

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

NOTES: THE ENGINE SHOWN ON THESE DRAWINGS ARE LOOSLY BASED ON A PICTURE(S) WHICH I FOUND ON THE INTERNET. THE PICTURE WAS SUPPLIED BY SIMON ROWLEY. A SINGLE CYLINDER OF THIS SAME ENGINE IS ALSO AVAILABLE UNDER MY DRAWING NUMBER 09E-71-00

TITLE
2x1 CYLINDER NON REVERSABLE BALANCED BEAM ENGINE (BORE=22mm STROKE=32mm)

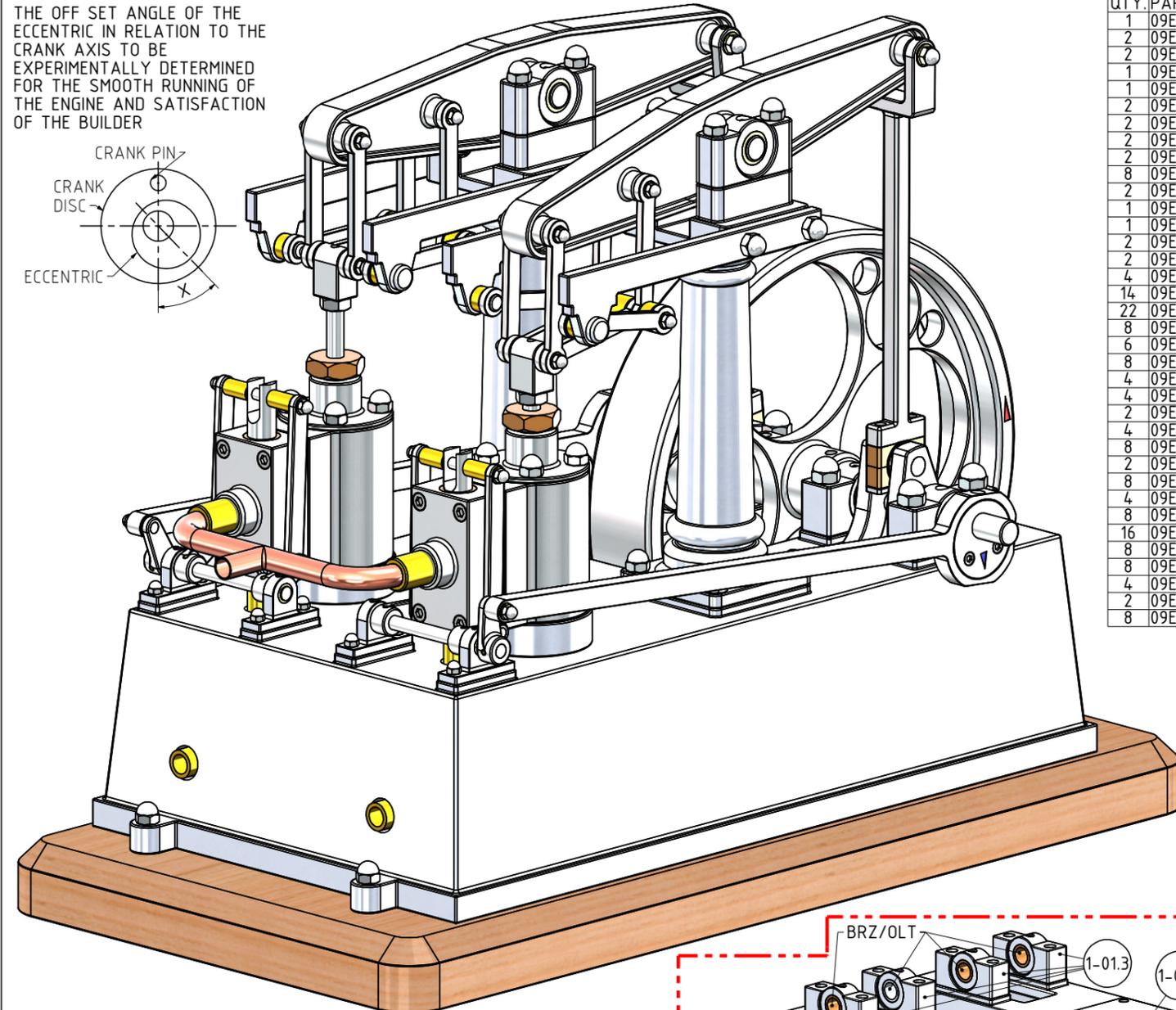
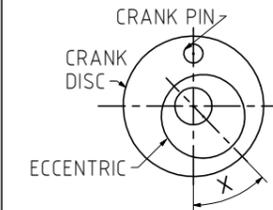
DRAWING CONTENTS
GENERAL ARRANGEMENT, NOTES

