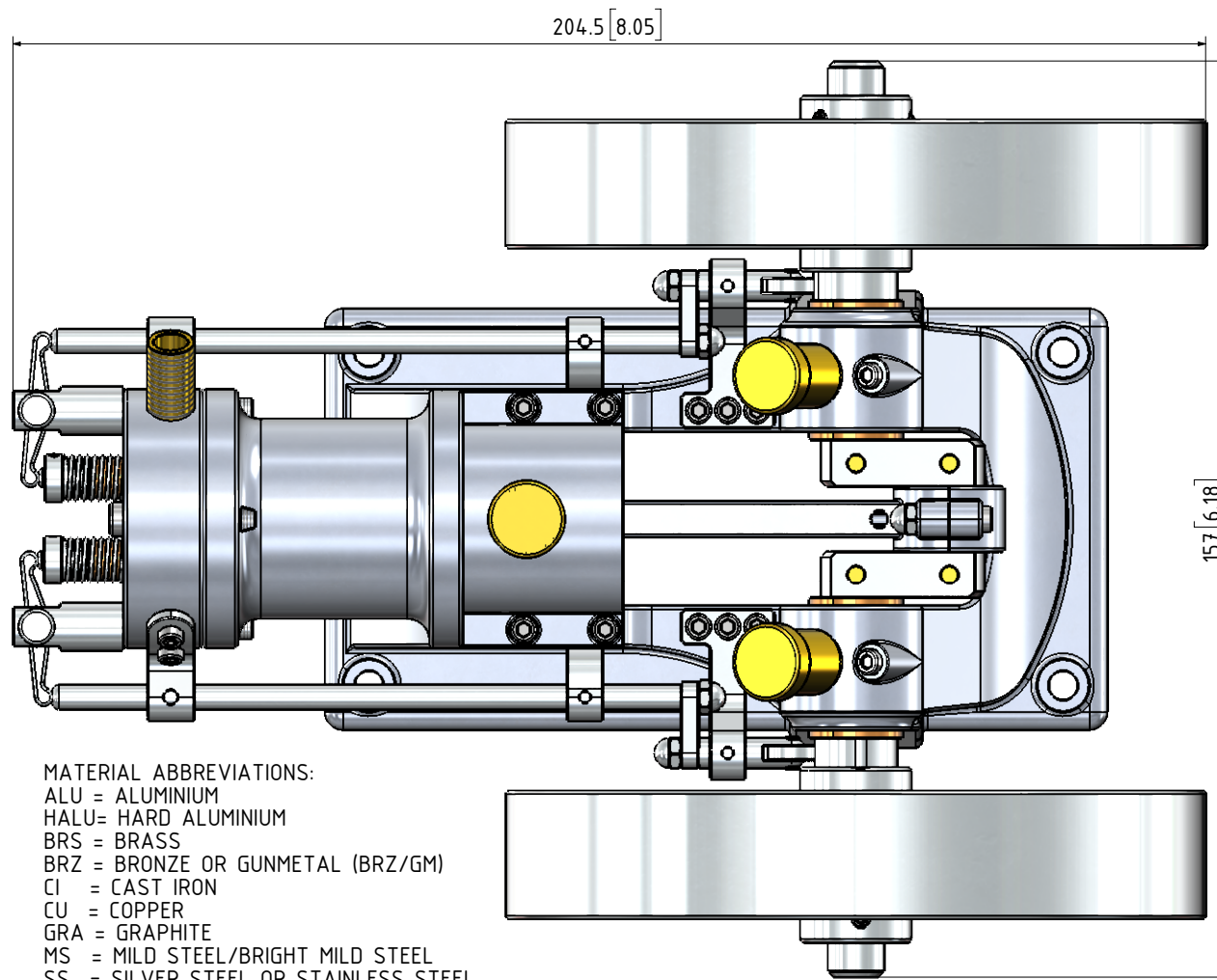


- GENERAL NOTES:
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
 1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
 2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
 3. PREFERABLY ALL TAPPED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

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

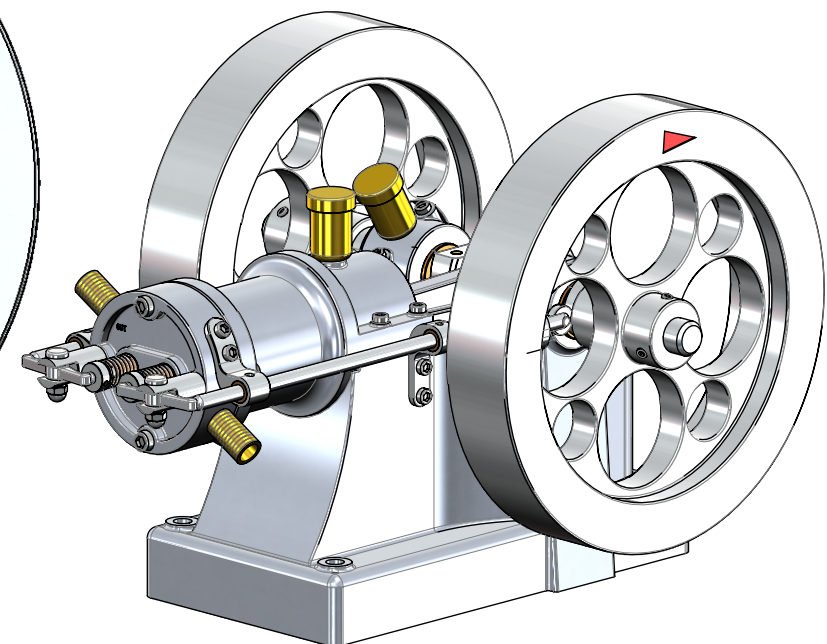
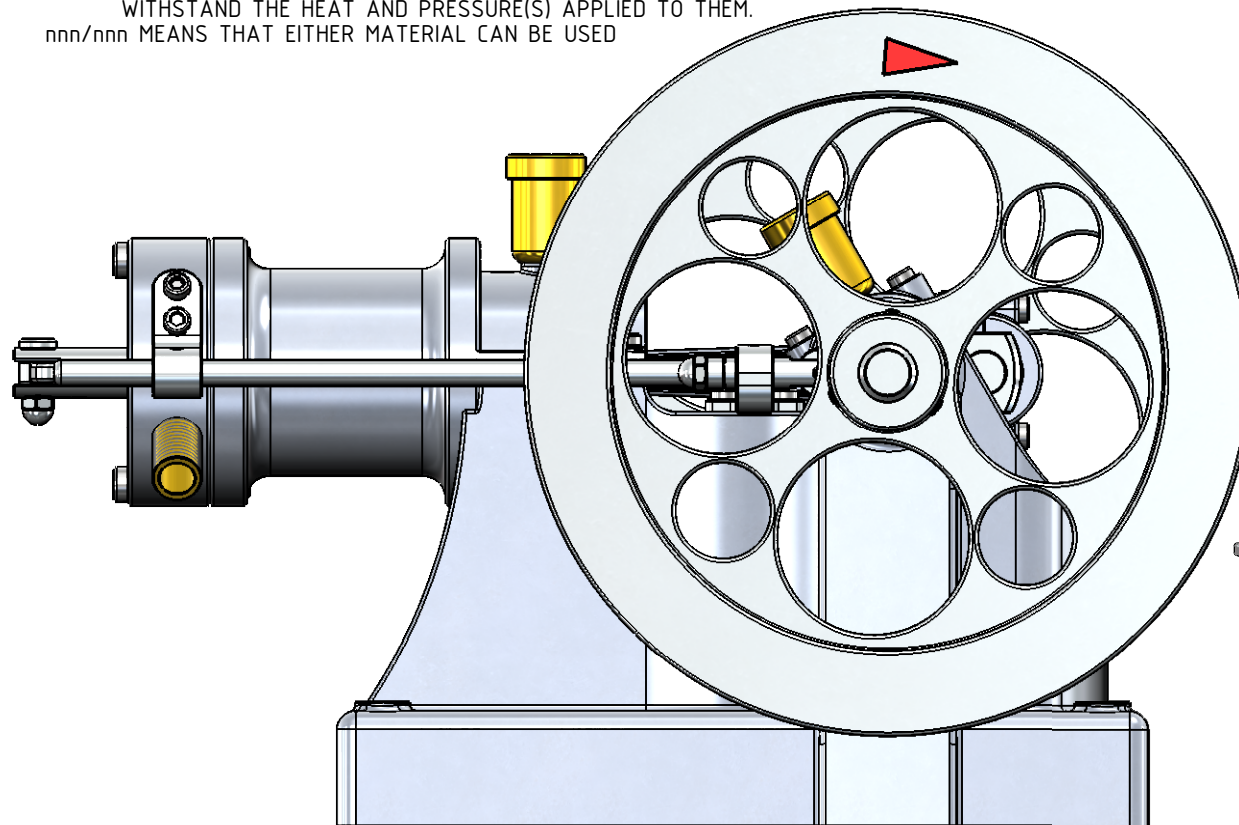
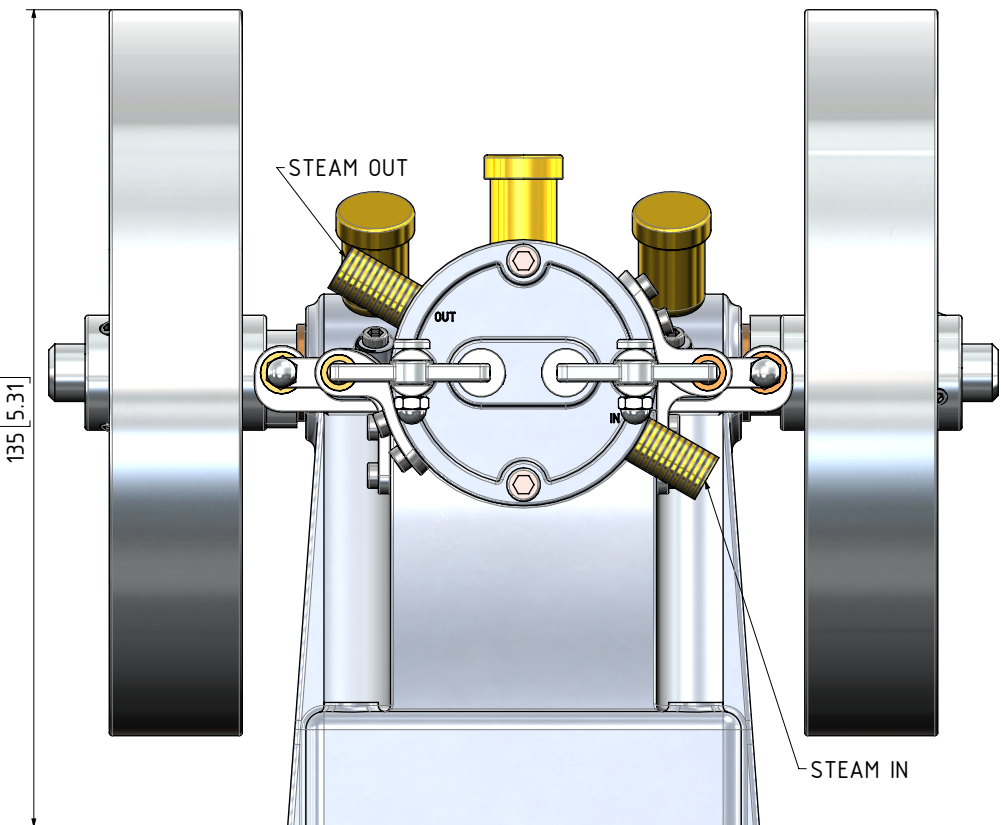


- MATERIAL ABBREVIATIONS:
- ALU = ALUMINIUM
 - HALU= HARD ALUMINIUM
 - BRS = BRASS
 - BRZ = BRONZE OR GUNMETAL (BRZ/GM)
 - CI = CAST IRON
 - CU = COPPER
 - GRA = GRAPHITE
 - MS = MILD STEEL/BRIGHT MILD STEEL
 - SS = SILVER STEEL OR STAINLESS STEEL
 - SPS = SPRING STEEL
 - PEEK= POLYETHER ETHER KETONE
 - 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.
 nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED

QTY.	PART NUMBER
1	09D-30-00-1-01-ENGINE BASE
1	09D-30-00-1-02-CYLINDER
1	09D-30-00-1-03-CYLINDER HEAD
2	09D-30-00-1-04-ROCKER ARM PIVOT STUD
3	09D-30-00-1-05-OIL CUP
2	09D-30-00-1-06-CAM FOLLOWER GUIDE-1
2	09D-30-00-1-07-CAM FOLLOWER GUIDE-2
2	09D-30-00-1-08-INLET-OUTLET NIPPLE
1	09D-30-00-2-01-CRANKSHAFT
1	09D-30-00-2-02-FLYWHEEL+CAM
1	09D-30-00-2-02-FLYWHEEL+CAM
1	09D-30-00-2-03-PISTON
1	09D-30-00-2-04-CON-ROD
2	09D-30-00-2-05-VALVE
2	09D-30-00-2-06-ROCKER ARM
2	09D-30-00-2-07-CAM FOLLOWER
8	09D-30-00-M3 DOME NUT
6	09D-30-00-M3x14 A-K CYL HEAD SCREW
4	09D-30-00-M3x20 A-K CYL HEAD SCREW
6	09D-30-00-M3x5 A-K GRUB SCREW
14	09D-30-00-M3x8 A-K CYL HEAD SCREW
2	09D-30-00-M4x20 A-K CYL HEAD SCREW

- 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

- ADDITIONAL NOTES ABOUT THESE DRAWINGS:
- 1) MATERIALS HAVE BEEN SPECIFIED ON THESE DRAWINGS.HOWEVER THE BUILDER CAN CHOOSE ITS OWN PREFERRED MATERIAL FOR THE PARTS/COMPONENTS.
 - 2) FASTENERS SUCH AS BOLTS, SCREWS, RIVETS, NUTS AND WASHERS HAVE BEEN SHOWN ON THESE DRAWINGS. THE BUILDER TO CHOOSE ITS OWN PREFERRED TYPE OF FASTENERS IF SO DESIRED.



NOTES: THE ORIGINAL DRAWINGS WERE GIVEN TO ME. THE ORIGINAL DRAWINGS HAD THE TITLE "COLE HIT & MISS GAS ENGINE", BY R. BROMPS, DATED 5-12-77. THESE DRAWINGS SHOW A CONVERTED HIT&MISS GAS ENGINE TO A STEAM ENGINE		PROJECT No 09D-30-00		PROJECTION JDWDS MODEL SCALE: 1:1	
TITLE EXPERIMENTAL STEAM ENGINE CONVERTED FROM A HIT & MISS GAS ENGINE		DRAWING CONTENTS GENERAL ARRANGEMENT, NOTES, ISOMETRIC VIEW, BILL OF MATERIALS		DATE AUGUST 2024 DWG SCALE: 1:1 @A3 OR AS SHOWN	
		J.D.W. 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.		Copyright © J.A.M. DE WAAL PAPAOKURA NZ	
		SHEET: 01 OF 03		A3 No: 09D-30-00-SHT-01	