

Portal type Machining Center
PME/PMC Series

PME-21/PME-26/PME-32/PME-40/PME-50
PMC-21/PMC-26





PME(H) Series

The PME/PMH-Series elevating cross-rail (W-axis) travels 1000mm to 3500mm effective for machining shorter to super large size workpieces.

The massive-sized double columns provide excellent rigidity for heavy-duty machining and with using the optional various high-speed spindle heads offers high productivity for many high-speed milling requirements.

- One-piece casting structure of the bed, column and cross-rail provide stability, rigidity and accuracy.
- Vertical spindle head can be configured with optional attachments offering optimal machining for any application.
- Continuous multi-phase and sequential machining operations can be accomplished with the Automatic Attachment Changer.
- Substantial and rigid square 380/500/600mm Ram and 1000/1500mm stroke Z-axis give flexibility for heavy duty machining.
- Hydrostatic guideway structure for X-axis to keep low friction, less wear, stable accuracy and smooth motion even at low speeds.
- Spindle cooling unit prevents heat problems and afford long continuous machining operation.
- Maximize the efficiency with Auto Tool Changer, Auto Pallet Changer, Auto Attachment Changer or other offered options.
- High speed spindle with built-in motor for PMH model





PME-32/40/50 Type



PMC(F) Series

PMC/PMF-Series featuring a fixed cross-rail is a portal type 5-face machining center for increased productivity with total automatic operation using ATC, AAC and APC to reduce machining lead time and cost.

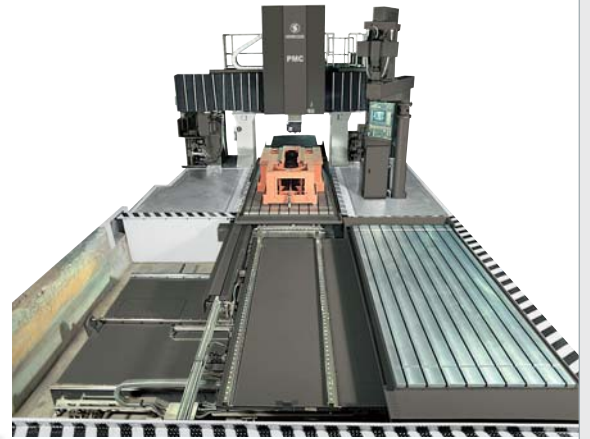
It stabilizes high-accuracy and heavy duty machining capability with a one-piece totally enclosed ram and rigid constructed saddle, and a box type rib structured bed, column and cross-rail for minimizing heat-deformation.

- 5 phase machining spindle head with 2 types of vertical spindle and horizontal spindle
- Square 380mm Ram and 1000mm stroke Z-axis for heavy duty machining
- Oil mist lubrication for spindle cooling to minimize heat deformation.
- One-piece casting structure, box type bed, column and cross rail maintain high rigidity and stable accuracy performance.
- Long lasting and stable precise machining by spindle cooling oil mist to restrain heat-deformation.
- LM roller guide way used for X and Y axes
- Maximize the efficiency of equipment with ATC, APC, AAI etc
- High speed spindle with built-in motor for PMF model





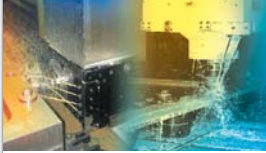
PMC-21/26



PMC-APC



PMC-21/26 Type



PME/PMC Series



Spindle Head

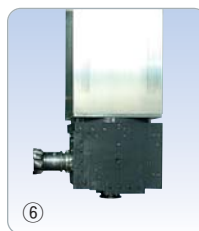
Head body with 380mm/500mm/600mm square ram can travel long enough, and its heat-treated and ground guide-ways guarantee long life and stable accuracy. Spindle speed from 30 to 3000rpm makes various machining possible. (max. 1500rpm for attachments) ISO 7/24 taper No. 50 (BT-50) or No. 60 (BT-60) tool shank size for this head can adopt MAS P50T-I or P60T-I pull stud. Precision-class roller bearings and super-rigid angle bearings offer precision during heavy duty machining.



