

8		7		6		5		4		3		2		1	
F	No.	Name		Material	Specification		Amount	No.	Name		Material	Specification		Amount	
	401	Forearm		A7075P			1	101	Base		A7075P			1	
	402	Shaft		C3604B			1	102	Axis of rotation		C3604B			1	
	403	Bevel gear		C3604B			2	103	Timing pulley		A2017B	ATP72MXL025		1	
	404	Bevel gear		C3604B	B80 B40		1	104	Timing pulley		A2017B	ATP24MXL025		1	
	501	List		A7075P	B80 B20		1	105	Waist rotation board		A7075P			1	
E	502	Shaft		C3604B			1	106	Proximity sensor target		C3604B			1	
	601	Pulse motor			CMK243AP-SG18		5	107	Spacer		C3604B			1	
	701	Jade axis			6900NR		2	108	Timing belt			TBN132MXL025		1	
	704	Ball bearings			F695		10	201	Left motor mounting pole		A7075			1	
	705	Ball bearings			F695		4	202	Right Motor mounting pole		A7075			1	
	706	Resin plain bearings		PTFE	R-BRF0505		12	203	Reinforcement plate		A7075			1	
D								204	Motor mounting plate		A7075			1	
								205	Motor mounting plate		A7075			1	
								206	Spur gear		C3604B	S80 30B+0505		2	
								207	Spur gear		C3604B	S80B 90B+0508		1	
								208	Spur gear		SUS304	S80SU 90B+0508		1	
								209	Spur gear		S45C	S50S 40B+0505		2	
C								210	Spur gear		S45C	S50S 80B+0508		2	
								211	Timing pulley		A2017B	BMXL30		4	
								212	Flange		C3604B			8	
								213	Shaft		C3604B			1	
								214	Sleeve		C3604B			2	
								215	Sleeve		C3604B			3	
B								216	Washer		C3604B			6	
								217	Timing belt			TBN158MXL025		2	
								301	Upper arm		A7075P			1	
								302	Shaft		C3604B			1	
								303	Timing pulley		A2017B	BXML30		2	
								304	Flange		C3560P			2	
A								305	Lever		C3604B			1	
								306	Link bar		C3604B			1	
								307	Link mounting shaft		C3604B			1	
								308	Nut		C3604B			2	
								309	Timing belt			TBN155MXL025		2	
								UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING	
								NAME	SIGNATURE	DATE			TITLE:		
							DRAWN								
							CHK'D								
							APPV'D								
							MFG								
							Q.A				MATERIAL:		DWG NO.		A3
											Robot arm drawing				
											WEIGHT:		SCALE:2:1		SHEET 1 OF 22
8		7		6		5		4		3		2		1	
SOLIDWORKS Educational Product. For Instructional Use Only.						5		4		3		2		1	

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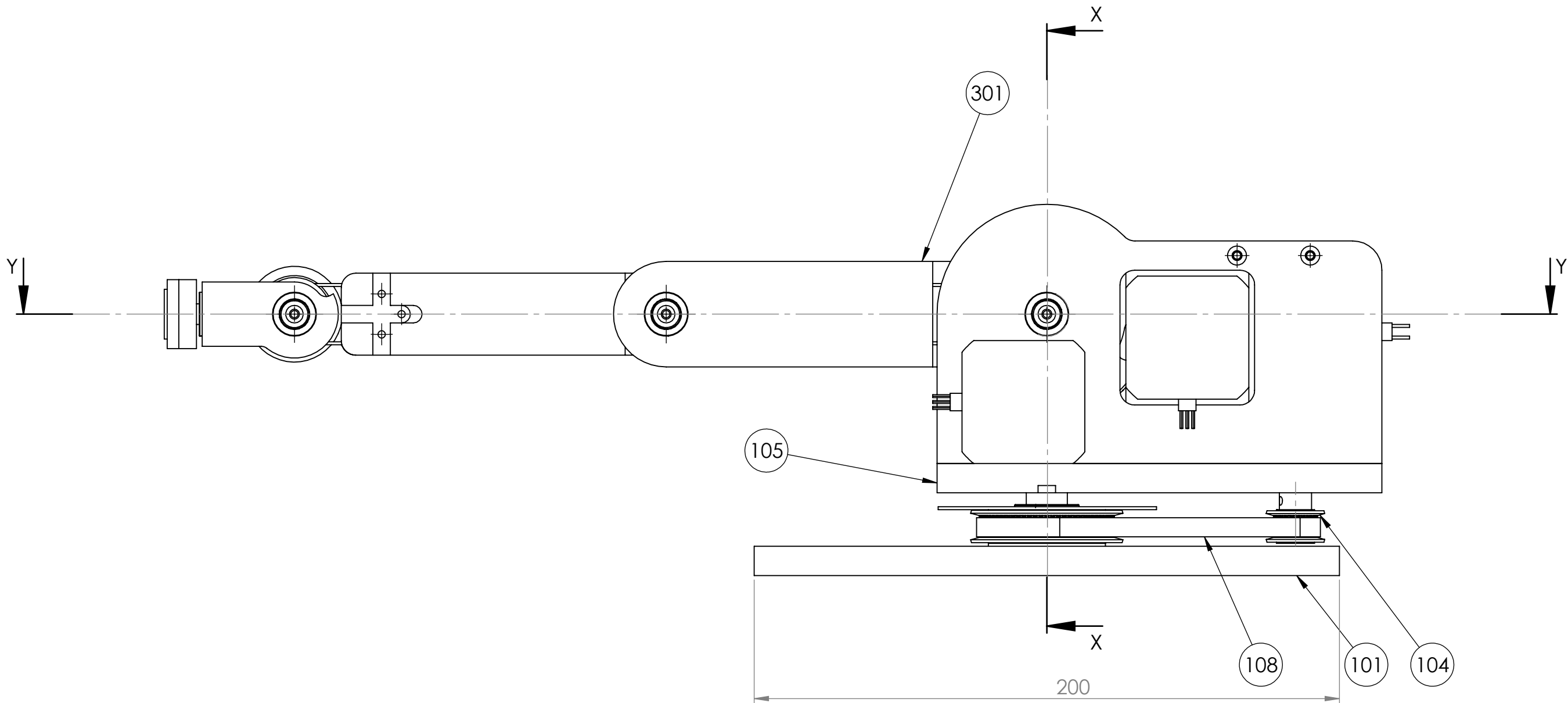
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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION			
DRAWN		NAME		SIGNATURE		DATE		TITLE:		DWG NO. Robot arm drawing		A3	
CHK'D													
APPV'D													
MFG													
Q.A													
								MATERIAL:					
								WEIGHT:		SCALE:1:1.5		SHEET 2 OF 22	

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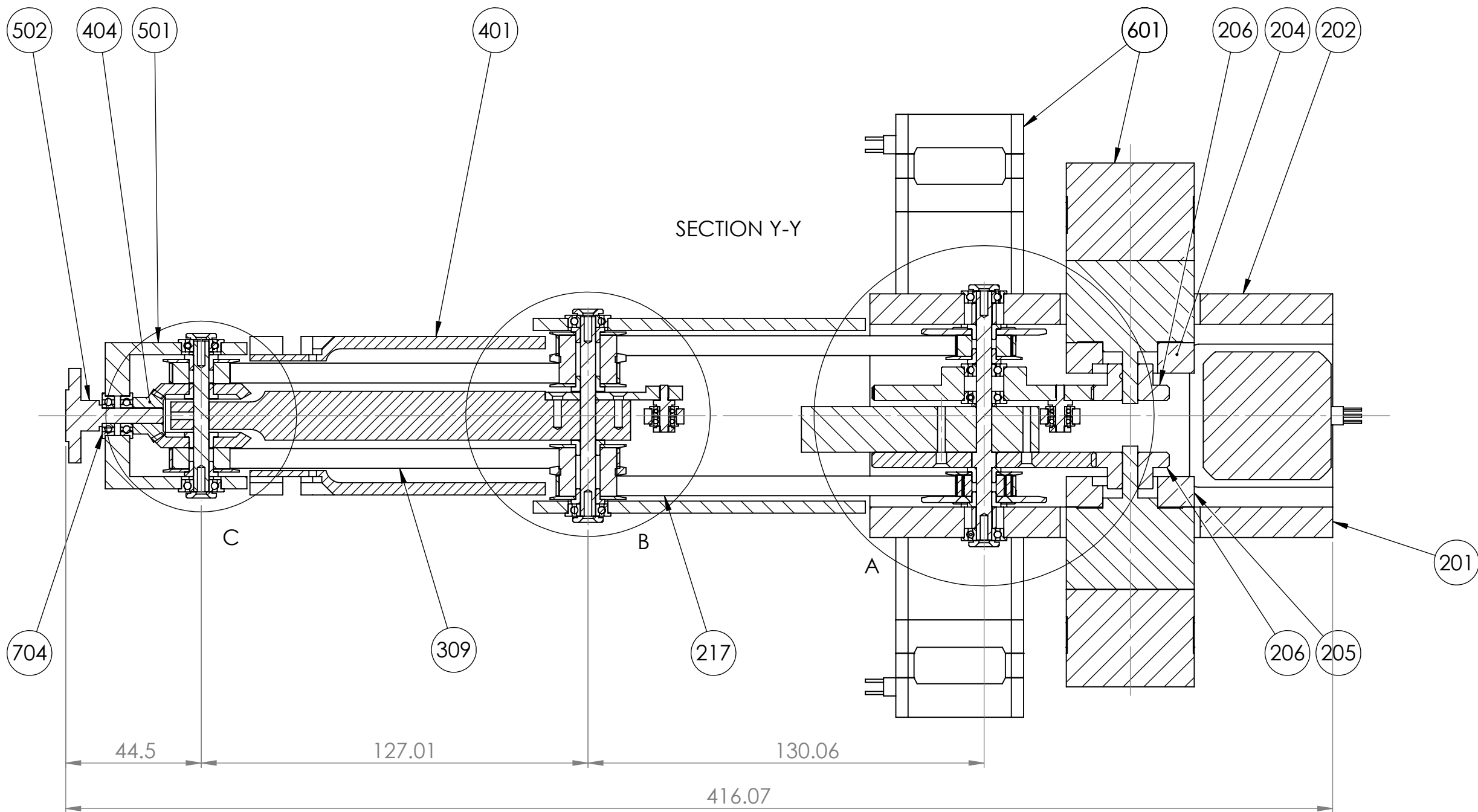
E

