



Screwdriving technology

Automation

Air motors

Air tools

DEPRAG

Air vane motors for special applications

drilling motors 170 - 600 W

milling motors 250 - 400 W

grinding motors 150 - 400 W

robust and precise bearing high running accuracy
high precision drill chucks and collets

High performance drive for installation in robots and machines.
For example their slim design allows the smallest of drill spacings when applying a multi-spindle technique, such as for the construction of windows.

The robust steel housing guarantees high precision and operational safety.



Air motors for special applications

drilling motors - milling motors - grinding motors



80 W drilling motors with collet
170 W drilling motors with collet or drill chuck

Motor size 1		right rotation					
Series 104- with collet	Type order no.	104-010-1 302929 A	104-110-1 302929 B	104-210-1 302929 C	104-310-1 302929 D		
Nominal-Power	W / HP	80 / 0.11	80 / 0.11	80 / 0.11	80 / 0.11		
Nominal-Speed	rpm	11000	3000	950	650		
Speed (idling)	rpm	22000	6000	1900	1300		
Nominal-Torque	Nm / in.lbs	0.06 / 0.5	0.22 / 1.9	0.8 / 7	1.2 / 11		
Start-Torque min.	Nm / in.lbs	0.09 / 0.8	0.33 / 2.9	1.2 / 11	1.8 / 16		
Air consumption	m ³ /min / cfm	0.23 / 8	0.23 / 8	0.23 / 8	0.23 / 8		
Length L	mm / in.	96.5 / 3.76	96.5 / 3.76	105.5 / 4.11	105.5 / 4.11		
Weight	kg / lbs	0.2 / 0.4	0.2 / 0.4	0.22 / 0.5	0.22 / 0.5		
Hose I.D.	mm / in.	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂		
for drilling steel up to	mm / in.	–	3 / ¹ / ₈	3 / ¹ / ₈	3 / ¹ / ₈		
for drilling aluminium up to	mm / in.	3 / ¹ / ₈	3 / ¹ / ₈	3 / ¹ / ₈	3 / ¹ / ₈		

Performance data relate to an air pressure of 6 bar (85 PSI)

Motor housing made from stainless steel.
Spindle and collet regular steel.

Motor size 2		right rotation					
Series 104- with collet	Type order no.	104-020-1 302916 A	104-120-1 302916 B	104-220-1 302916 C	104-320-1 302916 D	104-420-1 302916 E	104-520-1 302916 F
Series 104- for drill chuck	Type order no.	–	104-120 302912 B	104-220 302912 C	104-320 302912 D	104-420 302912 E	104-520 302912 F
Nominal-Power	W / HP	170 / 0.23	170 / 0.23	170 / 0.23	170 / 0.23	170 / 0.23	170 / 0.23
Nominal-Speed	rpm	12000	3000	2000	750	500	330
Speed (idling)	rpm	24000	6000	4000	1500	1000	660
Nominal-Torque	Nm / in.lbs	0.13 / 1.1	0.5 / 4.4	0.8 / 7	2.1 / 18	3.2 / 28	4.9 / 43
Start-Torque min.	Nm / in.lbs	0.19 / 1.7	0.8 / 7	1.2 / 10	3.2 / 28	4.8 / 42	5 / 44*)
Air consumption	m ³ /min / cfm	0.3 / 11	0.3 / 11	0.3 / 11	0.3 / 11	0.3 / 11	0.3 / 11
Weight	kg / lbs	0.38 / 0.84	0.38 / 0.84	0.38 / 0.84	0.43 / 0.95	0.43 / 0.95	0.43 / 0.95
Hose I.D.	mm / in.	6 / ¹ / ₄	6 / ¹ / ₄	6 / ¹ / ₄	6 / ¹ / ₄	6 / ¹ / ₄	6
for drilling steel up to	mm / in.	–	3 / ¹ / ₈	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂
for drilling aluminium up to	mm / in.	4 / ⁵ / ₃₂	5 / ¹³ / ₆₄	6 / ¹⁵ / ₆₄	6 / ¹⁵ / ₆₄	6 / ¹⁵ / ₆₄	6 / ¹⁵ / ₆₄

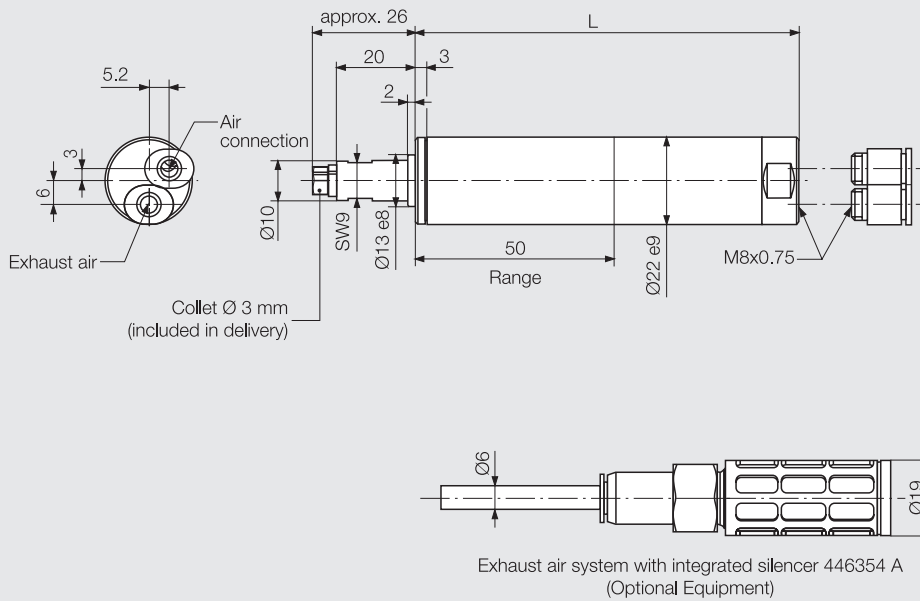
Performance data relate to an air pressure of 6 bar (85 PSI)

*) max admissible Torque
External parts regular steel.

Allowable shaft loading see page 10.

Optional Equipment:	Motor size 1	Motor size 2
Collet		
∅ 2 mm	order no. 314693	–
∅ 3 mm	order no. (included in delivery)	312681
∅ 4 mm	order no. 302474/1	312684
∅ 5 mm	order no. –	312686
∅ 6 mm	order no. –	(included in delivery)
∅ 3/32" (2.35 mm)	order no. 314694	–
∅ 1/8" (3.175 mm)	order no. 314407	312682
∅ 1/4" (6.35 mm)	order no. –	312689
Drill chuck		
Range 0.5 - 6 mm / B 10	order no. –	804655
Quick change chuck		
Range 0 - 6 mm / B 10	order no. –	804664
2 Slide connectors (M8 x 0.75)	order no. (included in delivery)	–
Noise level without silencer	95 dB (A)	73 dB (A)
with exhaust air system and silencer	71 dB (A)	78 dB (A)
Exhaust air system	order no. 446354 A	302923 A
Silencer	order no. integrated in exhaust air system	811091

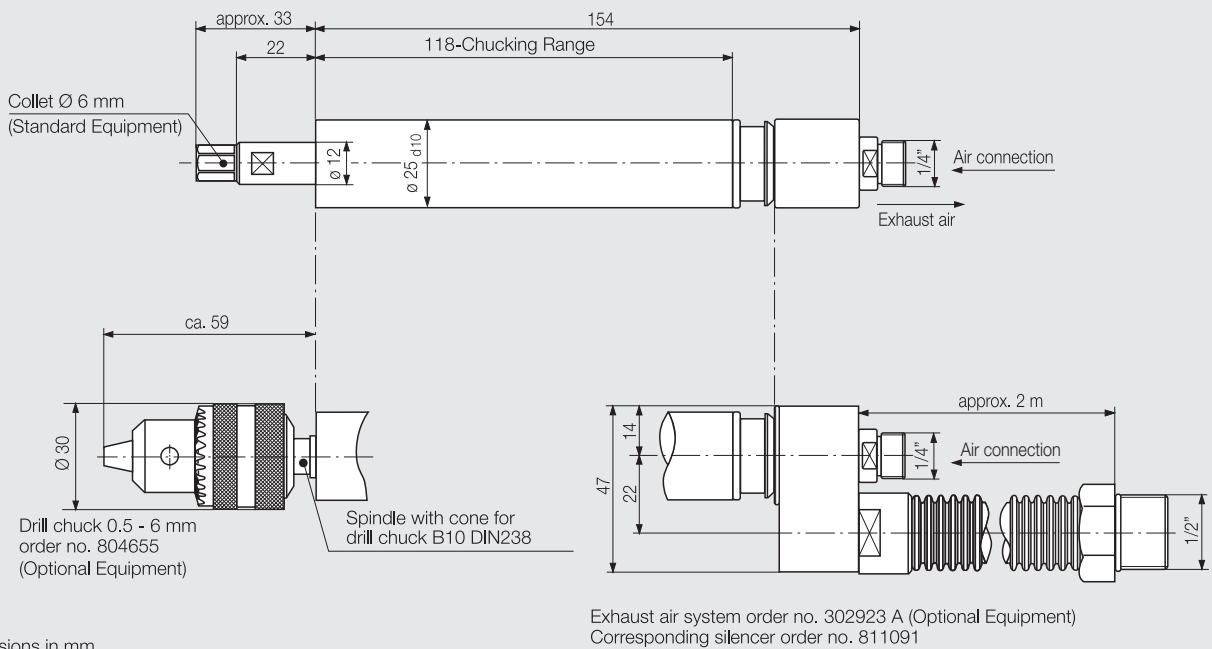
Motor size 1
Series 104-
 right rotation



Dimensions in mm

p203439

Motor size 2
Series 104-
 right rotation



Dimensions in mm

250 W / 400 W drilling motors with collet or drill chuck

Motor size 2.5		right rotation					
Series 104- with collet	Type order no.	104-0250-1 302897 A	104-1250-1 302897 B	104-2250-1 302897 C	104-7250-1 302897 D	104-3250-1 302897 E	104-4250-1 302897 F
Series 104- for drill chuck	Type order no.	104-0250 302900 A	104-1250 302900 B	104-2250 302900 C	104-7250 302900 D	104-3250 302900 E	104-4250 302900 F
Nominal-Power	W / HP	250 / 0.33	250 / 0.33	250 / 0.33	250 / 0.33	250 / 0.33	250 / 0.33
Nominal-Speed	rpm	8500	2400	1250	700	350	175
Speed (idling)	rpm	17000	4800	2500	1400	700	350
Nominal-Torque	Nm / in.lbs	0.28 / 2.5	1 / 9	1.9 / 17	3.4 / 30	6.8 / 60	13.6 / 125
Start-Torque min.	Nm / in.lbs	0.42 / 3.7	1.5 / 13	2.8 / 25	5.1 / 45	10.2 / 90	20.4 / 180
Air consumption	m ³ /min / cfm	0.35 / 12	0.35 / 12	0.35 / 12	0.35 / 12	0.35 / 12	0.35 / 12
Length L1	mm / in.	141 / 5 9/16	141 / 5 9/16	141 / 5 9/16	157 / 6 3/16	157 / 6 3/16	157 / 6 3/16
Length L2	mm / in.	64 / 2 33/64	64 / 2 33/64	64 / 2 33/64	80 / 3 5/32	80 / 3 5/32	80 / 3 5/32
Weight	kg / lbs	0.8 / 1.8	0.8 / 1.8	0.8 / 1.8	0.9 / 2	0.9 / 2	0.9 / 2
Hose I.D.	mm / in.	6 / 1/4	6 / 1/4	6 / 1/4	6 / 1/4	6 / 1/4	6 / 1/4
for drilling steel up to	mm / in.	–	4 / 5/32	6 / 15/64	8 / 5/16	10 / 25/64	10 / 25/64*)
for drilling aluminium up to	mm / in.	6 / 15/64	6 / 15/64	8 / 5/16	10 / 25/64	–	–

Performance data relate to an air pressure of 6 bar (85 PSI)

*) for stainless steel

Air connection and drive shaft regular steel.

Motor size 3		right rotation					
Series 104- for drill chuck	Type order no.	104-030 302937 A	104-130 302937 B	104-230 302937 C	104-730 302937 D		
Nominal-Power	W / HP	400 / 0.54	400 / 0.54	400 / 0.54	400 / 0.54		
Nominal-Speed	rpm	8500	2400	1250	700		
Speed (idling)	rpm	17000	4800	2500	1400		
Nominal-Torque	Nm / in.lbs	0.44 / 3.9	1.6 / 14	3 / 26	5.4 / 48		
Start-Torque min.	Nm / in.lbs	0.66 / 5.8	2.4 / 21	4.5 / 40	8.1 / 72		
Air consumption	m ³ /min / cfm	0.42 / 15	0.42 / 15	0.42 / 15	0.42 / 15		
Length L1	mm / in.	150 / 5 29/32	150 / 5 29/32	150 / 5 29/32	166 / 6 17/32		
Length L2	mm / in.	64 / 2 17/32	64 / 2 17/32	64 / 2 17/32	80 / 3 5/32		
Weight	kg / lbs	0.82 / 1.8	0.82 / 1.8	0.82 / 1.8	0.92 / 2		
Hose I.D.	mm / in.	10 / 3/8	10 / 3/8	10 / 3/8	10 / 3/8		
for drilling steel up to	mm / in.	–	4 / 5/32	6 / 15/64	8 / 5/16		
for drilling aluminium up to	mm / in.	6 / 15/64	6 / 15/64	8 / 5/16	10 / 25/64		

Performance data relate to an air pressure of 6 bar (85 PSI)

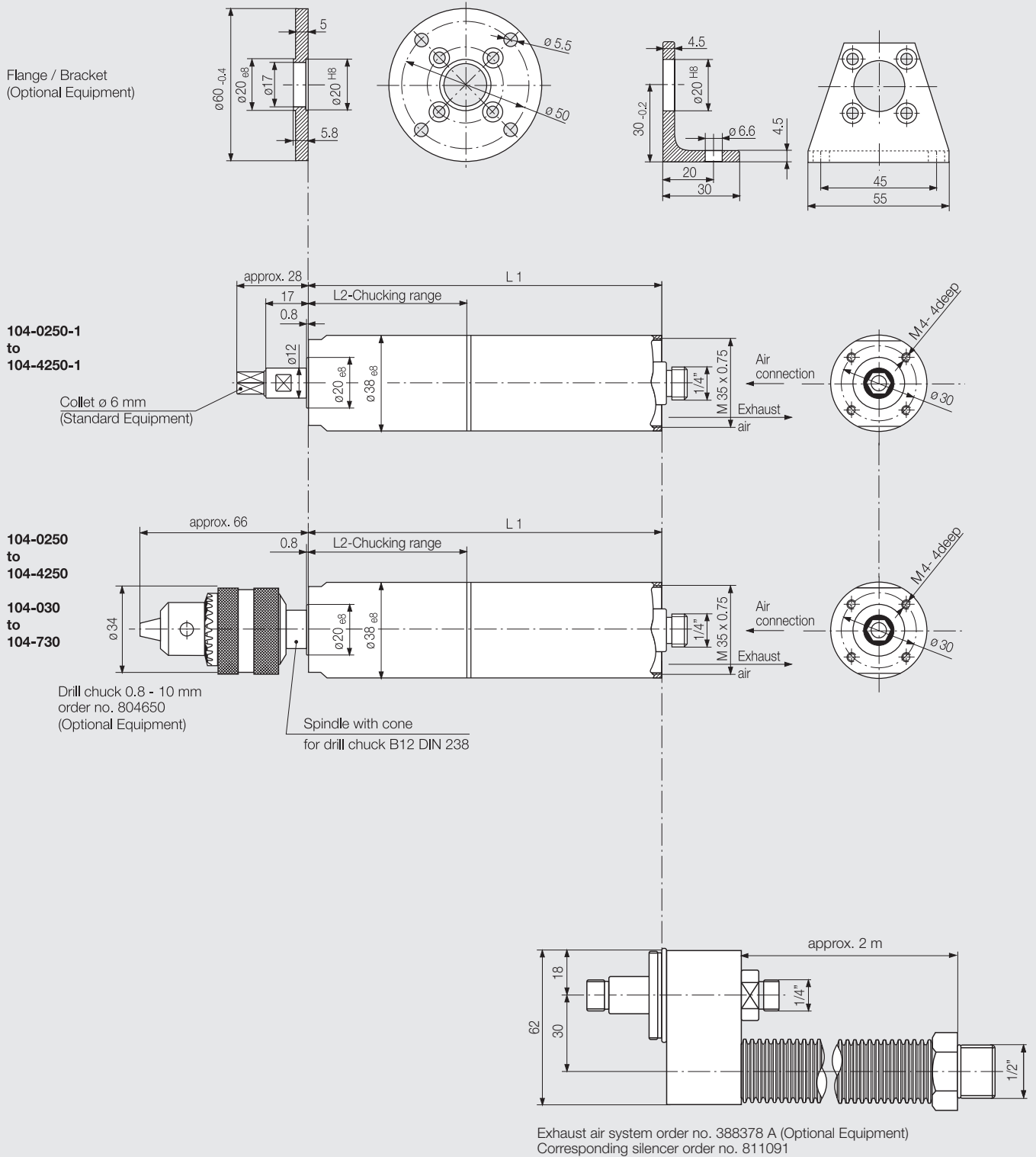
Air connection and drive shaft regular steel.

Allowable shaft loading see page 10.

Optional Equipment:		Motor size 2.5 Series 104-	Motor size 3 Series 104-
Flange	order no.	444530	444530
necessary 4 cylinder-screws	order no.	823216	823216
Bracket	order no.	444539	444539
necessary 4 cylinder-screws	order no.	823216	823216
Collet	order no.	312681	–
Ø 3 mm	order no.	312684	–
Ø 4 mm	order no.	312685	–
Ø 4.5 mm	order no.	312686	–
Ø 5 mm	order no.	(included in delivery)	–
Ø 6 mm	order no.	312682	–
Ø 1/8" (3.175 mm)	order no.	312689	–
Ø 1/4" (6.35 mm)	order no.		
Drill chuck	order no.	804850	804850
Range 0.8 - 10 mm / B 12			
Quick change chuck	order no.	804661	804661
Range 0.5 - 8 mm / B 12			
Not suitable for type 104-0250/104-030			
Noise level without silencer		75 dB (A)	75 dB (A)
with exhaust air system and silencer		73 dB (A)	73 dB (A)
Exhaust air system	order no.	388378 A	388378 A
Silencer	order no.	811091	811091

Motor size 2.5
Series 104-
 right rotation

Motor size 3
Series 104-
 right rotation



Dimensions in mm

600 W drilling motors made from stainless steel

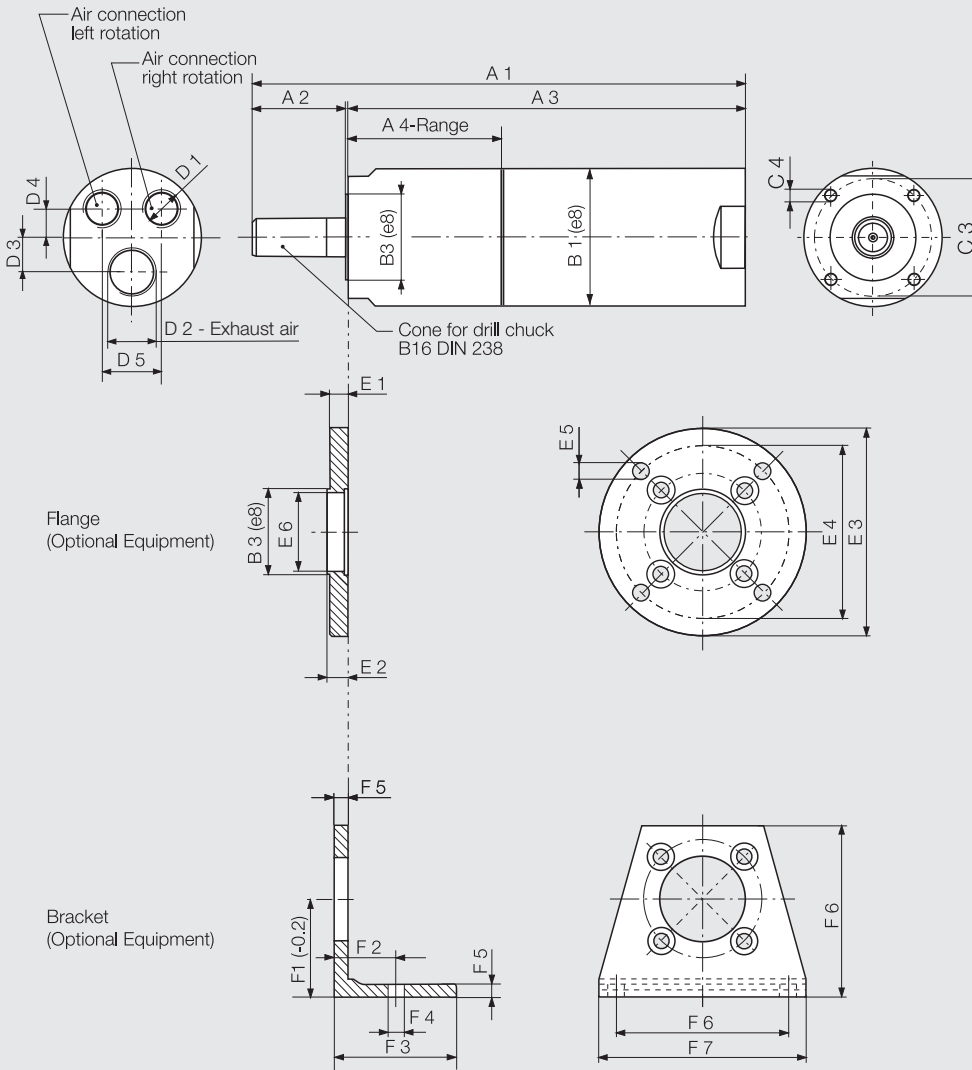
Motor size 6		reversible						
Series 67- for drill chuck	Type order no.	67-016B16 445353 H	67-026B16 445353 B	67-036B16 445353 C	67-046B16 445353 D	67-056B16 445353 E	67-066B16 445353 F	67-0661B16 445353 G
Nominal-Power	W / HP	600 / 0.8	600 / 0.8	600 / 0.8	600 / 0.8	600 / 0.8	600 / 0.8	300 / 0.4
Nominal-Speed	rpm	1750	1350	850	315	240	150	75
Speed (idling)	rpm	3500	2700	1700	630	480	300	150
Nominal-Torque	Nm / in.lbs	3.2 / 28	4.2 / 37	6.7 / 59	18 / 159	24 / 212	38 / 336	38 / 336
Start-Torque min.	Nm / in.lbs	4.8 / 42	6.4 / 57	10.1 / 89	27 / 239	36 / 319	57 / 504	57 / 504
Air consumption	m ³ /min / cfm	0.85 / 30	0.85 / 30	0.85 / 30	0.85 / 30	0.85 / 30	0.85 / 30	0.55 / 19
Weight	kg / lbs	2.1 / 4.6	2.1 / 4.6	2.1 / 4.6	2.2 / 4.8	2.3 / 5.1	2.3 / 5.1	2.3 / 5.1
Hose I.D.	mm / in.	12 / 1/2	12 / 1/2	12 / 1/2	12 / 1/2	12 / 1/2	12 / 1/2	12 / 1/2
for drilling steel up to	mm / in.	3 / 1/8	5 / 13/64	8 / 5/16	13 / 33/64	13 / 33/64	13 / 33/64	13 / 33/64
for drilling aluminium up to	mm / in.	3 / 1/8	5 / 13/64	8 / 5/16	13 / 33/64	13 / 33/64	13 / 33/64	13 / 33/64

Performance data relate to an air pressure of 6 bar (85 PSI)

Allowable shaft loading see page 10.

Optional Equipment:		Motor size 6 Series 67-
Flange necessary 4 cylinder-screws	order no. order no.	444616 823148
Bracket necessary 4 cylinder-screws	order no. order no.	444617 823148
Drill chuck Range 1 - 13 mm / B 16	order no.	804652
Quick change chuck Range 1 - 13 mm / B 16	order no.	804663
Noise level without silencer with silencer with exhaust air system		104 dB (A) 94 dB (A) 76 dB (A)
Silencer – motor operates in one direction: 1 Air connection (right- or left-rotation) 1 Hose-nozzle 1 Silencer 1 Silencer	order no. order no. order no.	410540 (3/8") 802671 (3/8") 802666 (1/2")
Silencer – motor is reversible: 2 Air connections (right- and left-rotation) 2 Hose-nozzles 1 Silencer	order no. order no.	410540 (3/8") 802666 (1/2")
Silencer system – motor operates in one direction:	order no.	440019 B
Silencer system – motor is reversible	order no.	440019 A

Motor size 6
67-016 B16
to
67-0661 B16



Dimensions in mm

p440183

Motor size	Series 67- Type			Dimensions of Motor (mm)												
				A1	A2	A3	A4	B1	B3	C3	C4	D1	D2	D3	D4	D5
6	67-016B16	67-026B16	67-036B16	201	37	162	62	56	35	48	M6	G ³ / ₈	G ¹ / ₂	14	12	24
	67-046B16			219	37	180	80	56	35	48	M6	G ³ / ₈	G ¹ / ₂	14	12	24
	67-056B16	67-066B16	67-0661B16	219	37	180	80	56	35	48	M6	G ³ / ₈	G ¹ / ₂	14	12	24

Motor size	Series 67- Type			Dimensions Flange (mm)							Dimensions Bracket (mm)						
				B3	E1	E2	E3	E4	E5	E6	F1	F2	F3	F4	F5	F6	D5
6	67-016B16	67-026B16	67-036B16	35	7.5	8.5	85	70	6.6	32	40	25	50	6.6	5.5	70	85
	67-046B16			35	7.5	8.5	85	70	6.6	32	40	25	50	6.6	5.5	70	85
	67-056B16	67-066B16	67-0661B16	35	7.5	8.5	85	70	6.6	32	40	25	50	6.6	5.5	70	85

150 W / 250 W / 400 W milling motors and grinding motors

	Type order no.	211-43 314740 C	202-30 315082 A	27-030 314925 A
Nominal-Power	W / HP	150 / 0.2	250 / 0.33	400 / 0.54
Speed (idling)	rpm	47000	32000	20000
Air consumption (under load)	m ³ /min / cfm	0.23 / 8.1	0.3 / 11	0.38 / 13.4
Weight	kg / lbs	0.36 / 0.8	0.8 / 1.76	0.7 / 1.54
Hose I.D.	mm / in.	6 / 1/4	6 / 1/4	10 / 25/64
Air inlet pipe thread size		1/4" m	1/4" m	1/4" m
Milling insert (high-grade steel)	Head-Ø mm / in.	max. 6 / 15/64	max. 10 / 25/64	max. 12 / 15/32
Grinding insert	Head-Ø mm / in.	max. 13 / 33/64	max. 25 / 1	max. 32 / 117/64

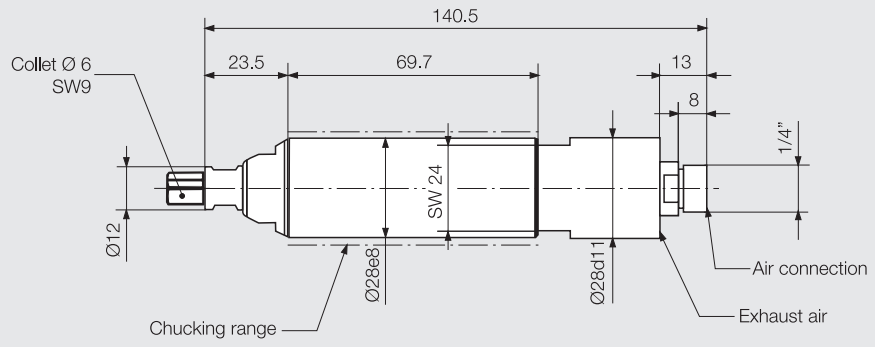
Performance data relate to an air pressure of 6 bar (85 PSI)

Allowable shaft loading see page 10.

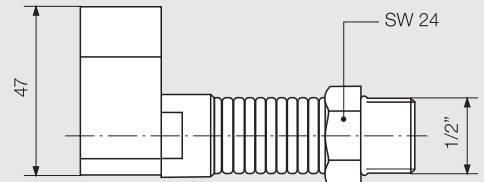
Standard Equipment	Collet Ø 6 mm Wrench	Collet Ø 6 mm Wrench	Collet Ø 6 mm –

Optional Equipment					
Collet	Ø 3 mm	order no.	312681	312681	312690
	Ø 4 mm	order no.	312684	312684	312692
	Ø 5 mm	order no.	312686	312686	312693
	Ø 6 mm	order no.	312688	312688	312694
	Ø 7 mm	order no.	–	–	312739
	Ø 8 mm	order no.	–	–	312696
	Ø 9 mm	order no.	–	–	313137
	Ø 1/8" (3.175 mm)	order no.	312682	312682	312691
	Ø 1/4" (6.35 mm)	order no.	312689	312689	312695
Noise level	without silencer with exhaust air system and silencer		85 dB (A) 73 dB (A)	71 dB (A) 76 dB (A)	75 dB (A) 73 dB (A)
Exhaust air system	order no.	334615 H	302923 A	388378 A	
Silencer	order no.	811091	811091	811091	

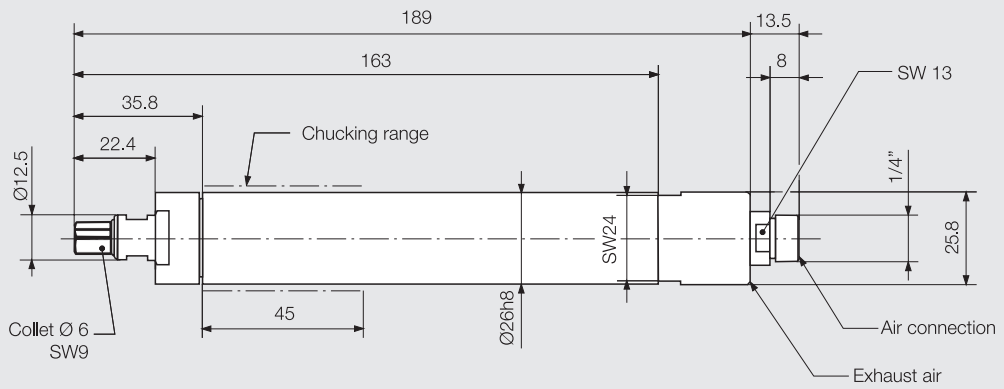
**Type
211-43**



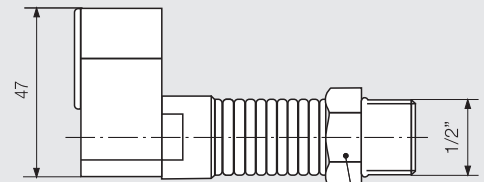
**Exhaust air system
334615 H
(Optional Equipment)
Corresponding
silencer 811091**



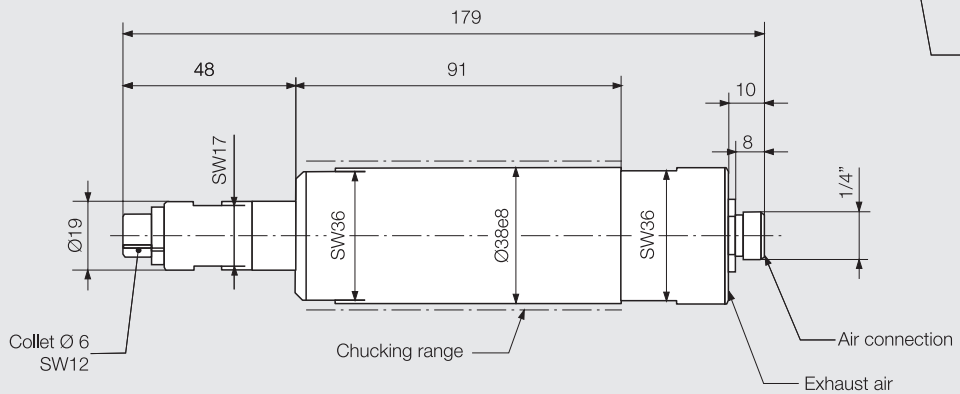
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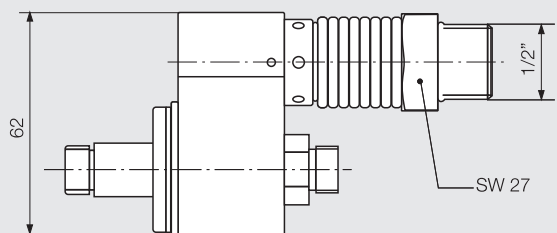
**Exhaust air system
302923 A
(Optional Equipment)
Corresponding
silencer 811091**



**Type
27-030**

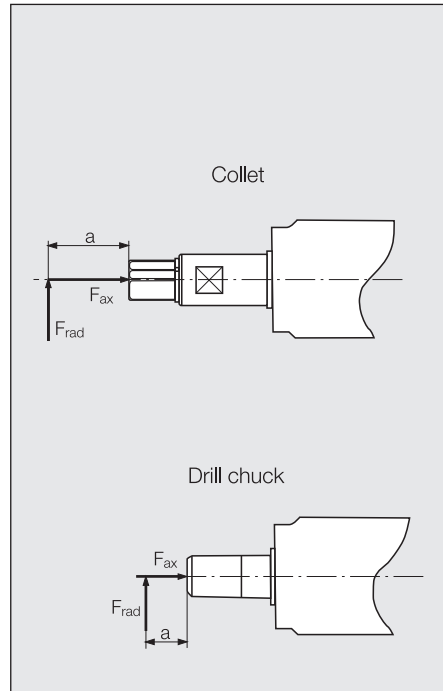


**Exhaust air system
388378 A
(Optional Equipment)
Corresponding
silencer, 811091**



314740 C
315083
314925 A

Maximum allowable load on the drive shaft



Motors with collet				
Motor size	order no.	Fax [N]	Frاد [N]	a [mm]
MG 1	302929 A-D	200	75	25
MG 1	314740 C	15	30	25
MG 2	302916 A-F	380	50	25
MG 2	315082 A	15	30	25
MG 2.5	302897 A-F	750	220	25
MG 3	314925 A	25	50	25

max. allowed force

Motors with drill chuck				
Motor size	order no.	Fax [N]	Frاد [N]	a [mm]
MG 2	302912 B-F	380	35	60
MG 2.5	302900 A-F	750	150	70
MG 3	302937 A-D	750	150	70
MG 6	445353 B-D, H	1100	150	80
MG 6	445353 E-G	1100	265	80

max. allowed force

Speed standard values (rpm) for HSS spiral drills

Cutting Speed	35 m/min (115 ft./min)	28 m/min (90 ft./min)	25 m/min (80 ft./min)	14 m/min (45 ft./min)	11 m/min (35 ft./min)	7 m/min (23 ft./min)	22 m/min (70 ft./min)	12 m/min (40 ft./min)	50 m/min (165 ft./min)	90 m/min (300 ft./min)	165 m/min (540 ft./min)	210 m/min (690 ft./min)
Drill dia. mm/in.	Carbon steel			Alloy steel		Stainless steel	Cast-Iron		Copper Bronze Brass	Lightweight-Metal common alloy mild brass ¹⁾		hard Magnesium-Alloy ²⁾
	up to 500 N/mm ² (30 long tons/ sq. in.)	500 - 700 N/mm ² (30 - 45 long tons/ sq. in.)	above 700 N/mm ² (45 long tons/ sq. in.)	700 - 900 N/mm ² (45 - 55 long tons/ sq. in.)	900 - 1100 N/mm ² (55 - 70 long tons/ sq. in.)		up to 180 N/mm ² (10 long tons/ sq. in.)	above 180 N/mm ² (10 long tons/ sq. in.)				
1/0.04	11000	8800	7800	4400	3400	2200	7000	3800	16000	28000	52000	66000
2 ⁵ /64	5500	4400	3900	2200	1700	1100	3500	1900	8000	14000	26000	33000
3 ¹ /8	3700	3000	2600	1500	1100	730	2300	1300	5300	9000	17300	22000
4 ⁵ /32	2800	2200	2000	1100	850	550	1700	950	4000	7000	13000	16500
5 ¹³ /64	2200	1800	1600	880	680	440	1400	760	3200	5600	10400	13200
6 ¹⁵ /64	1900	1500	1300	735	570	365	1200	630	2700	4800	8700	11000
7 ⁹ /32	1600	1300	1100	630	485	315	1000	540	2300	4000	7400	9400
8 ⁵ /16	1400	1100	975	550	425	275	875	475	2000	3500	6500	8300
9 ²³ /64	1200	975	865	490	380	245	780	420	1800	3100	5800	7400
10 ²⁵ /64	1100	880	780	440	340	220	700	380	1600	2800	5200	6600

1) Speed for machining of thermoset plastics, laminates and hard laminates, however instead of the HSS-drills we recommend high-speed steel drills made with hard-metal K 10

2) for thermoplastics use approx. double the value

Tell us your operational conditions and our application consultants will be happy to help:

Application:	<input type="text"/>		
In what kind of environment will the motor be installed?	ATEX requirement / explosion safety?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	if yes, which safety class:	<input type="text"/>	
	food industry conformity?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	sterilisable?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	acid resistant?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	steam resistant?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Application conditions:	constant operation (24 hrs, non-stop)	<input type="checkbox"/> yes	<input type="checkbox"/> no
	duty cycle in hrs/day:	<input type="text"/>	
	days/year:	<input type="text"/>	
	cycle time (s):	<input type="text"/>	
	motor loaded to stall?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	self-locking?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Required turn direction:	<input type="checkbox"/> left	<input type="checkbox"/> right	<input type="checkbox"/> reversible
	(view from air inlet)		
Motor performance:	power:	<input type="text"/>	W
	nominal torque:	<input type="text"/>	Nm
	nominal speed:	<input type="text"/>	rpm
Performance influencing application conditions:	operating pressure (at motor inlet):	<input type="text"/>	bar
	operation with lubricated air possible?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	smallest opening cross-section of connection pieces and hoses?	<input type="text"/>	mm
External motor design:	<input type="checkbox"/> standard steel	<input type="checkbox"/> non-corrosive	<input type="checkbox"/> aluminium
	<input type="checkbox"/> plastics	<input type="checkbox"/> ceramics	
	other:	<input type="text"/>	
Drive spindle design:	drive shaft requirements:	<input type="text"/>	
	(e. g. keyed shafts, square end, hexagonal, collet, drill chuck taper, etc.)		
	required dimensions:	<input type="text"/>	
Motor fixture design:	mounting requirements: (bracket, flange, etc.)	<input type="text"/>	
	required dimensions:	<input type="text"/>	
Additional components:	<input type="checkbox"/> holding brake	<input type="checkbox"/> operational brake	
	gear box:	<input type="text"/>	
Price range:	<input type="text"/>		
Annual requirement:	<input type="text"/>		

DEPRAG

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