Bed/Table

Heavy-duty, ribbed bed and table help to achieve high rigidity with excellent accuracy and the technically advanced static lubrication system provides wear resistance and low friction for smooth guide-way movement and keep accuracy.

Angular Attachments - Option



- ① Right Angular Attachment
- ② Extension Angular Attachment
- ③ ④ Compact Angular Attachment
- ⑤ Offset Angular Attachment
- ⑥ 5-H/V Angular Attachment
- ⑦ Universal Angular Attachment



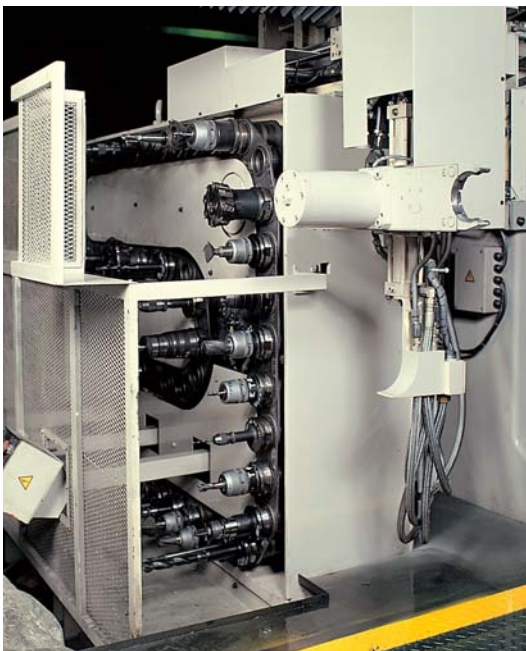
■ AAC (Automatic Attachment Changer) - Option

The Auto Attachment Changer afford an automatic change of the 90-degree or optional 5-degree angled index attachment allowing multi-phase machining with one set-up improving productivity and guaranteeing accuracy.

Tool changing on both the vertical spindle ram and angle head attachment are achieved by a single-arm changer.

AAC of 1-pot magazine is a standard supply for PME32/40/50.

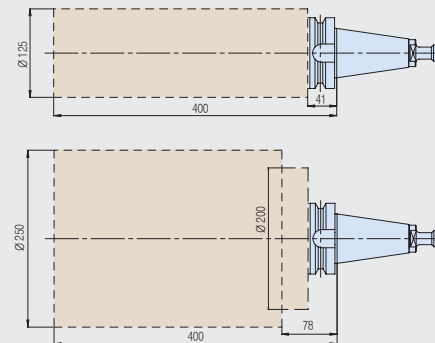
■ ATC (Automatic Tool Changer) - Option



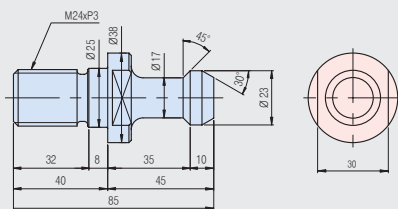
A single changer arm changes tools from the vertical spindle and angle attachment, and tool selection is performed in the shortest possible time by a distance detecting circuit.

The next tool is ready in the tool change position, and tool changing is done within seconds. 40/60/90/120 tools ATC magazines are available as optional equipment.

