

PD355-04
CPVC/PVC
CHEMICAL
SUMP PUMPS

PARTS LIST

May 1, 1998

Supersedes PD-355-03, dated 8/1/86



Sethco Division

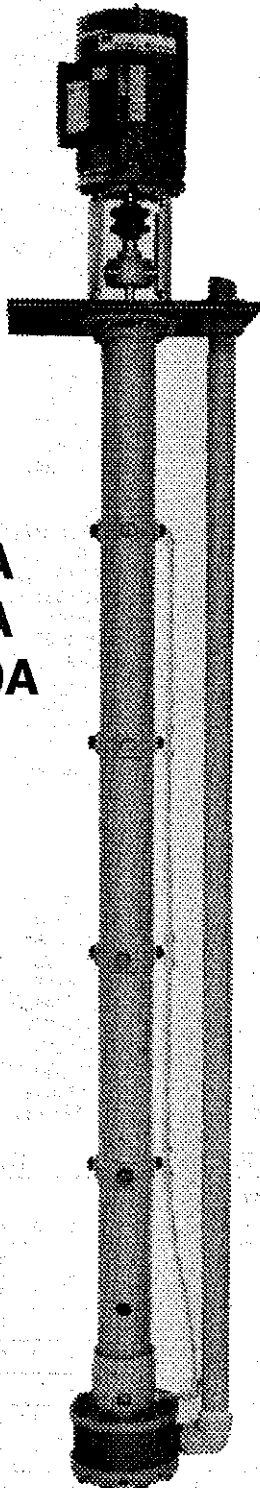
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Models

- UD-60A
- UD-80A
- UD-100A

CONGRATULATIONS! You have just purchased Sethco's model UD Sump Pump, a quality industrial product manufactured to exacting standards.

To insure prolonged life of your purchase, please take a few minutes to review the operating instructions and become familiar with the UD Sump Pump.

Thank you for choosing a Sethco product. We look forward to serving your future requirements for quality industrial corrosion resistant pumps and filter supplies.

SAFETY RULES

1. Do not use for any service other than specified on original purchase order without written permission from Sethco.
2. **KEEP BYSTANDERS AWAY** - All visitors and unauthorized persons should be kept a safe distance from work area.
3. **WEAR PROPER APPAREL** - No loose clothing or jewelry to get caught on hoses or cords. Rubber gloves, aprons, and footwear are recommended.
4. **USE SAFETY GLASSES** - Always wear safety glasses with eye shields before commencing operation. We recommend Wide Vision Safety Mask for use over spectacles, or standard safety glasses.
5. **SECURE PUMP AND HOSE** - Secure discharge end of hose to prevent "whipping" of hose. Secure hose clamp tight.
6. **DON'T OVERREACH** - Keep proper footing and balance at all times.
7. **MAINTAIN EQUIPMENT** with care - Keep pump clean for best performance. Follow maintenance instructions.
8. **AVOID ACCIDENTAL STARTING** - Use lockout wiring boxes.
9. **KEEP HANDS AND FINGERS FROM IMPELLER.**
10. **KEEP FACE AWAY** - Don't look into hose, pump discharge, or suction.

