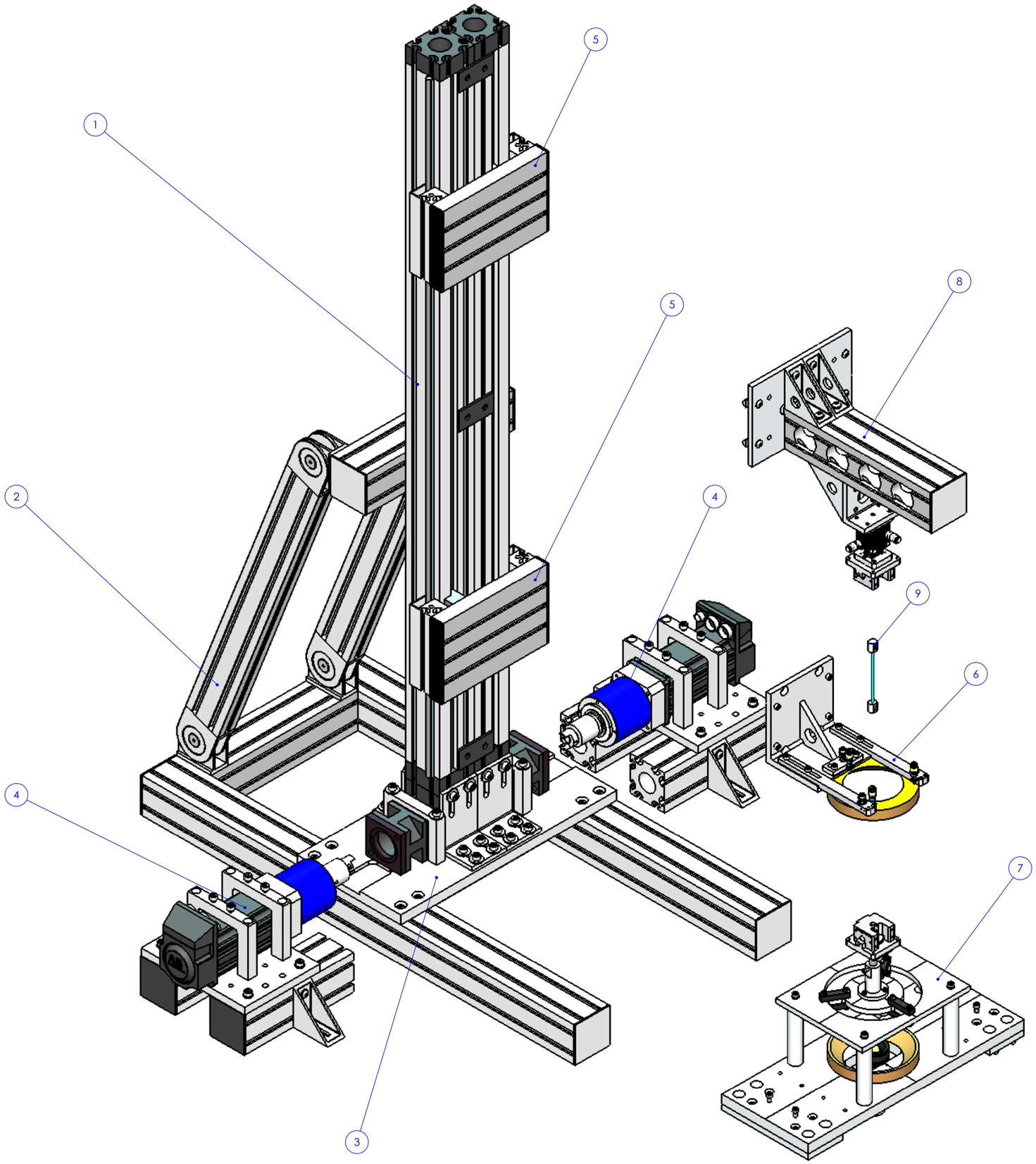
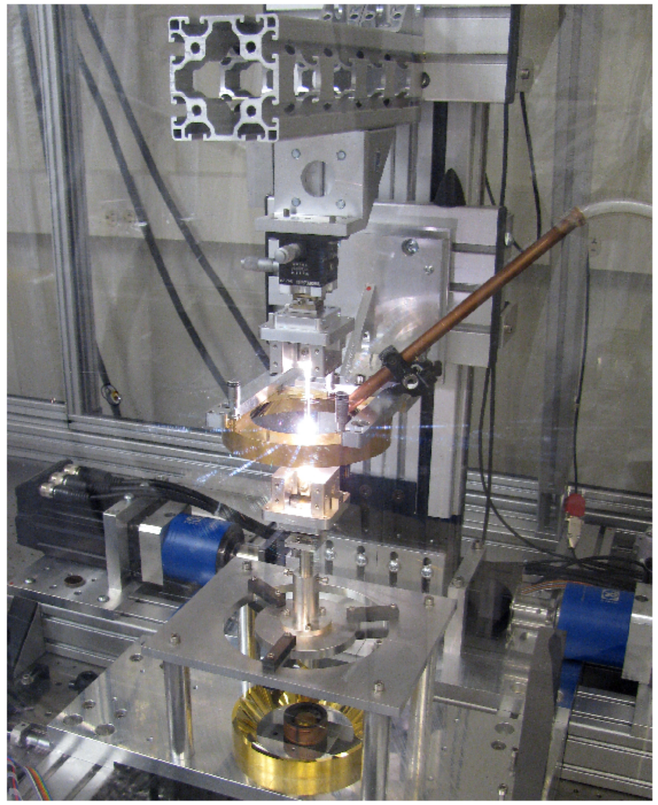




