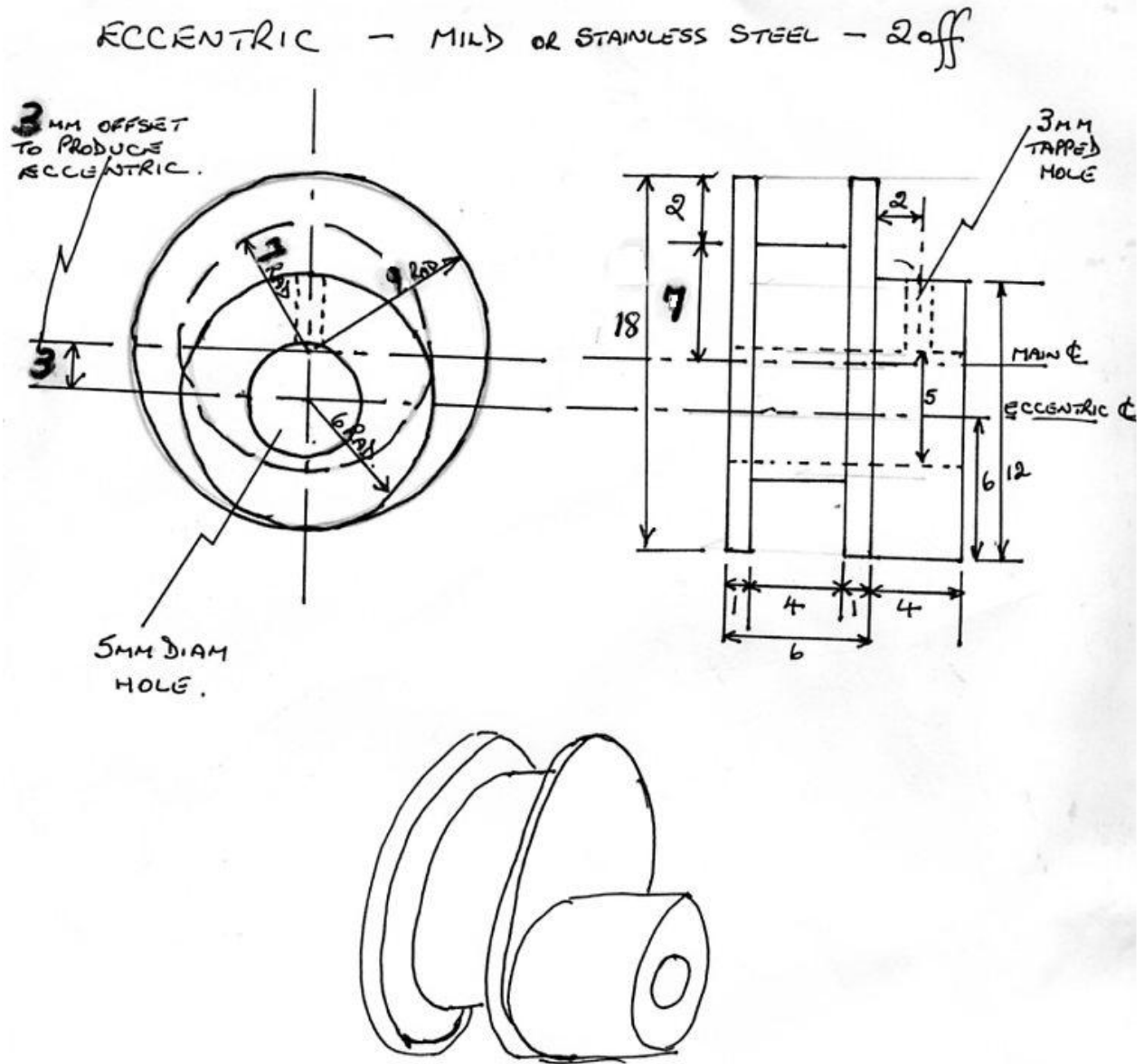


“Bogstandard”: Building a Steam Engine from mainly Junk Materials  
Appendix 1 – Design Sketches

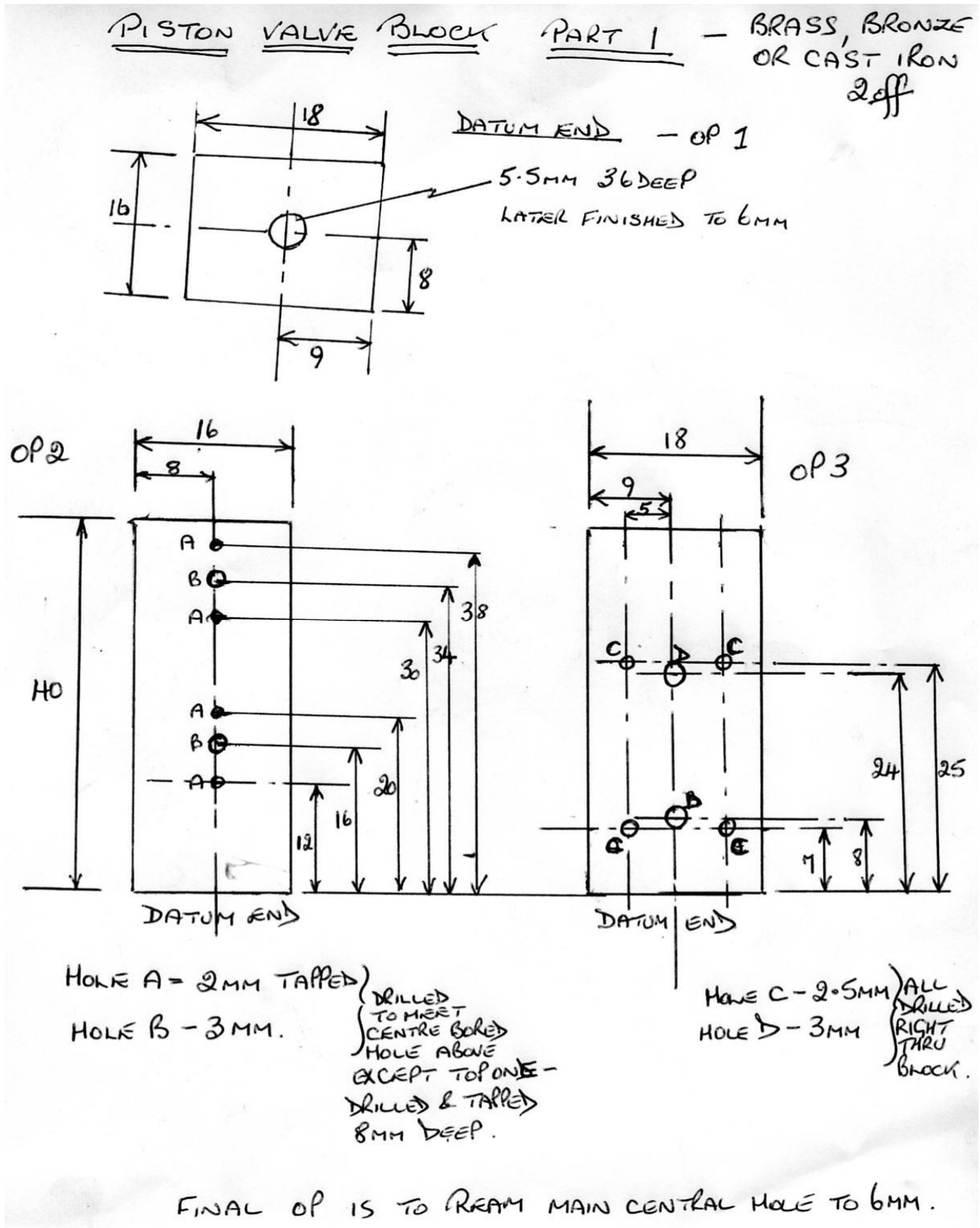
60 – Eccentrics





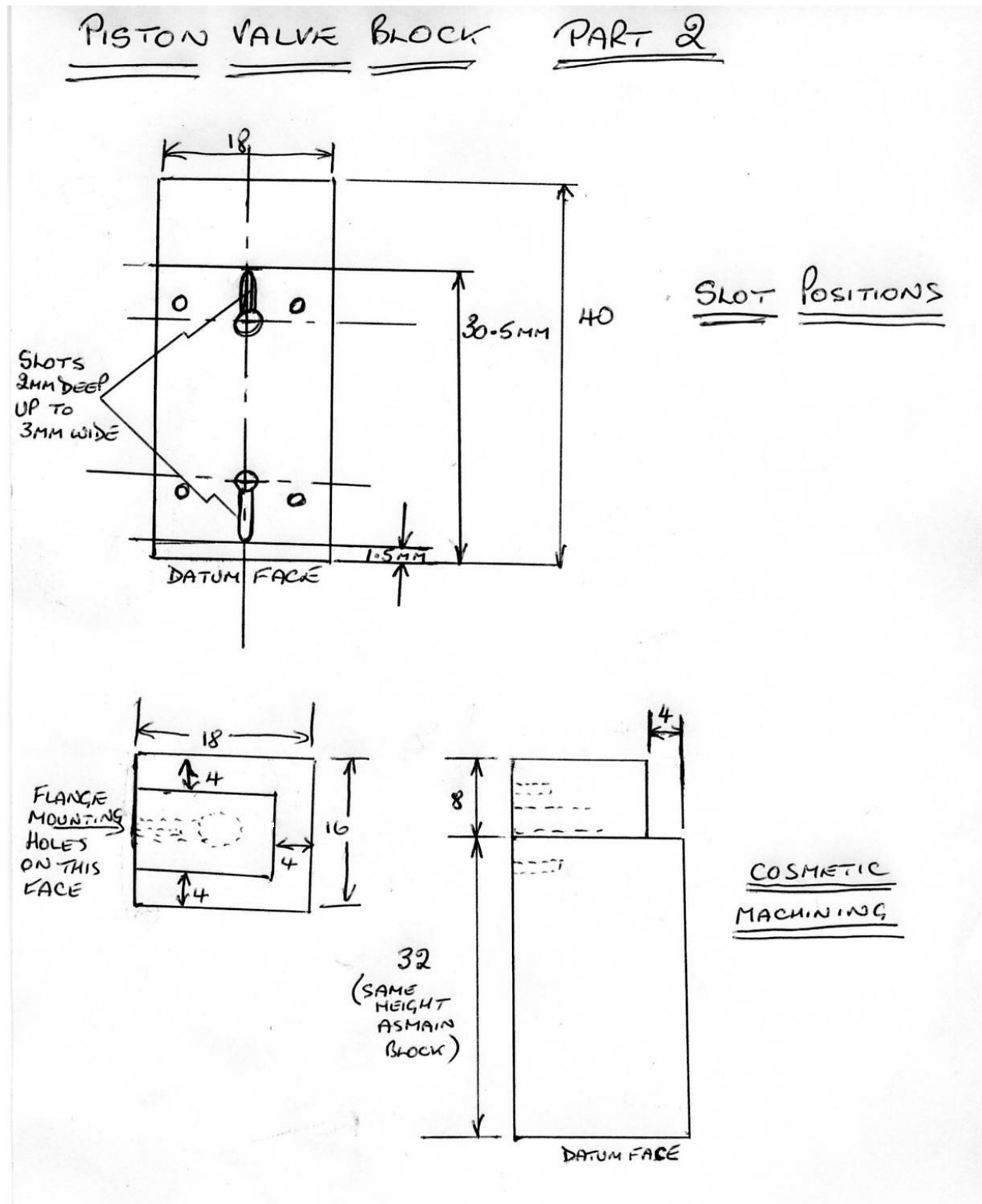
"Bogstandard": Building a Steam Engine from mainly Junk Materials  
 Appendix 1 - Design Sketches

71 - Piston Valve Packing Gland



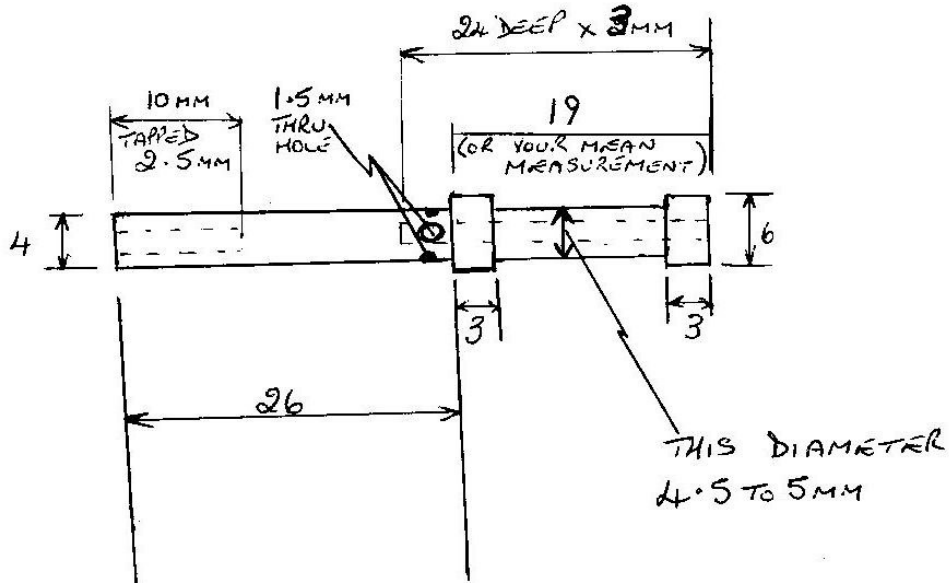
"Bogstandard": Building a Steam Engine from mainly Junk Materials  
Appendix 1 – Design Sketches

75 – Piston Valve Block



91A - Modified Spool Valve

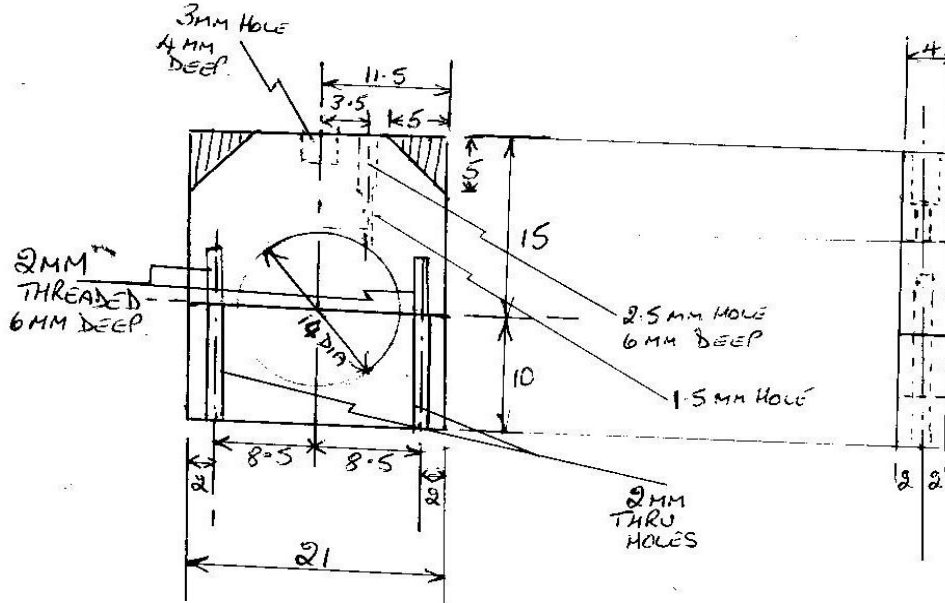
SPOOL VALVE - STAINLESS OR SILVER STEEL 2off



102 - Eccentric Strap and Connector Joint

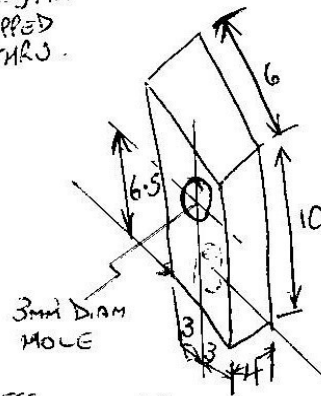
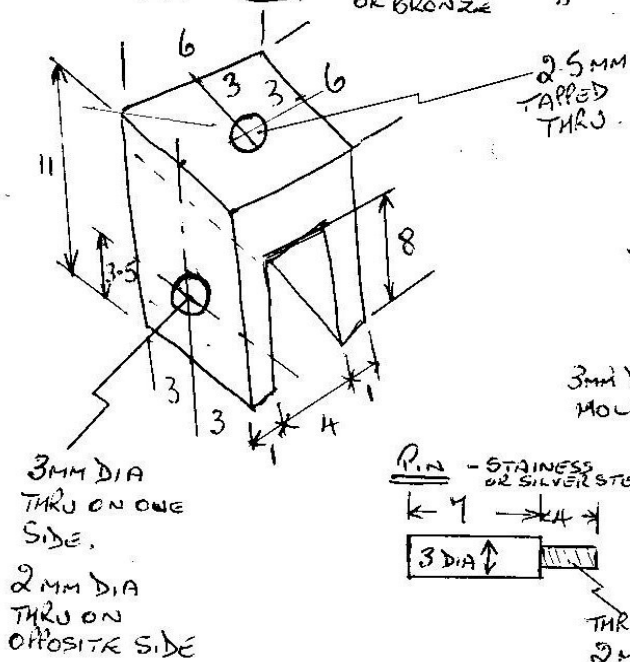
SKETCH FOR ECCENTRIC STRAP AND JOINT - BRASS OR BRONZE 2off

