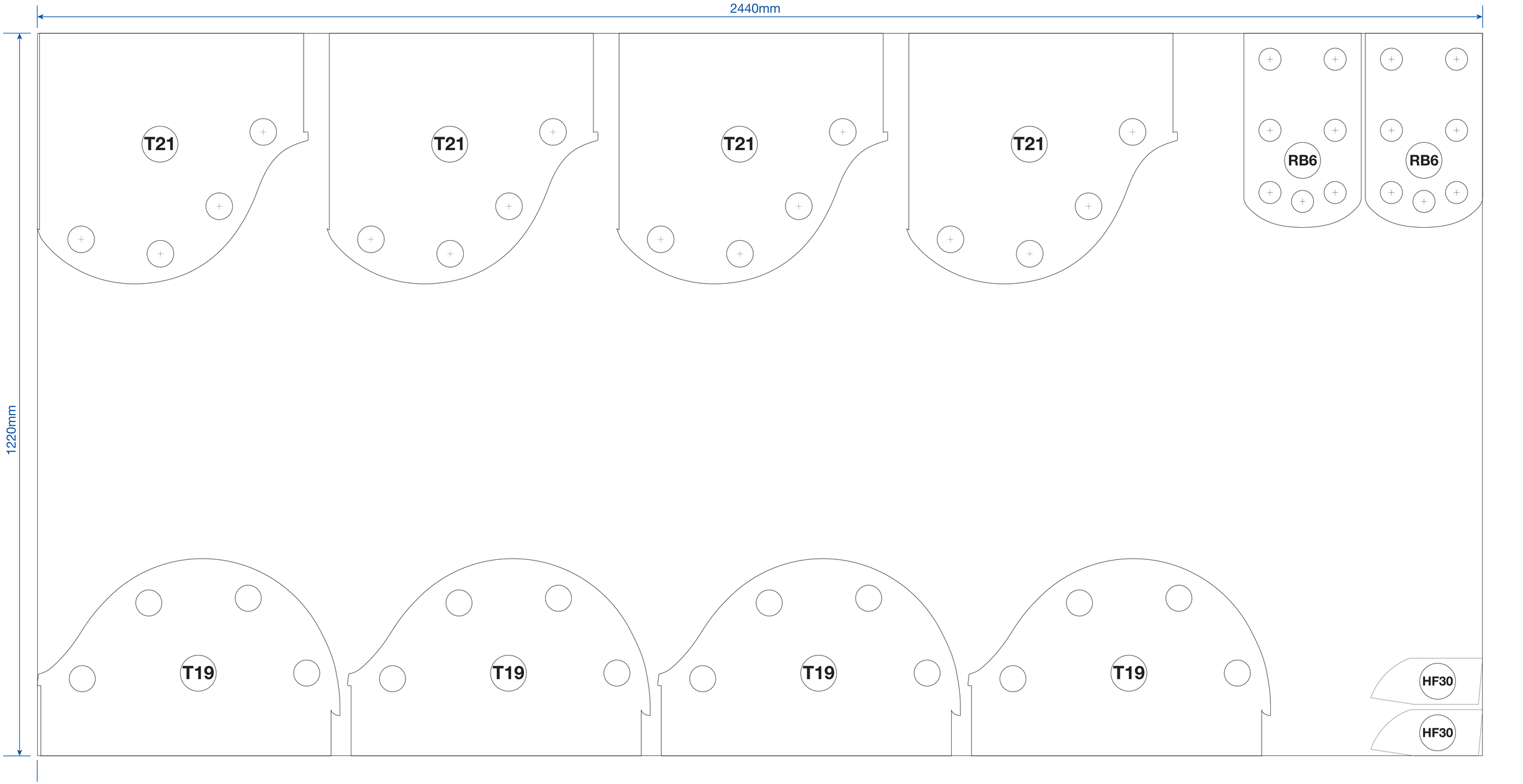
0 10 20 30 40 50

Scale (mm)



