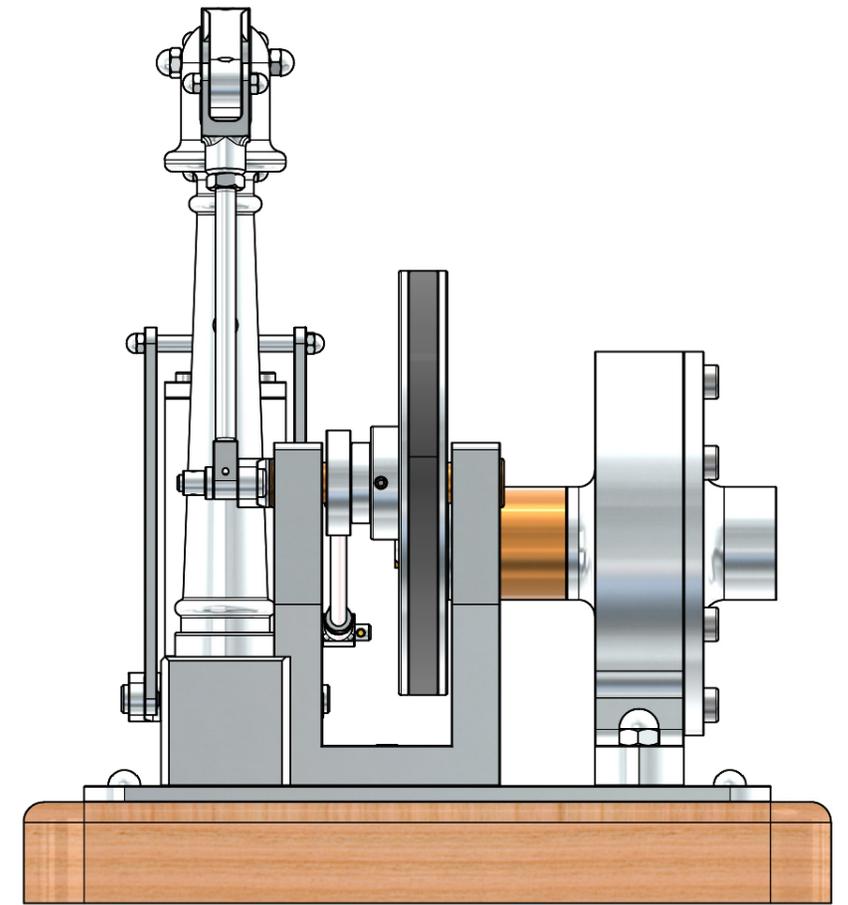
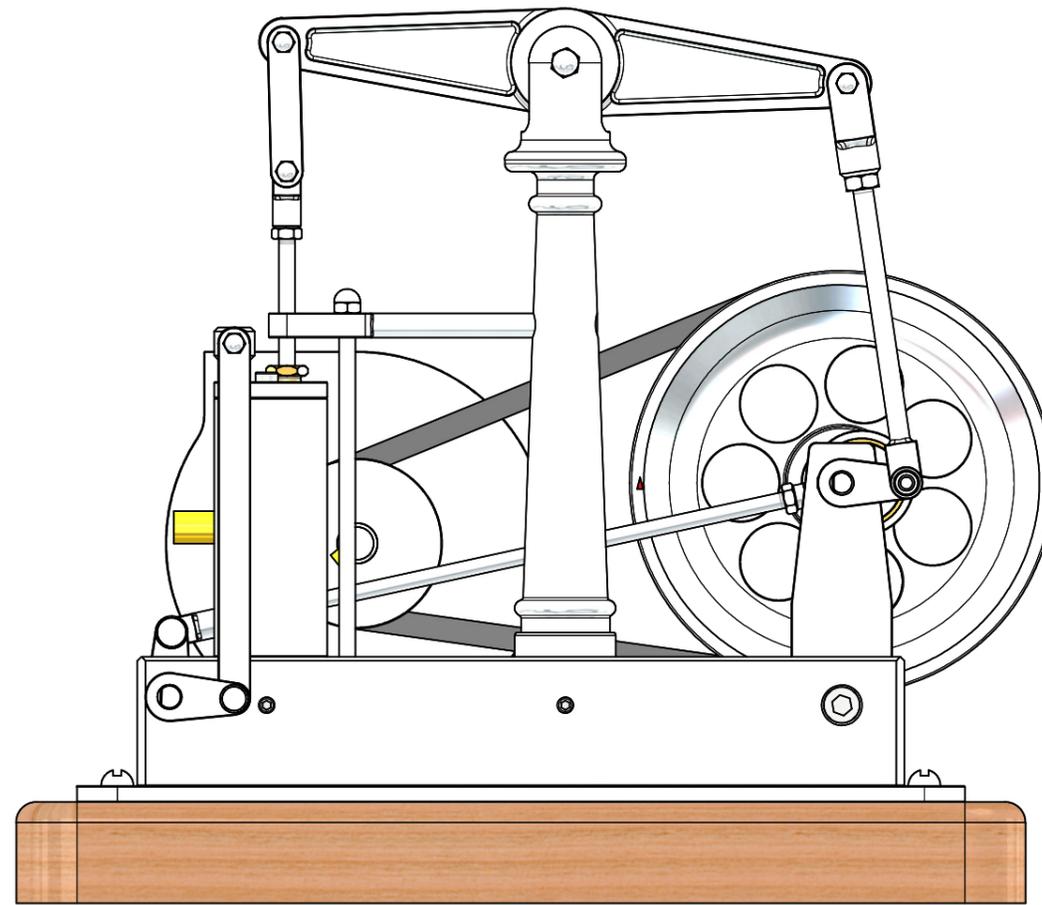