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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING		REVISION
	NAME	SIGNATURE	DATE				TITLE: Robot arm drawing		
DRAWN									
CHK'D									
APPV'D									
MFG									
Q.A						MATERIAL:	DWG NO.		A3
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						WEIGHT:	SHEET 3 OF 22		

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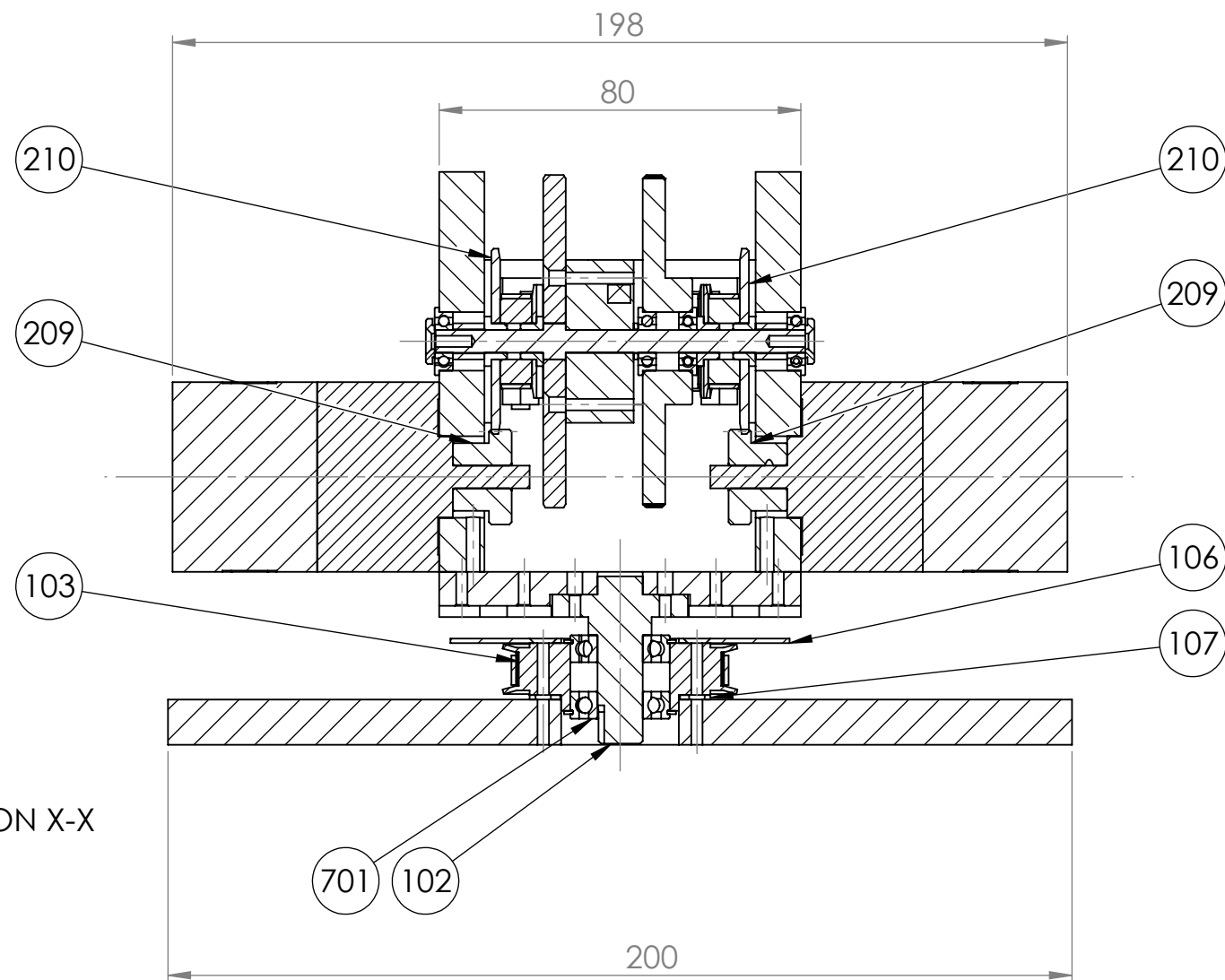
E

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DRAWN				NAME		SIGNATURE		DATE		TITLE:	
CHK'D											
APPV'D											
MFG											
Q.A								MATERIAL:		DWG NO.	
										Robot arm drawing	
										A3	
								WEIGHT:		SCALE:1:1.5	
										SHEET 4 OF 22	

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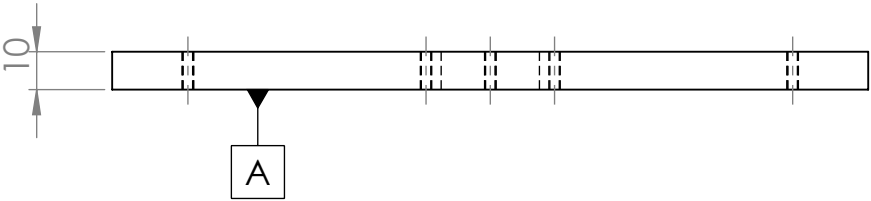
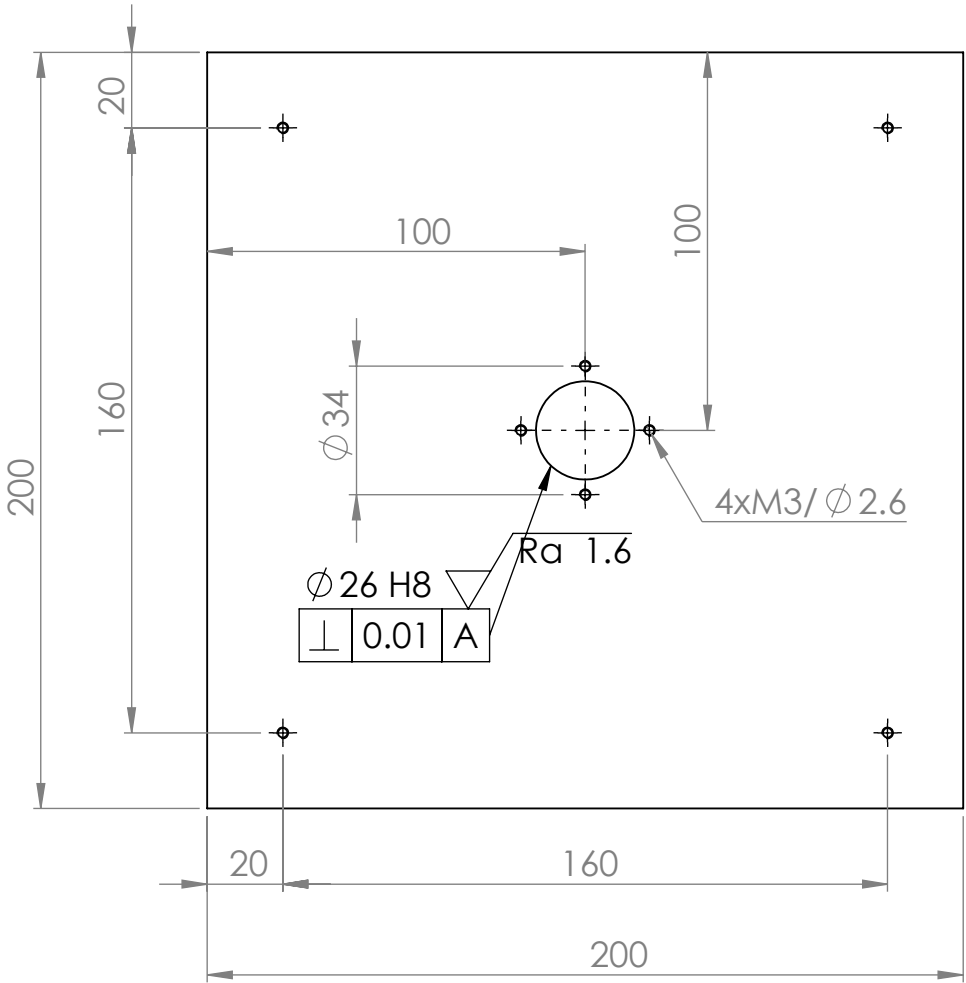
C

B

A

101

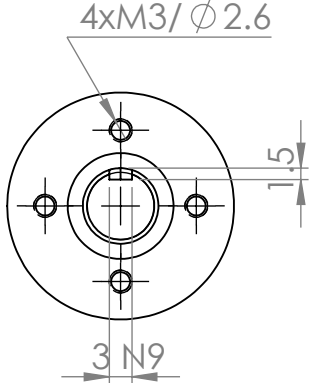
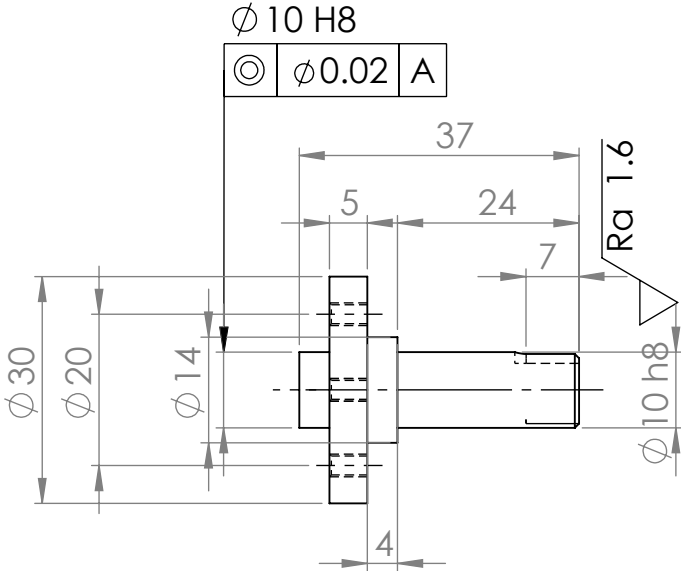
Ra 3.2



