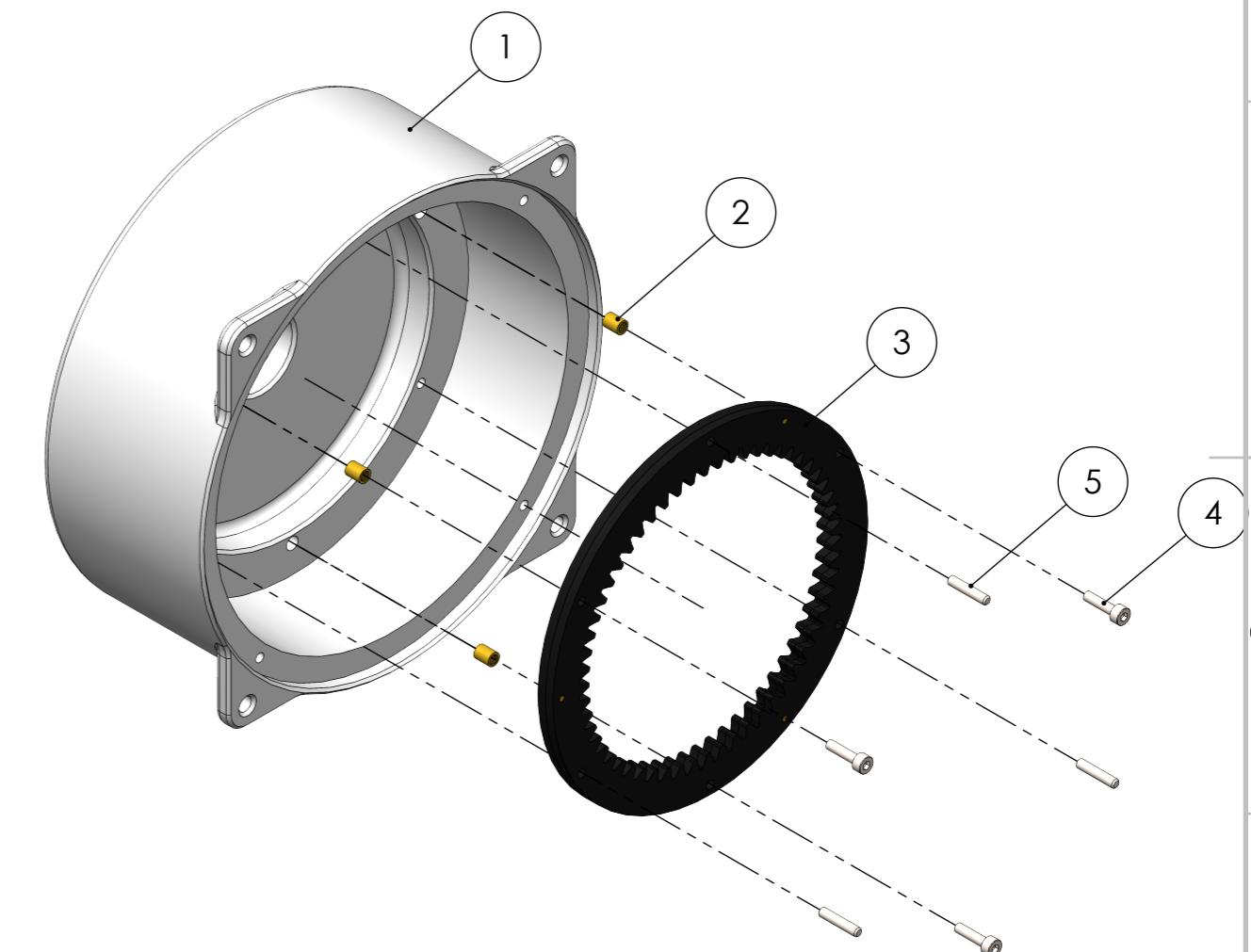
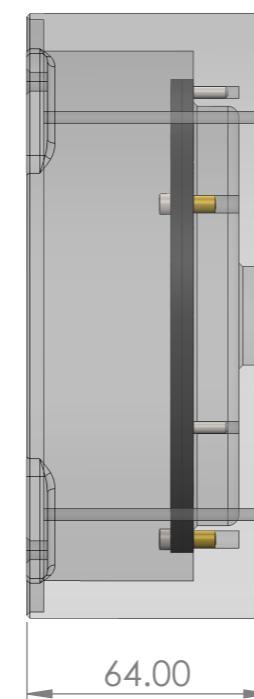
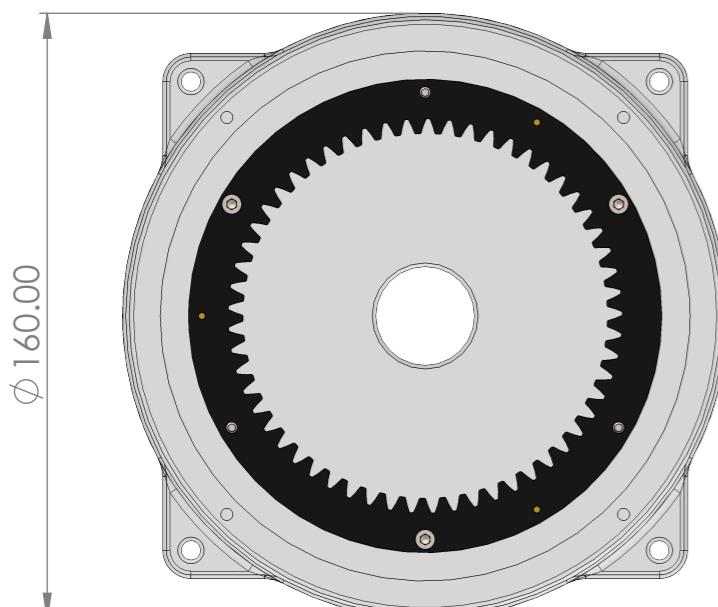
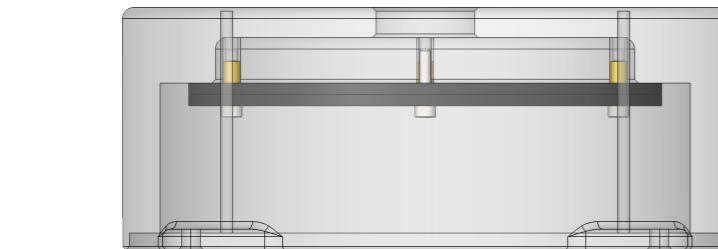
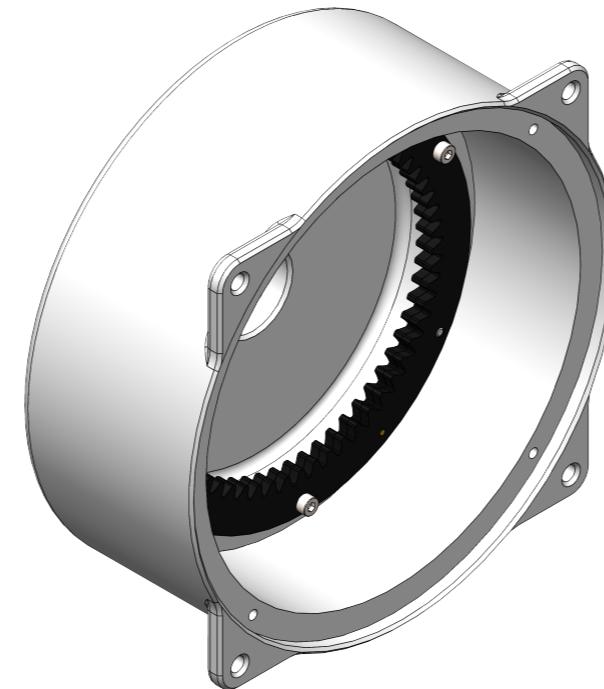