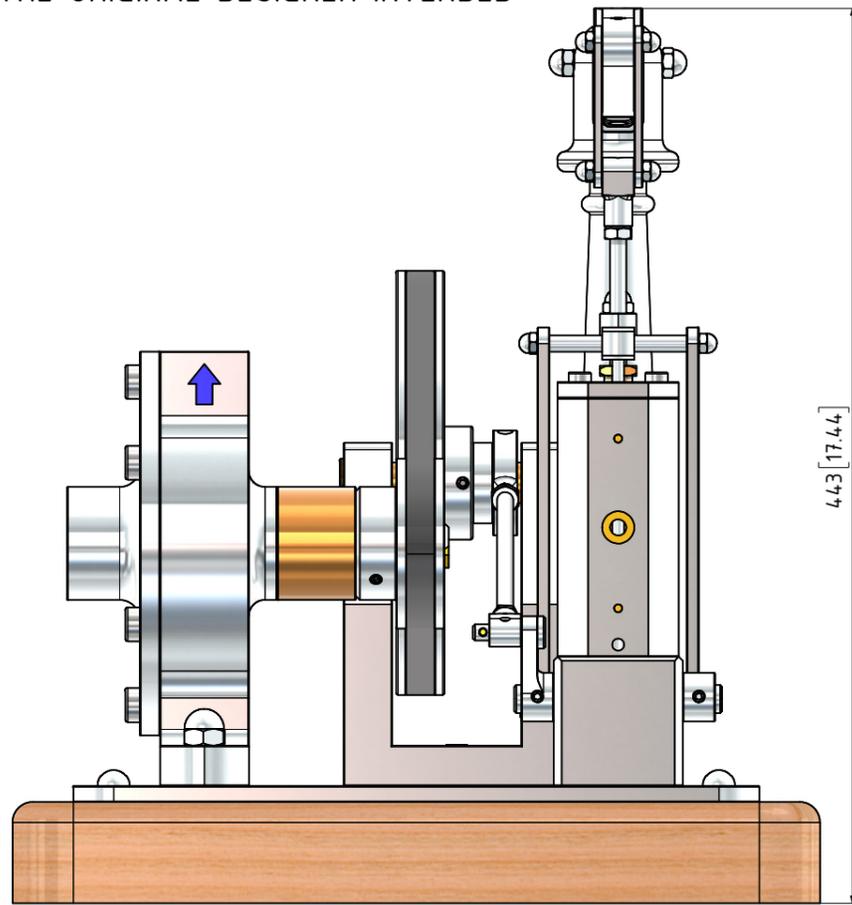