PROJECT No 09E-71-01
 JDW DRAUGHTING SERVICES
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PROJECTION	JDWDS	MODEL SCALE: 1:1
DATE	JULY 2025	DWG SCALE: 1:1 @A3 OR AS SHOWN
SHEET: 01 OF 04	A3	Copyright © J.A.M. DE WAAL PAKAPURA NZ
No:09E-71-01-SHT-01		

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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



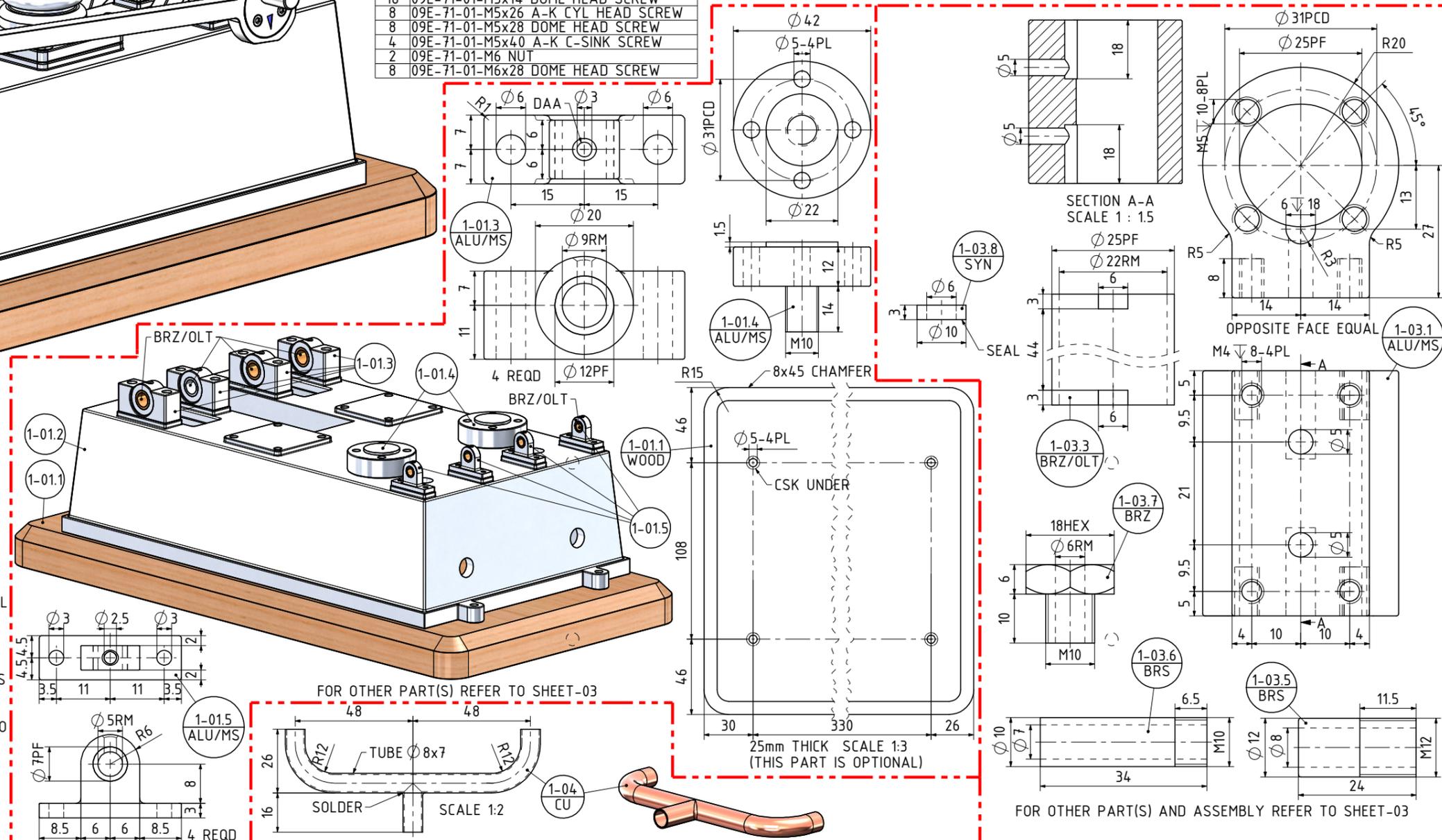
QTY.	PART NUMBER
1	09E-71-01-1-01-BASE FRAME
2	09E-71-01-1-02-BEAM COLUMN
2	09E-71-01-1-03-CYLINDER+VALVE CHEST
1	09E-71-01-1-04-STEAM SUPPLY PIPE
1	09E-71-01-2-01-CRANKSHAFT+FLYWHEEL
2	09E-71-01-2-02-BALANCE BEAM
2	09E-71-01-2-03-CON-ROD
2	09E-71-01-2-04-PARALLEL LINKAGE-1
2	09E-71-01-2-05-PARALLEL LINKAGE-2
8	09E-71-01-2-06-PARALLEL LINKAGE-3
2	09E-71-01-2-07-PISTON+CROSSHEAD
1	09E-71-01-2-08-VALVE ROCKING SHAFT
1	09E-71-01-2-08-VALVE ROCKING SHAFT
2	09E-71-01-2-09-ECCENTRIC STRAP
2	09E-71-01-2-10-SPOOLVALVE+CROSSHEAD
4	09E-71-01-2-11-VALVE LINKAGE
14	09E-71-01-M3 DOME NUT
22	09E-71-01-M3 WASHER
8	09E-71-01-M3x10 DOME HEAD SCREW
6	09E-71-01-M3x3.5 A-K GRUB SCREW
8	09E-71-01-M3x6 DOME HEAD SCREW
4	09E-71-01-M3x7 A-K C-SINK SCREW
4	09E-71-01-M4 DOME NUT
2	09E-71-01-M4 NUT
4	09E-71-01-M4 WASHER
8	09E-71-01-M4x24 A-K C-SINK SCREW
2	09E-71-01-M4x24 DOME HEAD SCREW
8	09E-71-01-M4x8 A-K GRUB SCREW
4	09E-71-01-M5 DOME NUT
8	09E-71-01-M5x10 DOME HEAD SCREW
16	09E-71-01-M5x14 DOME HEAD SCREW
8	09E-71-01-M5x26 A-K CYL HEAD SCREW
8	09E-71-01-M5x28 DOME HEAD SCREW
4	09E-71-01-M5x40 A-K C-SINK SCREW
2	09E-71-01-M6 NUT
8	09E-71-01-M6x28 DOME HEAD SCREW

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.

- 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
 - MAX/MIN = CRITICAL DIMENSION
 - [SA-xxx]= SUB ASSEMBLY-xxx

