

ADDITIONAL NOTES ABOUT THESE DRAWINGS:

- 1) NO MATERIALS HAVE BEEN SPECIFIED ON THESE DRAWINGS. THE BUILDER TO CHOOSE ITS OWN PREFERRED MATERIAL FOR THE PARTS/COMPONENTS. THE FOLLOWING COLOURS ON THE DRAWINGS INDICATES POSSIBLE MATERIALS WHICH CAN BE USED FOR PARTS: YELLOW=BRASS, LIGHT GREY=ALUMINIUM OR MILD STEEL, REDDISH BROWN=COPPER, DARK BROWN=BRONZE OR GUN METAL, WHITISH=SILVER STEEL OR STAINLESS STEEL
- 2) FASTENERS SUCH AS BOLTS, SCREWS, RIVETS, NUTS AND WASHERS HAVE BEEN SHOWN ON THESE DRAWINGS. HOWEVER THE BUILDER TO CHOOSE ITS OWN PREFERRED TYPE OF FASTENERS
- 3) THE STEAM/AIR PRESSURE TO OPERATE THIS ENGINE TO BE DETERMINED BY THE BUILDER
- 4) THE FOLLOWING ARE NOT SHOWN ON THESE DRAWING:
 - A) CYLINDER DRAIN HOLES AND ASSOCIATED DRAIN COCKS.
 - B) DRIVE PULLEY FOR DRIVING OTHER MACHINERY.
 - C) STEAM EXHAUST INTER CONNECTING PIPING
 - D) OILCUP TO LUBRICATE THE CROSSHEAD GUIDE
- 5) THE NUMBER OF TEETH OF THE BEVELED GEARS IS INDICATIVE ONLY. THE BUILDER TO SOURCE STANDARD GEARS WITH THE GIVEN DIMENSIONS ON THE DRAWINGS

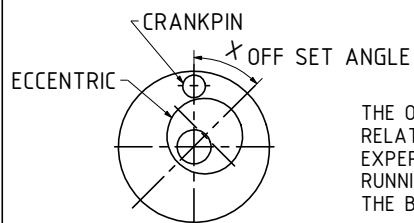
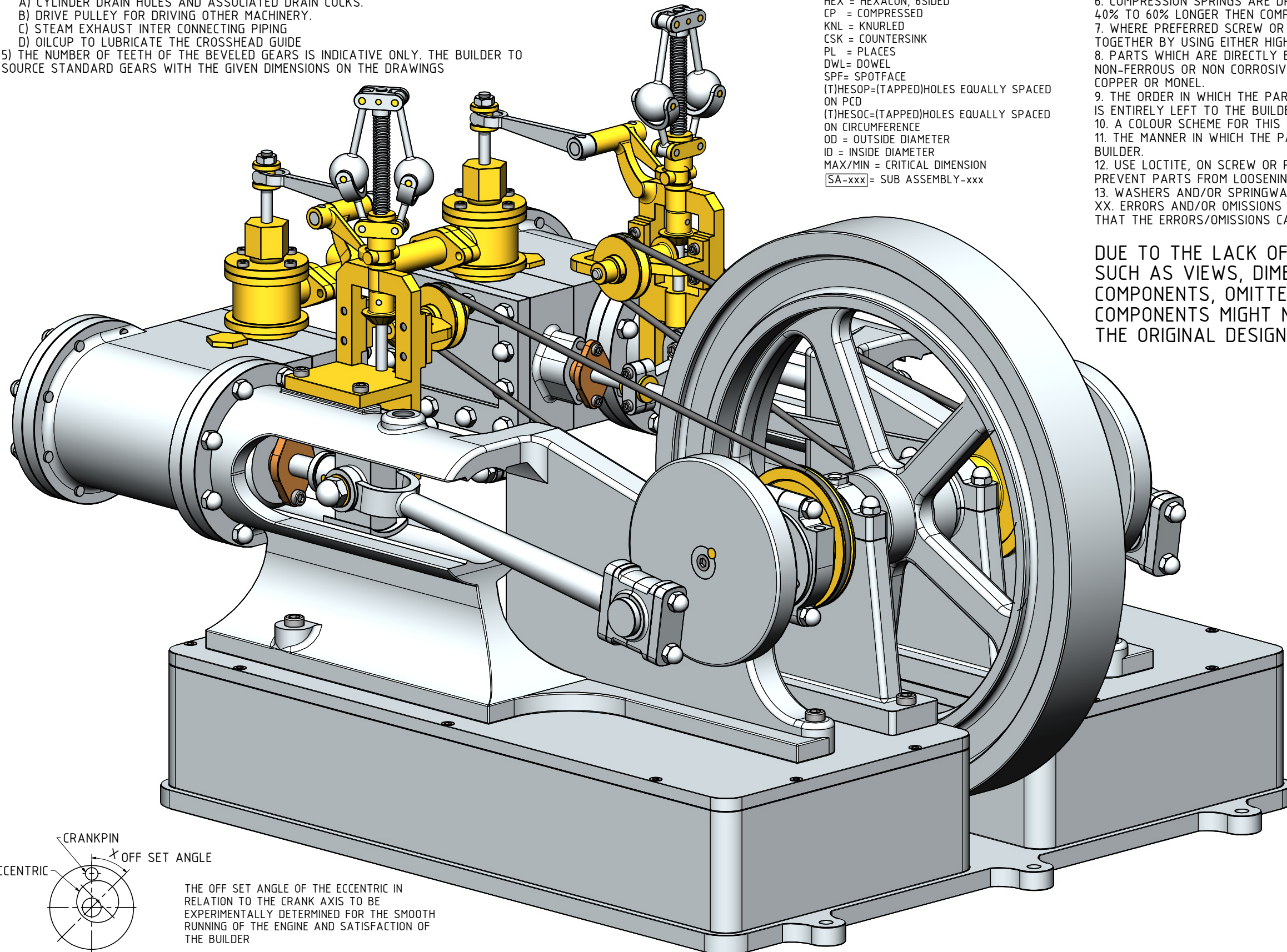
OTHER ABBREVIATIONS

- 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

GEERAL 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.

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.



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	09B-38-00-1-01-BASE BED PLATE
2	09B-38-00-1-02-MAIN BEARING
1	09B-38-00-1-03-CROSSHEAD GUIDE
1	09B-38-00-1-03-CROSSHEAD GUIDE
2	09B-38-00-1-04-CYLINDER+VALVE CHEST
2	09B-38-00-1-05-VALVE SPINDLE GUIDE
4	09B-38-00-1-06-M12 PLUG SCREW
1	09B-38-00-1-07-GOVERNER BASE FRAME
1	09B-38-00-1-07-GOVERNER BASE FRAME
2	09B-38-00-1-08-EXHAUST CONNECTOR
2	09B-38-00-1-09-STEAM INLET CONTROLLER BODY
1	09B-38-00-1-10-STEAM INLET PIPE
1	09B-38-00-2-01-CRANKSHAFT+FLYWHEEL
2	09B-38-00-2-02-PISTON+CROSSHEAD
2	09B-38-00-2-03-CON-ROD
2	09B-38-00-2-04-SLIDEVALVE
1	09B-38-00-2-05-ECCENTRIC STRAP
1	09B-38-00-2-05-ECCENTRIC STRAP
2	09B-38-00-2-06-GOVERNER DRIVEN PULLEY
2	09B-38-00-2-07-GOVERNER DRIVE BELT
2	09B-38-00-2-08-GOVERNER VERTICAL DRIVE SPINDLE
2	09B-38-00-2-09-GOVERNER CONTROL COLLAR
4	09B-38-00-2-10-GOVERNER FLYWEIGHT
4	09B-38-00-2-11-GOVERNER FLYWEIGHT CONNECTOR YOKE
1	09B-38-00-2-12-GOVERNER CONTROL COLLAR ARM
1	09B-38-00-2-12-GOVERNER CONTROL COLLAR ARM
2	09B-38-00-2-13-STEAM INLET CONTROL VALVE
2	09B-38-00-2-14-GOVERNER SPRING
12	09B-38-00-M3x10 A-K CYL HEAD SCREW
22	09B-38-00-M3x12 A-K C-SINK SCREW
4	09B-38-00-M3x20 A-K CYL HEAD SCREW
2	09B-38-00-M3x4.5 A-K GRUB SCREW
8	09B-38-00-M3x6 A-K CYL HEAD SCREW
68	09B-38-00-M4 DOME NUT
2	09B-38-00-M4 NUT
8	09B-38-00-M4x10 A-K CYL HEAD SCREW
8	09B-38-00-M4x14 A-K CYL HEAD SCREW
4	09B-38-00-M4x26 A-K CYL HEAD SCREW
4	09B-38-00-M4x34 A-K CYL HEAD SCREW
2	09B-38-00-M4x4 A-K C-SINK SCREW
8	09B-38-00-M5 DOME NUT
2	09B-38-00-M5 NUT
6	09B-38-00-M5x20 A-K CYL HEAD SCREW
4	09B-38-00-M5x24 A-K CYL HEAD SCREW
2	09B-38-00-M6 DOME NUT
2	09B-38-00-M6 NUT
2	09B-38-00-M6 WASHER

NOTES: FOUND ORIGINAL DRAWINGS ON THE INTERNET. THE DRAWING TITLE WAS "DOUBLE TANGYE TYPE MILL ENGINE" BY EDGAR T WESTBURY. THE ENGINE SHOWN ON THESE DRAWINGS IS APPROXIMATELY 1.5 TIMES THE ORIGINAL SIZE

TITLE
A DOUBLE TANGYE TYPE MILL STEAM ENGINE (BORE=43mm STROKE=58mm)

DRAWING CONTENTS
ISOMETRIC VIEW, NOTES, BILL OF MATERIALS

PROJECT No 09B-38-00
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PROJECTION
JDWDS MODEL SCALE: 1:1
 DWG SCALE: 1:1 @A3 OR AS SHOWN
 DATE AUGUST 2022 Copyright © J.A.M. DE WAAL PAPAURA NZ
 SHEET: 02 OF 07 **A3** No: 09B-38-00-SHT-02