High Efficiency Machining Center

LEADWELL CNC MACHINES MFG., CORP.

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* All performance are based on 220V/3PH/60HZ. Specification are subject to change without notice.

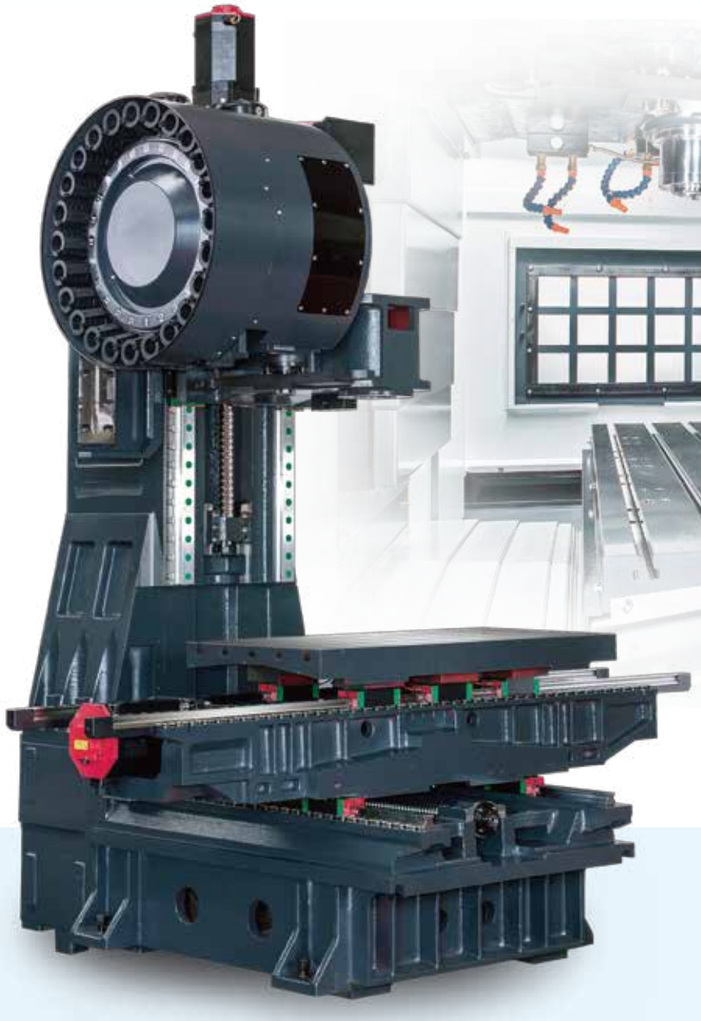
2014.07

VE Series

V-22i/V-26i/V-32i/V-42i
V-32A/V-42A

LEADWELL
LEADWELL CNC MACHINES MFG.,CORP.

VERTICAL MACHINING CENTERS



High Efficiency Machining Center

High Rigidity:
- FEA Analysis.
- High rigidity structure design.
- Six Guideway blocks in X axis.
- 3 Axis ball screw prestressing

High Reliability:
- Roller type motion system.
- 3 Axis absolute motor.

High Efficiency:
- V-32A/42A with high torque spindle motor.
- Rapid feed rate 48/48/48.
- Spindle speed 12,000 rpm(opt)
- Tool change time T to T 1.8 sec.
- Tool change time C to C 4 sec.

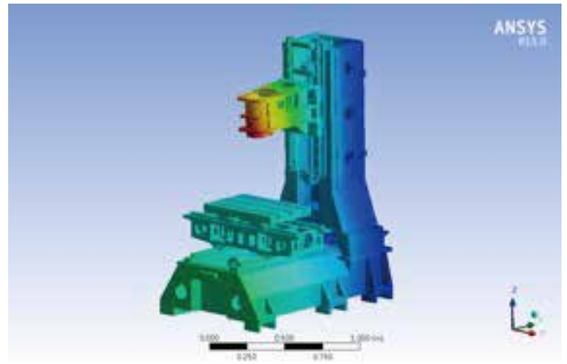
High Flexibility:
- 30T tools magazine available.
- 4/5 axis rotary table available.
- Front/Rear Chip Disposal available.

