

DESIGNED FOR CNC MACHINING

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AGREE TO ABIDE BY THE TERMS OF USE,
LISTED ON THE FINAL SHEET

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ITEM NO.	PART	QTY.	MATERIAL/VENDOR
1	001-101 - Motor Bracket	1	ALUMINUM 6061-T6
2	001-102 - Frame Wall	1	ALUMINUM 6061-T6
3	002-101 - Motor Plate	1	ALUMINUM 6061-T6
4	002-102 - Fixed Mold Plate	1	ALUMINUM 6061-T6
5	002-103 - Moving Mold Plate	1	ALUMINUM 6061-T6
6	002-104 - Actuator Plate	1	ALUMINUM 6061-T6
7	002-105 - Hopper Bracket	1	ALUMINUM 6061-T6
8	002-106 - Extractor Block	1	ALUMINUM 6061-T6
9	002-107 - Blank Mold Cavity	1	ALUMINUM 6061-T6
10	003-101 - Screw Support	1	ALUMINUM 6061-T6
11	003-102 - Screw	1	STAINLESS STEEL 304L
12	003-103 - Extruder Barrel	1	ALUMINUM 6061-T6
13	003-104 - Nozzle	1	ALUMINUM 6061-T6
14	005-101 - Blank Core	1	ALUMINUM 6061-T6
15	005-102 - Blank Ejector Plate	1	STAINLESS STEEL 304L
16	SP - Bearing LMK16UU - Phidgets LMN4219_0	4	Phidgets Inc.
17	SP - M3x5 SHCS - McMaster-Carr 91292A110	20	McMaster-Carr
18	SP - M3xM3x8 Standoff - McMaster-Carr 98952A106	20	McMaster-Carr
19	SP - M4x10 FHCS - McMaster-Carr 91294A190	4	McMaster-Carr
20	SP - M4x12 SHCS - McMaster-Carr 91290A148	32	McMaster-Carr
21	SP - M4x20 SHCS - McMaster-Carr 91290A168	4	McMaster-Carr
22	SP - M4x25 SHCS - McMaster-Carr 91290A176	4	McMaster-Carr
23	SP - M4x6 CPSS - McMaster-Carr 91390A112	4	McMaster-Carr
24	SP - M6 TNUT - Phidgets TSL4203_0	33	Phidgets Inc.
25	SP - M6 Thermocouple - Amazon DLM-B0711DRCVG	1	Amazon
26	SP - M6x10 CPSS - McMaster-Carr 91390A128	8	McMaster-Carr
27	SP - M6x14 BHCS - McMaster-Carr 91239A319	35	McMaster-Carr
28	SP - M6x15 FHCS - McMaster-Carr 92125A111	6	McMaster-Carr
29	SP - M6x40 DWL - McMaster-Carr 91585A692	4	McMaster-Carr
30	SP - M6x8 SPSS - McMaster-Carr 94085A127	4	McMaster-Carr

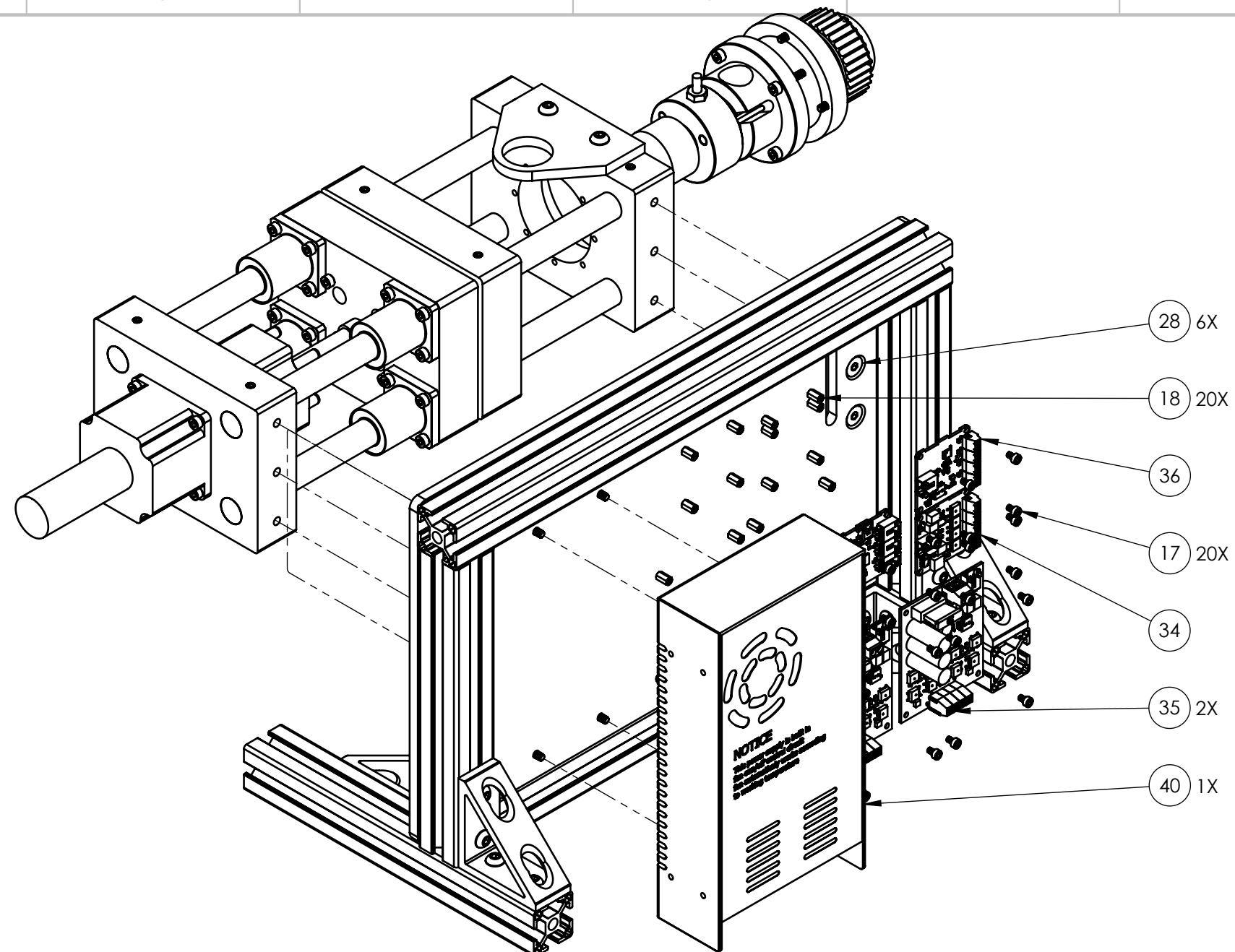
ITEM NO.	PART	QTY.	MATERIAL/VENDOR
31	SP - N23 Actuator - Haydon-Kerk 57M43-3_25-910	1	Haydon-Kerk
32	SP - NEMA34 Motor - Phidgets 3335_0	1	Phidgets Inc.
33	SP - Phidgets HUB0000_0	1	Phidgets Inc.
34	SP - Phidgets REL1100_0	1	Phidgets Inc.
35	SP - Phidgets STC1000_0	2	Phidgets Inc.
36	SP - Phidgets TMP1101_0	1	Phidgets Inc.
37	SP - 16TxHTD5 Pulley - Phidgets TRM4125_0	1	Phidgets Inc.
38	SP - 16x295mm Rail - Phidgets LMN4002_0	4	Phidgets Inc.
39	SP - 18x25x6 Wave Spring - McMaster-Carr 1561T430	1	McMaster-Carr
40	SP - 24V PSU - Phidgets PSU4016_0	1	Phidgets Inc.
41	SP - 3030 Extrusion Bracket - McMaster-Carr 5537T659	4	McMaster-Carr
42	SP - 3030x200mm Extrusion - Phidgets TSL4002_0	2	McMaster-Carr
43	SP - 3030x225mm Extrusion - Phidgets TSL4002_0	2	McMaster-Carr
44	SP - 3030x265mm Extrusion - Phidgets TSL4002_0	1	McMaster-Carr
45	SP - 3030x295mm Extrusion - Phidgets TSL4002_0	1	McMaster-Carr
46	SP - 34TxHTD5 Pulley - Phidgets TRM4122_0	1	Phidgets Inc.
47	SP - 3_4 Bearing - McMaster-Carr 5709K770	2	McMaster-Carr
48	SP - 3_4-16 NUTT - McMaster Carr 91847A555	1	McMaster-Carr
49	SP - 6x20 Heater - Amazon 258RK-3-U5	3	Amazon

NOTE:

-VENDOR PART NUMBERS ARE INCLUDED AT THE END OF THE PART NAME
 -THIS PACKAGE DEALS MOSTLY WITH MECHANICAL COMPONENTS. I MAY PUBLISH WIRING DIAGRAMS SEPARATELY, HOWEVER I WILL NOT SPECIFY WIRING COMPONENTS.

