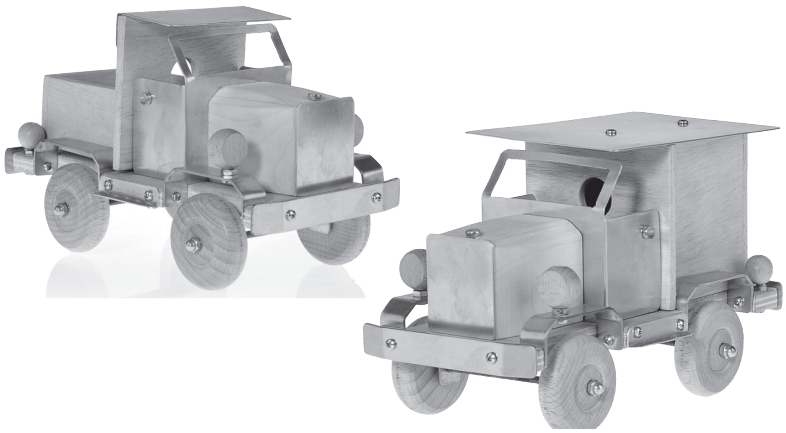
108.937
PICK-UP OLDTIMER



Necessary tools:
Scissors
Steel ruler + Pencil
Fretsaw + Hacksaw
Scroll saw
Fine saw
Pillar drill, hand drill
Machine vice
Metal drill bits Ø 3; Ø 4; Ø 5
Forstner bit Ø 20
Screwdrivers cross and slot
Allen keyl M4 (SW 7)
2-Component glue
Wood glue
Rasp, wood file, needle files
Sandpaper
Metal shear
Bradawl,hole maker
Hand countersink
Centre punch

Please Note
The OPITEC range of projects is not intended as play toys for young children.They are teaching aids for young people learning the skills of Craft, Design and Technolo- gy.These projects should only be undertaken and tested with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Dan- ger of suffocation!

Warning!
This product contains small parts that can be swallowed. There is a danger of choking!

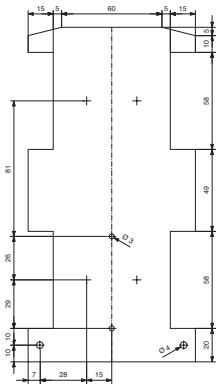
PART LIST				
	Part	**Size (mm)**	**Bezeichnung**	**Part-Nr.**
Plywood	1	200x100x10	Base	1
Plywood	1	220x150x6	Body	2
Aluminium sheet	1	200x200x0,8	Body	3
Hole metal strip	2	120x15x1,5	Axle carrier	4
Blechstreifen	2	300x15x1,5	Bumper	5
Wood strip	1	150x10x10	Strengthener	6
Wood strip	1	60 x 60 x 75	Radiator	7
Holzrad	4	Ø 50	Wheels	8
Threaded rod	1	M4x300	Axles	9
Drilled wooden ball	2	Ø 15	Lights	10
Drilled wooden ball	2	Ø 20	Lights	11
Screws	26	2,9x9,5	Fixings	12
Machine screws	4	M4x35	Light holder	13
Machine screws	3	M4x10	Radiator / Doors	14
Domed nuts	5	M4	Fixings	15
Nuts	15	M4	Fixings	16
Washers	4	4,3	Fixings	17
Screws	3	2,9x16	Fixings	18

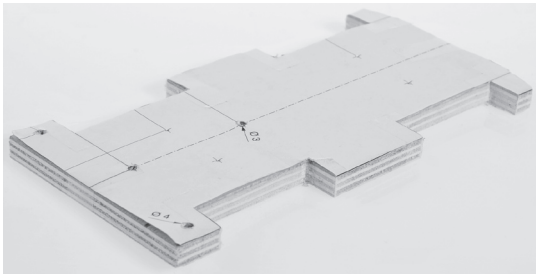
INSTRUCTIONS

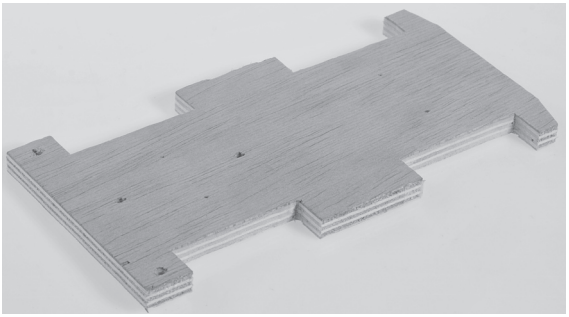
General
This pack is so designed that you can make one of two basic models a pick up or a lorry
This is a great project for making as a team .
The single components (Chassis, Body,Radiator, Cabin, Steering wheel, Seats, Lamps,Bumpers, Mudguards, Roof and axles etc) can all be made separately and then assembled. The range of materials used require different skills and tools so the beat can be made of any workshop situation.

The instructions are such that firstly the parts (Chassis, Radiator, Cabin, Steering wheel, Seat, lights, Bumpers, Mudguards,Axles) are the same for both models. The body for the pick up and the lorry are described separately. or you develop your own version according to the materials to hand.

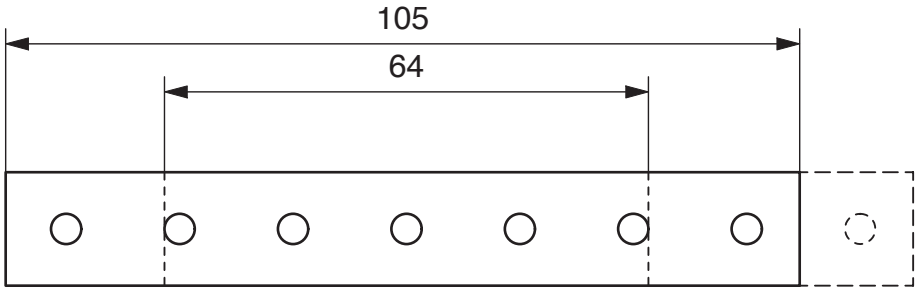
Step 1
Cut out the pattern for the chassis (Page15) and sellotape it to the plywood sheet (1) 200x100x10 .
Mark out the centres for the holes and pierce them with a bradawl or holemaker.
Drill the Ø 3 mm and Ø4 mm holes.
Saw out the outline of the shapes with Fretsaw-Scroll saw.
Sand the chassis to finish

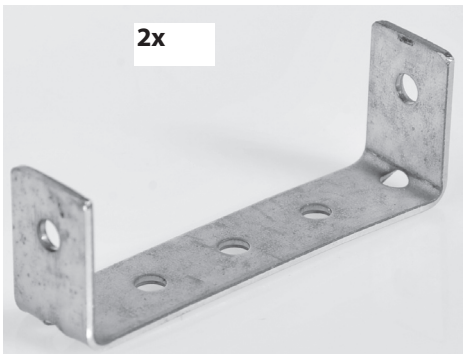






Step 2
Cut and finish the holed metal strip 105mm as shown, use a file to remove any burr.
Marl out where it is to bent.
Bend the ends at 90 degrees in a vice (Use vice protectors) (s.pattern)





Bending pattern:

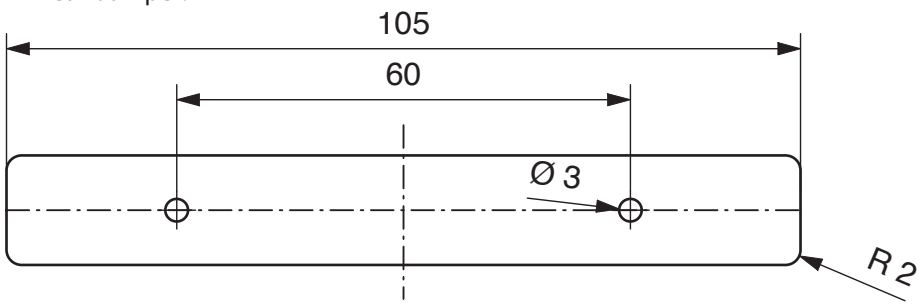
S 1:1

INSTRUCTIONS

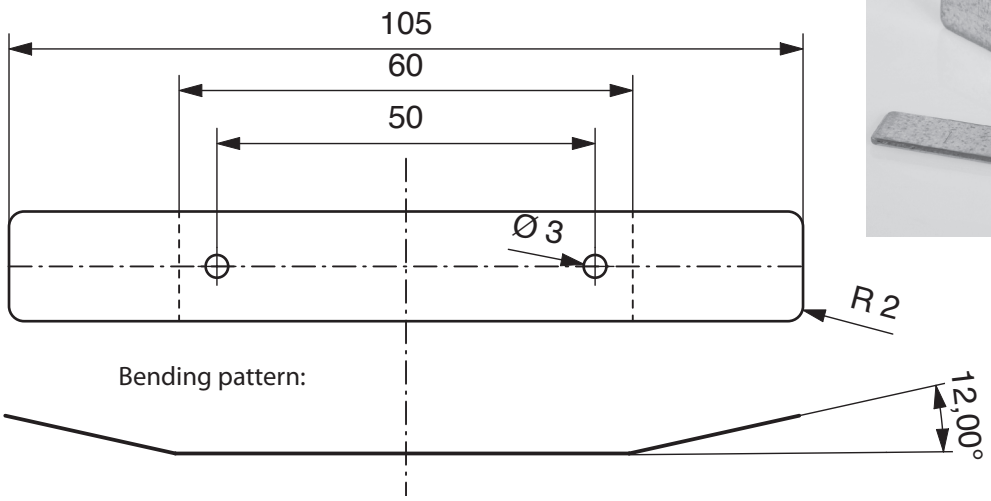
Step 3
Mark out and bend a 105mm length of metal strip (5) for the bumper
The remainder will be used for the rear bumper
Mark out and drill the holes.
Note: Note the hole positions for the front and rear bumpers!
Drill the holes and then clean them up with a hand countersink bit.
Radius the corners 2mm as shown, remove any burr with a file.
Fold the metal (broken lines) for the front bumper using a vice

Note: Offer the shape up to the chassis to check the shape!

Rear bumper:

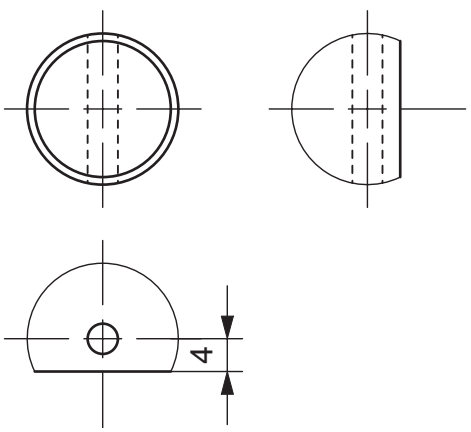


Front bumper

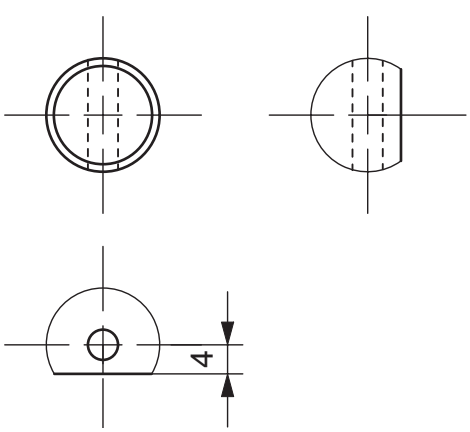


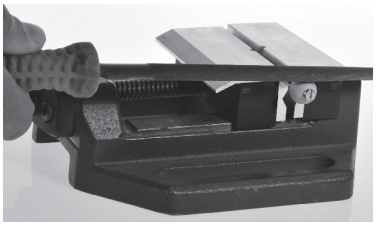
Step 4
The rear lights are made from wooden balls (10) Ø 15 mm file one side flat 4mm Use a machine screw (13) in the hole and fix them with nuts (16) Hold the ball in a vice and file a flat (Use vice protectors)
Note: The flattened is side is parallel to the hole!
The two wooden balls (11) Ø 20 mm for the front lights are finished in the same way.

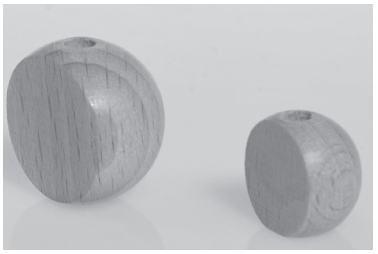
Front lights (11)



Rear light (10)



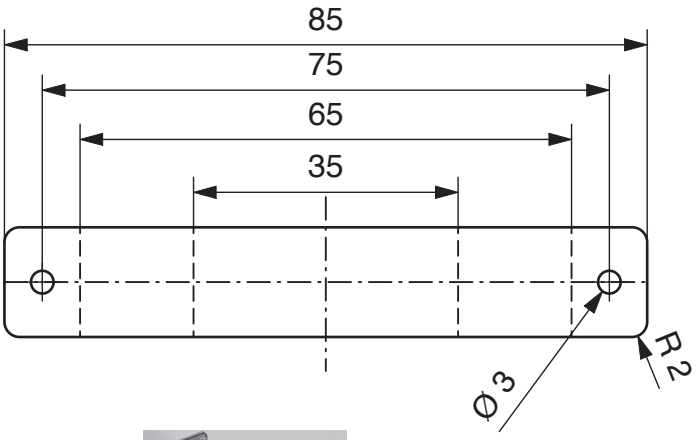




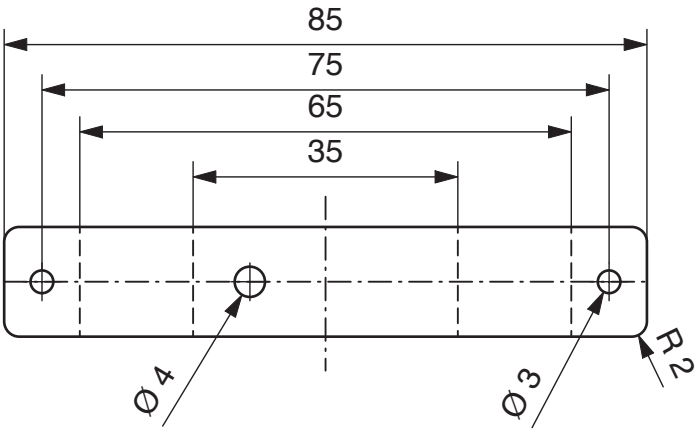
INSTRUCTIONS

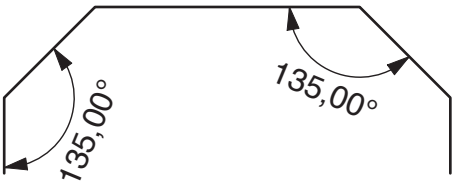
Step 5
According to the plan cut four pieces each 85 mm from the remainder of the metal sheet and the second metal sheet (5) for the mudguards.
Mark out the holes and centre punch them.
Note: There is a difference in the holes in the back and front mudguards.
Drill the holes and clean them up with a hand countersink.
Round the corners 2mm radius with a file, remove all the burr.
Bend the mudgurads with a file (broken line) according to the plan ,using a vice