ITEM	NAME	REQ'D	MATERIAL	UD60A	UD80A	UD100A
				PART NUMBER	PART NUMBER	PART NUMBER
1	Elbow	1	CPVC	270P104-551	270P102-551	270P104-551
2	Discharge Pipe 2 ft. (Note 1)	1	CPVC	593P10423-551	593P223-551	593P10423-551
2A	Discharge Pipe 3 ft. (Note 1)	1	CPVC	593P10435-551	593P235-551	593P10435-551
2B	Discharge Pipe 4 ft. (Note 1)	1	CPVC	593P10447-551	593P247-551	593P10447-551
2C	Discharge Pipe 5 ft. (Note 1)	1	CPVC	593P10459-551	593P259-551	593P10459-551
2D	Discharge Pipe 6 ft. (Note 1)	1	CPVC	593P10471-551	593P271-551	593P10471-551
2E	Discharge Pipe 7 ft. (Note 1)	1	CPVC	593P10483-551	593P283-551	593P10483-551
2F	Discharge Pipe 8 ft. (Note 1)	1	CPVC	593P10495-551	593P295-551	593P10495-551
2G	Discharge Pipe 9 ft. (Note 1)	1	CPVC	593P104107-551	593P2107-551	593P104107-551
2H	Discharge Pipe 10 ft. (Note 1)	1	CPVC	593P104119-551	593P2119-551	593P104119-551
3	Locknut	2	Polypropylene	510P1041104-580	510P21104-580	510P1041104-580
4	Mounting Plate	1	Phenolic	640P60100-560	640P60100-560	640P60100-560
5	Bolt	4	Stainless Steel	790P0413102-680	790P0413102-680	790P0413102-680
6	Bolt	8	Stainless Steel	790P0511104-680	790P0511104-680	790P0511104-680
7	Bolt	1	PVC	790P05111-550	790P05111-550	790P05111-550
8	Pedestal	1	Aluminum	680P60100-010	680P60100-010	680P60100-010
9	Ball Bearing	1	Steel	080P3072-720	080P3072-720	080P3072-720
10	Bearing Cover	1	Aluminum	140P4060-010	140P4060-010	140P4060-010
11	Setscrew	1	Steel	800P031605-720	800P031605-720	800P031605-720
12	Setscrew	2	Steel	800P022002-720	800P022002-720	800P022002-720
13	Thrust Collar	1	Stainless Steel	160P07104-680	160P07104-680	160P07104-680
14	Shaft	1	Various	See Table 1	See Table 1	See Table 1
15	Key	1	Stainless Steel	480P31606-680	480P31606-680	480P31606-680
16	Coupling	1	Steel	Note 2	Note 2	Note 2
17	Spider	1	Neoprene	Note 3	Note 3	Note 3
18	Lip Seal	1	Nitrile	760P63199-511	760P63199-511	760P63199-511
19	Column 2 ft. (Note 1)	1	CPVC	172P682-551	172P682-551	172P102-551
19A	Column 3 ft. (Note 1)	1	CPVC	172P683-551	172P683-551	172P103-551
19B	Column 4 ft. (Note 1)	1	CPVC	172P684-551	172P684-551	172P104-551
19C	Column 5 ft. (Note 1)	1	CPVC	172P685-551	172P685-551	172P105-551
19D	Column 6 ft. (Note 1)	1	CPVC	172P686-551	172P686-551	172P106-551
19E	Column 7 ft. (Note 1)	1	CPVC	172P687-551	172P687-551	172P107-551