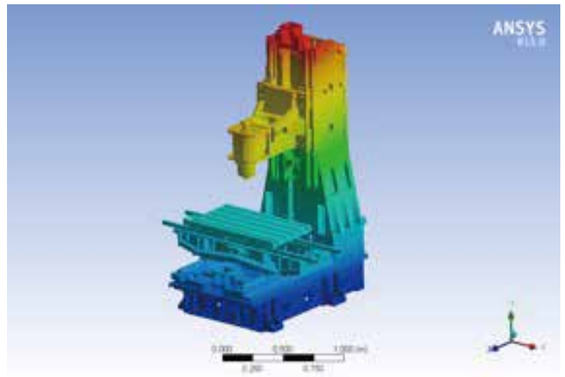
FEA REPORT(Finite Element Analysis)

Optimum
- Section areas
- Moments of inertia
- Torsional constant
- Plate thickness
- Bending stiffness
- Transverse shear
- Vibration reduce

With FEA you can:
1. Predict and improve product performance and reliability.
2. Reduce physical prototyping and testing .
3. Evaluate different designs and materials .
4. Optimize designs .

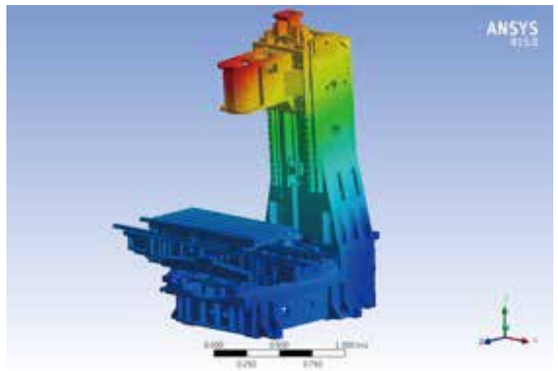
V-22 SERIES





V-32 SERIES

V-42 SERIES



PERFORMANCE

V-42i

FACE MILL

Removal Rate	260cc/min.
Tool	Ø63mm
Spindle Speed	1500rpm
Feedrate	1300mm/min
Width of Cut	50mm
Depth of Cut	4mm

End-DRILL

Removal Rate	144cc/min.
Tool	Ø20mm
Spindle Speed	2800rpm
Feedrate	900mm/min
Width of Cut	20mm
Depth of Cut	8mm

U-DRILL

Drilling	Ø42mm
Tool	Ø42mm
Spindle Speed	1500rpm
Feedrate	130mm/min.
Depth of Cut	50mm

TAP

Tapping	M16
Spindle Speed	350rpm
Feedrate	700mm/min.

RIGID TAP

Tapping	M20
Spindle Speed	1500rpm
Feedrate	3750mm/min.

MATERIAL

S45C

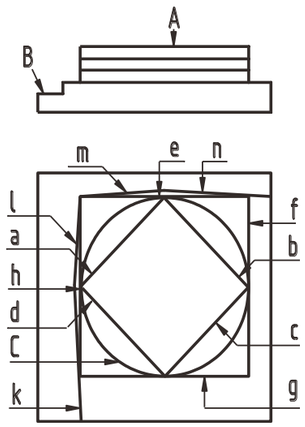
NASA REPORT

TEST REPORT

YEAR: 10 2 4 1 1 2 0 0 1 1

ITEM	NASA TEXT		MODEL	V-42i	
TEST CONDITION	Material: Aluminum #6061 Rough Machining: Tool: Ø50 End Mill Speed: 8000RPM Feedrate: 3000mm/min	Finish Machining: Tool: Ø12 End Mill Speed: 8000RPM Feed rate: 2000mm/min	NUMBER	#011	
			DATE	2013/5/18	
			PERSONNEL	Thomas	

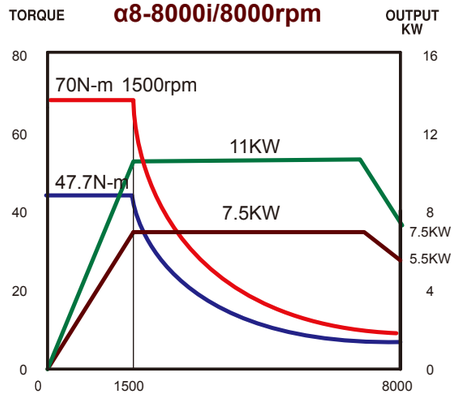
TEST RESULT		Tolerance	Side	Measured		Tolerance	Side	Measured
	H	0.015/300	A\B	*	⊥	0.015/140	d\a	0.002/140
	//	0.015/140	a\c	0.006/140	∠	17.7	i\k	17.7019
	//	0.015/140	b\d	0.003/140	∠	13.2	m\n	13.2743
	//	0.015/200	g\e	0.002/200	—	0.015/200	abcd	0.001
	//	0.015/200	f\h	0.007/200	—	0.015/200	efgh	0.001
	⊥	0.015/200	g\f	0.002/200	○	0.005	C	0.014
	⊥	0.015/200	f\e	0.001/200	Ra	2	abcd	△△△3.2
	⊥	0.015/200	e\h	0.001/200	Ra	2	A\B	△△△3.2
	⊥	0.015/200	h\g	0.002/200	L	141.42mm	A\C	140.217
	⊥	0.015/140	a\b	0.001/140	L	141.42mm	D\B	140.221
	⊥	0.015/140	b\c	0.006/140	L	200.mm	E\G	198.794
	⊥	0.015/140	c\d	0.003/140	L	200.mm	F\H	198.801



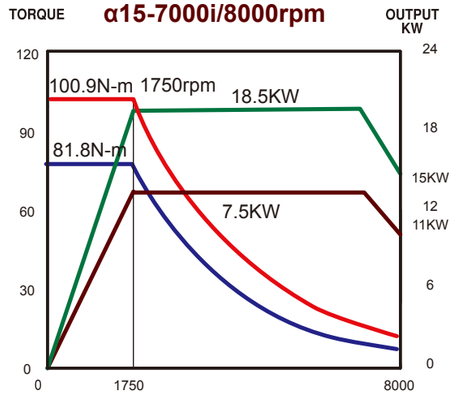
SPINDLE POWER CURVE

Continuous N-m
30 min N-m
Coutinuous KW
30 min KW

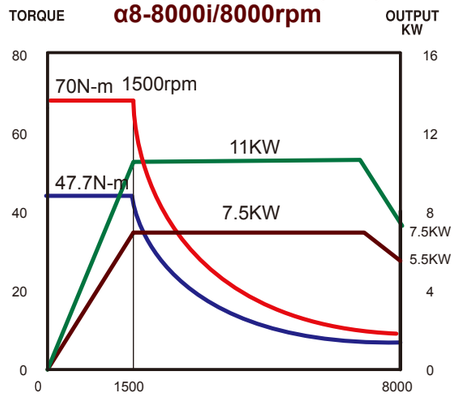
V-22i/V-26i



V-32A/V-42A
FANUC Spindle Motor (STD)



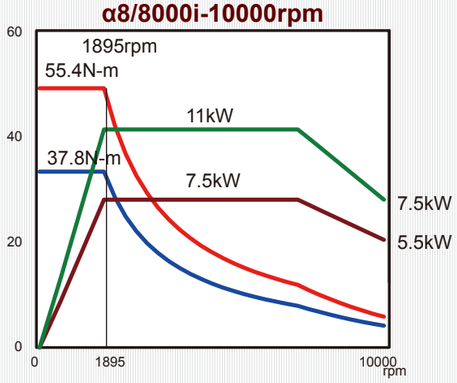
V-32i/V-42i
FANUC Spindle Motor (STD)



