

## **E. ENGINEERING DATA**

**TEMPERATURE LIMITATIONS**

**CHEMICAL RESISTANCE**

**TYPE "S" OUTBOARD SEAL**

**ELECTRICAL DATA 60HZ**

**ELECTRICAL DATA 50HZ**

**HIGH VOLUME & HIGH DISCHARGE HEAD FIELD CONVERSIONS**

**STANDARD-LINE PUMP PERFORMANCE CONVERSION KITS**



**WARNING:**  
CANCER AND REPRODUCTIVE HARM -  
[WWW.P65WARNINGS.CA.GOV](http://WWW.P65WARNINGS.CA.GOV)

*Engineering Information*

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### TEMPERATURE LIMITATIONS

Prosser® Portable Submersible Pumps are designed to operate in fluids whose temperatures vary from freezing to 140°F. Pumps operated within this temperature range will meet specifications and will operate within electrical tolerance under normal conditions.

The pumping of fluids whose temperature exceeds 140°F should be avoided, because the electrical unit cools itself by dissipating heat into the fluid being pumped. Rapid deterioration will result if motor temperature exceeds electrical limits. Consult the factory if pump is to be submerged in liquids below freezing or above 140°F.

**Single Phase Pumps:** Should the ambient temperature of the switchbox fall below 0°F (-19°C) the motor starting relay may become troublesome. It should also be noted that in cases where the switchbox ambient exceeds 140°F (285°C), nuisance trip-outs may be experienced due to this higher than normal value. If such temperatures are anticipated, specify on the order. Special provision can be made by the Factory.

### CHEMICAL RESISTANCE

Prosser® Pumps are aluminum construction in all horsepower ratings. They are suitable for use in various fluids due to the anti-corrosive coating applied to wetted surfaces. If a pump application involves fluids other than normal drainage, mine or construction site water, it is recommended that a new pump be used. A used pump should be partially disassembled and the anti-corrosive coating on the wetted surfaces inspected prior to application.

In extreme cases (see below) it is best that a sample of the fluid be analyzed (including pH) and the results sent to the Factory so that a compatibility check may be made. Based on the analysis, it may be possible to use special materials, to meet the fluid requirements.

It should be noted that some fluids will have specific gravity greater than sea water (1.07), greater viscosity (10cp), and possible radically reduced heat transfer characteristics relative to water. Prior to quoting or accepting an order the Factory must receive the following data:

1. Fluid to be pumped and pH.
2. Temperature of fluid.
3. Viscosity of fluid at pumping temperature.
4. Specific gravity of fluid.

#### FOLLOWING IS A PARTIAL LIST OF FLUIDS REQUIRING FACTORY CONSULTATION.

Acids:	Any strong (with less than 5pH) or hot acid. Halogenic acids (HC1, H2F2). Sulphuric acid (even dilute). Phosphoric acid. Chromic acid. Nitric acid.	Solvents:	Acetone Crude Oil Gasoline, Diesel Oil, JP-4, etc. Trichlorethylene Any Aromatics
Alkalines:	Any strong (pH greater than 9) or hot base. Ammonium Hydroxide (Ammonia water, Anhydrous Ammonia). Sodium Hydroxide (Lye). Potassium Hydroxide (Potash Lye).	Miscellaneous:	Raw Sewage Hydrazines Nitrogen Tetroxide Specific gravities in excess of 1.07 Fluid temperatures <0°F Fluid temperatures > 140°F Sea Water (for extended periods)
Salts:	Heavy Brine (Sp. Gr. 1.04). Copper Sulfate.		

### Engineering Information

Prosser has developed a specially designed abrasive resistant shaft seal. The silicon-carbide/silicon-carbide seals are designated as Prosser “TYPE S” seals. These patented unique seals offer greater service life for the Prosser Portable Submersible Dewatering Pumps. “TYPE S” seals are furnished as the outboard shaft seal on 2HP through 50HP STANDARD-LINE® pumps and all MINE pumps.

#### IMPORTANT FEATURES OF “TYPE S” SEALS

##### INTERCHANGEABILITY:

The “TYPE S” seals are completely interchangeable with former “TYPE C” carbon/ceramic outboard seals.

