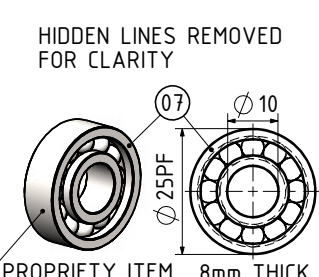
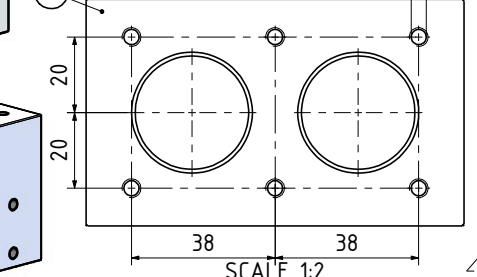
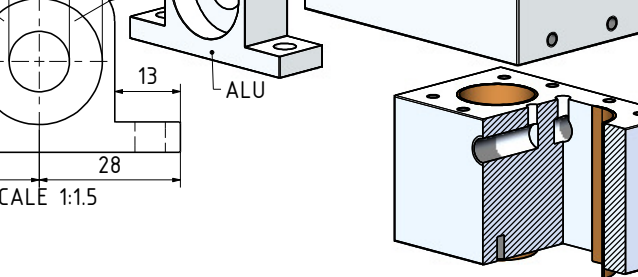
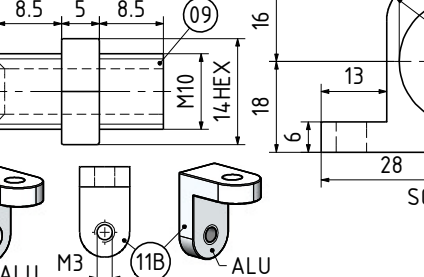
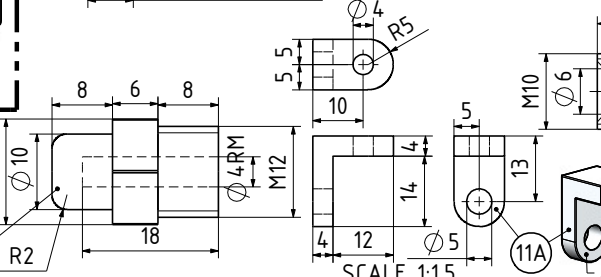