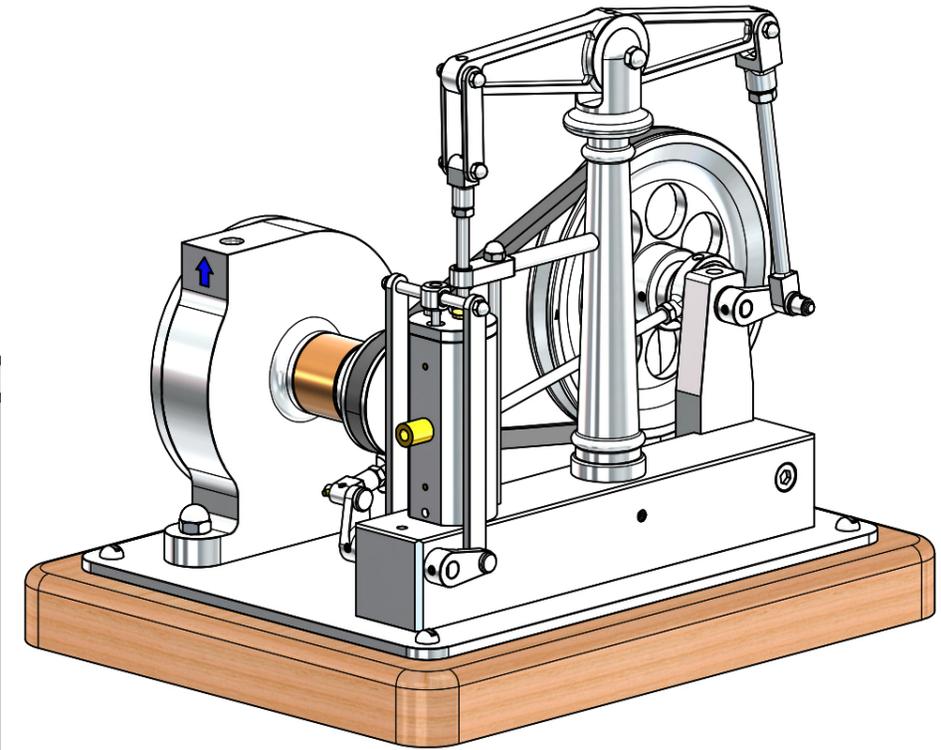
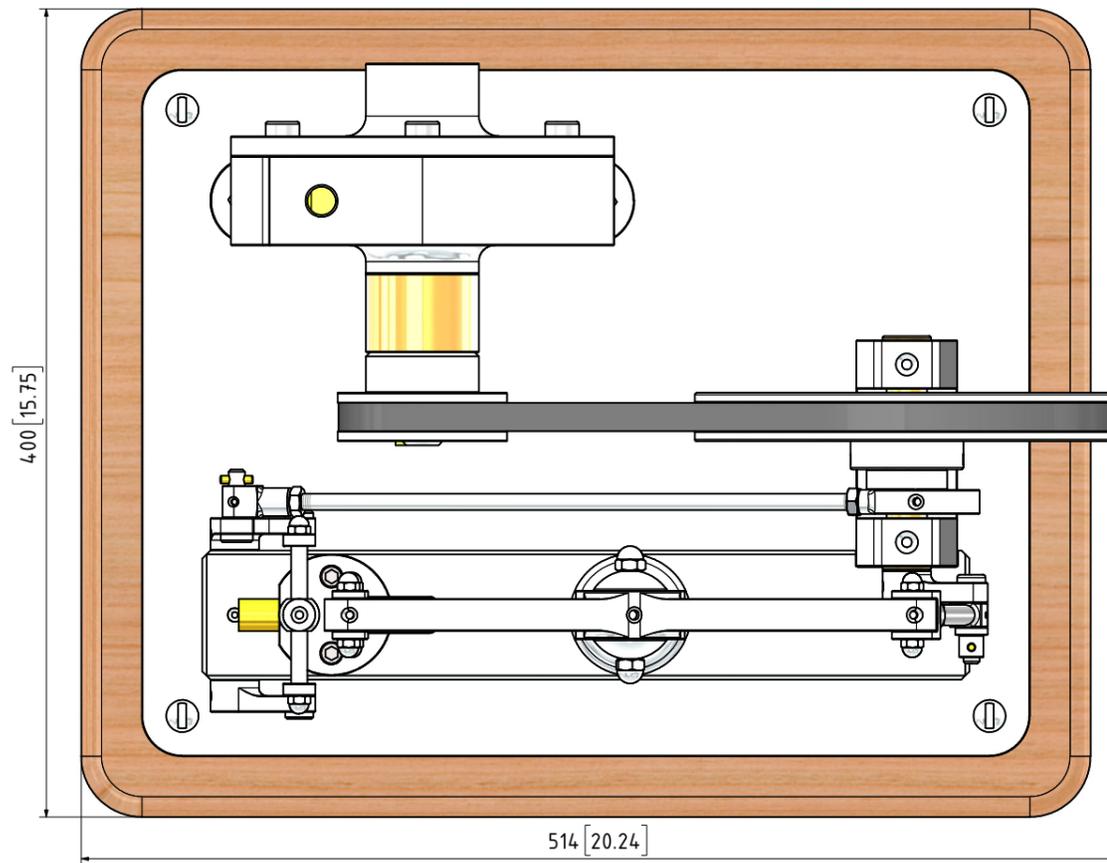


