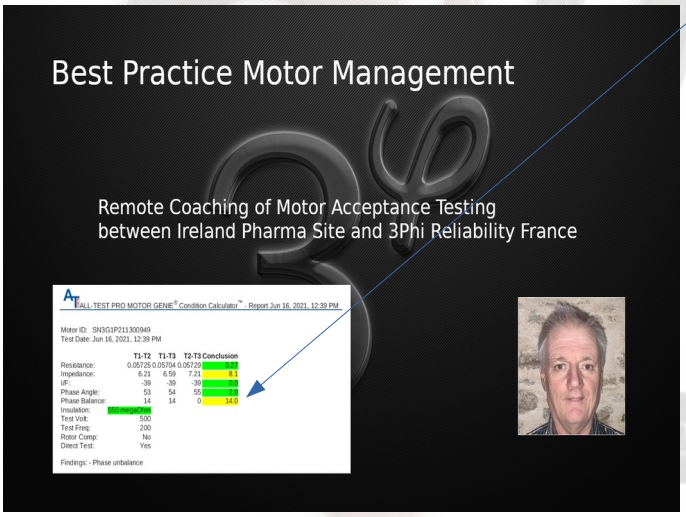
Energy Savings in Motor Systems is a huge Opportunity in every Business.

Approximately 50% of Global Electrical Supply is consumed in Electric Motors systems.

In nearly every business Electric Motors are the NUMBER ONE asset class on your Electric Bill.

Two Strategies are proven to make a significant difference:

1. Purchase Motors that are Magnetically Balanced: That means implementing an Acceptance Test at the point of sale.
Magnetically Balanced motors are more efficient (A phase balance test is quick and easy)



Phase Balance correlates to Motor Efficiency in this case 14% loss.

2. Ensure terminations are the lowest they can be.
Every resistance lowers the voltage seen by the Motor Windings, imbalances mean even good motors run inefficient.
These resistances are easily quantifiable and gains through good termination practice turned into Money saved on your bill.
Most Motors (>90%) can return savings, but obviously you begin with the largest first.

In the example below: The “As Found” measurements were taken, rectifications made and the “As Left” measurements made. The difference **3500 GBP (4,200 USD)** in resistance elimination.

The reduction in resistance is used to calculate the gain, combined with an accurate reading of the running current (Amps).

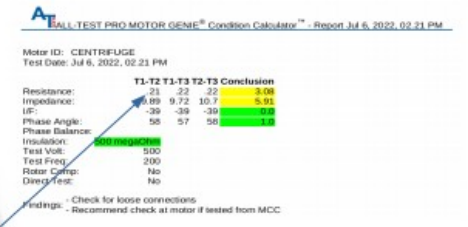
Loss across a connection Watts = I^2R (R is the difference As found As left, I Running Amps)

This is the Direct Current Formulae, for an Alternating Current eg 50Hz this must be reduced to the RMS value, then using your sites Power Cost per kWhr, and the estimated Running Hours a saving can be calculated.

In this example it took 2 hours to complete the remedial work, and returned 3500 GBP pa.

Example: Centrifuge Motor

As Found: Resistance Imbalance 3.08%

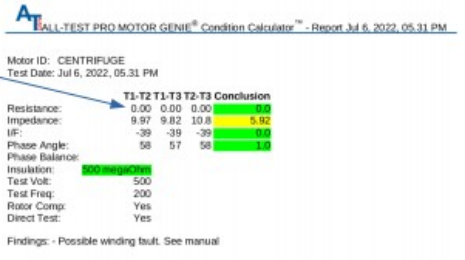

ALL-TEST PRO MOTOR GENIE® Condition Calculator™ - Report Jul 6, 2022, 02.21 PM

Motor ID: CENTRIFUGE
Test Date: Jul 6, 2022, 02.21 PM

	T1-T2	T1-T3	T2-T3	Conclusion
Resistance:	21	22	22	3.08
Impedance:	9.89	9.72	10.7	5.91
I/F:	-39	-39	-39	0.0
Phase Angle:	58	57	58	1.0
Phase Balance:				
Insulation:	500 megaOhm			
Test Volt:	500			
Test Freq:	200			
Rotor Comp:	No			
Direct Test:	No			

Findings: - Check for loose connections
- Recommend check at motor if tested from MCC

As Left: Resistance Imbalance Zero
Absolute Resistance dropped by 0.21 Ohms.


ALL-TEST PRO MOTOR GENIE® Condition Calculator™ - Report Jul 6, 2022, 05.31 PM

Motor ID: CENTRIFUGE
Test Date: Jul 6, 2022, 05.31 PM

	T1-T2	T1-T3	T2-T3	Conclusion
Resistance:	0.00	0.00	0.00	0.0
Impedance:	9.97	9.82	10.8	5.92
I/F:	-39	-39	-39	0.0
Phase Angle:	58	57	58	1.0
Phase Balance:				
Insulation:	500 megaOhm			
Test Volt:	500			
Test Freq:	200			
Rotor Comp:	Yes			
Direct Test:	Yes			

Findings: - Possible winding fault. See manual

I^2R 75 Rated Amps 0.22 Resistance 3712 Watts
estimate 60% Loss 2227 Watts

3563 Pounds Loss per Annum in I^2R losses.

Defects Fixed: Lug size incorrect, Loose Connection at Motor, Loose connection at Drive (Burnt Cable), Lug extruded, Crimping High Resistance and Lug arrangement incorrect.