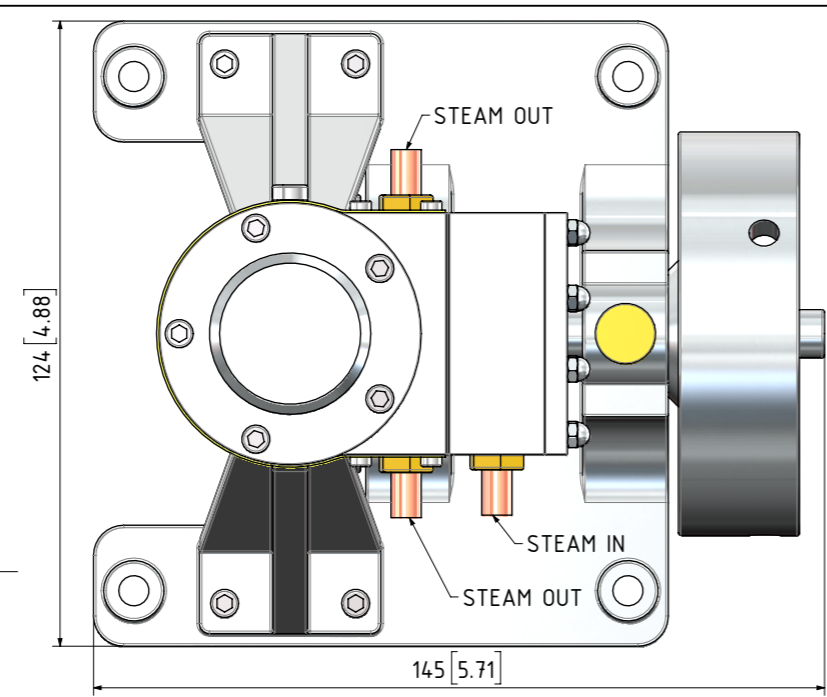
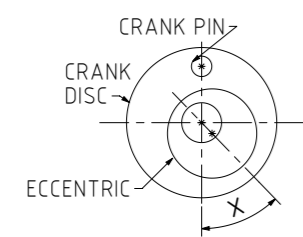
