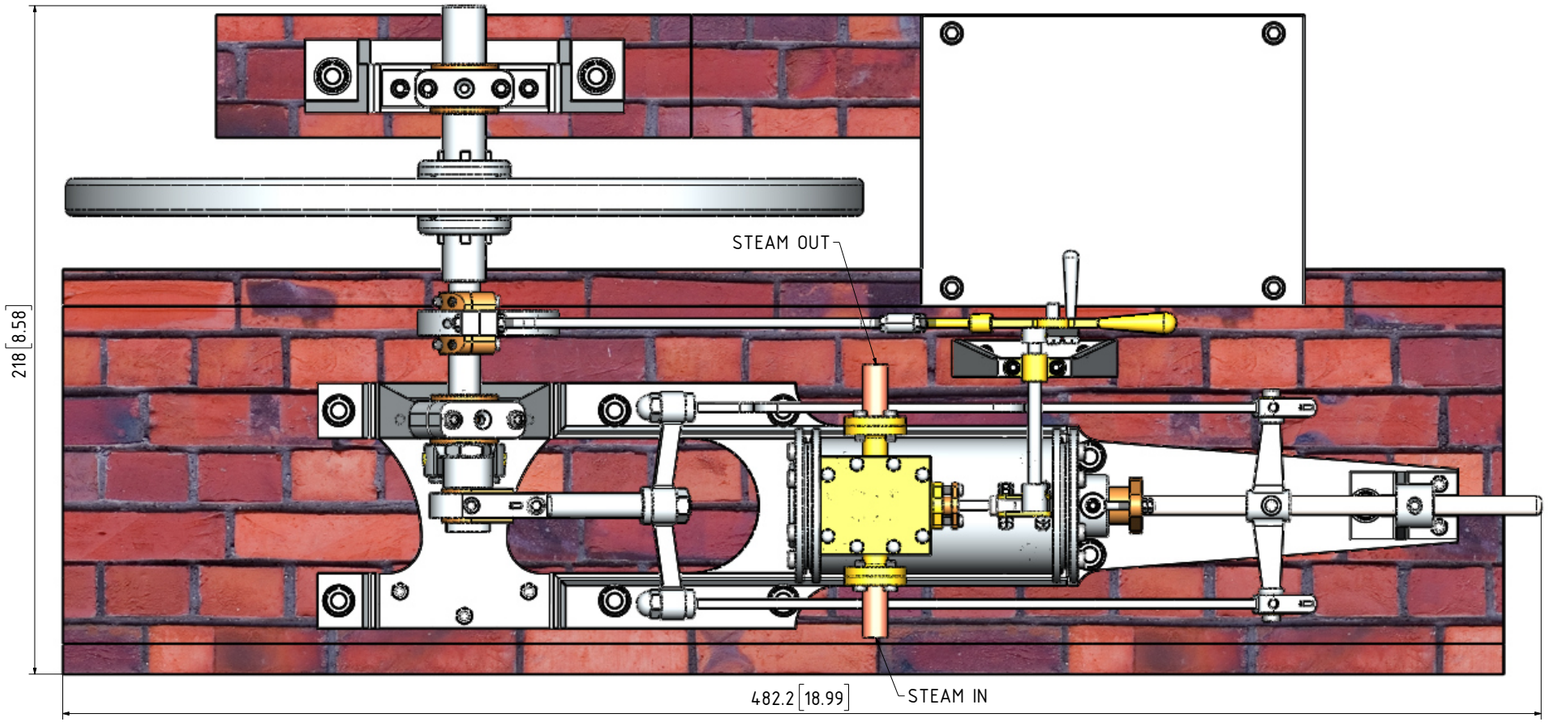
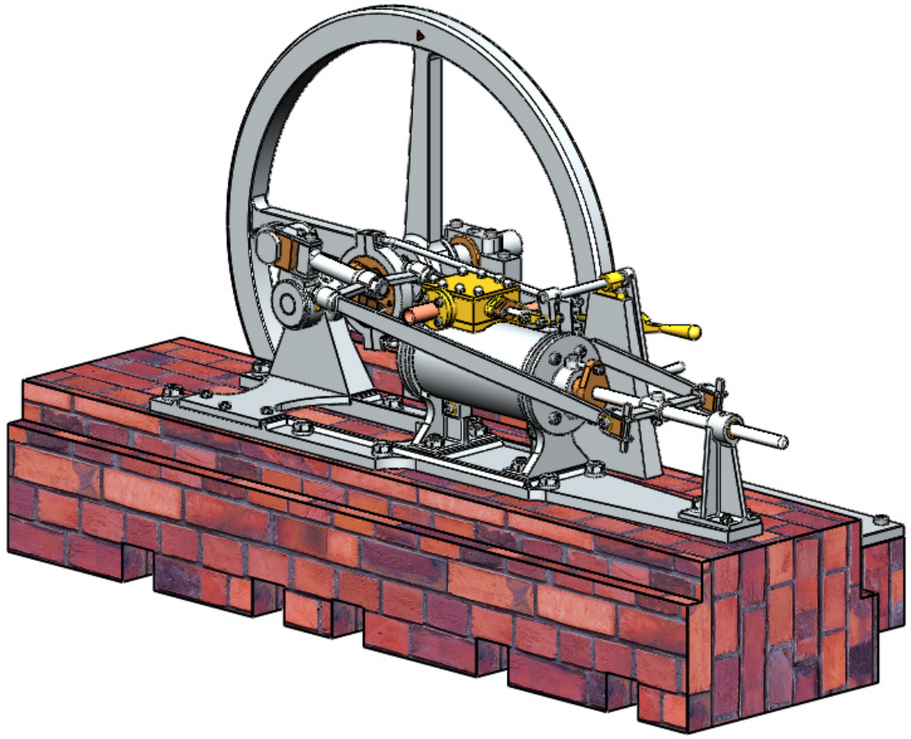
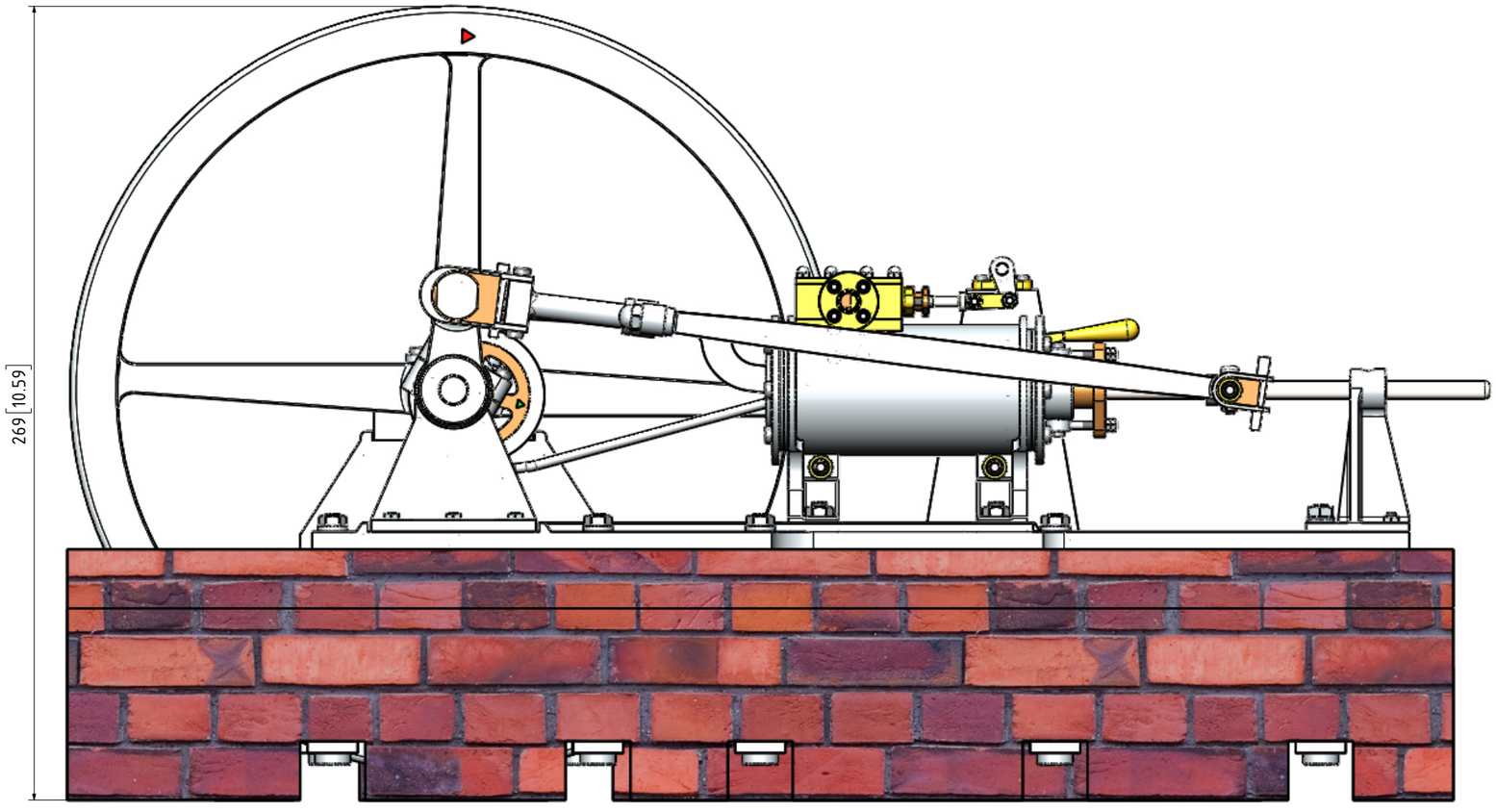
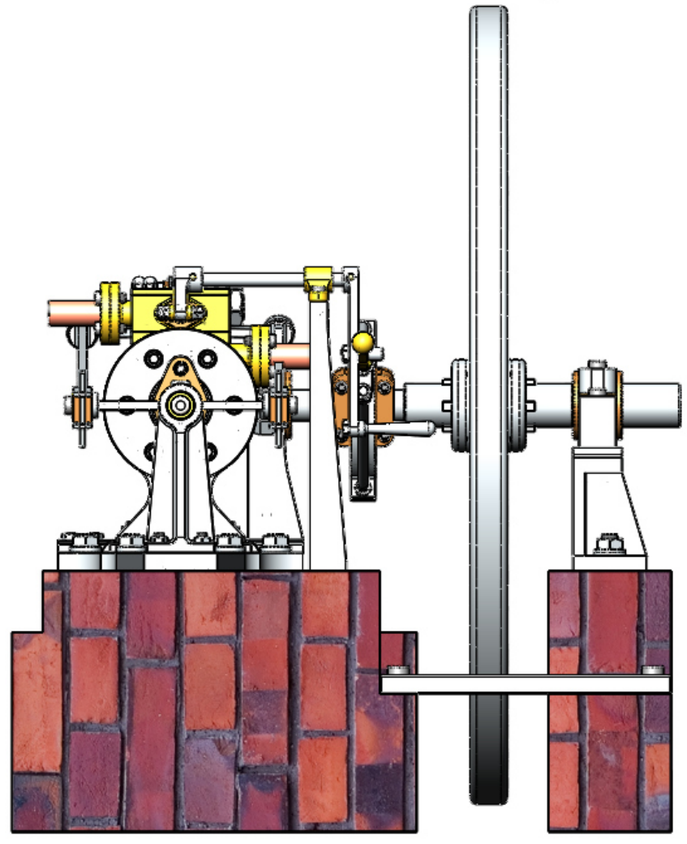








