

Spintec Engineering Pte Ltd- Portfolio

Prepared by Sivakumar R, 29 Nov 2019

Ver 16

Spindle Repair- Major Brands we Serve



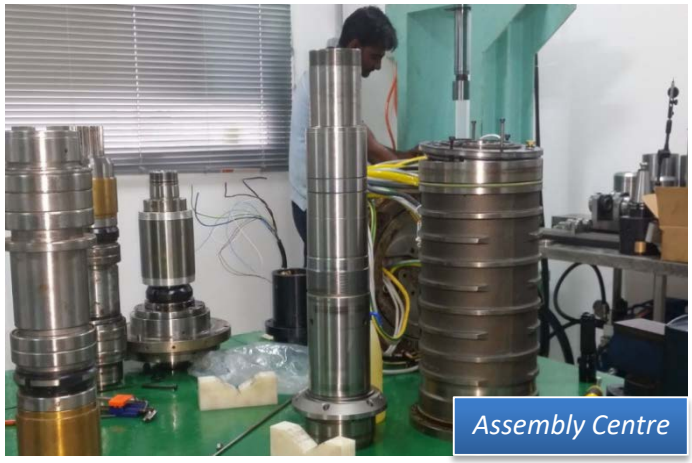
Spindle Repair- Customers

- Some of our customers:



Spindle Repair- Facilities


Assembly Centre

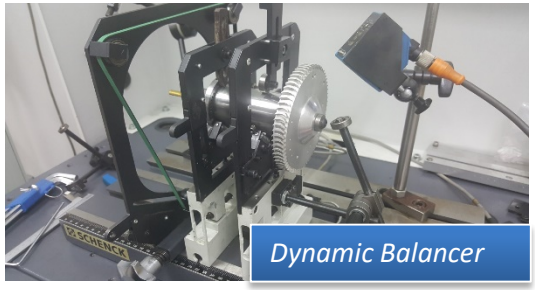

Assembly Centre




12T Hyd Press


Surface Grind- Okamoto, Japan


Simulator for Run-in


Dynamic Balancer

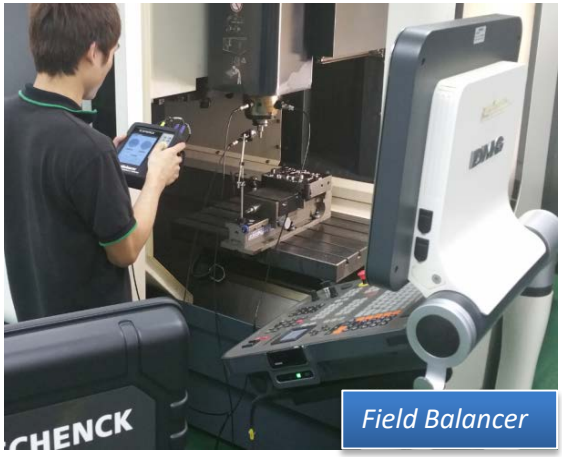

ID Grinding


Spindle (before and after grinding with hard chrome)

Spindle Repair- Facilities



Zeiss CMM



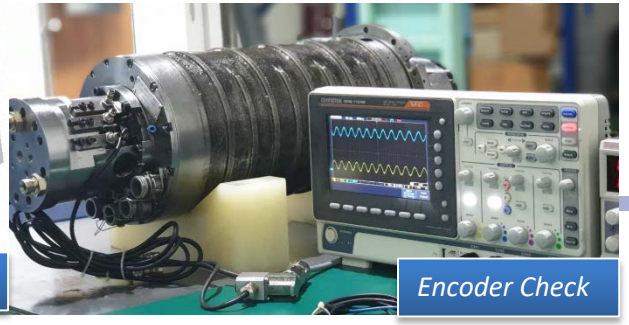
Field Balancer

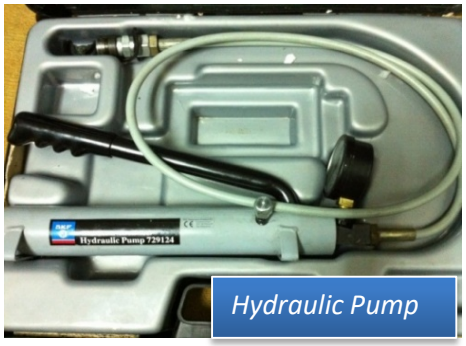

Drawbar Pull Force Checker



Modular Store


Bearing Heater


Encoder Check


Hydraulic Pump


Test Mandrels


Ultrasonic Cleaner


Oven

A



Make	Akira Seiki	Model	A500T
Spindle Max Speed	24000 rpm	Spindle Taper	HSK-A40

B



Make	BROTHER	Model	S700X
Spindle Max Speed	16000 rpm	Spindle Taper	BT-30



Make	BROTHER	Model	TC31A
Spindle Max Speed	16000 rpm	Spindle Taper	BT-30



Make	BROTHER	Model	TC20A
Spindle Max Speed	25000 rpm	Spindle Taper	BT-15

C



Make	CAMPRO	Model	
Spindle Max Speed	10000 rpm	Spindle Taper	BT-40



Make	CAMPRO	Model	
Spindle Max Speed	6000 rpm	Spindle Taper	BT-50



Make	CHIRON	Model	DZ/ FZ-15-W
Spindle Max Speed	12000 rpm	Spindle Taper	HSK-A63



Make	COLIBRI	Model	HF80 L13 D60
Spindle Max Speed	60000 rpm	Spindle Taper	NA



Make	CINCINNATI MILACRON	Model	NA
Spindle Max Speed	6000 rpm	Spindle Taper	BT-50

D



Make	DMG	Model	MF SPRINT 65
Spindle Max Speed	5000 rpm	Spindle Taper	A2-8



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



Make	DMG	Model	DMF 260/11
Spindle Max Speed	18000 rpm	Spindle Taper	SK40



Make	DMG	Model	DMC 75V
Spindle Max Speed	18000 rpm	Spindle Taper	HSK-A63



Make	DMG	Model	DMU 80T
Spindle Max Speed	18000 rpm	Spindle Taper	SK-40



Make	DMG	Model	DMU 105V
Spindle Max Speed	10000 rpm	Spindle Taper	BT-40



Make	DMG	Model	DMC 635
Spindle Max Speed	10000 rpm	Spindle Taper	SK40

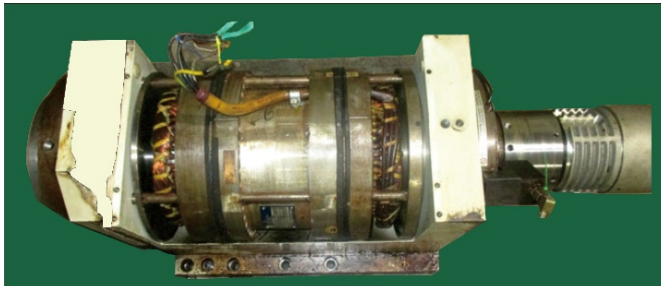


Make	DMG	Model	DMU 340
Spindle Max Speed	10000 rpm & 12000 rpm	Spindle Taper	HSK- A100

D



Make	DOOSAN	Model	VM125
Spindle Max Speed	10000 rpm	Spindle Taper	BT-50



Make	DMG	Model	MF SPRINT 42 & 65
Spindle Max Speed	5000 rpm	Spindle Taper	NA



Make	DMG	Model	DMC 635V
Spindle Max Speed	10000 rpm	Spindle Taper	SK40

E



Make	ETEC	Model	EL800
Spindle Max Speed	10000 rpm	Spindle Taper	BT-40



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 1260
Spindle Max Speed	60000 rpm	Spindle Taper	NA



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

F



Make	FANUC	Model	AlphaT21
Spindle Max Speed	24000 rpm	Spindle Taper	BT-30



Make	FANUC	Model	AlphaT21
Spindle Max Speed	15000 rpm	Spindle Taper	BT-30

G



Make	GF+ (Mikron)	Model	HEM SERIES
Spindle Max Speed	14000 rpm	Spindle Taper	SK-40



Make	GF+ (Mikron)	Model	VCE-600 PRO
Spindle Max Speed	14000 rpm	Spindle Taper	BT/SK-40

H



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



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



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



Make	HARDINGE	Model	VMC1000P3
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40

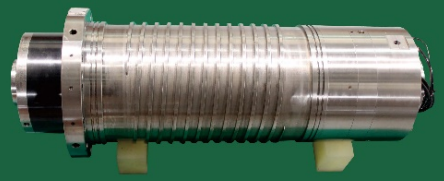


Make	HARTFORD	Model	VMC 1020A
Spindle Max Speed	10000 rpm	Spindle Taper	NA



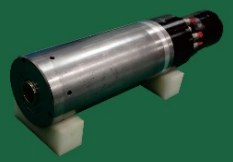
Make	HURCO	Model	BMP SERIES
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40

H



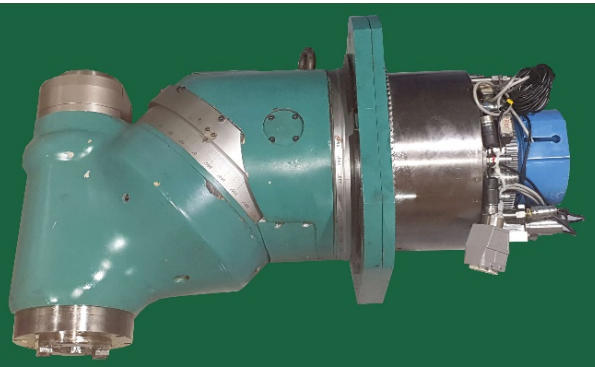
Make	HYUNDAI KIA	*Model*	VX950MH (OMLAT)
Spindle Max Speed	12000 rpm	*Spindle Taper*	BBT-50

I



Make	Ibag	*Model*	HF100
Spindle Max Speed	24000 rpm	*Spindle Taper*	SK-25

J



Make	JUARISTI	Model	UNIVERSAL HEAD
Spindle Max Speed	5000 rpm	Spindle Taper	BT-50

K



Make	Kasuga	Model	Q600VA
Spindle Max Speed	15000 rpm	Spindle Taper	BT-40



Make	KITAMURA	Model	MYCENTRE ZERO
Spindle Max Speed	12000 rpm	Spindle Taper	BT-30



Make	KITAMURA	Model	HX300i
Spindle Max Speed	15000 rpm	Spindle Taper	BBT-40

K



Make	KAO MING	Model	KMC331EP
Spindle Max Speed	8000 rpm	Spindle Taper	NA

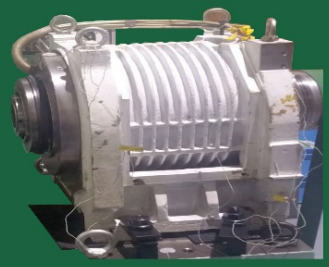
M



Make	MAZAK	Model	QTN 250
Spindle Max Speed	4000 rpm	Spindle Taper	A2-8



Make	MAZAK	Model	VARIAXIS-630-5X
Spindle Max Speed	12000 rpm	Spindle Taper	BT/SK 40



Make	MAZAK	Model	QTN 150/200/250
Spindle Max Speed	5000/ 5000/4000 rpm	Spindle Taper	A2-6/A2-6/A2-8

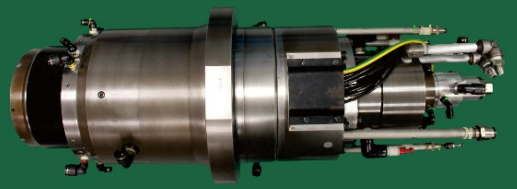
M



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



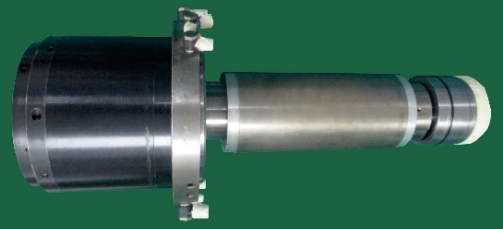
Make	Makino	Model	V56
Spindle Max Speed	20000 rpm	Spindle Taper	HSK-A63



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

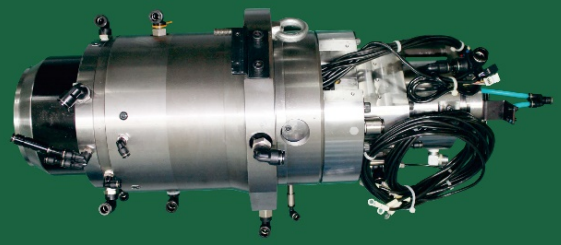


Make	MAKINO	Model	a51/ PS95/PS65
Spindle Max Speed	14000 rpm	Spindle Taper	HSK-A63/ BT-40

M



Make	Makino	Model	GF6
Spindle Max Speed	12000 rpm	Spindle Taper	BT-50



Make	MAKINO	Model	V56
Spindle Max Speed	30000 rpm	Spindle Taper	HSK-F63



Make	Makino	Model	MAX 65/S33/S56/F3/F5
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	Makino	Model	KE 55
Spindle Max Speed	6000 rpm	Spindle Taper	BT-40