THE IMAGE ABOVE SHOWS A CLOSE UP OF THE THE SILICA STOCK BEING HEATED BY THE LASER AT THE BEGINNING OF THE FIBRE PULLING PROCESS.

ITEM NO.	PART NUMBER	QTY.
1	MBS_52203A_Pulling Machine Twin Ballscrew Unit	1
2	MBS_53196_Ballscrew Support Frame	1
3	D060146_CO2 Laser Machine_Twin-Ballscrew_Support Frame Connection_[CO2_GLA_ASM_01]	1
4	D060147_CO2 Laser Machine_Motor_Drive Assembly_[CO2_GLA_ASM_02]	2
5	MBS_52203A_moving carriage	2
6	D060150_CO2 Laser Machine_Conical_Mirror_FEED_Assembly_[CO2_GLA_ASM_05]	1
7	D060149_CO2 Laser Machine_Spinning_Mirror_Assembly_[CO2_GLA_ASM_04]	1
8	D060152_CO2 Laser Machine_PULL_Assembly_[CO2_GLA_ASM_07]	1
9	D080404_Fuse Assembly	1

NOTES (UNLESS OTHERWISE SPECIFIED):

DO NOT SCALE DRAWING A2

DIMENSIONS ARE IN MILLIMETERS

GENERAL TOLERANCES:

0<X<50mm:	±0.1mm
50<X<150mm:	±0.2mm
100<X<1000mm:	±0.3mm
1000>:	±0.5mm
ANGULAR:	±0.2°

1. GRAPHICS INTENDED PURELY FOR REFERENCE DURING ASSEMBLY / INSTALLATION

QUANTITY: ---

MATERIAL: ---

SURFACE TEXTURE (µm): √ UNLESS STATED

FINISH: ---

	NAME	DATE
DRAWN	R.JONES	JUN10
CHK'D	A.CUMMING	JUN10
APPV'D	A.BELL	JUN10
Q.A		

Institute for Gravitational Research
University of Glasgow
GEO 600 Group

SYSTEM: CO2 Laser Pulling Machine

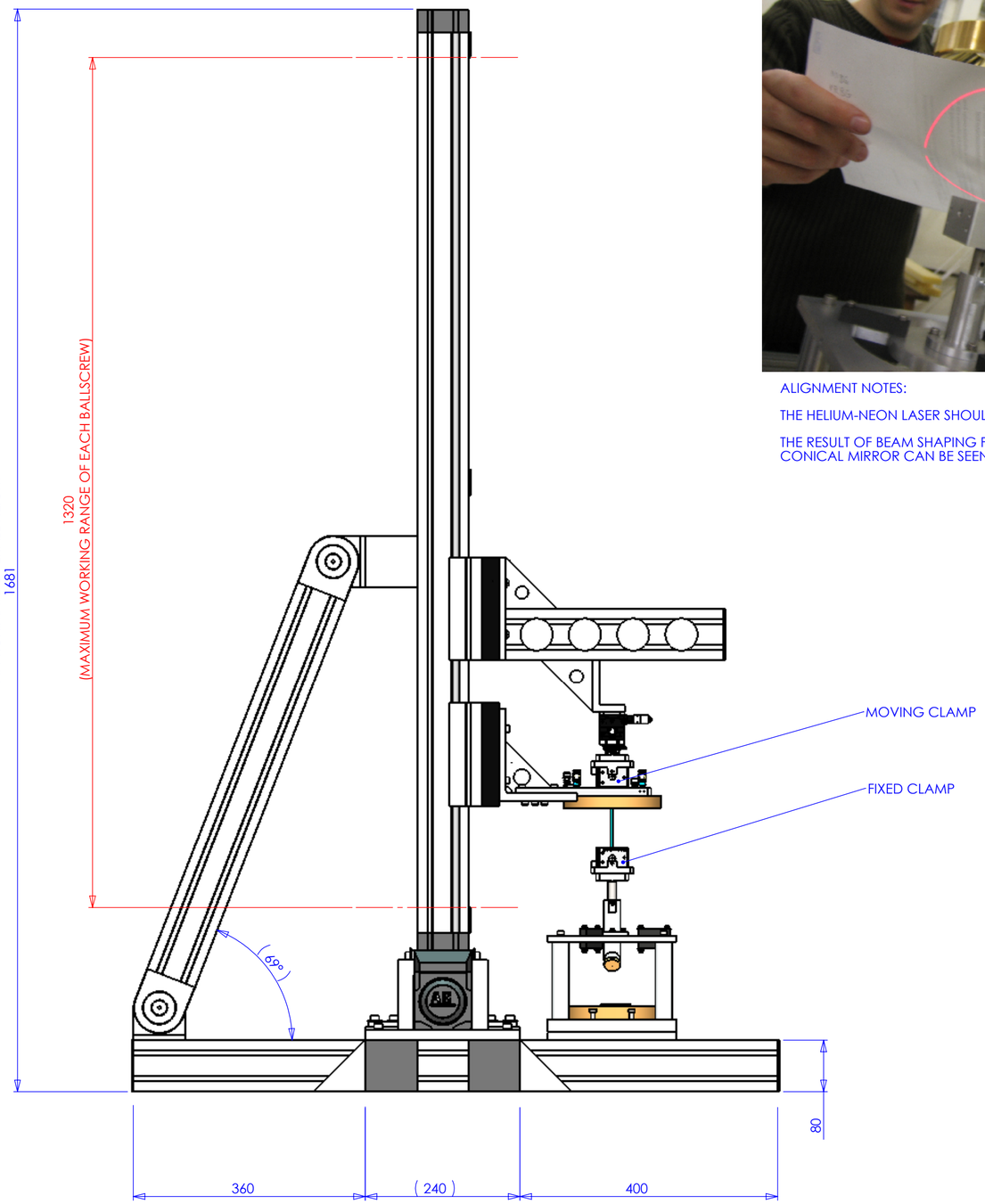
SUB-SYSTEM: ---

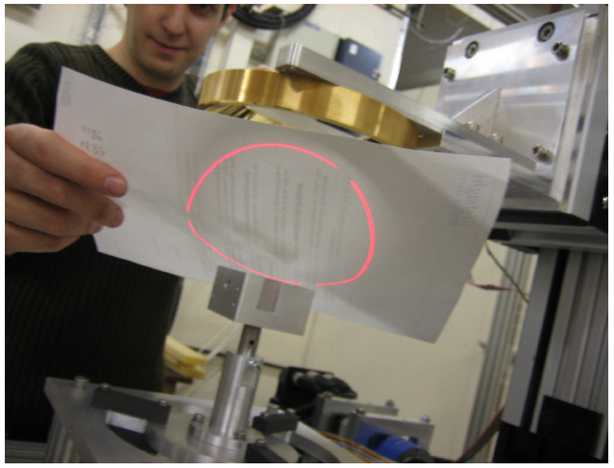
ASSEMBLY: Overall Assembly

PART NAME: ---

DWG NO. D070560 [CO2_GLA_ASM_OVERALL] **REV:** v2

SCALE:1:20 PROJECTION: (3rd ANGLE) SHEET 1 OF 4

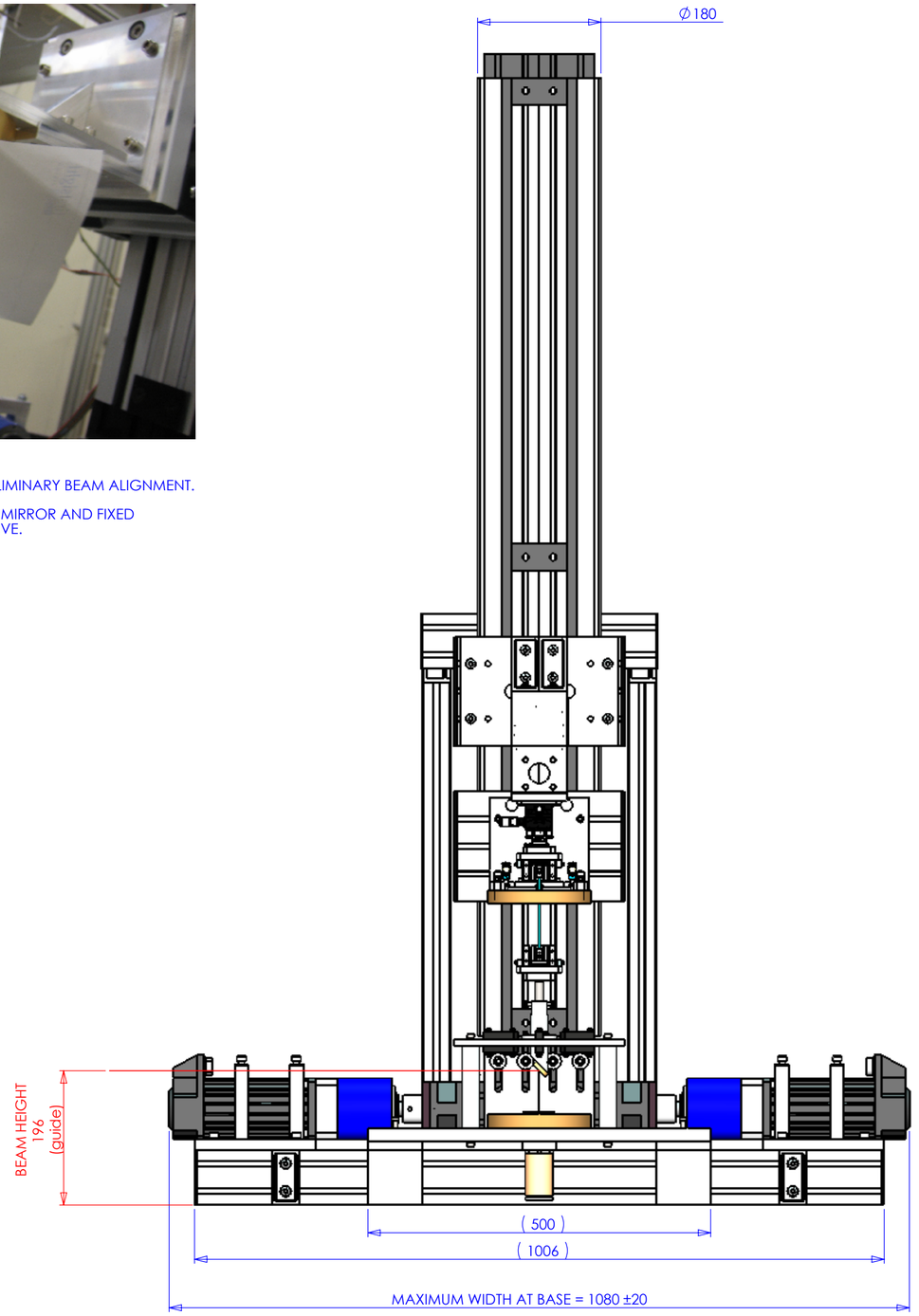




ALIGNMENT NOTES:

THE HELIUM-NEON LASER SHOULD BE USED FOR PRELIMINARY BEAM ALIGNMENT.

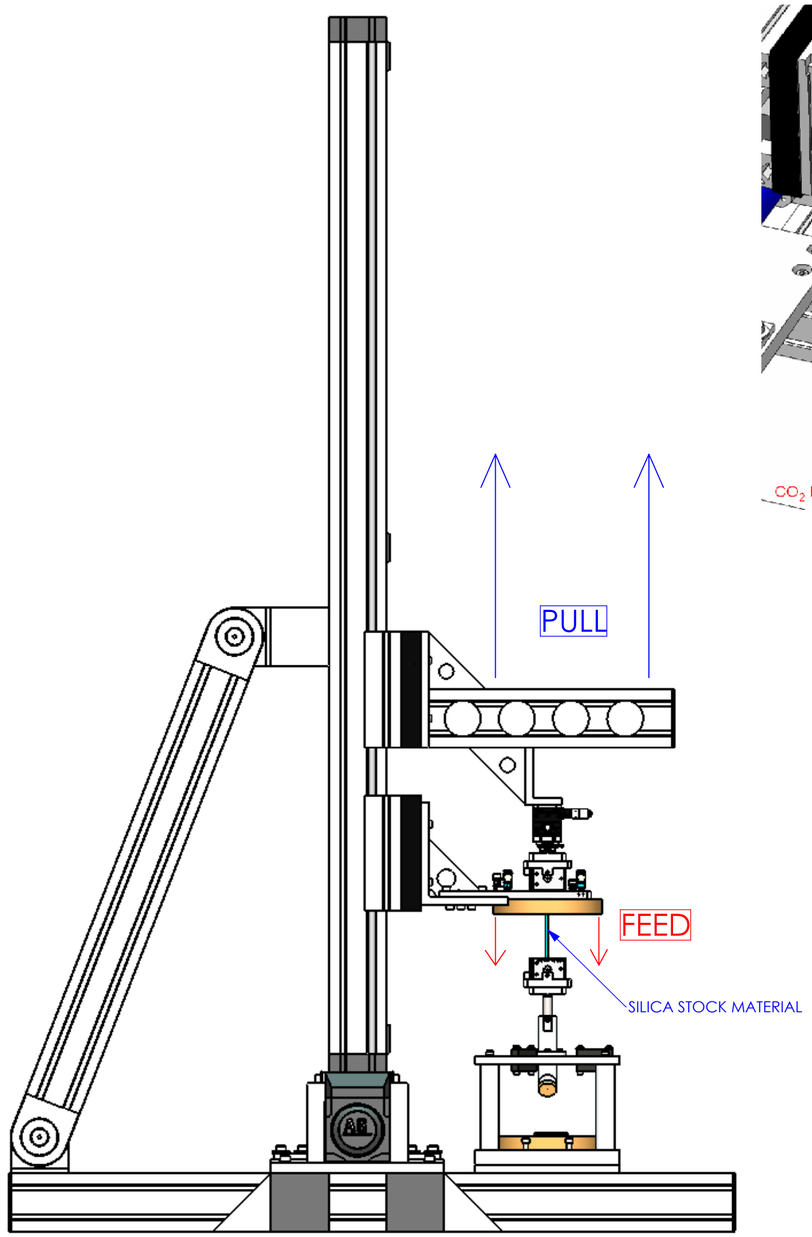
THE RESULT OF BEAM SHAPING FROM THE SPINNING MIRROR AND FIXED CONICAL MIRROR CAN BE SEEN IN THE PHOTO ABOVE.



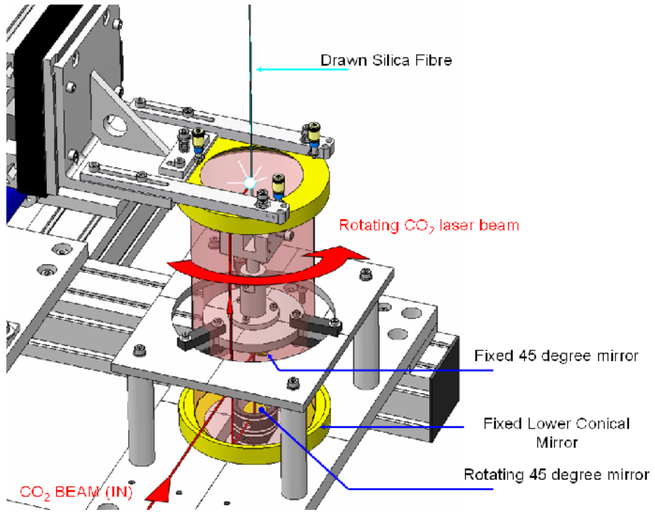
GENERAL ARRANGEMENT 1:

BASIC ASSEMBLY DIMENSIONS

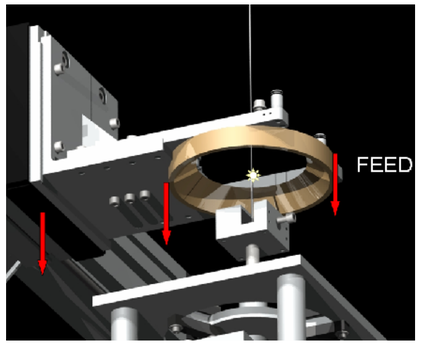
NOTES (UNLESS OTHERWISE SPECIFIED):				DO NOT SCALE DRAWING	A2
DIMENSIONS ARE IN MILLIMETERS	QUANTITY: ---			Institute for Gravitational Research, University of Glasgow, GEO 600 Group	
GENERAL TOLERANCES: 0<X<50mm: ±0.1mm 50<X<150mm: ±0.2mm 100<X<1000mm: ±0.3mm 1000>: ±0.5mm ANGULAR: ±0.2°	MATERIAL: ---			SYSTEM:	CO2 Laser Pulling Machine
	SURFACE TEXTURE (µm): √ UNLESS STATED			SUB-SYSTEM:	---
1. GRAPHICS INTENDED PURELY FOR REFERENCE DURING ASSEMBLY / INSTALLATION	FINISH: ---			ASSEMBLY:	Overall Assembly
		NAME	DATE	PART NAME:	---
	DRAWN	R.JONES	JUN10		
	CHK'D	A.CUMMING	JUN10	DWG NO.	REV:
	APPV'D	A.BELL	JUN10	D070560 [CO2_GLA_ASM_OVERALL]	v2
	Q.A			SCALE:1:20	SHEET 2 OF 4