QTY	PART NUMBER
1	09E-69-00-1-01-BASE PLATE+ENGINE BASE
1	09E-69-00-1-02-CENTRIFUGAL PUMP BODY
1	09E-69-00-2-01-CRANKSHAFT+ECCENTRIC
1	09E-69-00-2-02-BALANCED BEAM
1	09E-69-00-2-03-CON-ROD
1	09E-69-00-2-04-PISTON ROD LINKS
1	09E-69-00-2-05-PISTON
1	09E-69-00-2-06-VALVE ROCKER SHAFT
1	09E-69-00-2-07-VALVE
1	09E-69-00-2-08-VALVE ROCKER LINK
1	09E-69-00-2-09-ECCENTRIC STRAP
1	09E-69-00-2-10-PUMP IMPELLERE
1	09E-69-00-2-11-V-BELT
1	09E-69-00-M10 NUT
1	09E-69-00-M10x28 A-K C-SINK SCREW
4	09E-69-00-M10x50-ROUND HEAD WOOD SCREW
2	09E-69-00-M12 DOME NUT
4	09E-69-00-M12x36 A-K C-SINK SCREW
6	09E-69-00-M12x38 A-K CYL HEAD SCREW
1	09E-69-00-M12x80 A-K C-SINK SCREW
8	09E-69-00-M6 DOME NUT
1	09E-69-00-M6x14 A-K GRUB SCREW
2	09E-69-00-M6x22 A-K GRUB SCREW
3	09E-69-00-M6x8 A-K GRUB SCREW
3	09E-69-00-M8 DOME NUT
3	09E-69-00-M8 NUT
2	09E-69-00-M8x22 A-K GRUB SCREW
2	09E-69-00-M8x34 A-K CYL HEAD SCREW