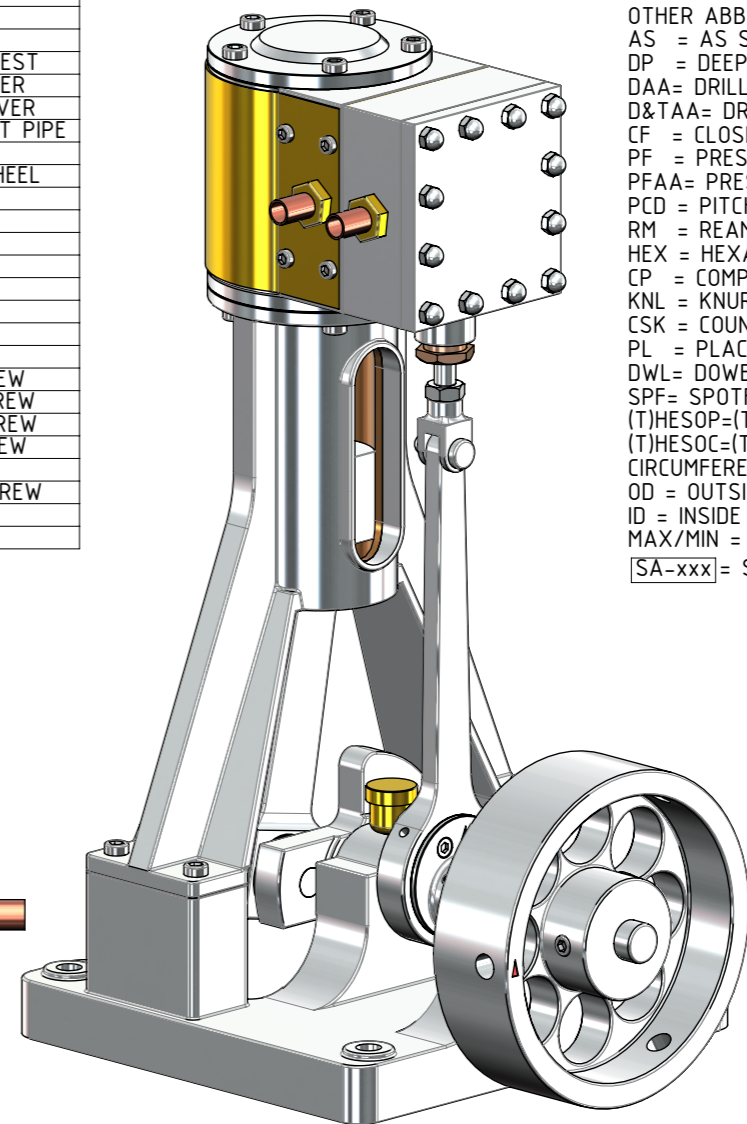
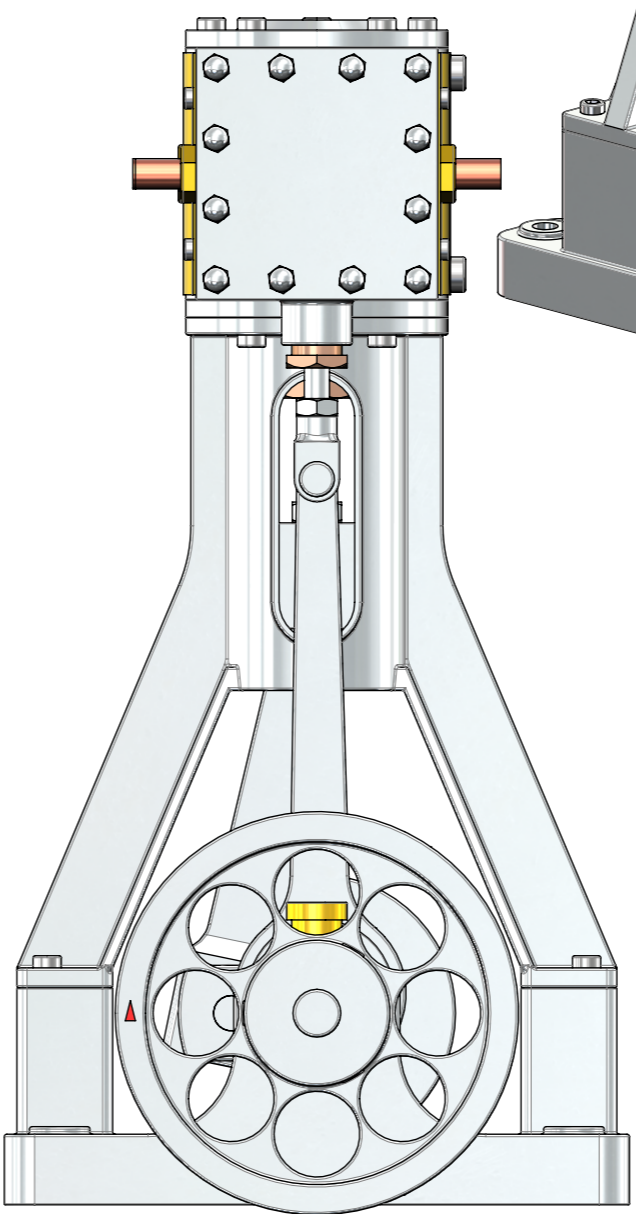
