

STAR WARS REBEL TROOPER BLASTER

(Version 2)



Image from Star Wars Episode IV: A New Hope © Lucasfilm Ltd

These instructions explain how to make a replica of the DH-17 blaster pistol as seen in the Star Wars films. No special pre-cast parts are required for this project, everything is available off the shelf. However, this is not a trivial project, it requires the cutting and shaping of wood, plastic and metal. Some parts cannot be precisely specified and following these instructions may require some modification depending on the exact parts used.

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Parts list

The following parts are required to build the basic rebel fleet trooper blaster. This list does not include all parts needed for the variants in other films.

Plastic pipe:

Floplast 40mm pipe (external diameter 43mm) Floplast 32mm pipe (external diameter 35mm) Floplast 21.5mm pipe (external diameter 21.5mm) 5mm external diameter tube

Plasticard:

A single 330mm x 220mm sheet of each of the following thicknesses is required. 2mm thick 1mm thick 0.5mm thick

A single 330mm x 440mm 0.5mm thick sheet is also required.

Balsa wood:

6mm sheet 9mm x 9mm baton 10mm x 4mm baton 8mm dowel

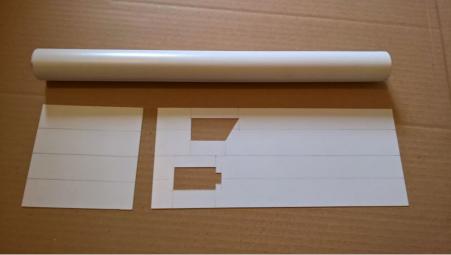
Other parts:

3 x 35mm to 22mm end fitting copper pipe reducers 2 x 25mm scope mounts 12mm wide brass strip 100ml measuring cone 2-3mm thick wire 1mm thick wire Transparent plastic lid approximately 22-25mm in diameter 2 x ribbed plastic lids approximately 18-20mm in diameter

Making the body

The body of the blaster is made from a 385mm long length the 32mm diameter pipe.

Around this are wrapped the two 0.5mm thick plasticard body coverings. The larger piece with two holes cut into it lines up with the rear of the pipe, while the plain piece lines up with the front to leave a gap of about 5mm between them. The two holes in the larger piece should be towards the centre of the blaster, with the diagonally sloping hole on the right and the rectangular one with the small tab on the left.



The pipe used as the core of the blaster and the two body coverings.

Gluing these to the pipe is easier if they have been preformed. To do this simply roll up the two pieces of plasticard and insert them into the pipe. Then leave them there for a few hours and when they are removed they will have acquired a curve.



The covered body.

The tapered front of the blaster is made from the measuring cone. Cut the base from this but leave the narrow end closed. Then cut the cone down so that its wide end matches the diameter of the blaster body. A small hole (I used a 6mm drill) is drilled in the closed end to represent the blaster muzzle before the cone is glued to the front of the blaster body.







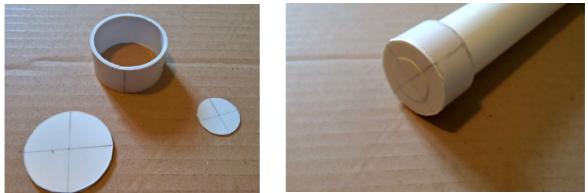
Left to right: The measuring cone used for the muzzle, the cut and drilled muzzle and the muzzle fitted to the front of the blaster body.

Next sixteen barrel shroud strips are cut from 2mm thick plasticard. These are glued evenly around the barrel running along it, leaving 10mm between the front of the strips and the start of the tapered front.



The ribs fitted around the body.

The rear end cap is made from a 20mm length of 40mm diameter pipe. This is glued around the rear of the blaster body. There will be a slight gap between the body and this piece of pipe so small strips of 1mm thick plasticard glued around the body can be used to mount it properly. The remaining gap can be filled later. The back of the end cap is then covered with a 2mm thick disc of plasticard with a smaller circle of 0.5mm thick plasticard placed in the centre of this.



