

ALLWEILER - weltweit präsent ALLWEILER - global presence

Werke in Deutschland Plants in Germany

ALLWEILER AG
Schraubenspindelpumpen,
Kreiselpumpen, Zahnradpumpen
und Anlagen
Screw Pumps, Centrifugal Pumps,
Gear Pumps and Systems

Postfach 11 40
78301 Radolfzell
Allweilerstraße 1
78315 Radolfzell
Germany
Tel. +49 (0)7732 86-0
Fax +49 (0)7732 86-436
E-mail: service@allweiler.de
Internet: <http://www.allweiler.com>

ALLWEILER AG
Exzentrerschneckenpumpen,
Schlauchpumpen, Kreiskolben-
pumpen und Mazeratoren
Progressing Cavity Pumps,
Peristaltic Pumps, Rotary Lobe
Pumps and Macerators

Postfach 20 01 23
46223 Bottrop
Kirchhellener Ring 77-79
46244 Bottrop
Germany
Tel. +49 (0)2045 966-60
Fax +49 (0)2045 966-679
E-mail: service-ge@allweiler.de
Internet: <http://www.allweiler.com>

Kundenzentren in Deutschland Service Centers in Germany

**Kundenzentrum Kreisel-, Zahnrad-
und Schraubenspindelpumpen**
Service Center for Centrifugal,
Gear and Screw Pumps
Tel. 0180 5 27 86 77
Fax 0180 5 77 86 77
E-mail: vertrieb-gr@allweiler.de

Kundenzentrum
Exzentrerschnecken-, Kreiskolben-,
Schlauchpumpen und Mazeratoren
Service Center for
Progressing Cavity, Rotary Lobe,
Peristaltic Pumps and Macerators
Tel. 0180 5 37 86 77
Fax +49 (0)2045 966-680
E-mail: vertrieb-ge@allweiler.de

Die Anschriften der ALLWEILER Vertretungen weltweit finden Sie unter <http://www.allweiler.com>
The current addresses of ALLWEILER representatives can be found at <http://www.allweiler.com>



ברלין טכנולוגיות בע"מ
שדרות גן רוה 13, יבנה, 8122214
<http://www.berlintech.co.il/>
mail@berlintech.co.il
טלפון: 073-7597171
פקס: 08-6638120

ALLWEILER 
A Colfax Business Unit

GB/07.05 - Ident-No. 796.488

Zenith® Pumps

Zenith 9000 Series Gear Pumps for Industrial Metering Applications

High performance in industrial applications:

- High accuracy
- Uniform metered flow
- Engineered solutions
- Active flowmeter concept
- Low cost of ownership
- Proven applications

ALLWEILER 
A Colfax Business Unit

Over the years Zenith has been distinguished as an innovator in the application of gear pump technology by a variety of industries and end-users.

Zenith Pumps offers a complete line of gear pumps and metering systems to handle all critical applications in the industrial production process.

At the heart of Zenith Pumps is the progressive manufacturing environment, which combines the most advanced technologies and production procedures with experienced engineering and computerized quality control.

Zenith® 9000 Series: Efficient and Versatile

Precise, pulseless, repeatable performance in a wide variety of industrial metering applications.

The Zenith 9000 Series was developed as a true precision metering gear pump for application into a variety of industrial processes. The design utilizes high AGMA standard external spur gears of optimum geometry, enclosed within a close tolerance housing assembly, resulting in a precise volume of fluid dispensed per shaft revolution.

The housing is constructed from a precision ground and lapped 3-plate assembly. The plate assembly is aligned with dowels to allow close control of operating clearances. This construction method in combination with several proprietary internal features is what ensures precise, pulseless and reliable flow under varying process conditions. Coupled with a pre-packaged integrated closed loop speed control and compact motor driver assembly (AC or DC), Zenith is able to provide the most precise and flexible metering gear pump on the market.



Series B-9000



Series C-9000



Series H-9000

Benefits and features:

- ▶ **High accuracy** - stable repeatable flows are assured under varying conditions of temperature, viscosity and pressure.
- ▶ **Uniform metered flow** - unique design offers virtually pulseless flow, without valves or flexible elements that add complexities, increase cost and hinder performance.
- ▶ **Engineered solutions** - a variety of pump heads and driver combinations have been pre-configured to provide a range of standard installation options, meeting OSHA, UL, EC and DIN standards.
- ▶ **Active flowmeter concept** - unparalleled mechanical precision, combined with closed loop accuracy, ensures exact volume per revolution without expensive flow meters.
- ▶ **Low costs of ownership** - only three moving parts, and hardened abrasion resistant materials provide excellent wear, corrosion and self-lubricating performance.
- ▶ **Proven applications** - years of practical application experience, backed by a technical staff with a variety of technical credentials eliminates the guesswork.

Zenith® 9000 Series Metering Systems: Sectional Drawings and Dimensions

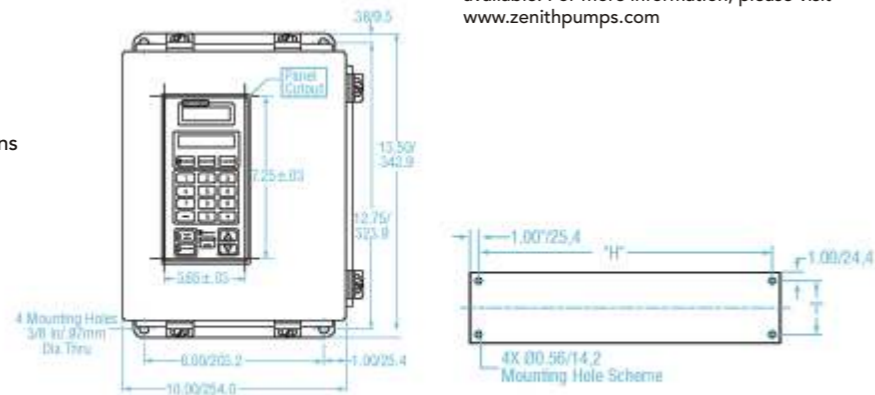
Zenith® C-9000 Series:
For corrosive & poor lubricating fluids, constructed of hardened 316SS and compatible materials

9000 MD Systems (shown with ZeDrive™ DC Controller)

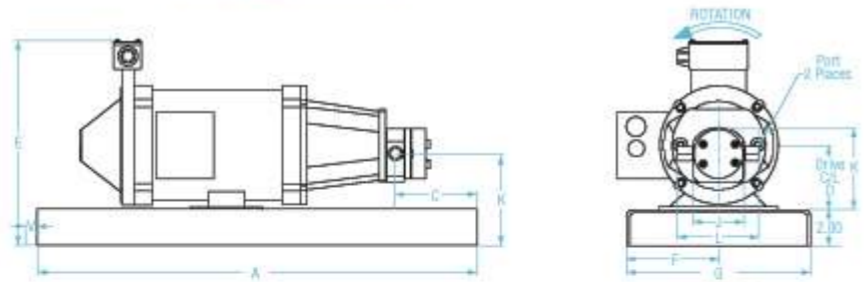
- 1/4 – 2 HP SCR DC drive
- 115 VAC, 1 phase (90 VDC motors)
- 230 VAC, 1 phase (180 VDC motors)
- Master or follower modes
- Closed loop PID control
- 4 engineering unit setpoints
- Jog
- 13 standard inputs
- 5 open collector outputs
- Keypad lockout
- Adjustable current limit
- RS-422 serial communications
- Optional analog I/O (12 bit)

Note: All standard systems include NPT port adapters. See dimensions "L" and "Z" in the chart below for details. If the NPT adapters are removed, refer to individual pump drawings for information on port connections.

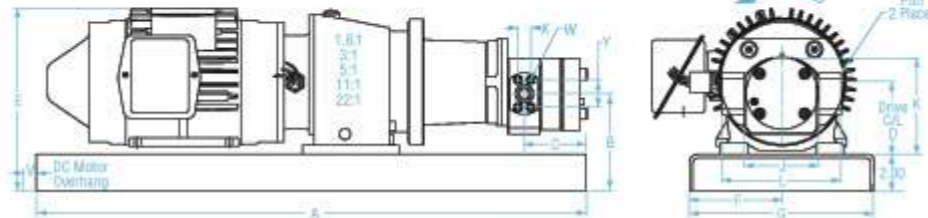
Note: ZVD AC controllers and motors are also available. For more information, please visit www.zenithpumps.com



9000MD
Direct drive
magnetic
coupling



9000MD
Magnetic
coupling with
reducer

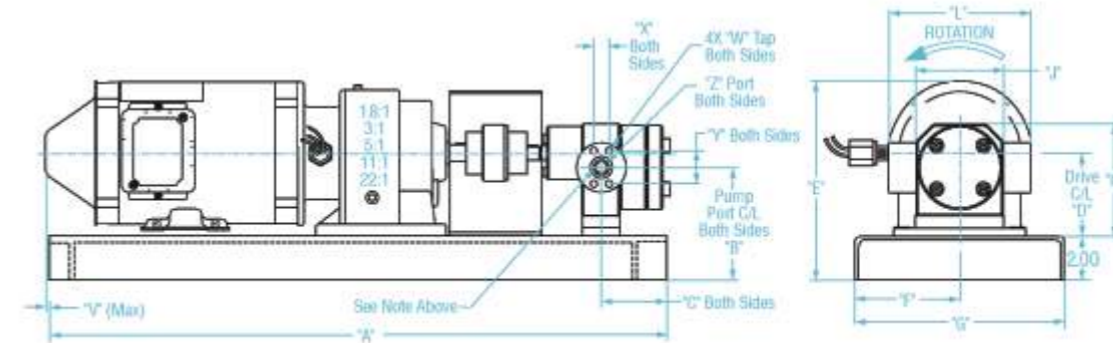
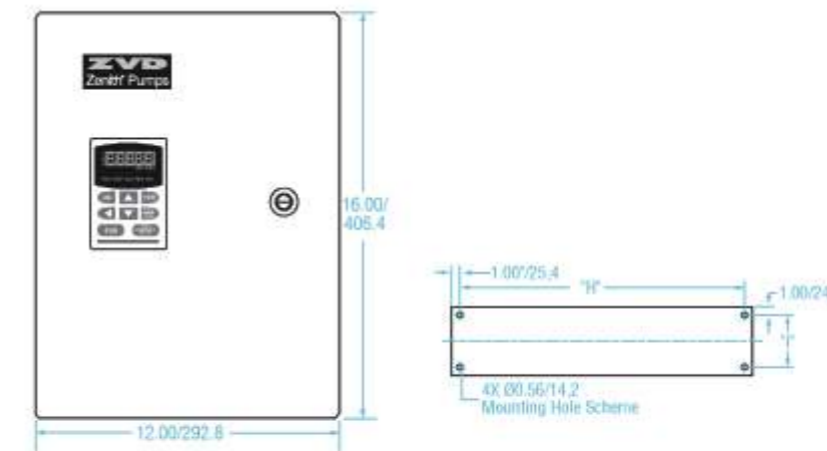


Standard Metering Systems (shown with ZVD AC Controller)

- 1/2 - 2 HP AC Vector Drive
- 230 VAC, 1 or 3 phase (1/2 – 2 HP)
- 460 VAC, 3 phase
- Closed loop PID control
- Engineering unit or frequency setpoint
- Jog
- 5 standard inputs
- 6 multifunction inputs
- 1 form C relay multifunction output
- 3 open collector multifunction outputs
- Password protection
- Adjustable current limit
- RS-485 Modbus serial communications
- Analog I/O

Note: All standard systems include NPT port adapters. See dimensions "L" and "Z" in the chart below for details. If the NPT adapters are removed, refer to individual pump drawings for information on port connections.

Note: ZeDrive™ DC controllers and motors are also available. For more information, please visit www.zenithpumps.com



System configuration	Coupling torque	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"V"	"W"	"X"	"Y"	"Z"	NEMA IEC
0.05 - 2.4 cc/rev	23 in-lb	24.00	5.01	4.50	5.47	11.20	5.00	10.00	22.00	8.00	2.76	4.38	4.45	N/A	N/A	N/A	N/A	1/4 NPT	56-C
1/2 HP direct drive		609.60	127.25	114.30	138.94	284.48	127.00	254.00	558.80	203.20	70.10	111.25	113.03	N/A	N/A	N/A	N/A	1/4 NPT	71
0.05 - 2.4 cc/rev	23 in-lb	30.00	5.47	4.50	5.94	11.70	5.00	10.00	28.00	8.00	2.76	4.85	4.45	N/A	N/A	N/A	N/A	1/4 NPT	56-C
1/2 HP with reducer		762.00	138.94	114.30	150.88	297.18	127.00	254.00	711.20	203.20	70.10	123.19	113.03	N/A	N/A	N/A	N/A	1/4 NPT	71
0.05 - 2.4 cc/rev	55 in-lb	24.00	5.01	4.50	5.47	11.20	5.00	10.00	22.00	8.00	2.76	4.38	4.45	N/A	N/A	N/A	N/A	1/4 NPT	56-C
1 HP direct drive		609.60	127.25	114.30	138.94	284.48	127.00	254.00	558.80	203.20	70.10	111.25	113.03	N/A	N/A	N/A	N/A	1/4 NPT	80
0.05 - 2.4 cc/rev	55 in-lb	30.00	5.47	4.50	5.94	11.70	5.00	10.00	28.00	8.00	2.76	4.85	4.45	0.09	N/A	N/A	N/A	1/4 NPT	56-C
1 HP with reducer		762.00	138.94	114.30	150.88	297.18	127.00	254.00	711.20	203.20	70.10	123.19	113.03	2.29	N/A	N/A	N/A	1/4 NPT	80
4.5 - 9.0 cc/rev	110 in-lb	24.00	4.84	4.00	5.47	11.20	5.00	10.00	22.00	8.00	3.94	4.81	6.50	N/A	M8 x 12DP	0.69	1.50	1/2 NPT	56-C
1/2 HP direct drive		609.60	122.94	101.60	138.94	284.48	127.00	254.00	558.80	203.20	100.08	122.17	165.10	N/A	M8 x 12DP	17.53	38.10	1/2 NPT	71
4.5 - 9.0 cc/rev	110 in-lb	30.00	5.28	3.44	5.94	11.70	5.00	10.00	28.00	8.00	3.94	5.25	6.50	N/A	M8 x 12DP	0.69	1.50	1/2 NPT	56-C
1/2 HP with reducer		762.00	134.11	87.38	150.88	297.18	127.00	254.00	711.20	203.20	100.08	133.35	165.10	N/A	M8 x 12DP	17.53	38.10	1/2 NPT	71
4.5 - 9.0 cc/rev	110 in-lb	24.00	4.84	4.00	5.47	11.20	5.00	10.00	22.00	8.00	3.94	4.81	6.50	0.06	M8 x 12DP	0.69	1.50	1/2 NPT	56-C
1 HP direct drive		609.60	122.94	101.60	138.94	284.48	127.00	254.00	558.80	203.20	100.08	122.17	165.10	1.52	M8 x 12DP	17.53	38.10	1/2 NPT	80
4.5 - 9.0 cc/rev	110 in-lb	30.00	5.28	3.44	5.94	11.70	5.00	10.00	28.00	8.00	3.94	5.25	6.50	0.17	M8 x 12DP	0.69	1.50	1/2 NPT	56-C
1 HP with reducer		762.00	134.11	87.38	150.88	297.18	127.00	254.00	711.20	203.20	100.08	133.35	165.10	4.32	M8 x 12DP	17.53	38.10	1/2 NPT	80
4.5 - 9.0 cc/rev	110 in-lb	24.00	4.84	4.00	5.47	11.20	5.00	10.00	22.00	8.00	3.94	4.81	6.50	3.36	M8 x 12DP	0.69	1.50	1/2 NPT	140TC
2 HP direct drive		609.60	122.94	101.60	138.94	284.48	127.00	254.00	558.80	203.20	100.08	122.17	165.10	85.34	M8 x 12DP	17.53	38.10	1/2 NPT	9
4.5 - 9.0 cc/rev	110 in-lb	30.00	5.28	3.44	5.94	11.70	5.00	10.00	28.00	8.00	3.94	5.25	6.50	2.77	M8 x 12DP	0.69	1.50	1/2 NPT	140TC
2 HP with reducer		762.00	134.11	87.38	150.88	297.18	127.00	254.00	711.20	203.20	100.08	133.35	165.10	70.36	M8 x 12DP	17.53	38.10	1/2 NPT	9