REMOVE CROSS HATCHED CORNERS OPTIONAL

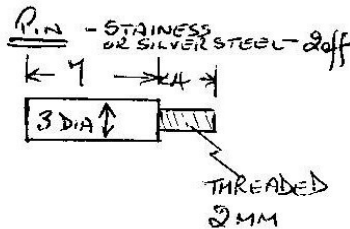


FORK END - BRASS OR BRONZE - 2off

BLOCK - BRASS OR BRONZE - 2off



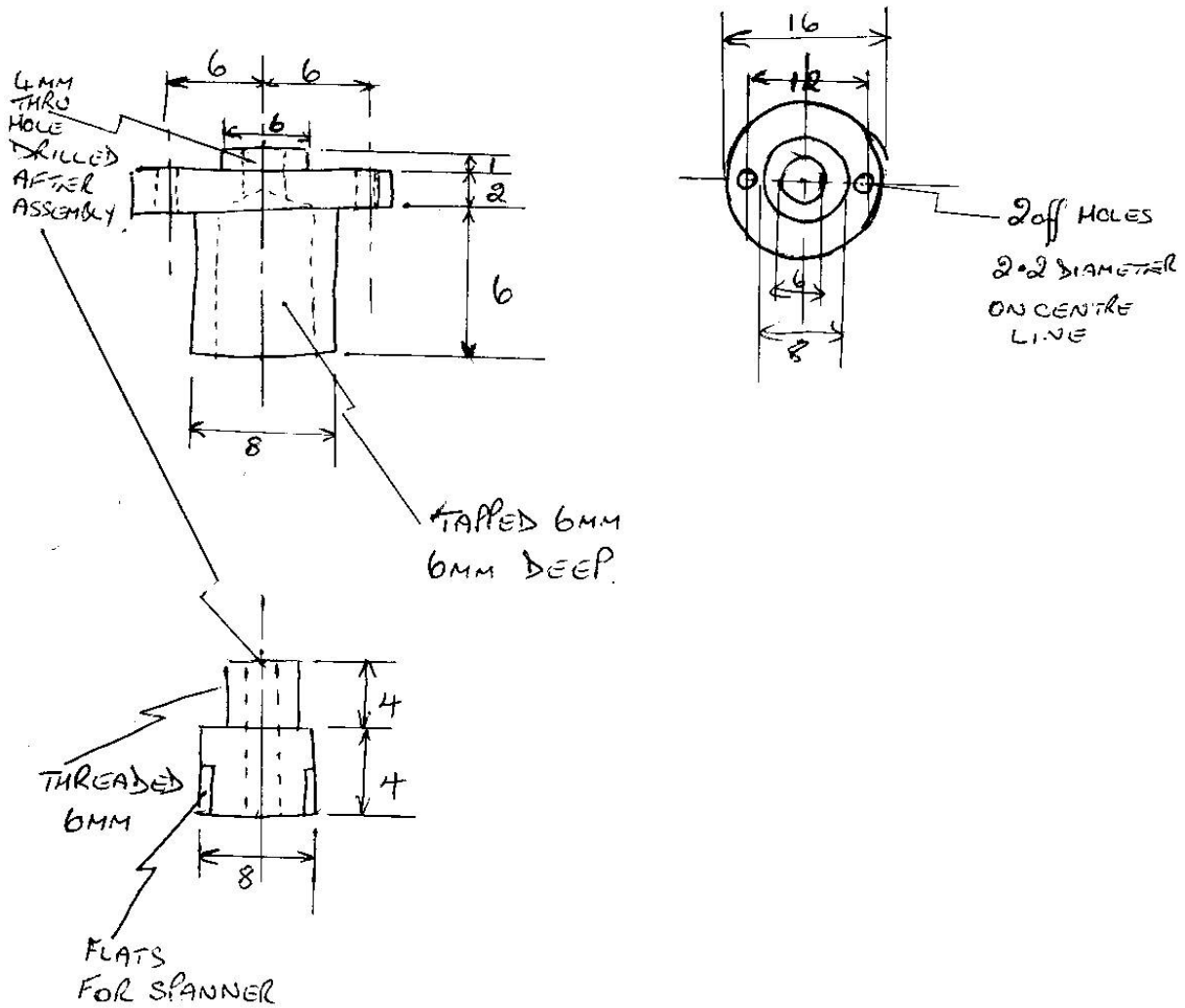
- ALSO REQ'D.
- ① 18MM LONG X 3MM BRASS TUBE OR ROD.
  - ② 11MM LONG 2.5MM THREADED ROD



3MM HOLE 4MM DEEP DRILLED IN CENTRAL POSITION ON BOTTOM FACE

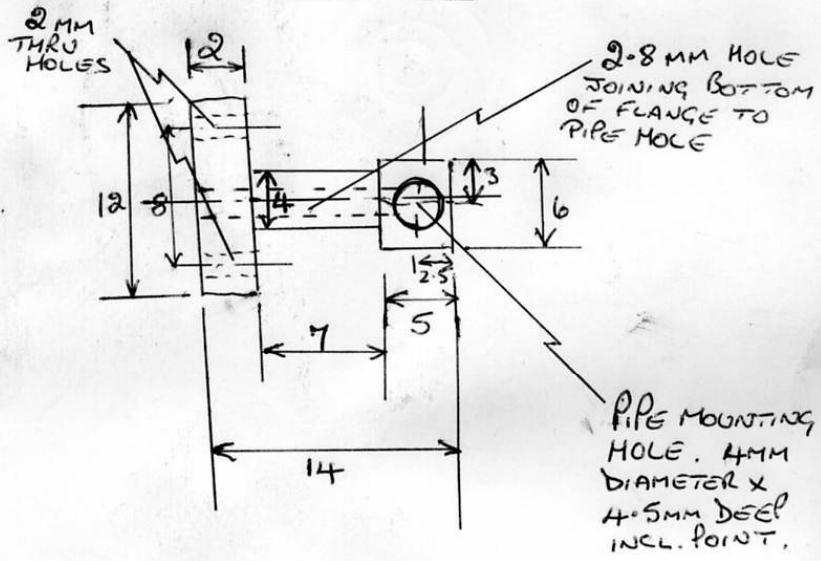
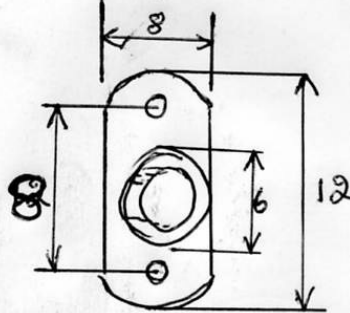
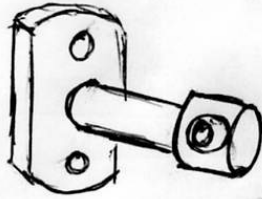
108 - Piston Valve Packing Gland

SKETCH FOR PISTON VALVE PACKING GLAND - BRASS 2off



110 – Pipe Flanges

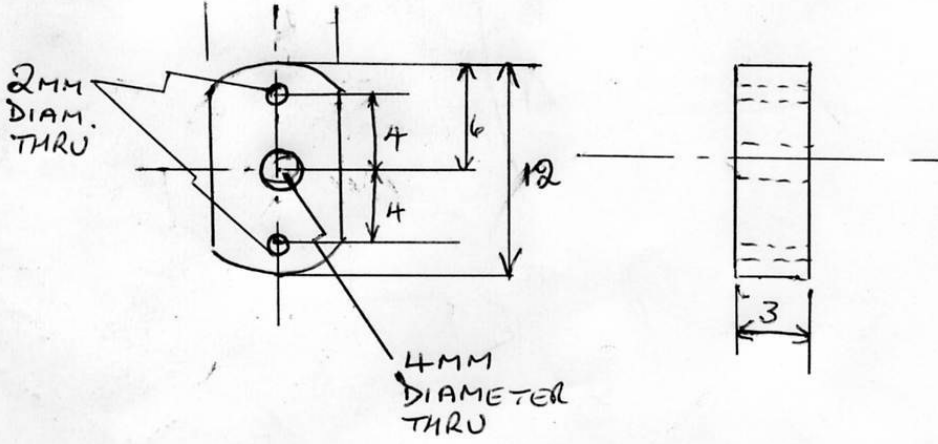
SKETCH FOR STAND OFF FLANGE - MILD STEEL - 4 off



Collet Pipe Req'd  
 4mm (5/32")

- 4 off x 30mm
- 1 off x 60mm
- 1 off x 90mm

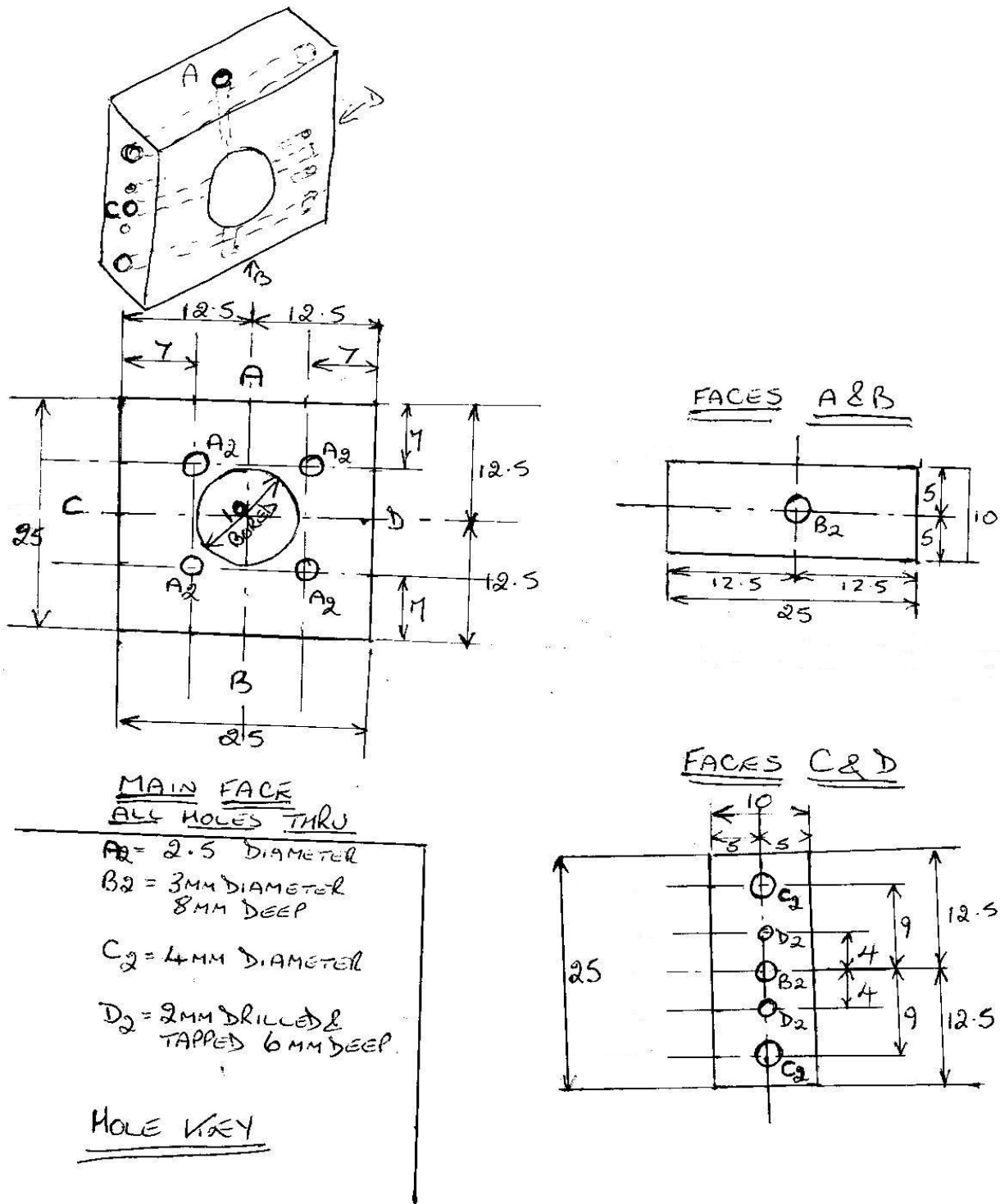
SKETCH FOR PLAIN FLANGE - MILD STEEL - 2 off





135 - Steam Control Main Block

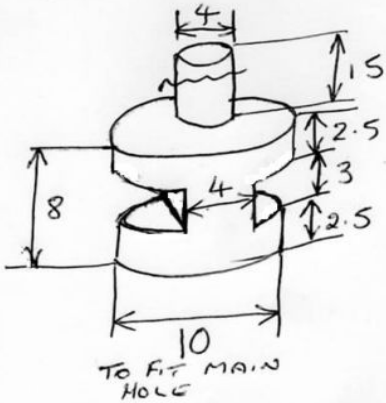
STEAM CONTROL BLOCK - BRASS OR MILD STEEL - 1off



"Bogstandard": Building a Steam Engine from mainly Junk Materials  
Appendix 1 – Design Sketches

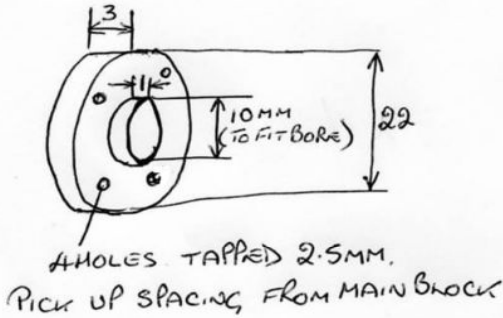
144 – Control Block Parts

SPOOL FOR CONTROL VALVE - BRASS OR BRONZE - 1 off

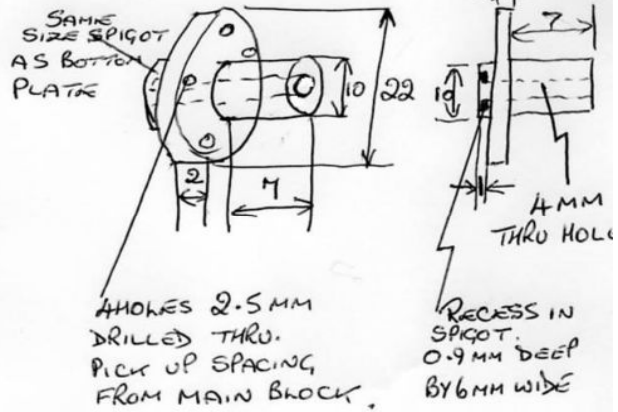


DO NOT MACHINE SLOTS UNTIL SPOOL IS MACHINED TO CORRECT HEIGHT AND WIDTH IS LAPPED TO FIT MAIN HOLE

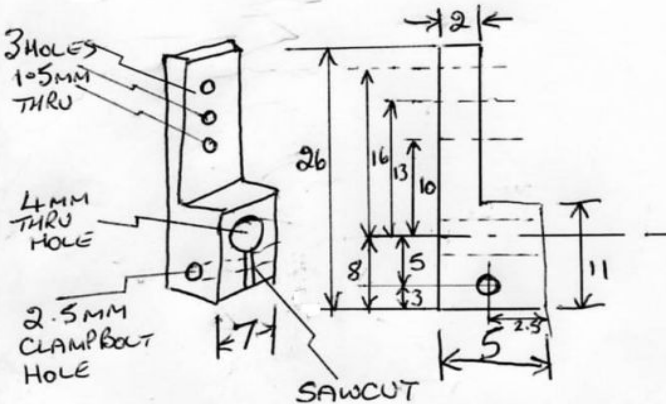
BOTTOM PLATE - BRASS - 1 off



TOP PLATE - BRASS - 1 off



CONTROL BLOCK ARM - BRASS OR STEEL - 1 off

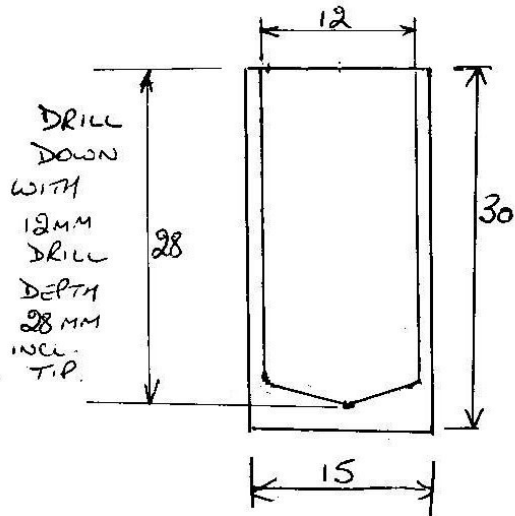


THE 10, 13 & 16 THRU HOLES FROM THE 4MM CENTRE LINE ARE STANDARD PITCHES FOR SERVO ARMS. IF YOURS ARE DIFFERENT, ALTER TO SUIT.