NOTES: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE ORIGINAL DRAWINGS HAD LIMITED DIMENSIONS. ORIGINATOR/AUTHOR AND DATE OF DRAWINGS UNKNOWN. THIS ENGINE COULD BE MADE USING STANDARD BAR STOCK

TITLE
A MODEL OF A FIELDHOUSE WINDING ENGINE DRIVEN BY STEAM. (B=28mm/ST=64mm)

DRAWING CONTENTS
GENERAL ARRANGEMENT AND ISOMETRIC VIEW

PROJECT No 09E-41-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS | MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
DATE MARCH 2020 | Copyright © J.A.M. DE WAAL PAPAKURA NZ
SHEET: 01 OF 06 | A3 | No: 09E-41-00-SHT01

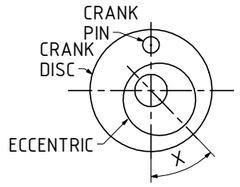
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

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 PREFERRED 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 SPRINGWASHERS SHALL BE USED WHERE DEEMED NECESSARY.
XX. ERRORS AND/OR OMISSIONS MAY OCCUR IN THE DRAWINGS, DO NOT HESITATE TO CONTACT ME SO THAT THE ERRORS/OMISSIONS CAN BE RECTIFIED.

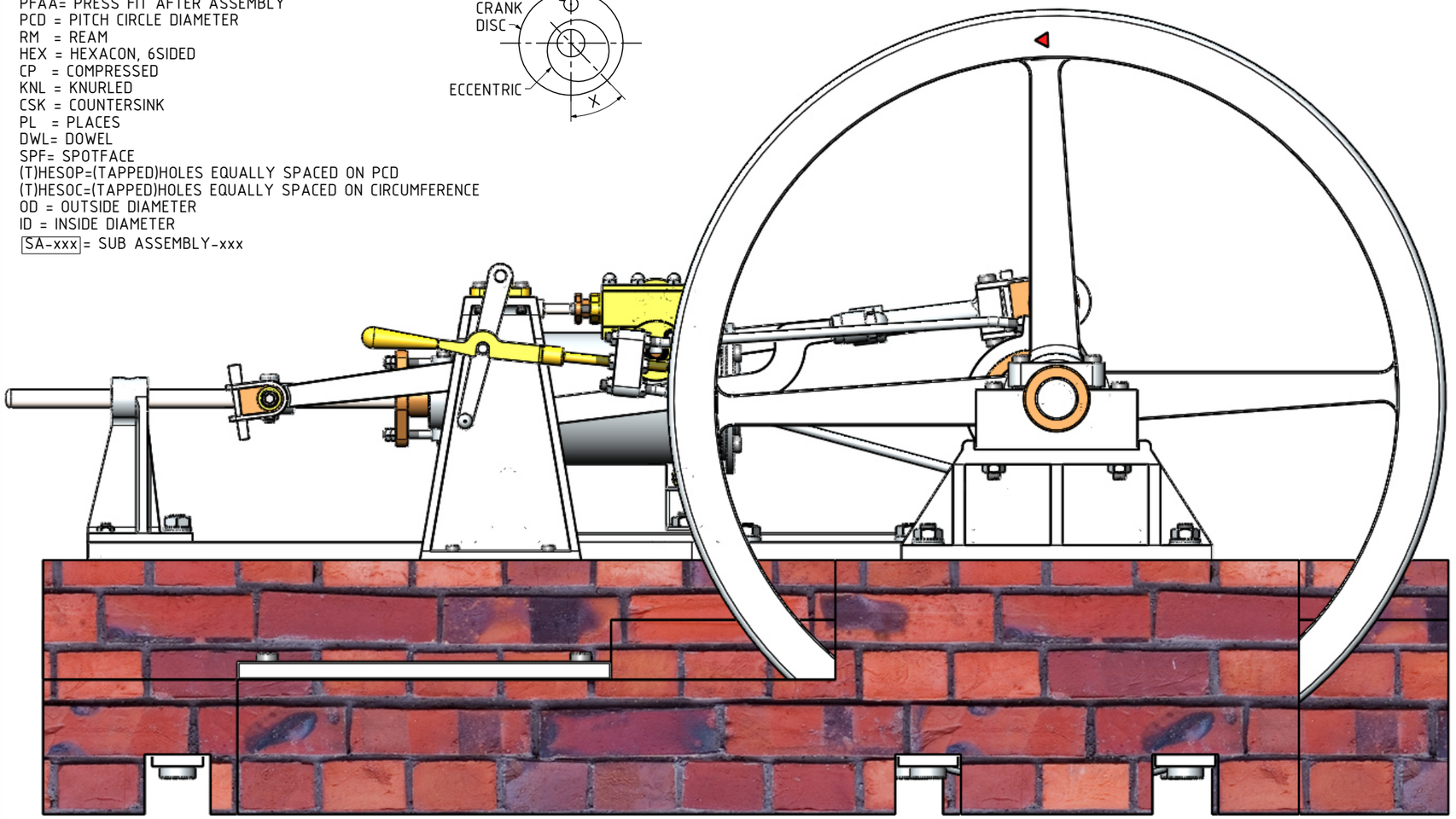
MATERIAL ABBREVIATIONS:
ALU = ALUMINIUM
HALU= HARD ALUMINIUM
BRS = BRASS
BRZ = BRONZE OR GUNMETAL (BRZ/GM)
CI = CAST IRON
CU = COPPER
GRA = GRAPHITE
MS = MILD STEEL/BRIGHT MILD STEEL
SS = SILVER STEEL OR STAINLESS STEEL
SPS = SPRING STEEL
PEEK= POLYETHER ETHER KETONE
SYN = SYNTHETIC MATERIAL SUCH AS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

