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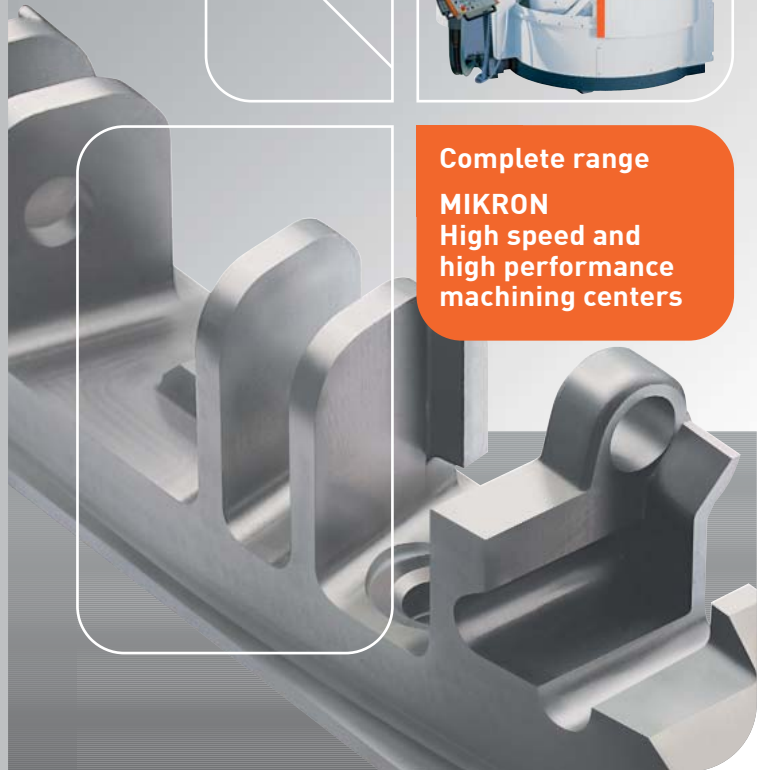
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+GF+

AgieCharmilles



**Complete range
MIKRON
High speed and
high performance
machining centers**



Achieve more...

+GF+

AgieCharmilles

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GF AgieCharmilles – Achieve more...



GF AgieCharmilles

We enable our customers to run their businesses efficiently and effectively by offering innovative Milling, EDM and Automation solutions. A comprehensive package of Customer Services completes our proposition.

Achieve more

We commit to a promise. That promise is “Achieve more.” It’s a commitment to create the right conditions for our customers to obtain competitive results. When our customers win, we win.

GF AgieCharmilles – Our core competences

We maintain a reliable partnership with our customers

Wherever our customers operate in the world, they benefit from the presence of well trained staff, from personal relationships based on trust, from our reliability and the values of our Swiss origin.

We support our customers by providing consistent application support

With comprehensive application know-how, a wide range of machines which lead the market from a technological point of view, efficient automation solutions and extensive services, GF AgieCharmilles provides outstanding solutions for economically attractive applications.

We offer our customers more efficient machines

Due to their convincing precision, speed and reliability, our machines yield increased productivity at lower operating costs throughout their entire life, resulting in greater value for our customers.

We base our success on innovations fulfilling market requirements

With their comprehensive technical know-how and considerable understanding of future market requirements, our creative employees carry out pioneering work in the development of new application solutions, technologies, products and services for the benefit of our customers. At least half of our turnover is generated by products that are less than three years old.

We keep our word and want to measure our success

We have fulfilled our vision when our customers state with conviction in regular surveys that they are more successful than their competitors as a result of our products and services.

GF AgieCharmilles Milling – Innovative machine tool design



GF AgieCharmilles Milling focuses on the development, manufacture and sales support of high speed (HSM) and high performance (HPM) machining centers with 3, 4, and 5 axes, including automation for mould and die manufacturing as well as high quality parts production.

Even better machining quality, shorter delivery times, more cost-effective solutions

This development philosophy drives the future-oriented strategy. With its complete machine range, individual solutions for achieving competitive advantages can be found for tool and mould makers and precision part production. The entry segment also offers a comprehensive range of the most varied types of machine tools that combine cost-favourable technology with superior quality and powerful controls.

GF AgieCharmilles – Mechanical engineering in Switzerland



Swiss precision, the most modern production technology and the know-how gained over a century are incorporated into the products. High quality requirements are already taken into account and put into practice in the design stage. Only high quality elements and components that originate from the world's leading suppliers are used to manufacture our machining centers.

Production and assembly are state-of-the-art

On the basis of an ingenious production and assembly concept, the machining centers are built in the shortest time possible and tested for quality characteristics. The unmistakable quality of machining centers from GF AgieCharmilles is achieved through precision and conscientious handling throughout the entire production and assembly process.

GF AgieCharmilles – Perfect for quality



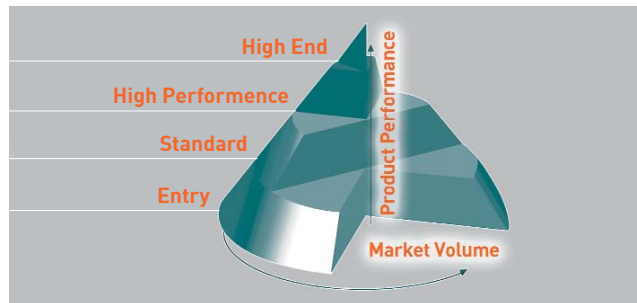
The appreciation of quality (accuracy, precision, reliability) which is a particular characteristic of the Swiss and therefore of our staff itself, has been an inherent value of the local watch-making industry for centuries.

Precision and quality are always reflected in GF AgieCharmilles products. The ISO 9001:2000 / 14001:2004 certification forms the basis of the very high quality of its processes, products and services.

Some examples of the various quality tests:

- Verifying the geometric accuracy by more than 200 specific test features
- Verifying the positioning accuracy of the linear-, rotation and swivelling axis with the most modern laser interferometer
- Verifying the relative movements between work piece and tool by
 - Circular test with grid-scale
 - R-test with test-spherule during simultaneous operation groping of 5-axes
- Verifying functionality and reliability in a 24-hour system endurance test
- Milling a test piece with the highest quality requirements in relation to dimensional, geometrical and positional accuracy. The high quality requirements for the end product are based on countless, minutely planned tests carried out by qualified specialists on components, individual parts and assemblies.

GF AgieCharmilles – Focus on complete solutions



The product portfolio covers a complete range of machining centers: from milling machines for standard applications (VCE, VCE Pro, VCP/UCP), to high performance machining (HPM) and high speed machining (HSM), to the absolute top class of ultra high speed machining (XSM).

Milling machines for the die and mould making industry and precision part production

The trend continues unabated towards higher availability with more flexibility in modern cutting technology. GF AgieCharmilles maintains the core technology, the necessary know-how and the resources to be a trusted, competent systems supplier for the die and mould machining industry and precision part production.

Mehr informations:
www.gfac.com

The Milling High Society

MIKRON XSM

Ultra High Speed Machining



MIKRON HSM

High Speed Machining



MIKRON HPM

High Performance Machining



MIKRON UCP

Universal Performance Machining



MIKRON VCP

Vertical Performance Machining



MIKRON VCE Pro-X

Conventional Machining



MIKRON VCE Pro

Conventional Machining



“smart machine” – The new dimension in modern production



The objective of smart machine modules is to make the milling process more transparent and easier to control for the operator. The first requirement for achieving this is communication between the operator and the machine. This is the

only way the operator can be provided with the comprehensive information about the milling process needed to make informed decisions. Second, the operator must have support during the optimization of the different milling processes, so that performance can be significantly improved as a result. Third, the machine controls and optimizes the milling process independently, thus improving process safety and the quality of the work-piece, especially during automated operation. It is at this point that the smart machine functions begin to make their presence felt.

Use of the smart machine modular system means:

- Greater accuracy in short processing times
- Improvement in the work-piece finish as well as moulding accuracy
- Detection of critical processing strategies
- Improvement in process safety
- Reduction in the machine rate resulting in an increase in machine service life
- Increase in availability
- Increase in operation comfort even during automated operation
- Considerable increase in reliability during automated operation
- Overall budget improved through optimization in all process areas

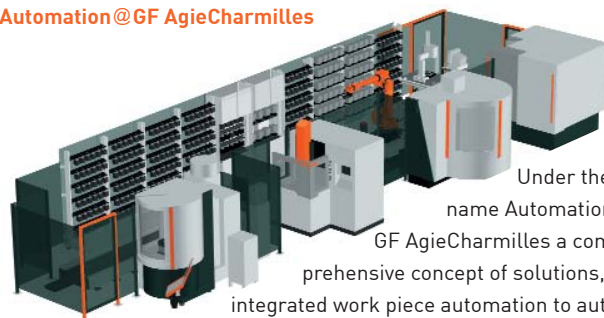


**Heidenhain iTNC 530
with the smart machine
Modul OSS**

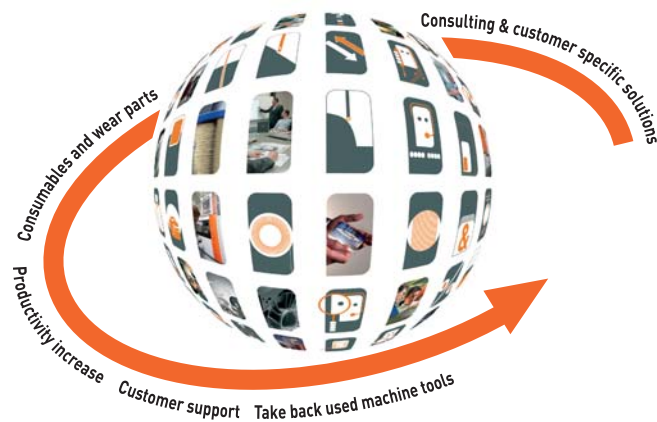
Check out our availability matrix:
www.gfac.com

GF AgieCharmilles Automation and Customer Services

Automation@GF AgieCharmilles



Under the name Automation @ GF AgieCharmilles a comprehensive concept of solutions, from integrated work piece automation to automation by means of standard or project-specific handling devices to project management for customer-specific work piece or process automation, is offered for the available range of machine tools and for their typical fields of application.



Customer Services

GF AgieCharmilles offers its customer a very large range of services, like preventive maintenance, customer training, automation, a dedicated service hotline, original parts and certified wear parts as well as an exclusive club-membership. At the same time GF AgieCharmilles placed the increasing productivity of its customers into the focus of its customer service.



**MIKRON
XSM 400**

**MIKRON
XSM 600**

**MIKRON
XSM 800**

			MIKRON XSM 400	MIKRON XSM 600	MIKRON XSM 800
Workarea					
Longitudinal	X	mm	400	600	800
Lateral	Y	mm	450	600	600
Vertical	Z	mm	350	500	500
Working spindle (40% ED, S6)					
54'000 rpm, HSK-E32		kW / Nm	8.5/ 3.5	8.5/ 3.5	8.5/ 3.5
42'000 rpm, HSK-E40		kW / Nm	13 / 4.2	13 / 4.2	13 / 4.2
30'000 rpm, HSK-E40		kW / Nm	12 / 8.8	12 / 8.8	12 / 8.8
36'000 rpm, HSK-E50		kW / Nm	-	32 /20	32 /20
24'000 rpm, HSK-A63		kW / Nm	-	22 /46	22 /46
Feed rate					
Feed rate / Rapid traverse [X, Y]		m / min	20/80	20/80	20/80
Feed rate / Rapid traverse [Z]		m / min	20/80	20/80	20/80
Work table					
Clamping surface		mm	in acc. with Pallet	700x600/in acc. with Pallet	900x600/in accordance with Pallet
Max table load		kg	200	800/in acc. with Pallet	1000/in accordance with Pallet
Tool changer					
HSK-E32		piece	20/40	20/40	20/40
HSK-E40		piece	18/36/68	18/36/68	18/36/68
HSK-E50		piece	-	15/30/60	15/30/60
HSK-A63		piece	-	30/50	30/50
Automation					
Pallet size / Number		- / piece	UPC/Dynafix / 7x	600x600 / 4x	600x600 / 4x
Pallet size / Number		- / piece	GPS/10x	-	-
Max. load		kg	90	800	1000
Control unit					
	Heidenhain		iTNC 530 2P	iTNC 530 2P	iTNC 530 2P
smart machine					
			APS, ITC, APS extended, RNS, OSS	APS, ITC, APS extended, RNS, OSS	APS, ITC, APS extended, RNS, OSS



MIKRON
XSM 400U



MIKRON
XSM 600U

Workarea

Longitudinal X	mm	400	800
Lateral Y	mm	240	600
Vertical Z	mm	350	500
Swivelling axis	°	+110/-110	+30/-110
Tilting axis	°	n x 360	n x 360

Working spindle (40% ED, S6)

54'000 rpm, HSK-E32	kW / Nm	8.5/ 3.5	8.5/ 3.5
42'000 rpm, HSK-E40	kW / Nm	13 / 4.2	13 / 4.2
30'000 rpm, HSK-E40	kW / Nm	12 / 8.8	12 / 8.8
36'000 rpm, HSK-E50	kW / Nm	-	32 /20
24'000 rpm, HSK-A63	kW / Nm	-	22 /46

Feed rate

Feed rate / Rapid traverse (X, Y)	m / min	20/ 80	20/ 80
Feed rate / Rapid traverse (Z)	m / min	20/ 80	20/ 80
Feed rate / Rapid traverse (Swivelling)	rpm	55/165	55/200
Feed rate / Rapid traverse (Turning)	rpm	55/250	55/360

Work table

Clamping surface	mm	in acc. with Pallet	in accordance with Pallet
Max table load	kg	25	120

Tool changer

HSK-E32	piece	20/40	20/40
HSK-E40	piece	18/36/68	18/36/68
HSK-E50	piece	-	15/30/60
HSK-A63	piece	-	30/50

Automation

Pallet size / Number	- / piece	Macro Magnum 156/18x	UPC/Dynafix / 7x
Pallet size / Number	- / piece	ITS 148/20x	GPS/10x
Max. load	kg	90	90

Control unit	Heidenhain	iTNC 530 2P	iTNC 530 2P
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smart machine		APS, APS extended, ITC, ITC 5X, RNS, OSS	APS, APS extended, ITC, ITC 5X, RNS, OSS
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		MIKRON HSM 300	MIKRON HSM 400	MIKRON HSM 500	MIKRON HSM 600	MIKRON HSM 700	MIKRON HSM 800
Workarea		MoldMaster GraphiteMaster					
Longitudinal	X	mm	380	400	500	600	700
Lateral	Y	mm	390	450	450	600	600
Vertical	Z	mm	255	350	350	500	500
Working spindle (40% ED, S6)							
54'000 rpm, HSK-E32		kW / Nm	-	8.5/ 3.5	8.5/ 3.5	8.5/ 3.5	8.5/ 3.5
42'000 rpm, HSK-E40		kW / Nm	-	13 / 4.2	13 / 4.2	13 / 4.2	13 / 4.2
30'000 rpm, HSK-E40		kW / Nm	7/ 3.5	12 / 8.8	12 / 8.8	12 / 8.8	12 / 8.8
36'000 rpm, HSK-E50		kW / Nm	-	-	32 /20	32 /20	32 /20
24'000 rpm, HSK-A63		kW / Nm	-	-	22 /46	22 /46	22 /46
Feed rate							
Vorschub /Eilgang (X, Y)		m / min	10/15	20/40	20/40	20/40	20/40
Vorschub /Eilgang (Z)		m / min	10/15	20/40	40/40	20/40	20/40
Work table							
Clamping surface		mm	410x325	in acc. w. Pal.	550x450	700x600/i.a.w.Pal.	900x600
Max table load		kg	68	200	200	800/in acc. w. Pal.	-
Tool changer							
HSK-E32		piece	-	20/40	20/40	20/40	20/40
HSK-E40		piece	18/27	18/36/68	18/36/68	18/36/68	18/36/68
HSK-E50		piece	-	-	15/30/60	15/30/60	15/30/60
HSK-A63		piece	-	-	30/50	-	30/50
Automation							
Pallet size / Number		-/piece	-	UPC/Dynafix / 7x	-	600x600 / 4x	-
Pallet size / Number		-/piece	-	GPS/10x	-	-	-
Max. load		kg	-	90	-	800	-
Control unit		Heidenhain	iTNC 530	iTNC 530	iTNC 530	iTNC 530	iTNC 530
smart machine			ITC	APS, APS extended, ITC, RNS	APS, APS extended, ITC, RNS	APS, APS extended, ITC, RNS	APS, APS extended, ITC, RNS



MIKRON
HSM 400U

MIKRON
HSM 600U

Workarea

Longitudinal	X	mm	400	800
Lateral	Y	mm	240	600
Vertical	Z	mm	350	500
Swivelling axis		°	+110/-110	+30/-110
Tilting axis		°	n x 360	n x 360

Working spindle (40% ED, S6)

54'000 rpm, HSK-E32	kW / Nm	8.5/ 3.5	8.5/ 3.5
42'000 rpm, HSK-E40	kW / Nm	13.0/ 4.2	13 / 4.2
30'000 rpm, HSK-E40	kW / Nm	12.0/ 8.8	12 / 8.8
36'000 rpm, HSK-E50	kW / Nm	-	32 /20
24'000 rpm, HSK-A63	kW / Nm	-	22 /46

Feed rate

Feed rate / Rapid traverse (X, Y)	m / min	20/ 40	20/ 40
Feed rate / Rapid traverse (Z)	m / min	20/ 40	20/ 40
Feed rate / Rapid traverse (Swivelling)	rpm	55/165	55/200
Feed rate / Rapid traverse (Turning)	rpm	55/250	55/360

Work table

Clamping surface	mm	in acc. with Pallet	in accordance with Pallet
Max table load	kg	25	120