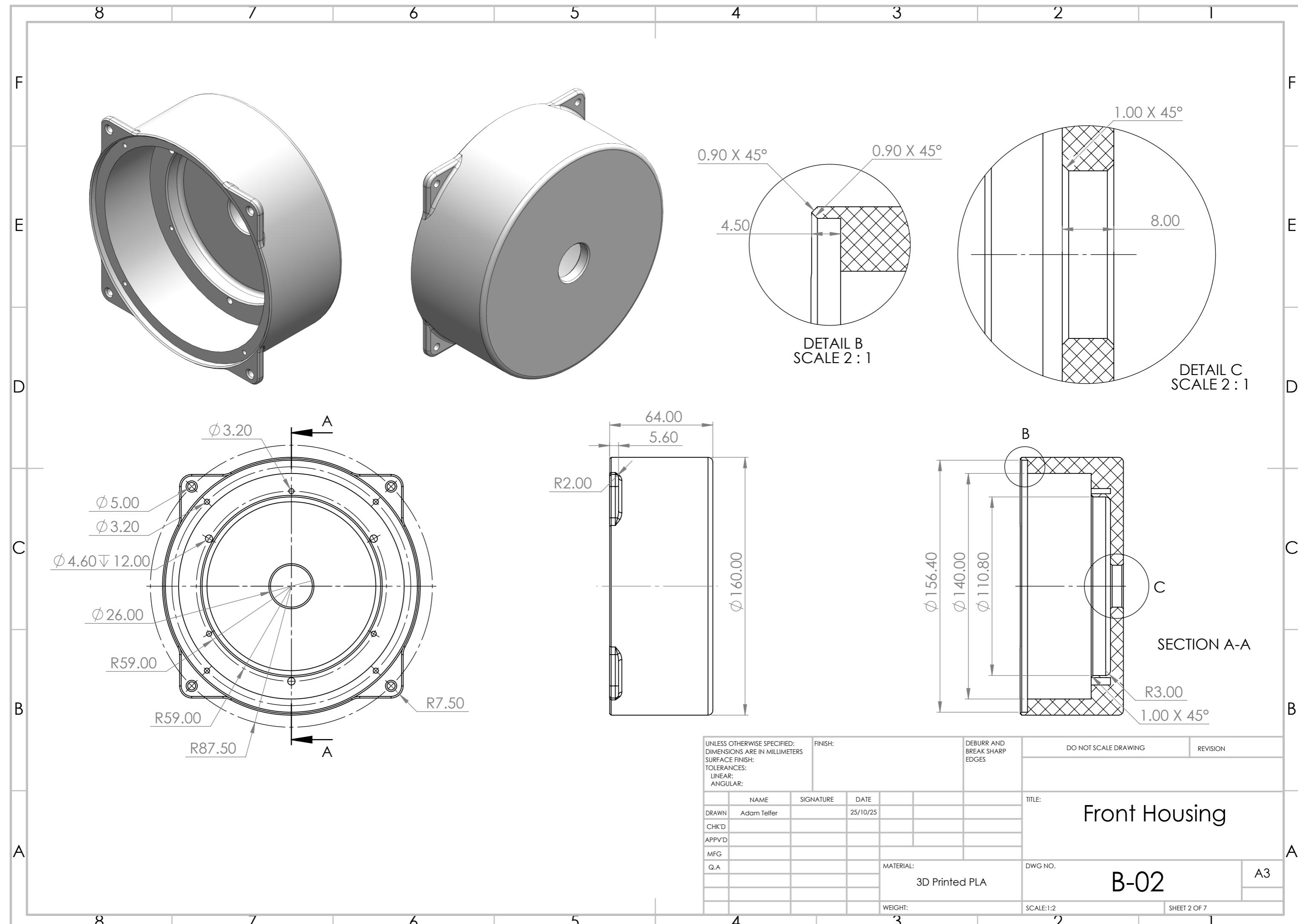
| ITEM NO. | PART NUMBER                     | DESCRIPTION | QTY. |
|----------|---------------------------------|-------------|------|
| 1        | Housing_Front                   |             | 1    |
| 2        | Threaded_Heat_Insert_M3x5.7x4.6 |             | 3    |
| 3        | Ring_Gear_Stage_1               |             | 1    |
| 4        | ISO 4762 M3 x 12 - 12N          |             | 3    |
| 5        | Ring_Gear_Alignment_Pin         | 15mm        | 3    |