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



Make	MATSUURA	Model	MAM72-3VS
Spindle Max Speed	12000 rpm	Spindle Taper	BBT-40

M



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



Make	Matsuura	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

M



Make	MAZAK	Model	H400N
Spindle Max Speed	10000 rpm	Spindle Taper	BT/SK 40



Make	MAZAK	Model	FJV 60/120
Spindle Max Speed	6000 & 10000 rpm	Spindle Taper	BT/SK 50



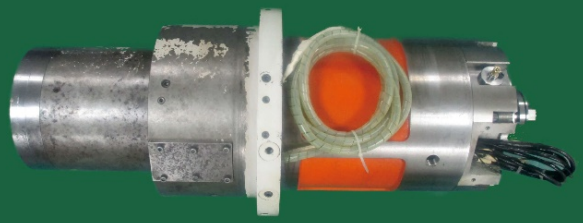
Make	MAZAK	Model	Integrex i400
Spindle Max Speed	12000 rpm	Spindle Taper	Capto C6



Make	MAZAK	Model	INTEGREX 60 (Turret Spindle)
Spindle Max Speed	3000 rpm	Spindle Taper	BT40



Make	MAZAK	Model	FJV200 UHS
Spindle Max Speed	25000 rpm	Spindle Taper	BT40



Make	MAZAK	Model	PFH-5800
Spindle Max Speed	12000 rpm	Spindle Taper	BT/SK-40

M



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



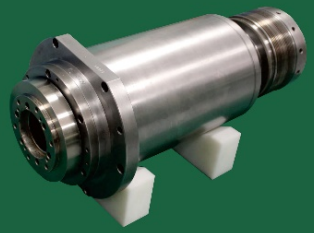
Make	MITSUBISHI	Model	M-V5C
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



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

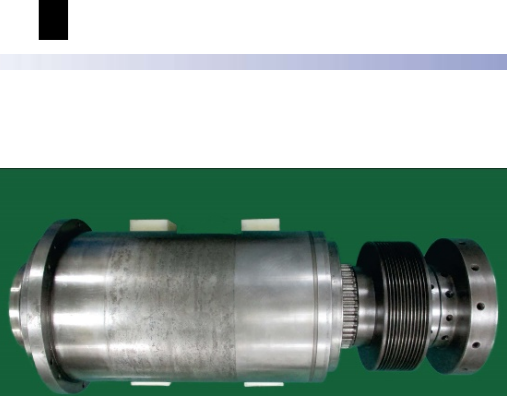


Make	Miyano	Model	LA05
Spindle Max Speed	6000 rpm	Spindle Taper	A2-6



Make	MIYANO	Model	BNJ- 42J
Spindle Max Speed	6000 rpm	Spindle Taper	NA

M



Make	MIYANO	Model	BNJ- 42S
Spindle Max Speed	5000 rpm	Spindle Taper	NA



Make	Mori Seiki	Model	NVD5000
Spindle Max Speed	20000 rpm	Spindle Taper	BBT-40



Make	MORI SEIKI	Model	SH403
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	MORI SEIKI	Model	NV4000 DCG
Spindle Max Speed	20000 rpm	Spindle Taper	BT-40



Make	MORI SEIKI	Model	MH-50
Spindle Max Speed	6000 rpm	Spindle Taper	BT-50

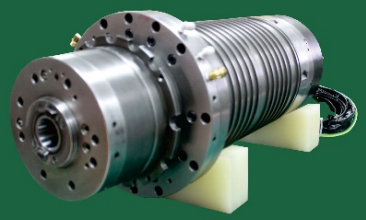


Make	Moriseiki	Model	SH50
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40

M



Make	MORISEIKI	Model	DURACENTER
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



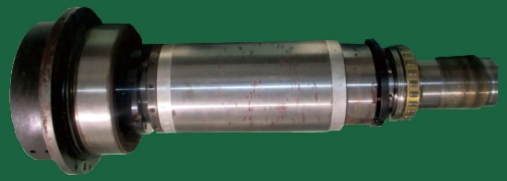
Make	MORI SEIKI	Model	SV500
Spindle Max Speed	6000 rpm	Spindle Taper	BT-50



Make	Mori Seiki	Model	SH500
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



Make	Mori Seiki	Model	NH4000
Spindle Max Speed	20000 rpm	Spindle Taper	HSK-A63



Make	Moriseiki	Model	NL 2500
Spindle Max Speed	6000 rpm	Spindle Taper	NA



Make	MORISEIKI	Model	NV 5000
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40



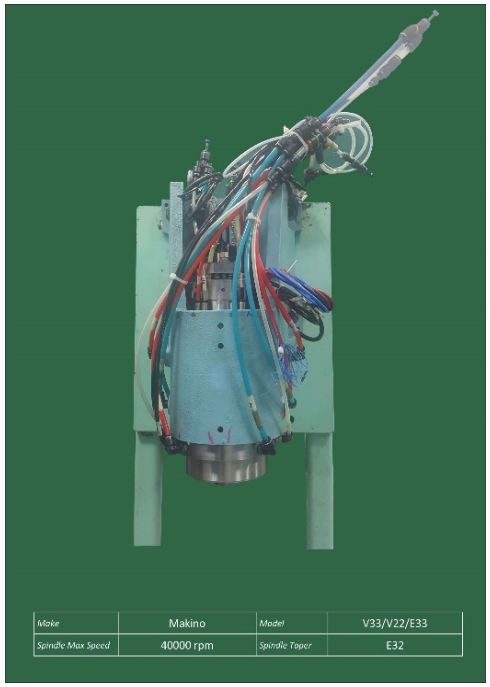
Make	Moriseiki	Model	NV/ NVD4000
Spindle Max Speed	30000 rpm	Spindle Taper	HSK- F63



Make	Makino	Model	V33/V22/S33/S56/F3/F5
Spindle Max Speed	30000 rpm	Spindle Taper	HSK-F63



Make	MORISEIKI	Model	NT4250
Spindle Max Speed	12000 rpm	Spindle Taper	HSK-A63

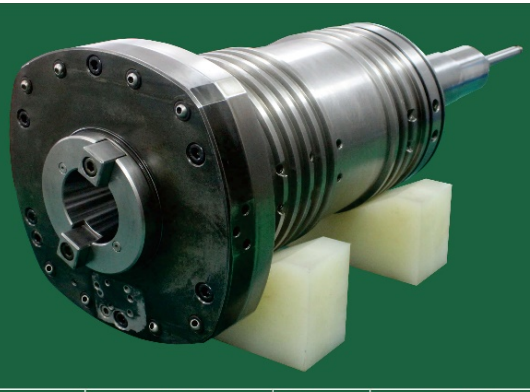


Make	Makino	Model	V33/V22/E33
Spindle Max Speed	40000 rpm	Spindle Taper	E32

N



Make	NEUTRON	Model	NV-500
Spindle Max Speed	24000 rpm	Spindle Taper	BT-30



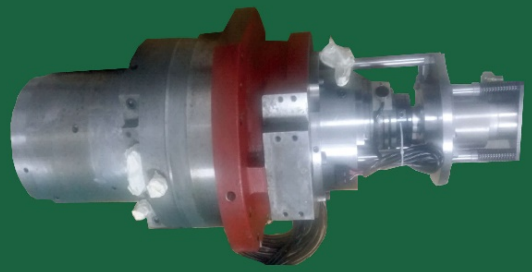
Make	Nigata	Model	HN80D-II
Spindle Max Speed	8000	Spindle Taper	BT-50



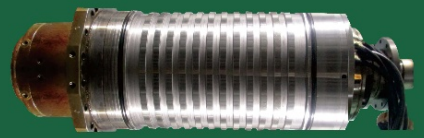
Make	NSK	Model	EXCEL PMC5V
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40



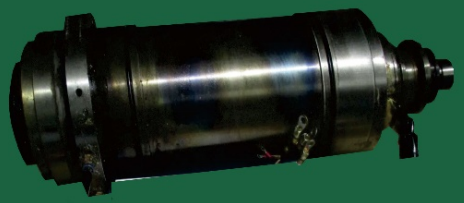
Make	OKK	Model	VP2200
Spindle Max Speed	20000	Spindle Taper	BT-40



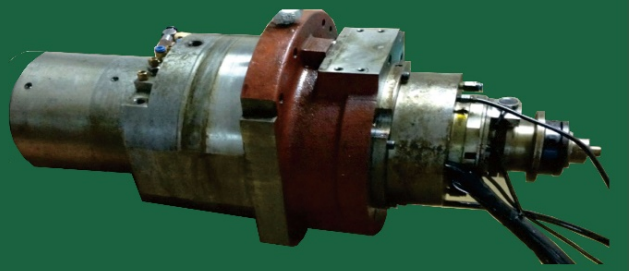
Make	OKK	Model	HM-40
Spindle Max Speed	20000 rpm	Spindle Taper	BT-40



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	HK507
Spindle Max Speed	50000 rpm	Spindle Taper	NA

