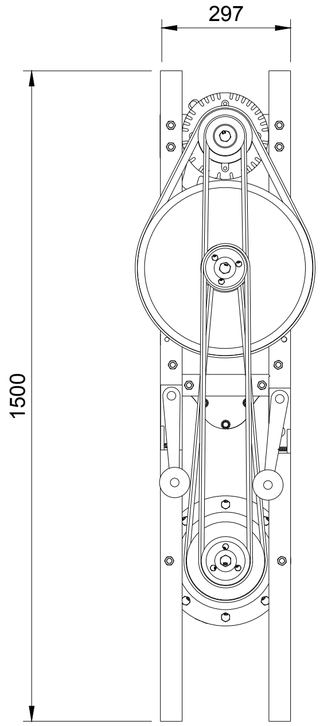
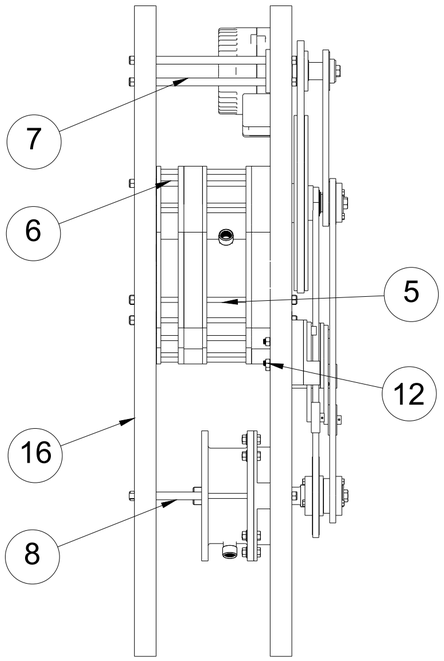
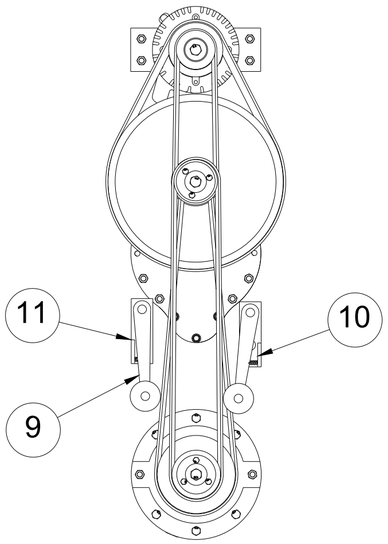
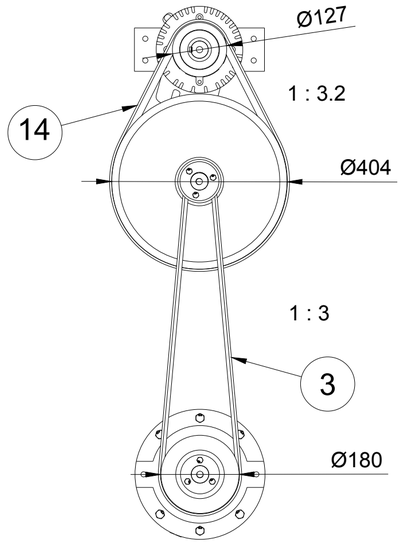
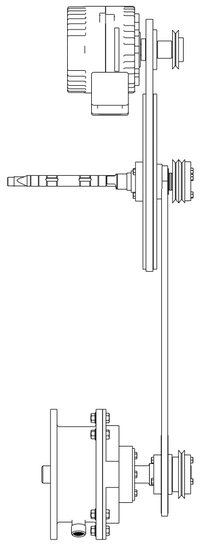






Charging Cycle Belts

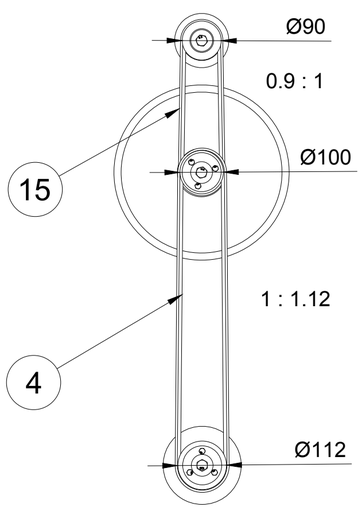


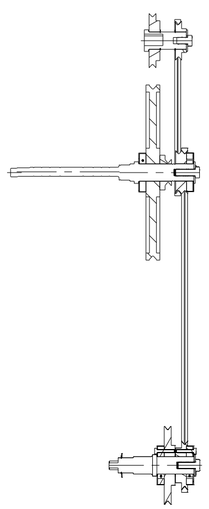


A-A (1:10)

Disharging Cycle Belts

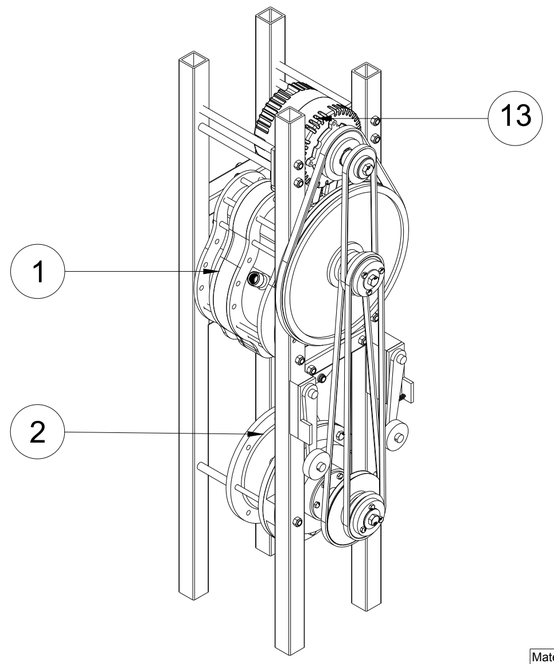
A





A

Parts List				
Item	Qty	Part Name	Material	Part No.
1	1	Large Compressor Assembly	Various	eCOOL_SJRW_B1
2	1	Small Comperssor Assembly	Various	eCOOL_SJRW_B2
3	1	Charge Compressor V-Belt	Polyurethane	eCOOL_SJRW_001
4	1	Disharge Compressor V-Belt	Polyurethane	eCOOL_SJRW_002
5	10	Support Bar	EN9 Steel Bar	eCOOL_SJRW_003
6	2	Short Support Bar	EN9 Steel bar	eCOOL_SJRW_004
7	4	Motor Support Spacer	Mild Steel Tube	eCOOL_SJRW_005
8	2	Small Compressor Spacer	Mild Steel Tube	eCOOL_SJRW_006
9	2	Tensioner Arm	Aluminium	eCOOL_SJRW_007
10	1	Tensioner Support (right)	Mild Steel	eCOOL_SJRW_008
11	1	Tensioner Support (left)	Mild Steel	eCOOL_SJRW_009
12	28	M12 Lock Nut	Medium Tensile Steel	90759A940
13	1	Motor/ Shaft Assembly	Various	eCOOL_SJRW_B3
14	1	Charge Motor V-Belt	Polyurethane	eCOOL_SJRW_010
15	1	Discharge Motor V-Belt	Polyurethane	eCOOL_SJRW_011
16	1	Frame	Mild Steel Sqare tube	eCOOL_SJRW_012



Materials: VARIOUS

DO NOT SCALE : IF IN DOUBT - PLEASE ASK | TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± ANGULAR:±

ALL DIMENSIONS IN MM | SCALE: 1:10

CONTACT DETAILS: sjrw21@bath.ac.uk

DESIGNED BY: Sam Riddell-Webster | CHECKED BY: | APPROVED BY: | SHEET SIZE: A2 | DATE: | PROJECT: GBDP - PTES

Notes: Remove all burrs

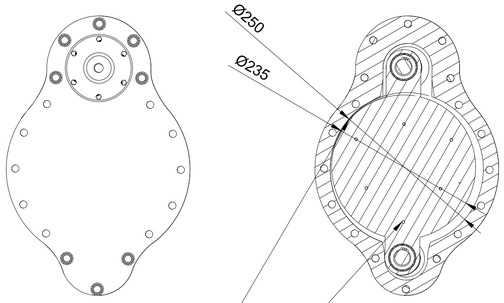
3rd ANGLE PROJECTION

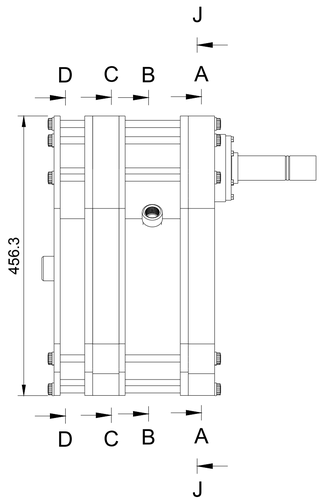
UNIVERSITY OF BATH

TITLE: Full Compressor/ Expander Assembly | ISO / BS8888

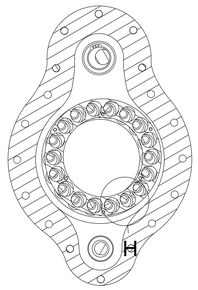
PART NO. eCOOL_SJRW_A | EDITION: | SHEET NO. 1

J-J (1:5)

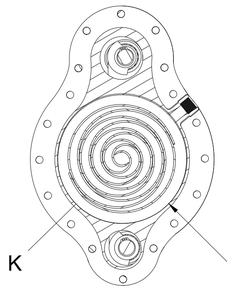




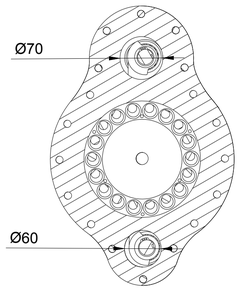
A-A (1:5)