## Drawings

- D-02: Front Housing Body
  - D-03: Stage 1 Ring Gear
  - D-04: Stage 1 Ring Sun Gear and Shaft
  - D-05: Sun Gear Assembly
  - D-06: Sun Gear 2D profiles
  - D-07: Input Shaft and Key Pin

|   |             |           |           |  |                                    |   |          |
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| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>SURFACE FINISH:<br>TOLERANCES:<br>LINEAR:<br>ANGULAR: |             | FINISH:   |           |  | DEBURR AND<br>BREAK SHARP<br>EDGES | DO NOT SCALE DRAWING                          | REVISION |
| DRAWN   | Adam Telfer | SIGNATURE | DATE      |  |                                    | TITLE:<br><br><h1>Front Housing Assembly</h1> |          |
| CHK'D   |             |           | 25/10/25  |  |                                    |   |          |
| APPVD   |             |           |           |  |                                    |   |          |
| MFG   |             |           |           |  |                                    |   |          |
| Q.A   |             |           | MATERIAL: |  | DWG NO.                            | B-01  | A3       |
|   |             |           |           |  | SCALE:1:2                          | SHEET 1 OF 7                                  |          |
|   |             |           | WEIGHT:   |  |                                    |   |          |



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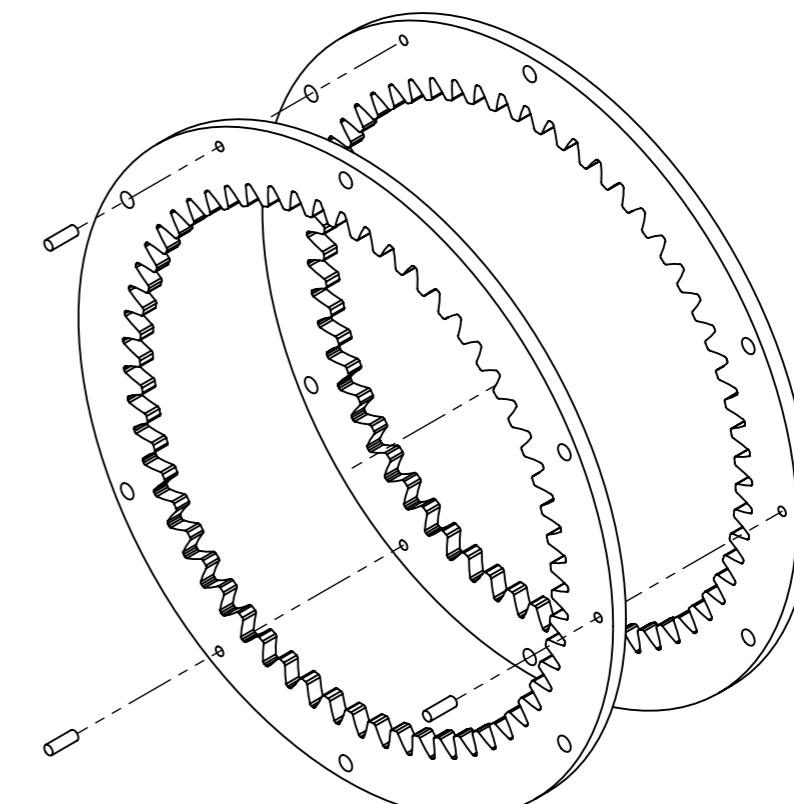
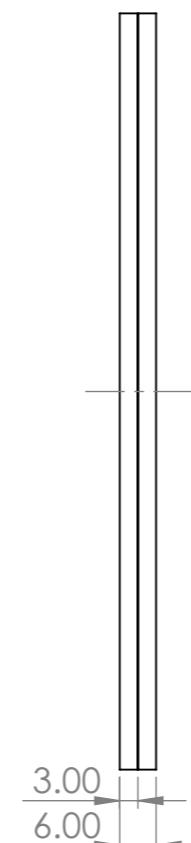
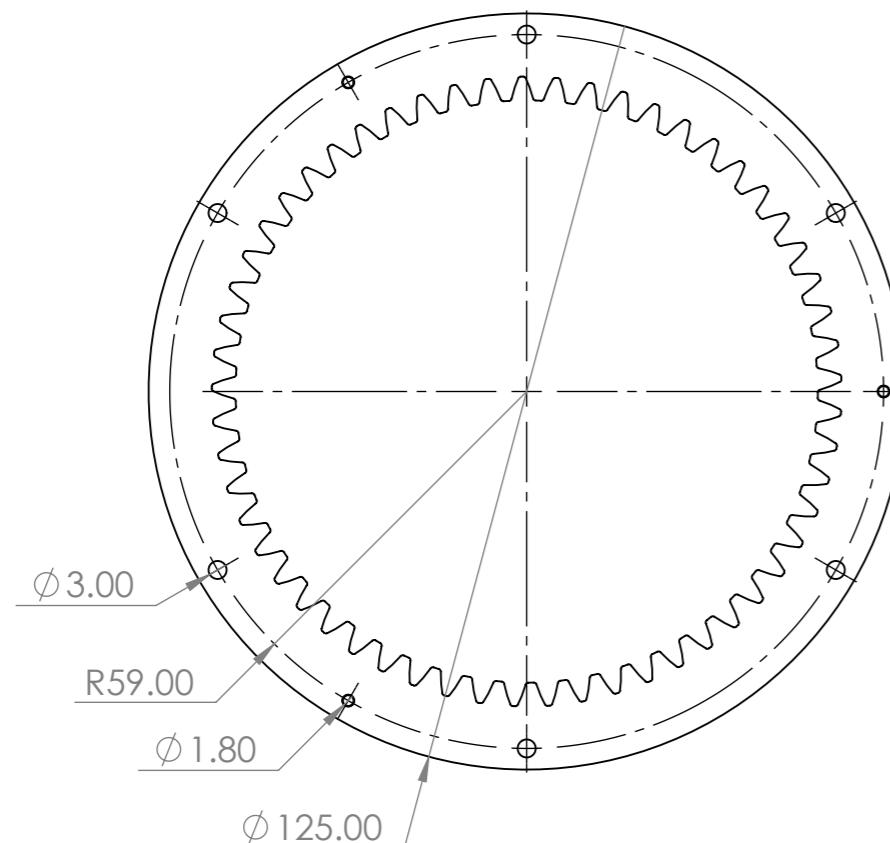
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| Stage 1 - Ring Gear |        |
|---------------------|--------|
| Module              | 1.75   |
| Teeth               | 57     |
| Pressure Angle      | 20 deg |



#### Notes

Gear layers are laser cut from 3 mm acrylic sheet.

Alignment Pins are 2 mm brass rod that is oversized during assembly then cut flush to the gear face.

