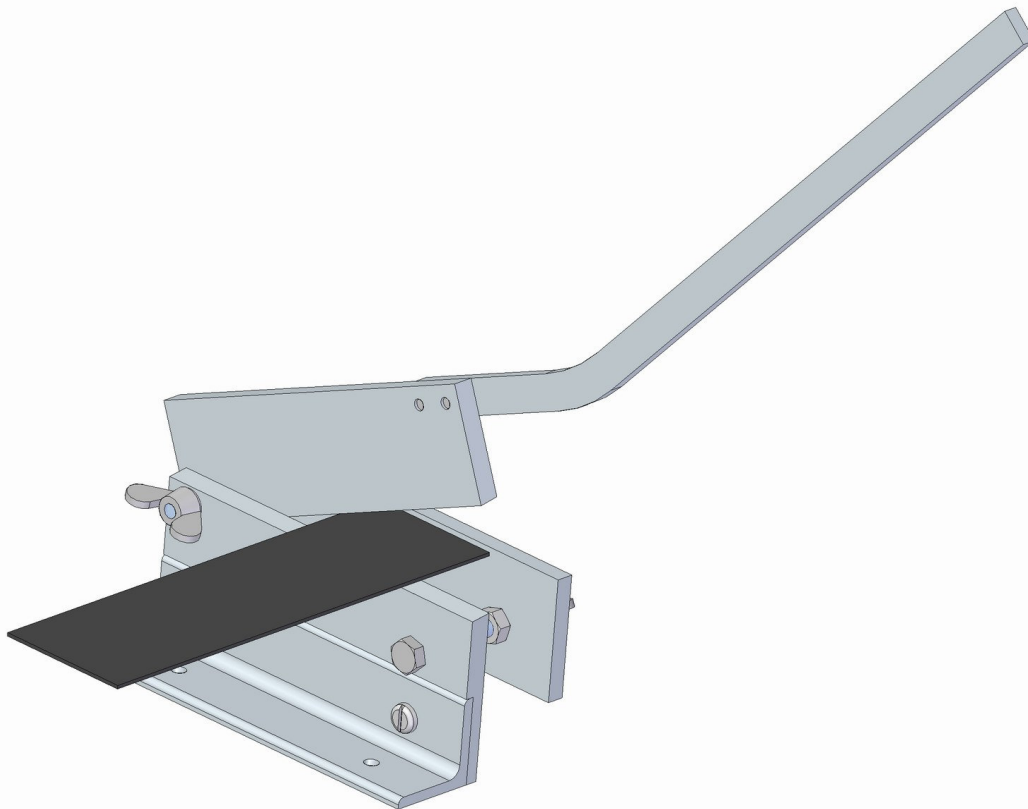


Sheet metal bench shear plan

Tools and machines for working with the sheet metal can be classified into two groups: Tools and machines for cutting the sheet metal and tools and machines for forming. On this page of our website we present the plan for a simple sheet metal bench shear manufacture, which should be an integral part of every sheet metal shop. Considering that cutting of sheet metal is one of the most common procedures in the manufacture of sheet metal parts and components, these bench shears can save a lot of your time. A function of these shears is to linear and precisely cut the sheet metal up to the 2mm thickness, and they are especially useful for cutting the sheet metal strips of constant width into pieces without previous scribing.

There is a large number of shear models on the market (small hand shears and large floor-mounted sheet metal shears; pneumatic or electric sheet metal shears that provide added strength and power for cutting thicker or stronger metals), but we are presenting the manual shear model, which can be made quickly. If your profession involves working with sheet metal, you have to own some kind of professional sheet metal shears in your workshop, which are capable to cut the sheet metal of larger width and thickness and which are electrical or pneumatic powered.

With these kinds of bench shears you can cut steel sheets up to 2mm of thickness. It is also suitable to cut aluminum, bronze, brass, copper or plastic sheets.



The bench shears consist out of the upper and lower shear blade. The lower blade is static and the upper blade rotates around the Rotation pin. Besides the fact, that the rotation pin is fastening and enabling rotation of the upper blade, it also serves as the support of the upper blade during the cutting.

The function of holes with the diameter $D = 8,5\text{mm}$ (0,33in) is to mount the shears onto the end of a workbench using the M8 screws.

Using sheet metal bench shears

1. Mark the straight line on where you want to make the cut, lining it up in the blade and slowly pull the handle down with your hand, until you cut the sheet metal. Always be careful where you put your fingers, as shears cut steel easily, just think how easily it could cut off your finger! It is especially useful to have a source of light next to the bench shears, so you could perfectly see the marked cutting line. This way, cutting will be done much faster and the precision will be higher.