##### MATERIALS:

The seal face material is silicon-carbide converted graphite combining the best properties of graphite and the most important characteristics of carbide. Springs and washers are stainless steel. Both the stationary and rotating faces have Viton® o-ring static seals.

##### HARDNESS:

Silicon-carbide is harder than coke or coal dust and abrasive particles such as quartz and silica found in sandy or silty water. Silicon-carbide is also harder than tungsten-carbide and almost as hard as diamond. Silicon-carbide Moh reading is 9.5, diamond is 10.

##### ABRASION RESISTANCE:

The life of “TYPE S” seals in abrasive lab tests was more than 100 times that of “TYPE C” seals.

##### LOW FRICTION:

Silicon-carbide/silicon-carbide seal faces have a friction coefficient of only 0.1, tungsten-carbide/tungsten-carbide is 0.2. This results in less torque required to turn the seal and less heat generated due to friction.

##### IMPROVED COOLING:

High thermal conductivity of seal material combined with increased oil circulation protects “TYPE S” seal O-rings against heat damage.

##### POSITIVE DRIVE:

A special spring and cup-washer design drives the rotating seal face without slippage.

##### CORROSION-RESISTANT:

Silicon-carbide is virtually inert to all liquids and chemicals. It will not become metal-plated from dissolved metals in the pumped solution as will metal seal faces.

##### DIMENSIONAL STABILITY:

Even at elevated temperatures the “TYPE S” seals are highly resistant to warping and cracking.

##### LIGHTWEIGHT:

The lightweight rotating face in a “TYPE S” seal is less susceptible to wobble at high shaft speeds. This results in less leakage.

##### BLISTER RESISTANT:

Silicon-carbide material will not blister when exposed to hot oil.

##### SPECIAL PACKAGING:

The “TYPE S” seals are protectively package with foam material in a cardboard box.

##### HANDLE WITH CARE:

“TYPE S” seals are so hard they are brittle. This is little cause for concern in assembled pump, but care must be taken during removal and installation.

##### OUTBOARD ONLY:

The “TYPE S” seals are not necessary in the inboard seal position. “TYPE C” seals continue to be used for inboard seals.

