

- O. 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
- 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.

## MATERIAL ABBREVIATIONS:

ALU = ALUMINIUM

HALU= HARD ALUMINIUM

BRS = BRASS

BRZ = BRONZE OR GUNMETAL

(BRZ/GM)

CI = CAST IRON CU = COPPER

GRA = GRAPHITE

= 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

SA-xxx = SUB ASSEMBLY-xxx

NOTES: THE DRAWINGS WERE GIVEN TO ME. THE DESIGNER/DRAFTER AND THE DATES OF THE ORIGINAL DRAWINGS ARE UNKNOWN.

A STIRLING ENGINE USING TWO FLYWHEELS

ISOMETRIC VIEWS AND NOTES

PROJECT No 05A-14-00

JDW DRAUGHTING SERVICES J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION JDWDS MODEL SCALE: 1:1

DWG SCALE: 1:1 @A4 OR AS SHOWN ATE AUGUST 2020 Copyright © J.A.M. DE WAAL PAPAKURA NZ

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