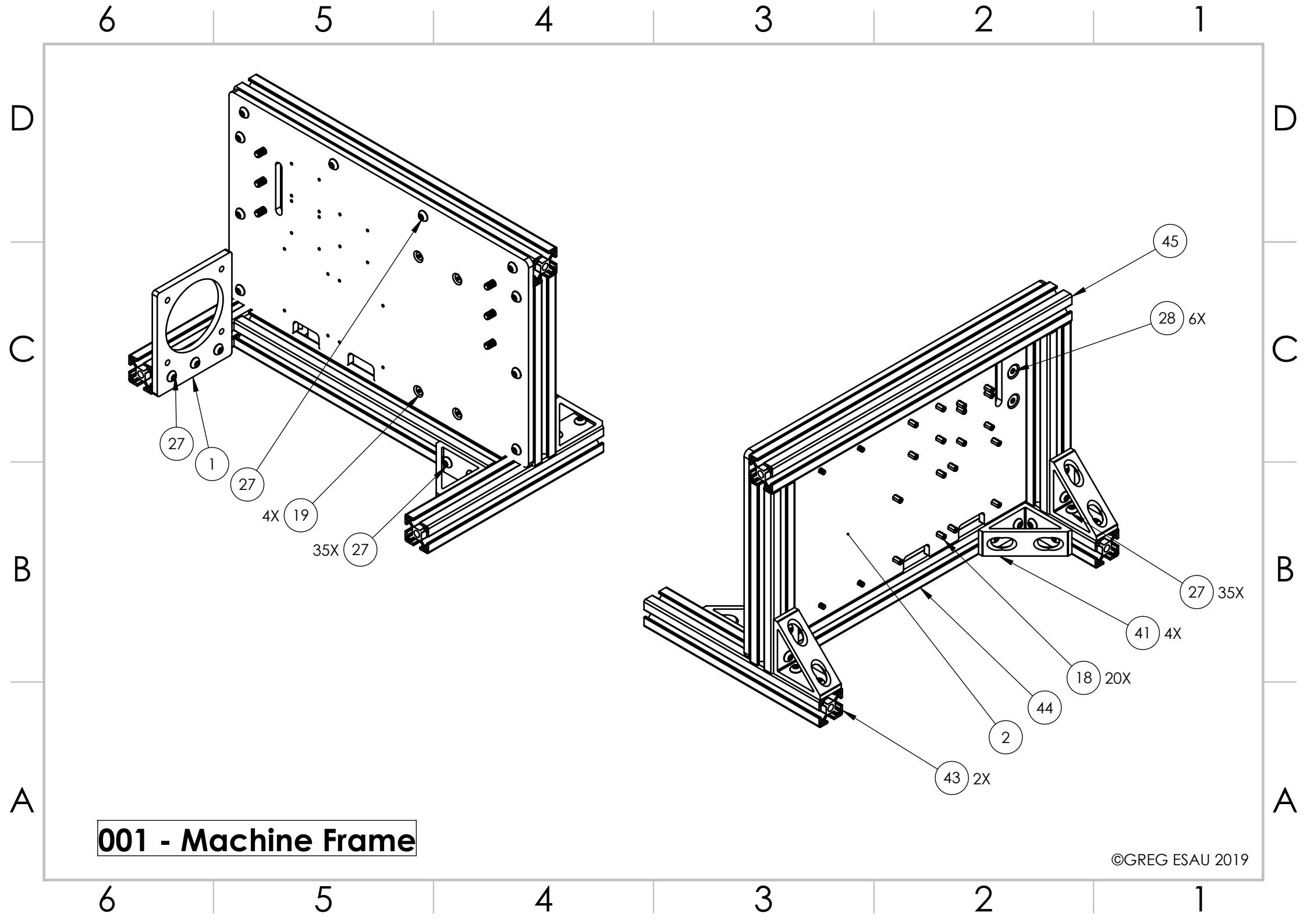
ITEM	PART NUMBER	VENDOR	QUANTITY
VINT CABLE	3004_0	PHIDGETS INC	4
ASSORTED WIRE	-	-	-
POWER ENTRY CONNECTOR*	-	-	-
POWER CABLE*	-	-	-

