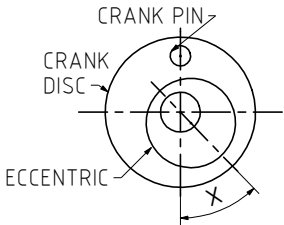


GENERAL NOTES:
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
3. PREFERABLY ALL TAPPED HOLES 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. USE SEALING GASKETS WERE DEEMED NECESSARY.
15. 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.

QTY	PART NUMBER
1	09B-52-00-1-01-BED PLATE
1	09B-52-00-1-02-CYLINDER SUPPORT BRACKET
2	09B-52-00-1-03-MAIN BEARING HOUSING
1	09B-52-00-1-04-CYLINDER+VALVE CHEST
1	09B-52-00-1-05-CYLINDER FRONT COVER
1	09B-52-00-1-06-CYLINDER REAR COVER
1	09B-52-00-1-07-STEAM INLET CONTROL BODY
1	09B-52-00-1-08-WATER PUMP HOUSING
1	09B-52-00-1-09-GOVERNOR BODY
1	09B-52-00-2-01-CRANKSHAFT+FLYWHEEL
1	09B-52-00-2-02-PISTON+CROSSHEAD
1	09B-52-00-2-03-CON ROD
1	09B-52-00-2-04-VALVE ECCENTRIC
1	09B-52-00-2-04-VALVE ECCENTRIC
1	09B-52-00-2-05-SLIDE VALVE
1	09B-52-00-2-06-VALVE ECCENTRIC STRAP
1	09B-52-00-2-07-WATER PUMP ECCENTRIC STRAP
1	09B-52-00-2-08-WATER PUMP PISTON
1	09B-52-00-2-09-GOVERNOR HORIZONTAL DRIVEN SHAFT
1	09B-52-00-2-10-GOVERNOR VERICAL DRIVEN SHAFT
1	09B-52-00-2-11-GOVERNOR V-BELT
1	09B-52-00-2-12-GOVERNOR PUSH ROD
2	09B-52-00-2-13-GOVERNOR FLYWEIGHT
1	09B-52-00-2-14-GOVERNOR OPERATING LEVER
1	09B-52-00-2-15-THROTTLE LEVER
1	09B-52-00-2-16-THROTTLE CONTROL LINK
1	09B-52-00-M2 DOME NUT
1	09B-52-00-M2 NUT
1	09B-52-00-M2 WASHER
2	09B-52-00-M2.5x3.5 A-K CYL HEAD SCREW
8	09B-52-00-M3x10 A-K CYL HEAD SCREW
8	09B-52-00-M3x14 A-K CYL HEAD SCREW
2	09B-52-00-M3x16 A-K CYL HEAD SCREW
2	09B-52-00-M3x20 A-K CYL HEAD SCREW
7	09B-52-00-M3x5 A-K GRUB SCREW
12	09B-52-00-M3x7 A-K CYL HEAD SCREW
18	09B-52-00-M4 NUT
4	09B-52-00-M4x10 A-K CYL HEAD SCREW
8	09B-52-00-M4x14 A-K CYL HEAD SCREW
4	09B-52-00-M4x28 A-K CYL HEAD SCREW
3	09B-52-00-M4x5.5 A-K GRUB SCREW
1	09B-52-00-M5 NUT
6	09B-52-00-M5x18 A-K CYL HEAD SCREW
1	09B-52-00-M6 NUT
1	09B-52-00-M6 WASHER

MATERIAL ABBREVIATIONS:
ALU = ALUMINIUM
HALU= HARD ALUMINIUM
BRS = BRASS
PBRZ= PHOSPHORE BRONZE
BRZ = BRONZE OR GUNMETAL (BRZ/GM)
OLT = OILITE
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

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



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

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

NOTES: THE ORIGINAL DRAWING(S) WERE GIVEN TO ME. THE ORIGINAL DESIGN WAS BY EDGAR T. WESTBURY, NO DATE(S) SHOWN ON ORIGINAL DRAWINGS. THE ENGINE SHOWN ON THESE DRAWINGS IS 1.5 TIMES LARGER THEN THE ORIGINAL AND WAS CONVERT FROM IMPERIAL TO METRIC.

TITLE	DRAWING CONTENTS	PROJECT No 09B-52-00	PROJECTION	DATE	MODEL SCALE: 1:1
1 CYLINDER HORIZONTAL STEAM ENGINE CALLED "UNICORN" (B=29mm S=48mm)	ISOMETRIC VIEW, NOTES AND BILL OF MATERIALS	JDW DRAUGHTING SERVICES J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPA KURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.	JDWDS	MAY 2026	DWG SCALE: 1:1 @A3 OR AS SHOWN
				SHEET: 02 OF 06	Copyright © J.A.M. DE WAAL PAPA KURA NZ A3 No:09B-52-00-SHT-02

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES