

# LV Series

# BV Series

## VERTICAL MACHINING CENTER



COMPANY NAME: JIUH-YEH  
A7861 ISO9001:2008

# MILLSTAR

JIUH-YEH

# LV / BV Series ( Linear Way / Box

**LV 50/80/100/1400/1500A/1500B/1600**  
**BV 60/80/1400/1500A/1500B/1600**



## MACHINE FEATURES

- Machine is made of Meehanite Casting with internal ribs running throughout each section, featuring long term metallic rigidity and stability.
- The 4 slide ways design (1400-2000) base is a one piece casting, the slide ways are coated with Turcite B, and all mating surfaces are precision hand scraped to increase the flatness and improve geometric accuracy of the whole assembly.
- High precision ball screws (C3 class) on 3 axes are pre-loaded to eliminate thermal displacement. The ball screws are modularly assembled, the parallelism and squareness accuracy are calibrated within  $\pm 0.01$  mm, in full length.
- Laser check, ball screw test and spindle dynamic balance are performed to ensure the optimum static and dynamic accuracy.
- Linear type use precision Roller type linear way (LV1400-2000).
- Durable hardened-treatment for Box type guide ways (BV series).
- ATC arm type 24 tools (std.) for 1400-2000.
- Under 1500A model can shipment by 40" HQ container.

Way)

1600/1700/1800/2000  
0/1700/1800/2000



4 Box Way  
BV 1400-2000



2 Linear Way  
LV 80-100

# High Performance Main Parts

## HIGH PRECISION SPINDLE A KEY PRECISION MACHINING



• BELT DRIVE  
BT- 40 8,000 / 10,000 rpm



• DIRECT DRIVE (Opt.)  
BT- 40 12,000 / 15,000 rpm



• BELT DRIVE  
BT- 50 4,500 / 6,000 rpm



• GEAR HEAD (Opt.)  
BT- 50 4,500 / 6,000 rpm

## AUTOMATIC TOOL CHANGER



• Chain Type Magazine  
(LV/BV 1500B-2000 Opt.)



• Arm Type Magazine  
(BV60, LV/BV80, LV100 Opt.)



• Armless Type Magazine  
(BV60, LV/BV80, LV100 Std.)

## CNC ROTARY TABLE



• CNC Rotary Table (Opt.)



• CNC Tilting Rotary Table (Opt.)

## COMPREHENSIVE CHIP FLUSHING DESIGN



• Coolant Through Spindle (Opt.)

## HIGH PRECISION HIGH / LOW SPEED



• Powerful Gear Head (High / Low Speed) (Opt.)

# Quality and Dependability Through Comprehensive Inspections



• Substantial Processing Test



• Laser inspection is applied for every machine after installation to ensure perfect quality



• High precision ball bar circle inspection



• Frequency / Balance detect



• Dynamic Vibration Inspection



• Work piece testing



• Spindle oil cooler (Std.)



• Electrical control box (complied with ce standards)



• Uniform and reliable Slideway Lubrication

## HIGH PRECISION BALLSCREW



• High Speed Ballscrew (FDC Type)



