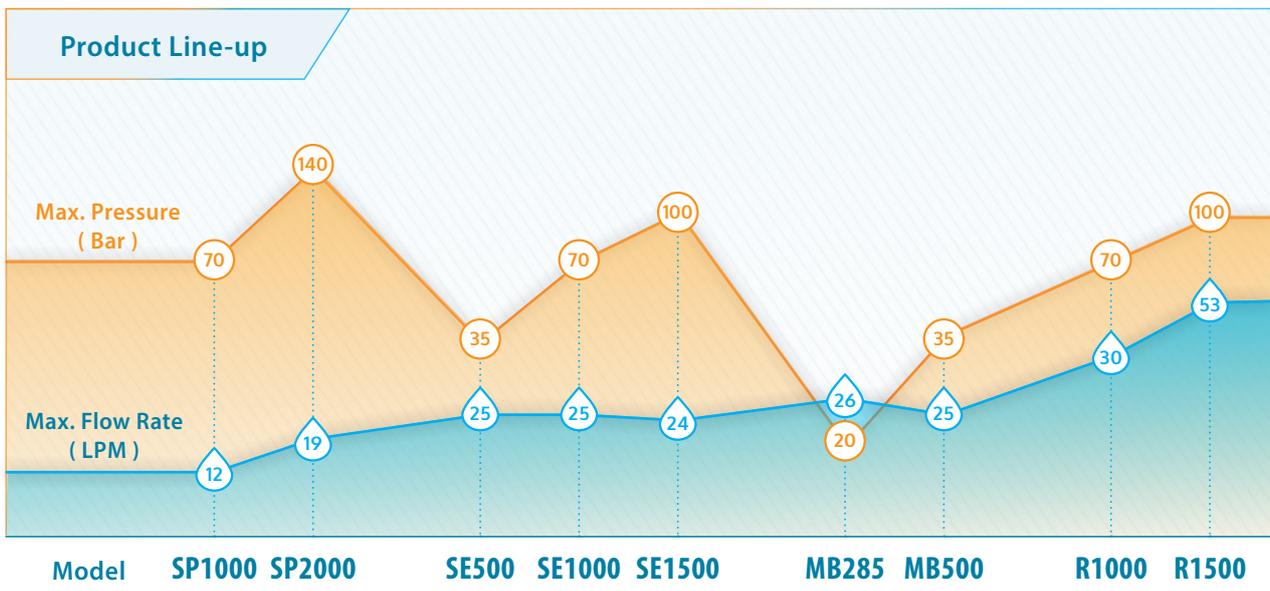




AllCool High Pressure Coolant Systems



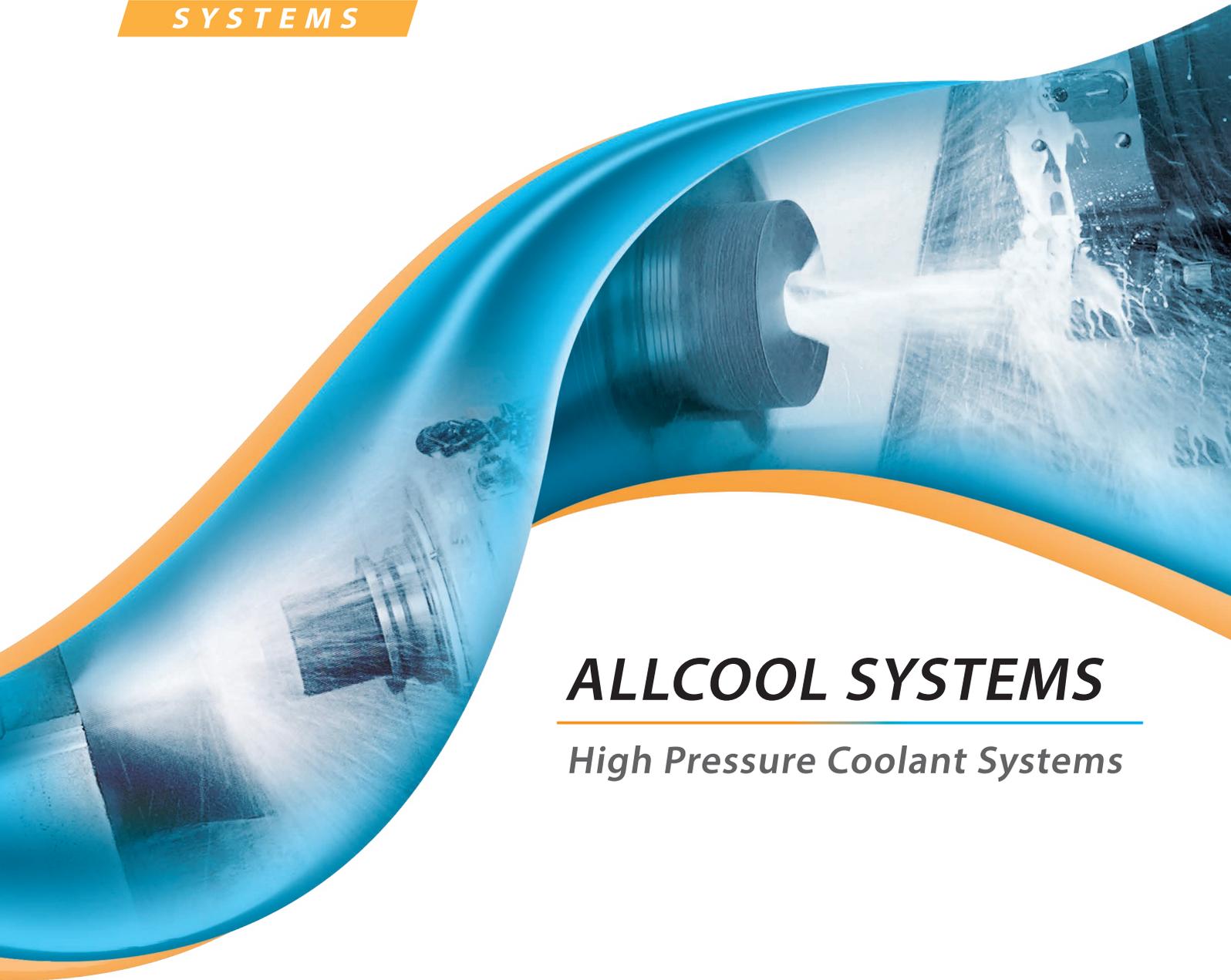
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ALLCOOL[®]
SYSTEMS



ALLCOOL SYSTEMS

High Pressure Coolant Systems



ABOUT ALLCOOL SYSTEMS

AllCool System was established in the year 2013, dedicated to developing the most advanced high pressure coolant systems available, has refined the High Pressure Coolant System (HPC System) to become smarter, more user-friendly, and ultra-reliable. Only the best components suitable for use with machine tool coolants are selected. The control and software inside have been developed with the user in mind to optimize machine productivity, save tooling costs, reduce down time and much more. AllCool Systems not only have received favourable evaluations from Asian market, but also have the best selling in Euramerican market. AllCool System has been the most advanced high pressure coolant systems available.

+ Machine Tool Coolant Pressure Level Introduction

