

Submit CAD files in STEP format

Notebook: Solidworks

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URL: <https://grabcad.com/challenges/grundfos-challenge-design-and-integration-of-...>

- Submit CAD files in STEP format:

[There are in the attachment file.](#)

- Screenshots in various views (preferably rendered)

[There are in the attachment file.](#)

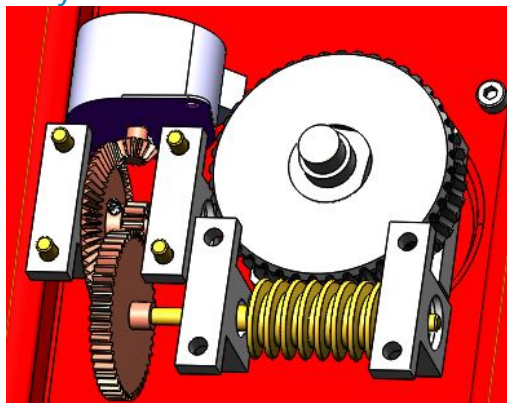
- Screenshots of simulation results (if applicable)
and a small description of the setup (so that it can
be replicated by the jury)

1. In gear drive train system, i choosed worm gear, spur
and straight bevel gear.

Worm gear provides major reduction ratio (44)

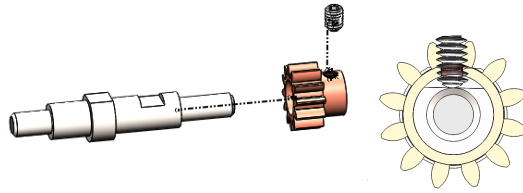
Spur provides 4 reduction ratio

straight bevel gear provides 4 reduction ratio and
easy assemble.



2. Standard and common parts Bearing holder, it can mostly reduce cost and avoid tolerance of assemble.

3.D-cut shaft are for the stable rotation

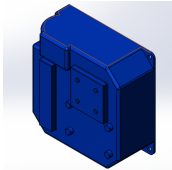
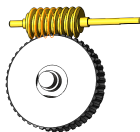
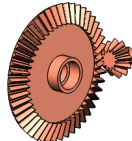
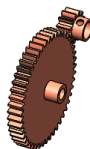
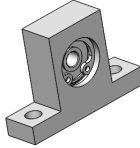
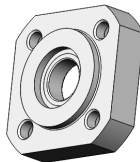
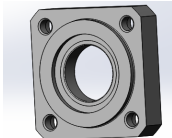

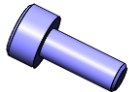


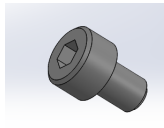
• Gear ratio:

Gear ratio	Photo
<ul style="list-style-type: none"> ○ A pair of straight bevel gear ○ Gear module:0.8, 12 teeth and 48 teeth. ○ Gear ratio 4 	
<ul style="list-style-type: none"> ○ A pair of spur gear ○ Gear module:0.8, 12 teeth and 48 teeth. ○ Gear ratio 4 	
<ul style="list-style-type: none"> ○ A pair of worm gear ○ Gear ratio 1:44 	
<ul style="list-style-type: none"> ○ Total: 704 	

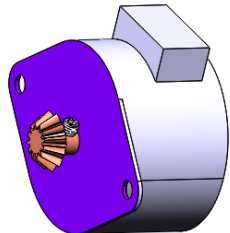
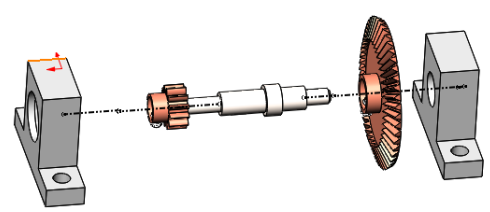
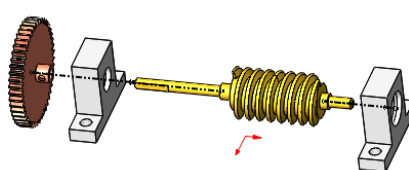
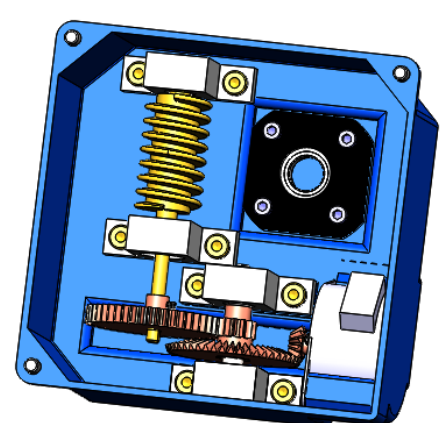
• Bill of material incl. material composition:

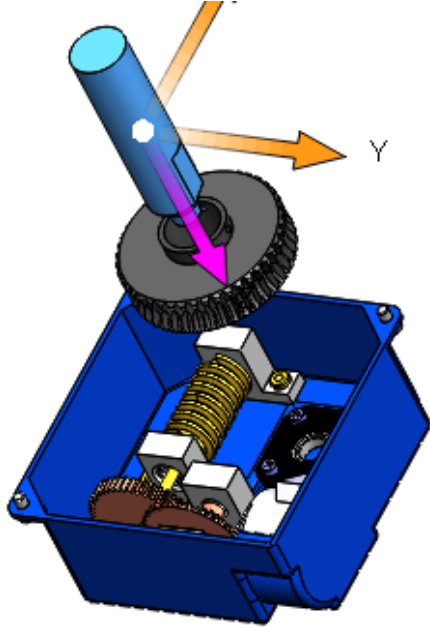
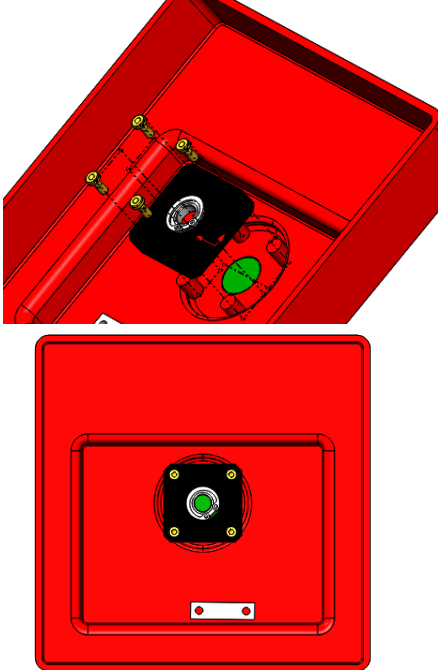
Part	Manufacturing	Photo	Quantity

Cover	<ul style="list-style-type: none"> Injection molding tool 3D-printing 		1
A pair of worm gear	<ul style="list-style-type: none"> customized shaft 		1
A pair of straight bevel gear	<ul style="list-style-type: none"> customized shaft 		1
A pair of spur gear	<ul style="list-style-type: none"> customized shaft 		1
Bearing holder (bearing 624)	<ul style="list-style-type: none"> Common parts : Misumi bearing holder BGHKB624DD-15 		4
Bearing holder (bearing 6800)	<ul style="list-style-type: none"> Common parts : Misumi bearing holder SBGSR6800ZZ 		1
Bearing holder (bearing 6804)	<ul style="list-style-type: none"> Common parts : Misumi bearing holder SBGSR6804ZZ 		1
Screw	<ul style="list-style-type: none"> Common parts : :T4x10 		12
Screw	<ul style="list-style-type: none"> Common parts : :T3x8 		4
Screw	<ul style="list-style-type: none"> 1. Common parts : :T4x4 		4

- Assembly

Step 1	Assemble motor and set screw	
Step 2	Assemble spur gear	
Step 3	Assemble worm gear	
Step 4	Mount cover with step 1, step 2, step 3 sup-module and lock by screw.	

Step 5	Mount worm gear and main shaft.	 <p>The diagram illustrates the assembly of a worm gear and main shaft into a blue enclosure box. A blue cylindrical main shaft is shown being inserted into a grey worm gear. A pink arrow points to the shaft, and an orange arrow labeled 'Y' indicates the direction of rotation. The assembly is shown being placed into the blue enclosure box, which contains other internal components like a spring and a motor.</p>
Step 6	Mount on enclosure box	 <p>The diagram shows the assembly mounted on a red enclosure box. The top view shows the assembly with a green circular component and a black motor. The bottom view shows the assembly with a black motor and a green circular component. The assembly is shown being placed into the red enclosure box, which has a black motor and a green circular component.</p>
Step 6	assemble all module	

