LITZ®

ISO 14001 ISO 9001 CE EMC

LH-500/630/800

Horizontal Machining Center

Technical Highlights:

- Innovative design, state-of-art technology
- High-rigidity T-structural design
- High-performance positioning and easy maintenance
- Spindle and 3-axes thermal displacement mitigation
- High-performance control system and user-friendly interface
- High-efficiency Chip Removal System

LITZ HITECH CORP.

Table of Content

Page

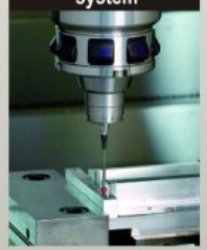
Production Bases

Main Sub-systems

Spindle system

Controller system

On-line measurement system



Thermal displacement control

Energy saving and carbon reduction

Machining performance

High Precision

APC worktable exchange

ATC system

Maintenance and repair

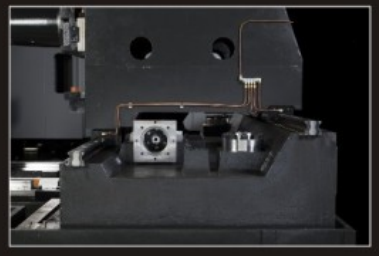
Process application

Chip removal system

Mechanical Design

Robust and Precision Machine Bed

- The major construction parts are based on Meehanite cast iron which is structurally stable, ensuring machine quality permanently.
- The computerized calculation of structural strength and reinforcing ribs is carried out by way of finite element analysis, ensuring high rigidity of the machine.



LH-630

Mechanical Rigidity

Unique rib construction

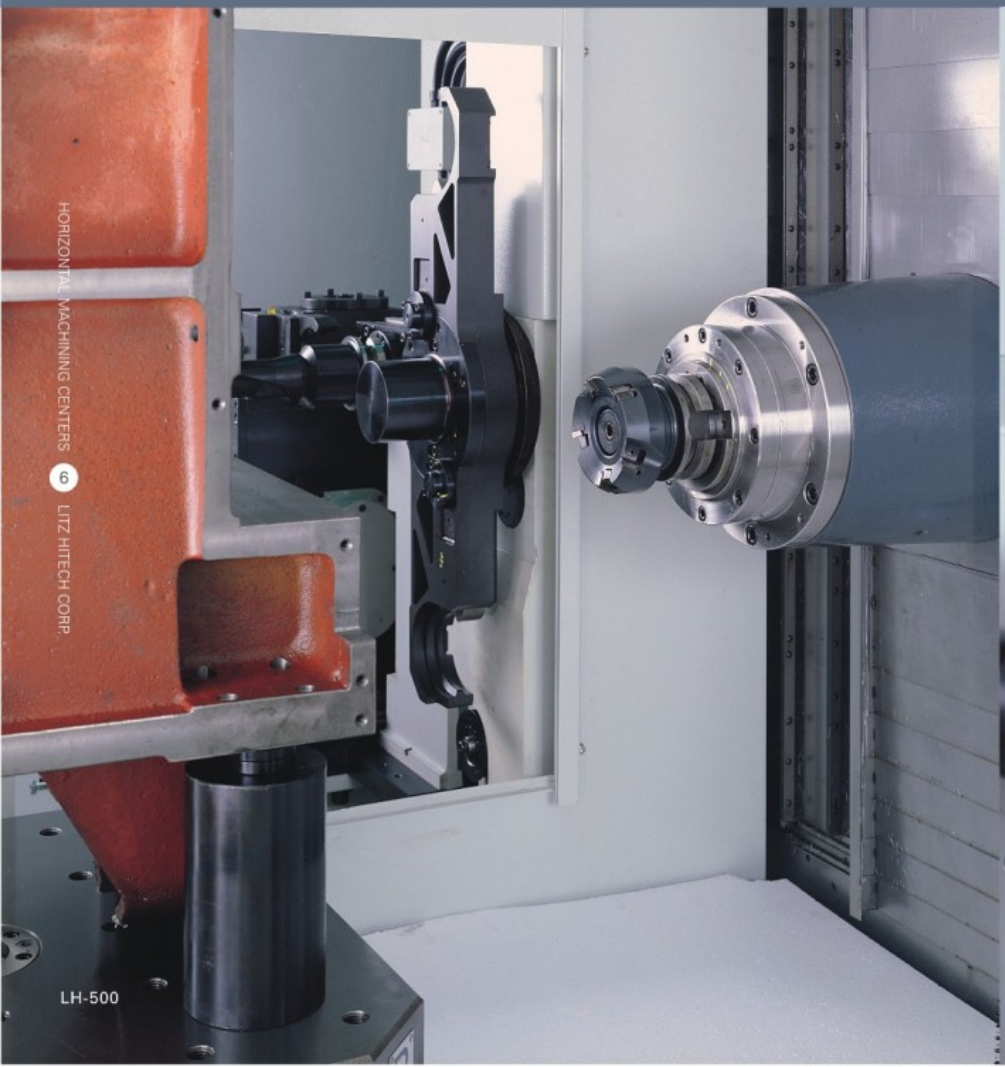
Wide base and robust structure ensure steady machining against heavy loads.

LH-630

High speed mechanism

Shortens non-machining time substantially

The capability to shorten the time for spindle acceleration, deceleration, transmission and tool change is the key to high cutting efficiency. The LH Series shortens the overall process time by increasing the speed of key mechanisms.



LH-500

Production efficiency

Gain extra profit by reducing non-machining time loss.

LH-500

Chip Disposal

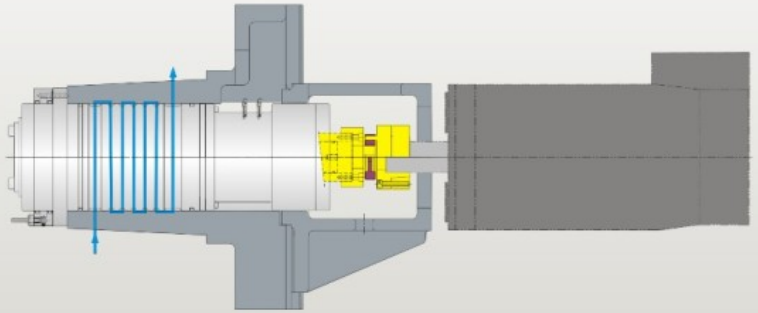
Increases machine utilization ratio substantially

The high efficiency chip disposal system completely solves the chip problems of the horizontal machine center; it not only increases machine utilization substantially but also avoids adversely affecting machining accuracy resulting from the cutting heat.

LH-500

Spindle Transmission System

Unique IDD Spindle Transmission LH-500/630

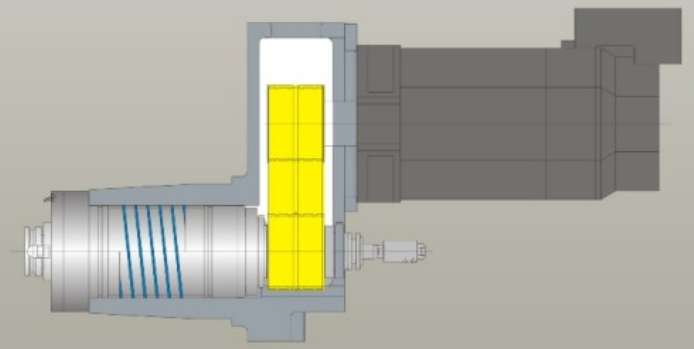


IDD the optimal heat isolation design

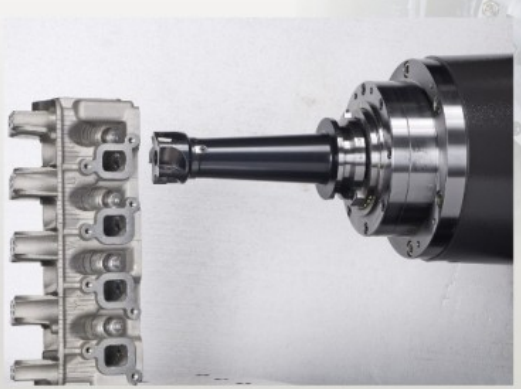
IDD (Isolated Direct Drive System)

- The spindle is free from thermal effect of main motor. Thermal displacement is reduced and the spindle accuracy and service life can be ensured.
- Thermal isolation coupling is designed between the motor and the spindle. Selecting application of the spindle oil cooling system for the entire spindle ensures increased spindle accuracy.
- The spindle is directly coupled to the motor. No more noise, backlash and vibration problems.
- The transmission efficiency is increased due to direct coupling. The high accuracy rigid tapping is achievable via direct rotation detection of the motor.

High-torque Belt Transmission System LH-500/630/800

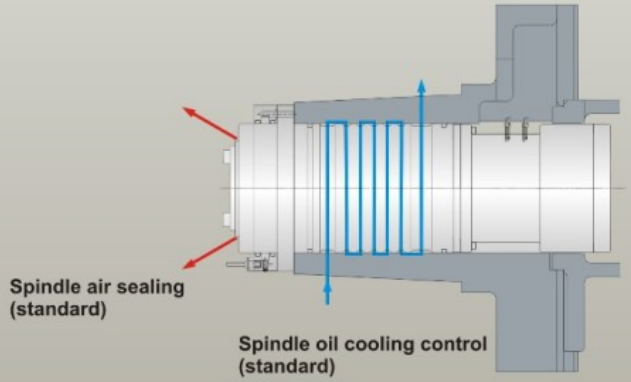


The Spindle Motor System



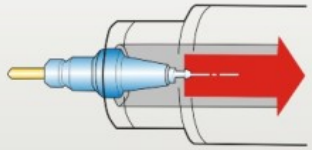
High performance FANUC spindle motors are provided with double windings, capable of both low-speed output and high-torque output; high-speed output and low-torque output.
The motor has variable speed features. When operating at the highest ratio of 1:4 in gear box option, the torque output can be controlled by software via automatic speed-change of the spindle motor.

Spindle Dust-expelling Air Curtain System



- High speed spindle with spindle oil cooling system.
  This efficiently keeps a constant temperature in the spindle, meaning less thermal displacement of the spindle, ensuring high precision of the high-speed spindle.
- The spindle air curtain system prevents the vacuum pumping effect that sucks-in dust while the spindle is at very high speed. This ensures spindle precision and prolongs spindle service life.

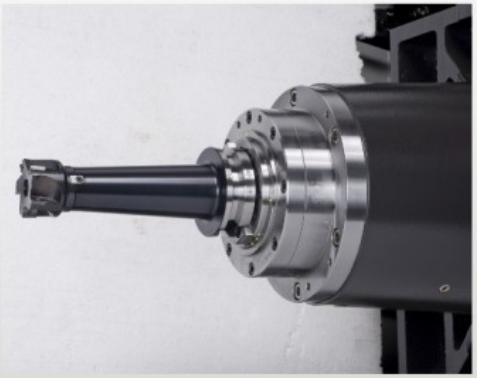
Spindle with quick reacting and high tool-pulling force



- Spindle tool-pulling force

1800kgf (17000N)

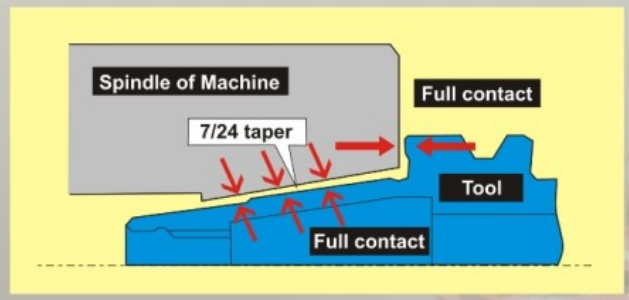
- Spindle with high tool-pulling force, providing tool clamping and high rigidity, enhancing machining rigidity.



- The spindle only takes **1.7** seconds to accelerate from 0 to 6000RPM.
- The spindle only takes **1.2** seconds to decelerate from 6000RPM to 0.

Two-face restraint BT tool holder

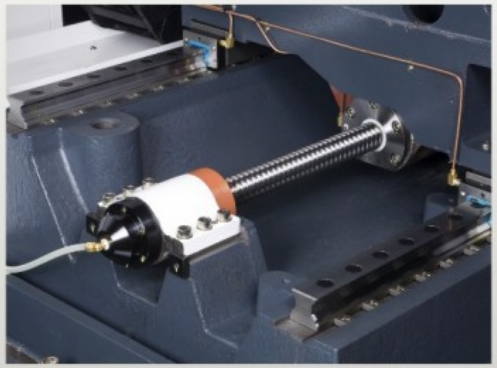
The spindle taper, 7/24 is used.



- Due to full contact between the Two-face restraint tool holder and the spindle, vibration is eliminated during the process, enhancing process precision and workpiece face precision.
- End face of spindle will not expand under high rpm operation.
- Two-face restraint tool holder offers high precision installation and high cutting capability.

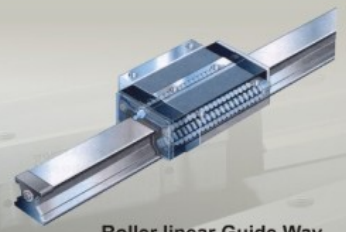
Three-Axis Transmission System

3-Axis Ballscrew system



- The 3-Axis ballscrew employs large diameter ballscrew to enhance transmission rigidity, ensuring repetitivity and precise positioning.
- X/Y/Z axis rapid speed
  36 m/min (LH-500)
  32 m/min (LH-630/800)
- Synchronized telescopic covers are provided for all 3 axes, eliminating transmission noise and vibration.

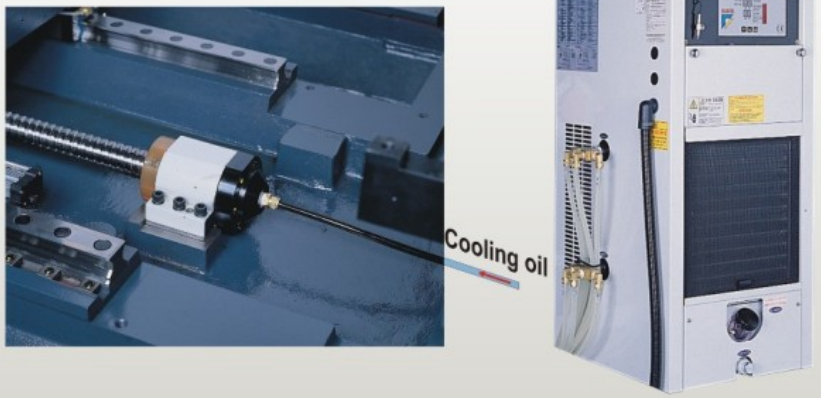
High-speed High-precision Linear Guide Way



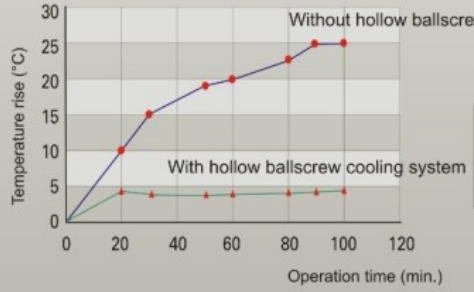
Roller linear Guide Way

- Roller linear guide ways with zero backlash ensure consistent cutting surface on curve or slope cutting.
- Suitable for high speed travel and the drive power requirement is significantly reduced.
- By using rolling contact instead of sliding contact, linear guide reduces friction loss, reacts quickly, and increases positioning accuracy.
- The loading capacity is high in multiple directions. Multiple contact points are maintained when machining, and cutting rigidity can be ensured.
- Easy to assemble, interchangeable, with a simple structure for easy lubrication.
- Long service life is guaranteed by the extremely low friction loss in the linear guide way.