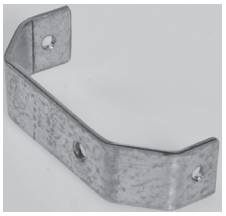
Front mudguard (2x)



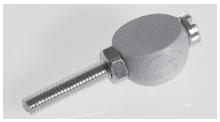
Front mudguard with light holder (2x)



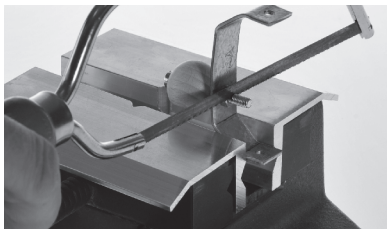


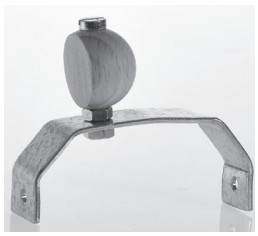


Step 6
Assembling the ready made parts: Lights,Mudguards;Bumpers; axle holders and axles
Lights:
Insert a machine screw(13) from above through each ball and fix with a nut (16).tighten



Mount the front lights (large ball) each with a nut (16) on the front mudguards, flat side facing forwards (= short mudguard surface) Saw off any excess and remove burr with a file

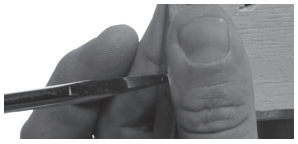
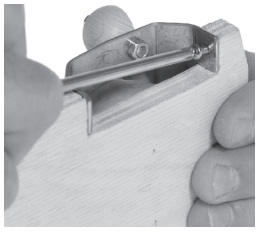
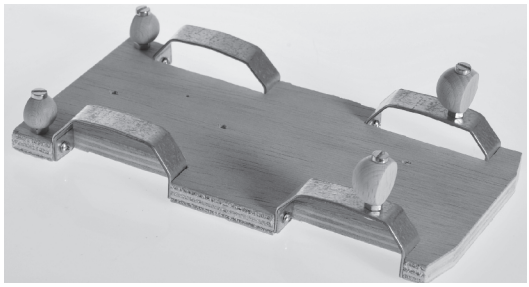




Mount the rear lights (small ball) each with nut (16) in the 4mm holes in the rear of the chassis (1). To do this insert a machine screw from above and then a nut The flattened side faces opposite to the driving driving direction. Saw off the screw and remove burr from the ends

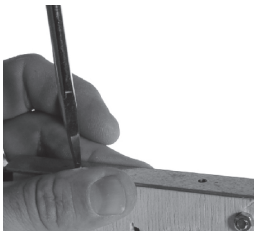
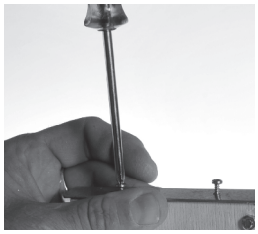
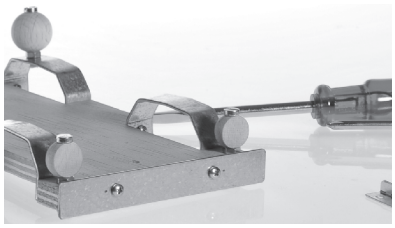
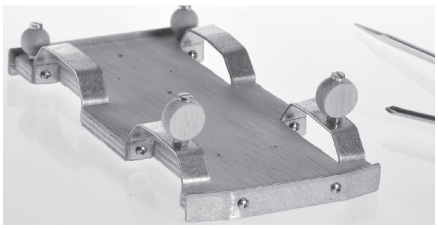
INSTRUCTIONS

Mudguards:
Mount the front mudguards in the slots in the chassis (Watch the direction!).
Make the holes with a holemmaker (bradawl) and fix each mudguard with two screws (12).
The rear mudguards are mounted in the same way.

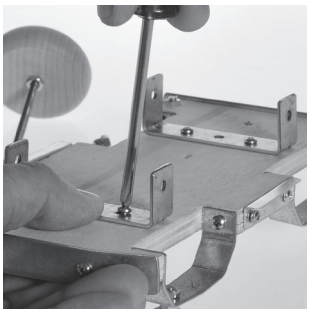
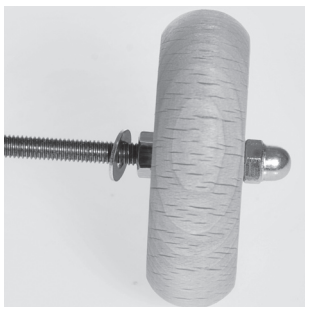
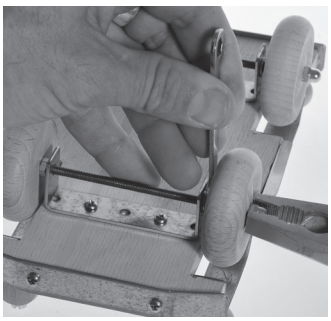
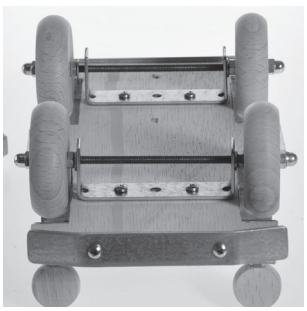
Bumpers:
Mount each bumper in the correct place, make the holes and mount with 2 screws (12).

Note: Check the shape of the bumpers and alter to fit before mounting them in position.

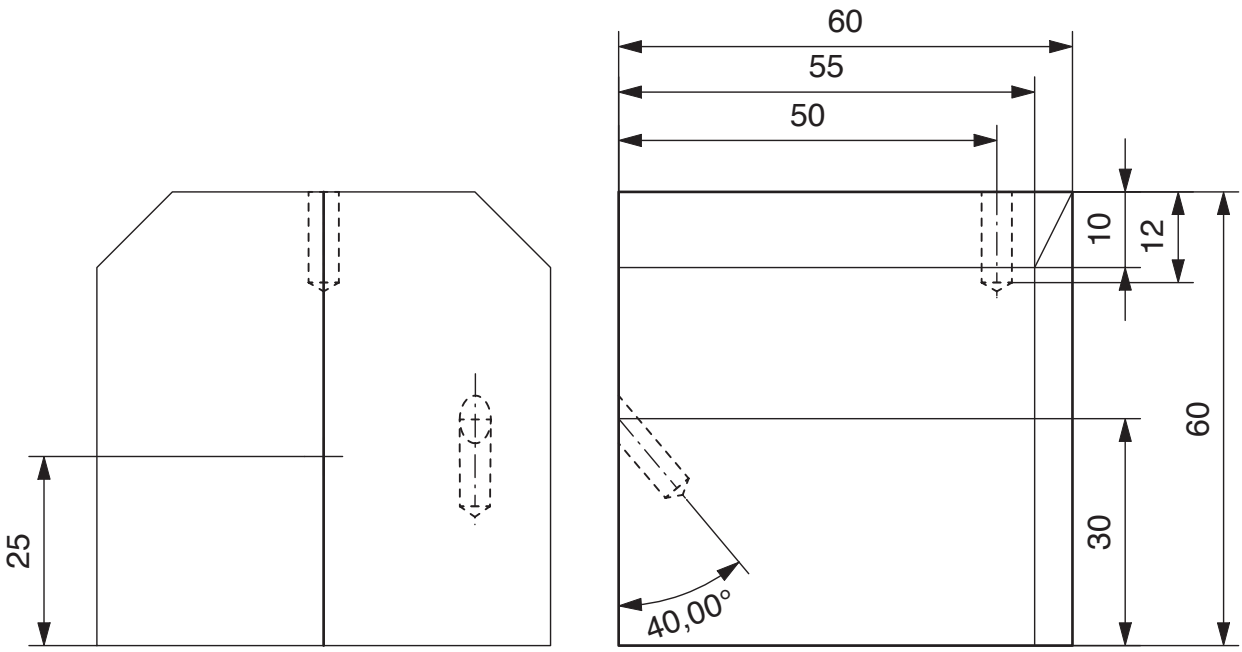
Axles:
Mount the two axle holder under the chassis with 2 screws (12) according to the positions shown.
Cut two lengths each 120mm long from the threaded rod (9) remove burr from the ends of the saw cuts.
Mount a wheel as shown on the axle using a domed nut (15), a nut (16) and a washer (17) Contra tighten the nuts so that the wheel fits well on the axle .
Insert the axle through the carrier and add a washer (17), a nut (16) a wheel (8) and finally a domed nut (15) Add the wheel as already described.

