

P.O. Box 80769 • Lafayette, LA 70598-0769 • (337) 235-9838 • FAX (337) 235-9852 • www.sidewinderpumps.com

Pneumatic Powered - Plunger Pumps

Suggested Installation & Operating Instructions for Sidewinder Pumps

See Suggested Pump Installation and System Set Up Diagram (inside) and Pump Breakdown (inside)

- 1)When installing pump, manufacturer recommends the use of 316SS seamless tubing rated for the maximum discharge pressure of the specific pump model being used. DO NOT USE poly tubing, copper tubing, and/or seamed tubing as a discharge line. Use of incorrect material may result in discharge line failure leading to personal injury, death, and/or compromise to intended injection objectives. For Safety Purposes and Good Engineering Practice, the manufacturer recommends placement of a properly sized Pressure Relief Valve (PRV) / Pressure Safety Valve (PSV) on the pump discharge line at the pump, with the relief line plumbed back to the chemical tank (#7).
- 2) Install pump setting gauge (#9) onto chemical tank (#7), with an isolation ball valve (#8) between tank and gauge.
- 3) Install pump with suction filter (#11) with isolation ball valve (#8) between pump and pump setting gauge (#9).
- 4) A regulator (#2) should be installed in the air/gas supply line to provide correct supply of air/gas pressure. Connect air/gas supply line from regulator (#2) to the pump supply inlet using 1/4" NPT tee with 0-150 PSI gauge. An isolation ball valve (#5) should be installed between air/gas regulator (#2) and the pump. Use minimum of 3/8 inch diameter tubing (#3) with a maximum distance of 10 feet from regulator to the pump. If longer distance is required or multiple pumps are run off same supply line, a volume bottle (#4) should be installed within 5 feet of the pump(s).
- 5) If the air/gas supply is "wet", a volume bottle (#4) with a drain and filter should be installed in between the regulator (#2) and pump(s) as close as possible to the pump(s). If the air/gas supply is extremely "wet" a scrubber (#1) should be installed on the main flow line with regulator taking its supply from the scrubber.
- 6) Set the regulator (#2) to required pressure. See Pump Selection Guide and Performance Chart
- 7) Connect discharge line to the 1/4 inch NPT discharge check valve. For good safety practice an in-line check valve (Sidewinder part number LC-4S) (#10) should be installed on the discharge line at the injection point.
- 8) If natural gas is used as the supply gas, pump exhaust should be vented via the 1/8" NPT threaded port on the control valve body (#53) to safe disposal area or non pressurized disposal device
- 9) Open bleeder valve (#20 Pump Breakdown) until air removed from pump chamber. Isolate pump setting gauge (#9) from tank. Open air/gas isolation valve (#5) to pump. Run pump following directions on pump setting gauge to determine flow rate.
- 10) Adjust speed of pump by rotating dial (#31 Pump Breakdown), clockwise to decrease number of strokes per minute, counter clockwise to increase number of strokes per minute. Further volume control can be set by varying the length of the piston/plunger stroke with the stroke adjuster (#1 Pump Breakdown).
- 11) Reset isolation ball valves (#8) so pump takes chemical direct from tank (#7).

Pump Repair or Emergency Shut Down

- To perform repairs to the pump or to the pump setting gauge, close the air/gas supply isolation ball valve (#5), close both isolation ball valves (#8) between tank (#7) & gauge (#9) and pump & gauge (#9). Remove component(s) to be repaired. After repair, reinstall component(s). Open isolation ball valve (#8) between tank (#7) and gauge (#9), check for leaks. Open isolation ball valve (#8) between tank (#7) and gauge (#9), check for leaks. Perform steps 8 thru 10 above.
- 2) In event of an emergency the following steps are to be done in the following order
 - i) Close air/gas supply isolation ball valve (#5)
 - ii) Close isolation ball valve #8 between pump setting gauge (#9) and chemical tank (#7)
 - iii) Close isolation ball valve #8 between pump and pump setting gauge (#9)

Parts List / Model 42, 82 - 'D' Series 62 - 'F' Series

	Item	Quantity Required	Part	Part Number		
	No.		Description	Model 42D	Model 62F	Model 82D
	1	1	Stroke Adjuster	1-42-B	1-42-B	1-42-B
	2	1	Locknut-Stroke Adjuster	2-42	2-42	2-42
	3*#	1	Seal-Stroke Adjuster	3-42	3-42	3-42
	4	1	Powerhead	4-42-2	4-42-2	4-42-2
31 33 35 52 53	4A	3	Lockscrews	4A-42-B	4A-42-B	4A-42-B
	6ª*#	1	U-Cup (Viton available-see notes)	6-42	6-42	6-42
	7A	1	Mounting Tube Locknut	7A-42	7A-42	7A-42
	10	1	303 SS Mounting Flange	10-42-В	10-42-B	10-42-B
	11 ^b *#	1	Return Spring (Spring options-see notes)	11-42	11-42	11-42
	12	1	Mounting Tube	12C-42	12C-62	12C-82
	13A	1	Vent	13A-42	13A-42	13A-42
	15*#	1	Body Plug	15-Plug	15-Plug	15-Plug
	16*	1	Piston-Plunger-17-4 SS	16-42	16-62	16-82
			Piston-Plunger-316 SS	16-42-2	16-62-2	16-82-2
58 75 54 56 55 57			Piston-Plunger-440 SS	16-42-3	16-62-3	16-82-3
			Piston-Plunger-Ceramic	16-42-4	16-62-4	16-82-4
			Piston-Plunger-Hastelloy	16-42-5	16-62-5	16-82-5
			Piston-Plunger-Titanium	16-42-6	16-62-6	16-82-6
			Piston-Plunger-440C SS w/			
			Chrome Plating	16-42-7	16-62-7	16-82-7
			Piston-Plunger-440C SS w/			
			Electroless Nickel Plating	16-42-8	16-62-8	16-82-8
			Customer Specified Special	16-42-9	16-62-9	16-82-9
	17*#	1	O-Ring Mounting Tube	17-42	17-42	17-42
	18*#	1	Plunger Seal-Teflon Carbon Filled			
			Graphite Uniseal	18-42	18-62G	18-82
			Plunger Seal-Techno Uniseal	18-42-1	18-62G-1	18-82-1
			Plunger Seal-Viton O-Ring	18-42-2	18-62G-2	18-82-2
			Plunger Seal-Buna O-Ring	18-42-3	18-62G-3	18-82-3
			Plunger Seal-Virgin Teflon Uniseal	18-42-4	18-62G-4	18-82-4
			Plunger Seal-Virgin Teflon Uniseal			
			w/ Buna Insert	18-42-4B	18-62G-4B	18-82-4B
			Plunger Seal-Virgin Teflon Uniseal			
			w/ Viton Insert	18-42-4V	18-62G-4V	18-82-4V
MODEL 82 LUBE SEAL			Plunger Seal-Chemraz O-Ring	18-42-5	18-62G-5	18-82-5
			Plunger Seal-Hitec O-Ring	18-42-6	18-62G-6	18-82-6
			Plunger Seal-Virgin Teflon O-Ring	18-42-7	N/A	N/A
			(Seals Continued Below)			
		1	(

Sidewinder Pumps, Inc. asserts Trademark rights in and to the distinctive appearance of Sidewinder model 40/60/80 & 42/62/82 pumps. Sidewinder Pumps, Inc. asserts Trademart rights in and to the distinctive appearance of Sidewinder's line of solar chemical pumps.



For explanation of production series, visit our website.