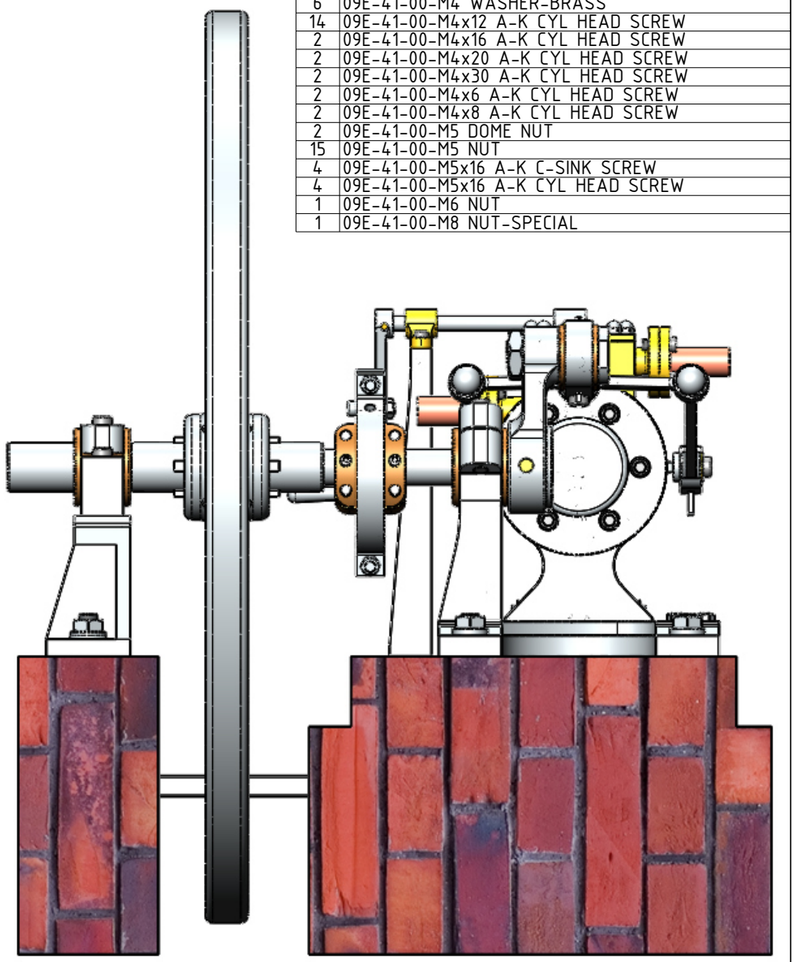
OTHER ABBREVIATIONS
AS = AS SHOWN
DP = DEEP
DAA= DRILL AFTER ASSEMBLY
D&TAA= DRILL AND TAP AFTER ASSEMBLY
CF = CLOSE FIT (SIZE FOR SIZE)
PF = PRESS FIT
PFAA= PRESS FIT AFTER ASSEMBLY
PCD = PITCH CIRCLE DIAMETER
RM = REAM
HEX = HEXACON, 6SIDED
CP = COMPRESSED
KNL = KNURLED
CSK = COUNTERSINK
PL = PLACES
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
SA-xxx = SUB ASSEMBLY-xxx

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	09E-41-00-1-01-BASE
10	09E-41-00-1-02-TIE BOLT
1	09E-41-00-1-02-TIE BOLT
1	09E-41-00-1-03-ENGINE BEDPLATE
1	09E-41-00-1-04-BEDPLATE CRANK SHAFT BEARING
1	09E-41-00-1-05-OUTER CRANK SHAFT BEARING
1	09E-41-00-1-06-ROCKING SPINDLE SUPPORT STAND
1	09E-41-00-1-07-PISTON ROD SUPPORT BEARING
1	09E-41-00-1-08-CYLINDER
1	09E-41-00-1-09-CYLINDER FRONT COVER
1	09E-41-00-1-10-CYLINDER REAR COVER
2	09E-41-00-1-11-INLET-EXHAUST PIPE
1	09E-41-00-2-01-CRANKSHAFT+FLYWHEEL
1	09E-41-00-2-02-PISTON+CROSSHEAD
1	09E-41-00-2-03-LEFTHAND CON-ROD
1	09E-41-00-2-04-RIGHTHAND CON-ROD
1	09E-41-00-2-05-CON-ROD BIG END
1	09E-41-00-2-06-SLIDE VALVE
1	09E-41-00-2-07-ECCENTRIC SHEAVE
1	09E-41-00-2-08-SLIDE VALVE ROCKING SHAFT
2	09E-41-00-2-09-ROCKING SHAFT LINK PLATE
1	09E-41-00-2-10-ECCENTRIC STRAP
8	09E-41-00-M2.5 DOME NUT
12	09E-41-00-M2.5 NUT
4	09E-41-00-M2.5 WASHER-BRASS
2	09E-41-00-M2.5x10 A-K CYL HEAD SCREW
8	09E-41-00-M2.5x20THREADED ROD
19	09E-41-00-M3 NUT
5	09E-41-00-M3x12 A-K C-SINK SCREW
4	09E-41-00-M3x14 A-K CYL HEAD SCREW
3	09E-41-00-M3x18 A-K C-SINK SCREW
2	09E-41-00-M3x5 A-K GRUB SCREW
14	09E-41-00-M3x8 A-K CYL HEAD SCREW
4	09E-41-00-M4 NUT
6	09E-41-00-M4 WASHER-BRASS
14	09E-41-00-M4x12 A-K CYL HEAD SCREW
2	09E-41-00-M4x16 A-K CYL HEAD SCREW
2	09E-41-00-M4x20 A-K CYL HEAD SCREW
2	09E-41-00-M4x30 A-K CYL HEAD SCREW
2	09E-41-00-M4x6 A-K CYL HEAD SCREW
2	09E-41-00-M4x8 A-K CYL HEAD SCREW
2	09E-41-00-M5 DOME NUT
15	09E-41-00-M5 NUT
4	09E-41-00-M5x16 A-K C-SINK SCREW
4	09E-41-00-M5x16 A-K CYL HEAD SCREW
1	09E-41-00-M6 NUT
1	09E-41-00-M8 NUT-SPECIAL