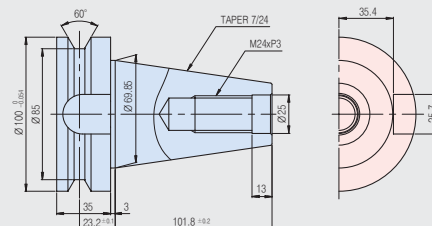
Tool Size



Pull Stud(MAS P50T-1)



Shank(BT-50)





PME/PMC Series

Machine Specifications

Items		Unit	PMC[PMF]-21	PMC[PMF]-26
Capacity	Distance between columns	mm(inch)	2100(82.7)	2600(102.3)
	Hight of vertical spindle tip above table	mm(inch)	150-1150(5.9-45.3)	
	X-axis stroke(Table longitudinal)	mm(inch)	3500/4500/5500/6500(138/177/216/256)	
	Z-axis stroke(Ram vertical)	mm(inch)	1000(39.4)	
	Y-axis stroke(Spindle head cross)	mm(inch)	2900(114)	3400(134)
	W-axis stroke(Cross rail vertical)	mm(inch)	-	
Table	Table size	mm(inch)	1800×3000/4000/5000/6000 (71×118/157/197/236)	2000×3000/4000/5000/6000 (79×118/157/197/236)
	Max. load on table	ton(lbs)	12/14/16/18(26,500/30,900/35,300/39,700)	
Spindle Head	Spindle speed	rpm	30-3000[1-10,000]	
	Spindle tip diameter	mm(inch)	110(4.3)	
	Spindle taper	-	ISO 7/24 Taper No.50	
	Ram sectional dimensions	mm(inch)	□380×380(15×15)	
	Turret index degree	deg.	90°, (5° Option)	
Feed-rate	X/Y/Z-axis feed rate	mm/min(ipm)	1~5000(0.1~197)	
	W-axis feed rate	mm/min(ipm)	-	
	X/Y/Z-axis rapid traverse	m/min(ipm)	10/10/6(394/394/236)	
	W-axis rapid traverse	m/min(ipm)	-	
ATC	Type of tool shank	-	MAS BT-50	
	Magazine capacity	set	40/60/90/120 tools(Option)	
	Max. weight tool	kg(lbs)	25(55)	
	Type of pull stud	-	P50T-I	
Moter	Spindle motor (30min/cont.)	kW(Hp)	AC 18.5/22(25/30)[20/35(27/47)]	
	X-axis servo motor	kW(Hp)	AC 14(18.6)	
	Y/Z-axis servo motor	kW(Hp)	AC 7(9.3)	
	W-axis servo motor	kW(Hp)	-	
Machine Weight		ton(lbs)	36/42/48/54 (79,400/92,600/105,800/119,000)	38/44/50/56 (83,800/97,000/110,230/123,500)
CNC System		-		

Standard Accessories

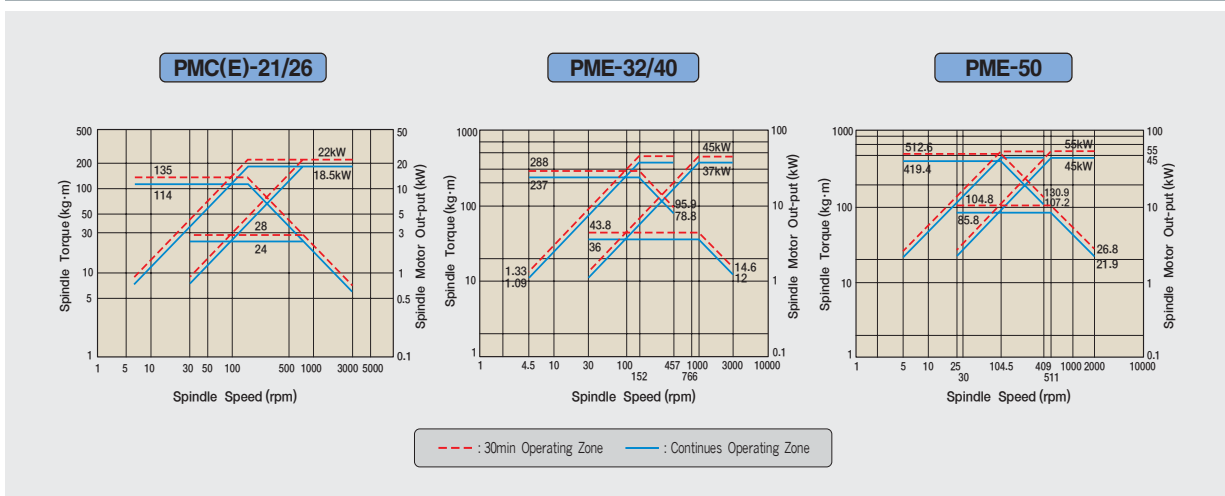
- CNC controller, Fanuc 31iM-B
- Automatic attachment indexer(AAI)-90° : PMC-21/26
- Side angular attachment: PME-32/40/50
- Automatic attachment changer(AAC)-1pot: PME-32/40/50
- Manual tool change
- Hydraulic power unit
- Automatic lubrication system for guide-ways
- Oil mist lubrication system for bearings and gears: PMC(E)-21/26
- Hydraulic balancing cylinders for ram
- X/Y/W-axis(Bed/Cross rail/Column) telescopic steel cover
- Chip conveyor(Scraper type)
- Guard rail
- Automatic NC power off
- Stand type operation panel
- Levelling block
- Foundation bolt & nut
- Work light
- Patrol lamp(Red, Yellow, Green)
- Maintenance tool kits & tool box

Optional Accessories

- Automatic Tool Changer(ATC)-40/60/90/120 tools
- Automatic Pallet Changer(APC)-2 Pallets
- Automatic Attachment Changer(AAC)-5 Pots
- Automatic Attachment Indexer(AAI)-every 5°, 72-position
- Attachments
- High pressure coolant system
- Through spindle coolant: PME-32/40/50
- Through tool coolant: PMC(E)-21/26
- Chip conveyor(Hinge steel belt type) & Bucket
- Scale feedback system(X, Y, Z, W)
- Automatic workpiece measuring device(work probe)
- Automatic tool length measuring device
- Transformer
- Pre-heat timer
- Splash guard: PMC(E)-21/26

PME[PMH]-21		PME[PMH]-26		PME-32		PME-40		PME-50	
2100(82.7)		2600(102.3)		3200(126)		4000(157.5)		5000(196.8)	
0-1750(0-69)				0-3000(0-118)		0-3500(0-138)		0-4500(0-177)	
3500/4500/5500/6500(138/177/216/256)				6500/8500/10,500(226/335/413)				11,000/13,000(433/512)	
1000(39.4)				1000(39.4)				1500(59)	
2900(114)		3400(134)		4200(165)		5000(197)		6500(256)	
1000(39.4)				2300(90.5)		2800(110)		3500(138)	
1800×3000/4000/5000/6000 (71×118/157/197/236)		2000×3000/4000/5000/6000 (79×118/157/197/236)		2500×6000/8000/10,000 (98×236/315/398)		3000×6000/8000/8000/10,000 (118×236/315/398)		4000×10,000/12,000 (157×398/472)	
12/14/16/18(26,500/30,900/35,300/39,700)				30/50/70 (66,100/110,300/154,300)		30/50/60/80 (66,100/110,300/132,300/176,400)		80/100 (176,400/220,500)	
30-3000[1-10,000]				30-3000				5-2000	
110(4.3)				158(6.2)				200(7.9)	
ISO 7/24 Taper No.50				ISO 7/24 Taper No.50				ISO 7/24 Taper No.60	
□380×380(15×15)				□500×500(19.7×19.7)				□600×600(23.6×23.6)	
90°, 5° (Option)				90°, 5° (Option)				90°, 5° (Option)	
1~5000(0.1~197)				1~6000/6000/5000(0.1~236/236/197)				1~6000/4000(0.1~236/157)	
1~2000(0.1~79)				1~1500(0.1~59)				1~1500(0.1~59)	
10/10/6(394/394/197)				10/10/6(394/394/197)				10/10/6(394/394/197)	
2(78.7)				1.5(59)				1.5(59)	
MAS BT-50				MAS BT-50				MAS BT-60	
40/60/90/120 tools(Option)				40/60/90/120 tools(Option)				40/60/90/120 tools(Option)	
25				25				25	
P50T- I				P50T- I				P60T- I	
AC 18.5/22(25/30)[20/35(27/47)]				AC 45/55(60/73)				AC 60/75(80/100)	
AC 14(18.6)				AC 16(21.3)				AC 16(21.3)	
AC 7(9.3)				AC 9(12)				AC 9(12)	
AC 4(5.3)				AC 7(9.3)				AC 7(9.3)	
36/42/48/54 (79,400/92,600/105,800/119,000)		38/44/50/56 (88,800/97,000/110,230/123,500)		196/213/230 (432,100/469,600/507,000)		210/227/244 (463,000/500,400/538,000)		280/320 (617,300/705,500)	
FANUC 31iM-B									

