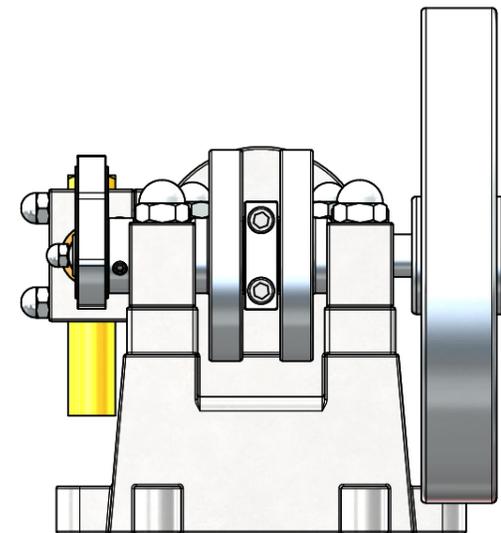
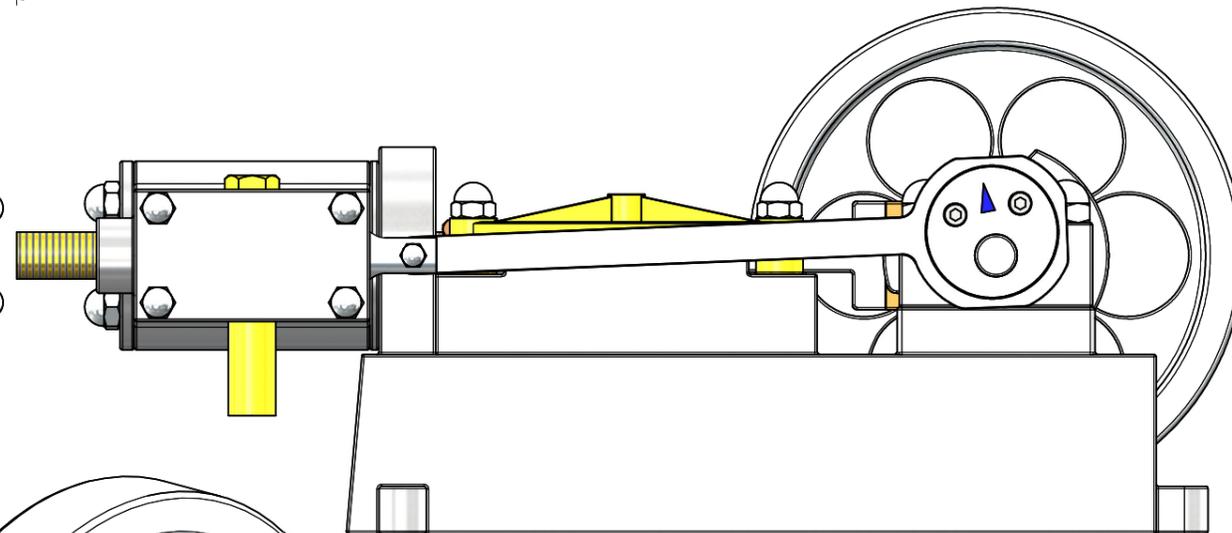
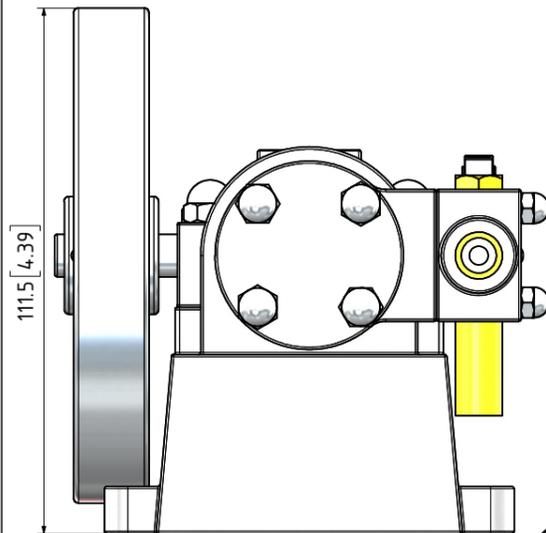
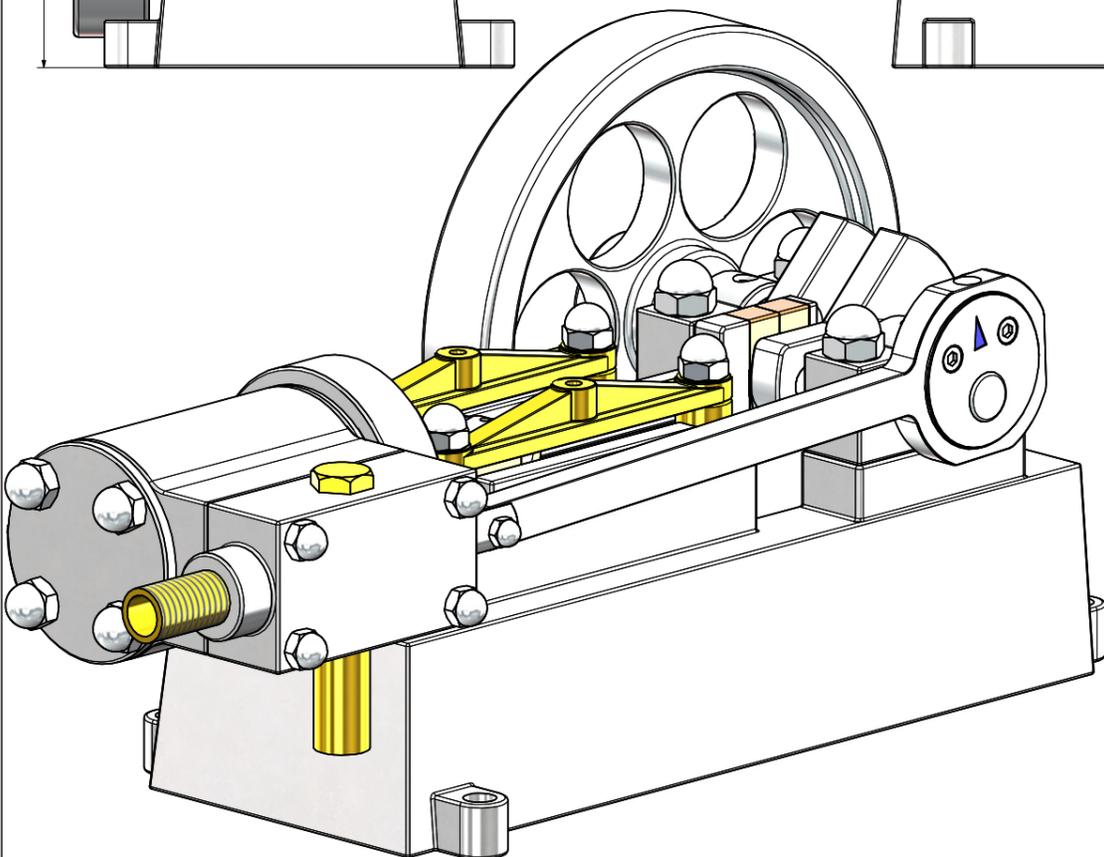
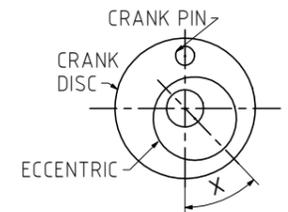


