SCHUNK Engineering
Special expansion technology

System solution for gear grinding

Hand in hand for tomorrow

SCHUNK gear grinding

Where precision meets performance

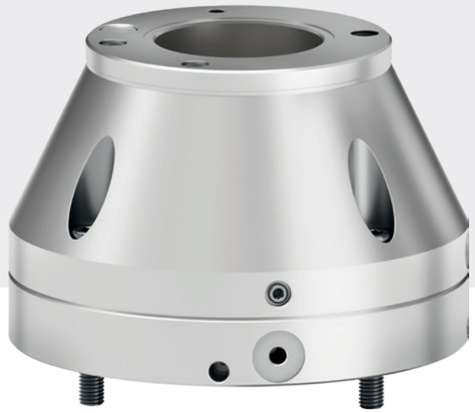
Discover our solutions for gear grinding. Our perfectly matched combination of base chucks and a comprehensive portfolio of interchangeable hydraulic expansion arbors provides you with maximum flexibility and minimal set-up effort. Gain decisive competitive advantages through the highest run-out accuracy and benefit from the vibration damping of the hydraulic system.

**Your contact for the
special expansion technology
Tel.: +49-7133-103-2555
sonderdehnspanntechnik@de.schunk.com**

Base chuck with axial retracting effect

Reduces your set-up times

Our base chuck with axial retraction ensures complete surface contact of the clamping device. By using a membrane, the clamping device is drawn axially to the flat surface of the base chuck and centered to the axis using hydraulic expansion technology. This prevents even the smallest wobble errors and ensures exceptionally high stability during machining. Furthermore, axial screw mounting of the clamping device to the base chuck is not required. Our base chuck is available in clamping diameters of 38, 40, and 66mm.



Advantages:

- A single base chuck on the machine is enough to clamp various clamping devices
- Overall repeatability ≤ 0.005 mm across three interfaces
- Versatile fields of applications: gear grinding, gear skiving, hobbing, gear shaping, cylindrical grinding, turning, and measurement
- Thanks to automatic centering, aligning with a dial gauge and manual inspection are no longer necessary
- With direct connection via the machine hydraulics, a pressure intensifier can be integrated into the base chuck

Hydraulic expansion arbors

For maximum flexibility

Our extensive portfolio of hydraulic exapnsion arbors offers you ideal solutions in the fieled of gear grinding.

Technical data:
- Ø 13 – 50.499 mm
- Additional clamping Øs are available upon request

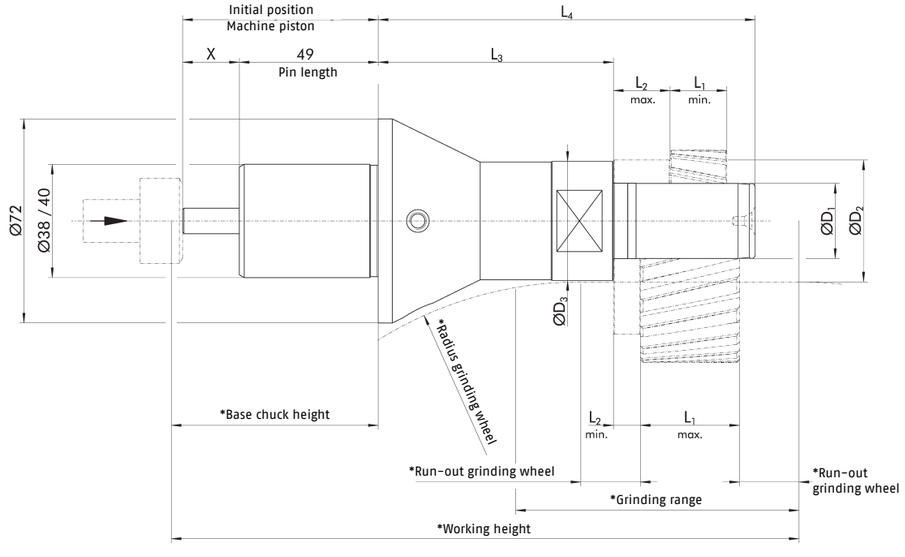
Run-out accuracy:
- ≤ 3 µm with direct clamping

Advantages:

- Excellent vibration damping
- Absolute slim interfering contour for improved grinding wheel run-out
- Best surface quality
- Low-maintenance
- Insensitive to contamination and grinding sludge, as it is a hermetically sealed system
- With the fixed build-in stop, we ensure axial positioning
- Compatible with base chucks of renowned manufacturers

Hydraulic expansion arbors

Solution overview for pin diameter 38 or 40mm



Series	D1 Workpiece Ø [mm]	L1 Workpiece length [mm]	D2 Root Ø [mm]	L2 Stop length [mm]	D3 [mm]	L3 [mm]	L4 Projection length [mm]	X** Setting length [mm]	max. weight [kg]	Price [€]
1	13 – 16,499	10 – 20	20 – 200	7,5 – 13	19	100	140	10 – 30	4,6	2.350,00
2	16,5 – 20,999	13 – 25	26 – 200	7,5 – 15	25	95	140	10 – 30	5,2	2.420,00
3	21 – 26,499	17 – 30	43 – 200	12,5 – 21	42	85	133	10 – 30	7,0	2.490,00
4	26,5 – 32,499	20 – 35	43 – 200	9,5 – 20	42	83	133	10 – 30	6,8	2.550,00
5	32,5 – 38,499	24 – 40	43 – 200	7,5 – 19	42	80	133	10 – 30	6,6	2.610,00
6	38,5 – 44,499	27 – 47	66 – 200	10,5 – 26	65	70	133	10 – 30	9,0	2.680,00
7	44,5 – 50,499	33 – 58	66 – 200	7 – 27	65	63	133	10 – 30	9,2	2.740,00

* The height of the base chuck should be chosen in such a way that both the length of the workpiece and the grinding wheel overhang are within the grinding area of the machine. The specific conditions of the machine room must be considered independently.
For each expansion arbor, the clamping force is determined individually and is directly labeled on the product.
Prices are valid until end of December 2024

Inquiry form

To process your inquiry, please provide us with the following values:

	Dimension (example value)		Your values	Limits
D1	Workpiece Ø	*(14)*	mm	*see table*
	Workpiece tolerance	*(H6)*		*max. IT 7*
L1	Workpiece lenght	*(15)*	mm	*see table*
D2	Root Ø	*(60)*	mm	*see table*
	Clamping Ø of the base chuck	*(40)*	mm	*38 or 40*
X**	Setting dimension	*(17,5)*	mm	*10 – 30*

** The piston setting dimension X is required to ensure that the actuation stroke of the clamping device falls within the capabilities of your machine. The calculated value must not be less than 10 mm and not greater than 30 mm.
If your value falls outside this range, please contact our customer service.
Calculation formula: X = initial position of the machine piston – pin length

SCHUNK Engineering – special expansion technology
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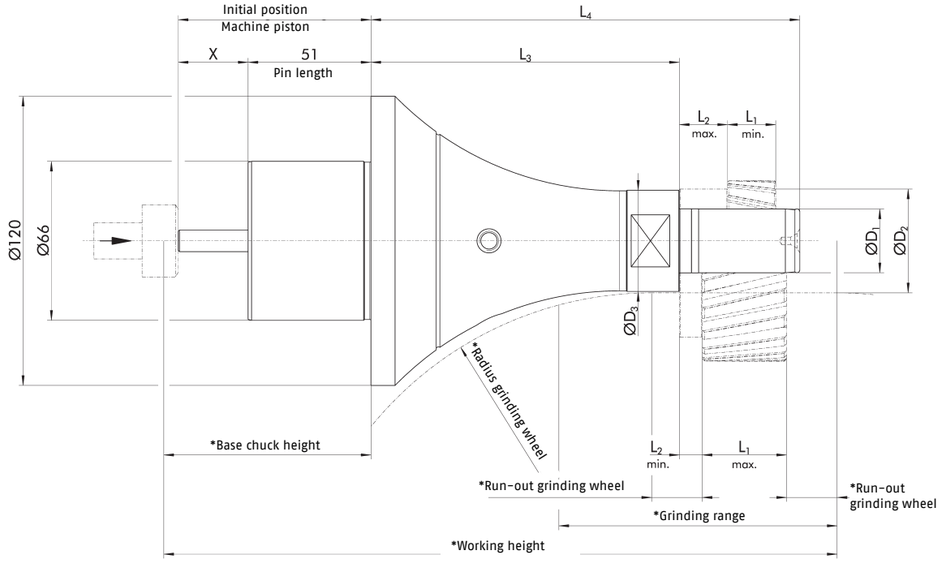
Hydraulic expansion arbors

Solution overview for pin diameter 66mm



Series	D1 Workpiece Ø [mm]	L1 Workpiece length [mm]	D2 Root Ø [mm]	L2 Stop length [mm]	D3 [mm]	L3 [mm]	L4 Projection length [mm]	X** Setting dimension [mm]	max. weight [kg]	Price [€]
11	13 – 16,499	10 – 20	20 – 200	7,5 – 13	19	145	185	10 – 30	8,1	2.600,00
12	16,5 – 20,999	13 – 25	26 – 200	7,5 – 15	25	140	185	10 – 30	8,7	2.670,00
13	21 – 26,499	17 – 30	43 – 200	12,5 – 21	42	130	178	10 – 30	10,5	2.740,00
14	26,5 – 32,499	20 – 35	43 – 200	9,5 – 20	42	128	178	10 – 30	10,3	2.800,00
15	32,5 – 38,499	24 – 40	43 – 200	7,5 – 19	42	125	178	10 – 30	10,1	2.880,00
16	38,5 – 44,499	27 – 47	66 – 200	11,5 – 26	65	115	178	10 – 30	12,7	2.950,00
17	44,5 – 50,499	33 – 58	66 – 200	8 – 27	65	108	178	10 – 30	12,9	3.000,00

* The height of the base chuck should be chosen in such a way that both the length of the workpiece and the grinding wheel overhang are within the grinding area of the machine. The specific conditions of the machine room must be considered independently.
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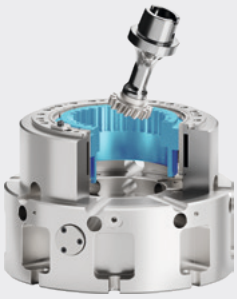
D1	Workpiece Ø	*(14)*	mm	*see table*
	Workpiece tolerance	*(H6)*		*max. IT 7*
L1	Workpiece lenght	*(15)*	mm	*see table*
D2	Root Ø	*(60)*	mm	*see table*
	Clamping Ø of the base chuck	*(66)*	mm	*66*
X**	Setting dimension	*(17,5)*	mm	*10 – 30*

** The piston setting dimension X is required to ensure that the actuation stroke of the clamping device falls within the capabilities of your machine. The calculated value must not be less than 10 mm and not greater than 30 mm.
If your value falls outside this range, please contact our customer service.
Calculation formula: X = initial position of the machine piston – pin length

Customized special solutions

Versatile and precise

Beyond our system solution, we offer you numerous other options to individually address your tasks in the field of gear cutting. Please contact us!



Complete solution in the field of gear skiving / hobbing – workpiece and workpiece clamping- from a single source

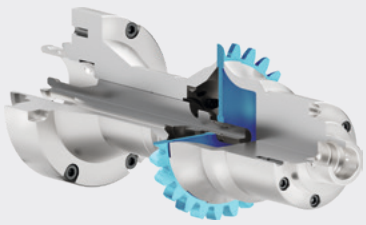
Workpiece clamping with vibration damping and optimal chip removal. Gear hobbing tool clamping with vibration damping and micron-precise run-out.

Precise and secure fixation of geared workpieces with an optimal interfering contour

The workpiece is loaded between centers into the hydraulic expansion chuck, then centered and clamped wiht micron precision. The integrated insertion and ejection pin in the clamping device enables precise loading and unloading.

Additively manufactured hydraulic expansion arbor

Through the use of additive manufacturing, we are able to achieve extremely small clamping diameters, as low as 4 mm.
At the same time, we ensure high clamping stability and maximum precision.



Mechanical expansion arbor with axial retraction for gear hobbing

A pivot-mounted conterholder ensures an even distribution of clamping force across the workpiece. In addition to the existing precison, this contributes to outstanding stability.

SCHUNK SE & Co. KG
Spanntechnik
Greiftechnik
Automatisierungstechnik

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01/2025