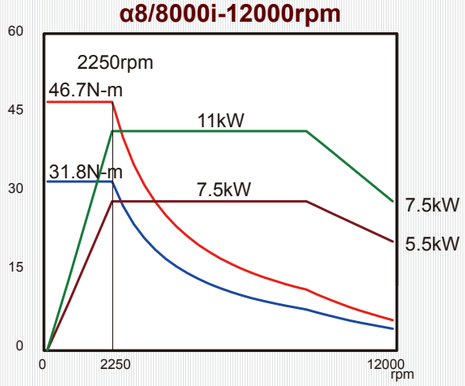
SPINDLE POWER CURVE

Continuous N-m
30 min N-m
Coutinuous KW
30 min KW

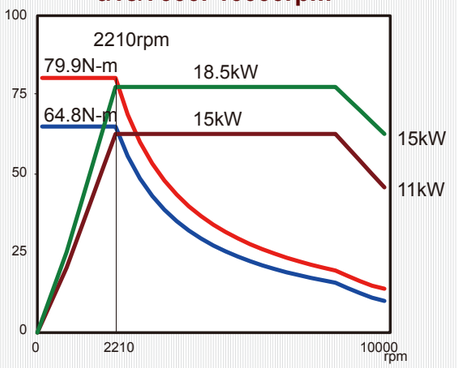
V-22i/V-26i
α8/8000i-10000rpm



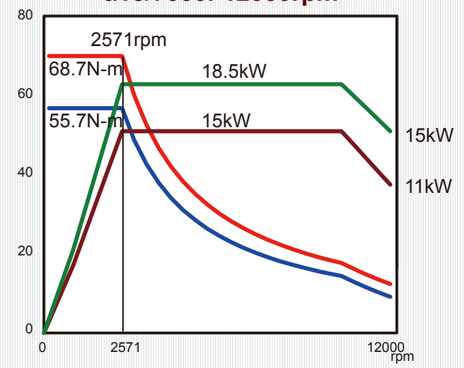
V-22i/V-26i
α8/8000i-12000rpm



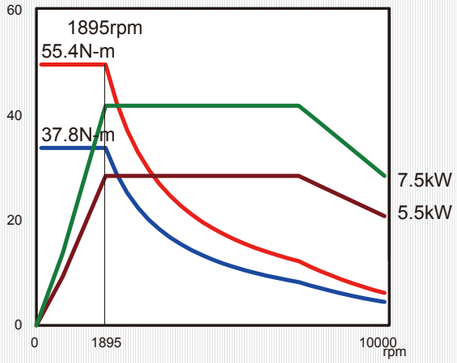
V-32A/V-42A
α15/7000i-10000rpm



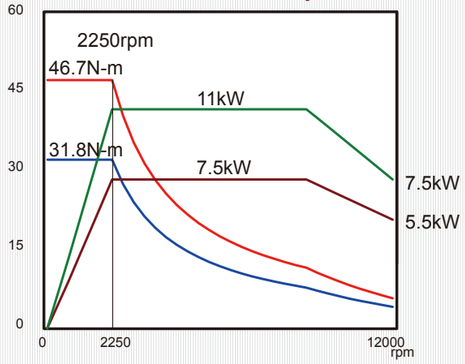
V-32A/V-42A
α15/7000i-12000rpm



V-32i/V-42i
α8/8000i-10000rpm

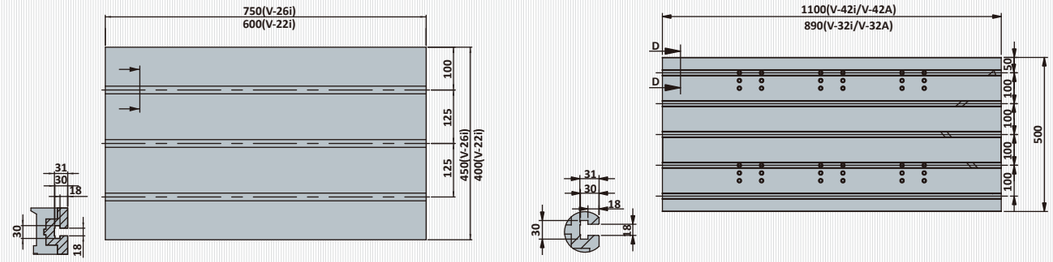


V-32i/V-42i
α8/8000i-12000rpm



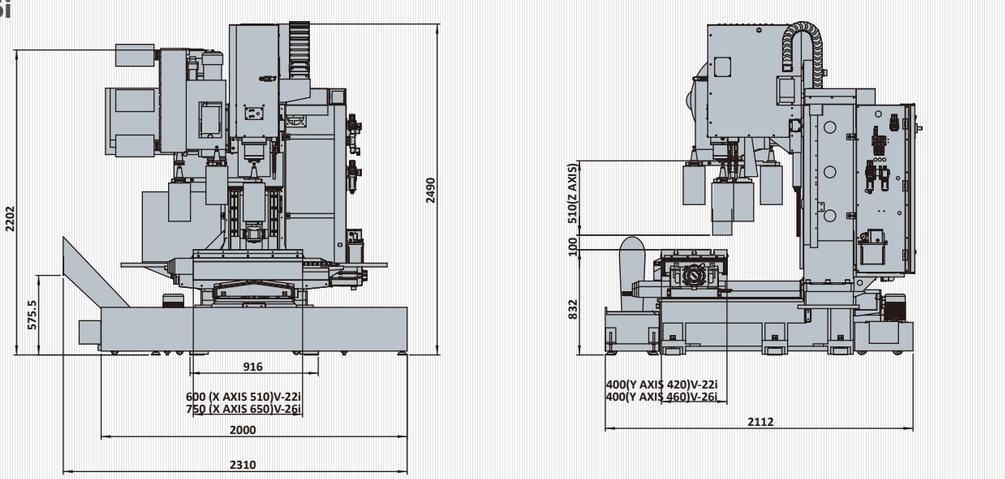
OUTLINE DRAWING

Table Size

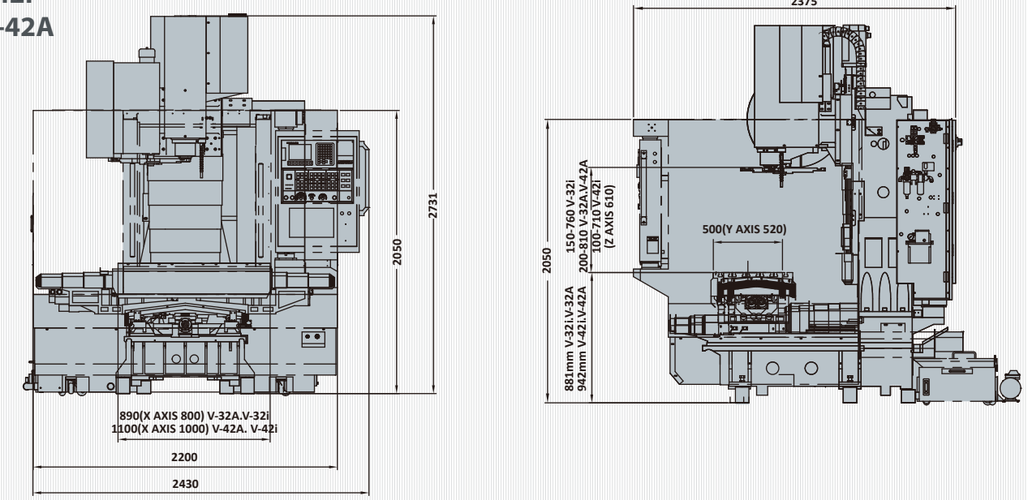


Travel Drawing

V-22i/V-26i

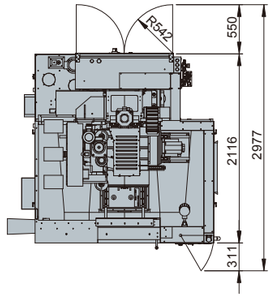


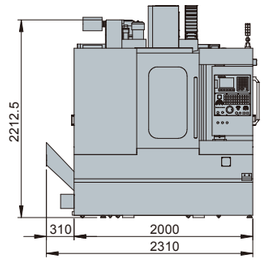
V-32i/V-42i