MATERIAL ABBREVIATIONS:
 ALU = ALUMINIUM
 HALU= HARD ALUMINIUM
 BRS = BRASS
 PBRZ= PHOSPHORE BRONZE
 BRZ = BRONZE OR GUNMETAL (BRZ/GM)
 OLT = OILITE
 CI = CAST IRON
 CU = COPPER
 GRA = GRAPHITE
 MS = MILD STEEL/BRIGHT MILD STEEL
 SS = SILVER STEEL OR STAINLESS STEEL
 SPS = SPRING STEEL
 PEEK= POLYETHER 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

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 = HEXAGON, 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



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



- 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 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 SPRING WASHERS SHALL BE USED WHERE DEEMED NECESSARY.
 14. USE SEALING GASKETS WERE DEEMED NECESSARY.
 15. 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.

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

QTY.	PART NUMBER
1	09B-50-00-1-01-BASE
1	09B-50-00-1-02-CYLINDER+VALVE CHEST
2	09B-50-00-1-03-CROSS HEAD GUIDE
1	09B-50-00-2-01-CRANK SHAFT+FLYWHEEL
1	09B-50-00-2-02-PISTON+CROSSHEAD
1	09B-50-00-2-03-CON-ROD
1	09B-50-00-2-04-SPOOLVALVE
1	09B-50-00-2-05-ECCENTRIC STRAP
2	09B-50-00-M3 DOME NUT
3	09B-50-00-M3x3.5 A-K GRUB SCREW
2	09B-50-00-M3x7 A-K C-SINK SCREW
1	09B-50-00-M3x8 A-K GRUB SCREW
1	09B-50-00-M4 NUT
2	09B-50-00-M4x24 A-K CYL HEAD SCREW
4	09B-50-00-M4x24 DOME HEAD SCREW
1	09B-50-00-M5 NUT
4	09B-50-00-M5x28 DOME HEAD SCREW
4	09B-50-00-M5x67 DOME HEAD SCREW
4	09B-50-00-M6x26 DOME HEAD SCREW

NOTES: THE ENGINE SHOWN ON THESE DRAWINGS ARE LOOSLY BASED ON A UNDIMENSIONED DRAWING AND PICTURES WHICH I FOUND ON THE INTERNET. THE DRAWING WAS DRAWN BY SIMON ROWLEY, AND DATED OCT-2017. NO SCALE INDICATED.

TITLE
1 CYLINDER NON REVERSABLE HORIZONTAL STEAM ENGINE (BORE=22mm STROKE=32mm)