CUTTING GUIDE - 19mm Thick Plywood 1220 x 2440mm Sheet

Flatbed Felix
PEDAL CAR BUILD

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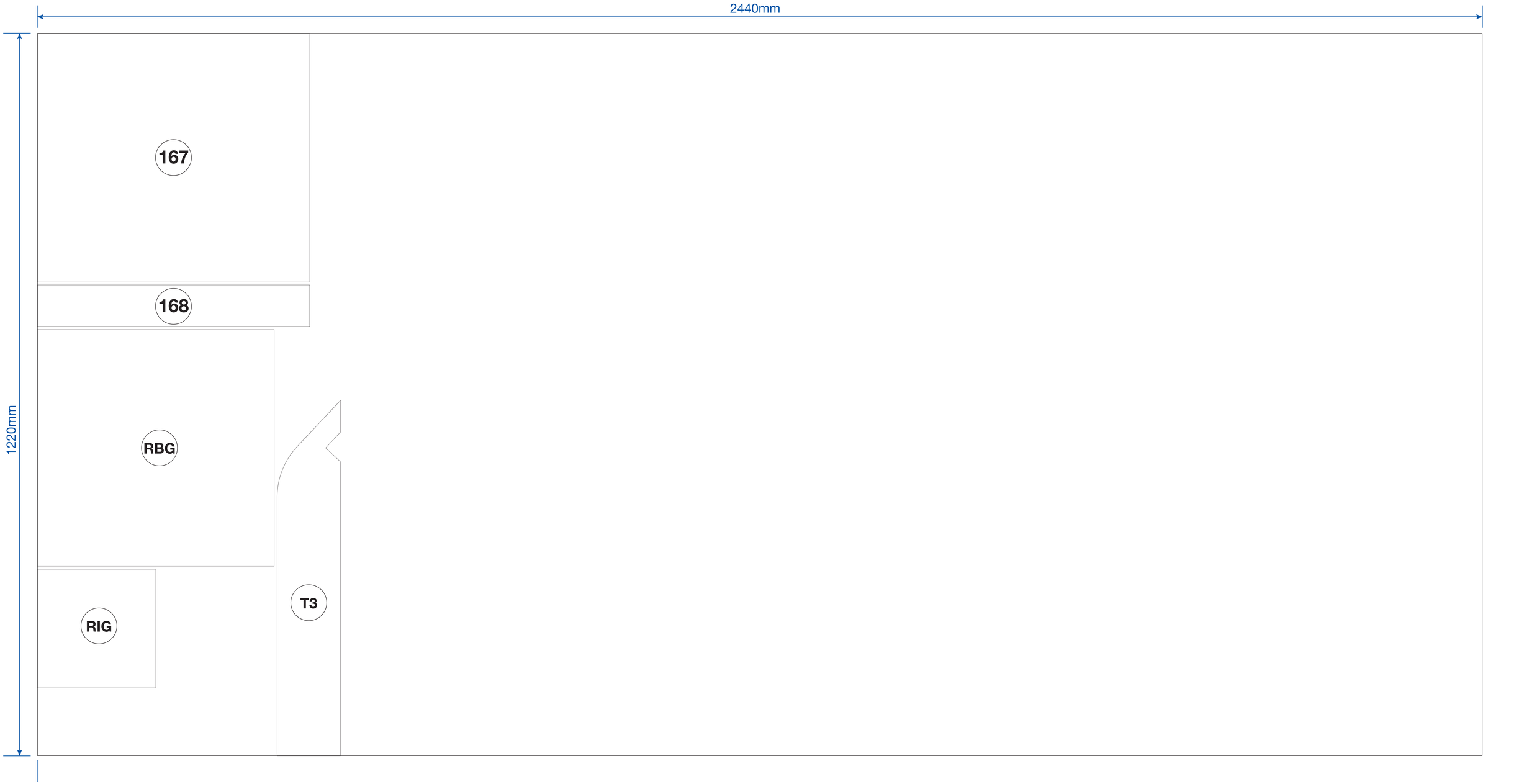
TEMPLATE
19mm Plywood Sheet

TEMPLATE	DRAWING: 35
SCALE:	TOLERANCE ± 2mm

MATERIALS LIST:
1220 x 2440mm - 19mm thick Plywood Pine Sheet

0 10 20 30 40 50
Scale (mm)