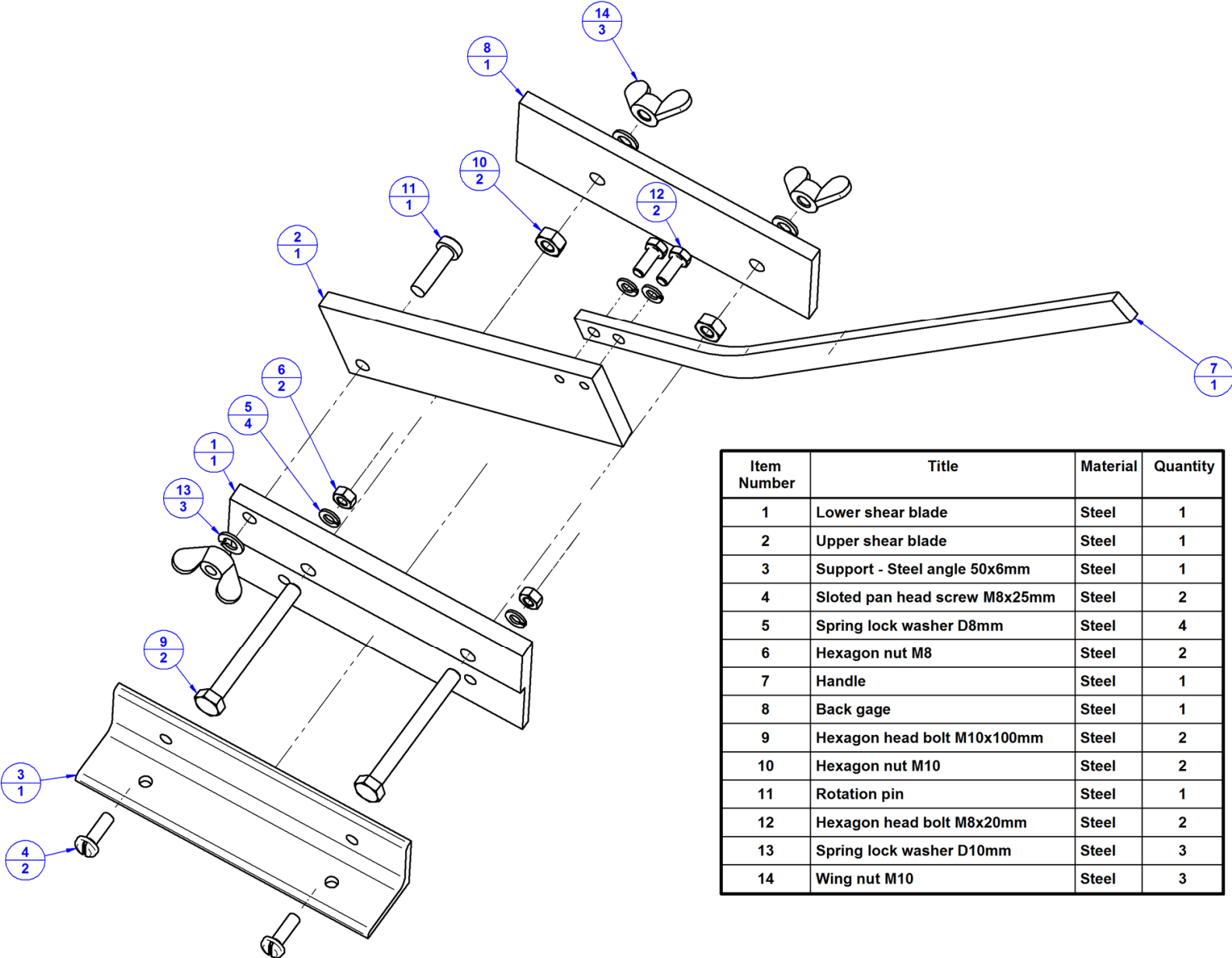
2. These sheet metal bench shears have built in the back gage part, which sets and fastens easily. This feature is useful if you're planning on cutting many sheets of metal down to the same size. That way, you don't have to measure each sheet. Fasten the Back gage part on the same distance from the blade, as the length of cutting is. When cutting sheet metal, we are placing the sheet metal from the left side, and then push it until it comes to the back gage (part 8) and we cut it. We put aside the cut piece and we push again sheet metal until it comes to the back gage.

During the cutting, push the handle little to the left, so you would not separate the blades.

Lower knife (item 1) and Upper knife (item 2) have to be tempered in order to harden them and besides that, these two items have to be made out of the quality high-carbon steel with high hardness.

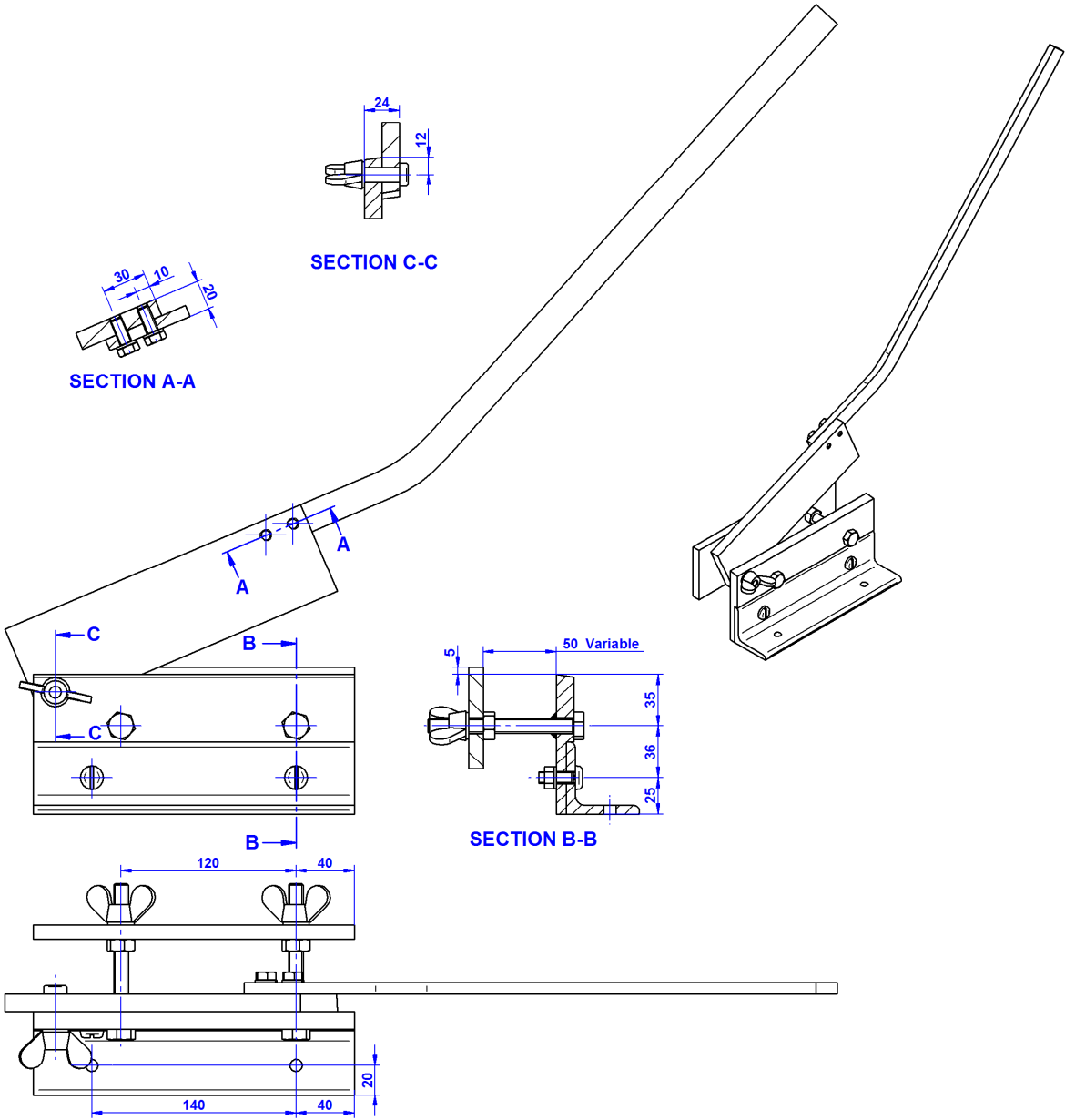
Keep shear blades sharp, well oiled, and adjusted just tight enough to work freely.

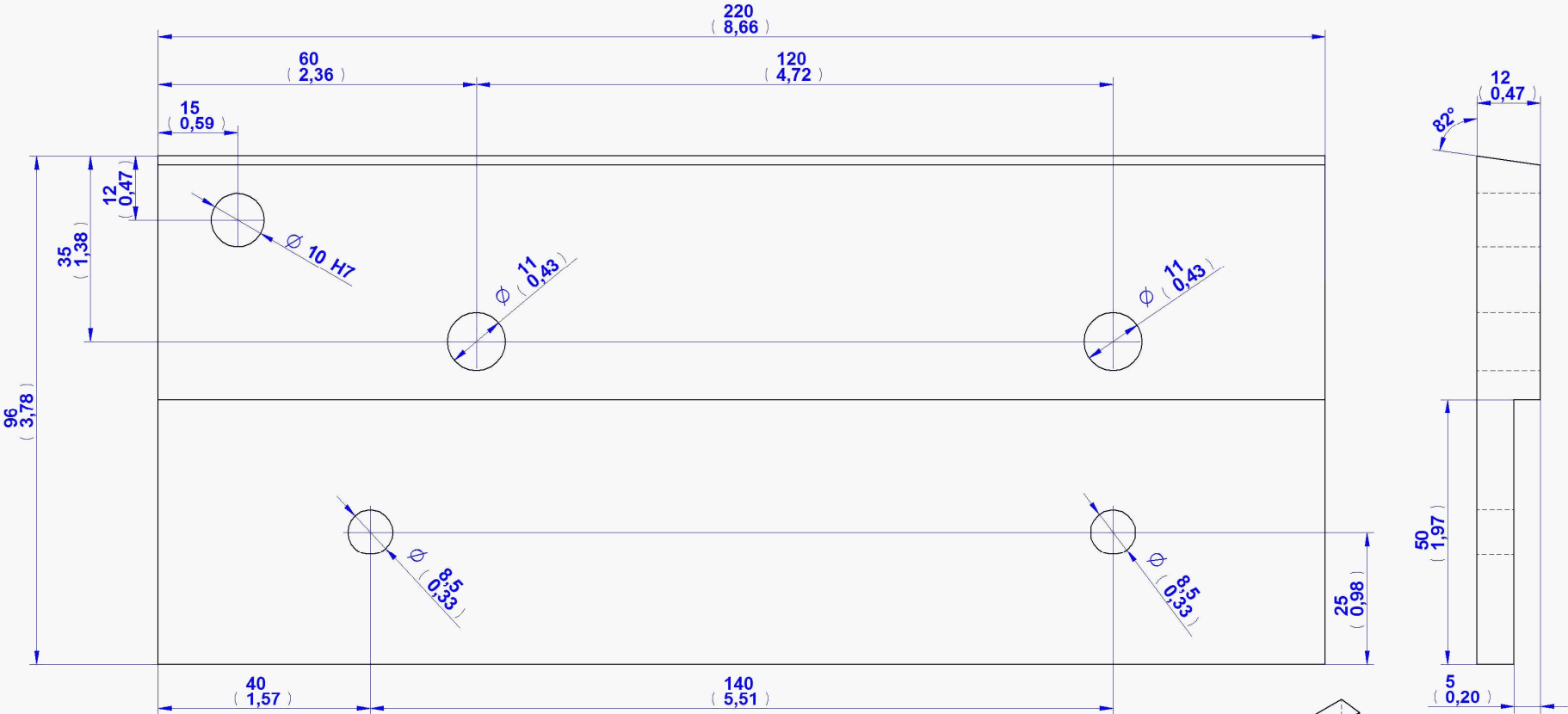
Parts List



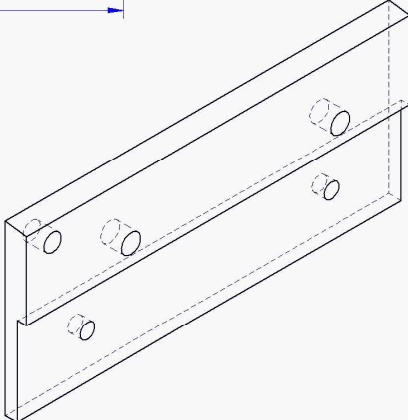
Item Number	Title	Material	Quantity
1	Lower shear blade	Steel	1
2	Upper shear blade	Steel	1
3	Support - Steel angle 50x6mm	Steel	1
4	Sloted pan head screw M8x25mm	Steel	2
5	Spring lock washer D8mm	Steel	4
6	Hexagon nut M8	Steel	2
7	Handle	Steel	1
8	Back gage	Steel	1
9	Hexagon head bolt M10x100mm	Steel	2
10	Hexagon nut M10	Steel	2
11	Rotation pin	Steel	1
12	Hexagon head bolt M8x20mm	Steel	2
13	Spring lock washer D10mm	Steel	3
14	Wing nut M10	Steel	3

