1

Flowrate (Q) = 10dm³/min Bresoure charge (AP) = 12 bar Speed (AD) = 1500rpm Marrinal displacement = 10cm³/rev Torque input (T) = 12 5 N-m

1) Ideal flow rate = normal Deplacement x Speed = 10cm3/NV x 1500 ppm = 15000cm3/min = 15dm3/min Viduretric efficiency = Actual flow 1 deal flow = 11/15 = 10.666 2.cg 66.1

= 10/15 = 0.6667 or 66.67%

1) Q = 10 x 10-3 m3/sec = 16:7x 10-5 m3/s DP=12×105 N/m2

Fluid power = AP x Q = 16.7 x 10-0.5 on3/sec x 12 x 105 N/02 Shaft power = 27 NT = 27 x 1500

= 1963.5 wafts

Overall Efficiency = F.P/s.P = 200/1963.5 50.102 or 10.2%

Surmary: there exe can see that shaft power almost 10 times of fluid power can be either increase by the change in pressure a

Normal displacement = Surviller
Pressure chappe (Ap) = Iw box
Shoft Power = 15 kito withs = 15000
Overall & fficiency = ??
Noturnities & Efficiency = ??
Flow rote (O) = 35 drs//run
Speed (N) = 850 rpm

ideal flow role = Marminal displainment x speed = 50cm³ (rev x 850 rpm = 42.500cm³/min = 42.5 drm²/min Udurnetric efficiency = Actual flow lideal flow = 35/42.5 = 0.8235 or 82.35%

(i) Q = 35×10-3 m3/sec = 58.3 × 10 5 m3/sec

Ap= 100 × 105 H/m2 Hund power = AP × Q = XXXXXX

= 38.3 × 10° 500 /sec × 100 × 10

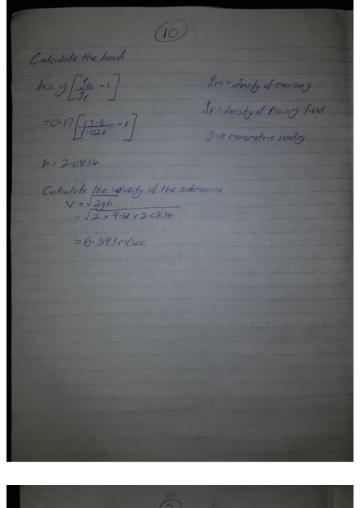
05830 walts

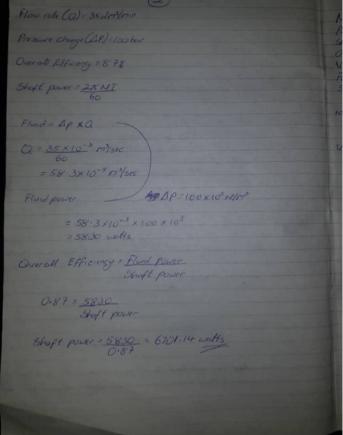
shoft power = 15000 vatts

Crerall Efficiency = fluid four = 58.30 = 0.3586 or 38.86% Soft four 15000 38.86%

1/2 my 2 jet 1/2 PQ v 2 jet 1/2 x 1000 x 0 013 28314 Cpred = 179h = 109h =1000 x 0.013 x 6 = 30.607.2 = 30.6072 kalon 2×981 Pres 28.316 POWER = 890 × 9.81 × 220 × 10 - × 300 Power supplied from reservent 5762394 x 100 E 0.8324 8386 > 1000 x TX 2.5 × 10-3 × 19 7959 × 9.8 × 20 I - density of water bowly years) ~ CEX , 94.8.6× 94.6×8.66) x = 01×01/× xy300 Power = 30478.03W

1220 motors for hard differentally = x (so -A = 003(410m, Coalficient of discharge (cd)=096 · Volume flow rate (a) = a: A1-A2-12-99 Specific cought of good (54) - 19.62 Arra A= (B-F) = 1512 CSX103x951 = 1-933~ (20.97 x 0.015/46 x 4-5365 x 10-3 x 12x 9x1 x 1933. a · Compa (1 29h) 097 x 0 018146)2- Con 53 55 x 103)2 Par(981×1000)(4453) Pz=4368303261012 10+ 4400000 x (0.5658) - 6+P2 + 2-2599 Z, + C+ 1/2 = Z, 1/2 1/2" 4= 42.46 - 40×103





Balogun's fluid assignment