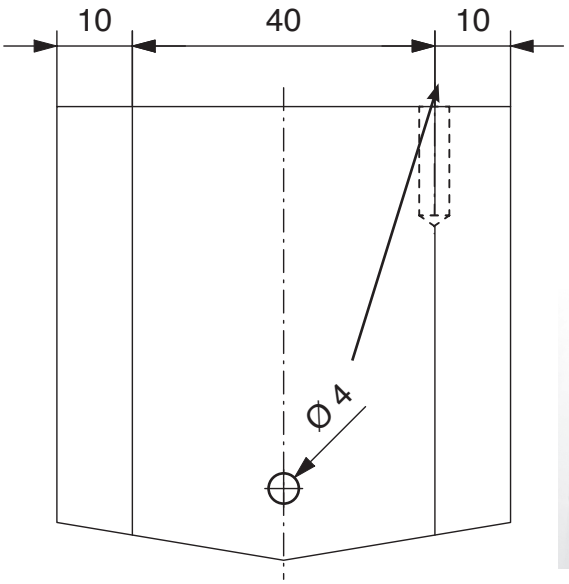
Note: The axle should turn freely in the axle carrier!

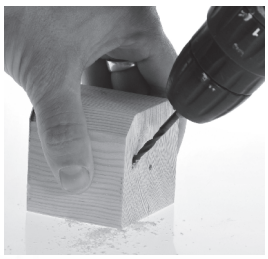





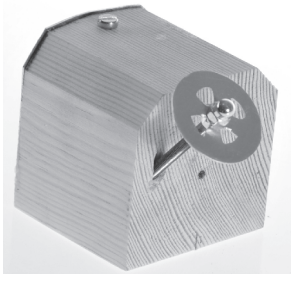
INSTRUCTIONS

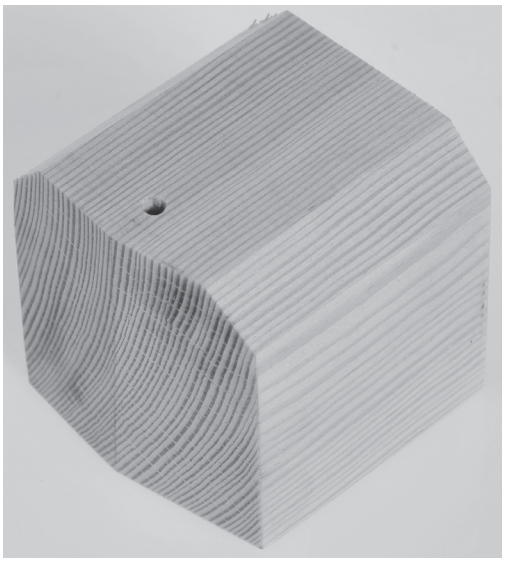
Step 7
Mark ot the size of the radiator (7) 75x60x60mm . The piece is about 15mm too long.
Mark ot the holes with a bradawl for drilling.
Drill the holes Ø 4 mm . The hole for the steering wheel is about 40 degrees
Chamfer any esdges as shown. Remove any exess material by sawing
Note: You can also make the radiator 60mm and saw it straight, slope the front with a file!
Sand the finished radiator.
General The patterns are only a suggestion. Also shown are other ideas or you can develop your own shape!

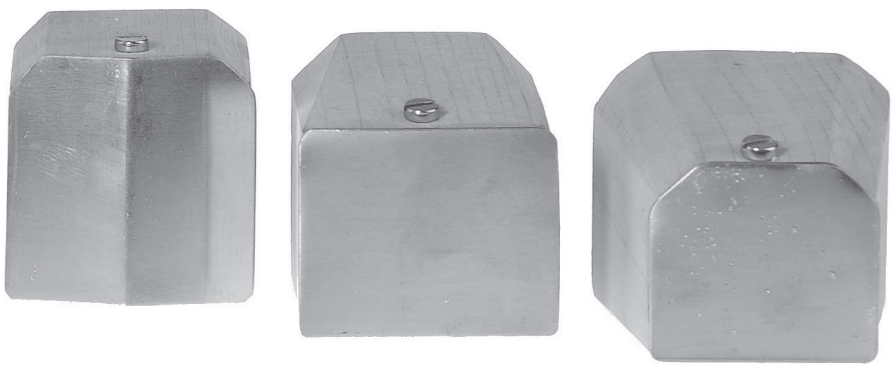








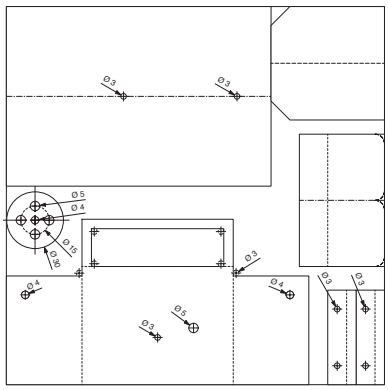


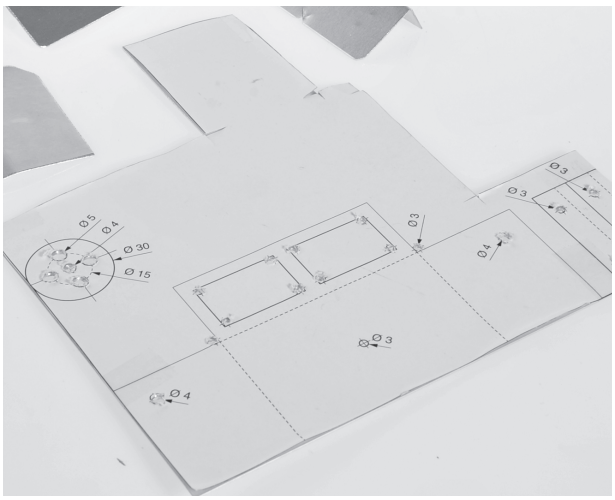


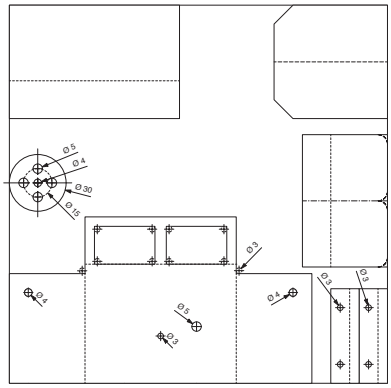
INSTRUCTIONS

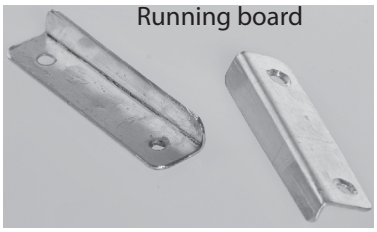
General:
Now you have to choose if want the pickup or wagon version. You can also design your own model.