104//		(Seals Continued)				
18*#		Plunger Seal-Polyblend Uniseal	18-42-8	18-62G-8	18-82-8	
		Customer Specified Material	18-42-9	18-62G-9	18-82-9	
		Plunger Seal-Teflon Graphite Uniseal				
		w/ Viton O-Ring Insert	18-42-V	18-62G-V	18-82-	
	NOTE:	O-Ring seals - Model 42 requires (1) O-ring 62 requires (1) O-ring and (2) narrow back u ring and (2) narrow back up rings (18D-82).	and (2) narrow l p rings (18D-62	oack up rings (1 G), Model 82 re	8D-42), Mod equires (1) C	
19*#	1	Lube Seal	19-42-6	19-62-6	19-82-6	
20	1	Bleeder Valve	20-42-2	20-42-2	20-42-2	
22*	1	Suction Check Valve	22-42-2	22-82-2	22-82-2	
23*	1	Discharge Check Valve	23-42-2	23-42-2	23-42-2	
24	1	Pump Chamber	24-42-2	24-62-2	24-82-2	
31	1	Control Knob	31-42	31-42	31-42	
33	1	Valve Stem	33-42C	33-42C	33-420	
35**	1	O-Ring Stem	35-42	35-42	35-42	
51	1	Control Valve Cover w/ Timer	51T-42C-2	51T-42C-2	51T-42C	
52**	1	Diaphram	52-42	52-42	52-42	
53	1	Control Valve Body	53-42-2	53-42-2	53-42-2	
54**	1	Actuator	54-42	54-42	54-42	
55**	1	Poppet	55-42	55-42	55-42	
56**	1	Body Seal	56-42	56-42	56-42	
57**	1	Spring	57-42	57-42	57-42	
58**	2	Mounting Screw	58-42	58-42	58-42	
75**	2	Mounting Screw Lockwasher	75-42	75-42	75-42	
91*#	1	Piston Grease	91-42	91-42	91-42	
		Notes				
				numn model		
* Part	s included	in a pump end repair kit. This kit is designated by a '	"K" preceding the	pump model		
* Part numl	s included ber. The D	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Put	"K" preceding the mp End Repair Ki	t.		
* Part numl ** Par	s included ber. The D	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pu l in a timer valve repair kit. This part number is KV("K" preceding the mp End Repair Ki 2-40F for the Mod	t. el 42 Model 62 «	and	
* Part numl ** Pa the M	ts included ber. The D rts included	in a pump end repair kit. This kit is designated by a and F Series in the Model 42/62/82 use the same Pur d in a timer valve repair kit. This part number is KVC	"K" preceding the mp End Repair Ki C-40F for the Mod	t. el 42, Model 62, a	and	
* Part numl ** Pa the N	ts included ber. The D rts included Iodel 82 pu	in a pump end repair kit. This kit is designated by a and F Series in the Model 42/62/82 use the same Pu l in a timer valve repair kit. This part number is KVC ump.	"K" preceding the mp End Repair Ki C-40F for the Mod	el 42, Model 62, a	und	
* Part numl ** Pa the M # Part and th	ts included ber. The D rts included Iodel 82 pu s included he seal ider	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC ump. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump	el 42, Model 62, a pump model des would be K42C-3	nnd cription 3.	
* Part numb ** Pa the N # Part and th and the	ts included ber. The D rts included fodel 82 pu s included he seal ider 6 - Piston	in a pump end repair kit. This kit is designated by a and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC imp. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2.	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump	el 42, Model 62, a pump model des would be K42C-3	und cription 3.	
* Part numl ** Pa the M # Part and th a Item	is included ber. The D rts included fodel 82 pu s included he seal ider 6 - Piston	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC ump. in Soft Parts Repair Kit. This kit is designated by a " atification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2.	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump	el 42, Model 62, a el 42, Model 62, a pump model dess would be K42C-3	nd cription 8.	
