

Performance Correction Factors

200.A.03 (Effective March 11, 2021)

Use the multipliers listed below to de-rate head, capacity and efficiency for special materials, bowls and impellers. Apply both multipliers listed if both bowl and impeller are of special construction.

Model	Bowl Multiplier			Impeller Multiplier	
	CI or DI WITHOUT Interior Coating	316LSS CD4MCu NI-AL-BRZ	AL-BRZ	DI NI-AL-BRZ	316LSS 12% Chrome CD4MCu
5C	1.00	0.99	0.98	0.98	0.98
5RWA	1.00	0.99	0.98	0.98	0.98
5T	1.00	0.99	0.98	0.98	0.98
6C	0.98	0.97	0.98	0.97	0.97
6DH	0.98	0.97	0.98	0.97	0.97
6RA	1.00	0.97	0.98	0.97	0.97
7C	0.98	0.97	0.98	0.97	0.97
7RA	1.00	0.97	0.98	0.97	0.97
7T	0.98	0.97	0.98	0.97	0.97
7WA	0.98	0.97	0.98	0.97	0.97
8FD	0.98	0.97	0.99	0.97	0.97
8RA	1.00	0.97	0.98	0.97	0.97
8RJ	0.98	0.97	0.99	0.98	0.97
9RC	0.98	0.97	0.98	0.97	0.97
9T	0.98	0.97	0.98	0.97	0.97
9WA	0.98	0.97	0.98	0.97	0.97
10DH	0.99	0.98	0.99	0.98	0.97
10L	0.99	0.98	0.99	0.98	0.97
10RA	1.00	0.97	0.99	0.97	0.97
10RJ	0.98	0.98	0.99	0.98	0.97
10WA	0.98	0.97	0.99	0.97	0.97
11C	0.99	0.98	0.98	0.98	0.98
11RA	0.98	0.97	0.99	0.98	0.97
11WA	0.99	0.98	0.99	0.98	0.98
12C	0.99	0.98	0.99	0.98	0.97
12FD	0.99	0.98	0.99	0.98	0.97
12FR	0.99	0.98	0.99	0.98	0.97
12RJ	0.99	0.98	0.99	0.98	0.97
12WA	0.99	0.98	0.99	0.98	0.97

Model	Bowl Multiplier		Impeller Multiplier		
	Cl or DI WITHOUT Interior Coating	316LSS CD4MCu NI-AL-BRZ	AL-BRZ	DI NI-AL-BRZ	316LSS 12% Chrome CD4MCu
13C	0.98	0.97	0.99	0.98	0.97
13RA	0.98	0.97	0.99	0.98	0.97
14DH	0.99	0.98	0.99	0.98	0.97
14F	0.99	0.98	0.99	0.98	0.97
14RH	0.99	0.98	0.99	0.98	0.97
14RJ	0.99	0.98	0.99	0.98	0.97
15F	0.99	0.99	0.99	0.98	0.97
16B	0.99	0.98	0.99	0.98	0.97
16DH	0.99	0.99	1.00	0.99	0.97
16DM	0.99	0.98	1.00	0.99	0.97
16RG	0.98	0.98	0.99	0.98	0.97
18B	0.99	0.98	0.99	0.98	0.97
18C	0.99	0.99	0.99	0.98	0.97
18D	1.00	0.98	0.99	0.98	0.97
18G(X)	0.98	0.98	0.99	0.99	0.97
18H	0.99	0.99	0.99	0.99	0.97
18L	0.99	0.99	0.99	0.99	0.97
20B	0.99	0.99	0.99	0.99	0.97
20E	0.98	0.98	0.99	0.99	0.97
20G	0.98	0.98	0.99	0.99	0.97
20RC	0.99	0.99	0.99	0.99	0.97
24C	0.99	0.98	1.00	0.99	0.98
24D	0.99	0.98	1.00	0.99	0.98
24E	0.99	0.98	1.00	0.99	0.97
24F	0.99	0.98	1.00	0.99	0.97
24G	0.99	0.98	1.00	0.99	0.97
26G	0.99	0.98	1.00	0.99	0.98
28B	0.99	0.98	1.00	0.99	0.98
28G	0.99	0.98	1.00	0.99	0.98
30B	0.99	0.98	1.00	0.99	0.98
30G	1.00	1.00	1.00	1.00	1.00
32G	1.00	1.00	1.00	1.00	1.00
34G	1.00	1.00	1.00	1.00	1.00
36G	1.00	1.00	1.00	1.00	1.00
40G	1.00	1.00	1.00	1.00	1.00
44G	1.00	1.00	1.00	1.00	1.00
48G	1.00	1.00	1.00	1.00	1.00
6M	1.00	0.98	0.99	0.98	0.98
10M	1.00	0.98	0.99	0.98	0.98
12M	1.00	0.98	0.99	0.98	0.98