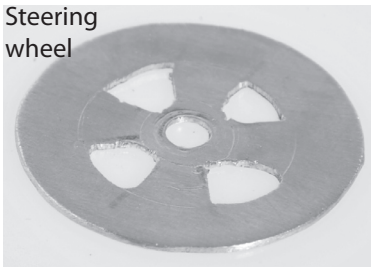
Step 8
Choose the pattern for the design you want to make (s. page 11/12) Cut out the pattern and sellotape it on the metal sheet (3)
Note : The steering wheel can be made from wood (s. pattern)!
The sheet metal parts are the same except for the roof. The front part can be left as one piece or cut out!
Mark out the holes with centre punch.
Drill the Ø3 mm, Ø 4 mm and Ø 5 mm holes.
Fianlly cut out all the parts with meal shears.
Fold all the parts and file the edges. Clean the hoes with a countersink
Use a vice to bend the metal (Use vice protectors) Bend along the broken lines

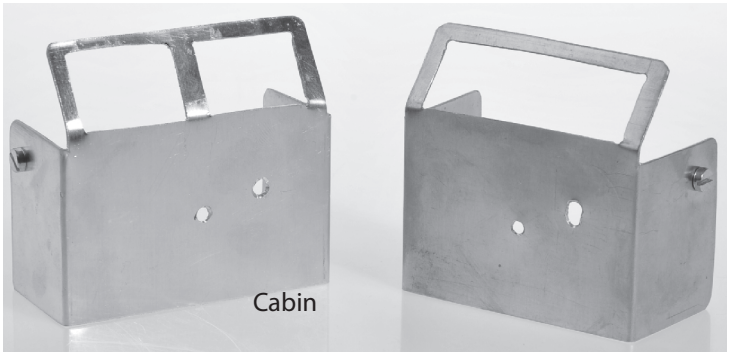


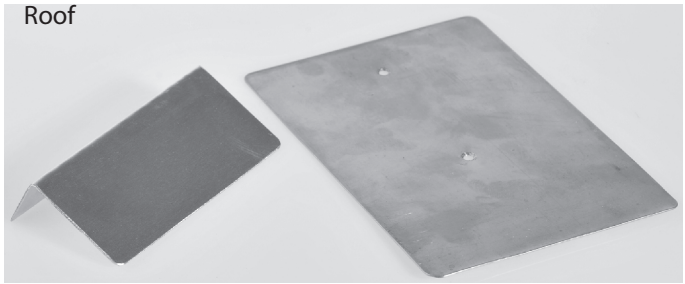




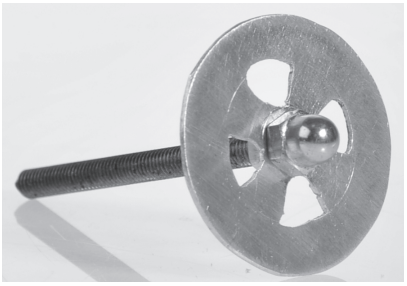








Step 9
Fit steering wheel with a domed nut (15) and a nut (16) tightly on the remainder of the axle rod (9/ca.55mm)



INSTRUCTIONS

STEP10

Choose the pattern for your version of the vehicle you wish to make (s. Page 13/14) cut it out and sellotape it to the plywood sheet (2) 220x150x6 mm or mark out the sizes directly on to the plywood

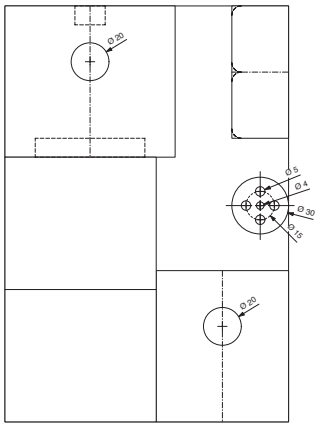
Note: The steering wheel can also be made from aluminium (s. Pattern)!

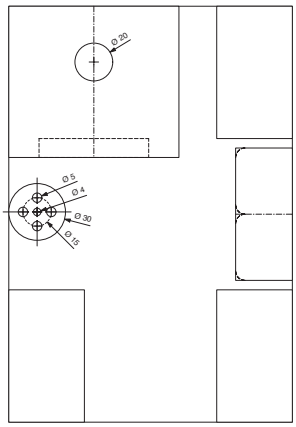
The wooden parts are different as to whether they are large or small.

Use a bradwal to mark out the holes.

Drill the holes (Ø 4 mm, Ø 5 mm = only when the steering wheel is made from wood) and 20mm hole

Finally cut out the parts with a scoll saw and sand to finish

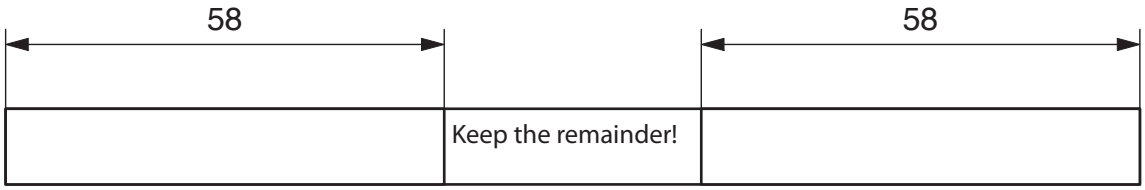




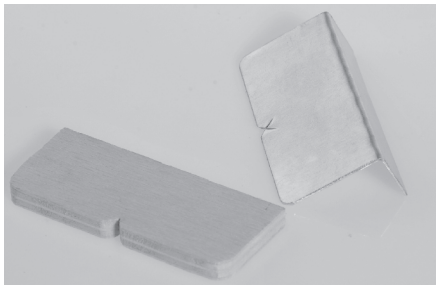
Step 11

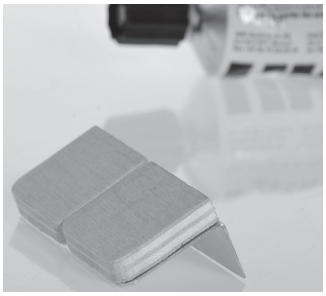
Cut two pieces of the wooden strip (6) 10x10x150 each 58mm long and sand to finish

Note: The remainder will be used for the lorry version



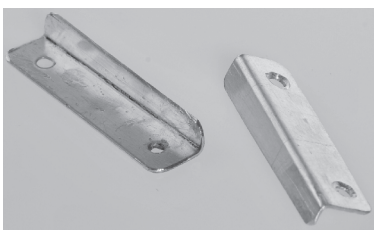
Step 12 The seat is made from plywood and aluminium glued together with two component glue.

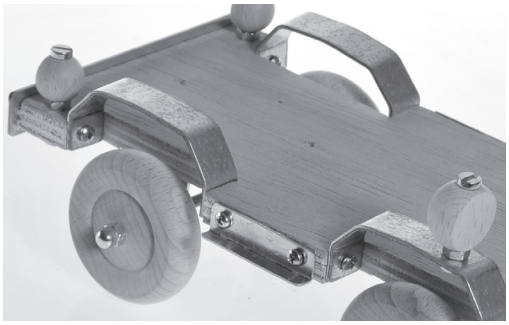




Step 13

The running board is fixed to the chassis (see diagram) with two screws (12) Use a bradawl to make the holes

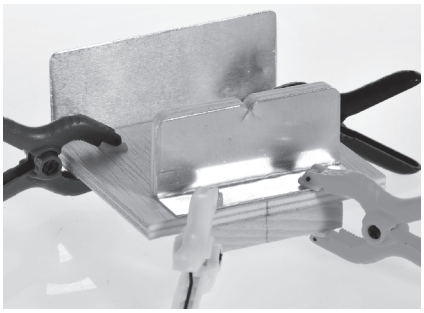


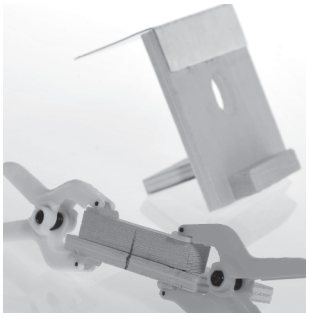


INSTRUCTIONS

Sctep 14
Glue the wooden strips 10x10x58 mm around the back. At the same time
fit the seat in the position shown- holsd in place with modelling clamps whislt the glue is drying.
In the pick up vesion the roof is fixed with an all purpose glue.
In the lorry vesion a strip 10x10x16 mm is added instead of the roof. This is made from the remainder of wooden strip (6)

Rear wall, Pick-Up

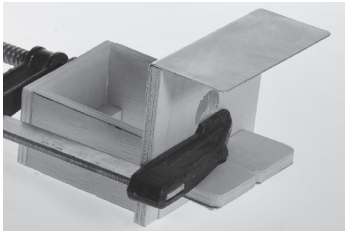


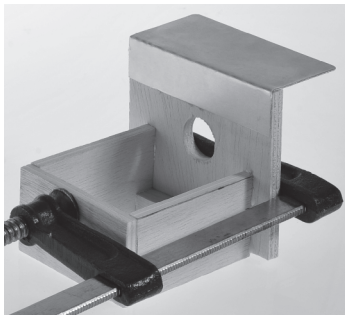


Rear wall, lorry

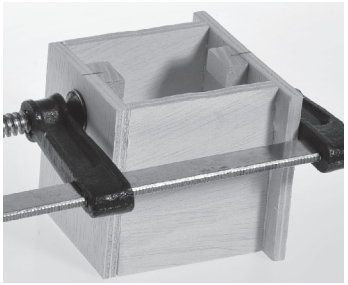
Step 15
In the pick up version a second strip 10x10x58 mm is glued to the edge to hold the sides (with 20mm-hole)
The lorry version has a wooden strip (6/Remainder from step 11)ca. 10x10x16 mm glued as shown. (This need to fit the roof!)
Glue the Pick-Up-/ Lorry sides as shown

Pick-Up

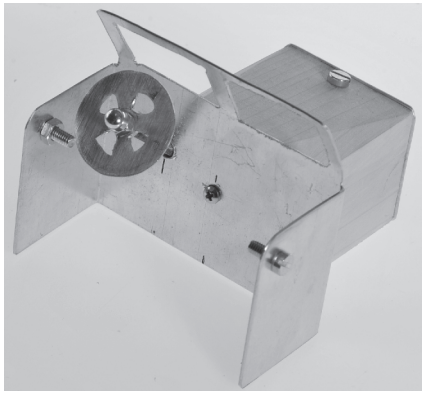


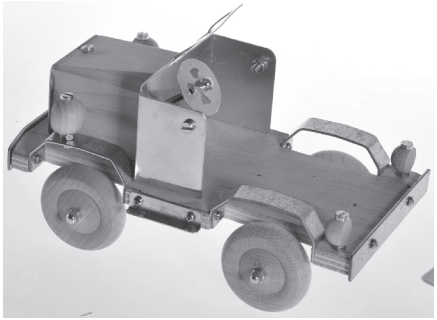


Lorry version



Step 16
Screw the cabin (12) on to the radiator.
Insert the steerig wheel into the hole. If the steering column is too long
cut it to length.
Apply glue to the bottom of the radiator and glue it to the chassis.

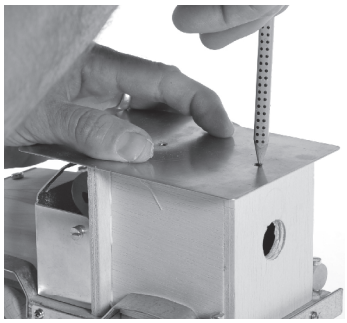
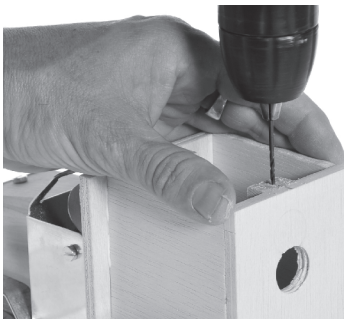
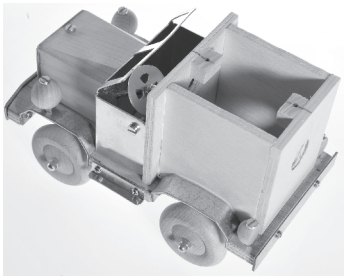
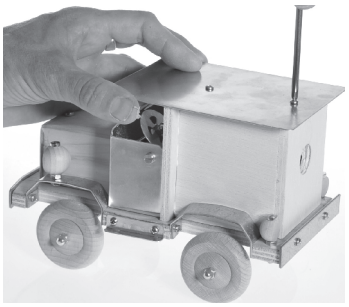
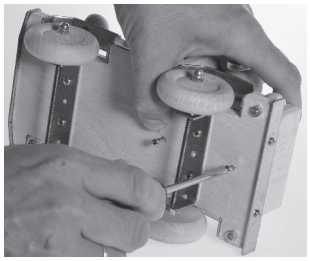




INSTRUCTIONS

Step 17
On the lorry version the back is assembled on the back of the cabin.
Screw the roof in the middle (hoe in the middle of the strip) Mark out the hole and drill the 2mm hole into the strip (See diagram). Fit with 2 screws (12).
Fit the back to chassis (18) with two screws.

On the pick up vesion screw the back to the chassis and fix from underneath with two screws (18)

Step 18
The model can be painted and decorated as you wish. This could be in art lessons.

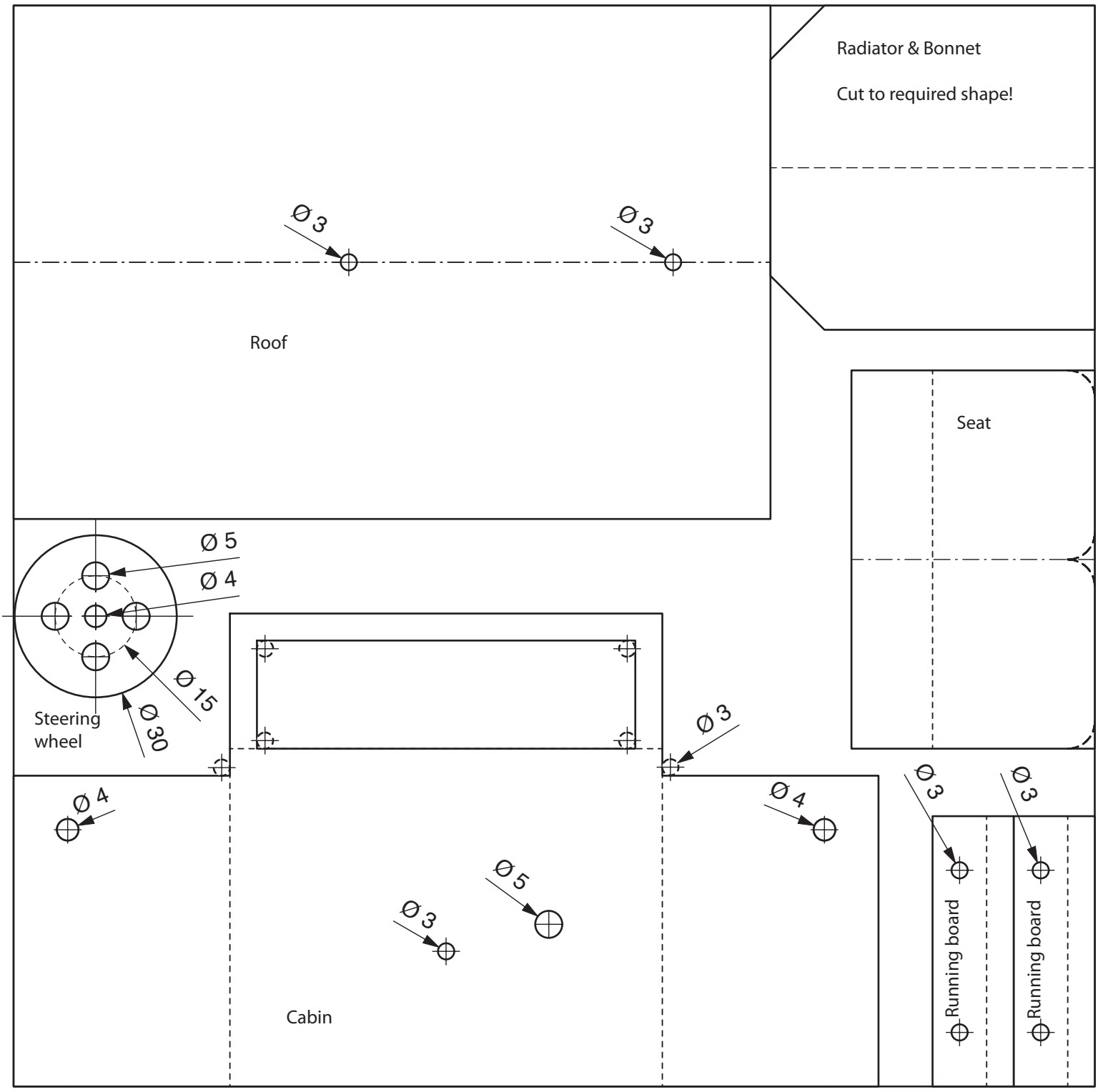
Pick-Up

Lorry version

INSTRUCTIONS

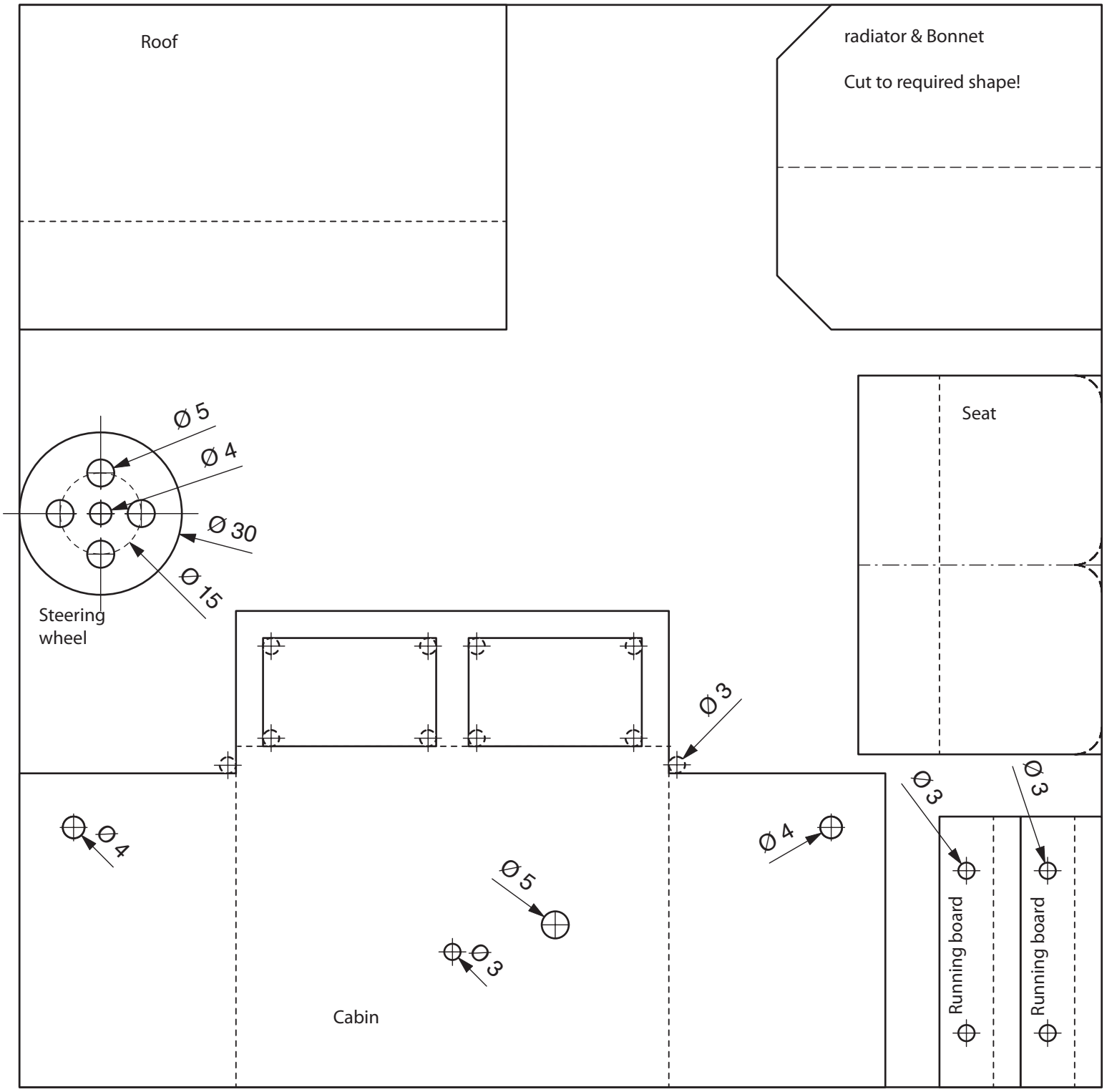
Schablone
Lorry version
Aluminium parts
S 1:1

