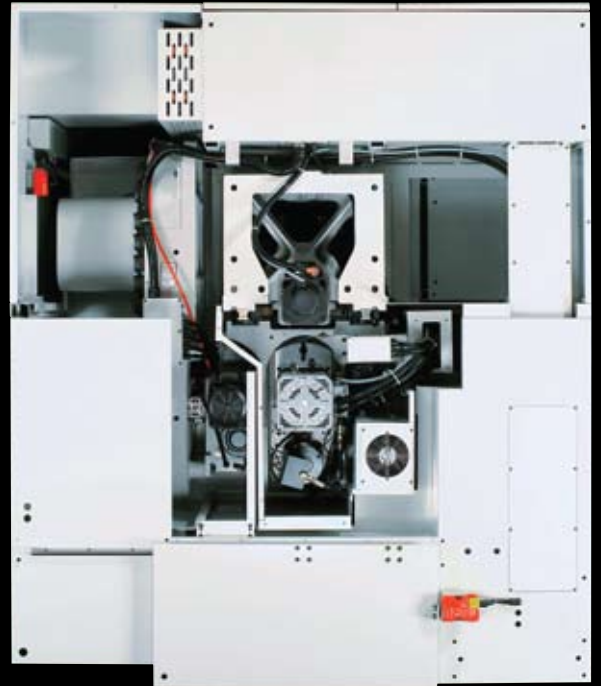


QUASER

we cut faster

MV154 SERIES



MV154 SERIES

**MV154 series (Version 1) is our most popular VMC
- more than 1,500 units installed all over the
world during 2004-2007.**

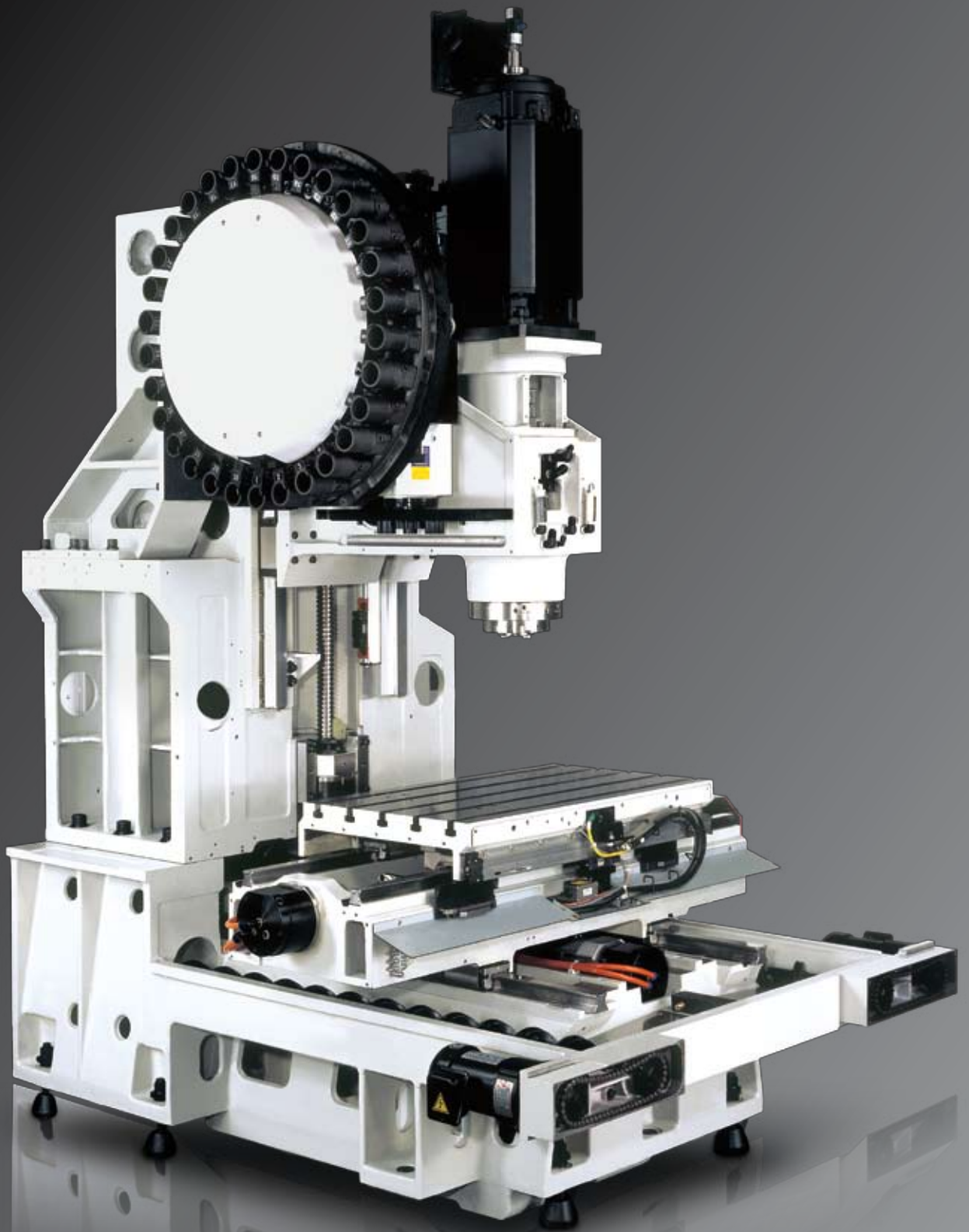
**Now, we come out version 2 with the new
features while still keep all the virtues of version 1.**



Highest rigidity frame in this class:

Static rigidity > 50 N/ μ m

(Competitors at 20 – 30 N/ μ m)



Economic: MV154E & MV154EL

Performance: MV154P & MV154PL



Mold & Die High Speed Cutting: MV154M & MV154LM



We calibrate the ball screws alignment within 1 μm



We hand scrape the linear way contact surfaces to achieve the highest mounting accuracies