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TITLE
A MODEL OF A FIELDHOUSE WINDING ENGINE DRIVEN BY STEAM. (B=28mm/ST=64mm)

DRAWING CONTENTS
GENERAL ARRANGEMENT, NOTES AND BILL OF MATERIALS

PROJECT No 09E-41-00

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS

DATE MARCH 2020

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

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SHEET: 02 OF 06 | A3 | No: 09E-41-00-SHT02

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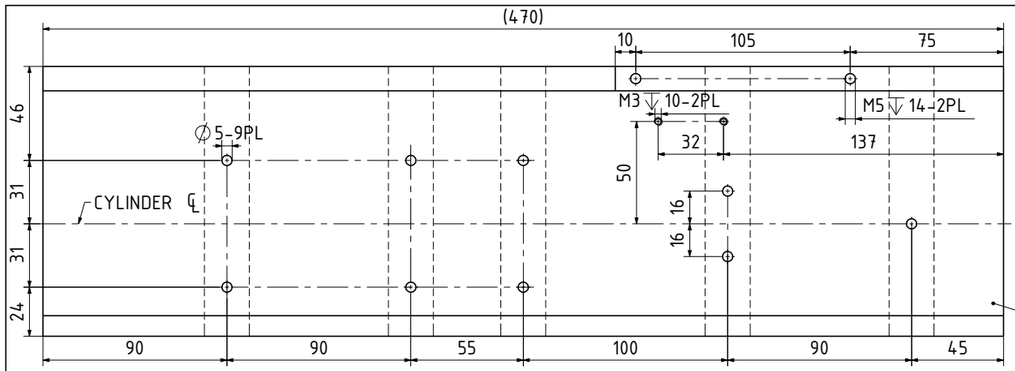

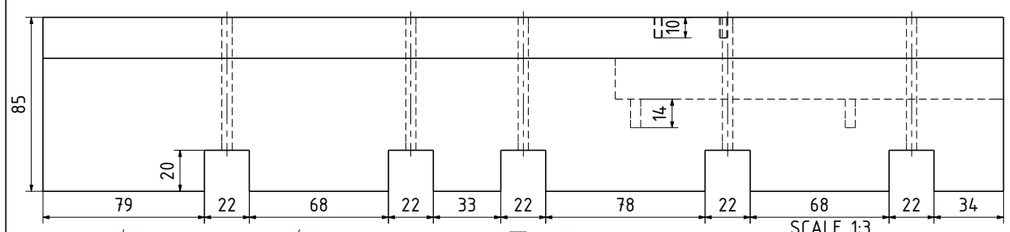

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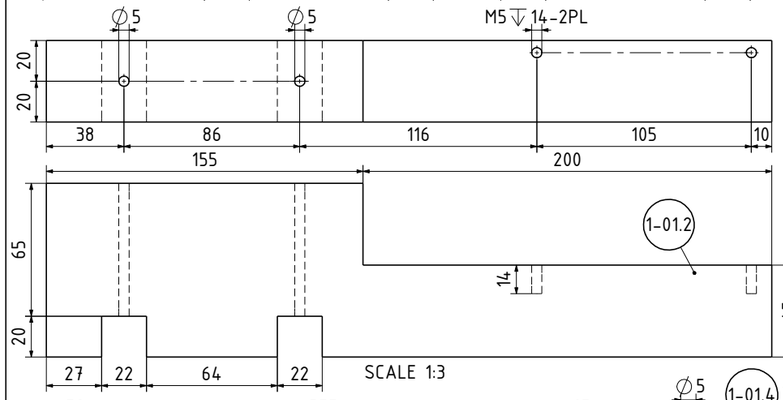

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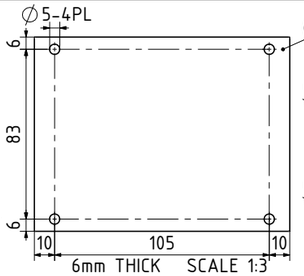

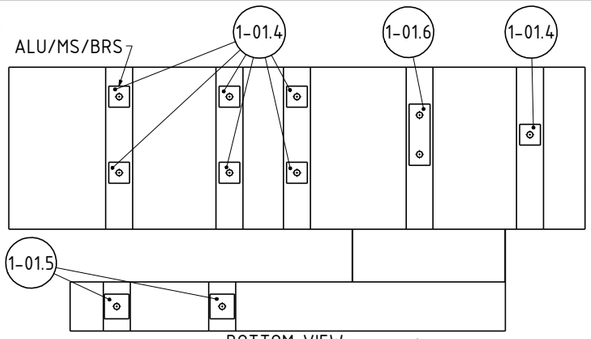

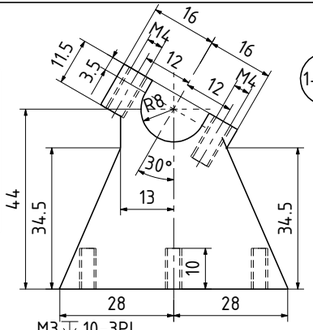

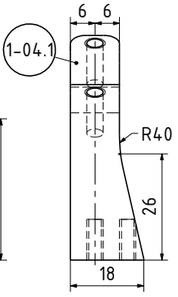

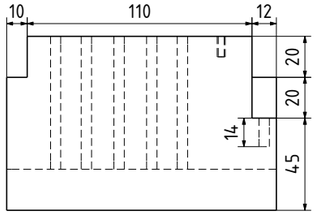

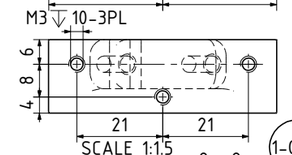

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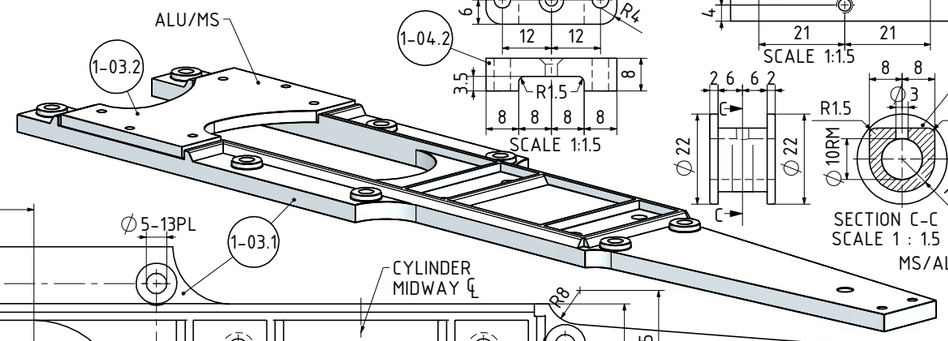

