



## Product overview

Relying upon proven technology – committed to innovation

# SCHERER Feinbau

Your expert for vertical CNC turning centers and vertical shaft lathes





SCHERER Feinbau is an internationally oriented machine tool company with customers in Germany, Europe, North and South America as well as in Asia. The customers are predominantly from the automotive industry and are very much at home with machining of a wide range of materials. In the year 2014, 180 employees achieved a turnover of about 60 million euros. The export rate is around 50%.

SCHERER Feinbau GmbH has belonged to the CHIRON group since 2012. In this group, it brings in its skills for production solutions around the topic of turning operations. Due to similar industries and business segments, SCHERER Feinbau and its partner companies achieve synergies in international sales and service as well as in the production of turning centers.

Since 2015, SCHERER Feinbau has had its new headquarters at Alzenau. The over 14,200-square-meter plot with modern and spacious company buildings includes more than 9,000 square meters of space for production, management, and technology. The sheet metal fabrication and mechanical processing continue to be based at the old location at Mömbris.

# VDZ 100 / VDZ 100 DS

Vertical turning centers by SCHERER Feinbau

The especially compact CNC vertical lathes in the single-spindle variant as VDZ 100 and with two spindles as VDZ 100 DS offer highest performance and precision in the smallest possible space: highly dynamic, fast, easy to use, robust and low-maintenance.

High precision is achieved thanks to the very good vibration damping and excellent static dynamic stiffness which is made possible by the proven machine bed made of polymer.



VDZ 100





VDZ 100 DS

# VDZ 220 / VDZ 220 DS

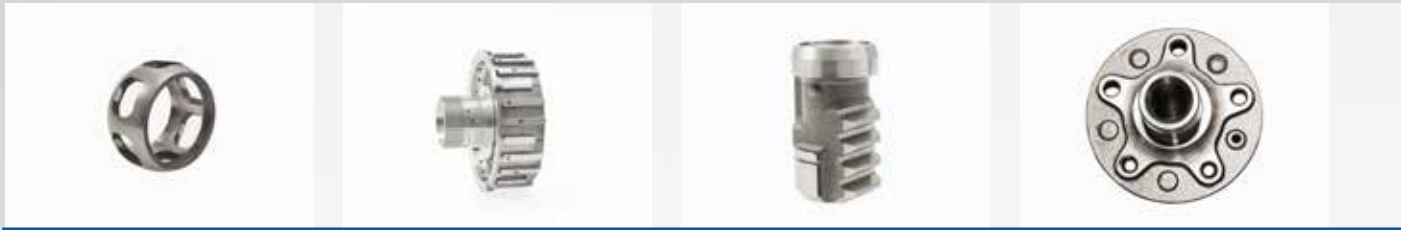
Vertical turning centers by SCHERER Feinbau

The modular machine concept allows numerous variations for diverse applications: The CNC vertical lathes of the single-spindle variant VDZ 220 and the double-spindle VDZ 220 DS are real function miracles.

A whole range of equipment options are available for customer-specific configurations: from the turret machine via milling spindles up to special modules for ball turning, bearing track milling and hob-

bing. An additional Y axis in the main spindle with a traverse path of 180 mm ensures high productivity for complex processing.

The machine bed made of Hydropol® (special concrete and steel) ensures excellent vibration damping and an excellent static dynamic stiffness – for highly accurate results.



VDZ 220





VDZ 220 DS

# VDZ 320 / VDZ 320 DS

Vertical turning centers by SCHERER Feinbau

The single-spindle VDZ 320 variant and the double-spindle VDZ 320 DS variant of CNC vertical lathes are multi-talented, with various automation options for series production.

The modular machine concept, a powerful synchronous drive technology with a

power of 67.4 kW and 585 Nm nominal torque as well as the high-precision in-process measurement allow greatest productivity and highest precision. A stable machine bed made of Hydro-pol® with a filling of mineral concrete ensures optimal dampening behavior and at the same time enables optimal chip disposal.



VDZ 320

d: 400 mm | H: 300 mm







VDZ 320 DS

# VDZ 420 / VDZ 420 DS

Vertical turning centers by SCHERER Feinbau

The latest synchronous drive technology with a performance of 64.4 kW and 820 Nm nominal torque: The CNC vertical lathes of the single-spindle variant VDZ 420 / 520 and the double-spindle VDZ 420 / 520 DS enable powerful cutting.

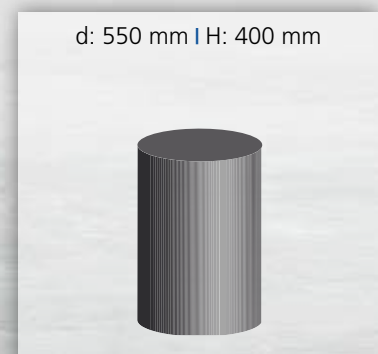
Cost-effectiveness, efficiency, flexibility, and numerous automation possibilities

make the VDZ 420 / 520 and the VDZ 420 DS / 520 DS the first choice in the automotive industry.

A stable machine bed made of Hydro-pol® ensures optimum damping characteristics and a maximum degree of smoothness for heavy machining.