V-32A/V-42A

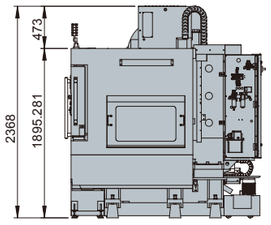


OUTLINE DIMENSION

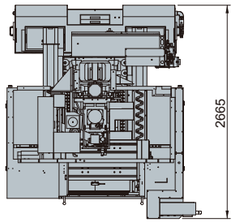
V-22i/V-26i

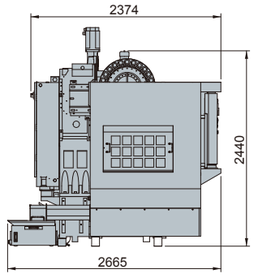


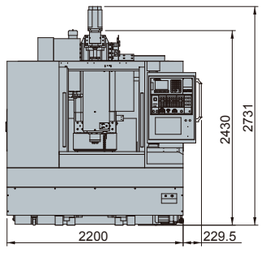




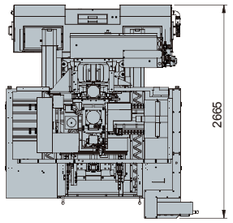
V-32i/V-32A

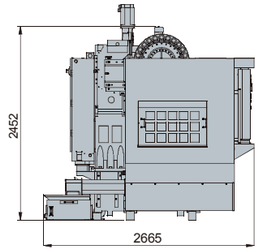


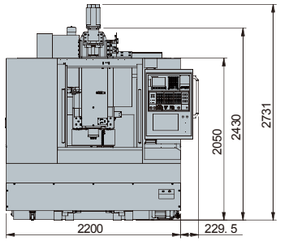




V-42i/V-42A



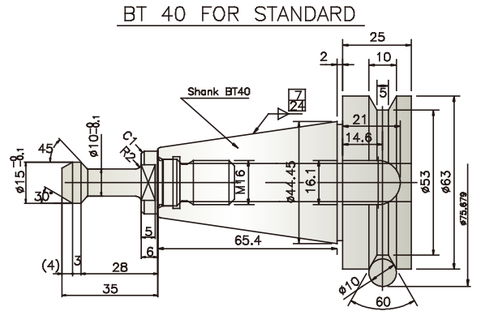




VERTICAL MACHINING CENTERS

Pull Stud

Standard



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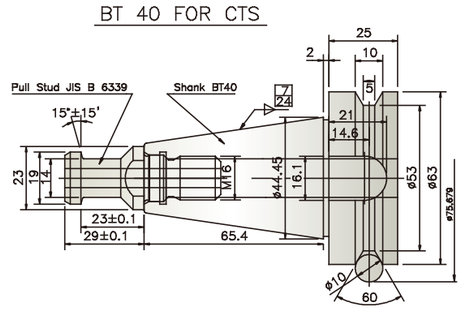
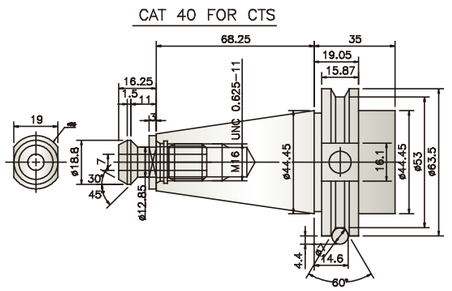
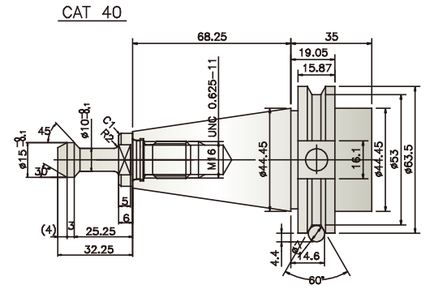
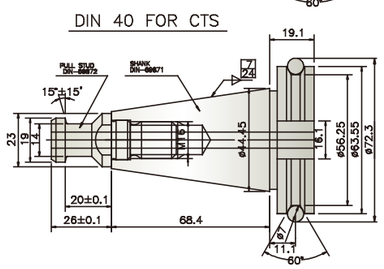
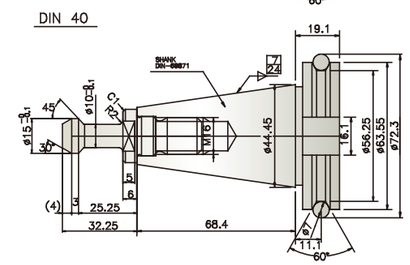


Optional