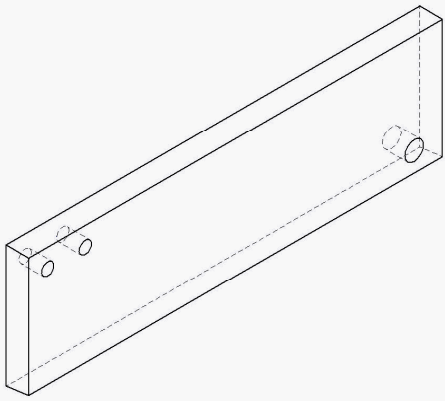
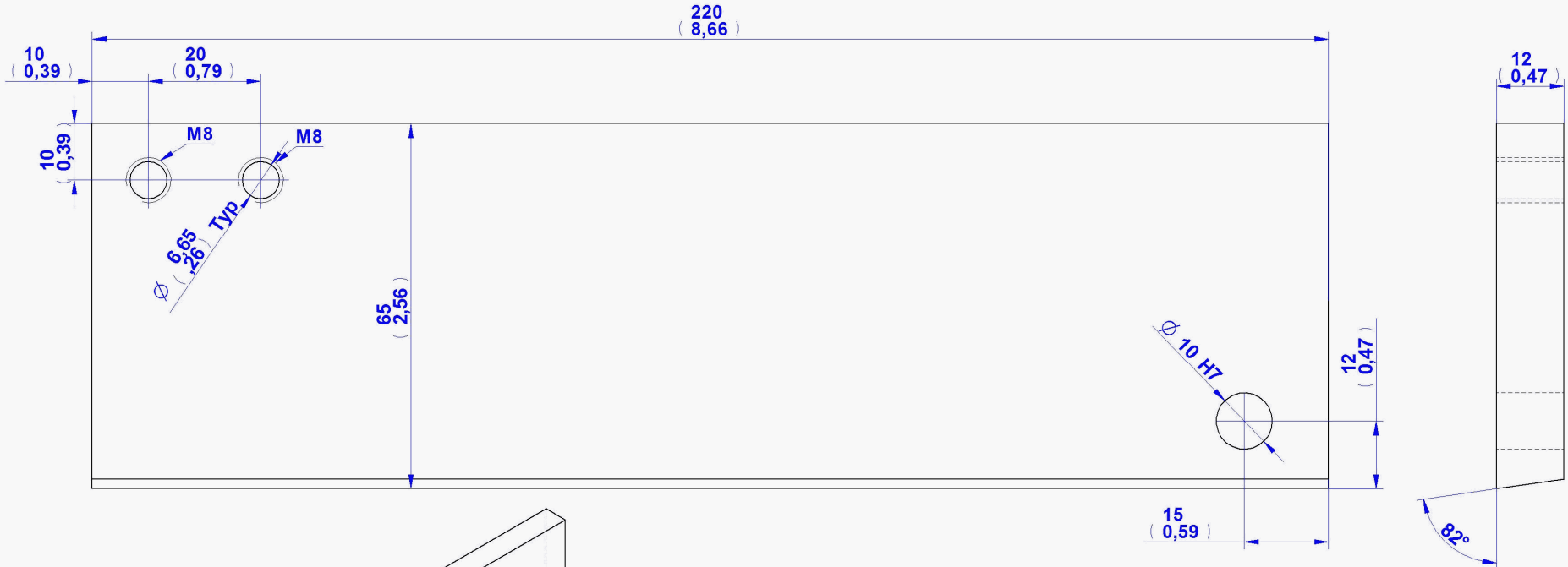
Assembly drawing