O



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



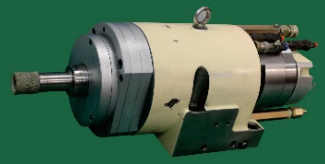
Make	OKUMA	Model	LB300
Spindle Max Speed	4500 rpm	Spindle Taper	NA



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

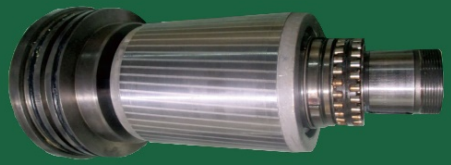
O



Make	OKUMA	Model	LU400
Spindle Max Speed	3000 rpm	Spindle Taper	A2-11



Make	Okuma	Model	LCS15
Spindle Max Speed	5000 rpm	Spindle Taper	NA



Make	Okuma	Model	LB200
Spindle Max Speed	6000 rpm	Spindle Taper	NA



Make	Okuma	Model	LC40
Spindle Max Speed	2500 rpm	Spindle Taper	NA



Make	Okuma	Model	LC15
Spindle Max Speed	4500 rpm	Spindle Taper	NA



Make	OKUMA	Model	MA-400H
Spindle Max Speed	15000 rpm	Spindle Taper	BT-40

Q



Make	Quaser	Model	MV154P-15M
Spindle Max Speed	15000 rpm	Spindle Taper	BT-40



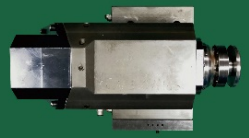
Make	QUASER	Model	MV204PL
Spindle Max Speed	15000 rpm	Spindle Taper	BT-40

R



Make	ROYAL	Model	NA
Spindle Max Speed	12000 rpm	Spindle Taper	BT-40

S



Make	SAMPUTENSILI	Model	GEAR GRINDER
Spindle Max Speed	12000 rpm	Spindle Taper	NA



Make	SIGMA	Model	STV-1611 H
Spindle Max Speed	6000 rpm	Spindle Taper	BT-50



Make	STEPTEC	Model	VCP-600
Spindle Max Speed	20000 rpm	Spindle Taper	HSK-A63



Make	STEPTEC	Model	HSM 600
Spindle Max Speed	36000 rpm	Spindle Taper	HSK-E50

T



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



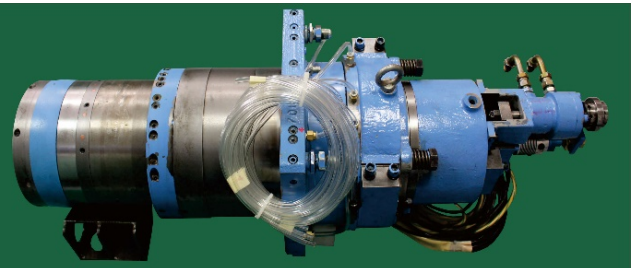
Make	TECHNO WASINO (GLS-5T)	Model	TC-20
Spindle Max Speed	20000 rpm	Spindle Taper	NA