## Engineering Information

HP (kW)	PUMP SERIES	PHASE	VOLTS	MAX. RATED CURRENT AMPS.			MAX kW INPUT	BREAKER RATED AMPS or FUSE+	CABLE		MIN GENERATOR SIZE (kW)
				NO LOAD	FULL LOAD	LOCK'D ROTOR			SIZE AWG	MAX LENGTH FT (m)**	
.50 (.4)	PUPP512	1	115	†	7.2	25.2	---	†	†	20 (6)	†
<b>STANDARD-LINE® PUMPS</b>											
.75 (.6)	9-01000	1	115	†	11.0	36.2	1.0	+20.0	14/4	100 (30.5)	2.0
		1	230		5.8	18.1		6.5		375 (114.3)	
		3	230		3.6	15.0		3.6		715 (217.9)	
		3	460		1.8	7.5		2.0		2860 (871.7)	
		3	575		1.4	6.2		1.5		4595 (1400.5)	
1 (.8)	9-01300	1	115	†	12.0	36.2	1.2	+20.0	14/4	90 (27.4)	2.5
		1	230		6.7	18.1		8.0		325 (99.1)	
		3	230		3.8	15.0		4.5		675 (205.7)	
		3	460		1.9	7.5		2.0		2705 (824.4)	
		3	575		1.5	6.2		1.5		4290 (1307.5)	
2 (1.5)	9-20000	1	115	13.6	23.4	92.5	26	12/4	127 (39)	4.0	
		1	230	6.9	11.7	51.0	13		197 (60)		
2.50 (1.9) HV	9-25000	3	230	4.5	7.8	49.2	9.0	12/4	530 (161)	5.0	
		3	460	2.4	3.9	24.6	4.5		2130 (649)		
		3	575	1.6	3.0	19.7	3.6		3350 (1021)		
2.50 (1.9) HH	9-25000	3	230	4.5	6.8	49.2	9.0	12/4	530 (161)	5.0	
		3	460	2.4	3.4	24.6	4.5		2130 (649)		
		3	575	1.6	2.7	19.7	3.6		3350 (1021)		
2.75 (2.1)	9-27000	1	230	4.0	12.5	52.6	2.5	12/4	197 (60)	5.0	
3.50 (2.6)	9-35000	1	230	10.5	18.5	84.0	3.8	12/4	193 (59)	7.5	
5 (3.7)	9-50000	3	230	8.0	15.5	87.8	18.0	12/4	225 (69)	15.0	
		3	460	4.2	7.8	43.9	9.0		975 (300)		
		3	575	3.1	6.2	35.1	7.2		1375 (423)		
5 (3.7) 2 STAGE	9-55000	3	230	8.5	15.2	87.8	18.0	12/4	245 (75)	15.0	
		3	460	4.2	7.6	43.9	9.0		982 (299)		
		3	575	3.1	6.1	35.1	7.2		1392 (424)		
10 (7.5) HV & HH	9-81000	3	230	13.0	30.0	208	34.0	6/4	500 (100)	30.0	
		3	460	6.5	15.0	104	18.0	12/4	520 (160)		
		3	575	5.2	12.0	83	13.6	12/4	820 (250)		
15 (11.2) HV & HH	9-81500	3	230	14.4	39.5	288	45.0	6/4	375 (81)	40.0	
		3	460	7.2	19.7	144	22.0	12/4	420 (128)		
		3	575	5.8	15.6	110	18.0	12/4	658 (281)		
25 (18.7) HV & HH	9-82500	3	230	22.8	65.8	464	80	4/4	400 (123)	60.0	
		3	460	11.4	32.9	232	40	875 (269)			
		3	575	9.1	26.3	185	30	1375 (423)			
50 (37.3) HV & HH	9-85000	3	460	19.7	56.0	360	60	4/4	800 (246)	100.0	
		3	575	15.8	44.6	288	38				

(†) Consult Factory

(\*) Type G Cable = 3 Power COnductors + 3 Copper Fillers used as Ground

(\*\*) 5% Voltage Drop

Impeller Gap: .020 - .030, All Models

1HP = .746kW 1kW = 1000 WATTS

HH = High Head, HV = High Volume

# Electrical Data

60Hz

# PROSSER®

www.cranepumps.com

## Engineering Information

HP (kW)	PUMP SERIES	PHASE	VOLTS	MAX. RATED CURRENT AMPS.			MAX kW INPUT	BREAKER RATED AMPS or FUSE+	CABLE		MIN GENERATOR SIZE (kW)
				NO LOAD	FULL LOAD	LOCK'D ROTOR			SIZE AWG	MAX LENGTH FT (m)**	
<b>X-PRUF® PUMPS - FM Approved</b>											
2 (1.5)	9-79200	1	230	†	11.4	51	†	19.5	12/6	278 (85)	4.0
2.50 (1.9)	9-79300	3	230		6.8	49.2		13.5	12/6	552 (168) 2207 (673) 3350 (102)	5.0
		3	460		3.4	24.6		6.8			
		3	575		2.7	19.7		5.4			
3.50 (2.6)	9-79400	1	230	18.2	84	33	12/6	176 (54)	5.0		
5 (3.7)	9-79500	3	230	15.5	87.8	33	12/6	242 (74)	15.0		
		3	460	7.8	43.9	13.5					
		3	575	6.2	35.1	10.8		1375 (419)			

(†) Consult Factory

(\*) Type G Cable = 3 Power COnductors + 3 Copper Fillers used as Ground

(\*\*) 5% Voltage Drop

Impeller Gap: .020 - .030, All Models

1HP = .746kW 1kW = 1000 WATTS

HH = High Head, HV = High Volume

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**CRANE**  
A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

