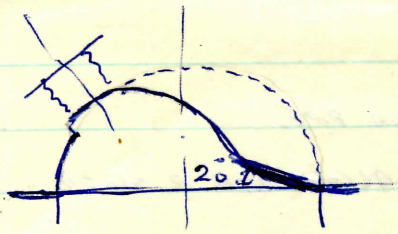
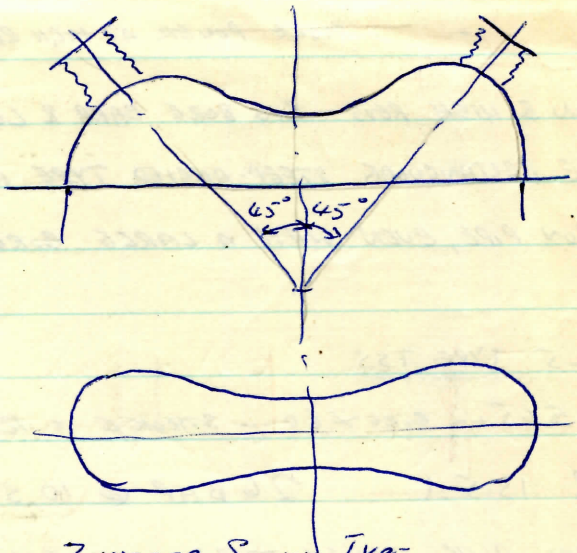
J.W VIERDAG IMPROVING 2-STROKE ENGINE PERFORMANCE



PEAR SHAPE OR WEDGE SHAPE COMBUSTION CHAMBER

"BULTACO"



ZUNDAPP SQUISH TYPE COMBUSTION CHAMBER

PORT TIMING

2TD INLET 120° TO 130°
EX 160°
TRANSFER 120° TO 130°

COMP INLET 150° (156° IF PORT IS WIDE & NARROW)
EX 160°
TRANSFER 140° TO 144°

EX PORT ~~CAN~~ LOWER EDGE CAN BE BELOW PISTON CROWN AT B.D.C – HELPS T SCAVENGE BECAUSE OF SUDDEN EXPANSION OF WASTE GASES.

SOME 50cc RACES ALLOW EX PORT TO CONNECT WITH CRANKCASE NEAR C – AT HIGH REVS THIS HAS A DRAWING EFFECT TO HELP FILL CRANKCASE.

ANOTHER SYSTEM IS A TUBULAR CONNECTION WITH NON-RETURN VALVE BETWE CRANKCASE, IMMEDIATELY BELOW EX. PORT & A SUITABLE PLACE IN THE EX SYSTE

BOOSTER PORTS OPEN 55° TO 62° BEFORE T.D.C. (PREFERABLY 55°)

ARIEL LEADER SUPER SPORTS – DESAXE – OFFSET G/PIN.

ROTARY INLET VALVE

① INLET OPENS 100° B.T.D.C, CLOSES 60° A.T.D.C.
② " " 140° " , " 60° "
③ " " 162° " , " 40° "
④ " " 175° " , " 35° "

2 ROTARY VALVES WITH 2 CARBS, DIFFERENTLY TIMED TO SUIT DIFFERENT SPEEDS, DISC & HOUSING HIGHLY POLISHED, THEN LAPPED IN WITH CERIUM OXIDE & TREATED WITH P.T.F.E.

PISTONS GROOVES 1mm WIDE x 3mm DEEP WITH 5mm WIDE LANDS IMPROVE LUBRICATI & PORT CLOSURE

LONG INDUCTION MANIFOLD - BETTER ACCELERATION.

SHORT - - - MORE POWER AT HIGH REVS.

GOOD ACCELERATION & HIGH REVS — BIG BORE CARB & LONG INDUCTION PIPE.

NARROW BUT WIDE RECTANGULAR STEEP-ANGLED TYPE INLET PORT ALLOWS FOR A MUCH BIGGER INDUCTION PIPE, EVEN WITH A LARGE BORE CARB.

BULTACO

125 TYPE TSS

51·5 mm BORE × 60 mm STROKE = 125 cc

C.R. 13·5:1 . 26 BHP @ 10,500

Central plug, SQUISH TYPE COMBUSTION CHAMBER

MAHLE PISTON WITH TWO 'L' TYPE COMPRESSION RINGS, TOP ONE FLUSH WITH CROWN.

DELL'ORTO CARB, TYPE 29A, 26° DOWNDRAUGHT

196 TYPE TSS

64·5 mm BORE × 60 mm STROKE = 196 cc

C.R 13:1 31 BHP @ 10,000

CENTRAL PLUG, SQUISH HEAD.

