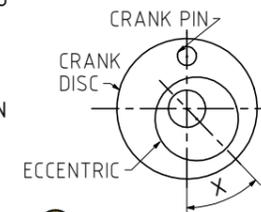


- GENERAL NOTES:
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
  1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
  2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
  3. PREFERABLY ALL TAPPED 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. 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.

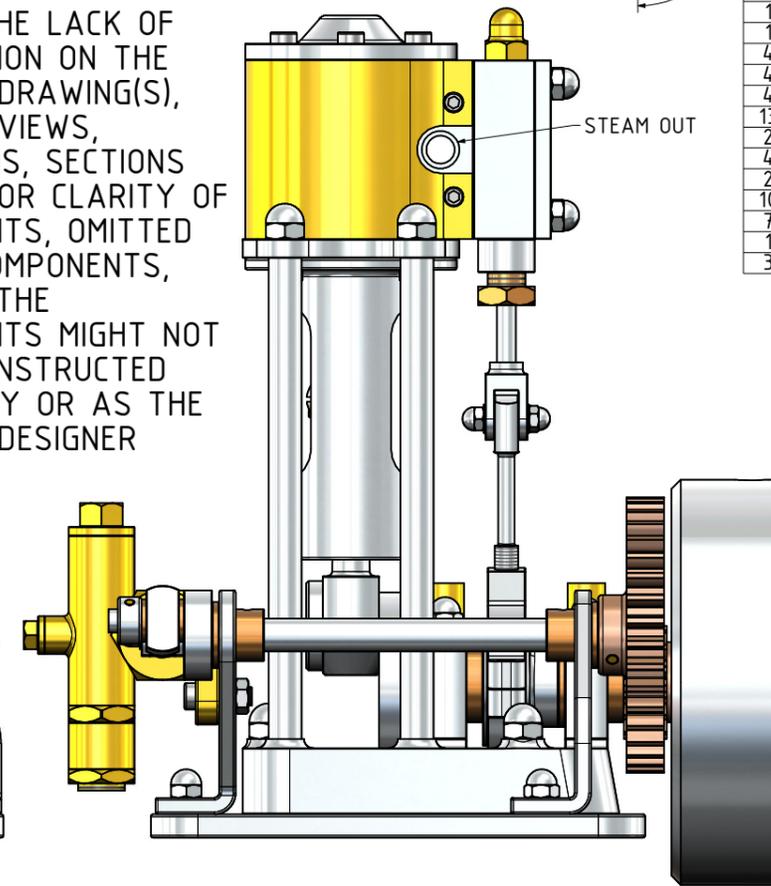
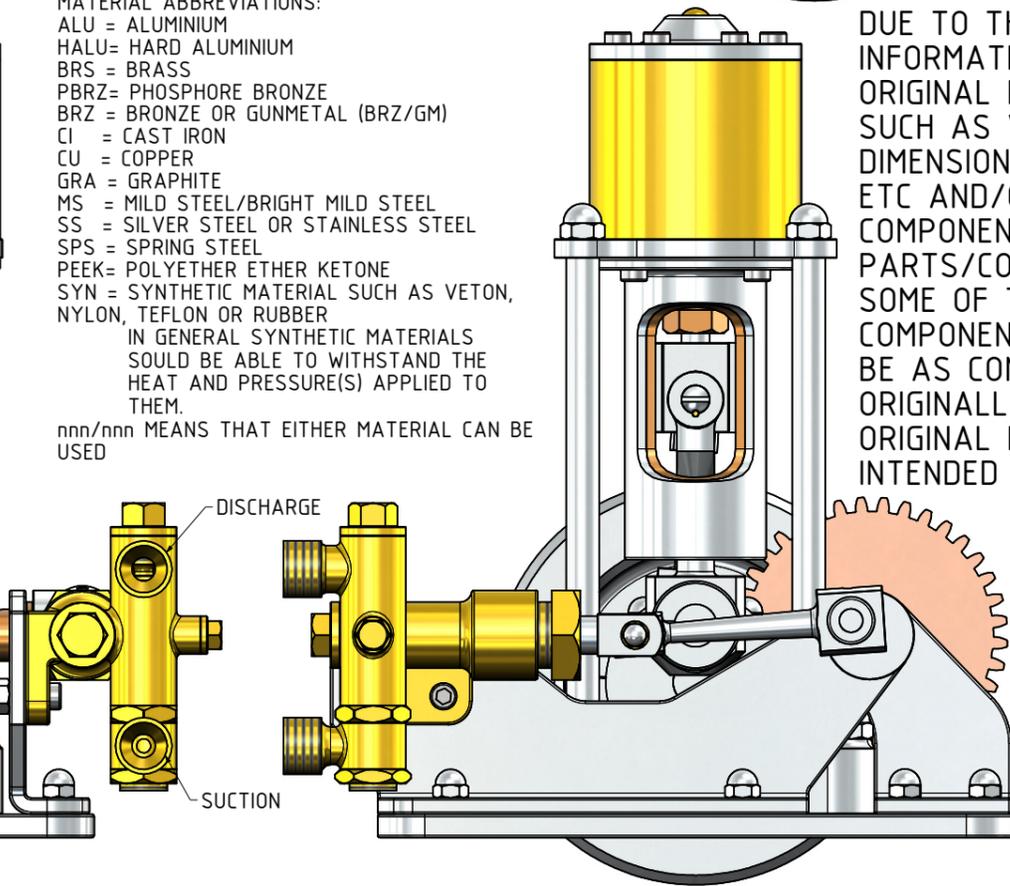
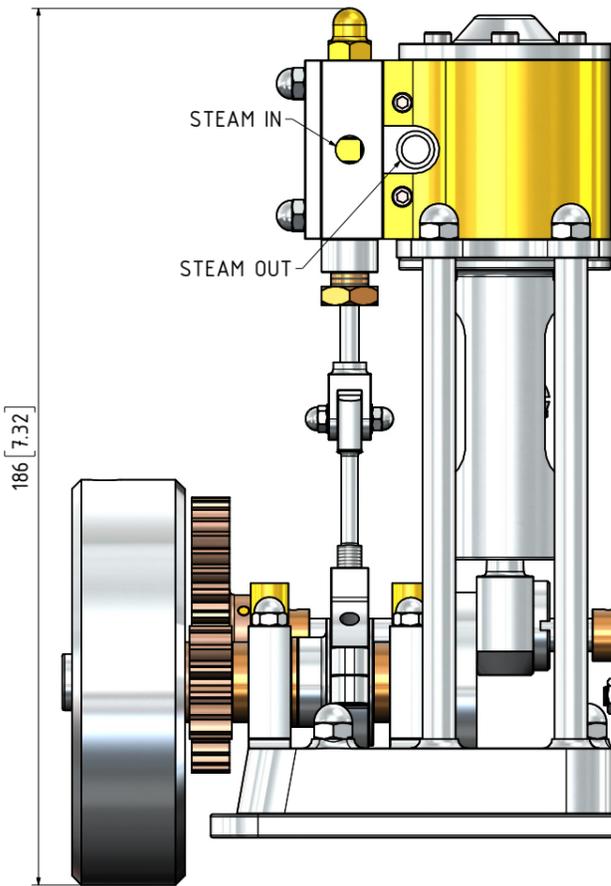
THE OFF SET ANGLE OF THE ECCENTRIC IN RELATION TO THE CRANK AXIS TO BE EXPERIMENTALLY DETERMINED FOR THE SMOOTH RUNNING OF THE ENGINE AND SATISFACTION OF THE BUILDER



