
# Model 42. 62, & 82 Series Pumps
# Parts Break Down, Model Selection
# Trouble Shooting, Inspection and
# Assembly Procedures

Sidewinder Pumps Inc. asserts Trade Mark Rights in and to the distinctive appearance of Sidewinder Model 40, 42, 60, 62, 80, and 82 pumps

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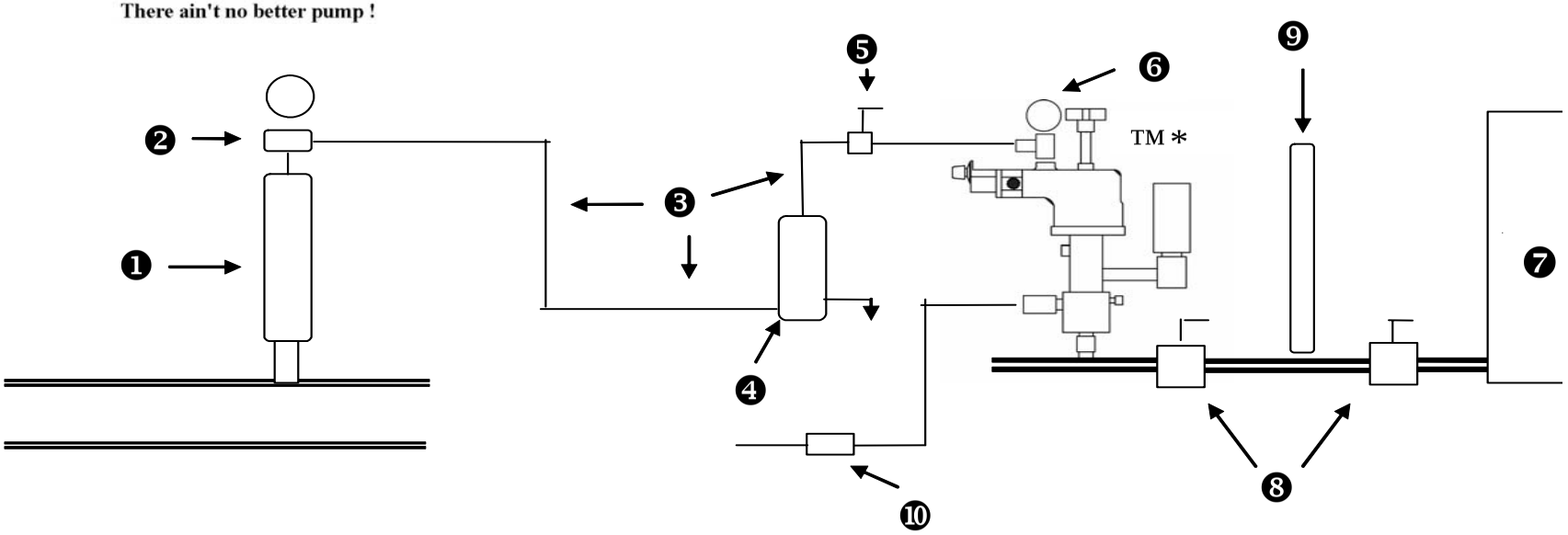
There ain't no better pump !

# Suggested Pump Installation and System Set Up




1. Scrubber unit installed on supply flow line
2. Step down regulator with pressure gauge
3. Supply line - 3/8 inch tubing
4. Volume bottle / drop out tank with drain
5. 3/8 inch tubing ball valve - pump supply shut off
6. 1/4 inch tee at pump supply inlet with pressure gauge
7. Chemical supply drum/tank
8. Ball Valves -isolation valves for tank/drum, pump setting gauge, & pump
9. Pump setting/calibration gauge
10. In line discharge check valve

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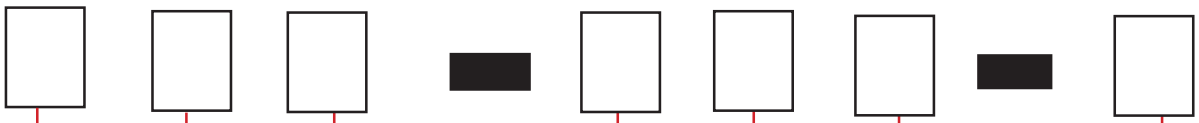
# SIDEWINDER PUMP MODEL NUMBER CHART

*Fill in boxes below to determine Sidewinder Pump Size and Material Requirements*



**Plunger Size**

| | |
|---|---|
| 04 | 0.250” |
| 06 | 0.375” |
| 08 | 0.500” |
| 16 | 1.00” |

**Piston Size**

| | |
|---|---|
| 0 | 1.25” |
| 2 | 2.25” |
| 4 | 4.00” |

**Production Series**

| |
|---|
| F |
| C |
| C |

**Plunger Material**

| | |
|---|---|
| 0 | 17-4 SS (Standard) |
| 2 | 316 SS |
| 3 | 440C SS |
| 4 | Ceramic |
| 5 | Hastelloy |
| 6 | Titanium |
| 7 | Chrome Plated Stainless Steel |
| 8 | Electroless Nickel Plated Stainless Steel |

**Check Valve & Body Material**

| | |
|---|---|
| 316 SS (Standard) | 2 |
| Hastelloy | 5 |
| Titanium | 6 |

**Plunger Packing**

| | |
|---|---|
| 0 | Teflon Graphite Uniseal |
| 1 | Techno Uniseal (Polyimede) |
| 2 | Viton O-ring |
| 3 | Buna O-ring |
| 4 | Teflon Uniseal |
| 4B | Teflon Uniseal w/Buna O-ring Insert |
| 4V | Teflon Uniseal w/Viton O-ring Insert |
| 5 | Chemraz O-ring |
| 6 | Hitec O-ring (Aflas) |
| 7 | Virgin Teflon O-ring |
| 8 | Polyblend Uniseal (UHMW) |
| 9 | Special |

**Special Options**

2-Viton Piston U-Cup
4-Ceramic Check Valve Balls
MP- Ni Cobalt Molly Return Spring

## PUMP PERFORMANCE CHART

| Model Number | Plunger Size | Piston Size | Amplification Ratio | Supply Pressure PSI | Discharge Pressure PSI(a) | Max Full Strokes per minute | Output Volume Qts./Day(b) |
|---|---|---|---|---|---|---|---|
| 40 | 0.250” | 1.25” | 25:1 | 15 to 150 | 0 to 3,750 | 60 | 0 to 90 |
| 42 | 0.250” | 2.25” | 80:1 | 10 to 150 | 0 to 10,000 | 55 | 0 to 70 |
| 44 | 0.250” | 4” | 240:1 | 10 to 45 | 0 to 10,000 | 35 | 0 to 30 |
| 60 | 0.375” | 1.25” | 11:1 | 15 to 150 | 0 to 1,600 | 60 | 0 to 200 |
| 62 | 0.375” | 2.25” | 36:1 | 10 to 150 | 0 to 5,400 | 55 | 0 to 155 |
| 64 | 0.375” | 4” | 110:1 | 10 to 150 | 0 to 10,000 | 30 | 0 to 67 |
| 80 | 0.500” | 1.25” | 6.25:1 | 15 to 150 | 0 to 935 | 60 | 0 to 360 |
| 82 | 0.500” | 2.25” | 20:1 | 10 to 150 | 0 to 3,000 | 55 | 0 to 275 |
| 84 | 0.500” | 4” | 60:1 | 10 to 150 | 0 to 9,000 | 30 | 0 to 120 |
| 164 | 1.000” | 4” | 16:1 | 10 to 150 | 0 to 2,400 | 40 | 0 to 680 |

# SIDEWINDER PUMP ENGINEERING CHANGE

**TECHNICAL BULLETIN 10052005**

**ENGINEERING CHANGE – CONTROL VALVE COVER WITH TIMER**

Sidewinder Pumps has made an engineering change in the Control Valve Cover w/Timer, part number 51T-42-2 & Valve Stem part number 33-42.

The Valve Stem part number 33-42 has been modified to a tapered needle, new part number **33-42C**

The Control Valve Cover **(*new part number 51T-42C-2*)** has been modified, eliminating the **Teflon O-ring Seat (37-42)** and has a tapered orifice to accept the new **Valve Stem (*new part 33-42C*),** producing a metal on metal seat.

This design change took placed November 15, 2005. with serial number 40755

The design change will also affect the nomenclature describing the pump. The 40/60/80 ***"D"*** series will become the ***"F"*** series, the 42/62/82/44/64/84/164 ***"B"*** series will become the ***"C"*** series.

The design change will also affect the Timer Valve repair kit – the new part number will be ***KVC-40F***. The old kit KVC-40 will still be in production for existing pumps in the field. The *difference* between the kits is the *omission* of the *Teflon O-ring Seat part number 37-42* in the ***KVC-40F***.

**Existing pumps can be retrofitted with the new Control Valve Cover w/ timer. *The retro fit part number is 30-42C* and consist of the control timer cover (51T-42C-2), timer stem (33-42C), timer knob w/set screw (31-42) and timer stem o-ring (35-42).**

# Trouble Shooting Guide - Pneumatic Plunger Pumps

| Problem | Possible Cause | Action |
|---|---|---|
| **Control Valve Not Cycling** | 1) No supply pressure | 1) Check gauge on supply line near pump to verify adequate supply pressure - 10 to 150 PSI |
| | 2) Pump speed control closed | 2) Rotate dial CCW three turns from full in position and then set desired rate. Rotate CW to slow rate pump rate |
| | 3) Leak in control or valve | 3) Check for leak, pinched or missing seals, broken diaphragm or loose mounting screws. |
| | 4) Supply gas blowing through to exhaust due to speed control too wide, trash under vavle seat or restricion in air gas/supply line | 4) Rotate control dial CW to decrease setting. Block exhaust momentarily and then release. DO NOT USE BARE FINGERS. If this does not work replace Timer Seat O-ring #37 or increase supply line size and move pump closer to air/gas supply source |
| **Piston Not Stroking** | 1) Return spring broken | 1) Replace Spring |
| | 2) Piston stuck due to lack of Piston or Plunger Lube | 2) Clean and lubricat power head and piston with Piston Lube #91-42. Clean Plunger Lube Chamber and fill with Plunger lube (#92). Change Piston and plunger seals if needed |
| | 3) Supply pressure too low to buck process line pressure | 3) 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 |
| | 4) Stroke Length Adjuster screwed too far in | 4) Back out on stroke adjuster to desired setting. |
| **No Fluid Discharge With Timer Control Cycling and Piston Stroking** | 1) Air or vapor in pump chamber | 1) Open bleeder valve, fill chamber with fluid only, then close bleeder valve. |
| | 2) Fluid flow to pump blocked by plugged line, closed valve, extremely high viscosity or lack of fluid suuply | 2) Provide free flow of fluid to pump suction. |
| | 3) Suction or discharge check valve leaking | 3) Use drum gauge with handle in test position to determine which valve is leaking. Clean or replace faulty valve |
| | 4) Discharge line plugged | 4) Clear or replace line. |
| **Premature Seal Failure** | 1) Chemical incompatibily between seal and material being pumped | 1) Check a Compatibility Chart or consult chemical manufacturer, and install seal made from compatible material |
| | 2) Scored or damaged plunger | 2) Replace plunger. |
| | 3) Abrasive material in chemical | 3) Install suction filter. |
| | 4) No lubricant or incorrect lube | 4) Use Sidewinder Lube #91-42 on piston and #92-122 on plunger. Periodically check lube level. |

# Trouble Shooting Guide Questionaire

## Air Motor Assessment

Is the pump air motor cycling? Yes _____ No _____

If not:

A) is air/gas blowing out exhaust port continously? Yes _____ No _____

B) is air/gas being exhausted at all? Yes _____ No _____

C) is cycle eratic Yes _____ No _____

D) is air gas escaping from around stroke adjuster? Yes _____ No _____

E) is air gas escaping from around valve body seals? Yes _____ No _____

## PUMP END ASSESSMENT

Air motor cycles but pump does not move fluid or build pressure

Is there a pump setting / calibration / drum gauge in the system? Yes _____ No _____

Is there a pressure gauge on the air/gas supply at the pump Yes _____ No _____
If yes, what is the pressure reading? _____

Is there a pressure gauge on the discharge line of the pump? Yes _____ No _____
If yes what is the pressure reading? _____

Does the pump lose flow when the system starts to pressurize? Yes _____ No _____

Is the plunger moving up & down Yes _____ No _____
Observe plunger thru the breather port under the power head.

Is chemical appearing in the lube bottle? Yes _____ No _____

Isolating the pump setting / calibration gauge / drum gauge) with the pump running:
Does the fluid in the gauge fluctuate up & down? Yes _____ No _____