* Part numl ** Par the M # Part and ti ^a Item	ts included ber. The D rts included fodel 82 pu s included he seal ider 6 - Piston 11 - Return	in a pump end repair kit. This kit is designated by a and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC ump. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2. n Spring available in Ni Cobalt Moly - part number #	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump # 11-42-MP.	el 42, Model 62, a el 42, Model 62, a pump model dess would be K42C-2	nd cription 3.	
* Part numl ** Par the M # Part and tl ^a Item	is included ber. The D rts included fodel 82 pu s included he seal ider 6 - Piston 11 - Return	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC ump. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2. n Spring available in Ni Cobalt Moly - part number #	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump # 11-42-MP.	el 42, Model 62, a pump model des would be K42C-3	nd cription 3.	
* Part numl ** Pai the M # Part and th ^a Item	ts included ber. The D rts included fodel 82 pu s included he seal ider 6 - Piston <u>11 - Retur</u>	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC imp. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2. n Spring available in Ni Cobalt Moly - part number # Theoretical Fluid Vc	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump # 11-42-MP.	umped umped umped umped	and cription 3.	
* Part numl ** Pai the M # Part and tl a Item b Item	is included ber. The D rts included fodel 82 pu s included he seal ider 6 - Piston 11 - Return	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur d in a timer valve repair kit. This part number is KVC mp. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2. n Spring available in Ni Cobalt Moly - part number # Theoretical Fluid Vc eximate; to insure accurate flow rates Sidewinder Pur	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump # 11-42-MP. Diume Pi mps recommends in	t. el 42, Model 62, a pump model desa would be K42C-3 umped nstalling a Pump	and cription 3. Setting Gauge	
* Part numl ** Pa the M # Part and ti ^a Item <u>^b Item</u>	is included ber. The D rts included fodel 82 pu is included he seal ider 6 - Piston 11 - Return s are appro	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur I in a timer valve repair kit. This part number is KVC mp. in Soft Parts Repair Kit. This kit is designated by a ' ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2. n Spring available in Ni Cobalt Moly - part number # Theoretical Fluid Vc eximate; to insure accurate flow rates Sidewinder Pur Quarts/Day = 1.5 x Strokes/Min. Quarts/Day = 3.0 x Strokes/Min. At high numers	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump # 11-42-MP. Dume P 1 mps recommends in for 1/4" Plunge for 3/8" Plunge for 3/8" Plunge	ump model 62, a pump model 62, a pump model des would be K42C-3 umped installing a Pump a pr pr pr pr pr pr	and cription 3. Setting Gauge	
* Part numl ** Pa the M # Part and tl a Item b Item	is included ber. The D rts included fodel 82 pu is included he seal ider 6 - Piston <u>11 - Retur</u>	in a pump end repair kit. This kit is designated by a ' and F Series in the Model 42/62/82 use the same Pur d in a timer valve repair kit. This part number is KVC mp. in Soft Parts Repair Kit. This kit is designated by a " ntification number. Example: Soft Parts Kit for a mod U-Cup in Viton - Part # 6-42-2. n Spring available in Ni Cobalt Moly - part number # Theoretical Fluid Voc eximate; to insure accurate flow rates Sidewinder Pur Quarts/Day = 1.5 x Strokes/Min. Quarts/Day = 3.0 x Strokes/Min. At high pump rates, volume per strok. Pula af Thumb .	"K" preceding the mp End Repair Ki C-40F for the Mod "K" preceeding the lel 42C-032 pump # 11-42-MP. Dlume Pr nps recommends in for 1/4" Plunge for 3/8" Plunge for 1/2" Plunge e is reduced sli	t. el 42, Model 62, a pump model dess would be K42C-3 umped nstalling a Pump , er er ghtly.	and cription 3.	

