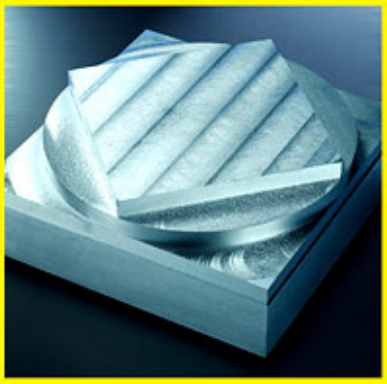
LEADWELL

LEADWELL CNC MACHINES MFG.,CORP.

LBV SERIES

CNC BRIDGE TYPE MACHINING



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2006.03

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

CNC Bridge Type Machining

LBV Series

LBV-Leadwell's enhanced double column bridge machine outperforms competitive machines

A large double column bridge CNC vertical machining center.

◆ MORE POWERFUL

- Extra powerful spindle motor - alpha 15i (15 KW / 20 HP) with high-torque Z/F gear box
- Optional high power available - alpha 22i (22 KW / 29 HP) also high Z/F gear box
- Also available - several higher speed spindle options and extended length spindle option
- Base is welded construction with crossed ribs for extra rigidity

◆ INCREASED CAPACITY

- X-axis travel from 1700 mm to 5200 mm
- Y-axis travel from 1200 mm to 2700 mm
- Table maximum capacity from 3500 kg to 18,000 kg
- Suitable for machining large automotive molds and forging dies!

◆ FASTER/MORE PRODUCTIVE

- Increased feedrate: X/Y-12 m/min, Z-10 m/min
- 6 spindle head attachments available for full 5-sided machining
- High speed ATC for 8 sec tool to tool time

◆ NEW ERGONOMIC CONSIDERATIONS

- Pivoting operator panel for easy access to machine
- Foot peddle for easy tool release
- Quieter, due to wide angle drive belt
- Built-in chip augers on each side of table

LBV Series

CNC Bridge Type Machining

LBV Series

THE ULTIMATE IN PERFORMANCE

- The standard LBV is a compact design that can be expanded from a basic 3-axis configuration to full 5-sided CNC machining center.
- The LBV-series machines have 9 different spindle cartridges available and 6 different spindle head options.
- These machines come standard with an oil cooled spindle for high accuracy die and mold machining.

RIGID CONSTRUCTION IS SPECIALLY DESIGNED FOR THE 5-FACE MACHINING CENTER DEMANDS

- The bed is a welded box type design with thick walls and ample ribs.
- The table is a fully supported heavily ribbed cast iron design to ensure high precision at any position.
- Tables wider than 2200 mm have a third linear guideway in the center to reduce table distortion.
- The double column spacing is 1200 mm and the stability is 30% more than the ordinary planer frame.
- Optional column widths of 1400mm and 1600mm are available
- The fixed Y-Axis bridge uses the same design as other 5-Faced machining centers. The vertical spread of the linear guideways is 715 mm linear and are arranged to oppose cutting force in both the horizontal and vertical directions. This gives the LBV-series 25% more strength than ordinary linear guideway designs.
- The spindle center line to Z-Axis slideway surface is 95 mm and the spindle center line to Y-Axis saddle way is 310 mm.

RIGID TRANSMISSION CONSTRUCTION

Leadwell uses only premium quality preloaded double-nut ball screws from THK, IBL, STAR and HIWIN. Depending on machine travel and axis, the ball screws range between 63 mm to 100mm in diameter. On the LBV-Series machines each ball screw is accurately aligned parallel to the guide ways and anchored at both ends. They are then pre-tensioned to improve machine stiffness. The rotational torque variation is inspected to guarantee a non-binding, highly accurate, and long running component. With this design the LBV-Series can exceed customer requirements for accuracy and maximum life.

The bearings used in all three axis transmissions are designed to give full protection from both water and dust contamination to increase the service life and maintain the bearing precision.

CAST IRON CONSTRUCTION

Leadwell uses only top quality well-ribbed castings for the columns, cross slide, headstock, cross rail, and table. Finite Element Analysis (FEA) is used on each new casting to determine the size and location of all internal ribs ensuring high torsional stiffness and minimum vibration. The cast iron column, cross slide, headstock, cross rail, and tables have over 10 times the dampening capacity of those made from steel resulting in superior cutting performance. Wider and taller columns are available for special customer application. Consult Leadwell representative for details.

