

2009
AKIRA - SEIKI®
Horizontal Turning Center



Headquater

AKIRA - SEIKI®
PRECISION CNC MACHINE TOOLS

Headquater

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AKIRA-SEIKI®

Always keeps moving to advance your future success.

With more than 20 years solid profession in machine tool technology, Akira Seiki expands marketing development from USA to the international.

In the past, we built reliable machineries to process customers' success in USA where is keen competition. Now, we broaden our mission to progress your competition wherever you are.

AKIRA SEIKI President



▲ AKIRA-SEIKI® Headquarter in USA



▲ AKIRA-SEIKI® 1st Factory

Well Practice In Quality

Akira Seiki well management in production and quality is the fore and ever guarantee to our customer. Thorough practice of **Quality Process Activity**, every Akira Seiki execution is regulated and presented with documentary **Standard Operation Procedure**. Akira Seiki always carries on the professional **Research & Development** of next successful machine tool product to keep our customer advancement in the future.



◀ Plenty storage in Material Resource Department



▲ Research and Development

▲ Inspection while assembly



▲ Quality Control



◀ Spindle test run

Brochure Guide

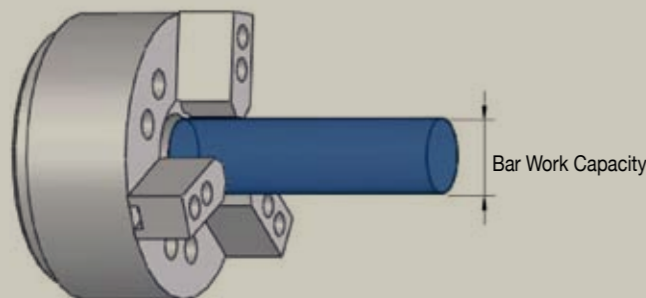
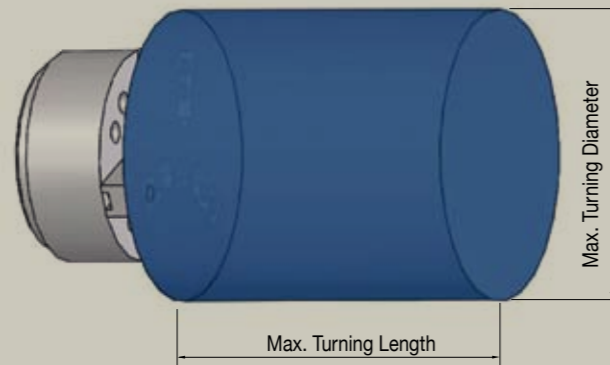
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AKIRA-SEIKI® SL Horizontal Turning Center

Extend more turning capability than your expectation!



Model Guide by Working Envelop



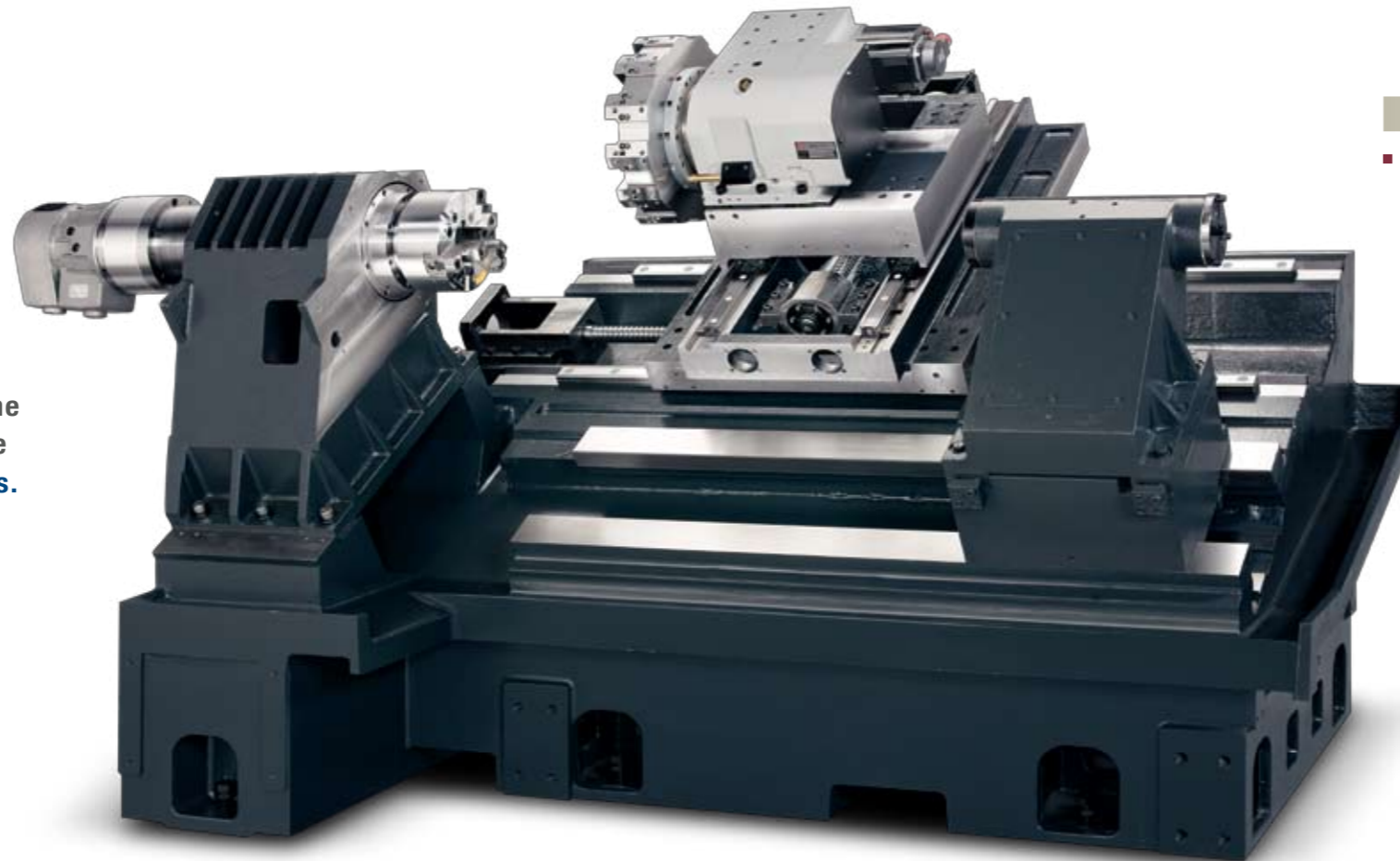
	Model	Swing over bed	Turing diameter x length	Bar work	Sub spindle	C1 axis	C2 axis	B axis	Y axis
Performa 2-axis	GT12 / SL15 / SL20	400-450	250 x 200	42 - 45					
	SL25	500	350 x 400	52					
	SL30 / SL30L	600	400 x 600 - 1000	65					
	SL35 / SL35L	650	450 x 600 - 1000	78					
	SL40 / SL40L	750	500 x 750 - 1500	103					
Performa 3-axis	SL25 MC	500	350 x 400	50					
	SL35 MC / SL35L MC	650	450 x 600 - 1000	78		✓			
Akira Super Multi-axis	SL300S	600 - 650	400 - 450 x 1000	65 - 78	✓			✓	
	SL300CY	600 - 650	400 - 450 x 1000	65 - 78		✓			✓
	SL300CS	600 - 650	400 - 450 x 1000	65 - 78	✓	✓	✓		✓
	LS300CSY	600 - 650	400 - 450 x 1000	65 - 78	✓	✓	✓	✓	✓

All specifications subject to change without notice.

Rigid Physical Foundation



- **MEEHANITE** high quality iron casting assures permanent rigidity and accuracy.
- Each Akira Seiki casting frame is verified when founded by the **authorized Meehanite foundries.**

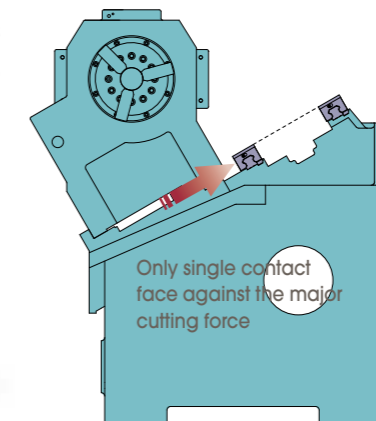


Material Guarantee

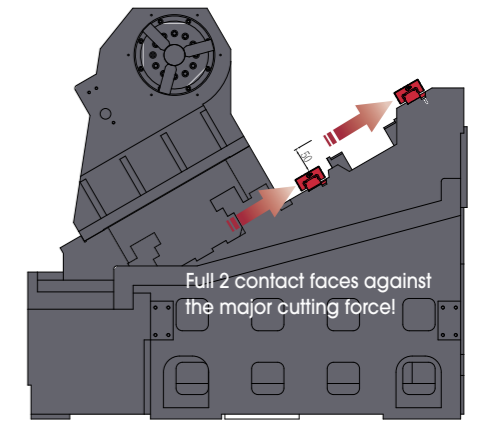
Casting **physical report** along with every **AKIRA SEIKI** Machine

Full Two Face Contact Support

- To enforce the **steady rigidity** while fast feeding cut, SL base design in **dual level of Z axial guide ways**. This increased contact face of by both lower and upper guide way obtain more cutting rigidity than conventional only-one contact face.



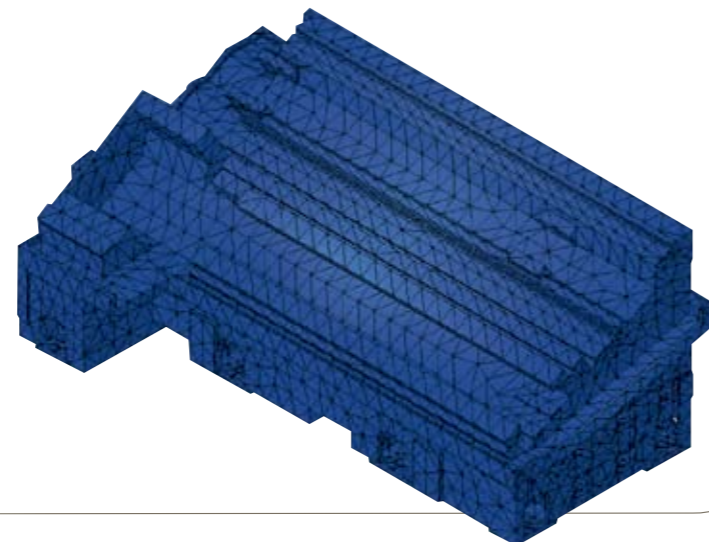
Other turning structure with only single guide ways contact support.