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

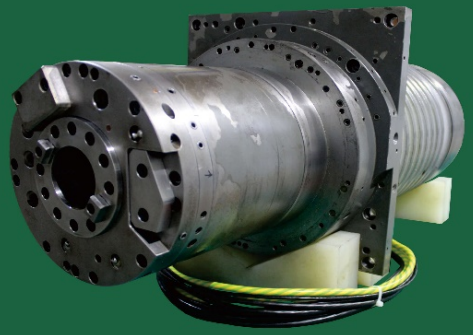


Make	Tornos	Model	MULTISIGMA
Spindle Max Speed	5000 rpm	Spindle Taper	NA



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

T



Make	Toyoda	Model	FH1250SX
Spindle Max Speed	6000 rpm	Spindle Taper	BT-50

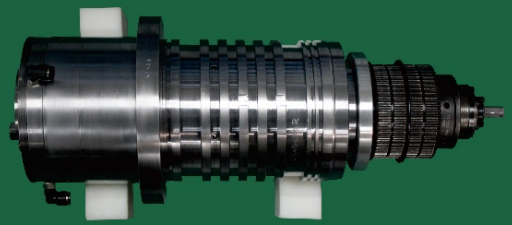


Make	TWINHORN	Model	VE1020L3
Spindle Max Speed	10000 rpm	Spindle Taper	BT-40

Y



Make	YCM	Model	FV-56T
Spindle Max Speed	15000 rpm	Spindle Taper	BT-30

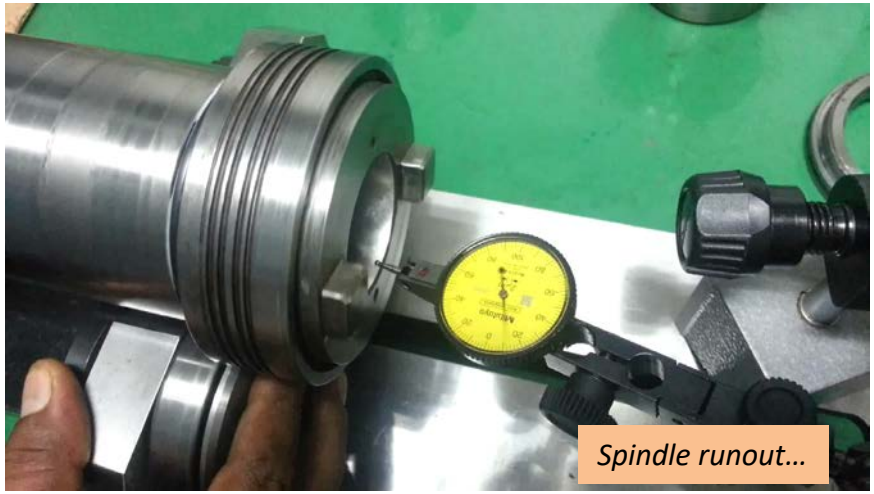


Make	YCM	Model	NMV106A
Spindle Max Speed	12000 rpm	Spindle Taper	HSK-A63



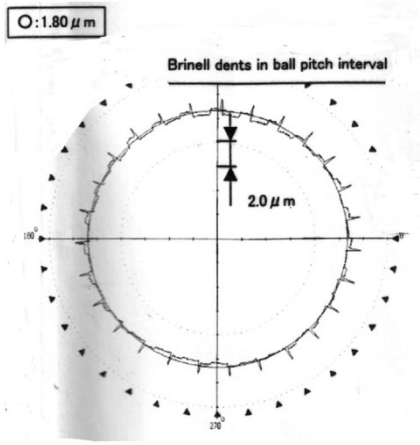
Make	YCM	Model	MV76A
Spindle Max Speed	8000 rpm	Spindle Taper	BT-40

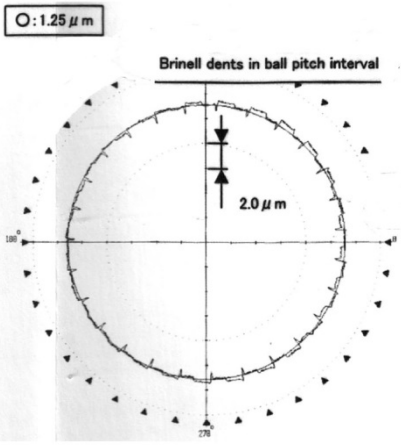
Type of Failures



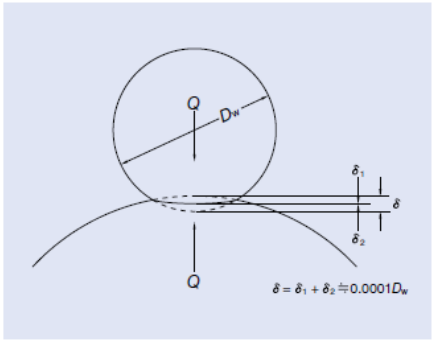
Spindle runout…

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_{0r} for radial bearings and C_{0a} for thrust bearings in the bearing tables.