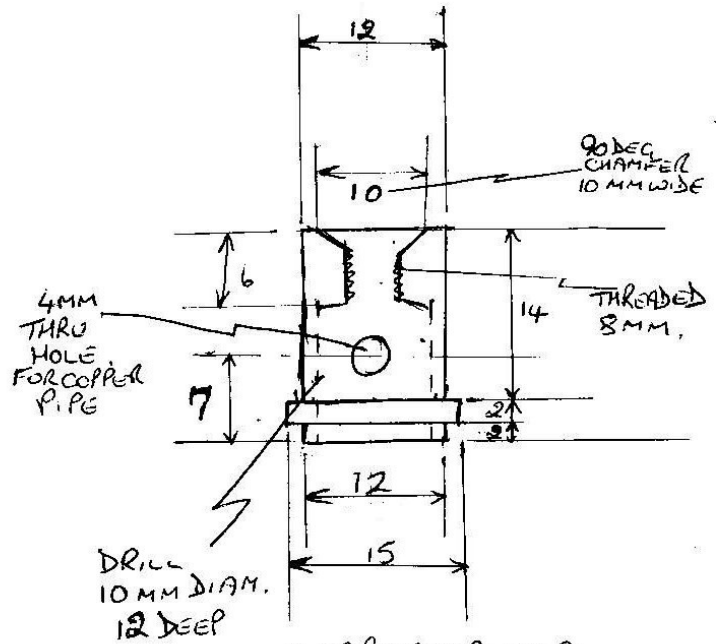
"Bogstandard": Building a Steam Engine from mainly Junk Materials  
 Appendix 1 – Design Sketches

152 – Lubricator

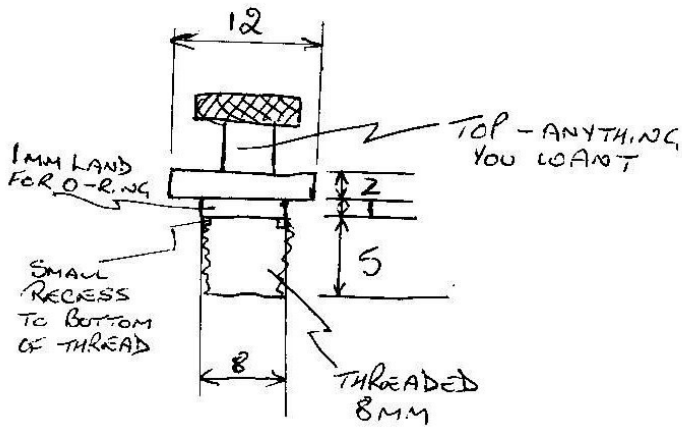
DISPLACEMENT LUBRICATOR - BRASS - 1 off



MAIN CHAMBER  
BRASS - 1 off



LUBRICATOR TOP  
BRASS 1 off



SCREW CAP - BRASS 1 off

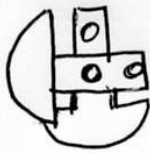
156 - Timing the Bottom End

TIMING THE ENGINE - BOTTOM END

VIEWED FROM FLYWHEEL END

STEP ONE - SET THE TWO MIDDLE  
CRANKS 90° APART - DOESN'T MATTER  
WHICH WAY.

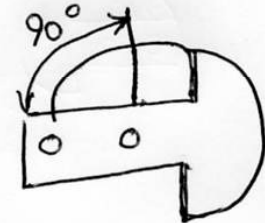
FOR CLOCKWISE



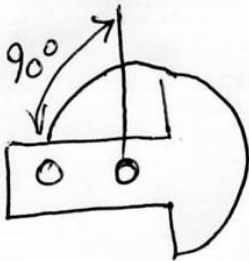
FOR ANTICLOCKWISE

STEP TWO - LOOKING  
FROM LUBRICATOR END.

N°1 ECCENTRIC & N°1 CRANK



STEP THREE - LOOKING  
FROM FLYWHEEL END.  
N°2 ECCENTRIC & N°2 CRANK.

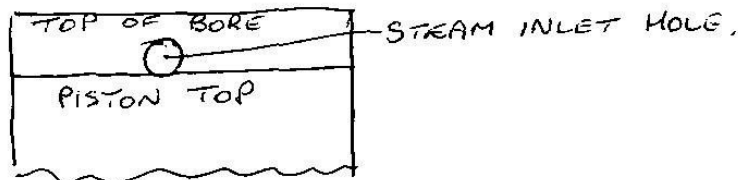


157 - Timing the Top End

TIMING THE ENGINE - TOP END

STEP ONE -

TURNING THE ENGINE IN THE DIRECTION OF ROTATION SET UP ON THE ECCENTRICS, TURN CRANK UNTIL PISTON IS AT T.D.C. SLACKEN OFF NUT ON CROSSHEAD AND SCREW THE PISTON ROD IN THE CORRECT DIRECTION TO BRING THE TOP OF THE PISTON IN LINE WITH THE BOTTOM OF THE STEAM INLET HOLE. LOCK UP NUT AND DO ANOTHER CRANK REVOLUTION TO MAKE SURE IT HAS HELD POSITION



STEP TWO

TAKE OFF COVER PLATE ON THE END OF THE PISTON VALVE BLOCK. SLACKEN OFF NUT AT BOTTOM OF PISTON SPOOL VALVE. TURN ENGINE UNTIL PISTON IS AT T.D.C. ADJUST BY TURNING SPOOL UNTIL TOP HOLE IS ONLY JUST BEING UNCOVERED AT THE TOP. TIGHTEN UP NUT, DO ANOTHER ROTATION OF THE CRANK AND RECHECK.