System/Dim.	A	B	C	D	E	F	G	H	I	J	K	L	V	W	X	Y	Z	NEMA IEC
1/2 hp	28.00	5.28	3.39	3.74	9.00	4.75	9.50	26.00	7.50	2.76	4.65	4.40	0.17	N/A	N/A	N/A	1/4 NPT	56C
.05-2.4 cc/rev*	711.2	134.1	86.1	95.0	228.6	120.7	241.3	660.4	190.5	70.1	118.1	111.8	4.3	N/A	N/A	N/A	1/4 NPT	71
1/2 hp	28.00	5.11	2.98	4.11	9.00	4.75	9.50	26.00	7.50	3.94	5.07	6.44	0.17	M8 x 12DP	0.69	1.50	1/2 NPT	56C
4.5-9 cc/rev*	711.2	129.8	75.7	104.4	228.6	120.7	241.3	660.4	190.5	100.1	128.8	163.6	4.3	M8 x 12DP	17.5	38.1	1/2 NPT	71
1 hp	36.00	5.86	8.22	4.51	10.01	5.00	10.00	34.00	8.00	3.94	5.82	6.44	N/A	M8 x 12DP	0.69	1.50	1/2 NPT	56C
4.5-9 cc/rev*	914.4	148.8	208.8	114.6	254.3	127.0	254.0	863.6	203.2	100.1	147.8	163.6	N/A	M8 x 12DP	17.5	38.1	1/2 NPT	80
2 hp	36.00	5.86	8.22	4.51	10.01	5.00	10.00	34.00	8.00	3.94	5.82	6.44	3.37	M8 x 12DP	0.69	1.50	1/2 NPT	145TC
4.5-9 cc/rev*	914.4	148.8	208.8	114.6	254.3	127.0	254.0	863.6	203.2	100.1	147.8	163.6	85.6	M8 x 12DP	17.5	38.1	1/2 NPT	90
1/2 hp	36.00	5.19	7.63	4.11	9.61	5.00	10.00	34.00	8.00	5.00	5.69	7.50	N/A	M10 x 22DP	0.88	1.88	3/4 NPT	56C
15-30 cc/rev**	914.4	131.8	193.8	104.4	244.1	127.0	254.0	863.6	203.2	127.0	144.5	190.5	N/A	M10 x 22DP	22.4	47.8	3/4 NPT	71
1 hp	36.00	5.60	7.55	4.51	10.01	5.00	10.00	34.00	8.00	6.10	7.50	N/A	M10 x 22DP	0.88	1.88	3/4 NPT	56C	
15-30 cc/rev**	914.4	142.2	191.8	114.6	254.3	127.0	254.0	863.6	203.2	127.0	154.9	190.5	N/A	M10 x 22DP	22.4	47.8	3/4 NPT	80
2 hp	36.00	5.60	7.55	4.51	10.01	5.00	10.00	34.00	8.00	6.10	7.50	N/A	M10 x 22DP	0.88	1.88	3/4 NPT	145TC	
15-30 cc/rev**	914.4	142.2	191.8	114.6	254.3	127.0	254.0	863.6	203.2	127.0	154.9	190.5	N/A	M10 x 22DP	22.4	47.8	3/4 NPT	90
1 hp	36.00	6.14	6.12	5.38	10.89	5.00	10.00	34.00	8.00	6.89	7.59	9.37	N/A	M12 x 24DP	1.19	2.31	1-1/4 NPT	56C
45-90 cc/rev**	914.4	156.0	155.4	136.7	276.6	127.0	254.0	863.6	203.2	175.0	192.8	238.0	N/A	M12 x 24DP	30.2	58.7	1-1/4 NPT	80
2 hp	36.00	6.14	6.12	5.38	10.89	5.00	10.00	34.00	8.00	6.89	7.59	9.37	N/A	M12 x 24DP	1.19	2.31	1-1/4 NPT	145TC
45-90 cc/rev**	914.4	156.0	155.4	136.7	276.6	127.0	254.0	863.6	203.2	175.0	192.8	238.0	N/A	M12 x 24DP	30.2	58.7	1-1/4 NPT	9

*Available for B-9000, C-9000 and H-9000, **Available for B-9000 and H-9000

W
B
A
R

Zenith® 9000 Series Gear Pumps: High Performance and Reliability

Zenith® H-9000 Series:
High temperature and
abrasive fluids, construc-
ted of through hardened
high speed tool steels

Technical data

		B-9000	C-9000	H-9000
Typical service	General chemical	+	—	—
	Corrosive/Poor lubricity	—	+	—
	Abrasive/High temperature	—	—	+
Materials	400 series stainless steel	+	—	—
	316 stainless steel	—	+	—
	Tool steel	—	—	+
Outlet pressure	≤ 1000 psi	+	+	+
	1000 ≤ 2500 psi	—	—	+
Inlet pressure	≤ 300 psi	+	+	+
	300 ≤ 1000 psi	—	—	+
Temperature	≤ 350 F	+	+	+
	≤ 645 F	+	—	+
	≤ 950 F	—	—	+
Viscosity	≤ 1 cps	—	+	—
	≥ 1 cps	+	+	+
Flow rate	≤ 9000 cc/min	+	+	+
	≤ 27000 cc/min	+	—	+
Lubricity	Abrasive (TiO2 etc.)	—	—	+
	Poor (solvents etc.)	—	+	—
	Good (polyols etc.)	+	+	+
	Excellent (oils etc.)	+	+	+
pH	Low (< 7)	—	+	—
	Neutral (7)	+	+	+
	High (> 7)	+	+	—

Operating speed

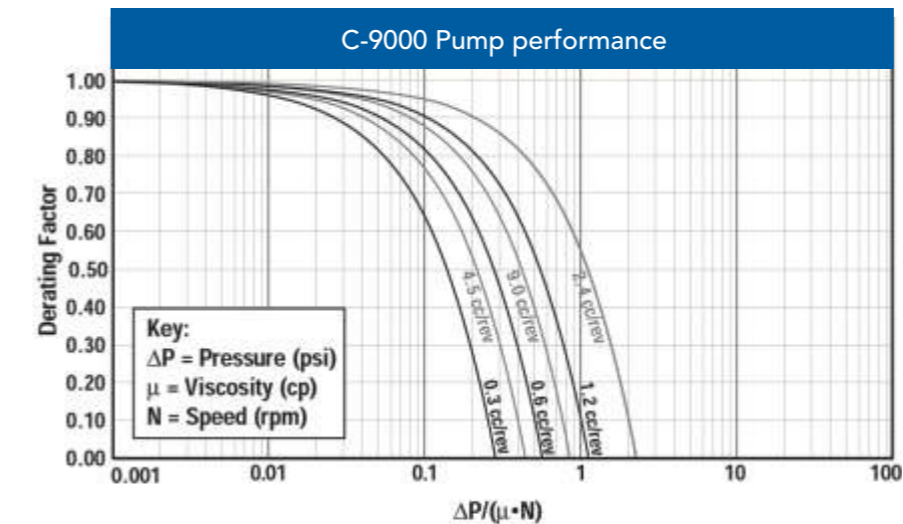
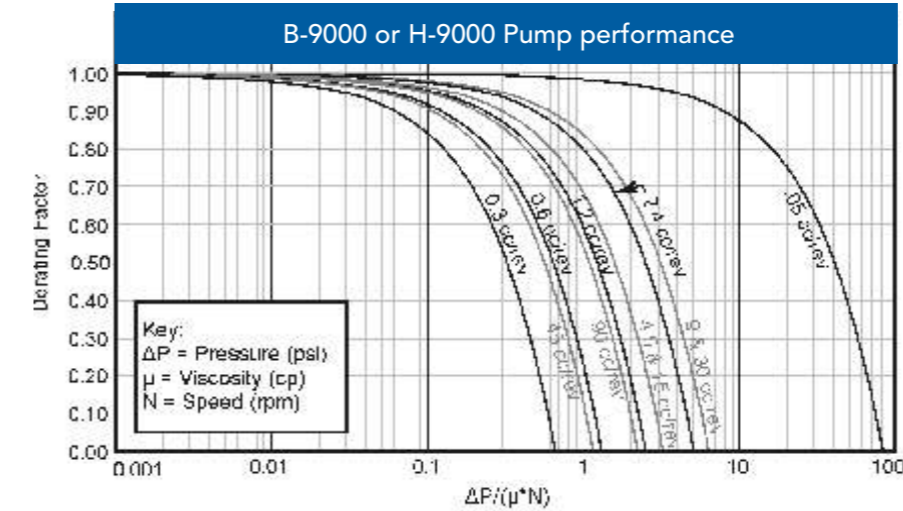
Operating conditions		Suggested maximum speed (rpm)		
Lubricity	Viscosity	B-9000	C-9000	H-9000
Excellent	< 1,000 cps	< 500	< 1000	< 500
Good to excellent	1000 < 10,000 cps	< 300	< 500	< 300
Poor to excellent	> 10,000 cps	< 150	< 150	< 150
Abrasive (consult Zenith)	> 1 cps	—	—	< 75

Reducer ratio

Pump speed range with 1800 rpm motor, 20:1 turndown						
Speed range (n - N)	90 - 1800*	50 - 1000	30 - 600	18 - 360	8 - 164	4 - 82
Reducer ratio	1:1 (direct)	1.8:1	3:1	5:1	11:1	22:1

* Note: maximum recommended pump speed is 1000 rpm or less.

Pump performance



Maximum pump torque

Capacity (cc/rev)	K_1/K_2	K_3/K_4	Max. torque (in-lbs/NM)
0.05	0.0005/0.85	0.0008/0.096	7.5/.85
0.3	0.003/2.11	0.004/0.24	90/10
0.6	0.006/2.34	0.010/0.26	350/40
1.2	0.012/2.82	0.018/0.32	350/40
2.4	0.023/3.78	0.037/0.43	350/40
4.5	0.044/6.85	0.070/0.77	880/100
9.0	0.087/8.56	0.141/0.97	880/100
15.0	0.146/14.66	0.233/1.66	1100/125
30.0	0.291/18.57	0.468/2.10	1100/125
45.0	0.437/32.78	0.701/3.70	2400/275
90.0	0.873/30.61	1.404/3.46	2400/275

Inlet pressure

cc/rev	W1	W2
0.3	4.29E-06	2.32E-06
0.6	1.93E-06	2.47E-06
1.2	1.21E-06	2.77E-06
2.4	9.34E-07	3.38E-06
4.5	3.00E-07	3.46E-07
9.0	2.24E-07	4.19E-07
15.0	1.11E-07	7.47E-08
30.0	8.61E-08	9.28E-08
45.0	3.38E-08	1.65E-08
90.0	2.49E-08	2.02E-08

ALLWEILER - 
the right pump
for all applications 

Founded in 1860, ALLWEILER AG is the oldest German pump manufacturer and the European market and technology leader for centrifugal, propeller, screw, progressing cavity, peristaltic pumps and macerators. ALLWEILER AG is represented by subsidiaries in fourteen European countries, Egypt, and South Africa. The company has about 100 subsidiaries and partner companies throughout the world.

ALLWEILER pumps are specifically designed to meet the requirements set by every field of application. Such fields of application include especially marine and offshore, power generation, water and wastewater, process technology and chemistry, building industry, food and pharma, tool machinery, pulp and paper, and heat transfer.

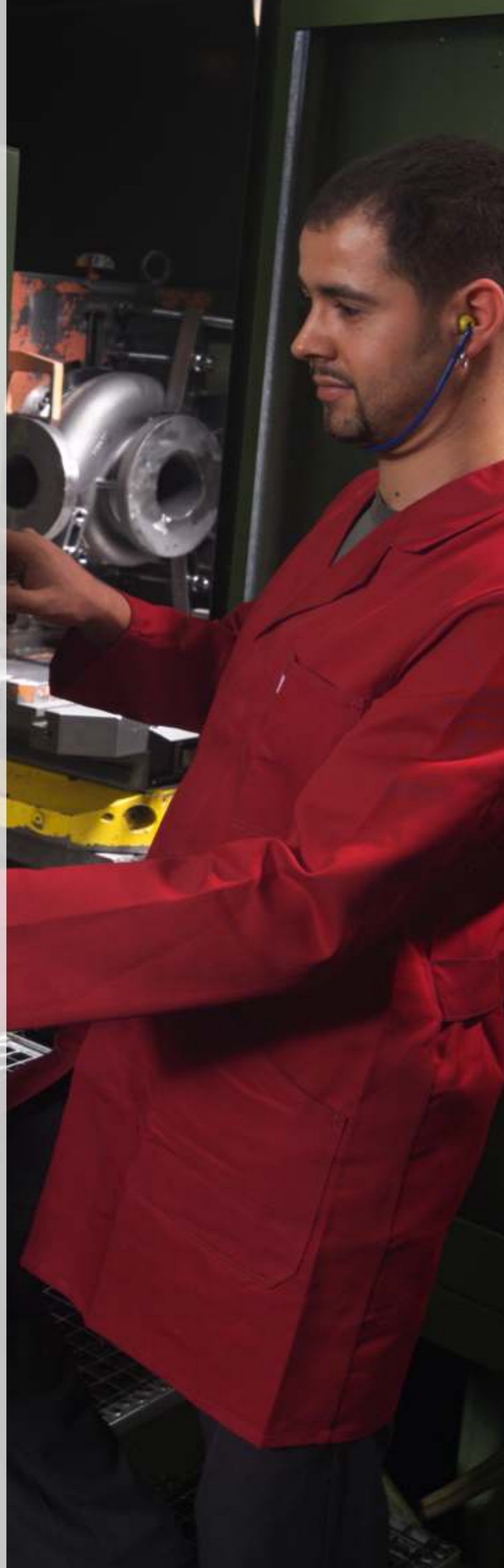
Our experience since 1860 is your guarantee. As a member of the COLFAX Corp., we can always provide the ideal pump for every one of your applications.

Our global subsidiaries and partners ensure that you will always have good service wherever you need a competent partner.

Please contact us:

+49 (0)7732 86-553
(Phone)

+49 (0)7732 86-99 553
(Fax)



Gear Pumps Information Request

Please make a copy of this form and fax it to:

ALLWEILER AG

D-78315 Radolfzell

Fax +49 (0)7732 86-99 553

Or simply call or send us an E-mail. We look forward to hearing from you.

Tel. +49 (0)7732 86-553

E-mail: service@allweiler.de

Please provide me free information at no obligation about **(please check)**:

- Zenith® Gear Pumps
- Please provide me free information at no obligation about all ALLWEILER's products

Address

.....
Company

.....
Division

.....
Contact

.....
Street

.....
ZIP code / Town / City

.....
Phone

.....
Fax

.....
E-mail

**FAX
OF
ZEN**