SURVIVOR®

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® 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® 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® 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

- **2-** Catalog Section
- **2-** 2 = 2 Wire, 3 = 3 Wire
- **2L-** L = Lancaster Hydro-Force Motor, (no letter L) = Franklin Electric Motor
- **2LP-** P = Plastic Discharge Head, Plastic Motor Support
- **2LS-** S = Stainless Steel Discharge Head, Stainless Steel Motor Support
- **2LSP-** SP = Stainless Steel Discharge Head, Plastic Motor Support
- **2LST-** J = 5 GPM, L = 7 GPM, T = 10 GPM, U = 15 GPM, W = 22 GPM
- **2LST50-** 50 = 0.50 HP, 75 = 0.75 HP, 100 = 1.0 HP, 150 = 1.5 HP, 200 = 2.0 HP, 300 = 3.0 HP, 500 = 5.0 HP
- **2LST5007-** Number of Stages
- **2LST5007-2** 1 = 115 Volt, Single Phase, 2 = 230 Volt, Single Phase, 3 = 230 Volt, Three Phrase (Additional Voltages Available)

SURVIVOR SERIES

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.

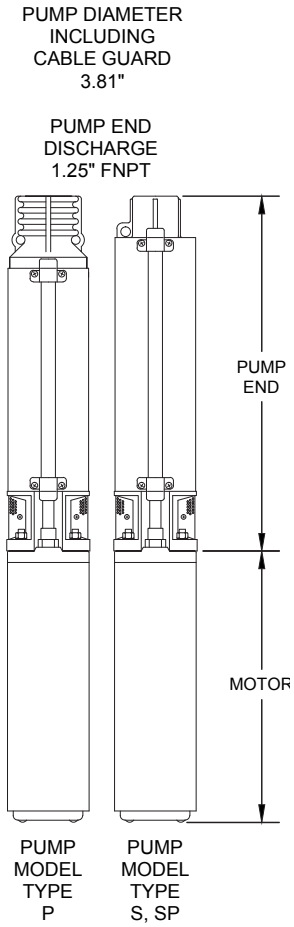
OPERATING LIMITS

- 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® T-SERIES 10 GPM



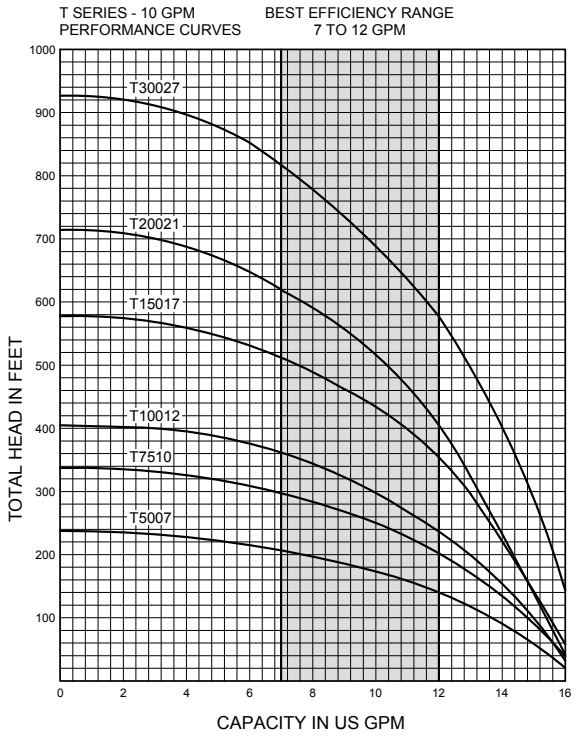
T SERIES - 10 GPM 60 Hz, 3450 rpm

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)
PT5007 ST5007 SPT5007	1/2	12.78	4.2 7.0 5.5	10.69	19.6	9.53	18	10.25	19.5	9.53	19	9.53	18
PT7510 ST7510 SPT7510	3/4	15.13	5.3 8.2 6.6	11.69	22.0	10.66	21	10.50	20.2	10.66	21	10.66	21
PT10012 ST10012 SPT10012	1	16.69	6.1 9.0 7.4	12.44	24.1	11.75	24	12.12	23.9	11.75	24	11.75	24
PT15017 ST15017 SPT15017	1-1/2	20.53	7.9 10.8 9.8	n/a	n/a	15.12	31	n/a	n/a	13.62	28	11.75	24
ST20021	2	24.53	12.7	n/a	n/a	n/a	n/a	n/a	n/a	15.12	33	13.62	28
ST30027	3	29.06	15.6	n/a	n/a	n/a	n/a	n/a	n/a	19.06	41	16.06	35

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.