Ballscrew Cooling System



Cooling efficiency of hollow ballscrew



Test conditions

Ball screw Dia. (mm)	RPM	Temperature control of cooling oil (°C)	Coolant flow rate L/min
Ø50xP12	1000	20	2.5

- The transmission ballscrew is of hollow design. The coolant oil automatically circulates through the ballscrew , eliminating heat generation and thermal expansion during high speed rotation, so as to accomplish high-speed and high precision machining.

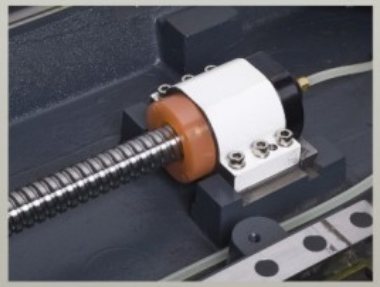
Oil-coolant separation design

Oil-coolant separation design of machine

- The machine is of oil-water separation design, ensuring separation of lubricant from coolant, preventing deterioration of the coolant resulting from mixing with lubricant, thereby ensuring process quality.

- The separated cutting fluid is recycled into tank for re-use. The lubricant is centrally collected for disposal to meet environmental requirements.

Collision prevention device



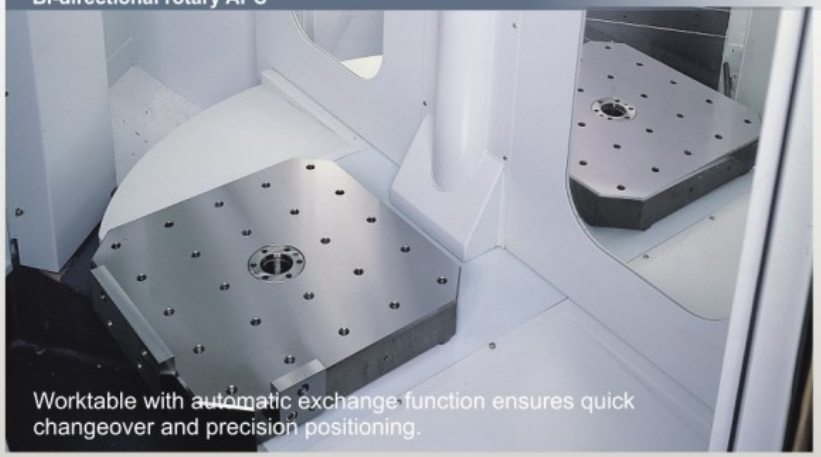
- In case of mechanical anomaly or operator negligence, the built-in collision prevention device is capable of absorbing the impact of collision, minimizing the impairment as well as maintaining the intended precision.

Direct-coupled transmission

- Direct-coupled transmission with motor and precision high-speed ballscrew.
- Pre-tension device increases rigidity of ballscrew , lowers thermal displacement and escalates precision.
- Hollow ballscrew cooling design is devised in the transmission system, significantly lowering thermal displacement resulting from high-speed rotation, and suitable for machining high-precision parts.
- C3 Class large diameter ballscrew with pre-load design ensures high rigidity and excellent precision.

APC · Worktable

Bi-directional rotary APC



Worktable with automatic exchange function ensures quick changeover and precision positioning.

Worktable

Minimum division of worktable:
1° (standard)

Minimum division of worktable:
0.001° (optional)

Stand-by worktable can be arbitrarily rotated manually **0° ~ 90°**.

Tool Change System and Magazine

LH-500

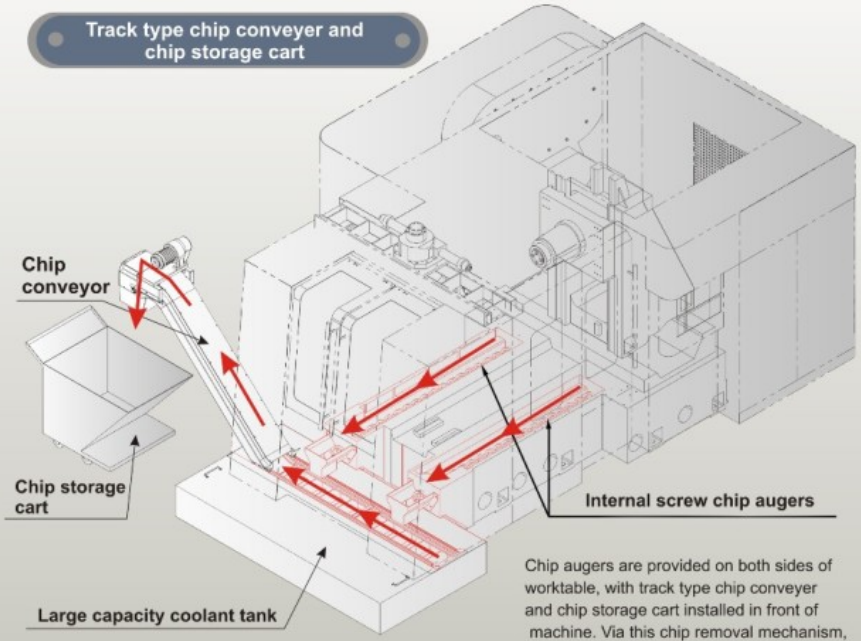
- Fast, simple, reliable and long service life tool changer system provides stable and reliable tool change operation.
- The unique tool change system adopts an advanced cam drive device. Tool selection can be done quickly using the PLC program from any tool position.
- The ATC system passed 1,000,000 endurance tests to meet reliability requirements.
- The cam drive device of the magazine ensures precision rotation, ensuring smooth operation of the magazine even in heavy tool operation.

Quick tool change mechanism (LH-500)

Servomotor driven magazine

Chip Removal System

Track type chip conveyer and chip storage cart



Chip augers are provided on both sides of worktable, with track type chip conveyer and chip storage cart installed in front of machine. Via this chip removal mechanism, large amount of metal chips can be handled.

Selection of track type chip conveyor device

● : Excellent result ○ : OK X : Inferior result

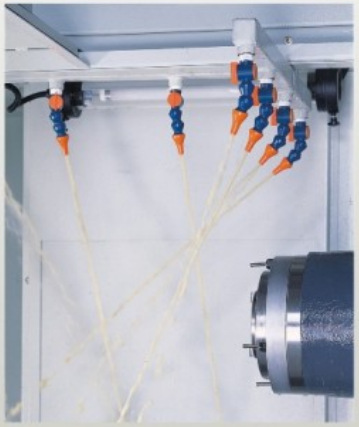
Material		Steel	Cast iron	Al / colored metal	Mixed chips
Shape of chips					
Internal chip remover	Screw type	○	○ (Dry cutting)	○	○
Track type chip conveyor	Scrap type: Cast iron (heavy)	×	●	×	○
	Scrap type: Aluminum (light)	×	×	●	○
	Chain-type	●	○	×	○

Chip wash-down system

Coolant tank and disc-type and oil separation

- Disc-type oil separator is easy to install and saves space.
- Disk-type oil separator enables effective separation of floating oil in the coolant tank, ensuring quality and prolonged service life of the coolant, therefore, the quality of the process is improved.

Internal coolant/wash down device



- Coolant is sprayed from nozzles above the hood, preventing accumulation of chips.

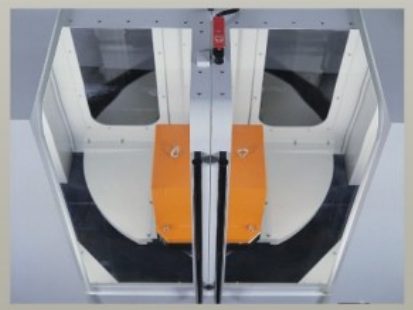
Coolant Spray Gun

- Spray gun for easy and prompt cleaning of the machine, removes and cleans remaining chips that stick and adhere to the machine, maintaining the machine in a clean and tidy condition.

Minimal floor area requirement

Compact machine design ensures minimal floor area, making the best use of limited space.

Excellent front door transparency



Excellent operation door transparency

Front door and operation door of the machine comprise wide spread acrylic / safety glass with high transparency accompanied with high luminance fluorescent lights for convenient surveillance over the operation.

Maintenance Performance

In order to shorten the non-processing maintenance time, the machine allows quick and easy maintenance to take place at all positions.

Magazine Access Door for easy maintenance

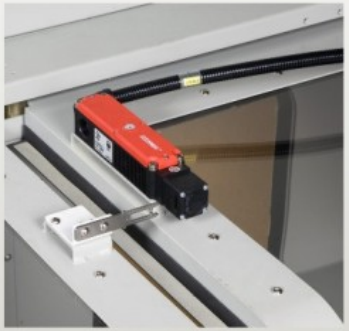
Centralized cables and pipelines (hydraulic system)

Access Door for easy maintenance

Centralized accessories of Automatic Pallet Changer

Safety System

Safety Door Interlock



- When the door remains open, the programmed operation will not start, ensuring safety of the operator.
- For the safety of the operator, opening the door during machining will stop the program.

Warning Light

- On completion of a processing program, the yellow warning light will flash, notifying the operator to unload/load the workpiece.
- In the event of machine anomaly which causes an alarm message, the red light will flash; emergency troubleshooting is therefore required.

Buzzer alarm

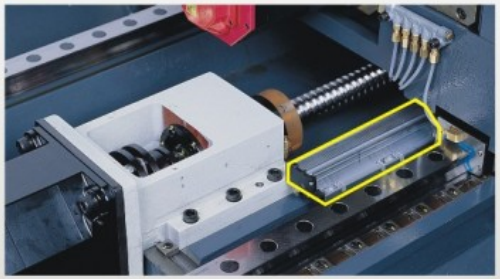
- In case of anomaly during the process that gives a warning message, the buzzer will beep, informing the operator that emergency troubleshooting is required.

Low-air-pressure Indicator

- When the pressure of the compressed air system becomes lower than the setting value, the pressure detector will deliver an air-system anomaly signal to the system controller, with an alarm message indicated.

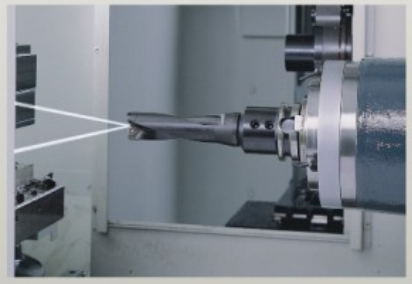
High Performance Accessories

Optical linear Scale OP



- Optical linear scale System can be added to X/Y/Z- Axes, for feeding back signal of thermal displacement caused by high-speed movement of machine, so that compensation can be made by the controller accordingly. This is suitable for processing high-precision parts.
- Optical Scale is provided with air protection device to prevent any damage by dust or oil, so as to ensure accuracy and prolonged service life of the Optical Linear Scale.

Coolant through spindle OP



- Coolant through spindle and sprays from tool nose, directly cools down the workpiece and carries heat away from tool blade, ensuring quality of the process. Especially suitable for deep hole drilling.

Splash ring of Spindle

- 4 splash nozzles are allocated around the spindle, ensuring the best cooling effect of the tool and workpiece, and achieving quality processing.

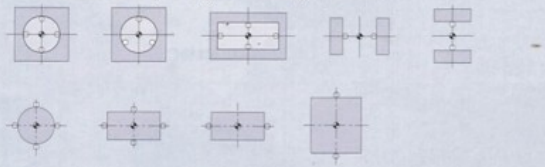
On-line Measurement System

Workpiece Measurement System OP

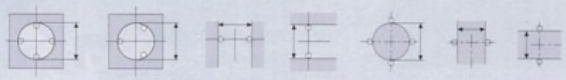
- RENISHAW RMP60 is used.
- Automatic center measurement and automatic measuring point.
- Automatic Measurement Applications are shown in the following illustrations.

Automatic Measurement Applications

- **Setting the Origin**
  Automatic setting of origin of working coordinates



- **Measuring**
  Measuring workpiece dimensions

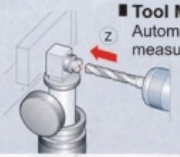


Tool length measuring system OP

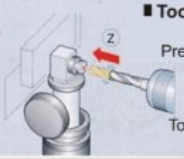
- RENISHAW NC4S is used.
- Automatic tool detection and tool breakage detection.
- Automatic Measurement applications are shown as follows:

Automatic Measurement applications

- **Tool Measuring**
  Automatic tool length measurement.

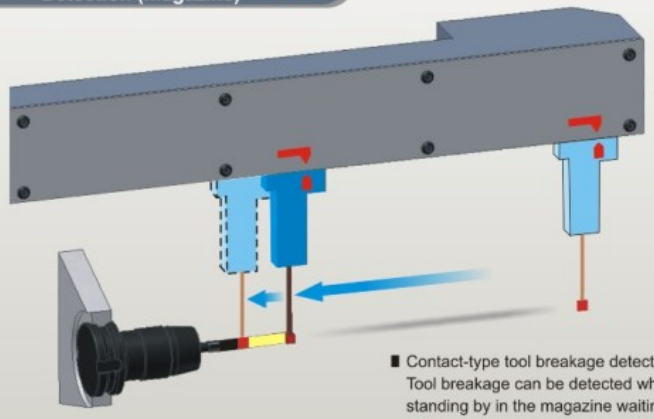


- **Tool breakage detection**
  Prevents further damage, automatic detection of Tool Breakage.



Automatic Tool Breakage Detection

Automatic Tool Breakage Detection (magazine) OP



- Contact-type tool breakage detection system. Tool breakage can be detected when the tool is standing by in the magazine waiting to be changed. When tool breakage is detected, the control system issues a message to prevent any damage to subsequent process engineering.
- Tool measurement and tool breakage can be performed within the magazine, therefore not impeding the processing time.

Lower Power Consumption

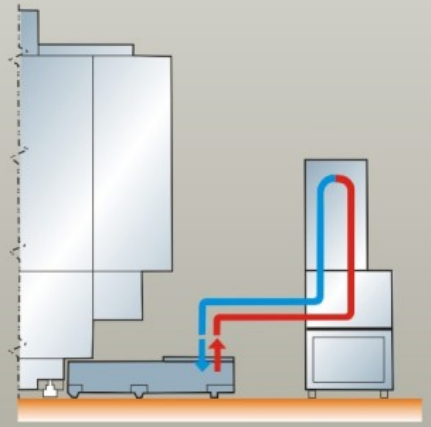
- **Indoor light OFF function**
  Indoor lighting will be shut off automatically when the touch screen has been left inoperative for a set duration. This helps to save energy and prolong lifespan of the lamp.
- **Power OFF function**
  Power to the servomotor, spindle motor, coolant pump, chip conveyor will be shut off when the keypad and the controller have remained inoperative for a set duration, so as to minimize power consumption.
- **Lubrication System OFF function**
  When the 3-axis guideway has remained inoperative for a set duration, the automatic lubrication system will be shut off automatically, to save use of lube oil.
- **Display OFF function**
  The display will be shut off automatically when the control panel has been left untouched for a set duration, to save power consumption and prolong lifespan of the display.

Oil Mist Collector System

Oil Mist Collector System OP

- The fully enclosed sheet-metal hood and mist collector effectively collect the particles and mist produced by machining, so that the operator can be protected from inhaling harmful substances that risk harming the health.
- When producing high-precision parts in an enclosed space or clean room, the Mist Collector ensures effective control of air quality to meet green technology requirements.