Taper became bell mouth



Bearing condition…

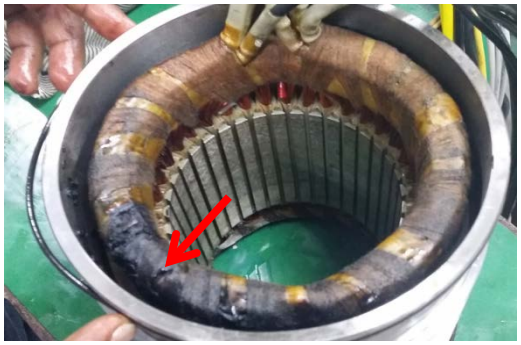
Types of Failures

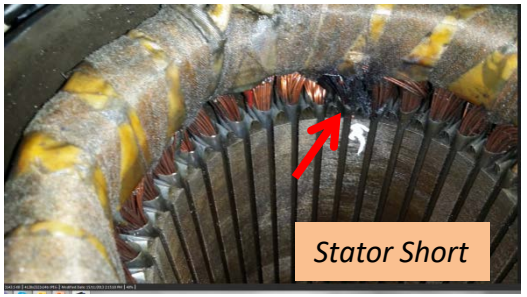


Disc spring failure

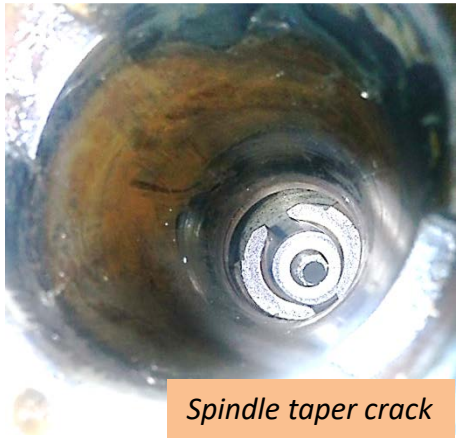


Heavy contamination in coolant jacket





Stator Short



Spindle taper crack



Drawbar sleeve crack





Coolant entry

Test Report and Analysis Report

Sample Report

SPINTEC

SPINDLE TEST REPORT
STR-012-09/0712

Customer and Machine Data

Customer name	Ah Che Precision (M/C S/M) Pte Ltd	Reference ID	09/0712
Machine make & model	Okk, HM-4		
Machine number	HM#07		
Week of Repair	31-38		

Spindle Data

Drive type	□ Belt / □ Direct c
Spindle body	☑ Cartridge type (
Drive system	□ Frequency conv
Speed range	From 0
Spindle Motor	Make: Fanuc
Lubrication	□ Grease □ Oil-mi
Direction of rotation	☑ Right hand / □ L
Spindle cooling	□ Water/ Oil (thro □ Air cooling (Pre □ Fan / Cooling usage oth
Pulley (when belt drive)	□ Flat belt / □ V-b
Additional Features	□ TSC / □ TSC pres

Tool Mounting- Tool change System Data

ATC (Automatic)	☑ ISO/SK /MAS-BT □ HSK –A_____/ □ ATC system pne □ ATC system hyd

Probable Cause of Failure

☑ Symptoms of Crash	□ Coolant penetra
□ End of Fatigue Life	□ Dirt/ contamina

After Repair Data

Spindle Data

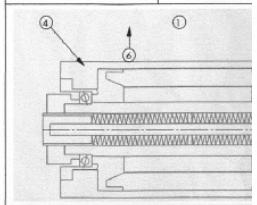
Tool Clamp force	743.6
Test bar run out	At Spindle nose
Spindle runout	At Spindle face

SPINTEC

SPINDLE TEST REPORT
STR-012-0013

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	29.51		



Vibration Measurement (Target:

Speed in rpm	X Dir	Y Dir
500	0.323	0.65
1000	0.339	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	1.13
4500	0.580	0.85
5000	0.725	0.70
6000	0.888	0.36
7000	0.227	1.36
8000	0.321	0.39
9000	0.422	0.386
10000	0.397	0.606

24000		
25000		

V2, April 09, 2012 Spintec Engineering, Singapore Page 2 of 3

SPINTEC

SPINDLE TEST REPORT
STR-012-0013

Comments/ Recommendation

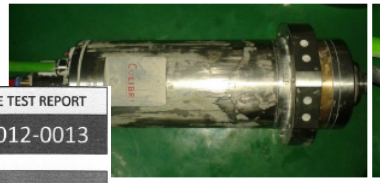
This spindle had crash and taper found to be damaged. The blue sealing was not good at all. Hard chrome plating was done on taper and re-ground to suit BT-40 taper.

SPINTEC

SPINDLE ANALYSE RE
SAR- 147-00

Customer and Machine Data

Customer name	RCCN Trading, Philippines	Reference ID	147
Machine make & model	Colibri, HF80 L13 D60	Prepared by:	Guru
Machine number	S No 1315505	Checked by:	Ramesh
Week of Repair	47-49	Date:	20/Nov/2013



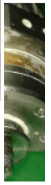


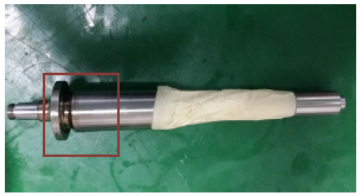
ubstrate sludge all around

Sludge at cable entry

SPINTEC

SPINDLE ANALYSE REPORT
SAR- 147-00









Shaft having 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	RCCN Trading, Philippines	Reference ID	147

END