LANCASTER pump

SURVIVOR® T-SERIES 10 GPM



T SERIES - 10 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	400	440	480	520	560	600	640	680	720	760	800	840	880
T5007	1/2	0	—	—	15.0	14.4	13.7	12.9	11.8	10.7	9.5	7.8	5.6																				
		20	14.8	14.2	13.4	12.5	11.5	10.4	9.1	7.2	4.7																						
		30	14.1	13.3	12.4	11.3	10.3	8.8	6.8	4.2																							
		40	13.2	12.2	11.2	10.1	8.5	6.5	3.4																								
		50	12.0	11.0	9.8	8.3	6.2	2.0																									
		60	10.8	9.6	8.0	5.8																											
Shut-off PSI			94	86	77	68	60	51	42	34	25	16	8																				
T7510	3/4	0	—	—	—	—	14.8	14.3	13.9	13.3	12.7	12.0	11.3	10.4	9.4	8.1	6.7	5.0															
		20	—	15.1	14.7	14.3	13.8	13.2	12.5	11.8	11.1	10.2	9.1	7.7	6.2	4.3																	
		30	15.0	14.6	14.2	13.6	13.0	12.4	11.7	11.0	10.0	8.9	7.5	6.0	3.7																		
		40	14.5	14.1	13.5	12.9	12.3	11.6	10.8	9.8	8.7	7.3	5.7	3.0																			
		50	14.0	13.4	12.8	12.2	11.5	10.7	9.7	8.5	7.0	5.5																					
		60	13.4	12.7	12.1	11.4	10.5	9.5	8.2	6.8	5.2																						
Shut-off PSI			137	129	120	111	103	94	85	77	68	59	51	42	33	25	16	7															
T10012	1	0	—	—	—	—	15.0	14.6	14.2	13.8	13.3	12.8	12.4	12.0	11.3	10.6	9.9	9.2	8.1	6.9	3.2												
		20	—	—	14.8	14.4	14.0	13.6	13.2	12.8	12.3	11.8	11.1	10.4	9.7	8.8	7.7	6.4	5.0														
		30	15.1	14.8	14.4	14.0	13.5	13.1	12.7	12.2	11.7	11.0	10.3	9.6	8.7	7.5	6.3	4.6															
		40	14.7	14.3	13.9	13.5	13.0	12.6	12.2	11.6	10.8	10.2	9.4	8.5	7.3	6.1	4.3																
		50	14.3	13.8	13.4	13.0	12.5	12.1	11.4	10.8	10.1	9.3	8.3	7.2	5.9	4.0																	
		60	13.8	13.3	12.9	12.5	12.0	11.3	10.6	10.0	9.2	8.2	7.0	5.6	3.4																		
Shut-off PSI			166	158	149	141	132	123	115	106	97	89	80	72	63	54	46	37	28	20	2												
T15017	1-1/2	0	—	—	—	—	—	—	15.0	14.8	14.5	14.2	14.0	13.7	13.5	13.2	12.9	12.5	12.1	11.8	11.0	9.8	8.3	5.8	4.0								
		20	—	—	—	—	14.9	14.7	14.4	14.2	13.9	13.6	13.4	13.1	12.8	12.4	12.0	11.6	11.3	10.8	9.6	8.0	6.3	3.3									
		30	—	—	—	14.9	14.6	14.4	14.1	13.9	13.6	13.3	13.1	12.7	12.3	11.9	11.6	11.2	10.7	10.1	8.7	7.1	5.0										