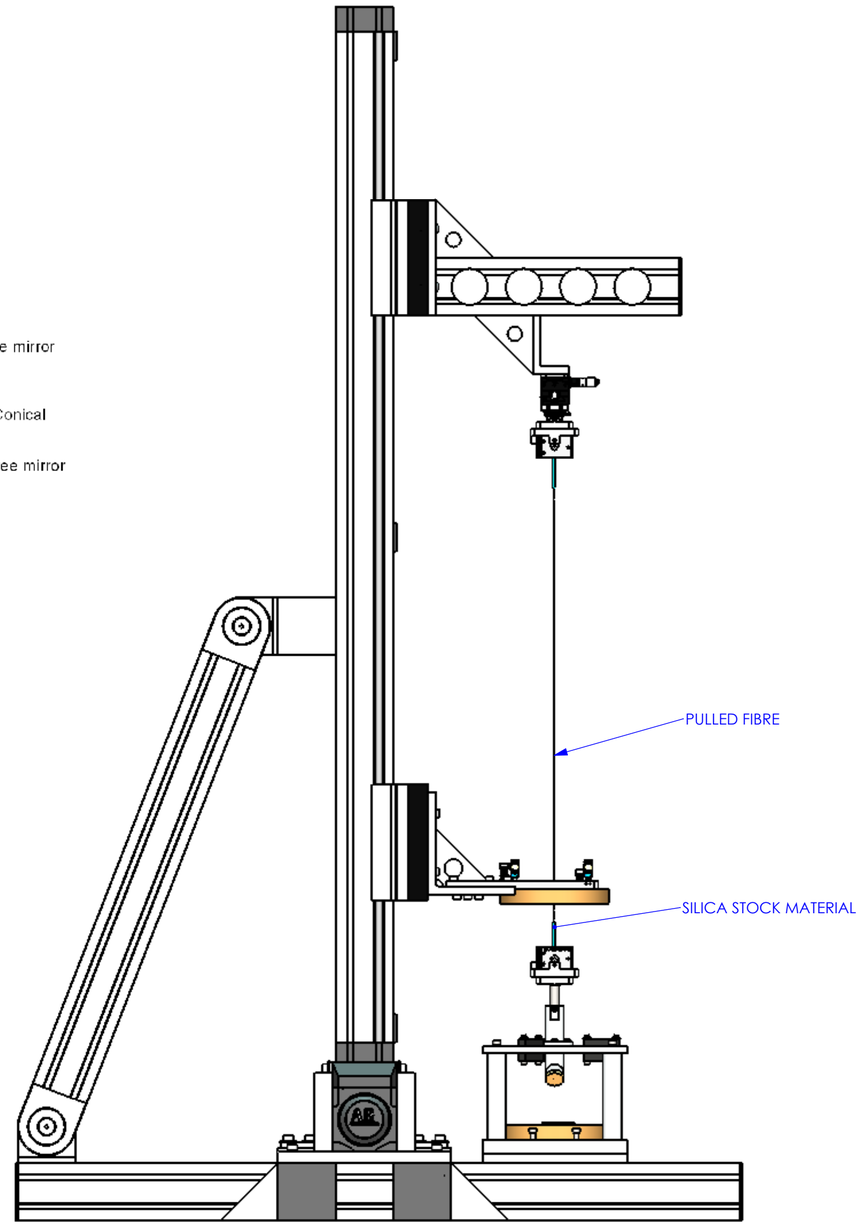


BEFORE PULLING PROCESS



NOTE: THE UPPER CONICAL MIRROR (PICTURED BELOW), FEEDS THE ROTATING CO2 LASER BEAM (INDICATED IN THE PICTURE ABOVE) TOWARDS THE FIXED CLAMP IN ORDER TO HEAT FRESH MATERIAL.





AFTER PULLING PROCESS

GENERAL ARRANGEMENT 2:

FIBRE PRODUCTION

NOTES (UNLESS OTHERWISE SPECIFIED):

DIMENSIONS ARE IN MILLIMETERS

GENERAL TOLERANCES:

0<X<50mm:	±0.1mm
50<X<150mm:	±0.2mm
100<X<1000mm:	±0.3mm
1000>:	±0.5mm
ANGULAR:	±0.2°

1. GRAPHICS INTENDED PURELY FOR REFERENCE DURING ASSEMBLY / INSTALLATION

QUANTITY: ---

MATERIAL: ---

SURFACE TEXTURE (μm): √ UNLESS STATED

FINISH: ---

	NAME	DATE
DRAWN	R.JONES	JUN10
CHK'D	A.CUMMING	JUN10
APPV'D	A.BELL	JUN10
Q.A		

DO NOT SCALE DRAWING | A2

Institute for Gravitational Research
University of Glasgow
GEO 600 Group

SYSTEM: CO2 Laser Pulling Machine

SUB-SYSTEM: ---

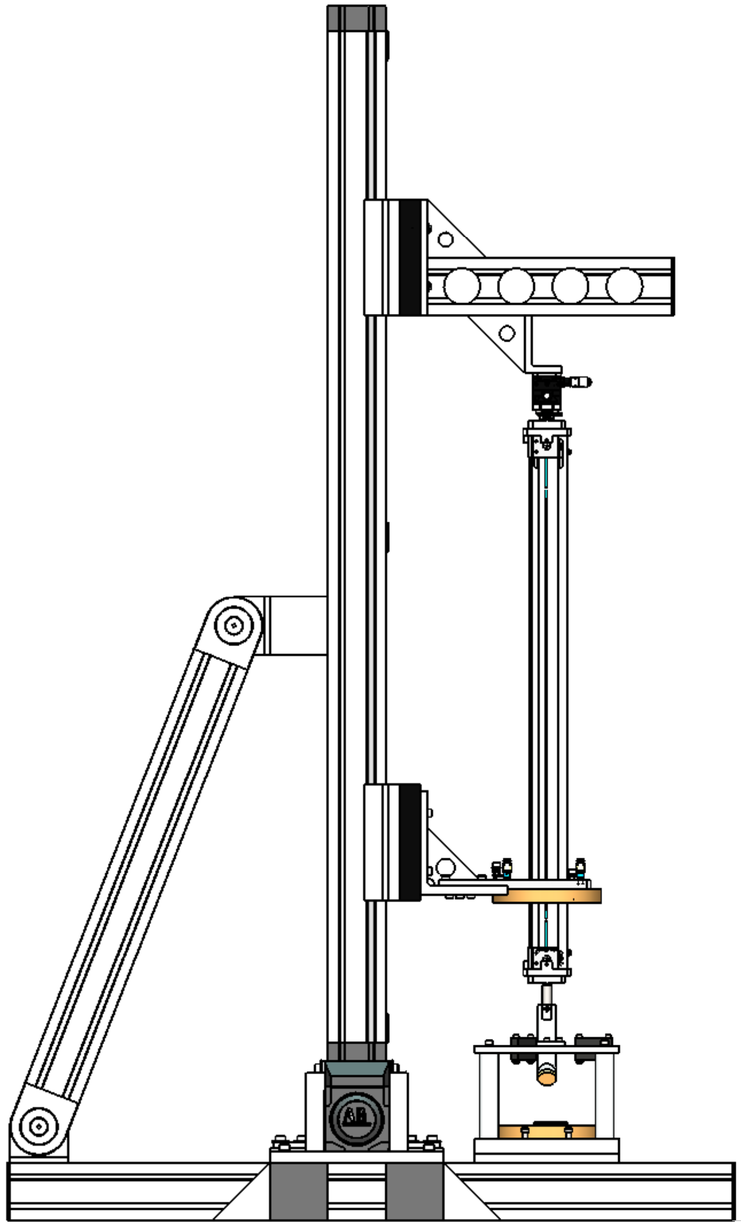
ASSEMBLY: Overall Assembly

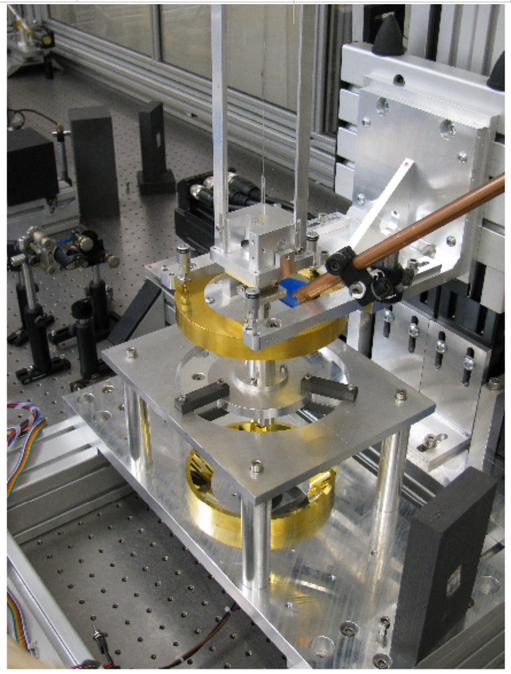
PART NAME: ---

DWG NO. D070560 [CO2_GLA_ASM_OVERALL] **REV:** V2

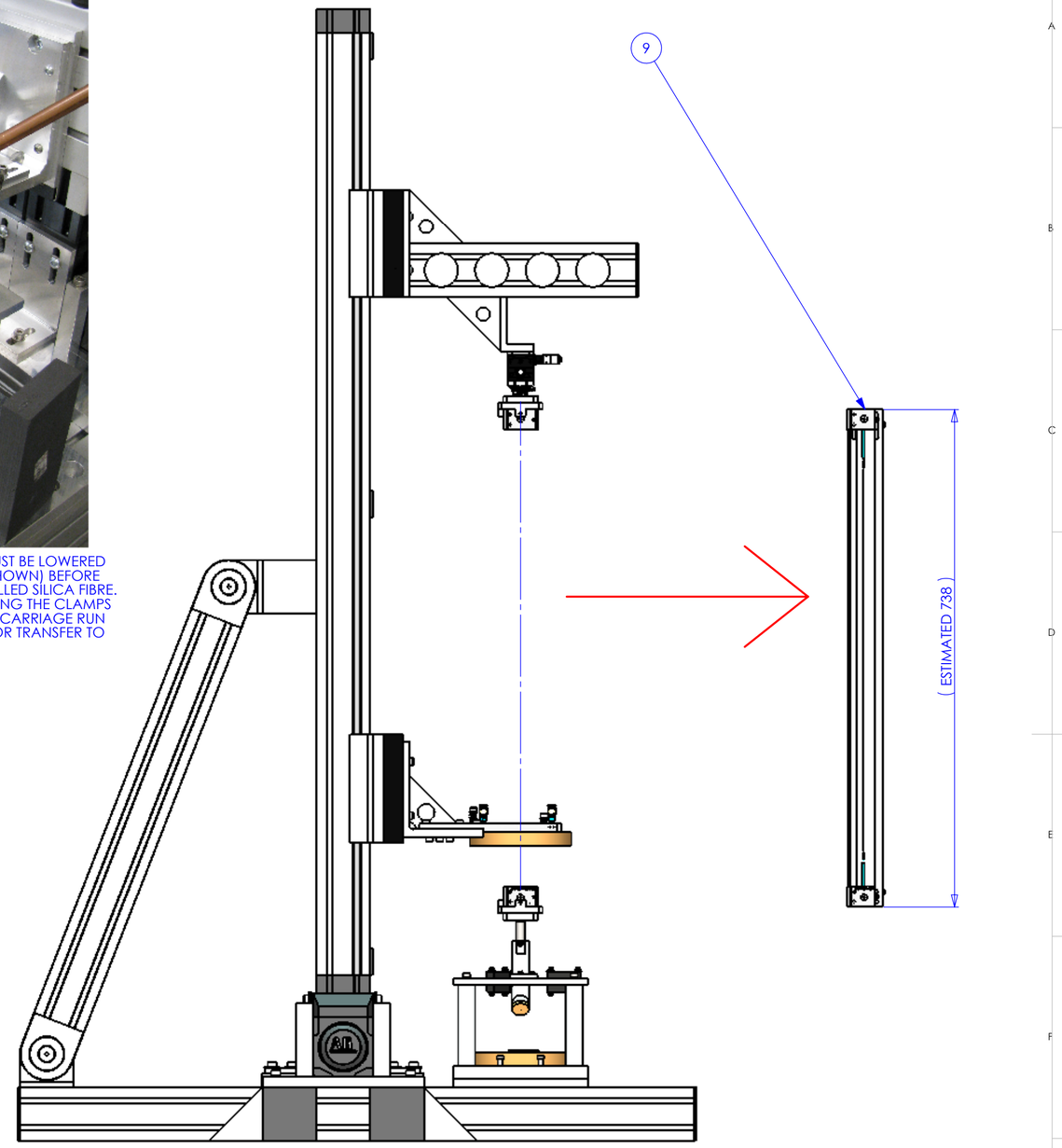
SCALE:1:20 | PROJECTION: (3rd ANGLE) | SHEET 3 OF 4

ITEM NO.	PART NUMBER	Cartridge removal of pulled fibre/QTY.
9	D1001504_aLIGO Fibre Cartridge Assembly	1





NOTE: THE UPPER CONICAL MIRROR (PICTURED ABOVE), MUST BE LOWERED BELOW THE LEVEL OF THE BOTTOM CLAMP ASSEMBLY(AS SHOWN) BEFORE ATTACHING BRACKETS FOR CARTRIDGE REMOVAL OF THE PULLED SILICA FIBRE. ONCE