Spindle Torque & Power Diagram





PMC/PME Series

■ CNC System Specifications(FANUC 31iM-B)

Standard Function

Controlled Axis	
Controlled axes	3-axis(X, Y, Z): PMC 6-axis(X, Y, Z, W1, W2, A, C): PME
Simultaneously controllable axes	Positioning(G00), Linear interpolation(G01): 3 axes Circular interpolation(G02, G03): 3 axes
Least command increment	0.001mm(0.0001 inch), 0.001deg
Axis interlock	All axis/each axis
Machine lock	
Emergency stop	
Over-travel	
Stored stroke check 1	
Mirror image	All axis
Backlash compensation	
Backlash compensation for rapid and cutting feed	
Stored pitch error compensation	
HRV control	

Operation

Operation function	Auto.(Memory), MDI, DNC operation
Search function	Program number/Sequence number
Sequence number compensation and stop	
Buffer register	
Dry run	
Single block	
Manual continuous feed(Jog)	
Manual reference position return	
Manual handle feedrate	0.001, 0.01, 0.1mm
Rewind	
Jog and handle simultaneous mode	
Reset	
Program restart	
Cycle stop/Feed hold	
Manual handle retrace	
Handle Interruption	
Jog and handle simultaneous mode	

Interpolation Functions

Positioning	G00
Linear interpolation	G01
Circular interpolation	G02, G03
Cylindrical interpolation	
Exact stop/Exact stop mode	G09/G61
Skip function	G31
Dwell	G04
Polar coordinate interruption	
Helical interruption	
Thread cutting/Synchronous cutting	
Automatic reference point return	G28, G27
2nd. reference point return	G30

Feed Functions

Rapid traverse rate (mm/min)	G00
Cutting feedrate (mm/min)	
Jog override	0-200%
Rapid traverse override	F0, 25, 50, 100%
Feedrate override	0-200%
Automatic acceleration/deceleration	
Feed per minute	G94(1-240000 mm/min)
Feed per revolution	G95(0.0001-500.00 mm/rev)
Manual feed per revolution	
Cutting feedrate clamp	
Override cancel	M48, M49

Program Input

Tape code	EIA/ISO Automatic recognition (EIA RS24 / ISO 840)
Data format	
Control In / Out	
Optional block skip	
Program name	16-character
Maximum commandable value	±99999.999mm(±9999.9999inch), ±99999.999deg
Program number	O4-digit
Sequence number	N5-digit
Absolute/Incremental programming	
Combined use in the same block	
Decimal point input	
Polar coordinate command	
Local/Machine coordinate system	G52/G53
Work coordinate system	G54/G55/G56/G57/G58/G59
Manual absolute-On/Off	
Plane selection	G17/G18/G19
Automatic coordinate system setting	
Coordinate system shift/Max. spindle speed Clamp	G92
Radius designation on arc	
Programmable data input	G10
Sub program call	4 folds nested
Canned cycle for drilling	
Rigid tapping	
Custom macro B	
Additional macro variable	