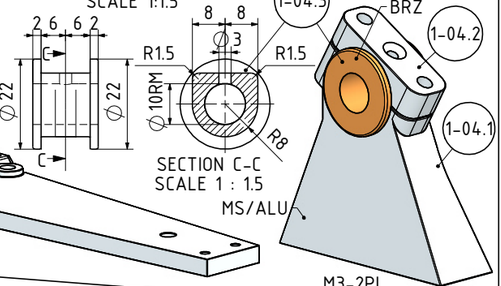

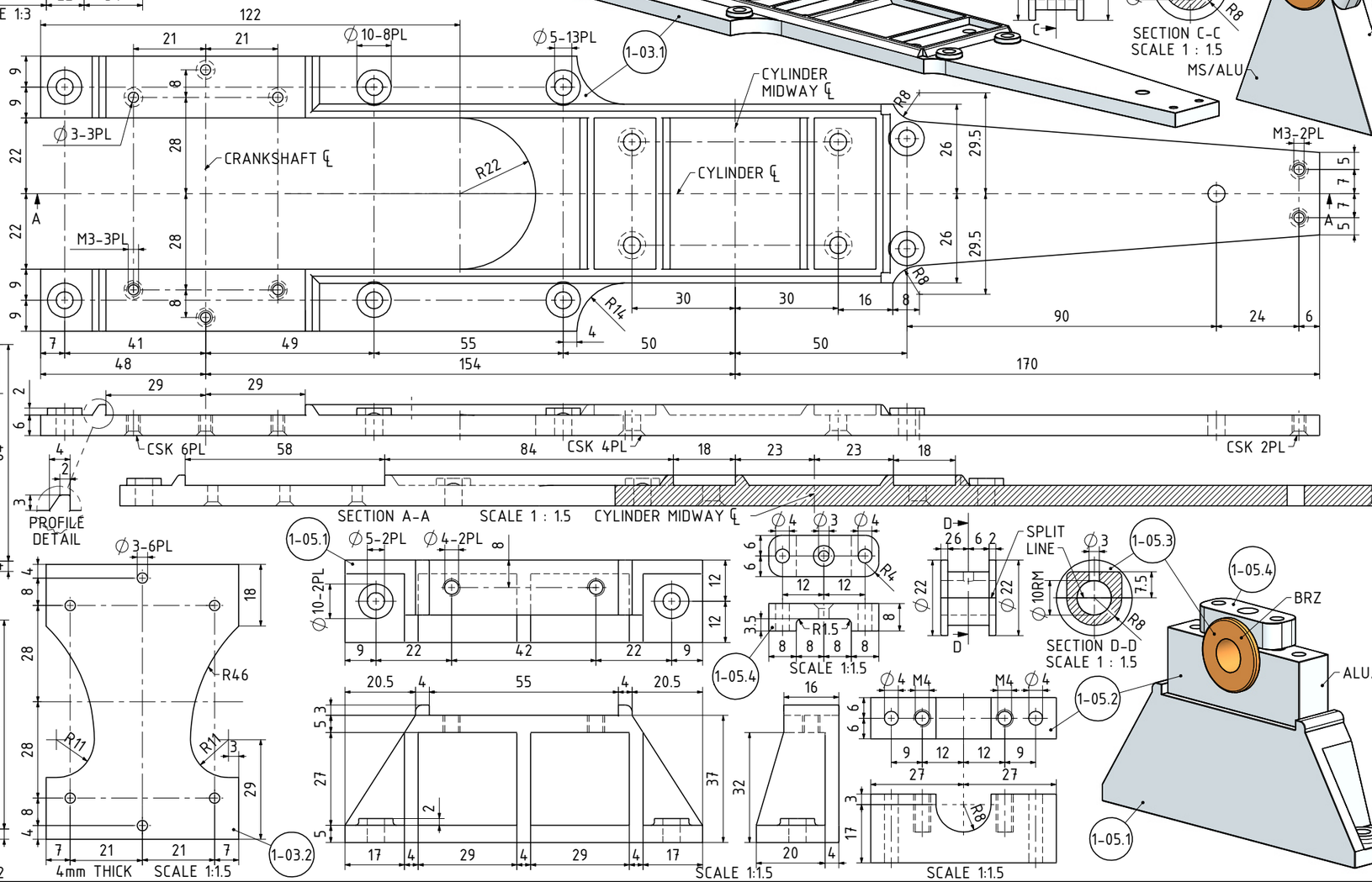

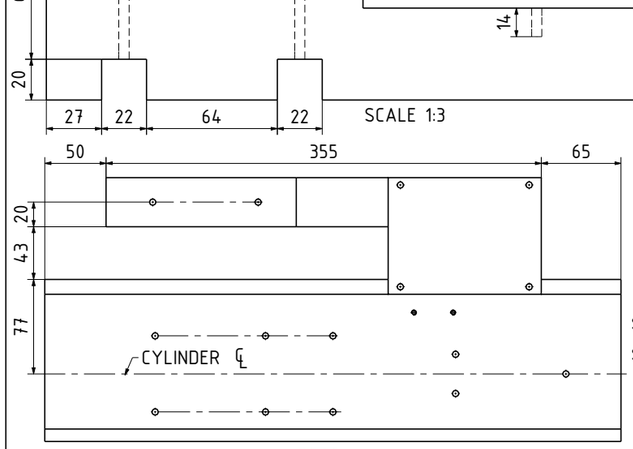

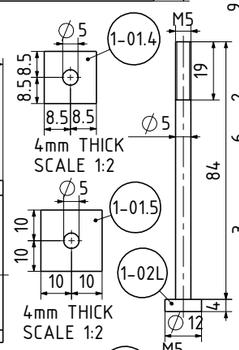

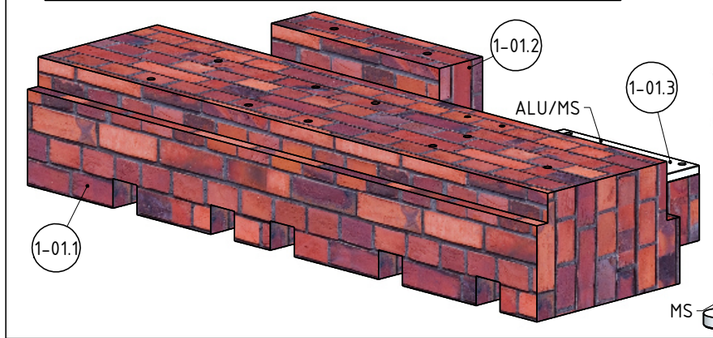

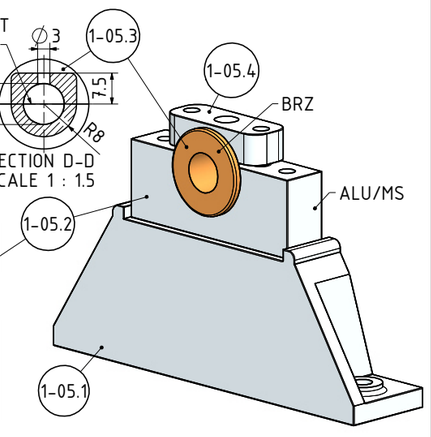

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TITLE

A MODEL OF A FIELDHOUSE WINDING ENGINE DRIVEN BY STEAM. (B=28mm/ST=64mm)

DRAWING CONTENTS

PARTS AND ASSMBLIES

PROJECT No 09E-41-00

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS | MODEL SCALE: 1:1

DATE MARCH 2020 | DWG SCALE: 1:1 @A3 OR AS SHOWN

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SHEET: 03 OF 06 | A3 | No: 09E-41-00-SHT03

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SECTION A-A
SCALE 1 : 1.5

SECTION D-D

SECTION B-B

SECTION F-F
SCALE 1 : 1.5

DETAIL E
SCALE 2 : 1

SECTION C-C

SECTION H-H

BOTTOM VIEW

SEAL

SOLDER

4mm THICK SCALE 1:1.5
HARDSOLDER/BRAZE ONTO
1-08.1 FLAT MARKED "A"

SCALE 1:1.5

SCALE 1:1.5

36 SCALE 1:1.5

2mm THICK SCALE 1:1.5

SECTION G-G

REFER TO 1-08.9

OPPOSITE
FACE EQUAL

DRAIN HOLES

THESE DRAIN HOLES TO BE
DRILLED AFETR ASSEMBLY

HOLES TO BE TAKEN
OVER FROM 1-08.1

HOLES TO BE TAKEN
OVER FROM 1-08.4

HOLES TO BE TAKEN
OVER FROM 1-08.5

SLOTS TO BE TAKEN
OVER FROM 1-08.1

PRESS FIT AND BRAZE

SA-1-101

SA-1-102

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PARTS AND ASSMBLIES

PROJECT No 09E-41-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA
2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS | MODEL SCALE: 1:1
DATE MARCH 2020 | DWG SCALE: 1:1 @A3 OR AS SHOWN
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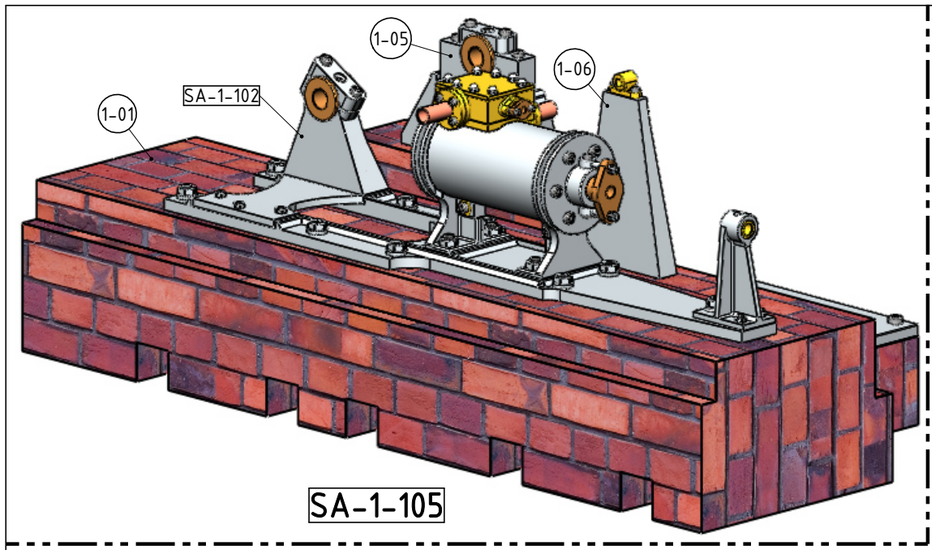
SHEET: 04 OF 06 | A3 | No: 09E-41-00-SHT04

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES



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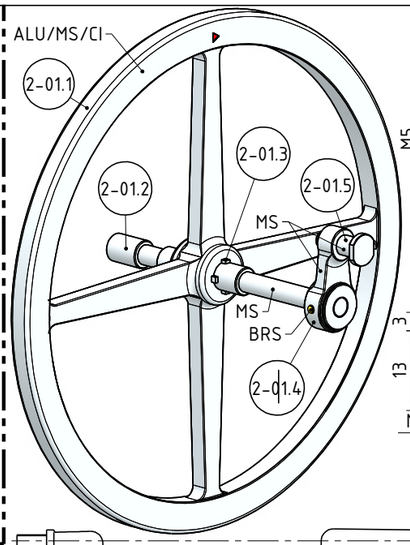

