



# Precision Grinding



## Purpose

Precision grinding, also known as die grinding, is performed with handheld tools to remove material from small areas, cavities, or other confined spaces. Typical operations include creating cavities in a die and removing excess material from narrow welds. Other precision tasks include deburring cast or cut pieces of any material, such as beveling and grinding grooves.



## Tool Types

Die grinders are designed for precision work. These are ungeared, high-speed tools with a collet chuck, often referred to as collet grinders. Die grinders weigh about 1 kg and are relatively small and light compared to tools for rough grinding, with a limited output of up to 800W. They come in straight (short/extended) or angle (angle-head) versions, depending on the location of the area to be ground and the operator's preference.



## Settings: Rotational Speeds

Speeds for precision grinding range from 20,000 to 100,000 rpm, depending on the material, shape of the burr, and workpiece. Finer, more precise operations require higher speeds and smaller burrs. The operation determines the size of the abrasive, which in turn determines the rotational speed. Choosing the right power level is crucial, balancing power requirements against increased weight. Handheld die grinders typically have a power rating of up to 800W.



## Technique

Each time a "tooth" of the burr or an abrasive grain touches the workpiece, it removes a chip. The size of the chip depends on several factors: the size of the "tooth" or grain, the hardness of the materials, rotational speed, and feed force. The operator should avoid applying excessive force that could cause the bit to jam and the tool to stall. Keeping the surface area of the workpiece in contact with the abrasive as small as possible provides greater control over the tool and increases contact pressure, resulting in a higher material removal rate. Rough treatment can easily damage abrasives, particularly die grinding burrs. High burr consumption will negatively impact grinding economy.

## Precision and versatility in narrow and cramped spaces: Angle die grinders with collets offer exceptional control and adaptability for detailed work in confined areas.

### Description

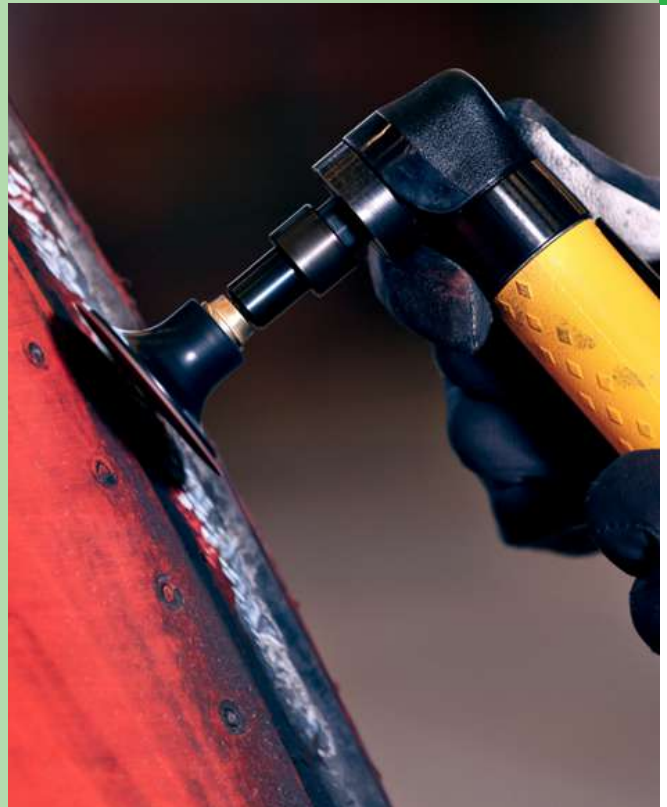
Experience unparalleled precision and control with our range of precision grinders - angle die grinders with collets. Designed for applications requiring high surface finish and excellent accessibility, these tools excel in tight spaces while ensuring operator comfort and efficiency. Featuring powerful motors, integrated speed governors, and ergonomic designs, our angle die grinders with collets deliver optimal performance and minimal maintenance. Perfect for a variety of tasks, from detailed grinding to fine sanding, our range of precision grinders offer the ultimate blend of power, precision, and comfort.

### Features

- High speed (up to 20000RPM)
- Integrated speed controlled governor
- Compact and robust design
- Lightweight and easy-to-handle design
- Secure collet system
- Lever equipped with the safety clutch

### Benefits

- Optimal process speed for different applications
- High productivity
- Long-lasting performance and reliability
- Excellent operator comfort and accessibility
- Minimum sound levels



## Angle Die Grinders with Collet



LSV12

Details



LSV19

Details



LSV29

Details





Model	Max free speed r/min	Max output kW	Collet size mm	Length mm	Weight kg	Air consumption at max output l/s	Air consumption at free speed l/s	Rec hose size mm	Air inlet thread BSP in	Recom. pad size max dia mm	Height over spindle mm	Ordering No.
LSV12 S120-1	12000	0.24	6	166	0.5	8.3	3.0	8	1/4	75	76	8423 1124 05
LSV12 S200-1	20000	0.29	6	166	0.5	9.5	6.4	8	1/4	50	76	8423 1124 06

## Accessories

	8423 1124 05	8423 1124 06	Ordering No.
<b>Included</b>			
Open-end spanner (A/F 11mm)	✓	✓	4150 2226 14
Open-end spanner (A/F 17mm)	✓	✓	4150 2226 13
Collet (Ø5.55 to 6.35 mm - Ø1/4")	✓	✓	4150 2226 03
<b>Optional</b>			
Hose kit (Cablair 08; 8 mm (5/16"), L = 0.9 m (L = 3 ft))	✓	✓	4150 1689 80
Collet (Ø7/32")	✓	✓	4150 2226 49
Collet (Ø3mm - Ø1/8")	✓	✓	4150 2226 46
Collar	✓	✓	4150 2226 02
Collet holder	✓	✓	4150 2226 21
Collet nut	✓	✓	4150 2226 04
Productivity kit (MIDI-FRL-1/2-BSP EQ08-C10)	✓	✓	8202 0850 03
MULTIFLEX-1/4-NPT (For North America)	✓	✓	8202 1350 26
MULTIFLEX-1/4 cover	✓	✓	8202 1350 41
MULTIFLEX-1/4	✓	✓	8202 1350 20



Model	Max free speed r/min	Max output kW	Collet size mm	Length mm	Weight kg	Air consumption at max output l/s	Air consumption at free speed l/s	Rec hose size mm	Air inlet thread BSP	Recom. pad size max dia mm	Height over spindle mm	Ordering No.
LSV19 S200-1	20000	0.46	6	186	0.6	11.3	7.5	10	1/4	50	78	8423 0111 41
LSV19 S120-1	12000	0.46	6	186	0.6	11.3	7.5	10	1/4	75	78	8423 0111 43
LSV19 S080-1	8000	0.37	6	186	0.6	11.3	6.5	10	1/4	75	78	8423 0111 46
LSV19 S200-1F	20000	0.46	6	185	0.6	11.3	7.5	10	1/4	50	78	8423 0111 47

## Accessories

	8423 0111 41	8423 0111 43	8423 0111 46	8423 0111 47	Ordering No.
<b>Included</b>					
Hose (Soft type, Ø38, L = 1 m)	✓	✓	✓	✓	4150 1314 02
Collet (Ø6mm)	✓	✓	✓	✓	4150 0075 00
<b>Optional</b>					
Hose kit (Cablair 10; 10 mm, L = 0.7 m)	✓	✓	✓	✓	8202 1180 19
Syringe, filled with grease (RHENUS LKR03, 20 ml)	✓	✓	✓	✓	4081 0530 90
Collet (Ø3mm)	✓	✓	✓	✓	4150 0081 00
Collet (Ø8mm - Ø5/16")	✓	✓	✓	✓	4150 0074 00
Collet (Ø5mm)	✓	✓	✓	✓	4150 0075 01
Collet (Ø1/4")	✓	✓	✓	✓	4150 0076 00
Collet (Ø3/16")	✓	✓	✓	✓	4150 0649 00
Collet (Ø1/8")	✓	✓	✓	✓	4150 0082 00
Collet (Ø5/32")	✓	✓	✓	✓	4150 0648 00
Wheel guard	-	-	-	✓	4150 1157 00

Continued on the next page (LSV 19 with collet)

## Accessories

	8423 0111 41	8423 0111 43	8423 0111 46	8423 0111 47	Ordering No.
<b>Optional</b>					
Screws for wheel guard (x3)	-	-	-	✓	0226 0326 00
Collet nut	✓	✓	✓	✓	4150 0760 00
MULTIFLEX-1/4 cover	✓	✓	✓	✓	8202 1350 41
MULTIFLEX-1/4-NPT (For North America)	✓	✓	✓	✓	8202 1350 26
MULTIFLEX-1/4	✓	✓	✓	✓	8202 1350 20
Productivity kit (MIDI-FRL-1/2-BSP EQ08-C10)	✓	✓	✓	✓	8202 0850 03
Spot suction kit for fiber disc (Ø50 - 75 mm)	✓	✓	✓	✓	3780 4092 62
Spot suction kit drum (diamond drum not incl). To be used with 6 mm collet	✓	✓	✓	✓	3780 4011 61
Diamond drum Ø27 mm	✓	✓	✓	✓	3780 5033 00
Diamond cylinder kit Ø 27mm	✓	✓	✓	✓	3780 5033 01



Model	Max free speed r/min	Max output kW	Collet size mm	Length mm	Weight kg	Air consumption at max output l/s	Air consumption at free speed l/s	Rec hose size mm	Air inlet thread BSP in	Scatter damped	Ordering No.
LSV29 S150	15000	0.7	6	250	1.2	21	8	13	3/8	No	8423 0127 40

## Accessories

	8423 0127 40	Ordering No.
<b>Included</b>		
Open-end spanner (A/F 14mm)	✓	4080 0153 00
Hose (Soft type, Ø38, L = 1 m)	✓	4150 1314 02
Collet (Ø6mm)	✓	4150 0075 00
<b>Optional</b>		
Hose kit (Cablair 10; 10 mm, L = 0.9 m)	✓	4150 1617 80
Syringe, filled with grease (RHENUS LKR03, 20 ml)	✓	4081 0530 90
Collet (Ø3mm)	✓	4150 0081 00
Collet (Ø8mm - Ø5/16")	✓	4150 0074 00
Collet (Ø5mm)	✓	4150 0075 01
Collet (Ø1/4")	✓	4150 0076 00
Collet (Ø3/16")	✓	4150 0649 00
Collet (Ø1/8")	✓	4150 0082 00
Collet (Ø5/32")	✓	4150 0648 00
Collet holder and collet nut	✓	4110 0844 90
Collet nut	✓	4150 0760 00
Cone wheel adapter (UNF 3/8)	✓	4150 2326 85
MULTIFLEX-3/8 cover	✓	8202 1350 42
MULTIFLEX-3/8-NPT (For North America)	✓	8202 1350 28
MULTIFLEX-3/8	✓	8202 1350 22

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