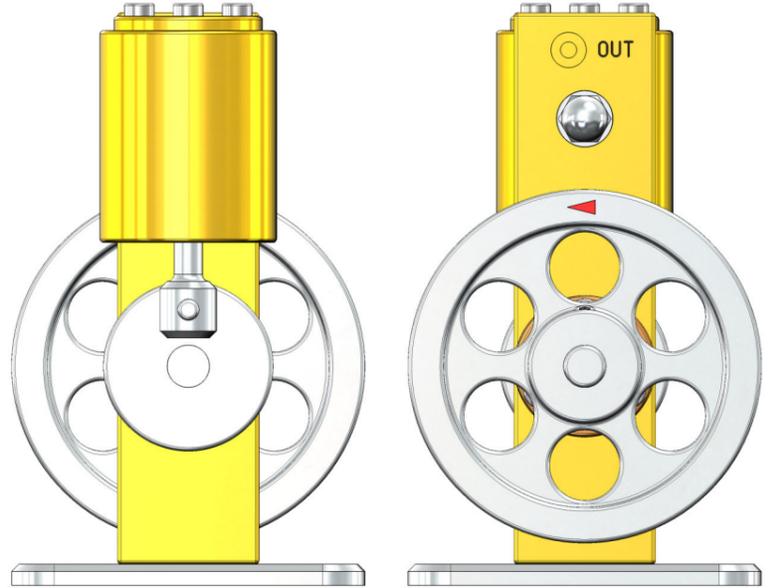
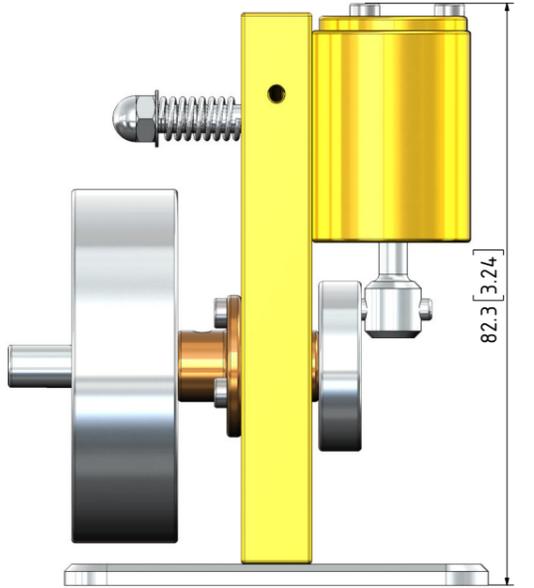


QTY.	PART NUMBER
1	09A-48-00-1-01-BASE+STANDARD
1	09A-48-00-2-01-CRANKSHAFT+FLYWHEEL
1	09A-48-00-2-02-CYLINDER
1	09A-48-00-2-03-PISTON
1	09A-48-00-M3x5 A-K GRUB SCREW
2	09A-48-00-M3x8 A-K C-SINK SCREW
6	09A-48-00-M3x8 A-K CYL HEAD SCREW
1	09A-48-00-M4 DOME NUT
1	09A-48-00-M4 WASHER

GENERAL NOTES:

- ALL DRAWINGS ARE IN METRIC MEASUREMENTS
- ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
- WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
- PREFERABLY ALL TAPPED HOLES AND MATCHING SCREWS AND/OR BOLTS TO BE METRIC FINE (MF)
- MATERIALS SPECIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER CAN MAKE HIS/HER OWN MATERIAL CHOICE.
- ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.
- COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.
- 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.
- 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.
- THE ORDER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED AND THE MODEL IS ASSEMBLED IS ENTIRELY LEFT TO THE BUILDER/MODEL MAKER.
- A COLOUR SCHEME FOR THIS PROJECT IS ENTIRELY LEFT UP TO THE MODEL MAKER.
- THE MANNER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED IS ENTIRELY LEFT UP TO THE BUILDER.
- USE LOCTITE, ON SCREW OR PRESS FIT CONNECTIONS OR SURFACES, WERE DEEMED NECESSARY TO PREVENT PARTS FROM LOOSENING.
- WASHERS AND/OR SPRING WASHERS SHALL BE USED WHERE DEEMED NECESSARY.
- 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

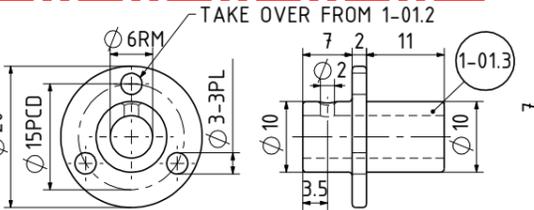
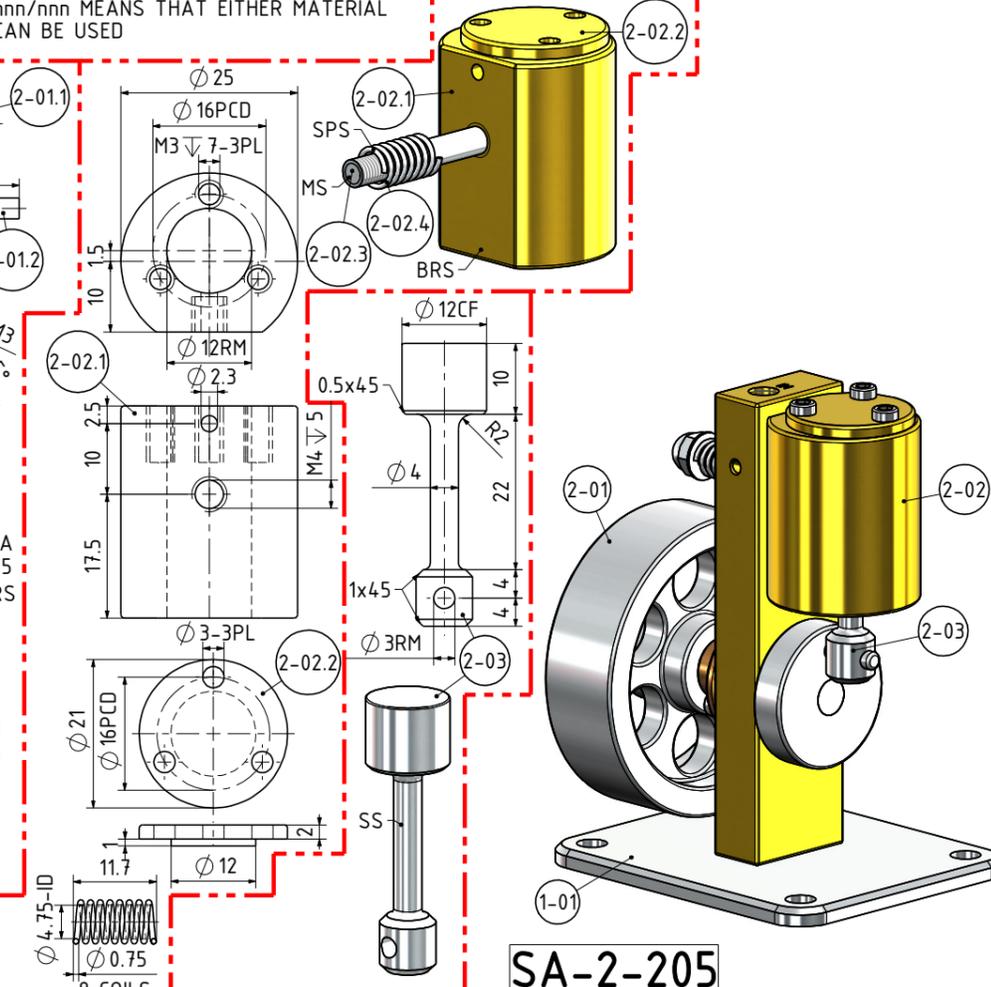
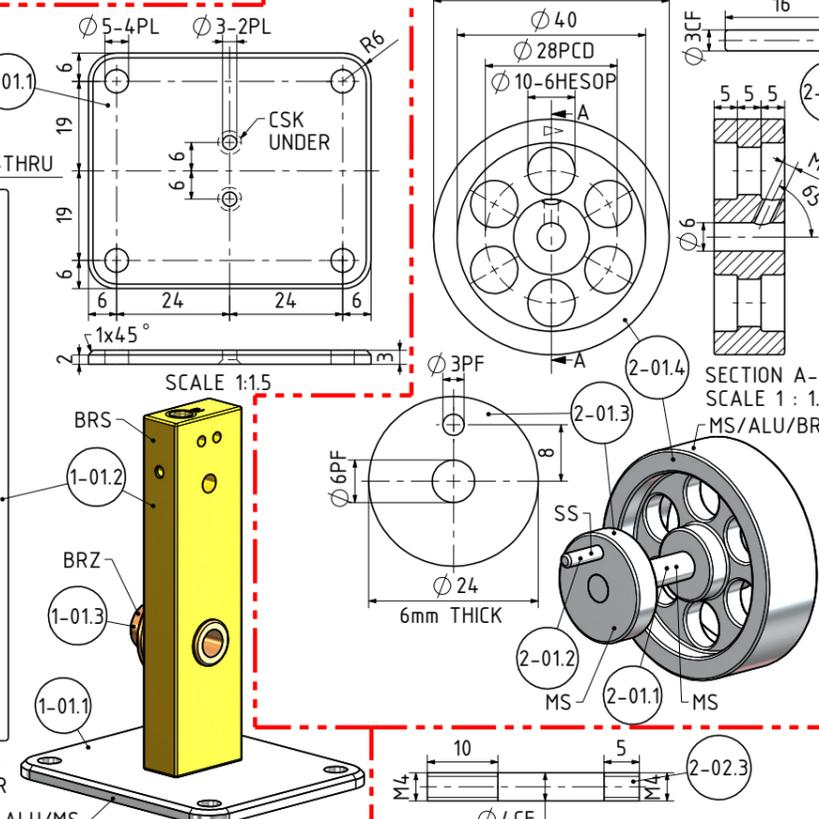
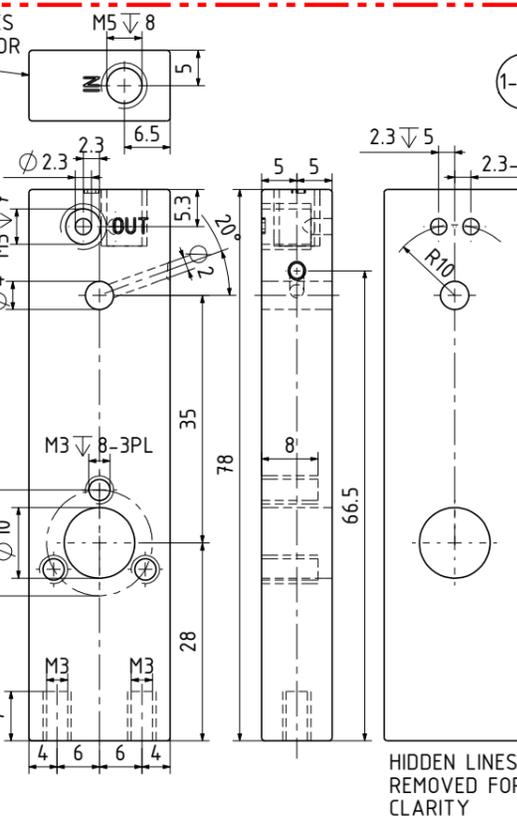
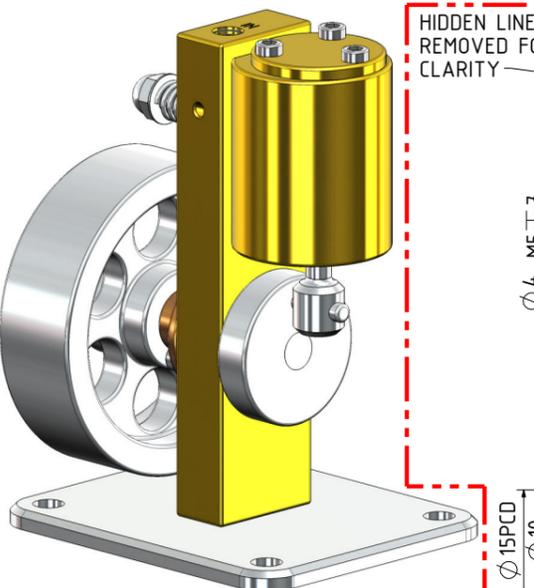
- AS = AS SHOWN
- DP = DEEP
- DAA= DRILL AFTER ASSEMBLY
- D&TAA= DRILL AND TAP AFTER ASSEMBLY
- CF = CLOSE FIT (SIZE FOR SIZE)
- PF = PRESS FIT
- PFAA= PRESS FIT AFTER ASSEMBLY
- PCD = PITCH CIRCLE DIAMETER
- RM = REAM
- HEX = HEXAGON, 6SIDED
- CP = COMPRESSED
- KNL = KNURLED
- CSK = COUNTERSINK
- PL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

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 SHOULD BE ABLE TO WITHSTAND THE HEAT AND PRESSURE(S) APPLIED TO THEM.

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

nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED



NOTES: THE ORIGINAL DRAWINGS WERE GIVEN TO ME. NO AUTHOR, DESIGNER OR DRAFTER AND DATES WERE SHOWN ON THE DRAWINGS. THE DRAWING TITLE WAS: "SIMPLE OSCILLATING STEAM ENGINE". SOME PARTS HAVE BEEN SLIGHTLY MODIFIED

TITLE
1 CYLINDER VERTICAL OSCILLATING STEAM ENGINE (BORE=12mm STROKE=16mm)

DRAWING CONTENTS
G.A., ISOMETRIC VIEW, NOTES, BOM, PARTS AND ASSEMBLIES

PROJECT No 09A-48-00
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PROJECTION **JDWDS** MODEL SCALE: 1:1
 DWG SCALE: 1:1 @A3 OR AS SHOWN
 DATE JANUARY 2025 Copyright © J.A.M. DE WAAL PAPAOKURA NZ
 SHEET: 01 OF xx **A3** No:09A-48-00-SHT-01

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES