

# Returning Reliability & Energy Savings

Example: 230HX03P03REFINERYC IOLINGTOWERPUMP

37kW 63 Amp @ Full Load

As Found

AT BALL-TEST PRO MOTOR GENIE® Condition Calculator™ - Report Jul 9, 2022, 09:06 AM

Motor ID: 230HX03P03REFINERYC IOLINGTOWERPUMP  
Test Date: Jul 9, 2022, 09:06 AM

	T1-T2	T1-T3	T2-T3	Conclusion
Resistance:	0.17	0.16	0.17	4.0
Impedance:	2.99	2.92	2.97	1.35
I/F:	-27	-27	-27	0.8
Phase Angle:	34	32	32	2.0
Phase Balance:				
Insulation:	100 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

AT BALL-TEST PRO MOTOR GENIE® Condition Calculator™ - Report Jul 9, 2022, 12:40 PM

Motor ID: 230HX03P03REFINERYC IOLINGTOWERPUMP  
Test Date: Jul 9, 2022, 12:40 PM

	T1-T2	T1-T3	T2-T3	Conclusion
Resistance:	.10	.10	.10	0.0
Impedance:	2.88	2.95	2.93	1.37
I/F:	-26	-27	-26	1.0
Phase Angle:	32	33	33	1.0
Phase Balance:				
Insulation:	500 megaOhm			
Test Volt:	500			
Test Freq:	200			
Rotor Comp:	No			
Direct Test:	Yes			

Findings: - Good winding & connections

The lug selection is too large, 15-8 lug used on a 6mm Post. Bottom nuts loose and the crimp has not fully compressed. Insulation tape between lug faces.

Resistance after remedial work has dropped from 0.17 Ohms to 0.10 Ohms.

The I<sup>2</sup>R loss at full Load 277 Watts per termination.  
Estimated 60% loading equates to 498 Watts.

498 Watts @ 20p per kWhr estimated 8000 hours per year =  
**796 pounds per year.**



## 3Phi Reliability Returning Reliability & Energy Savings



<http://www.3Phi-Reliability.com/blog>