

QTY.	PART NUMBER
1	JULIAN-1-01-RH-HORN PLATE
1	JULIAN-1-02-LH-HORN PLATE
1	JULIAN-1-03-MOTION SUPPORT PLATE
1	JULIAN-1-04-VALVE ROCKER MOUNT
1	JULIAN-1-05-LH PLATFORM UNDER FRAME
1	JULIAN-1-06-RH PLATFORM UNDER FRAME
1	JULIAN-1-07-FOOTPLATE
1	JULIAN-1-08-REAR FUEL BUNKER
1	JULIAN-1-09A-LH-REAR FUEL BUNKER SIDE
1	JULIAN-1-09B-RH-REAR FUEL BUNKER SIDE
1	JULIAN-1-10A-LH-REAR FUEL BUNKER INSIDE
1	JULIAN-1-10B-RH-REAR FUEL BUNKER INSIDE
1	JULIAN-1-11A-LH-PLATFORM SIDE
1	JULIAN-1-11B-RH-PLATFORM SIDE
1	JULIAN-1-12-DRAW BAR
1	JULIAN-1-13-DRAW BAR PIN
1	JULIAN-1-14-REAR STEP
1	JULIAN-1-14-REAR STEP
6	JULIAN-1-15-BEARING BLOCK
6	JULIAN-1-16-BEARING
1	JULIAN-1-17-STEERING COLUMN TOP BRACKET
1	JULIAN-1-18-THROTTLE CONTROL SHAFT
1	JULIAN-1-19-DUMMY REVERSING QUADRANT
1	JULIAN-1-20-REVERSING HANDLE
1	JULIAN-1-21A-FUEL TANK BOTTOM PART
1	JULIAN-1-21B-FUEL TANK TOP PART
2	JULIAN-1-22-BURNER
1	JULIAN-1-23-CENTER BURNER
2	JULIAN-1-24-REAR ROOF SUPPORT POLE
8	JULIAN-1-25-ROOF RAFTER
2	JULIAN-1-26-ROOF END PLATE
2	JULIAN-1-27-ROOF
1	JULIAN-1-28-ROOF POLLE HOLDING BLOCK
1	JULIAN-1-28-ROOF POLLE HOLDING BLOCK
1	JULIAN-1-28-ROOF POLLE HOLDING BLOCK
1	JULIAN-1-29-IDLER GEAR WHEEL SHAFT
1	JULIAN-1-30-COAL BUNKER BOTTOM PLATE
1	JULIAN-1-31-COAL BUNKER BOTTOM PLATE
QTY.	PART NUMBER
1	JULIAN-2-01-BOILER SHELL
1	JULIAN-2-02-BOILER FRONT HEAD PLATE
1	JULIAN-2-03-BOILER BACK HEAD PLATE
3	JULIAN-2-04-BOILER TOP BUSH
1	JULIAN-2-05A-BACK HEAD BUSH
1	JULIAN-2-05B-BACK HEAD BUSH
1	JULIAN-2-06-BOILER LONGITUDINAL STAY
1	JULIAN-2-07-CENTER WATER PIPE
1	JULIAN-2-08-LH WATER PIPE-1
1	JULIAN-2-09-RH WATER PIPE-1
1	JULIAN-2-10-BOILER OUTER CASING
2	JULIAN-2-11- WATER PIPE-2
1	JULIAN-2-12-FIREBOX WRAPPER
1	JULIAN-2-13-FIREBOX THROAT PLATE
1	JULIAN-2-14-FIREBOX BACK PLATE
1	JULIAN-2-15-BOILER FRONT SUPPORT PLATE
1	JULIAN-2-16-STEAM DOME BOTTOM
1	JULIAN-2-17-STEAM DOME TOP
1	JULIAN-2-18-SMOKE STACK
1	JULIAN-2-19-SMOKE BOX DOOR
1	JULIAN-2-20-SMOKE BOX DOOR HINGE
1	JULIAN-2-21-SMOKE BOX DOOR HINGE BRACKET
1	JULIAN-2-22-PERCH BRACKET
1	JULIAN-2-23-PERCH BRACKET STAY
1	JULIAN-2-24-CYLINDER MOUNTING BRACKET
1	JULIAN-2-25-CYLINDER
1	JULIAN-2-26-CYLINDER FRONT LID
1	JULIAN-2-27-CYLINDER REAR LID
1	JULIAN-2-28-CYLINDER REAR LID GLAND
2	JULIAN-2-29-CROSS HEAD GUIDE
1	JULIAN-2-30-CYLINDER COVER
1	JULIAN-2-31-VALVE CHEST
1	JULIAN-2-32-VALVE CHEST COVER
1	JULIAN-2-33-VALVE CHEST GLAND
1	JULIAN-2-34-BLAST PIPE
1	JULIAN-2-35-EXHAUST PIPE+FLANGE
2	JULIAN-2-36-CONDENSATE RELEASE VALVE BODY
2	JULIAN-2-37-CONDENSATE RELEASE VALVE SPINDLE
1	JULIAN-2-38-FRONT RUNBOARD BRACKET
1	JULIAN-2-39-REAR RUNBOARD BRACKET
1	JULIAN-2-40-RUNBOARD+ STEPS
1	JULIAN-2-41-STEERING BRACKET MOUNT

QTY.	PART NUMBER
1	JULIAN-2-41-STEERING BRACKET MOUNT
1	JULIAN-2-42-LH STEERING BRACKET
1	JULIAN-2-43-RH STEERING BRACKET
1	JULIAN-2-44-WORM GEAR BUSH
1	JULIAN-2-45-REGULATOR STAND
1	JULIAN-2-46-STEAM SUPPLY CONNECTOR
1	JULIAN-2-47-LUBRICATOR BODY
1	JULIAN-2-48-STEAM SUPPLY PIPE
2	JULIAN-2-49-STEERING CHAIN ROLLER BEARING
1	JULIAN-2-50-STEERING VALVE BODY
1	JULIAN-2-51-STEERING VALVE BALL
1	JULIAN-2-52-STEERING VALVE LIFTING STEM
1	JULIAN-2-53-STEERING VALVE SPRING
1	JULIAN-2-54-STEERING VALVE PRESSURE ADJUSTER
1	JULIAN-2-55-WATER FILLER NIPPLE
1	JULIAN-2-56-WATER LEVEL CHECK PIPE NIPPLE
3	JULIAN-2-57-WTR LVL CHECK PIPE NUT
1	JULIAN-2-58-WTR LVL CHECK PIPE
1	JULIAN-2-59-PRESSURE GAUGE NIPPLE
1	JULIAN-2-60-PRESSURE GAUGE
2	JULIAN-2-61-PRESSURE GAUGE PIPE NUT
1	JULIAN-2-62-PRESSURE GAUGE PIPE
1	JULIAN-2-63-OUTER CASING ROOF POLE
1	JULIAN-2-64-WTR LVL VALVE BODY
1	JULIAN-2-65-WTR LVL VALVE SPINDLE
1	JULIAN-2-66-WTR LVL VALVE SPINDLE NUT
1	JULIAN-2-67-WTR LVL DISCHARGE PIPE
1	JULIAN-2-68-WATER FILLER SCREW
1	JULIAN-2-69-FUEL TANK FILLER CAP SCREW
1	JULIAN-2-70-CHIMNEY INTERNAL MOUNTING PLATE
1	JULIAN-2-71-NAME PLATE
QTY.	PART NUMBER
1	JULIAN-3-01-CRANKSHAFT
1	JULIAN-3-02-CRANK DISC
1	JULIAN-3-03-CRANK PIN
1	JULIAN-3-04-CON-ROD
1	JULIAN-3-05-CROSSHEAD CENTER PLATE - Copy
2	JULIAN-3-06-CROSSHEAD SIDE PLATE
1	JULIAN-3-07-CROSSHEAD GUDGEON PIN
1	JULIAN-3-08-PISTON ROD
1	JULIAN-3-09-PISTON
1	JULIAN-3-10-VALVE ECCENTRIC
1	JULIAN-3-11-ECCENTRIC DRIVE COLLAR
1	JULIAN-3-12-ECCENTRIC STRAP
2	JULIAN-3-13-ECC STRAP+ VALVE SPINDLE YOKE
1	JULIAN-3-14-VALVE
1	JULIAN-3-15-VALVE ROD
1	JULIAN-3-16-VALVE ROCKER PLATE
1	JULIAN-3-17-THROTTLE HANDLE
1	JULIAN-3-18-THROTTLE CONTROL VALVE
1	JULIAN-3-19-THROTTLE PULL WIRE
2	JULIAN-3-20-FRONT WHEEL HUB
2	JULIAN-3-21-FRONT WHEEL RIM
32	JULIAN-3-22-FRONT WHEEL SPOKES
2	JULIAN-3-23-REAR WHEEL HUB
2	JULIAN-3-24-REAR WHEEL RIM
48	JULIAN-3-25-REAR WHEEL SPOKES
24	JULIAN-3-26A-REAR WHEEL GROUWER-LH
24	JULIAN-3-26B-REAR WHEEL GROUWER-RH
1	JULIAN-3-27-FLYWHEEL HUB
1	JULIAN-3-28-FLYWHEEL RIM
6	JULIAN-3-29-FLYWHEEL SPOKE
1	JULIAN-3-30-FLYWHEEL OUTER RIM
1	JULIAN-3-31-FRONT WHEEL AXLE
1	JULIAN-3-32-REAR WHEEL AXLE
1	JULIAN-3-33-COUNTER SHAFT
1	JULIAN-3-34-FRONT AXLE FORK
1	JULIAN-3-35-FRONT AXLE FORK COLLAR
1	JULIAN-3-36-CRANKSHAFT GEAR WHEEL-Z=32
1	JULIAN-3-37-IDLER GEAR WHEEL Z=66
1	JULIAN-3-38-COUNTER SHAFT GEAR WHEEL Z=81
2	JULIAN-3-39-COUNTER SHAFT GEAR WHEEL Z=16
2	JULIAN-3-40-REAR WHEEL GEAR WHEEL Z=120
6	JULIAN-3-41-REAR WHEEL SPACER
2	JULIAN-3-42-REAR WHEEL AXLE SPACER
1	JULIAN-3-43-STEERING COLUMN
1	JULIAN-3-44-STEERING WHEEL
1	JULIAN-3-45-STEERING GEAR WHEEL Z=20
1	JULIAN-3-46-STEERING CHAIN ROLLER
1	JULIAN-3-47-STEERING CHAIN ROLLER COLLAR
1	JULIAN-3-48-STEERING WORM GEAR

QTY.	PART NUMBER
2	JULIAN-3-49-STEERING CHAIN LUG
1	JULIAN-3-50-STEERING CHAIN
1	JULIAN-3-51-STEERING CHAIN
2	JULIAN-3-52-CONTROL LEVER COLLAR
1	JULIAN-3-53-ECCENTRIC STRAP GUIDE SCREW
2	JULIAN-3-54-YOKE GUDGEON PIN
1	JULIAN-3-55-VALVE ROCKER GUDGEON PIN
1	JULIAN-3-56-REGULATOR PRESSURE SPRING
2	JULIAN-3-57-GEAR WHEEL KEYS
2	JULIAN-3-57-GEAR WHEEL KEYS
2	JULIAN-3-58-COUNTER SHAFT COLLAR
QTY.	PART NUMBER
1	JULIAN-BASE FLOOR
2	JULIAN-M3 NUT
2	JULIAN-M3x10 A-K ROUND HEAD SCREW
9	JULIAN-M4 NUT
1	JULIAN-M4 WASHER
8	JULIAN-M4x3-COUNTER SINK RIVET
3	JULIAN-M4x4.5-ROUND HEAD RIVET
94	JULIAN-M4x4-ROUND HEAD RIVET
2	JULIAN-M4x5-ROUND HEAD RIVET
14	JULIAN-M4x6 A-K ROUND HEAD SCREW
16	JULIAN-M4x6-ROUND HEAD RIVET
2	JULIAN-M4x8 A-K ROUND HEAD SCREW
7	JULIAN-M4x8 GRUB SREW
14	JULIAN-M4x10 A-K ROUND HEAD SCREW
10	JULIAN-M4x10-ROUND HEAD RIVET
26	JULIAN-M4x11-ROUND HEAD RIVET
28	JULIAN-M4x12 A-K ROUND HEAD SCREW
7	JULIAN-M4x30 A-K ROUND HEAD SCREW
1	JULIAN-M4x35 THREADED ROD
7	JULIAN-M5 NUT
96	JULIAN-M5x7-COUNTER SINK RIVET
5	JULIAN-M5x10 A-K ROUND HEAD SCREW
14	JULIAN-M5x16 A-K ROUND HEAD SCREW
13	JULIAN-M6 NUT
6	JULIAN-M6x4.5-ROUND HEAD RIVET
2	JULIAN-M6x4-ROUND HEAD RIVET
2	JULIAN-M6x6.5 GRUB SREW
9	JULIAN-M6x12 A-K ROUND HEAD SCREW
2	JULIAN-M6x26 GRUB SREW
1	JULIAN-M6x35 A-K ROUND HEAD SCREW
1	JULIAN-M8 NUT
2	JULIAN-M10 CIRCLIP

NOTES:

- ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
- WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
- PREFERABLY ALL TAPPED HOLES AND MATCHING SCREWS AND/OR BOLTS TO BE METRIC FINE (MF)
- MATERIALS SPECIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER CAN MAKE HIS/HER OWN MATERIAL CHOICE.
- INQUIRE AT THE APPROPRIATE AUTHORITIES WHETHER OR NOT THIS BOILER REQUIRES A PRESSURE TEST CERTIFICATE.
- ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.
- COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.
- 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.
- 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.
- THE ORDER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED AND THE MODEL IS ASSEMBLED IS ENTIRELY LEFT TO THE BUILDER/MODEL MAKER.
- SEALS/GASKETS SHALL BE INSTALLED WHERE DEEMED NECESSARY
- 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:

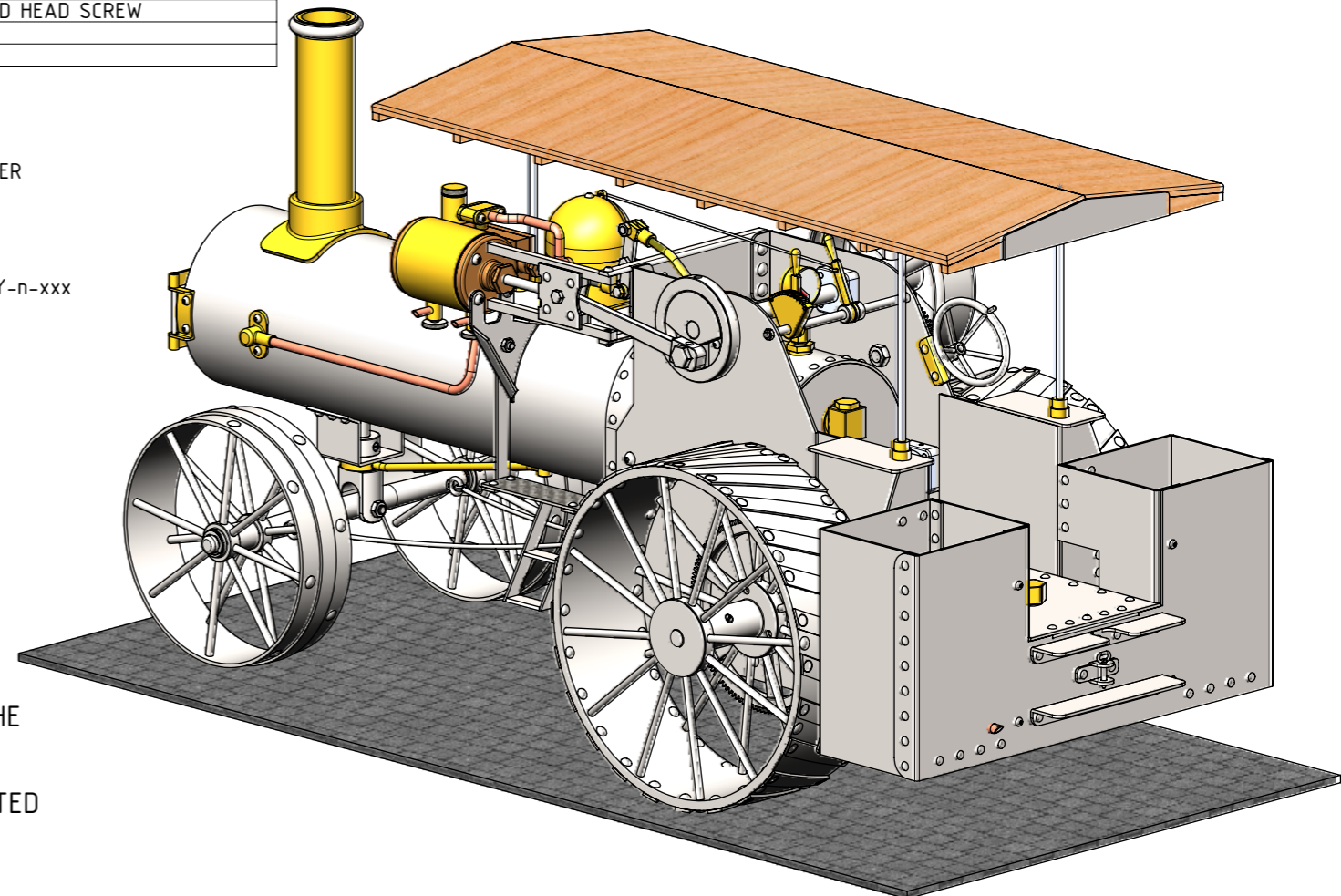
- ALU = ALUMINIUM
 - BRS = BRASS
 - BRZ = BRONZE OR GUNMETAL (BRZ/GM)
 - CI = CAST IRON
 - CU = COPPER
 - GRA = GRAPHITE
 - MS = MILD STEEL/BRIGHT MILD STEEL
 - S/S = SILVER STEEL OR STAINLESS STEEL
 - SPS = SPRING STEEL
 - SYN = SYNTHETIC MATERIAL SUCH AS VETON, NYLON, TEFLON OR RUBBER
- IN GENERAL SYNTHETIC MATERIALS SHOULD BE ABLE TO WITHSTAND THE HEAT AND PRESSURE(S) APPLIED TO THEM.

OTHER ABBREVIATIONS

- PF = PRESS FIT
- PCD = PITCH CIRCLE DIAMETER
- RM = REAM
- HEX = HEXAGON, 6SIDED
- CP = COMPRESSED
- KNL = KNURLED
- [SA-n-xxx]= SUB ASSEMBLY-n-xxx

IMPORTANT:

THE SAFE MAXIMUM WORKING STEAM PRESSURE FOR THIS MODEL IS 50PSI (3.45BAR)
THE BOILER SHOULD TESTED TO TWICE THE WORKING PRESSURE. THE SAFETY VALVE SHOULD BE CALIBRATED TO THE MAXIMUM WORKING PRESSURE



NOTES: THIS MODEL TRACTION ENGINE IS LOOSLY BASED ON UPON THE FULL-SIZE TRACTORS FORMERLY BUILT BY THE J. I. CASE CO. BUT IS NOT AN EXACT SCALE REPLICA

TITLE
KEROSINE FIRED MODEL STEAM TRACTION ENGINE CALLED "JULIAN"

DRAWING CONTENTS
ISOMETRIC VIEW, BILL OF MATERIALS AND NOTES

PROJECT No 08-07-00
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PROJECTION
DATE
JUNE-2015
SHEET: 02 OF 10

MODEL SCALE: 1:1
DWG SCALE: NTS @A3 OR AS SHOWN
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A3 No: JULIAN-02