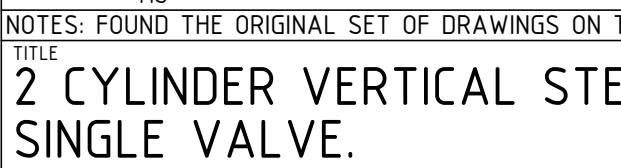
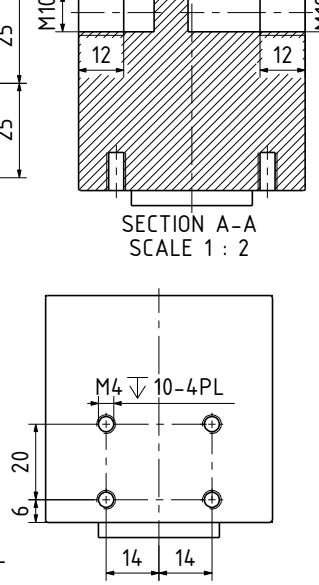
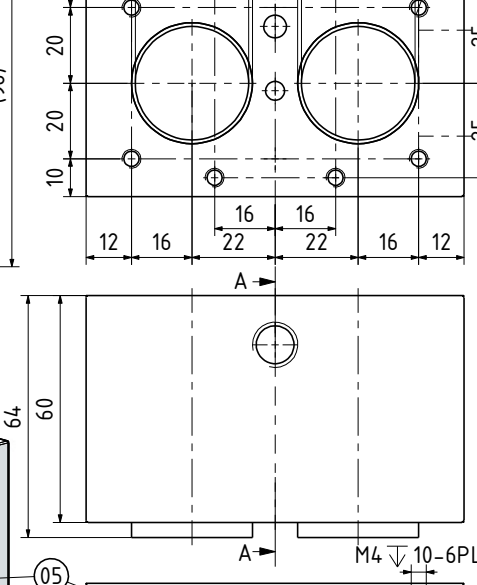
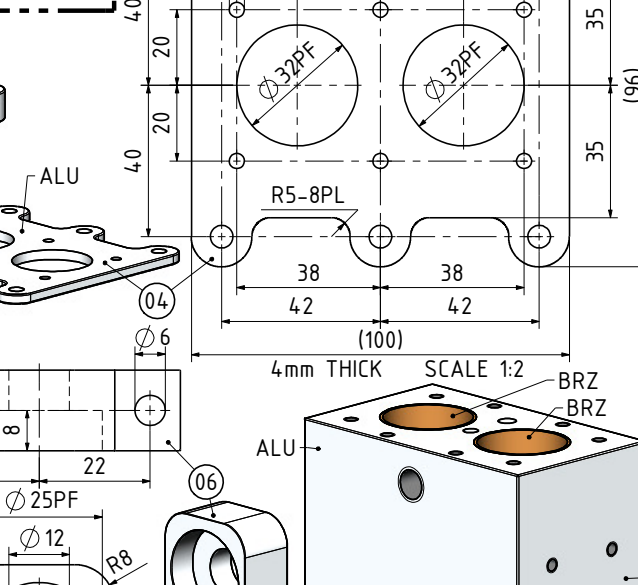
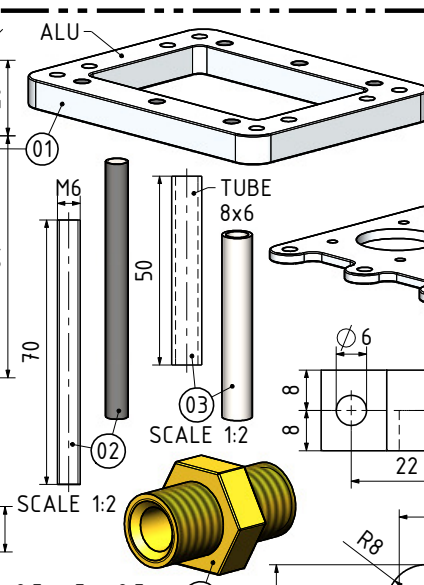
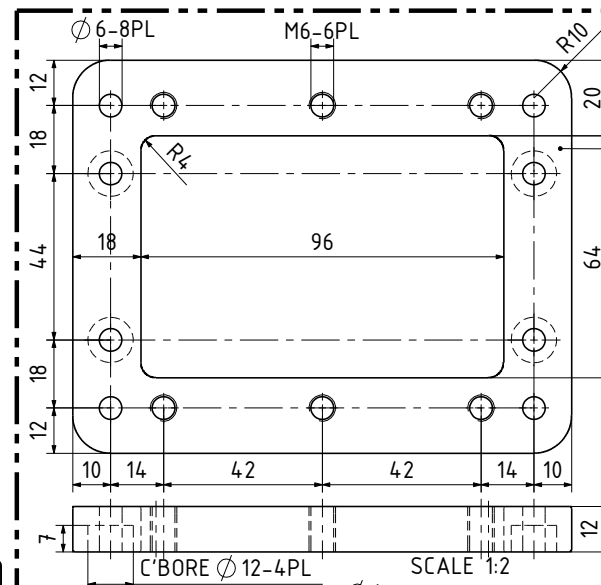
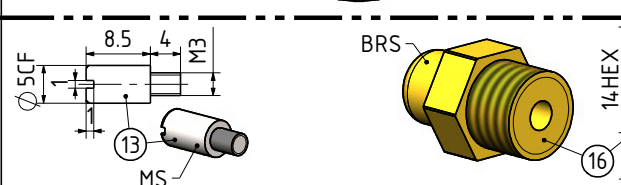
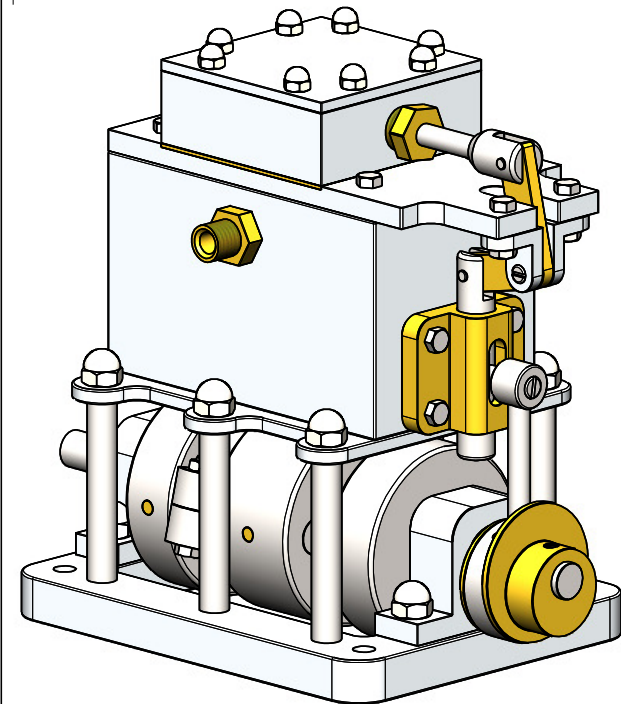
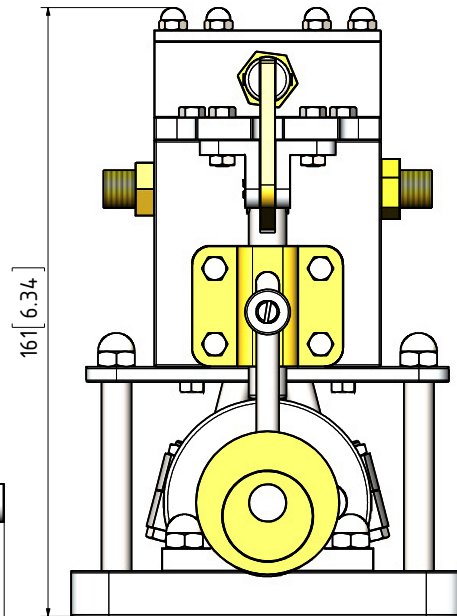
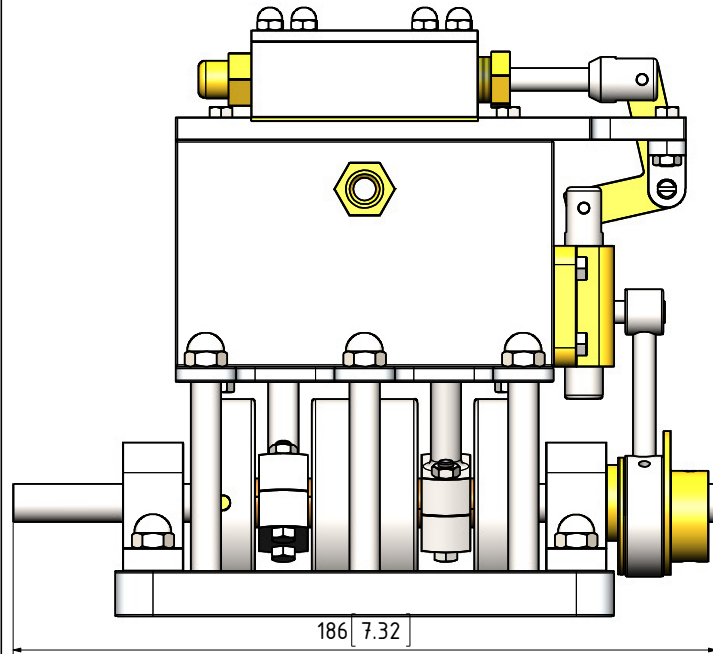