THE CARTRIDGE IS FORMED, THE GRUB SCREWS HOLDING THE CLAMPS CAN BE RELEASED AND THE MOTOR OPERATING THE UPPER CARRIAGE RUN ON SUCH THE THE CARTRIDGE CAN BE SAFELY REMOVED FOR TRANSFER TO THE PROFILER.



GENERAL ARRANGEMENT 3:

FIBRE CARTRIDGE REMOVAL

NOTES (UNLESS OTHERWISE SPECIFIED):

DIMENSIONS ARE IN MILLIMETERS

GENERAL TOLERANCES:
0<X<50mm: ±0.1mm
50<X<150mm: ±0.2mm
100<X<1000mm: ±0.3mm
1000>: ±0.5mm
ANGULAR: ±0.2°

1. GRAPHICS INTENDED PURELY FOR REFERENCE DURING ASSEMBLY / INSTALLATION

QUANTITY: ---

MATERIAL: ---

SURFACE TEXTURE (µm): √UNLESS STATED

FINISH: ---

	NAME	DATE
DRAWN	R.JONES	JUN10
CHK'D	A.CUMMING	JUN10
APPV'D	A.BELL	JUN10
Q.A		

DO NOT SCALE DRAWING | A2

Institute for Gravitational Research
University of Glasgow
GEO 600 Group

SYSTEM: CO2 Laser Pulling Machine

SUB-SYSTEM: ---

ASSEMBLY: Overall Assembly

PART NAME: ---

DWG NO. D070560 [CO2_GLA_ASM_OVERALL] **REV:** v2

SCALE:1:20 | PROJECTION: (3rd ANGLE) | SHEET 4 OF 4