VDZ 420



# VDZ 520 / VDZ 520 DS



VDZ 520 DS

# Configuration options of the VDZ series

Vertical turning centers by SCHERER Feinbau

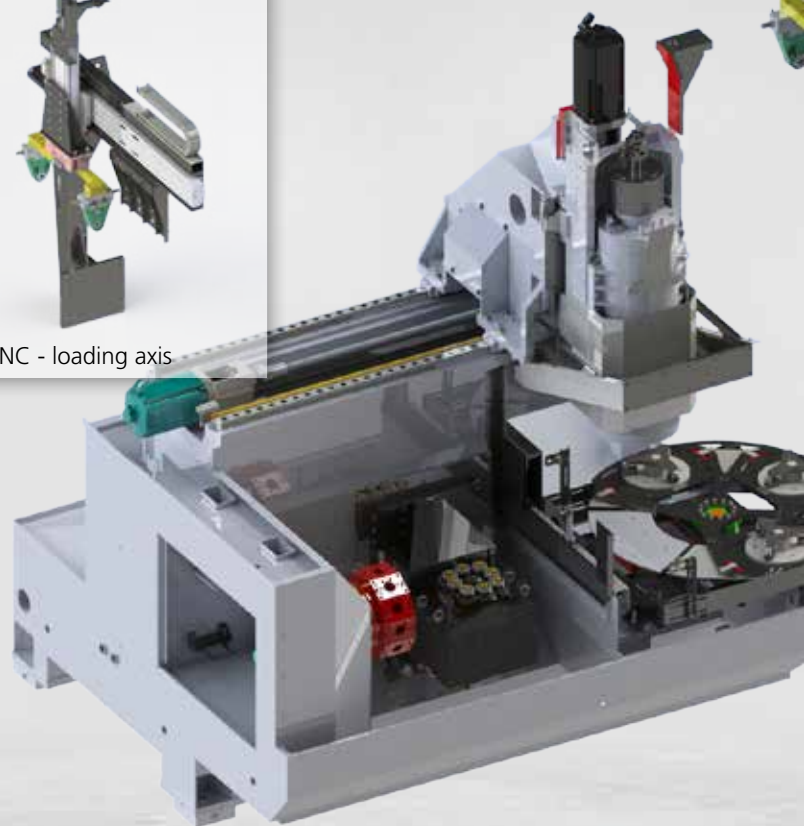
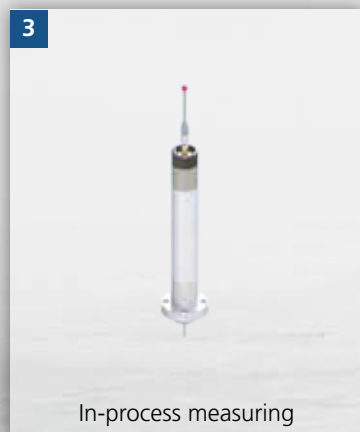
## From the lathe as isolated solution right up to the automated production line

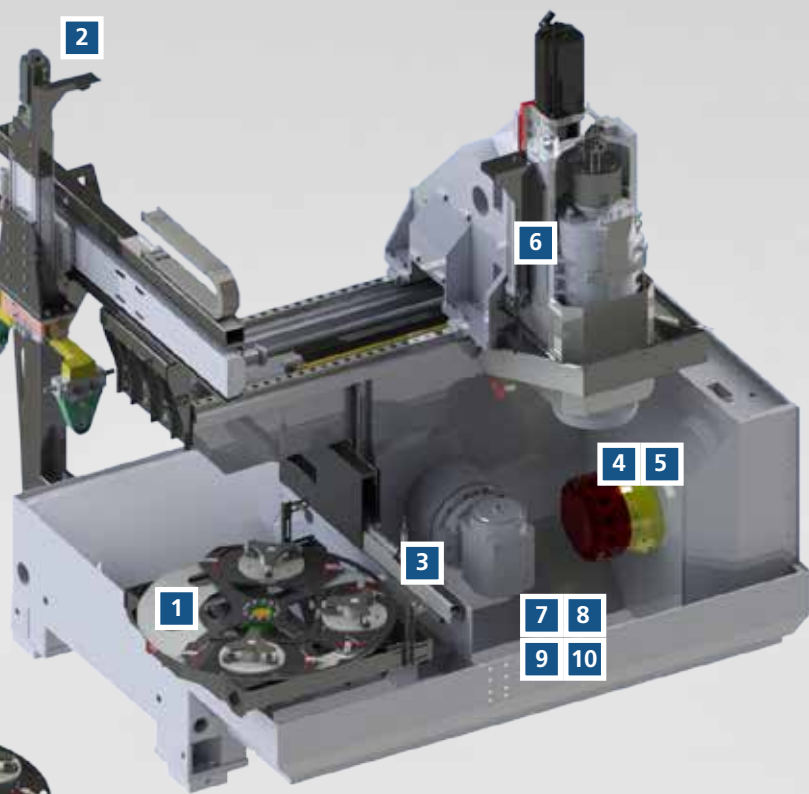
The machine base consists of five VDZ series (vertical turning centres) that operate according to the pick-up principle and have a modular design. They can produce workpieces with a turning diameter between 30 mm and 600 mm. All machines are equipped with the basic elements filled in with special concrete in a rigid box design which ensure excellent dampening, stiffness and performance values. In addition, the linear recirculating roller bearings ensure low friction and high precision.

To pick up workpieces – such as brake discs, differential housings, wheel hubs and many more – the headstock

can move out of its working position. It then transports them back into the work area and automatically starts the different machining tasks. This does not „only“ refer to complex turning. If necessary, there can be drilling and milling in one operation since these technologies can be easily integrated.

Scherer Feinbau expands the high flexibility of its machines by the possibility of using automated workpiece feeders for blanks and individual handling devices. On request, the finished parts can even be measured and the results can be stored. Such fully automatic production lines ensure the shortest possible lead times for the customers.





# Everything in view

## Vertical turning centres – technical data

### Slide travel

		VDZ 100   VDZ 100 DS	VDZ 220 / DS   VDZ 220 XL / DS	VDZ 320   VDZ 320 DS	VDZ 420   VDZ 420 DS	VDZ 520   VDZ 520 DS
Swing diameter over bed covers	mm	210	260   390	400	550	600
Turning diameter	mm	160	260   390	400	550	550
Slide travel X in the work area with the cover closed	mm	180	260   385	340	423	549
Slide travel X over turret centre (-)	mm	-20	-20   -20	-20	-20	-20
Slide travel X total	mm	495	606   866	850	1735	1709
Slide travel Z (spindle stop – divider panel) A/BC/D	mm	300	265   265	450   530	450   530	450   530
Slide travel Z	mm	250	250   250	450	450	450
Slide travel Y	mm		+100/-80   +100/-80	±140	±140	±140
Distance spindle stop turret max.	mm	480	580   580	820   900	820   900	820   900
Distance spindle stop turret min.	mm	230	240   240	370   450	370   450	370   450
Chuck diameter	mm	210	260   260	400	550	600
Feed force X/Y/Z at 100% ED	kN	5/5/5	6/6/6   6/6/6	8/8/8	8/8/8	10/10/12
Ball screw spindle Ø X / Y / Z	mm	32/32/32	32/32/32   40/32/32	50/50/50	50/50/50	50/50/50
Rapid feed speed X / Y / Z	m/min	48/30/30	60/30/30   60/30/30	60/30/30	60/30/30	60/30/30

### Direct-drive motor spindle standard

		VDZ 100   VDZ 100 DS	VDZ 220 / DS   VDZ 220 XL / DS	VDZ 320   VDZ 320 DS	VDZ 420   VDZ 420 DS	VDZ 520   VDZ 520 DS
Spindle head with short taper	DIN 55026	A5	A6	A8	A8	A11
Motor type		synchronous	synchronous	synchronous	synchronous	synchronous
Bearing lubrication		Grease	Grease	Grease	Grease	Grease
Bearing type		Roller bearings	Roller bearings	Roller bearings	Roller bearings	Roller bearings
Length from the spindle nose to the clamping cylinder flange	mm	789	789	950	950	950
Nominal power 100% ED	kW	23	38	67,4	64,4	64,4
Nominal torque 100% ED	Nm	129	300	585	820	820
Nominal speed	rpm	1700	1200	1100	750	750
Maximum speed	rpm	7000	5000	4000	3500	2800
Bore hole diameter in the front bearing	mm	85	120	150	150	180
Spindle bore hole	mm	46	75	72	72	72

### Other tool carriers

VDZ 100 | VDZ 100 DS    VDZ 220 / DS | VDZ 220 XL / DS    VDZ 320 | VDZ 320 DS    VDZ 420 | VDZ 420 DS    VDZ 520 | VDZ 520 DS

Block tools			ja	ja	ja	ja
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### Tool turret driven

VDZ 100 | VDZ 100 DS    VDZ 220 / DS | VDZ 220 XL / DS    VDZ 320 | VDZ 320 DS    VDZ 420 | VDZ 420 DS    VDZ 520 | VDZ 520 DS

Disc turret	shelf	12	12	12	12	12
Cylinder shaft holder	DIN 69880	30	40	40	50	50
Spanner size	mm	320	320	320	380	380
Swivel diameter	mm	700	756	960	960	960
Maximum tool length	mm	190	218	320	290	290
Maximum tool diameter	mm	140	140	300	300	300
Transmission		1:1	1:1	1:1	1:1	1:1
Maximum permissible speed	rpm	4000	4000	4000	4000	4000
Nominal speed	rpm	4000	4000	4000	4000	4000
Nominal power	Kw	10	10	10	10	10
Maximum torque	Nm	62	63	63	100	100

### Tool turret drive – optional

VDZ 100 | VDZ 100 DS    VDZ 220 / DS | VDZ 220 XL / DS    VDZ 320 | VDZ 320 DS    VDZ 420 | VDZ 420 DS    VDZ 520 | VDZ 520 DS

Disc turret	shelf	12	12	12	12	12
Cylinder shaft holder	DIN 69880	40	40	40	50	50
Spanner size	mm	320	340	340	400	400
Swivel diameter	mm	756	756	950	950	950
Maximum tool length	mm	218	208	305	275	275
Maximum tool diameter	mm	140	140	300	300	300
Transmission		1:1	Direct drive	Direct drive	Direct drive	Direct drive
Maximum permissible speed	rpm	4000	10000	10000	8000	8000
Nominal speed	rpm	4000	3000	3000	2360	2360
Nominal power	Kw	10	20	20	26	70
Maximum torque	Nm	63	50	50	100	108

### Machine dimensions

VDZ 100 | VDZ 100 DS    VDZ 220 / DS | VDZ 220 XL / DS    VDZ 320 | VDZ 320 DS    VDZ 420 | VDZ 420 DS    VDZ 520 | VDZ 520 DS

Length (depth)	mm	2340	2340   2340	3400	3400	3400
Width / DS width	mm	1895 / 3410	1690 / 3400   2160 / 4040	2330 / 4700	3155 / 5615	3155 / 5615
Height	mm	2200	3000   3000	3510	3510	3510
Weight / DS weight (ca.)	kg	6000 / 12000	7000/2x7000   7000/2x7000	18000 / 2x18000	18000 / 2x18000	18000 / 2x18000

# WDZ 250 / WDZ 250 Duo

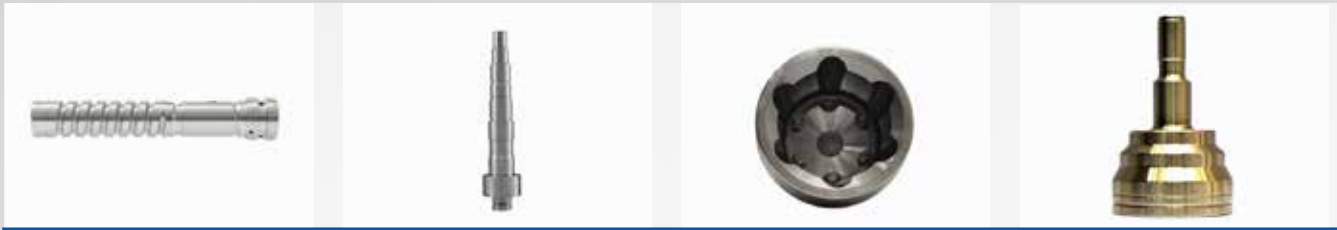
Shaft lathes by SCHERER Feinbau

The shaft lathes of series 250 and 350 with a steady rest (WDZ 250/WDZ 350) and with two independent steady rests (WDZ 250 Duo/WDZ 350 Duo) provide maximum economy.

Their special features include very short downtimes due to loading and unloading parallel to machining time, the numerous processing options such as drilling, milling, grinding and finishing in one machine and the simple automation capabilities.

Thanks to its slim design, this machine type can easily be combined to create manufacturing cells.

A powerful main spindle with up to 64.4 kW and a torque of 820 Nm, the economical 4-axis machining and the time-parallel loading and unloading – the WDZ 350 shaft lathes with one steady rest and the WDZ 350 duo with two independent steady rests are designed for maximum productivity.



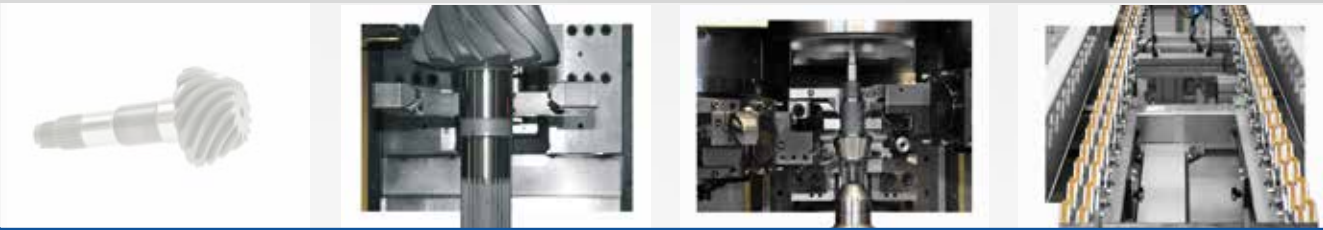
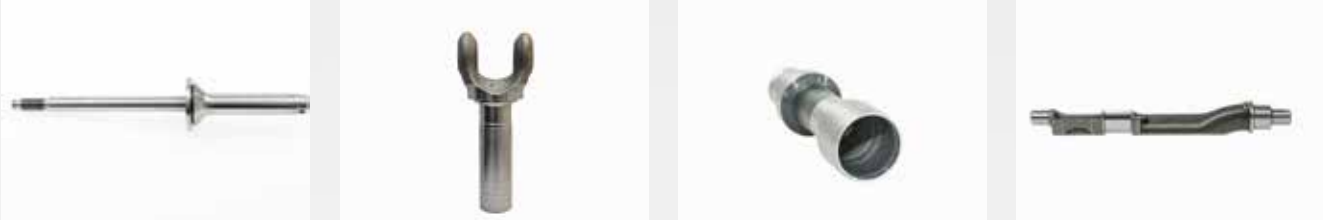
WDZ 250

d: 250 mm | H: 1100 mm





# WDZ 350 / WDZ 350 Duo



d: 350 mm | H: 1100 mm



WDZ 350

# Everything in view

## Shaft lathes – technical data

### Slide travel

		WDZ 250   WDZ 250 G	WDZ 250 Duo   WDZ 250 Duo G	WDZ 350
Swing diameter over bed covers	mm	280   280	280   280	350
Turning diameter	mm	250   250	250   250	350
Distance between the spindle flange and the tail stock centering tip (counter-spindle) max(counter-spindle) max	mm	1540   1255	1540   1255	1330
Slide travel X right / left	mm	320   320	320   320	500
Slide travel Y +/-	mm			
Slide travel Z right / left	mm	1290   1290	1290   1290	1200
Chuck diameter		250   250	250   250	350
Feed force X/Y/Z at 100% ED	kN	7/7/7   7/7/7	7/-/10   7/-/10	10/-/10
Durchmesser KGT X / Y / Z	mm	32/32/40   32/32/40	40/-/50   40/-/50	50/-/50

### Direct-drive motor spindle standard

		WDZ 250   WDZ 250 G	WDZ 250 Duo   WDZ 250 Duo G	WDZ 350
Spindle head with short taper	DIN 55026	A8   A8	A8	A8
Motor type		synchronous	synchronous	synchronous
Bearing lubrication		Grease	Grease	Grease
Bearing type		Roller bearings	Roller bearings	Roller bearings
Length from the spindle nose to the clamping cylinder flange	mm	789   789	789   789	935
Nominal power 100% ED	kW	37,7   37,7	37,7   37,7	64,4
Nominal torque 100% ED	Nm	300   300	300   300	820
Nominal speed	rpm	1200   1200	1200   1200	750
Maximum speed	rpm	5500   5500	5500   5500	3500
Bore hole diameter in the front bearing	mm	130   130	130   130	160
Spindle bore hole	mm	53   53	53   53	72
Bearing arrangement		<<>>   <<>>	<<>>   <<>>	<<>>

### Tailstock

		WDZ 250   WDZ 250 G	WDZ 250 Duo   WDZ 250 Duo G	WDZ 350
Inner cone of the sleeve	MK	5	5	5
Sleeve force, (top tailstock) continuously adjustable	kN	13	12	12
Bore hole diameter in the front bearing	mm	85	85	85
Bearing arrangement		<<<>	<<<>	<<<>

**Steady rests****WDZ 250 |  
WDZ 250 G****WDZ 250 Duo |  
WDZ 250 Duo G****WDZ 350**

Clamping diameter	mm	101   101	101   101	160
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**Bottom counter-spindle****WDZ 250 |  
WDZ 250 G****WDZ 250 Duo |  
WDZ 250 Duo G****WDZ 350**

Spindle head with short taper	DIN 55026	A8	A8	A11
Motor type		synchronous	synchronous	synchronous
Bearing lubrication		Grease	Grease	Grease
Bearing type		Roller bearings	Roller bearings	Roller bearings
Length from the spindle nose to the clamping cylinder flange	mm	789	789	640
Nominal power 100% ED	kW	37,7	37,7	63
Nominal torque 100% ED	Nm	300	300	430
Nominal speed	rpm	1200	1200	1400
Maximum speed	rpm	5500	5500	2500
Bore hole diameter in the front bearing	mm	130	130	180
Spindle bore hole	mm	53	53	60
Bearing arrangement		<<>>	<<>>	<<>>

**Tool turret driven****WDZ 250 |  
WDZ 250 G****WDZ 250 Duo |  
WDZ 250 Duo G****WDZ 350**

Disc turret	shelf	12   12	12   12	12
Cylinder shaft holder	DIN 69880	40   40	40   40	50
Spanner size	mm	380   380	380/460   380/460	780
Swivel diameter	mm	720   720	720/800   720/800	940
Maximum tool length	mm	155   155	155   155	240
Tool length, center	mm	120   120	120   120	160
Transmission		1:1   1:1	1:1   1:1	1:1
Maximum permissible speed	rpm	4000   4000	4000   4000	4000
Nominal speed	rpm	4000   4000	4000   4000	4000
Nominal power	kW	10   10	10   10	12,5
Maximum torque	Nm	63   63	63   63	100

**Machine dimensions****WDZ 250 |  
WDZ 250 G****WDZ 250 Duo |  
WDZ 250 Duo G****WDZ 350**

Length	mm	3390   3390	3390   3390	4800
Width	mm	1800   1800	2935   2935	2340
Height	mm	3900   3900	3900   3900	4600
Weight	kg	17000   17000	29000   29000	32000

# Ahead through synergies

Complete systems from one source



Because turning and milling each have a similar industrial and business segment, synergies between the two of them (and when they are in a concatenated set-up) are inevitable. The first joint projects show that the customers can expect great added value.

There are many kinds of advantages: Fewer interfaces, everything from one source and one contact person are only a few of the many benefits for our customers.