A SMALL VIDEO CLIP CAN BE FOUND ON YOUTUBE WEBSITE

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 TO THE SATISFACTION OF THE BUILDER



QTY.	PART NUMBER
1	JPB2CVSE-01-BASE PLATE
6	JPB2CVSE-02-PILLAR STUD
6	JPB2CVSE-03-PILLAR TUBE
1	JPB2CVSE-04-CYLINDER SUPPORT PLATE
1	JPB2CVSE-05-CYLINDER BLOCK
2	JPB2CVSE-06-CRANKSHAFT BEARING BLOCK
2	JPB2CVSE-07-10x25x8 BALL BEARING
1	JPB2CVSE-08-VALVE PUSHER GUIDE
2	JPB2CVSE-09-STEAM PIPE CONNECTOR
1	JPB2CVSE-10-CYLINDER TOP PORT PLATE
1	JPB2CVSE-11-PIVOT ANGLE BRACKET
1	JPB2CVSE-11-PIVOT ANGLE BRACKET
1	JPB2CVSE-12-SLIDE VALVE PORT PLATE
1	JPB2CVSE-13-ANGLE BRACKET PIVOT PIN
1	JPB2CVSE-14-VALVE CHEST
1	JPB2CVSE-15-VALVE CHEST COVER
1	JPB2CVSE-16-VALVE ROD GUIDE
1	JPB2CVSE-17-VALVE ROD GLAND
2	JPB2CVSE-21-CRANKSHAFT END
2	JPB2CVSE-22-OUTER CRANK WEB
1	JPB2CVSE-23-INNER CRANK WEB
2	JPB2CVSE-24-CRANKPIN
1	JPB2CVSE-25-ECCENTRIC SHEAVE
1	JPB2CVSE-26-ECCENTRIC SHEAVE COVER
1	JPB2CVSE-27-ECCENTRIC SHEAVE SPACER
2	JPB2CVSE-28-PISTON
2	JPB2CVSE-29-PISTON GUDGEON PIN
2	JPB2CVSE-30-CON-ROD
1	JPB2CVSE-31-ECCENTRIC STRAP
1	JPB2CVSE-32-PUSHER GUIDE SLIDER
1	JPB2CVSE-33-SLIDER PIVOT PIN
1	JPB2CVSE-34-SLIDER LINKAGE
1	JPB2CVSE-35-SLIDE VALVE
1	JPB2CVSE-36-SLIDE VALVE NUT
1	JPB2CVSE-37-SLIDE VALVE STEM
1	JPB2CVSE-38-VALVE STEM CONNECTOR
8	JPB2CVSE-M4 DOME NUT
6	JPB2CVSE-M4 NUT
1	JPB2CVSE-M4x3.5 GRUB SREW
16	JPB2CVSE-M4x13 HEX BOLT
4	JPB2CVSE-M4x24HEX BOLT
4	JPB2CVSE-M4x32 STUD
4	JPB2CVSE-M4x45 STUD
10	JPB2CVSE-M6 DOME NUT
4	JPB2CVSE-M6x16 HEX BOLT

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.
- 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
BRS = BRASS
BRZ = BRONZE OR GUNMETAL (BRZ/GM)
CI = CAST IRON
CU = COPPER
GRA = GRAPHITE
MS = MILD STEEL/BRIGHT MILD STEEL
S/S = 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

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
HESOP=HOLES EQUALLY SPACED ON PCD
[SA-xxx]= SUB ASSEMBLY-xxx

NOTES: FOUND THE ORIGINAL SET OF DRAWINGS ON THE INTERNET. THE ORIGINAL DRAWINGS WERE DESIGNED AND DRAWN BY J.P.BOURDILLAT IN FRENCH. (THIS DESIGN IS VERY SIMILAR TO THAT OF ELMER VERBURG PROJECT CHAPTER 44)

TITLE
2 CYLINDER VERTICAL STEAM ENGINE WITH SINGLE VALVE.

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

PROJECT No 09C-21-00
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PROJECTION
JDWDS
DATE
JULY-2016

MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
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SHEET: 01 OF 02
A3 No: JPB2CVSE-01