| ITEM NO. | PART NUMBER                | DESCRIPTION | QTY. |
|----------|----------------------------|-------------|------|
| 1        | Internal_Spur_Gear_Stage_1 |             | 2    |
| 2        | Alignment_Pin              |             | 3    |

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| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>SURFACE FINISH:<br>TOLERANCES:<br>LINEAR:<br>ANGULAR: |      |           |          | FINISH:                     | DEBURR AND<br>BREAK SHARP<br>EDGES | DO NOT SCALE DRAWING | REVISION |
| DRAWN   | NAME | SIGNATURE | DATE     |                             |                                    |                      |          |
| CHK'D   |      |           | 25/10/25 |                             |                                    |                      |          |
| APP'D   |      |           |          |                             |                                    |                      |          |
| MFG   |      |           |          |                             |                                    |                      |          |
| Q.A   |      |           |          |                             |                                    |                      |          |
|   |      |           |          | MATERIAL:                   | DWG NO.                            |                      |          |
|   |      |           |          | Gear: Acrylic<br>Pin: Brass | B-03                               |                      |          |
|   |      |           |          | WEIGHT:                     | SCALE:1:5                          |                      |          |
|   |      |           |          |                             | A3                                 |                      |          |
|   |      |           |          | SHEET 3 OF 7                |                                    |                      |          |