• Accurate Transmission



• High Rigidity Linear Guideway



• Precision Scraping

# Machine Specifications

	MODEL	LV 50	BV 60	LV / BV 80		LV 100	LV / BV 1400
TABLE	Work Table	650 x 430 mm	800 x 450 mm	950 x 500 mm	950 x 450 mm	1100 x 500 mm	1550 x 700 mm
	T-slot	125 x 14 mm x 4T	100 x 18 mm x 4T	80 x 18 mm x 5T	100 x 18 mm x 4T	80 x 18 mm x 5T	130 x 18 mm x 5T
	Max. Loading	250 kg	500 kg	500 kg	600 kg	600 kg	1500 kg
TRAVEL	Three Axes Travel	500 x 400 x 500	660 x 480 x 450	800 x 500 x 500	820 x 520 x 550	1000 x 500 x 500	1400 x 720 x 610 (BT40) 1400 x 720 x 680 (BT50)
	Spindle Nose to Table Surface	155 ~ 655 mm	200 ~ 650 mm	125 ~ 625 mm	100 ~ 650 mm	125 ~ 625 mm	150 ~ 760 mm (BT40) 150 ~ 830 mm (BT50)
	Spindle Center to Column Slide Ways	350 mm	520 mm	550 mm / 520 mm		550 mm	745 mm
SPINDLE	Spindle Taper	BT- 40		BT- 40		BT40	BT40 / BT50
	Spindle Diameter	Ø 60 mm		Ø 70 mm		Ø 70 mm	Ø 70 / Ø100 mm
	Spindle Speed	10000 rpm (Belt)		10000 rpm (Belt)		10000 rpm (Belt)	8000rpm (BT40, belt) 6000rpm (BT50, belt)
FEEDRATE	3 axes Slide Ways	Linear Way / Box Way		Linear Way / Box Way		Linear Way	LV : X,Y: Linear / Z: Box BV : XYZ: Box Way
	3 axes Rapid Feedrate	LV50 : 30 / 30 / 30 m/min BV60 : 20 / 20 / 20 m/min		LV80 : 36 / 36 / 36 m/min BV80 : 20 / 20 / 20 m/min		36 / 36 / 36 m/min	LV : 30 / 30 / 20 m/min BV : 15 / 15 / 12 m/min
	3 axes Cutting Feedrate	10 / 10 / 10 (M/min)		10 / 10 / 10 (M/min)		10 / 10 / 10 (M/min)	10 / 10 / 10 (M/min)
ATC	Tool Magazine type	Armless type 12 T	Armless type 20 T	Armless type 20 T		Armless type 20 T	Arm type 24 T
	Tool Selection	Bi-direction shortest path		Bi-direction shortest path		Bi-direction shortest path	Bi-direction shortest path
	Max. Tool Diameter x Length	Ø 60 x 150 mm	Ø 100 x 250 mm	Ø 100 x 250 mm	Ø 100 x 250 mm	Ø 100 x 250 mm	BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm
	Max. Tool Weight	7 kg		7 kg		7 kg	7 / 15 kg
	Tool Shank	BT- 40		BT- 40		BT- 40	BT40 / BT50
MOTOR	Spindle Motor ( cont. / 30min. )	5.5 / 7.5 kw		7.5 / 11 kw		7.5 / 11 kw	15 / 18.5 kw
	X / Y / Z axis Servomotor	LV50 : 1.5 / 1.5 / 2.0 Kw BV60 : 1.5 / 1.5 / 2.0 Kw		2.2 / 2.2 / 2.0 Kw		2.2 / 2.2 / 2.0 Kw	3.5 / 3.5 / 3.5 Kw
	X / Y / Z axis Ball Screw	LV50 : Ø 32 x Pitch 16 BV60 : Ø 40 x Pitch 10		LV80 : Ø 36 x Pitch 12 BV80 : Ø 40 x Pitch 10		Ø 36 x Pitch 12	Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)
	Coolant Pump	660 w		660 w		660 w	750w
MISCELLANEOUS	External Dimensions ( L x W x H ) mm	LV : 1906 x 2495 x 2387 BV : 1950 x 2360 x 2764		2180 x 2957 x 2632	2230 x 3282 x 2707	2800 x 2050 x 2380	3690 x 3030 x 2585 (40) 3690 x 3030 x 2685 (50)
	N.W / G.W. ( approx. )	LV : 3000 kg / 3500 kg BV : 3500 kg / 4000 kg		4500 / 5000 kg	5000 / 5500 kg	4700 / 5200 kg	10000 / 11000 kg (40) 10500 / 11500 kg (50)
	Splash Guard	Fully Splash Guard		Fully Splash Guard		Fully Splash Guard	Fully Splash Guard
	Shipment Require	40"HQ ( 4 sets )		40"HQ ( 4 sets )	40"HQ ( 4 sets )	40"HQ ( 4 sets )	40"HQ
	Coolant Tank Capacity	200L		260L	270L	330L	600L

