

# DATA SHEET

## SINGLE STAGE CENTRIFUGAL PUMPS



**Stainless Steel  
Self-Priming Models:**

**5K111–5K124**

See Page 2 for Complete Motorized Pump Unit Codes



Model 5K122WT3 Shown

### FEATURES

- 304SSL liquid-end construction offers corrosion resistance and increases operating life over typical cast iron models.
- Unique bulge formed components eliminate harsh radiuses and welds, and provides great efficiency and durability.
- Back pullout design permits easy repair of impeller and seal.
- High-quality mechanical shaft seal and O-rings support a variety of standard or high-temperature and chemical duty applications.
- Under casing foot mount and center line discharge reduces misalignment and assures self-venting.
- Close coupled, motorized packages are compact and allow for easy installation.
- Durable noryl/fiberglass diffuser.

### SPECIFICATIONS

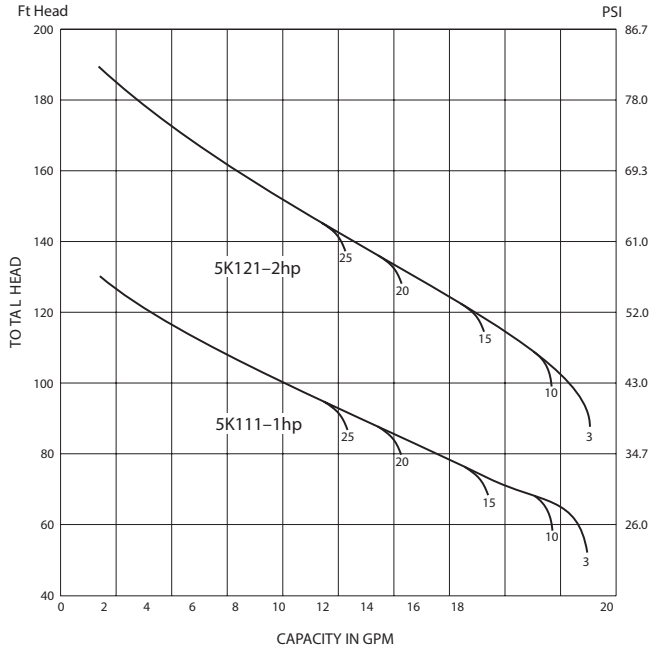
### U.S. Measure

Flow Range	1.5–18.5 gpm
Pressure Range	27–82 psi
	63–190 Head-ft
Maximum Suction Lift	25 ft
Maximum Working Pressure	85 psi
Pump RPM	3450 rpm
Inlet Fitting (All Models)	1.25" NPT(F)
Discharge Fitting (All Models)	1" NPT(F)
Horsepower Range	1–2 hp
Motor Options TEFC NEMA	56J Frame
	1.0 hp 115/230V, 1 PH
	2.0 hp 115/208–230V, 1 PH
	1.0 hp 208–230/460V, 3 PH
	2.0 hp 208–230/460V, 3 PH
Cycle	60 HZ
Maximum Temperature (Continuous)	113° F*
Weight (Pump Only)	8.95 lbs
Dimensions (Pump Only)	7.63 x 8.19"

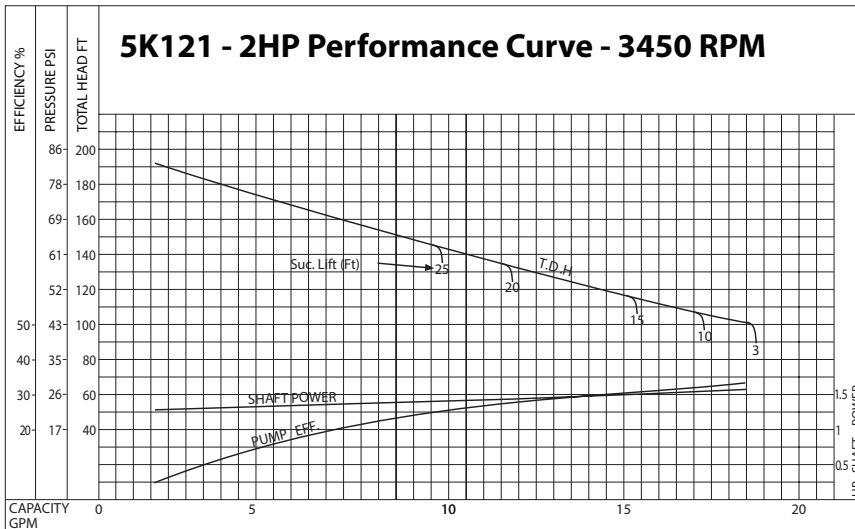
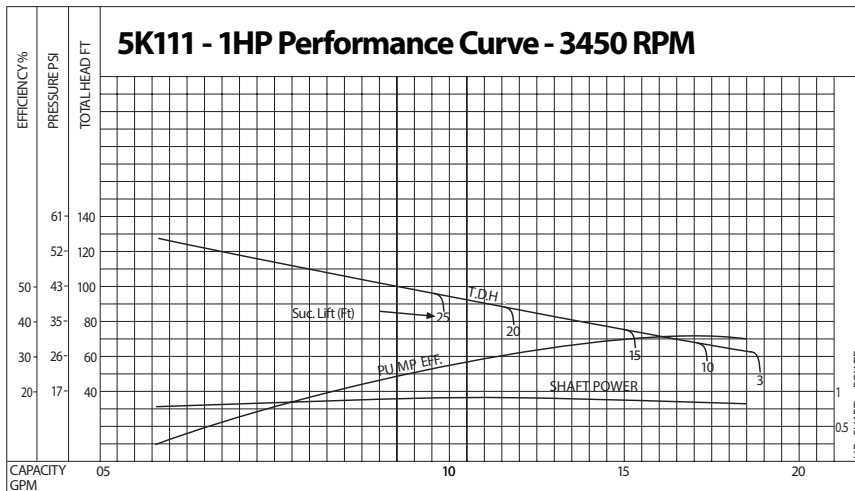
\*Contact Cat Pumps for applications above 113° F.



# SELECTION CHART - 3450 RPM



NOTE: Figures in selection chart indicate suction lift (Ft).



## GENERAL SAFETY AND OPERATION

**SELECTION:** Review the Selection Chart to find the performance range and pump model suited to your application requirements. Then review the Performance Curve Chart to verify the most efficient performance and inlet conditions required.

**INSTALLATION:** These pumps may be installed in either a horizontal (most common) or vertical position (as installation requires). The following criteria should be considered to assure optimum performance:

- Proper alignment of plumbing
- Adequate line size to prevent starvation
- Rigid metal, plastic pipe or reinforced flexible plumbing to prevent collapsing lines
- Properly sealed connections to prevent air leaks
- Good filtration of the liquid to avoid abrasives and solids
- Foot valve may need to be installed at the inlet

**OPERATION:** The pump comes with a standard seal for fresh water or non-harsh liquids. Excessive pH, high viscosity and abrasives will affect the life and performance of the pump and individual components. Special shaft seals are available for high-temperature or chemical duty applications. Check with Cat Pumps for high-viscosity liquids. Make certain there is sufficient liquid supply to the pump before starting operation.

**MAINTENANCE:** This is a low-maintenance pump. The shaft seal and impeller are the primary service items. These can be easily replaced.

1. Remove the 8 socket head screws and toothed lockwashers. Separate the casing from the casing cover.
2. Remove the impeller nut and unthread the impeller.
3. Carefully pry the casing cover away from the bracket.
4. Place the casing cover on a work surface (large diameter up) and press out the shaft seal.
5. Turn the casing cover over on the work surface (small diameter up) and press the back half (stationary half) of the new shaft seal into position until completely seated in the chamber with the elastomer side down.

### CAUTION

Exercise care when handling the shaft seal. It can be easily contaminated by improper handling and will not properly seal. Use the paper cover to press the seal into position and toss the cover when done.

**NOTE:** If seal installation is tight, carefully apply a small amount of lubricant to the outer edge (non-chlorine dish soap). Do not use oil or grease.

6. Align the casing cover with the holes on the bracket and press into position.

7. Slide the front half of the seal (rotating half) onto the shaft with the elastomer side out (carbon/ceramic surfaces mating). Then slide the seal spring and washer onto the shaft.
8. Hold the seal spring in place and thread the impeller into position until completely seated.
 

**NOTE:** Use a screwdriver to hold the motor shaft stationary.
9. Install the impeller hex nut onto the shaft and torque per chart.
 

**NOTE:** Apply Loctite® 242® to the impeller nut before installing.

**NOTE:** Rotate the impeller to ensure proper alignment before installing the cover.
10. Place the new O-ring over the casing cover. Exercise caution not to cut or twist the O-ring during installation.
11. Replace the casing. Rotate to desired discharge port position and align holes. Replace 8 lockwashers and socket screws and torque per chart.

## Torque Specifications Chart

	Size	in-lbs	ft-lbs	N-m
Impeller Nut	7/16"-20	144-216	12-18	16-24
Pump Casing (To Motor Bracket)	M6 x 16 Socket Head Cap Screw M6 Ext. Tooth Lockwasher	41	3.4	4.6
Motor Bracket (To Motor)	3/8"-16 x 1" Socket Head Screw 3/8" Ext. Tooth Lockwasher	72	6.0	10.8
Motor Bracket (To Motor Base)	M8 x 16 Hex Head Cap Screw	48	4.0	5.4
Motor Stand Support	M8 x 30 or M8 x 45 Head Cap Screw M8 Hex Nut	No Requirements (Adjust to Support Motor/Variable)		

## TROUBLESHOOTING

No flow or low flow	<ul style="list-style-type: none"> <li>• Check rotation of pump.</li> <li>• Check liquid supply to pump.</li> </ul>
Leaking	<ul style="list-style-type: none"> <li>• Replace shaft seal.</li> <li>• Check case cover O-ring.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Check liquid supply to pump.</li> <li>• Check viscosity of liquid.</li> <li>• Review NPSH requirements.</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• Secure plumbing to and from pump.</li> <li>• Check impeller and replace as needed.</li> </ul>

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### ⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high-pressure system. Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system. The CAUTIONS and WARNINGS are included in each Service Manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at [www.catpumps.com/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)