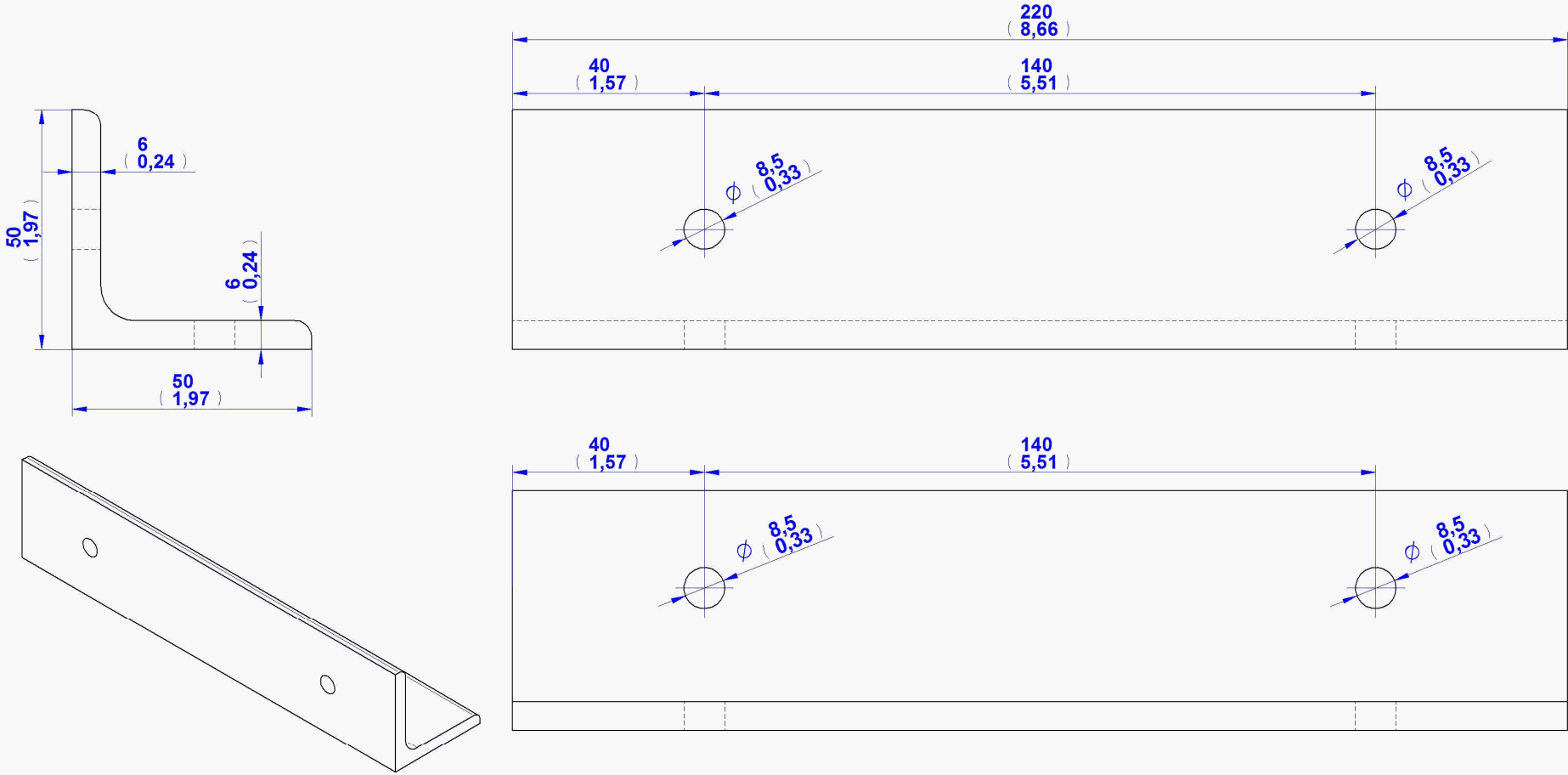


1. Lower shear blade



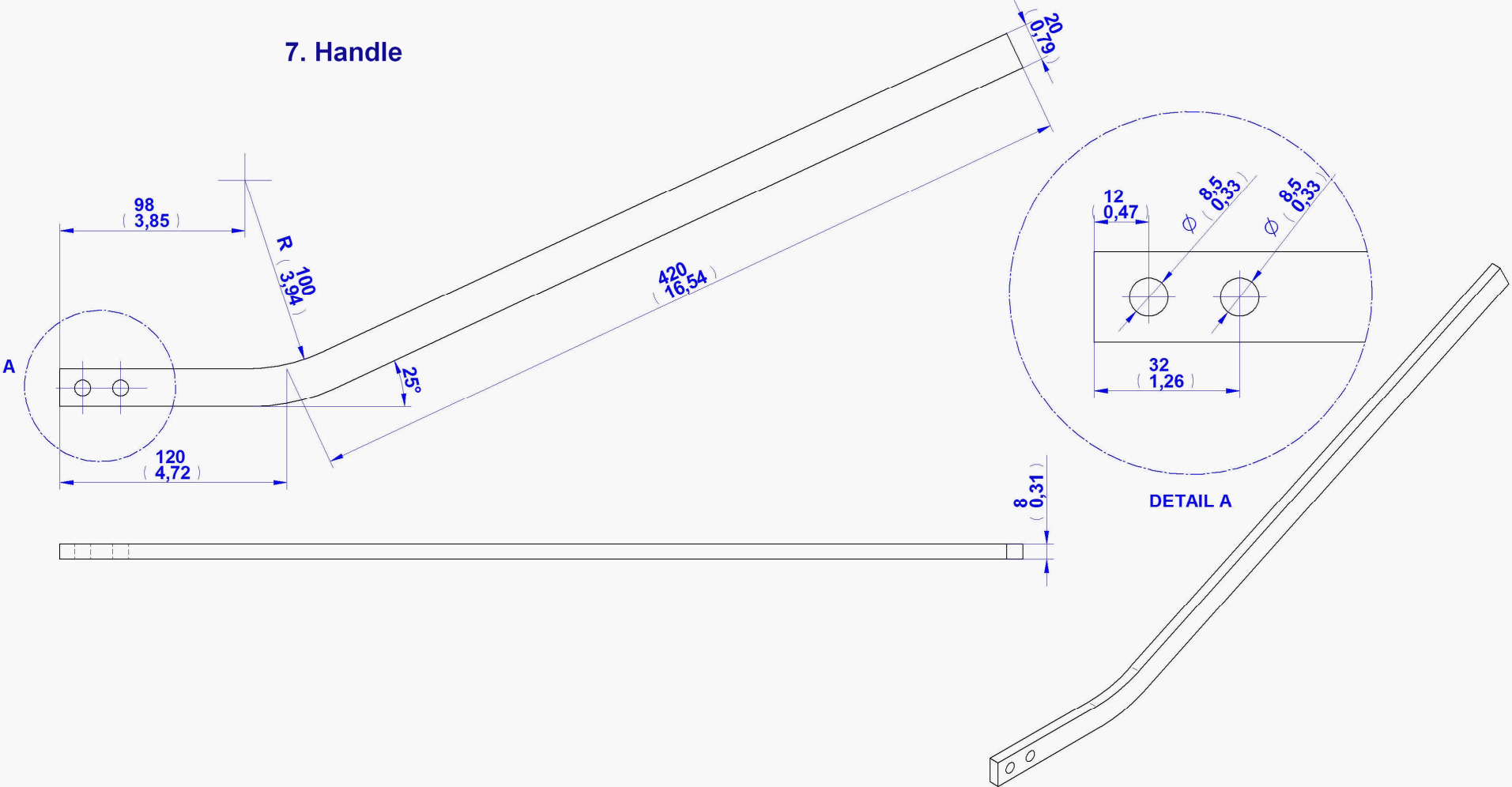


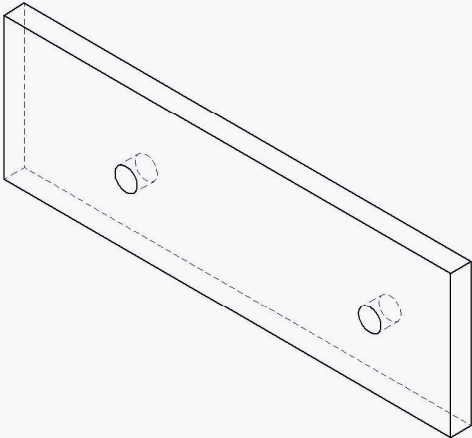
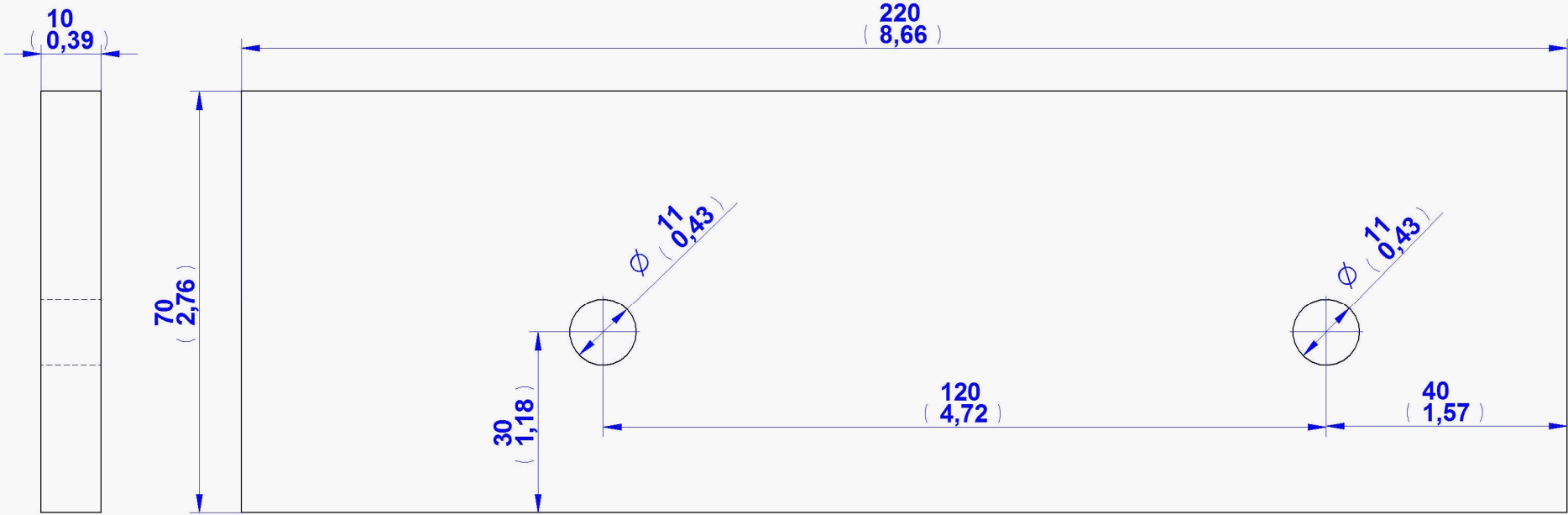
2. Upper shear blade