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Suggested Pump Installation and System Set Up

There ain't no better pump

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Troubleshooting The Sidewinder Chemical Pump							
Problem	Possible Cause	Action					
Control valve not cycling	 No supply pressure Pump speed control closed Leak in control or valve Supply gas blowing through to exhaust due to speed control too wide, trash under valve seat or restriction in air/gas supply 	 Check gauge on supply line at pump to verify adequate supply pressure 10 to 150 psi. Rotate dial CCW three turns from full in position and then select desired rate. Rotate CW to slow pump rate Check for leak, pinched or missing seals, broken diaphragm, loose mounting screws, loose lock down nut on stroke adjuster. Rotate control dial CW to decrease setting. Block exhaust momentarily and then release. Verify supply line size minimum of 3/8" diameter, and a maximum distance from regulator to pump of 10 feet . Check for blockage in supply line and Timer Control. For pumps before serial #40755, contact the manufacturer. 					
Piston not stroking	 Return spring broken Lack of grease/lube Plunger seal swollen Supply line pressure too low to buck process line pressure Stroke length adjuster screwed too far 	 Replace spring (#11). Clean and lubricate power head and piston u-cup with Piston Grease #91-42. Clean plunger lube chamber and fill with Sidewinder Lube #92-42 on liquid lube models or with Sidewinder Grease #91-42 on grease lube models. Change piston and plunger seals if needed. Change to different seal material. Divide process line pressure by amplification ratio (see Performance Chart). Supply pressure must exceed this result. (Standard Sidewinder Control operates from 10 to 150 psi). Back out on stroke adjuster to desired setting. 					
No fluid discharge with timer control cycling and piston stroking	 Air or vapor in pump chamber Fluid flow to pump blocked by plugged line, closed valve, extremely high viscosity or lack of fluid supply Suction or discharge check valve leaking Discharge line plugged Chemical filter clogged 	 Open bleeder valve (#20), purge until steady flow of fluid, then close bleeder valve. If ambient temperature is close to vapor point of chemical, mount or situate pump on slight angle down from tank. Provide free flow of fluid to pump suction. Fluid level in tank must be above level of bleeder valve (#20). Put pump setting gauge in test position to determine which valve is leaking. Fluid falling then rising in gauge indicates suction check valve. Fluid level remaining constant indicates discharge check valve issue. Clear or replace line. Replace or clean filter element. 					
Premature seal failure	 Chemcial compatibility Abrasive material in chemical No seal lubriant or incorrect lube 	 Check the plunger first. If plunger is scored, switch to more compatible material such as ceramic, and replace with same seal material. If seal fails, change to a different seal material. If plunger is okay, change seal material. Install suction filter. Use Sidewinder Lube #92-42 in liquid lube models, use Sidewinder Grease #91-42 in grease lube models. 					
Chemical leakage	Damaged or leaking suction line, discharge line or seal failure	 Close air/gas supply isolation ball valve (#5). Close isolation ball valve (#8) between pump setting gauge (#9) and chemical tank (#7). Close isolation ball valve (#8) between pump and pump setting gauge (#9). Close isolation ball valve between tee (#4H) and exhaust collection point. 					
Air/Gas supply leakage	Damaged or leaking Air/Gas Supply Line	 Close air/gas supply isolation ball valve (#5). Close isolation ball valve (#8) between pump setting gauge (#9) and chemical tank (#7). Close isolation ball valve (#8) between pump and pump setting gauge (#9). Close isolation ball valve between tee (#4H) and exhaust collection point. 					
NOTE: When performing repairs, follow the suggested procedures as described in Pump Repair or Emergency Shut Down section NOTE: In the event of an emergency shut down, follow the suggested procedures as described in the Pump Repair or Emergency Shut Down section NOTE: Item numbers referenced are in the Suggested Pump Installation and System Setup Diagram and Pump Breakdown							

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Pump Selection Guide & Performance Chart								
Model	Plunger	Piston	Amplification	Supply	Discharge	Maximum Full Strokes	Output Volume	
Number	Size	Size	Chart	Pressure PSI	Pressure PSI(a)	Per Minute	Qts./Day(b)	
40	1/4"	1.25"	25:1	15 to 150	0 to 3,500	60	0 to 90	
42	1/4"	2.25"	80:1	10 to 150	0 to 10,000	55	0 to 70	
44	1/4"	4"	240:1	10 to 45	0 to 10,000	35	0 to 30	
44CR	1/4"	4"	240:1	10 to 45	0 to 10,000	55	0 to 50	
60	3/8"	1.25"	11:1	15 to 150	0 to 1,600	60	0 to 200	
62	3/8"	2.25"	36:1	10 to 150	0 to 5,400	55	0 to 155	
64	3/8"	4"	110:1	10 to 95	0 to 10,000	30	0 to 67	
64CR	3/8"	4"	110:1	10 to 95	0 to 10,000	55	0 to 122	
80 82 84 84CR	1/2" 1/2" 1/2" 1/2"	1.25" 2.25" 4" 4"	6.25:1 20:1 60:1 60:1	15 to 150 10 to 150 10 to 150 10 to 150 10 to 150	0 to 935 0 to 3,000 0 to 9,000 0 to 9,000	60 55 30 55	0 to 360 0 to 275 0 to 120 0 to 220	
164	1"	4"	16:1	10 to 150	0 to 2,400	40	0 to 680	
164CR	1"	4"	16:1	10 to 150	0 to 2,400	55	0 to 935	

For information on Plunger Material & Plunger Packing Material, see Sidewinder Pump Model Number Chart inside of this brochure.

(a) 1 psig = 0.0703 kg/sq. cm • (b) 1 quart = 0.946 liters

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