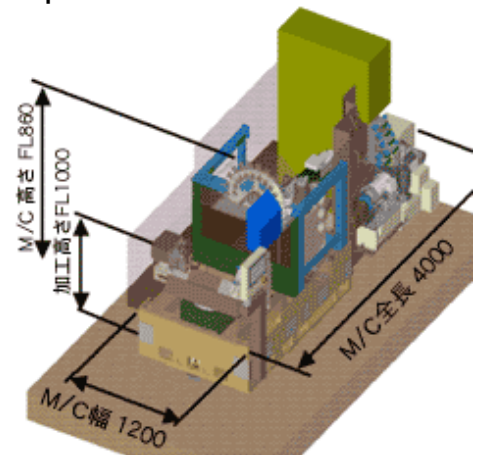


No.	006-24
job classification	periodic inspection
target machine	Machining

SHIOZAWA NEWS

Manufacturer	Nachi
Model	DH524
Task	Accuracy inspection of line equipment machines

【 Overview of repair machines : Example of inspection of an automotive parts manufacturing line consisting of multiple units】



【 Key points of the exchange operation : Periodic inspection of spindle runout accuracy and clamping force】

Examination of spindle runout and clamping force of spindle

1. Measurement of O.D. and end-face runout with a test bar

	Unit: mm		
	A) frontal runout	B) End runout	C) face runout
tolerance	0.005	0.02	0.005
Measured value	0.018	0.12	0.013

2. Movement in X/Y direction

	Unit: mm	
	A) X-X	B) Y-Y
tolerance	0.01/300	0.01/300
Measured value	0.04	0.066

3. Measuring clamping force

※Clamping force measuring equipment: Pullmeter

	Unit:KN
	Clamping force
tolerance	21~34
Measured value	23.1

【Axis-related (X,Y,&Z-axis) inspection details】

■ LM gateway& ball screw inspection

No.	Inspection point	Check Item	Guidelines/ Equipment	Judgment Criteria	Measured value/Judgment	
1	X-axis	General	Chips	Visual	No penetration of chips	Ok
2		LM-Rail	Condition of sliding surfaces	Visual/Palpation	No scratches, wear, or corrosion	No
3		LM-Block	Block status	Visual	Seal must not be rolled up or bulging.	Ok
4		Ball screw	Backlash	Dial gauge 1μ	Within 0.005mm	0.002
5	Y-axis	General	Chips	Visual	No penetration of chips	Ok
6		LM-Rail	Condition of sliding surfaces	Visual/Palpation	No scratches, wear, or corrosion	Ok
7		LM-Block	Block status	Visual	Seal must not be rolled up or bulging.	Ok
8	Z-axis	Ball screw	Backlash	Dial gauge 1μ	Within 0.005mm	0.008
9		General	Chips	Visual	No penetration of chips	Ok
10		LM-Rail	Condition of sliding surfaces	Visual/Palpation	No scratches, wear, or corrosion	Ok
11		LM-Block	Block status	Visual	Seal must not be rolled up or bulging.	Ok
12	Ball screw	Backlash	Dial gauge 1μ	Within 0.005mm	0.001	

■ Backlash compensation

PRM No.:1851		PRM No.:1852	
X	2	X	0
Y	11	Y	0
Z	0	Z	0

※ Compensation value entered at the time of inspection

【Inspection of LM guides used for X, Y & Z axes and measurement of backlash amount of ball screws】

【 Overview of periodic inspection works】

01 Usually multiple machines are inspected at the same time due to machines in the line

02 If inspection and diagnosis only, install a test bar to check

03 The lubricant level is also checked at the same time. The work is usually performed by a group (2 persons x 2/one group). 2 days

04 The man-hours required for one person to diagnose and check the lubricant with a test bar would be 0.5 days/person per unit.