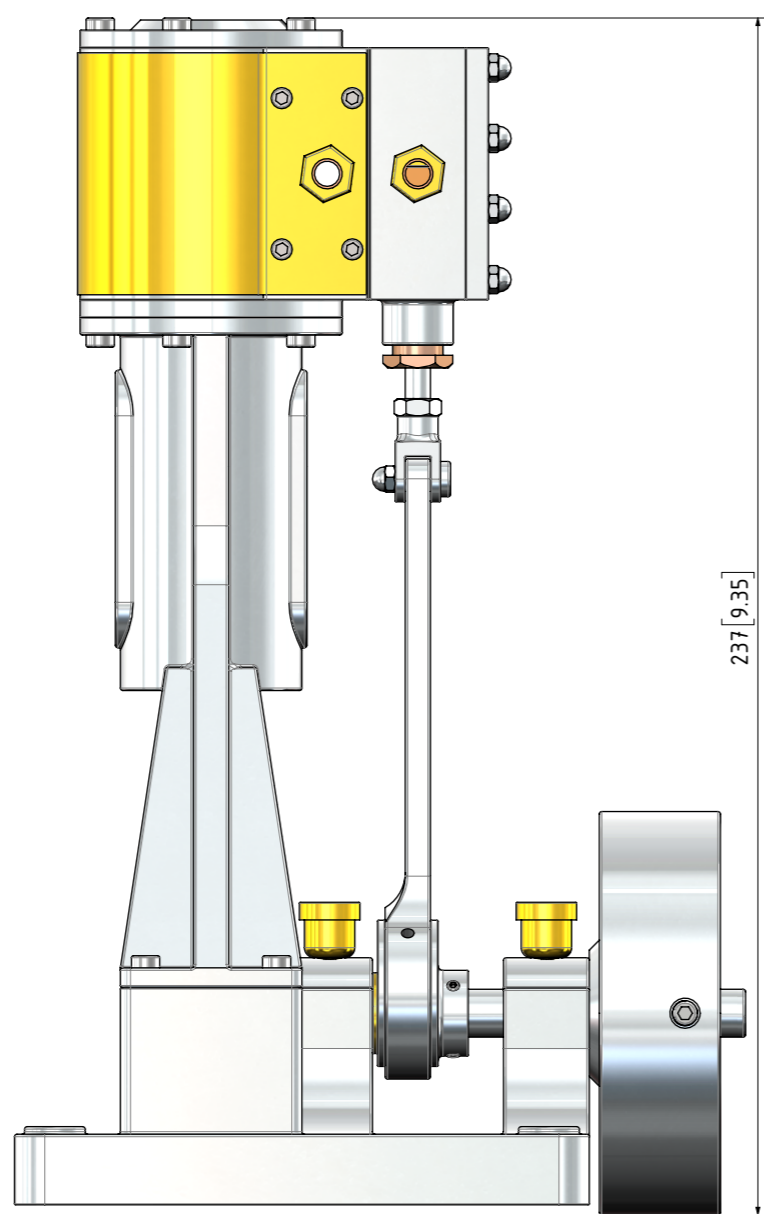
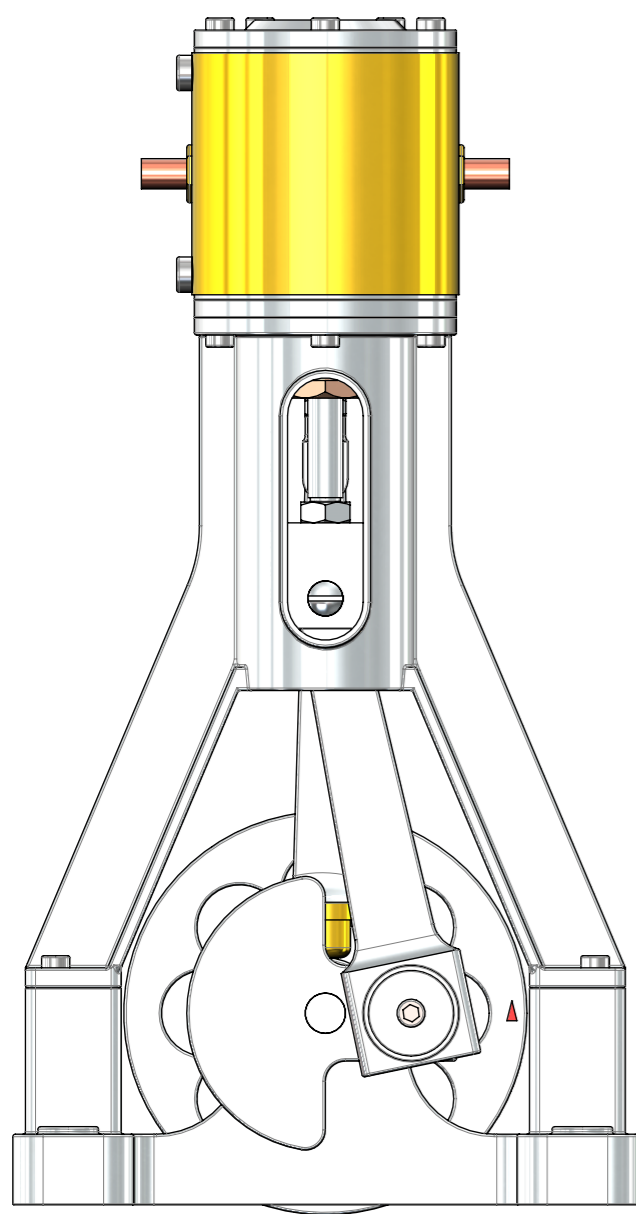