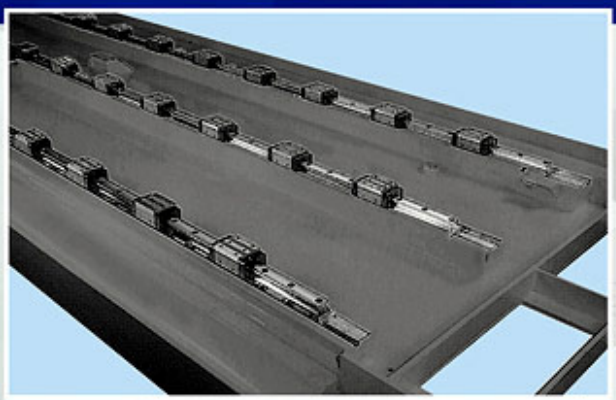
HEAVY-DUTY WAYS

- X-axis uses HSR linear guideways. For tables wider than 2200 mm a third guideway is added in the center of the table for extra rigidity.
- Y-axis uses Schneeberger MRD roller linear guideways for low friction and extra rigidity.

* Note: Schneeberger linear guideways are optional for X-axis

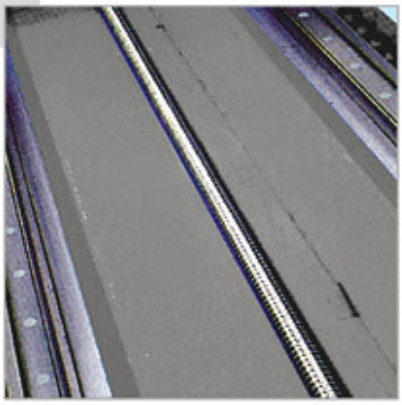
- Z-Axis is a box way configuration for added strength and dampening. They are hardened to HS67-75 (HRC50-56) and precision ground. The female guideways and gibs are covered with anti-friction Turcite-B to reduce friction for maximum accuracy level

* Note: Linear guideways for Z-axis are optional for high speed machining.



OPTIONAL ACCESSORIES

- 4 tables: 400 mm, 500 mm, 630 mm and 800 mm diameter
- Manual tailstock



Leadwell's simple and efficient design uses chip augers on both sides of the machine and provides high volume coolant to wash the chips from the work area. The augers move the chips into a chip conveyor which moves chips to an external chip bucket. This eliminates the need for an operator to manually remove chips and thus reduces non-cutting time.

- Access to the working area is clear and safe for operator loading and unloading of work pieces. The front splash guard can be removed for added convenience and safety.
- A large capacity coolant tank (400-600 liters) and a high flow coolant pump is included to supply even the most demanding coolant needs.
- An optional additional high-pressure pump for CTS can be fitted to the coolant tank or an additional sub-coolant tank and filter unit can be added.

CENTRALIZED AUTOMATIC LUBRICATION SYSTEM

When a pressure setting is achieved, all the lubricating blocks will release the lubricant simultaneously. The pressure feedback system ensures quick detection of blockages or leaks to ensure continuous lubrication of key areas prolonging the reliability and life of the machine.

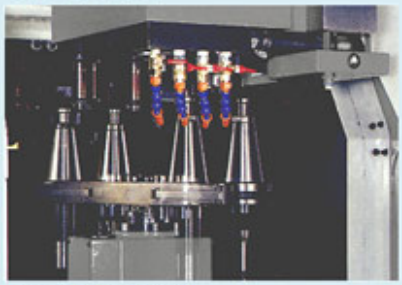
OPERATOR PANEL

The swing type operator panel is compact and user friendly. The design is robust and rigid for safety. MPG (Manual Pulse Generator) is a standard feature for the panel. This operator panel design eases set-up and adjustments to the workpiece and reduces blind spots during the machining process.
The operator station comes equipped with a tool clamp/unclamp foot switch and a MPG (remote handwheel)

SPINDLE OIL COOLER

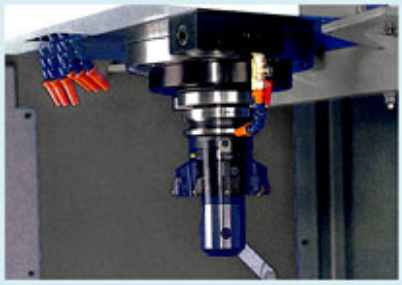
During long periods of high-speed spindle usage, the spindle cooler will control the temperature to a constant level for long-term accuracy and reliability.

Options



ATC OPTIONS

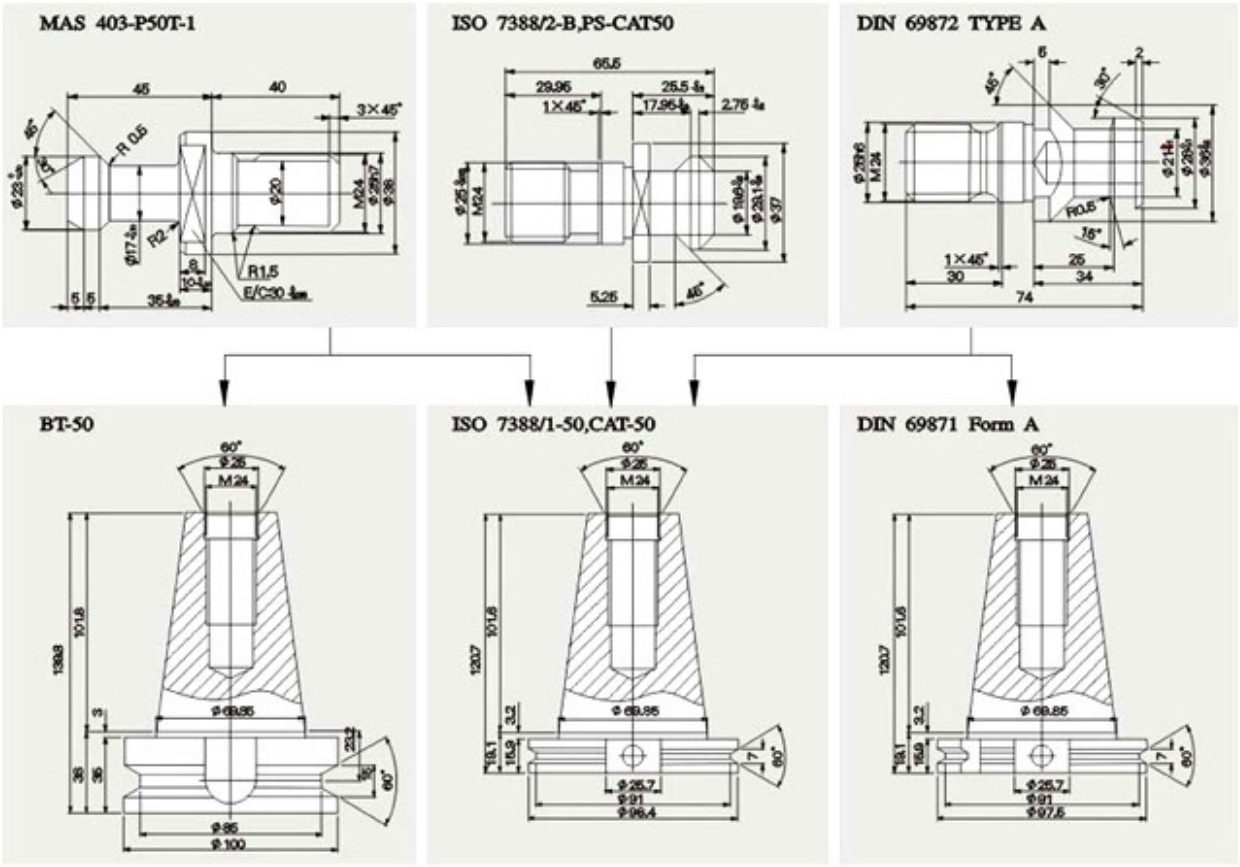
Select the suitable tool magazine capacity (20, 30, 40, or 60) and tool changer type (arm or drum) appropriate for specific machining requirements.
Tool-to-tool time is approximately 8 seconds.



