

Lube-free Bushing



Maintenance-free lube-free bushings

D-M-E Lube-free Bushing is a high-load carrying slide bearing, with a porous iron-base sintered alloy impregnated with a high viscosity lubricating oil.

- Excellent self-lubrication at high load and wide range of slide speed, particularly at lower speed.
- Superior resistance against wear, seizure or erosion without lubrication for a prolonged period.
- High strength against fatigue.
- Reduction of maintenance costs, environmental pollution and noise.
- Best choice for an environment where frequent greasing is not easy to perform

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Die Sets

Double lubrication

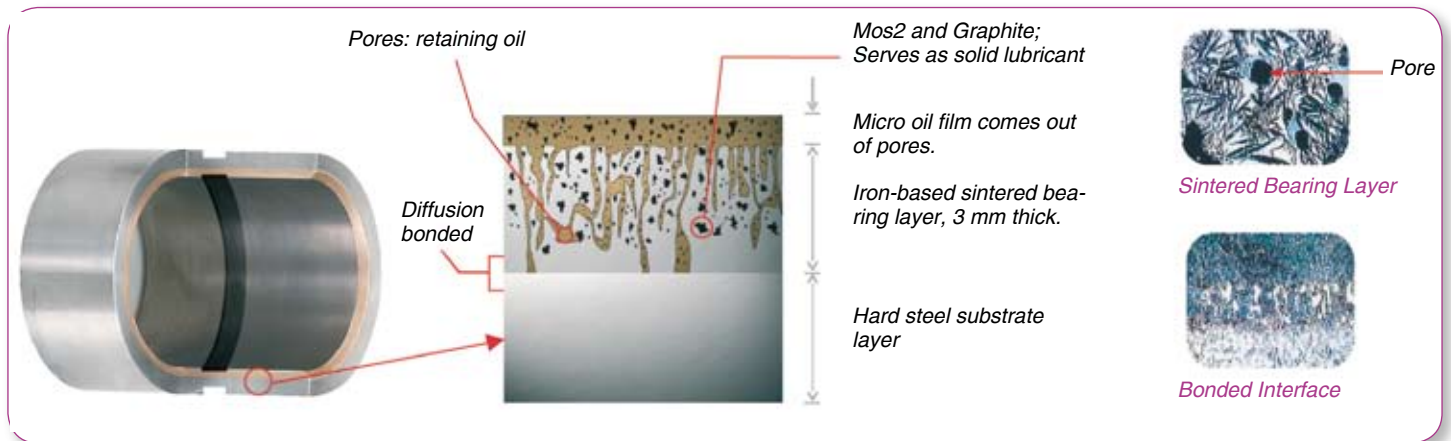
Wet lubrication

During operation the impregnated lubricating oil comes out over the sliding surface due to frictional heat. While not in service, the oil returns to the pores through capillary action.

Dry lubrication

Finely dispersed solid lubricants serve as dry lubrication enhancing wear resistance and low noise. Gives excellent performance particularly at low speed.

Magnified view of cross section



Service condition & specification

Items	Unit	Specification
Lubrication	-	Self-lube
Allowable max pressure	N/mm ²	100*
Allowable max velocity	m/min	70
Temperature	°C	-40 / +250
Hardness of bearing layer	HRB	80-90
Hardness of substrate	HRC	40-50

* allowable static pressure

Lube-Free Bushings have been invented to replace common types of carburized steel bushings and graphite plug bushings. This innovative product is maintenance-free, without the need for lubrication with oil or grease. Grasp a chance to compare its remarkable quality with other conventional bushings on the current market. You can easily find out why Lube-Free Bushings are called innovative bushings that customer have been looking for.

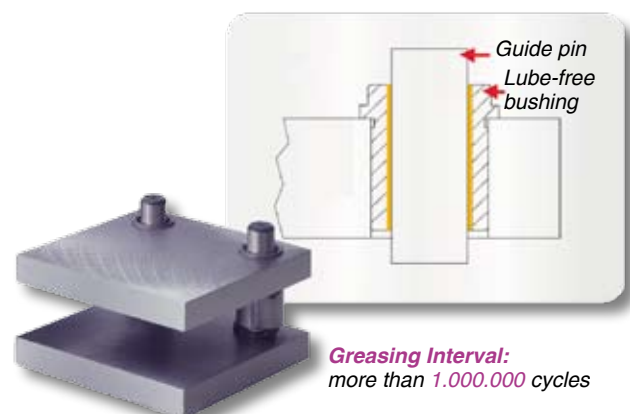
Features & benefits

The bushings have a sintered layer inside with dry lubricants and oil. When in service the lubricants come on the surface due to the friction heat. No additional lubrication is needed. The bushings are maintenance free. The design of the bushings is made for high and low sliding speed or for heavy duty applications. Compared to bronze bushings with solid graphite, the new product is much more wear resistant and has a longer lifetime in service.

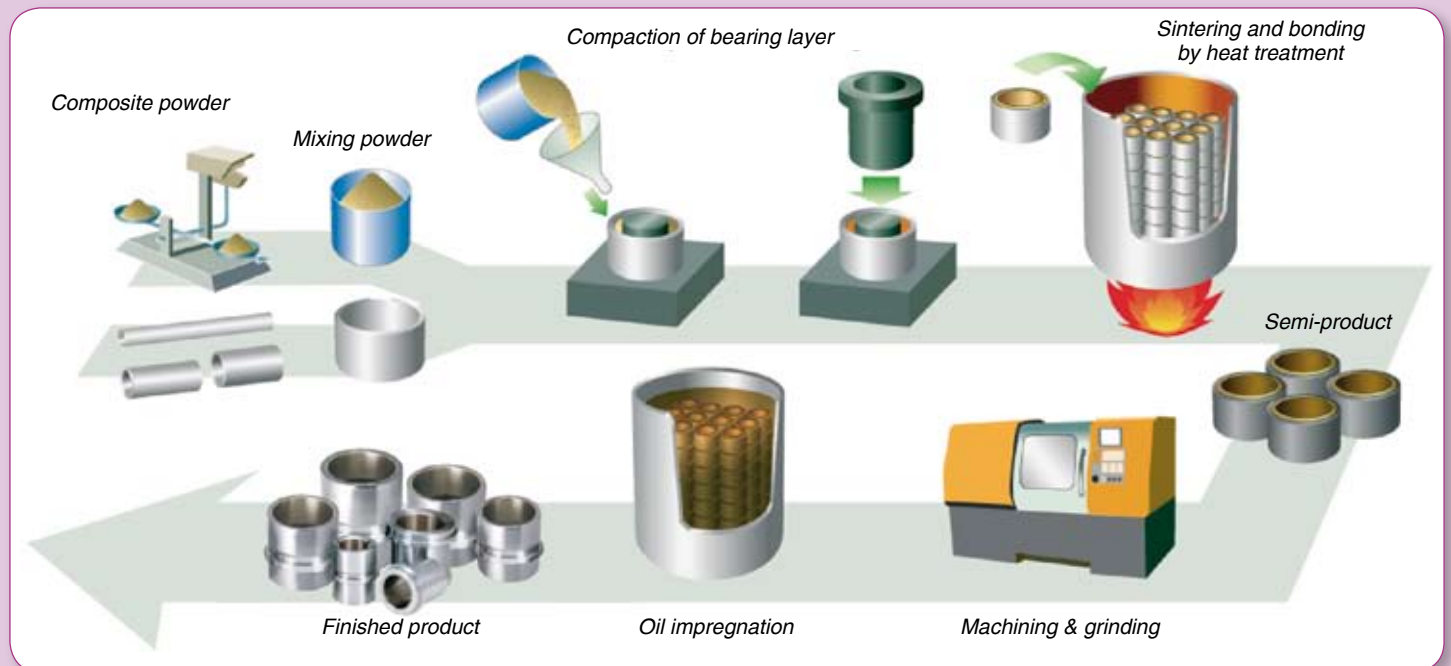
Typical applications

Guide pins and bushings in die and mold sets

Another typical application is a reciprocating or sliding motion. Other bushings use liquid lubricants such as grease, this is easily squeezed out. With Lube-free bushings the solid lubricants contained in the bearing layer don't escape and impregnated oil is well trapped and retained in the pores for a long time.



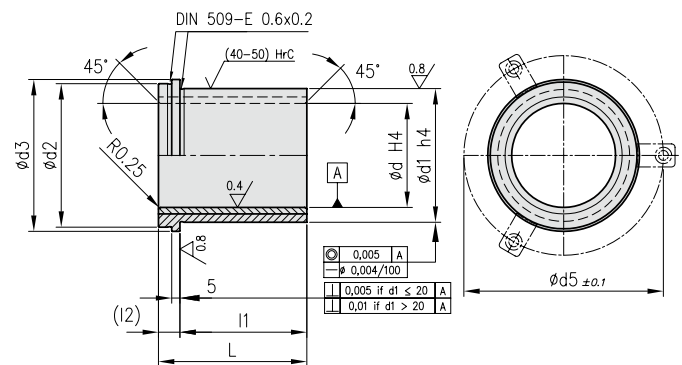
Production process



WZ 4033

Mat.: **outside:** steel substrate + iron based sintered alloy metal -
inside: Fe + Cu with dispersed graphite and molybdenum disulfide

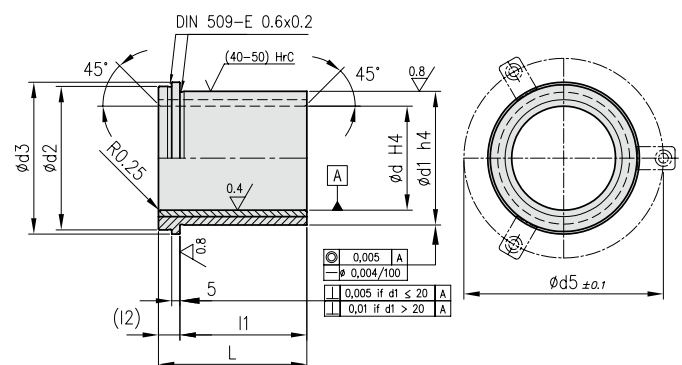
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WZ4033	24/25	36	24/25	38	44	51	41	36	23	13	31,00
WZ4033	30/32	43	30/32	45	48	53	63	43	30	13	35,49
WZ4033	40/42	51	40/42	54	58	63	73	51	38	13	43,95
WZ4033	50/52	61	50/52	65	74	79	89	61	48	13	61,43
WZ4033	63	74	63	81	87	92	106,2	74	61	13	95,55
WZ4033	80	91	80	100	106	111	125,2	91	78	13	123,69



WZ 4034

Mat.: **outside:** steel substrate + iron based sintered alloy metal -
inside: Fe + Cu with dispersed graphite and molybdenum disulfide

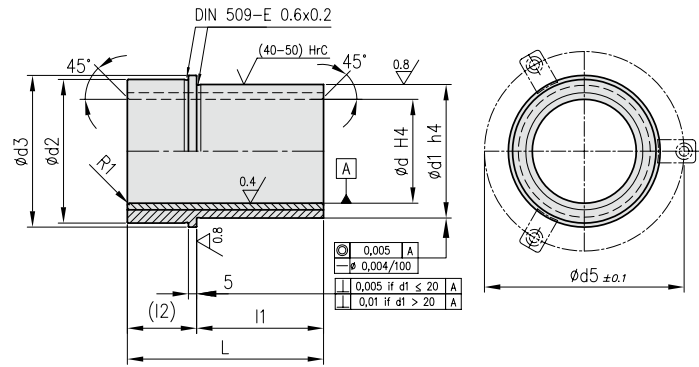
REF	d	L	d	d1	d2	d3	d5	L	l1	l2	€/St.
WZ4034	18/19	50	18/19	28	29	34	41	31	37	13	30,85
WZ4034	24/25	55	24/25	38	44	51	41	36	42	13	34,40
WZ4034	30/32	60	30/32	45	48	53	63	43	47	13	39,31
WZ4034	40/42	67	40/42	54	58	63	73	51	54	13	49,14
WZ4034	50/52	75	50/52	65	74	79	89	61	62	13	64,43
WZ4034	63	90	63	81	87	92	106,2	74	77	13	108,38



WZ 4042

Mat.: **outside:** steel substrate + iron based sintered alloy metal -
inside: Fe + Cu with dispersed graphite and molybdenum disulfide

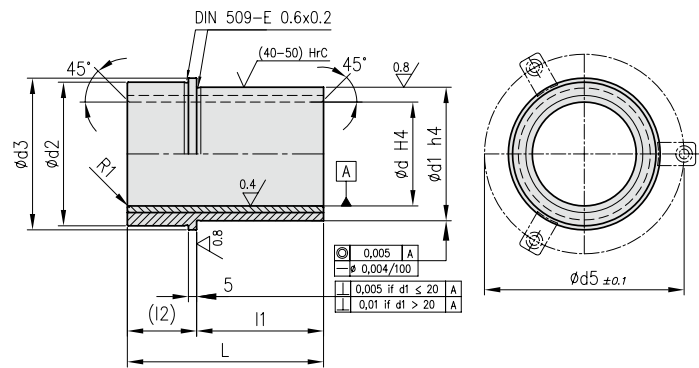
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WZ4042	18/19	50	18/19	28	31	34	41	50	18	32	30,50
WZ4042	24/25	55	24/25	38	41	44	51	55	23	32	34,40
WZ4042	30/32	60	30/32	45	50	53	63	60	26	34	39,31
WZ4042	40/42	67	40/42	54	60	63	73	67	30	37	49,14
WZ4042	50/52	75	50/52	65	76	79	89	75	35	40	64,43
WZ4042	63	90	63	81	89	92	106,2	90	48	42	108,38
WZ4042	80	100	80	100	108	111	125,2	100	48	52	151,94



WZ 4052

Mat.: **outside:** steel substrate + iron based sintered alloy metal -
inside: Fe + Cu with dispersed graphite and molybdenum disulfide

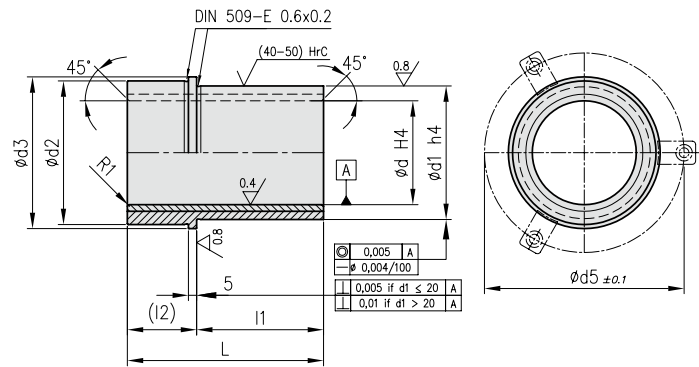
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WZ4052	18/19	70	18/19	28	31	34	41	70	27	43	32,49
WZ4052	24/25	80	24/25	38	41	44	51	80	32	48	37,95
WZ4052	30/32	90	30/32	45	50	53	63	90	37	53	45,32
WZ4052	40/42	100	40/42	54	60	63	73	100	47	53	61,00
WZ4052	50/52	110	50/52	65	76	79	89	110	57	53	88,50
WZ4052	63	130	63	81	89	92	106,2	130	67	63	115,50
WZ4052	80	150	80	100	108	111	125,2	150	77	73	184,00



WZ 4056

Mat.: **outside:** steel substrate + iron based sintered alloy metal -
inside: Fe + Cu with dispersed graphite and molybdenum disulfide

REF	d	L	d	d1	d2	d3	d5	L	I1	I2	€/St.
WZ4056	18/19	70	18/19	28	31	34	41	70	18	52	32,49
WZ4056	24/25	80	24/25	38	41	44	51	80	23	57	37,95
WZ4056	30/32	90	30/32	45	50	53	63	90	26	64	45,32
WZ4056	40/42	100	40/42	54	60	63	73	100	30	70	59,00
WZ4056	50/52	110	50/52	65	76	79	89	110	35	75	86,27
WZ4056	63	130	63	81	89	92	106,2	130	48	82	125,00



WZ 9051

Mat.: **outside:** steel substrate + iron based sintered alloy metal -
inside: Fe + Cu with dispersed graphite and molybdenum disulfide

REF	d1	I1	d1	d2	d3	d4	I1	I2	I3	I4	r	d5	€/St.
WZ9051	24	40	24	32	32	40	40	32	6,3	4	3	58	26,04
WZ9051	25	40	25	32	32	40	40	32	6,3	4	3	58	26,04
WZ9051	30	50	30	40	40	50	50	40	6,3	4	3	66	43,00
WZ9051	32	50	32	40	40	50	50	40	6,3	4	3	66	43,00
WZ9051	40	63	40	50	50	63	63	50	6,3	5	3	79	50,23
WZ9051	42	63	42	50	50	63	63	50	6,3	5	3	79	50,23
WZ9051	50	71	50	63	63	71	71	56	6,3	6,3	5	89	60,06
WZ9051	52	71	52	63	63	71	71	56	6,3	6,3	5	123	60,06
WZ9051	63	80	63	80	80	90	80	63	6,3	8	6	143	68,50
WZ9051	80	100	80	100	100	112	100	80	6,3	10	8	168	82,50
WZ9051	100	125	100	125	125	140	125	106	6,3	12,5	10	203	210,50
WZ9051	125	160	125	160	160	180	160	132	6,3	16	12	243	420,50

