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How to Use the Finish Thompson Inc. Centrifugal Pump Selector

Finish Thompson's centrifugal pump selector program has been designed to be easy to use. It allows our collection of centrifugal pumps to be quickly searched to find the ones that most closely meet your selection criteria. The information provided in this document is designed to provide additional information on how our selector operates.

Terms of Use Information:

Please review the important information found in the "Centrifugal Pump Selector: Terms of Use" section. This can be accessed by clicking on the link (the word "here") in the following sentence found on the first page of the selector "The user bears primary responsibility for these factors, some of which should be reviewed [here](#)"

Contact Finish Thompson for Help:

If you have trouble using our selector or would like to receive a factory recommendation, please contact us at sales@finishthompson.com or click on the link on the first page. Again, it is the word "here" in the following sentence "If you have trouble using the selector or would like a factory recommendation, please click [here](#)"

Input Selection Criteria

This is the form where hydraulic and application criteria are entered. Following is additional information for each choice.

"Unit System" – Chose either US or Metric.

- If "US" is selected, units of measure will be in US gallons per minute, feet, degrees Fahrenheit and horsepower.
- If "Metric" is selected, units of measure will be in m³/hr, meters, degrees Celsius and kW.

"Frequency" – Chose either 50 Hz or 60 Hz. The "Nominal Speed" will automatically change based on the frequency selection.

"Nominal speed" – At least one of the two speeds shown must be selected. Both speeds are automatically selected. To refine the selection results, deselect one of the speeds by clicking on the "checkmark". Most customers choose to operate Finish Thompson

centrifugal pumps at the higher speed (2900 or 3500 rpm). This typically allows a smaller, less expensive pump to be used for the application.

- If 50 Hz is selected, the speeds shown will be 2900 rpm and 1450 rpm.
- If 60 Hz is selected, the speeds shown will be 3500 rpm and 1750 rpm.

“Flow” – Enter the required flow for the application. The flow must fall within the range displayed.

- If “US” was selected for the unit system, enter the flow in gpm (gallons per minute). The selector will automatically round tenths of a gallon to the next higher or lower value (for example, 10.6 gpm will be automatically rounded up to 11 gpm).
- If “Metric” was selected for the unit system, enter the flow in m^3/hr (cubic meters per hour). Below $10 \text{ m}^3/\text{hr}$, the flow can be entered in tenths of m^3/hr (8.6 m^3/hr for example). Above $10 \text{ m}^3/\text{hr}$, the selector will automatically round to the next higher or lower value (for example, $10.6 \text{ m}^3/\text{hr}$ will automatically be rounded up to $11 \text{ m}^3/\text{hr}$).

“Head” – Enter the required head for the application. The head must fall within the range displayed.

- If “US” was selected for the unit system, enter the head in feet.
- If “Metric” was selected for the unit system, enter the head in meters.

“Specific Gravity” (SG) – Enter the specific gravity of the fluid being pumped. Water has a specific gravity of approximately 1.0 at 70° Fahrenheit (21° Celsius). When the specific gravity of the fluid is entered, it allows the selector to calculate the motor power (horsepower or kW) required at both the duty point and to be non-overloading for the entire head/capacity curve. In addition, the selector uses specific gravity to select pumps that have the appropriate working pressure capabilities for the values entered.

“Fluid Temperature” – Enter the temperature of the fluid being pumped. The temperature must fall within the range displayed. The selector chooses pumps that have the appropriate temperature capabilities for the value entered.

- If “US” was selected for the “Unit System”, the temperature will be in degrees Fahrenheit.
- If “Metric” was selected for the “Unit System”, the temperature will be in degrees Celsius.

“Construction Material” – At least one of the materials shown must be selected. By default, all materials are selected. To refine the selection results, deselect one or more of the materials by clicking on the “checkmark”. Some construction materials are not available in all “Pump Types” (see next section for more information on the “Pump Type” selection). For example, 316 SS is only available in “Sealed” pump type. See the chart below for more information.

“Construction Material”	“Pump Type” MUST BE	“Pump Type” CANNOT BE
Glass-filled Polypropylene	“Sealless”, “Sealed” or “Sealless Self-Priming”	“Sealless ANSI Dimensional”
Carbon-filled PVDF	“Sealless”, “Sealed” or “Sealless Self-Priming”	“Sealless ANSI Dimensional”
316 SS	“Sealed”	“Sealless”, “Sealless ANSI Dimensional” or “Sealless Self-Priming”
ETFE Lined Ductile Iron	“Sealless ANSI Dimensional”	“Sealless”, “Sealed” or “Sealless Self-Priming”

- Refer to our “Chemical Guide” for chemical resistance information and help in determining which materials are appropriate for the application. The “Chemical Guide” is located in the “Downloads” section of the website under the “Centrifugal Pumps” category.

“Pump Type” – At least one of the pump types shown must be selected. By default, all pump types are selected. To refine the selection results, deselect one or more of the pump types by clicking on the “checkmark”. Some pump types are not available in all of the “Construction Material” selections. See the chart below for more information.

“Pump Type”	“Construction Material” MUST BE	“Construction Material” CANNOT BE
“Sealless”	“Glass-filled Polypropylene” or “Carbon-filled PVDF”	“316 SS” or “ETFE Lined Ductile Iron”
“Sealed”	“Glass-filled Polypropylene” or “Carbon-filled PVDF” or 316 SS	“ETFE Lined Ductile Iron”
“Sealless ANSI Dimensional”	“ETFE Lined Ductile Iron”	“Glass-filled Polypropylene” or “Carbon-filled PVDF” or 316 SS
“Sealless Self-Priming”	“Glass-filled Polypropylene” or “Carbon-filled PVDF”	“316 SS” or “ETFE Lined Ductile Iron”

“Configuration” – Select either “Horizontal” or “Vertical”. Horizontal pumps can’t be submerged in the liquid. Vertical pumps can be submerged in the liquid up to the mounting plate (the motor is not designed to be submerged).

Example of “Input Selection Criteria” page:

Input Selection Criteria

Unit System	US
Frequency	60 Hz
Nominal Speed	<input checked="" type="checkbox"/> 3500 rpm <input type="checkbox"/> 1750 rpm Select at least one
Flow REQUIRED	50 gpm Range: 0-330 gpm [US]; 0-75 m3/hr [Metric]
Head REQUIRED	26 feet Range: 0-325 feet [US]; 0-99 m [Metric]
Specific Gravity REQUIRED	1.8
Fluid Temp. REQUIRED	70 F Range: -20 to 300 F [US]; -30 to 149 C [Metric]
Construction Material	<input checked="" type="checkbox"/> Glass-filled Polypropylene <input checked="" type="checkbox"/> Carbon-filled PVDF <input type="checkbox"/> 316 SS <input type="checkbox"/> ETFE Lined Ductile Iron Select at least one
Pump Type	<input checked="" type="checkbox"/> Sealless <input type="checkbox"/> Sealed <input type="checkbox"/> Sealless ANSI Dimensional <input checked="" type="checkbox"/> Sealless Self-Priming Select at least one
Configuration	Horizontal
<input type="button" value="Search"/>	


- **Once the hydraulic and application information is entered, click on the “Search” button and the selector finds the pumps that most closely match your criteria.**


Pump Search Results


A new page is displayed showing a maximum of ten pumps that most closely match the selection criteria. In addition, your “Supplied Selection Criteria” is summarized.

“**Selection Results**” – A chart is displayed (sample is shown below) showing the pumps that most closely match the selection criteria. The pumps are sorted by the closest match in head compared to the value input in the “Input Selection Criteria” section.

The computer starts looking for pumps that are within 95% of the supplied head. For example, if 100 feet of head was used in the “Input Selection Criteria” section, the computer will start looking for matches beginning at 95 feet of head.

Click on the  (**curve icon**) OR **Model** to view the curve data including head, flow, efficiency, power and NPSH required.



	Model	Speed [rpm]	Construction Material	Type	Impeller Diameter [in]	Flow [gpm]	Head [feet]	Power [HP]
	KC8	3450	Glass-filled Polypropylene	Sealless	3.5	50.0	27.47	1.35

“**Return to Input Data**” – Click on this to return to the first page. Your original selection criteria are displayed and can be modified to refine your search. For example, you may want to deselect certain “Construction Materials” or “Pump Types”.

“**New Search**” – Click on this to return to the first page. All of the input fields will return to their default positions.

Example of “Pump Search Results” page:

Pump Search Results

Supplied Selection Criteria











Unit System	US
Flow	50 gpm
Head	26 feet
Frequency	60 Hz
Speed	3500 rpm
Specific Gravity	1.8
Fluid Temp	70 F
Construction Material	Glass-filled Polypropylene, Carbon-filled PVDF
Pump Type	Sealless, Sealless Self-Priming
Configuration	horizontal

[Return to Input Data](#) | [New Search](#)

Selection Results

These selections most closely match your selection criteria.

Click on the **Model** to view the curve data including head, flow, efficiency, power and NPSH required.

	Model	Speed [rpm]	Construction Material	Type	Impeller Diameter [in]	Flow [gpm]	Head [feet]	Power [HP]
	KC8	3450	Carbon-filled PVDF	Sealless	3.5	50.0	27.47	1.35
	KC8	3450	Glass-filled Polypropylene	Sealless	3.5	50.0	27.47	1.35
	SP11	3450	Glass-filled Polypropylene	Sealless Self-Priming	3.63	50.0	30.14	1.62
	SP11	3450	Carbon-filled PVDF	Sealless Self-Priming	3.63	50.0	30.14	1.62
	DB11	3450	Carbon-filled PVDF	Sealless	3.63	50.0	33.88	1.31
	DB11	3450	Glass-filled Polypropylene	Sealless	3.63	50.0	33.88	1.31
	SP11	3450	Carbon-filled PVDF	Sealless Self-Priming	3.88	50.0	34.93	1.89
	SP11	3450	Glass-filled Polypropylene	Sealless Self-Priming	3.88	50.0	34.93	1.89
	KC10	3450	Carbon-filled PVDF	Sealless	3.88	50.0	36.34	1.58
	KC10	3450	Glass-filled Polypropylene	Sealless	3.88	50.0	36.34	1.58

➤ **When you click on the  (curve icon) OR “Model” a new page is displayed (“Selected Pump Details”).**

Selected Pump Details

This page includes two graphs that display head and capacity (flow), efficiency, power and NPSHR (Net Positive Suction Head Required) Also displayed are power required at the duty point, power required to be non-overloading (adjusted for specific gravity) and review of the selection criteria and selected model overview.

Along the top of the page, there is a line showing “Print”, “Back to Selection Results”, “Refine your Search” and “New Search”.

“Print” – Click on this to have all of the information on the page formatted for your printer. The formatting will be superior when compared to simply selecting the “Print” button from your browser.

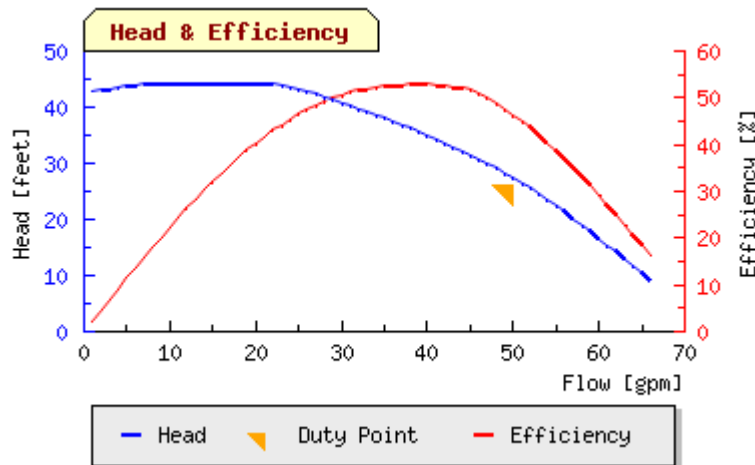
“Back to Selection Results” – Click on this to return to the previous page that shows the chart with the pumps that most closely match your selection criteria.

“Return to Input Data” – Click on this to return to the first page. Your original selection criteria are displayed and can be modified to refine your search. For example, you may want to deselect certain “Construction Materials” or “Pump Types”.

“New Search” – Click on this to return to the first page. All of the input fields will return to their default positions.

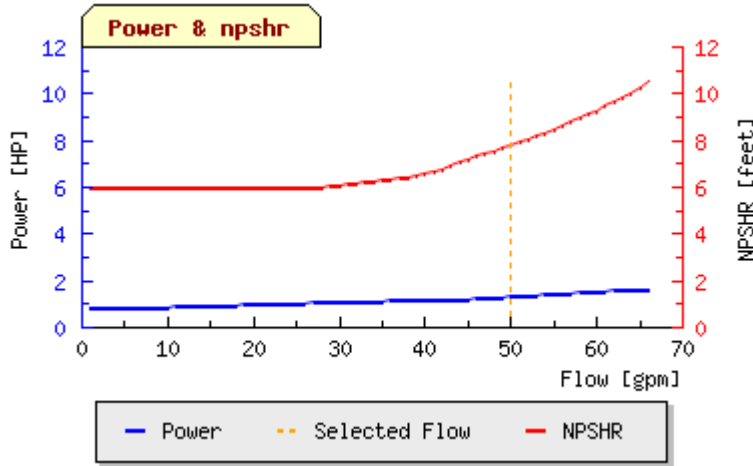
“Head/Capacity and Efficiency Graph” – The first graph shows the head/capacity (head and flow) curve and the pump efficiency curve. The scale along the bottom of the graph indicates the flow (either in GPM or m³/hr depending upon the “Unit System” selected). The scale on the left side of the graph indicates the head (either in feet or meters). The scale on the right side of the graph indicates efficiency in percentage. The duty point is indicated on the graph by the triangle symbol.

Example of the “Head/Capacity and Efficiency Graph”:



“Power and NPSHR Graph” – The second graph shows the power curve and the NPSHR (Net Positive Suction Head Required) curve. The scale along the bottom of the graph indicates the flow (either in GPM or m³/hr depending upon the “Unit System” selected). The scale on the left side of the graph indicates the power (either in horsepower or kW). The scale on the right side of the graph indicates the NPSHR (either in feet or meters). For reference purposes, a dashed line indicates the selected flow.

Example of the “Power and NPSHR Graph”:



“Required Power Information” – Two text lines are displayed below the “Power and NPSHR” graph showing the power required by the pump corrected for specific gravity. The power is displayed either in horsepower or kW depending upon the “Unit System” selected.

- The first line indicates the required power at the duty point.
- The second line indicates the required power to be non-overloading across the whole “Head/Capacity Curve”.

If the power required to be non-overloading exceeds the ability of the pump, the following message is displayed: **“The power required to be non-overloading exceeds the capacity of this particular model.”** The selector automatically excludes pumps that at the duty point exceed the maximum power capabilities of the pump.

Example of Corrected Power Information:

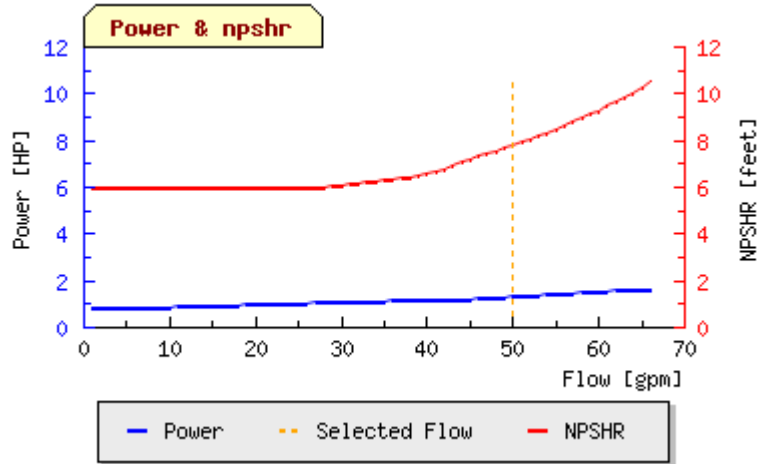
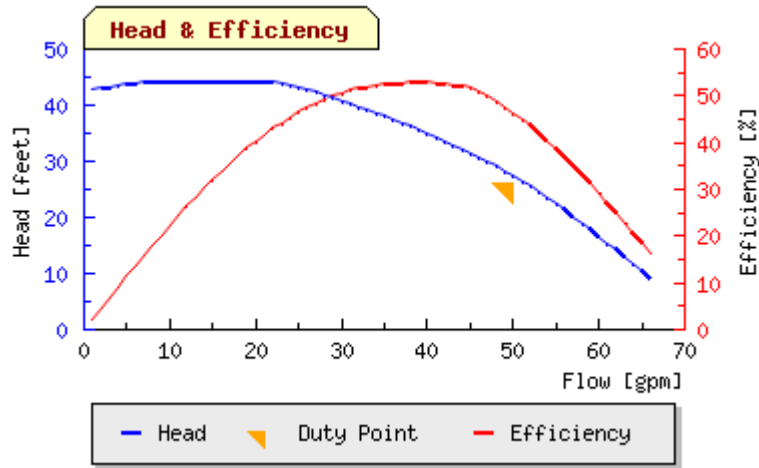
HP corrected for 1.8 specific gravity at the duty point = 1.35 HP
 HP corrected for 1.8 specific gravity non-overloading = 1.67 HP

“Your Input” and “Selected Model Overview” – The “Your Input” section provides a review of the selection criteria provided. The “Selected Model Overview” section shows information concerning the pump. If you click on the “General Model Details” you will be taken to a screen to view the general model details including materials of construction, available motor frames, product photograph and product downloads.

Example of “Selected Pump Details” page:

Selected Pump Details

[PRINT](#) | [Back to Selection Results](#) | [Return to Input Data](#) | [New Search](#)



HP corrected for 1.8 specific gravity at the duty point = 1.35 HP

HP corrected for 1.8 specific gravity non-overloading = 1.67 HP

Your Input

Unit System	US
Flow	50 gpm
Head	26 feet
Frequency	60 Hz
Speed	3500 rpm
Specific Gravity	1.8
Fluid Temp	70 F
Construction Material	Glass-filled Polypropylene, Carbon-filled PVDF
Pump Type	Sealless, Sealless Self-Priming
Configuration	horizontal

Selected Model Overview

Model	KC8
Speed	3450 rpm
Construction Material	Glass-filled Polypropylene
Impeller Diameter	3.5 in
Impeller Type	Closed
Suction Port	1.50 in
Discharge Port	1.00 in
General Model Details	

Example of “General Model Details” page:

Search: [Go](#)



Back to Home

Pump Selector
Centrifugal Pumps

Pump Selector
Drum Pumps

- DB Series
- SP Series
- KC Series
- MSKC Series
- VKC Series
- MSVKC Series
- GP Series
- AC Series
- AK Series
- AV Series
- UC Series

Introducing
NEW DB SERIES
 Premium Mag Drive Pumps



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Centrifugal Pumps - KC8 Model

Motor @ 3450 RPM:	0.75 HP
Motor @ 2900 RPM:	0.37 kW
Max specific gravity:	1.4 (1.8 with magnet upgrade)
Suction Port:	1.50 in
Discharge Port:	1.00 in
Impeller Diameter:	3.5 in (8.9 cm)
Impeller Type:	Closed

	@ 3450 RPM	@ 2900 RPM
Max flow	66.6 gpm	12.0 m ³ /hr
Max head	42.6 ft.	9.2 m

Type:	Sealless
Configuration:	Horizontal
Motor frame:	56C, 63 with B14, 71 with B14, 80 with B14
Connection type:	NPT or BSP
Max pressure:	60 psi
Construction materials:	Glass-filled Polypropylene, Carbon-filled PVDF
O-ring Material:	Viton, EPDM, Aflas
Bushing Material:	Carbon, PTFE, Ceramic
Bearing Frame (Pedestal):	Optional

	Polypropylene	PVDF	ETFE Lined Ductile Iron	316SS
Max temp. [° F]:	180	220	n/a	n/a
Max temp. [° C]:	82	104	n/a	n/a

Downloads

- [KC8 Model Flyer](#)
- [KC8 Model Brochure](#)
- [KC8 Model Manual](#)
- [KC8 Model Curve Book](#)