



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. INQUIRE AT THE APPROPRIATE AUTHORITIES WHETHER OR NOT THIS BOILER REQUIRE A PRESSURE TEST CERTIFICATE.
 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:

0) 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
 1) FASTENERS.
 NO FASTENERS SUCH AS RIVETS, BOLTS, SCREWS, NUTS AND WASHERS HAVE BEEN SHOWN ON THESE DRAWINGS. THE BUILDER TO CHOOSE ITS OWN PREFERRED TYPE OF FASTENERS.
 2) PRESSURE GAUGE. (NOT SHOWN ON THESE DRAWINGS)
 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), IF USED, TO BE ADJUSTED TO THE PIPE SIZE USED.
 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. (NO MORE THAN 2BAR (29PSI) IS ADVISABLE
 BOILER INSULATION AND BOILER CLADDING ARE NOT SHOWN ON THESE DRAWINGS.
 IF BOILER INSULATION AND BOILER CLADDING IS INSTALLED THEN THE THE FOLLOWING COULD BE CONSIDERED:
 INSULATION MATERIAL 2mm THICK AND CLADDING 0.5mm THICK.
 THE BOILER STRAPS DIAMETER SHOULD BE ADJUSTED ACCORDINGLY.
 5) APPENDAGES.
 THE FOLLOWING APPENDAGES ARE NOT SHOWN ON THESE DRAWINGS: 1) WATER LEVEL GAUGE, 2) NON RETURN VALVE, 3)SAFETY VALVE, 4)PRESSURE GAUGE, 5)BLOWNDOWN VALVE, THE BUILDER TO DESIGN THE PART(S) OR ALTERNATIVELY PURCHASE.
 5) ENHANCEMENT
 THE APPEARANCE OF THE CARRIAGE COULD BE ENHANCED BY ADDING SOME EXTRA PARTS SUCH AS: LAMP HOLDERS, FRONT AND REAR LIGHTS, WHISTLE, OPENING AND CLOSING FRONT DOORS, INTERNAL DECORATIONS IN THE PASSENGERS CABIN SUCH AS SEATS AND FLOOR COVERINGS ect.
 6) THERE ARE QUITE A LOT OF PICTURES TO BE FOUND ON THE INTERNET. SO A COLOR SCHEME CAN CHOOSE

QTY.	PART NUMBER
1	09E-32-00-1-01-CHASSIS
2	09E-32-00-1-02-REAR WHEEL BEARING
2	09E-32-00-1-03-CRANKSHAFT BEARING
1	09E-32-00-1-04-CROSSHEAD GUIDE RAIL
1	09E-32-00-1-05-BOILER CRADLE
2	09E-32-00-1-06-DISENGAGE LEVER GUIDE
2	09E-32-00-1-07-REAR WHEEL AXLE
1	09E-32-00-1-08-BOILER)
1	09E-32-00-1-09-CYLINDER
1	09E-32-00-1-10-BOILER INTERNAL SMOKE STACK
1	09E-32-00-1-10-BOILER INTERNAL SMOKE STACK
1	09E-32-00-1-11-SMOKE STACK
4	09E-32-00-1-12-BOILER NIPPLE
2	09E-32-00-1-12-BOILER NIPPLE
1	09E-32-00-1-12-BOILER NIPPLE
1	09E-32-00-1-13-CYLINDER INTERNAL PORT PIPE
1	09E-32-00-1-14-CYLINDER EXTERNAL PORT PIPE
1	09E-32-00-1-15-STEAM SUPPLY PIPE
1	09E-32-00-1-16-BOILER STEAM SUPPLY PIPE
1	09E-32-00-1-17-STEAM SUPPLY VALVE
1	09E-32-00-1-18-FOOT PLATE BRACKET
2	09E-32-00-1-19-FOOT PLATE STAY
1	09E-32-00-1-20-EXHAUST STEAM PIPE
1	09E-32-00-1-21-FIRE BOX DOOR
1	09E-32-00-1-22-FOOT REST PLATE
1	09E-32-00-1-23-DRIVERS SEAT MOUNTING BLOCK
1	09E-32-00-1-24-DRIVERS SEAT STRUCTURE
2	09E-32-00-1-25-SHORT STEP
2	09E-32-00-1-26-LONG STEP
4	09E-32-00-1-27-PASSENGERS CABIN PILLAR
4	09E-32-00-1-28-STRAP RING
4	09E-32-00-1-29-LEATHER STRAP
1	09E-32-00-1-30-PASSENGERS CABIN
1	09E-32-00-1-31-CHASSIS CROSS BEAM
1	09E-32-00-1-32-CABIN ROOF
1	09E-32-00-1-33-CABIN DOOR
1	09E-32-00-2-01-CRANKSHAFT
1	09E-32-00-2-02-CROSSHEAD
1	09E-32-00-2-03-CON-ROD
2	09E-32-00-2-04-CRANKSHAFT GEAR WHEEL
2	09E-32-00-2-06-DISENGAGING COLLAR+ARM
2	09E-32-00-2-07-DISENGAGING LEVER
2	09E-32-00-2-08-REAR WHEEL GEAR WHEEL+HUB
24	09E-32-00-2-09-REAR WHEEL SPOKE
2	09E-32-00-2-10-REAR WHEEL RIM
1	09E-32-00-2-11-FRONT WHEEL FORK
1	09E-32-00-2-12-FRONT WHEEL
1	09E-32-00-2-13-STEAM CONTROL VALVE
1	09E-32-00-2-14-VALVE SPRING
1	09E-32-00-2-15-VALVE BLOCK LINK
1	09E-32-00-2-16-SLIDE BLOCK

MATERIAL ABBREVIATIONS:

ALU = ALUMINIUM
 HALU= HARD ALUMINIUM
 BR = 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

OTHER ABBREVIATIONS

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
 [SA-xxx]= SUB ASSEMBLY-xxx

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

NOTES: THIS DESIGN IS BASED ON DRAWINGS/SKETCHES AND PICTURES WHICH I FOUND ON THE INTERNET. NONE OF THE DRAWINGS/SKETCHES WERE DIMENSIONED.

TITLE
A MODEL OF RICHARD TREVITHICK'S LONDON STEAM CARRIAGE OF 1802/1803

DRAWING CONTENTS
ISOMETRIC VIEWS, NOTES AND BILL OF MATERIALS

PROJECT No 09E-32-00
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PROJECTION
JDWDS
 DATE MAY 2019
 SHEET: 02 OF 07

MODEL SCALE: 1:8.7
 DWG SCALE: 1:1 @A3 OR AS SHOWN
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 No: 09E-32-00-SHT02