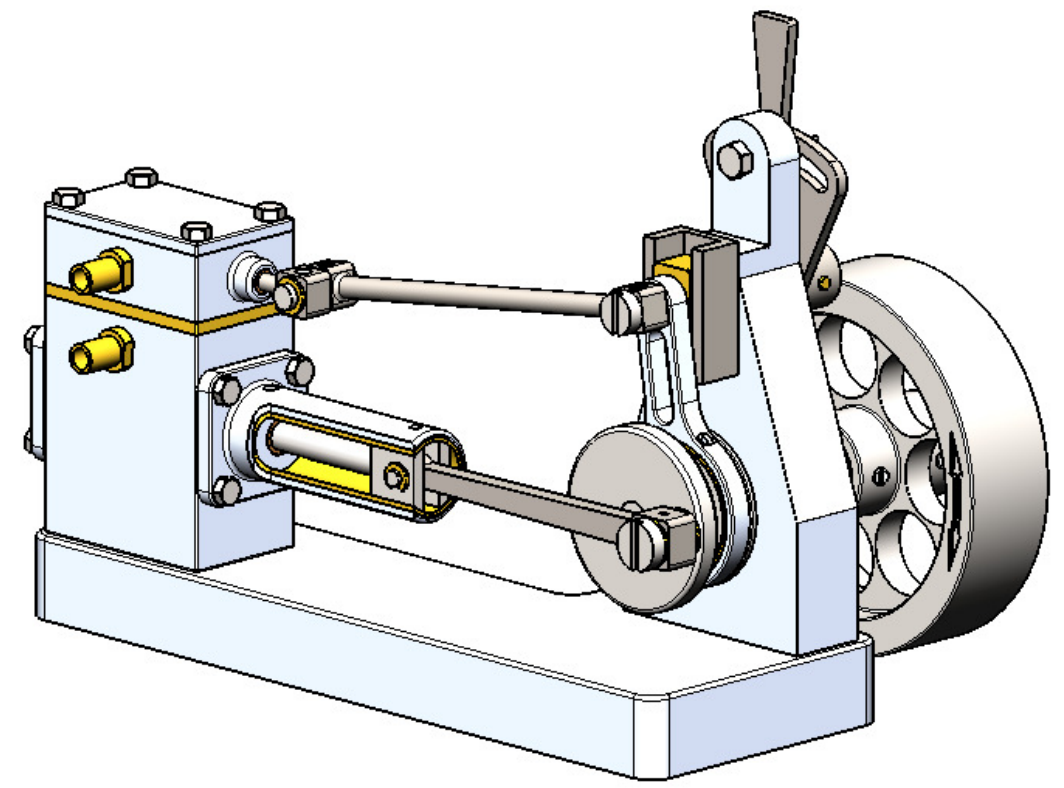
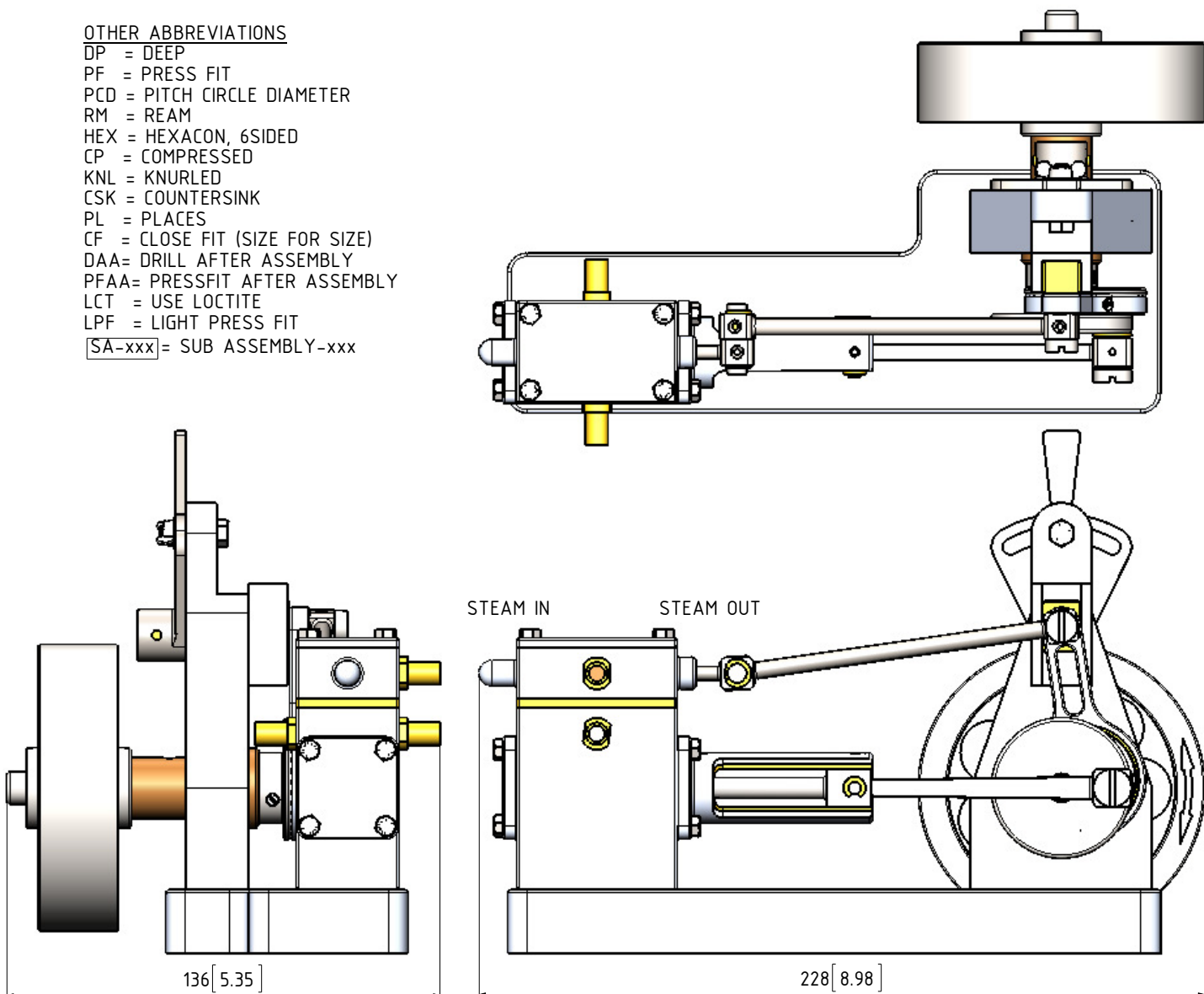


**OTHER ABBREVIATIONS**

- DP = DEEP
- PF = PRESS FIT
- PCD = PITCH CIRCLE DIAMETER
- RM = REAM
- HEX = HEXACON, 6SIDED
- CP = COMPRESSED
- KNL = KNURLED
- CSK = COUNTERSINK
- PL = PLACES
- CF = CLOSE FIT (SIZE FOR SIZE)
- DAA= DRILL AFTER ASSEMBLY
- PFAA= PRESSFIT AFTER ASSEMBLY
- LCT = USE LOCTITE
- LPF = LIGHT PRESS FIT
- SA-xxx= SUB ASSEMBLY-xxx

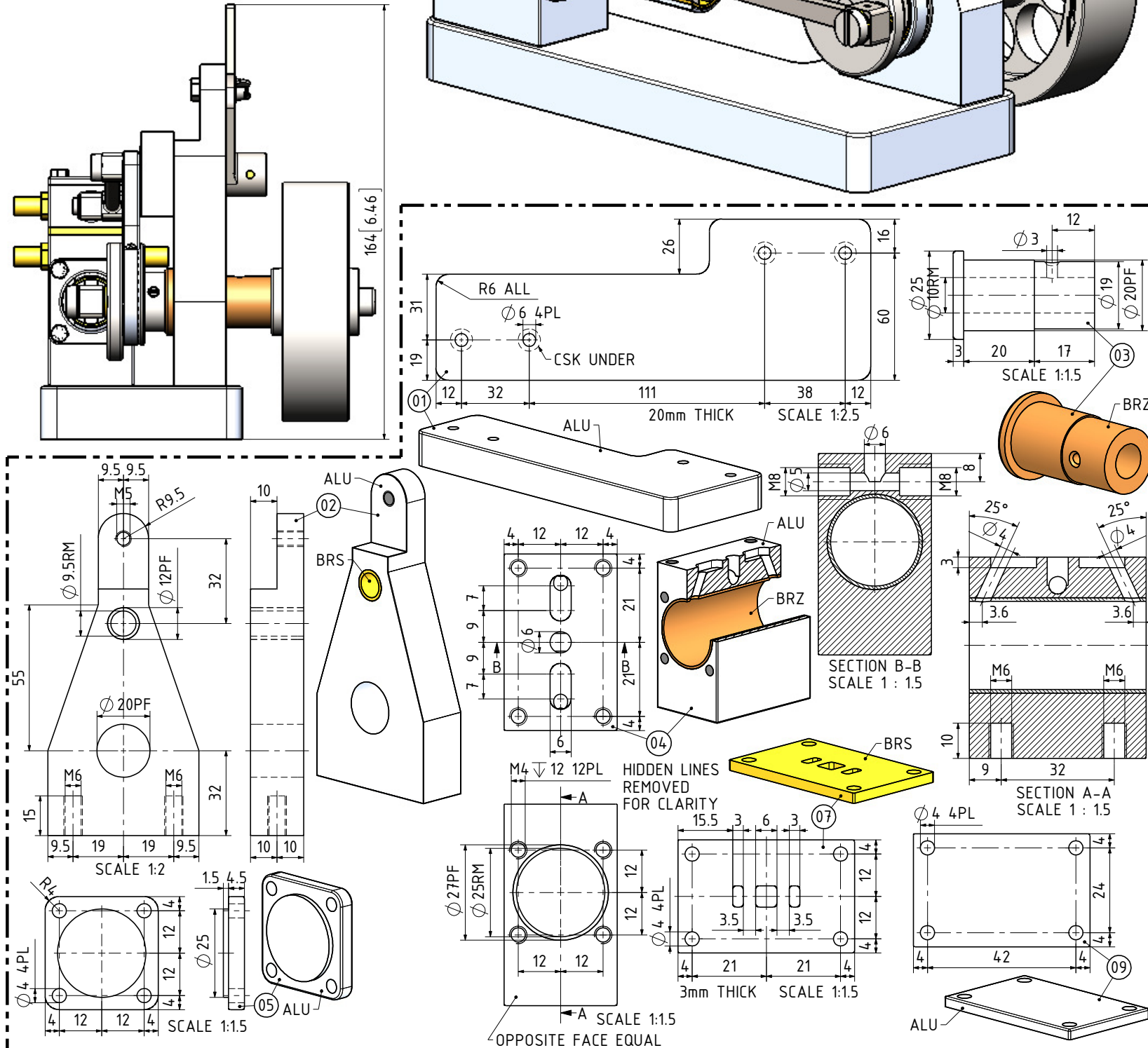
**MATERIAL ABBREVIATIONS:**

- ALU = ALUMINIUM OR DURAL(MIN)
  - 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
  - PEEK= POLYETHER ETHER KETONE
  - 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.
- nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED

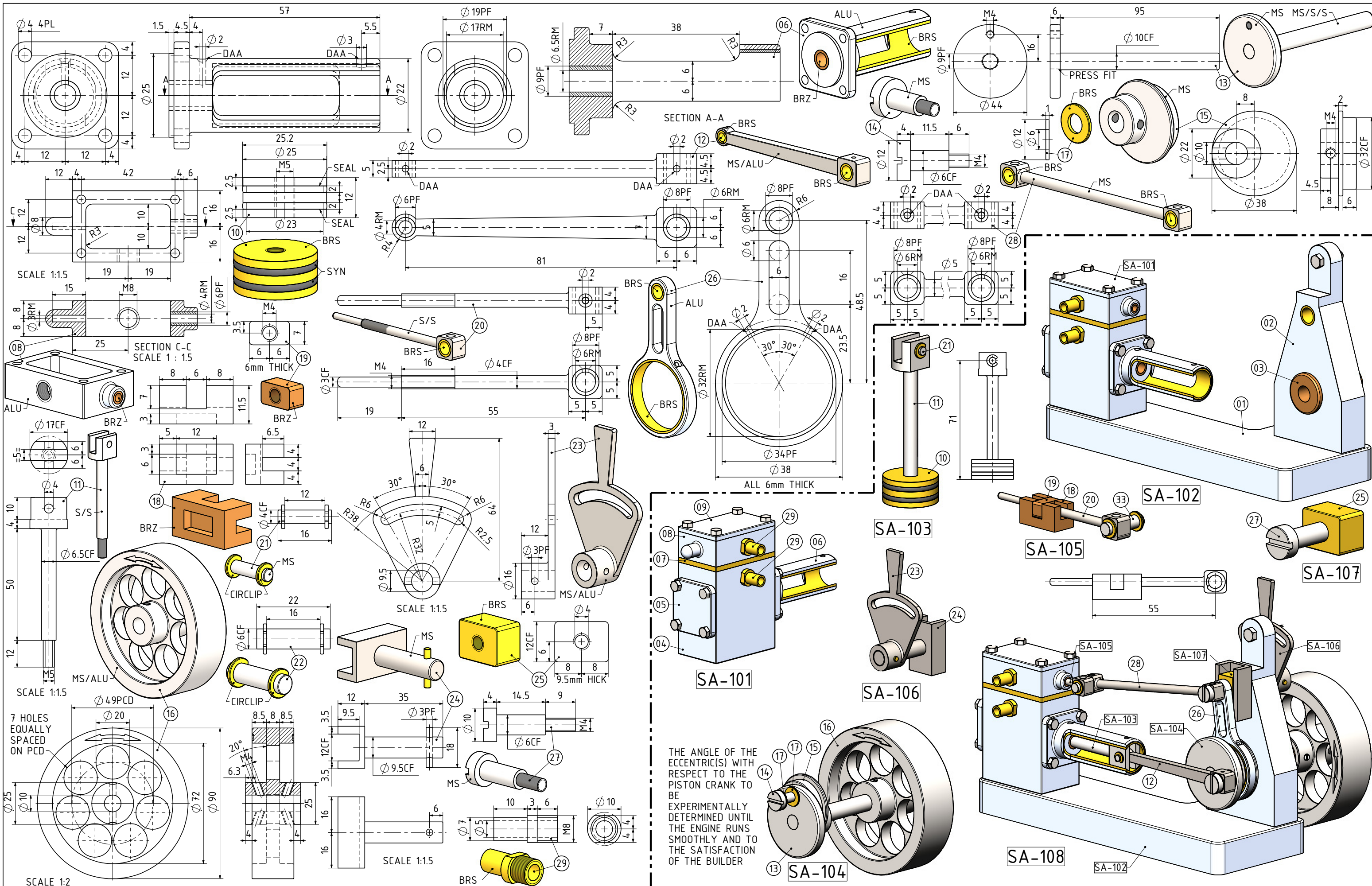


QTY.	PART NUMBER
1	EVG-P43-01-BASE PLATE
1	EVG-P43-02-MAIN BEARING SUPPORT COLUMN
1	EVG-P43-03-CRANKSHAFT BEARING
1	EVG-P43-04-CYLINDER BLOCK
1	EVG-P43-05-CYLINDER FRONT COVER
1	EVG-P43-06-CYLINDER REAR COVER
1	EVG-P43-07-VALVE PORT PLATE
1	EVG-P43-08-VALVE CHEST
1	EVG-P43-09-VALVE CHEST COVER
1	EVG-P43-10-PISTON
1	EVG-P43-11-PISTON ROD
1	EVG-P43-12-CON-ROD
1	EVG-P43-13-CRANKSHAFT AND CRANK
1	EVG-P43-14-CRANK PIN
1	EVG-P43-15-ECCENTRIC SHEAVE
1	EVG-P43-16-FLYWHEEL
2	EVG-P43-17-CRANK PIN SPACER
1	EVG-P43-18-SLIDE VALVE
1	EVG-P43-19-SLIDE VALVE NUT
1	EVG-P43-20-SLIDE VALVE SPINDLE
1	EVG-P43-21-CON-ROD PIN
1	EVG-P43-22-VALVE SPINDLE PIN
1	EVG-P43-23-REVERSER LEVER
1	EVG-P43-24-REVERSER SLIDING BLOCK GUIDE
1	EVG-P43-25-REVERSER SLIDE BLOCK
1	EVG-P43-26-ECCENTRIC STRAP
1	EVG-P43-27-ECCENTRIC STRAP PIN
1	EVG-P43-28-ECCENTRIC LINK ROD
3	EVG-P43-29-STEAM INLET PIPE CONNECTOR
2	EVG-P43-M4x6 GRUB SCREW
4	EVG-P43-M4x8 GRUB SCREW
8	EVG-P43-M4x14 HEX BOLT
4	EVG-P43-M4x30 HEX BOLT
1	EVG-P43-M5 WASHER
1	EVG-P43-M5 WING NUT
1	EVG-P43-M5x18 HEX BOLT
4	EVG-P43-M6x30 C-SINK SCREW

- NOTES:**
1. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
  2. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
  3. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
  4. PREFERABLY ALL TAPPED HOLES AND MATCHING SCREWS AND/OR BOLTS TO BE METRIC FINE (MF)
  5. MATERIALS SPECIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER CAN MAKE HIS/HER OWN MATERIAL CHOICE.
  6. N/A
  7. ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.
  8. COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.
  9. 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.
  10. 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.
  11. THE ORDER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED AND THE MODEL IS ASSEMBLED IS ENTIRELY LEFT TO THE BUILDER/MODEL MAKER.
  12. ERRORS AND/OR OMISSIONS MAY OCCUR IN THE DRAWINGS, DO NOT HESITATE TO CONTACT ME SO THAT THE ERRORS/OMISSIONS CAN BE RECTIFIED.
  13. A COLOUR SCHEME FOR THIS PROJECT IS ENTIRELY LEFT UP TO THE MODEL MAKER.
  14. THE MANNER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED IS ENTIRELY LEFT UP TO THE BUILDER.







NOTES: THE ORIGINAL DRAWINGS AND ARTICLE OF THIS ENGINE WERE BY ELMER VERBURG AND PUBLISHED IN A BOOK AS CHAPTER 43. THE ORIGINAL DRAWINGS WERE POSTED ON: WWW.JOHN-TOM.COM (THIS ENGINE IS 2 TIMES LARGER THAN THE ORIGINAL)

TITLE  
**1 CYLINDER HORIZONTAL MILL STEAM ENGINE WITH REVERSER (HORIZONTAL MILL ENGINE)**

DRAWING CONTENTS  
**PARTS AND ASSEMBLIES**

PROJECT No 10-43-00  
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PROJECTION  
**JDWDS**  
 DATE APRIL-2016

MODEL SCALE: 1:1  
 DWG SCALE: 1:1 @A3 OR AS SHOWN  
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 SHEET: 02 OF 02 **A3** No: EVG-P43-02