MACHINING CENTER
TEST RECORD

MACHINE	DVF6500
SERIAL No.	0
DATE	2023-11-15

DN SOLUTIONS

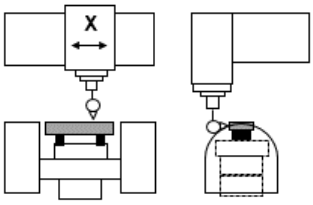
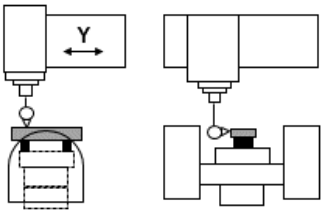
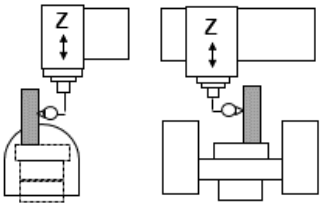
CHANGWON, KOREA

MACHINE GREATNESS™

GEOMETRICAL TEST (기하학적 정밀도)

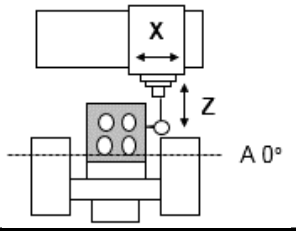
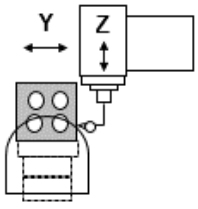
Straightness (진직도)

Unit : mm

NO.	Item (검사 항목)		Diagram (측정 방법)	Tolerance (허용 공차)		Result (측정 결과)
				ISO	**DN SOLUTIONS**	
1	Checking straightness of X-axis motion (X축 운동의 진직도)	a) in the vertical ZX plane (EZX)		0.010/500	**0.005/300**	
		b) in the horizontal XY plane (EYX)		0.010/500	**0.005/300**	
2	Checking straightness of Y-axis motion (Y축 운동의 진직도)	a) in the vertical YZ plane (EZY)		0.010/500	**0.005/300**	
		b) in the horizontal XY plane (EXY)		0.010/500	**0.005/300**	
3	Checking straightness of Z-axis motion (Z축 운동의 진직도)	a)in the vertical YZ plane parallel to the Y-axis(EYZ)		0.010/500	**0.005/300**	
		b)in the vertical ZX plane parallel to the X-axis(EXZ)		0.010/500	**0.005/300**	

Squareness(직각도)

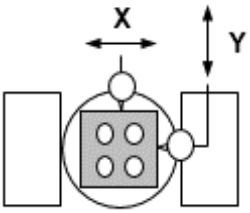
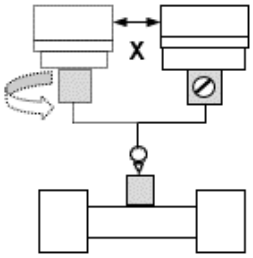
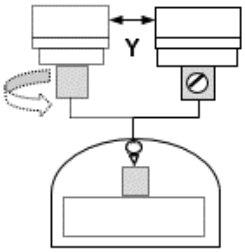
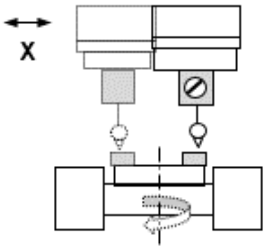
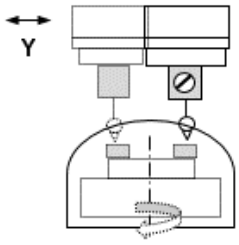
Unit : mm

4	Checking of squareness between Z-axis motion and X-axis motion (ZX 상호직각도)	XZ Plane (XZ평면)		0.020/500	**0.010/300**	
5	Checking of squareness between Z-axis motion and Y-axis motion (YZ 상호직각도)	YZ Plane (YZ평면)		0.020/500	**0.010/300**	

GEOMETRICAL TEST (기하학적 정밀도)

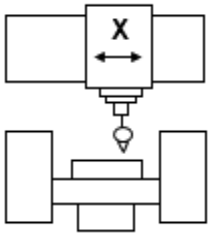
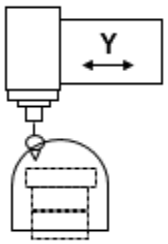
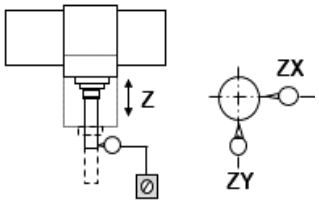
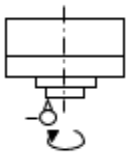
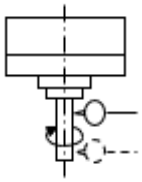
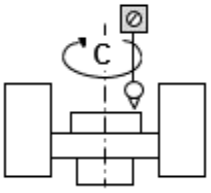
Squareness (직각도)

Unit : mm

NO.	Item (검사 항목)		Diagram (측정 방법)	Tolerance (허용 공차)		Result (측정 결과)
				ISO	**DN SOLUTIONS**	
6	Checking of squareness between X-axis motion and the Y-axis motion (XY 상호직각도)	XY plane (XY평면)		0.020/500	**0.010/300**	
7	Checking of squareness between Spindle center line and X-axis motion (주축중심선과 X축운동 직각도)	XZ plane (XZ평면)		0.020/300	**0.010/300**	
8	Checking of squareness between Spindle center line and Y-axis motion (주축중심선과 Y축운동 직각도)	YZ plane (YZ평면)		0.020/300	**0.015/300**	
9	Checking of squareness between C-axis center line and X-axis motion (C축중심선과 X축운동 직각도)	XZ plane (XZ평면)		0.020/300	**0.015/500**	
10	Checking of squareness between C-axis center line and Y-axis motion (C축중심선과 Y축운동 직각도)	YZ plane (YZ평면)		0.020/300	**0.015/500**	