### Engineering Information

HP (kW)	PUMP SERIES	PHASE	VOLTS	MAX. RATED CURRENT AMPS.			MAX kW INPUT	BREAKER RATED AMPS or FUSE+	CABLE		MIN GENERATOR SIZE (kW)
				NO LOAD	FULL LOAD	LOCK'D ROTOR			SIZE AWG	MAX LENGTH FT (m)**	
<b>STANDARD-LINE® PUMPS</b>											
.6 (.4)	9-01300	1 3	230 415	†	3.3 1.5	†	.9 .9	†	14/4	325 (99.1) 675 (205.7)	2
1.4 (1.9) HV & HH	9-25000	3	380-415		xxx 4.0		1.6		12/4	530 (161)	5
1.9 (1.4) HH	9-50112	1	220		xxx 15.3		2.2		12/4	193 (59)	10
2.8 (2.1) HH	9-50000	3	380-415		xxx 7.7		3.7		12/4	225 (69)	15
2.8 (2.1) 2 STAGE	9-55000	3	380-415		xxx 7.5		3.5		12/4	245 (75)	15
5.6 (4.2) HH & HV	9-81000	3	380-415		xxx 16.0		6.0		6/4	500 (100)	30
8.5 (6.3) HV & HH	9-81500	3	380-415		xxx 24.0		13.7		6/4	500 (100)	40
14.1 (10.5) HV & HH	9-82500	3	380-415		†		†		4/4	875 (269)	60

(†) Consult Factory  
 (\*\*) 5% Voltage Drop  
 xxx Current AMPS at 415 Volts  
 Impeller Gap: .020 - .030, All Models  
 1HP = .746kW      1kW = 1000 WATTS  
 HH = High Head,      HV = High Volume

# Field Conversions Kits

High Volume & High Discharge Head

# PROSSER®

www.cranepumps.com

## Engineering Information

PROSSER submersible pumps are designed for dependable and reliable extended service. Job site flexibility is incorporated in the design of all PROSSER pumps. Many Standard-Line® pumps are available in both High Head and High Volume performance models from the factory. The pumps can be converted in the field or at an Authorized Repair Facility from "High Volume" pumps (HV) to "High Head" pumps (HH) and vice versa.

The versatility of this convertibility is extremely important to contractors and rental equipment companies as they may purchase one pump for a specific application and then convert the pump for another job. Rental equipment companies can virtually double the available inventory without additional capital equipment expenditures.

Typically, the conversion from one model to another consists of changing the impeller and suction case. The conversion from one model to the other does not require electrical modifications or disturbing the silicon carbide seals. A conversion kit containing the necessary components and detailed instructions facilitates the conversion. Each kit contains the necessary pump components, hardware, detailed instructions and pump marking labels for the conversion. It is recommended that an Authorized Repair Facility or PROSSER distributor completes the pump conversion, however, the conversions can be completed at the job site with standard tools.

PUMP SERIES NUMBER	HP / DISCHARGE	CONVERSION KIT PART NUMBER	CONVERSION KIT DESCRIPTION
9-25000	2.5 HP/2"	9-250180 9-250185	Conversion of HH to HV pump Conversion of HV to HH pump
9-81000	10 HP/4"	9-810180 9-810185	Conversion of HH to HV pump Conversion of HV to HH pump
9-81500	15 HP/4"	9-815180 9-815185	Conversion of HH to HV pump Conversion of HV to HH pump
9-82500	25 HP/6"	9-825180 9-825185	Conversion of HH to HV pump Conversion of HV to HH pump
9-85000	50 HP/6"	9-850180 9-850185	Conversion of HH to HV pump Conversion of HV to HH pump