The pieces used for the end cap, and the end cap fitted to the blaster body.

The sling swivel is made from the thick wire. A 90mm length of this is bent into shape to form the swivel itself. The housing for this is made from three pieces of 2mm thick plasticard that make up the backplate and sides to form a channel into which the swivel itself is placed. A 1mm thick cover is then glued over this. The long edges of the cover should be sanded slightly to take off the corner.

The complete sling swivel is then glued horizontally to the back of the blaster. If the swivel rattles around too much it can be glued in place as well.





The swivel, channel and cover and the completed swivel assembly fitted to the end cap.

The two stock retaining lugs are made from three pieces of plasticard stacked on top of one another. The construction of these two lugs should be mirrored to fit on either side of the end cap. The 1mm thick plate is on the inside of this stack, followed by the narrower of the two 2mm thick hooked pieces with the wider piece fitting over this on the outside. These are sanded so they will fit better before being glued to the very end of the end cap so that the diagonal end is towards the front. The outer faces of the lugs should be 38mm apart.

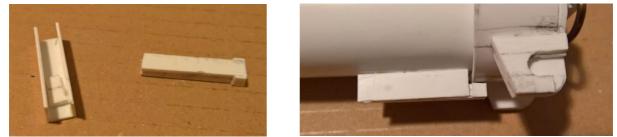




The pieces of a lug, plus an assembled lug and a lug fitted under the end cap.

The channel to take the stock switch is made from three pieces of 1mm thick plasticard, with the two walls being glued along the outside of the base. Because the switch itself is raised off the base some scrap pieces of plasticard can be used to make a 3mm deep support for it.

The actual switch is made from two lengths of 2mm thick plastic card glued on top of one another. Then a pair of 1mm thick squares of plasticard are glued either side of this at one end. The switch is then glued into its channel, leaving a small (<1mm) gap between the end of the channel and the wider part of the switch. Lastly the completed switch is glued centrally beneath the blaster so that there is a gap of about 1mm between the back of the channel and the front of the end cap.



The switch and channel and the switch fitted to the body of the blaster.

On the right hand side of the body is a detail made up of two 1mm thick pieces of plasticard, each of which has a pair of smaller 2mm thick strips glued to the corners at one end. All of these will need to be bent along their longer sides slightly before being glued so that they will fit to the blaster body. It is recommended to cut a single strip of 2mm thick plasticard and bend this before cutting off the individual pieces rather than cut them all and trying to bend them separately. They are likely to snap as individual pieces. These two pieces are glued 13mm away from the end cap so that there is a 1mm gap between them that is along the centre line of the blaster.





The two parts of the right side detail and then fitted to the blaster body.

Two 2mm thick pieces of plasticard are used to create the frame of the triangular block behind the hole on the left hand side of the main body detail. The wider part needs to be sanded along one edge so that it will fit sloping backwards until it meets the top of the narrower piece. This is placed along the edge of the hole in the main body detail, with the top lining up with the upper corner of the protruding part of the hole.



The hollow triangular section of the left side detail.

Making the grips

The grips consist of a central core of plasticard on which is mounted the trigger, trigger guard, safety catch as well as the grips themselves.

To start with the grip body is made by cutting out two of the provided side templates from 1mm thick plasticard. These are joined together using the various spacers, positioned as indicated in the image below.



The grip body components, including spacers 1-7 glued in place. Also visible are two off cuts of 12mm wide plasticard used for extra support.

The other side template is glued on top of the supports before a 14mm wide strip of 0.5mm thick plasticard is used to seal the grips between the two points indicated in the image. This may require more than one piece place end to end and is not shown in the templates.





The grip body with the end points of the covering strip marked on and with the strip glued in place.

The grips themselves are cut from 6mm thick balsa wood. The left side grip requires a curved channel to be sanded in it between the two marked lines. The easiest way to do this is to wrap some sandpaper around an off cut length of the 32mm pipe used to make the body while sanding. The grips will stick up above the grip unit and will need to be sanded at an angle to allow them to fit to the body of the blaster. In addition the edges of the grip marked on the template should be rounded off with sandpaper to make the grip more comfortable.



Left to right: The basic pieces of the grips plus the sanded left and right grips glued in place. Note the curved channel sanded into the left grip.

The selector switch is cut from a 2mm thick piece of plasticard. In addition a 6mm length of the 8mm dowel is cut in half to form two semicircles and glued about 3mm from the diagonally straight cut end of the selector. The entire selector switch if then glued to the left of the grip about a centimetre from the corner of the wood grip. The exact position is not vital.



Left to right: The parts of the selector, the assembled selector and the selector glued to the grip body.

The trigger guard is made from a 110mm length of 12mm wide brass strip. 10mm at each end is folded around to make the tabs that will be glued to the grips while the rest is bent into a curve shape to fit the body of the grips between the marked positions.





The trigger guard and the points of the grip where it should meet.

Three identical trigger shapes are cut from 2mm thick plasticard and glued side by side. These are then glued in the corner within the trigger guard.





The three identical pieces of the trigger and the trigger and guard glued to the grips.

The completed grip unit is then glued to the bottom of the blaster body so that the very front comes level with the start of the bottom edge of the hole in the body detail on the right hand side. The two gaps at the front and rear where the grip joins the body are covered using more 14mm wide 0.5mm thick plasticard trimmed to fit.



The grips glued to the body.

Making the scope and mount

The scope requires few pieces to assemble but the procedure is made more difficult by the need to cut metal parts.

The core of the scope mount is made from 234mm of 10x10mm balsa baton. This is mounted on two 2mm thick pieces of plasticard. At the front a 10mm square is positioned flush with the front end of the baton while a 24mm length is glued at the back so that it protrudes 1mm past the end of the baton. This is then glued to the top of the blaster so that the back of the rear length of plasticard is 10mm from the front of the end cap.



The body of the scope mount plus the two supporting pieces.



The scope mount body fixed to the main blaster body.

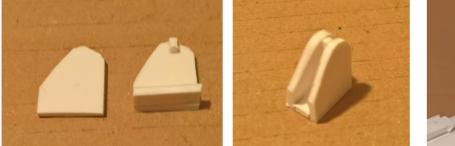
The two rear sight sides are then glued either side of the rear of the baton, lining up with the length of plasticard it is mounted on.





The sides of the rear sight and them fitted to the blaster.

The two halves of each front sight element are connected via a pair of spacers. At the top just use a small off cut of 2mm thick plasticard to space them 2mm apart while the 5mm wide space is used along the bottom. When the other half is glued over these it forms a hollow triangular section. These are then glued either side of the front of the baton so that they line up with the front of the baton at the base.





Left to right: The pieces of a foresight element, an assembled foresight and the two foresight elements fitted to the blaster.

The 1mm thick side plates are glued to the baton so that then meet the blaster body at the bottom and line up with the top of the baton. A gap of 3mm is left at at the rear between the side plate and the rear sight pieces.



A side plate fitted.

The sight decorative plates use 2mm thick strips of plasticard as their base. A 32mm length of 5x10mm baton is glued to the rear of this. A 12mm length of the same baton is then cut. One end of this is sanded at an angle of 45 degrees before the sides are also sanded at 45 degrees to produce a triangular cross section. This is then glued to the opposite end of the base with the vertical face facing the rear. The ridge between the two pieces of balsa wood is made from 1mm thick plasticard and glued in place along the centreline of the base.

The block of balsa wood at the rear is decorated using 3 1mm thick pieces of plasticard. Stick one at the front, one at the rear and one at the end. Finally cut two 2mm lengths of the 5mm tube and glue these in the gaps between these decorative pieces.

This process is repeated for the other side and the two decorative plates are glued to the blank side plates. A 1mm gap between the edges of the side plates and decorative plates should be left at the top bottom and rear.



The pieces of a scope mount decorative plate.



The completed decorative plate fitted to the side plate.

The sight rail is made from three 2mm thick strips of plasticard stacked on top of one another. The two wider strips should be sanded along their longer edges at an angle of 45 degrees. The wider surfaces of these are then glued back to back while the narrower strip is glued to one of them. The rail is then glued to the main body of the mount by the narrower bottom plate. It should be 100mm from the front of the baton.



The pieces of the sight rail and the stacked pieces glued to the top pf the blaster.

The body of the scope is made from three 35 to 22mm copper pipe reducers. One of these has the wider end cut back to a length of 5mm. The three pieces are then aligned end to end and glues around a 110mm length of 21.5mm pipe as shown in image. The plastic pipe should protrude from the front by 3mm.





The three reducers and length of pipe used for the scope, plus a close up of the reducer marked for cutting. Masking tape has been wrapped around it to make drawing on it easier.



The basic body of the scope. Note the protruding plastic pipe at the front.

A disc of 1mm thick plasticard is fixed to the rear of the plastic pipe inside the rear reducer while at the front a disc of 2mm thick plasticard is used to seal the pipe. Before this is put in place a 1mm hole is drilled in the centre so that a 25mm long piece of wire can be poked through to form the sight element. A 4mm length of the 8m dowel is cut and a 1mm hole drilled down the centre of this. This is then glued around the wire where it emerges from the plasticard disc.



The end pieces for the scope.



The scope with the front sealed and the sight element fitted.

Two ribbed end caps approximately 16mm diameter are used for the sight adjustment knobs. Glue one to what will become the top of the central wide section and another at 90 degrees to the left. A 2mm disc of plasticard is glued level with these 135 degrees to the right of the top knob (45 degrees below a point directly opposite the left side knob).





The ribbed caps fitted to the top and left of the scope and disc glued to the right underside.

The transparent front end is made from a plastic cap that is the right size to fit over the plastic pipe running through the centre of the scope. Finding a part that will fit is a matter of trial and error and may require some packing around the plastic pipe for a good fit.

DO NOT GLUE THIS IN PLACE YET.



Transparent cap came from a brand of spray candy.

Two 25mm scope mounts are used to fit the scope to the blaster. Depending on the exact make of the mounts they will require modifying so that there is a gap of about 5mm between the top of the sight rail and the bottom of the scope. Plasticard can be used to block any gaps under the scope mounts, they should appear to have a solid base.

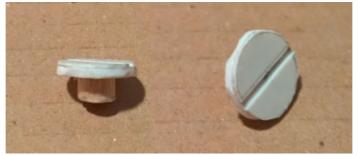


25mm scope mounts. This type is too tall and needs cutting down.

Assuming that there are no fixing screws on the scope mounts, two dummy screws must be fitted to the right hand side where the mounts meet the rail. The heads of these screws are made from discs of 2mm thick plasticard. To one side of these two 0.5mm thick near semicircles are glued so that there is a straight gap running through the middle. The screw head is then glued onto a 5mm length of the 8mm dowel. The complete screws are then glued to the scope mounts where they meet the rail.



The parts of a dummy screw.



Two different views of assembled screws.



The scope mounted on the rail with the dummy screws glued to the right hand side.

Filling the gaps

Milliput or any similar modelling compound is used to fill in any gaps left during the construction of the model. In addition the foresights, left side body detail and stock lugs need to be filled and built up to complete them. The hollow structures of the foresights and body detail need to be filled and the body detail also requires the end rounding off. Milliput needs to be used to build up the stock lugs inwards towards the centre of the blaster. They should slope towards the body so that a gap of 10mm is left between them.



Left to right: Left body detail filled, foresight elements filled, stock lugs built up.



The fully built model.

Painting the model

The model is first sprayed black. Then the front end as far back as the rear of the barrel ribs is painted silver. A darker gunmetal colour is used for the holes either side of the body while the sight element is picked out bright red. A duller red is used inside the rear of the sight for the disc.

Once the model is painted the transparent sight fore end is glued in place. This should be done using PVA glue rather than super glue to avoid misting up the plastic.



Both sides of the painted blaster.

Video tutorial

The making of this blaster was recorded at each stage. The compiled video can be found on my YouTube channel at:

https://youtu.be/ZgCGC-EXLvY

Appendix: Alternate versions of the DH-17

Different versions of the DH-17 appeared in other Star Wars films. These have their origins in the means used to create the original props. The versions seen in A New Hope were inert castings while genuine or replica Sterling sub-machine guns were used in other films. These variants are distinct from the rebel fleet trooper version in that they all possess a magazine on the left hand side of the body as well as other slight differences in the detailing of the body and sight. At least one version was also fitted with a stock.







Various DH-17 blasters as seen in The Empire Strikes Back, behind the scenes of Rogue One and in The Force Awakens. (All images © Lucasfilm Ltd)

Rather than provide detailed instructions for every possible variant, this section offers basic information for creating some of these details. It should not be considered exhaustive by any means.

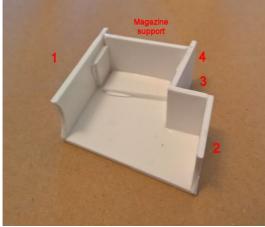
Making the Main Body

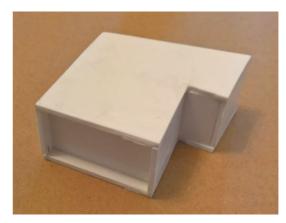
The main body is still a 385mm long length of plastic pipe covered in a pattern made from 0.5mm thick plasticard. However, this pattern is now a single sheet. It is still applied in the same way as the basic two piece cover is.

Note that due to the length of the detailed body cover, it has not been possible to provide a single template for this. Instead it has been split between two pages and the two parts should be stuck end to end before making the actual cover.

Making the Magazine Well

The magazine well sides and magazine support are all glued to one of the magazine well top/bottom plates as shown. The sides are all positioned flush to the edge of the top/bottom plate while the magazine support is set 5mm in from the edge. With the sides and magazine support in place the second top/bottom plate can be fixed in place.





The basic structure of the magazine well.

The detail plate can then be glued to the back of the magazine well so it fits against the corner where it widens.



Detail plate added to magazine well.

There is another small detail to be added to this detail plate, made from a length of 8mm wooden dowel and 5mm plastic tube. A 10mm length of dowel is cut and the edge at one end smoothed off slightly. Then a shallow 5mm hole is drilled about half way along. A short piece of plastic tube, just long enough to protrude from this hole is cut and glued inside it.



The parts of the detail, separately and together.

This is now glued along the centre of the detail plate so the plastic tube points directly away from the body of the magazine well. To complete the magazine well a magazine release button is made using the same parts as the dummy screws for the sight mounts on the rebel fleet trooper version. This is glued to the top of the magazine well so the outer edge lines up with the edges of the magazine well.



The complete magazine well with rear detail and magazine release button added.

Making the Magazine

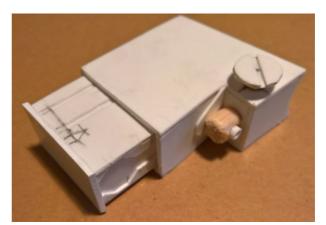
To make the magazine glue the two side plates to one of the top/bottom plates 1mm in from the short edges. Then glue the second top/bottom plate to them, also leaving 1mm exposed at each end. Then to the end that will be the back of the magazine glue the four magazine side details in the corners as shown. The top and bottom details are then glued to the top and bottom plates so that the small triangular hole is towards the rear.



The hollow magazine showing the four details in the corners and with the top/bottom detail pattern added.

The magazine is completed by gluing the 2mm thick end plate over the end with the shorter rear details. It can then be inserted centrally into the magazine well and glued in place.





The completed magazine before and after gluing into the magazine well.

Fixing the Grip and Magazine to the Main Body

The grip on the rebel fleet trooper version of the DH-17 is not in the same place as any of the variants. Instead it is positioned so that the very front of the grip assembly is level with the front of the magazine well where it joins the main body, 147mm from the front of the plastic pipe.