Tool changer

HSK-E32	piece	20/40	20/40
HSK-E40	piece	18/36/68	18/36/68
HSK-E50	piece	-	15/30/60
HSK-A63	piece	-	30/50

Automation

Pallet size / Number	- / piece	Macro Magnum 156 /18x	UPC/Dynafix / 7x
Pallet size / Number	- / piece	ITS 148/20x	GPS/10x
Max. load	kg	90	90

Control unit	Heidenhain	iTNC 530	iTNC 530
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smart machine		APS, APS extended, ITC, ITC 5X, RNS	APS, APS extended, ITC, ITC 5X, RNS
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		MIKRON HSM 600 ProdMod	MIKRON HSM 600U ProdMod	MIKRON HSM 800 ProdMod
Workarea				
Longitudinal X	mm	600	800	800
Lateral Y	mm	600	600	600
Vertical Z	mm	500	500	500
Swivelling axis	°	-	+30/-110	-
Tilting axis	°	-	n x 360	-
Working spindle (40% ED, S6)				
36'000 rpm, HSK-E50	kW / Nm	32/20	32 /20	32 /20
24'000 rpm, HSK-A63	kW / Nm	22/46	22 /46	22 /46
Feed rate				
Feed rate / Rapid traverse (X,Y)	m / min	20/40	20/ 40	20/ 40
Feed rate / Rapid traverse (Z)	m / min	20/40	20/ 40	20/ 40
Feed rate / Rapid traverse (Swivelling)	rpm	-	55/200	-
Feed rate / Rapid traverse (Turning)	rpm	-	55/360	-
Work table				
Clamping surface	mm	700x600	in accordance with Pallet	900x600
Max table load	kg	800	120	1000
Tool changer				
HSK-E50	piece	120/170/220	120/170/220	120/170/220
HSK-A63	piece	120/170/220	120/170/220	120/170/220
Automation				
Pallet size / Number	- / piece	600x600 / 4	UPC/Dynafix / 7x	800x600 / 4
Pallet size / Number	- / piece	-	GPS/10x	-
Max. load	kg	-	90	-
Control unit				
	Heidenhain	iTNC 530	iTNC 530	iTNC 530
smart machine				
		APS, APS extended, ITC, ITC 5X, RNS	APS, APS extended, ITC, ITC 5X, RNS	APS, APS extended, ITC, ITC 5X, RNS



**MIKRON
HPM 600**

**MIKRON
HPM 900**

**MIKRON
HPM 1200**

**MIKRON
HPM 1350**

Workarea

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
Longitudinal	X	mm	650	900	1200	1350
Lateral	Y	mm	600	600	600	900
Vertical	Z	mm	500	500	500	750

Working spindle (40% ED, S6)

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
15'000 rpm, ISO-SK40, BT40, CAT40	kW / Nm		39/84	39/84	39/84	-
15'000 rpm, HSK-A63	kW / Nm		-	-	-	38/193
20'000 rpm, HSK-A63	kW / Nm		39/84	39/84	39/84	-
24'000 rpm, HSK-A63	kW / Nm		-	-	-	30/ 75
30'000 rpm, HSK-A63	kW / Nm		37/37	37/37	37/37	-
30'000 rpm, HSK-E40	kW / Nm		12/9	12/9	12/9	-
42'000 rpm, HSK-E40	kW / Nm		13/4.5	13/4.5	13/4.5	-

Feed rate

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
Feed rate / Rapid traverse [X, Y]	m / min		40	40	40	12/30
Feed rate / Rapid traverse [Z]	m / min		30	30	30	12/30

Work table

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
Clamping surface	mm		800x600	1100x600	1400x600	1425x875
Max table load	kg		500	800	1200	2100

Tool changer

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
ISO-SK40, BT40, CAT40	piece		30/60	30/60	30/60	-
HSK-A63	piece		30/60/120/170/220	30/60/120/170/220	30/60/120/170/220	30/46/60/92
HSK-E40	piece		30/60	30/60	30/60	-

Automation

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
Pallet size / Number	- / piece		Erowa UPC 320x320 / 7	Erowa UPC 320x320 / 7	Erowa UPC 320x320 / 7	-
Pallet size / Number	- / piece		System 3R Dynafix / 7	System 3R Dynafix / 7	System 3R Dynafix / 7	-
Pallet size / Number	- / piece		System 3R GPS / 10	System 3R GPS / 10	System 3R GPS / 10	-
Pallet size / Number	- / piece		600x600 / 4	600x600 / 4	-	-
Pallet size / Number	- / piece		800x600 / 4	800x600 / 4	-	-
Max. load	kg		80, 500	80, 800	80	-

Control unit

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
Heidenhain			iTNC 530	iTNC 530	iTNC 530	iTNC 530

smart machine

			MIKRON HPM 600	MIKRON HPM 900	MIKRON HPM 1200	MIKRON HPM 1350
APS, APS extended, ITC, RNS, Sigma FMC, OSS			APS, APS extended, ITC, RNS, Sigma FMC, OSS	APS, APS extended, ITC, RNS, Sigma FMC, OSS	APS, APS extended, ITC, RNS, Sigma FMC, OSS	APS, APS extended, ITC, Adaptive Control



**MIKRON
HPM 600U**

**MIKRON
HPM 800U**

Workarea

Longitudinal	X	mm	650	800
Lateral	Y	mm	650	800
Vertical	Z	mm	550	550
Swivelling axis		°	+30/-110	+30/-110
Tilting axis		°	n x 360	n x 360

Working spindle (40% ED, S6)

15'000 rpm, ISO-AD40/BT40/CAT40	kW / Nm	39/84	39/84
20'000 rpm, HSK-A63	kW / Nm	39/84	39/84
30'000 rpm, HSK-A63	kW / Nm	37/37	37/37

Feed rate

Feed rate / Rapid traverse (X, Y)	m / min	45	45
Feed rate / Rapid traverse (Z)	m / min	45	45
Feed rate / Rapid traverse (Swivelling)	rpm	25	25
Feed rate / Rapid traverse (Turning)	rpm	35	35

Work table

Clamping surface	mm	Ø500	Ø630
Max table load	kg	500	500

Tool changer

ISO-AD40/BT40/CAT40	piece	30/60/115/165/210	30/60/115/165/210
HSK-A63	piece	30/60/115/165/210	30/60/115/165/210

Automation

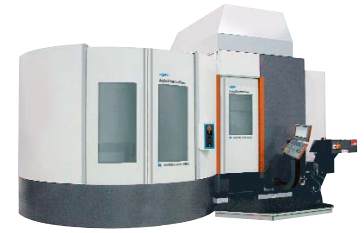
Pallet size / Number	- / piece	400x400 / 7	400x400 / 7
Pallet size / Number	- / piece	500x630 / 7	500x630 / 7
Max. load	kg	500	500

Control unit

Heidenhain	iTNC 530	iTNC 530
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smart machine

APS, APS extended, ITC, ITC 5X, RNS, SPS	APS, APS extended, ITC, ITC 5X, RNS, SPS
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			MIKRON HPM 1000U	MIKRON HPM 1150U	MIKRON HPM 1350U	MIKRON HPM 1850U
Workarea						
Longitudinal X	mm		1000	1000	1350	1850
Lateral Y	mm		800	1150	1150	1400
Vertical Z	mm		600	700/895	700/895	720/905
Swivelling axis	°		+30/-110	+16/-120	+16/-120	-20/+120
Tilting axis	°		n x 360	n x 360	n x 360	n x 360
Working spindle (40% ED, S6)						
10'000 rpm, HSK-A100	kW / Nm		-	-	-	34/324
15'000 rpm, ISO-B40	kW / Nm		-	38/193	38/193	-
15'000 rpm, HSK-A63	kW / Nm		-	38/193	38/193	38/193
18'000 rpm, HSK-A63	kW / Nm		66/198	-	-	-
24'000 rpm, HSK-A63	kW / Nm		66/ 75	30/ 75	30/75	30/75
Feed rate						
Feed rate / Rapid traverse (X, Y)	m / min		20/60	15/30	15/32	15/40
Feed rate / Rapid traverse (Z)	m / min		20/60	15/30	15/32	15/40
Feed rate / Rapid traverse (Swivelling)	rpm		60	11/20	11/20	11/20
Feed rate / Rapid traverse (Turning)	rpm		60	40	40	30
Work table						
Clamping surface	mm		Ø800	Ø1000	Ø1100	Ø1600
Max table load	kg		800	1100	1600	4000
Tool changer						
ISO-B40	piece		-	30/46/92	30/46/92	-
HSK-A63	piece		40/115/165/210	30/46/92	30/46/92	46/120/210
HSK-A100	piece		-	-	-	30/175
Automation						
Pallet size / Number	- / piece		500x630 / 5, 6, 7	-	-	1000x1250 / 3
Max. load	kg		800	-	-	1500/3000
Control unit						
	Heidenhain / Siemens		iTNC 530 / -	iTNC 530 / 840D	iTNC 530 / 840D	iTNC 530 / 840D
smart machine						
			APS, APS extended, ITC, ITC 5X, RNS	APS, APS extended, ITC, Adaptive Control	APS, APS extended, ITC, Adaptive Control	APS, APS extended, ITC, Adaptive Control



			MIKRON VCP 600	MIKRON VCP 800	MIKRON VCP 800W Duro	MIKRON VCP 1000 Duro
Workarea						
Longitudinal	X	mm	600	800	800	1000
Lateral	Y	mm	450	450	650	650
Vertical	Z	mm	450	450	500	500
Working spindle (40%ED,S6)						
12'000 rpm, ISO-B40		kW / Nm	15/100	15/100	15/100	15/100
20'000 rpm, HSK-A63		kW / Nm	30/ 91	30/ 91	30/ 91	30/91
42'000 rpm, HSK-E40		kW / Nm	13/ 4.2	13/ 4.2	13/ 4.2	13/4.2
Feed rate						
Feed rate / Rapid traverse [X, Y]		m / min	15/22	15/22	20/30	20/30
Feed rate / Rapid traverse [Z]		m / min	15/22	15/22	20/30	20/30
Work table						
Clamping surface		mm	850x530	1050x590	900x600	1300x600
Max table load		kg	400	400	1600	1600
Tool changer						
ISO-B40		piece	30	30	30	30
HSK-A63		piece	30	30	30	30
HSK-E40		piece	36	36	36	36
Control unit						
	Heidenhain		iTNC 530	iTNC 530	iTNC 530	iTNC 530
smart machine						
			APS, APS extended, ITC, RNS	APS, APS extended, ITC, RNS	APS, APS extended, ITC, RNS	APS, APS extended, ITC, RNS



**MIKRON
UCP 600**

**MIKRON
UCP 600 Vario**

**MIKRON
UCP 800 Duro**

Workarea

Longitudinal X	mm	530	600	800
Lateral Y	mm	450	450	650
Vertical Z	mm	450	450	500
Swivelling axis	°	-100/+122	-115/+30 (+45/-101)	-100/+120
Tilting axis	°	n x 360	n x 360	n x 360

Working spindle (40% ED, S6)

12'000 rpm, ISO-B40	kW / Nm	15/100	15/100	15/100
20'000 rpm, HSK-A63	kW / Nm	30/ 91	30/ 91	30/ 91
42'000 rpm, HSK-E40	kW / Nm	13/ 4.2	13/ 4.2	13/ 4.2

Feed rate

Feed rate / Rapid traverse (X, Y)	m / min	15/22	15/22	20/30
Feed rate / Rapid traverse (Z)	m / min	15/22	15/22	20/30
Feed rate / Rapid traverse (Swivelling)	rpm	-/20	10/25	-/15
Feed rate / Rapid traverse (Turning)	rpm	-/30	20/33	-/20

Work table

Clamping surface	mm	Ø280/Ø400	Ø450	600x600
Max table load	kg	200	200	500

Tool changer

ISO-B40	piece	30	30	30
HSK-A63	piece	30	30/75/120/170/220	30
HSK-E40	piece	36	36	36

Automation

Pallet size / Number	- / piece	-	Erowa UPC 320x320 / 7	-
Pallet size / Number	- / piece	-	System 3R Dynafix 280x280 / 7	-
Pallet size / Number	- / piece	-	Mecatool GPS / 10	-
Max. load	kg	-	90	-

Control unit

Heidenhain	iTNC 530	iTNC 530	iTC 530
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smart machine

APS, APS extended, ITC, RNS	APS, APS extended, ITC, ITC 5X, RNS, Sigma FMC	APS, APS extended, ITC, ITC 5X, RNS
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MIKRON
VCE 800 Pro-X

MIKRON
VCE 1000 Pro-X

Workarea

			MIKRON VCE 800 Pro-X	MIKRON VCE 1000 Pro-X
Longitudinal	X	mm	800	1020
Lateral	Y	mm	500	560
Vertical	Z	mm	540	600

Working spindle (40% ED, S6)

16'000 rpm, ISO-B40		kW / Nm	15/94	15/94
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Feed rate

Feed rate / Rapid traverse [X,Y]		m / min	16/36	16/36
Feed rate / Rapid traverse [Z]		m / min	16/24	16/24

Work table

Clamping surface		mm	910x500	1000x560
Max table load		kg	1100	1350

Tool changer

ISO-B40		piece	24	24
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Control unit