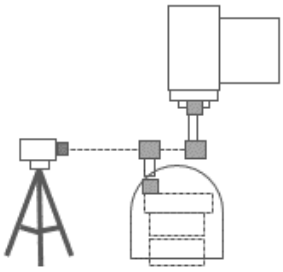
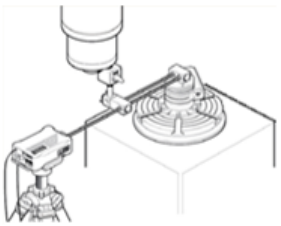
Parallelism & Run out (평행도 & 흔들림)

Unit : mm

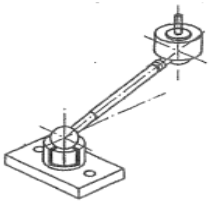
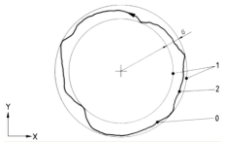
NO.	Item (검사 항목)		Diagram (측정 방법)	Tolerance (허용 공차)		Result (측정 결과)
				ISO	**DN SOLUTIONS**	
11	Checking of parallelism between X-axis motion and the table surface (테이블 상면과 X축이송평행도)	XZ Plane (XZ평면)		0.020/500	**0.012/400**	
12	Checking of parallelism between Y-axis motion and the table surface (테이블 상면과 Y축이송평행도)	YZ Plane (YZ평면)		0.020/500	**0.012/400**	
13	Checking of parallelism between spindle center line and the Z-axis motion (주축중심선과 Z축이송평행도)	a)XZ Plane (XZ평면)		0.020/300	**0.010/300**	
		b)YZ Plane (YZ평면)		0.020/300	**0.010/300**	
14	Checking run-out of spindle nose surface (주축 단면의 흔들림)	camming of spindle nose surface (주축단면)		0.01	**0.005**	
15	Checking run-out of spindle internal taper (주축 내경의 흔들림)	a)at the spindle nose (주축입구)		0.01	**0.005**	
		b)at a distance of 300mm (300mm 위치)		0.020/300	**0.012/300**	
16	Checking run-out of table surface (테이블 상면의 흔들림)			—	**0.020/Φ500**	

POSITIONING TEST (위치 결정 정밀도)

Accuracy and repeatability of positioning (위치결정 정밀도와 반복 정밀도)

NO.	Item (검사 항목)		Diagram (측정 방법)	Tolerance (허용 공차)			Result (측정 결과)
				ISO	DN SOLUTIONS		
					W/O Scale	W/ Scale	
17	Bidirectional accuracy of positioning (양방향 위치 결정 정밀도)	a) X-axis (X축)	**DVF6500** **Axis Stroke & Range** **X/Y/Z : 750/785/600mm** **A : -120˚~120˚** **C : 360˚** **※ ISO230-2 Standard** **Stroke (S)** **500 < S≤800** **Positioning Accuracy(A)** **: 0.025** **Repetability of positioning(R)** **: 0.015** **Range(D)** **D≤360˚** **Positioning Accuracy(A)** **: 28"** **Repetability of positioning(R)** **: 16"**	0.025	**0.008**	**0.006**	
		b) Y-axis (Y축)		0.025	**0.008**	**0.006**	
		c) Z-axis (Z축)		0.025	**0.008**	**0.006**	
		d) A-axis (TILT) (A축)		28"	**28"**	**9"**	
		e) C-axis (ROTARY) (C축)		28"	**28"**	**9"**	
18	Bidirectional repeatability of positioning (양방향 반복 정밀도)	a) X-axis (X축)	 **Linear positioning**	0.015	**0.005**	**0.004**	
		b) Y-axis (Y축)		0.015	**0.005**	**0.004**	
		c) Z-axis (Z축)		0.015	**0.005**	**0.004**	
		d) A-axis (TILT) (A축)	 **Angular positioning**	16"	**16"**	**5" (±4")**	
		e) C-axis (ROTARY) (C축)		16"	**16"**	**5"**	

Circular deviation (원형 편차)

NO.	Item (검사 항목)		Diagram (측정 방법)	Tolerance (허용 공차)		Result (측정 결과)
				ISO	**DN SOLUTIONS**	
19	Checking circular deviation G of the path generated by circular interpolation of two linear axes over 360° according to ISO230-4 (두 직선축의 360° 원호보간으로 생성된 경로의 원형편차 G ISO230-4기준)	a) Circular deviation (CCW) (원형편차) (CCW)	  + center of minimum zone circles 0 starting point 1 minimum zone circles 2 actual path circular deviation, G_{XY} ▶diameter of nominal path : 200mm ▶contouring feed : 1000mm/min ▶measuring range : 360°	**0.050**	**0.010**	
		b) Circular deviation (CW) (원형편차) (CW)		**0.050**	**0.010**	
		c) Bi-directional circular deviation (양방향 원형편차)		**0.050**	**0.010**	

INSPECTED BY :

APPROVED BY : Seo Young-il