Auxiliary/Spindle Functions

Spindle function	S4 digits
Spindle serial output	
Spindle speed override	50-120% (5% increments)
1st. spindle orientation	
M-code functions	M4 digits
Auxiliary function lock	
Multiple M command in a single block	Max. 3EA

Tool Function/Tool Compensation

Tool functions	
Tool position offset	G45/G46/G47/G48
Tool offset memory C	Between cutter/Tool length compensation
Tool length compensation	G43/G44/G49
Nose R compensation	G40/G41/G42
Number of tool offsets	200EA.

Editing Operation

Part program storage	640m
Registered programs	100EA
Background editing	
Program protect/edit	

Setting, Display and Other

Operation panel	10.4" color LCD/MDI full key
Clock function	
Load-meter display	
Run hour and part number display	
Graphic display	
Dynamic graphic display	
Multi-language display	English, Korean, Italian, German
Self-diagnostic function	
Spindle speed/T-code display	
Memory protect key	
Memory card input/output	

Optional Function

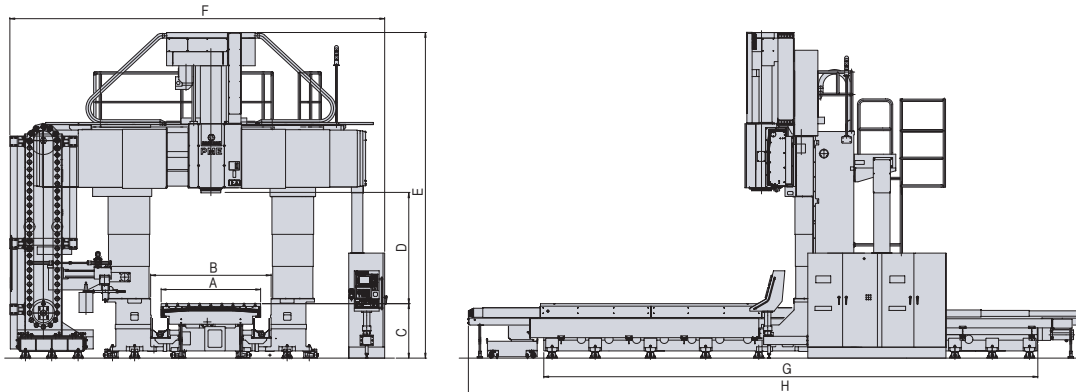
Optional Function	
Inch/Metric conversion	G20/G21
Hypothetical axis interpolation	
3rd/4th reference position return	
Bell-shaped acc./dec. after rapid traverse interpolation	
Linear acc./dec. after cutting feed interpolation	
Lock-ahead control	
Optional block skip addition	9 blocks
Tool retract and return	
Programmable parameter input	
Interruption type custom macro	
Automatic coner override	
Tape format F15	
Conversational programming with graphic function	
Conversational automatic programming	
Constant surface speed control	G96/G97
Tool life management	
Addition of tool life pairs for tool life management	512pairs
Part program storage	1280m/2560m
No of registered program	400EA, 1000EA
Extended part program editing	
Remote diagnostic function	
Remote buffer	
External I/O device control	
DNC1 control	
DNC2 control	
Data server	
Straightness compensation	
Slope compensation	



