

| MEMBER ORDER LIST | | | |
|-------------------------|---------|------|-----------|
| SW-File Name(File Name) | ID | QTY. | Drawing # |
| Housing | PLY | 1 | 1 |
| gear A Final (2) | Acrylic | 1 | 2 |
| gear B Final (2) | Acrylic | 1 | 3 |
| gear C Final (3) | Acrylic | 1 | 4 |
| gear D Final (3) | Acrylic | 1 | 5 |
| gear E Final (2) | Acrylic | 1 | 6 |
| gear F Final (2) | Acrylic | 1 | 7 |
| 10mm Shaft | 6060 T5 | 2 | 8 |
| 12mm Shaft | 6060 T5 | 1 | 9 |
| 15.88mm Shaft | 6061 T6 | 1 | 10 |
| Gear A Bracket | PLA | 2 | 11 |
| Gear B Bracket | PLA | 2 | 12 |
| Gear C Bracket | PLA | 2 | 13 |
| Gear D Bracket | PLA | 2 | 14 |
| Gear E Bracket | PLA | 2 | 15 |
| Gear F Bracket | PLA | 2 | 16 |
| PulleyAssembly | HDF | 1 | 17 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
| | | | |
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**DRAWN BY
COOPER RUFUS, N11029978**

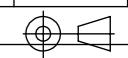
**PROJECT
GROUP 1.4**

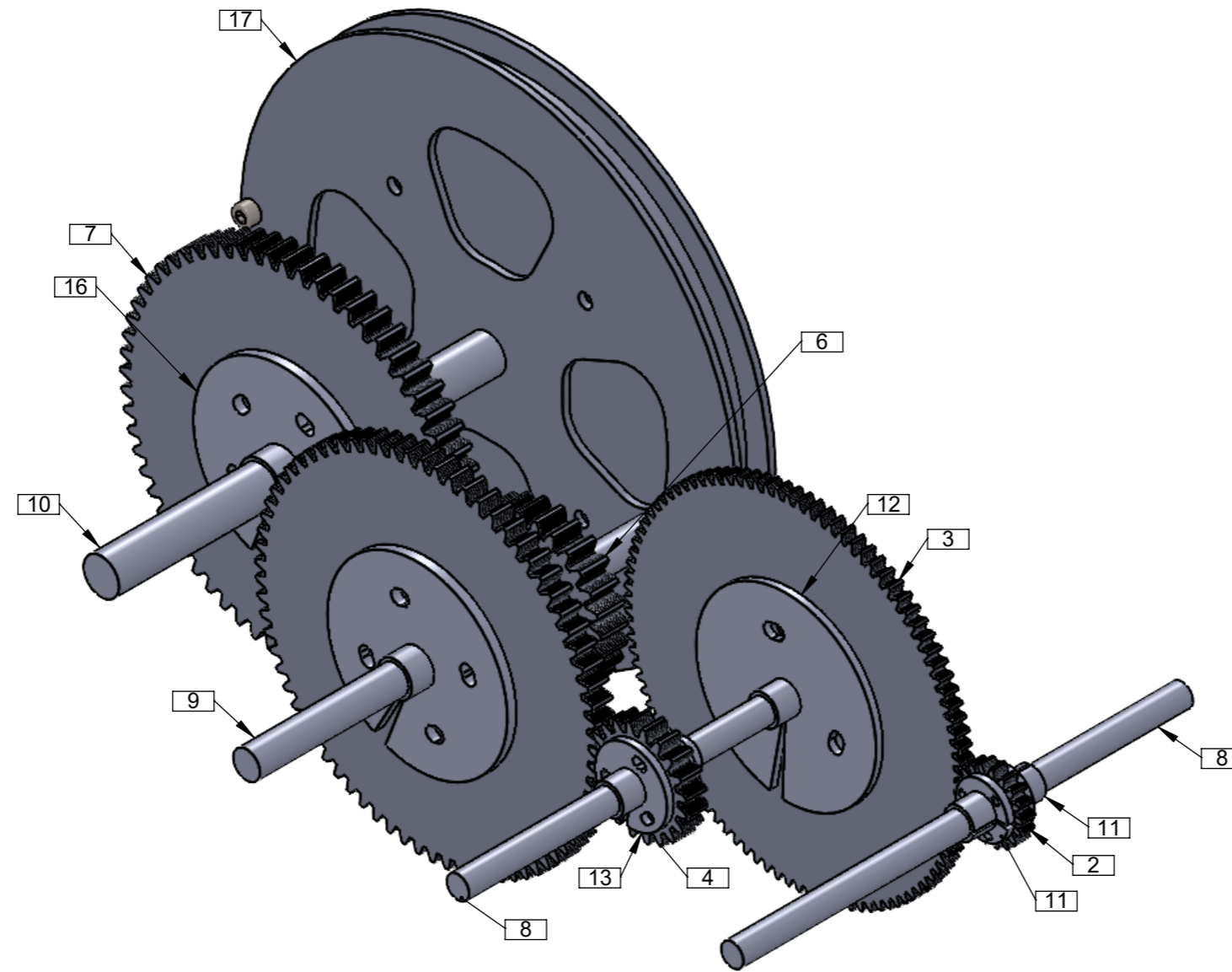
**SITE
3-STAGE SPUR GEARBOX
50:1 REDUCTION**

| | | | |
|----------|-------|------|----------|
| DRAWN | C.R. | DATE | 25.10.22 |
| CHECKED | P.B. | DATE | 27.10.22 |
| APPROVED | | DATE | |
| | SCALE | | 1:3 |

| | | | |
|-------------------------------|--|--------------|--|
| DIMENSIONS IN MILLIMETERS | | DO NOT SCALE | |
| TITLE EBG210 GEARBOX ASSEMBLY | | | |
| DRAWING No | | SHEET No | |
| 1.4 Gearbox Assembly | | 1 OF 4 | |

A3
REV
0





| MEMBER ORDER LIST | | | |
|-------------------------|---------|------|-----------|
| SW-File Name(File Name) | ID | QTY. | Drawing # |
| Housing | PLY | 1 | 1 |
| Gear A | Acrylic | 1 | 2 |
| Gear B | Acrylic | 1 | 3 |
| Gear C | Acrylic | 1 | 4 |
| Gear D | Acrylic | 1 | 5 |
| Gear E | Acrylic | 1 | 6 |
| Gear F | Acrylic | 1 | 7 |
| 10mm Shaft | 6060 T5 | 2 | 8 |
| 12mm Shaft | 6060 T5 | 1 | 9 |
| 15.88mm Shaft | 6061 T6 | 1 | 10 |
| Gear A Bracket | PLA | 2 | 11 |
| Gear B Bracket | PLA | 2 | 12 |
| Gear C Bracket | PLA | 2 | 13 |
| Gear D Bracket | PLA | 2 | 14 |
| Gear E Bracket | PLA | 2 | 15 |
| Gear F Bracket | PLA | 2 | 16 |
| PulleyAssembly | HDF | 1 | 17 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
| | | | |
| | | | |
| | | | |
| | | | |