PROGRAMMABLE COOLANT NOZZLE

This unique programmable coolant nozzle option provides precise coolant control. It allows the CNC program to change the coolant direction during the machining cycle. The nozzle can be programmed for tool lengths from 60 mm (2.4") to 250 mm (10"). This option eliminates operator adjustment causing unnecessary downtime.

Tool Shank Options



Floor Space (mm)

MODE	Distance Between 2 Columns	A1 / A2 / A3	B	C	D	E	F
LBV-1611/LBV 2011	1400	5000/5900	4460	4100	2120	4050 (Z-750)	4400 (Z-900)
LBV-2215/LBV 3215	1600	5900/7800	4660	4300	2320	4050 (Z-750)	4400 (Z-900)
LBV-2219/LBV 4219	2000	7800/10300	5030	4700	2520	4050 (Z-750)	4400 (Z-900)
LBV-3224/LBV 4224/LBV- 5224	2500	7800/10300/12500	5530	5200	2770	4050 (Z-750)	4400 (Z-900)
LBV-5229	3200	12500	6030	5700	3020	4200 (Z-750)	4550 (Z-900)

NOTE: To constantly improve Leadwell reserves the right to change the design and structure at any time. The data in this catalog is to be used only as a reference. Contact a Leadwell representative for specific requirements.

High Accuracy, High Torque Spindle

The standard LBV-Series machines are supplied with a 20-4000 rpm speed spindle with and optional 30-6000 rpm speed. This spindle is powered by a 2-speed German Z/F gearbox. The 2-speed gearbox is superior to the single speed belt drives as it achieves higher torque with less heat generation.

The heavy-duty spindle utilizes FAG or NSK ABEC-7 bearings to allow heavy cutting. Oversized disk springs used to hold the tool in the spindle are tested for long life. The high retention force of the springs reduce tool movement, improve tool life, allow heavier cutting, reduce chatter, & create a better part finish. This spindle is prepared to easily add the CTS option.

Extended #50 taper spindle for deep hole cutting.

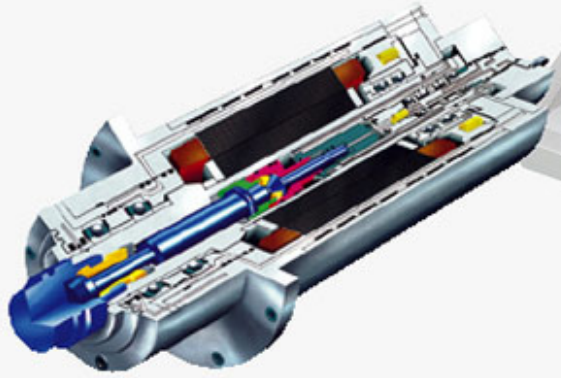
- 4000 rpm with oil mist lubrication
- 6000 and 8000 rpm also available.

Extended #40 taper spindle

- 10,000 rpm with oil mist lubrication
- 12,000 and 15,000 rpm also available.

Motorized high-speed spindle option:

Leadwell offers an HSK-63A taper motorized 18.000 rpm spindle with 96NM torque. It has air-oil lubrication and three 80 mm ceramic spindle bearings to guarantee a robust and durable spindle. The spindle is suitable for conventional and high speed machining.



Optional Spindle Heads:

Hydraulically clamped 900 milling head
• Manually positioned to
0˚ / 90˚ / 180˚ / 270˚
• 2000 rpm or 3500 rpm

45˚ angle milling head
• Also available: 30˚, 72˚, 75˚

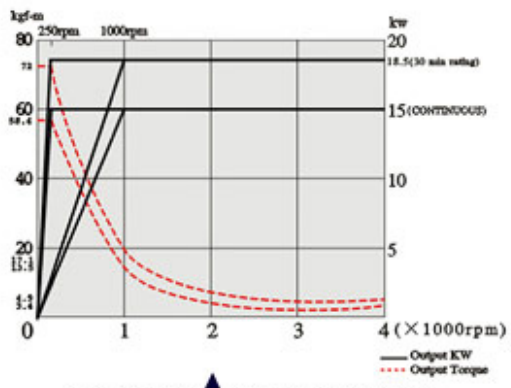
300 mm head extension with tool clamping/unclamping
• 3500 rpm