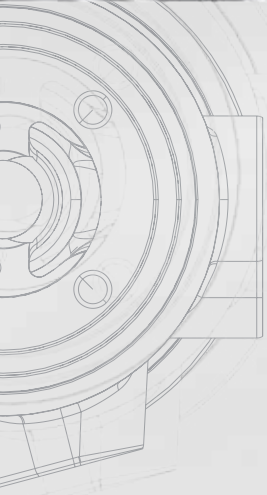
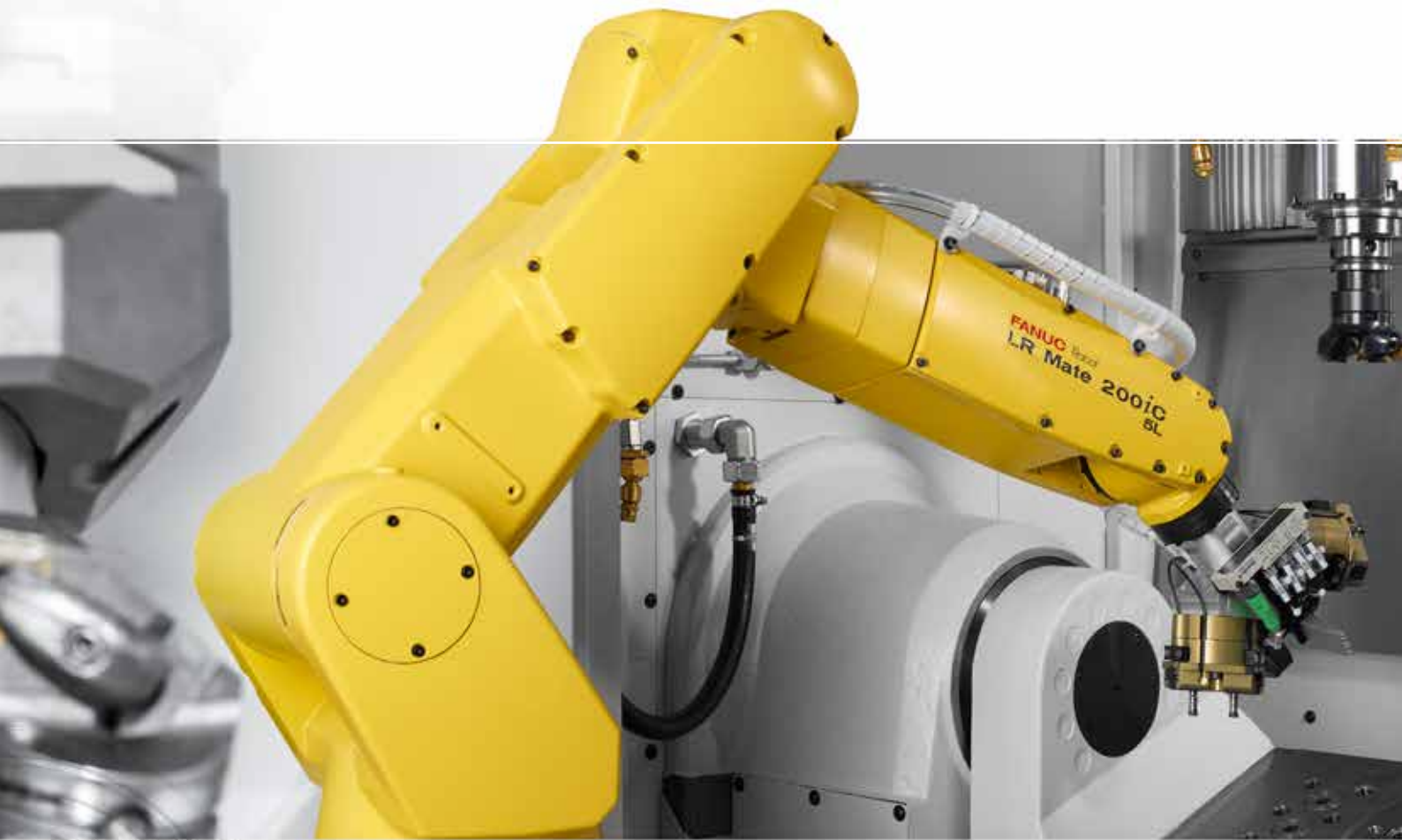
Other synergies in this partnership that are beginning to emerge for our customers include:

- Work operations are optimally matched – piece times are optimized at maximum output
- Savings through sharing of aggregates (such as coolant processing and cooling, suction)

- Saving other resources like energy, personnel or space

Parts requiring turning and milling are optimal for concatenated production. Furthermore, drilling or threading operations are performed frequently. But auxiliary production operations such as cleaning, balancing, measuring or labelling can also be integrated into the CHIRON-SCHERER systems.