Bowl Assembly Pressure Limits

200.A.04 (Effective March 11, 2021)

Model	Maximum Bowl Working Pressure (PSIG) ¹	
	Cast Iron CL 30	Ductile Iron ³ Double Bolting
	Std. Bolts (Grade 8)	Std. Bolts (Grade 8)
5C	480	1080
5RWA	480	1080
5T	480	1080
6C	450	1000
6DH ²	530	1160
6RA	540	1220
7C	350	750
7RA	410	930
7T	440	940
7WA	430	920
8FD	410	930
8RA	410	930
8RJ	410	920
9RC	400	860
9T	470	1070
9WA	470	1070
10DH	370	840
10L	360	820
10RA	370	840
10RJ	370	840
10WA	370	840
11C	400	860
11RA	380	860
11WA	450	1020
12C	380	850
12FD	380	860
12FR	350	750
12RJ	380	860
12WA	380	860
6M	450	1020
10M	370	840
12M	340	740

Model	Maximum Bowl Working Pressure (PSIG) ¹	
	Cast Iron CL 30	Ductile Iron ³ Double Bolting
	Std. Bolts (Grade 8)	Std. Bolts (Grade 8)
13C	390	850
13RA	310	670
14DH	370	840
14F	340	730
14RH	370	840
14RJ	360	770
15F	260	560
16B	400	900
16DH	380	860
16DM	400	900
16RG	180	400
18B	430	940
18C	320	690
18D	380	830
18G(X)	410	900
18H	350	750
18L	390	840
20B	410	890
20E	370	830
20G	270	590
20RC	400	880
24C	320	690
24D	390	860
24E	390	850
24F	320	680
24G	350	760
26G	330	710
28B	380	850
28G	320	680
30B	380	850
30G	320	690
32G	320	700
34G	330	720
36G	270	610
40G	330	720
44G	330	720
48G	330	720

Performance Correction Factors Example

Example:

Customer's rating is 1100 GPM at 75 ft head with NI-AL-BRZ bowl and impeller materials. A 12CHC 1-stage at 1770 RPM was selected.

From the table, both the bowl and impeller correction is 0.98. To determine pump efficiency, the rating must be corrected:

$$\text{Corrected Capacity} = 1100 \text{ GPM} * 0.98 * 0.98 = 1056.4 \text{ GPM}$$

$$\text{Corrected Head} = 75 \text{ ft} * 0.98 * 0.98 = 72.0 \text{ ft}$$

Referring to the bowl assembly performance curve, the efficiency at the corrected rating is 86.6% minus 3 points of de-rate for one stage equaling 83.6%. This efficiency must now be corrected:

$$\text{Pump Efficiency} = 0.836 * 0.98 * 0.98 = 80.3\%$$

Therefore, the pump performance (without increasing

impeller trim to compensate) is 1056.4 GPM, 72.0 ft. and 80.3% efficiency.

$$BHP = \frac{1056.4 \text{ (GPM)} * 72.0 \text{ (ft)}}{3960 * 0.803 \text{ (Eff)}} = 23.9 \text{ HP}$$

Please note that Xylem Online (XOL) would account for the material de-rate automatically by adjusting the impeller trim to keep the duty point constant, increasing the BHP.

Bowl Assembly Pressure Limit Notes

Notes:

1. Pressure units based on maximum operating pressure of pump at any point on performance curve, normally occurring at shutoff.
2. Threaded bowl connection.
3. To insure proper sealing at bowl mating surfaces:
Either O-ring or liquid gasket material recommended on all ductile iron, double-bolted bowl assemblies.
4. For Low NPSH models (Those with "X" after the bowl model) please use the closest standard NPSH model. For instance 10DX = 10DH, or 12DX = 12FD.



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