Does the fluid in the gauge move? Yes _____ No _____

# Model 42/62/82 Parts List

| Item No. | Qty Req | Part Description | Part Number Model 42 | Model 62 | Model 82 |
|---|---|---|---|---|---|
| 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 |
| 4A | 3 | Lockscrews | 4A-42-B | 4A-42-B | 4A-42-B |
| 6* | 1 | U-Cup Standard Buna N Consctruction | 6-42 | 6-42 | 6-42 |
| 6* | 1 | U-Cup Option Viton Construction | 6-42-2 | 6-42-2 | 6-42-2 |
| 7A | 1 | Mounting Tube Locknut | 7A-42 | 7A-42 | 7A-42 |
| 10 | 1 | 303 S S Mounting Flange | 10-42-B | 10-42-B | 10-42-B |
| 11* | 1 | Return Spring | 11-42 | 11-42 | 11-42 |
| 11* | 1 | Return Spring Option Ni Cobalt Moly Construction | 11-42-MP | 11-42-MP | 11-42-MP |
| 12 | 1 | Mounting Tube | 12C-42 | 12C-62 | 12C-82 |
| 13A | 1 | Vent | 13A-42 | 13A-42 | 13A-42 |
| 14 | 1 | Lubricator | 14-42 | 14-42 | 14-42 |
| 14A* | 1 | Lube Body O-Ring | 14A-42 | 14A-42 | 14A-42 |
| 15 | 1 | Lube Tube | 15-42 | 15-42 | 15-42 |
| 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 |
| | | 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-SS w/ chrome plating | 16-42-7 | 16-62-7 | 16-82-7 |
| | | Piston-Plunger- 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 | 18-62 | 18-82 |
| | | Plunger Seal-Techno Uniseal | 18-42-1 | 18-62-1 | 18-82-1 |
| | | Plunger Seal-Viton O-Ring | 18-42-2 | 18-62-2 | 18-82-2 |
| | | Plunger Seal-Buna O-Ring | 18-42-3 | 18-62-3 | 18-82-3 |
| | | Plunger Seal-Virgin Teflon Uniseal | 18-42-4 | 18-62-4 | 18-82-4 |
| | | Plunger Seal-Virgin Teflon Uniseal w/Buna Insert | 18-42-4B | N/A | 18-82-4B |
| | | Plunger Seal-Virgin Teflon Uniseal w/Viton Insert | 18-42-4V | N/A | 18-82-4V |
| | | Plunger Seal Chemraz O-Ring | 18-42-5 | 18-62-5 | 18-82-5 |
| | | Plunger Seal-Hitec O-Ring | 18-42-6 | 18-62-6 | 18-82-6 |
| | | Plunger Seal Virgin Teflon O-Ring | 18-42-7 | N/A | 18-82-7 |
| | | Plunger Seal-Polyblend Uniseal | 18-42-8 | 18-62-8 | 18-82-8 |
| | | Customer Specified Material | 18-42-9 | 18-62-9 | 18-82-9 |
| | | *NOTE: O-ring seals for Model 42 pumps equire (1) O-ring and two (2) narrow back up rings. (18D-42). Model 62 pumps require (2) O-rings and three (3) narrow back up rings. (18D-62).Model 82 pump requie (1) O-ring and two back up rings (18D-82).Uniseals do not require back up ring* | | | |
| 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 | Timer Stem (For Pumps Prior to s/n # 40755 - Nov '05) | 33-42 | 33-42 | 33-42 |
| 33 | 1 | Timer Stem (For Pumps After s/n # 40755 - Nov '05) | 33-42C | 33-42C | 33-42C |
| 35** | 1 | O-Ring Stem | 35-42 | 35-42 | 35-42 |
| 37** | 1 | Timer Seat O-Ring (Teflon) (Deleted on pumps after ser # 40755, Nov '05) | 37-42 | 37-42 | 37-42 |
| 51 | 1 | Control Valve Cover with Timer (Prior to s/n 40755) Replace w/ 51T-42C-2 | N/A | N/A | N/A |
| 51 | 1 | Control Valve Cover with Timer (Pumps after #40755 Nov '05) | 51T-42C-2 | 51T-42C-2 | 51T-42C-2 |
| 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 Washer | 75-42 | 75-42 | 75-42 |
| 92* | 1 | Plunger Lube (2 o.z.) | 92-42 | 92-42 | 92-42 |

*Parts included in a pump end repair kit. Also included is a 91-42 Silicone Piston Grease. This kit is designated by a "K" preceding preceding the pump model number. The B & C series in the Model 42/62/82 uses the same pump end repair kit.

** Parts included in a timer valve repair kit. This part number is KVC-40 for the Model 42, Model 62 and Model 82 pump prior to s/n 40755 - for pumps after s/n 40755 - Nov '05 kit part number is KVC-40F.