QTY.	PART NUMBER
1	09C-67-00-1-01-BASE PLATE+ ENGINE FRAME
2	09C-67-00-1-02-MAIN BEARING
1	09C-67-00-1-03-TRUNK GUIDE
1	09C-67-00-1-04-CYLINDER BLOCK+VALVE CHEST
1	09C-67-00-1-05-PUMP BODY
1	09C-67-00-2-01-CRANKSHAFT+FLYWHEEL
1	09C-67-00-2-02-PISTON+CROSSHEAD
1	09C-67-00-2-03-CON-ROD
1	09C-67-00-2-04-SLIDE VALVE
1	09C-67-00-2-05-ECCENTRIC SHEAVE
1	09C-67-00-2-06-ECCENTRIC STRAP
1	09C-67-00-2-07-PUMP CRANKSHAFT
1	09C-67-00-2-08-PUMP CON-ROD
1	09C-67-00-2-09-PUMP PLUNGER
4	09C-67-00-M3 DOME NUT
4	09C-67-00-M3 WASHER
4	09C-67-00-M3x6 A-K CYL HEAD SCREW
13	09C-67-00-M4 DOME NUT
2	09C-67-00-M4 NUT
4	09C-67-00-M4x12 A-K C-SINK SCREW
2	09C-67-00-M4x12 A-K CYL HEAD SCREW
10	09C-67-00-M4x8 A-K CYL HEAD SCREW
7	09C-67-00-M5 DOME NUT
1	09C-67-00-M5x14 A-K GRUB SCREW
3	09C-67-00-M5x24 A-K C-SINK SCREW

MATERIAL ABBREVIATIONS:  
 ALU = ALUMINIUM  
 HALU= HARD ALUMINIUM  
 BRS = BRASS  
 PBRZ= PHOSPHORE BRONZE  
 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

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



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: THE ORIGINAL DRAWINGS WERE GIVEN TO ME. THE DESIGN AND DRAWINGS WERE PUBLISHED IN "MODEL ENGINEER" MAGAZINE FROM JUNE 1978 TO FEBRUARY 1979, UNDER THE TITLE "MORE UTILITY STEAM ENGINES" BY J. P. BERTNAT. THIS ENGINE IS CALLED "TROJAN MARK 2" THE ENGINE SHOWN ON THESE DRAWINGS IS 1.5 TIMES THE ORIGINAL

TITLE  
**1 CYLINDER VERTICAL NON REVERSABLE STEAM ENGINE WITH WATER FEED PUMP**

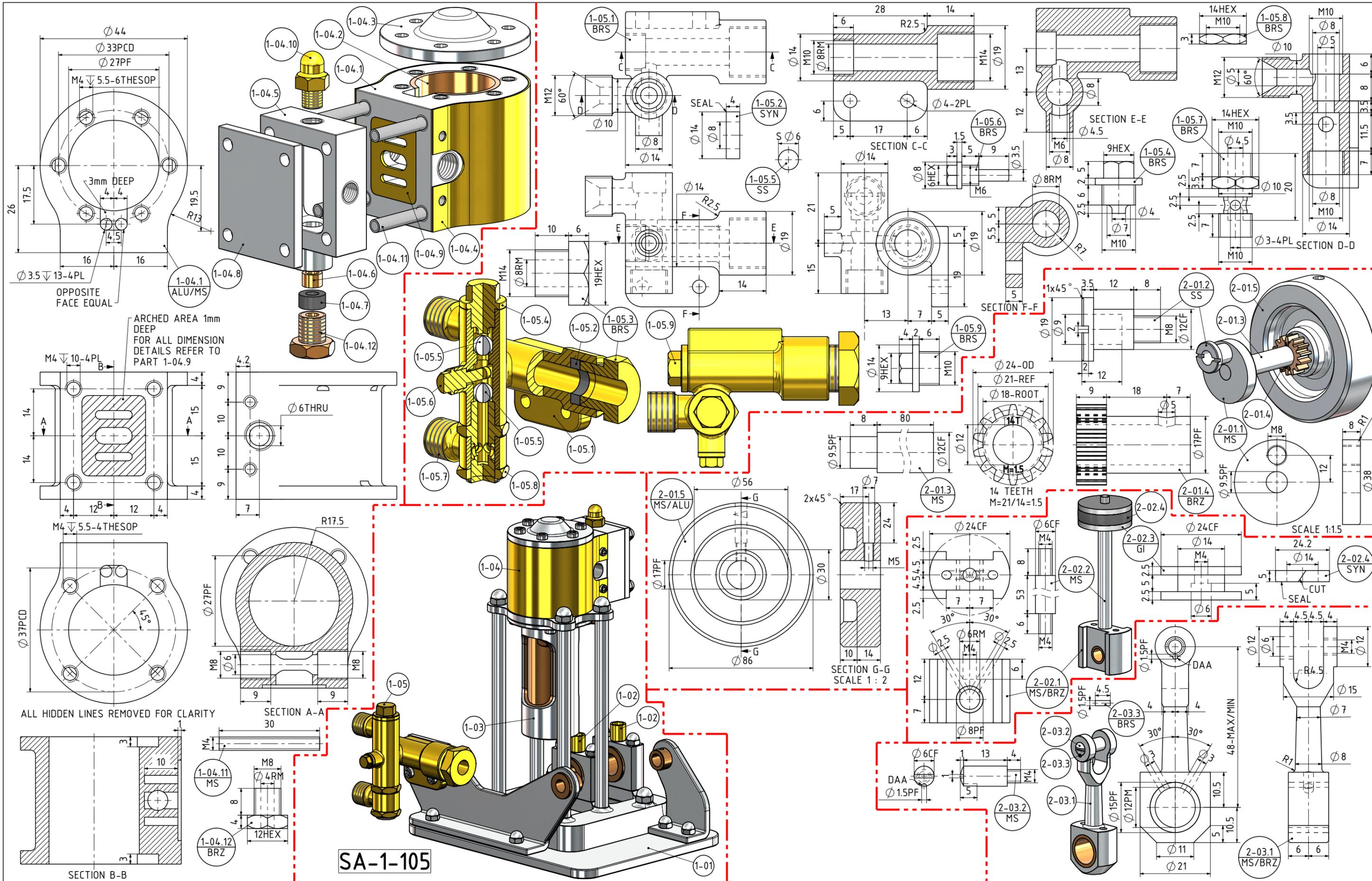
DRAWING CONTENTS  
**GENERAL ARRANGEMENT, ISOMETRIC VIEW, NOTES, BILL OF MATERIALS**