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: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE TITLE ON THE ORIGINAL DRAWINGS WAS "BEAM ENGINE WIH CENTRIFUGAL PUMP" BY J. GALBA, DATED 01/12/2010. THE ENIGNE SHOWN ON THESE DRAWINGS IS TWICE THE ORIGINAL

TITLE  
A BALANCE BEAM STEAM ENGINE WITH CENTRIFUGAL PUMP (B=24mm S=64mm)

DRAWING CONTENTS  
GENERAL ARRANGEMENT, NOTES, ISOMETRIC VIEW

PROJECT No 09E-69-00  
JDW DRAUGHTING SERVICES  
J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAPA KURA  
2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB:  
0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION	<b>JDWDS</b>	MODEL SCALE: 1:1
DATE	JUNE 2025	DWG SCALE: 1:1 @A3 OR AS SHOWN
SHEET: 01 OF 04	A3	No:09E-69-00-SHT-01

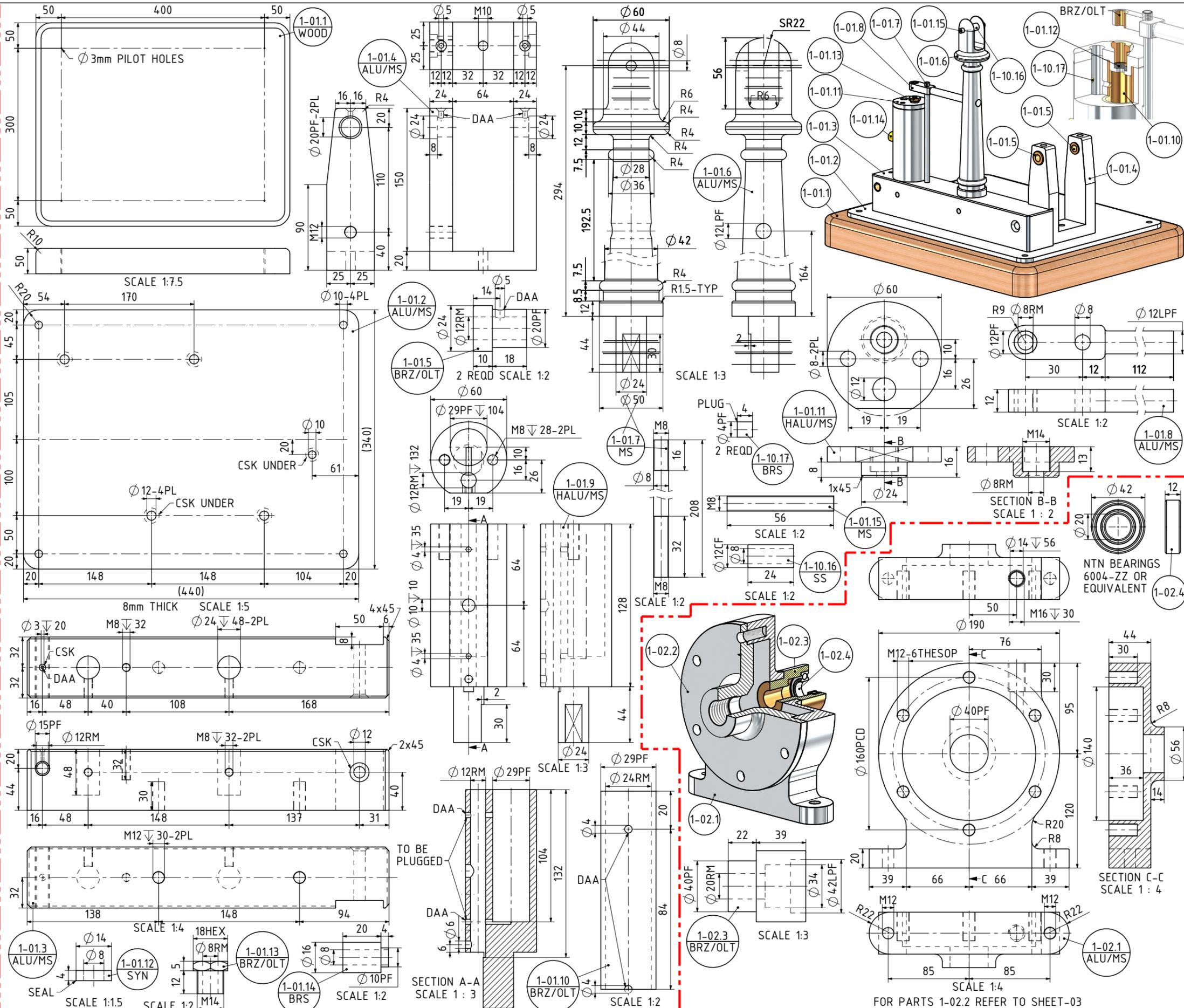
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

**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.

**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 = 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



NOTES: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE TITLE ON THE ORIGINAL DRAWINGS WAS "BEAM ENGINE WITH CENTRIFUGAL PUMP" BY J. GALBA, DATED 01/12/2010. THE ENIGNE SHOWN ON THESE DRAWINGS IS TWICE THE ORIGINAL

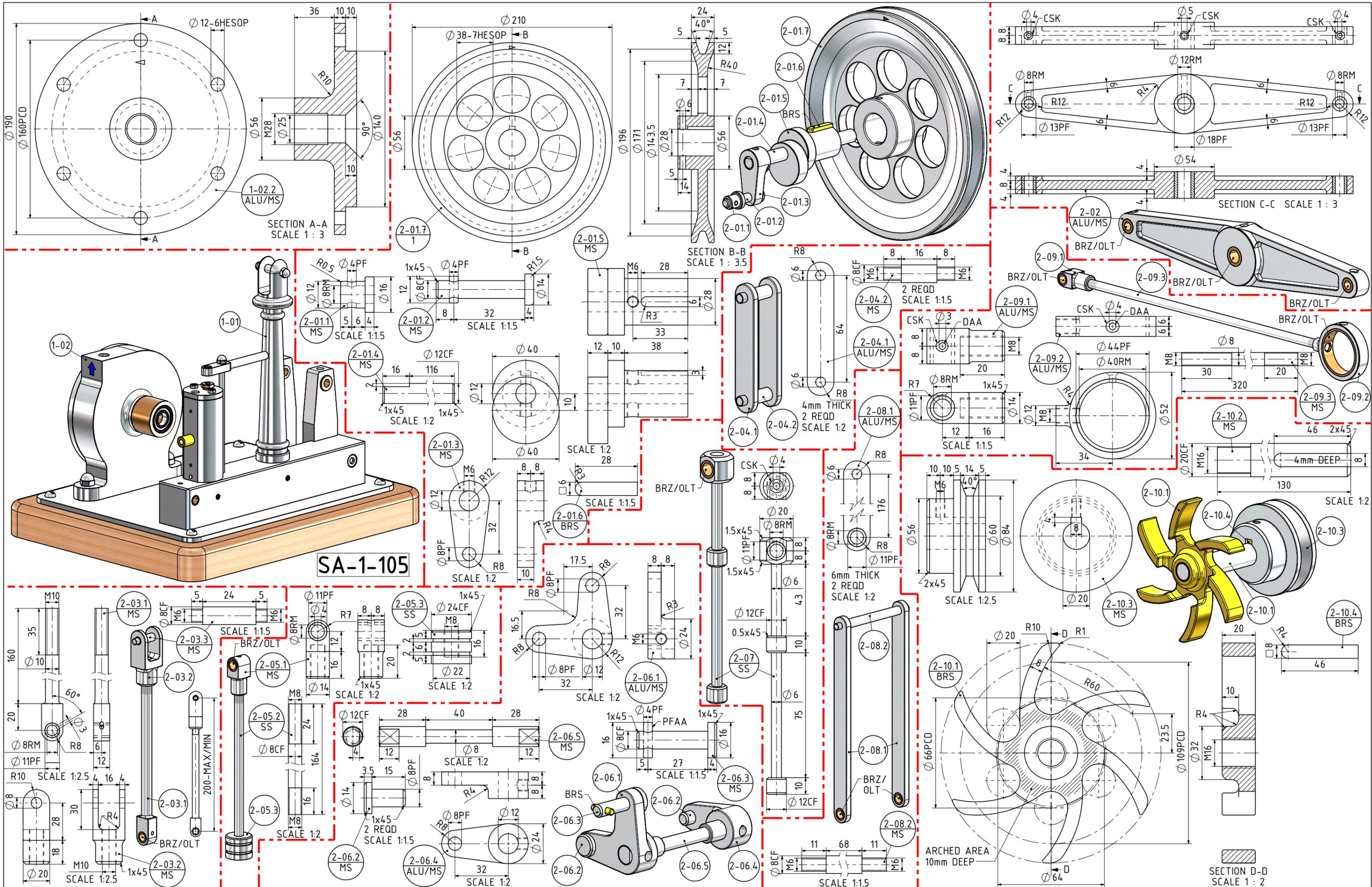
TITLE  
**A BALANCE BEAM STEAM ENGINE WITH CENTRIFUGAL PUMP (B=24mm S=64mm)**

DRAWING CONTENTS  
**PARTS AND ASSEMBLIES NOTES**

PROJECT No 09E-69-00  
 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.