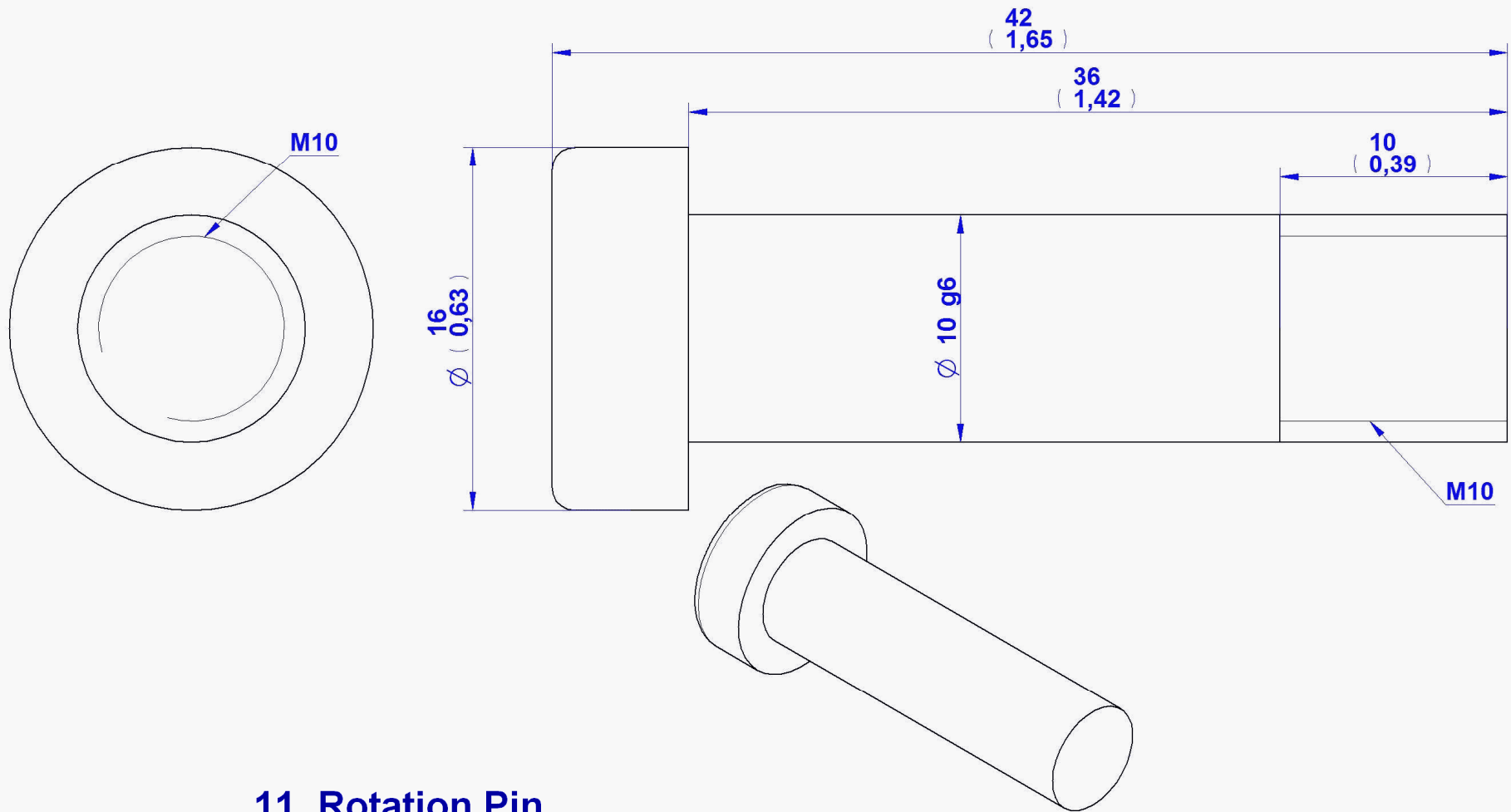
3. Support - Steel angle 50 x 6mm

7. Handle



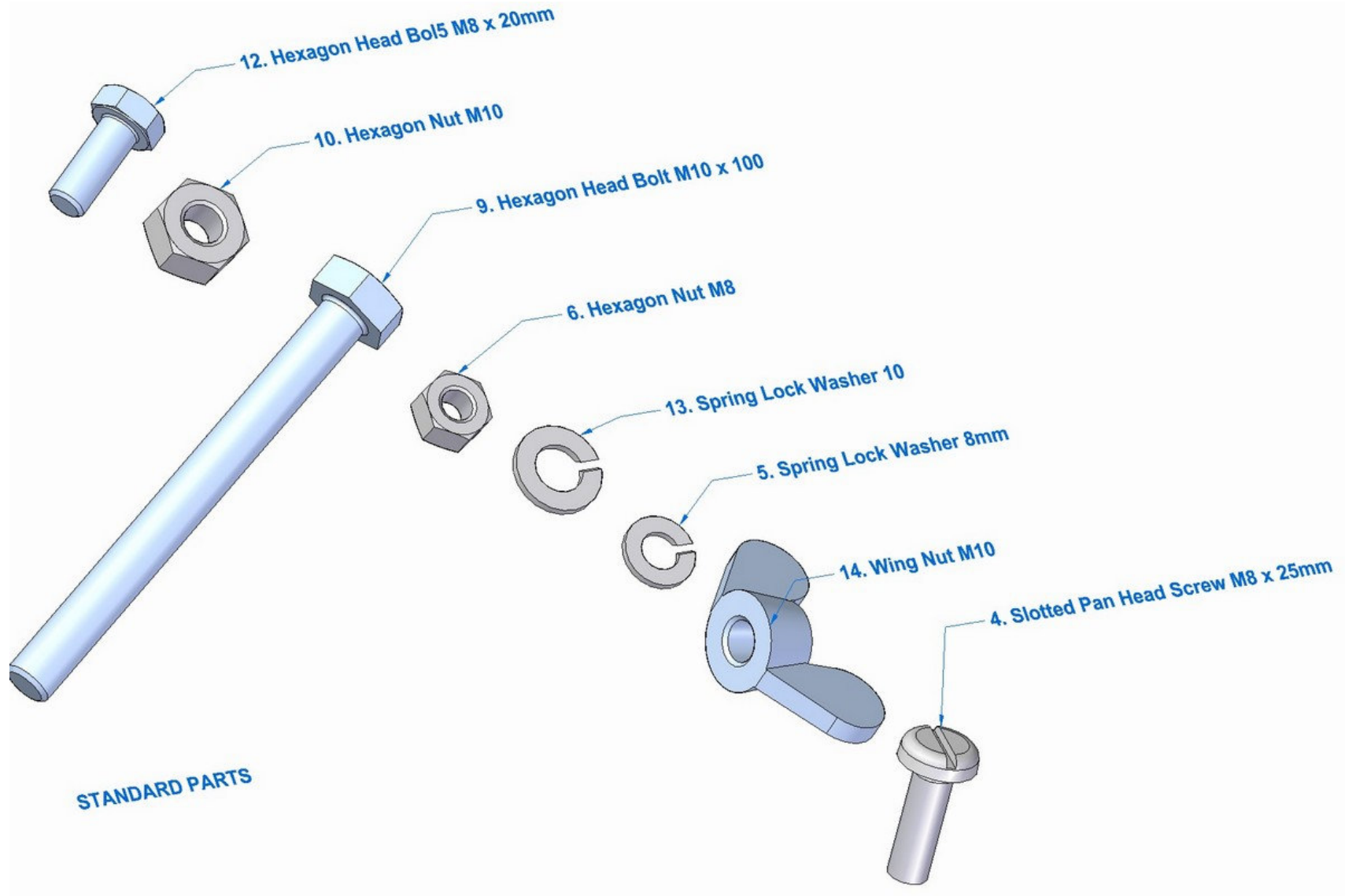


8. Back gage



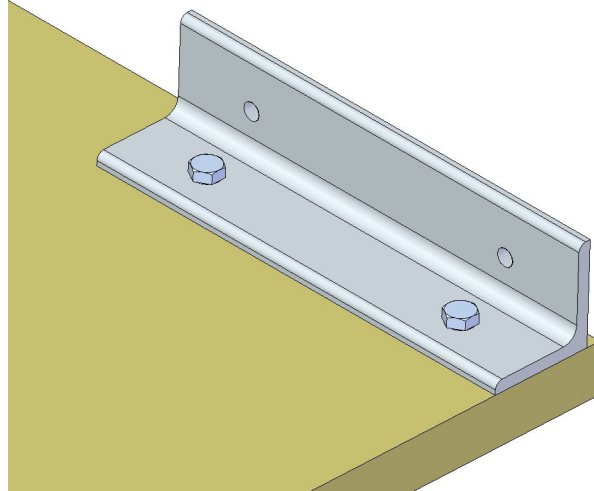
11. Rotation Pin

Standard Parts

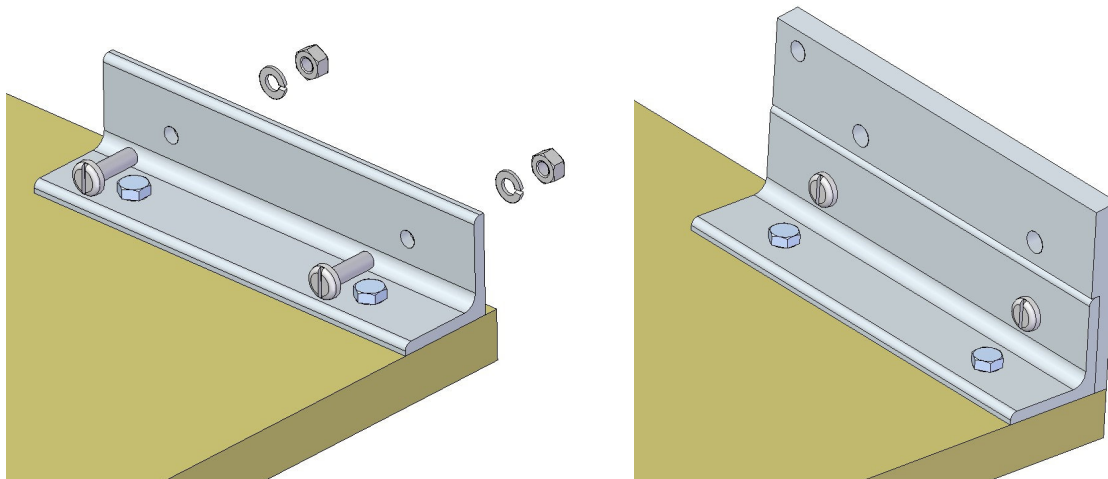


Assemblage Instruction

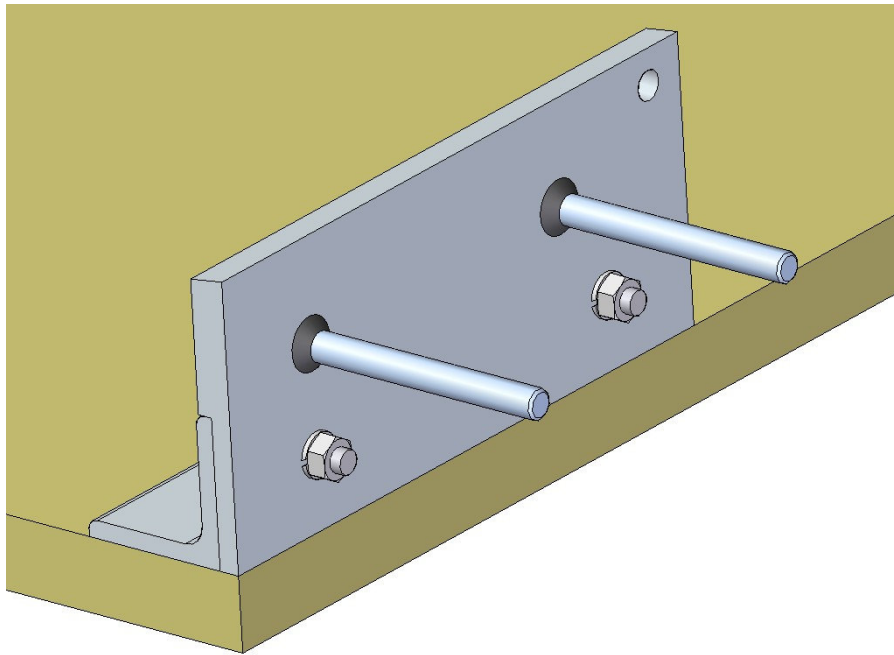
1. Fasten the Support (Part 3) to the edge of your workbench, or some other appropriate place.



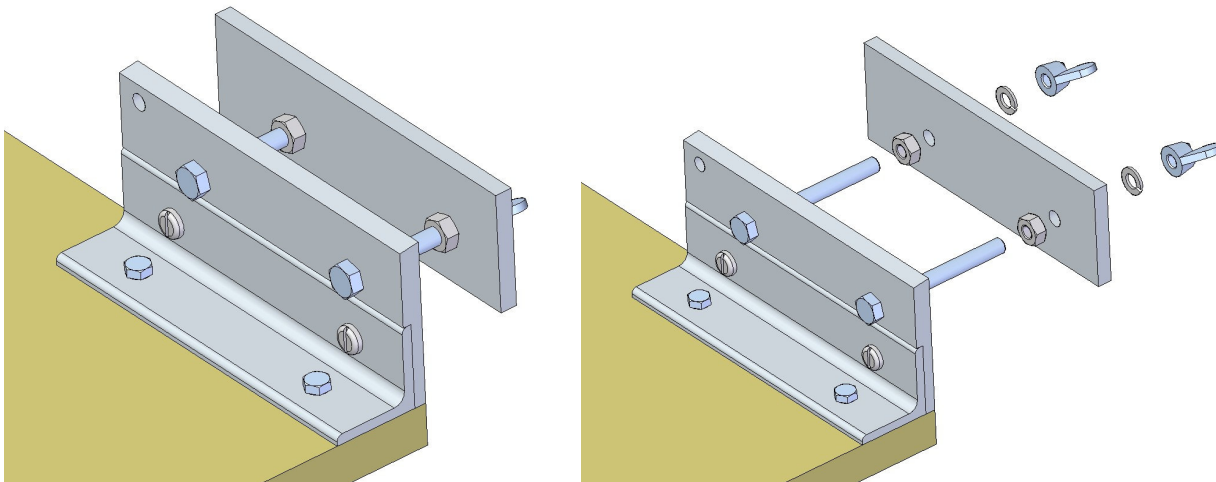
2. Fasten the Lower shear blade (part 1) to the Support (part 3) with bolts.



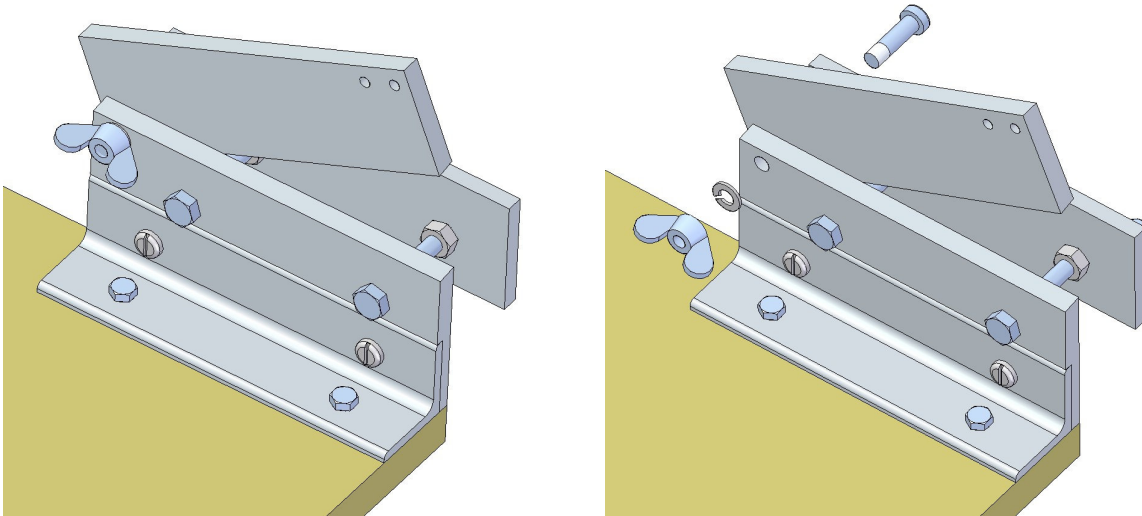
3. Weld the Hexagon Head Bolts (part 9, M10 x 100mm) to the Lower shear blade (part 1).



4. Fasten the Back gage (part 8) to the previously made construction.



5. Fasten the Upper shear blade (part 2) to the previously made construction.



6. Fasten the Handle (part 7) to the previously made construction.

