



# Spintec Engineering Pte Ltd- Portfolio

*Prepared by Sivakumar R, 29 Nov 2019*

# Spindle Repair- Major Brands we Serve



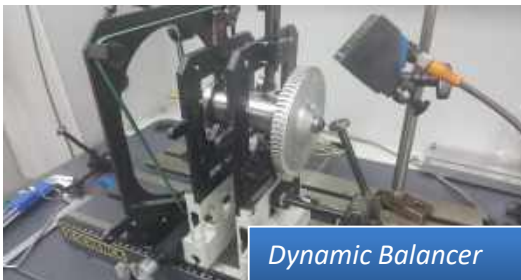
# Spindle Repair- Customers

- Some of our customers:





# Spindle Repair- Facilities



# Spindle Repair- Facilities



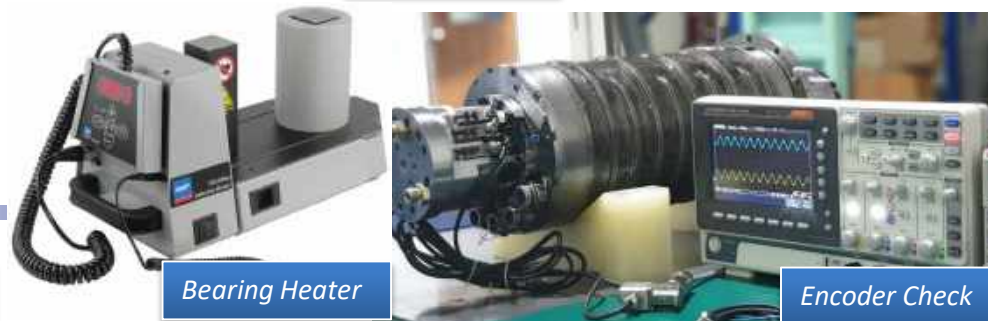
Zeiss CMM



Field Balancer



Drawbar Pull Force Checker



Bearing Heater

Encoder Check



Modular Store



Hydraulic Pump



Test Mandrels



Ultrasonic Cleaner



Oven

# A



# B





# C



# D



Make	DMG	Model	MF SPRINT 65
Spindle Max Speed	5000 rpm	Spindle Taper	A2-B



Make	Dahlih	Model	MCV1020
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	DAHLIH	Model	MCV-1450
Spindle Max Speed	10000 rpm	Spindle Taper	BT-50



Make	DMG	Model	DMU60
Spindle Max Speed	18000 rpm	Spindle Taper	SK-40



Make	DMG	Model	DMU50
Spindle Max Speed	10000 rpm	Spindle Taper	SK-40



Make	DMG	Model	DMU70
Spindle Max Speed	18000 rpm	Spindle Taper	HSK-A63



# D



# D



# E





Make	FASSLER	Model	NA
Spindle Max Speed	3000 rpm	Spindle Taper	NA



Make	Feeler	Model	VMP40A
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	FISCHER	Model	M34-FHSK50C-80RL300-30
Spindle Max Speed	30000 rpm	Spindle Taper	HSK-C50



Make	Roders(Fischer)	Model	RXP500
Spindle Max Speed	42000 rpm	Spindle Taper	HSK-E40



Make	FISCHER	Model	MFV 1250
Spindle Max Speed	60000 rpm	Spindle Taper	NA



Make	Fairfriend	Model	VM405A
Spindle Max Speed	10000 rpm	Spindle Taper	BT-40

# F



# G







Maker	HAAS	Model	VF-2
Spindle Max Speed	15000 rpm	Spindle Taper	BT-40



Maker	Haas	Model	EC-300
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Maker	Hardinge	Model	VCM-1000P3
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



Maker	HARDINGE	Model	VCM1000P3
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



Maker	HARTFORD	Model	VMC 1020A
Spindle Max Speed	10000 rpm	Spindle Taper	NA



Maker	HURCO	Model	BMP SERIES
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40