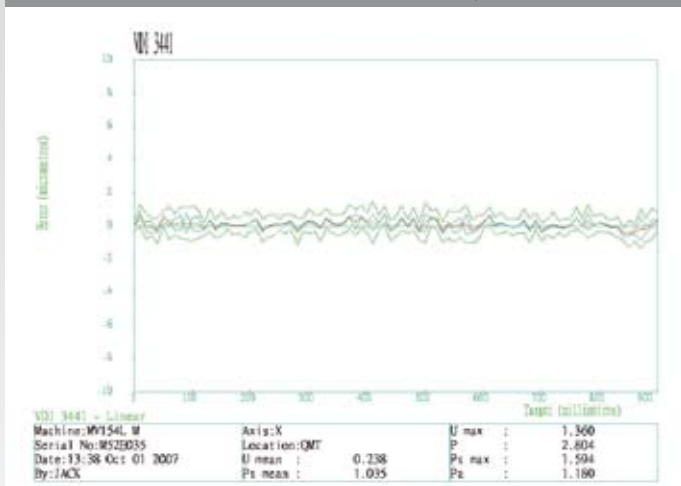
Results



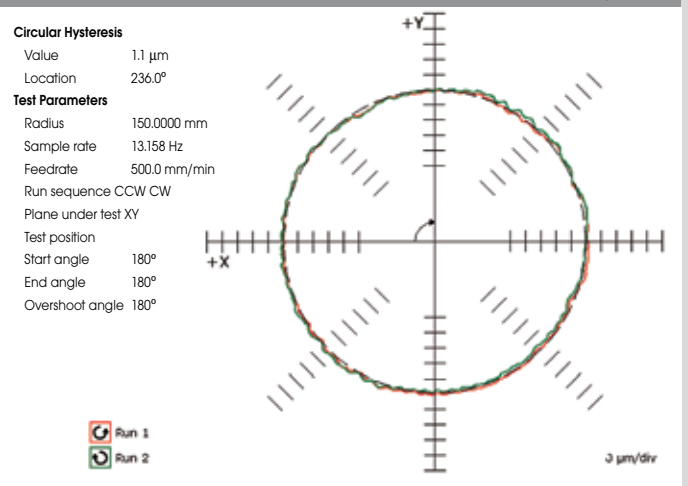
Text island, height 2 μm



Positioning accuracy=1.180 μm VDI 3441



Feed rate: 500 mm / min, Value: 1.1 μm

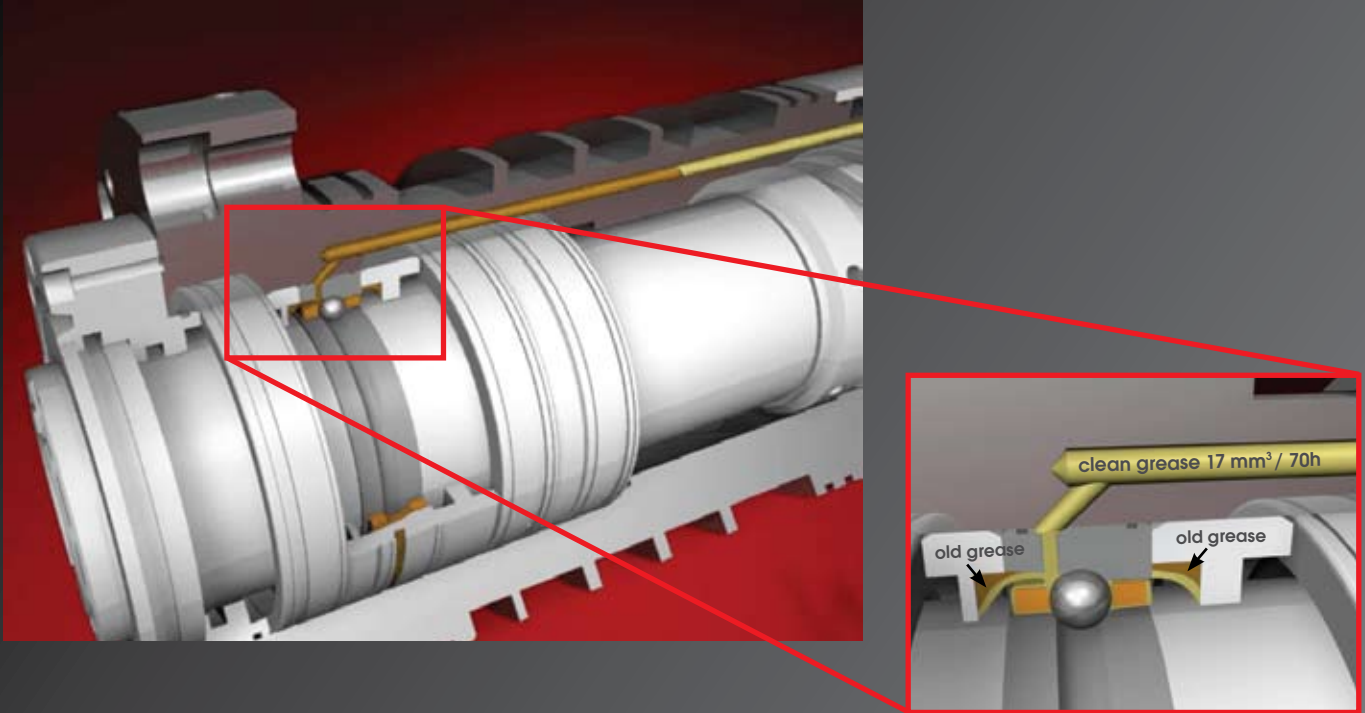


Note: The measuring results indicated in this catalog are provided as an example by random selection.

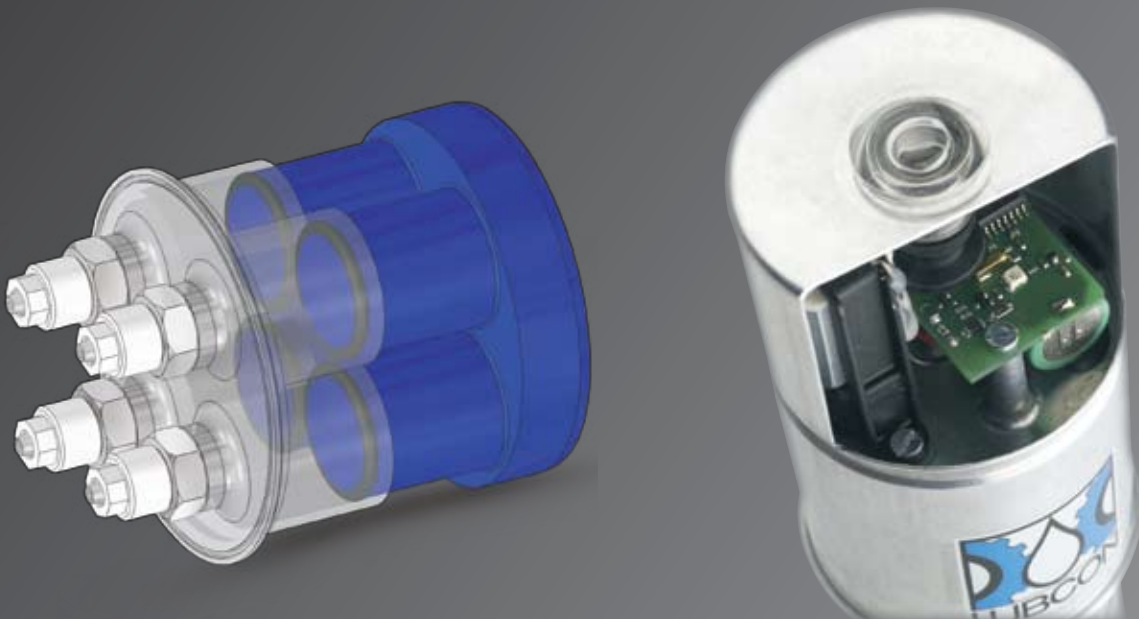
Unique spindle technology

Key principle

Use car industry re-greasing principle to supply “clean grease” at 70 hr interval by 17mm^3 / shoot.



The grease chamber volume at 7.5 cm^3 can support 28,840 hr.
This LUBCON unit service life at 3 years as minimum is guaranteed.



