

ตารางที่ ก.๑ การทดสอบและวัดค่าเพื่อหาค่ากำลังของกังหันตามกฎทางอุณหพลศาสตร์และทฤษฎีสถิตศาสตร์และหาค่าความเร็ว

| time (min) | Inlet Temperature (°C) | Inlet Pressure (MPa) | Inlet Enthalpy (KJ/kg) | Outlet Temperature (°C) | Outlet Pressure (Mpa) | Outlet Enthalpy (KJ/kg) | Mass Flow Rate (kg/s) | Inlet Velocity (m/s) | Outlet Velocity (m/s) | Theoretical Power (kW) |
|------------|------------------------|----------------------|------------------------|-------------------------|-----------------------|-------------------------|-----------------------|----------------------|-----------------------|------------------------|
| 0 | 21.6 | 0.5 | 420.75 | 21.6 | 0.5 | 420.75 | 0 | 0 | 0 | 0 |
| 3 | 24.5 | 0.55 | 422.01 | 21.7 | 0.52 | 420.48 | 0.277 | 152.571315 | 62.2514232 | 3.111093171 |
| 6 | 26.4 | 0.6 | 422.57 | 22.6 | 0.57 | 420.27 | 0.277 | 162.211154 | 77.3908788 | 3.451850789 |
| 9 | 30.5 | 0.69 | 424.14 | 25.1 | 0.63 | 421.09 | 0.277 | 166.619951 | 79.7404542 | 3.809258034 |
| 12 | 35.3 | 0.77 | 426.49 | 29.6 | 0.7 | 423.29 | 0.277 | 174.604442 | 92.6440341 | 3.920075466 |
| 15 | 42.9 | 0.88 | 430.66 | 34 | 0.75 | 425.82 | 0.277 | 197.18789 | 105.561556 | 5.182645343 |
| 18 | 50.3 | 1.1 | 433.23 | 38.1 | 0.8 | 428.17 | 0.277 | 216.241403 | 128.259832 | 5.599521743 |
| 21 | 55.1 | 1.23 | 435.24 | 44.5 | 0.95 | 430.85 | 0.277 | 253.421498 | 163.569823 | 6.405260535 |
| 24 | 60.5 | 1.35 | 438.02 | 48.4 | 1.05 | 432.45 | 0.277 | 266.870583 | 180.287105 | 6.905120822 |
| 27 | 65.6 | 1.49 | 440.37 | 50.1 | 1.18 | 431.84 | 0.277 | 280.686024 | 207.353588 | 7.31960498 |
| 30 | 69.9 | 1.65 | 441.87 | 53.8 | 1.25 | 433.85 | 0.277 | 309.637787 | 233.681409 | 7.937235324 |
| 33 | 73.1 | 1.7 | 444 | 57.4 | 1.3 | 436.13 | 0.277 | 340.987859 | 265.268544 | 8.537876731 |
| 36 | 78 | 1.8 | 447 | 62 | 1.4 | 438.57 | 0.277 | 371.404037 | 296.298756 | 9.280608853 |

ตารางที่ ก.๒ การทดสอบและวัดค่าเพื่อหาค่ากำลังของกังหันจากชุดอุปกรณ์ Rope Brake

| time (min) | Force (N) | Torque (N.m) | Rotational Speed (rpm) | Actual Power (kW) |
|------------|-------------|--------------|------------------------|-------------------|
| 0 | 0 | 0 | 0 | 0 |
| 3 | 1.411121863 | 0.017639023 | 160 | 0.295553851 |
| 6 | 1.491836665 | 0.018647958 | 181 | 0.353469521 |
| 9 | 1.491358804 | 0.018641985 | 240 | 0.468538738 |
| 12 | 1.40053454 | 0.017506682 | 328 | 0.601339576 |
| 15 | 1.790126533 | 0.022376582 | 395 | 0.925620458 |
| 18 | 1.757764598 | 0.021972057 | 476 | 1.095266453 |
| 21 | 1.904849922 | 0.023810624 | 523 | 1.304111045 |
| 24 | 1.83816638 | 0.02297708 | 621 | 1.494268146 |
| 27 | 2.221447669 | 0.027768096 | 689 | 1.712787565 |
| 30 | 1.871423706 | 0.023392796 | 810 | 1.984308831 |
| 33 | 1.80737181 | 0.022592148 | 830 | 1.963711648 |
| 36 | 1.629802923 | 0.020372537 | 870 | 1.856121771 |

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| time (min) | Theoretical Power (kW) | Power (Actual)(kW) | Turbine Efficiency (100%) |
|------------|------------------------|--------------------|---------------------------|
| 0 | 0 | 0 | 0 |
| 3 | 3.111093171 | 0.295553851 | 9.5 |
| 6 | 3.451850789 | 0.353469521 | 10.24 |
| 9 | 3.809258034 | 0.468538738 | 12.3 |
| 12 | 3.920075466 | 0.601339576 | 15.34 |
| 15 | 5.182645343 | 0.925620458 | 17.86 |
| 18 | 5.599521743 | 1.095266453 | 19.56 |
| 21 | 6.405260535 | 1.304111045 | 20.36 |
| 24 | 6.905120822 | 1.494268146 | 21.64 |
| 27 | 7.31960498 | 1.712787565 | 23.4 |
| 30 | 7.937235324 | 1.984308831 | 25 |
| 33 | 8.537876731 | 1.963711648 | 23 |
| 36 | 9.280608853 | 1.856121771 | 20 |