Low Pressure Systems	Under 10 Bar (150 PSI)	Output of coolant pumps on general machine tools.
Medium Pressure Systems	20 ~ 60 Bar (300 ~ 900 PSI)	Moderately improve cycle time and tool life.
High Pressure Systems	70 ~ 100 Bar (1,000 ~ 1,500 PSI)	Achieve optimal cycle time, tool life, efficiently machine hard to cut materials, and also have the better chip solution.
Ultra-High Pressure Systems	Above 100 Bar (1,500 PSI)	Utilized in machining super alloys and ultra-hard to machine materials.

+ Machining Effects

Medium Pressure

20 Bar (300 PSI)



High Pressure

70 Bar (1,000 PSI)



Ultra-High Pressure

300 Bar (4,300 PSI)



+ Coolant Pressure Case Studies

Mill Application



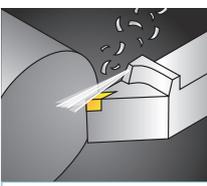
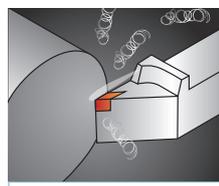
Low Pressure

Tool need to be retracted while milling to clean out the chips. The whole process takes lots of time.

High Pressure

Coolant can hit directly to the milling spot and clean out all the chips at once. The whole process is much efficient and faster.

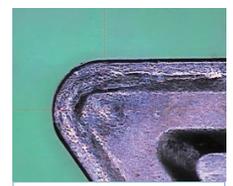
Heat Disperse



Low Pressure

High Pressure

Tool Life (With the same working time and workpiece, and in the same machine process.)



Low Pressure

High Pressure

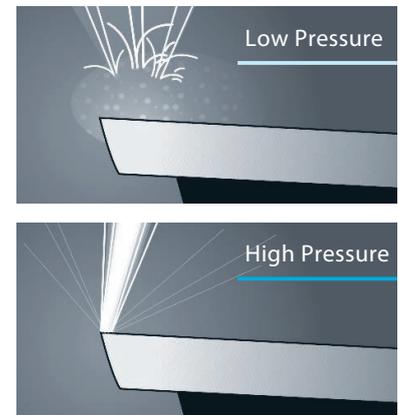
HIGH PRESSURE COOLANT SYSTEM ADVANTAGES

If a machine tool is not equipped with a HPC system, the only way to achieve a fraction of the benefits listed below is to design a machine with the structural rigidity to withstand the use of larger motors and faster spindles, this would dramatically increase machine cost by 50% to 100%. Just like the car engine upgrade with Turbo, Adding a HPC system to your machine tool is the simplest and most cost effective way to improve both the cutting feed rate and machine tool production. It also provides a better surface finish and reduces manufacturing cost with extended tool life.

 <p>Machining Speed</p> <ul style="list-style-type: none"> ■ Cutting speeds can be increased up to 20% or more. ■ Reduce machining cycle time up to 70%. 	 <p>Machining Precision</p> <ul style="list-style-type: none"> ■ Improved cutting accuracy with excellent surface finishes.
 <p>Chip Removal</p> <ul style="list-style-type: none"> ■ Excellent in deep-hole machining with best chip removal capability. 	 <p>Tool Life</p> <ul style="list-style-type: none"> ■ Extend tool life up to 25% to 400%. ■ Breakthrough the vapor barrier for tool-tip heat removal.

+ What is Vapor Barrier?

During machining, temperatures on the tool-tip can reach well over 212 degrees Celsius. When medium to low pressure coolant is used, the high temperature surrounding the tool-tip turns coolant into vapor, thus forming a vapor barrier that blocks coolant from reaching the tool-tip. This barrier leads to poor heat removal causing fast tool wear and poor surface finish. Tests show that HPC systems with outputs above 70 Bar (1,000 PSI) will breakthrough the vapor barrier for effective cooling.

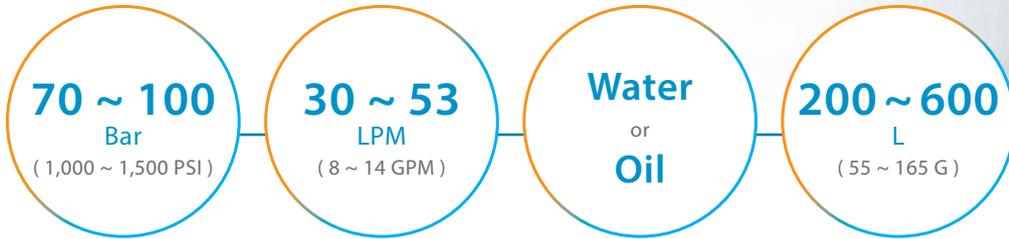


+ The Advantages of AllCool High Pressure Coolant Systems

	Average High Pressure Systems	Allcool High Pressure Systems
Filtration systems	Replace the filter within 1 ~ 3 weeks	✓ Replace the filter bag about 1 ~ 2 months (Expendables are also cheaper)
Pressure detection	Mechanical type	✓ Electronic type (High accuracy and long expired date)
Coolant level detection	Mechanical type	✓ Electronic type (Low failure rate and good stability)
High pressure pump	Gear pump	✓ Diaphragm pump (High tolerance of dirt entry and regardless oil-water ratio)

R series

High Pressure Coolant Systems with Coolant Reservoir



Max. Pressure

Max. Flow Rate

Coolant Type

Reservoir Capacity

+ Features

Output-pressure monitoring system

Output-pressure monitoring system protects system and machine from excess pressure.

Automatic filter replacement detection

Large capacity dual-filter system with automatic filter replacement detection to reduce down time.

Large capacity coolant reservoirs

200 L large capacity coolant reservoirs help maintain constant coolant supply and regulate heat buildup.
(Optional 400 L / 600 L)

7" full-color touch screen

7" full-color touch screen interface control simplifies operation.

Made in USA patented diaphragm pumps

Made in USA patented diaphragm pumps for durability and performance.

Electronic level-switch / pressure switches

German made non-contact electronic level-switch and ceramic electronic pressure switches for reliability and durability.

	R 1000	R 1500
Coolant Type	Water / Oil	
Max. Pressure	70 Bar (1,000 PSI)	100 Bar (1,500 PSI)
Max. Flow Rate	30 LPM (8 GPM)	53 LPM (14 GPM)
Pressure Adjustment	Manual or AVP Control	
High Pressure Pump	Diaphragm Pump	
High Pressure Motor	5.5 kW (7.5 HP)	15 kW (20 HP)
Feed Pump Motor	Con. 0.75 kW (1 HP)	
Reservoir Capacity	200 L (55 G) ^{*1}	
Filtration System	Dual High-Capacity Filter Units with 5 μ Disposable Filter Bags (opt. centrifugal filter unit)	
Filter Replacement Detection	Yes	
Number of Ports	1 Std. (Opt. 2, 4, 8 ports)	
Control	7" Touch-Screen w/ PLC (opt. control by Ethernet or IO control)	
Voltage, Frequency	3 Phase 220 V ($\pm 10\%$), 60 Hz	
Rated Current	30 A	75 A
Option		
Dimensions L x W x H	120 x 90 x 130 cm	170 x 100 x 135 cm

*1 Optional 400 L / 600 L coolant reservoirs

Specifications are subject to change without notice.

 Smart Inverter (Ethernet + AVP control)



SMART INVERTER OPT.



+ Ethernet fast connection

The **i** smart inverter HPC system can be controlled by only one Ethernet cable. No need to change PLC from NC. Plug and Play. Fast connection and convenient.

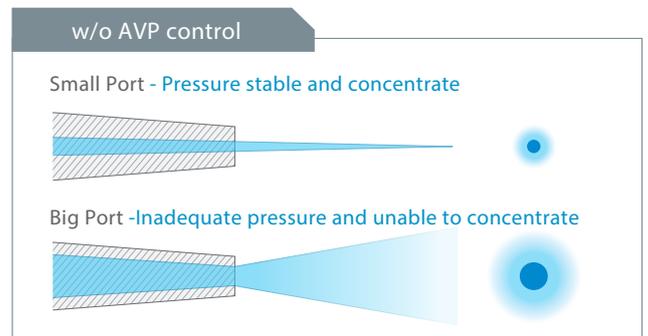
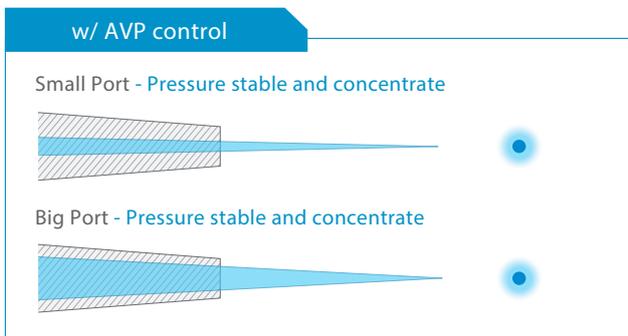


+ Automatic Variable Pressure Control (AVP Control)

▪ Easy Control Use NC program to control output pressure

Automatic pressure change and do not need to adjust regulating valve manually. Simply key in the required pressure value on the machine and the output coolant will auto adjust itself. Within the system capacity, any pressure can be selected for each tool no matter quantity or diameter of the tools.

▪ Constant Pressure Maintain stable pressure in different diameter of tools



▪ Energy Saving Save 40% electric power in average

AVP Control can precisely control motor speed by required pressure output and provide suitable flow. Compare to full flow output under manual system, it greatly reduce power consumption.



▪ Extended Pump Life Buffer motor speed to protect pump



CENTRIFUGAL FILTER UNIT OPT.



- Industrial Waste**
No waste disposal of filter element
- Service required**
Easy to change filters
- Cost for maintenance**
Cost reduction, no need to buy filter

- Effectively Filtering more than 1.5 proportion dust chip 10µm 98%
- Visible chip collector. Chip disposal while machine is running.
- Three stages centrifugal filtration technology without power required for energy saving.

Material	SS400
Flow Rate	60 L/min
Liquid Viscosity	Under 2.5 cP

S series

High Pressure Coolant Systems for Swiss Turning Centers

35 ~ 140
Bar
(500 ~ 2,000 PSI)

Max. Pressure

12 ~ 25
LPM
(3 ~ 6.6 GPM)

Max. Flow Rate

**Water
&
Oil**

Coolant Type



- High quality gear pump.
- Use disposable filter bag, it's efficient, time saving, easy and safe.
- Pressure adjustment conform with ergonomics.
- With tri-color signal light tower, can warning the status.
- With emergency stop switch.
- Built-in filter warning and stop system.
- Built-in the pressure is too low or too high alarm.



CONCEALED DESIGN OPT.

Optional concealed design  of SP series specially for saving floor space which can be installed beneath bar feeder.

	SP 1000	SP 2000	SE 500	SE 1000	SE 1500
Coolant Type	Oil		Oil / Water		
Max. Pressure	70 Bar (1,000 PSI) ^{*1}	140 Bar (2,000 PSI) ^{*1}	35 Bar (500 PSI)	70 Bar (1,000 PSI)	100 Bar (1,500 PSI)
Max. Flow Rate	12 LPM (3 GPM) ^{*1}	19 LPM (5 GPM) ^{*1}	25 LPM (6.6 GPM)	25 LPM (6.6 GPM)	24 LPM (6.3 GPM)
Pressure Adjustment	Manual		Manual		
High Pressure Pump	Gear Pump		Gear Pump		
Motor	2.2 kW (3 HP)	5.5 kW (7.5 HP)	2.2 kW (3 HP)	5.5 kW (7.5 HP)	7.5 kW (10 HP)
Filtration System	5μ		5μ		
Min. & Max. Pressure Detection	Yes		Yes		
Filter Replacement Detection	Yes		Yes		
Tri-Color Signal Light Tower	Yes		Yes		
Number of Ports	4 / 8		4 / 8		
Voltage, Frequency	3 Phase 220 V (±10 %), 60 Hz		3 Phase 220 V (±10 %), 60 Hz		
Rated Current	10 A	25 A	10 A	25 A	30 A
Option	 / 				
Dimensions L x W x H	85 x 47 x 108.5 cm		92 x 47 x 108.5 cm		

^{*1} Was tested with temperature : 40°C / viscosity : 46 CST oil in 220V, 60Hz.
Pressure output would change according to the oil temperature, voltage and frequency.

Specifications are subject to change without notice.

MB

series

Medium Pressure Coolant Systems

20 ~ 35
Bar
(285 ~ 500 PSI)

Max. Pressure

25 ~ 26
LPM
(6.6 ~ 6.8 GPM)

Max. Flow Rate

Water
(5 % oil)
&
Oil

Coolant Type

- Suitable for both oil or water type of coolant.
- Compact structure design minimizes factory space usage and easy connection.
- Filter Elements / Filter bags device easy to replace.
- Pressure adjustment conform with ergonomics.
- Cost-effective.



MB 285



MB 500

	Oil / Water (5 % Oil)	
Coolant Type*1	Oil / Water (5 % Oil)	
Max. Pressure	20 Bar (285 PSI)	35 Bar (500 PSI)
Max. Flow Rate	26 LPM (6.8 GPM)	25 LPM (6.6 GPM)
Pressure Adjustment	Manual	
High Pressure Pump	Gear Pump	Piston
Motor	1.5 kW (2 HP)	2.2 kW (3 HP)
Filtration System	Single high-capacity filter unit with 5μ filter element	Single high-capacity filter unit with 5μ disposable filter bag
Filter Replacement Detection	Visual inspection by checking negative pressure gauge	Controlled by NC signal
Number of Ports	1	1 (Opt. 2 ports)
Voltage, Frequency	3 Phase 220 V (±10 %), 60 Hz	
Rated Current	8 A	10 A
Dimensions L x W x H	46 x 34 x 73 cm	78 x 72 x 85 cm

*1 Viscosity 2 ~ 100 mm²/sec

Specifications are subject to change without notice.