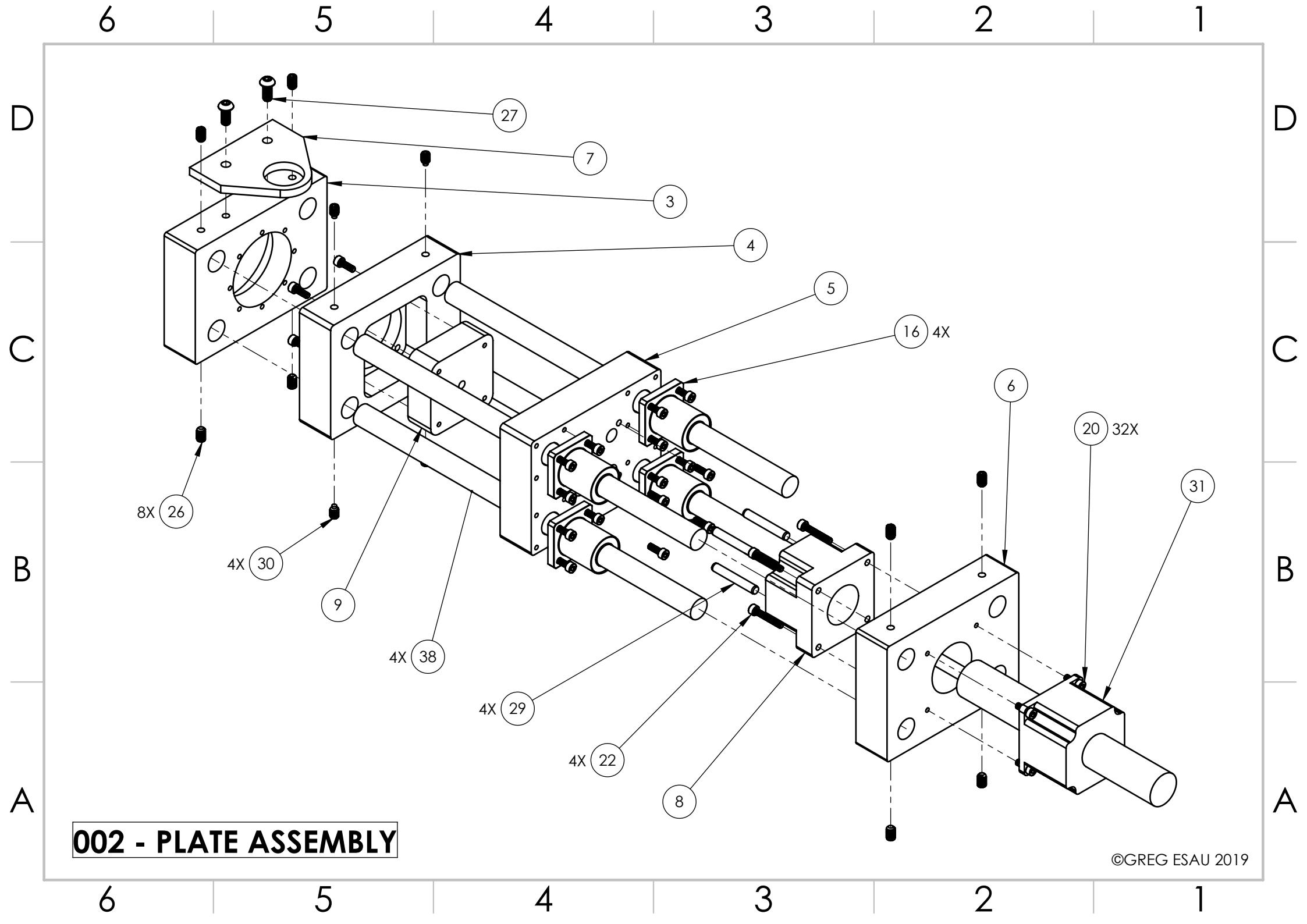
* I PURPOSELY OMITTED POWER COMPONENTS DUE TO VARYING REGIONAL STANDARDS AND LIABILITY



000 - Injection Molding Machine

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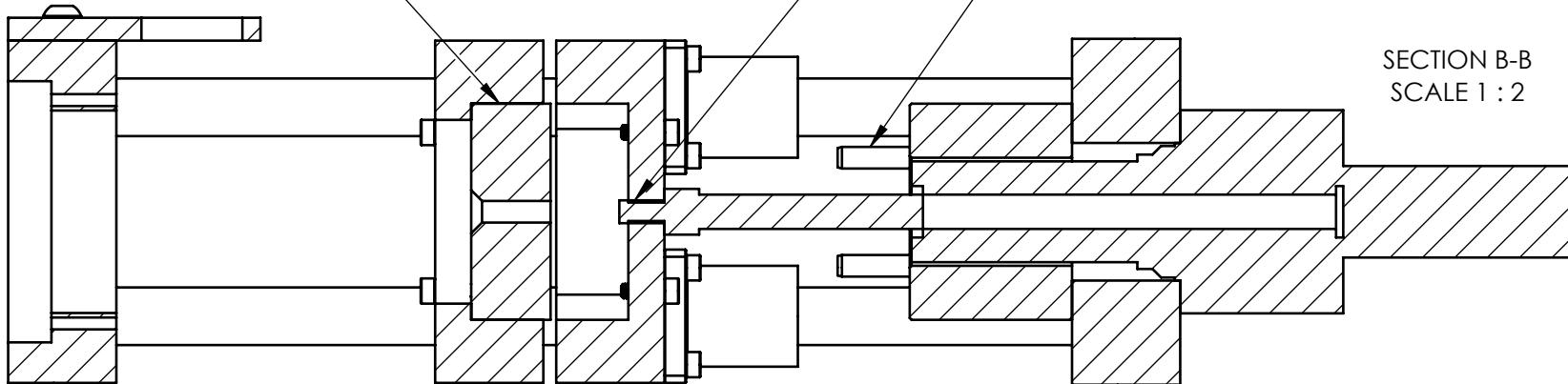


6 5 4 3 2 1

D

D

BLANK MOLD CAVITY INCLUDED. CORE SHOWN IN DIFFERENT VIEW.



C

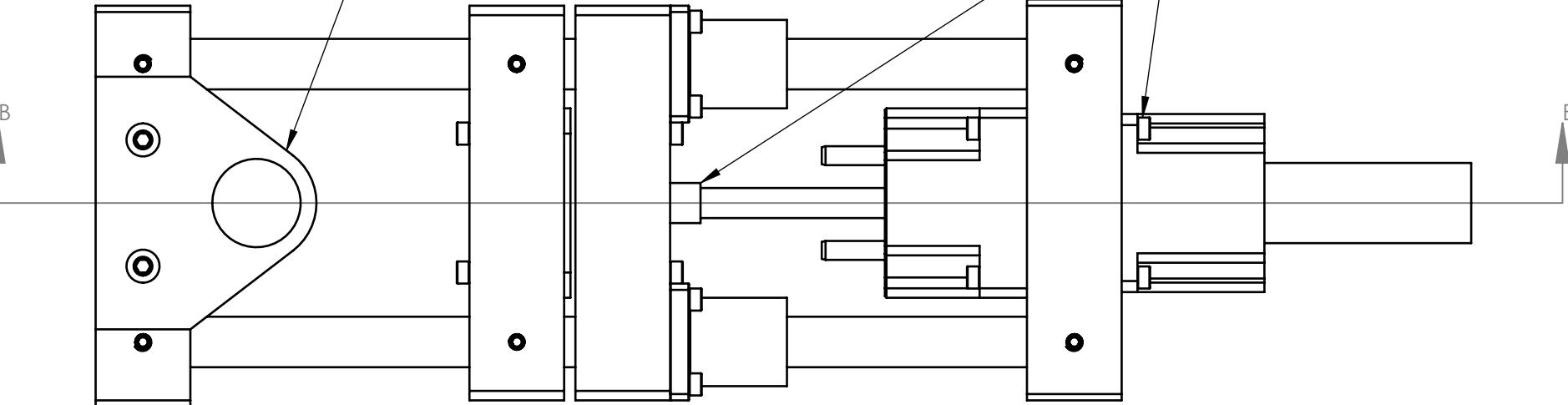
C

B

B

HOPPER AND ADAPTER DESIGNS NOT PROVIDED

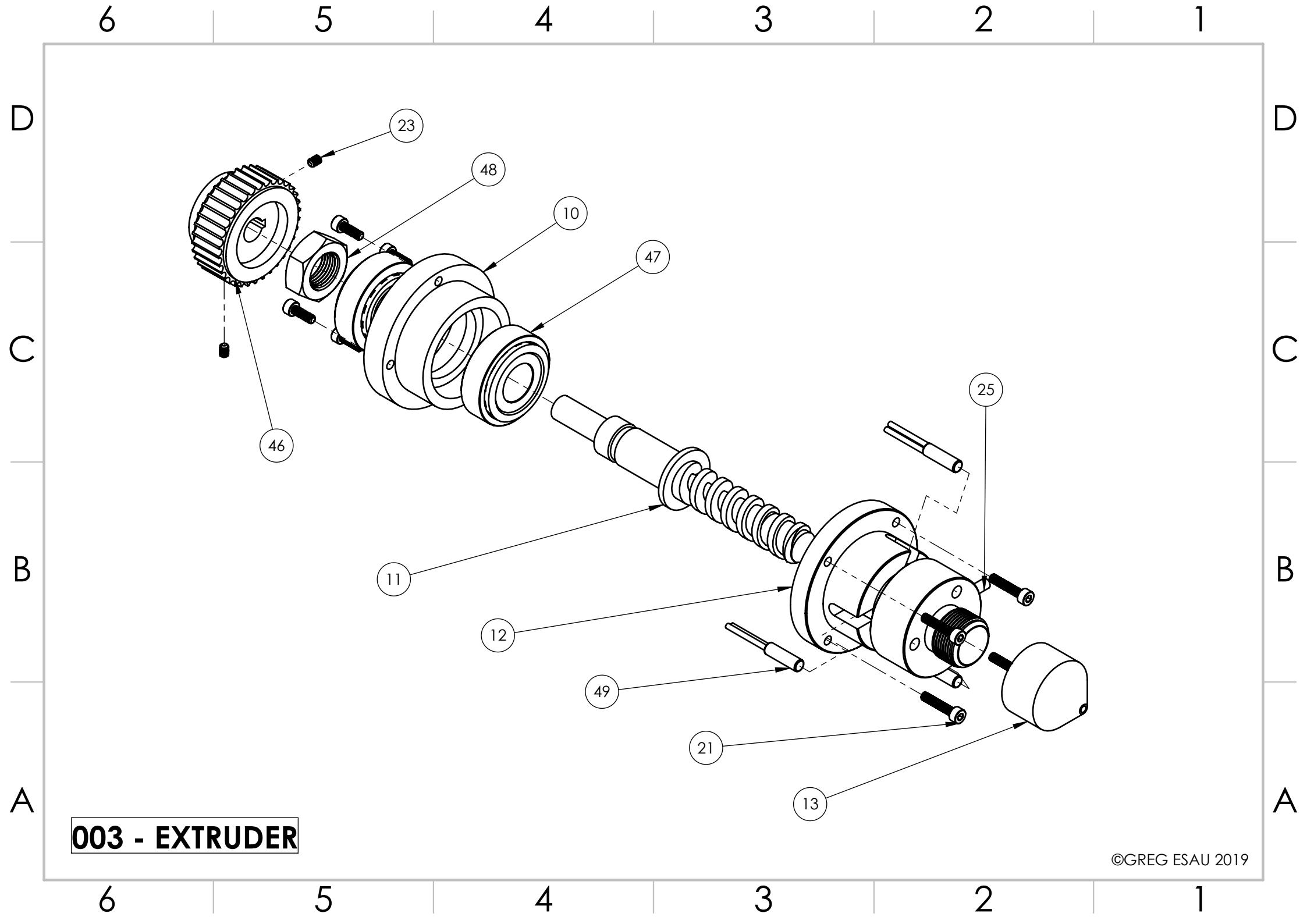
ACTUATOR MUST BE SCREWED INTO 002-103 BEFORE BEING FASTENED TO 002-104



A

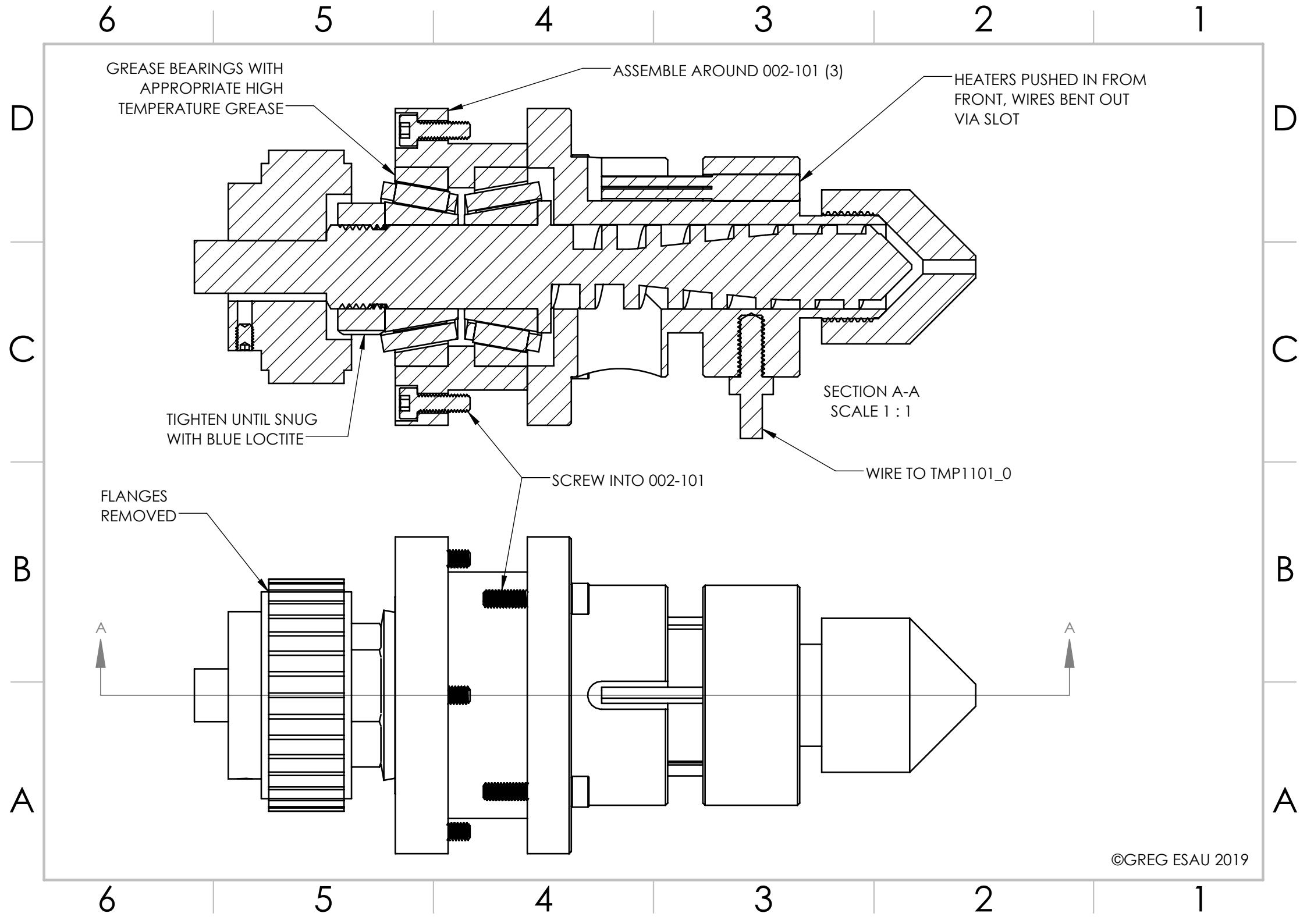
