



# SURVIVOR<sup>®</sup> Survivor 4" Submersible Pumps

Lancaster Pump offers a broad selection of SURVIVOR 4" submersible well pumps. Horsepower from ½ to 5 HP, with the most popular size range ½ to 1½ HP, available in Corrosion Resistant Thermoplastic or Super Strength Stainless Steel. Capacity ratings are 5, 7, 10, 15 and 22 gallons per minute with heads as high as 990 feet.

## INSIDE A PUMP STAGE

- Diffuser with stainless steel seal/wear surfaces for upper impeller hub
- Impeller eye surrounding lower hub
- Stage plate with stainless steel seal/wear surface for impeller eye

## ASSEMBLED PUMP STAGE

- Laminated phenolic thrust washer on top of every stage provides down-thrust protection and axial sealing for the impeller inside the next stage above

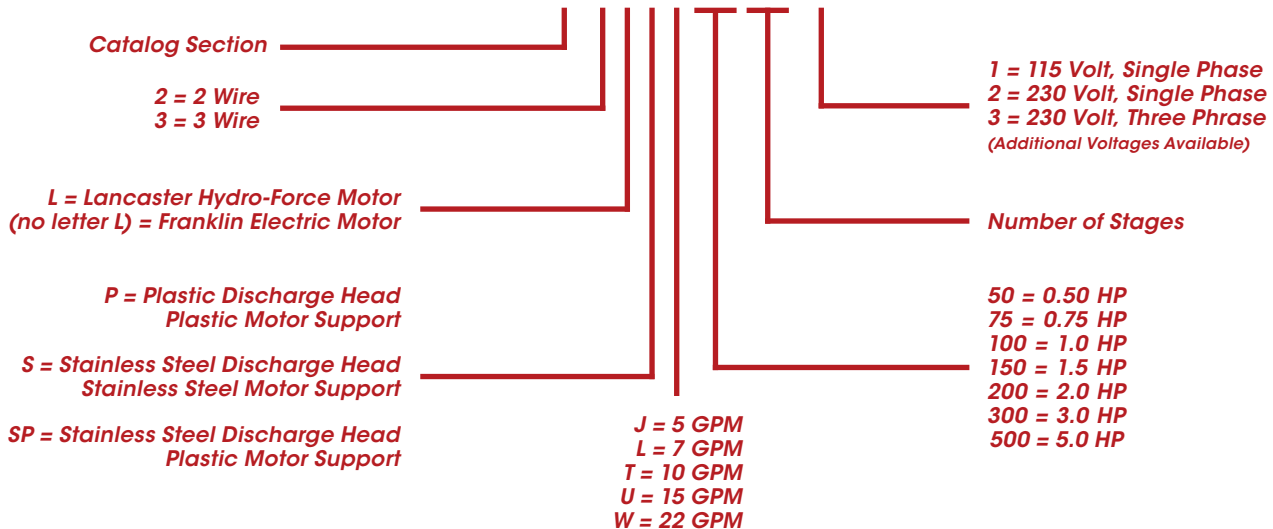
## BREAKDOWN

- Glass-filled Noryl<sup>®</sup> Discharge Head with field replaceable fluted Internal Check Valve. Molded jug handles - no need for safety cable adapter, ½ HP thru 1½ HP models. Available in Stainless Steel up to 5 HP.
- Fluted Polyurethane Bearing at top end of shaft. Excellent abrasion and wear resistance.
- Stainless Steel Cable Guard for maximum cable protection. Attached with stainless steel screws.
- Balanced Teflon<sup>®</sup> impregnated Impellers made of glass-filled thermoplastic, provide for lower friction for longer pump life.
- Stainless steel Hex Shaft with slotted end for test turning.
- Fully enclosed, glass-filled thermoplastic Diffusers and Stage Plates with stainless steel wear surfaces. Each stage is complete with an individual composite thrust washer for extra protection.
- Heavy wall, high quality Stainless Steel Pump Casing sized inside for perfect stage alignment.
- Glass-filled Noryl<sup>®</sup> Motor Support ½ HP thru 1 ½ Hp models. Available in Stainless Steel up to 5 HP.
- Stainless Steel screen, cannot snap off during installation.