Universal milling head (manual)
• 3000 rpm

B & C Axis head with 50 incremental positioning (manual)
• 3500rpm

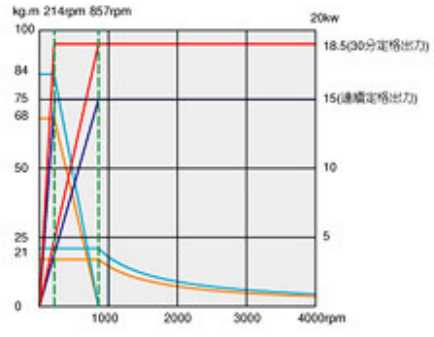
Universal 4/5 axis milling head with 50 incremental positioning (automatic)

Standard 20-4000 RPM Spindle



Motor HP & Torque (Ratio: 1:6, 1:1.5)

15/18.5kw Z.F.2K250 (FANUC a15i)



Motor HP & Torque (Ratio: 1:4, 1:1.0)

CNC Bridge Type Machining

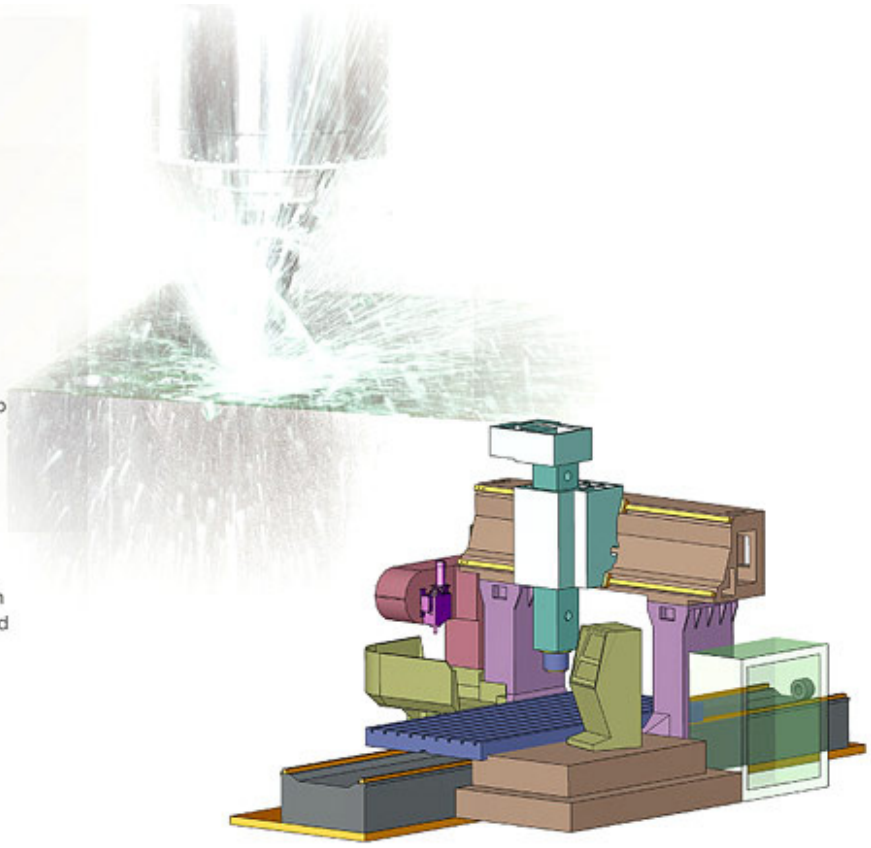
LBV Series

MACHINE SPECIFICATIONS

ITEM / MODEL		LBV-1611	LBV-2011	LBV-2215	LBV-2219	LBV-3215	LBV-3219
CAPACITY	Unit						
X axis travel	mm	1700	2200	2160	2160	3200	3200
Y axis travel	mm	1200	1200	1400	1800	1400	1800
Z axis travel	mm	750					
Distance from spindle nose to table surface	mm	220-970					
Distance between columns	mm	1400	1400	1600	2000	1600	2000
TABLE							
Table size (LxW)	mm	1600x1050	2100x1000	2000x1400	2000x1700	3000x1400	3000x1700
T-slots size	mm	22					
Max. table load weight	kgs	3500	5000	6000	7000	9000	10000
SPINDLE							
Spindle speed range	rpm	4000					
Spindle taper/Tool shank		BT-50					
Main motor output (30min./cont)	HP	25 (20)					
FEEDRATE							
Rapid traverse rate X,Y axis	m/min	12					
Rapid traverse rate Z axis	m/min	10					
Max. cutting feedrate	mm/min	1-5000					
A.T.C.							
Tool magazine capacity (opt.)	pcs	20/24/32 (40/60)					
Max. tool diameter / adjacent pockets empty	mm	ø250					
Max. tool length (from gauge line)	mm	350					
Max. tool weight	kgs	18 (20)					
Tool change time (T-T)(approx)	secs	8/14					
MACHINE SIZE							
Power requirement	KVA	40					
Floor space requirement (LxW)	mm	5000x4460	5900x4460	5900x4460	5900x5030	7800x4660	7800x5030
Machine height from floor level	mm	4050	4050	4050	4050	4050	4050
Machine weight (approx)	kgs	19000	20000	21000	26500	24500	29000
Positioning accuracy	mm	JIS B6388 0.01/300, VDI 3441 P0.025					
Repeatability accuracy	mm	±0.003	±0.003	±0.003	±0.003	±0.005	±0.005
Computer control	FANUC	21i-MC					

STANDARD ACCESSORIES

- RS232 interface
- Rigid tapping
- Chip conveyor(auger type)
- Work light
- Alarm lamp