19F	Column 8 ft. (Note 1)	1	CPVC	172P688-551	172P688-551	172P108-551
19G	Column 9 ft. (Note 1)	1	CPVC	172P689-551	172P689-551	172P109-551
19H	Column 10 ft. (Note 1)	1	CPVC	172P6810-551	172P6810-551	172P1010-551
20	Bearing	1	Teflon-Carbon	080P60304-777	080P60304-777	080P60304-777
21	Gasket	1	Hypalon	330P061-341	330P061-341	330P061-341
22	Gasket	1	Hypalon	330P04101-341	330P04101-341	330P04101-341
23	Casing	1	CPVC	133P60-551	-	-
23A	Casing (Standard) (Note 4)	1	PVC	-	133P80-550	133P100-550
23B	Casing (Special) (Note 4)	1	CPVC	-	Consult Factory	Consult Factory
24	Cover	1	CPVC	140P9-551	140P9-551	-
25	Impeller-Specify Dia. (Note 5)	1	CPVC	430P6-551	430P6-551	430P6-551
26	Impeller Nut	1	CPVC	120P0413-551	120P0413-551	120P0413-551
27	Strainer	1	CPVC	870P9-551	870P9-551	870P9-551
28	Key	1	Stainless Steel	480P31606-680	480P31606-680	480P31606-680
29A	Motor Adapter (Note 6)	1	Phenolic	010P184-060	010P184-060	010P184-060
29B	Motor Adapter (Note 6)	1	Cast Iron	010P213-160	010P213-160	010P213-160
30	Nut (Standard) (Note 7)	8	PVC	610P0511-550	610P0511-550	-
30A	Nut (Special) (Note 8)	8	Same as Shaft	Consult Factory	Consult Factory	-
31	O-Ring	1-2	Viton	590P2255-830	590P2255-830	-
32	Motor	1	Various	Consult Factory	Consult Factory	Consult Factory
33	Lower Bearing Housing	1	PVC	450P60304-550	450P60304-550	450P60304-550
34	Bolt (To 140°F)	8	PVC	-	-	790P0511106-550
34A	Bolt (Over 140°F)	8	Same as Shaft	-	-	Consult Factory
35	Bolt (To 140°F)	8	PVC	-	-	790P05111-550
35A	Bolt (Over 140°F)	8	Same as Shaft	-	-	Consult Factory
36	Bearing Housing (Note 11)	0-4	PVC	450P60205-550	450P60205-550	450P60205-550
37	Bearing Lock Pin (Note 11)	1-5	HAST C	682P2116-340	682P2116-340	682P2116-340
38	Spacer (Note 11)	0-12	CPVC	770P60100-551	770P60100-551	770P60100-551
40	Lockbolt (Note 11)	0-8	PVC	790P0610-550	790P0610-550	790P0610-550
41	Collar (Note 11)	0-12	CPVC	160P60100-551	160P60100-551	160P60100-551
42	Lockbolt w/L tube (Note 11)	0-4	PVC	790P061003-550	790P061003-550	790P061003-550
43	Bearing (Note 11)	0-4	Teflon-Carbon	080P60205-777	080P60205-777	080P60205-777
44	O-Ring	1	Viton	590P2258-830	590P2258-830	590P2258-830
45	Bolt (Standard) (Note 9)	8	PVC	790P05116-550	790P05116-550	-
45A	Bolt (Special) (Note 10)	8	Same as Shaft	Consult Factory	Consult Factory	-
47	Socket Head Capscrew (Note 12)	4	Steel	790P041311-720	790P041311-720	790P041311-720