External Dimensions

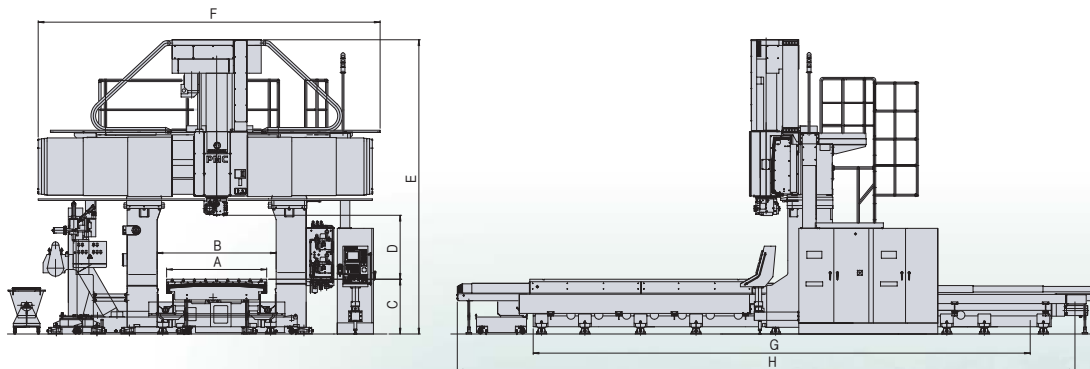
Unit:mm

PME Series



	A	B	C	D	E	F	G	H
PME-21	1800	2100	985	~1750	5900	6350	6940~12940	9110~15110
PME-26	2000	2600	985	~1750	5900	6850	6940~12940	9110~15110
PME-32	2500	3200	1270	~3000	8300	8200	12200~22200	18800~26800
PME-40	3000	4000	1270	~3500	8800	9000	14200~22200	18800~26800
PME-50	4000	5000	1450	~4500	10600	11500	23000~27000	27800~31800

PMC Series



	A	B	C	D	E	F	G	H
PMC-21	1800	2100	985	150~1150	5200	6350	6940~12940	9110~15110
PMC-26	2000	2600	985	150~1150	5200	6850	6940~12940	9110~15110



HEAD OFFICE & PLANT

HANKOOK MACHINE TOOLS CO., LTD.

52, Ungnam-dong, Seongsan-gu, Changwon-si,
Gyeongnam, Korea.

TEL: +82-55-282-7781, 7660 FAX: +82-55-284-9791

E-mail: sales@hanmachine.com

www.hanmachine.com

AMERICA OFFICE

Hankook America, Corp.

1601 Atlantic Drive-#109 West Chicago, IL 60185 U.S.A

TEL: +1-630-562-9240 FAX: +1-630-562-9250

E-mail: hankookamerica@msn.com

EUROPE OFFICE

Vertriebsgesellschaft

HANKOOK MACHINE GERMANY GmbH

Schwalbacher Str. 62, 65760 Eschborn Germany.

TEL: +49-6196-99849-0 FAX: +49-6196-99849-29

E-mail: info@hanmachine.de

www.hanmachine.de

北京代表处 / BEIJING OFFICE

韩国工作机械株式会社

北京市朝阳区广顺南大街东亚望京中心B座1010室

Room 1010, Block B, Guangshun South Street,

East-Aisa Wangjing Center Building,

Chaoyang District, Beijing, 100102 China.

TEL: +86-10-8478-6108 FAX: +86-10-8478-6128 E-

mail: wmh722@163.com

上海事务所 / SHANGHAI OFFICE

韩国工作机械株式会社

上海市延安西路2299号世贸商城11P07

Room 11p07, Shanghai Mart, No.2299 West Yanan Rd.

Shanghai, China.

TEL: +86-21-6236-1153(Ext 806) FAX: +86-21-6236-0323

E-mail: lgkim@126.com

JAPAN OFFICE

Maruei Nishihonmachi Bldg 3F,

1-15-16, Awaza, Nishi-ku, Osaka-shi 550-0011

TEL: +81-6-6543-3455 FAX: +81-6-6543-7859

E-mail: hjkang@hanmachine.com

SINGAPORE OFFICE

Hankook Singapore Pte. Ltd.

Blk 1013 Geylang East Ave 3 #04-106 Singapore 389728.

TEL: +65-6747-8665 FAX: +65-6748-6546

E-mail: hanmachine@singnet.com.sg

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