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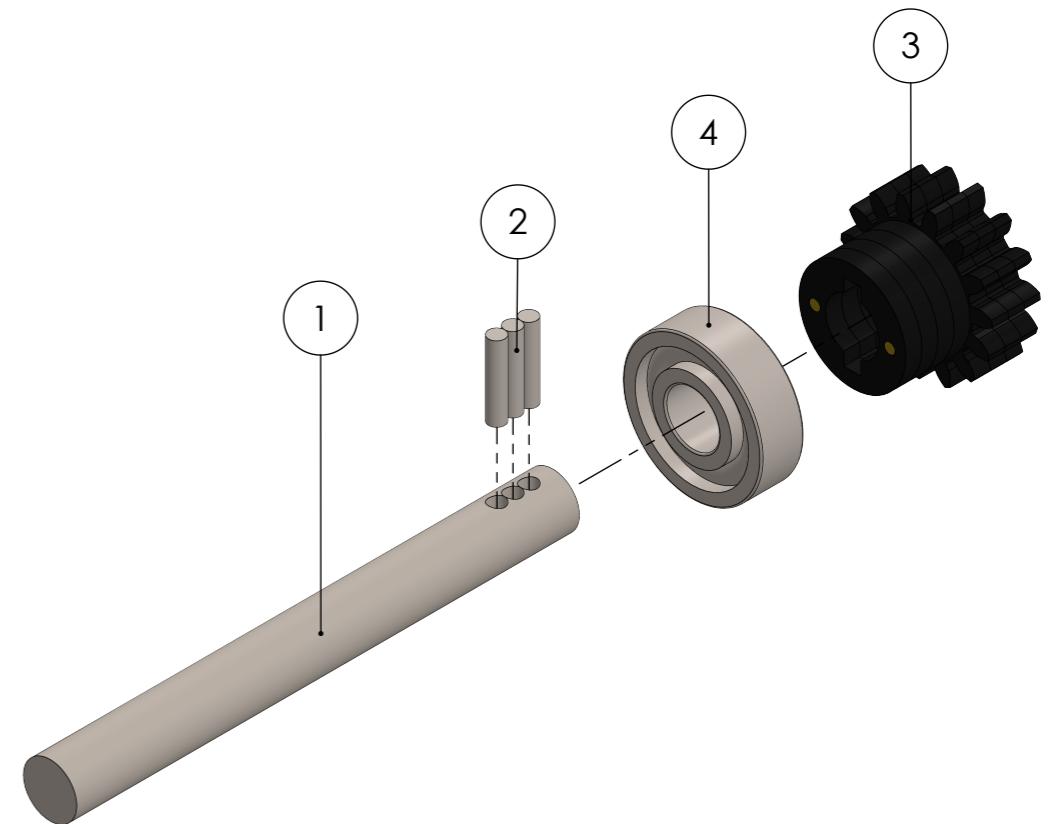
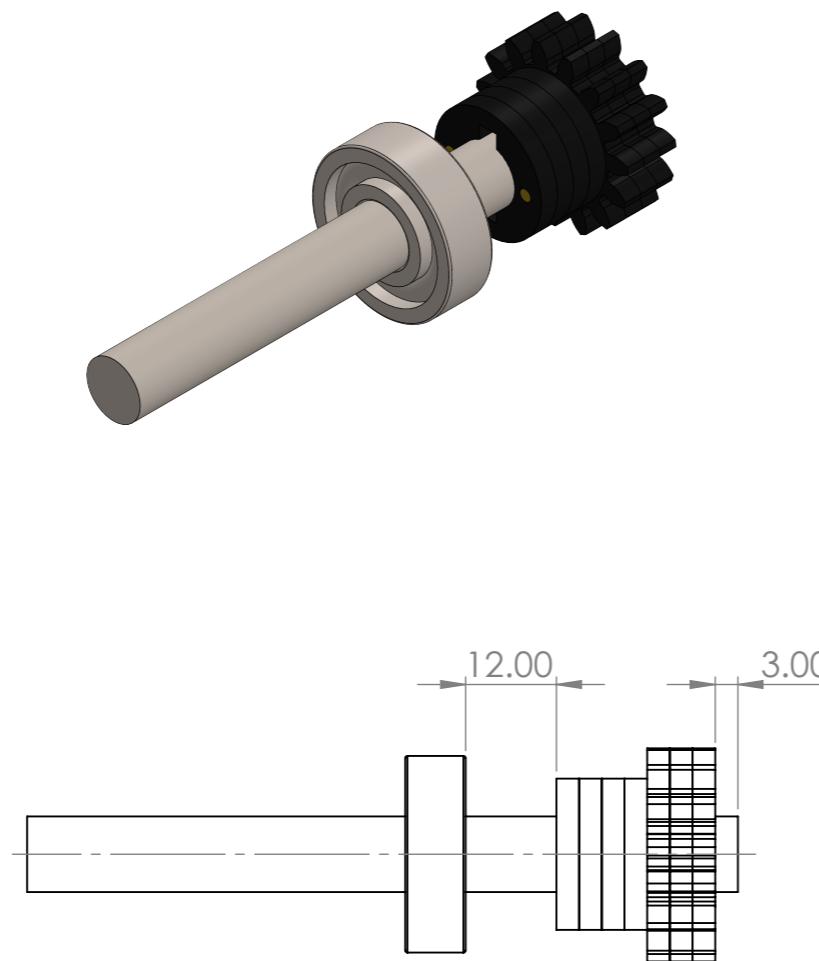
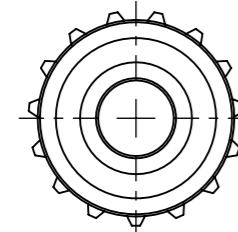
