

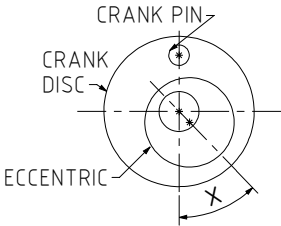
- GENERAL NOTES:
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
 1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
 2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
 3. PREFERABLY ALL TAPPED 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. USE SEALING GASKETS WERE DEEMED NECESSARY.
 15. 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.

OTHER ABBREVIATIONS

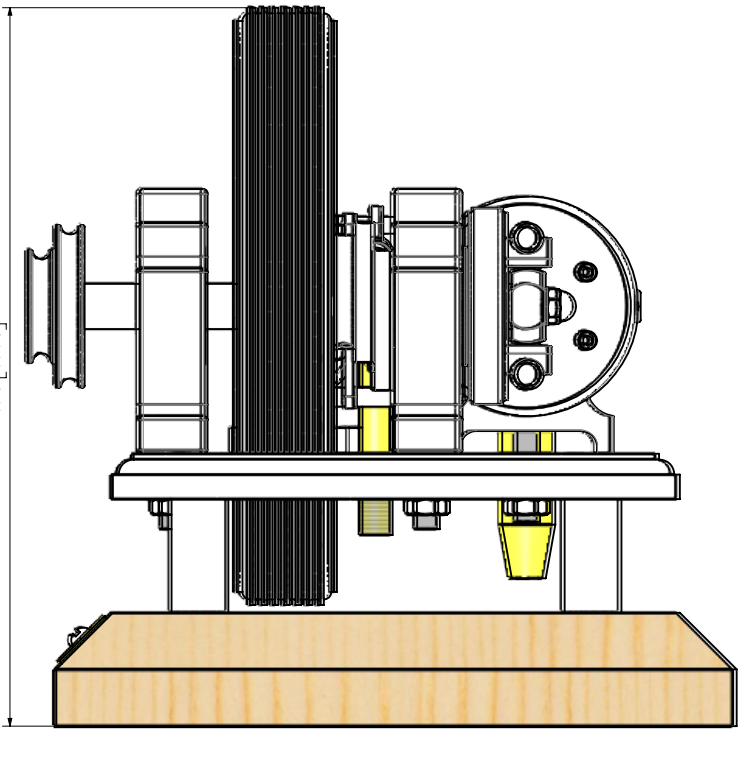
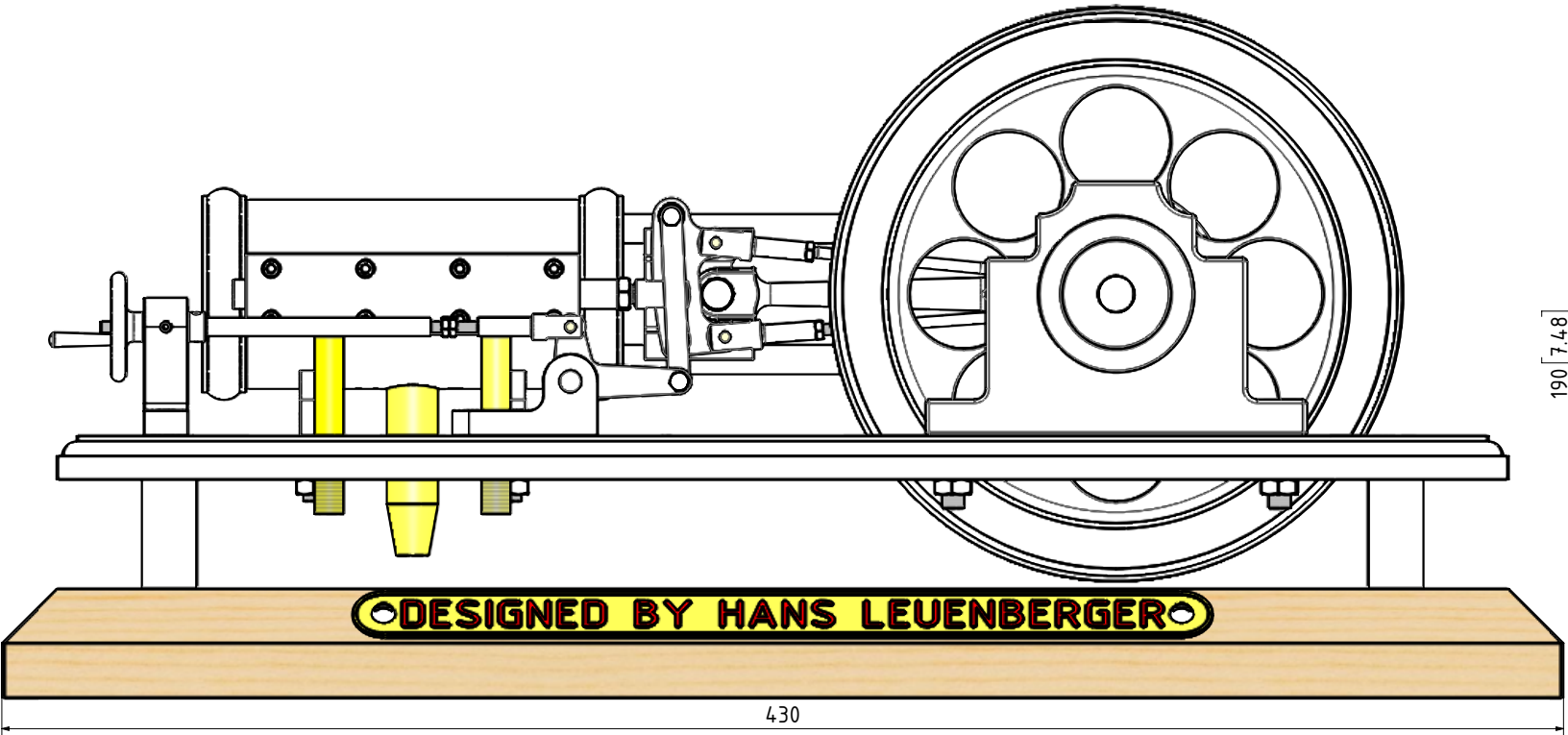
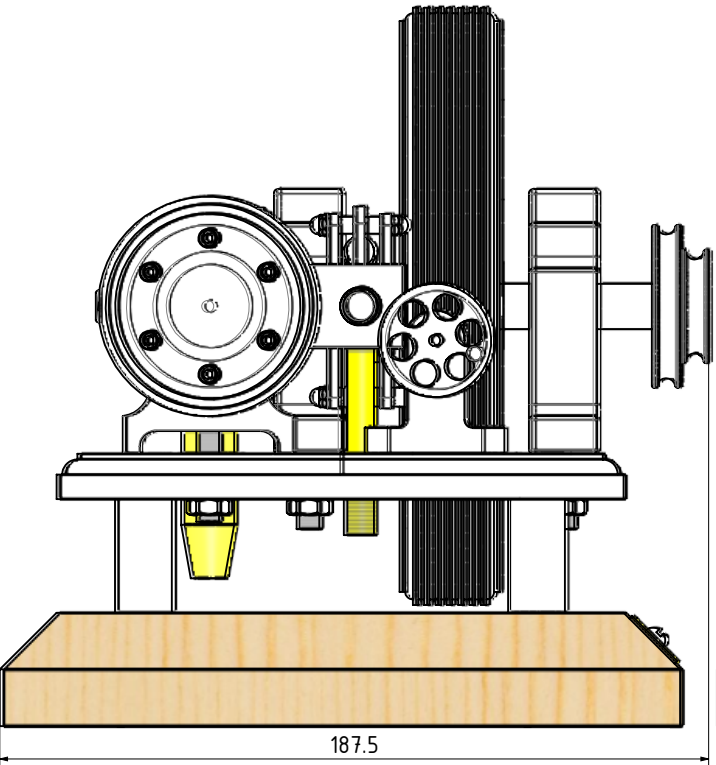
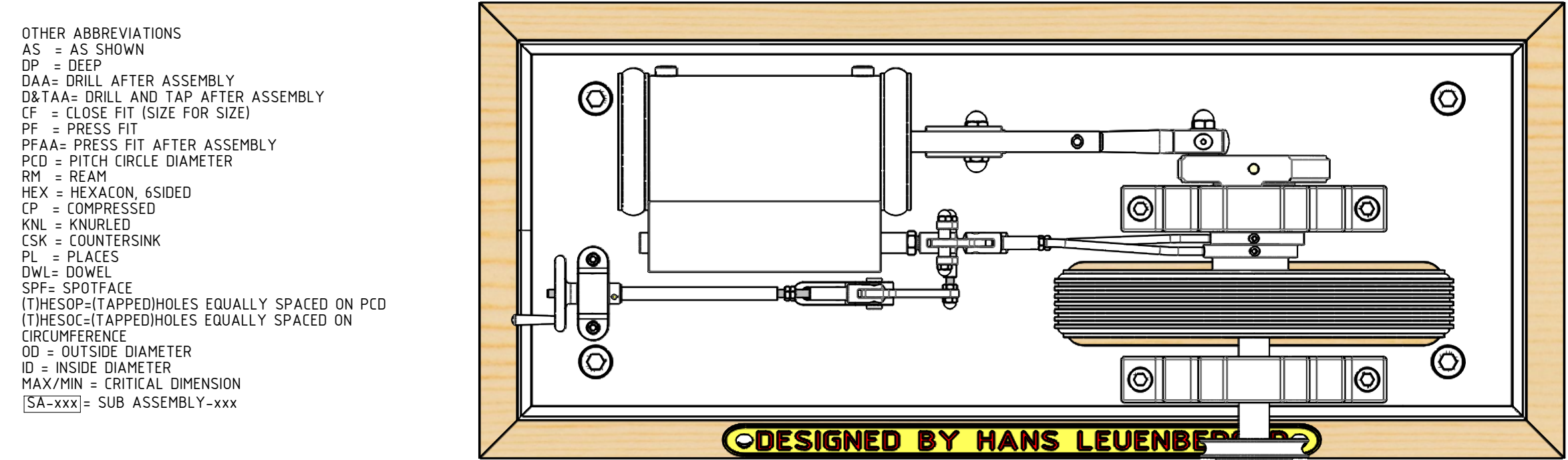
- AS = AS SHOWN
DP = DEEP
DAA= DRILL AFTER ASSEMBLY
D&TAA= DRILL AND TAP AFTER ASSEMBLY
CF = CLOSE FIT (SIZE FOR SIZE)
PF = PRESS FIT
PFAA= PRESS FIT AFTER ASSEMBLY
PCD = PITCH CIRCLE DIAMETER
RM = REAM
HEX = HEXACON, 6SIDED
CP = COMPRESSED
KNL = KNURLED
CSK = COUNTERSINK
PL = PLACES
DWL= DOWEL
SPF= 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

DUE TO THE LACK OF INFORMATION ON THE ORIGINAL DRAWING(S), SUCH AS VIEWS, DIMENSIONS, SECTIONS ETC AND/OR CLARITY OF COMPONENTS, OMITTED PARTS/COMPONENTS, SOME OF THE COMPONENTS MIGHT NOT BE AS CONSTRUCTED ORIGINALLY OR AS THE ORIGINAL DESIGNER INTENDED

THE OFF SET ANGLE OF THE ECCENTRIC IN RELATION TO THE CRANK AXIS TO BE EXPERIMENTALLY DETERMINED FOR THE SMOOTH RUNNING OF THE ENGINE AND SATISFACTION OF THE BUILDER

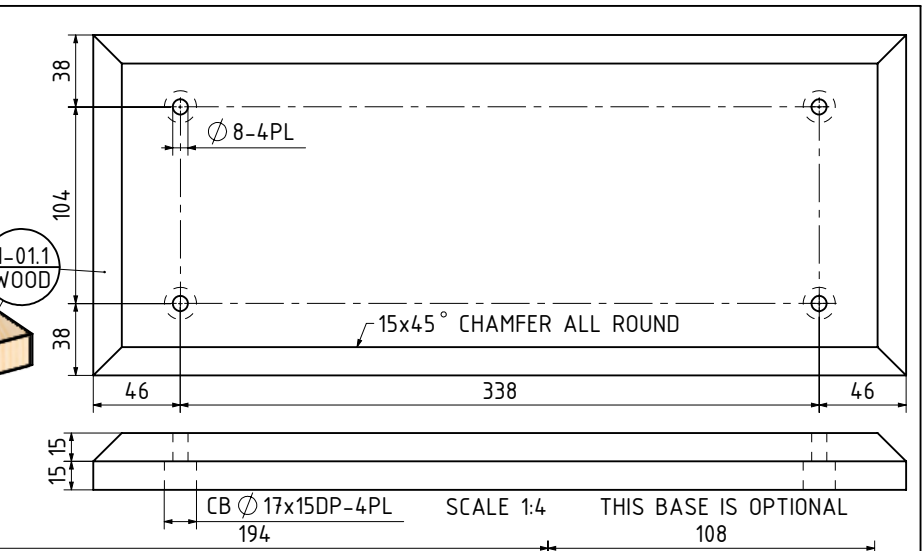
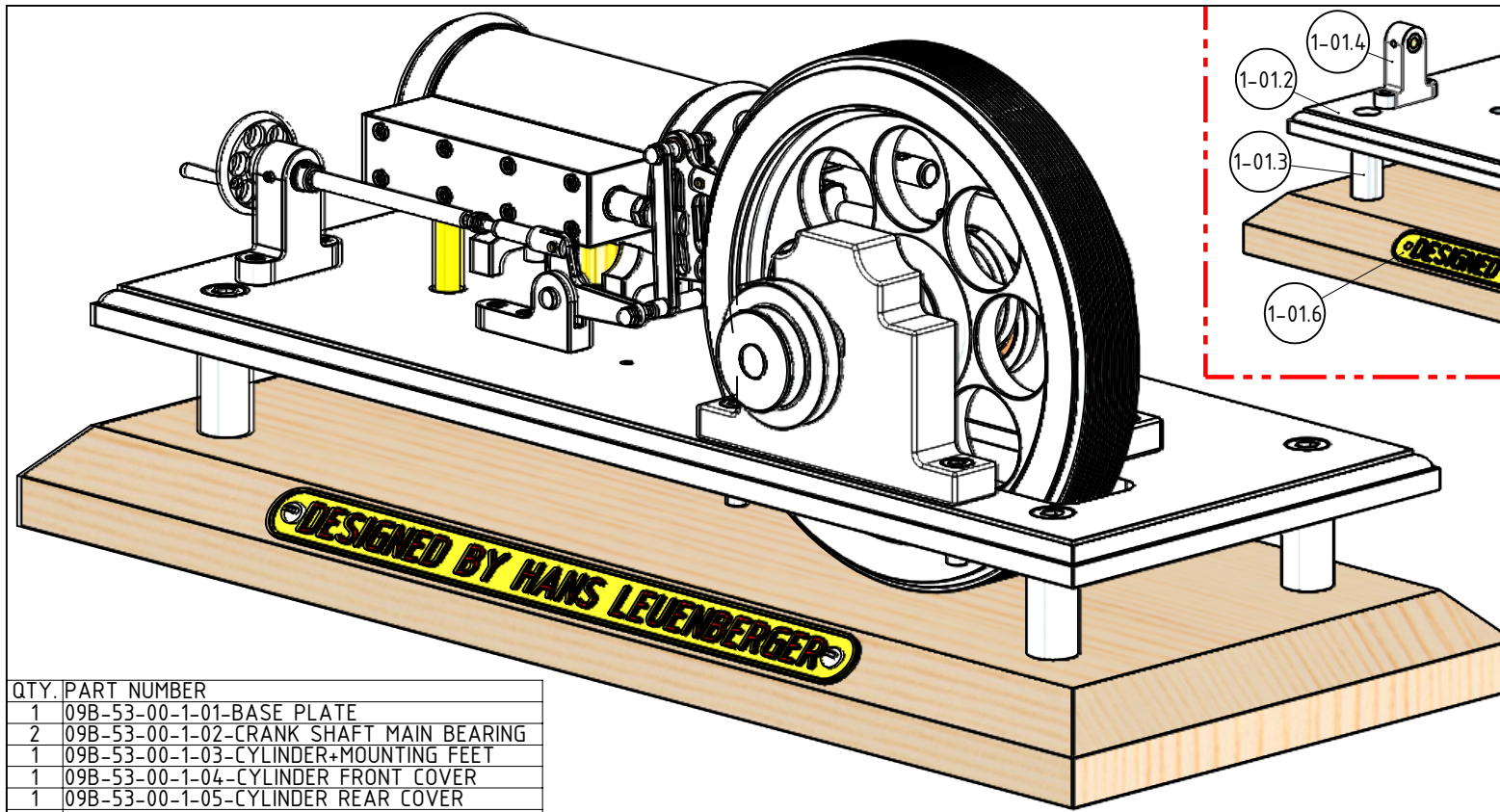


- MATERIAL ABBREVIATIONS:
- ALU = ALUMINIUM
HALU= HARD ALUMINIUM
BRS = BRASS
PBRZ= PHOSPHORE BRONZE
BRZ = BRONZE OR GUNMETAL (BRZ/GM)
OLT = OILITE
CI = CAST IRON
CU = COPPER
GRA = GRAPHITE
MS = MILD STEEL/BRIGHT MILD STEEL
SS = SILVER STEEL OR STAINLESS STEEL
SPS = SPRING STEEL
PEEK= POLYETHER ETHER KETONE
SYN = SYNTHETIC MATERIAL SUCH AS VETON, NYLON, TEFLON OR RUBBER
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

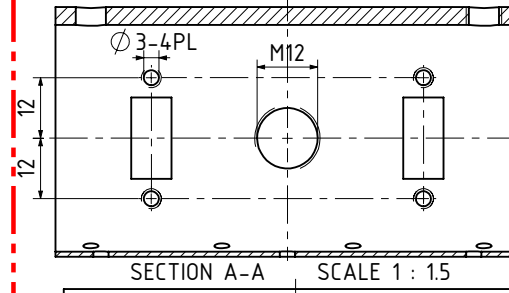
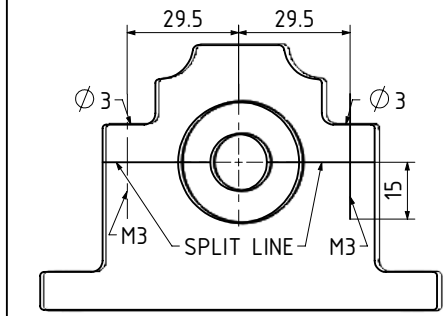


NOTES: THE ORIGINAL DRAWINGS WERE GIVEN TO ME. THE ORIGINAL DESIGN WAS BY HANS LEUENBERGER, 4800 ZOFINGEN, SWITZERLAND. THE ENGINE SHOWN ON THESE DRAWINGS IS 1.5 LARGER THAN THE ORIGINAL.													
TITLE 1 CYLINDER HORIZONTAL DOUBLE ACTING STEAM ENGINE WITH REVERSER (B=25 S=40)				DRAWING CONTENTS GENERAL ARRANGEMENT				PROJECT No 09B-53-00 JDW DRAUGHTING SERVICES J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAKAPURA 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 @A3 OR AS SHOWN	
								DATE JUNE 2026		Copyright © J.A.M. DE WAAL PAKAPURA NZ			
								SHEET: 01 OF 04		A3 No:09B-53-00-SHT-01			

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QTY.	PART NUMBER
1	09B-53-00-1-01-BASE PLATE
2	09B-53-00-1-02-CRANK SHAFT MAIN BEARING
1	09B-53-00-1-03-CYLINDER+MOUNTING FEET
1	09B-53-00-1-04-CYLINDER FRONT COVER
1	09B-53-00-1-05-CYLINDER REAR COVER
1	09B-53-00-2-01-CRANK SHAFT+FLYWHEEL
1	09B-53-00-2-02-PISTON+CROSSHEAD
1	09B-53-00-2-03-CON-ROD
1	09B-53-00-2-04-EXPANSION LINK LIFTING ARM
1	09B-53-00-2-05-REVERSING SHAFT
1	09B-53-00-2-06-LIFTING ARM FORK LINK
1	09B-53-00-2-07-SPOOL VALVE
1	09B-53-00-2-08-EXPANSION LINK
2	09B-53-00-2-09-LIFTING LINK
1	09B-53-00-2-10-ECCENTRIC SHEAVE
1	09B-53-00-2-11-ECCENTRIC STRAP-TYPE-A
1	09B-53-00-2-12-ECCENTRIC STRAP-TYPE-B
4	09B-53-00-M3 DOME NUT
5	09B-53-00-M3 NUT
8	09B-53-00-M3x16 A-K C-SINK SCREW
6	09B-53-00-M3x20 A-K C-SINK SCREW
4	09B-53-00-M3x24 A-K C-SINK SCREW
2	09B-53-00-M3x3.5 A-K GRUB SCREW
8	09B-53-00-M3x34 A-K C-SINK SCREW
1	09B-53-00-M3x5 A-K GRUB SCREW
2	09B-53-00-M3x7 A-K GRUB SCREW
3	09B-53-00-M4 NUT
2	09B-53-00-M4x20-ROUND HEAD WOOD SCREW
2	09B-53-00-M5 DOME NUT
1	09B-53-00-M5 NUT
1	09B-53-00-M5 WASHER
1	09B-53-00-M5x20 DOME HEAD SCREW
6	09B-53-00-M6 NUT
2	09B-53-00-M6x12 A-K CYL HEAD SCREW
4	09B-53-00-M6x30 A-K C-SINK SCREW
4	09B-53-00-M8 WASHER
4	09B-53-00-M8x25 A-K CYL HEAD SCREW
4	09B-53-00-M8x30 A-K C-SINK SCREW

