Test Bench Measurement

Motor type: **HP 875-50-A8 S P30**

Date: 17.02.2021

Bearing type: RS

Controller: MST 400-133

Measuring Parameter

Voltage: **70.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 2,225.1 [RPM] Io: 2.7 [A] kV: 32.3 [RPM/V] kn: -13.24 [RPM/A] kT: 35.63 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
70.0	5.0	2,229.4	350.0	271.8	116.4	77.64
70.0	6.0	2,211.6	420.0	338.8	146.3	80.67
70.0	7.0	2,194.0	490.0	406.0	176.7	82.85
70.0	8.0	2,176.6	560.0	473.0	207.5	84.46
70.0	9.0	2,159.4	630.0	539.6	238.6	85.64
70.0	10.0	2,142.5	700.0	606.2	270.2	86.60
70.0	11.0	2,125.7	770.0	672.3	302.0	87.31
70.0	12.0	2,109.2	840.0	738.4	334.3	87.90
69.9	13.0	2,092.9	908.7	803.9	366.8	88.47
69.9	14.0	2,076.8	978.6	869.3	399.7	88.83
69.9	15.0	2,061.0	1,048.5	934.3	432.9	89.11
69.9	16.0	2,045.3	1,118.4	999.0	466.4	89.32
69.9	17.0	2,029.8	1,188.3	1,063.2	500.2	89.47
69.9	18.0	2,014.6	1,258.2	1,127.2	534.3	89.59
69.9	19.0	1,999.5	1,328.1	1,190.6	568.6	89.65
69.9	20.0	1,984.6	1,398.0	1,253.6	603.2	89.67
69.9	21.0	1,970.0	1,467.9	1,316.2	638.0	89.66
69.9	22.0	1,955.5	1,537.8	1,378.2	673.0	89.62
69.9	23.0	1,941.2	1,607.7	1,439.8	708.3	89.56
69.9	24.0	1,927.1	1,677.6	1,500.8	743.7	89.46
69.9	25.0	1,913.2	1,747.5	1,561.3	779.3	89.35
69.9	26.0	1,899.5	1,817.4	1,621.6	815.2	89.22
69.9	27.0	1,885.9	1,887.3	1,681.0	851.2	89.07
69.9	28.0	1,872.5	1,957.2	1,739.9	887.3	88.90
69.9	29.0	1,859.3	2,027.1	1,798.3	923.6	88.71
69.9	30.0	1,846.3	2,097.0	1,856.1	960.0	88.51

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
69.8	32.0	1,820.8	2,233.6	1,969.9	1,033.1	88.19
69.8	33.0	1,808.2	2,303.4	2,025.9	1,069.9	87.95
69.8	34.0	1,795.9	2,373.2	2,081.3	1,106.7	87.70
69.8	35.0	1,783.7	2,443.0	2,135.9	1,143.5	87.43
69.8	36.0	1,771.6	2,512.8	2,190.1	1,180.5	87.16
69.8	37.0	1,759.8	2,582.6	2,243.5	1,217.4	86.87
69.8	38.0	1,748.0	2,652.4	2,296.4	1,254.5	86.58
69.8	39.0	1,736.4	2,722.2	2,348.4	1,291.5	86.27
69.8	40.0	1,725.0	2,792.0	2,399.8	1,328.5	85.95
69.8	41.0	1,713.7	2,861.8	2,450.5	1,365.5	85.63
69.8	42.0	1,702.5	2,931.6	2,500.6	1,402.6	85.30
69.8	43.0	1,691.5	3,001.4	2,549.8	1,439.5	84.95
69.8	44.0	1,680.7	3,071.2	2,598.7	1,476.5	84.61
69.8	45.0	1,669.9	3,141.0	2,646.5	1,513.4	84.26
69.8	46.0	1,659.3	3,210.8	2,693.7	1,550.2	83.89
69.8	47.0	1,648.8	3,280.6	2,740.1	1,587.0	83.53
69.8	48.0	1,638.5	3,350.4	2,785.8	1,623.6	83.15
69.8	49.0	1,628.3	3,420.2	2,830.9	1,660.2	82.77
69.8	50.0	1,618.2	3,490.0	2,875.0	1,696.6	82.38
69.8	51.0	1,608.2	3,559.8	2,918.6	1,733.0	81.99
69.7	52.0	1,598.3	3,624.4	2,961.0	1,769.1	81.70
69.7	53.0	1,588.6	3,694.1	3,003.1	1,805.2	81.29
69.7	54.0	1,579.0	3,763.8	3,044.3	1,841.1	80.88
69.7	55.0	1,569.4	3,833.5	3,084.5	1,876.8	80.46
69.7	56.0	1,560.0	3,903.2	3,124.0	1,912.3	80.04
69.7	57.0	1,550.7	3,972.9	3,162.7	1,947.6	79.61
69.7	58.0	1,541.5	4,042.6	3,200.6	1,982.7	79.17
69.7	59.0	1,532.4	4,112.3	3,237.7	2,017.6	78.73
69.7	60.0	1,523.4	4,182.0	3,273.9	2,052.2	78.28
69.7	61.0	1,514.5	4,251.7	3,309.3	2,086.6	77.83
69.7	62.0	1,505.6	4,321.4	3,343.8	2,120.8	77.38
69.7	63.0	1,496.9	4,391.1	3,377.4	2,154.6	76.92
69.7	64.0	1,488.3	4,460.8	3,410.4	2,188.2	76.45
69.7	65.0	1,479.7	4,530.5	3,442.3	2,221.5	75.98
69.7	66.0	1,471.2	4,600.2	3,473.4	2,254.5	75.50
69.7	67.0	1,462.8	4,669.9	3,503.6	2,287.2	75.03
69.7	68.0	1,454.5	4,739.6	3,532.9	2,319.5	74.54
69.7	69.0	1,446.3	4,809.3	3,561.5	2,351.5	74.05
69.7	70.0	1,438.1	4,879.0	3,589.0	2,383.2	73.56

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
69.6	72.0	1,422.0	5,011.2	3,641.3	2,445.3	72.66
69.6	73.0	1,414.0	5,080.8	3,666.0	2,475.8	72.15
69.6	74.0	1,406.1	5,150.4	3,689.8	2,505.9	71.64
69.6	75.0	1,398.3	5,220.0	3,712.9	2,535.6	71.13

nl = rpm with no load
Io = current with no load
kV = specific rpm
kn = rpm drop per Amp
kT = torque constant
[1] incl. Controller