**Project:** Complete machining of an adapter flange for injection pumps  
**Annual demand:** 250.000 pieces



Raw part



OP10 + OP20



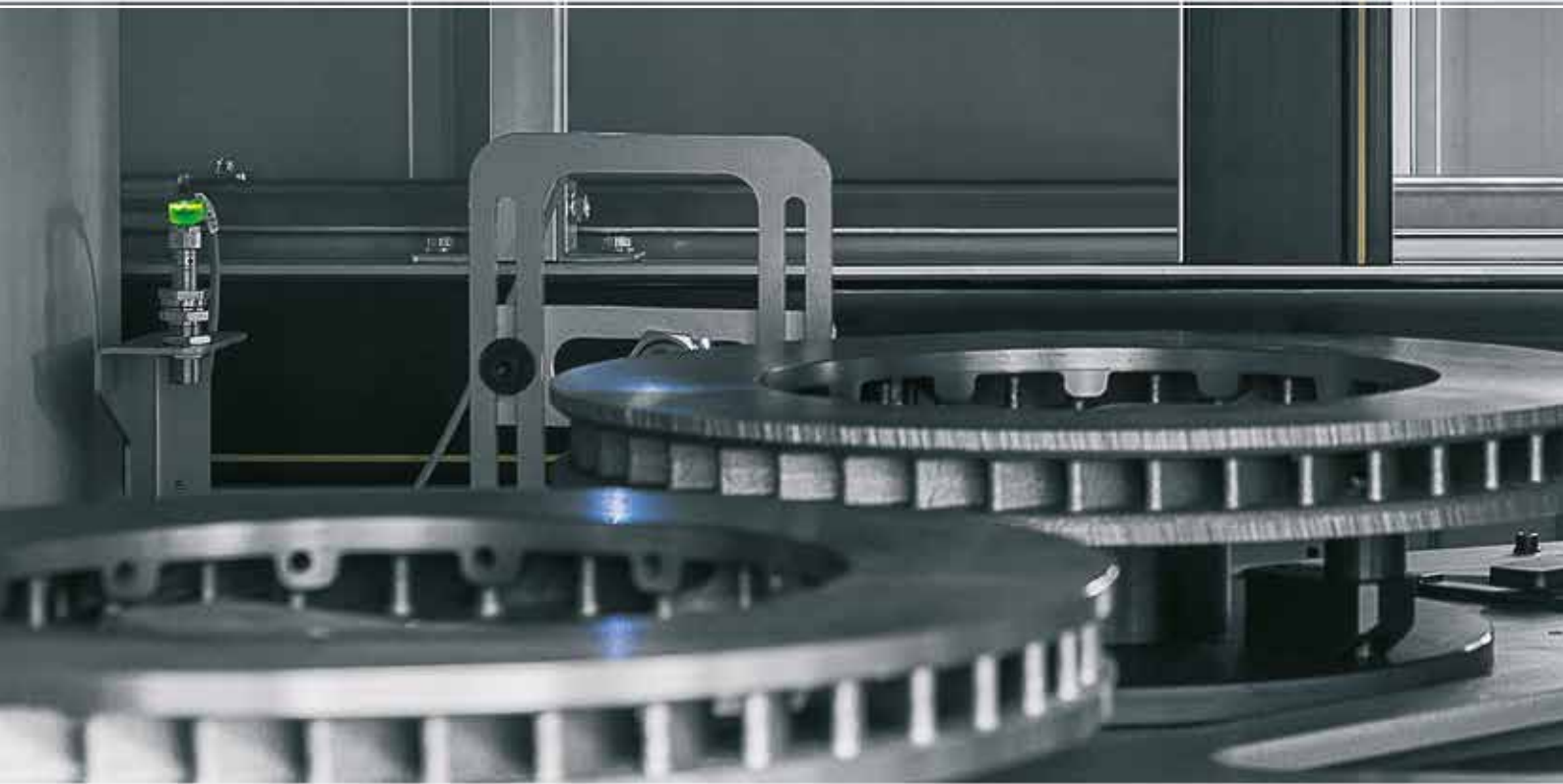
OP30 + OP40



Process sequences	OP10 + OP20	OP30 + OP40
System components	Turning SCHERER 1 x VDZ100DS	Milling CHIRON 1 x DZ12 W Magnum
Machining time [sek]	80	160
Loading & unload. times [sek] incl.		incl.
Total cycle time [sek]	80	160/2=80