Heidenhain			iTNC 530	iTNC 530
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		MIKRON VCE 600 Pro	MIKRON VCE 800 Pro	MIKRON VCE 800W Pro	MIKRON VCE 1000 Pro	MIKRON VCE 1200 Pro	MIKRON VCE 1400 Pro	MIKRON VCE 1600 Pro
Workarea								
Longitudinal	X	mm	600	800	860	1020	1200	1400
Lateral	Y	mm	500	500	560	560	600	650
Vertical	Z	mm	540	540	600	600	675	675
Working spindle (40% ED, S6)								
6'000 rpm, ISO-50		kW / Nm	-	-	-	-	-	18 /350
10'000 rpm, ISO/BT-E40		kW / Nm	18.5/149	18.5/149	18.5/149	18.5/149	18 /209	18 /209
14'000 rpm, ISO/BT-E40		kW / Nm	18.5/106	18.5/106	18.5/106	18.5/106	18.5/106	18.5/106
Feed rate								
Feed rate / Rapid traverse (X, Y)		m / min	16/24	16/24	16/24	16/24	16/24	14/20
Feed rate / Rapid traverse (Z)		m / min	16/20	16/20	16/20	16/20	16/20	12/20
Work table								
Clamping surface		mm	700x500	910x500	1000x560	1000x560	1220x620	1400x620
Max table load		kg	800	1100	1350	1350	1700	2000
Tool changer								
ISO/BT-40		piece	24	24	24	24	24	30
ISO-50		piece	-	-	-	-	-	24
Control unit								
	Heidenhain		iTNC 530	iTNC 530	iTNC 530	iTNC 530	iTNC 530	iTNC 530

GF AgieCharmilles – HSM Competence Centers

In the past few years, HSM (high speed machining) has been able to establish itself as an alternative or addition to conventional milling or die sinking by EDM (electro-discharge machining). However, experience has shown that what has been state-of-the-art for years in the production of motor units and gearbox cases or integrated components cannot be easily translated to tool and mould manufacturing. Geometries and materials that change daily, along with a simultaneous demand for accuracy, surface quality, flexibility and ever shorter process times create requirements different from mass production. The efficiency of the HSM process, however, is so impressive that a profit-oriented business can hardly avoid the use of HSM anymore. This applies to businesses in drop forging or mould construction, manufacture of complex and/or precise production parts in small production runs and other similar fields of application. The proof of successful and profitable use of the process has already been achieved by the trailblazers in these sectors.

HSM Competence Centers - Propagating HSM and making it more transparent

The Competence Center staff are available to support interested users anytime with know-how about HSM. They offer a range of services from analyses about the suitable use of HSM for a concrete machining task or a representative spectrum of parts through to special HSM technology courses and seminars on theory and practice of the process, advice on cutting tools and clamping systems or on developing suitable machining strategies on the CAM system, right through to carrying out subcontract work using HSM.

A worldwide network of HSM Competence Centers

A worldwide network of HSM Competence Centers, equipped with the newest and most efficient machines available in the market and supported by the years of experience of its qualified specialist staff, is ready to work out solutions for specific machining demands together with the customer.



Brazil



Switzerland



Germany



Beijing



France



Great Britain



Hong Kong



Italy



Singapore



Shanghai



Spain



USA

The services on offer are available to all interested parties and are not confined to GF AgieCharmilles customers. The HSM Competence Centers can be seen as service enterprises for all who wish to be advised or trained in the world of HSM or who are seeking an extended workbench for HSM tasks.

Milling High-Speed and High-Performance Milling Centers

In terms of cutting speed, HSM centers are 10 times faster than conventional milling machines. Greater accuracy and a better surface finish are also achieved. This means that even tempered materials can be machined to a condition where they are largely ready to use. One essential advantage of HSM is that with systematic integration, the process chain can be significantly shortened. HSM has developed alongside EDM into one of the key technologies in mold and tool making.

EDM Electric Discharge Machines

EDM can be used to machine conductive materials of any hardness (for example steel or titanium) to an accuracy of up to one-thousandth of a millimeter with no mechanical action. By virtue of these properties, EDM is one of the key technologies in mold and tool making. There are two distinct processes – wire-cutting EDM and die-sinking EDM

Automation Tooling, Automation, Software

Tooling for fixing workpieces and tools; automation systems and system software for configuring machine tools and recording and exchanging data with the various system components.

Spindle HSM Spindle Technology

Development, production and sale of the motor spindles that form the core components of modern HSM centers. The spindles rotate at speeds between 10 000 and 60 000 rpm.

Service Services and Consumables

Service, maintenance, spare parts and consumables for EDM, milling and HSM systems as well as for other machine tools; consumables include filters, wire, graphite, copper electrodes and special resin.