PROJECT No 09C-67-00  
 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 FEBRUARY 2025 Copyright © J.A.M. DE WAAL PAPAOKURA NZ  
 SHEET: 01 OF 04 **A3** No:09C-67-00-SHT-01

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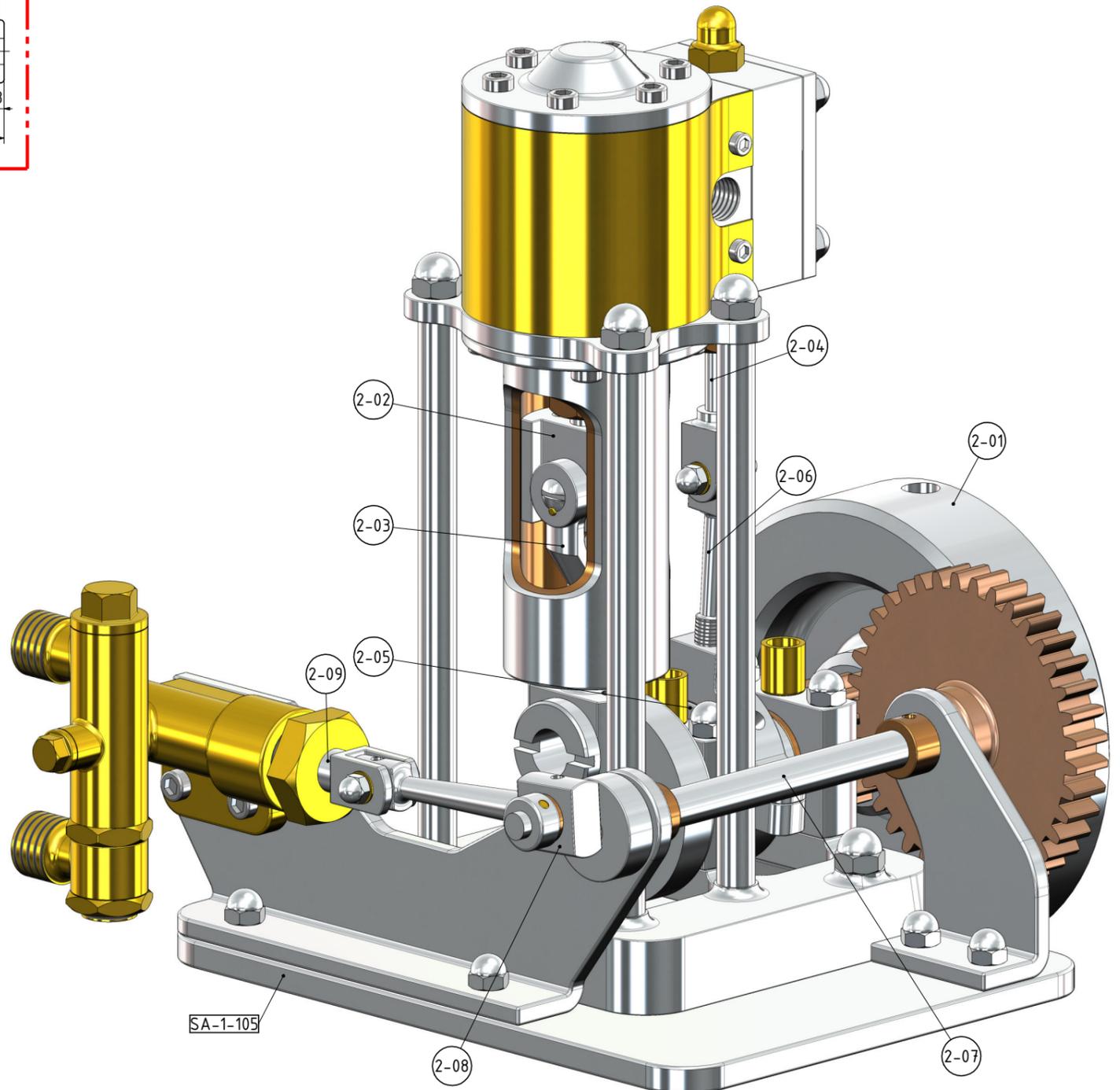
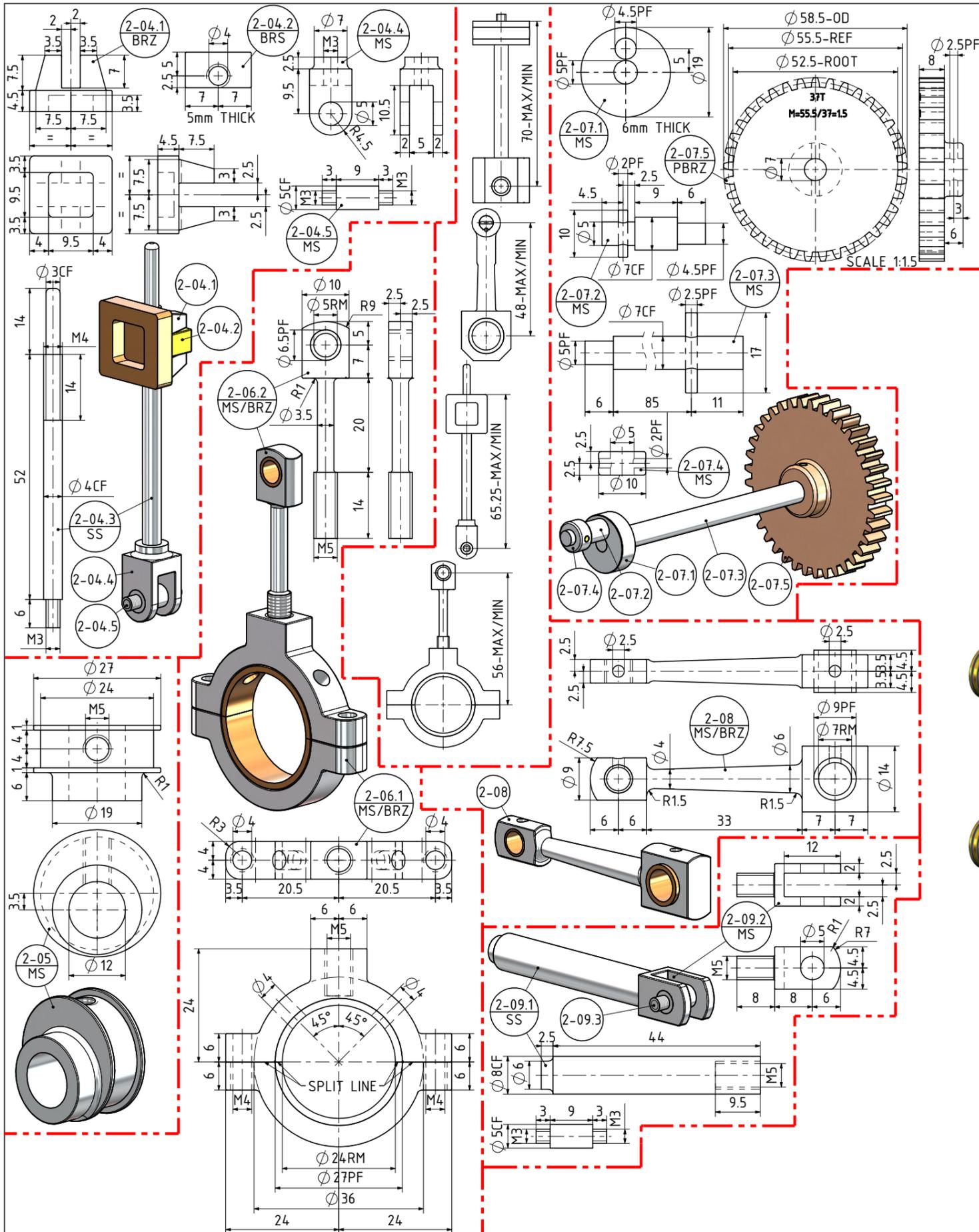
TITLE  
**1 CYLINDER VERTICAL NON REVERSABLE STEAM ENGINE WITH WATER FEED PUMP**

DRAWING CONTENTS  
**PARTS AND ASSEMBLIES**

PROJECT No 09C-67-00  
 JDW DRAUGHTING SERVICES  
 J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAPAOKURA  
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**SA-2-205**

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DRAWING CONTENTS  
**PARTS AND ASSEMBLIES**

PROJECT No 09C-67-00  
 JDW DRAUGHTING SERVICES  
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PROJECTION	<b>JDWDS</b>	MODEL SCALE: 1:1
DATE	FEBRUARY 2025	DWG SCALE: 1:1 @A3 OR AS SHOWN
SHEET: 04 OF 04	A3	No:09C-67-00-SHT-04

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