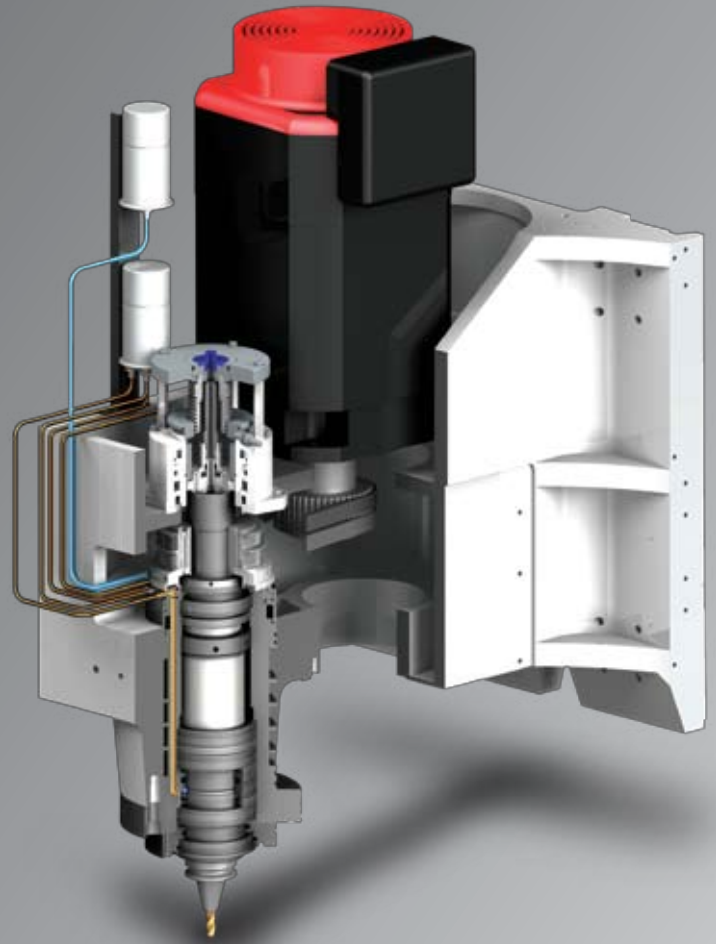
Wide range selections

40 Taper

1) Reliable belt driving spindle

Type WB40R

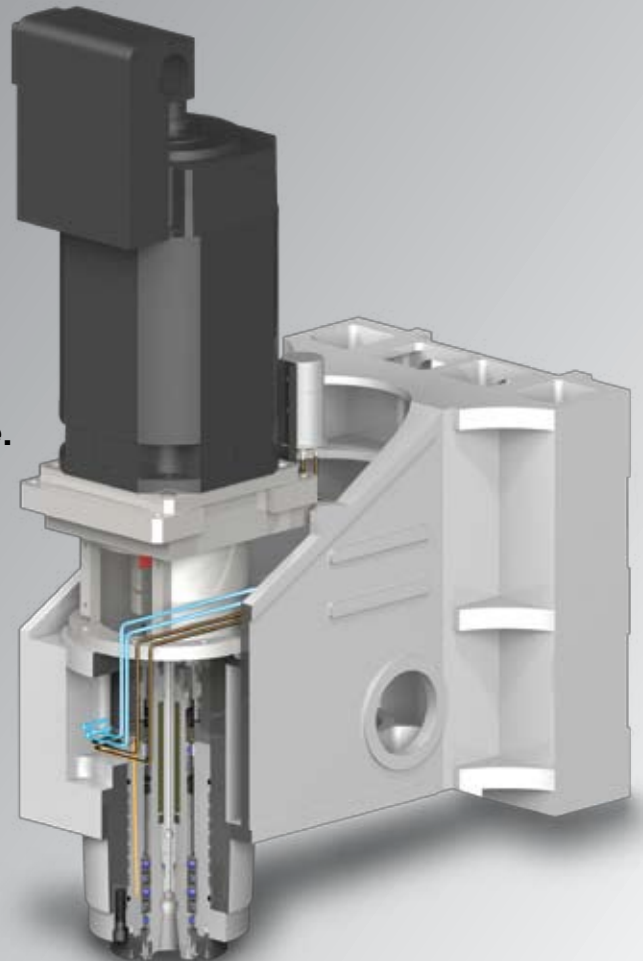
- the best (may be also the first) in the world.
- 15,000 min⁻¹, vibration $\leq 1.5 \mu\text{m}$ with low noise level plus very low maintenance cost.
- 4 Hybrid angular bearing plus one roller bearing in rear.



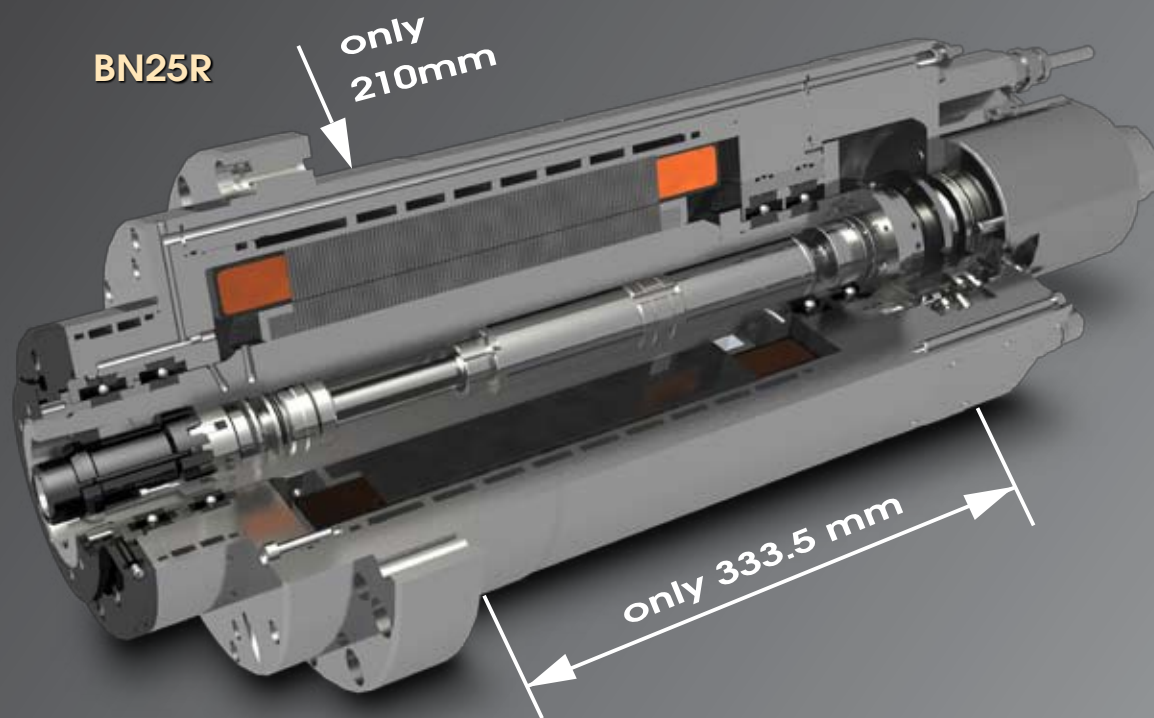
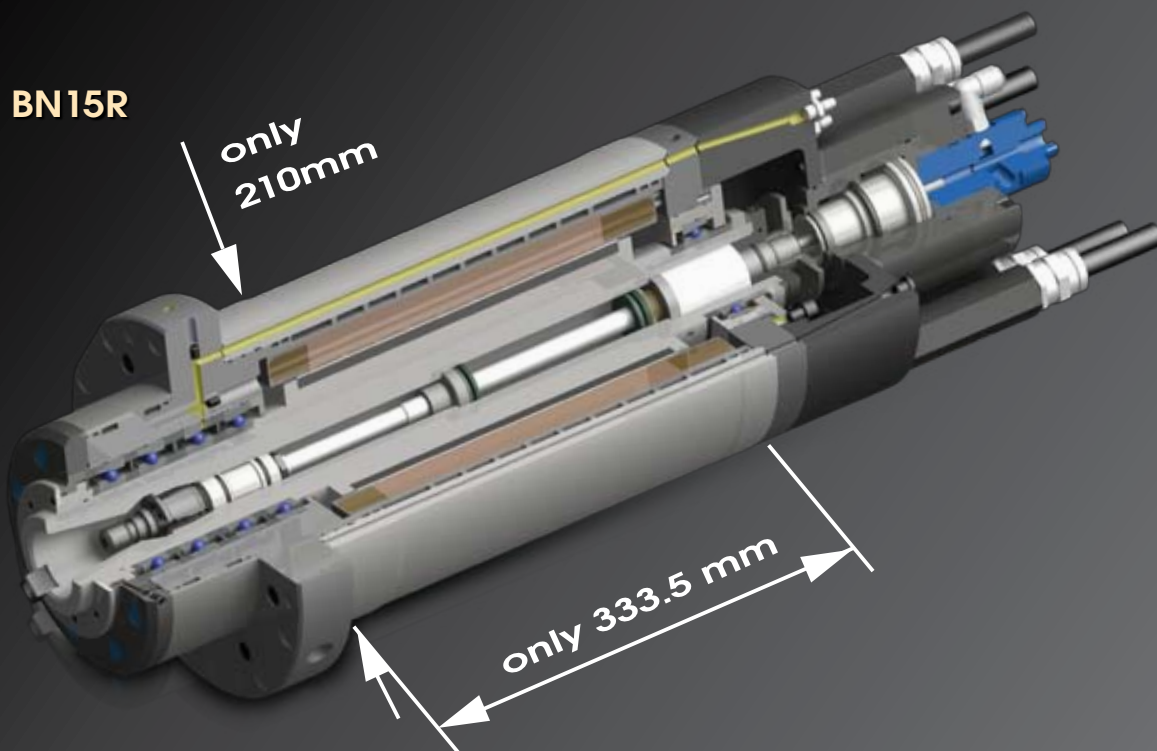
2) Performance coupling spindle

Type NC40R

- highest rigidity 15,000 min⁻¹ spindle.
- Roller bearing in the front & rear.



3) State-of-art motor spindles



Type BN15R – THE BEST MOTOR SPINDLE IN THIS CLASS.

15,000 min⁻¹, 42 kw, 201 Nm

Vibration displacement $\leq 0.7 \mu\text{m}$

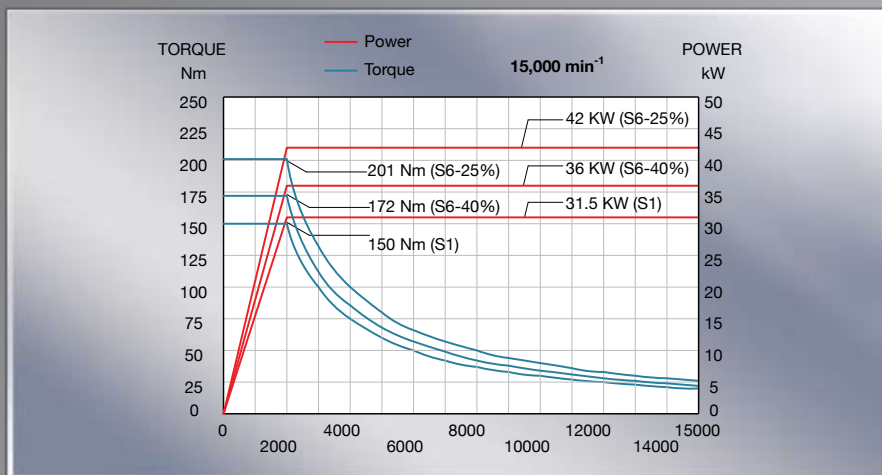
a) Use most advanced synchronous motor technology

- 30% higher torque & power to the same size asynchronous motor.
- Very high first natural frequency, supplying excellent kinematics and achieve $\leq 0.7 \mu\text{m}$ vibration displacement at high speed.

b) Four Ø70 mm angular contact hybrid ball bearings under fixed preload:

- Higher rigidity.
- Less thermal expansion.

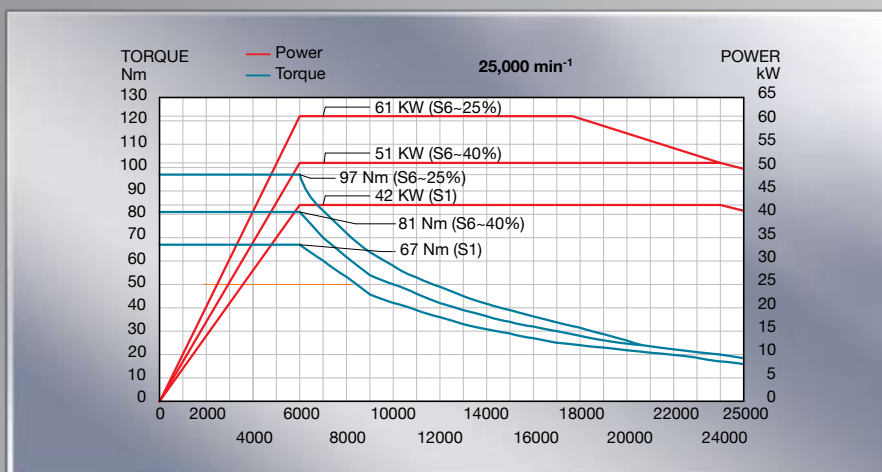
Compared with competitors spring preload spindles.



Type BN25R – THE BEST MOTOR SPINDLE IN THIS CLASS.

25,000 min⁻¹, 61 kw, 97 Nm with popular HSK A63.

Vibration displacement $\leq 1.0 \mu\text{m}$.





Heavy duty

Plunge milling: $\varnothing 35$ mm

Workpiece: S45C

S= 1,400 min⁻¹

F= 700 mm/min

t= 1 mm

MODEL MV154M



High speed

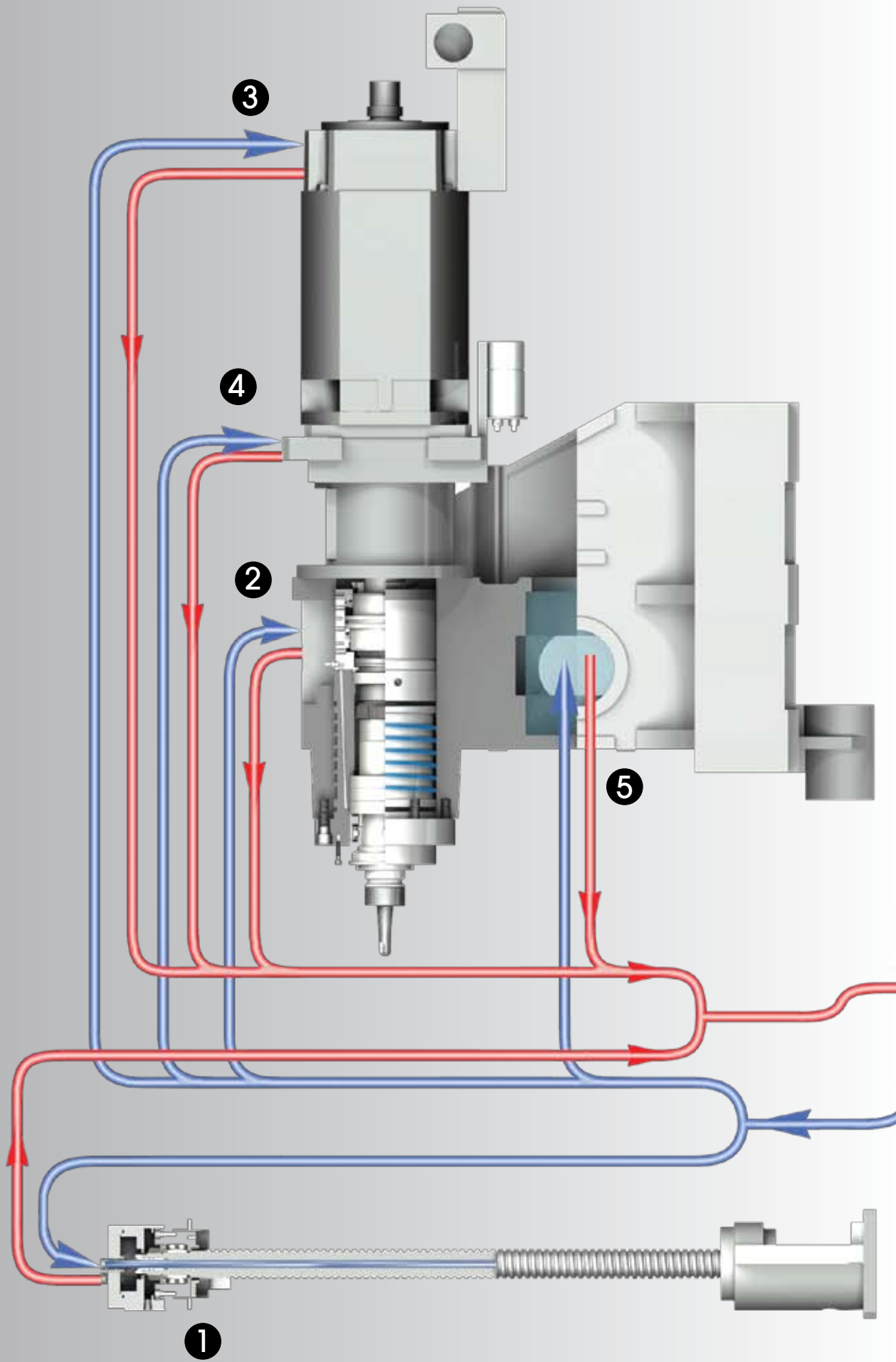
Fine drilling: $\varnothing 0.3$ mm

Workpiece: S45C

S= $15,000 \text{ min}^{-1}$

F= 50 mm/min

depth= 2 mm



Thermal management

To meet more and more severe “ WORKING ACCURACY ” requirements, our “ THERMAL MANAGEMENT ”:

- ❶ Coolant through ball screw (CTB) to keep
 - a) Under $\pm 10 \mu\text{m}$ repeatability on X, Y & Z
 - b) Stable rigidity on ball screw system
- ❷ Spindle cooling circuit
- ❸ Motor cooling circuit (for coupling spindle)
- ❹ Motor housing cooling circuit (for coupling spindle)
- ❺ Head stock cooling chamber (for coupling spindle & motor spindle)
- ❻ Large capacity oil cooler



● = Standard ○ = Option × = N / A

	Belt spindle			Coupling	Motor spindle	
	9	12	15	15	15	25
❶	○	○	○	○	○	○
❷	●	●	●	●	●	●
❸	×	×	×	●	●	●
❹	×	×	×	●	×	×
❺	×	×	×	●	●	●
❻	○	○	●	●	●	●



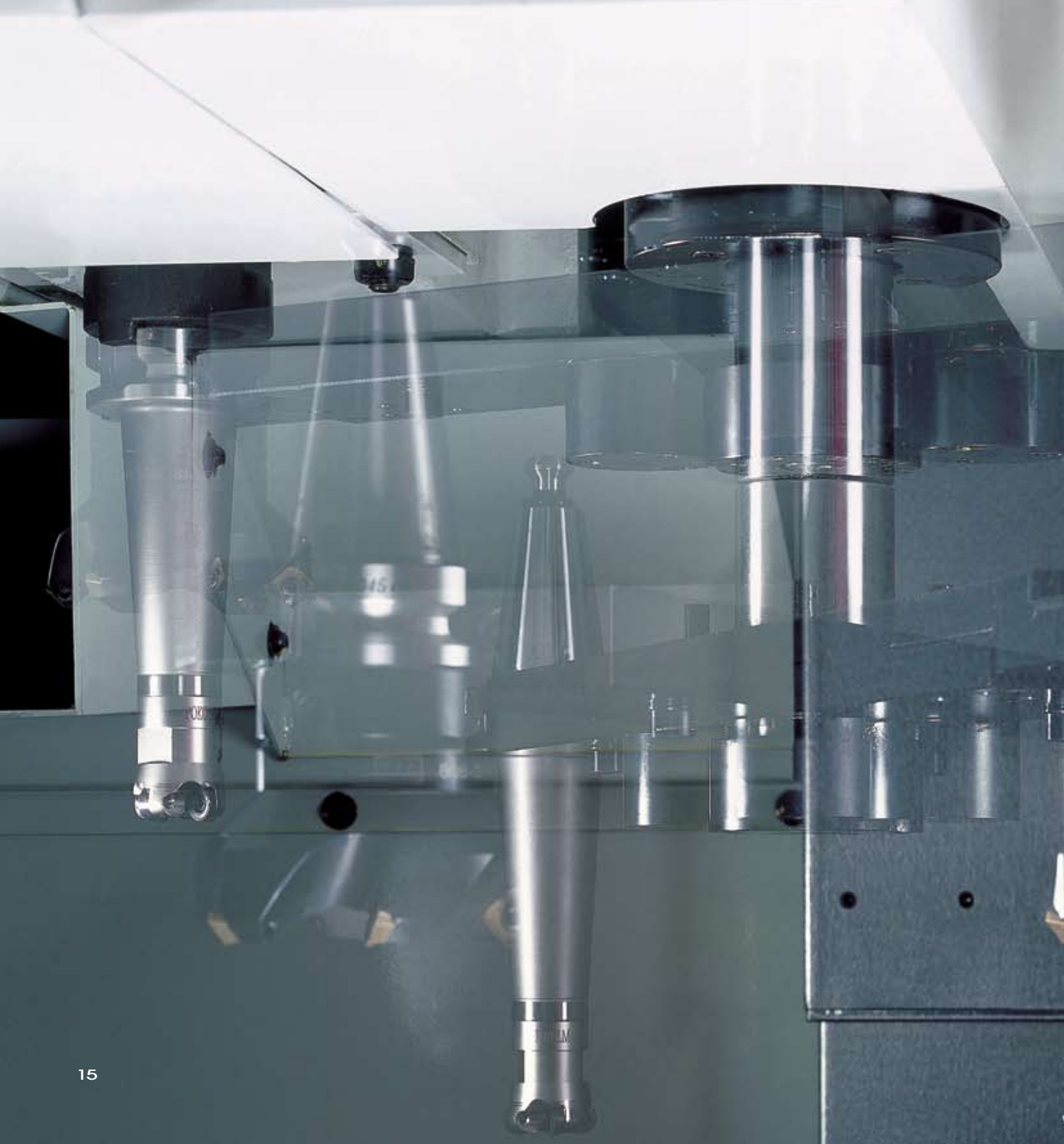
60ATC



48ATC



30ATC





Chip to chip time: 4 sec



Blue and yellow label with technical specifications.

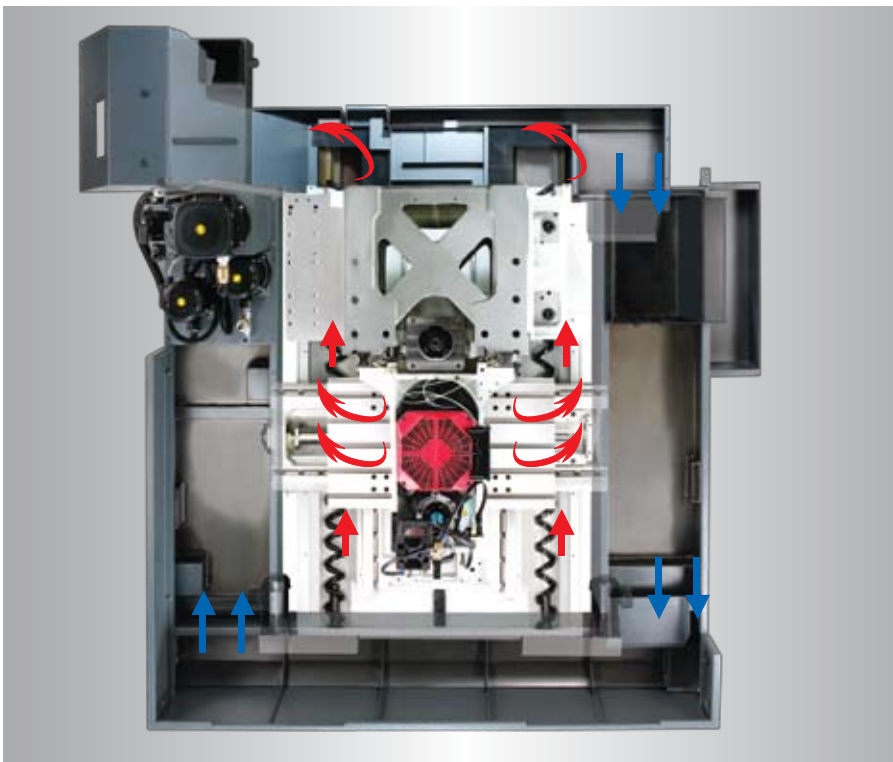
VERBODEN TOEGANG
Gevaar van scherpereksie
Bewegende delen
Afwijking van de werking
Beweging van de
Werkstukken
Bij het bedienen
van de machine
Bewaren van de
veiligheidsafstand



Better chip flow by augers direct to the rear



Scraper or hinge type chip conveyor



Large volume wash down coolant

ter
4P

BIG-PLUS
SAFETY & OPERATING GUIDE

mit
WEISS
SPINDEL



WARNING
The safety device must be closed before starting the machine. The safety device must be closed before starting the machine. The safety device must be closed before starting the machine.

WARNING
13.000 min.
15.000 min.
238 °C

WARNING
Keep hands clear of all moving parts. Do not touch the workpiece or the tool. Do not touch the workpiece or the tool. Do not touch the workpiece or the tool.

WARNING
Do not touch the workpiece or the tool. Do not touch the workpiece or the tool. Do not touch the workpiece or the tool.