Coolant cooling system OP



- Coolant cooling system offers control of heat generated by prolonged processing, ensuring machining precision.

Humanized Man-Machine Interface

Convenient Operation

Operation System Corresponding the New Generation

- FANUC 10.4"LCD Color Monitor
- Pushbutton type operation panel developed by LITZ, for easy and prompt input.
- Protection covers are provided for critical keys on the panel, for a reconfirmed execution to prevent any mistake.

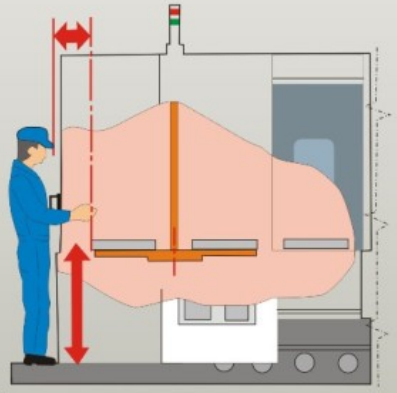
Access Distance

Distance to Worktable

270mm (LH-500)
360mm (LH-630)
402mm (LH-800)

Height of Worktable

878mm (LH-500)
993mm (LH-630)
988mm (LH-800)



- Shortens distance between operator and worktable.

Width of door opening

822mm (LH-500)
1200mm (LH-630)
1330mm (LH-800)

- Wide door opening design facilitates loading/unloading of workpiece and jigs.

Controller Specifications

(FANUC 18i)

Standard Specifications	
Controlled Axes	
Control Table	X.Y.Z.B
Number of simultaneously controlled axes	Positioning/ linear interpolate/ Arc interpolate (3/3/2)
Input command	
Minimum setting unit	0.001mm
Minimum movement unit	0.001mm
Maximum command value	±99,999.999mm
Absolute/relative program	G90/G91
Input of decimal point	
Imperial/metric conversion	G20/G21
Tape code	EIA ISO automatic verification
Interpolation	
Positioning	G00
Linear interpolation	G01
Arc interpolation	G02/G03
Helical interpolation	G02.1/G03.1
Acceleration/Deceleration after cutting interpolation	
Feed	
Feeding speed	1~10,000mim/min
Temporary feed stop	G04
Handwheel feed	Manual pulse generator 1 unit x1. x10. x100 (per scale)
Automatic acceleration/ deceleration	Linear (feed) / exponential function (cutting feed)
Rapid feed ratio	FO(ine feed),25/100%
Cutting feed ratio	0~150%(at 10% increment)
Feed rate adjustment cancel	
Spindle positioning	
Manual jog feed	0~1,260mim/min(15 grades)
Feed per min.	
Program storing and editing	
Program storage capacity	1280m
Program editing	Erase, interpolate, change
Searching function	Program No., Serial No., Address
Number of registered programs	200
Program No./Program Name	4 rows/48 characters
Accurate stop method	G61
Automatic deceleration at turn angle	G62
Taping method	G63
Cutting method	G64
Accurate stop	G09
Operation, Display	
Operation panel, display	10.4" TFT color LCD display
Input/output function, device	
Input/output interface	RS-232-C/PCMCIA(type Ⅰ、Ⅱ)
RS-232-C tape operation	
Spindle function (S function)	S5-row specification
Spindle speed ratio	50~120% (10% increment)
Tool function (T function)	T4-row specification
Auxiliary function (M function)	M3-row specification
Tool compensation	
Tool position compensation	G45~G48
Tool radius compensation	G40~G42
Number of Tool Offset Groups	200 groups
Tool offset memory C	D/H code, shape/abrasion
Tool length offset	G43,G44,G49
Number of tool offset groups	999
Programmed input of offset	
Coordinate system	
Programmable data input	G10
Automatic origin reset	G28
Second origin reset	G30
Origin reset confirmation	G27
Automatic Setting of coordinate system	
Setting of coordinate system	
Selection of workpiece coordinates	G54~G59
Setting of Local Coordinates	G52
Local Coordinates system	G53
Total number of workpiece coordinates system	(48 groups)
Coordinates rotation	G68、G69
Operation support function	
Single block	
Selective stop	
Skip of selective program block	
Dry run	
Mechanical lock	
Auxiliary function lock	
Absolute manual value	
Z-axis lock	
Operation time/Part No. display	
Expansion method editing	
Background editing	
Load cell display screen	
Arc interpolation Time display	
Program support function	
Arc radius R specification	G73,G74,G76,G80~G89,G98,G99
Hole drilling fixed cycle	Maximum 4 duplicates
Subroutine	
Customer program group B	
One direction position check	G61/G64
Rigid tapping	G84
Preview control function	
Mechanical system precision offset	
Backlash offset	±9,999pulses
Rapid movement/ feed rate backslash independent compensation	
Program re-start	
Total of Macro Shared Variables	(600)
A1 outline control function	G5.1 Q1
A1 Nanometer outline control function	G5.1 Q1
Mechanical Support Function	
Axis Interlocking	External input control axis interlocking is optional
Automation support function	
Jump function	G31
Safety, Maintenance	
Diagnosis function	Alarm display, input output signal diagnosis, ladder diagram recording paper
Display of historical alarms	Digital control, computer alarm
Display of historical operator massage	Detects abnormal loading
Software status monitoring	

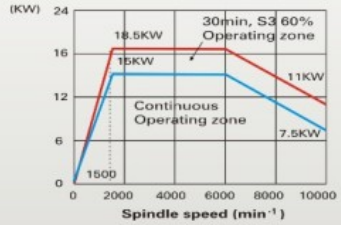
Optional specifications
Addition of registered programs1,000
☐ Input unit 1/10 folds
☐ Hypothetical axis offset
☐ Polar coordinate offset

Optional specifications
☐ NURBS offset
☐ Smooth offset
☐ Cylindrical offset
☐ Exponential function offset
☐ F1 feed (F1-F9)
☐ Feed per revolution
☐ Data server (ATA Card)
☐ F15 Format
☐ Constant circumference speed control
☐ Tool position layout (G45~ G48)
☐ 3D Tool offset
☐ Serial number comparison stop
☐ Addition of arbitrary jump of program block BDT2~BDT9)
☐ Process time marking function
☐ Specification of chamfer of arbitrary angle
☐ Insertion of customer macro
☐ Program mirror image
☐ Automatic rotation angle speed adjustment
☐ Zooming
☐ Coordinates command
☐ A1 high-precision outline control function G05 P10000
☐ A1 Nanometer high-precision outline control function G05 P10000
☐ High-speed jump
☐ Multiple jump
☐ Tool life management
☐ Addition of tool life management groups (512 groups)
☐ Coordinate command disable G15
☐ Coordinate command enable G16
☐ Mirror image
☐ Tool length measurement
☐ Single direction positioning G60
☐ Tool offset 999
☐ Number of Programs 400/1000
☐ Dynamic circle display
☐ Process inclination function selection
☐ Tool (INPC)
☐ Program memory 2560m (1024kb)

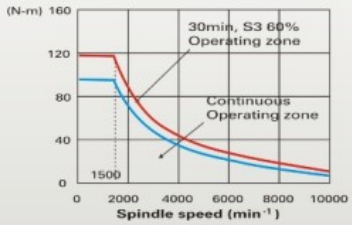
Spindle motor power and torque charts

LH-500A/B FANUC α15

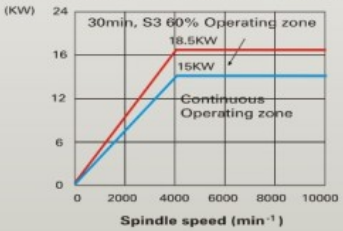
Low-speed winding output (Y connection)



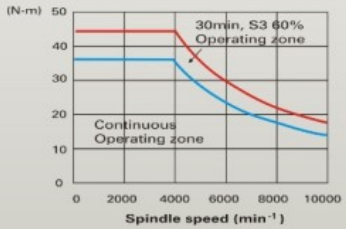
Low-speed winding torque (Y connection)



High-speed winding output (△ connection)

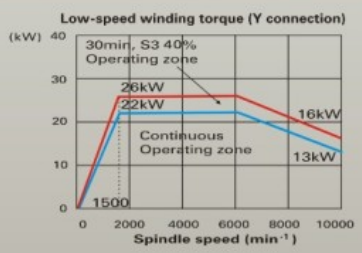


High-speed winding output (△ connection)



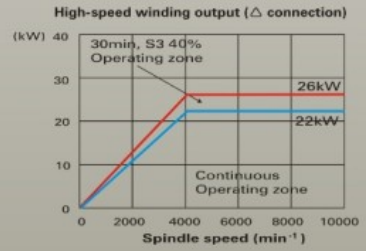
LH-630A/B ,LH-800B FANUC α22

Low-speed winding torque (Y connection)

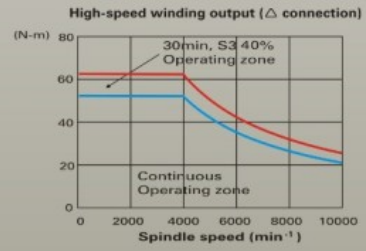


Low-speed winding torque (Y connection)

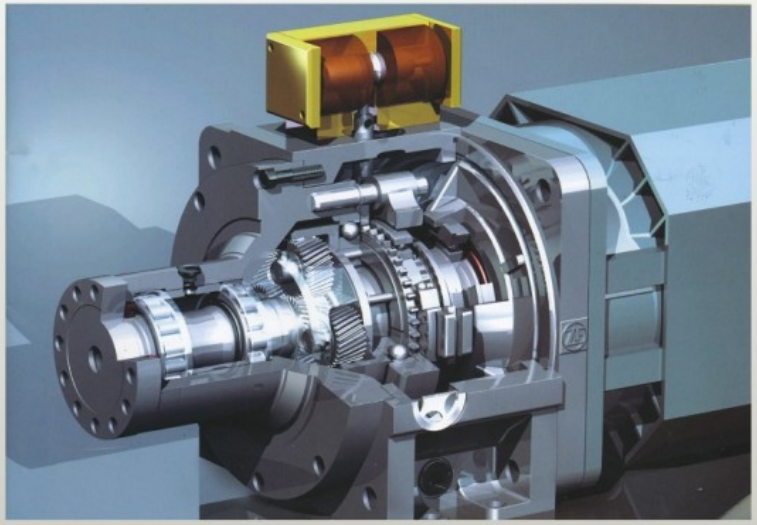
High-speed winding output (△ connection)



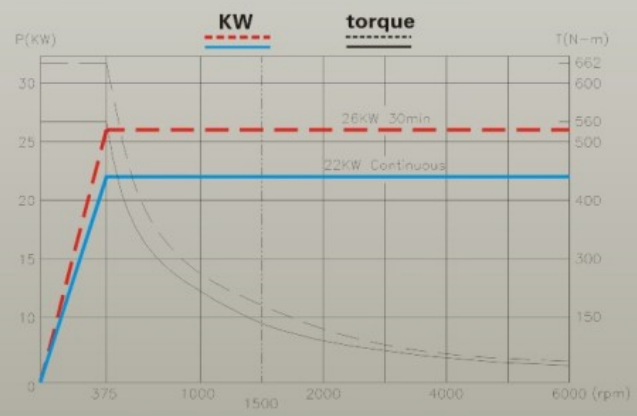
High-speed winding output (△ connection)



ZF + FANUC High-torque motor



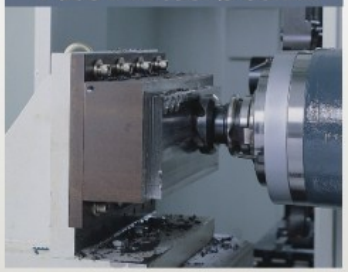
(α22/7000i) (22/26Kw) 660Nm(30 min. rating)



α22/7000i+ZF(1:4) Spindle speed 6000rpm
Spindle Power-Torque Chart

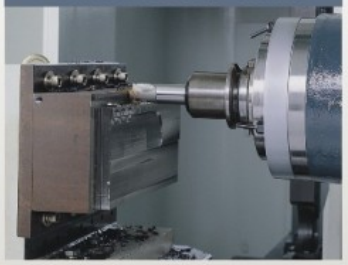
Cutting data

Face mill tool Ø 80mm



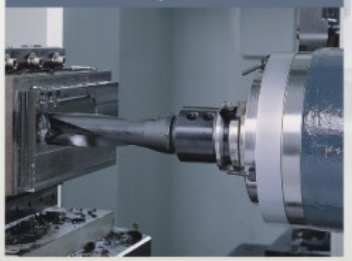
LH-500B	Chip removal capacity **334mL/min** Spindle rpm 1000 rpm Feedrate 1200 mm/min
LH-630B	Chip removal capacity **400mL/min** Spindle rpm 1000 rpm Feedrate 1300 mm/min
LH-800B	Chip removal capacity(∅100) **600mL/min** Spindle rpm 700 rpm Feedrate 1000 mm/min

End mill tool Ø 40mm



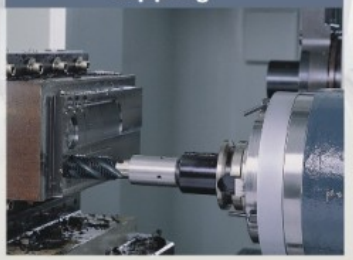
LH-500B	Chip removal capacity **150mL/min** Spindle rpm 500 rpm Feedrate 175 mm/min
LH-630B	Chip removal capacity **197mL/min** Spindle rpm 640 rpm Feedrate 230 mm/min
LH-800B	Chip removal capacity **296mL/min** Spindle rpm 700 rpm Feedrate 340 mm/min

Drill tip Ø 50mm



LH-500B	Chip removal capacity **177mL/min** Spindle rpm 900 rpm Feedrate 90 mm/min
LH-630B	Chip removal capacity **220mL/min** Spindle rpm 900 rpm Feedrate 113 mm/min
LH-800B	Chip removal capacity(∅60) **282mL/min** Spindle rpm 770 rpm Feedrate 100 mm/min

Tapping



LH-500B	Chip removal capacity **M36xP4.0** Spindle rpm 88 rpm Feedrate 352 mm/min
LH-630B	Chip removal capacity **M40xP4.0** Spindle rpm 88 rpm Feedrate 352 mm/min
LH-800B	Chip removal capacity **M42xP4.5** Spindle rpm 88 rpm Feedrate 352 mm/min

High accuracy

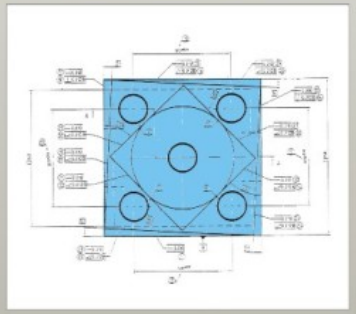
Laser Inspection

- The full travel is inspected and compensated by a laser measurement instrument, ensuring machine accuracy and calibration results.

Dynamic Spindle Balancing

- The IRD dynamic balancing instrument calibrates spindle speed, displacement, and acceleration at the maximum rpm.

Standard Specimen Test



- Besides inspection by precision instruments, every machine is subject to a dynamic cutting test according to international standards.
- On completion of the cutting test, the standard specimen is measured using a 3D measuring machine to ensure accuracy.

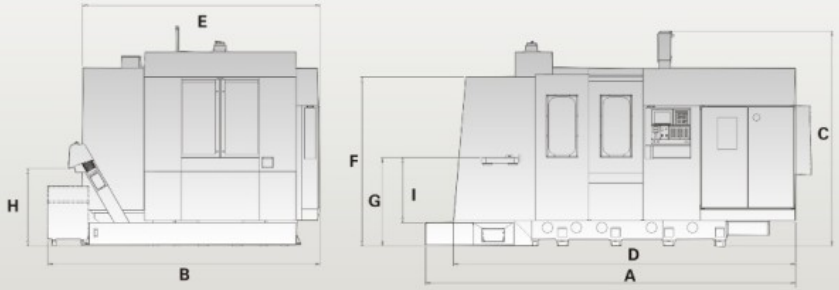
Ball-Bar inspection

- The Ball-Bar instrument is used for calibrating roundness and geometric accuracy of the machine to ensure precision 3D movement of the machine.

Machine Dimensions

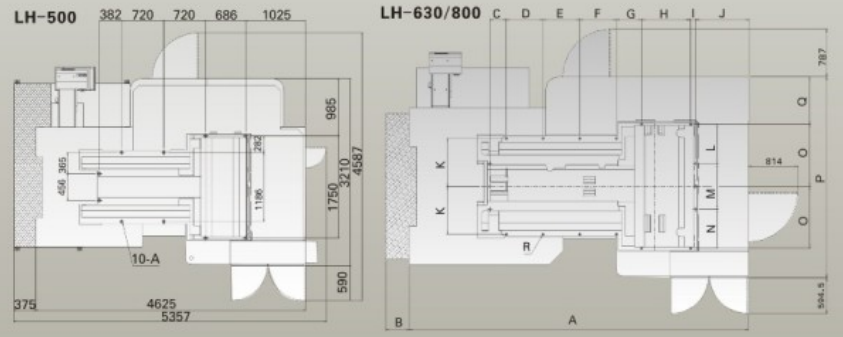
Unit: mm

Dimensions



Model \ Position	A	B	C	D	E	F	G	H	I
LH-500	5000	3680	2904	4625	3210	2283	1195	1046	878
LH-630	5966	4000	3362	5577	3470	2550	1295	1132	993
LH-800	6991	4506	3948	6581	4326	2932	1290	1132	988

Floor space and foundation diagram

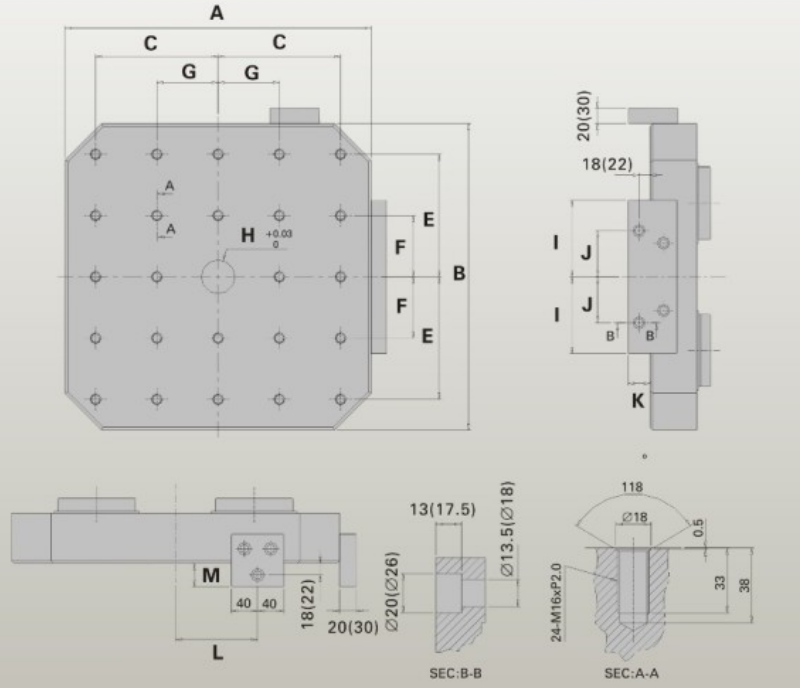


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
LH-630	5577	389	273	603	603	603	414	806.5	75	889.5	788.5	—	—	—	1020	3470	951	14
LH-800	6581	410	545	660	660	660	435	895	75	980	---	814	764	914	---	4326	1355	16

Machine Dimension

Unit: mm

Pallet Dimensions

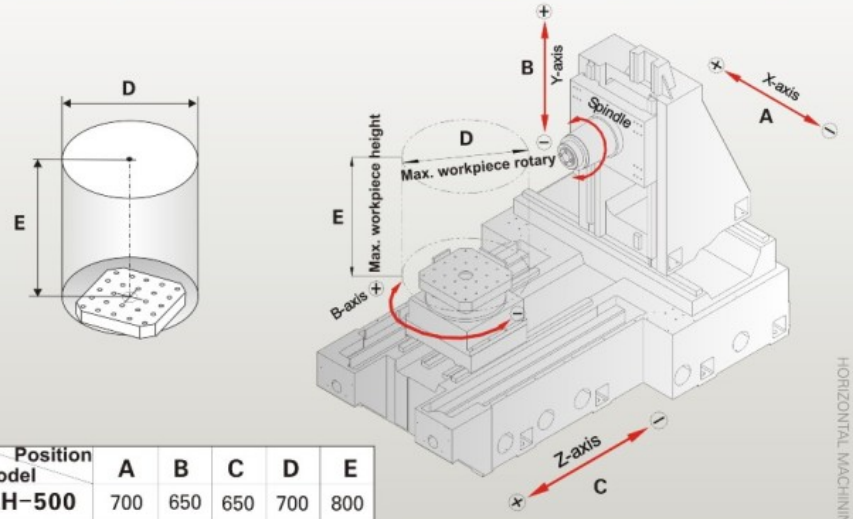


STD: LH500/630
( ):LH-800

Position / Model	A	B	C	E	F	G	H	I	J	K	L	M
LH-500	500	500	200	200	100	100	55	125	75	36	125	36
LH-630	630	630	250	250	125	125	30	105	55	35	60	35
LH-800	800	800	320	320	160	160	55	200	135	41	200	41

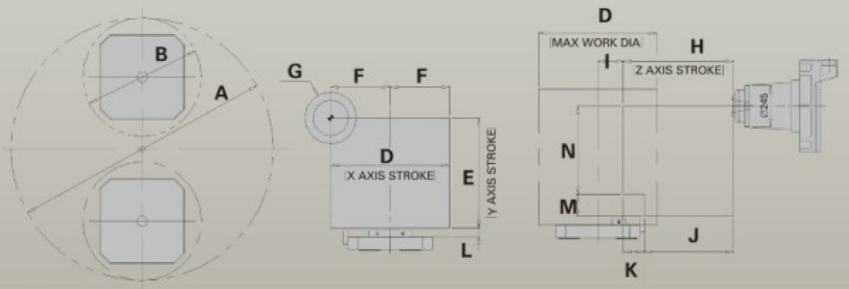
Unit: mm

Traverse Diagrams



Position / Model	A	B	C	D	E
LH-500	700	650	650	700	800
LH-630	1000	850	950	1000	1000
LH-800	1300	1200	1200	1300	1200

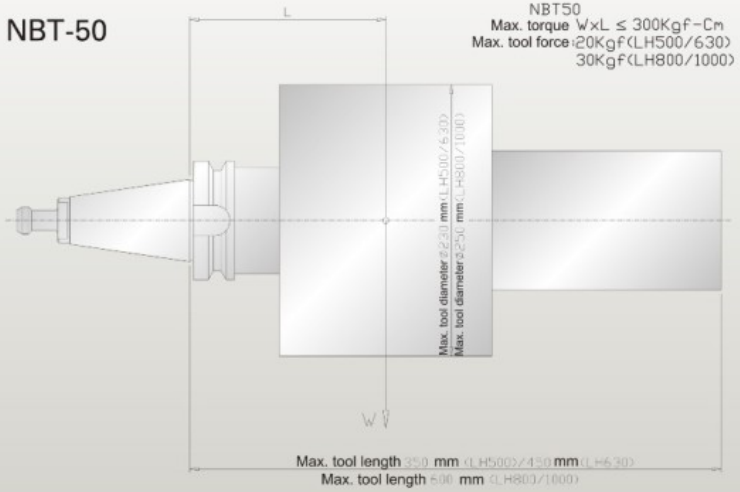
Machining Range



Position / Model	A	B	D	E	F	G	H	I	J	K	L	M	N
LH-500	1550	700	700	650	350	306	650	150	525	125	50	130	520
LH-630	2230	1000	1000	850	500	306	950	150	760	190	100	80	770
LH-800	2900	1300	1300	1200	650	306	1200	200	960	240	100	85	1115

Tool Specifications

NBT-50



Tool package (SYIC) OP

- This tool package uses SYIC tool holder
- The photo shows NBT-40 model ; NBT-50 tool package is also available for option.

Detailed contents of NBT40 tool Package

Item specifications		
BT40-ER20A-100-PG	ER tool shank	1
ER20-4mm-A	ER Sleeve clamp, A-grade	1
ER20-6mm-A	ER Sleeve clamp, A-grade	1
ER20-8mm-A	ER Sleeve clamp, A-grade	1
ER20-10mm-A	ER Sleeve clamp, A-grade	1
ER20-12mm-A	ER Sleeve clamp, A-grade	1
ER20-A-W wrench	ER wrench, A-type	1
BT40-FMA31.75-45	Plane milling tool shank	1
KM-80	45deg. type milling tool	1
SEHT1204AFEN-M01 0M4025	Blade	10
BT40-45G	Pull stud, 45deg	2
M5-11-7.0-55	Screw	1
T20	Spanner	1
CHMT-6020	Oil	1

List of accessories

●Standard accessory ○ Optional ☆Requires consultation —Not available

	LH-500A	LH-500B	LH-630A	LH-630B	LH-800B
Spindle					
Spindle speed 6000RPM	—	●	—	●	●
Spindle speed 8000RPM	—	○	—	○	○
Spindle speed 10000RPM	●	—	●	—	—
Spindle coolant system	●	●	●	●	●
Spindle air seal system	●	●	●	●	●
Spindle belt transmission	—	—	—	●	●
Spindle direct transmission	●	●	●	—	—
Spindle belt transmission + ZF gear	—	—	—	○	●
3-axis transmission system					
3-axis roller linear rail	●	●	●	●	●
3-axis ballscrew cooling system	●	●	●	●	●
Linear scale system	○	○	○	○	○
Fourth axis optical encoder	○	○	○	○	○
Pallet unit					
Pallet 1° division	●	●	●	●	●
Pallet 0.001° division	○	○	○	○	○
Pallet M16 fixing hole	●	●	●	●	●
Pallet T-slot	○	○	○	○	○
Cooling system					
Splash ring	○	○	○	○	○
Spindle Air Seal System	●	●	●	●	●
Coolant through Spindle system	○	○	○	○	○
Chip Removal System					
Track type chip conveyor system	●	●	●	●	●
Chip storage cart	●	●	●	●	●
Built-in screw-type chip auger	●	●	●	●	●
Built-in oil-liquid separator	●	●	●	●	●
Overhead chip wash-down system	●	●	●	●	●
Disc-type coolant separator	○	○	○	○	○

	LH-500A	LH-500B	LH-630A	LH-630B	LH-800B
Safety System					
Front door/Side door safety switch	●	●	●	●	●
CE Safety Specifications	○	○	○	○	○
Measuring system					
Tool length measuring system NC-4S	○	○	○	○	○
Workpiece measuring system PMP-60	○	○	○	○	○
Tool breakage detection (magazine)	☆	○	☆	○	☆	○	☆	○	☆	○
ATC and Magazine Systems					
Tool Storage Capacity 40T		●	—	●	
Tool Storage Capacity 60T	●	○	●	○	●
Tool specification NBT	●	●	●	●	●
Tool specification CAT	○	○	○	○	○
Tool taper NO 40	●	—	●	—	—
Tool taper NO 50	—	●	—	●	●
Electrical					
M30 Automatic power-off system	●	●	●	●	●
Working light (lighting)	●	●	●	●	●
Warning light	●	●	●	●	●
Electrical cabin air-conditioner	○	○	○	○	○
Electrical cabin heat exchange system	●	●	●	●	●
Controller					
FANUC 18i	●	●	●	●	●
FANUC 31i	○	○	○	○	○
FANUC 0iMD	○	○	○	○	○
Other					
Mist collector unit	○	○	○	○	○
Rotary window	○	○	○	○	○

Technical Specifications

		LH-500A	LH-500B	LH-630A	LH-630B	LH-800B
Travel						
Travel, X/Y/Z	mm	700/650/650		1000/850/950		1300/1200/1200
Spindle center to pallet face	mm	50-700		100-950		100-1300
Spindle nose to pallet center	mm	150-800		150-1100		200-1400
Pallet						
Pallet size	mm	500x500		630x630		800x800
Maximum workpiece	mm	Ø700		Ø1000		Ø1300
Maximum pallet load	kg	500		1000		2000
Maximum workpiece height	mm	800		1000		1300
Pallet surface configuration	mm	24-M16 Pitch 100		24-M16 Pitch 125		24-M16 Pitch 160
Pallet minimum division angle		1°		1°		1°
Spindle						
Spindle max. speed	RPM	10000	6000	10000	6000	6000
Low/High gear variation	RPM	1200		1200		------
Spindle max. torque (cont.)	Nm	141		165		310
Spindle taper		7/24Taper,No.40	7/24Taper,No.50	7/24Taper,No.40	7/24Taper,No.50	7/24Taper,No.50
Spindle bearing ID	mm	70	100	70	100	100
Spindle bransmission		Direct couple	Direct couple	Direct couple (Belt + ZF)		Belt + ZF
Feed						
Max. X/Y/Z Rapid speed	mm/min	36000		32000		32000
Cutting feed rate	mm/min	1-10000		1-10000		1-10000
Manual feed rate	mm/min	1260		1260		1260
Automatic Tool Change						
Type of tool shank		ISO 40/NBT-40	ISO 50/NBT-50	ISO 40/NBT-40	ISO 50/NBT-50	ISO 50/NBT-50
Tool capacity	PC	60	40	60	40	60
Max. tool diameter (without neighboring tool)	mm	95(190)	120(230)	80(160)	115(230)	125(250)
Max. tool length	mm	350	350	450	450	600
Max. tool weight	kg	8	20	8	20	30
ATC change time (T to T)	Sec	5		5		5
Tool selection method		Random/Fixed address				

		LH-500A	LH-500B	LH-630A	LH-630B	LH-800B
Automatic Pallet Changer						
Number of Pallet	pc	2		2		2
Pallet Change method		Rotary		Rotary		Rotary
Time for APC	sec	18		18		18
Controller system						
FANUC		18i		18i		18i
Motor						
Spindle motor, power	KW	15/18.5		22/26		22/26
Spindle max. torque (30 min.)	Nm	120		170		660
X/Y/Z/B axis motor	KW	7/7/4/1.6		7/7/7/3		7/6/7/3
Motor, Hydraulic system	KW	2.2		2.2		2.2
Motor, coolant pump system	KW	1.6		1.6		1.6
Power Supply						
Power requirement	KVA	42		42		42
Capacity of oil tank/coolant tank						
Capacity, Hydraulic System	L	60		60		60
Capacity, Lubrication System	L	4		4		4
Capacity, coolant system	L	760		800		850
Mechanical Specifications						
Height	mm	2970		3362		3900
Floor area	mm	3210x5000		5966x3470		6991x4326
Weight	kg	15000		23000		25000

- All photos in this catalog are for reference only. Please refer to the actual machine in case of discrepancies.
- LITZ reserves the right to make alterations or deletions to the specifications, appearances and accessories of the product.

Manufacturer

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Agent

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