A&C ELECTRIC / LINCOLN SERVICE

SERVICE REPORT

Customer		**P.O. #**	*9354*
Shop #	*146608*	**Brass Tag #**	*42145*
Date	*5/20/2012*	**Technician**	*JS*
Part #	*n/a*		

Motor nameplate information:					
Mfg.	*Fanuc*	**KW**	*7*	**RPM**	*2000*
Type	*40s/2000*	**Serial**	*C944A6969*	**Volts**	*170*
Model	*A06B-0583-B372#7008*				
Feedback nameplate information:					
Mfg.	*Fanuc*				
Part No.	*A860-0346-T141*				
Type	*Serial Pulse Coder A*				

STATOR WINDING TESTS:						
Insulation to frame check:	∞	**MegOhms @ 1000v**				
Hipot test:	*1500v*	**Surge test:**	*2500v*			
Winding resistance:	*.148Ω*	**U-V**	*.148Ω*	**V-W**	*.148Ω*	**W-U**
Back EMF:	*82.1v*	**U-V**	*82.1v*	**V-W**	*82.1v*	**W-U**
Stator Slots:	*36*	**Rotor Bars:**	*n/a*			

BRAKE TESTS:			**Rated @**	*40 Nm*
Brake release voltage:	*90v*	**Brake coil resistance:**	*237.6Ω*	
Brake torque:	*75 Nm*	**MegOhms to frame:**	∞	

TACHOMETER TESTS:		
Measured output voltage:		**at 1000 RPM's**

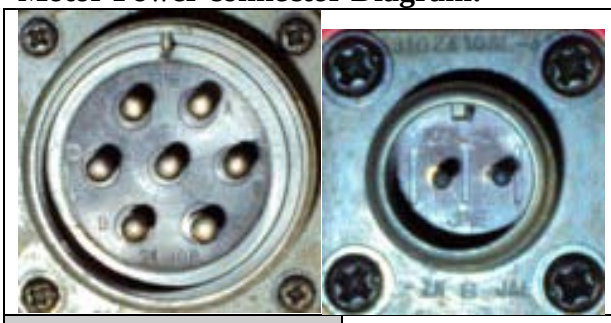
ENCODER TESTS:			
Counts per turn:	*1,048,576*	**Continuous count errors:**	*>1%*
Phase offset	*n/a*	**Symmetry A-B**	*n/a*
Oscilloscope checks:	*n/a*		

RESOLVER TESTS:						
Winding resistance:	**Excitation:**		**Cosine:**		**Sine:**	
Outputs checked with and oscilloscope OK at:					**KHz Excitation freq**	
Insulation to frame check:		**MegOhms @ 250v**		**Vector Volts**		

Rotor vibration test:		**mils/disp.**

Servo motor Information & Pin-outs

Motor Power connector Diagram:



Connector Number	

Pin	Function	Color
A	Phase U	
B	Phase U	
C	Phase V	
D	Phase V	
E	Phase W	
F	Phase W	
G	Ground	
	Brake	
A	Brake +	Yellow
B	Brake -	Yellow

Static lock-up position

Polarity of DC voltage applied to the leads:

Phase U	Phase V	Phase W
Positive	*Negative*	*Negative*

Commutation signal states:

H1	H2	H3	H4	H5	H6
0	*0*	*0*	*1/0*		
Resolver angle					
Encoder "Z" Pulse					

Motor forward rotation DE	*CCW*
Resolver forward rotation DE	*n/a*
Encoder A/B rotation DE	*CCW*
Mechanical Angele +U to -V	
Electrical Angle +U to -V	

Encoder/ Resolver connector diagram:

Connector number	3102A 22-14p
Test cable number	TI-5004

Pin	Function	Color
A	SD	Grey
B	SD*	Black
C		
D		
E	Req	Purple
F	Req*	Pink
G		
H		
J		
K		
L	+5 volts	Brown/white
M	0 volts	Green
N		
N		
P		
R		
S		
T	Batt +	Red/white
U		Yellow
V		Blue

Commutation signal type:	*Serial Encoder*
Motor number of poles:	*8*
Resolver number of speeds:	*n/a*
Encoder count:	*1,048,576*

Dynamic commutation alignment check using an oscilloscope:

With motor being driven in **forward** direction of rotation:

Input 1 Oscilloscope channel **A** connected to the following motor stator leads:

Scope probe to		**Reference lead to**	

Input 2 Oscilloscope channel **B** connected to Commutation feedback:

Scope probe to		**Reference lead to**	

Oscilloscope traces as found with the above signals:

NO SCOPE TRACES SERIAL ENCODER

Check for balanced output voltages.

Output voltage at 1000 RPM	***82.1v***	**Rated output voltage**	***83.1v***

TI-3000 Settings	***Fanuc P8, A, B & B2***	**Coupling size**	***35 mm***
Notes:	***Complete Rebuild***		
Clean and adjust brake			
Replace encoder (faults)			
Replace blower fan (shorted)			
Align and verify encoder outputs			
Run test motor			

Bearings	**P.E.**	***6208zz 6209zz***	**O.P.E**	***6207zz***	**Seal**	***BC3555E***