# Options for your production

individualized to meet your specific requirements



Carrier system tailored to the workpiece

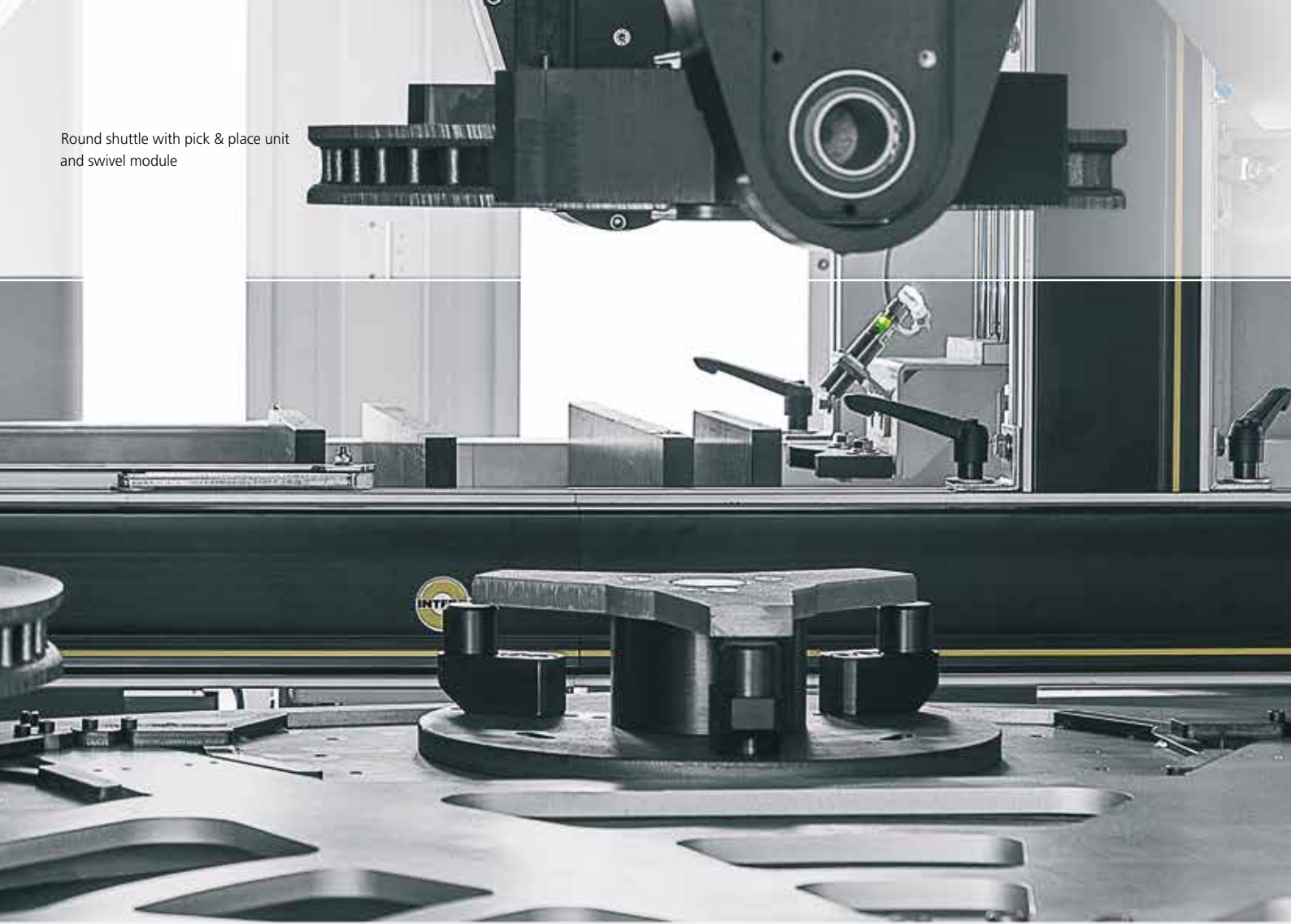


In designing our highly productive manufacturing systems, we focus right from the start of the designing process on possibilities for customer-optimized development, from isolated solutions all the way to fully automatic production lines. Therefore, all machine types of the VDZ and WDZ series are optionally expandable and offer a variety of possibilities for internal and external process optimization / extensions.

These include every conceivable automation variants, such as belts, shuttles and robotic systems for the supply and removal of parts, as well as the implementation of additional processing units, such as milling spindles, special drilling heads, threading devices and grinding systems.

All this is complemented by further adaptation options such as in-process probes, measuring stations, cleaning, deburring and drying plants and other downstream process steps.

Round shuttle with pick & place unit and swivel module



In-process probe



Integrated milling unit



The integrated milling spindle allows internal processing of differential housings in one set-up



In-process shaft measurement



Integrated roll-milling module



Complete machining with auxiliary systems

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## India

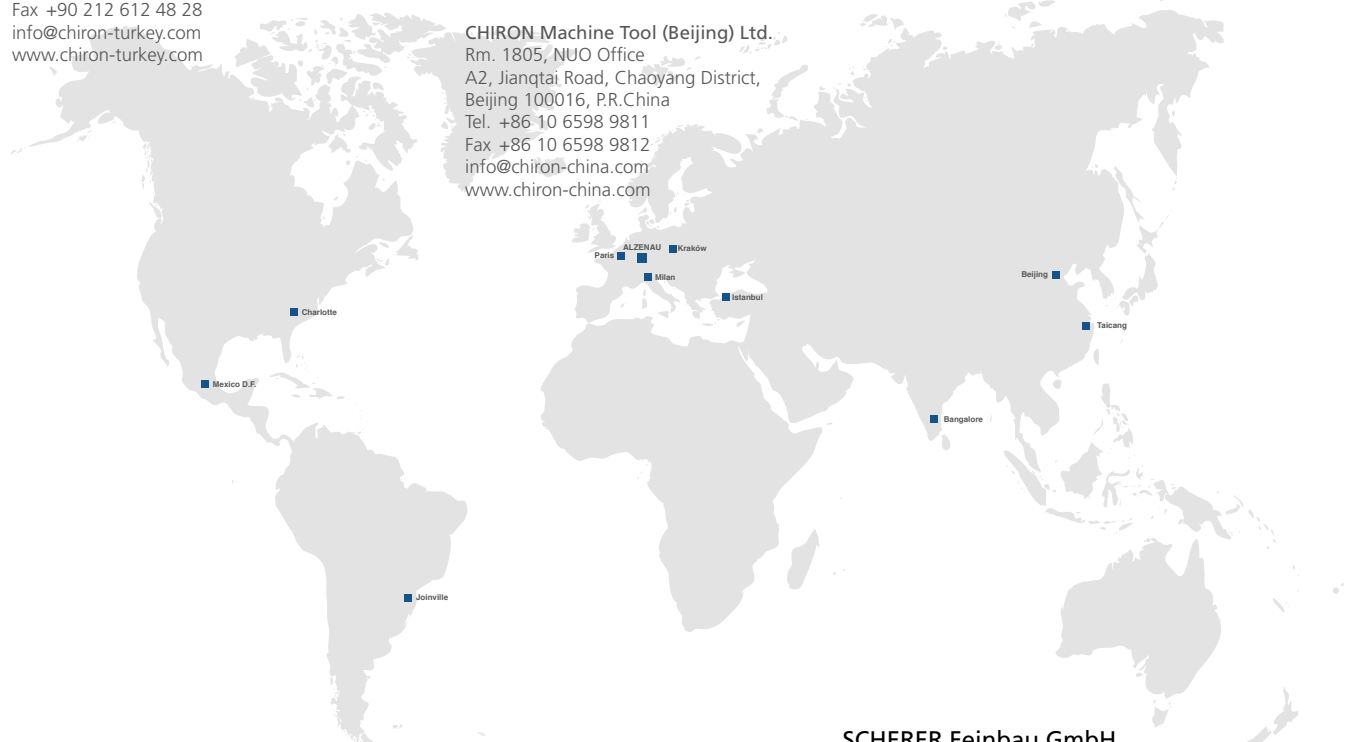
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■ SCHERER Feinbau and partners

CHIRON Group

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