



Application - All Motors

Hot Water Applications

When the pump-motor operates in water hotter than 30°C, a flow rate of at least .91 m/sec is required. When selecting the motor to drive a pump in over 30°C water, the motor horsepower must be de-rated per the following procedure.

- Using Table 7A, determine pump l/m required for different well or sleeve diameters. If necessary, add a flow sleeve to obtain at least .91 m/sec flow rate.

TABLE 7A Minimum l/m Required for .91 m/sec Flow Rate

Casing or Sleeve I.D.	4" High Thrust Motor	6" Motor	8" Motor
mm	l/m	l/m	l/m
102	57		
127	303		
152	606	197	
178		568	
203		984	227
254		1970	1250
305			2460
356			3860
406			5530

- Determine pump KW (HP) required from the pump manufacturer's curve.

- Multiply the pump KW (HP) required by the heat factor multiplier from Table 8.

- Select a rated KW (HP) motor that is at least the value calculated in Item 3.

TABLE 8 Heat Factor Multiplier at .91 m/sec Flow Rate

Maximum Water Temperature	1/3 - 5 HP .25 - 3.7 KW	7 1/2 - 30 HP 5.5 - 22 KW	Over 30HP Over 22 KW
60°C	1.25	1.62	2.00
55°C	1.11	1.32	1.62
50°C	1.00	1.14	1.32
45°C	1.00	1.00	1.14
40°C	1.00	1.00	1.00
35°C	1.00	1.00	1.00

Hot Water Applications - Example

EXAMPLE: A 6" pump end requiring 29.1 KW (39 HP) input will pump 51°C water in an 203 mm well at a delivery rate of 530 l/m. From Table 7A, a 152 mm flow sleeve will be required to increase the flow rate to at least .91 m/sec.

Using Table 8, the 1.62 heat factor multiplier is selected because the KW (HP) required is over 22 KW (30 HP) and water temperature is above 50°C. Multiply 29.1 KW x 1.62 (multiplier), which equals 47.1 KW (63.2 HP). This is the minimum rated full load horsepower usable at 21.9 KW (39 HP) in 51°C.