B

version 2

- A** Swiveling operator panel
- B** Single door design open at 900 mm (1,200 mm on L)
- C** Spindle to front at a convenient 755 mm (805 mm on L)
- D** Table to front-easy access 170 mm (220 mm on L)

15,000 min⁻¹



A

INSTRUCTION OF CUSTOMER PARAMETERS SETTING

A. Make sure about is functioning at AUTO mode and request to update program and parameter setting.

B. CNC setting data is related to each machine and parameter setting.

FUNCTION	ADDRESS	UNIT	DEFAULT	STANDARD	NOTE
Spindle speed	M03	rpm	1000	1000	Spindle speed
Spindle stop	M05	min	0.0000	0.0000	Spindle stop
Spindle start	M02	min	0.0000	0.0000	Spindle start
Spindle stop	M04	min	0.0000	0.0000	Spindle stop
Spindle stop	M06	min	0.0000	0.0000	Spindle stop
Spindle stop	M07	min	0.0000	0.0000	Spindle stop
Spindle stop	M08	min	0.0000	0.0000	Spindle stop
Spindle stop	M09	min	0.0000	0.0000	Spindle stop
Spindle stop	M10	min	0.0000	0.0000	Spindle stop
Spindle stop	M11	min	0.0000	0.0000	Spindle stop
Spindle stop	M12	min	0.0000	0.0000	Spindle stop
Spindle stop	M13	min	0.0000	0.0000	Spindle stop
Spindle stop	M14	min	0.0000	0.0000	Spindle stop
Spindle stop	M15	min	0.0000	0.0000	Spindle stop
Spindle stop	M16	min	0.0000	0.0000	Spindle stop
Spindle stop	M17	min	0.0000	0.0000	Spindle stop
Spindle stop	M18	min	0.0000	0.0000	Spindle stop
Spindle stop	M19	min	0.0000	0.0000	Spindle stop
Spindle stop	M20	min	0.0000	0.0000	Spindle stop
Spindle stop	M21	min	0.0000	0.0000	Spindle stop
Spindle stop	M22	min	0.0000	0.0000	Spindle stop
Spindle stop	M23	min	0.0000	0.0000	Spindle stop
Spindle stop	M24	min	0.0000	0.0000	Spindle stop
Spindle stop	M25	min	0.0000	0.0000	Spindle stop
Spindle stop	M26	min	0.0000	0.0000	Spindle stop
Spindle stop	M27	min	0.0000	0.0000	Spindle stop
Spindle stop	M28	min	0.0000	0.0000	Spindle stop
Spindle stop	M29	min	0.0000	0.0000	Spindle stop
Spindle stop	M30	min	0.0000	0.0000	Spindle stop
Spindle stop	M31	min	0.0000	0.0000	Spindle stop
Spindle stop	M32	min	0.0000	0.0000	Spindle stop
Spindle stop	M33	min	0.0000	0.0000	Spindle stop
Spindle stop	M34	min	0.0000	0.0000	Spindle stop
Spindle stop	M35	min	0.0000	0.0000	Spindle stop
Spindle stop	M36	min	0.0000	0.0000	Spindle stop
Spindle stop	M37	min	0.0000	0.0000	Spindle stop
Spindle stop	M38	min	0.0000	0.0000	Spindle stop
Spindle stop	M39	min	0.0000	0.0000	Spindle stop
Spindle stop	M40	min	0.0000	0.0000	Spindle stop
Spindle stop	M41	min	0.0000	0.0000	Spindle stop
Spindle stop	M42	min	0.0000	0.0000	Spindle stop
Spindle stop	M43	min	0.0000	0.0000	Spindle stop
Spindle stop	M44	min	0.0000	0.0000	Spindle stop
Spindle stop	M45	min	0.0000	0.0000	Spindle stop
Spindle stop	M46	min	0.0000	0.0000	Spindle stop
Spindle stop	M47	min	0.0000	0.0000	Spindle stop
Spindle stop	M48	min	0.0000	0.0000	Spindle stop
Spindle stop	M49	min	0.0000	0.0000	Spindle stop
Spindle stop	M50	min	0.0000	0.0000	Spindle stop
Spindle stop	M51	min	0.0000	0.0000	Spindle stop
Spindle stop	M52	min	0.0000	0.0000	Spindle stop
Spindle stop	M53	min	0.0000	0.0000	Spindle stop
Spindle stop	M54	min	0.0000	0.0000	Spindle stop
Spindle stop	M55	min	0.0000	0.0000	Spindle stop
Spindle stop	M56	min	0.0000	0.0000	Spindle stop
Spindle stop	M57	min	0.0000	0.0000	Spindle stop
Spindle stop	M58	min	0.0000	0.0000	Spindle stop
Spindle stop	M59	min	0.0000	0.0000	Spindle stop
Spindle stop	M60	min	0.0000	0.0000	Spindle stop
Spindle stop	M61	min	0.0000	0.0000	Spindle stop
Spindle stop	M62	min	0.0000	0.0000	Spindle stop
Spindle stop	M63	min	0.0000	0.0000	Spindle stop
Spindle stop	M64	min	0.0000	0.0000	Spindle stop
Spindle stop	M65	min	0.0000	0.0000	Spindle stop
Spindle stop	M66	min	0.0000	0.0000	Spindle stop
Spindle stop	M67	min	0.0000	0.0000	Spindle stop
Spindle stop	M68	min	0.0000	0.0000	Spindle stop
Spindle stop	M69	min	0.0000	0.0000	Spindle stop
Spindle stop	M70	min	0.0000	0.0000	Spindle stop
Spindle stop	M71	min	0.0000	0.0000	Spindle stop
Spindle stop	M72	min	0.0000	0.0000	Spindle stop
Spindle stop	M73	min	0.0000	0.0000	Spindle stop
Spindle stop	M74	min	0.0000	0.0000	Spindle stop
Spindle stop	M75	min	0.0000	0.0000	Spindle stop
Spindle stop	M76	min	0.0000	0.0000	Spindle stop
Spindle stop	M77	min	0.0000	0.0000	Spindle stop
Spindle stop	M78	min	0.0000	0.0000	Spindle stop
Spindle stop	M79	min	0.0000	0.0000	Spindle stop
Spindle stop	M80	min	0.0000	0.0000	Spindle stop
Spindle stop	M81	min	0.0000	0.0000	Spindle stop
Spindle stop	M82	min	0.0000	0.0000	Spindle stop
Spindle stop	M83	min	0.0000	0.0000	Spindle stop
Spindle stop	M84	min	0.0000	0.0000	Spindle stop
Spindle stop	M85	min	0.0000	0.0000	Spindle stop
Spindle stop	M86	min	0.0000	0.0000	Spindle stop
Spindle stop	M87	min	0.0000	0.0000	Spindle stop
Spindle stop	M88	min	0.0000	0.0000	Spindle stop
Spindle stop	M89	min	0.0000	0.0000	Spindle stop
Spindle stop	M90	min	0.0000	0.0000	Spindle stop
Spindle stop	M91	min	0.0000	0.0000	Spindle stop
Spindle stop	M92	min	0.0000	0.0000	Spindle stop
Spindle stop	M93	min	0.0000	0.0000	Spindle stop
Spindle stop	M94	min	0.0000	0.0000	Spindle stop
Spindle stop	M95	min	0.0000	0.0000	Spindle stop
Spindle stop	M96	min	0.0000	0.0000	Spindle stop
Spindle stop	M97	min	0.0000	0.0000	Spindle stop
Spindle stop	M98	min	0.0000	0.0000	Spindle stop
Spindle stop	M99	min	0.0000	0.0000	Spindle stop
Spindle stop	M100	min	0.0000	0.0000	Spindle stop

PARAMETER SETTING

C

D

version 2

15,000



Technical data

Technical Data	MV154E / MV154EL Economic			MV154P / MV154PL Performance						MV154M / MV154LM Mold & Die				
	/9B	/12B	/15B	/9B	/12B	/15B	15C	/15M	25M	15C	/15M	25M		
Work range														
Table size (mm)	900 x 500 / 1,200 x 500									900 x 500 / 1,200 x 500				
Travel	X (mm)	700 / 1,020									700 / 900			
	Y (mm)	530									500			
	Z (mm)	560									560			
Table load capacity (kg)	500									500				
Feed drive														
Feed force	X (N)	4,712			4,712 (F) / 6,951 (T)						17,279 (F) / 16,965 (T)			
	Y (N)	4,712			4,712 (F) / 6,951 (T)						17,279 (F) / 20,499 (T)			
	Z (N)	11,519			11,519 (F) / 11,310 (T)						23,562 (F) / 20,499 (T)			
Rapid movement X/Y/Z (m/min.)	40 / 40 / 36			40 / 40 / 36						24				
Acceleration X/Y/Z (m/s ²)	F	7 / 6 / 5			7 / 6 / 5						10 / 10 / 8.5			
	T	-			6 / 5 / 5									
Dia. & pitch of the ball screw	Ø45 / P = 16 / 16 / 12									Ø45 / P = 8 / 8 / 8				
Position accuracy														
ISO 230-2 / JIS in X/Y/Z (mm)	0.015 ⁽¹⁾ / 0.008									0.003 / 0.002				
	0.008 ⁽¹⁾ / 0.004 (Linear encoder)									0.005 / 0.003 (Linear encoder)				
Main spindle														
Spindle model	40 Taper													
Spindle taper	BBT40						BBT40 HSK A63	BBT40	HSK A63	BBT40 HSK A63	BBT40	HSK A63		
	Max. spindle speed	9,000	12,000	15,000	9,000	12,000	15,000	15,000	15,000	25,000	15,000	15,000	25,000	
Spindle base speed	F	938 ⁽²⁾	1,250 ⁽²⁾	1,563 ⁽²⁾	1,125	1,500	1,875	1,400	-	-	1,400	-	-	
	T	-			1,125	1,500	1,875	1,500	2,000	5,880	1,500	2,000	5,880	
Spindle output KW (S6-40%)	F	15			22 ⁽²⁾			22	-	-	22	-	-	
	T	-			25			25	36/42 ⁽³⁾	51/61 ⁽³⁾	25	36/42 ⁽³⁾	51/61 ⁽³⁾	
Spindle output torque Nm (S6-40%)	F	153 ⁽²⁾	115 ⁽²⁾	92 ⁽²⁾	187 ⁽²⁾	140 ⁽²⁾	112 ⁽²⁾	150	-	-	150	-	-	
	T	-			212	159	127	159	172/201 ⁽³⁾	81/97 ⁽³⁾	159	172/201 ⁽³⁾	81/97 ⁽³⁾	
Spindle transmission	F	Belt			Belt			Coupling	-			-		
	T	-			Belt			Coupling	Motor spindle			Motor spindle		
Spindle diameter (mm)	Ø70									Ø65		Ø70		Ø65
Tool changer														
Tool selection	Random													
Magazine positions	30													
	48 / 60													
Max. tool diameter (mm)	76.2													
Max. tool dia. due to neighbor pots are empty	125						75			125	75			
Max. tool length (mm)	280						200			280	200			
Max. tool weight (kg)	7						4.5			7	4.5			
CTC time-ISO 10791-9 (sec.) - 60Hz	5			4						8		4		8

