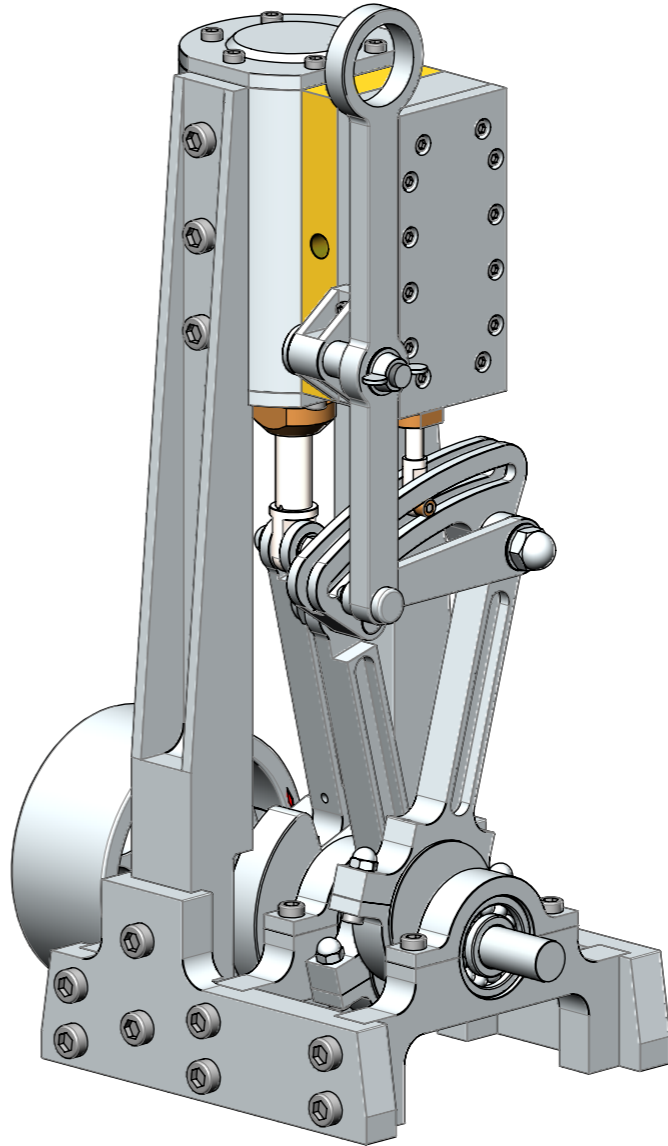
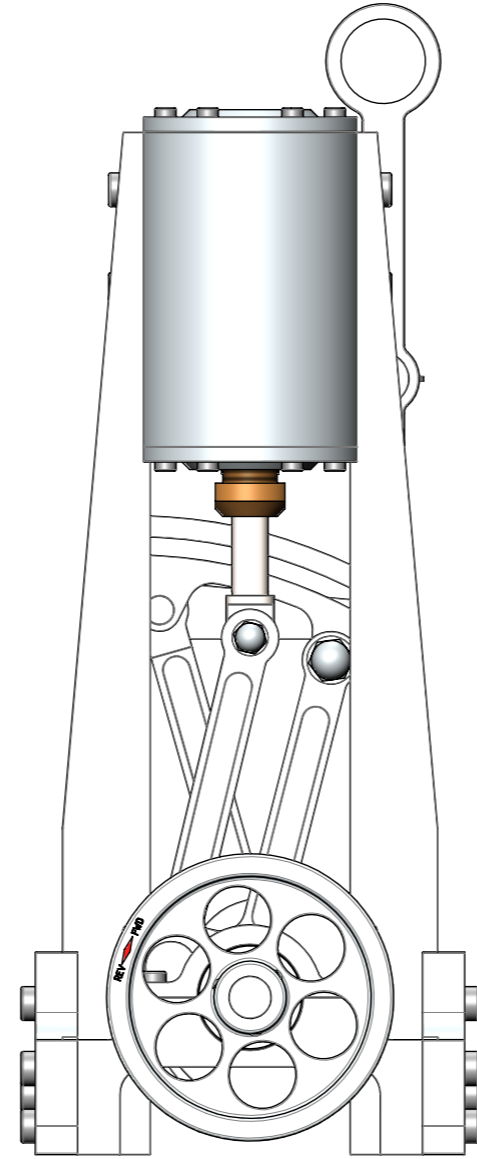
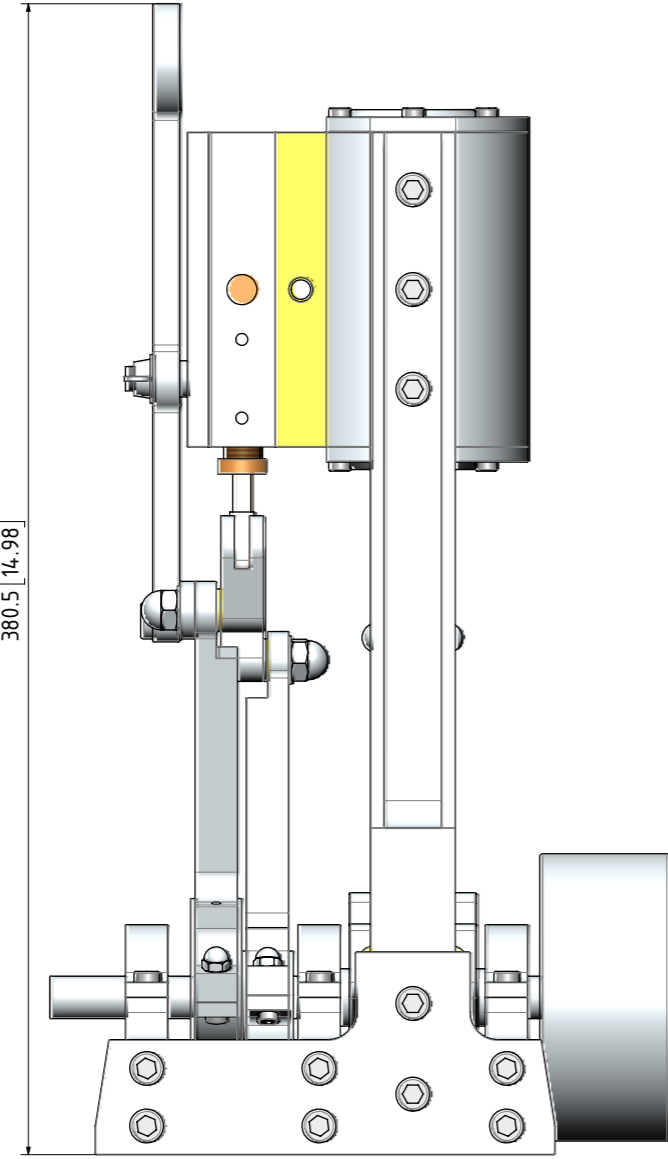
