

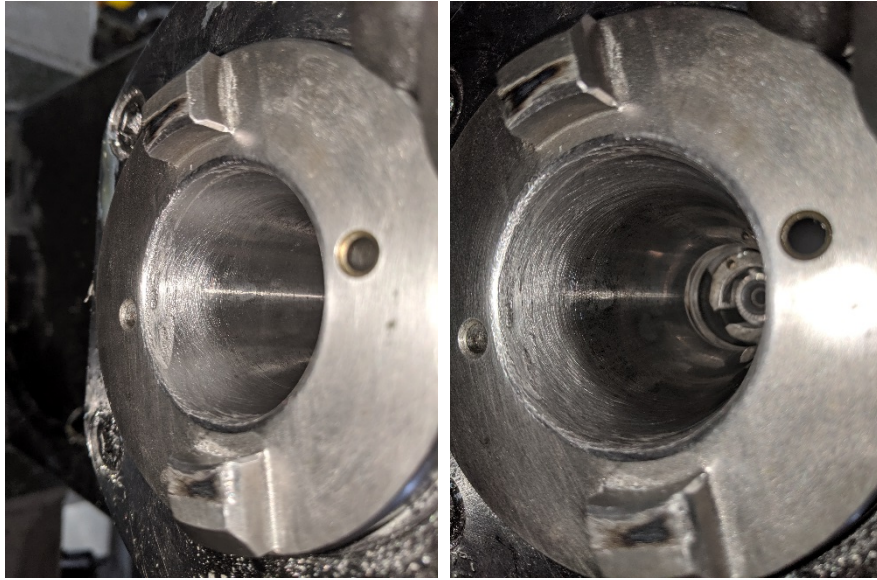
Spindle Re-Conditioning Report

Mazak VTC-20G (20G-PC)

Noranco Pickering
February 20, 2020

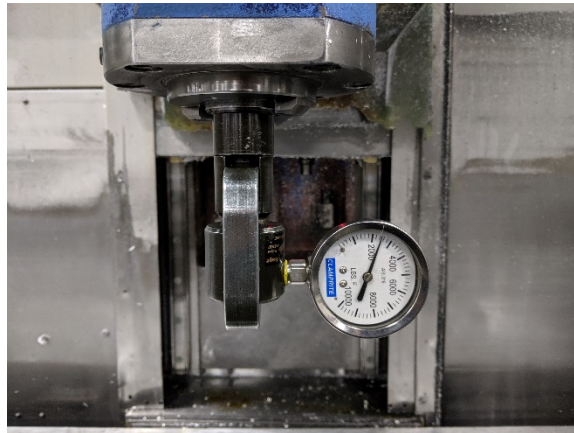
Spindle Condition Report

Spindle Condition As Found



- Spindle has cold welded material from the tool being pulled from the spindle.
- Spindle has been hand worked.
- There is a gouge towards the major diameter that may not be reasonably removable

Clamping Force As Found



2500lbs

Test Bar Runout As Found

@0°	24mm from spindle	=	Not taken - spindle has cold weld
	240mm from spindle	=	Not taken - spindle has cold weld
@90°	24mm from spindle	=	Not taken - spindle has cold weld
	240mm from spindle	=	Not taken - spindle has cold weld
@180°	24mm from spindle	=	Not taken - spindle has cold weld
	240mm from spindle	=	Not taken - spindle has cold weld
@270°	24mm from spindle	=	Not taken - spindle has cold weld
	240mm from spindle	=	Not taken - spindle has cold weld

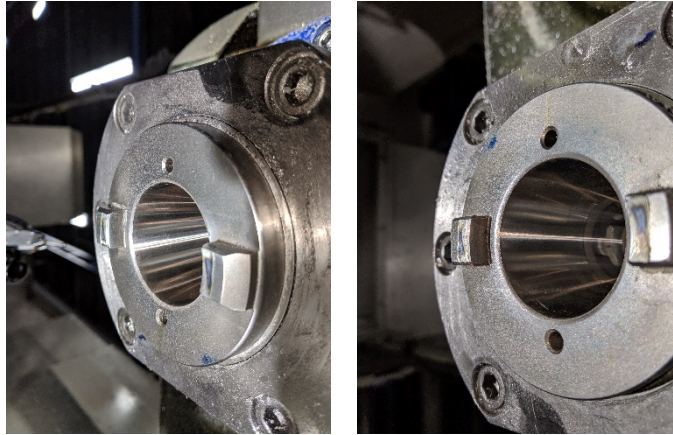
Spindle Condition Report

Transfer Test - "As Found"

- NOT TAKEN - TOO MUCH DAMAGE FOR TEST BAR INSTALLATION

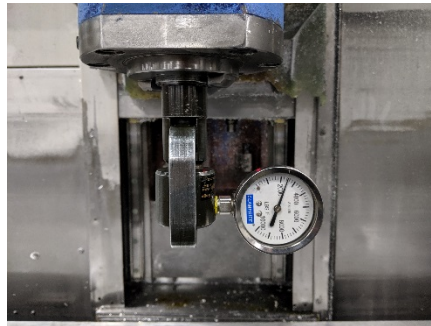
Spindle Condition Report

Spindle Condition Final



- Surface finish is good with a small inclusion remaining towards the major diameter.
- Restored taper contact to >98%

Spindle Clamping Force Final



2500 lbs

Spindle Runout Final

@0°	24mm from spindle	=	0.002mm (0.0001")
	300mm from spindle	=	0.006mm (0.0003")
@90°	24mm from spindle	=	0.002mm (0.0001")
	300mm from spindle	=	0.006mm (0.0003")
@180°	24mm from spindle	=	0.002mm (0.0001")
	300mm from spindle	=	0.006mm (0.0003")
@270°	24mm from spindle	=	0.002mm (0.0001")
	300mm from spindle	=	0.005mm (0.0002")

Spindle Condition Report

Spindle Transfer Test Final



Good even pressure throughout taper. >98%Contact.