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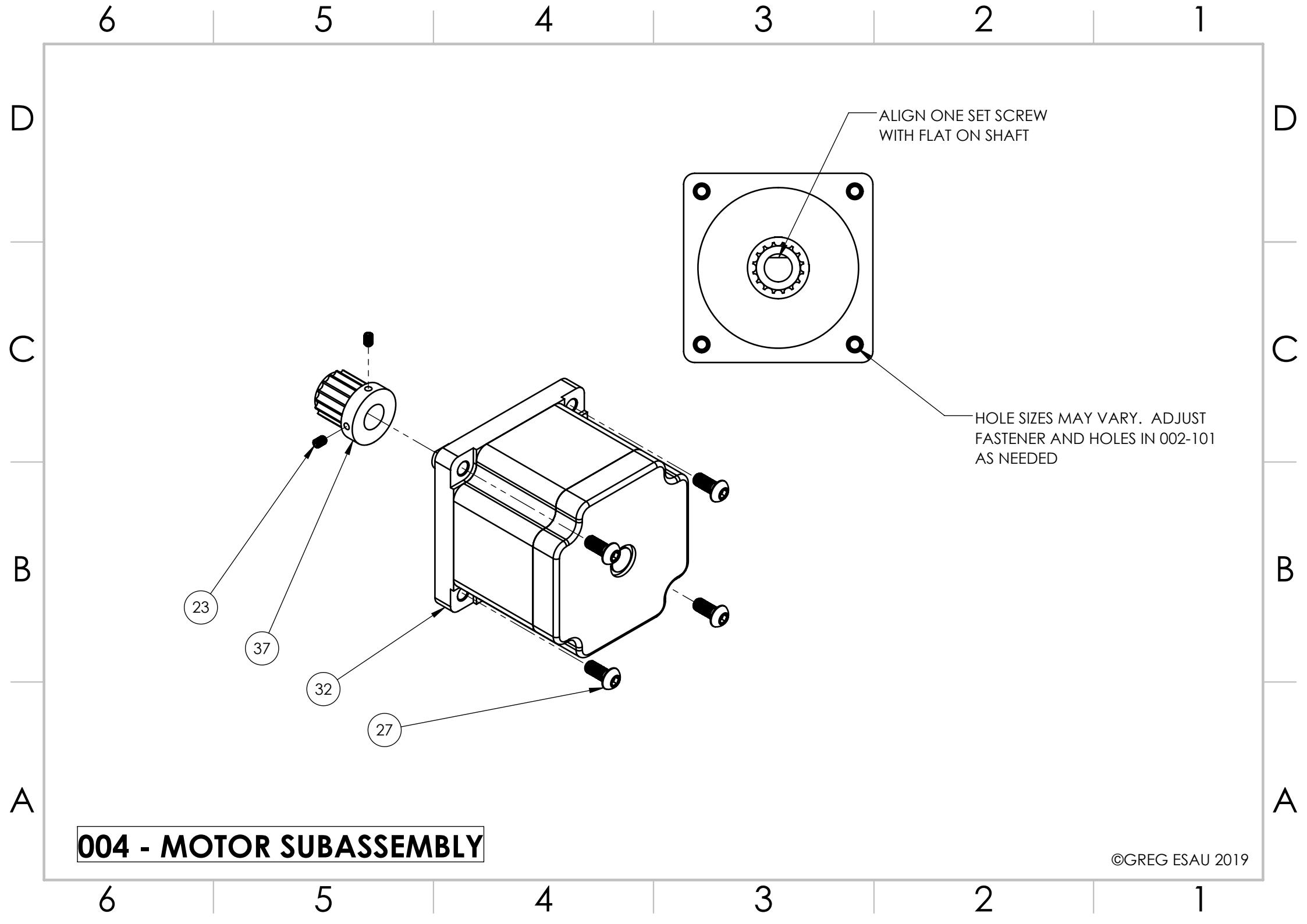
6 5 4 3 2 1