BEARING FLUSH LINE PARTS

ITEM	NAME	MATERIAL	PART NO.	EXTERNAL FLUSH										INTERNAL FLUSH												
				PUMP LENGTH (ft.)										PUMP LENGTH (ft.)												
				2	3	4	5	6	7	8	9	10	11	2	3	4	5	6	7	8	9	10	11			
48*	Elbow Male	PolyPro	270P03-580	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	
49	Elbow Female	PolyPro	270P031-580	3	2	2	2	2	2	2	2	2	2	2	2	-	1	1	1	1	1	1	1	1	1	1
50	Tee	PolyPro	920P03-580	-	-	-	2	2	3	4	4	4	4	4	-	-	-	1	1	2	3	3	3	3	3	3
51	Tubing (Feet)	PolyPro	000P03-580	2	4	6	7	8	9	10	11	12	12	12	-	2	2	3	3	4	4	5	5	5	5	5
52	Tee	CPVC	920P03-551	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
53	Plug	CPVC	660P03-551	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
54	Nipple	CPVC	620P033-551	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1
55	Male Connection	PolyPro	1761P1066-580	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-

*Not Shown

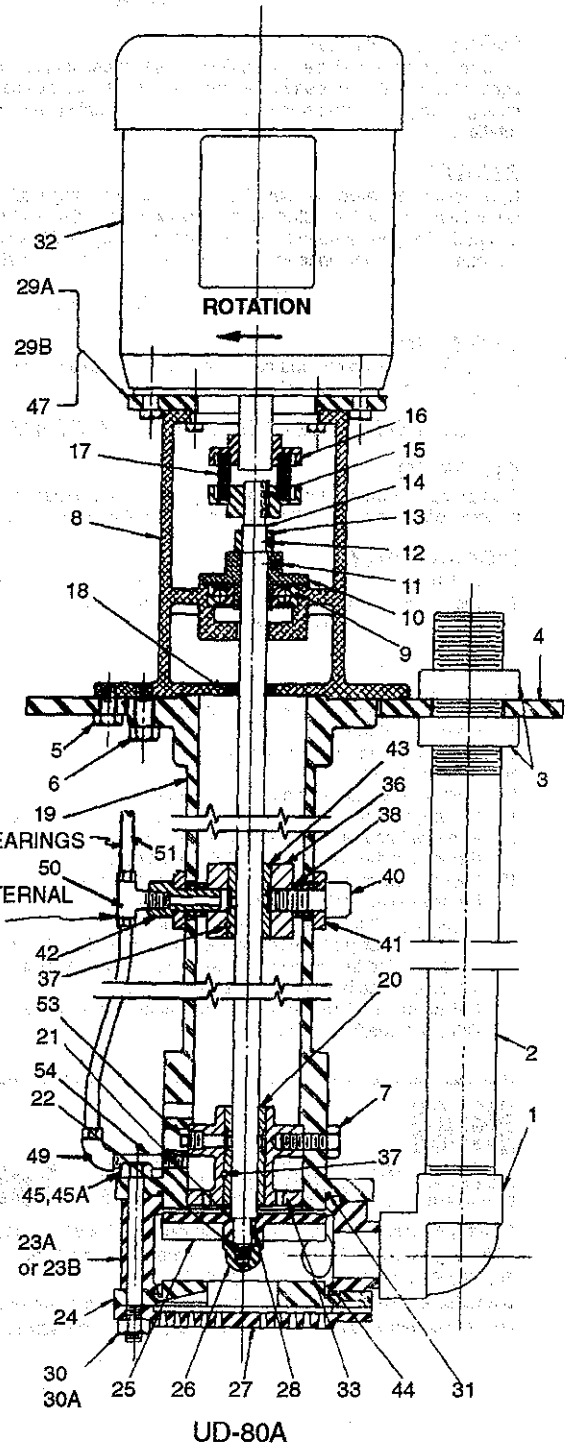
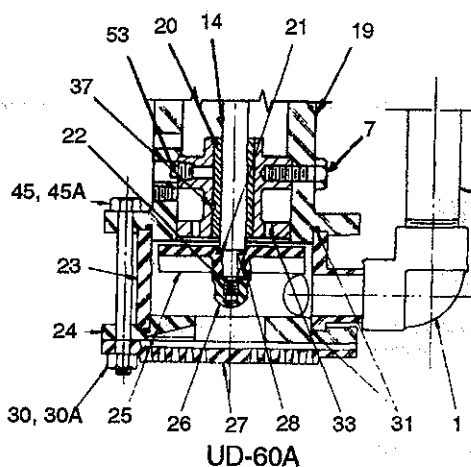
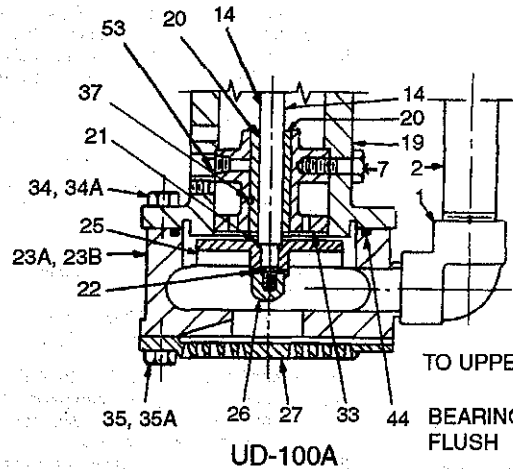
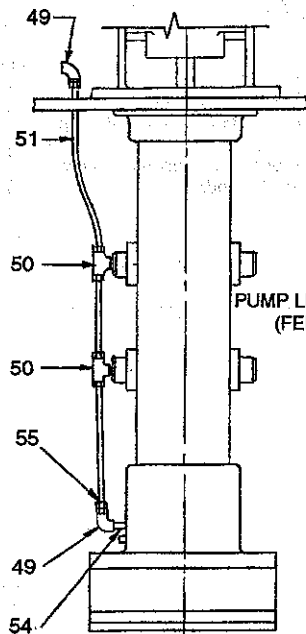
TABLE 1
SHAFT FOR STANDARD LENGTH PUMPS (Note 1)

ITEM	NAME	REQ'	SS-316 PART NUMBER	CARPENTER 20 PART NUMBER	TITANIUM PART NUMBER	HASTELLOY C PART NUMBER
14	Shaft (2 ft.)	1	850P042807-670	850P042807-130	850P042807-780	850P042807-340
14A	Shaft (3 ft.)	1	850P044007-670	850P044007-130	850P044007-780	850P044007-340
14B	Shaft (4 ft.)	1	850P045207-670	850P045207-130	850P045207-780	850P045207-340
14C	Shaft (5 ft.)	1	850P046407-670	850P046407-130	850P046407-780	850P046407-340
14D	Shaft (6 ft.)	1	850P047607-670	850P047607-130	850P047607-780	850P047607-340
14E	Shaft (7 ft.)	1	850P048807-670	850P048807-130	850P048807-780	850P048807-340
14F	Shaft (8 ft.)	1	850P041007-670	850P041007-130	850P041007-780	850P041007-340
14G	Shaft (9 ft.)	1	850P0411207-670	850P0411207-130	850P0411207-780	850P0411207-340
14H	Shaft (10 ft.)	1	850P0412407-670	850P0412407-130	850P0412407-780	850P0412407-340

NOTES

- For other than Standard lengths, consult factory.
- Motor couplings come in various sizes from 5/8" to 1-1/8" depending upon the frame size of the motor. The pump side of the coupling is 3/4". When ordering, state diameter of motor shaft and spider size (Item 17).
- Spiders come in various sizes depending on motor frame. When ordering refer to number on coupling. (Example: 3J, 4J, 5J, 6J).
- Use PVC casing, Item #23A, for operating temperatures to 140°F. Use CPVC casing, Item #23B, for operating temperatures over 140°F.
- Impellers come in various diameters. Indicate pump model, diameter required and serial number of pump.
- Motor Adapter 29A is required for Motor Frames 182TC, 184TC. Motor Adapter 29B is required for Motor Frames 213TC, 215TC.
- For operating temperatures to 140°F. Use with Item #45. For operating temperatures over 140°F, use Item #30A.
- For temperatures over 140°F. Use Item #45A.
- For operating temperatures to 140°F. Use with Item #30. For temperatures over 140°F, use Item #45A.
- For temperatures over 140°F. Use with Item #30A.
- This part is incorporated in all pumps over 2 ft. Not used with 2 ft. pump.
- Used with Motor Adapters, Item #29A or #29B only.
- Use Item #49 instead of Item #48 for a 2 ft. pump.

EXTERNAL FRESH WATER FLUSH CONNECTION



ASSEMBLY / DISASSEMBLY / INSTALLATION INSTRUCTIONS

PRELIMINARY

Review entire unit for loose, broken or missing components and fasteners which may have loosened in shipment.

INSTALLATION

WIRING

Install a lockout type box.

PIPING

If piping is used, no piping on casing is permitted. Additionally, the thermal expansion of the piping system must be accounted for. Hoses must be suitable for the chemical to be transferred, pressure and temperature. Discharge valve is recommended.

MOUNTING

Motor has been provided with a mounting panel. Panel must be bolted or clamped to a secure foundation.

OPERATION

INITIAL START UP

Prior to starting of unit, be certain hose adapters are tight and hose clamps are tight. Check that hose bends are generous and do not impose a strain on the casing. Jog pump and listen for smoothness of running. Also check direction of rotation.

START UP

Open discharge valve. Be sure fluid is 6 in. above pump inlet. Open fresh water flush connection. Start pump. Check to be certain that fluid is being pumped. For pumps up to 5 feet in length, provide 1/2 GPM flush @ 60 psi. For pumps 5 - 10 feet in length, provide 1 GPM flush @ 60 psi.*

—DO NOT RUN DRY—

OPERATING

Check all hose adapters and hose connections for leaks. Listen for any unusual noise. Observe any unusual vibration.

—DO NOT SLAM CLOSED PUMP DISCHARGE LINE—

STOPPING

Stop pump. If pump is used in a service which crystallizes or thickens with age or reduction in temperature, the pump should be flushed.