PROJECTION  
**JDWDS**  
 MODEL SCALE: 1:1  
 DWG SCALE: 1:1 @A3 OR AS SHOWN  
 DATE JUNE 2025  
 Copyright © J.A.M. DE WAAL PAPAOKURA NZ  
 SHEET: 02 OF 04  
**A3 No:09E-69-00-SHT-02**

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**SA-1-105**

NOTES: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE TITLE ON THE ORIGINAL DRAWINGS WAS "BEAM ENGINE WITH CENTRIFUGAL PUMP" BY J. GALBA, DATED 01/12/2010. THE ENIGNE SHOWN ON THESE DRAWINGS IS TWICE THE ORIGINAL

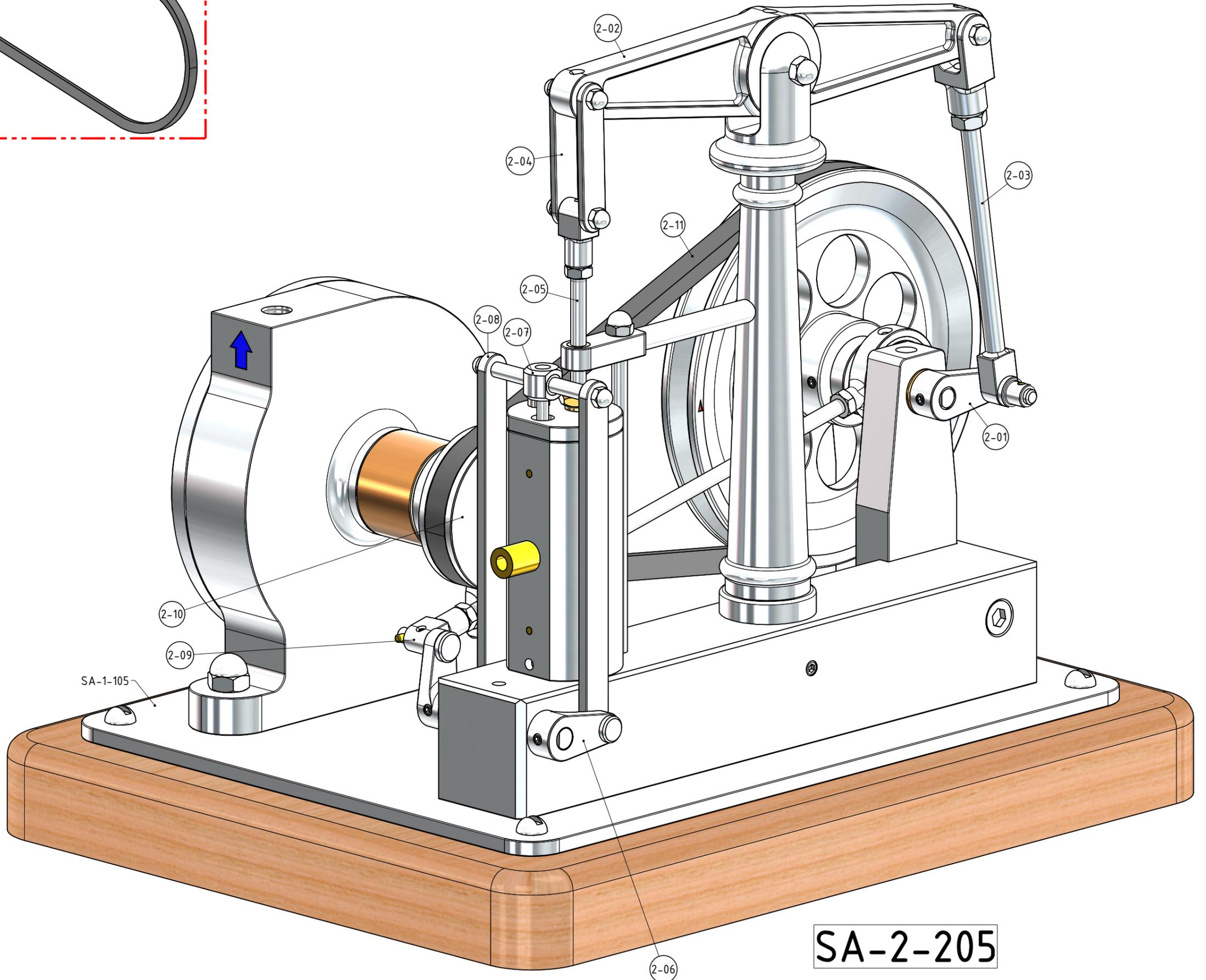
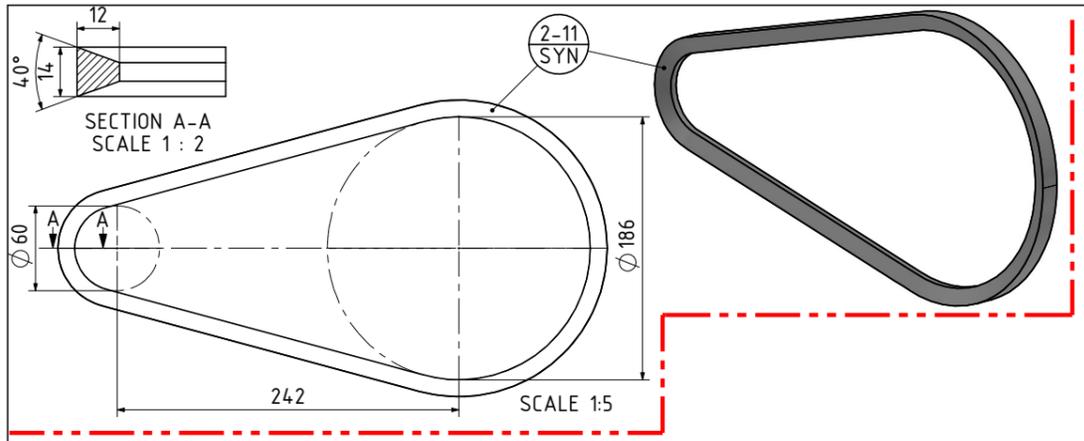
TITLE  
**A BALANCE BEAM STEAM ENGINE WITH CENTRIFUGAL PUMP (B=24mm S=64mm)**

DRAWING CONTENTS  
**PARTS AND ASSEMBLIES**

PROJECT No 09E-69-00  
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 J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAPAOKURA  
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PROJECTION **JDWDS** MODEL SCALE: 1:1  
 DATE JUNE 2025 DWG SCALE: 1:1 @A3 OR AS SHOWN  
 SHEET: 03 OF 04 A3 No:09E-69-00-SHT-03  
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**SA-2-205**

NOTES: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE TITLE ON THE ORIGINAL DRAWINGS WAS "BEAM ENGINE WIH CENTRIFUGAL PUMP" BY J. GALBA, DATED 01/12/2010. THE ENIGNE SHOWN ON THESE DRAWINGS IS TWICE THE ORIGINAL		PROJECT No 09E-69-00 JDW DRAUGHTING SERVICES J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAPAURA 2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.		PROJECTION <b>JDWDS</b> DATE JUNE 2025 SHEET: 04 OF 04		MODEL SCALE: 1:1 DWG SCALE: 1:1 @A3 OR AS SHOWN Copyright © J.A.M. DE WAAL PAPAURA NZ No:09E-69-00-SHT-04	
TITLE <b>A BALANCE BEAM STEAM ENGINE WITH CENTRIFUGAL PUMP (B=24mm S=64mm)</b>		DRAWING CONTENTS <b>PARTS AND ASSEMBLIES</b>		<b>DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES</b>			