DUE TO THE LACK OF INFORMATION ON THE ORIGINAL DRAWING(S), SUCH AS VIEWS, DIMENSIONS, SECTIONS ETC AND/OR CLARITY OF COMPONENTS, OMITTED PARTS/COMPONENTS, SOME OF THE COMPONENTS MIGHT NOT BE AS CONSTRUCTED ORIGINALLY OR AS THE ORIGINAL DESIGNER INTENDED

THE OFF SET ANGLE OF THE ECCENTRIC IN RELATION TO THE CRANK AXIS TO BE EXPERIMENTALLY DETERMINED FOR THE SMOOTH RUNNING OF THE ENGINE AND SATISFACTION OF THE BUILDER



QTY.	PART NUMBER
1	09C-61-00-1-01-BASE
1	09C-61-00-1-02-CYLINDER STAND
1	09C-61-00-1-03-CYLINDER+VALVE CHEST
1	09C-61-00-1-04-CYLINDER REAR COVER
1	09C-61-00-1-05-CYLINDER FRONT COVER
3	09C-61-00-1-06-STEAM INLET-OUTLET PIPE
2	09C-61-00-1-07-OIL CUP
1	09C-61-00-2-01-CRANKSHAFT+FLYWHEEL
1	09C-61-00-2-02-PISTON+CROSSHEAD
1	09C-61-00-2-03-CON-ROD
1	09C-61-00-2-04-SLIDE VALVE
1	09C-61-00-2-05-ECCENTRIC SHEAVE
1	09C-61-00-2-06-ECCENTRIC STRAP
3	09C-61-00-M2.5x4 A-K GRUB SCREW
13	09C-61-00-M3 DOME NUT
2	09C-61-00-M3x6 A-K C-SINK SCREW
8	09C-61-00-M3x6 A-K CYL HEAD SCREW
10	09C-61-00-M4x10 A-K CYL HEAD SCREW
4	09C-61-00-M4x14 A-K CYL HEAD SCREW
1	09C-61-00-M4x8 A-K CYL HEAD SCREW
1	09C-61-00-M5 NUT
2	09C-61-00-M5x5.5 A-K CYL HEAD SCREW
1	09C-61-00-M6 NUT
3	09C-61-00-M5x10 A-K GRUB SCREW



OTHER ABBREVIATIONS  
AS = AS SHOWN  
DP = DEEP  
D&TAA= DRILL AND TAP AFTER ASSEMBLY  
CF = CLOSE FIT (SIZE FOR SIZE)  
PF = PRESS FIT  
PFAA= PRESS FIT AFTER ASSEMBLY  
PCD = PITCH CIRCLE DIAMETER  
RM = REAM  
HEX = HEXACON, 6SIDED  
CP = COMPRESSED  
KNL = KNURLED  
CSK = COUNTERSINK  
PL = PLACES  
DWL= DOWEL  
SPF= SPOTFACE  
(T)HESOP=(TAPPED)HOLES EQUALLY SPACED ON PCD  
(T)HESOC=(TAPPED)HOLES EQUALLY SPACED ON CIRCUMFERENCE  
OD = OUTSIDE DIAMETER  
ID = INSIDE DIAMETER  
MAX/MIN = CRITICAL DIMENSION  
[SA-xxx]= SUB ASSEMBLY-xxx

MATERIAL ABBREVIATIONS:  
ALU = ALUMINIUM  
HALU= HARD ALUMINIUM  
BRS = BRASS  
BRZ = BRONZE OR GUNMETAL (BRZ/GM)  
CI = CAST IRON  
CU = COPPER  
GRA = GRAPHITE  
MS = MILD STEEL/BRIGHT MILD STEEL  
SS = SILVER STEEL OR STAINLESS STEEL  
SPS = SPRING STEEL  
PEEK= POLYETHER ETHER KETONE  
SYN = SYNTHETIC MATERIAL SUCH AS VETON, NYLON, TEFLON OR RUBBER  
IN GENERAL SYNTHETIC MATERIALS SHOULD BE ABLE TO WITHSTAND THE HEAT AND PRESSURE(S) APPLIED TO THEM.  
nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED

- GENERAL NOTES:  
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS  
1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.  
2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.  
3. PREFERABLY ALL TAPPED HOLES AND MATCHING SCREWS AND/OR BOLTS TO BE METRIC FINE (MF)  
4. MATERIALS SPECIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER CAN MAKE HIS/HER OWN MATERIAL CHOICE.  
5. ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.  
6. COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.  
7. WHERE REFERRED SCREW OR RIVETED CONNECTIONS CAN BE OMITTED AND PARTS CAN BE BONDED TOGETHER BY USING EITHER HIGH STRENGTH GLUE, EPOXY RESIN, OR SOLDER.  
8. PARTS WHICH ARE DIRECTLY EXPOSED TO STEAM AND/OR WATER SHOULD BE CONSTRUCTED USING NON-FERROUS OR NON CORROSIVE MATERIAL SUCH AS BRASS, BRONZE, GUNMETAL, STAINLESS STEEL, COPPER OR MONEL.  
9. THE ORDER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED AND THE MODEL IS ASSEMBLED IS ENTIRELY LEFT TO THE BUILDER/MODEL MAKER.  
10. A COLOUR SCHEME FOR THIS PROJECT IS ENTIRELY LEFT UP TO THE MODEL MAKER.  
11. THE MANNER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED IS ENTIRELY LEFT UP TO THE BUILDER.  
12. USE LOCTITE, ON SCREW OR PRESS FIT CONNECTIONS OR SURFACES, WERE DEEMED NECESSARY TO PREVENT PARTS FROM LOOSENING.  
13. WASHERS AND/OR SPRING WASHERS SHALL BE USED WHERE DEEMED NECESSARY.  
14. REMOVE ALL SHARP EDGES  
XX. ERRORS AND/OR OMISSIONS MAY OCCUR IN THE DRAWINGS, DO NOT HESITATE TO CONTACT ME SO THAT THE ERRORS/OMISSIONS CAN BE RECTIFIED.

NOTES: THE ORIGINAL DRAWING WAS GIVEN TO ME. NO TITLE, AUTHOR(S) OR DATE WAS PRINTED ON THE ORIGINAL DRAWING. THE ONLY INFORMATION: "TINY POWER 10-SERIES STEAM ENGINES". THE ENGINE SHOWN ON THESE DRAWINGS IS 1.5 TIMES LARGER THAN THE ORIGINAL

TITLE  
**1 CYLINDER VERTICAL, NON REVERSABLE, STEAM ENGINE. (BORE=30mmxSTROKE=34mm)**

DRAWING CONTENTS  
**GENERAL ARRANGEMENT, ISOMETRIC VIEW, NOTES, BILL OF MATERIALS**

PROJECT No 09C-61-00  
JDW DRAUGHTING SERVICES  
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2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

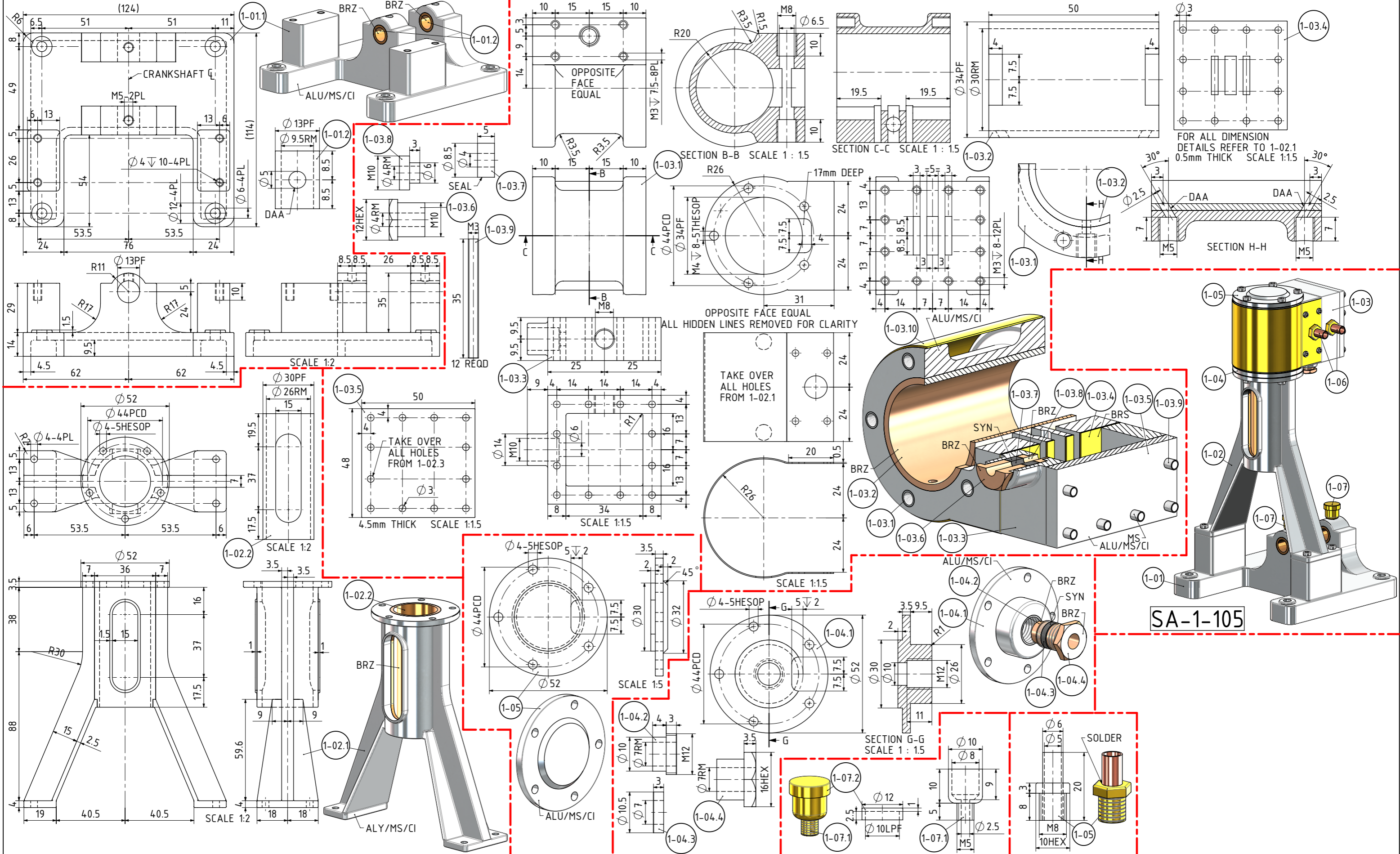
PROJECTION  
  
DATE AUGUST 2024  
SHEET: 01 OF 03

MODEL SCALE: 1:1  
DWG SCALE: 1:1 @A3 OR AS SHOWN  
Copyright © J.A.M. DE WAAL PAPA KURA NZ  
A3 No:09C-61-00-SHT-01



**ADDITIONAL NOTES ABOUT THESE DRAWINGS:**

- 1) MATERIALS HAVE BEEN SPECIFIED ON THESE DRAWINGS. HOWEVER THE BUILDER CAN CHOOSE ITS OWN PREFERRED MATERIAL FOR THE PARTS/COMPONENTS. THE FOLLOWING COLOURS ON THE DRAWINGS INDICATES POSSIBLE MATERIALS WHICH CAN BE USED FOR PARTS: YELLOW-BRASS, LIGHT GREY-ALUMINIUM OR MILD STEEL, REDDISH BROWN-COPPER, DARK BROWN-BRONZE OR GUN METAL, WHITISH-SILVER STEEL OR STAINLESS STEEL
- 2) FASTENERS SUCH AS BOLTS, SCREWS, RIVETS, NUTS AND WASHERS HAVE BEEN SHOWN ON THESE DRAWINGS. THE BUILDER TO CHOOSE ITS OWN PREFERRED TYPE OF FASTENERS IF SO DESIRED.



**SA-1-105**

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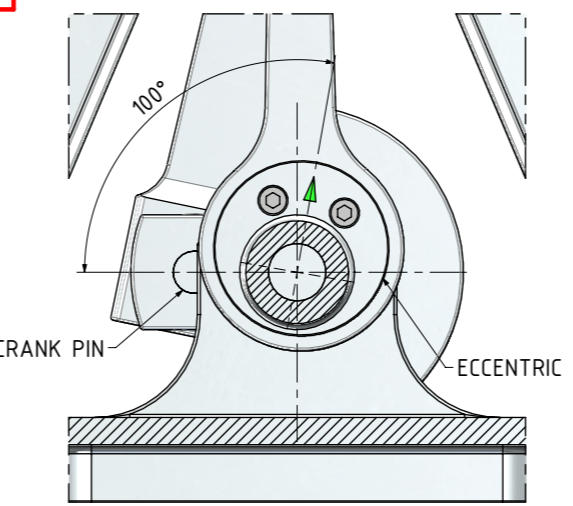
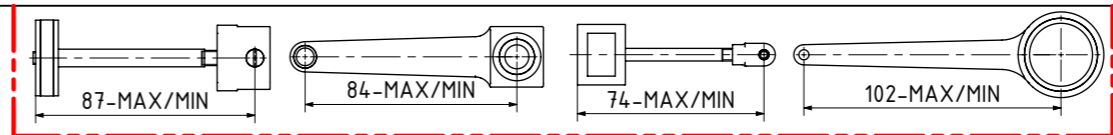
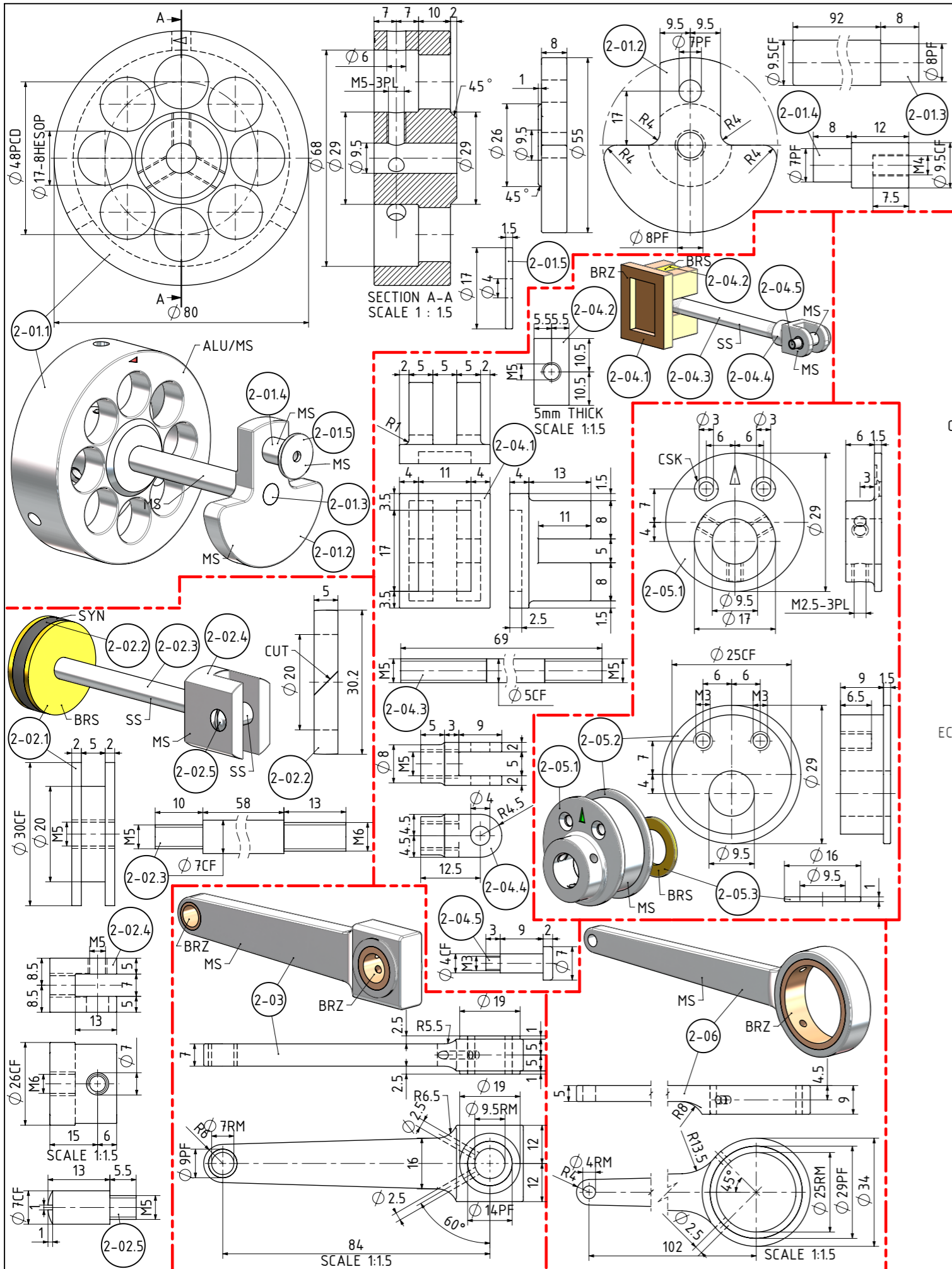
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DRAWING CONTENTS  
**PARTS AND ASSEMBLIES, NOTES.**

