## Torpedo<sup>™</sup> Sideslope Pump Systems



QED Torpedo<sup>TM</sup> electric submersible pumps are made of stainless steel and fitted with teflon seals and bearings to handle the rigors of contaminated groundwater pumping and continuous operation in landfill/remediation applications. Built to deliver optimum efficiency periods of high demand, all electric pumps provide low, long-term

operating costs and high operating reliability.

QED's Torpedo environmental submersibles meet government guidelines for environmental equipment and have been proven through extensive use in the field.

#### **FEATURES**

- Made For 10" and Larger Wells
  Flow rates of 30 to 220 GPM (113.6 to 832.8 LPM).
- · State-of-the-art Hydraulics

Pump efficiency is maximized by constant improvement of the high performance hydraulic design, and precise manufacturing process.

· Manufactured With High-grade Stainless Steel

Rugged stainless steel construction inside and out resists corrosion and attack from aggressive liquids.

· Wear-resistant Design

Designed to flush abrasive particles from the pump, and made from stainless steel to resist wear caused by abrasives.

Built-in Check Valve

Prevents back-flow into the well once the pump is shut down.

· 2 to 75 HP Motors

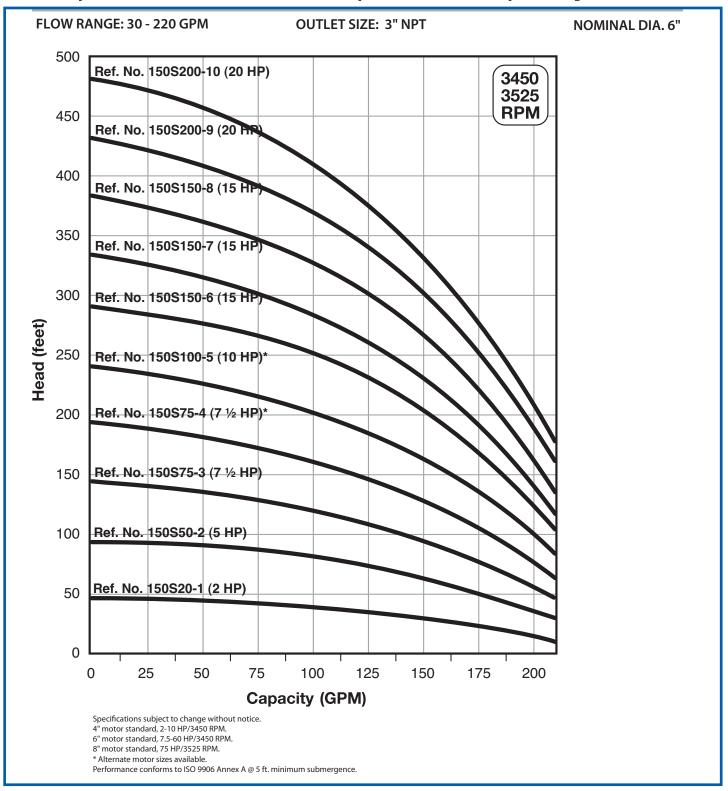
Stainless steel construction and quality design.

Motor Controls and Protection

Available controls to protect the motor against burnout and dry-running, plus the ability to monitor the system allowing the user to optimize settings.



## Torpedo<sup>™</sup> Sideslope Pump Systems





# Torpedo<sup>™</sup> Sideslope Pump Systems

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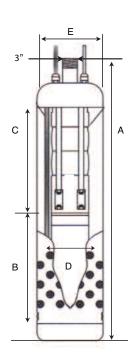
		Motor		Dimensions Approxima							
		Size	Discharge	A	В	C	D	E	Shipping Wt.		
Model No.	HP	ln.	Size	In.	In.	In.	ln.	ln.	Lbs.		
150SRP20-1	2	4	3" NPT	35.3	13.6	13.7	3.75	8.5	60		
150SRP50-2	5	4	3" NPT	49.1	23.6	17.5	3.75	8.5	80		
150SRP75-3	71/2	4	3" NPT	58.9	29.6	21.3	3.75	8.5	97		
150SRP75-4	71/2	4	3" NPT	62.7	29.6	25.1	3.75	8.5	102		
150SRP100-5	10	4	3" NPT	80.8	43.9	28.9	3.75	8.5	156		
150SRP75-4	71/2	6	3" NPT	57.9	24.2	25.7	5.38	8.5	140		
150SRP100-5	10	6	3" NPT	62.9	25.4	29.5	5.38	8.5	153		
150SRP150-6	15	6	3" NPT	69.3	28	33.3	5.38	8.5	172		
150SRP150-7	15	6	3" NPT	73	28	37	5.38	8.5	174		
150SRP150-8	15	6	3" NPT	76.8	28	40.8	5.38	8.5	179		
150SRP200-9	20	6	3" NPT	83.2	30.6	44.6	5.38	10.5	196		
150SRP200-10	20	6	3" NPT	87	30.6	48.4	5.38	10.5	198		
150SRP200-11	20	6	3" NPT	90.8	30.6	52.2	5.38	10.5	203		
150SRP250-12	25	6	3" NPT	97	33.1	55.9	5.38	10.5	240		
150SRP250-13	25	6	3" NPT	100.8	33.1	59.7	5.38	10.5	243		
150SRP250-14	25	6	3" NPT	104.6	33.1	63.5	5.38	10.5	247		
150SRP300-15	30	6	3" NPT	111	35.7	67.3	5.38	10.5	265		
150SRP300-16	30	6	3" NPT	114.8	35.7	71.1	5.38	10.5	267		
150SRP300-17	30	6	3" NPT	118.5	35.7	74.8	5.38	10.5	271		

Weights include pump end with motor in lbs.

#### **MATERIALS OF CONSTRUCTION**

COMPONENT	CYLINDRICAL SHAFT (1-39 Stgs.)
Check Valve Housing	304 Stainless Steel
Check Valve	304 Stainless Steel
Diffuser Chamber	304 Stainless Steel
Split Cone Nut	304 Stainless Steel
Split Cone	304 Stainless Steel
Impeller	304 Stainless Steel
Suction Interconnector	304 Stainless Steel
Inlet Screen	304 Stainless Steel
Seal Ring Support Plate	304 Stainless Steel
Straps	304 Stainless Steel
Cable Guard	304 Stainless Steel
Priming Inducer	304 Stainless Steel
Coupling	316/329 Stainless Steel**
Pump Shaft	431 Stainless Steel
Intermediate Bearings	Teflon
Impeller Seal Ring	Teflon
Check Valve Seat	Teflon/316 Stainless Steel
Top Bearing	Teflon/304 Stainless Steel
Upthrust Disc	Carbon/Graphite
Upthrust Stop Washer	304 Stainless Steel
8" Motor Adaptor Plate	304 Stainless Steel
Sleeve*	316 Stainless Steel
Sleeve Flange	304 Stainless Steel

NOTES: Specifications are subject to change without notice.





<sup>\*</sup>Required for 29-39 stage models.

<sup>\*\* 4&</sup>quot; Coupling made of 316 Stainless Steel.

#### MODEL 150 SRP DATA SHEET - THREE PHASE

### Three Phase Motors

Table 16 Three-Phase 60 °C Cable, 60 Hz (Service Entrance to Motor) Maximum Length in Feet 60 °C

MOTO	OD DATU	NC -						_								ıı reni		ODDED WI	DE CIZE	U
	OR RATI	1		40	40						WIRE SIZ			000	0000	050		OPPER WI		500
VOLTS	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	250	300	350	400	500
	1/2	0.37	710	1140	1800	2840	4420													
	3/4	0.55	510	810	1280	2030	3160	44.40												
	1	0.75	430	690	1080	1710	2670	4140	5140											
200 V 60 Hz	1.5	1.1	310	500	790	1260	1960	3050	3780	0040	4400	F 400								
	2	1.5	240	390	610	970	1520	2360	2940	3610	4430	5420								
	3	2.2	180	290	470	740	1160	1810	2250	2760	3390	4130	0050	0070	4440	5000				
Three- Phase	5	3.7	110	170	280	440	690	1080	1350	1660	2040	2490	3050	3670	4440	5030				
3 - Lead	7.5	5.5	0	0	200	310	490	770	960	1180	1450	1770	2170	2600	3150	3560	0.100	0.100		
	10	7.5	0	0	0	230	370	570	720	880	1090	1330	1640	1970	2390	2720	3100	3480	3800	4420
	15	11	0	0	0	160	250	390	490	600	740	910	1110	1340	1630	1850	2100	2350	2570	2980
	20	15	0	0	0	0	190	300	380	460	570	700	860	1050	1270	1440	1650	1850	2020	2360
	25	18.5	0	0	0	0	0	240	300	370	460	570	700	840	1030	1170	1330	1500	1640	1900
	30	22	0	0	0	0	0	0	250	310	380	470	580	700	850	970	1110	1250	1360	1590
	1/2	0.37	930	1490	2350	3700	5760	8910												
	3/4	0.55	670	1080	1700	2580	4190	6490	8060	9860										
	1	0.75	560	910	1430	2260	3520	5460	6780	8290										
	1.5	1.1	420	670	1060	1670	2610	4050	5030	6160	7530	9170								
230 V	2	1.5	320	510	810	1280	2010	3130	3890	4770	5860	7170	8780							
60 Hz	3	2.2	240	390	620	990	1540	2400	2980	3660	4480	5470	6690	8020	9680					
Three- Phase	5	3.7	140	230	370	590	920	1430	1790	2190	2690	3290	4030	4850	5870	6650	7560	8460	9220	
3 - Lead	7.5	5.5	0	160	260	420	650	1020	1270	1560	1920	2340	2870	3440	4160	4710	5340	5970	6500	7510
	10	7.5	0	0	190	310	490	760	950	1170	1440	1760	2160	2610	3160	3590	4100	4600	5020	5840
	15	11	0	0	0	210	330	520	650	800	980	1200	1470	1780	2150	2440	2780	3110	3400	3940
	20	15	0	0	0	0	250	400	500	610	760	930	1140	1380	1680	1910	2180	2450	2680	3120
	25	18.5	0	0	0	0	0	320	400	500	610	750	920	1120	1360	1540	1760	1980	2160	2520
	30	22	0	0	0	0	0	260	330	410	510	620	760	930	1130	1280	1470	1650	1800	2110
	1/2	0.37	2690	4290	6730															
	3/4	0.55	2000	3190	5010	7860														
	1	0.75	1620	2580	4060	6390	9980													
	1.5	1.1	1230	1970	3100	4890	7630													
	2	1.5	870	1390	2180	3450	5400	8380												
	3	2.2	680	1090	1710	2690	4200	6500	8020	9830										
	5	3.7	400	640	1010	1590	2490	3870	4780	5870	7230	8830								
	7.5	5.5	270	440	690	1090	1710	2640	3260	4000	4930	6010	7290	8780						
	10	7.5	200	320	510	800	1250	1930	2380	2910	3570	4330	5230	6260	7390	8280	9340			
380 V 60 Hz	15	11	0	0	370	590	920	1430	1770	2170	2690	3290	4000	4840	5770	6520	7430	8250	8990	
60 HZ Three-	20	15	0	0	0	440	700	1090	1350	1670	2060	2530	3090	3760	4500	5110	5840	6510	7120	8190
Phase	25	18.5	0	0	0	360	570	880	1100	1350	1670	2050	2510	3040	3640	4130	4720	5250	5740	6590
3 - Lead	30	22	0	0	0	0	470	730	910	1120	1380	1700	2080	2520	3020	3430	3920	4360	4770	5490
	40	30	0	0	0	0	0	530	660	820	1010	1240	1520	1840	2200	2500	2850	3170	3470	3990
	50	37	0	0	0	0	0	0	540	660	820	1000	1220	1480	1770	2010	2290	2550	2780	3190
	60	45	0	0	0	0	0	0	0	560	690	850	1030	1250	1500	1700	1940	2150	2350	2700
	75	55	0	0	0	0	0	0	0	0	570	700	860	1050	1270	1440	1660	1850	2030	2350
	100	75	0	0	0	0	0	0	0	0	0	510	630	760	910	1030	1180	1310	1430	1650
	125	90	0	0	0	0	0	0	0	0	0	0	0	620	740	840	950	1060	1160	1330
	150	110	0	0	0	0	0	0	0	0	0	0	0	0	620	700	790	880	960	1090
	175	130	0	0	0	0	0	0	0	0	0	0	0	0	0	650	750	840	920	1070
	200	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	630	700	760	880

Lengths in **BOLD** only meet the US National Electrical Code ampacity requirements for individual conductors in free air or water. Lengths NOT in bold meet NEC ampacity requirements for either individual conductors or jacketed cable.



### Three Phase Motors

#### 60 °C Table 17 Three-Phase 60 °C Cable (Continued) 60 °C INSULATION - AWG COPPER WIRE SIZE MCM COPPER WIRE SIZE 0.75 2.2 60 Hz Three 18.5 Phase 0.37 0.55 575 V 60 Hz Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω

Lengths in **BOLD** only meet the US National Electrical Code ampacity requirements for individual conductors in free air or water. Lengths NOT in bold meet NEC ampacity requirements for either individual conductors or jacketed cable.

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### MODEL 150 SRP DATA SHEET - THREE PHASE

## Three Phase Motors

**Table 24 Three-Phase Motor Specifications (60 Hz)** 

TYPE			RATING			FULL	. LOAD		(IMUM LOAD)	LINE TO LINE RESISTANCE	EFFICI	ENCY %	LOCKED ROTOR AMPS	KVA
	HP	KW	VOLTS	HZ	S.F.	AMPS	WATTS	AMPS	WATTS	OHMS	S.F.	F.L.		CODE
	5	3.7	200	60	1.15	17.5	4700	20.0	5400	.77-,93	79	79	99	Н
8.5"	5	3.7	230	60	1.15	15	4700	17.6	5400	1.0-1.2	79	79	86	Н
U.U	5	3.7	380	60	1.15	9.1	4700	10.7	5400	2.6-3.2	79	79	52	Н
	5	3.7	460	60	1.15	7.5	4700	8.8	5400	3.9-4.8	79	79	43	Н
	5	3.7	575	60	1.15	6	4700	7.1	5400	6.3-7.7	79	79	34	Н
	7.5	5.5	200	60	1.15	25.1	7000	28.3	8000	.4353	80	80	150	Н
	7.5	5.5	230	60	1.15	21.8	7000	24.6	8000	.6478	80	80	130	H
	7.5	5.5	380	60	1.15	13.4	7000	15	8000	1.6-2.1	80	80	79	H
	7.5	5.5	460	60	1.15	10.9	7000	12.3	8000	2.4-2.9	80	80	65 52	H
	7.5	5.5	575 200	60	1.15	8.7 32.7	7000 9400	9.8	10800	3.7-4.6	80 79	80 79	198	H
	10	7.5	230	60	1.15	28.4	9400	32.2	10800	.4757	79	79	172	+
	10	7.5	380	60	1.15	17.6	9400	19.6	10800	1.2-1.5	79	79	104	H
	10	7.5	460	60	1.15	14.2	9400	16.1	10800	1.9-2.4	79	79	86	H
	10	7.5	575	60	1.15	11.4	9400	12.9	10800	3.0-3.7	79	79	69	+
	15	11	200	60	1.15	47.8	13700	54.4	15800	.2429	81	81	306	+
	15	11	230	60	1.15	41.6	13700	47.4	15800	.2835	81	81	266	H
	15	11	380	60	1.15	25.8	13700	28.9	15800	.7795	81	81	161	+
	15	11	460	60	1.15	20.8	13700	23.7	15800	1.1-1.4	81	81	133	
	15	11	575	60	1.15	16.6	13700	19	15800	1.8-2.3	81	81	106	+
	20	15	200	60	1.15	61.9	18100	69.7	20900	.1620	82	82	416	2.0
	20	15	230	60	1.15	53.8	18100	60.6	20900	.2226	82	82	362	
	20	15	380	60	1.15	33	18100	37.3	20900	.5568	82	82	219	J
	20	15	460	60	1.15	26.9	18100	30.3	20900	.8-1.0	82	82	181	
	20	15	575	60	1.15	21.5	18100	24.2	20900	1.3-1.6	82	82	145	74
	25	18.5	200	60	1.15	77.1	22500	86.3	25700	.1215	83	83	552	-
	25	18.5	230	60	1.15	67	22500	75	25700	.1519	83	83	480	94
	25	18.5	380	60	1.15	41	22500	46	25700	.4656	83	83	291	
	25	18.5	460	60	1.15	33.5	22500	37.5	25700	.63-,77	83	83	240	
	25	18.5	575	60	1.15	26.8	22500	30	25700	1.0-1.3	83	83	192	J
	30	22	200	60	1.15	90.9	26900	104	31100	.0911	83	83	653	38
	30	22	230	60	1.15	79	26900	90.4	31100	.1417	83	83	568	
	30	22	380 460	60	1.15	48.8	26900	55.4 45.2	31100	.5264	83	83	317 284	
	30	22	575	60	1.15	31.6	26900	36.2	31100	.7895	83	83	227	
	30 40	30	380	60	1.15	66.5	35600	74.6	42400	.2633	83	83	481	
	40	30	460	60	1.15	54.9	35600	61.6	42400	.3442	83	83	397	
	40	30	575	60	1.15	42.8	35600	49.6	42400	.5264	83	83	318	1
	50	37	380	60	1.15	83.5	45100	95	52200	.2125	82	83	501	+
	50	37	460	60	1.15	67.7	45100	77	52200	.2532	82	83	414	1
	50	37	575	60	1.15	54.2	45100	61.6	52200	.4049	82	83	331	1
	60	45	380	60	1.15	98.7	53500	111	61700	.1518	84	84	627	+
	60	45	460	60	1.15	80.5	53500	91	61700	.2227	84	84	518	+
	60	45	575	60	1.15	64.4	53500	72.8	61700	.3539	84	84	414	+

Model numbers above are for three-lead motors. Six-lead motors with different model numbers have the same running performance, but when wye connected for starting have locked rotor amps 33% of the values shown. Six-lead individual phase resistance = table X 1.5.



## Three Phase Motors

**Table 25 Three-Phase Motor Fuse Sizing** 

				CIRC	UIT BREAKERS OR FUSE	AMPS	CIRCUIT BREAKERS OR FUSE AMPS				
TYPE		RATIN	G		(MAXIMUM PER NEC)		(TYPICAL SUBMERSIBLE)				
	НР	KW	VOLTS	STANDARD FUSE	DUAL ELEMENT TIME DELAY FUSE	CIRCUIT BREAKER	STANDARD FUSE	DUAL ELEMENT TIME DELAY FUSE	CIRCUIT BREAKER		
	5	3.7	200	60	35	45	50	25	45		
8.5"	5	3.7	230	45	30	40	45	20	40		
0.0	5	3.7	380	30	17.5	25	30	12	25		
	5	3.7	460	25	15	20	25	10	20		
	5	3.7	575	20	12	15	20	8	15		
	7.5	5.5	200	80	45	70	80	35	70		
	7.5	5.5	230	70	40	60	70	30	60		
	7.5	5.5	380	45	25	35	40	20	35		
	7.5	5.5	460	35	20	30	35	15	30		
	7.5	5.5	575	30	17.5	25	25	11	25		
	10	7.5	200	100	60	90	100	45	90		
	10	7.5	230	90	50	80	90	40	80		
	10	7.5	380	60	35	45	50	25	45		
	10	7.5	460	45	25	40	45	20	40		
	10	7.5	575	35	20	30	35	15	30		
	15	11	200	150	90	125	150	60	125		
	15	11	230	150	80	110	125	60	110		
	15	11	380	80	50	70	80	35	70		
	15	11	460	70	40	60	60	30	60		
	15	11	575	60	30	45	50	25	45		
	20	15	200	200	110	175	175	80	175		
	20	15	230	175	100	150	175	70	150		
	20	15	380	100	60	90	100	45	90		
	20	15	460	90	50	70	80	35	70		
	20	15	575	70	40	60	70	30	60		
	25	18.5	200	250	150	200	225	100	200		
	25	18.5	230	225	125	175	200	90	175		
	25	18.5	380	125	80	110	125	50	110		
	25	18.5	460	110	60	90	100	45	90		
	25	18.5	575	90	50	70	80	35	70		
	30	22	200	300	175	250	300	125	250		
	30	22	230	250	150	225	250	100	200		
	30	22	380	150	90	125	150	60	125		
	30	22	460	125	70	110	125	50	100		
	30	22	575	100	60	90	100	40	80		
	40	30	380	200	125	175	200	90	175		
	40	30	460	175	100	150	175	70	150		
	40	30	575	150	80	110	125	60	110		
	50	37	380	250	150	225	250	110	225		
	50	37	460	225	125	175	200	90	175		
	50	37	575	175	100	150	175	70	150		
	60	45	380	300	175	250	300	125	250		
	60	45	460	250	150	225	250	100	225		
	60	45	575	200	125	175	200	80	175		