PISTON AS ABOVE

DELL'ORTO CARB, TYPE 38I-29A, 26° DOWNDRAUGHT

K-100

49·6 BORE × 51·5 STROKE = 99·1 cc

CR 14·1 :1, 7·9 BHP @ 5000

13·5 BHP @ 9,500

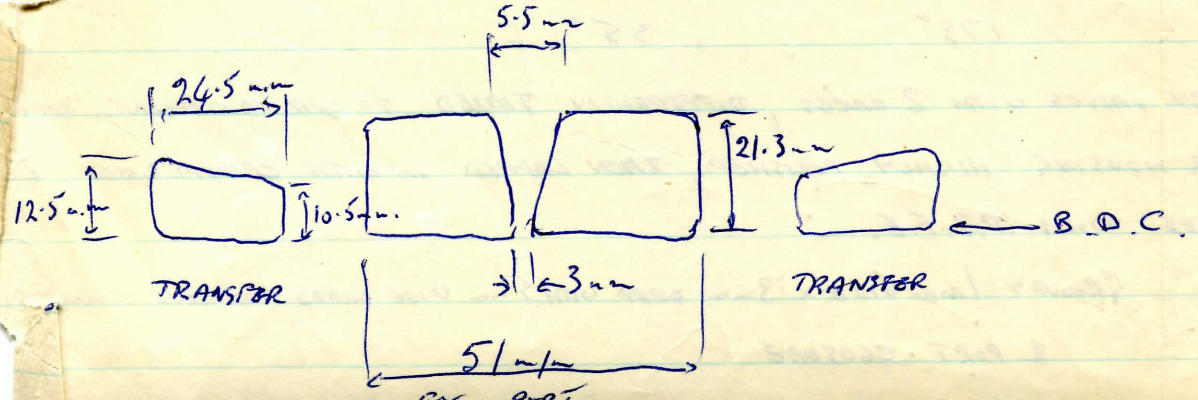
23-25 mm CHOKE CARB.

