



IMPORTANT NOTE:
BEFORE STARTING: IT IS STRONGLY ADVISED THAT THE BOILER AS SHOWN ON THESE DRAWINGS SHOULD BE INSPECTED BY AN AUTHORISED PROFESSIONAL ENGINEER AND THE WORKING AND MAXIMUM BOILER PRESSURE TO BE CALCULATED. MAKE SURE THE BOILER FULLY COMPLIES WITH THE LOCAL RULES AND REGULATIONS OF MODEL BOILERS. A COMPLIANCE AND SAFETY/TEST CERTIFICATE SHOULD BE OBTAINED.

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.

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
 2) FASTENERS.
 NO 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.
 2) PRESSURE GAUGE.
 THE RANGE OF THE PRESSURE GAUGE TO BE DETERMENT AFTER MAXIMUM BOILER PRESSURE IS ESTABLISHED AND THE AVAILABILITY ON THE MARKET. THE PRESSURE GAUGE IS A PROPRIETY ITEM.
 3) PIPING
 PREFERABLY ALL PIPING TO BE COPPER. THE PIPING ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER TO ESTABLISH THE PIPE LENGTH AND ROUTE FROM WORK PIECE. THE PIPE SIZES ARE INDICATIVE ONLY. THE BUILDER TO ESTABLISH THE AVAILABILITY OF THE PIPE SIZE(S) FROM THE LOCAL SUPPLIER(S). THE PIPE NUT(S) TO BE ADJUSTED TO THE USED PIPE SIZE.
 4) BOILER.
 BEFORE STARTING: THE BOILER AS SHOWN ON THESE DRAWING SHOULD BE INSPECTED BY AN AUTHORISED PROFESSIONAL ENGINEER. THE RUNNING AND MAXIMUM BOILER PRESSURE TO BE CALCULATED. MAKE SURE THE THE BOILER FULLY COMPLIES WITH THE LOCAL RULES AND REGULATIONS OF MODEL BOILERS. A COMPLIANCE AND TEST CERTIFICATE SHOULD BE OBTAINED.
 BOILER INSULATION AND GLADDING ARE NOT SHOWN ON THESE DRAWINGS.
 IF BOILER INSULATION IS PREFERRED THEN THE BUILDER TO SOURCE THE APPROPRIATE MATERIAL AND THICKNESS, THE GLADDING AND THE STRAPS TO BE DESIGNED BY BUILDER.
 5) DUMMY PARTS.
 IF PREFERRED SOME OF THE DUMMY PARTS COULD BE REPLACED WITH REAL OPERATING PART(S). THE BUILDER TO DESIGN THE PART OR ALTERNATIVELY PURCHASE.
 6) ENHANCEMENT
 THE APPEARANCE OF THE TRATION ENGINE COULD BE ENHANCED BY ADDING SOME EXTRA PARTS SUCH AS: LAMP HOLDERS, FRONT AND REAR LIGHTS.

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

NOTES: DOWNLOADED ORIGINAL DRAWINGS FROM THE INTERNET. DRAWINGS WERE DRAWN BY BERT CLEWS, DATED NOV. 1993.

TITLE
A MODEL OF A "GARRETT" TRACTION ENGINE

DRAWING CONTENTS
**GENERAL ARRANGEMENT
 TOP VIEW AND NOTES**

PROJECT No 08-05-00
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PROJECTION
 DATE MARCH 2024
 SHEET: 04 OF 22
 JDWDS
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 MODEL SCALE: 1:3
 DWG SCALE: 1:1 @A2 OR AS SHOWN
 No:08-05-00-SHT-04

PLEASE NOTE THIS IS AN "A2" SIZE SHEET

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES