TAP BOTH SIDES M5 × 12MM

DIMENSIONS OF FRAME MEMBERS

ROUGH LOCATIONS OF THE CENTRAL AXLE AND STOP BLOCKS

IT IS RECOMMENDED TO ASSEMBLE ONLY THE LOWER HALF OF THE FRAME BEFORE BUILDING UP THE SUSPENSION. THIS ALLOWS FOR THE ACRYLIC SIDE PANELS TO BE SLID IN WITHOUT HAVING TO DISSASSEMBLE THE FRAME.

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FRAME BASE ASSEMBLY

ALL DIMENSIONS IN MM

FRAME_Cantilever

A2

SCALE 1:2

SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED

<table>
<thead>
<tr>
<th>ANGLES</th>
<th>X</th>
<th>X.X</th>
<th>X.XX</th>
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<tbody>
<tr>
<td>± 0.5°</td>
<td>± 0.500</td>
<td>± 0.100</td>
<td>± 0.010</td>
<td>± 0.005</td>
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</table>

42.6

0°

10

16

DEPENDING ON THE FIT, THIS PART MAY NEED TO BE LENGTHENED OR SHORENED. THIS CAN BE ACHIEVED BY MODIFYING THE CAD PRIOR TO PRINTING, OR SHIMMING AND SANDING.
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50MM GEAR

50mm_Gear

FIRST ISSUED: 4/30/21
DRAWN BY: MILLER, ANDREW
MATERIAL: ABS
FINISH: NONE
REVIEWED BY: ALKINS

SCALE 1:1

ALL DIMENSIONS IN INCHES

UNLESS OTHERWISE SPECIFIED

ANGLES ± 0.5°
X ± 0.025
X.X ± 0.020
X.XX ± 0.010
X.XXX ± 0.005

adapted from McMaster part number 2662N433
Adapted from McMaster part number 2662N435

SECTION A-A

UNLESS OTHERWISE SPECIFIED

ANGLES
± 0.5°

X
± 0.025

XX
± 0.020

XXX
± 0.010

XXXX
± 0.005

ALL DIMENSIONS IN INCHES

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FIRST ISSUED 4/30/21
DRAWN BY MILLER, ANDREW
MATERIAL ABS
FINISH NONE
REVIEWED BY ALKINS

60MM GEAR

SIZE DRG NO. SHEET REV
A 60mm_Gear A

SCALE 1:1

SHEET 1 OF 1
A NAIL, CUT TO LENGTH, WAS CHOSEN BECAUSE THE HEAD ENSURES THE AXLE REMAINS IN THE MOUNT IN THE CASE OF A LATERAL LOAD. IN PRACTICE, THE STRAIGHTNESS OF THE NAIL'S SHAFT WAS SLIGHTLY DISSAPPOINTING. IT CAN BE SUBSTITUTED WITH A 4MM ROD IF DESIRED.
UNLESS OTHERWISE SPECIFIED

<table>
<thead>
<tr>
<th>ANGLES</th>
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<th>X.X</th>
<th>X.XX</th>
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<td>± 0.010</td>
<td>± 0.005</td>
</tr>
</tbody>
</table>

ALL DIMENSIONS IN MM
ANY PARTS NOT DIMENSIONED ARE PURELY AESTHETIC
ALL CHAMPHERS ARE 0.5x0.5mm

UNLESS OTHERWISE SPECIFIED

ANGLES
±0.5°

ALL DIMENSIONS IN MM

UNIVERSITY OF ROCHESTER

SUSPENSION FLIPPER

FIRST ISSUED 3/25/21
DRAWN BY GAETAN FOSSY
MATERIAL ABS PLASTIC
FINISH N/A
REVIEWED BY

SCALE 1:1
UNLESS OTHERWISE SPECIFIED

<table>
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<tr>
<th>ANGLES</th>
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42,6

DEPENDING ON THE FIT, THIS PART MAY NEED TO BE LENGTHENED OR SHORENED. THIS CAN BE ACHIEVED BY MODIFYING THE CAD PRIOR TO PRINTING, OR SHIMMING AND SANDING.

