360 RAIN

CALCULATING TOTAL DYNAMIC HEAD

The total dynamic head (TDH) is the amount of work a pump must do to move the liquid through a 360 RAIN unit. TDH can be expressed in units of feet (meters) and can be used to calculate the desired pump outlet pressure in PSI (kPa). This worksheet is meant to provide the information to calculate the TDH to operate a 360 RAIN unit.

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PRODUCT SUPPORT TEAM AT 309-300-3120

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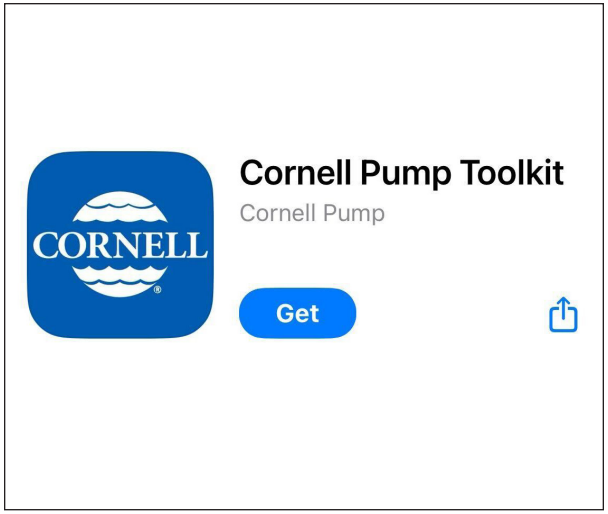
CALCULATING TOTAL DYNAMIC HEAD

STEP 1

TOTAL FRICTION LOSS THROUGH INFRASTRUCTURE



Calculate the total friction loss through the infrastructure. This includes all pipelines, valves, and fittings from the pump to the Rain unit's 3" hose.

The Cornell Pump Toolkit app can simplify calculation of total friction loss of your infrastructure. Once downloaded, open the **FRICTION LOSS CALCULATOR** and input your pipe material, diameter, pipe length, flow rate, and the number of elbows in the system. The app will calculate the total friction loss, enter it on the line below.

Total pipeline & fitting friction loss in feet (meters): _____

STEP 2

TOTAL ELEVATION CHANGE

Calculate the total elevation change in the field from pump to highest point.

Use a tool such as the elevation profile on Google Earth to help determine the elevation change.

Total elevation change in feet (meters): _____

STEP 3

TOTAL FRICTION LOSS THROUGH MACHINE

FLOW RATE GPM *(Gallons per minute)*	FRICTION LOSS *(Feet)*	PSI
170	192.3	83.2
180	211.6	91.6
190	231.9	100.4
200	253	109.5
210	275.1	119.1
220	298.2	129.1

Calculate total friction loss through a Rain machine and the pressure needed to divide equally to each drop.

The table above illustrates the friction loss with 3,000 ft of 3" hose that will be found through a RAIN unit at the listed flow rates.

Total friction loss in feet (meters): _____

Add Steps 1-3 to get the total friction loss in feet/meters: _____

Convert feet to psi: 2.31 Feet = 1 psi

Convert meters to kpa: 10 kpa = 1 meter

Total pressure required at pump to operate the 360 rain unit (psi or kpa): _____