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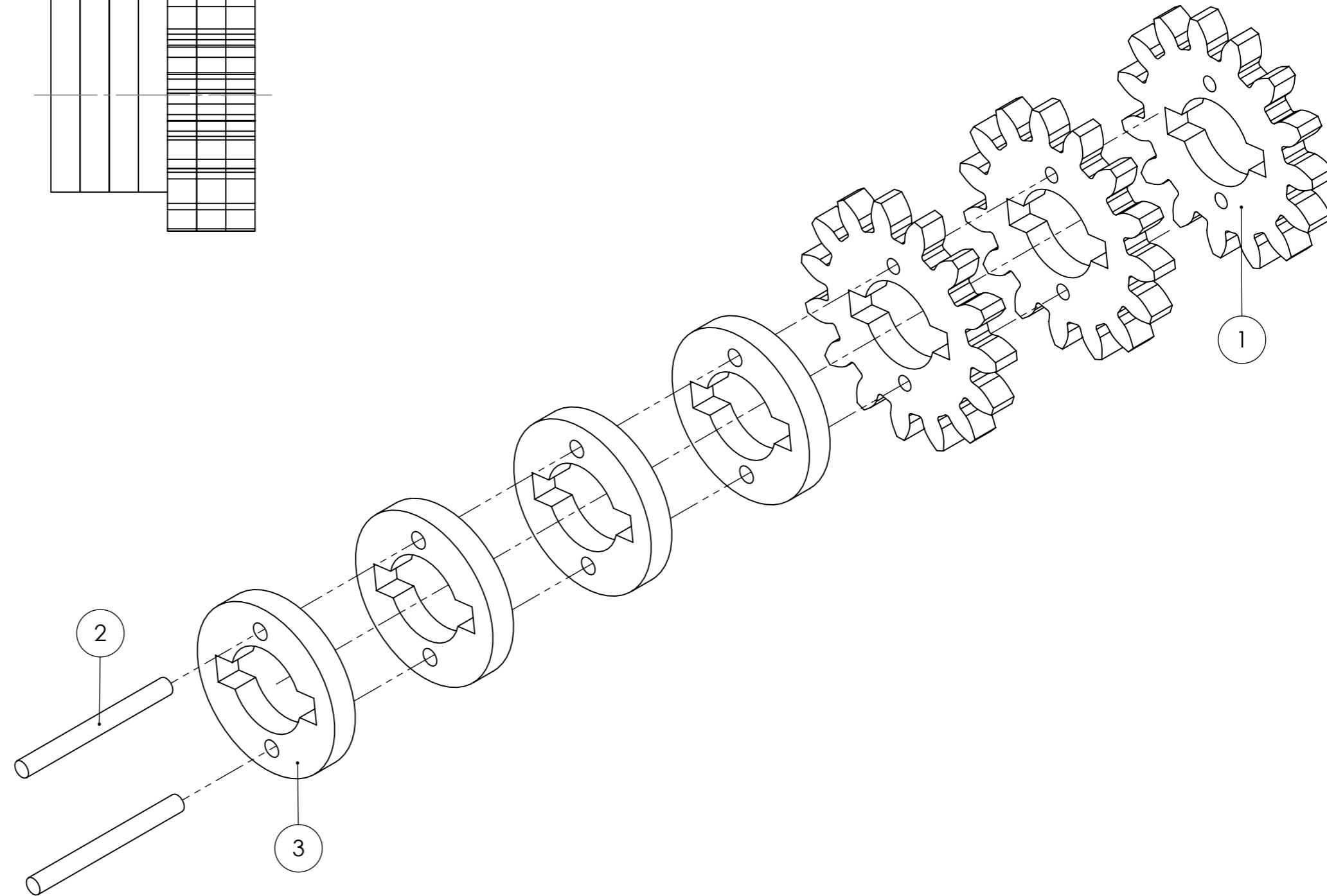
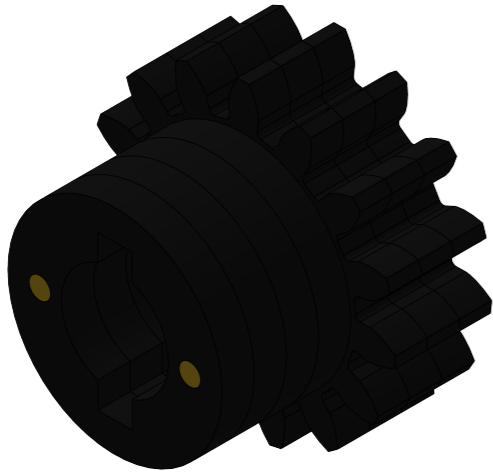
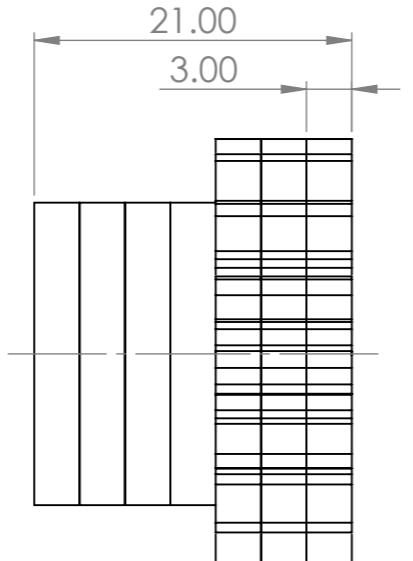
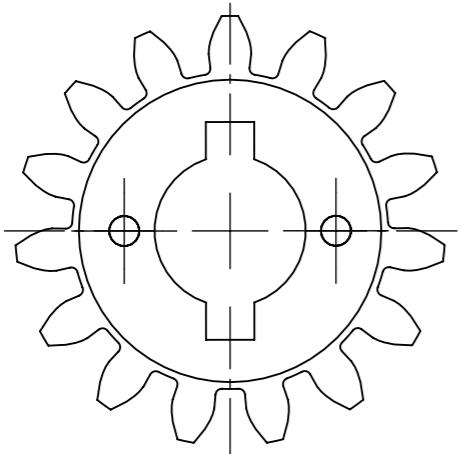