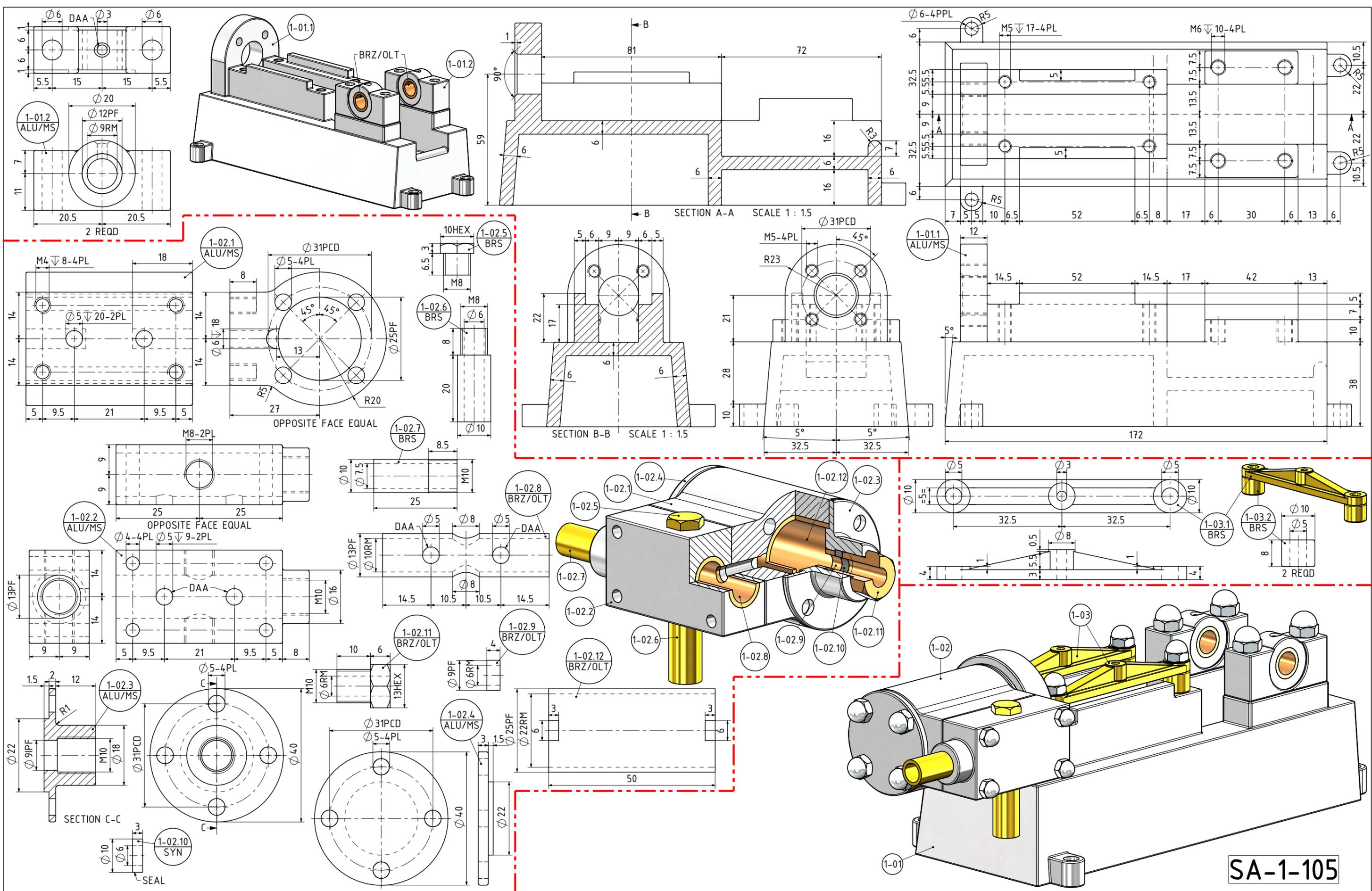
DRAWING CONTENTS
GENERAL ARRANGEMENT, ISOMETRIC VIEW, NOTES, BILL OF MATERIALS

PROJECT No 09B-50-00
 JDW DRAUGHTING SERVICES
 J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAKAPURA
 2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION

 DATE AUGUST 2025
 SHEET: 01 OF 03

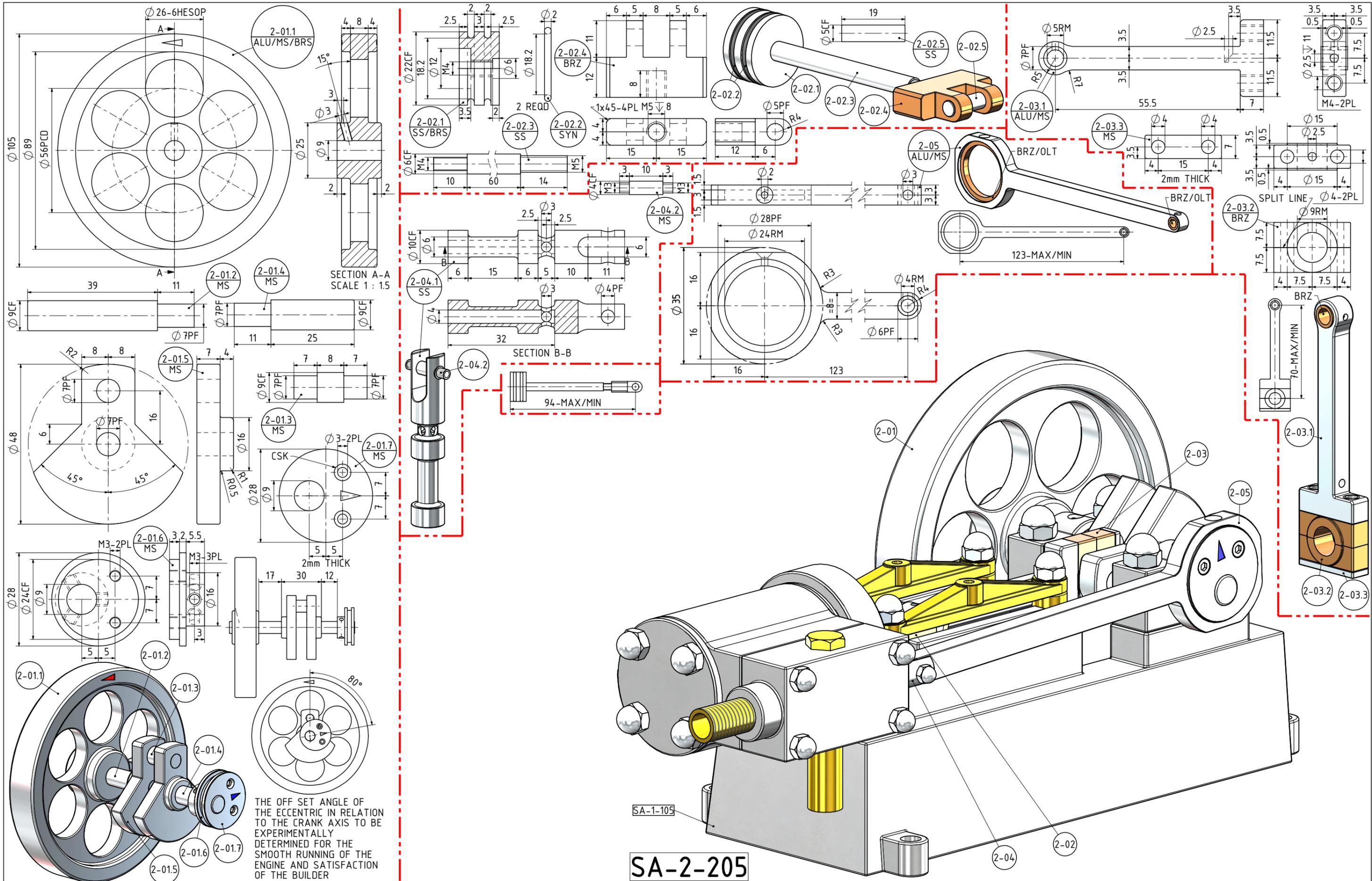
MODEL SCALE: 1:1
 DWG SCALE: 1:1 @A3 OR AS SHOWN
 Copyright © J.A.M. DE WAAL PAKAPURA NZ
A3 No:09B-50-00-SHT-01



NOTES: THE ENGINE SHOWN ON THESE DRAWINGS ARE LOOSLY BASED ON A UNDIMENSIONED DRAWING AND PICTURES WHICH I FOUND ON THE INTERNET. THE DRAWING WAS DRAWN BY SIMON ROWLEY, AND DATED OCT-2017. NO SCALE INDICATED.

<p>TITLE 1 CYLINDER NON REVERSABLE HORIZONTAL STEAM ENGINE (BORE=22mm STROKE=32mm)</p>	<p>DRAWING CONTENTS PARTS AND ASSEMBLIES</p>	<p>PROJECT No 09B-50-00 JDW DRAUGHTING SERVICES J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAPAOKURA 2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.</p>	<p>PROJECTION JDWDS DATE AUGUST 2025</p>	<p>MODEL SCALE: 1:1 DWG SCALE: 1:1 @A3 OR AS SHOWN Copyright © J.A.M. DE WAAL PAPAOKURA NZ SHEET: 02 OF 03 A3 No:09B-50-00-SHT-02</p>
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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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TITLE
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DRAWING CONTENTS
PARTS AND ASSEMBLIES

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

PROJECTION	JDWDS	MODEL SCALE: 1:1
DATE	AUGUST 2025	DWG SCALE: 1:1 @A3 OR AS SHOWN
SHEET: 03 OF 03	A3	Copyright © J.A.M. DE WAAL PAPAOKURA NZ
No:09B-50-00-SHT-03		

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