K.200

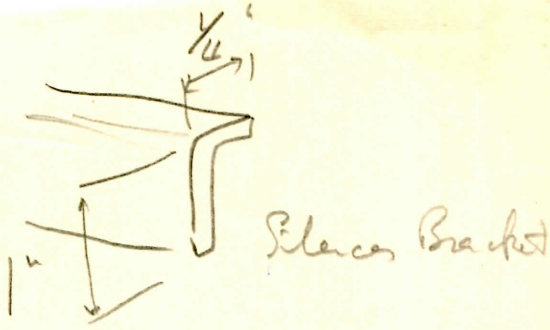
64·5 × 60 = 196 cc

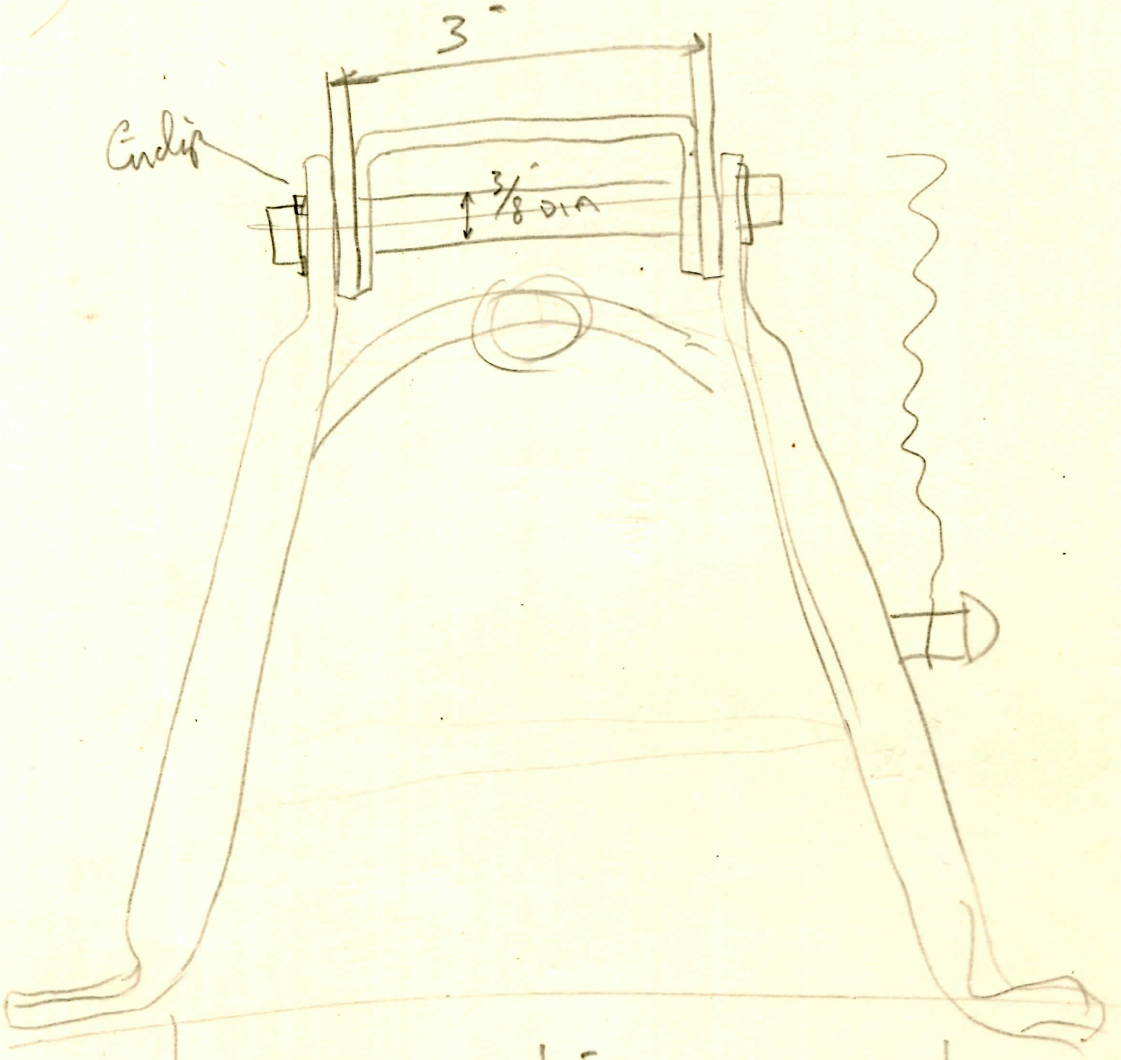
CR 12:1, 24 BHP @ 9,000

AMAL MONOBLOC 389/96, 1⅛" choke.

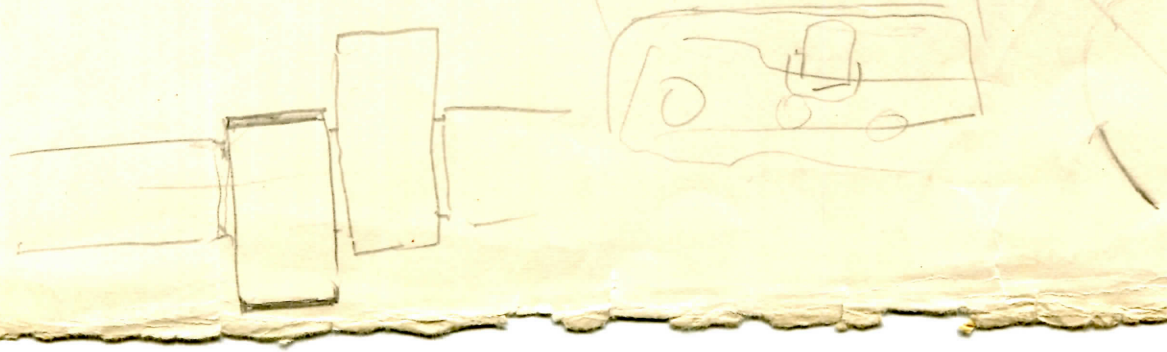


Ducati





9"



Engine Sprocket Driving Pins.

Stopping Engine Dead from 8,000 R.P.M

$$E = \frac{Wv^2}{64.32}$$

$$= \frac{4.6 \text{ lbs} \times 85^2}{64.32} \text{ FT/LBS}$$

$$= 520 \text{ FT/LBS.}$$

$$= 6240 \text{ IN LBS}$$

$$250$$

$$6490 \text{ TOTAL IN LBS.}$$

$$= 8,652 \text{ lbs at } 3/4\text{" Rad.}$$

M.S. Ultimate Shear Strength = 42,000 lb/sq"

Area of pegs reqd. $\frac{8,652}{42,000} = .206$ sq"

Area of $\frac{1}{4}$ dia peg = .0491"

Number of pegs necessary = 4

17 cu in
.27 lb/c"
340
119
459 lbs

7225
4.6
289000
43350
64 | 33235.0 | 520
320
123
128
12

2163
4 | 6490
8652
3

8652.0 | .2163
40,000

42 | 8.652 | .206
84
252
252

5 | 20.6
4

$$E_1 = \frac{W(V_1^2 - V_2^2)}{64 \cdot 32}$$

$$= \frac{4 \cdot 6 \text{ lbs} (85^2 - 10 \cdot 6^2)}{64 \cdot 32}$$

= 512 FT LBS

= 6144
250
6,394

8524 lbs

·203 –

7225
112
7113
4·6
28452·0
42678
327198
320
71
64
79
8

2131
6394×4
3

42) 8524 (·203
84
124

512