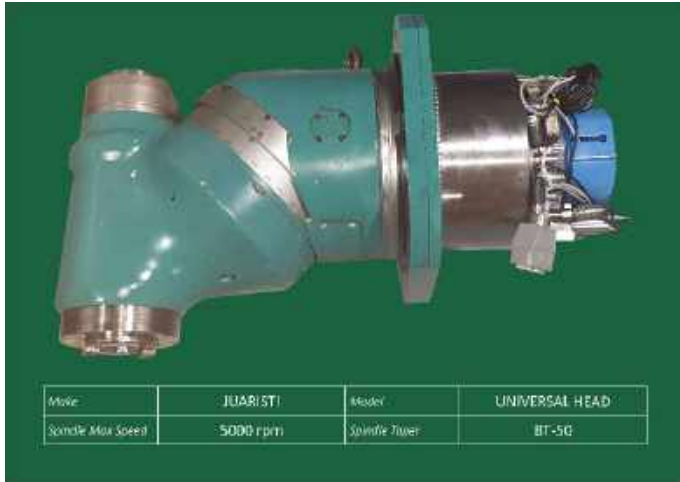
# H



# I



# J



# K



# K



# M





# M



Make	MAKINO	Model	MAX 65
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



Make	MAKINO	Model	SLIM 3
Spindle Max Speed	15000 rpm	Spindle Taper	HSK-A50



Make	Makino	Model	V56
Spindle Max Speed	20000 rpm	Spindle Taper	HSK-A63



Make	Makino	Model	FNC60
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



Make	Makino	Model	FNC60
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



Make	MAKINO	Model	a51/ PS95/PS85
Spindle Max Speed	14000 rpm	Spindle Taper	HSK-A63/ BT-40





Make	MATSUURA	Model	H PLUS 300
Spindle Max Speed	15000 rpm	Spindle Taper	BBT-40



Make	Matsuiura	Model	MAM-600
Spindle Max Speed	15000 rpm	Spindle Taper	BBT-40



Make	Mazak	Model	Integrex e-500H/ e-670H
Spindle Max Speed	5000/ 10000 rpm	Spindle Taper	BBT 50



Make	MAZAK	Model	FJV 35/80
Spindle Max Speed	6000 & 10000 rpm	Spindle Taper	BT/SK 50



Make	MAZAK	Model	VRX-730
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	MAZAK	Model	Integrex E420
Spindle Max Speed	12000 rpm	Spindle Taper	Capto C6







Make	MITSUBISHI	Model	Micro V1-5X
Spindle Max Speed	40000 rpm	Spindle Taper	HSK-E32



Make	MITSUBISHI	Model	M-V5C
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



Make	MITSUBISHI	Model	MVK30
Spindle Max Speed	5000 rpm	Spindle Taper	BT-50



Make	MIYANO	Model	GN3200
Spindle Max Speed	6000 rpm	Spindle Taper	NA



Make	Miyano	Model	LA05
Spindle Max Speed	6000 rpm	Spindle Taper	A2-6

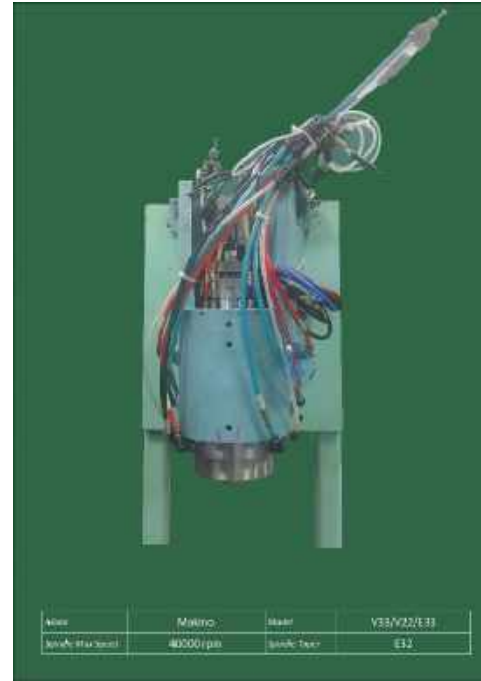


Make	MIYANO	Model	BNU-42J
Spindle Max Speed	8000 rpm	Spindle Taper	NA





# M







# O



Make	OKK	Model	VP2200
Spindle Max Speed	20000	Spindle Taper	BT-40



Make	OKK	Model	HM-90
Spindle Max Speed	20000 rpm	Spindle Taper	BT-40



Make	OKK	Model	VP400
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	OKK	Model	VM 5-2
Spindle Max Speed	14000 rpm	Spindle Taper	BT-40



Make	OKK	Model	VH1010
Spindle Max Speed	14000 rpm	Spindle Taper	BT-40



Make	OKUMA	Model	HKS07
Spindle Max Speed	50000 rpm	Spindle Taper	NA

# O



Make	Okuma	Model	HF-503
Spindle Max Speed	45000 rpm	Spindle Taper	NA



Make	OKUMA	Model	LB-300
Spindle Max Speed	4500 rpm	Spindle Taper	NA



Make	Okuma	Model	HQ-307
Spindle Max Speed	30000 rpm	Spindle Taper	NA



Make	OKUMA	Model	CROWN L1420
Spindle Max Speed	3000 rpm	Spindle Taper	NA



Make	Okuma	Model	HK-157
Spindle Max Speed	15000 rpm	Spindle Taper	NA



Make	Okuma	Model	LT-25
Spindle Max Speed	2500 rpm	Spindle Taper	A2-8

# 0



# Q



# R









Make	TOSHIBA	Model	YMD 16
Spindle Max Speed	1500 rpm	Spindle Taper	BT-50



Make	TBT	Model	ML-200-4-800
Spindle Max Speed	28000 rpm	Spindle Taper	NA



Make	TECHMO WASINO (GLS-ST)	Model	TC-20
Spindle Max Speed	20000 rpm	Spindle Taper	NA