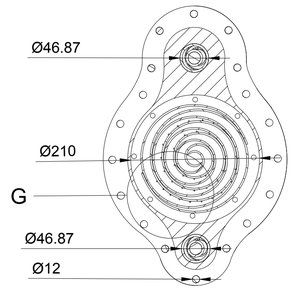
B-B (1:5)



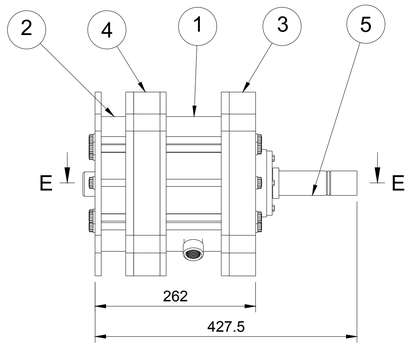
C-C (1:5)



D-D (1:5)



Parts List				
Part No.	Qty	Part Name	Material	Part Number
1	1	Fixed Large Scroll	Cast Iron	eCOOL_SJRW_013
2	1	Fixed Small Scroll	Cast Iron	eCOOL_SJRW_014
3	1	Large Scroll Housing Cover	Cast Iron	eCOOL_SJRW_015
4	1	Small Scroll Housing Cover	Cast Iron	eCOOL_SJRW_016
5	1	Drive Shaft	EN9 Steel	eCOOL_SJRW_017
6	1	Large Orbital Scroll	Cast Iron	eCOOL_SJRW_018
7	1	Small Orbital Scroll	Cast Iron	eCOOL_SJRW_019
8	1	Driven Shaft	EN9 Steel	eCOOL_SJRW_020
9	8	Housing Assembly Rod	EN9 Steel	eCOOL_SJRW_021
10	16	M12 Lock Nut	EN9 Steel	90759A940
11	1	Main Drive Shaft Bearing	Various	6307-2RS
12	4	Ball Coupling Plate	EN1A Steel	eCOOL_SJRW_022
13	36	Coupling Ball	EN9 Steel	eCOOL_SJRW_023
14	3	Shaft Locating Bearing	Various	6204-2RS
15	4	Ornital Scroll Bearing	Various	NU204-E
16	1	Primary Bearing Cover Plate	Cast Iron	eCOOL_SJRW_024
17	6	M5 Cover Plate Bolt	EN9 Steel	91310A124
18	1	Dust Seal	Rubber	5154T867
19	4	Shaft Counterweight	Cast Iron	eCOOL_SJRW_025
20	16	M25 Circlip	1090 spring steel	98541A440
21	16	M25 Washer	EN1A Steel	eCOOL_SJRW_026



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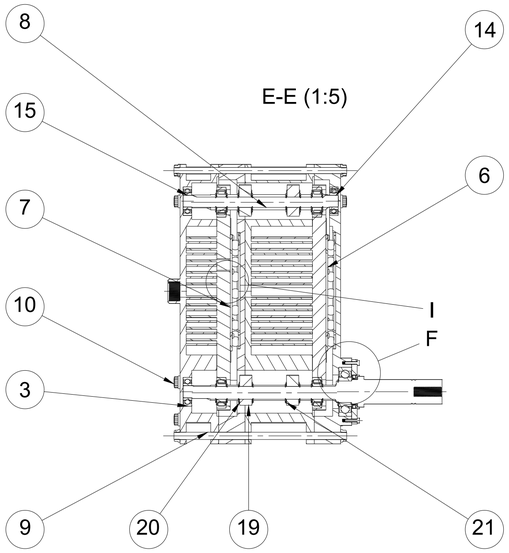

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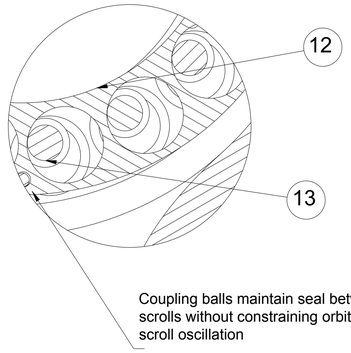
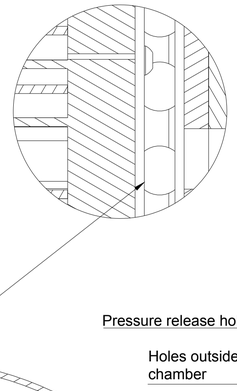
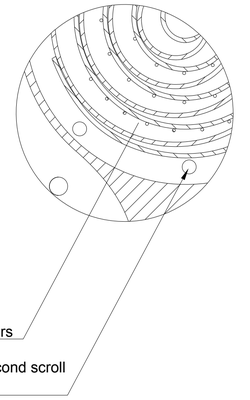


I (1:1)



G (1:2)



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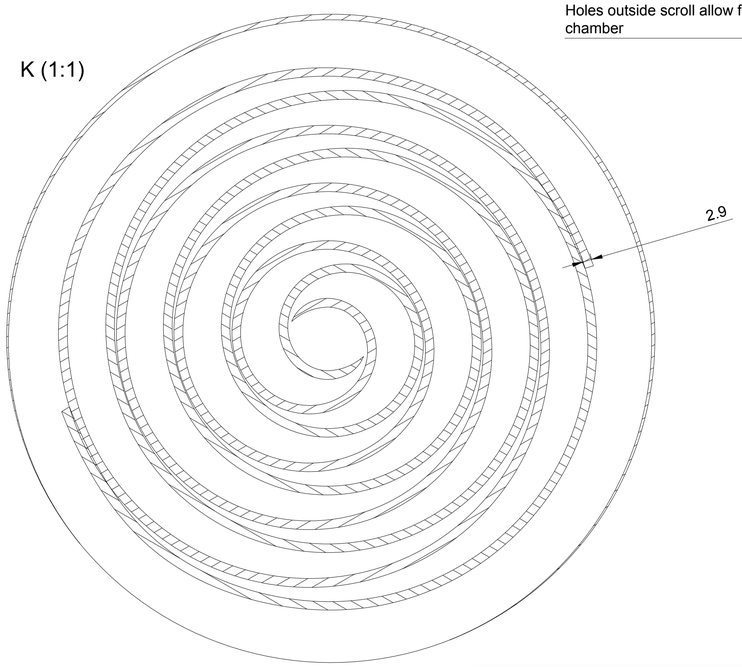
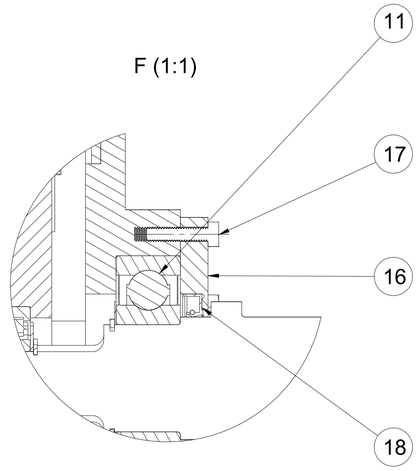
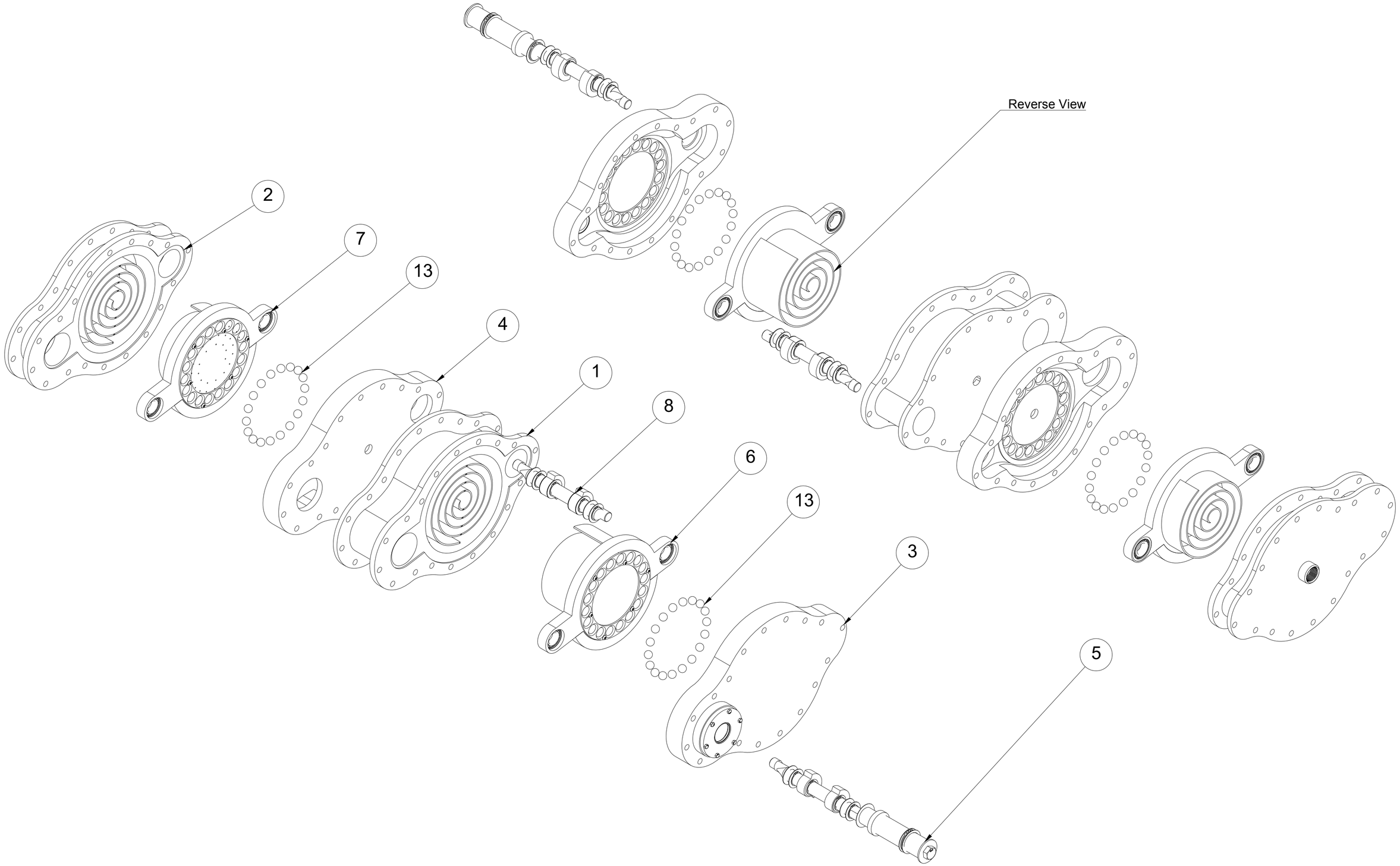