★ All specifications and designs a

## STANDRAD ACCESSORIES

- Spindle air blow system
- Automatic lubrication system
- Mitsubishi M80 controller (8.4"LCD display)
- 12 tools Armless type ATC, BT40 (LV50)
- 20 tools Armless type ATC, BT40 (BV60, LV/BV80, LV100)
- 24 tools Arm type ATC, BT40/BT50 (LV/BV1400-2000)
- Screw Steelbelt type chip conveyor with cart (LV/BV60~LV100)
- Steelbelt (Chain) type chip conveyor with cart (LV/BV1400-2000)
- Spindle speed 6000 rpm, BT50, Belt drive (LV/BV1400-2000)
- Spindle speed 8000 rpm, BT40, Belt drive (LV/BV1400-2000)
- Spindle speed 10,000 rpm, BT40, Belt drive (LV50-100, BV60-80)

- Rigid tapping
- Auto power off
- Coolant system
- Heat exchanger
- RS 232 interface
- Spindle oil cooler
- Fully splash cover
- M code air blasting
- Tool box with tools
- Quartz working light
- Water gun and air gun
- Leveling kits and blocks
- Transformer (Export only)

LV / BV 1500A	LV / BV 1500B	LV / BV 1600	LV / BV 1700	LV / BV 1800	LV / BV 2000
1550 x 700 mm	1700 x 700 mm	1700 x 800 mm	1900 x 800 mm	1900 x 800 mm	2100 x 800 mm
130 x 18 mm x 5T	125 x 22 mm x 6T	125 x 22 mm x 6T	125 x 22 mm x 6T	125 x 22 mm x 6T	125 x 22 mm x 6T
1500 kg	1800 kg	2000 kg	2200 kg	2200 kg	2500 kg
1500 x 720 x 610 (BT40) 1500 x 720 x 680 (BT50)	1500 x 825 x 750 (BT40) 1500 x 850 x 750 (BT50)	1600 x 825 x 750 (BT40) 1600 x 850 x 750 (BT50)	1700 x 825 x 750 (BT40) 1700 x 850 x 750 (BT50)	1800 x 825 x 750 (BT40) 1800 x 850 x 750 (BT50)	2000 x 825 x 750 (BT40) 2000 x 850 x 750 (BT50)
150 ~ 760 mm (BT40) 150 ~ 830 mm (BT50)	150 ~ 900 mm	150 ~ 900 mm	150 ~ 900 mm	150 ~ 900 mm	150 ~ 900 mm
745 mm	BT40 : 850 mm BT50 : 870 mm	BT40 : 850 mm BT50 : 870 mm	BT40 : 850 mm BT50 : 870 mm	BT40 : 850 mm BT50 : 870 mm	BT40 : 850 mm BT50 : 870 mm
BT40 / BT50	BT40 / BT50	BT40 / BT50	BT40 / BT50	BT40 / BT50	BT40 / BT50
Ø 70 / Ø100 mm	Ø 70 / Ø100 mm	Ø 70 / Ø100 mm	Ø 70 / Ø100 mm	Ø 70 / Ø100 mm	Ø 70 / Ø100 mm
8000rpm (BT40, belt) 6000rpm (BT50, belt)	8000rpm (BT40, belt) 6000rpm (BT50, belt)	8000rpm (BT40, belt) 6000rpm (BT50, belt)	8000rpm (BT40, belt) 6000rpm (BT50, belt)	8000rpm (BT40, belt) 6000rpm (BT50, belt)	8000rpm (BT40, belt) 6000rpm (BT50, belt)
LV : X,Y: Linear / Z: Box BV : XYZ: Box Way	LV : X,Y: Linear / Z: Box BV : XYZ: Box Way	LV : X,Y: Linear / Z: Box BV : XYZ: Box Way	LV : X,Y: Linear / Z: Box BV : XYZ: Box Way	LV : X,Y: Linear / Z: Box BV : XYZ: Box Way	LV : X,Y: Linear / Z: Box BV : XYZ: Box Way
LV : 30 / 30 / 20 m/min BV : 15 / 15 / 12 m/min	LV : 24 / 24 / 18 m/min BV : 15 / 15 / 12 m/min	LV : 24 / 24 / 18 m/min BV : 15 / 15 / 12 m/min	LV : 24 / 24 / 18 m/min BV : 15 / 15 / 12 m/min	LV : 24 / 24 / 18 m/min BV : 15 / 15 / 12 m/min	LV : 24 / 24 / 18 m/min BV : 15 / 15 / 12 m/min
10 / 10 / 10 (M/min)	10 / 10 / 10 (M/min)	10 / 10 / 10 (M/min)	10 / 10 / 10 (M/min)	10 / 10 / 10 (M/min)	10 / 10 / 10 (M/min)
Arm type 24 T	Arm type 24 T	Arm type 24 T	Arm type 24 T	Arm type 24 T	Arm type 24 T