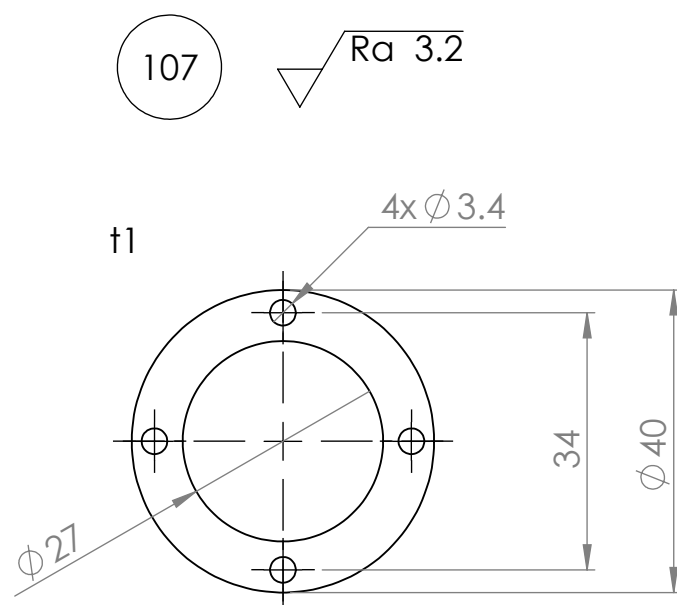
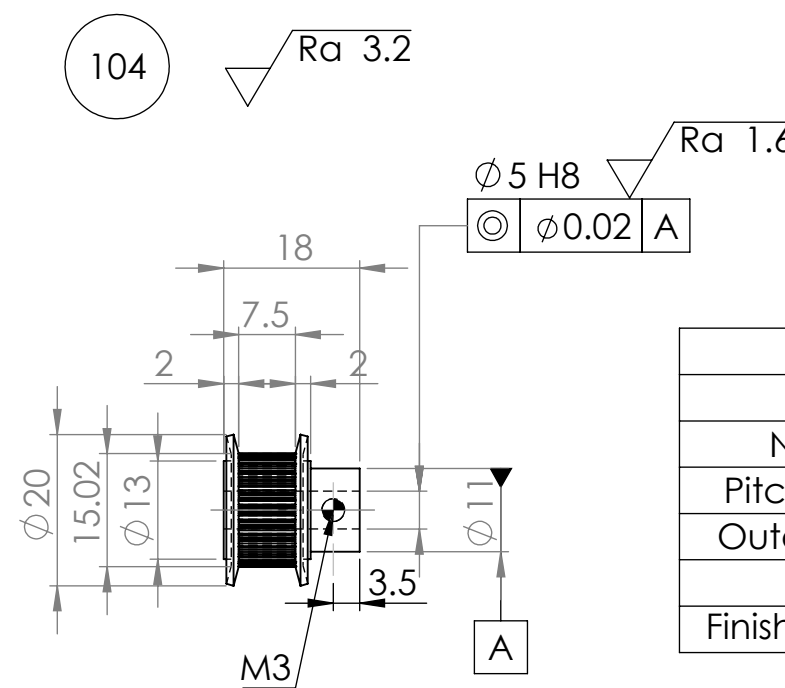
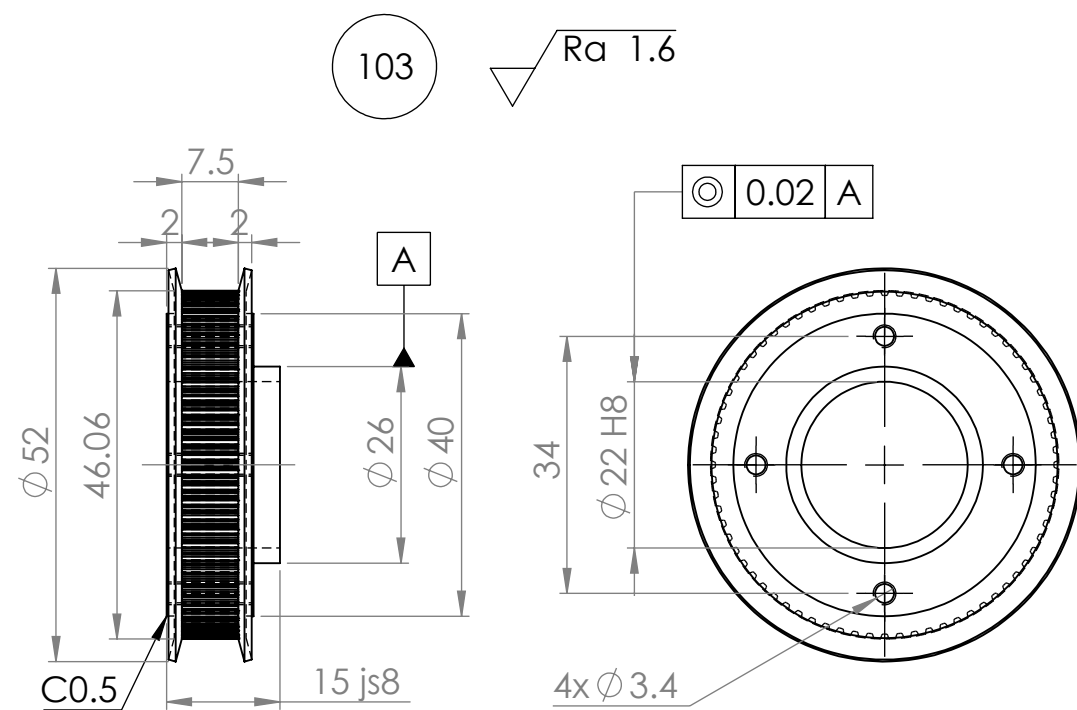
102

Ra 3.2

(1:1)



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:						FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION		
	NAME		SIGNATURE		DATE						TITLE:			
DRAWN														
CHK'D														
APPV'D														
MFG														
Q.A									DWG NO.				A3	
									Robot arm drawing					
									SCALE:1:2				SHEET 6 OF 22	
									WEIGHT:					



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						TITLE:			
	NAME	SIGNATURE	DATE						
DRAWN									
CHK'D									
APP'VD									
MFG						DWG NO. <div>Robot arm drawing</div> <div>A3</div>			
Q.A				MATERIAL:					
				WEIGHT:		SCALE:1:1		SHEET 7 OF 22	

F

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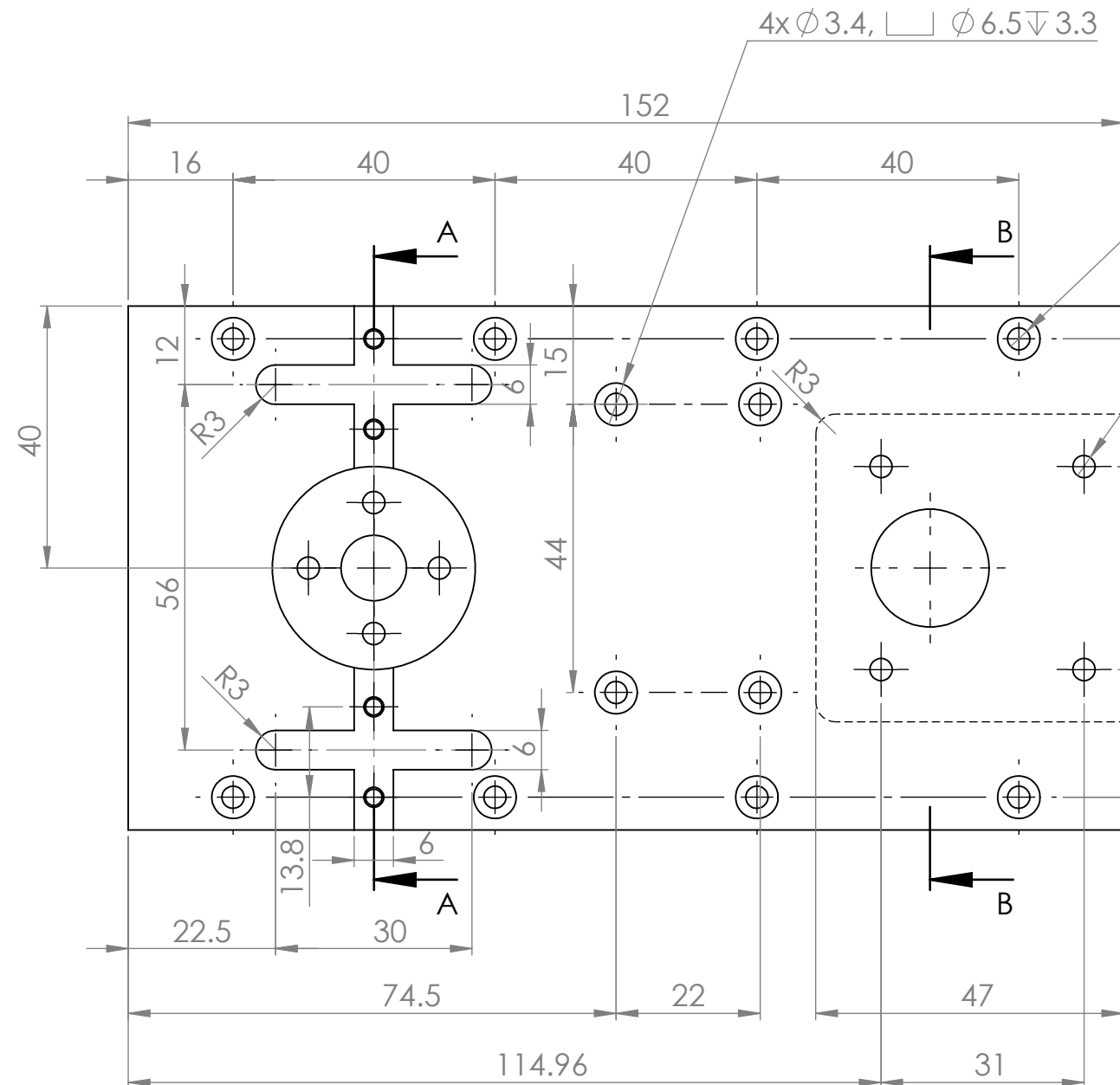
E