NOTE: Conversion Kits are not available for Permissible Mine and X-PRUF® Pumps

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**CRANE**  
®

A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598



### Engineering Information

PUMP SERIES	PUMP MODEL No.	PERFORMANCE CONFIGURATION	CONVERSION KIT PART NO.	CONVERSION KIT DESCRIPTION	CONVERTED PUMP NEW MODEL NO.	PERFORMANCE CONFIGURATION	PRIMARY KIT CONTENTS*
9-25000 2.5 HP 2" DISCHARGE	9-25132-03 9-25134-03 9-25135-03 9-25132-04 9-25134-04 9-25135-04	HH	9-250180	2.5 HP, HH to HV	9-25132-53 9-25134-53 9-25135-53 9-25132-54 9-25134-54 9-25135-54	HV	9-500100-1, Suction Case 9-275200-2, Impeller 9-500215, Shim Kit PS1-240019, Instructions
	9-25132-53 9-25134-53 9-25135-53 9-25132-54 9-25134-54 9-25135-54	HV	9-250185	2.5 HP, HV to HH	9-25132-03 9-25134-03 9-25135-03 9-25132-04 9-25134-04 9-25135-04	HH	9-250100-1, Suction Case 9-250200-6, Impeller 9-500215, Shim Kit PS1-240019, Instructions
9-81000 10 HP 4" DISCHARGE  <i>Note: 10HP, 575 Volt pumps are not convertible</i>	9-81032-23 9-81034-23 9-81032-24 9-81034-24	HH	9-810180	10 HP, HH to HV	9-81032-03 9-81034-03 9-81032-04 9-81034-04	HV	9-815100, Suction Case 9-810200-2, Impeller 9-815010-2, Spacer Bolt 9-815215, Shim Kit PS1-240020, Instructions
	9-81032-03 9-81034-03 9-81032-04 9-81034-04	HV	9-810185	10 HP, HV to HH	9-81032-23 9-81034-23 9-81032-24 9-81034-24	HH	9-810105, Suction Case 9-810203-3, Impeller 9-815010, Spacer Bolt 9-815215, Shim Kit PS1-240020, Instructions
9-81500 15 HP 4" DISCHARGE	9-81532-23 9-81534-23 9-81535-23 9-81532-24 9-81534-24 9-81535-24	HH	9-815180	15 HP, HH to HV	9-81532-03 9-81534-03 9-81535-03 9-81532-04 9-81534-04 9-81535-04	HV	9-815100, Suction Case 9-815200-2, Impeller 9-815010-2, Spacer Bolt 9-815215, Shim Kit PS1-240021, Instructions
	9-81532-03 9-81534-03 9-81535-03 9-81532-04 9-81534-04 9-81535-04	HV	9-815185	15 HP, HV to HH	9-81532-23 9-81534-23 9-81535-23 9-81532-24 9-81534-24 9-81535-24	HH	9-815105, Suction Case 9-810203-3, Impeller 9-815010, Spacer Bolt 9-815215, Shim Kit PS1-240021, Instructions
9-82500 25 HP 6" DISCHARGE	9-82532-43 9-82534-43 9-82535-43 9-82532-44 9-82534-44 9-82535-44	HH	9-825180	25 HP, HH to HV	9-82532-33 9-82534-33 9-82535-33 9-82532-34 9-82534-34 9-82535-34	HV	9-840100, Suction Case 9-825200-2, Impeller 9-840215, Shim Kit PS1-240022, Instructions
	9-82532-33 9-82534-33 9-82535-33 9-82532-34 9-82534-34 9-82535-34	HV	9-825185	25 HP, HV to HH	9-82532-43 9-82534-43 9-82535-43 9-82532-44 9-82534-44 9-82535-44	HH	9-840100-4, Suction Case 9-825203-1, Impeller 9-840215, Shim Kit PS1-240022, Instructions
9-85000 50HP 6" DISCHARGE	9-85034-24 9-85035-24	HH	9-850180	50 HP, HH to HV	9-85034-04 9-85035-04	HV	9-840100-8, Suction Case 9-850200-2, Impeller 9-850208-1, Bushing 9-850215, Shim Kit PS1-240023, Instructions
	9-85034-04 9-85035-04	HV	9-850185	50 HP, HV to HH	9-85034-24 9-85035-24	HH	9-840100-4, Suction Case 9-850203-2, Impeller 9-850208-1, Bushing 9-850215, Shim Kit PS1-240023, Instructions

**NOTES:**

HH = High Head  
HV = High Volume

(\*) Additional items include application hardware, o-rings, modification lable, detailed instructions.  
See PROSSER Accessory price list for current pricing.

*Engineering Information*

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