Cartridge Type Spindle

BBT Two face contact

HIGH PERFORMANCE ROTARY TABLE

LEADWELL®

LWAR Series (Air Brake)
LWHR Series (Hydraulic Brake)

LWAR-210/250
LWHR-210/255/320

- Recommend HR Series to use **made-in-Japan** dual-lead worm and worm gear

Larger Through Hole → Bigger Bearing
Bigger Bearing → Higher Rigidity

Large diameter

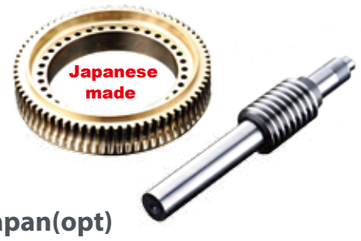
LWAR-210R

Devised by German

Specialized for Rotary Table, the Radial & Axial bearing can fully support heavy-duty cutting in both radial and axial directions.

LWHR-255R

(Sheet Metal Cover for Both Vertical and Horizontal Applications)



Made in Japan(opt)

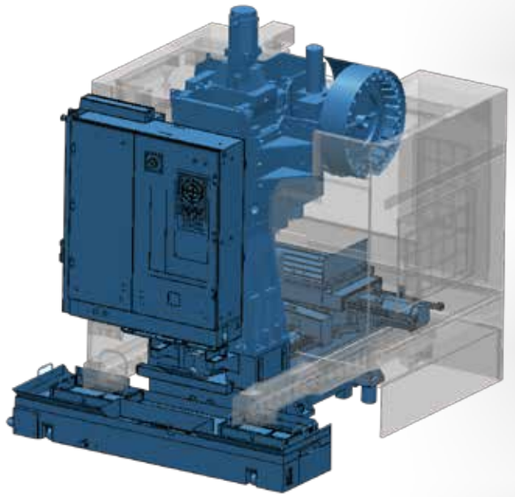
Unique high tensile brass
Wear life is 2.6 times longer than aluminum bronze PBC3.

4th Ratable Suggest Table

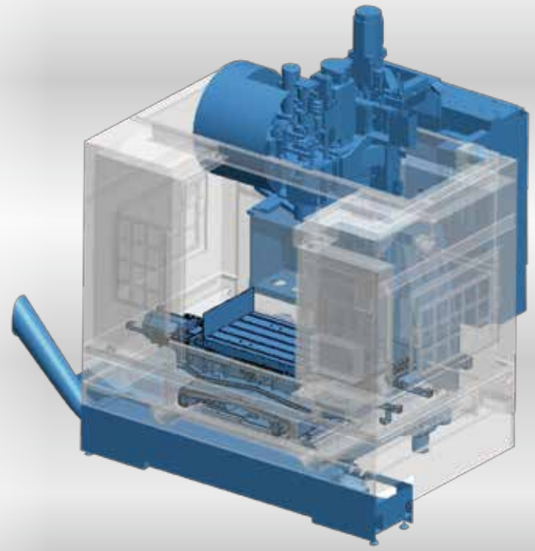
Model	Air			Hydraulic	
V-22i	LWAR-125R	LWAR-170R	LWAR-210R		
V-26i	LWAR-170R	LWAR-210R	LWAR-250R	LWHR-210R	
V-32i/V-32A	LWAR-210R	LWAR-250R		LWHR-210R	LWHR-255N
V-42i/V-42A	LWAR-210R	LWAR-250R		LWHR-210R	LWHR-255N

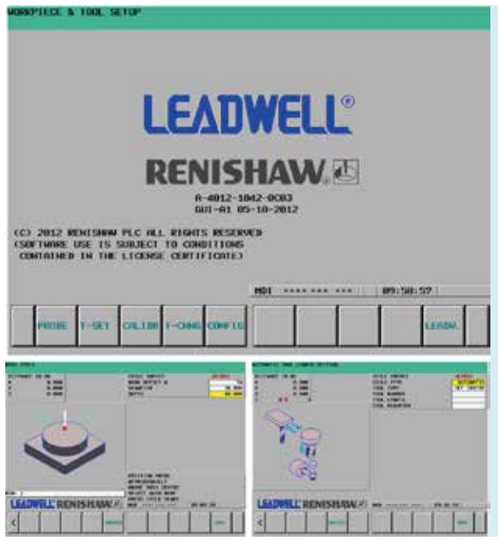
Coolant and Chip Seperation System

Rear Chip Disposal



Front Chip Disposal





RENISHAW GUI:

LEADWELL developed RENISHAW interface, can be used in TS27R, or OMPXX measuring device.
measurement process and read data indicate on the screen, simply instructions screen which greatly simplifies the operation complexity, users do not need to remember the program number and many measurement parameters.

ATC Tool management system:
Manual work-piece measurement:
Maintenance screen

MACHINE SPECIFICATIONS

ITEM \ MODEL		V-22i	V-26i	V-32i	V-32A	V-42i	V-42A
A.T.C	Type	Arm	Arm	Arm	Arm	Arm	Arm
CAPACITY	Unit						
X axis travel	mm (in)	510(20.1)	650(25.5)	800(31.5)		1000(40)	
Y axis travel	mm (in)	420(16.5)	460(18.1)	520(20.5)		520(20.5)	
Z axis travel	mm (in)	510(20.1)	510(20.1)	610(24)	610(24)	610(24)	610(24)
Distance from table top to spindle end	mm (in)	100-610(4-24)		150-760(6-30)	200-810(7.9-31.9)	100-710(3.9-28)	150+760(5.9+29.9)
Distance from column front to spindle center	mm (in)	460(18.1)	510(20.1)	545(21.4)	546.7(21.5)	546.7(21.5)	546.7(21.5)
TABLE							
Table size (L x W)	mm (in)	600x400(23.6x15.7)	750x450(29.5x17.7)	890x500(35x19.7)		1100x500(43.3x19.7)	
Max. table load weight	kg	250		500			
T-slot size		18Tx125x3		18Tx100x5			
SPINDLE							
Spindle speeds	rpm	8000/DDS 10000,12000,15000 opt					8000
Spindle nose (normal size, No.)		No.40					
Spindle bearing inner diameter	mm(in)	60(2.36)			70(2.76)	60(2.36)	70(2.76)
FEEDRATE							
Rapid traverse X/Y/Z	m/min(ipm)	48(1890)		36(1417)			
Max. cutting feedrate	m/min(ipm)	10(394)					
A.T.C.							
Tool storage capacity	pcs	24	24	24	24	24	24
Max. tool diameter(with adjacent tools)	mm(in)	80(3.15)	80(3.15)	80(3.15)	80(3.15)	80(3.15)	80(3.15)
Max. tool length	mm(in)	250(9.8)	150(5.9)	250(9.8)			
Tool change time T-T (C-C)	sec	2.4(5)	2.4(5)	1.8(4)	1.8(4)	1.8(4)	1.8(4)
MOTORS							
Spindle motor(30 min) FANUC	kw(hp)	11(14.7)			18.5(24.8)	11(14.7)	18.5(24.8)
X/Y/Z axis motor	kw(HP)	1.6/3/3(2.1/4/4)		4/4/4(5.4/5.4/5.4)			
MACHINE SIZE							
Height of machine (H)	mm(in)	2490(98)		2630(103.5)	2730(107)	2630(103.5)	2730(107)
Floor space (L x W)	mm(in)	2310X3050(91X120)		2200x3275(86.6x128.9)	2430x3420(96x135)	2200x2560(86x100)	2430x3420(96x135)
Total machine weight	kg	3300	3400	4700		4800	
Power requirement	KVA	25		30	35	30	35
Control	FANUC	0i-M/828DB					