Grip and magazine glued to the main body.

Other Body Details

The variants of the DH-17 do not have the details present towards the rear of the right hand side of the rebel fleet trooper version. Instead they feature some or all of the following:

A row of five domes along the left hand side behind the magazine. These can be made easily using M6 dome headed screws filled with epoxy putty to hide the head pattern.

A grooved rod above the dome details and next to the sight mount. This can be made from a 65mm length of 6mm wooden dowel. Cut flat sections 10mm long, separated by 5mm from each other along the entire length.



The domes and grooved rod behind the magazine.

The remains of a stock mount at the rear of the grip. This can be made from a 40mm length of 12.7mm diameter plastic tube that is closed off at each end. A rounded channel in cut centrally so that it fits flush against the body of the blaster right behind the grip.



The stock mount at the rear of the grip

The Sterling cocking handle is still present on some variants. This can be made easily using a length of 5mm thick copper wire. A suitable hole should be drilled in the body at the front of the slot in the detail plate that the wire can be pushed through and glued into place. A length of about 25-30mm of the wire should be left protruding. This is then bent forwards in an arc and the end smoothed of.



A cocking handle fitted.

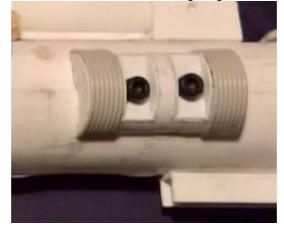
A ribbed detail towards the back of the left hand side. This same detail appears on a number of prop weapons in Star Wars films. This can be constructed from a 40mm length of 21.5mm plastic pipe and a few other pieces.

First the piece of pipe is cut in half lengthways to create a semi-circular cross section. Then two grooves are cut in it. Each grove is 9mm wide and 9mm in from the end (leaving 4mm in the middle) and ends about 8mm from the straight edges of the semi-circular pipe as shown here:



The grooves cut into the half pipe section.

The ends and grooves are then closed off using pieces of 0.5mm thick plasticard. Bear in mind that if you are going to attach this to a curved surface then the end pieces will need a matching curve to fit properly. The internal details can be made uses either short lengths of plastic pipe glued in place or suitably sized hex head screws. The latter option can also provide additional bracing when the detail is mounted to a prop. Finally the smooth end sections of this detail are textured using lengths of ribbon cable.



A finished side detail fitted to the body of a blaster. This example uses hex head screws for both detailing and fixing.

Sights

The sights used on different variants of the DH-17 are radically different. Some use what looks like a modern ACOG scope or similar whereas other use sights similar to the single point scope on the original rebel fleet trooper blaster. It appears that none of the single point scope types uses a transparent end piece though, instead they are all painted black.

The mountings to the main body also vary from film to film but most appear to consist of lengths of tubing that can be made from various pieces of plastic and wooden dowel.

Given the wide number of designs used no specific instructions are given here. Instead reference photos should be studied closely for whatever type of blaster is being built.

There are also what appear to be the foresight of a sterling sub-machine gun on many variants that has been moved backwards close to the grip. This is solid on the rebel fleet trooper blaster but on others this is open. Each open sight loop is made from a single piece of 1mm thick plasticard that requires modifying as follows prior to being attached to the body:

At the line marked 'A' on the template the piece needs folding slightly so that it will slope inwards above this. Between the points marked 'B' and 'C' the plastic needs bending carefully to bring the back end down level to the front.

Remember that two opposite sight loops are needed. These should be folded and bent in opposite directions at the same points.

These are glued to the body either side of the sight mount so that the front is level with the rearmost of the centre line of holes in the body detail and the back is approximately 10mm behind this.



A sight loop glued to the right hand side of a blaster.