		40	—	—	14.9	14.6	14.3	14.1	13.8	13.6	13.3	13.0	12.7	12.3	11.9	11.5	11.2	10.6	10.1	9.3	7.8	5.9	2.0										
		50	15.1	14.8	14.6	14.3	14.1	13.8	13.5	13.3	13.0	12.6	12.2	11.8	11.5	11.1	10.5	10.0	9.2	8.5	6.8	4.5											
		60	14.8	14.5	14.3	14.0	13.8	13.5	13.3	12.9	12.6	12.2	11.8	11.4	11.0	10.5	9.8	9.1	8.3	7.5	5.6												
Shut-off PSI			241	233	224	215	206	198	189	181	172	163	154	146	137	129	120	111	103	94	77	59	42	25	7								
T20021	2	0	—	—	—	—	—	—	15.0	14.8	14.6	14.3	14.1	13.9	13.7	13.5	13.3	13.0	12.8	12.6	12.1	11.5	10.8	9.9	9.0	7.6	6.2	4.4					
		20	—	—	—	—	14.9	14.7	14.5	14.3	14.1	13.8	13.6	13.4	13.2	13.0	12.8	12.5	12.3	12.1	11.4	10.6	9.8	8.8	7.4	6.0	2.1						
		30	—	—	15.1	14.9	14.7	14.4	14.2	14.0	13.8	13.6	13.4	13.2	12.9	12.7	12.5	12.3	12.0	11.7	10.9	10.2	9.3	7.9	6.6	5.0	1.5						
		40	—	15.1	14.9	14.6	14.4	14.2	14.0	13.8	13.6	13.3	13.1	12.9	12.7	12.5	12.3	12.0	11.6	11.3	10.5	9.7	8.6	7.2	5.8	3.7							
		50	15.0	14.8	14.6	14.4	14.2	14.0	13.7	13.5	13.3	13.1	12.9	12.6	12.4	12.2	12.0	11.6	11.2	10.8	10.0	9.1	7.7	6.4	4.7								
		60	14.8	14.6	14.4	14.1	13.9	13.7	13.5	13.3	13.1	12.8	12.6	12.4	12.2	11.9	11.5	11.2	10.8	10.4	9.5	8.3	7.0	5.5	3.1								
Shut-off PSI			300	292	283	274	266	257	248	240	231	222	214	205	196	188	179	170	162	153	136	119	101	84	67	49	32	15					
T30027	3	0	—	—	—	—	—	—	—	—	—	—	—	—	—	15.1	14.9	14.7	14.6	14.4	14.0	13.6	13.1	12.7	12.2	11.6	10.8	10.1	9.4	8.4	7.4	6.3	4.9
		20	—	—	—	—	—	—	—	—	—	—	—	15.0	14.8	14.7	14.5	14.3	14.1	13.9	13.5	13.0	12.6	12.1	11.4	10.7	10.0	9.3	8.3	7.2	6.2	4.6	
		30	—	—	—	—	—	—	—	—	—	—	15.0	14.8	14.7	14.5	14.3	14.1	13.9	13.7	13.2	12.8	12.3	11.8	11.0	10.3	9.6	8.7	7.6	6.6	5.3	3.2	
		40	—	—	—	—	—	—	—	—	15.1	15.0	14.8	14.6	14.4	14.3	14.1	13.9	13.7	13.4	13.0	12.5	12.1	11.3	10.6	9.9	9.1	8.1	7.0	6.0	4.2		
		50	—	—	—	—	—	—	—	15.1	15.0	14.8	14.6	14.4	14.2	14.1	13.8	13.6	13.4	13.2	12.7	12.3	11.6	10.9	10.2	9.5	8.6	7.5	6.4	5.1	2.3		
		60	—	—	—	—	—	—	15.1	14.9	14.8	14.6	14.4	14.2	14.0	13.8	13.6	13.4	13.1	12.9	12.4	12.0	11.2	10.5	9.8	9.0	7.9	6.9	5.8	3.9			
Shut-off PSI			392	384	375	366	358	349	340	332	323	314	306	297	288	280	271	262	254	245	228	211	193	176	159	141	124	107	89	72	55	37	20