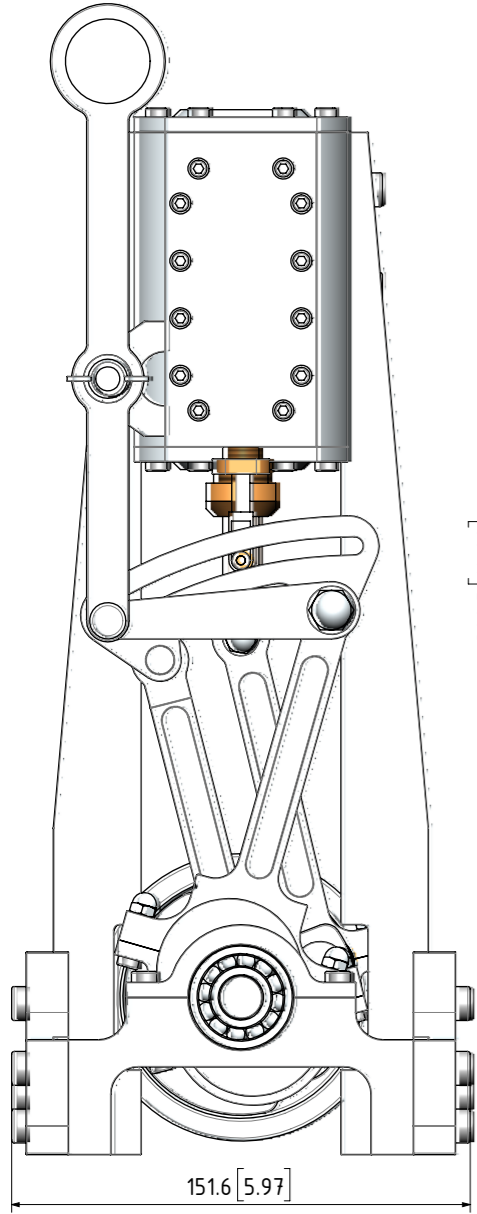
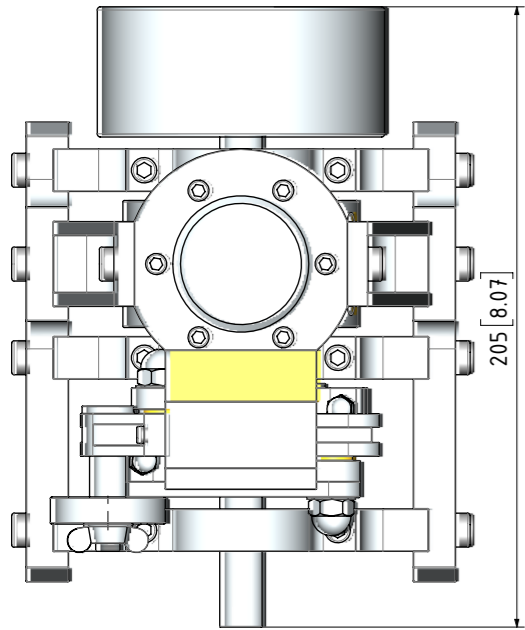