Side Mounted Flash Light/Targeting Unit

In Rogue One a number of DH-17s were fitted with a flash light or targeting unit on the side of the fore end. As with the sights there appear to be different versions of this so instead of precise instructions, reference photos should be used to determine the size and shape

Examples of DH-17 Variants

The Empire Strikes Back Version

Created for use with a rebel Hoth trench trooper costume (these troops also carried the fleet trooper version). The sight is similar to the basic fleet trooper version but lacks the transparent front end and the mounting is different.



Rogue One Version

This is for use with a rebel Scariff marine costume. The sight is much flatter, made using a length of plastic pipe and there is a flash light made from plastic pipe and mounted using plasticard and a balsa wood block. The sling swivel is from an air rifle and is screwed in.



Revision History.

Version 1 02/03/2017

First version covering only the rebel fleet trooper version used in A New Hope.

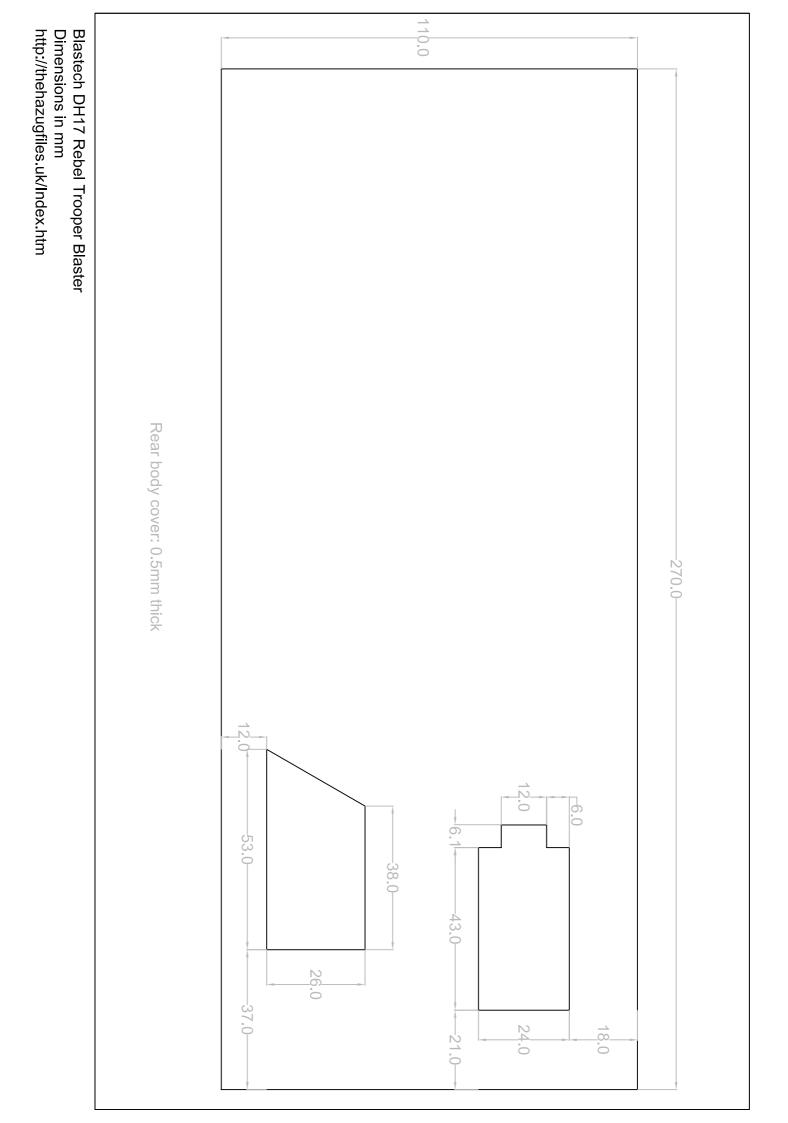
Version 2

04/05/2020

Clarified and corrected parts lists to include outer diameters of plastic pipe used and larger plasticard sheet for body detail.

Optional instructions added for versions seen in other films.

Templates added to provide magazine well, open foresight elements and single piece main body cover



	Forward body cover: 0.5mm thick	
		110-00
Barrel rib: 2mm thick x 16		
5.0 85.0		

