

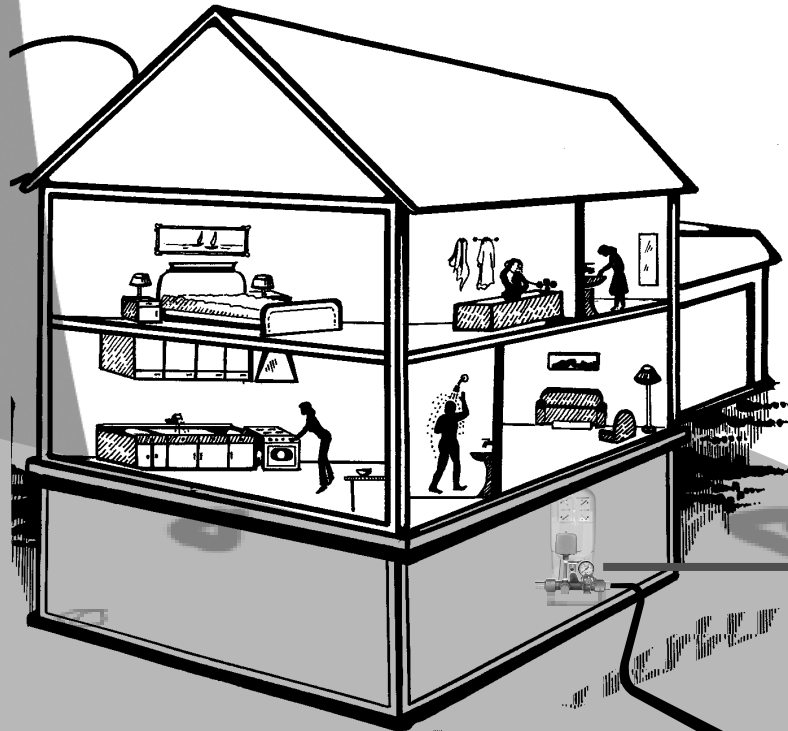
# DEEP WELL SUBMERSIBLE PUMP SIZING

## INFORMATIONS REQUIRED

- A = Depth of well
- B = Well recovery capacity (flow)
- C = Standing water level
- D = Drawdown during pumping at well recovery capacity

Consult well log provided by well driller.

**THE PUMP SHOULD NEVER HAVE A PUMPING CAPACITY ABOVE THE WELL RECOVERY CAPACITY**



- ① = Vertical distance from top of well to tank location.
- ② = Vertical distance from top of the well to standing water level.
- ③ = Vertical distance from standing water level to drawn down water level.
- ④ = Vertical distance from drawdown water level to depth of well (Submergence)

### GENERAL STANDARDS FOR DOMESTIC APPLICATION

- 5 to 10 Gallon per minute are required (300 to 600 GPH)  
Preferably 5 Gallon per minute if well recovery capacity is unknown
- Consider 1 GPM per water fixture without going over well recovery capacity
- To eliminate excess of friction loss, never use a pipe smaller than 1". Preferably, install the next pipe size.
- The friction loss of a 1 1/4" pipe is 25% of a 1" pipe.  
Investing in a 1 1/4" pipe has many benefits.
- Each PSI lifts water up to 2.31 feet.  
20 PSI are required to lift water to a level of 46 feet.
- A 20/40 PSI pressure switch is adequate for a bungalow.
- A 30/50 PSI pressure switch is adequate for a 2 storey house

House basement level

Top well level

Standing water level

Drawdown water level

Depth of well

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# DEEP WELL SUBMERSIBLE PUMP SIZING

## PUMP SIZE CALCULATION

### PUMPING LEVEL

Vertical distance

- ① Top of well to tank \_\_\_\_\_ ft
- ② Top of well to standing water level \_\_\_\_\_ ft
- ③ Standing water level to drawdown level \_\_\_\_\_ ft

**PUMPING LEVEL** ① + ② + ③ = \_\_\_\_\_ ft **(A)**

### SERVICE PRESSURE

- 20/40 (average 30 PSI) **69 ft**
- 30/50 (average 40 PSI) **92 ft**
- 40/60 (average 50 PSI) **115 ft**

**CHOICE OF SERVICE PRESSURE** \_\_\_\_\_ ft **(B)**

### FRICION LOSS

( ± 20% OF **(A) + (B)** ) \_\_\_\_\_ ft **(C)**

### TOTAL HEAD REQUIRED

**(A) + (B) + (C)** \_\_\_\_\_ ft

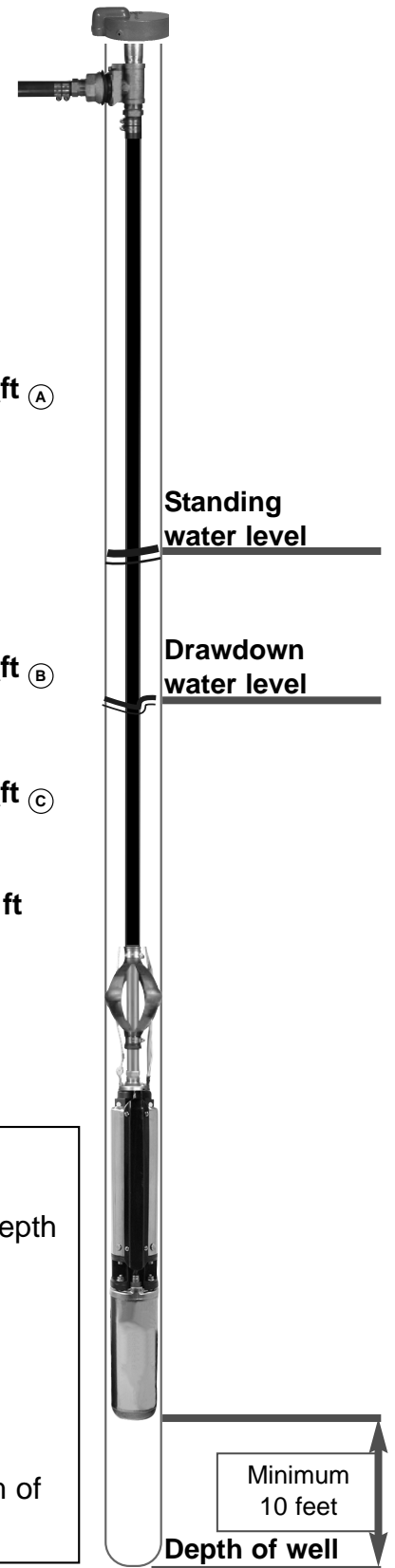
(Refer to chart or curves for appropriate pump)

### POSITION OF THE PUMP INTO THE WELL:

Calculate your submergence vertical distance, then position the pump depth to 70% of the submergence.

Example:	Depth of well	150'
	Drawdown water level	100'
	Submergence	50'
	70% of submergence	35'

**POSITION** = Drawdown water level + 70% of submergence = 135'  
However, never position your pump lower than 10 feet above the bottom of well to prevent suction of debris.



Minimum 10 feet  
Depth of well