**DRAWN BY
COOPER RUFUS, N11029978**

GROUP 1.4

SITE
**3-STAGE SPUR GEARBOX
50:1 REDUCTION**

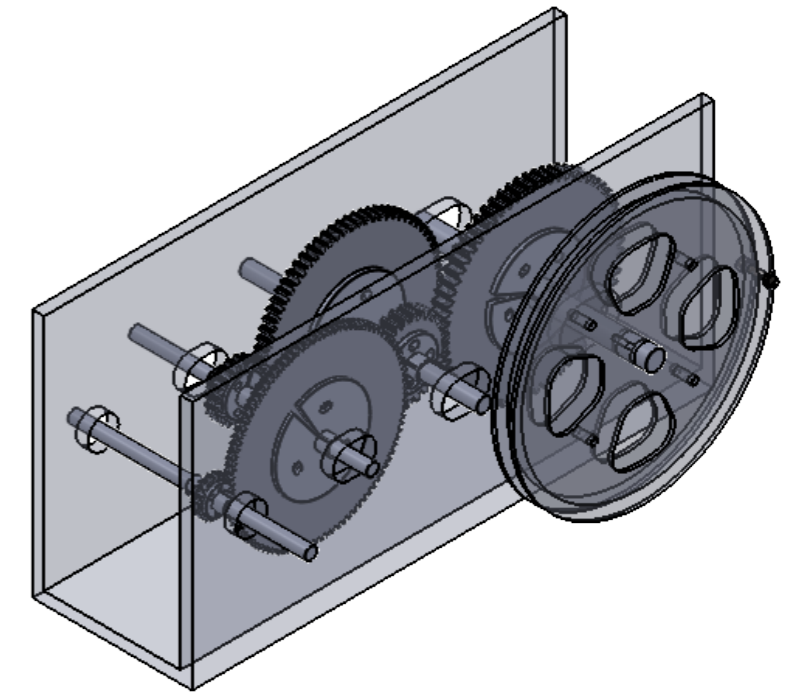
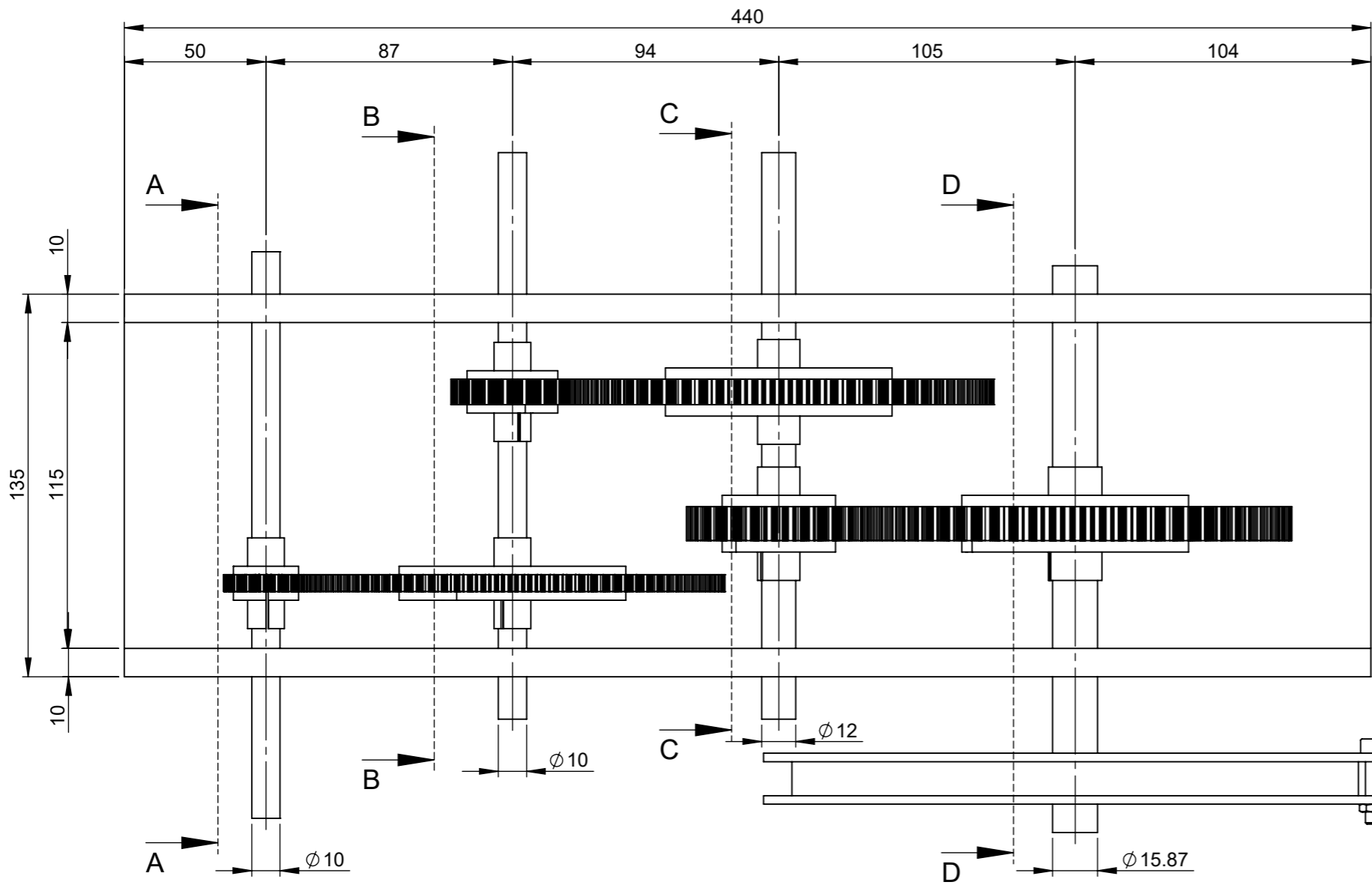
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|----------|-------|------|----------|
| DRAWN | C.R. | DATE | 25.10.22 |
| CHECKED | P.B. | DATE | 27.10.22 |
| APPROVED | | DATE | |
| | SCALE | | 1:2 |

| | | | |
|--------------------------------------|--|---------------|--|
| DIMENSIONS IN MILLIMETERS | | DO NOT SCALE | |
| TITLE EBG210 GEARBOX ASSEMBLY | | | |
| DRAWING No | | SHEET No | |
| 1.4 Gearbox Assembly | | 2 OF 4 | |

A3

REV
0





| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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| | | | |
| | | | |

**DRAWN BY
COOPER RUFUS, N11029978**

PROJECT
GROUP 1.4

SITE
3-STAGE SPUR GEARBOX
50:1 REDUCTION

| | | | |
|----------|------|-------|----------|
| DRAWN | C.R. | DATE | 25.10.22 |
| CHECKED | P.B. | DATE | 27.10.22 |
| APPROVED | | DATE | |
| | | SCALE | 1:2 |

| | | | |
|---------------------------|----------------------|-------------------------|--------|
| DIMENSIONS IN MILLIMETERS | | DO NOT SCALE | |
| TITLE | | EBG210 GEARBOX ASSEMBLY | |
| DRAWING No. | 1.4 Gearbox Assembly | SHEET No. | 3 OF 4 |

| |
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| |
| A3 |
| REV 0 |

1

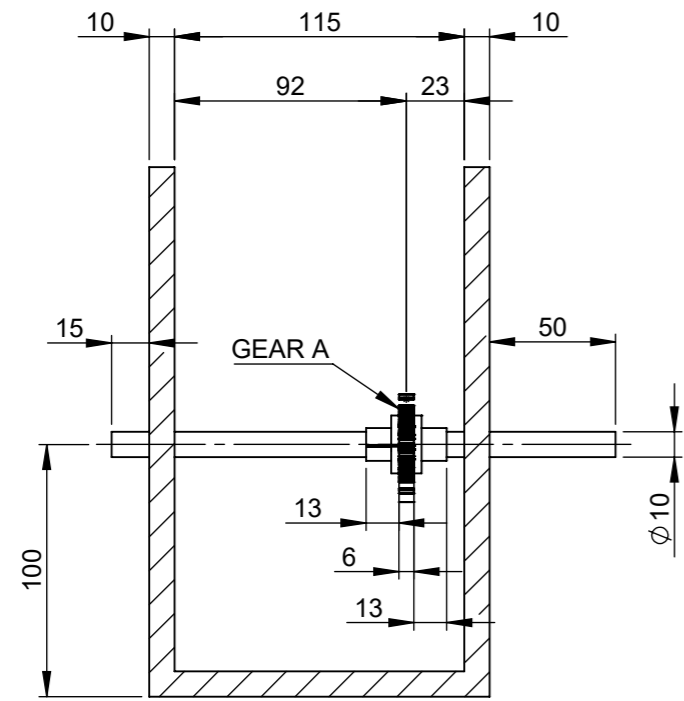
2

3

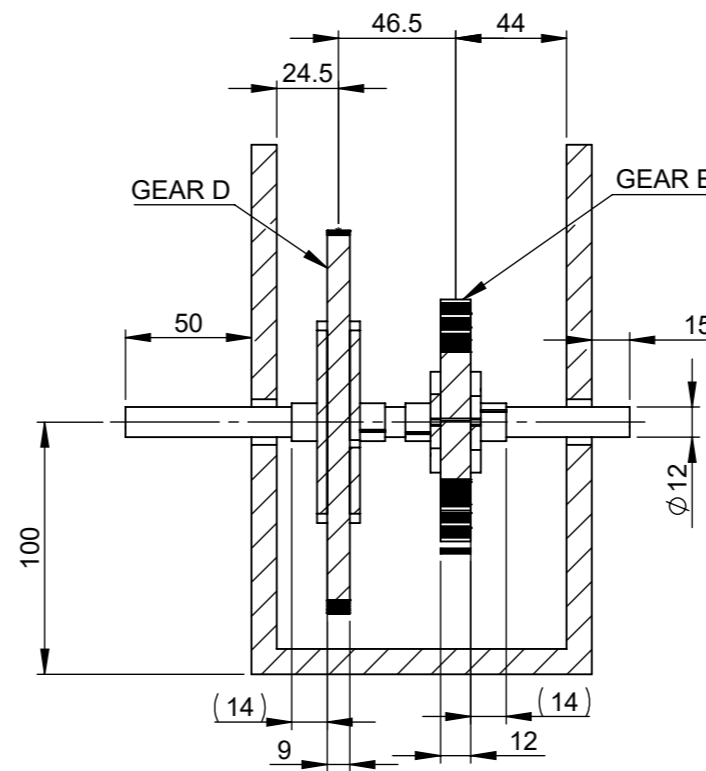
4

5

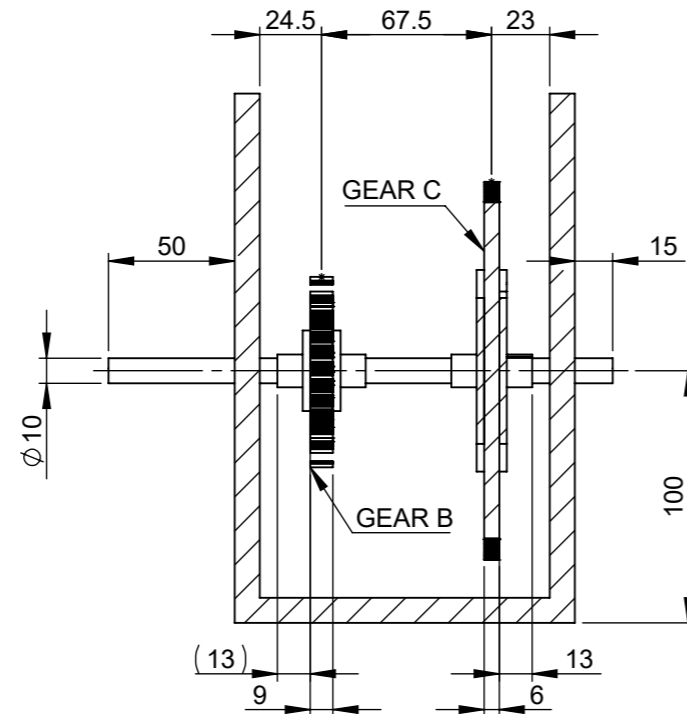
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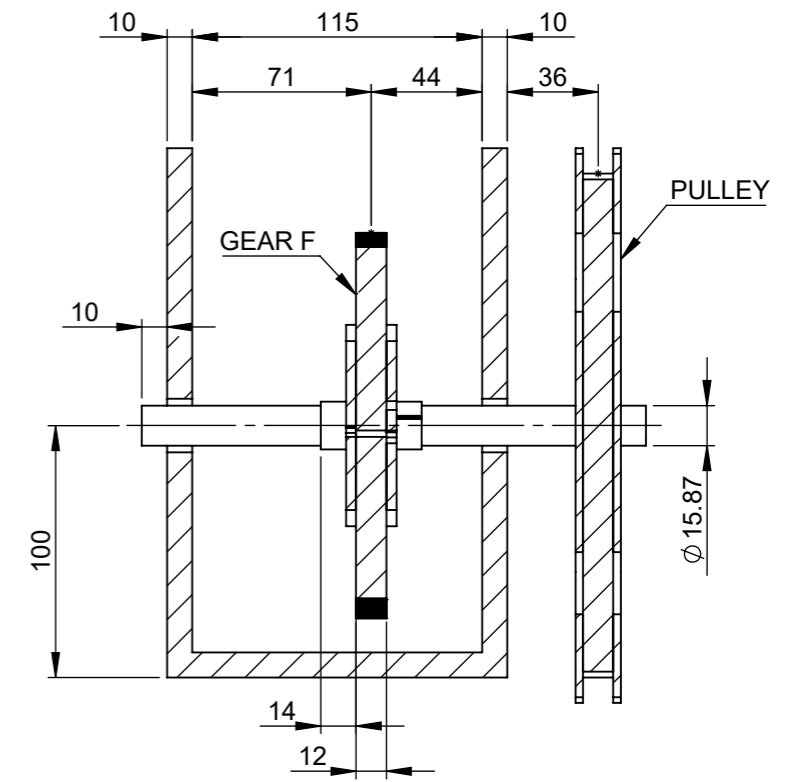
SECTION A-A



SECTION C-C
SCALE 1 : 2



SECTION B-B



SECTION D-D

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
| | | | |
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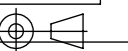
**DRAWN BY
COOPER RUFUS, N11029978**

PROJECT
GROUP 1.4
SITE
**3-STAGE SPUR GEARBOX
50:1 REDUCTION**

| | | | |
|----------|------|-------|----------|
| DRAWN | C.R. | DATE | 25.10.22 |
| CHECKED | P.B. | DATE | 27.10.22 |
| APPROVED | | DATE | |
| | | SCALE | 1:3 |

| | | | |
|--------------------------------------|----------------------|--------------|----------|
| DIMENSIONS IN MILLIMETERS | | DO NOT SCALE | |
| TITLE EBG210 GEARBOX ASSEMBLY | | | |
| DRAWING No | 1.4 Gearbox Assembly | | SHEET No |
| | | | 4 OF 4 |

A3
REV
0



1

2

3

4

A

A

B

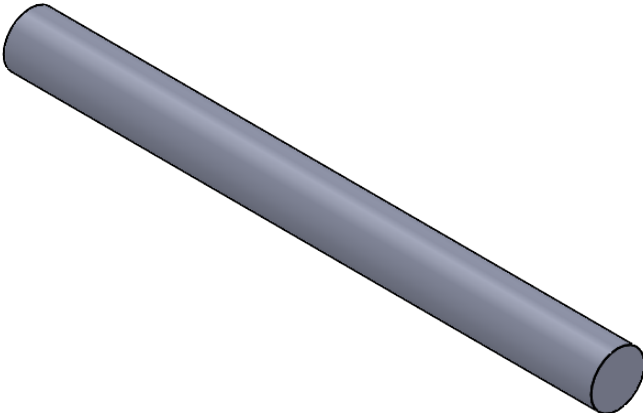
B

C

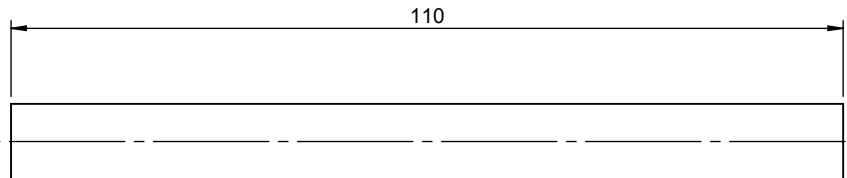
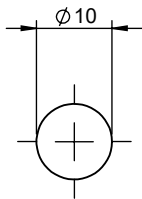
C

D

D



ISOMETRIC VIEW
SCALE 1:1



ID: MATERIAL: GRADE: QTY:

Drawn by
Cooper Rufus, n11029978

| | | | |
|----------|----------|---|--------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES DO NOT SCALE | |
| C.R. | 27.10.22 | | |
| CHECKED | DATE | | |
| P.B. | 27.10.22 | | |
| APPROVED | DATE | TITLE | A4 |
| | | Gear Shaft | |
| | | PROJECT | REV. |
| | | 210 Gearbox Project | |
| | SCALE | DRAWING No | SHEET |
| | 1:1 | 10mm Shaft | 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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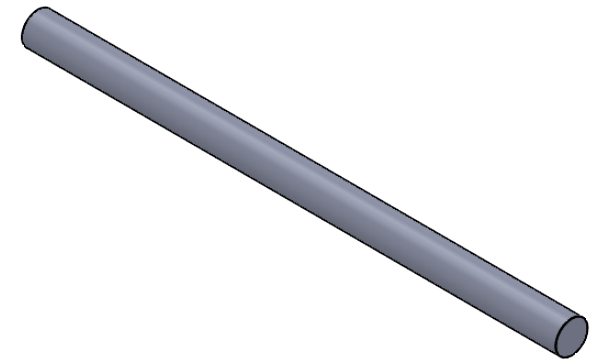
B

C

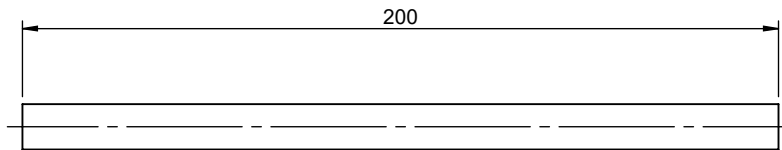
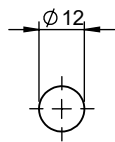
C

D

D



ISOMETRIC VIEW
SCALE 1:2



ID: 6060 T5 MATERIAL: GRADE: QTY:

Drawn by
Cooper Rufus, n11029978

| | | | |
|----------|----------|--------------------------------|--------------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES | DO NOT SCALE |
| C.R. | 27.10.22 | | |
| CHECKED | DATE | TITLE Gear Shaft | |
| P.B. | 27.10.22 | | |
| APPROVED | DATE | PROJECT 210 Gearbox Project | |
| | | | |
| | SCALE | DRAWING No | |
| | 1:2 | 12mm Shaft | |
| | | SHEET 1 OF 1 | |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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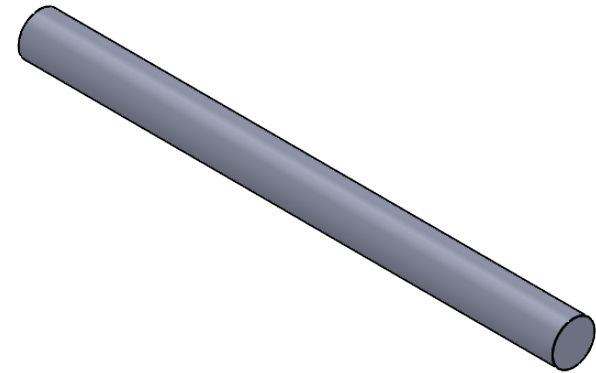
B

C

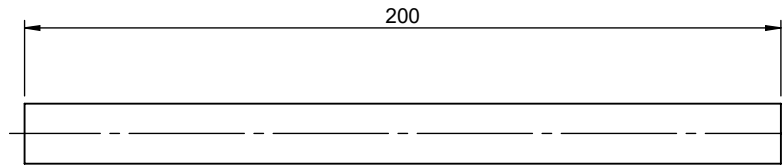
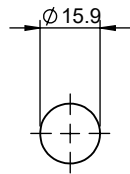
C

D

D



ISOMETRIC VIEW
SCALE 1:2



ID: 6061 T6 MATERIAL: GRADE: QTY:

Drawn by
Cooper Rufus, n11029978

| | | | | |
|----------|----------|---------------------------|--------------|------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES | DO NOT SCALE | |
| C.R. | 27.10.22 | | | |
| CHECKED | DATE | TITLE | | |
| P.B. | 27.10.22 | Gear Shaft | | |
| APPROVED | DATE | PROJECT | | A4 |
| | | 210 Gearbox Project | | |
| | SCALE | DRAWING No | | REV. |
| | 1:2 | 15.88mm Shaft | | |
| | | SHEET | | |
| | | 1 OF 1 | | |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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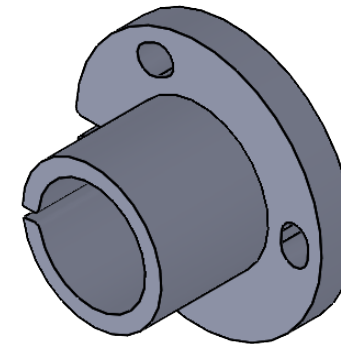
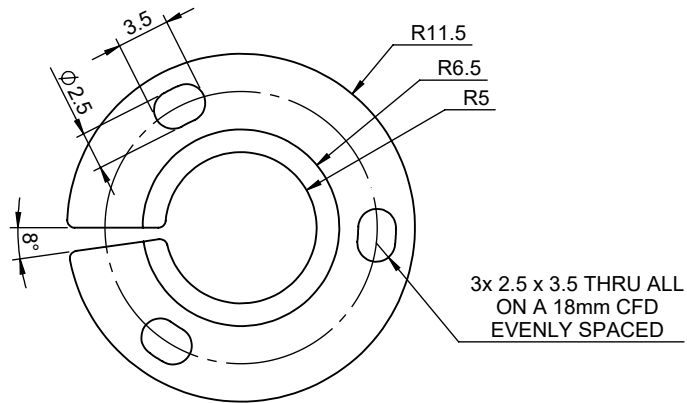
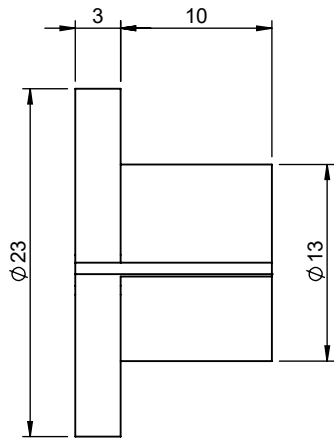
B

C

C

D

D



ISOMETRIC VIEW
SCALE 2:1

MATERIAL: PLA QTY: 1

For 3D Printing

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|------|------------|---------------------------|---------------------|----------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear A Bracket |
| APPROVED | | DATE | | PROJECT | 210 Gearbox Project | |
| SCALE | 2:1 | | DRAWING No | Gear A Bracket | | SHEET 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
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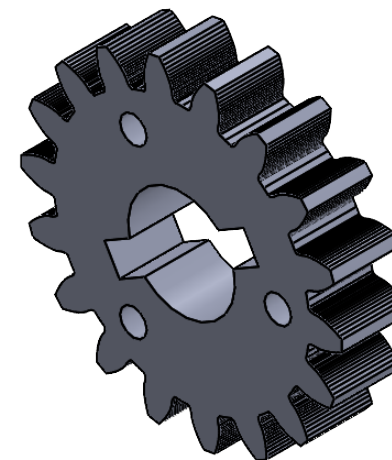
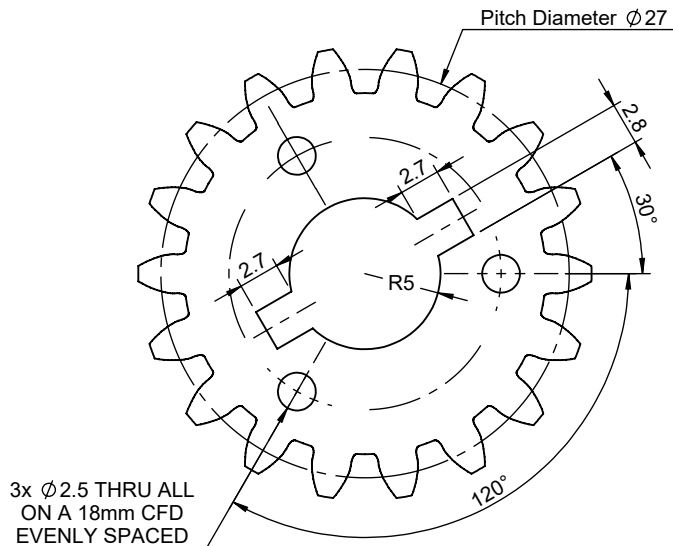
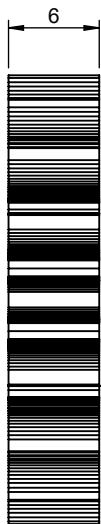
B

C

C

D

D



ISOMETRIC VIEW
SCALE 2:1

MATERIAL: Acrylic 2 x 3mm **QTY:** 1

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|------|-------------|---------------------------|---------------------|--------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear A |
| APPROVED | | DATE | | PROJECT | 210 Gearbox Project | |
| SCALE | 2:1 | | DRAWING No. | Gear A | SHEET | 1 OF 1 |

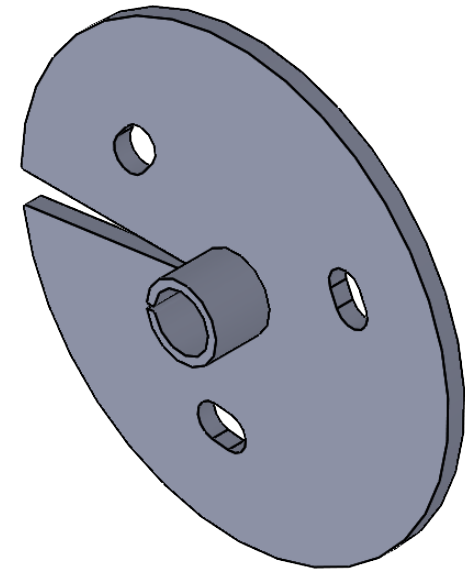
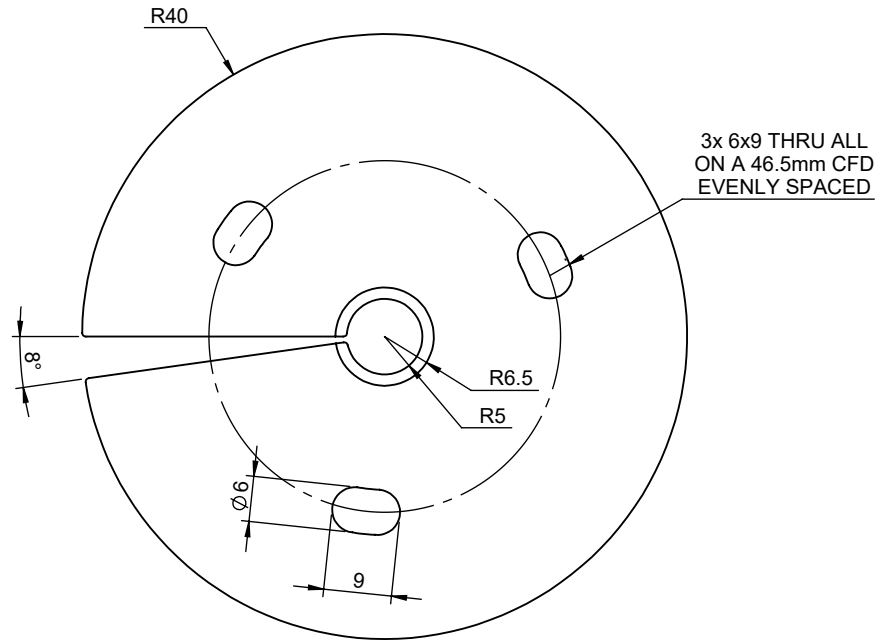
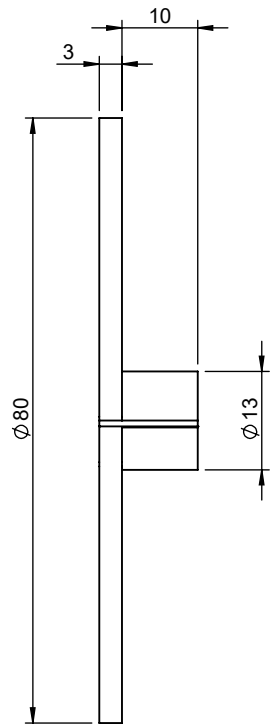
| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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ISOMETRIC VIEW
SCALE 1:1

MATERIAL: PLA QTY: 2

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|------------|----------------|---------------------------|---------------------|----------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear B Bracket |
| APPROVED | | DATE | | PROJECT | 210 Gearbox Project | |
| SCALE | 1:1 | DRAWING No | Gear B Bracket | | SHEET | 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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A

A

B

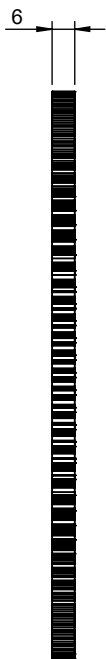
B

C

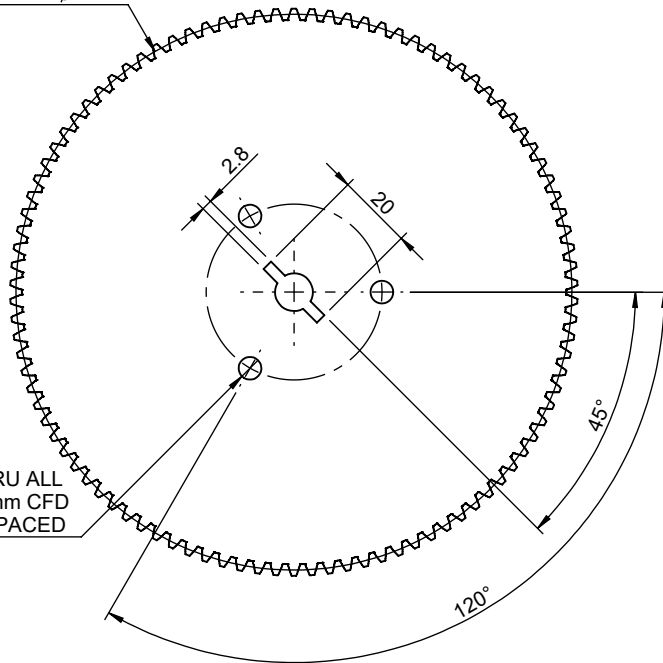
C

D

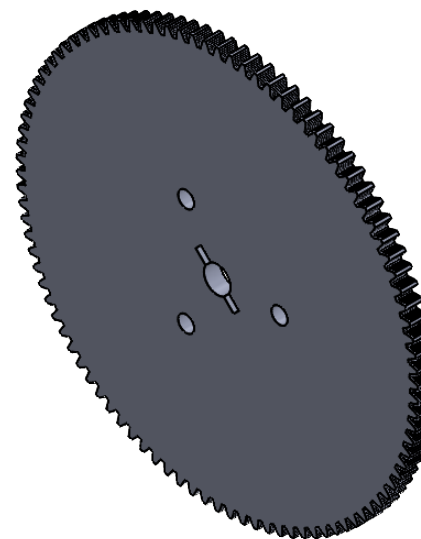
D



Pitchline Diameter ϕ 147



3x ϕ 6 THRU ALL
ON A 46.6mm CFD
EVENLY SPACED



ISOMETRIC VIEW
SCALE 1:2

MATERIAL: Acrylic 2 x 3mm

QTY: 1

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | |
|----------|----------|
| DRAWN | DATE |
| C.R. | 27.10.22 |
| CHECKED | DATE |
| P.B. | 27.10.22 |
| APPROVED | DATE |
| SCALE | 1:2 |

| | | |
|--------------------------------|--------|-----------------|
| DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| TITLE Gear B | | |
| PROJECT 210 Gearbox Project | | |
| DRAWING No. | Gear B | SHEET 1 OF 1 |

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| |
| A4 |
| REV. |

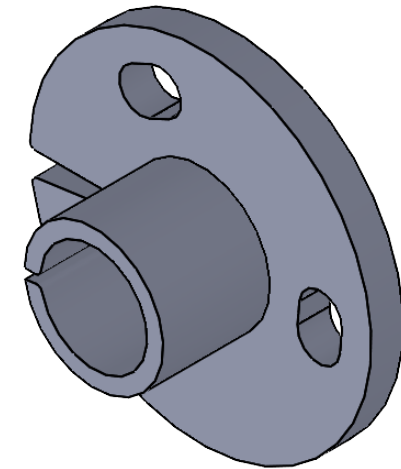
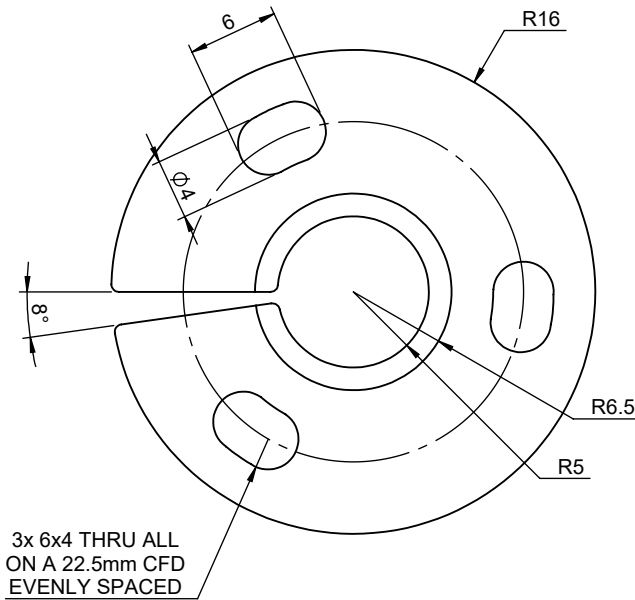
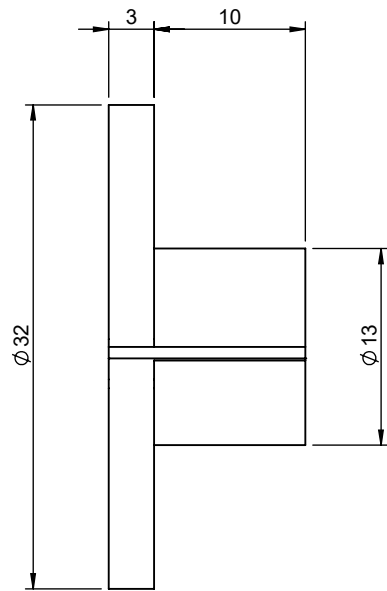
| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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ISOMETRIC VIEW
SCALE 2:1

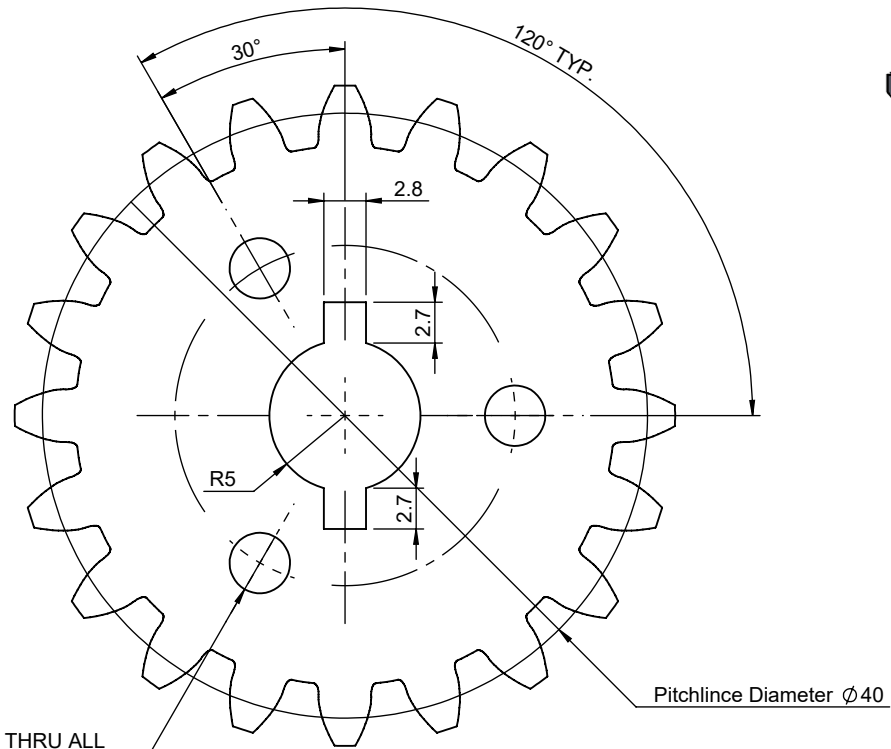
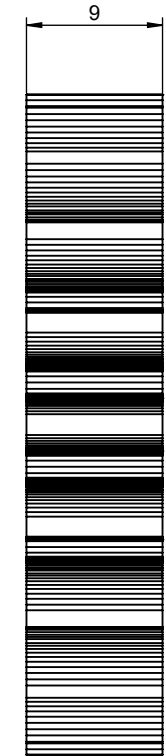
MATERIAL: PLA QTY: 2

For Lazar Cutting
from Acrylic

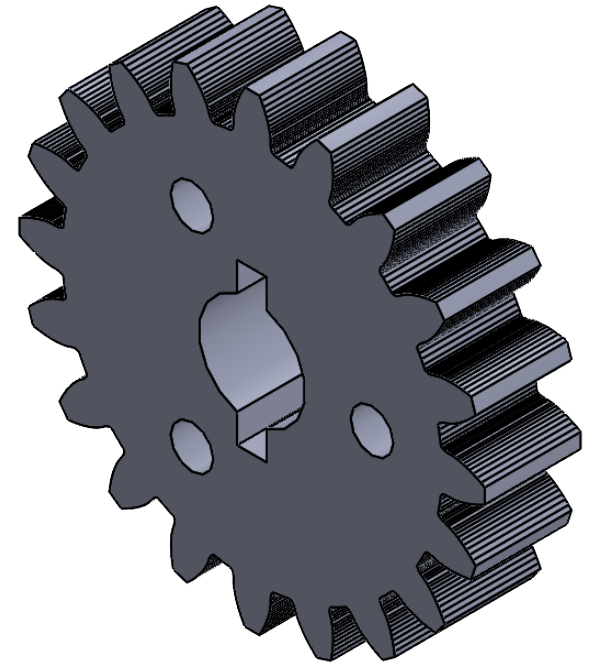
Drawn by
Cooper Rufus, n11029978

| | | | | |
|----------|----------|---------------------------|--|--------------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| C.R. | 27.10.22 | TITLE | | A4 |
| CHECKED | DATE | Gear C Bracket | | |
| P.B. | 27.10.22 | PROJECT | | REV. |
| APPROVED | DATE | 210 Gearbox Project | | |
| | SCALE | DRAWING No | | SHEET |
| | 2:1 | Gear C Bracket | | 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
| | | | |
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3x $\varnothing 4$ THRU ALL
ON A 22.6mm CFD
EVENLY SPACED