| ITEM NO. | PART NUMBER               | DESCRIPTION   | QTY. |
|----------|---------------------------|---------------|------|
| 1        | Shaft_KeyPins_SingleEnded | Input Stage 1 | 1    |
| 2        | Key_Pin_3mm               | 14mm          | 3    |
| 3        | Sun_Gear_1                |               | 1    |
| 4        | SKF - 6000 - 8,SI,NC,8_68 |               | 1    |

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
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| DRAWN | NAME | SIGNATURE | DATE     |
| CHK'D |      |           | 25/10/25 |
| APP'D |      |           |          |
| MFG   |      |           |          |
| Q.A   |      |           |          |

| ITEM NO. | PART NUMBER        | DESCRIPTION | QTY. |
|----------|--------------------|-------------|------|
| 1        | External_Spur_Gear | 1.6722m15T  | 3    |
| 2        | Alignment_Pin      |             | 2    |
| 3        | Spacer             | Planet Gear | 4    |



## Notes

Gear and Spacer layers are laser cut from 3 mm acrylic sheet.

Alignment Pins are 2 mm brass rod that is oversized during assembly then cut flush to the gear face.

|   |             |  |          |  |                                    |                      |                           |
|---|-------------|--|----------|--|------------------------------------|----------------------|---------------------------|
| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>SURFACE FINISH:<br>TOLERANCES:<br>LINEAR:<br>ANGULAR: |             | FINISH:                                      |          |  | DEBURR AND<br>BREAK SHARP<br>EDGES | DO NOT SCALE DRAWING | REVISION                  |
| DRAWN   | Adam Telfer | SIGNATURE                                    | DATE     |  |                                    | TITLE:               | Stage 1 Sun Gear Assembly |
| CHK'D   |             |  | 25/10/25 |  |                                    |                      |                           |
| APP'D   |             |  |          |  |                                    |                      |                           |
| MFG   |             |  |          |  |                                    |                      |                           |
| Q.A   |             | MATERIAL:<br><br>Gear: Acrylic<br>Pin: Brass |          |  | DWG NO.                            | B-05                 |                           |
|   |             |  |          |  |                                    | A3                   |                           |
|   |             | WEIGHT:                                      |          |  | SCALE:2:1                          | SHEET 5 OF 7         |                           |

# Stage 1 Sun Gear Assembly

B-05

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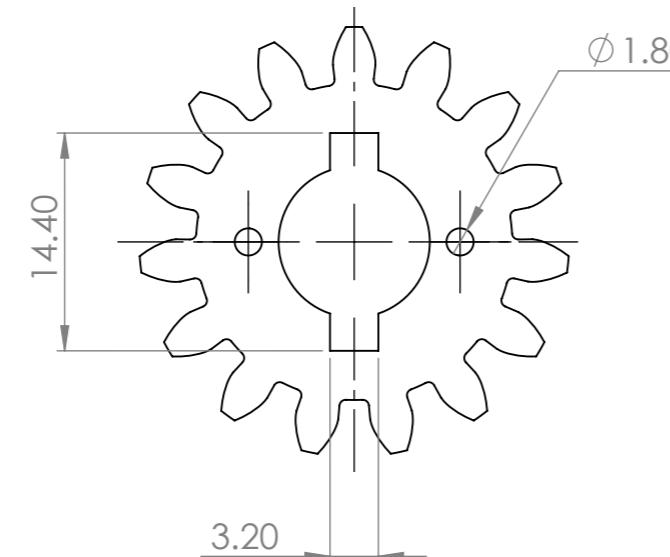
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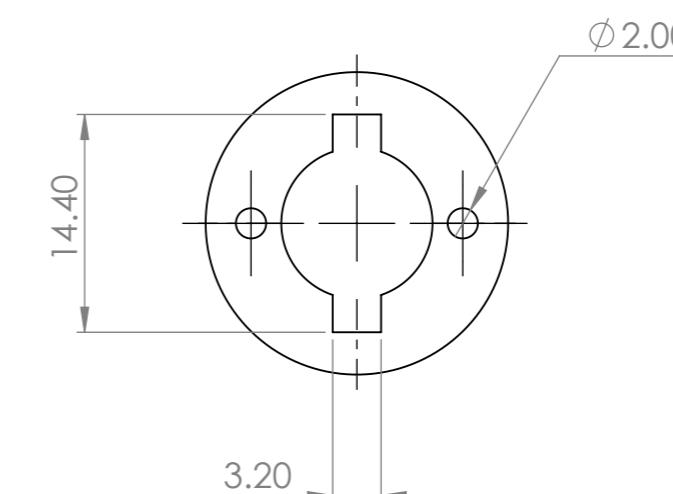
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| Stage 1 - Sun Gear |        |
|--------------------|--------|
| Module             | 1.67   |
| Teeth              | 15     |
| Pressure Angle     | 20 deg |