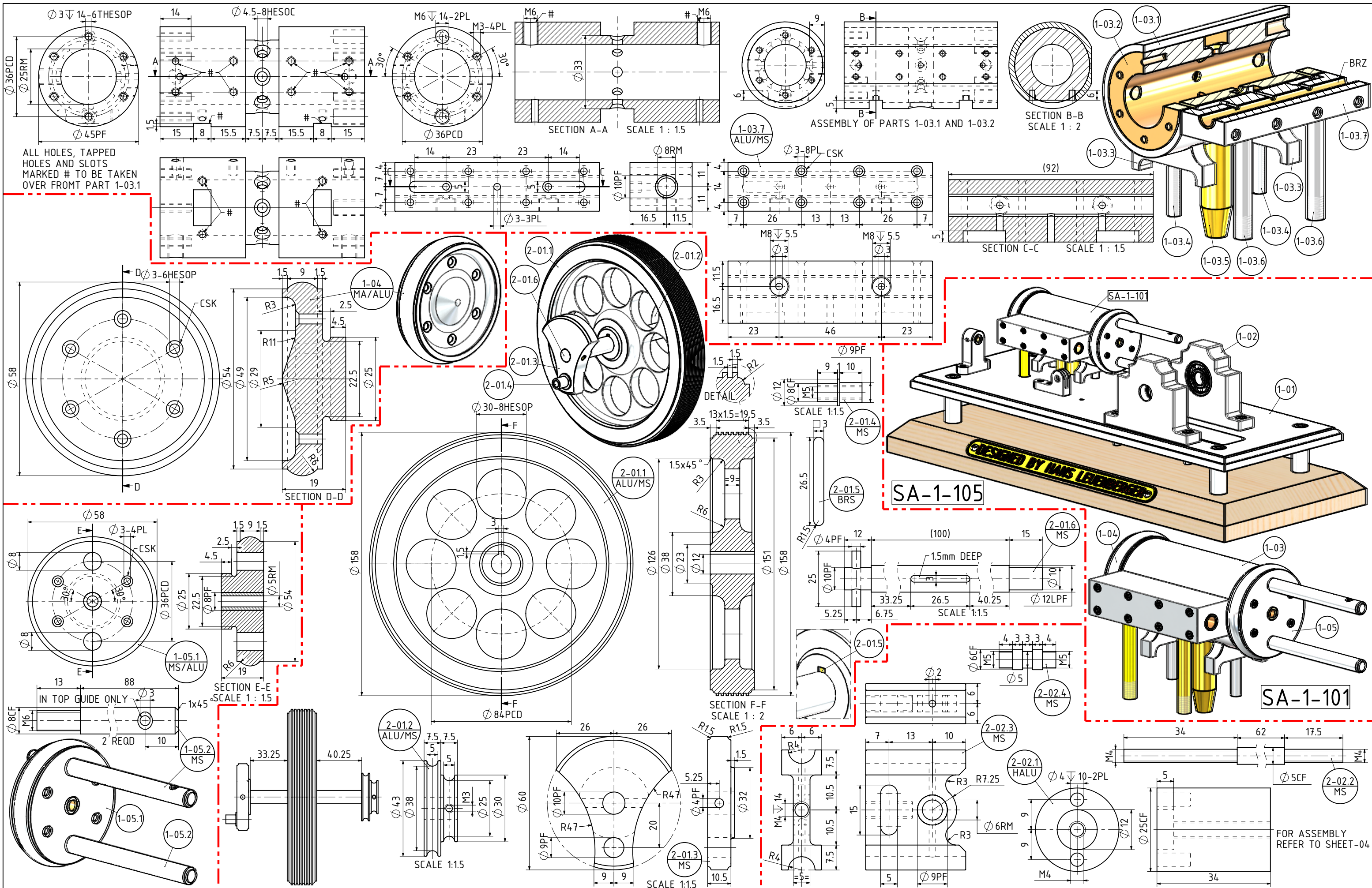


IFT THE BUILDER WISH TO MAKE THE
BEARING BLOCK IN TWO HALVES
REFER TO THE ABOVE PROPOSAL

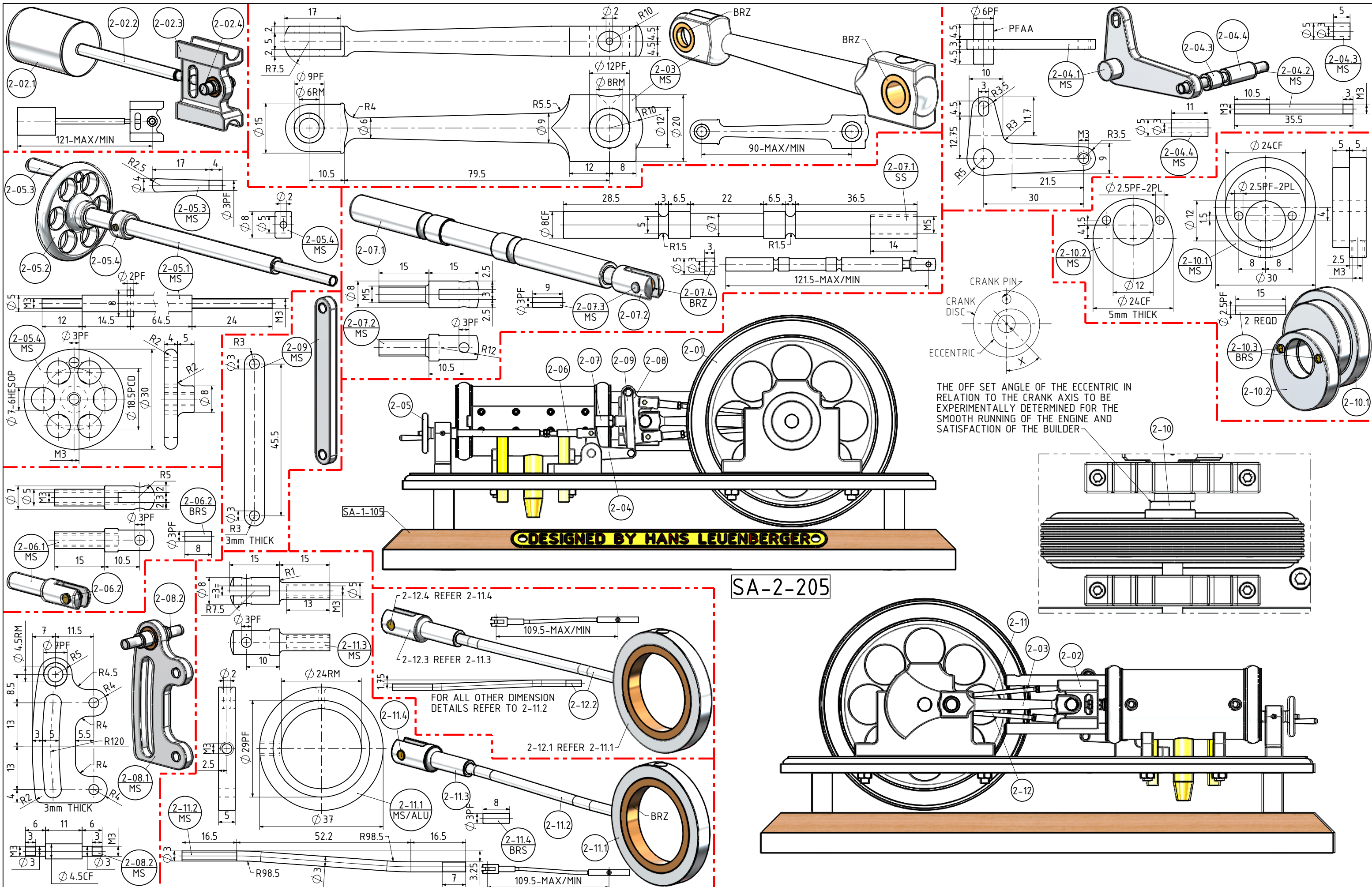
PLEASE NOTE ALL HOLES, TAPPED HOLES AND SLOTS TO BE MADE AFTER ASSEMBLY (WHEN PART 1-03.2 IS PRESSFITTED INTO PART PART 1-03.1)

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TITLE				DRAWING CONTENTS				PROJECT No 09B-53-00		PROJECTION	JDWDS	MODEL SCALE: 1:1		
1 CYLINDER HORIZONTAL DOUBLE ACTING STEAM ENGINE WITH REVERSER (B=25 S=40)				PARTS AND ASSEMBLIES				JDW DRAUGHTING SERVICES J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAKAPURA 2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.			DATE	JUNE 2026	Copyright © J.A.M. DE WAAL PAKAPURA NZ	DWG SCALE: 1:1 @A3 OR AS SHOWN
										SHEET: 03 OF 04	A3	No:09B-53-00-SHT-03		



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TITLE
**1 CYLINDER HORIZONTAL DOUBLE ACTING
STEAM ENGINE WITH REVERSER (B=25 S=40)**

DRAWING CONTENTS
PARTS AND ASSEMBLIES

PROJECT No 09B-53-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAKAPURA
2110, NEW ZEALAND. PHONE: 0064 09 2988815. MOB:
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