Make	TONGTAI	Model	HA500II
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	Tornos	Model	MULTISIGMA
Spindle Max Speed	5000 rpm	Spindle Taper	NA



Make	Toyoda	Model	FH450
Spindle Max Speed	15000 rpm	Spindle Taper	BT-40

# T

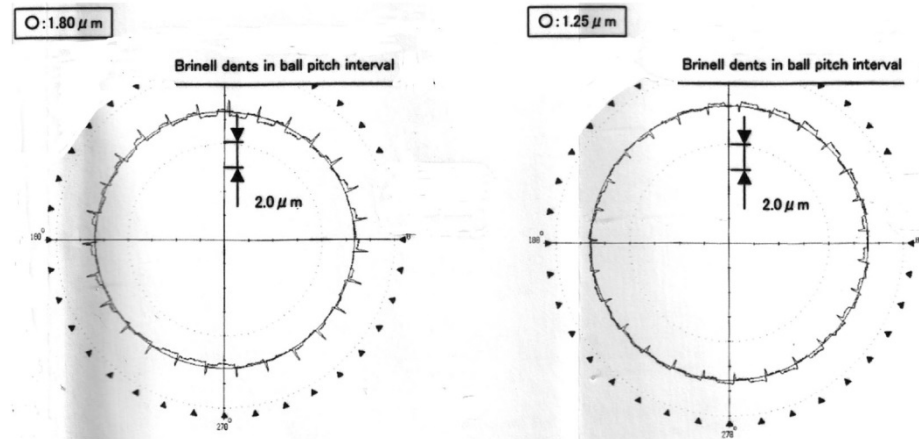


# Y

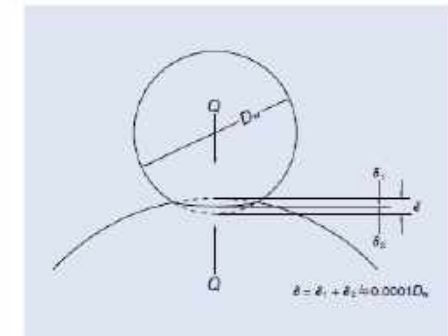
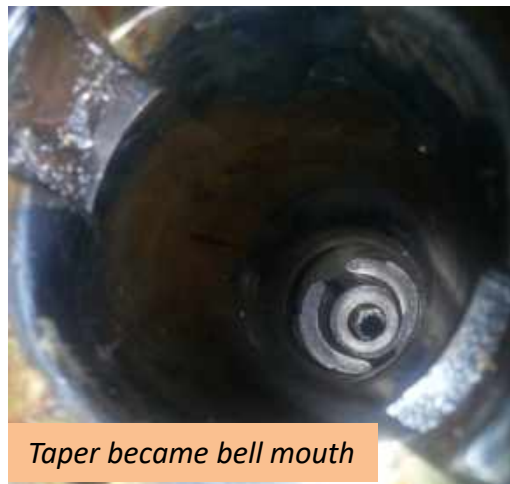


# Type of Failures

Bearing race way measurement on accident bearing



In this most heavily contacted area, the sum of the permanent deformation of the rolling element and that of the raceway is nearly 0.0001 times the rolling element's diameter. The basic static load rating  $C_0$  is written  $C_0$  for radial bearings and  $C_{0a}$  for thrust bearings in the bearing tables.





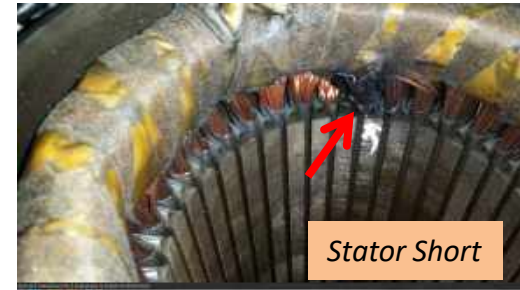
# Types of Failures



Disc spring failure



Heavy contamination in coolant jacket



Stator Short



Spindle taper crack



Drawbar sleeve crack



Coolant entry

# Test Report and Analysis Report



SPINDLE TEST REPORT  
STR-012-09/0712

Sample Report

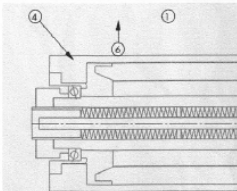
Customer and Machine Data	
Customer name	AR One Precision (6754647)
Machine make & model	OKK, HM-4
Machine number	HM#07
Week of Repair	31-38



SPINDLE TEST REPORT  
STR-012-0013

Spindle Data	
Drive type	<input type="checkbox"/> Belt / <input type="checkbox"/> Direct
Spindle body	<input checked="" type="checkbox"/> Cartridge type
Drive system	<input checked="" type="checkbox"/> Frequency conv
Speed range	From 0
Spindle Motor	Make: Fanuc
Lubrication	<input type="checkbox"/> Grease / <input type="checkbox"/> Oil-mist
Direction of rotation	<input checked="" type="checkbox"/> Right hand / <input type="checkbox"/> L
Spindle cooling	<input type="checkbox"/> Water/Oil (thro) <input type="checkbox"/> Air cooling (Pre) <input type="checkbox"/> Fan / <input type="checkbox"/> Cooling usage oth
Pulley (when belt drive)	<input type="checkbox"/> Flat belt / <input type="checkbox"/> V-b
Additional Features	<input type="checkbox"/> TSC / <input type="checkbox"/> TSC pres
Tool Mounting: Tool change System Data	
ATC (Automatic)	<input checked="" type="checkbox"/> ISO/SK / MAS-BT <input type="checkbox"/> HSK-A <input type="checkbox"/> ATC system pne <input type="checkbox"/> ATC system hyd

Temp Measurement			
Measuring Location	Min in deg C	Max in deg C	Saturated?
1. Ambient	29.41	33.09	NA
2. Front bearing hsg	29.29	37.46	Yes
3. Front bearing seal	29.33	43.91	Yes
4. Rear bearing hsg	29.29		
5. Oil cooling in	29.47		
6. Oil cooling out	29.57		



**Comments/ Recommendation**  
 This spindle had crash and taper found to be damaged. The blue sealing was not good at all. Hard chrome plating was done on taper and reground to suit BT.40 taper.

Vibration Measurement (Target:			
Speed in rpm	X Dir	Y Dir	
500	0.323	0.65	
1000	0.389	0.68	
1500	0.432	0.77	
2000	0.501	0.82	
2500	0.723	0.97	
3000	0.985	1.23	
3500	1.197	1.45	
4000	0.563	1.134	
4500	0.520	0.85	
5000	0.725	0.70	
6000	0.888	0.36	
7000	0.227	1.36	
8000	0.321	0.391	
9000	0.422	0.380	24000
10000	0.397	0.606	25000



SPINDLE ANALYSIS REPORT  
SAR- 147-00

Customer and Machine Data			
Customer name	RCN Trading, Philippines	Reference ID	147
Machine make & model	Colson, HFB0 L13 D50	Prepared by:	Guru
Machine number	S No 1315505	Checked by:	Ramesh
Week of Repair	47-49	Date:	20/Nov/2013

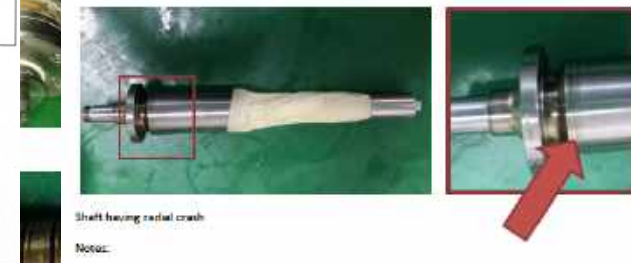


Substrate sludge all around

Sludge at cable entry



SPINDLE ANALYSIS REPORT  
SAR- 147-00



Spindle bearing radial crash

Notes:

It is suspected that this spindle had a radial crash. This could have happened due to the insufficient air flow that caused due to the blocked air path and orifices. The damaged surface has to be repaired and get corrected for roundness and running accuracy. The thrust bearing holes are found clogged and it requires complete cleaning. Besides cleaning, the surface has to be ground for good flatness with right air control and clearance parameters.

\*END\*

Customer and Machine Data			
Customer name	RCN Trading, Philippines	Reference ID	147
Machine make & model	Colson, HFB0 L13 D50	Prepared by:	Guru
Machine number	S No 1315505	Checked by:	Ramesh
Week of Repair	47-49	Date:	20/Nov/2013





**END**