NOTE: First generation Model 42 & Model 82 Sidewinder Pumps are denoted by serial numbers before 7935. These models require 9-40 Spiral Ring and only one 4A-40 Lockscrew

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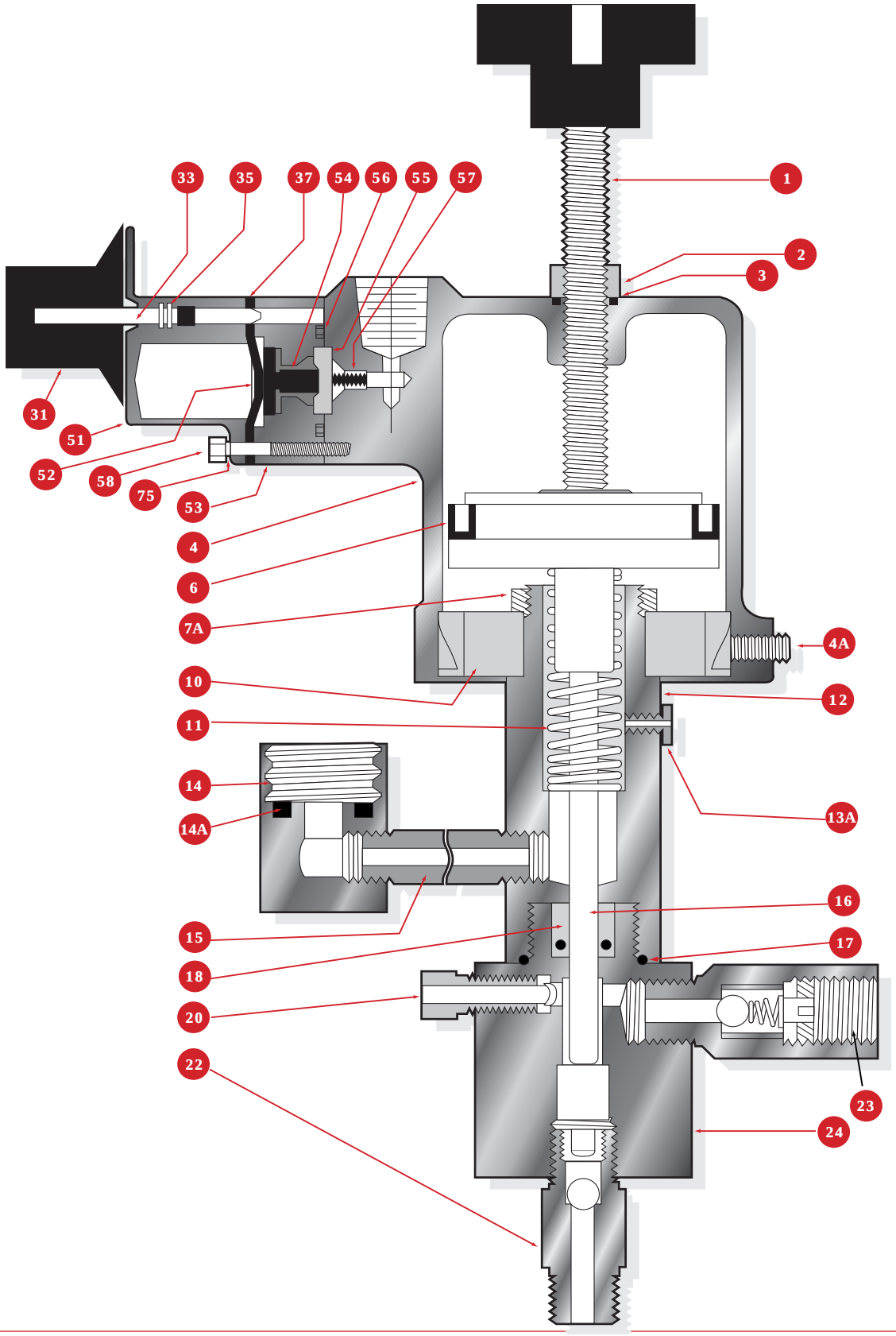
# Model 42/62/82 Parts Diagram

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# Model 42, 62, 82 Series
# Pump Body and Components Disassembly

1. Locate the three lock screws (item 4a) on power head and remove. Figures 1a to 1d.

1a

1b

1c

1d

2. Remove Power Head (item 4) with plunger assembly (item 16). Remove plunger assembly from power head. Inspect lower end of plunger for wear. Remove plunger U-cup (item6) and inspect for cuts and tears.

2a

2b

2c

2. Continued

2d

2e

2f

3. Remove return spring (item 11) and check for breaks. Remove vent (item 13a) from mounting tube (item 12). Inspect vent – when shaken, vent should make rattling sound. Holding the pump chamber (item 24) securely, unscrew the mounting tube (item 12). Figures 3a to 3 e.

3a

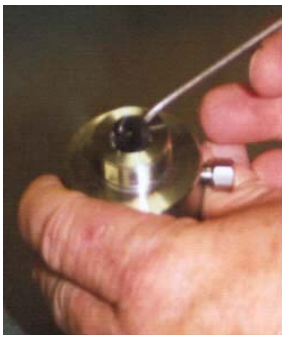
3b

3c

3d

3e

5. For ¼ inch and ½ inch pumps equipped with the o-ring seal arrangement, the o-ring is sandwiched between two back up rings. The 3/8 pump has two o-rings sandwiched between 3 back up rings. The backup rings and the o-ring are removed with an o-ring pick. Care should be taken not to scratch or damage the seal surface of the pump chamber. Figures 5a to 5c.



5a

5b

5c

6. Remove suction check valve (item 22) from pump chamber. When shaken check valve should rattle. To inspect check valve, use 3/16 allen wrench to remove retainer. After removing retainer the check ball should fall out. Inspect ball and seat for wear and deposits. Installation is reversal of this procedure. Retainer is screwed in until flush with body of valve. Figures 6a to 6d.

6a

6b

6c

6d

7. Remove discharge check valve (item23) from pump chamber. Using 3/16 allen wrench to remove retainer from valve. Remove ball and spring from valve. Tap valve with plug end down on table to remove seat. Inspect spring, ball and seat. Clean and reassemble in reverse order. Figures 7a to 7d.

7a

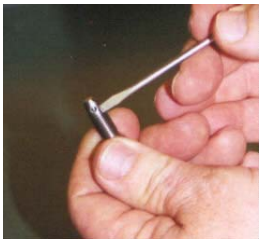
7b

7c

7d

8. Remove bleeder valve (item 20) from pump chamber. Inspect for blockage, clear with compressed air. Figures 8a to 8b.

8a



8b

# Model 42/62/82 Series Pump Body & Components Assembly

1. Install seal (item 18) into pump chamber seal gland. Uniseals are a single unit and are installed with lip / spring facing down. O-ring arrangement for ¼ & ½ inch pumps are composed of three items – two ea back up rings (part number 18D-xx) and an o-ring. O-ring arrangement for 3/8 inch pumps have two o-rings and three back up rings. Insert one back up ring, then the o-ring, then the last back up ring. Figures 1a to 1c.

1a

1b

1c

2. Take the pump chamber (item 24) and install the mounting tube o-ring (item17), bleeder valve (item 20), suction check valve (item 22), and discharge check valve (item23) **NOTE:** The check valves are marked for direction of flow. **NOTE**: Threaded items should have two wraps of Teflon tape starting one to two threads back from thread end. Figures 2a to 2d. **NOTE:** Do not use excessive Teflon tape, as the tape can become displaced and enter into the fluid passage ways blocking flow.

2. Continued

2a

2b

2c

2d

2e

3. Thread mounting tube (item 12) onto the pump chamber (item 24). **NOTE**: This should be hand tight. Install lube tube (item 15), lubricator body (item 14), vent (item 13A) and lubricator body o-ring (item 14A)

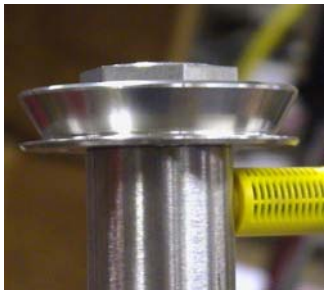
3a

3b

3c

4. If mounting flange (item 10) has been removed to replace, secure mounting tube (item 12) in vise or other fixture to prevent from turning. Place mounting flange (item 10) on to mounting tube (item 12) ****NOTE THE FLANGE ORIENTATION**.** The deepest part of groove is to the bottom. Install mounting tube lock nut (item 7A) and tighten until snug. Insert return spring (item 11) into mounting tube. Figures 4a to 4d.

4a



4b

4c

4d

5. Place stroke adjuster seal (o-ring item 3) onto stroke adjuster and thread stroke adjuster into power head (item 4). Thread the stroke adjuster into power head until threads are flush with housing on inside. Tighten lock nut (item 2). Figure 5a to 5c.

5a

5b

5c

6. Insert piston seal (u-cup item 6) on to plunger assembly. Note open lip of seal should be facing top of piston. Figure 6a to 6b.

6. Continued

6a

6b

7. Back off power head (item 4) lock screws (item 4A) enough to mount head on to mounting flange (item 10).

8. Place small amount of silicone piston grease (part number 91-42) in seal chamber of power head (item 4) and coat surface. Place small amount of silicone piston grease around exterior surface of the piston seal (item 6). Insert plunger assembly into power head. Put small amount of plunger seal lubricant (item 92) on working surface of plunger. Figures 8A to 8B.

8a

8b

9. Mount power head (item 4) with plunger assembly to mounting flange (item 10), inserting plunger into seal as putting power head down onto mounting flange. Tighten lock screws (item 4A) enough so power head can still be rotated. Rotate power head until desired position then tighten lock screws (item 4A). Figures 9a to 9b.

9a

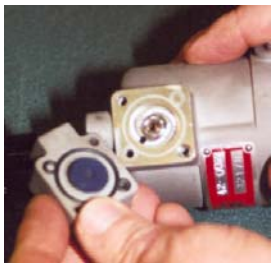
9b

# Control Timer Disassembly

1. Remove the two allen head screws (item 75) holding the Control Timer Assembly to the power head with an 7/64 allen wrench. Separate the control valve body (item 53) from the control valve cover with timer (item 51). Pay special attention to the orientation of the control valve diaphragm (item 52) and the orientation of the control valve body (item 53) to the power head. Figures 1a to 1c.

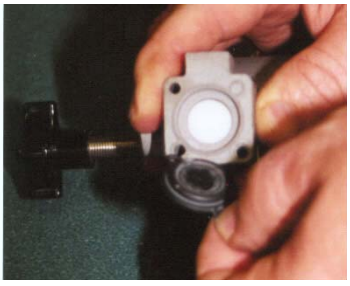
1a

1b



1c

2. Remove the diaphragm (item 52) from the control valve body. Remove the control valve poppet (item 55). Remove the control valve body seal (item 56). Remove the control valve actuator (item54). Remove the poppet return spring (item 57). Special attention should be given to the orientation of these items as they are removed. Figures 2a to 2e.



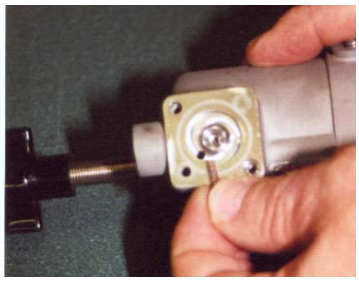
2a

2b

2c

2.Continued

2d



2e

3. Remove timer control valve stem (item 33) from timer cover. Remove o-ring (item 35) from valve stem. On pumps before serial number #40755 remove the Teflon O-ring seat (item 37) from control valve cover with timer (item 51). 3a to 3c. Pumps after serial number #40755 do not have this Teflon O-ring.

3a

3b

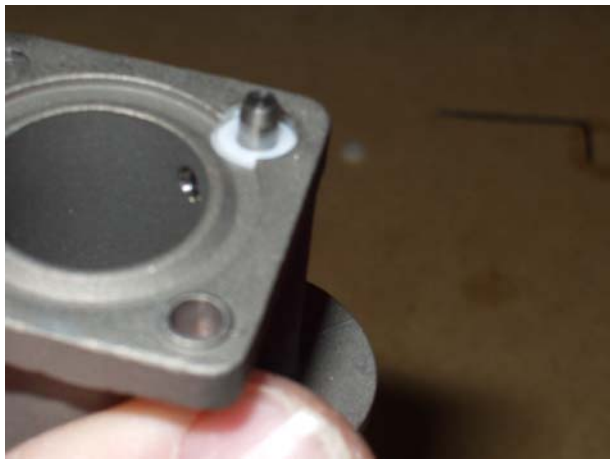
3c

## Control Timer Assembly

1.For pumps before serial # 40755-install stem o-ring (item 35) onto valve stem (item 33). Screw valve stem into control valve cover (item 51) until chamfer extends past the flat of control valve body. Pumps after serial # 40755 skip this step.

2. Insert Teflon O-ring seat (item 37) over valve stem (item 33), using insert tool press O-ring into place. If necessary trim flashing from edge of O-ring. Unscrew valve stem until back edge of chamfer engages o-ring seat.

2a



2b

3. Holding control valve cover with control knob downward, insert diaphragm (item52), take note diaphragm dog ear fits over the Teflon o-ring seat and the opposite corner. Put the actuator (item 54) on top of the diaphragm, large end to the diaphragm.

3a

3b

3c

4. Put the control valve body (item 53), flat side down on top of diaphragm and actuator. There is a line up indention that fits over the line up shoulder of one of the screws.

4a

4b

5. Insert valve body seal (item 56) into grove on valve body. Insert poppet (item 55), with the three dimples facing outward, into valve body.

5a

5b

6. Install spring (item 57) into power head, install timer assembly to the power head with time knob to the top. Tighten screws alternately until assembly is snug.

6a

6b

# Ceramic Plunger

## Sidewinder Pump Models 40, 60, 80, 42, 62, 82
## Handling, Installation, Start-up, & Operating Instructions

1. This is a solid ceramic plunger. It is very brittle and **must** be handled with extreme care before & during use in a Sidewinder Pump.

2. When installing:
   a) Be sure the Pump Chamber (Item #24) is separated from the Mounting Tube (Item #12).
   b) Be sure the Powerhead (Item #4) is removed from Mounting Flange(for Models 42,62,82) or Mounting Tube(for Models 40,60,80).
   c) **Model 42,62,82 only:** Mounting Flange (Item #10) should still be connected to the Mounting Tube (Item #12) by the Mounting Tube Locknut (Item #7A).
   d) Place Piston U-cup (Item #6) on piston with "U" facing away from plunger side.
   e) Upon assembly be sure the Powerhead (Item #4) is lubricated with Piston Grease (P/N 91-42). Grab the Ceramic Piston Plunger Assembly (Item #16) by the metal shank above the ceramic plunger and insert the piston into the Powerhead (Item #4) by cocking the assembly then straightening it. Be sure the Piston U-cup (Item #6) is not crimped or folded over.

      **Note: Never grab the Piston Plunger Assembly by the ceramic plunger.**

   f) Once the Ceramic Piston Plunger Assembly (Item #16) is inserted into the Powerhead (Item #4), push it to the top of the cylinder bore. Install the Return Spring (Item #11) around the metal shank portion of the Piston Plunger Assembly (Item #16) being sure it is slides into position against the piston portion of the assembly.
   g) Mount the Powerhead & the Piston Plunger Assembly with Return Spring in place onto & into Mounting Flange & Mounting Tube, respectively. **Caution should be used as the ceramic plunger passes through the seal retainer hole in the lower portion of the Mounting Tube (Item #12). Too much side-to-side motion can bind the plunger causing it to break.**
   h) Once Powerhead (Item #4) is fully in place on the Mounting Flange(for Models 42,62,82) or Mounting Tube(for Models 40,60,80) secure it by screwing in the three radial Lockscrews (Item #4A) evenly until tight.
   i) Screw the Pump Chamber (Item #24) onto the Mounting Tube (Item #12) insuring that the Plunger Seal (Item #18) & Mounting Tube O-ring (Item #17) are installed into and onto the Pump Chamber, respectively. The Pump Chamber and Mounting Tube connection is designed to be hand tight. **Caution: Tightening the Pump Chamber (Item #24) and the Mounting Tube (Item #12) with wrenches can cause the two pieces to gall.**

3) When starting pump into operation:
   a) Open the Bleeder Valve (Item #20) to prime pump.

# Ceramic Plunger

## Sidewinder Pump Models 40, 60, 80, 42, 62, 82
## Handling, Installation, Start-up, & Operating Instructions

a) Make sure the Control Knob (Item #31) is screwed in all the way to insure that the pump is off.
b) Back off on the air/gas supply regulator to 0 PSI.
c) Slowly bring the supply pressure up to 10 PSI(regardless of fluid injection pressure).
d) Slowly begin to unscrew the Control Knob (Item #31) until the pump begins to stroke at a rate of 1 stroke every 3-4 seconds.
e) Allow the pump to run in this condition until the injection lines fill and pump stalls against the injection pressure. (When pump stalls, the Control Valve will continue to shift and in fact speed up slightly, but the Piston Plunger Assembly (Item #16) will no longer be moving up and down. This can be confirmed be removing the Vent (Item #13A) on the Mounting Tube (Item #12) and observing. If the Control Valve blows a continuous stream of air instead of cycling, increase the air/gas supply pressure slightly. After raising the air/gas supply pressure slightly the Control Valve continue to blow a continuous stream of air/gas it will be necessary to place a solid object over the exhaust port, interrupting the flow of air/gas for one second to reset the Control Valve.
f) Once the pump stalls, slowly increase the air/gas supply regulator pressure until movement of the Piston Plunger Assembly begins. **Do not use more air/gas supply pressure than needed to cycle the pump.** Too much air/gas supply pressure will cause the Piston Plunger Assembly to slam down which can break the ceramic plunger portion of the assembly.
g) Increase or decrease pump volume by using either or both the Control Knob (Item #31) and the Stroke Adjuster (Item #1).

# NOTES

# Sidewinder Pumps Authorized Distributors United States

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Sidewinder Pumps Inc. asserts Trade Mark Rights in and to the distinctive appearance of Sidewinder Model 40, 42, 60, 62, 80, and 82 pumps