Bi-direction shortest path	Bi-direction shortest path	Bi-direction shortest path	Bi-direction shortest path	Bi-direction shortest path	Bi-direction shortest path
BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm	BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm	BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm	BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm	BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm	BT40 : Ø80 x 350 mm BT50 : Ø127 x 400 mm
7 / 15 kg	7 / 15 kg	7 / 15 kg	7 / 15 kg	7 / 15 kg	7 / 15 kg
BT40 / BT50	BT40 / BT50	BT40 / BT50	BT40 / BT50	BT40 / BT50	BT40 / BT50
15 / 18.5 kw	15 / 18.5 kw	15 / 18.5 kw	15 / 18.5 kw	15 / 18.5 kw	15 / 18.5 kw
3.5 / 3.5 / 3.5 Kw	4.5 / 4.5 / 4.5 Kw	4.5 / 4.5 / 4.5 Kw	4.5 / 4.5 / 4.5 Kw	4.5 / 4.5 / 4.5 Kw	4.5 / 4.5 / 4.5 Kw
Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)	Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)	Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)	Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)	Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)	Ø50/50/40 x Pitch 10(40) Ø50/50/50 x Pitch 10(50)
750w	750w	750w	750w	750w	750w
3800 x 3030 x 2585 (40) 3800 x 3030 x 2685 (50)	4250 x 3030 x 3100 (40) 4250 x 3030 x 3200 (50)	4350 x 3030 x 3100 (40) 4350 x 3030 x 3200 (50)	4450 x 3030 x 3100 (40) 4450 x 3030 x 3200 (50)	4550 x 3030 x 3100 (40) 4550 x 3030 x 3200 (50)	4800 x 3030 x 3100 (40) 4800 x 3030 x 3200 (50)
10500 / 11500 kg (40) 11000 / 12000 kg (50)	13500 / 15000 kg (40) 14000 / 15500 kg (50)	14000 / 15500 kg (40) 14500 / 16000 kg (50)	14500 / 16000 kg (40) 15000 / 16500 kg (50)	15000 / 17000 kg (40) 15500 / 17500 kg (50)	15500 / 17500 kg (40) 16000 / 18000 kg (50)
Fully Splash Guard	Fully Splash Guard	Fully Splash Guard	Fully Splash Guard	Fully Splash Guard	Fully Splash Guard
40"HQ	20"FR	20"FR	20"FR	20"FR	20"FR
600L	650L	650L	680L	700L	700L

are subject to change without prior notice.

## OPTIONAL ACCESSORIES

- CTS 20/30/50 bar (Coolant through spindle)
- 24 tools arm type ATC, BT40 (BV60, LV/BV80, LV100)
- 32 tools chain type ATC, BT50 (LV/BV1400-2000)
- Renishaw automatic tool length measuring device
- Renishaw automatic work piece measuring device
- Steelbelt (Chain) type chip conveyor with cart (BV60, LV/BV80, LV100)
- 4th axis preparation (IO connect only, not include motor & drive)
- Spindle speed 8000 rpm, BT50, Direct drive (LV/BV1400-2000)
- Spindle speed 12,000~15,000 rpm, BT40, Direct drive (LV/BV60~LV100)
- Spindle speed 4500~6000 rpm, BT50, Powerful Gear Head (LV/BV1400-2000)
- Spindle speed 10,000/12,000/15,000 rpm, BT40, Direct drive (LV/BV1400-2000)
- CNC 4th axis Rotary table with drive, motor.
- Fanuc/Siemens/Heidenhain controller
- Machine half cover (LV/BV1400-2000)
- Air conditioner for electric cabinet
- Heidenhain linear scale
- Chip flushing system
- 10.4" LCD display
- Oil skimmer
- CE Standrad



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