## Spacer



|   |      |           |      |                                    |                      |              |
|---|------|-----------|------|------------------------------------|----------------------|--------------|
| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>SURFACE FINISH:<br>TOLERANCES:<br>LINEAR:<br>ANGULAR: |      | FINISH:   |      | DEBURR AND<br>BREAK SHARP<br>EDGES | DO NOT SCALE DRAWING | REVISION     |
| DRAWN   | NAME | SIGNATURE | DATE |                                    |                      |              |
| CHK'D   |      |           |      |                                    |                      |              |
| APP'D   |      |           |      |                                    |                      |              |
| MFG   |      |           |      |                                    |                      |              |
| Q.A   |      |           |      | MATERIAL:                          | Acrylic              | DWG NO.      |
|   |      |           |      | WEIGHT:                            |                      | SCALE:2:1    |
|   |      |           |      |                                    |                      | SHEET 6 OF 7 |
|   |      |           |      |                                    |                      | 1            |
|   |      |           |      |                                    |                      | B-06         |
|   |      |           |      |                                    |                      | A3           |

Stage 1 Sun Gear  
Profiles

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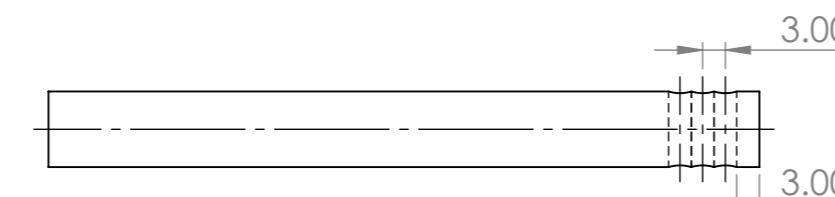
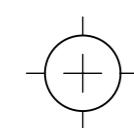
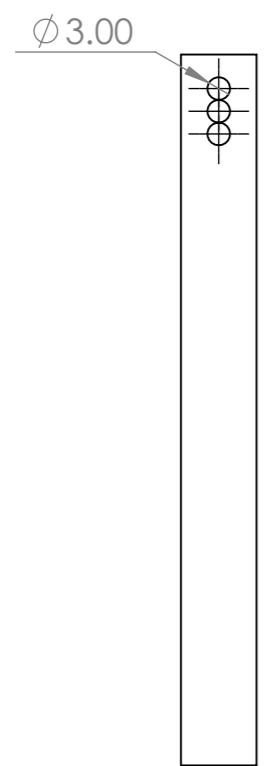
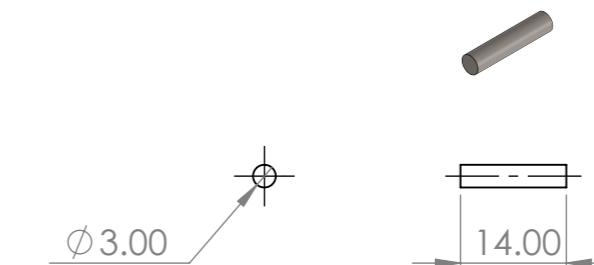
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**Input Shaft****Key Pin**

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| UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>SURFACE FINISH:<br>TOLERANCES:<br>LINEAR:<br>ANGULAR: |      |           | FINISH:      |  |  | DEBURR AND<br>BREAK SHARP<br>EDGES | DO NOT SCALE DRAWING |  | REVISION |
| DRAWN   | NAME | SIGNATURE | DATE         |  |  |                                    |                      |  |          |
| CHK'D   |      |           | 25/10/25     |  |  |                                    |                      |  |          |
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| MFG   |      |           |              |  |  |                                    |                      |  |          |
| Q.A   |      |           |              |  |  |                                    |                      |  |          |
|   |      |           | MATERIAL:    | Shaft: Aluminium<br>Pin: Stainless Steel |  |                                    |                      |  |          |
|   |      |           | WEIGHT:      |  |  |                                    |                      |  |          |
|   |      |           | SCALE:1:1    |  |  |                                    |                      |  |          |
|   |      |           | SHEET 7 OF 7 |  |  |                                    |                      |  |          |
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