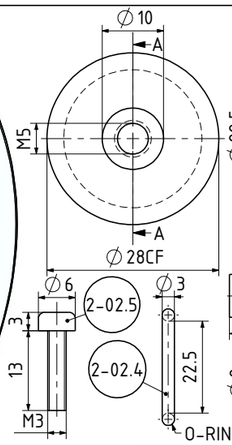

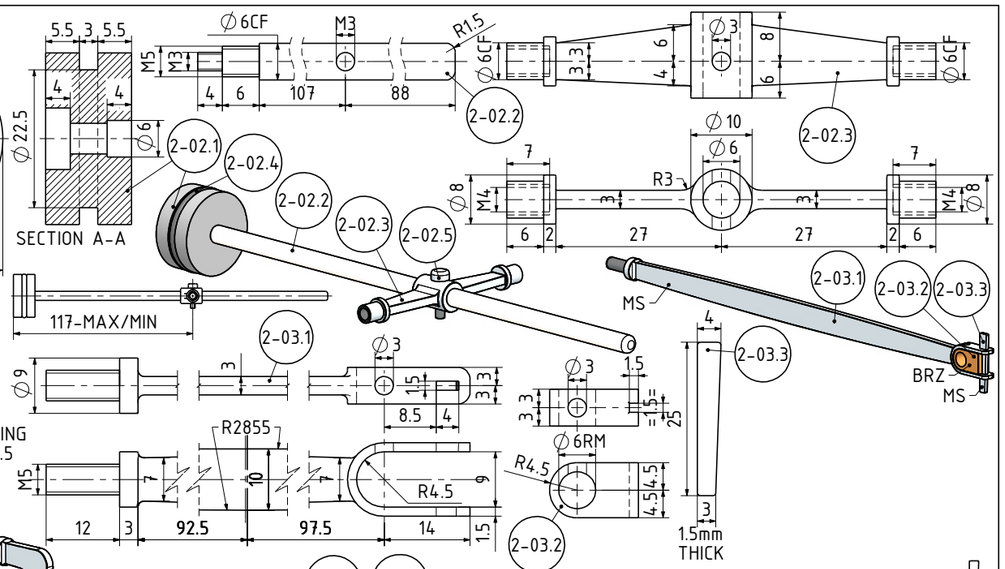

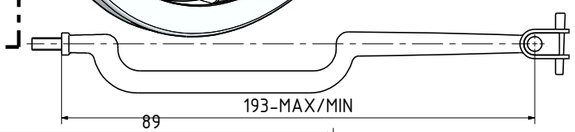

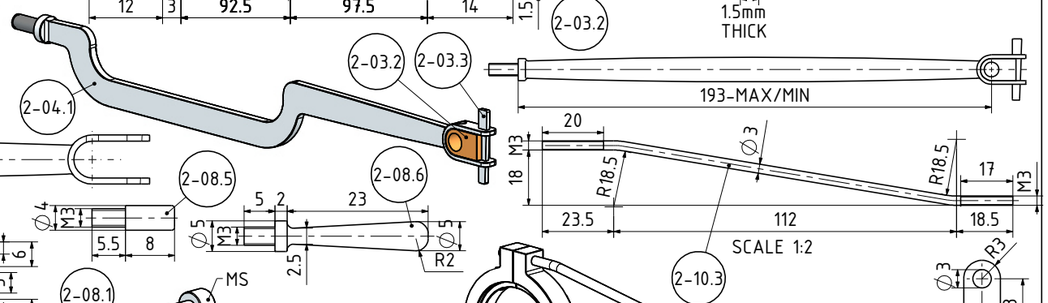

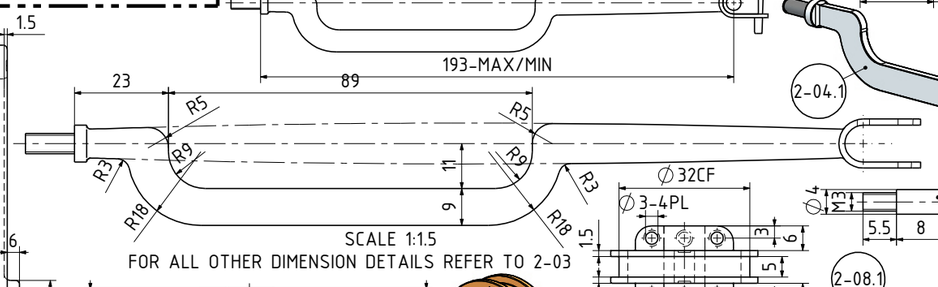

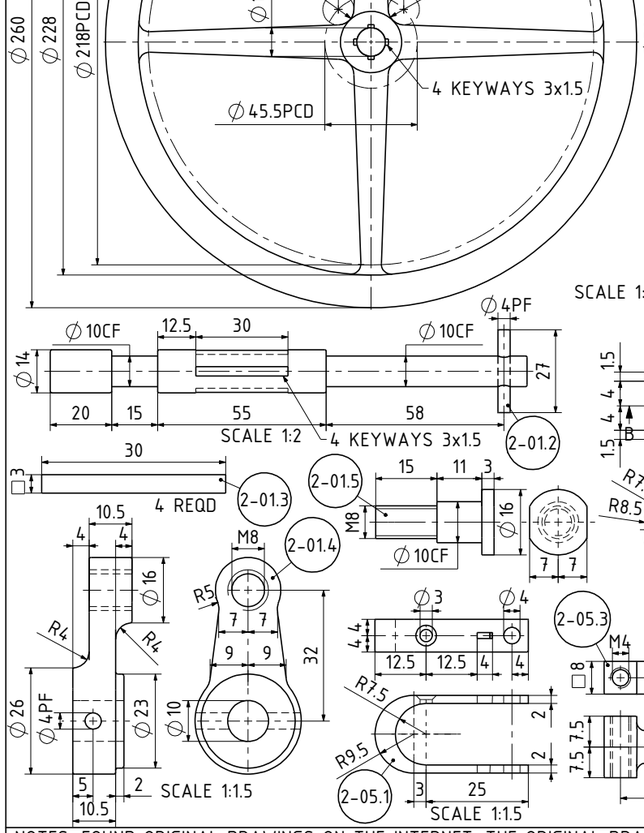

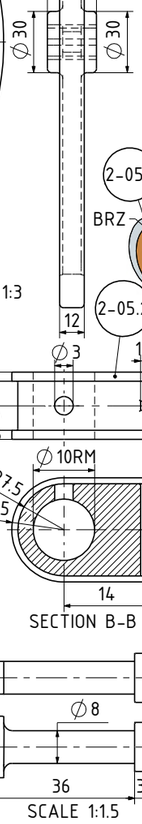

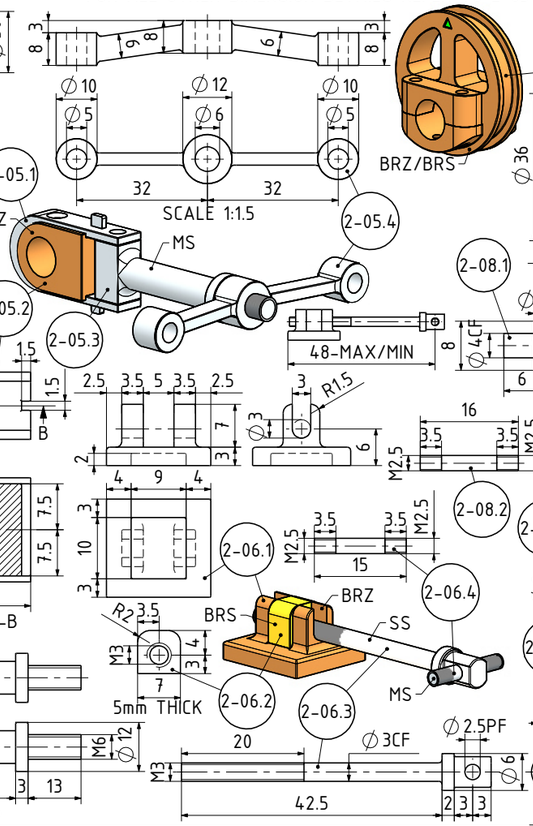

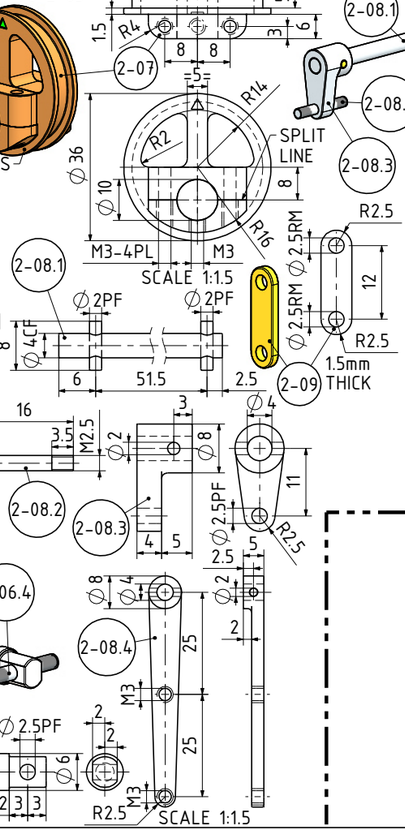

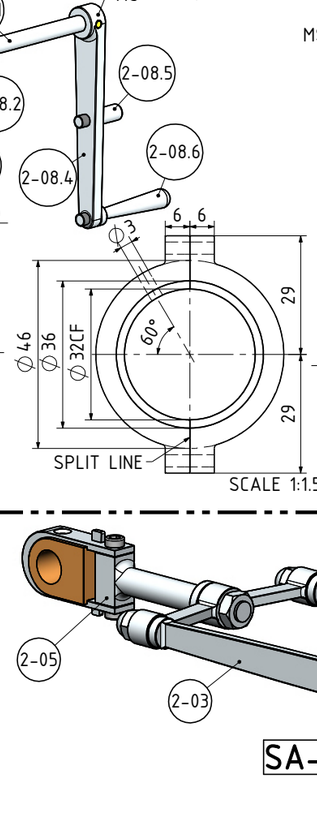

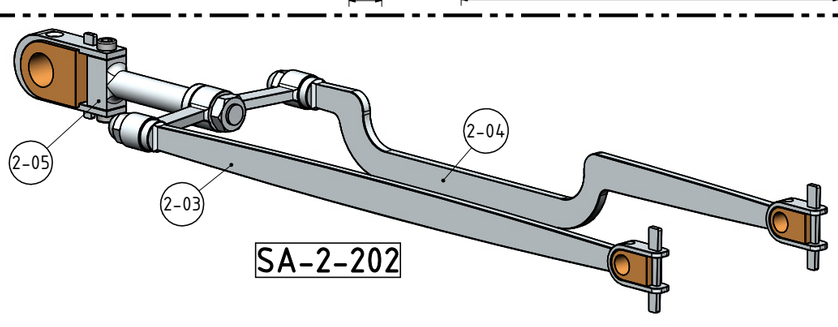

NOTES: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE ORIGINAL DRAWINGS HAD LIMITED DIMENSIONS. ORIGINATOR/AUTHOR AND DATE OF DRAWINGS UNKNOWN. THIS ENGINE COULD BE MADE USING STANDARD BAR STOCK

TITLE

A MODEL OF A FIELDHOUSE WINDING ENGINE DRIVEN BY STEAM. (B=28mm/ST=64mm)

DRAWING CONTENTS

PARTS AND ASSMBLIES

PROJECT No 09E-41-00

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS | MODEL SCALE: 1:1

DATE MARCH 2020 | DWG SCALE: 1:1 @A3 OR AS SHOWN

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SHEET: 05 OF 06 | A3 | No: 09E-41-00-SHT05