## SURVIVOR 4" SUBMERSIBLE PUMP MODEL NUMBER BREAKDOWN

**2-2LST5007-2**





# LANCASTER HYDRO-FORCE™

4" ENCAPSULATED SUBMERSIBLE MOTORS  
SINGLE PHASE TWO-WIRE & THREE-WIRE, ½-1 HP, 230 V  
EQUIPPED WITH LIGHTNING ARRESTORS

## TECHNICAL FEATURES

### TWO-WIRE DESIGN

- Split-phase induction run (IR) design with built-in electronic starter connected in series to a high resistance auxiliary start winding – no capacitor required – electronic starter controls disengagement of start winding as a function of starting time and starting voltage.

### THREE-WIRE DESIGN

- Capacitor-start induction run (CSIR) design – control box required
- Control box quick-disconnect design disconnects control box components from the electrical system when the lid is removed – will retrofit F.E. Q-D control boxes of same HP and voltage.
- Control box components include a 230V voltage relay for easy installation, two ground terminals, cable terminals up to AWG 8, and a start capacitor for higher starting torque.
- Control box painted steel enclosure with multiple knockouts is rated NEMA 3R for indoor or outdoor installation.

### TWO-WIRE AND THREE-WIRE DESIGNS

- Stator filled with special epoxy resin and hermetically sealed for a better insulation of the winding and a greater heat exchange.
- Rotor and thrust bearings lubricated by water mixed with Propylene Glycol.
- Built-in check valve for restoring of cooling liquid (well water) as needed.
- Built-in lightning arrestors providing surge protection.
- Built-in automatic reset overload providing thermal (overheat) protection caused by high amperage and/or inadequate motor cooling.
- AISI 304 Stainless Steel motor frame shell, top and bottom end bracket covers.
- AISI 303 Stainless Steel splined shaft end.
- Cationic epoxy electrocoated G20 cast iron top and bottom end brackets.
- Shaft sealing system using labyrinth seal, sand slinger and lip seal.
- Pressure equalizing diaphragm.
- 4" NEMA flange.
- M8 threaded mounting studs.
- Removable plug-in lead cable.
- Degree of protection: IP68.
- Insulation: Class B.
- Time Rating: Continuous Duty.
- UL recognized component.

### OPERATING LIMITS

- Water temperature: max. 95°F (35°C)
- Maximum starts per hour: 30
- Minimum flow-rate speed for motor cooling in water up to 95°F: 0.26 ft/s (0.08 m/s)
- Voltage tolerance: ±10%
- Mounting position: vertical/horizontal
- Water characteristics: pH from 5.8 to 8.6
- NEMA service factors (S.F.) for 60 Hz pump motors
- Axial Thrust Load: 300 Lb (1500 N)



## FRANKLIN

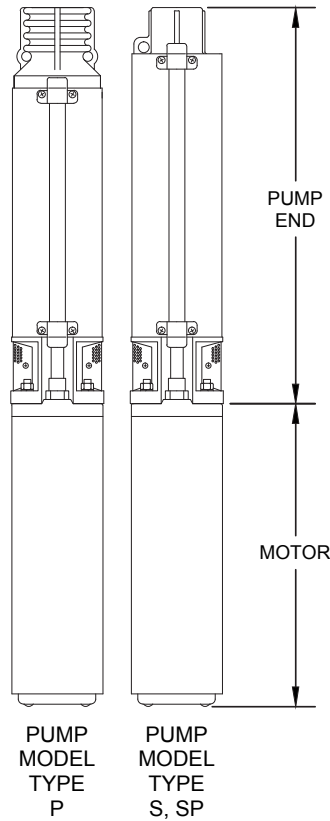
**Lancaster Pump is also teamed up with Franklin Electric's stainless water filled motors, meaning high quality and dependable service.**



# SURVIVOR<sup>®</sup> J-SERIES 5 GPM

PUMP DIAMETER  
INCLUDING  
CABLE GUARD  
3.81"

PUMP END  
DISCHARGE  
1.25" FNPT



## J SERIES - 5 GPM

60 Hz, 3450 rpm

Pump Model	HP	Pump End		Single-Phase Motors - 2-wire				Single-Phase Motors - 3-wire				Three-Phase Motors	
				LP Hydro-Force		FE Super Stainless		LP Hydro-Force		FE Super Stainless		FE Super Stainless	
		Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)	Length (inches)	Weight (LBS)
PJ5010 SJ5010 SPJ5010	1/2	13.75	4.8 7.7 6.1	10.69	19.6	9.53	18	10.25	19.5	9.53	19	9.53	18
PJ7513 SJ7513 SPJ7513	3/4	15.75	5.9 8.7 7.1	11.69	22.0	10.66	21	10.50	20.2	10.66	21	10.66	21
PJ10017 SJ10017 SPJ10017	1	18.28	7.1 9.9 8.3	12.44	24.1	11.75	24	12.12	23.9	11.75	24	11.75	24
PJ15024 SJ15024 SPJ15024	1-1/2	23.63	10.2 13.0 11.4	n/a	n/a	15.12	31	n/a	n/a	13.62	28	11.75	24

General notes for estimating only.

All Single-Phase motors are 230 Volt (FE Super Stainless 1/2 HP available 115 Volt OR 230 Volt).

Single-Phase 3-wire motors require properly matched control box.

Three-Phase motors available: 200 OR 230 OR 460 Volt.

Three-Phase motors require a magnetic starter with three leg Class 10 overload protection.

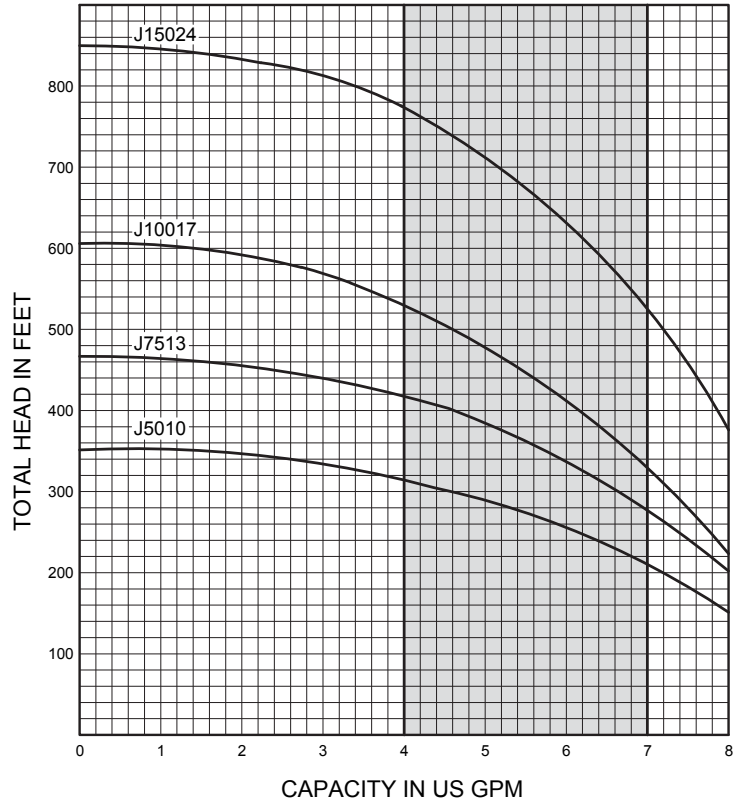


# SURVIVOR® J-SERIES 5 GPM



J SERIES - 5 GPM PERFORMANCE CURVES

BEST EFFICIENCY RANGE 4 TO 7 GPM



**J SERIES - 5 GPM PERFORMANCE CHART**

Ratings are in GPM (Gallons per Minute).  
 DO NOT operate pump at flow rates indicated by the symbol — .  
 Shaded areas indicate most efficient performance.  
 Friction losses in discharge pipe and fittings are not included in these charts.

Pump Model	HP	PSI	Depth to Water in Feet																																
			20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	460	500	540	580	620	660	700	740	780			
J5010	1/2	0	—	—	—	—	—	8.2	7.9	7.5	7.2	6.8	6.3	5.8	5.3	4.6																			
		20	—	—	—	—	8.1	7.8	7.4	7.1	6.6	6.2	5.7	5.1	4.3	3.5	2.0																		
		30	—	—	—	8.1	7.8	7.3	7.0	6.6	6.1	5.6	5.0	4.3	3.3	2.0																			
		40	—	—	8.0	7.7	7.3	6.9	6.5	6.0	5.5	4.8	4.2	3.3																					
		50	8.3	8.0	7.6	7.3	6.8	6.4	6.0	5.4	4.8	4.0	3.1																						
		60	7.9	7.6	7.2	6.8	6.3	5.8	5.3	4.7	4.0	3.0																							
Shut-off PSI			144	136	127	118	110	101	92	84	75	66	58	49	40	32	23																		
J7513	3/4	0	—	—	—	—	—	—	8.3	8.0	7.8	7.5	7.3	6.9	6.7	6.3	6.0	5.6	5.2	4.6															
		20	—	—	—	—	—	8.2	7.9	7.7	7.4	7.2	6.8	6.5	6.3	5.8	5.4	5.0	4.4	3.8	3.1														
		30	—	—	—	—	8.2	7.9	7.7	7.3	7.1	6.8	6.5	6.2	5.8	5.3	4.9	4.3	3.7	2.8															
		40	—	—	—	8.1	7.8	7.6	7.3	7.1	6.8	6.4	6.1	5.8	5.3	4.8	4.3	4.0	3.0																
		50	—	—	—	8.1	7.8	7.6	7.3	7.0	6.7	6.4	6.1	5.7	5.3	4.8	4.2	3.4	3.0																
		60	—	8.3	8.0	7.8	7.5	7.3	7.0	6.7	6.3	6.0	5.6	5.2	4.7	4.1	3.3	1.6																	
Shut-off PSI			192	184	175	166	158	149	140	132	123	114	106	97	88	80	71	62	54	45	36	28													
J10017	1	0	—	—	—	—	—	—	—	8.2	8.0	7.8	7.6	7.4	7.3	7.0	6.8	6.6	6.3	6.1	5.8	5.3	4.7	3.8											
		20	—	—	—	—	—	8.3	8.1	7.9	7.8	7.6	7.3	7.2	6.9	6.8	6.5	6.3	6.0	5.8	5.5	5.2	4.5	4.0	2.3										
		30	—	—	—	—	8.3	8.1	7.9	7.7	7.5	7.3	7.1	6.9	6.7	6.4	6.2	6.0	5.7	5.4	5.2	4.8	4.1	3.1											
		40	—	—	—	8.3	8.1	7.9	7.7	7.5	7.3	7.1	6.9	6.7	6.4	6.2	5.9	5.7	5.4	5.1	4.8	4.4	3.5	1.9											
		50	—	—	—	8.2	8.0	7.9	7.7	7.5	7.3	7.1	6.8	6.6	6.4	6.1	5.9	5.6	5.3	5.1	4.7	4.3	4.0	2.9											
		60	—	—	8.2	8.0	7.8	7.7	7.4	7.3	7.0	6.8	6.6	6.3	6.1	5.8	5.6	5.3	5.0	4.7	4.3	3.9	3.3	1.3											
Shut-off PSI			253	245	236	227	219	210	201	193	184	175	167	158	149	141	132	123	115	106	97	89	80	63	45	28									
J15024	1-1/2	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		20	—	—	—	—	—	—	—	—	—	—	—	—	—	8.3	8.2	8.1	7.9	7.8	7.7	7.5	7.4	7.2	6.8	6.4	6.0	5.6	5.1	4.4	3.8	2.6			
		30	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2	8.1	8.0	7.9	7.8	7.7	7.5	7.4	7.3	7.0	6.6	6.2	5.8	5.3	4.7	4.1	3.2	1.1		
		40	—	—	—	—	—	—	—	—	—	—	—	—	—	8.3	8.2	8.0	7.9	7.8	7.7	7.5	7.3	7.2	7.1	6.8	6.3	6.0	5.5	5.0	4.3	3.6	1.6		
		50	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2	8.1	8.0	7.9	7.8	7.6	7.5	7.3	7.2	7.1	6.9	6.5	6.1	5.7	5.2	4.6	4.0	3.1		
		60	—	—	—	—	—	—	—	—	—	—	—	—	—	8.2	8.1	8.0	7.8	7.7	7.6	7.5	7.3	7.2	7.1	6.9	6.7	6.3	5.9	5.4	4.9	4.3	3.5	1.8	
Shut-off PSI			360	352	343	334	326	317	308	300	291	282	274	265	256	248	239	231	222	213	205	196	187	170	153	135	118	101	83	66	49	31			