F (1:1)

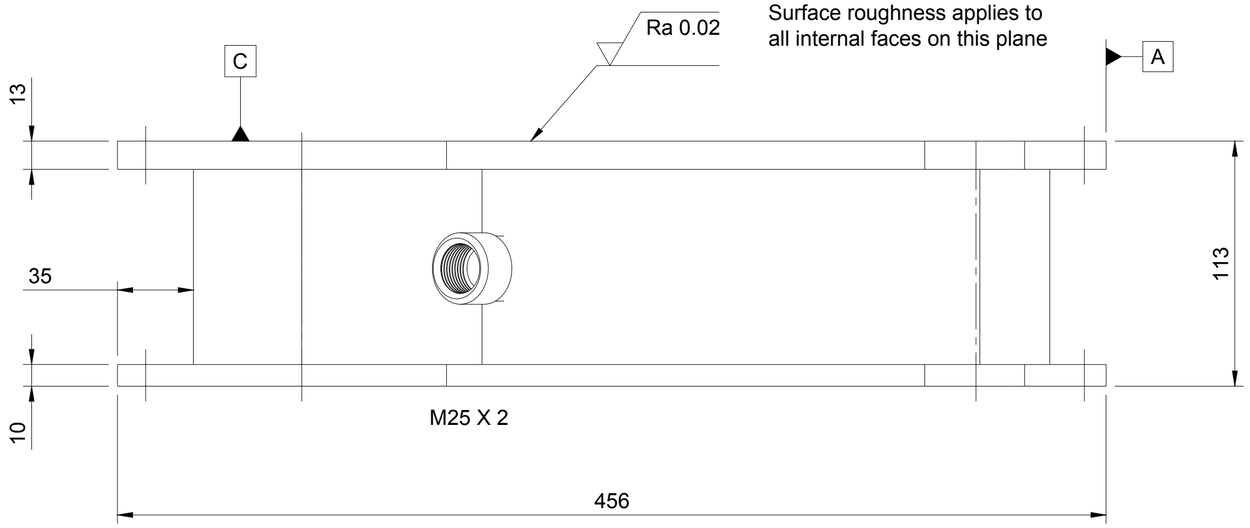


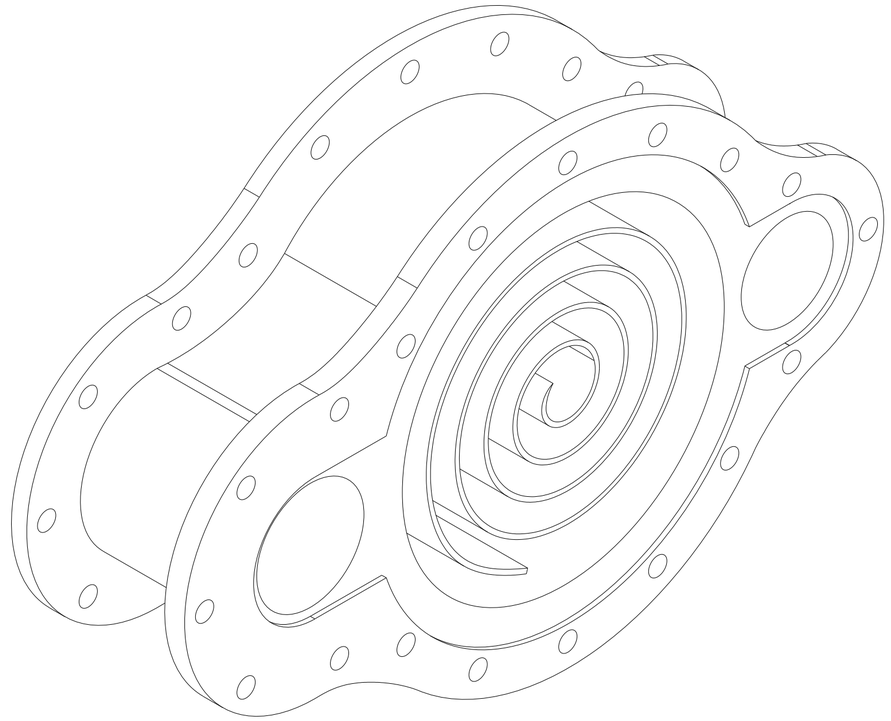
Materials:	DO NOT SCALE : IF IN DOUBT - PLEASE ASK	TOLERANCES UNLESS OTHERWISE STATED: LINEAR:±					ANGULAR:±	
	ALL DIMENSIONS IN MM SCALE: 1:5	CONTACT DETAILS: sjrw21@bath.ac.uk	DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A1	DATE: 22.05.20	PROJECT: GBDP - PTES
Notes: Remove all burrs	3rd ANGLE PROJECTION	© UNIVERSITY OF BATH THIS DOCUMENT IS COPYRIGHT AND THE PROPERTY OF THE UNIVERSITY OF BATH. IT MUST NOT BE COPIED IN WHOLE OR IN PART NOR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR PERMISION OF THE UNIVERSITY	UNIVERSITY OF BATH	TITLE: Large Compressor / Expander assembly				ISO / BS8888
				PART NO. eCOOL_SJRW_B1		EDITION:		SHEET NO. 2

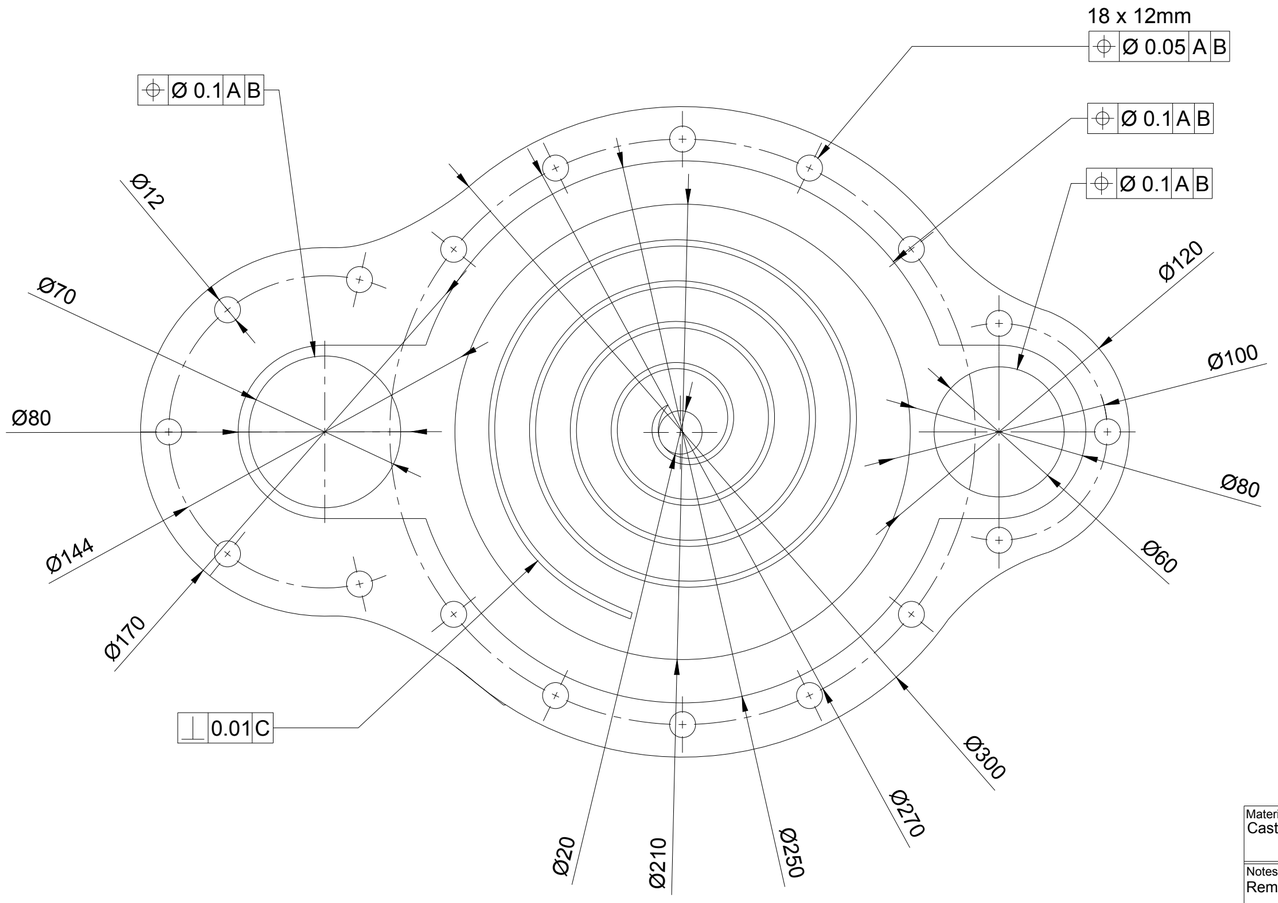


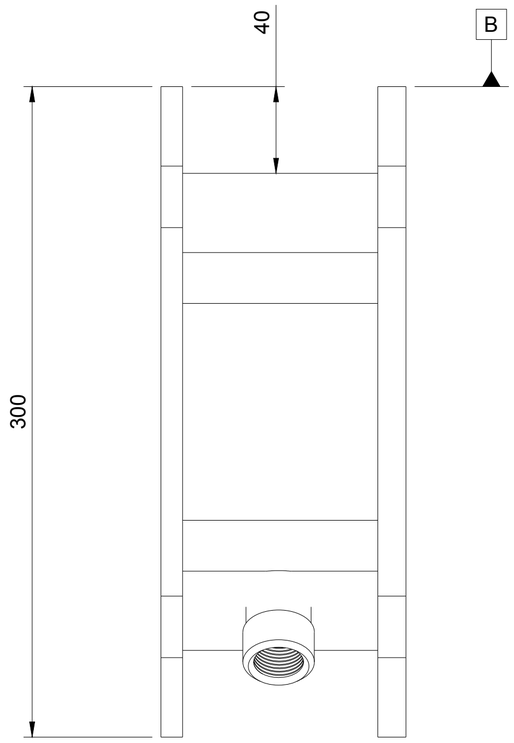
Part Numbers refer to Parts list on page 2