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FIRST ISSUED: 3/28/21
DRAWN BY: GAETAN FOSY
MATERIAL: ABS OR PVC
FINISH: NONE
REVIEWED BY:

SCALE 1:1
A3 Suspension_outer_spacer
SHEET 1 OF 1
Bevel Gear from McMaster
(https://www.mcmaster.com/2515N17/)

Gear Type: Bevel
Component: Gear
System of Measurement: Inch
Bore Type: Round
Face Width: 0.48"
Pitch: 16
Pressure Angle: 20°
Speed Ratio: 4:1

UNLESS OTHERWISE SPECIFIED

ANGLES
± 0.5°
X
± 0.025
X.X
± 0.020
X.XX
± 0.010
X.XXX
± 0.005
X.XXXX
± 0.0005

ALL DIMENSIONS IN INCHES

UNIVERSITY OF ROCHESTER

FIRST ISSUED: 4/3/2021
DRAWN BY: SABA
MATERIAL: ABS
FINISH: NONE
REVIEWED BY: N/A

SIZE
A
DRG NO.
Small_Bevel_Gear
SHEET REV.
C

SCALE 1:1

SHEET 1 OF 1
**Bevel Gear from McMaster**
(https://www.mcmaster.com/2515N18/)

<table>
<thead>
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<td>Component</td>
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<td>System of Measurement</td>
<td>Inch</td>
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<tr>
<td>Bore Type</td>
<td>Round</td>
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<tr>
<td>Face Width</td>
<td>0.48&quot;</td>
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<td>Pitch</td>
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<tr>
<td>Pressure Angle</td>
<td>20°</td>
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<tr>
<td>Speed Ratio</td>
<td>4:1</td>
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</tbody>
</table>

**Outer Pitch Diameter**: R1.02

**Inner Pitch Diameter**: R0.675

**Ø0.509**: +0.005

---

**UNIVERSITY OF ROCHESTER**

**FIRST ISSUED**: 4/3/2021

**DRAWN BY**: SABA

**MATERIAL**: ABS

**FINISH**: NONE

**SIZE**: A

**DRG NO.**: Small_Bevel_Pinion

**REVIEWED BY**: N/A

**SHEET REV**: B

**SCALE**: 2:1

**SHEET**: 1 OF 1

---

**ALL DIMENSIONS IN INCHES**

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<th>ANGLES ± 0.5°</th>
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<th>X.X ± 0.020</th>
<th>X.XX ± 0.010</th>
<th>X.XXX ± 0.005</th>
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<td>QTY</td>
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<td></td>
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</tr>
<tr>
<td>1</td>
<td>SHAFT_CLAMP_HALF</td>
<td>2</td>
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<tr>
<td>2</td>
<td>M5X24</td>
<td>4</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>M5_NUT</td>
<td>4</td>
<td></td>
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</tbody>
</table>
INSERT THE M5 NUT INTO THE SLOT AND TIGHTEN DOWN THE BOLT. THE BOLT CAN THEN BE ADJUSTED TO LIMIT THE MAX SUSPENSION TRAVEL.
IF THE DISPLAYED HOLE PATTERN FOR THE M5X8 SOCKET HEADED CAP SCREWS IS UNAVAILABLE, A STANDARD HEX DRIVE IS AN ADEQUATE SUBSTITUTION.
DIMPLES ARE PURELY FOR AESTHETIC Purposes AND CAN BE IGNORED.

UNLESS MARKED OTHERWISE
ALL CHAMFERS ARE 0.4X0.4MM

UNLESS OTHERWISE SPECIFIED

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ALL DIMENSIONS IN MM
E-STOP MOUNTING PLATE

UNLESS OTHERWISE SPECIFIED

ANGLES

<table>
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</table>

ALL DIMENSIONS IN MM

UNIVERSITY OF ROCHESTER

FIRST ISSUED 03/28/2021

DRAWN BY ZHOU

MATERIAL ACRYLIC

FINISH NONE

REVIEWED BY NONE

SCALE 1:1

A4 E_StopMountBoard A

SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED

ANGLES

± 0.5°

X ± 0.500

X.X ± 0.100

X.XX ± 0.010

X.XXX ± 0.005

ALL DIMENSIONS IN MM

UNIVERSITY OF ROCHESTER

FIRST ISSUED 03/28/2021
DRAWN BY ZHOU
MATERIAL ABS PLASTIC
FINISH NONE
REVIEWED BY

BOARD BRACKET 2

SIZE DRG NO. SHEET REV
A4 MountingPlate2 A

SCALE 1:1 SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED

ANGLES
± 0.5°

X
± 0.500

X.X
± 0.100

X.XX
± 0.010

X.XXX
± 0.005

ALL DIMENSIONS IN MM

UNIVERSITY OF ROCHESTER

FIRST IssUED
03/31/2021

DRAWN BY
ZHOU

MATERIAL
ACRYLIC

FINISH
NONE

REVIEWED BY
NONE

SIZE
A4

DRG NO.
SwitchMountBoard

SHEET REV
A

SCALE 1:1

SHEET 1 OF 1