Control Panel OPTION

FANUC

SIEMENS

MITSUBISHI

MACHINE ACCESSORIES

ITEM \ MODEL	V-22i	V-26i	V-32i	V-32A	V-42i	V-42A
RS232	●	●	●	●	●	●
Full enclosure guarding	●	●	●	●	●	●
Work light	●	●	●	●	●	●
Alarm lamp	●	●	●	●	●	●
Heat exchanger	●	●	●	●	●	●
Rigid tapping	●	●	●	●	●	●
Auto counter for workpiece	●	●	●	●	●	●
Chip conveyor (auger type) + 2 chip buckets	●	●	●	●	●	●
Remote MPG	■	■	●	●	●	●
Spindle speed 8000rpm	●	●	●	●	●	●
FANUC control	●	●	●	●	●	●
Chip disposal in the rear	■	■	●	●	●	●
Siemens control	■	■	■	■	■	■
Mitsubishi control	■	■	■	■	■	■
Spindle speed 10000rpm (ceramic bearing)	■	■	■	■	■	■
Spindle speed 12000rpm (ceramic bearing)	■	■	■	■	■	■
Spindle speed 15000rpm (DDS)	▲	▲	▲	▲	▲	▲
Spindle speed 15000rpm (DDS with CTS)	▲	▲	▲	▲	▲	▲
Spindle oil chiller	■	■	■	■	■	■
C.T.S. Form A	■	■	■	■	■	■
Tool tip air blow system	■	■	■	■	■	■
Tool overload detection	■	■	■	■	■	■
Tool Management	■	■	■	■	■	■
Auto tool length measurement TS-27	■	■	■	■	■	■
Automatic workpiece measurement OMP-60	■	■	■	■	■	■
Chip conveyor outside machine & chip bucket	■	■	■	■	■	■
Chip disposal at the front	●	●	■	■	■	■
Chip disposal at the side	■	■	■	■	■	■
Oil skimmer	■	■	■	■	■	■
Coolant gun	■	■	■	■	■	■
Air conditioner	■	■	■	■	■	■
4th axis rotary table Preparation	■	■	■	■	■	■
4th axis rotary table	■	■	■	■	■	■
Manual chuck with connecting plate for rotary table	■	■	■	■	■	■
Manual tailstock for rotary table	■	■	■	■	■	■
Power disk for 4 axis rotary table	■	■	■	■	■	■
Through hole drill kit	■	■	■	■	■	■
DNC link software	■	■	■	■	■	■
Programmable Nozzle	■	■	■	■	■	■
Programmable air blow	■	■	■	■	■	■
CTS preparation	■	■	■	■	■	■
Simple Filtrating system & 20bar /25u pump sys.	■	■	■	■	■	■
Simple Filtrating system & 40bar /25u pump sys	■	■	■	■	■	■
Sub tank	■	■	■	■	■	■
Extra coolant tank	■	■	■	■	■	■
Spindle annular coolant jet (Arm type ATC)	■	■	■	■	■	■
2 Speed Gear Box	X	X	■	■	■	■
Arm type ATC 30 tools	▲	▲	▲	▲	▲	▲
Linear Scale	▲	▲	▲	▲	▲	▲
Surrounding coolant system	■	■	■	■	■	■
Auto door	▲	▲	▲	▲	▲	▲

● : S.T.D / ■ : O.P.T (DESIGNED) / ▲ : O.P.T (TO BE ADVISED) / X : N/A(NOT AVAILABLE)

LEADWELL