- 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



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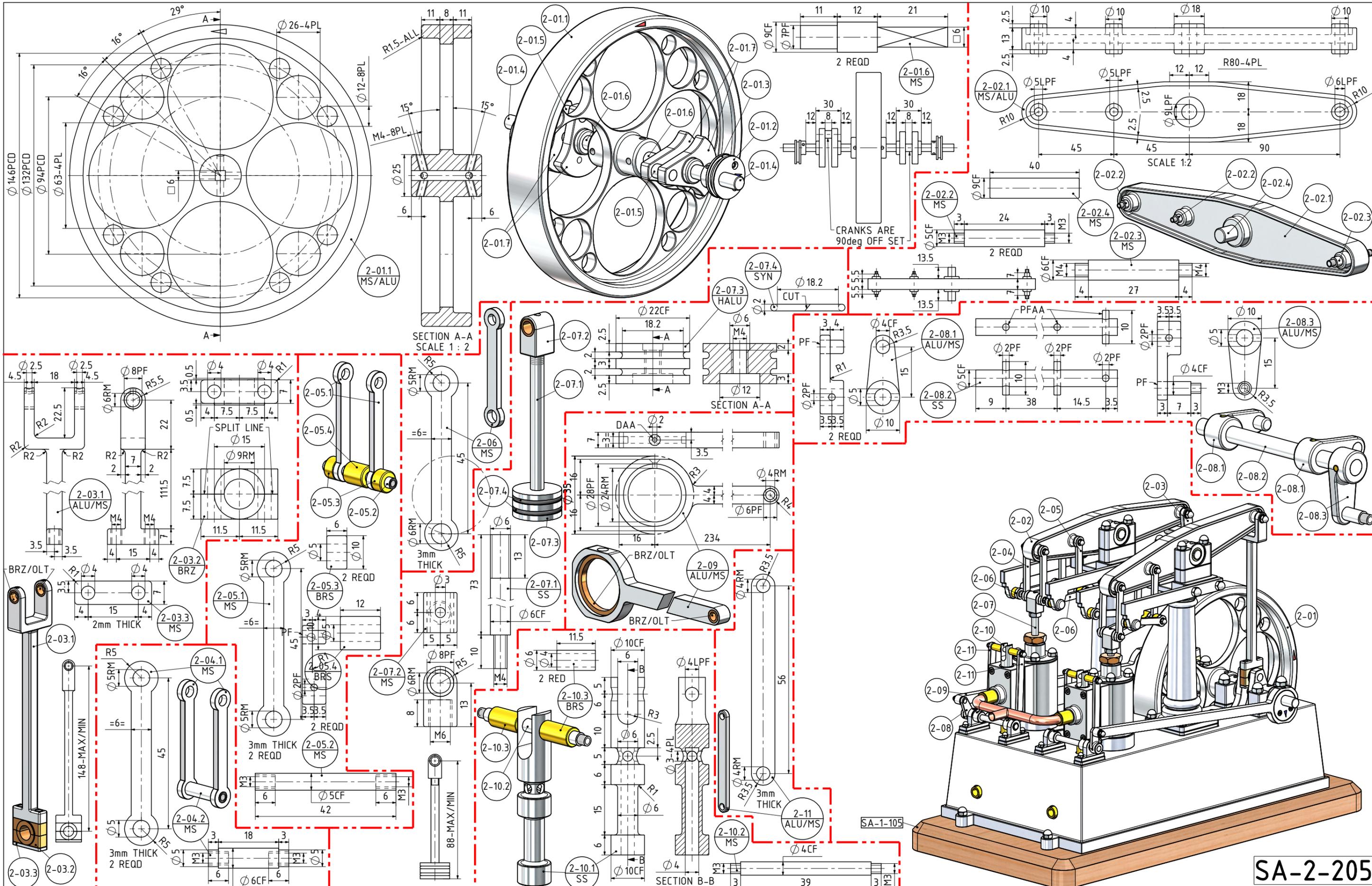
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DRAWING CONTENTS
ISOMETRIC VIEW,BILL OF MATERIALS, NOTES, PARTS AND ASSEMBLIES

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PROJECTION **JDWDS** MODEL SCALE: 1:1
 DWG SCALE: 1:1 @A3 OR AS SHOWN
 DATE JULY 2025 Copyright © J.A.M. DE WAAL PAPAOKURA NZ
 SHEET: 02 OF 04 **A3** No:09E-71-01-SHT-02

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DRAWING CONTENTS
PARTS AND ASSEMBLIES

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PROJECTION **JDWDS** MODEL SCALE: 1:1
 DWG SCALE: 1:1 @A3 OR AS SHOWN
 DATE JULY 2025 Copyright © J.A.M. DE WAAL PAPAOKURA NZ
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