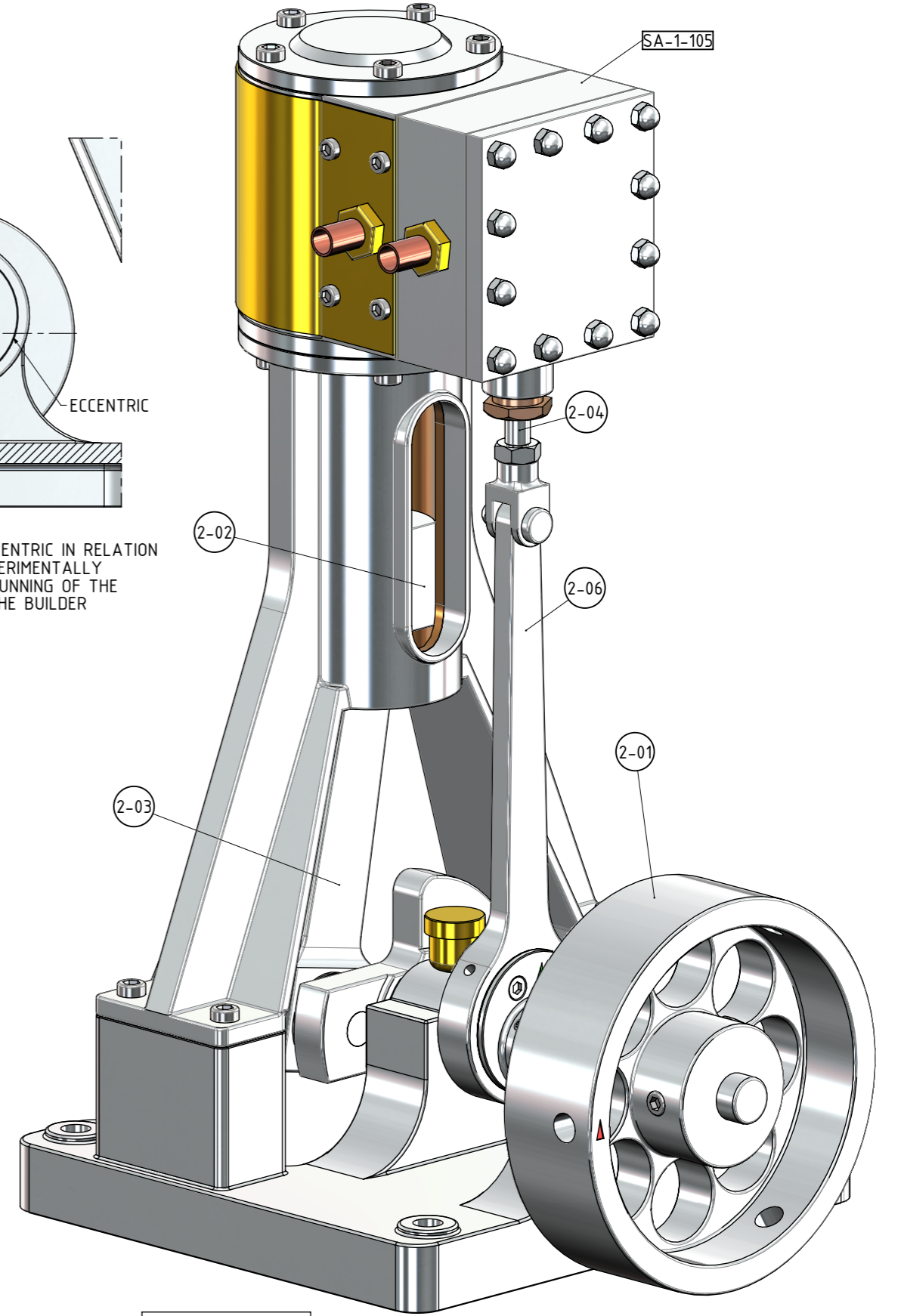
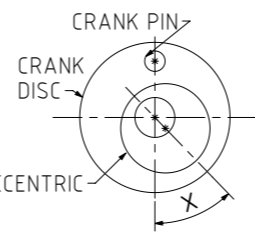
PROJECT No 09C-61-00  
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PROJECTION  
 DATE AUGUST 2024  
 SHEET: 02 OF 03  
 MODEL SCALE: 1:1  
 DWG SCALE: 1:1 @A3 OR AS SHOWN  
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 A3 No:09C-61-00-SHT-02





THE OFF SET ANGLE OF THE ECCENTRIC IN RELATION TO THE CRANK AXIS TO BE EXPERIMENTALLY DETERMINED FOR THE SMOOTH RUNNING OF THE ENGINE AND SATISFACTION OF THE BUILDER



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DRAWING CONTENTS  
**PARTS AND ASSEMBLIES**

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PROJECTION  
 JDWDS  
 DATE AUGUST 2024  
 SHEET: 03 OF 03

MODEL SCALE: 1:1  
 DWG SCALE: 1:1 @A3 OR AS SHOWN  
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