Note: ⁽¹⁾ Feed at 3 m/min

⁽²⁾ (S3-25%)

⁽³⁾ (S6-25%)

Main spindle

Belt spindle	- 9,000 min ⁻¹ & 12,000 min ⁻¹ & 15,000 min ⁻¹
Coupling spindle	- 15,000 min ⁻¹
Motor spindle	- 15,000 min ⁻¹ & 25,000 min ⁻¹

Control

(F) : FANUC	- QUASER mill i	(For E type)
	- 18iM-B	(For P type)
	- 31iA	(For M type)
(T) : HEIDENHAIN	- iTNC530	(For P & M type)

Technical Data	MV154E / MV154EL Economic			MV154P / MV154PL Performance						MV154M / MV154LM Mold & Die							
	/9B	/12B	/15B	/9B	/12B	/15B	15C	/15M	/25M	15C	/15M	/25M					
Coolant system																	
Coolant tank capacity (Liter)	400																
Pump capacity	60 L / min., 2 bar																
- Nozzle coolant	25 L / min., 8 bar																
- Through spindle coolant	25 L/min., 20 bar																
- Wash down	60 L / min., 2 bar																
Machine size																	
Height (mm)	2,880						2,985	2,955		2,985		2,955					
Floor space W x D (mm)	2,235 x 2,420 / 2,515 x 2,470																
Weight (kg)	6,400 / 6,850																
Connections																	
Main power	200V / 60Hz, 400V / 50Hz																
Power consumption (KVA)	20			25			30	45		55		30		45		55	

● = Standard ○ = Option × = N / A

Standard / Option accessories:	MV154 / MV154L											
	E			P						M		
	/9B	/12B	/15B	/9B	/12B	/15B	15C	/15M	/25M	15C	/15M	/25M
■ QUASER mill i	●	●	●	×	×	×	×	×	×	×	×	×
■ FANUC 18iM-B	×	×	×	●	●	●	●	×	×	×	×	×
■ FANUC 31iA	×	×	×	×	×	×	×	×	×	●	×	×
■ FANUC 3 "O" package (RISC, Data Servo, AI nano HPCC)	×	×	×	○	○	○	○	×	×	●	×	×
■ HEIDENHAIN iTNC530	×	×	×	●	●	●	●	●	●	●	●	●
■ HEIDENHAIN Option2	×	×	×	○	○	○	○	○	○	●	●	●
■ Tooling - ISO40	○	○	○	○	○	○	○	○	○	○	○	×
- BT40	●	●	●	●	●	●	●	●	●	×	●	×
- DIN	○	○	○	○	○	○	○	○	○	○	○	×
- HSK A63	×	×	×	×	×	×	○	×	●	○	×	●
■ ECO cooling system	●	●	×	●	●	×	×	×	×	×	×	×
■ Spindle oil chiller	○	○	●	○	○	●	●	●	●	●	●	●
■ 30 position tool magazine	●	●	●	●	●	●	●	●	●	●	●	●
■ 48 / 60 position tool magazine	○	○	○	○	○	○	○	○	○	○	○	○
■ 4th axis preparation	●	●	●	●	●	●	●	●	●	●	●	●
■ Ø250 mm rotary table & tail stock	○	○	○	○	○	○	○	○	○	○	○	○
■ Linear encoder absolute 0.05 μm	○	○	○	○	○	○	○	○	○	●	●	●
■ Spindle nose thermal compensation package (Z direction < 15 μm)*	×	×	×	○	○	○	○	○	○	●	●	●
■ Tool length / breakage measurement	○	○	○	○	○	○	○	○	○	○	○	○
■ Coolant system	●	●	●	●	●	●	●	●	●	●	●	●
■ 8 bar through spindle coolant	●	●	●	●	●	●	●	●	●	×	×	×
■ 20 bar through spindle coolant	○	○	○	○	○	○	○	○	○	●	●	●
■ Coolant wash down & wash gun	●	●	●	●	●	●	●	●	●	●	●	●
■ Chip conveyor	●	●	●	●	●	●	●	●	●	●	●	●
	Scrape type											
	Hinge type											
○	○	○	○	○	○	○	○	○	○	○	○	○
■ Stainless steel chip pan	●	●	●	●	●	●	●	●	●	●	●	●
■ Mist collector	○	○	○	○	○	○	○	○	○	○	○	○
■ Dual work light	●	●	●	●	●	●	●	●	●	●	●	●
■ Machine status light	●	●	●	●	●	●	●	●	●	●	●	●
■ CE & EMC	●	●	●	●	●	●	●	●	●	●	●	●

Note: * Package cover following items : spindle oil chiller, Z axis linear scale & QUASER's software.

MV154E & MV154P & MV154M

Installation dimension

A	9B/12B/15B	2,880
	15C	2,985
	15M/25M	2,955
B	Scrape type	300
	Hinge type	587

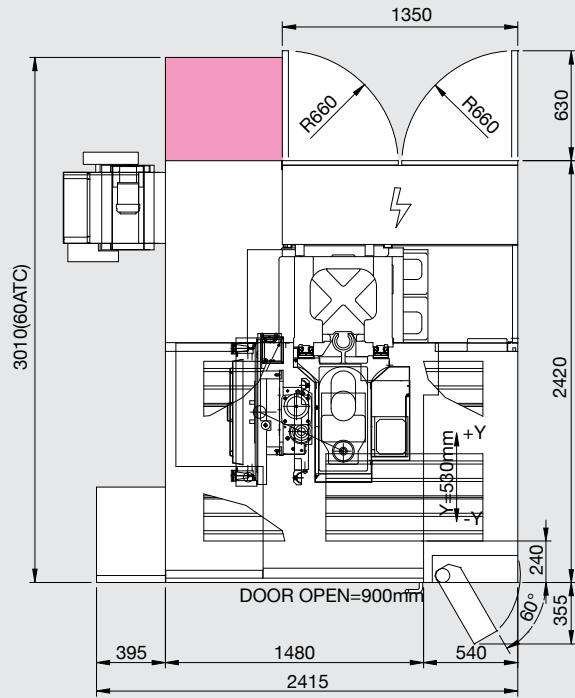
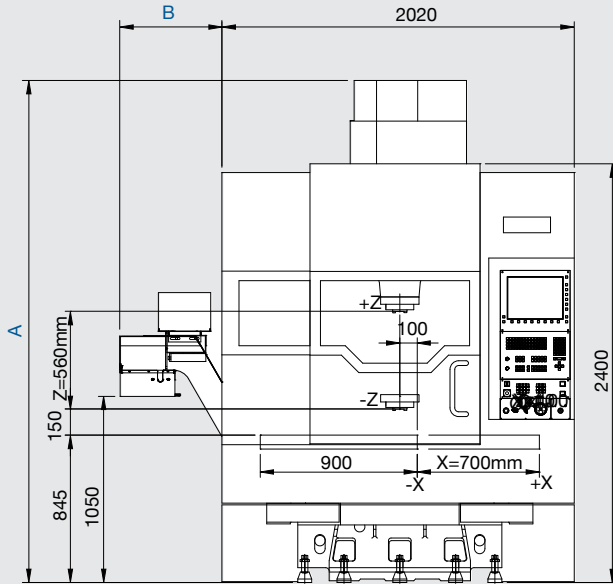
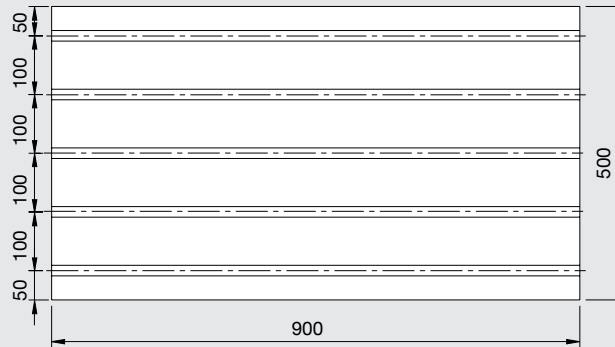
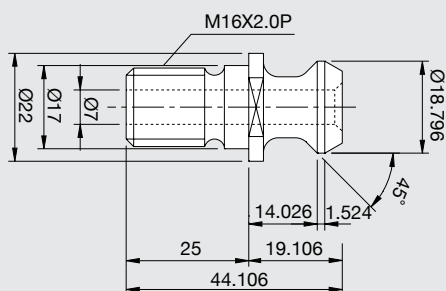


Table dimension

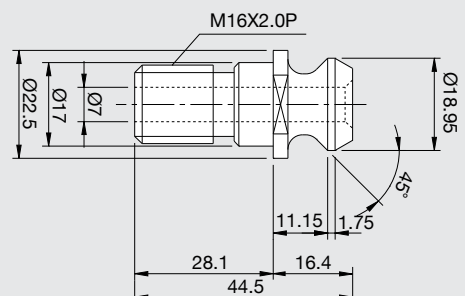


Pull stud and applicable tools

BT 40 (QUASER SUPPLY)

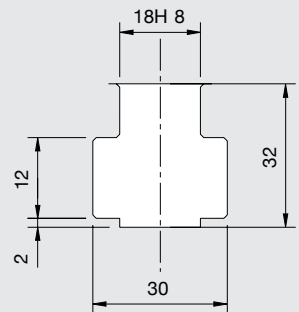
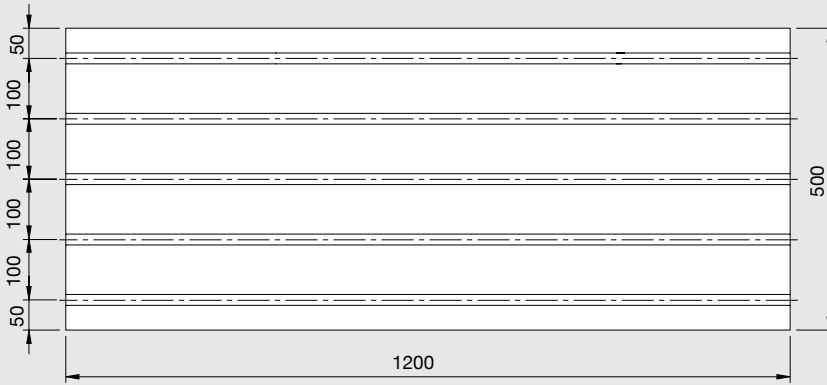
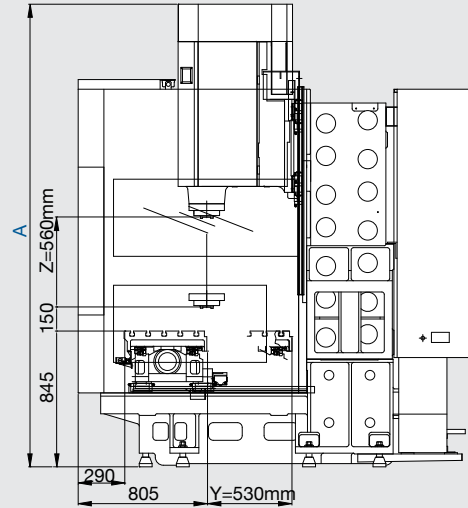
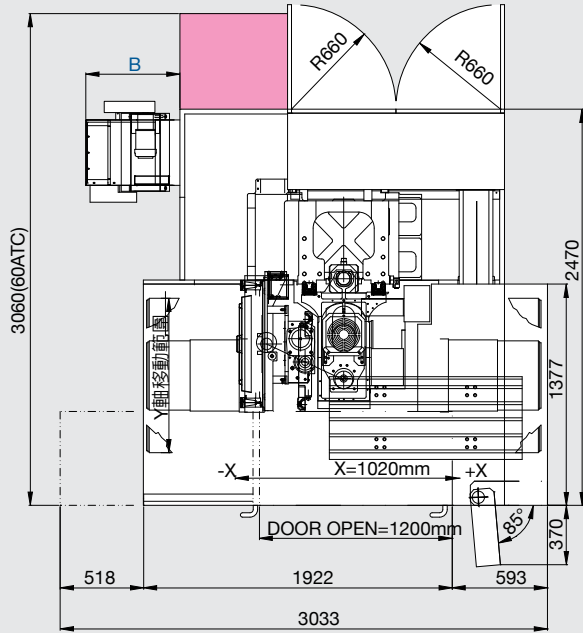


ISO (7388-B)

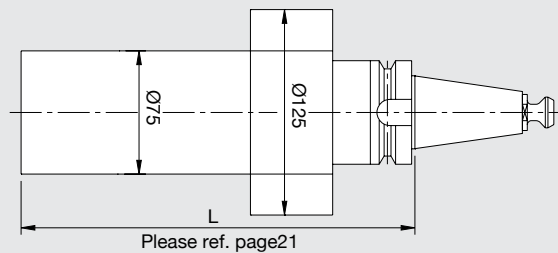
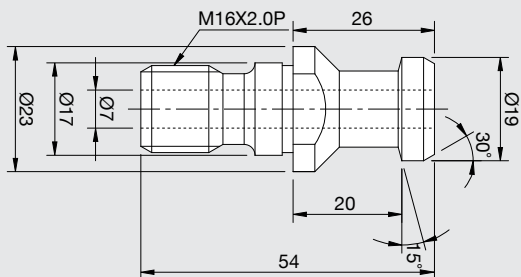


MV154EL & MV154PL & MV154LM

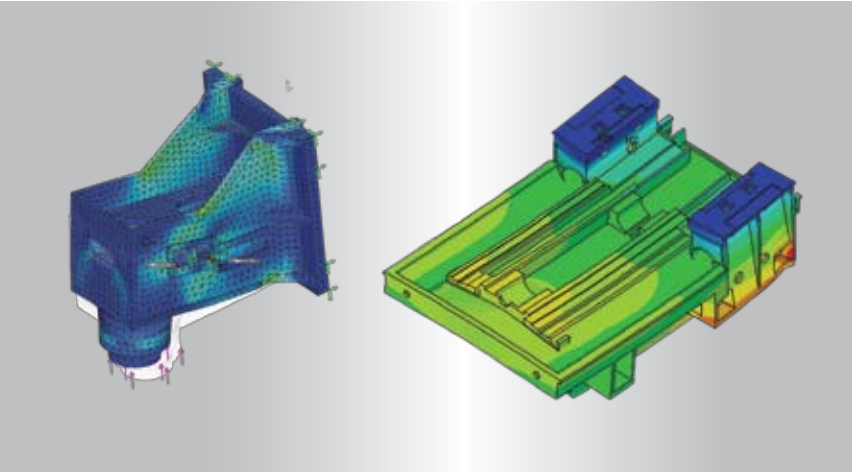
A	9B/12B/15B	2,880
	15C	2,985
	15M/25M	2,955
B	Scrape type	300
	Hinge type	587



DIN (69872-A)



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