Akira Seiki SL with full 2 guide ways contact support. (only for SL30-SL300)

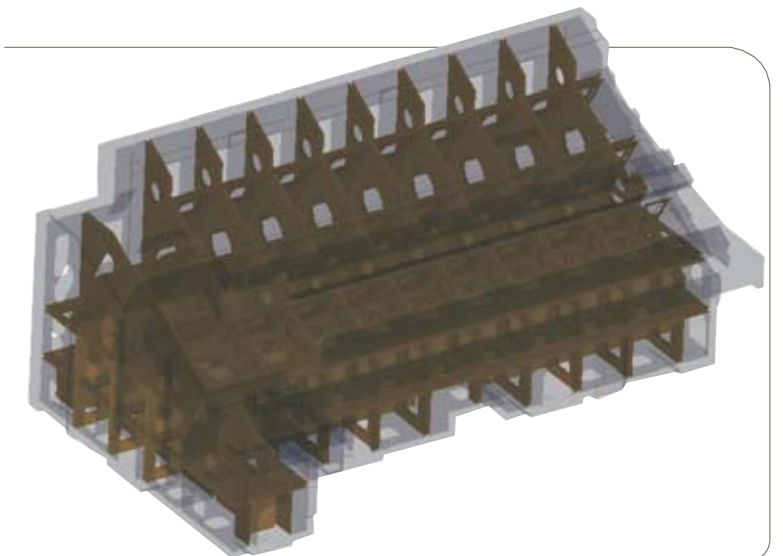
Scientific Technology Support

- Physical rigidity are ensured for all Akira Seiki strong SL in the primary design progress by **advanced digital assay tool**. All structural frames apply COSMOS system for analysis to **optimize rigid mechanism foundation**.
- **Digital FEA (Fine Element Analysis)** scientifically demonstrates rigid structure and approves excellent dynamic accuracy and vibration absorption while rapid cutting.



Reinforced Frame Construction

- Akira Seiki SL casting are **steady as rock** to perform **excellent dynamic accuracy and vibration absorption** while rapid cutting.
- The internal ribs of each key casting elements like base, column, head-cartridge and saddles are enforced for **deformation-resistant and anti-damp vibration**.



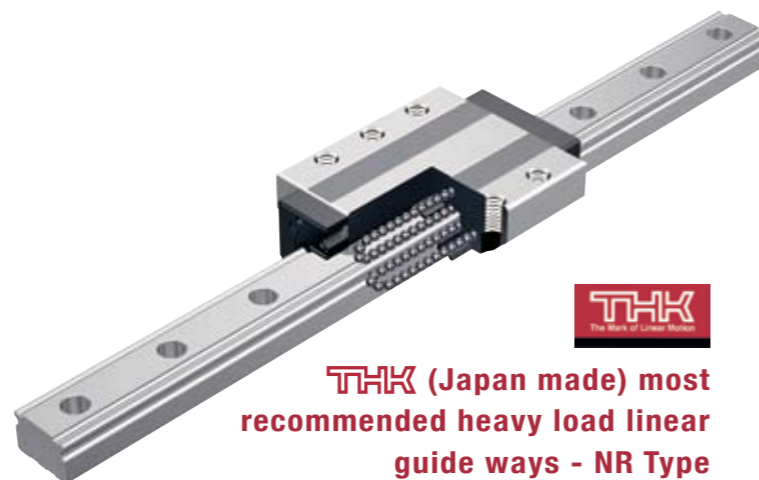
Construction frame of SL30/35

* All specification subject to change without notice.

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High Axial Loading Drive and Rapid Feed

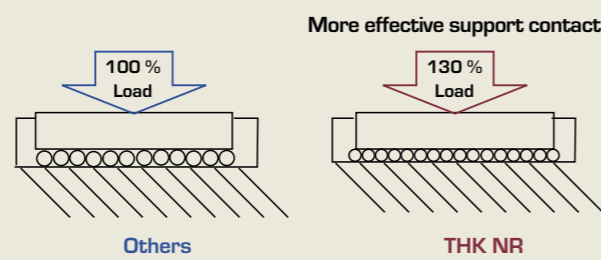
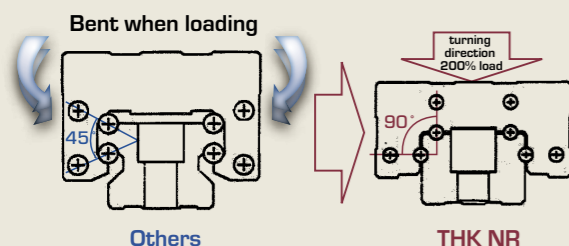
- Least friction coefficient and preloading for clearance-free between moving surface, precise ball linear guide ways are most compatible for fast movement and high positioning & repeatability accuracy.
- To carry high cutting rapid and more loading capability, all the feeding axis are in Japan THK most recommended NR type linear guide ways (THK patent).



THK (Japan made) most recommended heavy load linear guide ways - NR Type

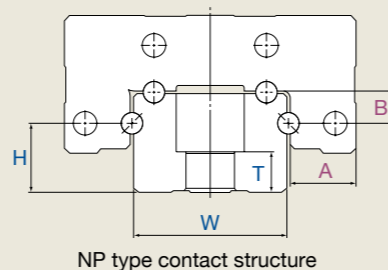
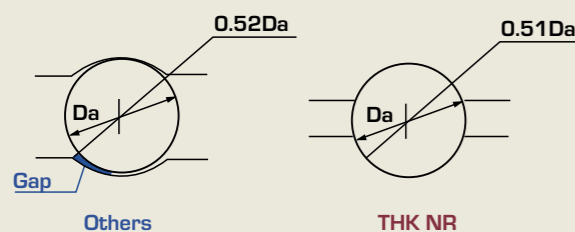
Ultra High Motion Rigidity

- NR type linear guide thicker flat-carrier block, low gravity center, 90 contact ball guides support 200% cutting load than others.
- Increased loading capacity on major load direction.
- Minimize ball diameter and increase ball numbers, raise up the effective contact rigidity to 30% than others.



- Da 51% curvature achieve perfect ball rotary rigidity, less vibration when fast feed.

- Low gravity-center structure as most stable carrier while rapid cutting



The height of "H" and "T" is short, it results in optimum small ratio between "H" and "W". Accordingly, the deformation of the NR rail under a lateral load is minimal, and the rigidity in the lateral directions is increased.

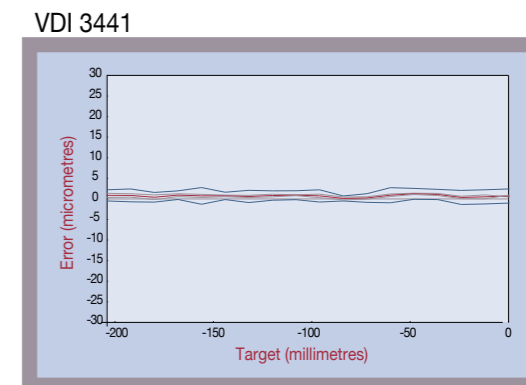
The height of "B" is short and the thickness "A" is large, the lateral extension of the LM block load of a reverse-radial or lateral is minimized. Results in increased rigidity.

* Please check the availability with your domestic Akira Seiki distributor.

Enforced Double-nutted Ballscrew



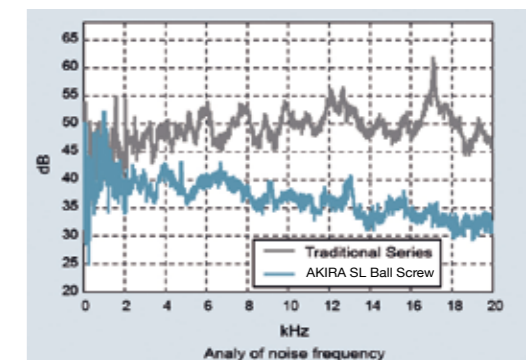
- Double-anchored ballscrew with ever extra broadened bearing nut than any others, enhance high cutting rigidity and accuracy while high cutting rapid feed.
- 100% laser track ensure the linear and ballscrew geometry accuracy.



Super Grade Precision Ballscrew

Tubeless ball-turn, free from noise

5~7dB lower than traditional series. The patented design of the return unit will reduce noises from impact of the ballnut's balls and its intensity.



Enforced transmission rigidity

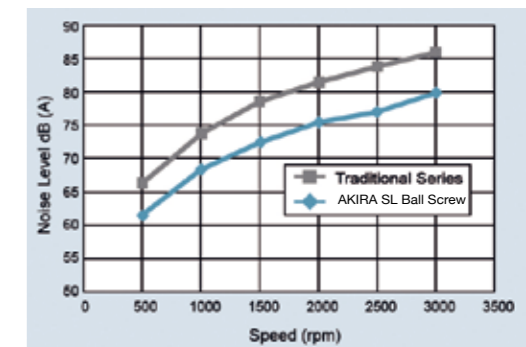
Total 4-5 ball-turn channels increase the transmission loading capacity (standard for all SL series). 33% higher rigidity than traditional 3 ball-turn channel ballscrews.

Dm-N value up to 180,000

Enforced return structure achieving Dm-N value up to 180,000, which is 80% higher than traditional Dm-N value 100,000.

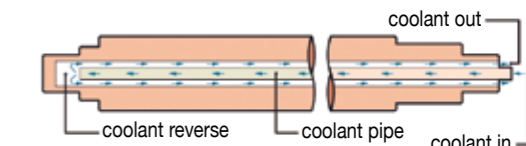
High acceleration and deceleration velocity

The pathway of the specialized return unit and ballnut's strengthened design diminish the impact experienced by the ball, it can sustain peak performance in more rigorous operating environments, such as high acceleration and deceleration.



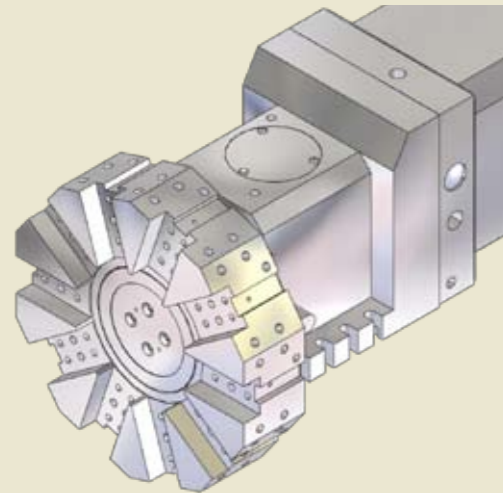
Effective ballscrew thermal control

Ballcrew Hollow for Cooling (available option) allows the circular chilling pumped through. The very recommended feature for ballscrew reliable thermal control for frequent rapid operation in duration operation to assure high machining precision.



* Please check the availability with your domestic Akira Seiki distributor.

Superior Efficient Turret



Fast Indexing Turret and Precise Positioning

Free from losing orientation trouble, by the **servo drive** and the initial 3-pieces coupling built in transmission unit for **high precision clamp** and **excellent chip proof** for future maintenance (standard for SL30-300, optional for SL15-25).

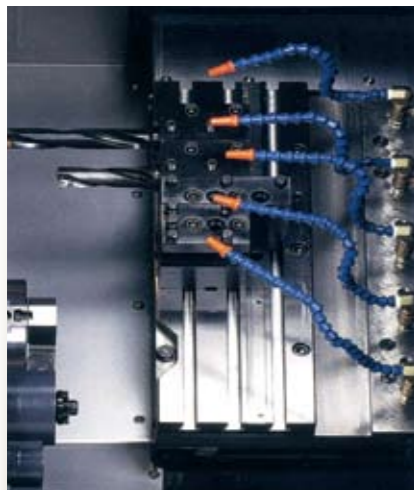
- The tool change without turret disc forward and backward clamping delay.
- No turret positioning section pushed out to machining area, free from machining chips and coolant disturb the turret durability.
- High speed and high torque designed gear drive for fastest positioning and smooth indexing.

Quick Index Time

Neighbor tool **0.3 sec.**

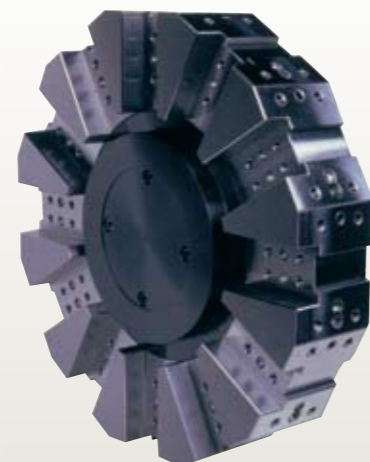
Diagonal tool **0.6 sec.**

Gang Tool Base



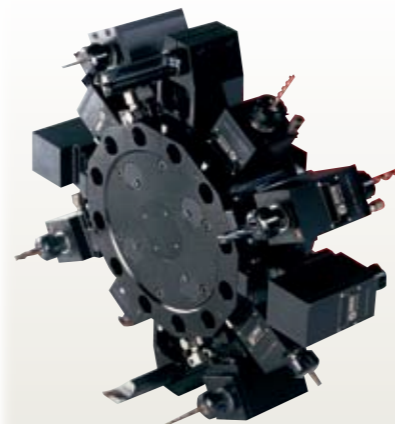
The fast, convenient and interchangeable tooling arrangement for basic turning jobs, very flexible to equip gang tool in individual and economic power live tool either by air or hydraulic power (for GT12).

Bolt-lock Turret



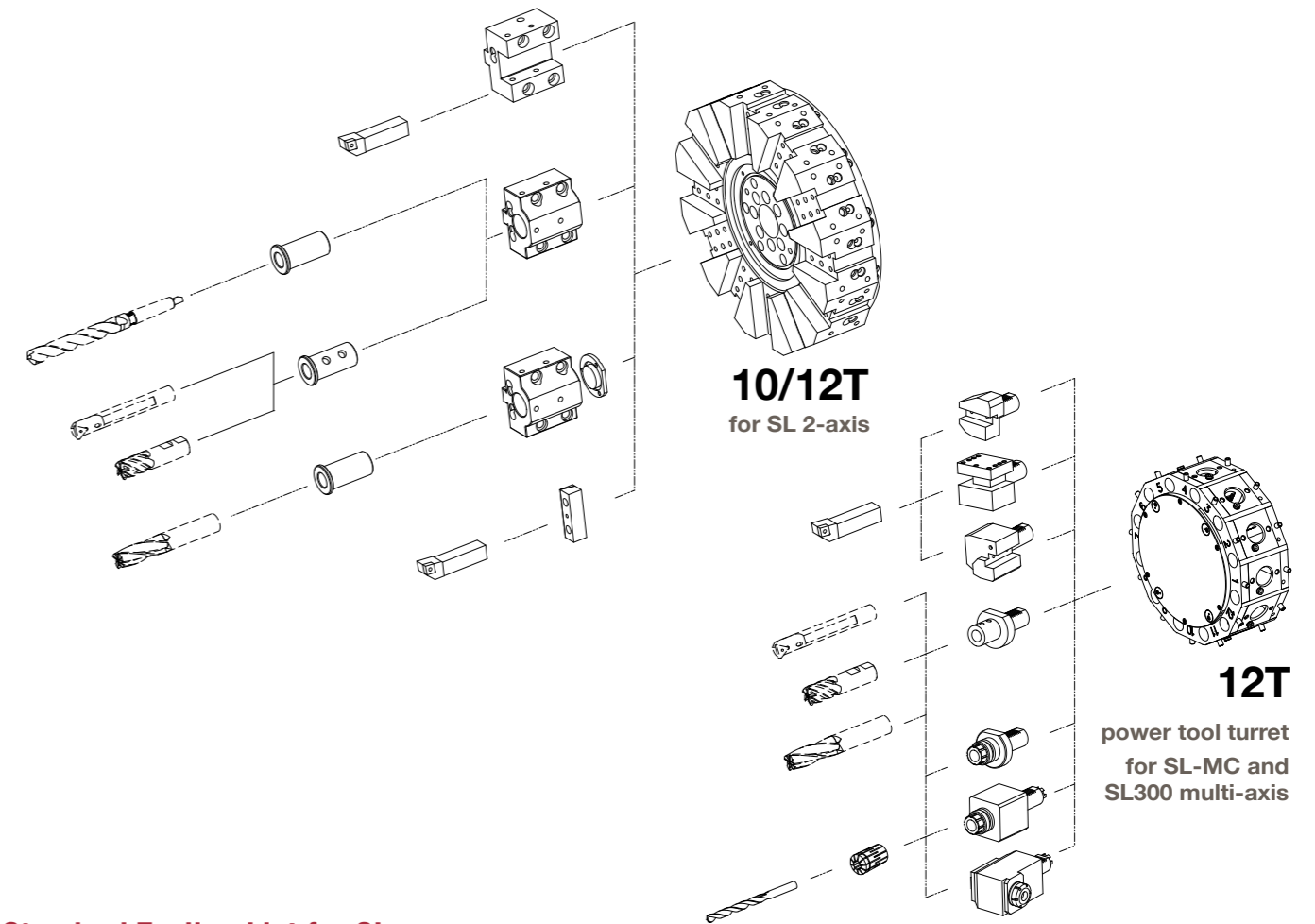
With most current-used of ID and OD tool holder availability, this polygon turret applies bolt-lock tool locations in turret rim and also equal tool stations in turret face. Highly adaptable to arrange either axial and radial tooling.

Power Tool Turret



Power live turret allows more variable secondary processing than turning, like milling, drilling, tapping and polishing either at terminal face and outer diameter of turned parts. Driven by individual powerful sub spindle motors to output capable machining ability.

Tooling System



Standard Tooling List for SL

Model and Turret	GT12		SL15 / SL20		SL25		SL30 / SL30L SL35 / SL35L		SL40 / SL40L		SL25MC		SL35MC SL35LMC SL300 series	
	Gang Tool Seat	*QTY	Polygon 10T	*QTY	Polygon 10T	*QTY	Polygon 12T	*QTY	Polygon 12T	*QTY	Power Turret 12T VDI 30 Radial	*QTY	Power Turret 12T VDI 40 Radial	*QTY
Tool Holder	SPEC	*QTY	SPEC	*QTY	SPEC	*QTY	SPEC	*QTY	SPEC	*QTY	SPEC	*QTY	SPEC	*QTY
ID Tool holder	Ø20	*5	Ø25	*7	Ø32	*8	Ø40	*8	Ø50	*8	N/A		N/A	
Boring Bar Sleeve	Ø5/8/10/12	*1 each	Ø8/10/12/16	*1 each	Ø8/10/12/16 25/32	*1 each	Ø8/10/12/16 25/32	*1 each	Ø8/10/12/16 25/32/40/50	*1 each	N/A		N/A	
OD Tool Holder	Ø16	*5	Ø20	*7	Ø20	*8	Ø25	*8	Ø32	*8	N/A		N/A	
OD Tool Clamper		*5		*7		*8		*8		*8	N/A		N/A	
Face Tool Holder		*1		*1		*1		*1		*1	N/A		N/A	
Axial VDI Tool Holder	N/A		N/A		N/A		N/A		N/A		Option		Option	
Radial VDI Tool Holder	N/A		N/A		N/A		N/A		N/A		Option		Option	

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Main Spindle and Powerful Drive



Stable Head Cartridge

Akira Seiki SL spindle is featured in **high rigidity** and acceleration efficiency. Fully hold in a enforced head stock and drive by **superior powerful horsepower** output main motor, Akira Seiki SL spindle operates **heavy loads high quality and polished surface finishing** in higher speed new cutting technology way.

The cutting trend

Superior High
Main Motor Output

+

Fine-balance
Higher Spindle Speed

+

Strong Machine Body

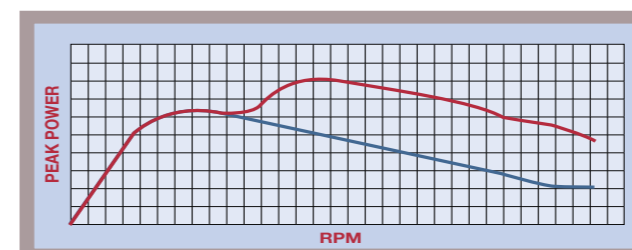
Cutting
Advantage

Faster, Accurate, Fine Finishing, Energy-Save

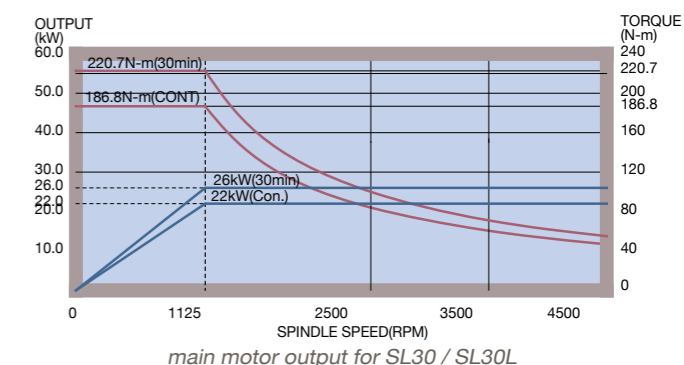
Superior Power Output



Akira Seiki employs **world class servo spindle drive and motor**. Akira Seiki seizes the essential technology to increase low speed torque and **constant high horsepower output** covering wide spindle speed. It reflects irreplaceable **benefit of delicate surface cut** like precise turning that require mostly motor horsepower.

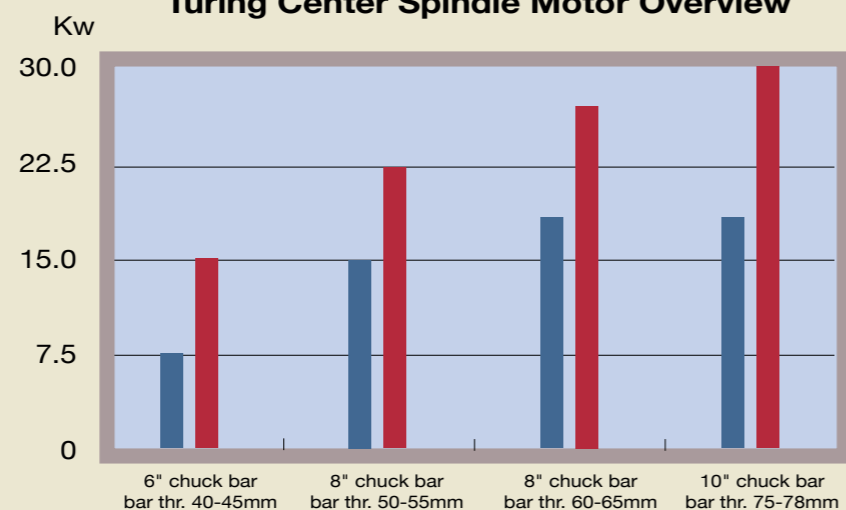


— Typical power curve
— Enhanced power range for SL series



main motor output for SL30 / SL30L

Turning Center Spindle Motor Overview



Average **54% higher power** output by Akira Seiki SL compare to others.

— Others
— Akira Seiki SL 30min output

unit : kW

	6" chuck bar bar thr. 40-45mm	8" chuck bar bar thr. 50-55mm	8" chuck bar bar thr. 60-65mm	10" chuck bar bar thr. 75-78mm
Akira Seiki SL	15	22	26	30
Others	7.5	15	18.5	18.5

↑ 100%

↑ 46%

↑ 40%

↑ 62%

Akira Seiki SL Main Power Upper Output compared to others!!

Productive Type Spindle

Akira Seiki seizes the major key technology in **Productive Type Spindle** development. To ensure the spindle **best balance** performance for **last-ever longevity**, Akira Seiki apply **high end inspection equipment** for fully supervising each good quality spindle, including **3D coordinate machine, balance test, roundness test machine by Japan made**. The **artificial intelligent thermal control** from inner spindle regulates the proper load rigidity in different speed range. For long life of spindle, all Akira Seiki Productive Type Spindles are all design in **well low-inertial** to enhance high speed machining.

Clean room for
spindle assembly &
roundness test



* All specification subject to change without notice.

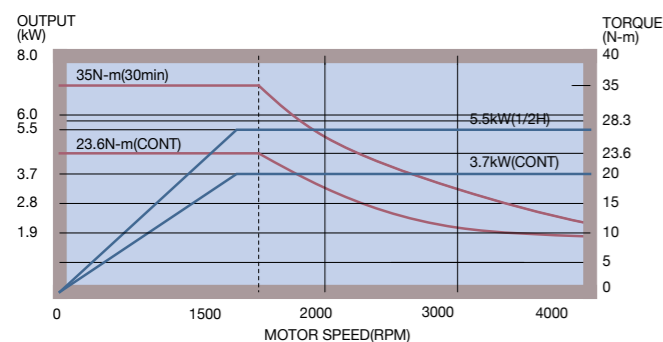
* All specification subject to change without notice.

Variable Machining Capability



Live Tool with C axis

To reserve the **best parts accuracy** and **increasing productivity** free from load/unload for next processing in milling machines, Akira Seiki SL-MC models with **full C axis** and **power live tooling turret** provide well interpolation for outer diameter and off center PCD processing. The **sturdy live turret** driven by individual **compact spindle motor**, its torque output carry **capable milling, drilling, tapping** and other operations.



Power Tooling Torque Output
for SL-35 MC / SL-300C models

Multi-Axis Machining Capability

The live turret accept **both radial and axial tool**. Power drive tool holders of VDI specification is strong and durable design, also easy of installation.



* All specification subject to change without notice.

Sub Spindle



Akira Seiki SL-300CS / SL300CSY models execute the double-sided jobs completed only by once set-up. Each spindle is **equipped with equal range chuck and driven by high torque motor**. Both main and sub-spindle terminal are in full C axis function. The toolings are mounted in a special two-face power live turret to serve basic and C axis cut at main and sub-spindle.

Average time only

7 sec.

to deliver part from 1st to 2nd spindle.

Multi-Axis Machining Capability

Y axis control **advanced multi-tasking live tooling jobs** and allow various finishing machining to achieve high precision in **complex job** with **grooving** and **milling** than regular turning process.

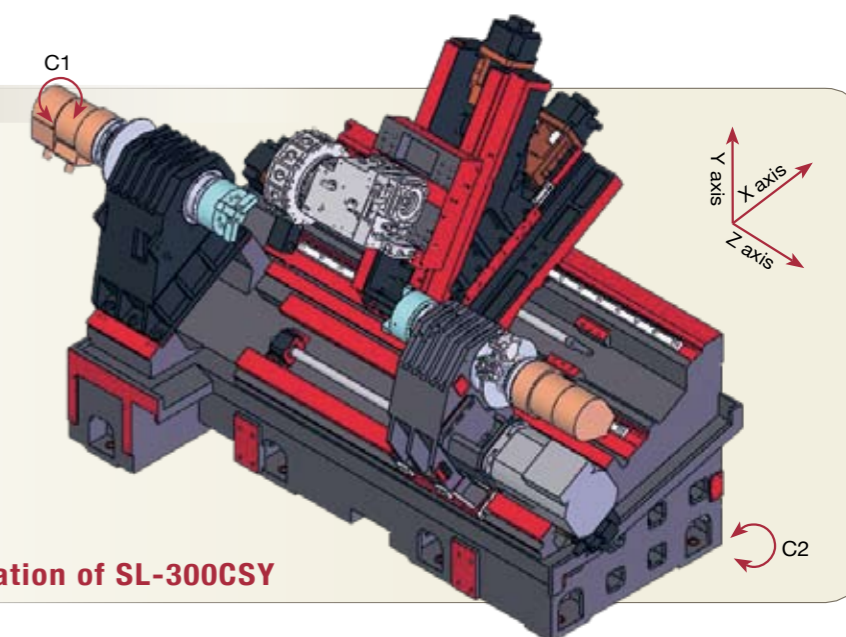


Illustration of SL-300CSY

* All specification subject to change without notice.

Safety & Ergonomic for Parts Holding



High Rigid Tailstock

Akira Seiki SL strong tailstock is located on wide space guide ways to ensure sufficient rigidity for part support. The hydraulic tailstock can be interpolated in programming in proper travel (standard for SL30-40, optional for GT12/SL15-20) along with parts program. It can be also operated by simple key function or by operation pedal switch.

Safe parts holding operation

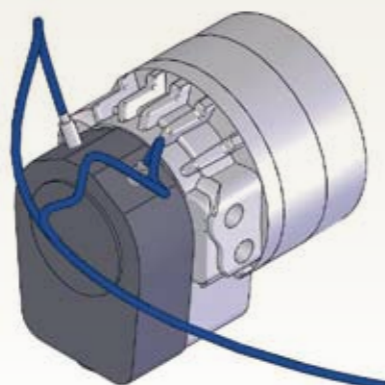
Easy one-button function

Very easy set-up procedure by only 1 steps to organize tailstock working position. The self-detection by key in proper numbers of retract, pre-hold, and current holding point to ensure tailstock correct programming mode.



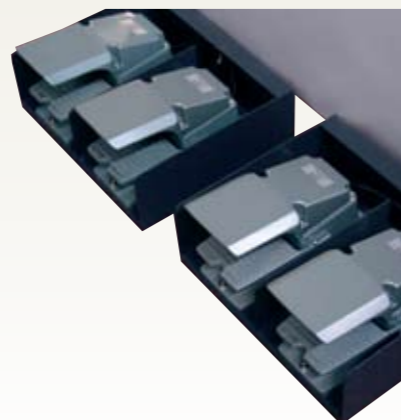
Chuck jaw clamp check

Two sensor detectors located in end of chuck cylinder, they ensure the safety check of chuck jaw stroke in correct position for parts clamp.

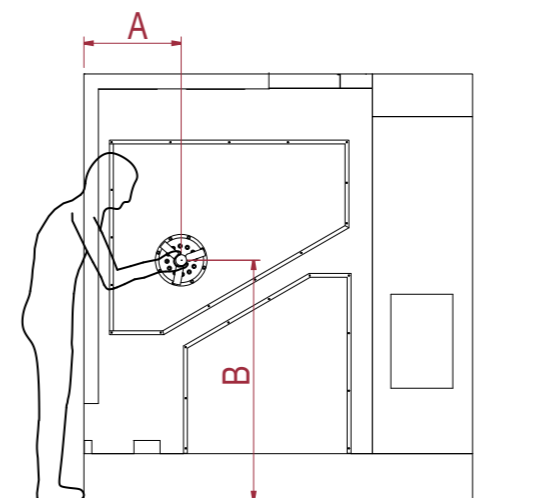


Two pair foot pedal lock

Two pairs pedals, both contains clamp / unclamp switch and separately for spindle chuck and tailstock, to control the safe parts hold / release without operation confusion by only 1 pair of pedal switch (option).



Ergonomics for Operation



Easy to Approach Spindle

The spindle location is designed for optimum operation layout for parts handling in proper height and close distance for operator.

unit : mm / inch		A	B
Performa 2-axis	GT12/SL15/SL20	255 / 10.0	940 / 37.0
	SL25	350 / 13.8	930 / 36.6
	SL30/SL30L/SL35/SL35L	455 / 17.9	1130 / 44.5
	SL40/SL40L	400 / 15.7	950 / 37.4
Performa 3-axis	SL25MC	455 / 17.9	1130 / 44.5
	SL35MC/SL35LMC	455 / 17.9	1130 / 44.5
Akira Super Multi-axis	SL300S	380 / 15.0	920 / 36.2
	SL300CY	380 / 15.0	920 / 36.2
	SL301CS	380 / 15.0	920 / 36.2
	SL300CSY	380 / 15.0	920 / 36.2

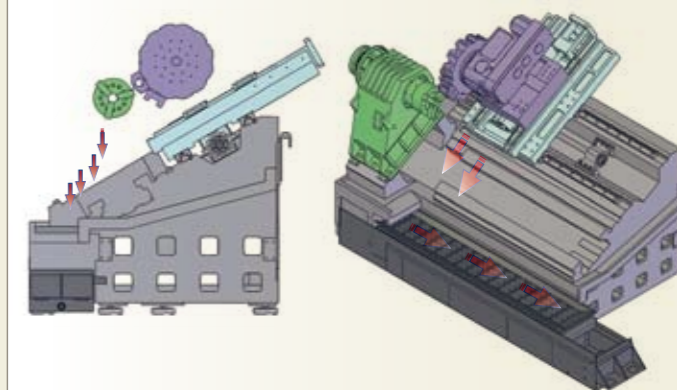
Adjustable Operation Panel

The convenient-to-use operation panel by swivel angle 80 degree.



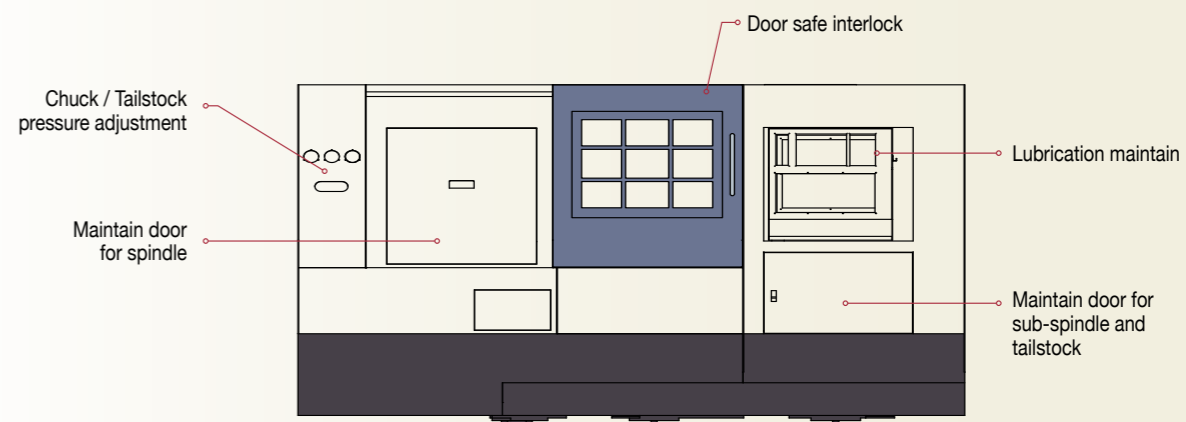
Chip Disposal

Slant bed angle leave the chips down to the accumulation tray and easy to be carried out.



Easy Identification for Maintenance

All the regular maintenance indexes are located in machine front for easy overview.



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Automation Bar Handling

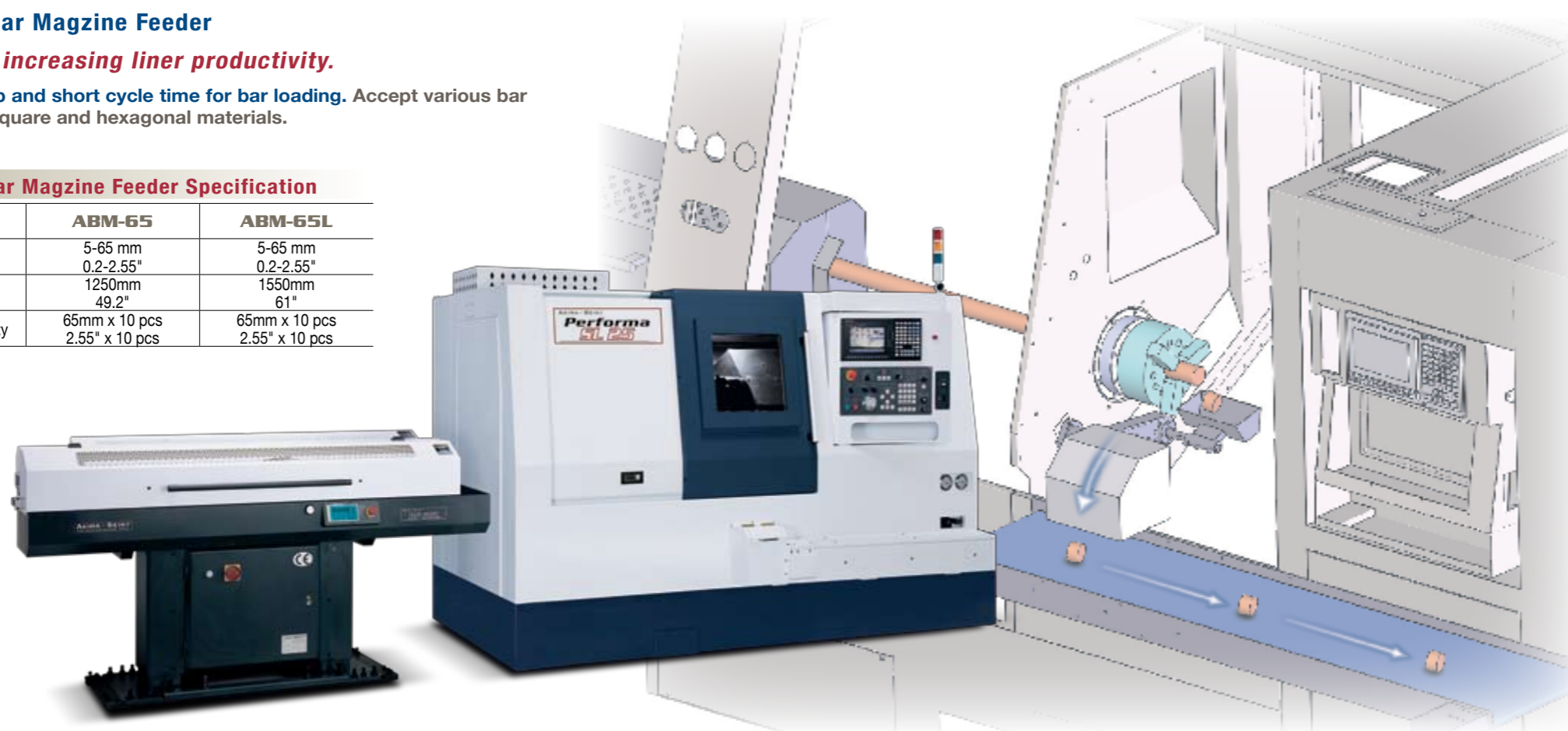
Akira Seiki Bar Magazine Feeder

designed for increasing liner productivity.

Very easy set-up and short cycle time for bar loading. Accept various bar shape also for square and hexagonal materials.

Akira Seiki Bar Magazine Feeder Specification

Model	ABM-65	ABM-65L
Bar Diameter	5-65 mm 0.2-2.55"	5-65 mm 0.2-2.55"
Bar Length	1250mm 49.2"	1550mm 61"
Bar Storage Capacity	65mm x 10 pcs 2.55" x 10 pcs	65mm x 10 pcs 2.55" x 10 pcs



Ergonomics for Parts Handling

Parts Catcher

No need to interrupt the operation and open door to collect the complete parts manually, the parts catcher automatically swings into the position to catch up the completed parts and gather them in a bin.



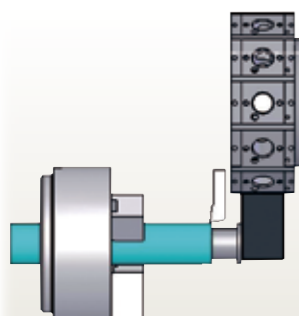
Parts Conveyor

A recommended device to combined the application of parts feeder automation, the parts conveyor is driven by initial command to carry the parts by safe distance from each. All these complete parts are delivered into another finished-part storage made by users.



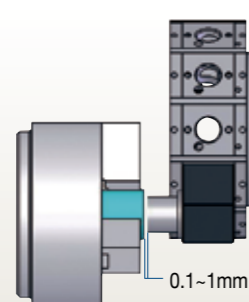
Convenient built-in software to easy the setting to satisfy variable bar condition and turning application.

Cut off



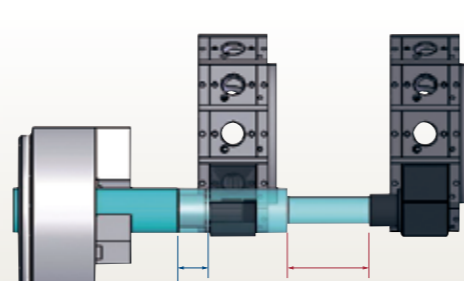
First cut off for datum

Safe Bar Forward



Regular bar length feeding, the turret stays in **set safe distance** (from 0.1~1mm by operator's setting) from part datum to bar stopper and then **move in Z axial direction together with bar feeding**. Instead of conventional bar-feeding stops while part pushing turret, Akira Seiki SL smart software to **serve safe buffer distance** saves turret from crashing by bar length error setting.

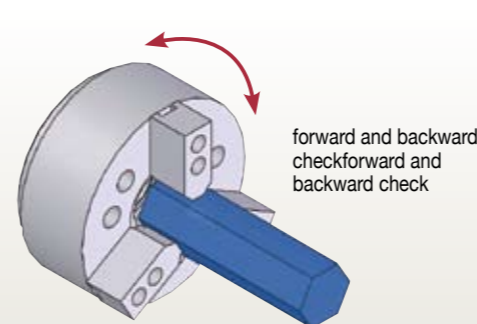
Multi section bar feeding



1st (blue sections) and 2nd (red section) bar feed can be set in different stroke.

Unlike conventional all processing strokes feeding at once, Akira Seiki SL smart software allow the bar feed by **multi length setting**. This reserves best cutting rigidity for long part material in multi sectional turning process.

Complex-shaped bar feeding



forward and backward checkforward and backward check

Only by parameter setting, the spindle orientation by **jogging** is available **minimum 15 degree for each indexing as each single-step indexing**. This spindle jogging orientation provides ensured **secure clamping for polygon shape bars**.

parts counter & parts target number setting

The control display provide both **completed parts counter** and **execution** for auto power off or machine complete shut down when reach the **set target numbers of the parts**, which comforts the operators for energy- saved in fully automation.

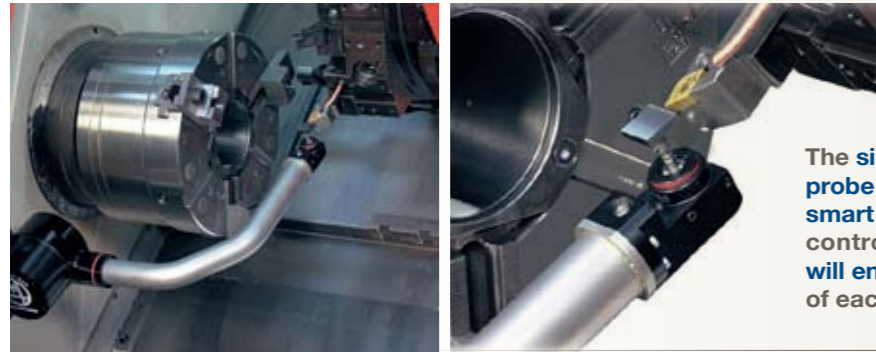


* All specification subject to change without notice.

* All specification subject to change without notice.

Operator Convenient Options

Tool Measurement



The simple swing down of the tool measuring probe eases the fast tool setting, Akira Seiki smart software automatically switch into the control offset display and measured offset will enter the record while the probe touching of each tips.

Parts Measurement

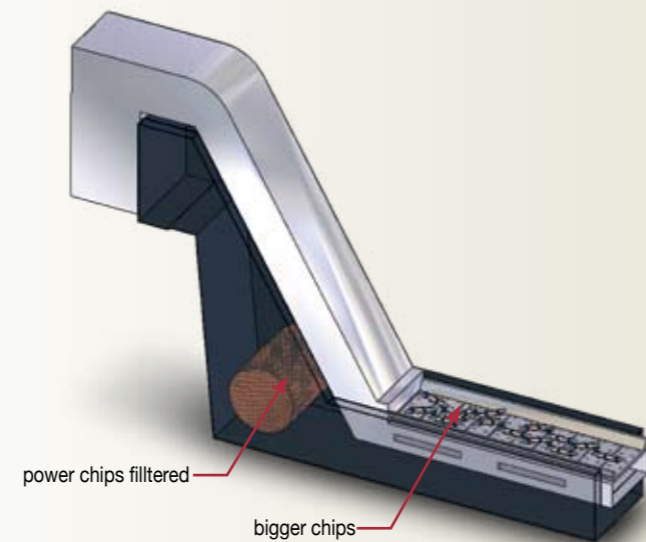
To ensure the precise machining operations, work touch probe of parts measurement can be used for quick prototype-setting of first part and monitoring the machining accuracy before each sectional processing. The measurement data can help the update tool wear record to reach high quality parts.



Chip Removing

- Hinge type chip conveyor provides the most efficient chip removal jobs and best chip-free coolant effect for massive production.
- The chip disposal height 1200mm allows the space for 1 gallon (4.6L) trolley for saving clear-up time (1200mm disposal height available for SL30-SL300 models).

- Double-level filter is available option to isolate medium and tiny chips, to maintain good coolant condition.



* All specification subject to change without notice.

Machine Configuration & Options

- = standard configuration
- ▲ = available option
- X = not available

	Performa SL 2-axis Turning						Proforma SL 3-axis Turning		Akira Super SL Multi-axis Turning			
	GT12	SL15	SL20	SL25	SL30 SL30L SL35 SL35L	SL40 SL40L	SL25MC	SL35MC SL35L MC	SL300S	SL300CY	SL300CS	SL300CSY
Spindle and Parts Holding System												
Collet chuck, made by Taiwan	●	●	X	X	X	X	X	X	X	X	X	X
Hydraulic hollow chuck, made by Taiwan	X	X	●	●	●	●	●	●	●	●	●	●
Soft and hard jaws	X	X	●	●	●	●	●	●	●	●	●	●
Soft jaws forming ring	X	X	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Sub-spindle and chuck	X	X	X	X	X	X	X	X	X	X	X	X
Turret for Basic Operation												
Performa SL 2-axis Turning												
Gang type tool post	●	X	X	X	X	X	X	X	X	X	X	X
Turret in hydraulic drive, 10T	X	●	●	X	X	X	X	X	X	X	X	X
Turret in servo drive, 12T	X	X	X	●	●	●	●	●	●	●	●	●
VDI 30 turret 10T (no power drive)	X	X	X	▲	X	X	X	X	X	X	X	X
VDI 40 turret 12T (no power drive)	X	X	X	X	▲	▲	X	X	X	X	X	X
Proforma Classic SL 3-axis Turning												
Akira Super SL Multi-axis Turning												
Live Tooling Turret and C Axis Motion												
Performa SL 2-axis Turning												
Power drive VDI turret curve type 12T	X	X	X	X	X	X	●	●	●	●	●	●
C axis for outline machining at main spindle	X	X	X	X	X	X	●	●	X	●	●	●
C axis for outline machining at sub spindle	X	X	X	X	X	X	X	X	X	●	●	●
Proforma Classic SL 3-axis Turning												
Akira Super SL Multi-axis Turning												
Tailstock and rear support												
Performa SL 2-axis Turning												
Programmable tailstock, hydraulic clamp	▲	▲	▲	X	●	●	X	●	X	▲	X	X
Manual tailstock	▲	▲	▲	X	X	X	X	X	X	▲	X	X
Quill travel (by auto or jog mode)	▲	▲	●	X	●	●	X	●	X	▲	X	X
Proforma Classic SL 3-axis Turning												
Akira Super SL Multi-axis Turning												
Automation operation support												
Performa SL 2-axis Turning												
Bar feeder interface	●	●	●	●	●	●	●	●	●	●	●	●
Auto bar feeder	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Guide bush (by customized size)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Auto parts catcher	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Tool pre-setter	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Parts conveyor	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Auto door	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Proforma Classic SL 3-axis Turning												
Akira Super SL Multi-axis Turning												
Convenient Features & Options												
Performa SL 2-axis Turning												
Chuck air blow	●	●	●	●	●	●	●	●	●	●	●	●
auto chain type chip conveyor & chip trolley	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Pedal switch for chuck clamp / unclamp	●	●	●	●	●	●	●	●	●	●	●	●
Pedal switch for tailstock clamp / unclamp	▲	▲	●	X	▲	▲	X	▲	▲	▲	▲	▲
Work light, sun light	●	●	●	●	●	●	●	●	●	●	●	●
High pressure coolant system	●	●	●	●	●	●	●	●	●	●	●	●
Additional coolant filter unit	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Heat exchanger for electrical baninet	●	●	●	●	●	●	●	●	●	●	●	●
Oil mist collector	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Lube- water separation	●	●	●	●	●	●	●	●	●	●	●	●
Proforma Classic SL 3-axis Turning												
Akira Super SL Multi-axis Turning												
NC and Software Option												
Performa SL 2-axis Turning												
Fanuc Oi controller in 7.2"LCD	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Akira Mi 8.4" LCD display	●	●	●	●	X	X	X	X	X	X	X	X
Akira Mi 10.4" LCD display	X	X	X	X	●	●	●	●	●	●	●	●
DNC link	●	●	●	●	●	●	●	●	●	●	●	●
Ethernet interface	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
USB interface	X	X	X	X	▲	▲	▲	▲	▲	▲	▲	▲
Flash memory card interface	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Graphic check	●	●	●	●	●	●	●	●	●	●	●	●
Spindle Orientation	●	●	●	●	●	●	●	●	●	●	●	●
Chuck close direction selection	●	●	●	●	●	●	●	●	●	●	●	●
Remote MPG	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Conversational user guide	●	●	●	●	●	●	●	●	●	●	●	●
M30 auto power off	●	●	●	●	●	●	●	●	●	●	●	●
M07 auto air blow for chuck and work piece	●	●	●	●	●	●	●	●	●	●	●	●
Sub programs for multi bar feeding operation	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Parts counter	●	●	●	●	●	●	●	●	●	●	●	●
Target parts number setter	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

* All configuration subject to change without notice.

Akira Mi Smart NC and Fast Programming Creation



To optimize combination with JR/SR rigid machining center, AKIRA Mi 645 coordinates the **CNC digital control** and **world leader drive system**. High resolution servo stabilizes precise axis positioning for **high complex and accuracy jobs**. Absolute industrial control components ensure **reliable longevity** and instant technical support in worldwide service centers.



AKIRA Mi645 Control High Achievement for Maching Efficiency

AKIRA Mi645 powerful **64bit CPU** incorporate the fastest-ever computation processions and program scanning.

Full look ahead up to **500 blocks** (Computer Link B) and **G05P10000 High Speed and High Accuracy control** allow contouring rapid and smoother motion.

AKIRA Mi645 operation interface stands by the customer's visual convenience.

- ▶ **5120M (2MB)** initial program memory is available as the largest industrial NC program stored capability.
- ▶ Fully **graphic function** including simulate run, tool path check and graphic scaling the same coordinate.
- ▶ **One- Button features** ease the often used functions instead of multi-steps procedure.
- ▶ **3 M codes** in the same line achieve **least code-code pause** for operation efficiency.
- ▶ Simple to correct 3 level alarm condition within same page, no inconvenience of forth & back biewing.
- ▶ **Program reserver** available to adapt flash memory card & Ethernet connection.
- ▶ **High compatibility** to Fanuc control programming.



Convenient Program Data Transferring

Optional Program Reservoir allows high speed machining with large data capacity via IC memory card or Ethernet. (IC card should be prepared by users). USB interface available as option.



Faster, Easier Program Edition Progressive Programming Guidance

Conversational Programming

The **friendly interactive message** by machining icons to guide users for programming before practical operation. **Various processing models** can be selected to satisfy **basic turning and turn-milling complex application**.



Turn Icon
Turn Menu **7** main option
Total **20** processing models
Turn Hole Drilling Threading
Grooving Copy Cut Trapezoid



Mill Icon
Turn Menu **3** main option
Total **10** processing models
Milling Hole Keyway Cut Contour Cut

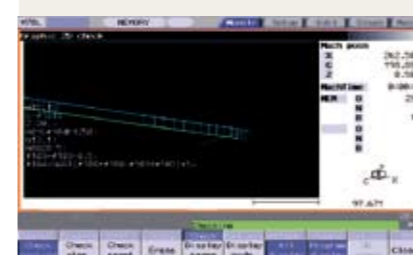
Progressive Programming Guidance



Thread Icon / Mill Hole Icon

The conversational guidance will instruct input of necessary conditions like machining sequence, tools and cutting dimension. The finished shape of simulation will automatically take form.

Graphic Check



The users can check the completed NC programs by previewing simulation through the tool path graphic checker function.

3D Cutting Simulation (only available option for SL300)



Convenient to zoom in and out to preview the programming achievement, also rotation view is available.

Teach-in Programming System through PC

The easy programming system can be **applied in users' own PC operation**. (option).

To save efficiency without disturbing machine processing, the **program can be edited and simulated in PC** before practical cut. Optimum application for training purpose!



* Please check the availability with your domestic Akira Seiki distributor.

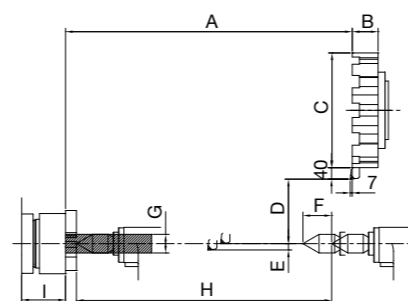
* All specification subject to change without notice.

Working Range & Measurement

Working Envelope

unit : mm / inch

	SL15	SL20	SL25	SL30 SL30L	SL35 SL35L	SL40 SL40L
10/12T turret for 2 axis model						
A	220 / 8.7	350 / 13.8	500 / 19.7	600 / 23.6 1000 / 39.3	600 / 23.6 1000 / 39.3	750 / 29.5 1500 / 59
B	80 / 3.1	80 / 3.1	126 / 5	126 / 5	126 / 5	126 / 5
C	272 / 10.7	272 / 10.7	400 / 15.7	400 / 16	400 / 16	400 / 16
D	140 / 5.5	140 / 5.5	175 / 6.9	225 / 9	250 / 10	250 / 10
E	30 / 1.2	30 / 1.2	20 / 0.8	25 / 1	25 / 1	25 / 1
F	- / -	80 / 3.1	100 / 3.9	100 / 4	100 / 4	100 / 4
G	42 / 1.7	45 / 1.8	65 / 2.6	65 / 3	65 / 3	65 / 3
H	250 / 9.8	250 / 9.8	490 / 19.3	490 / 19	490 / 19	490 / 19
I	193.5 / 7.6	161 / 6.3	153 / 6.0	153 / 6	153 / 6	153 / 6

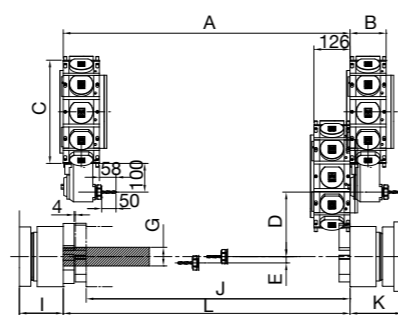


10/12T turret for 2 axis model

Remark : "Blue lines" for SL-L models

unit : mm / inch

	SL25MC	SL35MC SL35LMC	SL300
12T VDI turret for SL-MC / SL300 series (radial polygon type, standard)			
A	500 / 19.7	600 / 23.6 1000 / 39.3	1000 / 39.4
B	126 / 5	126 / 5	126 / 5
C	360 / 14.2	360 / 14	360 / 14.2
D	175 / 6.9	250 / 10	225 / 8.9
E	20 / 0.8	25 / 1	25 / 1.0
F	100 / 3.9	100 / 4	100 / 3.9
G	52 / 2.0	65 / 3	65 / 2.6
H	490 / 19.3	490 / 19	890 / 35.0
I	153 / 6.0	153 / 6	153 / 6
J	-	-	920 / 36.2
K	-	-	183 / 7.2
L	-	-	1000 / 39.4

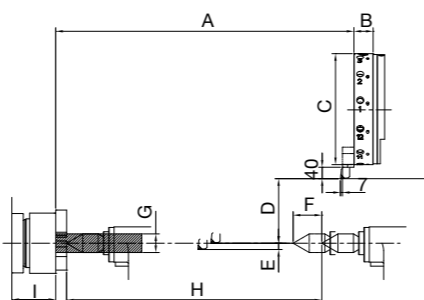


12T VDI turret (radial) for SL-MC and SL300C models

Remark : "Blue lines" for SL-L models

unit : mm / inch

	SL25MC	SL35MC SL35LMC
12T VDI turret for SL-MC (axial round type, option)		
A	500 / 19.7	600 / 23.6 1000 / 39.3
B	126 / 5	126 / 5
C	400 / 15.7	400 / 16
D	175 / 6.9	250 / 10
E	20 / 0.8	22 / 1
F	100 / 3.9	100 / 4
G	65 / 2.6	65 / 3
H	490 / 19.3	490 / 19
I	153 / 6	153 / 6

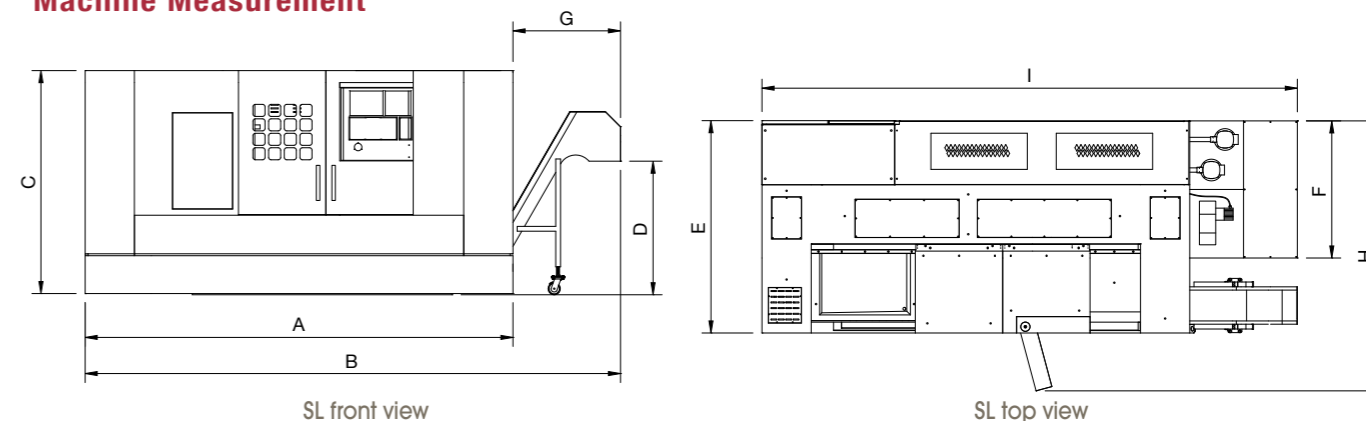


12T VDI turret (axial, optional) for SL-MC / SL300C models

Remark : "Blue lines" for SL-L models

* All specification subject to change without notice.

Machine Measurement

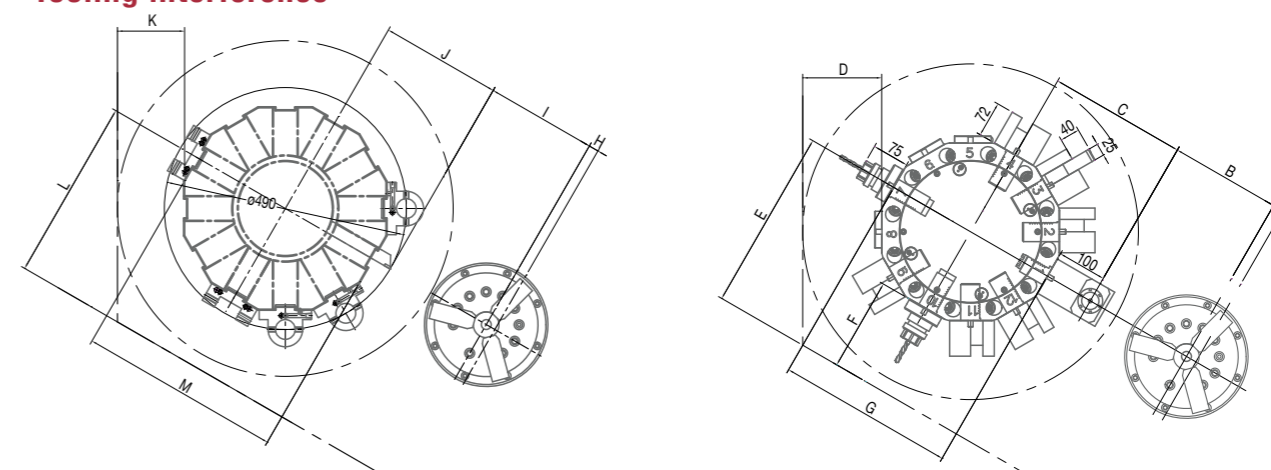


unit : mm / inch

		A	B	C	D	E	F	G	H	I
Performa 2-axis	GT12/SL15/SL20	1800 / 70.9	2500 / 98.4	1800 / 70.9	810 / 31.9	1300 / 51.2	- / -	680 / 26.8	- / -	- / -
	SL25	2200 / 86.6	3000 / 118.1	2000 / 78.7	1000 / 39.4	1500 / 59.1	510 / 20.1	500 / 19.7	2000 / 78.7	2700 / 106.3
	SL30	3300 / 123	4100 / 161.4	2100 / 82.7	1200 / 47.2	1900 / 74.8	510 / 20.1	800 / 31.5	2400 / 94.5	4100 / 161.4
	SL30L	3740 / 147.2	4540 / 178.7							4540 / 178.7
	SL35	3300 / 123	4100 / 161.4	2100 / 82.7	1200 / 47.2	1900 / 74.8	510 / 20.1	800 / 31.5	2400 / 94.5	4100 / 161.4
	SL35L	3740 / 147.2	4540 / 178.7							4540 / 178.7
Performa 3-axis	SL40	3400 / 134	4100 / 161.4	2500 / 98.4	1500 / 59.1	2200 / 86.6	510 / 20.1	800 / 31.5	2400 / 94.5	4200 / 165.4
	SL40L	3800 / 149.6	4540 / 178.7							4600 / 181.1
	SL25MC	2200 / 86.6	3000 / 118.1	2000 / 78.7	1000 / 39.4	1500 / 59.1	510 / 20.1	500 / 19.7	2000 / 78.7	2700 / 106.3
Akira Super Multi-axis	SL35MC	3300 / 123	4100 / 161.4	2100 / 82.7	1200 / 47.2	1900 / 74.8	510 / 20.1	800 / 31.5	2400 / 94.5	4100 / 161.4
	SL35LMC	3740 / 147.2	4540 / 178.7							4540 / 178.7
	SL300S	3740 / 147.2	4540 / 178.7	2100 / 82.7	1200 / 47.2	1900 / 74.8	510 / 20.1	800 / 31.5	2400 / 94.5	4540 / 178.7
Akira Super Multi-axis	SL300CY	3800 / 149.6	4540 / 178.7	2500 / 98.4	1500 / 59.1	2200 / 86.6	510 / 20.1	800 / 31.5	2400 / 94.5	4600 / 181.1
	SL300CS	3740 / 147.2	4540 / 178.7	2100 / 82.7	1200 / 47.2	1900 / 74.8	510 / 20.1	800 / 31.5	2400 / 94.5	4540 / 178.7
	SL300CSY	3800 / 149.6	4540 / 178.7	2500 / 98.4	1500 / 59.1	2200 / 86.6	510 / 20.1	800 / 31.5	2400 / 94.5	4600 / 181.1

Remark : "Blue lines" for SL-L models

Tooling interference



10/12T polygon turret for SL15-40

12T VDI radial turret for SL-MC and SL300

10/12T turret for 2 axis model		H	I	J	K	L	M
unit : mm / inch							
SL 2-axis	SL15 / SL20	20 / 0.79	150 / 5.91	176 / 6.93	90 / 3.54	220 / 8.66	272 / 10.71
	SL25	20 / 0.79	175 / 6.89	165 / 6.50	345 / 13.58	189 / 7.44	340 / 13.39
	SL30 / SL30L	20 / 0.79	225 / 8.86	245 / 9.65	135 / 5.31	369 / 14.53	410 / 16.14
	SL35 / SL35L	20 / 0.79	225 / 8.86	245 / 9.65	135 / 5.31	369 / 14.53	410 / 16.14
	SL35L	20 / 0.79	250 / 9.84	245 / 9.65	135 / 5.31	369 / 14.53	410 / 16.14
	SL40 / SL40L	25 / 0.98	275 / 10.83	160 / 6.30	369 / 14.53	189 / 7.44	360 / 14.17

12T VDI turret for SL-MC / SL300 series (radial polygon type, standard)		A	B	C	D	E	F	G
unit : mm / inch								
SL 3-6 axis	SL25MC	20 / 0.79	175 / 6.89	280 / 11.02	165 / 6.50	345 / 13.58	189 / 7.44	340 / 13.39
	SL35MC / SL35LMC	25 / 0.98	240 / 9.45	280 / 11.02	145 / 5.71	369 / 14.53	189 / 7.44	360 / 14.17
	SL300 series	25 / 0.98	225 / 8.86	280 / 11.02	160 / 6.30	369 / 14.53	189 / 7.44	360 / 14.17

* All specification subject to change without notice.

Line-up SL specification

		Proforma SL 2-Axis Turning							Proforma Classic SL 3-axis Turning		Akira Super SL Multi-axis Turning			
		GT12	SL15	SL20	SL25	SL30 SL30L	SL35 SL35L	SL40 SL-40L	SL25MC	SL35MC SL35LMC	SL300S	SL300CY	SL300CS	SL300CSY
Control System		Akira Mi645 (STD) / Fanuc Oi (OPT)												
Application	axis	X + Z							X+Z+C1		X+Z+B	X+Y+Z+C1	X+Z C1+C2+B	X+Y+Z C1+C2+B
CAPACITIES														
Max. swing over bed & front cover	mm	400	450	450	500	600	650	750	500	650	600 (STD) / 650 (OPT)	600 (STD) / 650 (OPT)	600 (STD) / 650 (OPT)	600 (STD) / 650 (OPT)
	inch	15.7	17.7	17.7	19.7	23.6	25.6	29.5	19.7	25.6	23.6 (STD) / 26 (OPT)	23.6 (STD) / 26 (OPT)	23.6 (STD) / 26 (OPT)	23.6 (STD) / 26 (OPT)
Max. over cross slide	mm	200	280	280	350	400	450	500	350	450	400 (STD) / 450 (OPT)	400 (STD) / 450 (OPT)	400 (STD) / 450 (OPT)	400 (STD) / 450 (OPT)
	inch	7.9	11.0	11.0	13.8	15.7	17.7	19.7	13.8	17.7	15.7 (STD) / 17.5 (OPT)	15.7 (STD) / 17.5 (OPT)	15.7 (STD) / 17.5 (OPT)	15.7 (STD) / 17.5 (OPT)
Max cutting diameter	mm	250	280	280	350	400	450	500	350	450	400 (STD) / 450 (OPT)	400 (STD) / 450 (OPT)	400 (STD) / 450 (OPT)	400 (STD) / 450 (OPT)
	inch	9.8	11.0	11.0	13.8	15.7	17.7	19.7	13.8	17.7	15.7 (STD) / 17.5 (OPT)	15.7 (STD) / 17.5 (OPT)	15.7 (STD) / 17.5 (OPT)	15.7 (STD) / 17.5 (OPT)
Max cutting length	mm	200	200	330	400	600 / 1000	600 / 1000	750 / 1500	400	600 / 1000	1000	1000	1000	1000
	inch	7.9	7.9	13.0	15.7	24.5 / 39.4	24.5 / 39.4	29.5 / 40	15.7	24.5 / 39.4	24.5	24.5	24.5	24.5
Chuck size for main spindle	inch	collet CR42 / 5C	collet CR42 / 5C	6"	8"	8" STD / 10" OPT	10" STD / 12" OPT	15"	8"	10" STD / 12" OPT	8" (STD) / 10" (OPT)	8" (STD) / 10" (OPT)	8" (STD) / 10" (OPT)	8" (STD) / 10" (OPT)
Chuck size for sub spindle	inch	--	--	--	--	--	--	--	--	--	8" (STD)	--	8" (STD)	8" (STD)
Draw tube bore	mm	42	42	45	52	65	78	103	52	78	65 (STD) / 78 (OPT)	65 (STD) / 78 (OPT)	65 (STD) / 78 (OPT)	65 (STD) / 78 (OPT)
	inch	1.7	1.7	1.8	2.0	2.6	2.6	4.1	2.0	3.1	2.6 (STD) / 3.1 (OPT)	2.6 (STD) / 3.1 (OPT)	2.6 (STD) / 3.1 (OPT)	2.6 (STD) / 3.1 (OPT)
MAIN SPINDLE														
Max speed	rpm	7000	7000	6000	5000	4500	3500	2500	5000	3500	4500	4500	4500	4500
Max power rating	kW	7.5	11	15	22	26	30	35	22	30	26	26	26	26
Spindle nose		A2-5	A2-5	A2-5	A2-6	A2-6	A-8	A2-11	A2-6	A-8	A2-6 (STD) / A2-8 (OPT)	A2-6 (STD) / A2-8 (OPT)	A2-6 (STD) / A2-8 (OPT)	A2-6 (STD) / A2-8 (OPT)
SUB SPINDLE														
Max speed	rpm	--	--	--	--	--	--	--	--	--	4500	--	4500	4500
Max power rating	kW	--	--	--	--	--	--	--	--	--	18.5	--	18.5	18.5
Spindle nose		--	--	--	--	--	--	--	--	--	A2-6	--	A2-6	A2-6
TRAVELS & FEEDRATES														
X axis travels	mm	350	150+20	150+20	175+20	225+25	250+25	275+30	175+20	250+25	225+25	--	225+25	225+25
	inch	13.78	5.9+0.79	5.9+0.79	6.89+0.79	8.86+1	8.86+1	10.83+1.18	6.89+0.79	8.86+1	8.86+1	--	8.86+1	8.86+1
Y axis travels for SL300 model	mm	--	--	--	--	--	--	--	--	--	--	100	--	100
	inch	--	--	--	--	--	--	--	--	--	--	3.9	--	3.9
Z axis travels	mm	220	220	350	400	600 / 1000	600 / 1000	750 / 1500	400	600 / 1000	1000	1000	1000	1000
	inch	8.66	8.7	13.8	15.7	24.5 / 39.4	24.5 / 39.4	29.5 / 59	15.7	24.5 / 39.4	39.4	39.4	39.4	39.4
B axis travels for SL300 model	mm	--	--	--	--	--	--	--	--	--	1000	1000	1000	1000
	inch	--	--	--	--	--	--	--	--	--	39.4	39.4	39.4	39.4
Rapids feed X/Z	m/min	36	36	36	36	36	36	36	36	36	36	36	36	36
	ipm	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417	1417
Cutting feed X/Z	m/min	10	10	10	10	10	10	10	10	10	10	10	10	10
	ipm	394	394	394	394	394	394	394	394	394	394	394	394	394
TURRET														
Number of tools	station	refer to drawing	10	10	12	12	12	12	12	12	12	12	12	12
OD Tool size	mm	16	20	20	20	25	25	32	VDI30	VDI40	VDI40	VDI40	VDI40	VDI40
	inch	0.63	0.79	0.79	0.79	0.98	0.98	1.26	1.18	1.57	1.57	1.57	1.57	1.57
Boring bar shank	mm	20	25	25	32	40	40	50	ref to application	ref to application	ref to application	ref to application	ref to application	ref to application
	inch	0.79	0.98	0.98	1.26	1.57	1.57	1.97						
Index time (neighbour tool)	sec	--	2	2	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
TAILSTOCK														
Quill travel	mm	--	--	80	--	100	100	120	--	100	--	--	--	--
	inch	--	--	3.1	--	3.9	3.9	4.7	--	3.9	--	--	--	--
Tailstock travel	mm	--	--	210	--	650	650	650	--	650	--	--	--	--
	inch	--	--	8.3	--	25.6	25.6	25.6	--	25.6	--	--	--	--
Quill taper	mm	--	--	MT3	--	MT4	MT5	MT5	--	MT5	--	--	--	--
Live Tooling														
Max speed	rpm	--	--	--	--	--	--	--	5000	4000	--	4000	4000	4000
Power drive torque	Nm	--	--	--	--	--	--	--	24	35	--	35	35	35
ACCURACY														
Positioning (+/-)	mm	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004	±0.004
	inch	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015	±0.00015
Repeatability (+/-)	mm	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002
	inch	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008	±0.00008
GENERAL														
Tank capacity	liters	100	120	120	200	250	250	400	200	250	250	250	250	250
	gal	26	32	32	53	66	66	106	53	66	66	66	66	66
Chip Disposal		Chip Tray STD Conveyor OPT	Chip Tray STD Conveyor OPT	Chip Tray STD Conveyor OPT	Chip Tray STD Conveyor OPT	Chip Tray STD Conveyor OPT	Chip Tray STD Conveyor OPT	Chip Tray STD Conveyor OPT	CONVEYOR	CONVEYOR	CONVEYOR	CONVEYOR	CONVEYOR	CONVEYOR
Power requirement	kva	20KVA	20KVA	20KVA	25KVA	25KVA	30KVA	30KVA	30KVA	30KVA	35KVA	35KVA	35KVA	35KVA
Floor Space (WxL)	mm ²	2500x1300	2500x1300	2500x1300	3000x1500	4100(4540)x1900	4100(4540)x1900	4100(4540)x2200	3000x1500	4100(4540)x1900	4540x1900	4540x2200	4540x1900	4540x2200
	inch ²	98.4x51.2	98.4x51.2	98.4x51.2	118x59	161.4(179)x75	161.4(179)x75	161(179)x86.6	118x59	161.4(179)x75	179x75	179x86.6	179x75	179x86.6
Weight	kgs	2300	2500	2600	4000	5200	5600	7000	4100	5800	7000	7800	7180	8200
	lbs	5071	5512	5732	8818	11464	12346	15432	9039	12787	15432	17196	15796	18078

Note: 1 year limited warranty

*All specification subject to change without notice. *Blue lines for "SL-L models".

*Accuracy quoted at 68° , on 8" steel reinforced concrete foundation. *See Akira Seiki technical bulletin for additional details.

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