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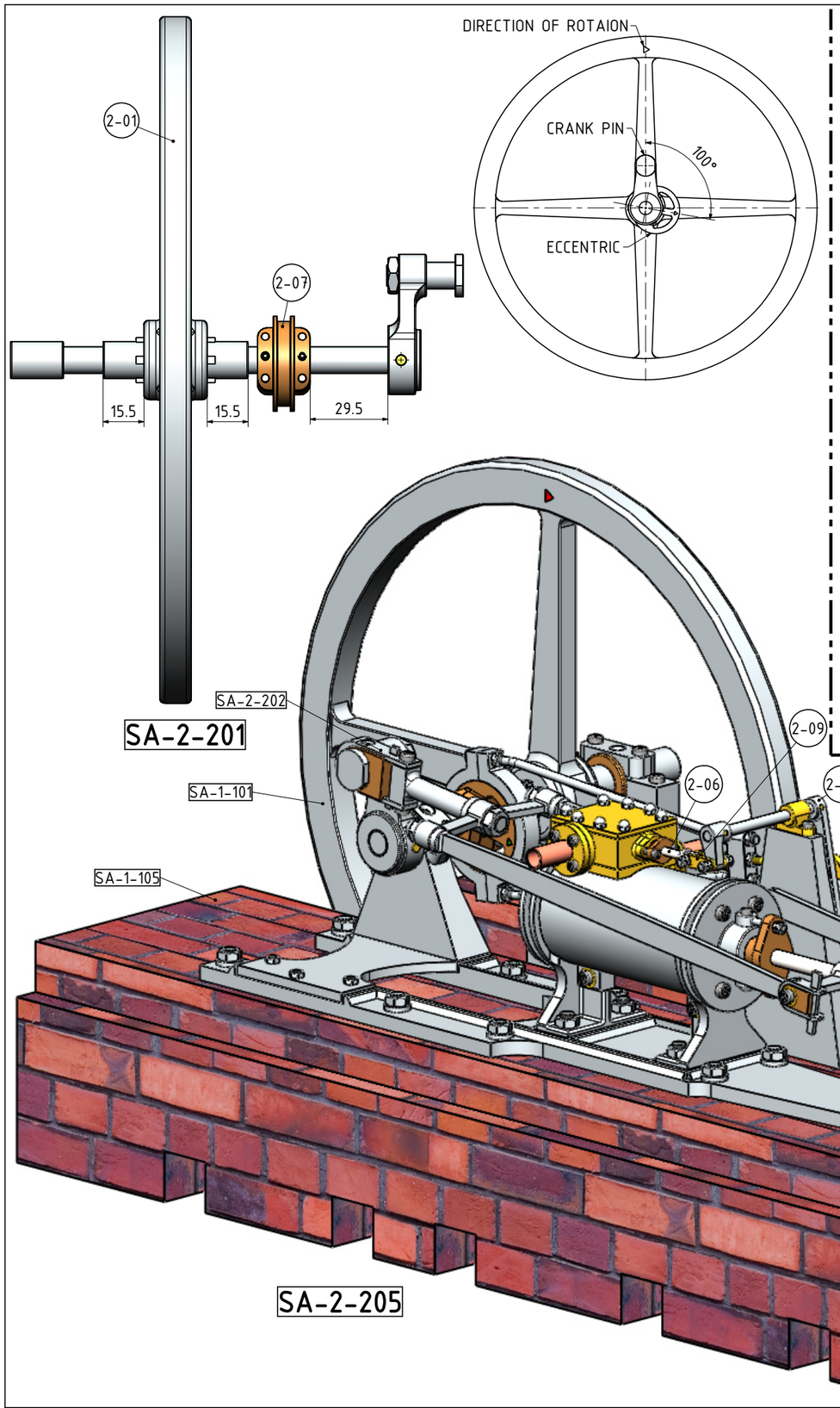

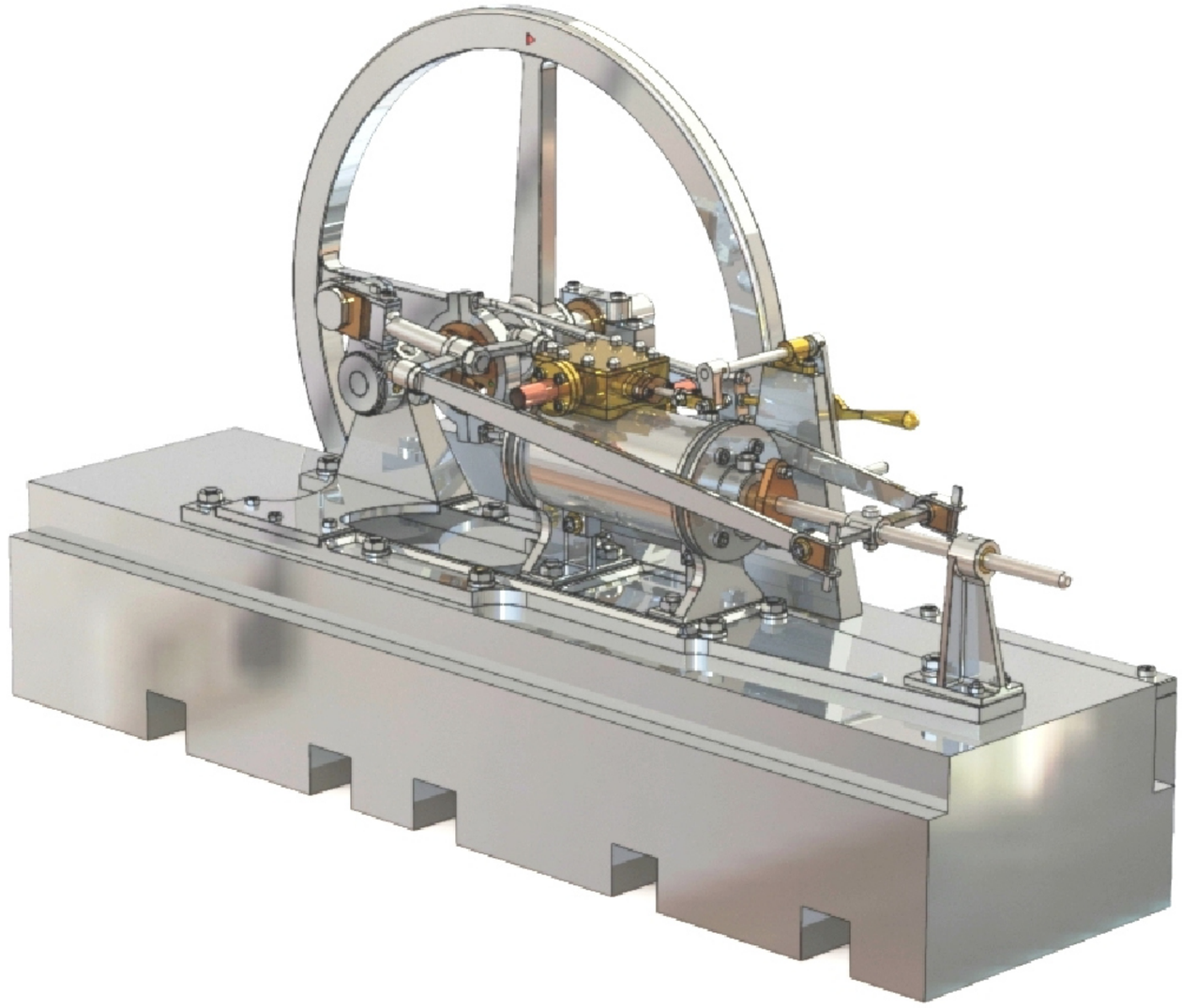

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DRAWING CONTENTS
PARTS AND ASSMBLIES, RENDERED PICTURE

PROJECT No 09E-41-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS | MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
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