ISOMETRIC VIEW
SCALE 2:1

MATERIAL: Acrylic 3 x 3mm

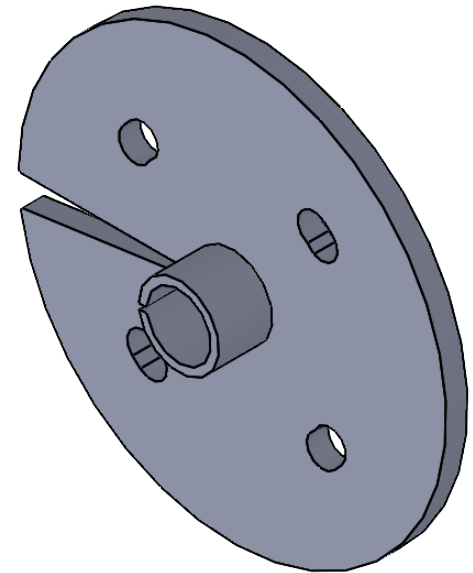
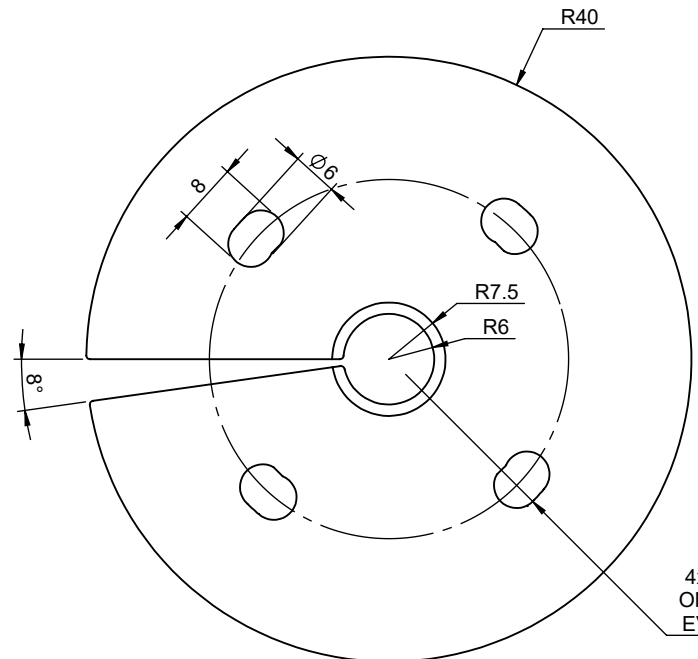
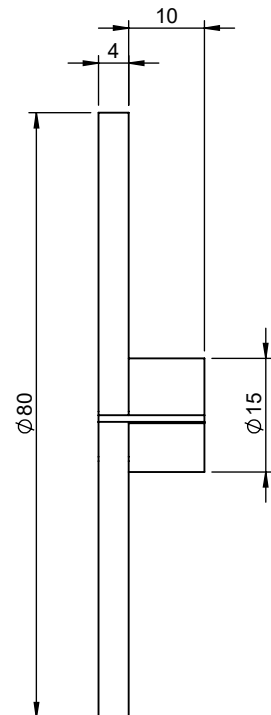
QTY: 1

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | |
|----------|----------|---------------------------|--|--------------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| C.R. | 27.10.22 | TITLE | | A4 |
| CHECKED | DATE | Gear C | | |
| P.B. | 27.10.22 | PROJECT | | |
| APPROVED | DATE | 210 Gearbox Project | | REV. |
| SCALE | 2:1 | DRAWING No. | | SHEET |
| | | Gear C | | 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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ISOMETRIC VIEW
SCALE 1:1

4x 8x6 THRU ALL
ON A 47.5mm CFD
EVENLY SPACED

MATERIAL: PLA QTY: 2

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|------------|----------------|---------------------------|---------------------|----------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear D Bracket |
| APPROVED | | DATE | | PROJECT | 210 Gearbox Project | |
| SCALE | 1:1 | DRAWING No | Gear D Bracket | SHEET | 1 OF 1 | |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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A

A

B

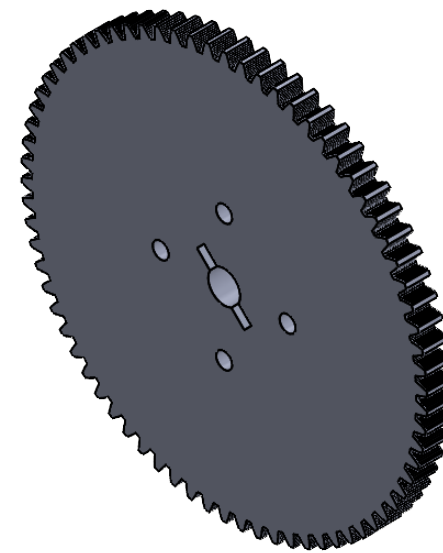
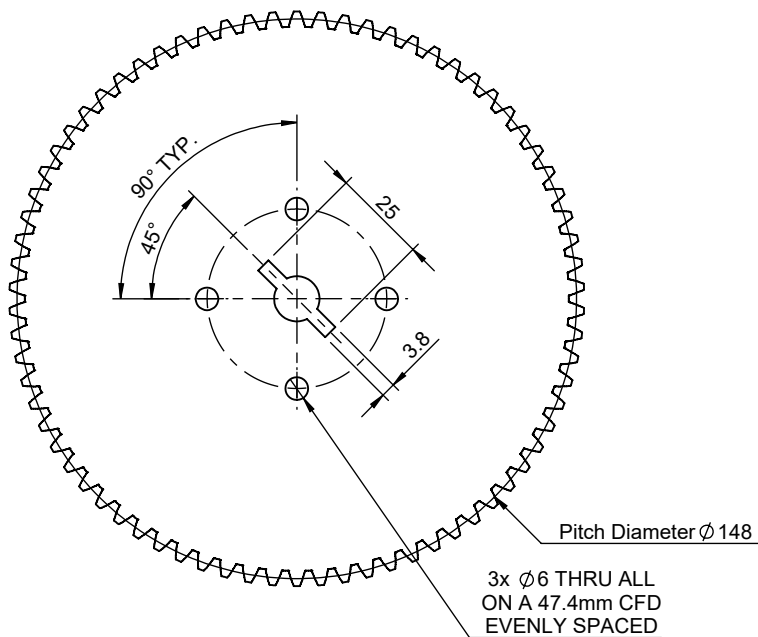
B

C

C

D

D



ISOMETRIC VIEW
SCALE 1:2

MATERIAL: Acrylic 3 x 3mm **QTY:** 1

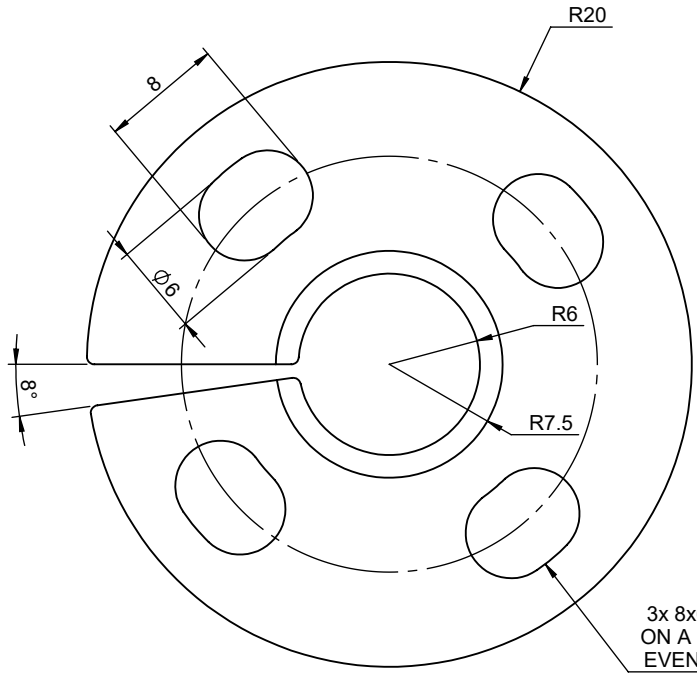
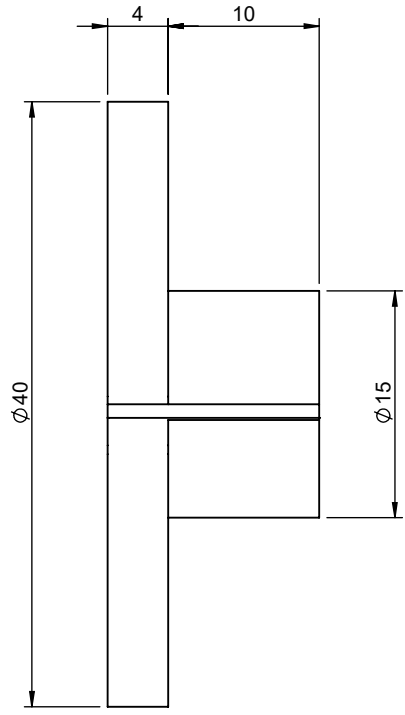
| | | | | | | | | | | | | | |
|-----|-------------|----|------|-----------------------------------|-------------------------------------|----------|----------|---------------------------|--|---------------------|--|--|-------|
| | | | | For Lazar Cutting from Acrylic | Drawn by Cooper Rufus, n11029978 | DRAWN | DATE | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE | | | |
| | | | | | | C.R. | 27.10.22 | TITLE | | Gear D | | | |
| | | | | | | CHECKED | DATE | PROJECT | | 210 Gearbox Project | | | A4 |
| | | | | | | P.B. | 27.10.22 | DRAWING No. | | Gear D | | | REV. |
| | | | | | | APPROVED | DATE | SCALE | | 1:2 | | | SHEET |
| REV | DESCRIPTION | BY | DATE | | | | | | | 1 OF 1 | | | |