Materials: Various	DO NOT SCALE : IF IN DOUBT - PLEASE ASK		TOLERANCES UNLESS OTHERWISE STATED: LINEAR:±			ANGULAR:±			
	ALL DIMENSIONS IN MM SCALE: 1:5	CONTACT DETAILS: sjrw21@bath.ac.uk	DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A2	DATE: 19.05.20	PROJECT: GBDP - PTES	
Notes:	3rd ANGLE PROJECTION		UNIVERSITY OF BATH	TITLE: Large Compressor Exploaded View				ISO / BS8888	
				PART NO. eCOOL_SJRW_B1_Exp		EDITION:		SHEET NO. 3	

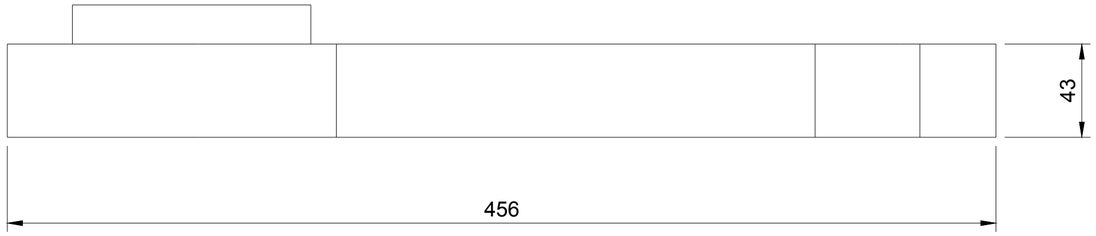


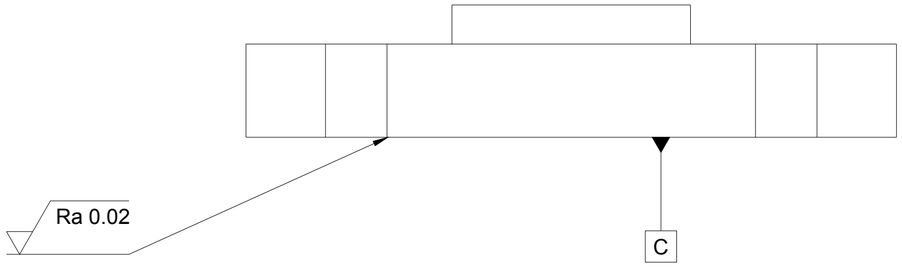


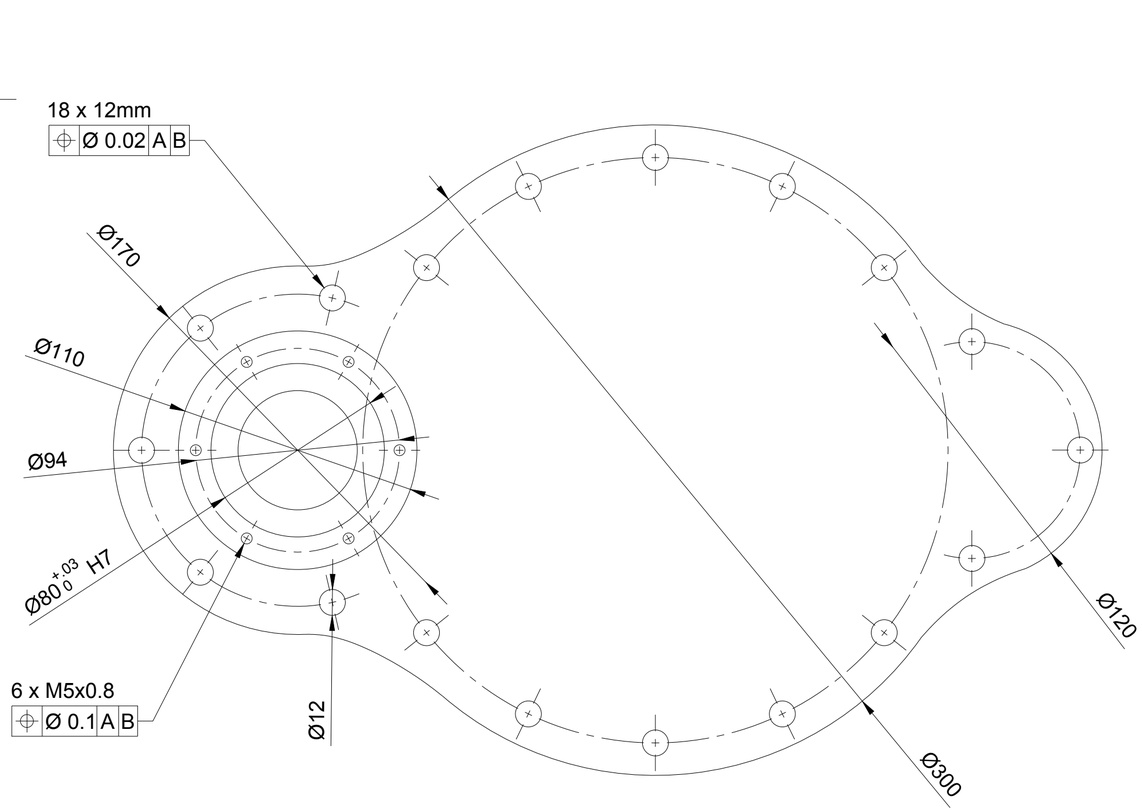


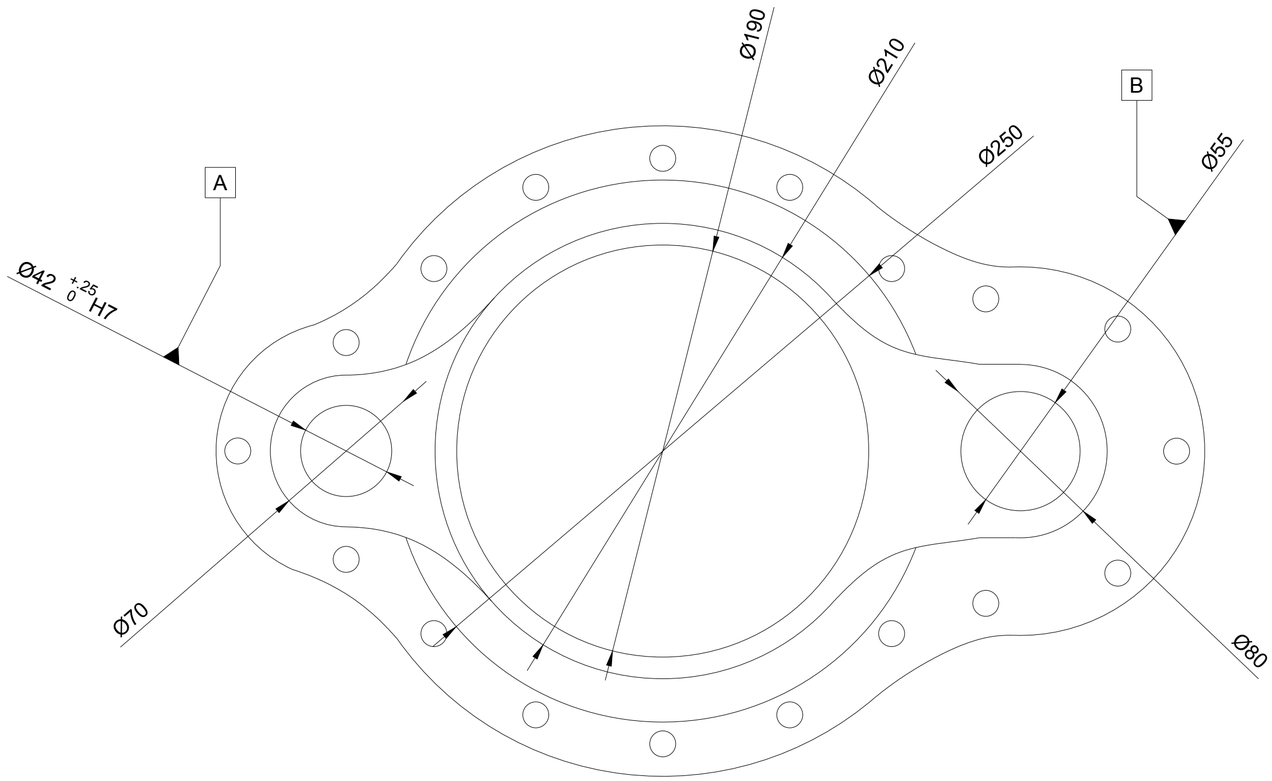


Materials: Cast Iron	DO NOT SCALE : IF IN DOUBT - PLEASE ASK	TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± 0.1 ANGULAR:±							
	ALL DIMENSIONS IN MM SCALE: 1:2	CONTACT DETAILS: sjrw21@bath.ac.uk		DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A2	DATE: 26.05.20	PROJECT: GBDP - PTES
Notes: Remove all burrs	3rd ANGLE PROJECTION		UNIVERSITY OF BATH	TITLE: Fixed Large Scroll					ISO / BS8888
				PART NO. eCOOL_SJR W_013			EDITION:		SHEET NO. 4

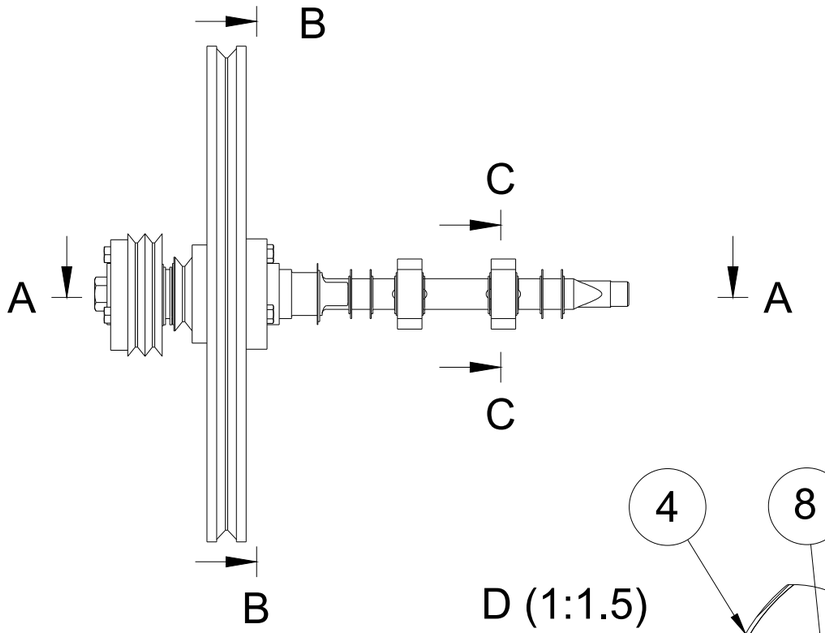




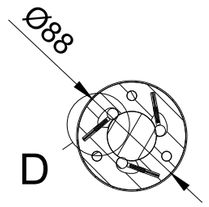




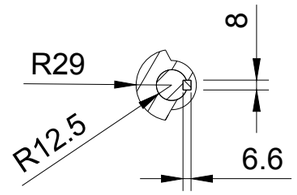
Materials: Cast Iron	DO NOT SCALE : IF IN DOUBT - PLEASE ASK	TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± 0.1 ANGULAR:±						
	ALL DIMENSIONS IN MM SCALE: 1:2	CONTACT DETAILS: sjrw21@bath.ac.uk	DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A2	DATE: 26.05.20	PROJECT: GBDP - PTES
Notes: Remove all burrs	3rd ANGLE PROJECTION		UNIVERSITY OF BATH	TITLE: Laege Scroll Housing Cover				ISO / BS8888
				PART NO. eCOOL_SJRW_015		EDITION:		SHEET NO. 5

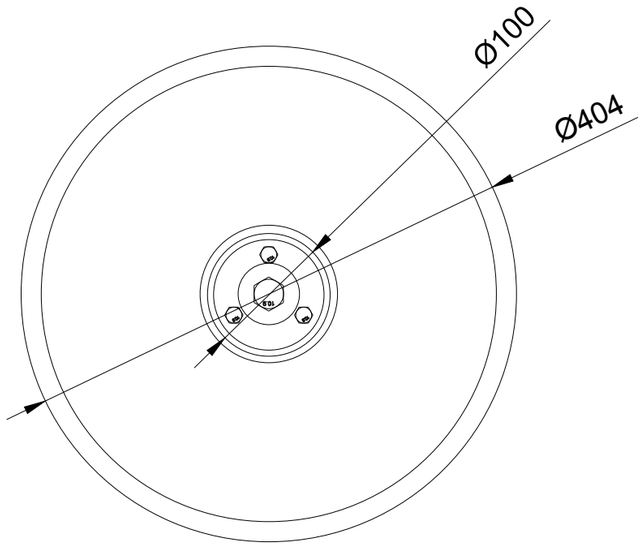


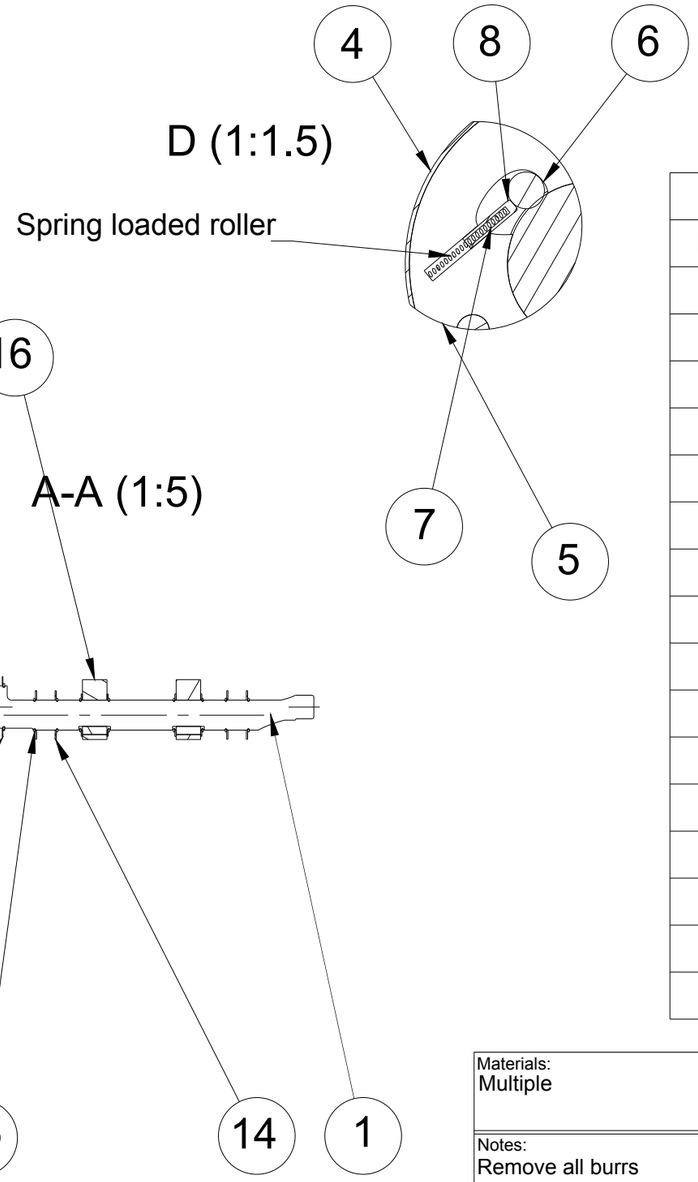
B-B (1:5)



C-C (1:5)







Parts List				
Item	Qty	Part Name	Material	Part No.
1	1	Large Compressor Drive Shaft	En9 Steel	eCOOL_SJRW_017
2	1	Charge Cycle Pulley	Cast Iron	031Z0351
3	1	Discharge Cycle Pulley	Cast Iron	031Z0142
4	2	Sprag Clutch Housing	Stainless Steel	eCOOL_SJRW_027
5	2	Sprag Clutch Body	EN9 Steel	eCOOL_SJRW_028
6	6	Sprag Clutch Roller	EN8 Steel	eCOOL_SJRW_029
7	6	Sprag Clutch Spring	Spring Steel	eCOOL_SJRW_030
8	6	Roller Pusher	EN1A Steel	eCOOL_SJRW_031
9	1	End washer	EN8 Steel	eCOOL_SJRW_032
10	1	End Shaft Bolt	Mediem Strength Steel	91310A839
11	6	Sprag Clutch Bolts	Medium Strength Steel	91052A104
12	3	M40 Washer	EN1A Steel	eCOOL_SJRW_033
13	3	M40 Circlip	1090 Spring Steel	98541A156
14	8	M25 Washer	EN1A Steel	eCOOL_SJRW_026
15	8	M25 Circlip	1090 Spring Steel	98541A440
16	2	Shaft Counterweight	Cast Iron	eCOOL_SJRW_025

Materials: Multiple

DO NOT SCALE : IF IN DOUBT - PLEASE ASK | TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± ANGULAR:±

ALL DIMENSIONS IN MM
SCALE: 1:5

CONTACT DETAILS: sjrw21@bath.ac.uk

DESIGNED BY: SamRiddell-Webster | CHECKED BY: | APPROVED BY: | SHEET SIZE: A3 | DATE: 21.05.20 | PROJECT: GBDP - PTES

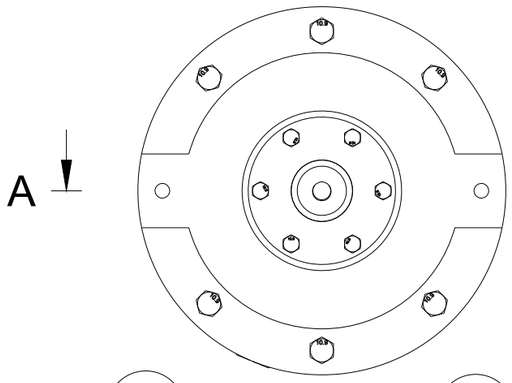
Notes: Remove all burrs

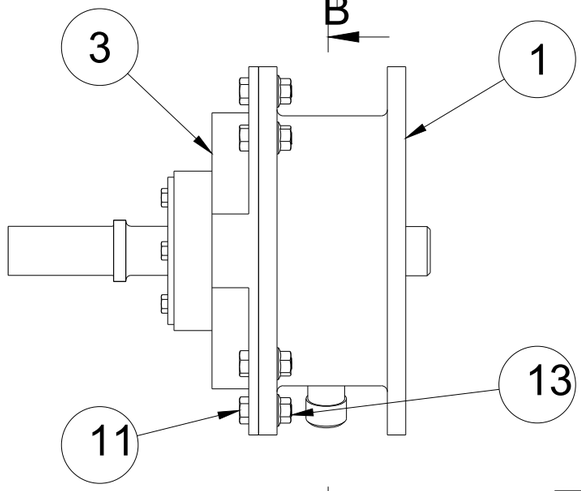
3rd ANGLE PROJECTION

UNIVERSITY OF BATH

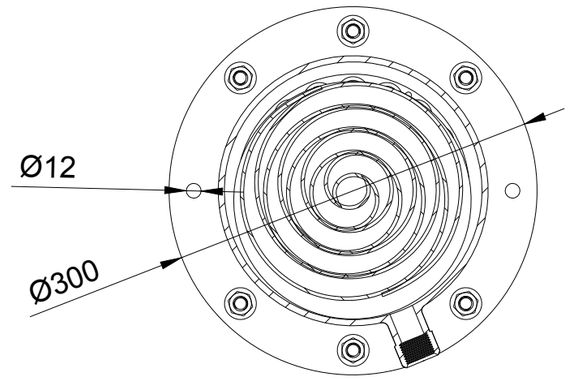
TITLE: Large Compressor Drive Shaft Assembly | ISO / BS8888

PART NO. eCOOL_SJRW_B2 | EDITION: | SHEET NO. 6

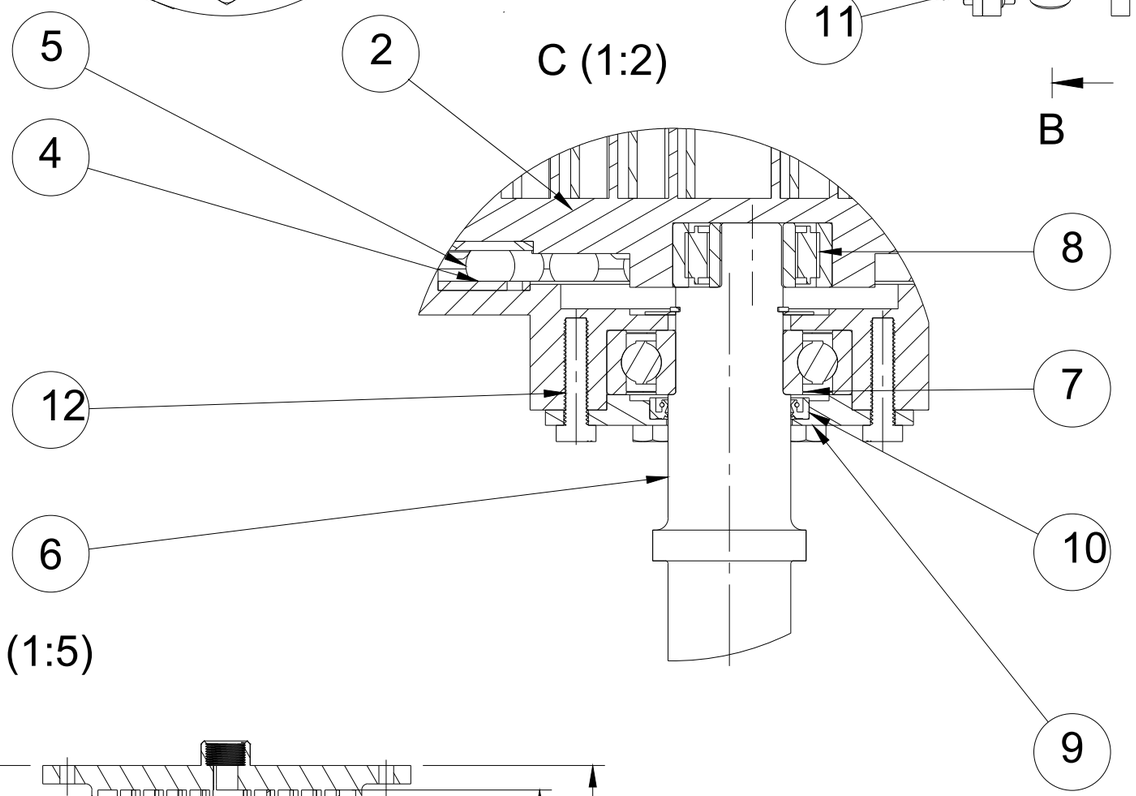




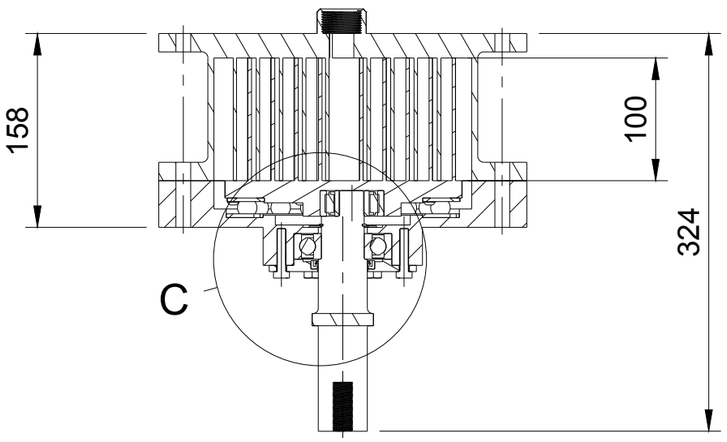
B-B (1:5)



C (1:2)



A-A (1:5)



Parts List				
Item	Qty	Part Name	Material	Part Number
1	1	Fixed Scroll Housing	Cast Iron	eCOOL_SJRW_033
2	1	Orbital Scroll	Cast Iron	eCOOL_SJRW_034
3	1	Scroll Housing Cover	Cast Iron	eCOOL_SJRW_035
4	2	Ball Coupling Plate	EN1A Steel	eCOOL_SJRW_022
5	18	Coupling Ball	EN 9	eCOOL_SJRW_023
6	1	Drive Shaft	EN 9	eCOOL_SJRW_036
7	1	Main Shaft Bearing	Various	6307-2RS
8	1	Orbital Scroll Bearing	Various	NU204-E
9	1	Main Bearing Cover	Cast Iron	eCOOL_SJRW_032
10	1	Shaft Seal	Rubber	eCOOL_SJRW_037
11	6	Flange Bolt	Medium Strength Steel	91310A715
12	6	Bearing Cover Bolt	Medium Strength Steel	91310A539
13	6	Flange Nuts	Medium Strength Steel	96194A104