Bend along broken line

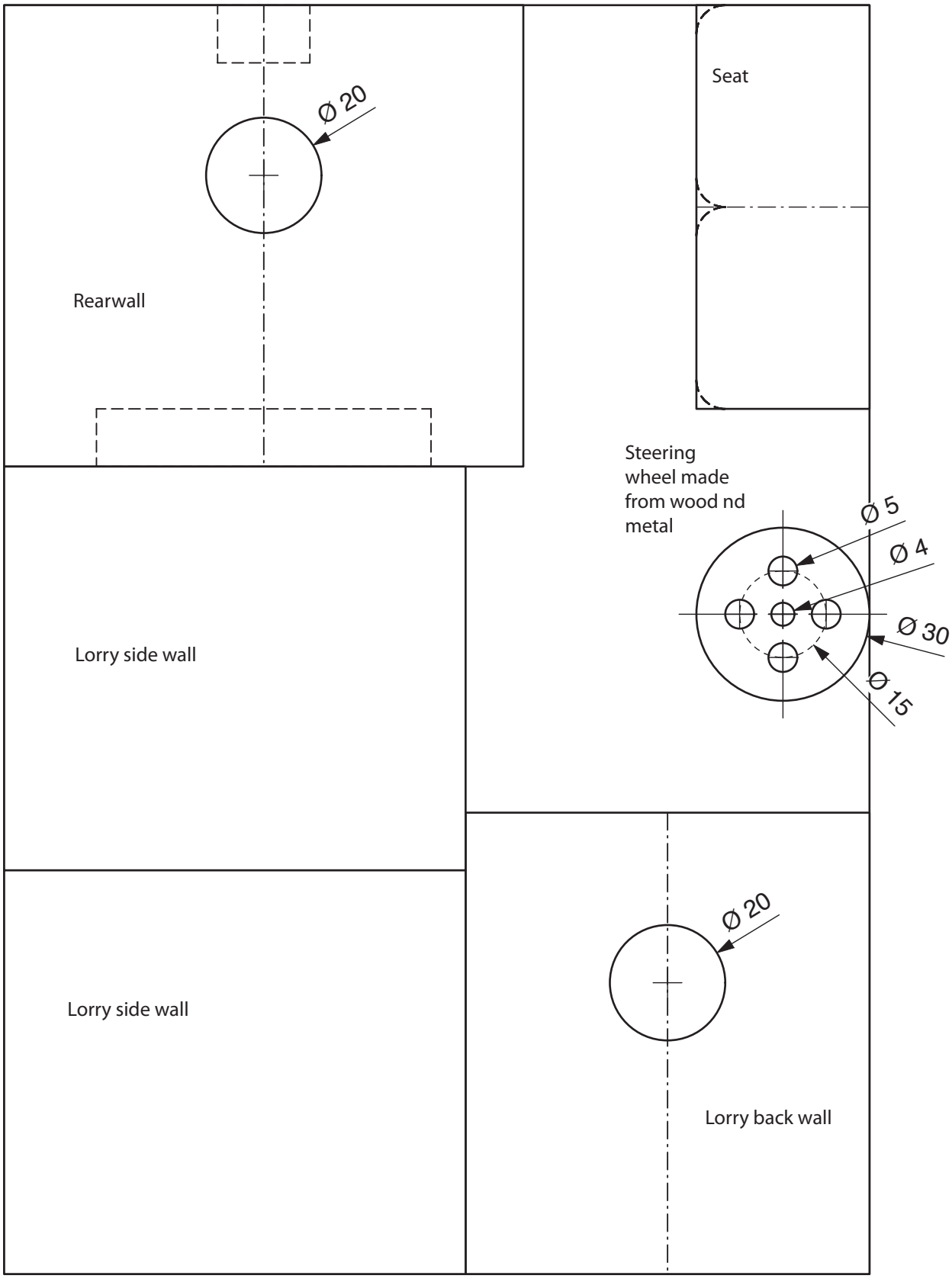


Pattern
Pick-Up
Aluminium parts
S 1:1

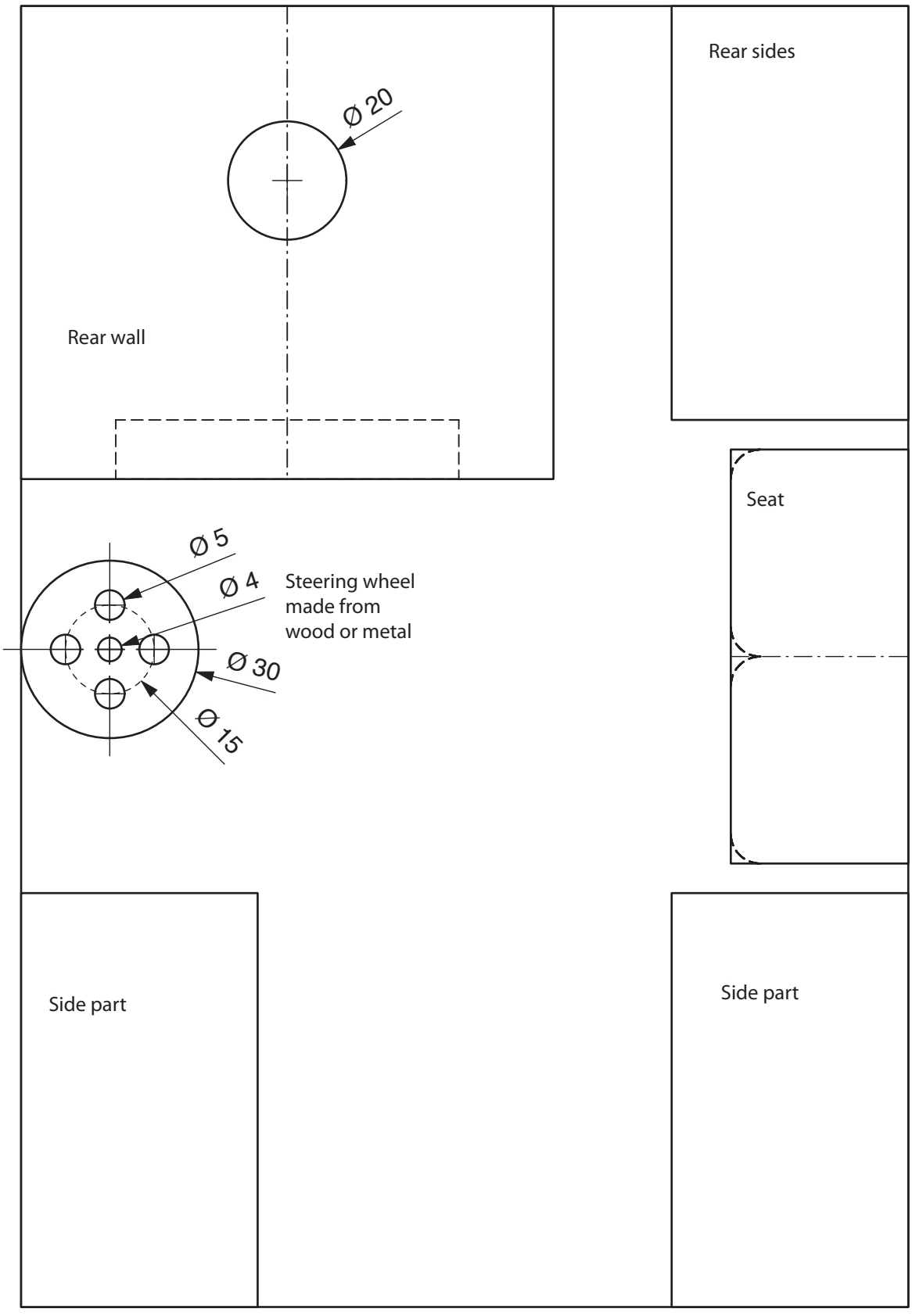
Bend along broken line



Schablone
Plywood parts
S 1:1



Pattern
Pick-Up
Plywood lorry back
S 1:1



Pattern
Chassis (PickUp or Lorry)

S 1:1