1

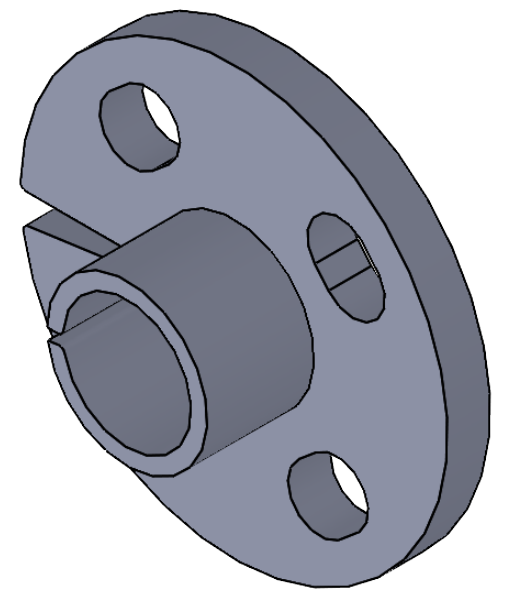
2

3

4



3x 8x6 THRU ALL
ON A 27.5mm CFD
EVENLY SPACED



ISOMETRIC VIEW
SCALE 2:1

MATERIAL: PLA QTY: 2

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|------|------------|---------------------------|---------------------|----------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear E Bracket |
| APPROVED | | DATE | | PROJECT | 210 Gearbox Project | |
| SCALE | 2:1 | | DRAWING No | Gear E Bracket | | SHEET |
| | | | | | | 1 OF 1 |

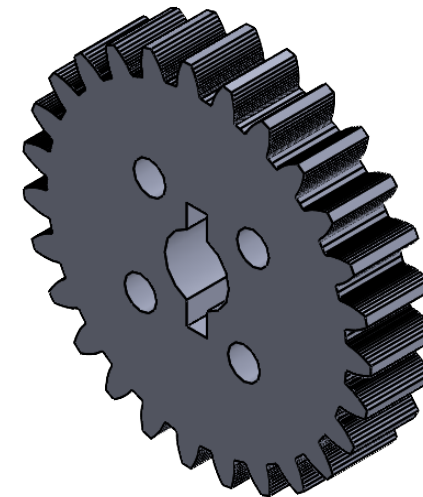
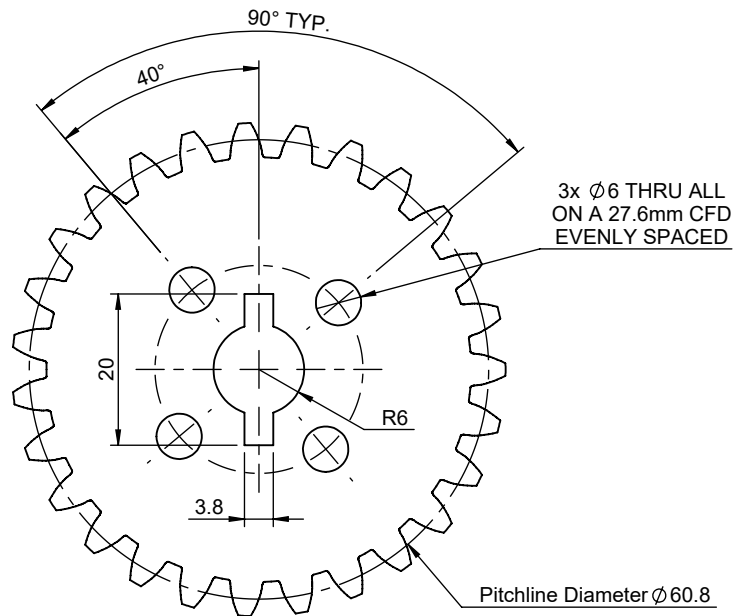
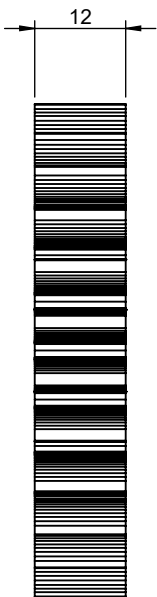
| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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4



ISOMETRIC VIEW
SCALE 1:1

MATERIAL: Acrylic 4 x 3mm

QTY: 1

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | |
|----------|----------|---------------------------|--|--------------|------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE | |
| C.R. | 27.10.22 | TITLE | | | |
| CHECKED | DATE | Gear D | | A4 | REV. |
| P.B. | 27.10.22 | PROJECT | | | |
| APPROVED | DATE | 210 Gearbox Project | | SHEET | |
| SCALE | 1:1 | DRAWING No. | | 1 OF 1 | |
| | | Gear E | | | |

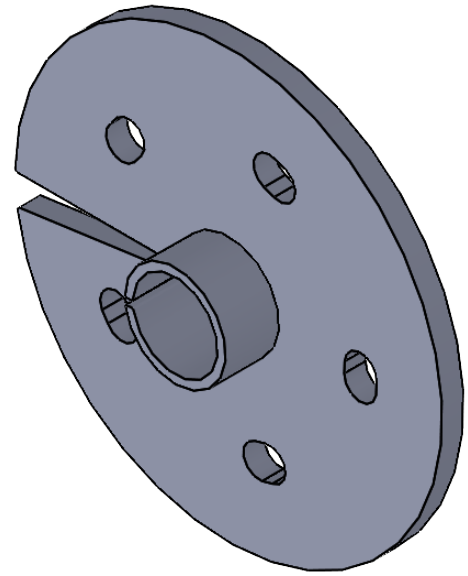
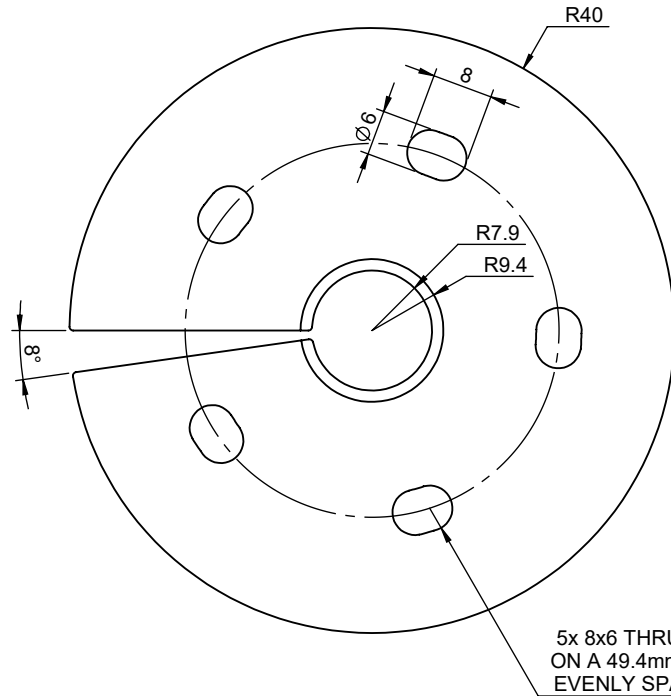
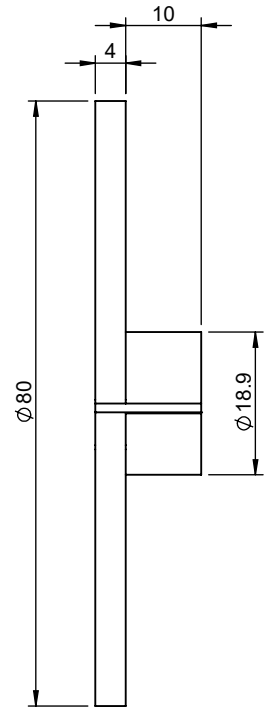
| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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4



ISOMETRIC VIEW
SCALE 1:1

MATERIAL: PLA QTY: 2

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|------------|----------------|---------------------------|---------------------|----------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear E Bracket |
| APPROVED | | DATE | | PROJECT | 210 Gearbox Project | |
| SCALE | 1:1 | DRAWING No | Gear F Bracket | | SHEET | 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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A

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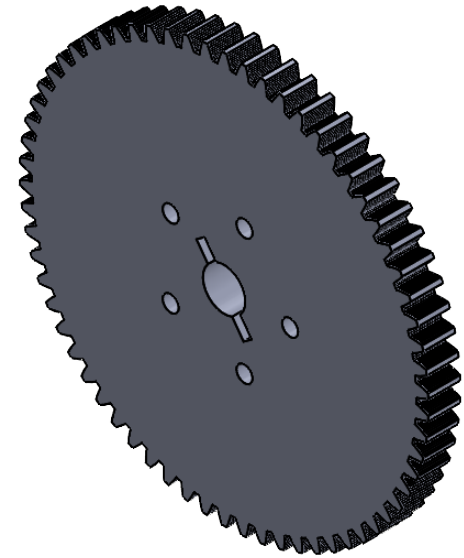
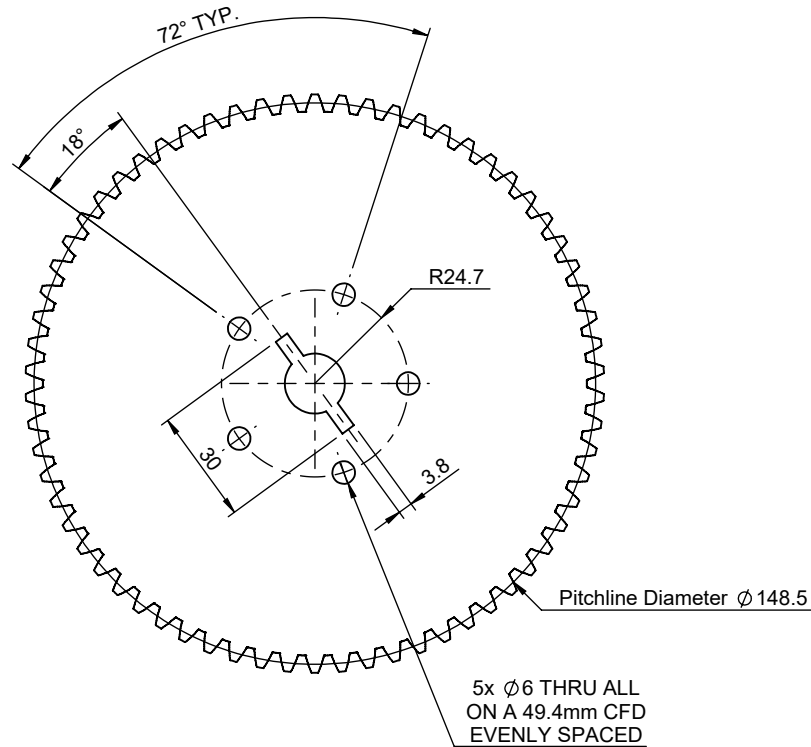
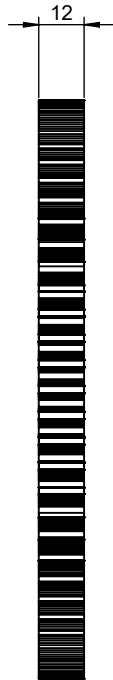
B

C

C

D

D



ISOMETRIC VIEW
SCALE 1:2

MATERIAL: Acrylic 4 x 3mm

QTY: 1

For Lazar Cutting
from Acrylic

Drawn by
Cooper Rufus, n11029978

| | | | | | | |
|----------|------|-------|----------|---------------------------|--|---------------------|
| DRAWN | C.R. | DATE | 27.10.22 | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| CHECKED | P.B. | DATE | 27.10.22 | TITLE | | Gear F |
| APPROVED | | DATE | | PROJECT | | 210 Gearbox Project |
| | | SCALE | 1:2 | DRAWING No. | | Gear F |
| | | | | SHEET | | 1 OF 1 |

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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A

A

B

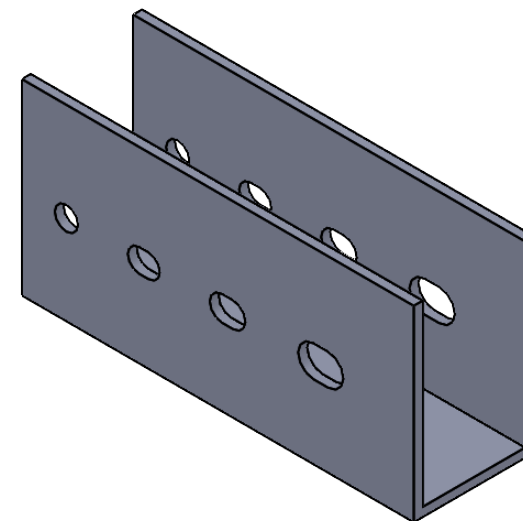
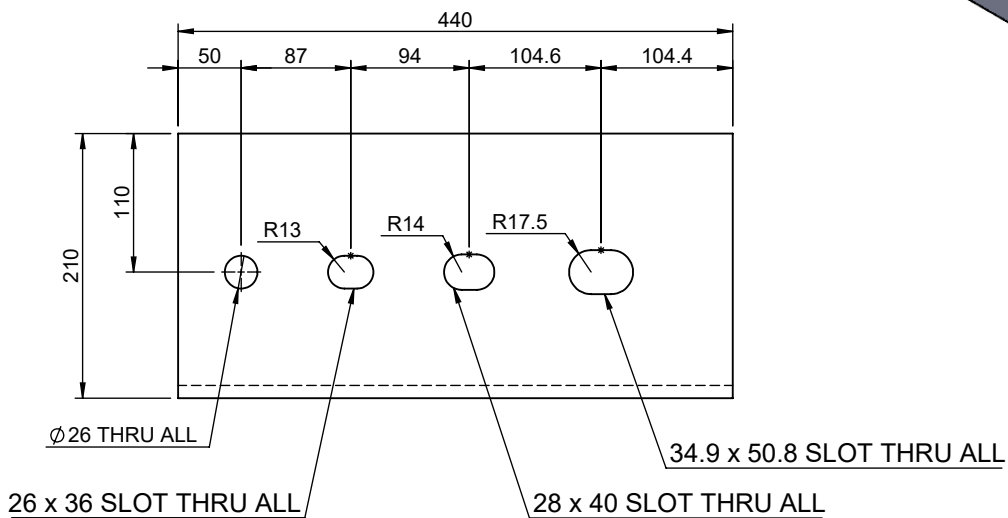
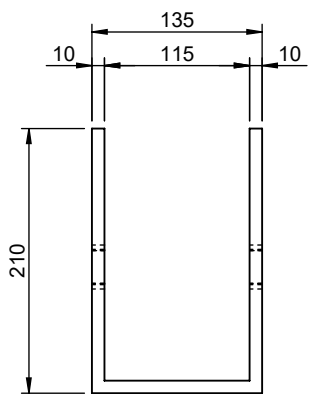
B

C

C

D

D



ISOMETRIC VIEW
SCALE 1:6

ID: PLY MATERIAL: GRADE: QTY:

Drawn by
Cooper Rufus, n11029978

| | | | | |
|----------|----------|---------------------------|--|--------------|
| DRAWN | DATE | DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| C.R. | 27.10.22 | TITLE | | |
| CHECKED | DATE | Gearbox Housing | | |
| P.B. | 27.10.22 | PROJECT | | |
| APPROVED | DATE | 210 Gearbox Project | | A4 |
| SCALE | 1:6 | DRAWING No. | | REV. |
| | | Housing | | SHEET |
| | | | | 1 OF 1 |

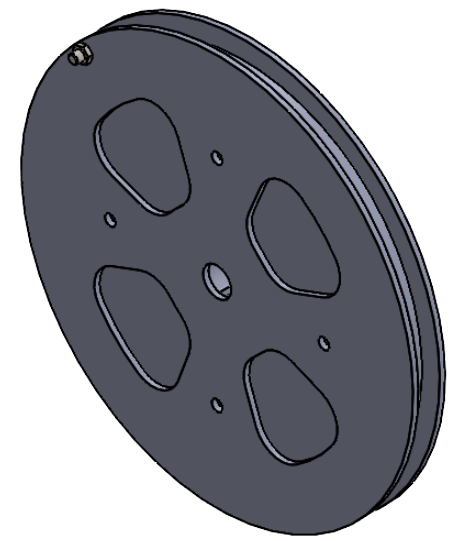
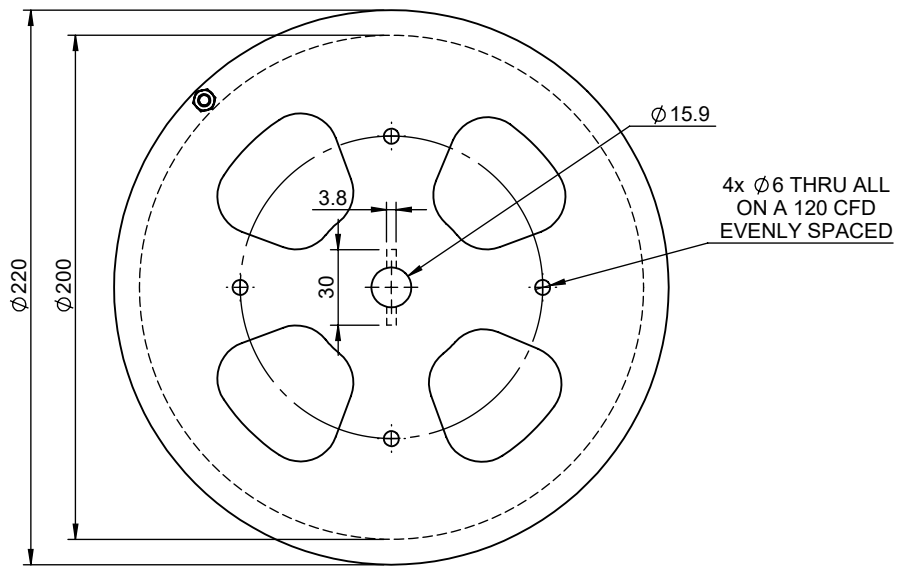
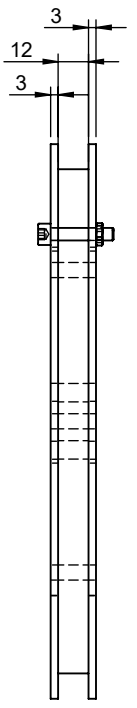
| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
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ISOMETRIC VIEW
SCALE 1:3

ID: HDF MATERIAL: GRADE: QTY:

| REV | DESCRIPTION | BY | DATE |
|-----|-------------|----|------|
| | | | |
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| | | | |

Drawn by
Cooper Rufus, n11029978

| | |
|----------|----------|
| DRAWN | DATE |
| C.R. | 27.10.22 |
| CHECKED | DATE |
| P.B. | 27.10.22 |
| APPROVED | DATE |
| | |
| SCALE | |
| 1:3 | |

| | | |
|--------------------------------|--------|-----------------|
| DIMENSIONS IN MILLIMETRES | | DO NOT SCALE |
| TITLE Gearbox Housing | | |
| PROJECT 210 Gearbox Project | | |
| DRAWING No. | Pulley | SHEET 1 OF 1 |


 A4
 REV.