- NOTES:
 0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
 1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
 2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
 3. PREFERABLY ALL TAPPED HOLES AND 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 SPRINGWASHERS SHALL BE USED WHERE DEEMED NECESSARY.
 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
 DP = DEEP 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
 [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 SOULD BE ABLE TO WITHSTAND THE HEAT AND PRESSURE(S) APPLIED TO THEM.
 nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED

Note from author for "Kelly's #1" Vertical Stephenson Link Steam Engine.
 This Is a pretty hefty little engine.
 It will run on as little as 1psi and up to 120psi.
 Depending on how well its made.



QTY.	PART NUMBER
1	09C-37-00-1-01-BASE STRUCTURE
2	09C-37-00-1-02-CYLINDER SUPPORT COLUMN
1	09C-37-00-1-03-CYLINDER
1	09C-37-00-1-04-CYLINDER TOP COVER
1	09C-37-00-1-05-CYLINDER BOTTOM COVER
1	09C-37-00-1-06-REVERSING LEVER PIVOT BLOCK
1	09C-37-00-2-01-CRANK SHAT
1	09C-37-00-2-02-ECCENTRIC SHEAVE
3	09C-37-00-2-03-BALL BEARING
1	09C-37-00-2-04-FLYWHEEL
1	09C-37-00-2-05-PISTON+ROD
1	09C-37-00-2-06-CON-ROD
1	09C-37-00-2-07-SLIDE VALVE+SPINDLE
1	09C-37-00-2-08-EXSPANSION LINK
2	09C-37-00-2-09-ECCENTRIC STRAP
1	09C-37-00-2-10-LIFTING LINK
1	09C-37-00-2-11-REVERSING LEVER
1	09C-37-00-M4 DOME NUT
2	09C-37-00-M4 NUT
1	09C-37-00-M4 WASHER
2	09C-37-00-M4x14 A-K CYL HEAD SCREW
3	09C-37-00-M4x5 GRUB SREW
12	09C-37-00-M4x50 A-K CYL HEAD SCREW
2	09C-37-00-M4x6 A-K CYL HEAD SCREW
6	09C-37-00-M5 DOME NUT
12	09C-37-00-M5x12 A-K CYL HEAD SCREW
6	09C-37-00-M5x18 A-K CYL HEAD SCREW
2	09C-37-00-M6 DOME NUT
2	09C-37-00-M6 WASHER
6	09C-37-00-M6x16 A-K CYL HEAD SCREW
2	09C-37-00-M8 DOME NUT
3	09C-37-00-M8 WASHER
1	09C-37-00-M8 WING NUT
10	09C-37-00-M8x16 A-K CYL HEAD SCREW
12	09C-37-00-M8x22 A-K CYL HEAD SCREW

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE GIVEN TO ME. THE ORIGINAL ENGINE DESIGN WAS CREATED BY Mr. KELLY KUBISCHTA, FOR NON-PROFFITPUBLICATION 2010. THE ENGINE PLANS ARE 1.5 TIMES LARGER THAN THE ORIGINAL

TITLE A MODEL OF A SIMPLE VERTICAL HEAVY DUTY STEAM ENGINE WITH REVERSER	DRAWING CONTENTS GENERAL ARRANGEMENT, ISOMETRIC VIEW, NOTES, BILL OF MATERIALS	PROJECT No 09C-37-00 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 JDWDS DATE MAY 2019 SHEET: 01 OF 03	MODEL SCALE: 1:1 DWG SCALE: 1:1 @A3 OR AS SHOWN Copyright © J.A.M. DE WAAL PAPAURA NZ A3 No: 09C-37-00-SHT01
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