Materials: Various

DO NOT SCALE : IF IN DOUBT - PLEASE ASK | TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± ANGULAR:±

ALL DIMENSIONS IN MM
SCALE: 1:5

CONTACT DETAILS: sjrw21@bath.ac.uk

DESIGNED BY: Sam Riddell-Webster | CHECKED BY: | APPROVED BY: | SHEET SIZE: A3 | DATE: 21.05.20 | PROJECT: GBDP - PTES

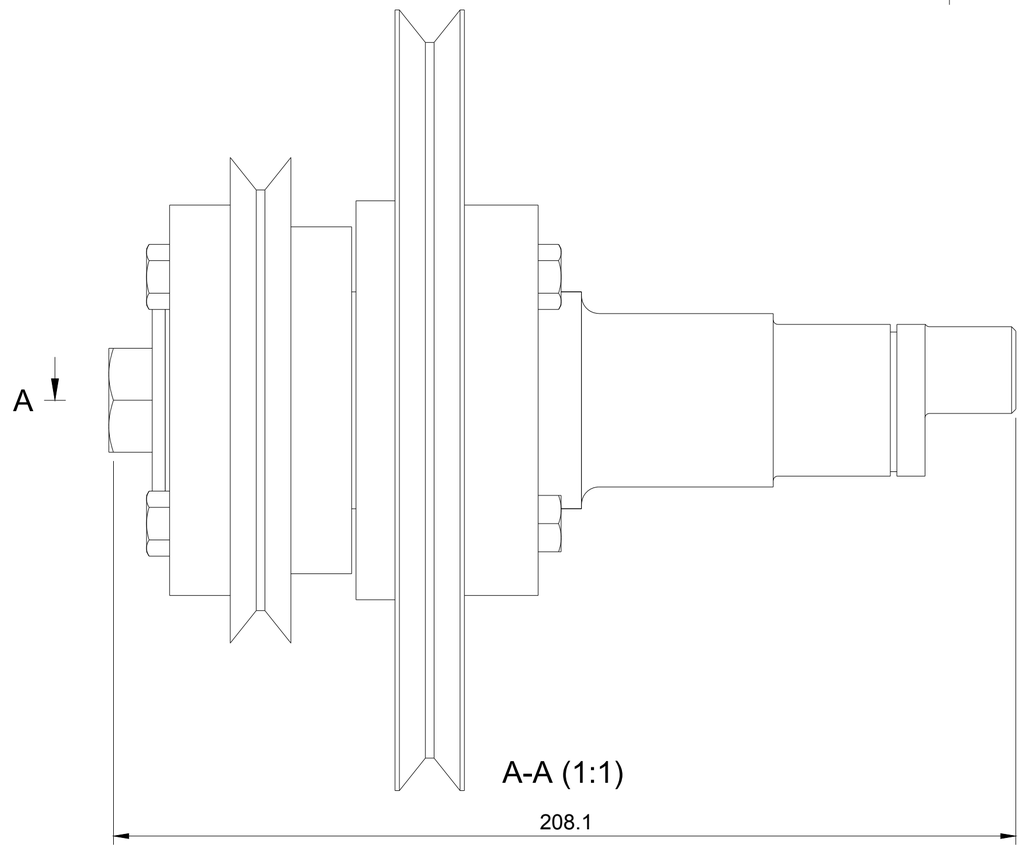
Notes: Remove all burrs

3rd ANGLE PROJECTION

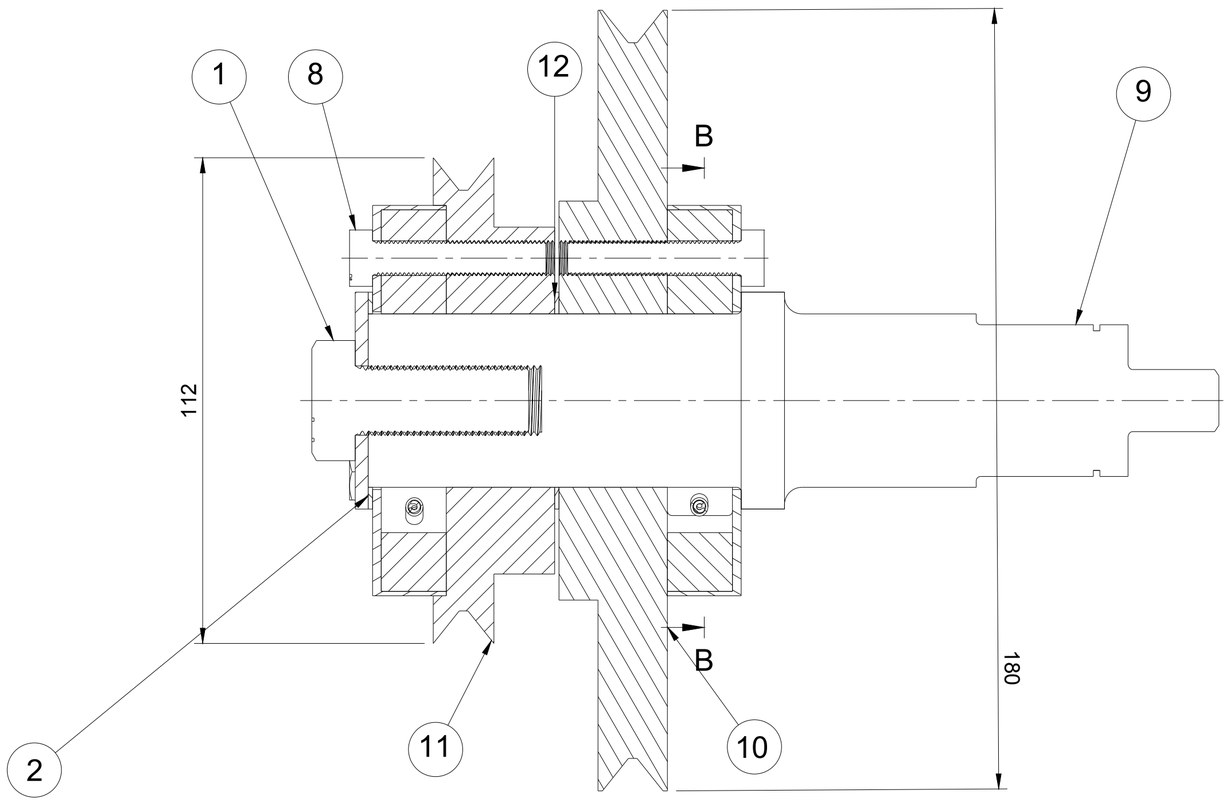
UNIVERSITY OF BATH

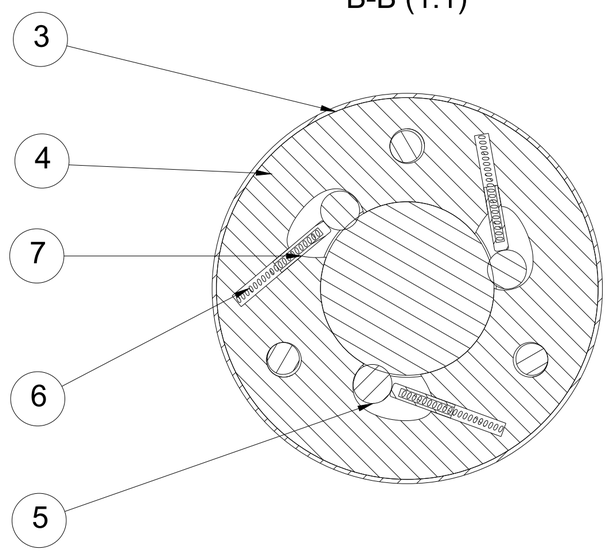
TITLE: Small Scroll Assembly | ISO / BS8888

PART NO. eCOOL_SJRW_B3 | EDITION: | SHEET NO. 7



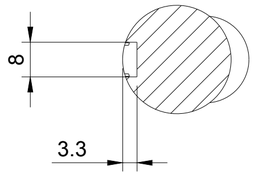
Parts List				
Part No.	Qty	Part Name	Material	Part Number
1	1	End Bolt	Mediem Strength Steel	91310A839
2	1	End Washer	EN8 Steel	eCOOL_SJRW_032
3	2	Sprag Clutch Housing	Stainless Steel	eCOOL_SJRW_027
4	2	Sprag Clutch Body	EN9 Steel	eCOOL_SJRW_028
5	6	Sprag Clutch Roller	EN8 Steel	eCOOL_SJRW_029
6	6	Sprag Clutch Spring	Stainless Steel	eCOOL_SJRW_030
7	6	Roller Pusher	EN1A Steel	eCOOL_SJRW_031
8	6	Sprag Clutch Bolts	Medium Strength Steel	91052A104
9	1	Small Compressor Drive Shaft	EN9 Steel	eCOOL_SJRW_036
10	1	Charge Cycle Pulley	Cast Iron	031Z0342
11	1	Discharge Cycle Pulley	Cast Iron	031Z0141
12	1	40mm Washer	EN1A Steel	98541A156

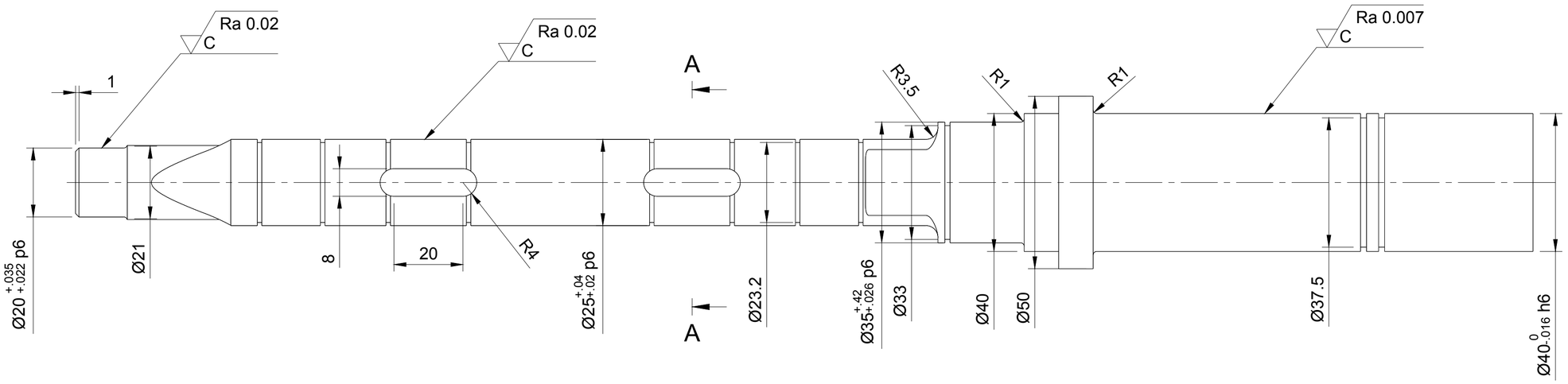


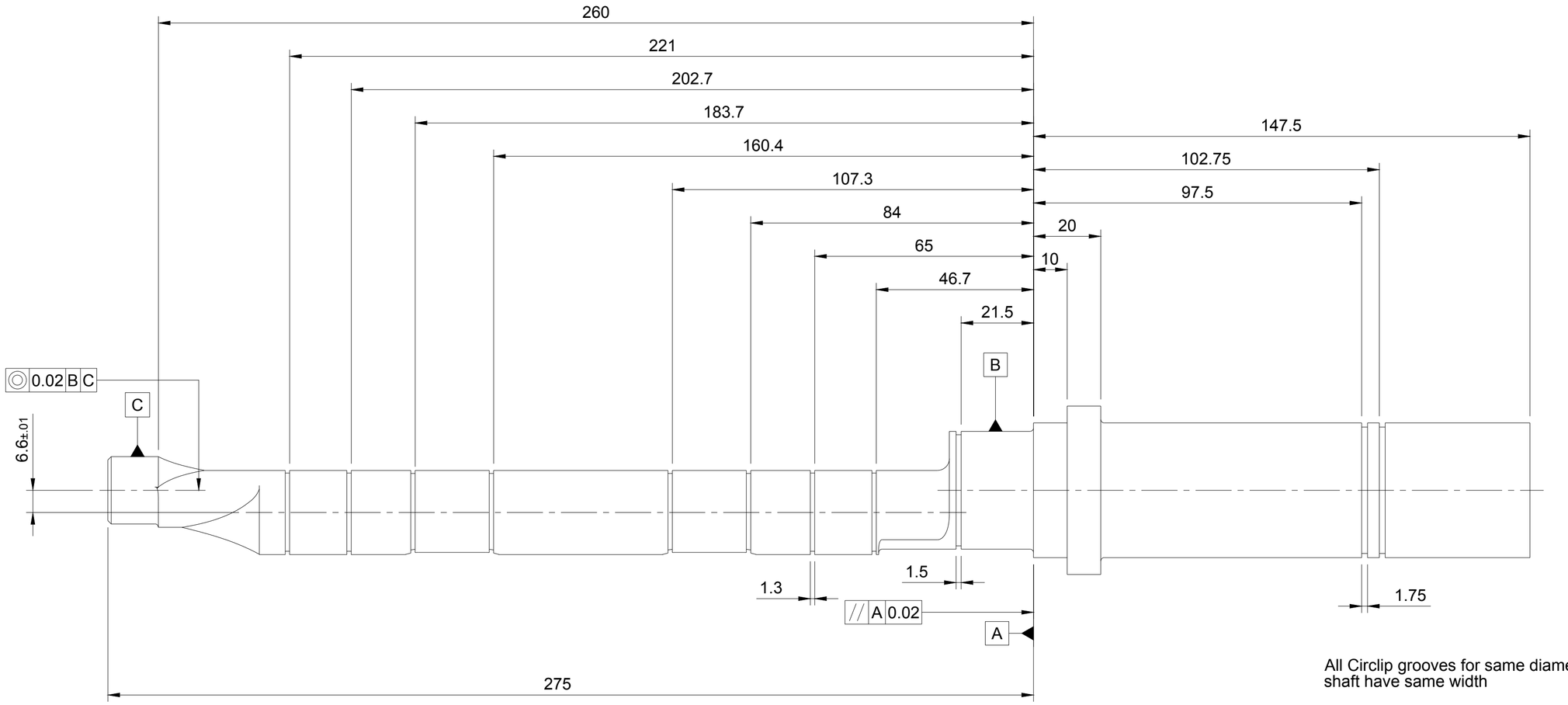


Materials: See Parts List	DO NOT SCALE : IF IN DOUBT - PLEASE ASK	TOLERANCES UNLESS OTHERWISE STATED: LINEAR:±		ANGULAR:±					
	ALL DIMENSIONS IN MM SCALE: 1:1	CONTACT DETAILS: sjrw21@bath.ac.uk	DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A2	DATE: 26.05.20	PROJECT: GBDP - PTES	
Notes: Remove all burrs	3rd ANGLE PROJECTION		UNIVERSITY OF BATH	TITLE: Small Compressor Shaft Assembly					ISO / BS8888
				PART NO. eCOOL_SJRW_B4		EDITION:		SHEET NO. 8	

A-A (1:1)



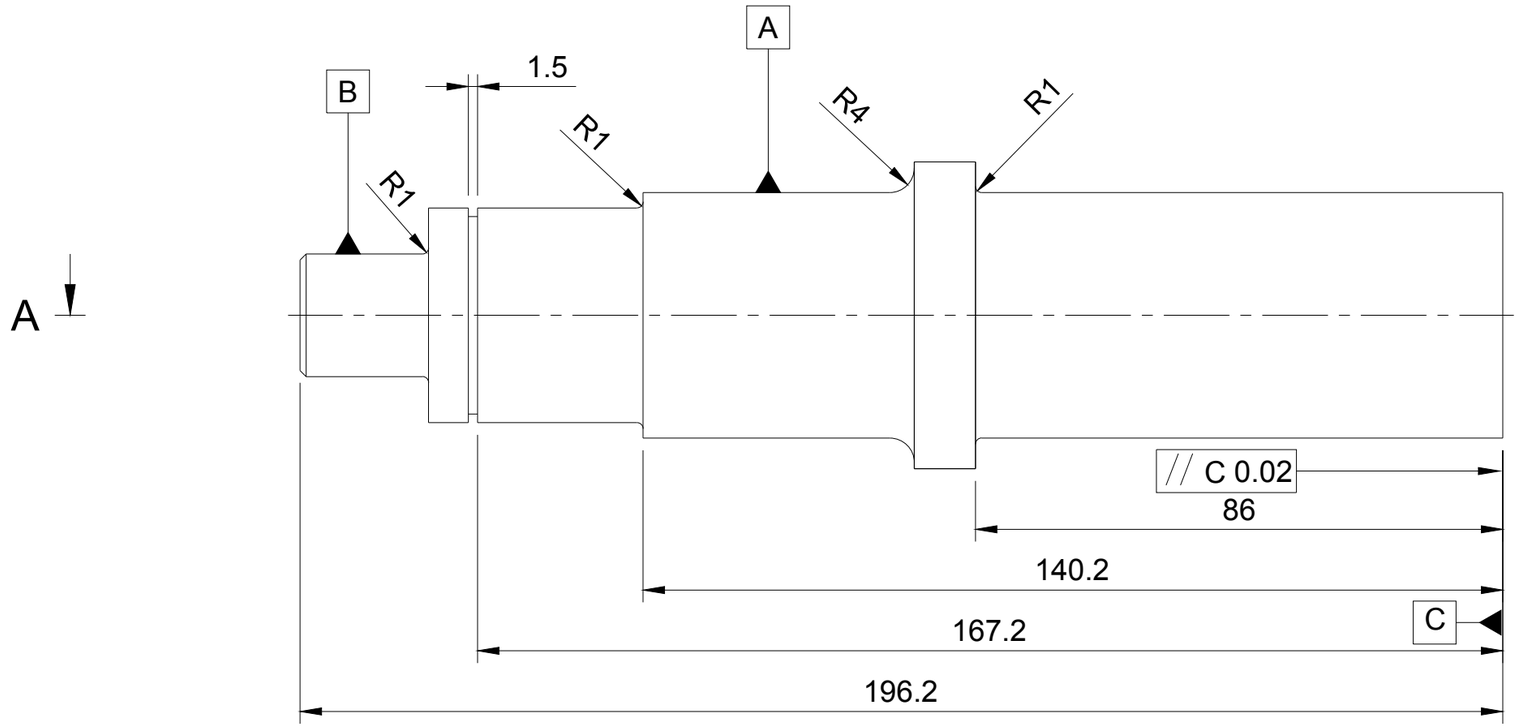




All Circlip grooves for same diameter shaft have same width

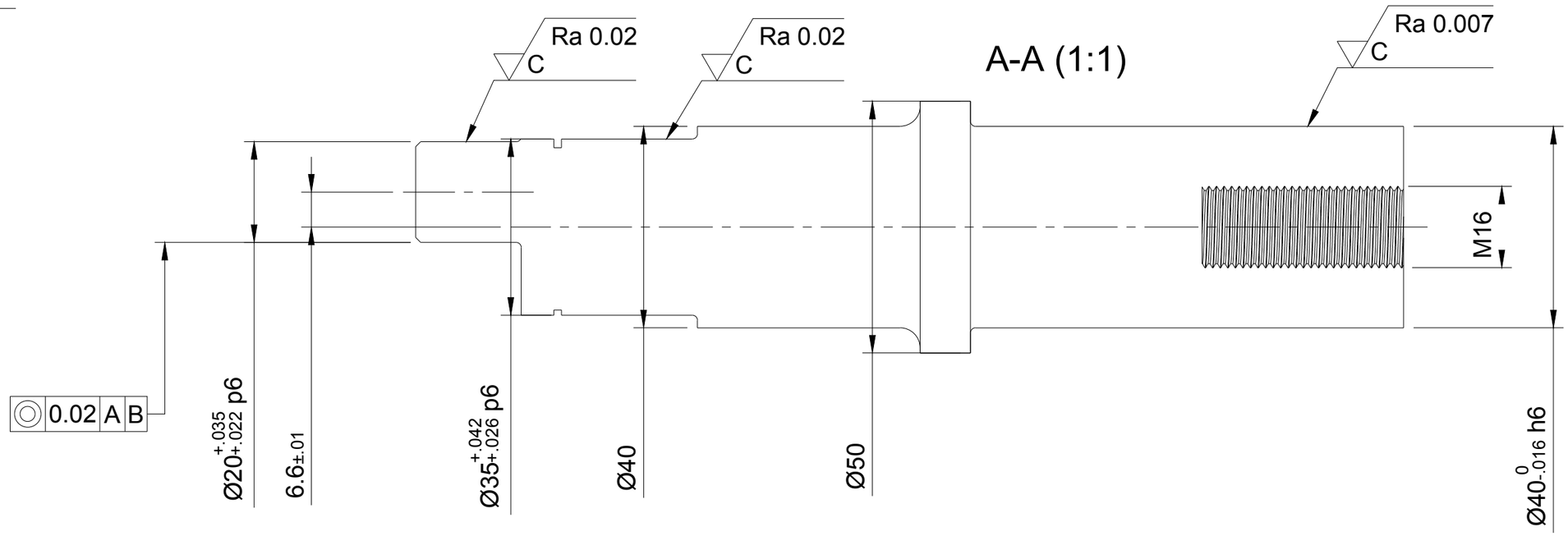
Unless otherwise specified:
Surface roughness: 0.02mm

Materials: EN9 Steel	DO NOT SCALE : IF IN DOUBT - PLEASE ASK		TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± 0.2			ANGULAR:± 0.2			
	ALL DIMENSIONS IN MM SCALE: 1:2	CONTACT DETAILS: sjrw21@bath.ac.uk	DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A2	DATE: 23.05.20	PROJECT: GBDP - PTES	
Notes: Remove all burrs	3rd ANGLE PROJECTION		UNIVERSITY OF BATH	TITLE: Large Compressor Shaft Part Drawing				ISO / BS8888	
				PART NO. eCOOL_SJRW_020		EDITION:		SHEET NO. 9	



A

A



A-A (1:1)

Unless otherwise specified:
Surface roughness: 0.02mm

Materials: EN9 Steel	DO NOT SCALE : IF IN DOUBT - PLEASE ASK	TOLERANCES UNLESS OTHERWISE STATED: LINEAR:± 0.1			ANGULAR:±			
	ALL DIMENSIONS IN MM SCALE: 1:1	CONTACT DETAILS: sjrw21@bath.ac.uk	DESIGNED BY: Sam Riddell-Webster	CHECKED BY:	APPROVED BY:	SHEET SIZE: A3	DATE: 21.05.20	PROJECT: GBDP - PTES
Notes: Remove all burrs	3rd ANGLE PROJECTION		UNIVERSITY OF BATH	TITLE: Small Compressor Drive shaft				ISO / BS8888
				PART NO. eCOOL_SJRW_36		EDITION:		SHEET NO. 10