D

C

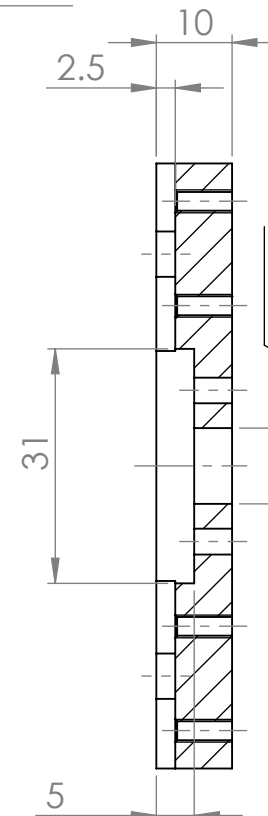
B

A

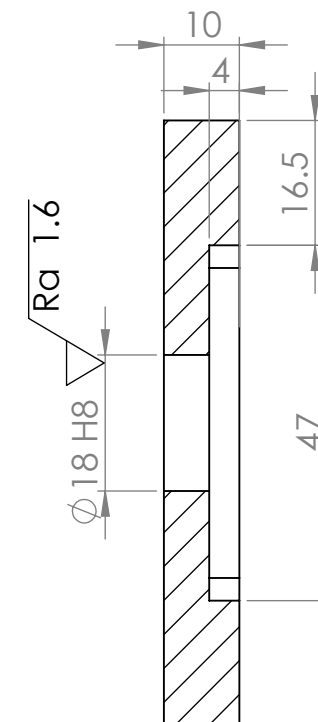


8x Ø 3.4, 10 Ø 6.5 ± 0.3

4x Ø 3.4



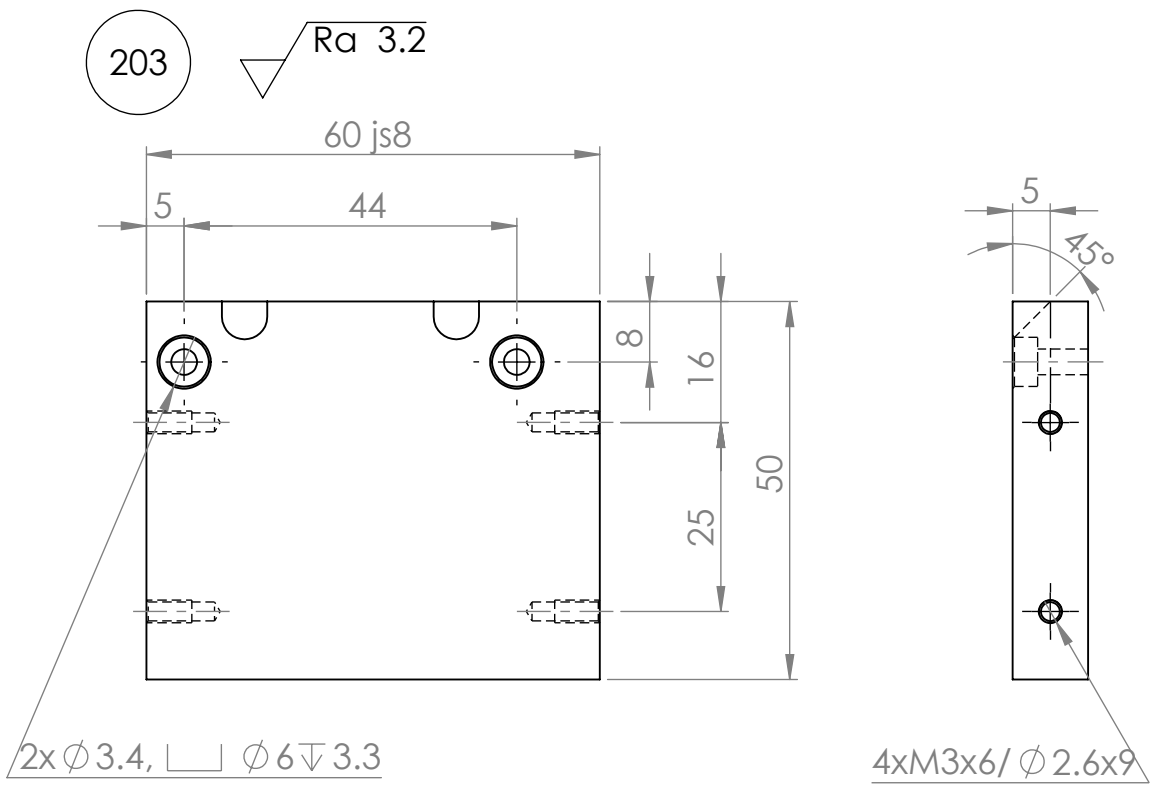
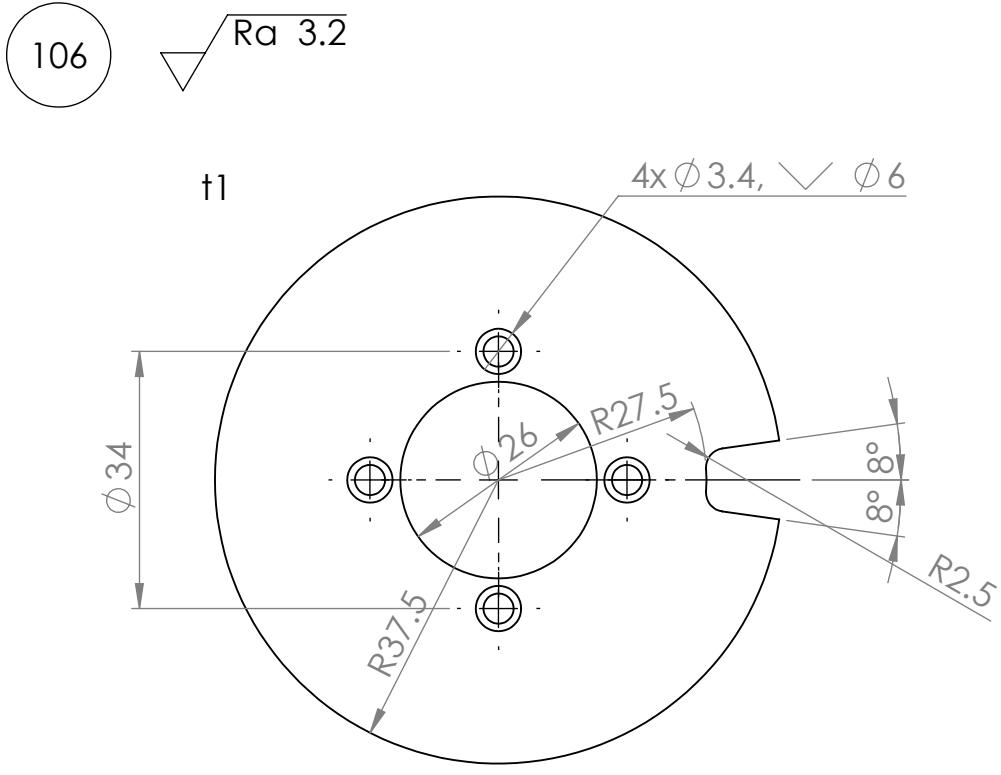
SECTION A-A



SECTION B-B

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:						FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION			
	NAME		SIGNATURE		DATE					TITLE:					
DRAWN															
CHK'D															
APPV'D															
MFG															
Q.A						MATERIAL:			DWG NO. Robot arm drawing				A3		
							WEIGHT:			SCALE:1:1				SHEET 8 OF 22	

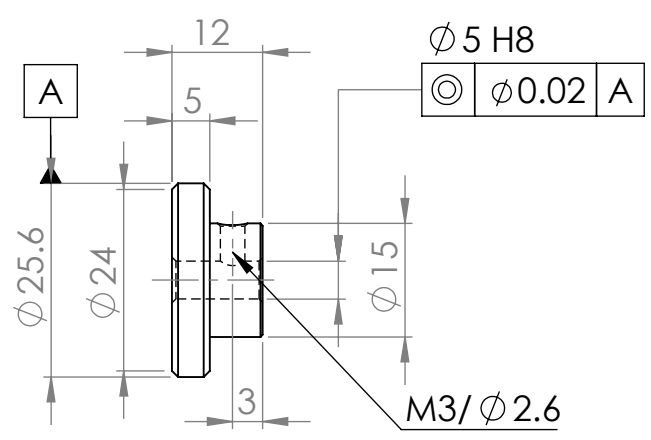
Robot arm drawing



206

Ra 3.2

Spur gera	
Tooth profile	Standard
Module	0.8
Pressure angle	20°
No. teeth	30
Reference circle diameter	24
Finishing method	Hob cut
Standard grade	JIS 9



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:	FINISH:	DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION		
	NAME	SIGNATURE	DATE			TITLE: DWG NO. Robot arm drawing A3
DRAWN						
CHK'D						
APPV'D						
MFG						
Q.A				MATERIAL:		SCALE:1:1
				WEIGHT:		SHEET 9 OF 22

F

E

D

C

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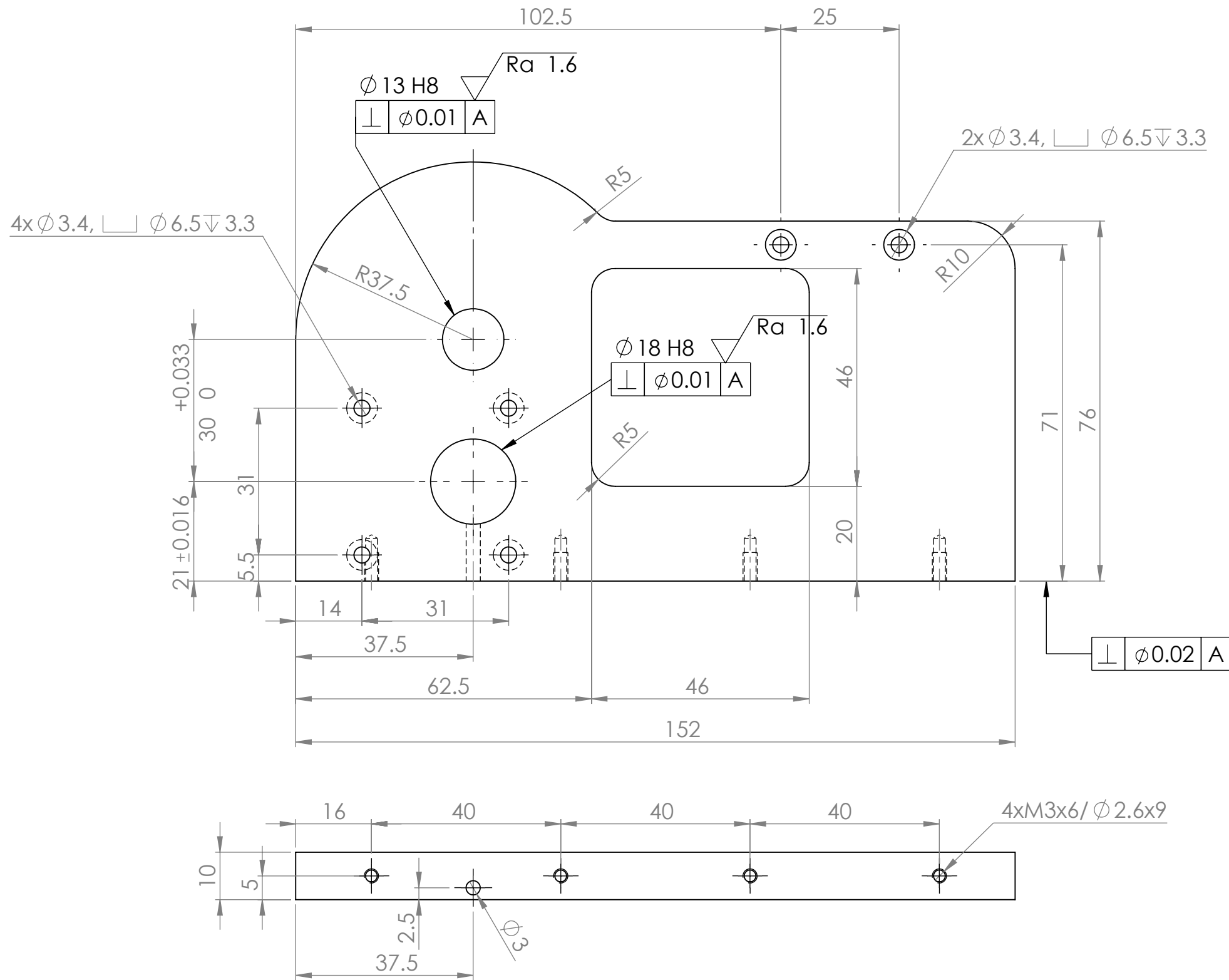
E

D

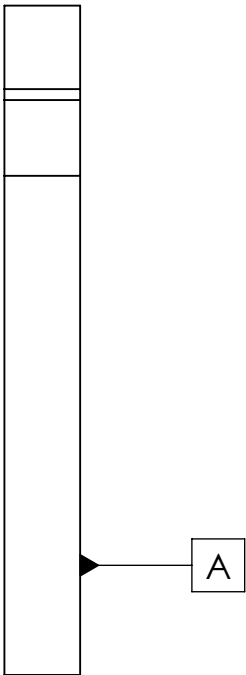
C

B

A



201 Ra 3.2



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:						FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
		NAME		SIGNATURE		DATE						TITLE:	
DRAWN													
CHK'D													
APP'V'D													
MFG													
Q.A													
								MATERIAL:		DWG NO. Robot arm drawing		A3	
										SCALE:1:1		SHEET 10 OF 22	

F

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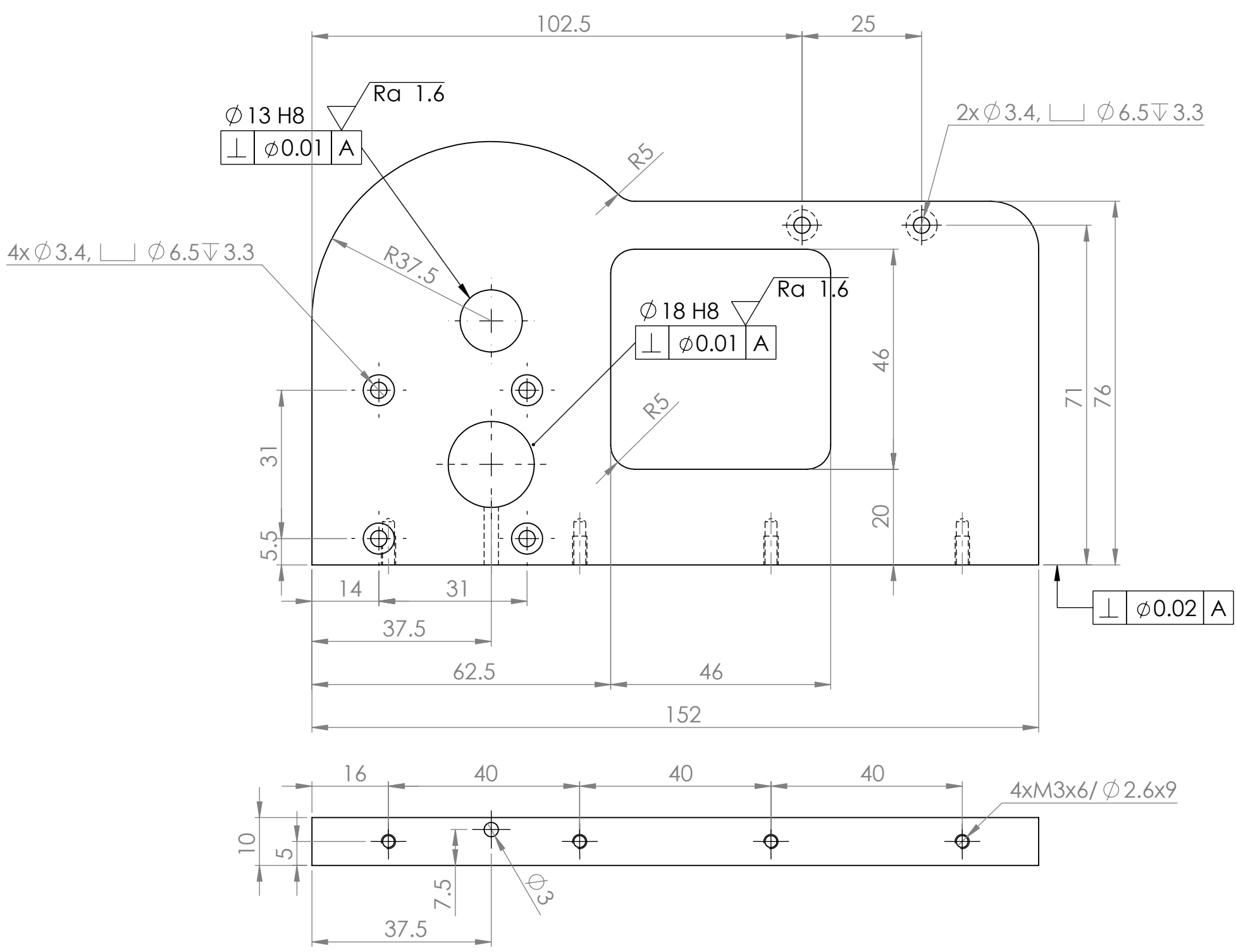
D

C

B

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87654321



202

Ra 3.2

A

$\phi 0.02$ A

4xM3x6/ $\phi 2.6 \times 9$

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING		REVISION
	NAME	SIGNATURE	DATE				TITLE:		
DRAWN									
CHK'D									
APPV'D									
MFG									
Q.A							DWG NO.		A3
							Robot arm drawing		
							SCALE:1:1		SHEET 11 OF 22
						WEIGHT:			

F

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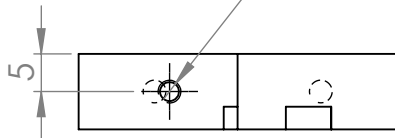
B

A

205

Ra 3.2

M3x6/ ϕ 2.6x9



42

21 js8

11.6

12

6

A

4xM3x5/ ϕ 2.6THRU ALL

4x3.4, \square ϕ 6.5 ∇ 3.3

R9 H8

Ra 1.6

66 js8

51 \pm 0.023

31

27.5

20

21 \pm 0.016

26.6

28.1

13.8

18.2

13.8

32

35

76

\perp 0.01 B

22

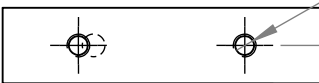
10

A

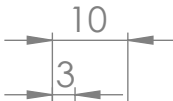
31

5.5

2xM3x6/ ϕ 2.6x9



5



B

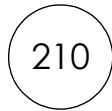
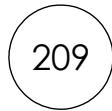
SECTION A-A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
	NAME		SIGNATURE		DATE				TITLE:		
DRAWN											
CHK'D											
APPV'D											
MFG											
Q.A					MATERIAL:			DWG NO.		A3	
					WEIGHT:			SCALE:1:1		SHEET 13 OF 22	

Robot arm drawing

A3

Ra 1.6



Spur gear		
No.	209	210
Tooth profile	Standard	
Module	0.5	
Pressure angle	20°	
Number of teeth	80	
Reference circle diameter	20	40
Finishing method	Hob cut	
Standard grade	JIS 9	



Timing pulley	
No. teeth	30
Pitch circle diameter	19.4
Outer diameter	18.9
Pitch	2.032
Finishing method	Hop cut

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:						FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
		NAME		SIGNATURE		DATE						TITLE:	
DRAWN													
CHK'D													
APPV'D													
MFG													
Q.A													
								MATERIAL:		DWG NO.		A3	
										Robot arm drawing			
										SCALE:2:1		SHEET 15 OF 22	
								WEIGHT:					

F

E

D

C

B

A

F

E

D

C

B

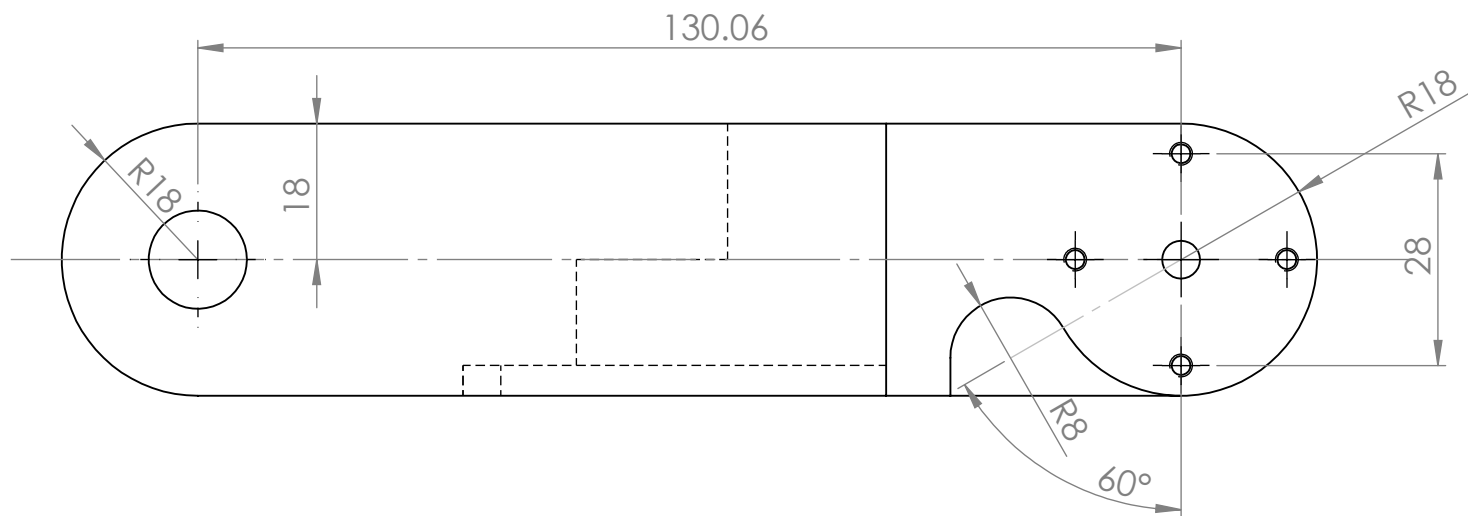
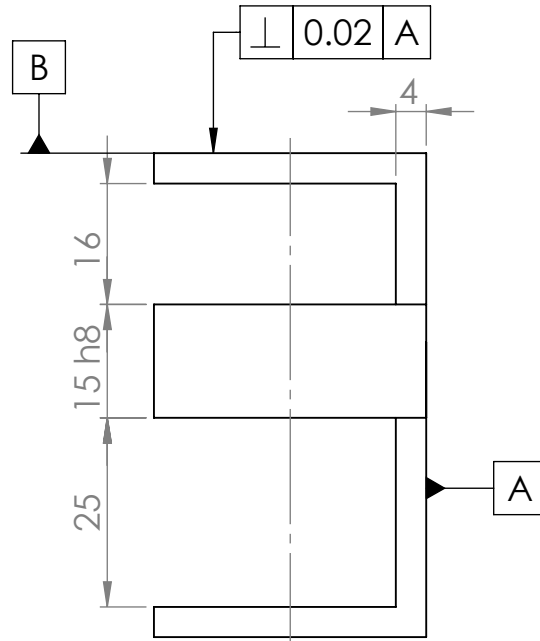
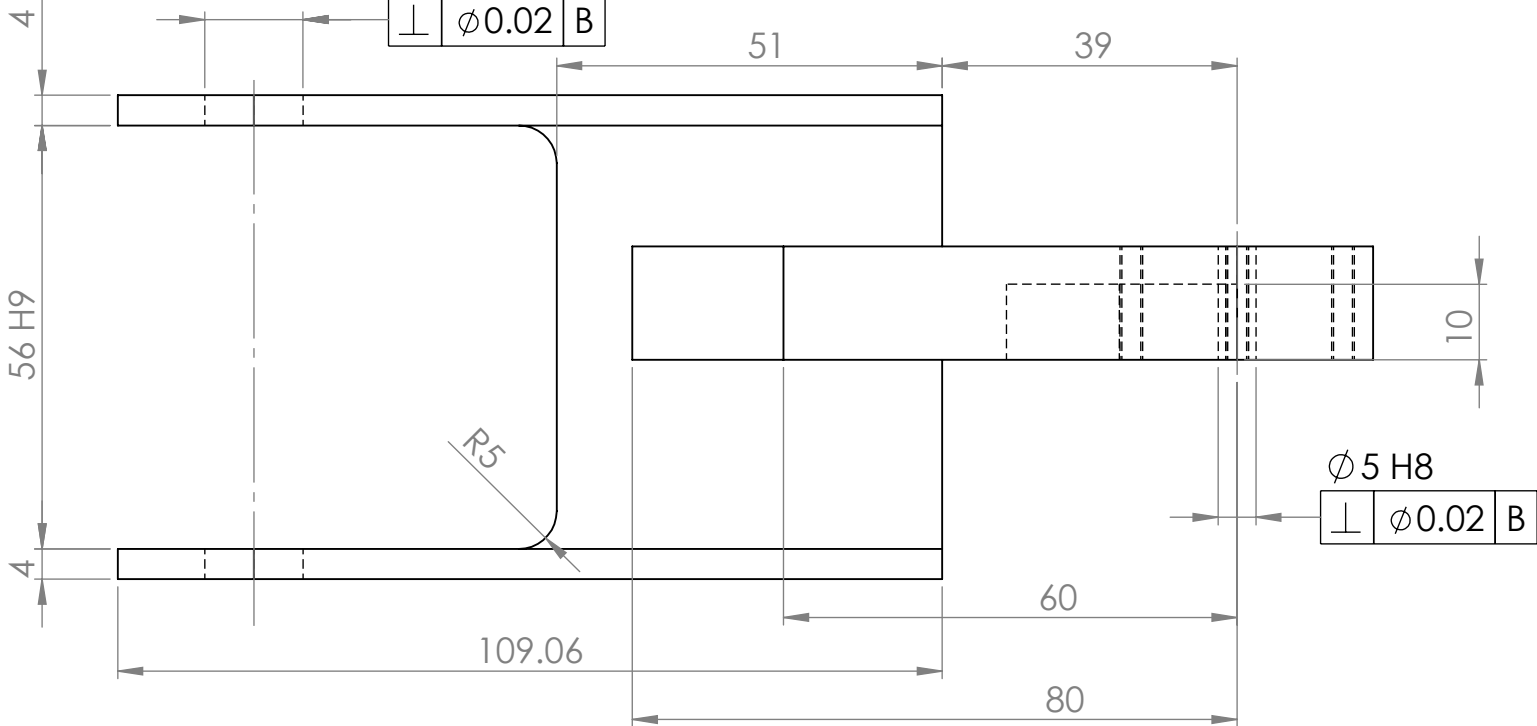
A

$Ra\ 3.2$

301

$Ra\ 1.6$

$\phi\ 13\ H8$
 $\perp\ \phi\ 0.02\ B$



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

FINISH:

DEBURR AND
BREAK SHARP
EDGES

DO NOT SCALE DRAWING

REVISION

	NAME	SIGNATURE	DATE			
DRAWN						
CHK'D						
APPV'D						
MFG						
Q.A						

TITLE:

DWG NO.

Robot arm drawing

A3

WEIGHT:

SCALE:1:1

SHEET 17 OF 22

F

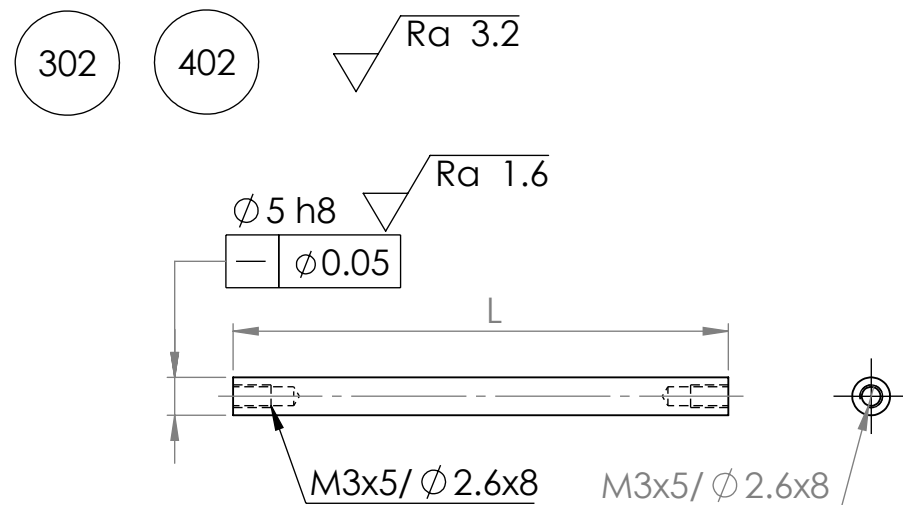
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D

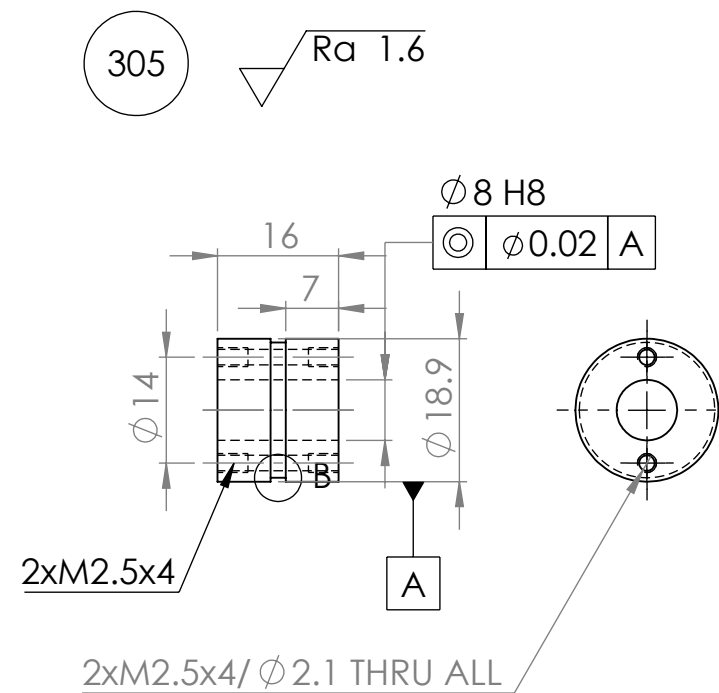
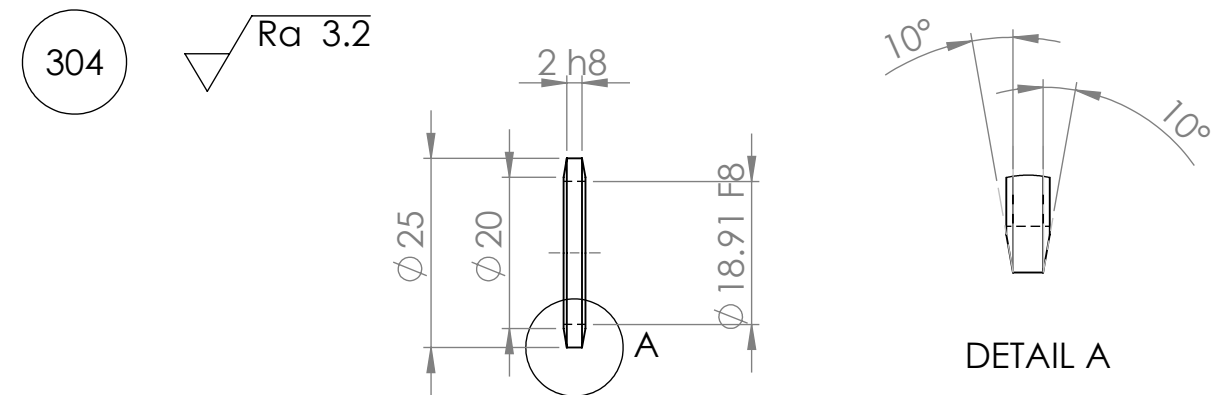
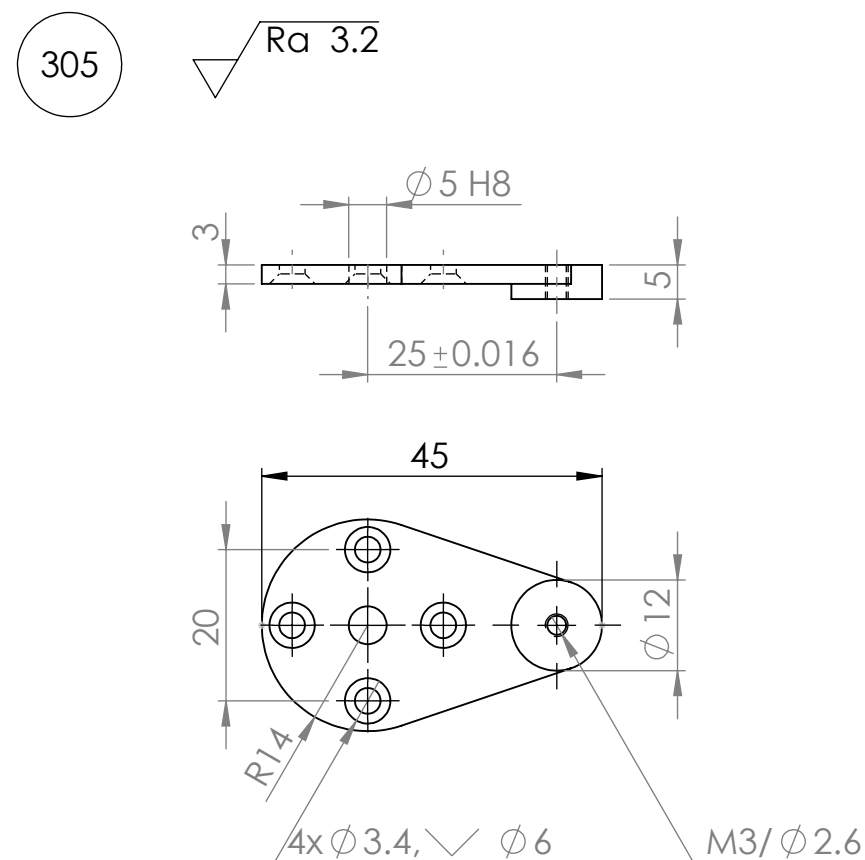
C

B

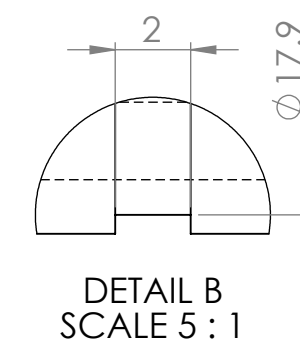
A



No.	L h9	Amount
302	65.5	1
405	49.5	1



Timing pulley	
No. teeth	30
Pitch circle diameter	19.4
Outer diameter	18.9
Pitch	2.032
Finishing method	Hop cut



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:						FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION		
	NAME		SIGNATURE		DATE				TITLE:					
DRAWN														
CHK'D														
APPV'D														
MFG														
Q.A						MATERIAL:			DWG NO.			A3		
									Robot arm drawing					
						WEIGHT:			SCALE:1:1			SHEET 18 OF 22		

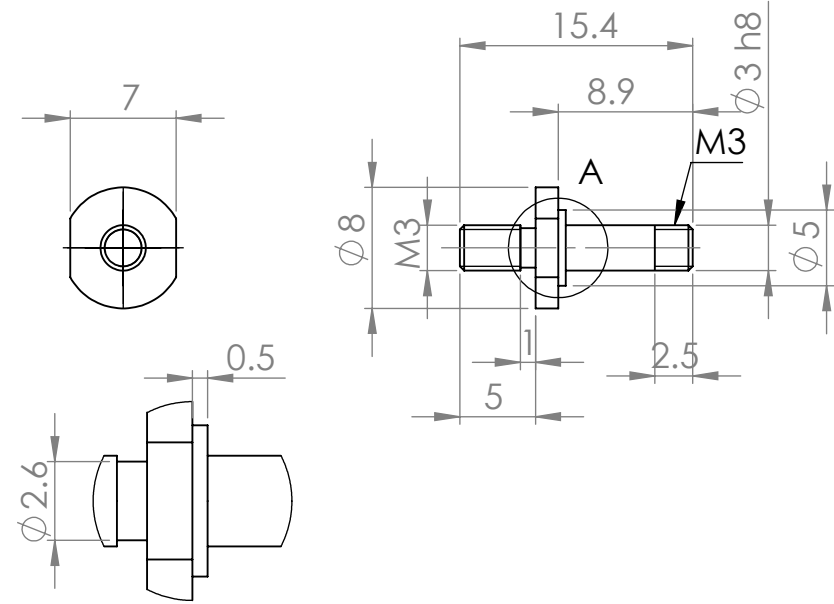
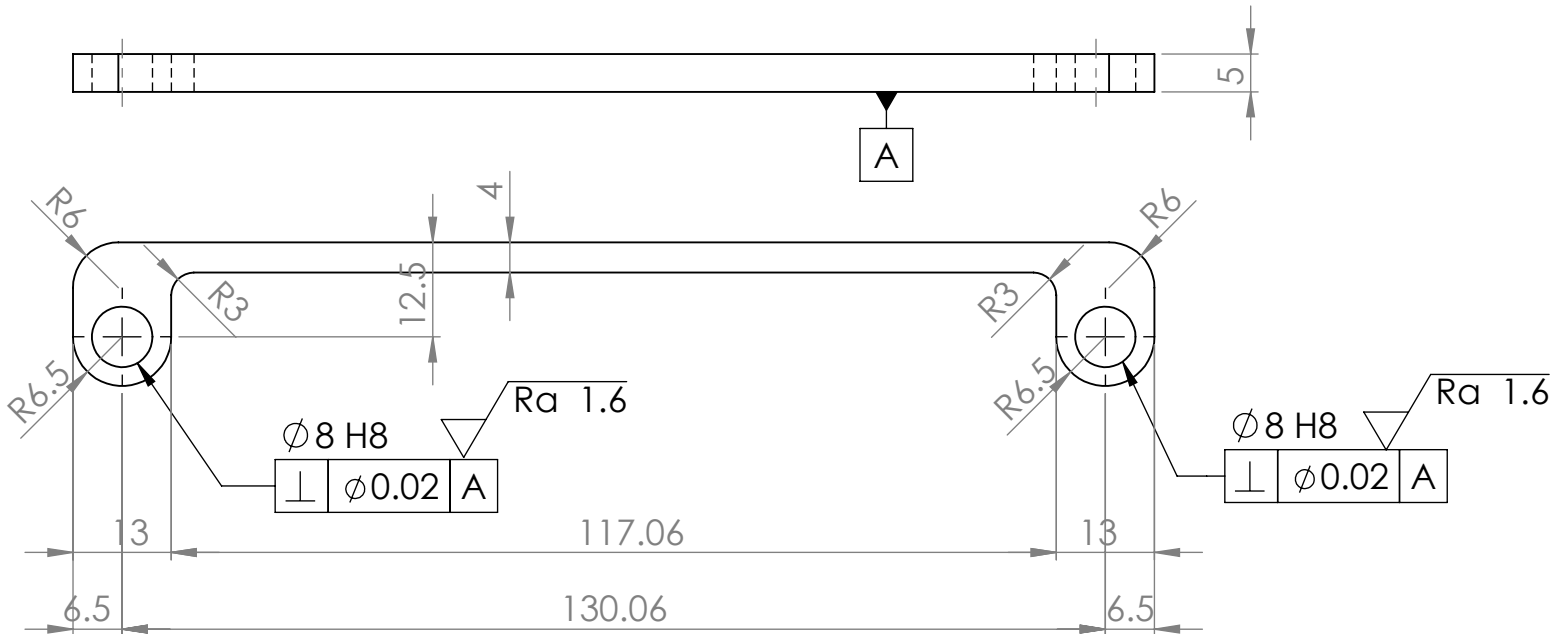
306

Ra 3.2

307

Ra 3.2

(2:1)

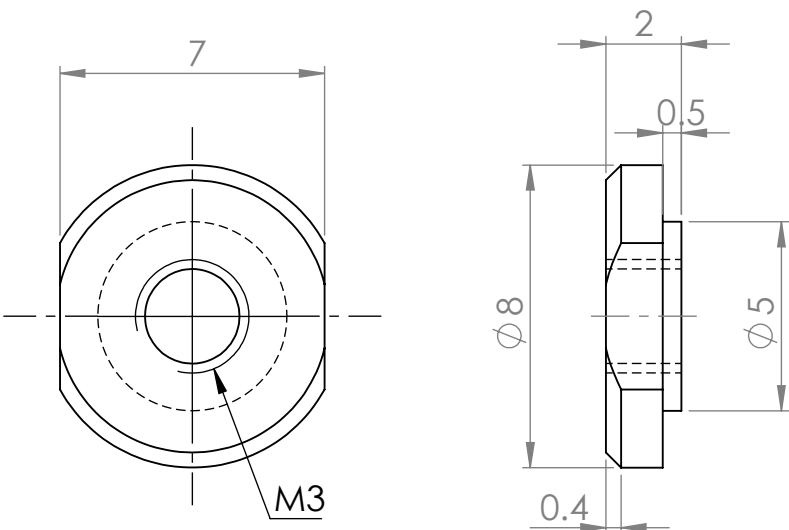


DETAIL A
SCALE 4 : 1

308

Ra 3.2

(5:1)



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:						FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION		
	NAME		SIGNATURE		DATE						TITLE:			
DRAWN														
CHK'D														
APPV'D														
MFG														
Q.A										DWG NO. Robot arm drawing		A3		
										SCALE:1:1		SHEET 19 OF 22		
						WEIGHT:								

F

E

D

C

B

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F


E

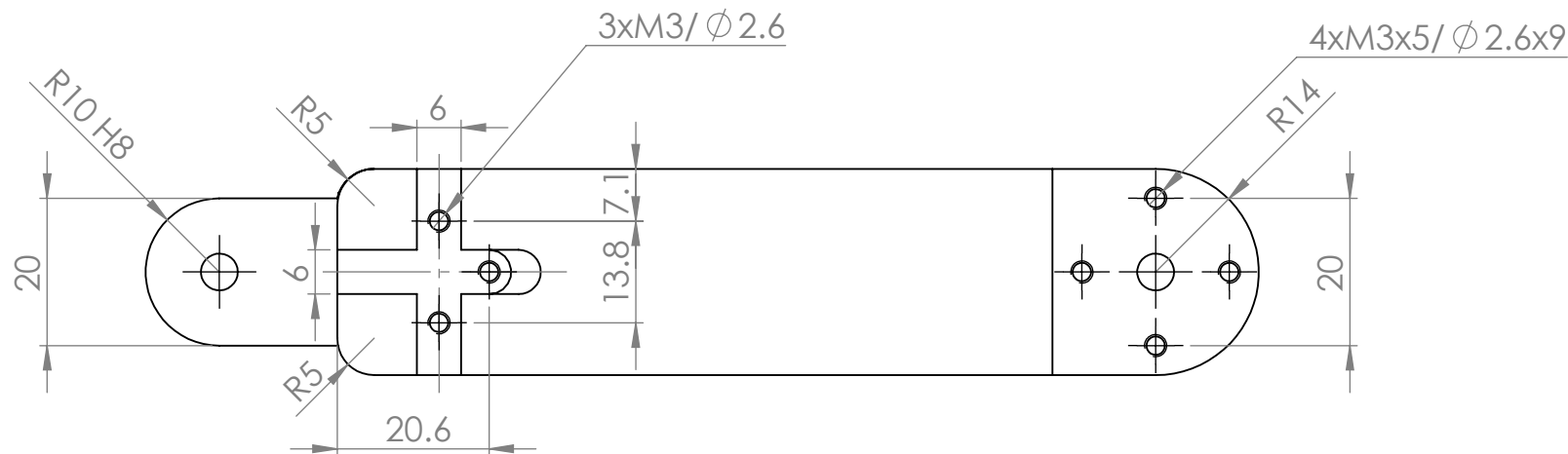
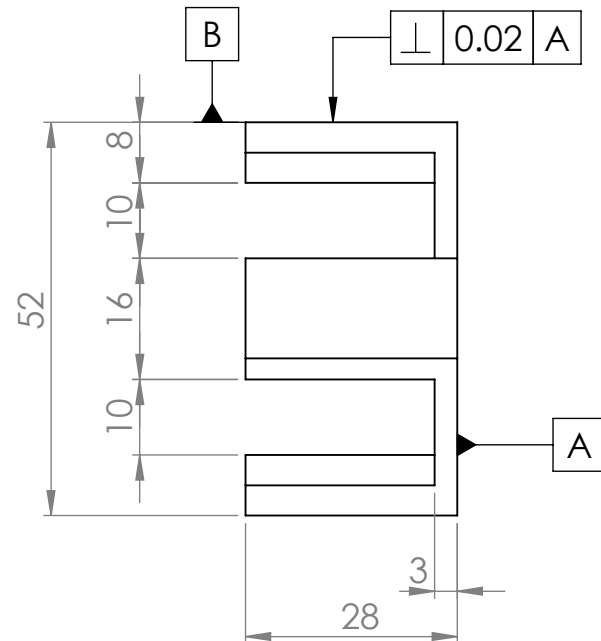
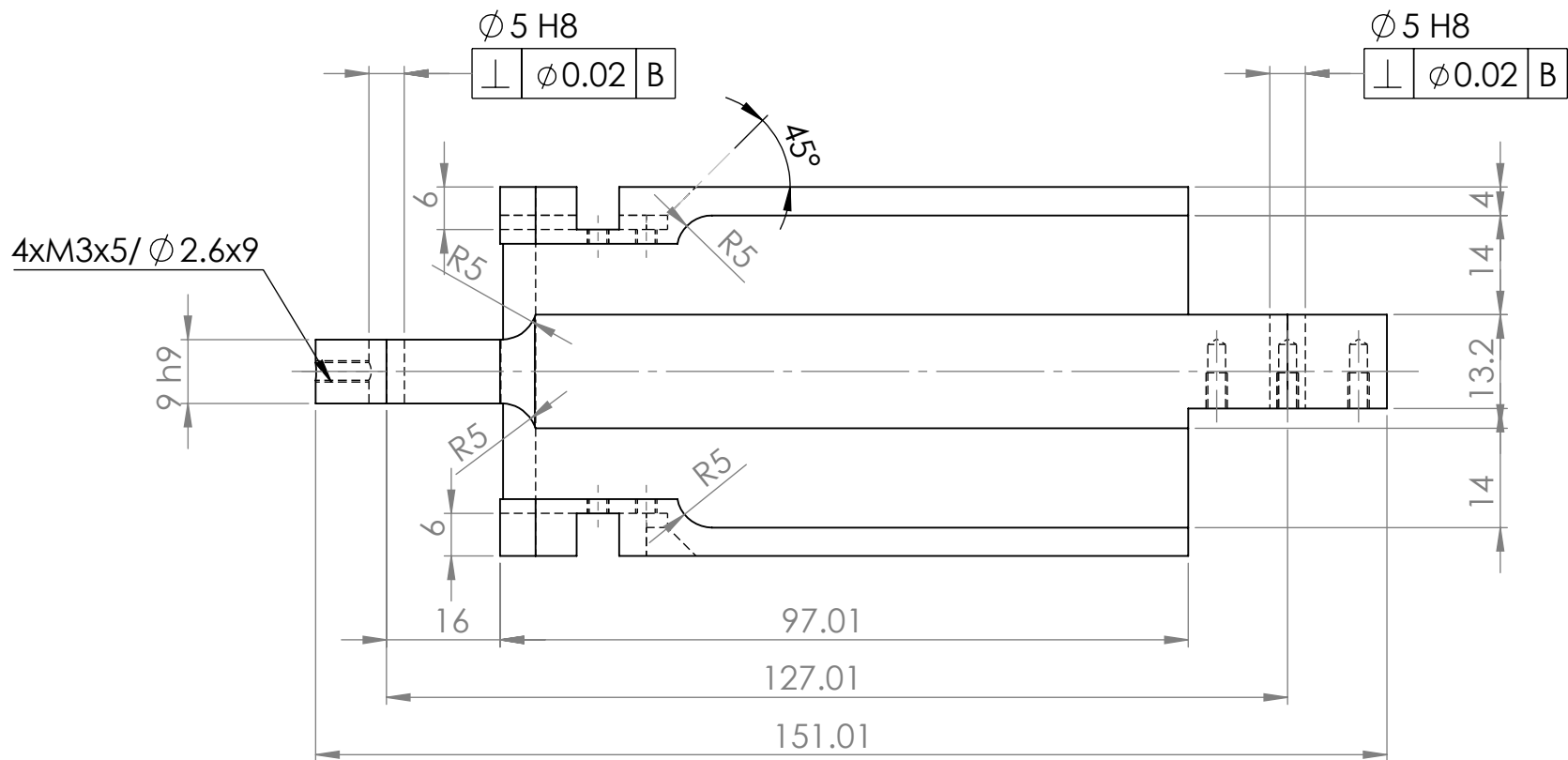
D

C

B

A

401  Ra 3.2



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

FINISH:

DEBURR AND
BREAK SHARP
EDGES

DO NOT SCALE DRAWING

REVISION

	NAME	SIGNATURE	DATE				
DRAWN							
CHK'D							
APPV'D							
MFG							
Q.A							

TITLE:	

F

E

D

C

B

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F

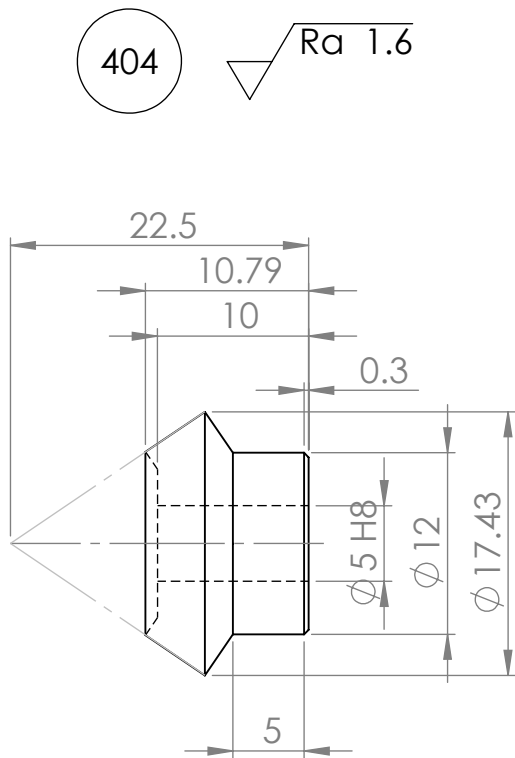
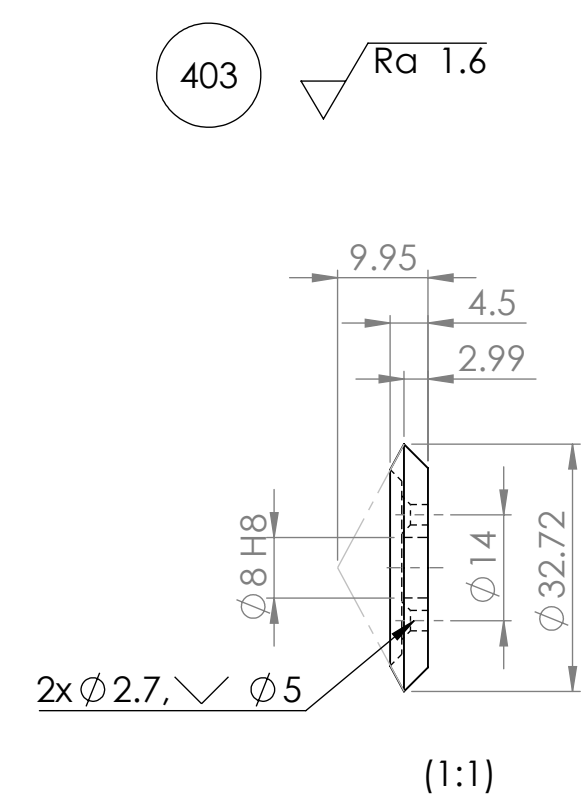
E

D

C

B

A



Straight bevel gear		
Distinction	Large	Small
No.	403	404
Tooth profile	Gleason	
Module	0.8	
Pressure angle	20°	
Number of teeth	40	20
Cutting edge diameter	32.72	17.43
Reference circle diameter	32	16
Pitch angle	64.43°	26.57°
Assembly distance	11.51	22.5
Finishing method	Cutting	
Standard grade	JIS 9	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
	NAME	SIGNATURE	DATE				TITLE:	
DRAWN								
CHK'D								
APPV'D								
MFG								
Q.A						MATERIAL:	DWG NO.	A3
							Robot arm drawing	
						WEIGHT:	SCALE:2:1	SHEET 21 OF 22