- Remote MPG
- Leveling screws and pads
- Maintenance tool box
- Tool tip air blow system
- Chip conveyor outside machine & chip bucket
- Spindle oil cooler (chiller)



OPTIONAL ACCESSORIES

- 10000rpm spindle
- #50 taper spindle: 6000 and 8000 rpm
- #40 taper spindle: 10,000, 12,000, and 15,000 rpm
- HSK-63A spindle: 18,000 rpm
- C.T.S preparation
- Linear scales
- Auto tool length measurement
- Rotary table preparation
- Manual tail stock for rotary table
- Arm A.T.C with 90 tools magazine
- Air conditioner in cabinet

New Design Coming Soon

ITEM / MODEL		LBV-3224	LBV-4219	LBV-4224	LBV-5224	LBV-5229	LBV-45
CAPACITY	Unit						
X axis travel	mm	3200	4200	4200	5200	5200	4500
Y axis travel	mm	2400	1800	2400	2400	2700	2100
Z axis travel	mm			750			1000
Distance from spindle nose to table surface	mm			220-970			200-1200
Distance between columns	mm	2500	2000	2500	2500	3200	3400
TABLE							
Table size (LxW)	mm	3000x2200	3000x1400	4000x2200	5000x2200	5000x2500	1800x4000
T-slots size	mm			22			22
Max. table load weight	kgs	12000	12000	14000	18000	18000	10000
SPINDLE							
Spindle speed range	rpm			4000			3000
Spindle taper/Tool shank				BT-50			BT-50
Main motor output (30min./cont)	HP			25 (20)			15/20
FEEDRATE							
Rapid traverse rate X,Y axis	m/min			12			15
Rapid traverse rate Z axis	m/min			10			7.5
Max. cutting feedrate	mm/min			1-5000			1000
A.T.C.							
Tool magazine capacity (opt.)	pcs			20/24/32 (40/60)			40
Max. tool diameter / adjacent pockets empty	mm			ø250			ø200
Max. tool length (from gauge line)	mm			350			300
Max. tool weight	kgs			18 (20)			25
Tool change time (T-T)(approx)	secs			8/14			4/12
MACHINE SIZE							
Power requirement	KVA			50			50
Floor space requirement (LxW)	mm	7800x5530	10300x5030	10300x5530	12500x5530	12500x6030	12000x6000
Machine height from floor level	mm	4050	4050	4050	4050	4050	5000
Machine weight (approx)	kgs	34000	32500	39000	41000	41000	31000
Positioning accuracy	mm			JIS B6388 0.01/300, VDI 3441 P0.025			0.02
Repeatability accuracy	mm			±0.005			±0.02
Computer control	FANUC			21i-MC			-