DISASSEMBLY

1. Isolate motor electrically and attach lockouts.
2. Close suction and discharge valves. Attach lockouts.
3. Loosen coupling setscrews.
4. Remove motor belts.
5. Remove motor (32).
6. Remove bolts securing mounting plate (4).
7. Remove pump assembly from sump.
8. Remove nut (30).
9. Remove strainer (27) and cover (24).
10. Remove locknuts (3).
11. Remove discharge pipe (2) and casing (23).
12. Secure impeller (25) with a strap wrench and remove impeller nut (26).
13. Remove impeller (25), gaskets (21,22) and key (28).
14. Remove pump coupling half (16) and key (15).
15. Loosen setscrews (12, 11). Remove thrust collar (13).
16. Remove shaft (14) from pump end of assembly.
17. Remove plug (53), nipple (54) and bolt (7).
18. Bearing housing (33) has two 3/8 diameter holes drilled through the lower flange behind the impeller. Screw in a 7/16-14 x 3" bolt into each 3/8 hole, 1/4 deep. The bolt will form its own thread.
19. Pull on the two 7/16 bolts to remove bearing housing (33).
20. Drive out bearing lock pin. (37)

21. Press out bearing (20).
22. Remove lockbolts (40,42). Remove.
23. Drive out bearing lock pin (37).
24. Press out bearing (43).
25. Remove bolts (6).
26. Remove lip seal (18).
27. To remove ball bearing (9) and bearing cover (10) from pedestal (8) apply heat with a hot air gun uniformly to bearing area of pedestal. Wear proper gloves and remove ball bearing cover by hand.
28. Press ball bearing (9) from being covered (10).

INSPECTION

Maintain trouble free service by replacing any parts whose continued service is questionable.

1. Examine spider (17) for wear and chemical attack.
2. Examine ball bearing (9). Check for smooth rotation.
3. Replace lip seal (18).
4. Examine bearings (43) and bearing (20). If out-of-round 1/8 or more, replace.
5. Examine shaft (14) in bearing wear areas. If wear is 3/32 on radius in any location, replace shaft.
6. Examine impeller (25). Look for cracks, distortion in bore and key.
7. Inspect all tube lines, fluid passages in lockbolt (42) and bearings (20, 43). Clean or replace as required.
8. Clean strainer (27).

MAINTENANCE

ASSEMBLY

1. Replace lip seal (18) into pedestal (8).
2. Assemble column (19) onto pedestal (8) and secure with bolt (6).
3. Replace ball bearing (9) onto bearing cover (10).
4. Install ball bearing (9) and bearing cover (10) into pedestal in bearing housing area with hot air. Press bearing and cover gently, by hand, into pedestal.
5. Insert shaft (14) into bearing cover (10).
6. Teflon bearing (43) assembly:
 - a) Align rectangular slot on outside diameter of bearing with 1/4 diameter hole in housing (36).
 - b) Push bearing (43) into housing (36).
 - c) Install lockpin (37).
7. Teflon bearing (20) assembly: (See Step 6).
8. Assemble bearing (43) and housing (36) onto shaft (14). Slide unit toward motor until tapped holes in housing (36) align with the set of three, 1-3/16 diameter holes in pump column (19).
9. Assemble collar (13) and spacer (38) onto lockbolt (40). Insert this assembly into the 1-3/16" diameter hole in column (19) and thread into housing (36).
10. Use two lockbolts (40) and one lockbolt (42) with a tapped hole for each bearing housing (36).
11. Insert bearing housing assembly (33).
12. Use spanner wrench to rotate bearing housing assembly (33) and align 3/4 drilled hole with 5/8-11 tapped hole in pump column.
13. Insert bolt (7).
14. Install gasket (21), impeller (25), key (28), gasket (22) and secure with impeller nut (26). Position impeller (25) for 1/4 inch running clearance and secure with setscrew (11).
15. Install O-ring (31), casing (23), O-ring (31), cover (24) and strainer (27). Secure with bolts (45) and nuts (30).
16. Assemble elbow (1).
17. Assemble one locknut (3) onto discharge pipe (2).
18. Insert discharge pipe (2) into panel (4) and assemble to elbow (1).
19. Assemble locknut (3) onto discharge pipe (2). Tighten locknuts (3) finger tight only, against panel (4).
20. Note all pumps are lubricated either by fluid pumped or external supply. Replace the tube lines as they were originally located.



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