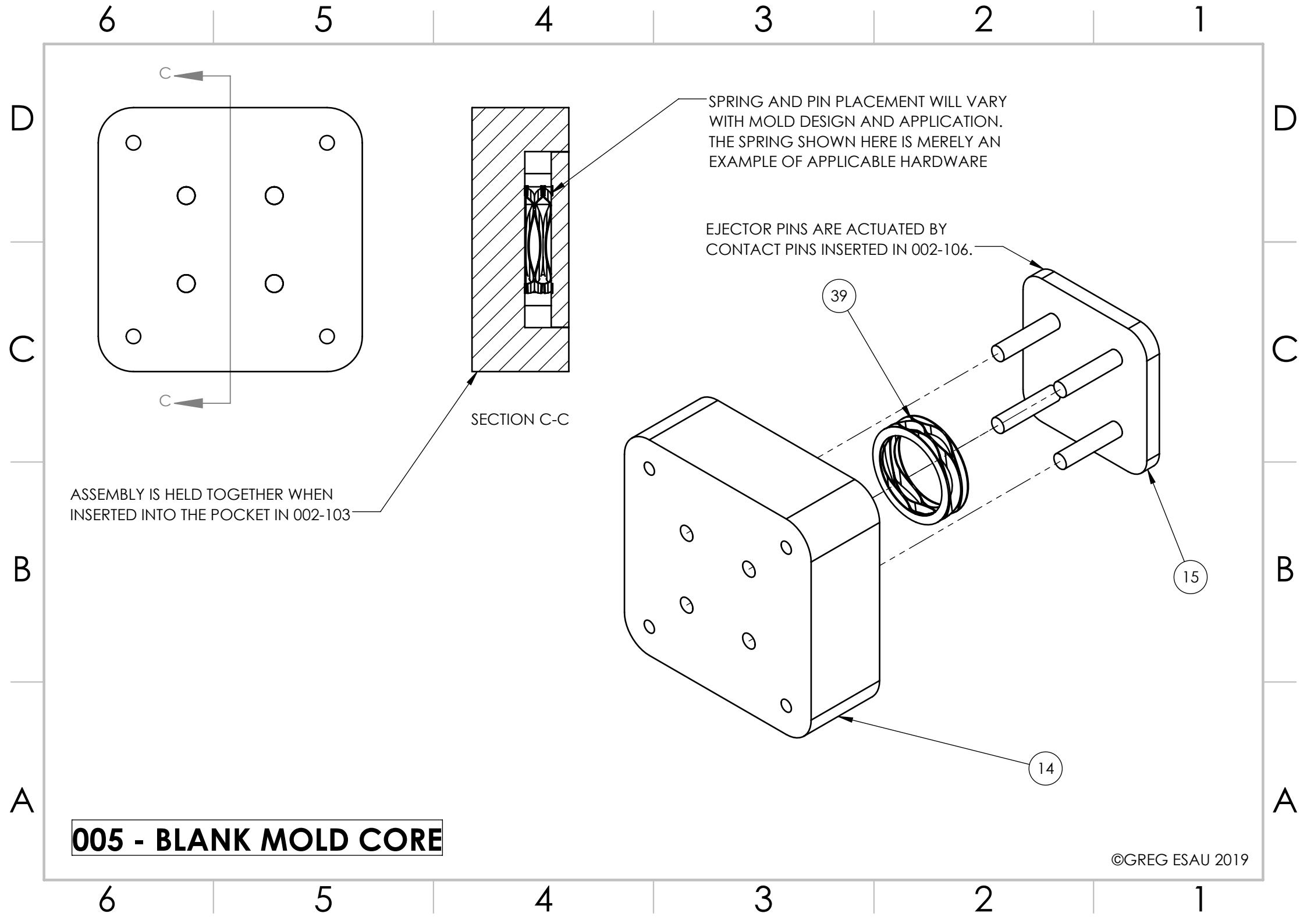


003 - EXTRUDER

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6 5 4 3 2 1

NOTES

- While this project may appear simple, it will require maintaining precise tolerances, thus it is not suited to hand tools or basic DIY tools
- I may release software for running this machine later, however I do not currently plan on it. My software is often inelegant and requires constant troubleshooting
- The electronics specified in this package, Phidgets, are well suited to users with a moderate competency in scripting languages and object oriented programming. They are decidedly more complicated than Arduino-style systems. If you are not comfortable with this format, retrofitting the design with Arduino may be a good option (I probably will after testing)
- I did not include a hopper system as I intend to use a 2L soda bottle with a fabricated adaptor
- This design will likely be superceded in the future with a longer-barrel version
- I have included .STEP files as well as SolidWorks Files
 - If any of the files contain CAM, I recommend ignoring it and restarting the CAM from scratch

D

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A

D

C

B

A

6 5 4 3 2 1

TERMS OF USE

- This project is intended to express my appreciation for my Patreon backers who make it possible for me to make projects like these
- I have done NO calculations or simulations about the strength, failure modes, or longevity of this design
 - These will all depend on the materials used, hardening condition, and cut parameters

INTELLECTUAL PROPERTY AND COPYRIGHT

- This device was designed and produced entirely by me
- There are no active patents in this device
- Some CAD files were acquired legally from the McMaster-Carr website and included in this model as a demonstration of compatible hardware offered by McMaster-Carr
- This model and drawing package were created on a legal copy of SolidWorks

BY DOWNLOADING THIS DRAWING PACKAGE AND/OR THE INCLUDED MODELS, YOU AGREE THAT:

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- 2) I hold no responsibility for legal repercussions caused by production or possession of this device
- 3) I hold no responsibility for objects that get damaged in the production or use of this device
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- 7) I reserve the right to withdraw the availability of this drawing package or the models
- 8) I reserve the right to make this drawing package or models available on other platforms
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