ZOELLER ®
PUMP COMPANY

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Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies.

TECHNICAL DATA
CENTRIFUGAL STEP SYSTEMS

The Centrifugal STEP System is designed to be an economical and reliable solution to an onsite or low pressure sewer pumping requirement. When effluent must be pumped uphill, the Centrifugal STEP System does the job without the added cost of an extra pump tank or chamber. It is a low-cost, high-quality option for onsite enhanced flow systems, repairs to failed septic systems where gravity flow is not possible, media filters, pressure pipe dosing systems, and other alternatives that would require a separate pump chamber. The Centrifugal STEP System fits into almost any septic tank, and filters the effluent to protect your pump and drainfield components.

FILTER AREA:
• 528 linear feet of 1/16" filtration
• 396 square inches of open area

MATERIALS:
• Tank - polyethylene
• Filters - polypropylene
• All components are engineered to withstand septic tank environment
• All pump models are cast iron, 1-1/2" discharge, 115 V/1PH submersible pumps with a corrosion-resistant powder coated epoxy finish
• 1-1/4" SCH 40 PVC discharge assemblies (check valve available)
• Pipe seal for discharge pipe included

INSTALLATION:
Install per local codes and National Electrical Code
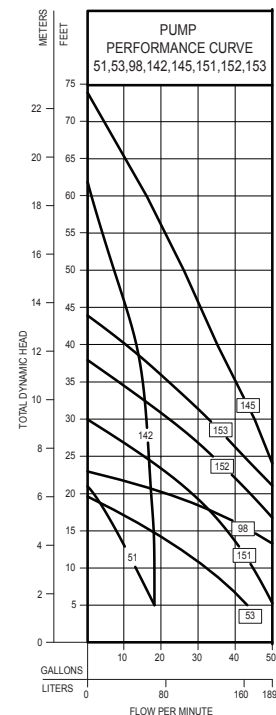See CL0029 for installation instructions and service parts

EASY MAINTENANCE:
The discharge has a union for easy removal of the pump and floats. The filter handle aids in the removal of the filter pack. Service as needed.
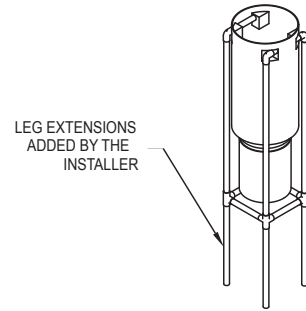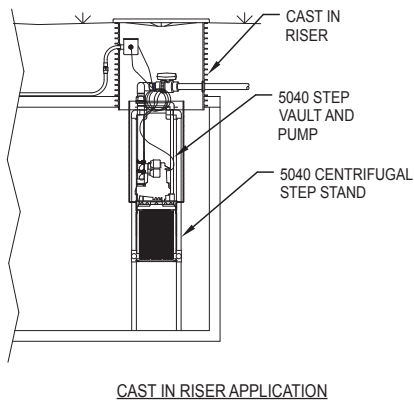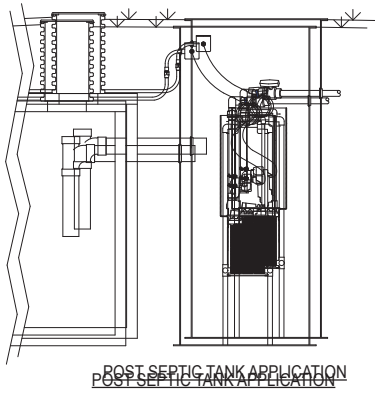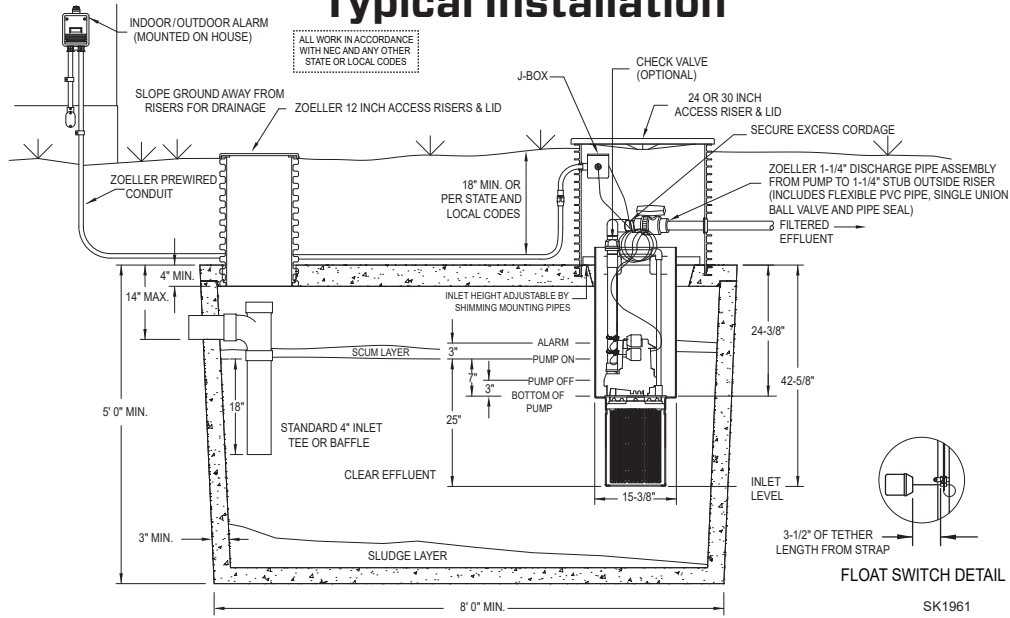
LONG LIFE:
Superior quality components make a superior quality system. Easy to install, maintain, and operate.
• Standard overall height is 46".

PUMP PERFORMANCE CURVE
51,53,98,142,145,151,152,153

Typical Installation

INDOOR/OUTDOOR ALARM (MOUNTED ON HOUSE)

ALL WORK IN ACCORDANCE WITH NEC AND ANY OTHER STATE OR LOCAL CODES

J-BOX

CHECK VALVE (OPTIONAL)

24 OR 30 INCH ACCESS RISER & LID

SECURE EXCESS CORDAGE

SLOPE GROUND AWAY FROM RISERS FOR DRAINAGE

ZOELLER 12 INCH ACCESS RISERS & LID

ZOELLER 1-1/4" DISCHARGE PIPE ASSEMBLY FROM PUMP TO 1-1/4" STUB OUTSIDE RISER (INCLUDES FLEXIBLE PVC PIPE, SINGLE UNION BALL VALVE AND PIPE SEAL)

ZOELLER PREWIRED CONDUIT

18" MIN. OR PER STATE AND LOCAL CODES

FILTERED EFFLUENT

4" MIN.

14" MAX.

INLET HEIGHT ADJUSTABLE BY SHIMMING MOUNTING PIPES

24-3/8"

42-5/8"

SCUM LAYER

ALARM

3"

PUMP ON

7"

PUMP OFF

3"

BOTTOM OF PUMP

5' 0" MIN.

18"

25"

STANDARD 4" INLET TEE OR BAFFLE

CLEAR EFFLUENT

INLET LEVEL

15-3/8"

3" MIN.

SLUDGE LAYER

8' 0" MIN.

3-1/2" OF TETHER LENGTH FROM STRAP

FLOAT SWITCH DETAIL

SK1961

POST SEPTIC TANK APPLICATION

CAST IN RISER

5040 STEP VAULT AND PUMP

5040 CENTRIFUGAL STEP STAND

CAST IN RISER APPLICATION

LEG EXTENSIONS ADDED BY THE INSTALLER

SHOWN ABOVE WITH STAND

SK2897

TOTAL DYNAMIC HEADFLOW PER MINUTE EFFLUENT AND DEWATERING

MODEL		51 *		53 *		98 *		142		145		151		152		153	
Feet	Meters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters	Gal.	Liters
5	1.5	18	68	43	163	-	-	18	68	-	-	50	189	-	-	-	-
10	3.0	13	50	34	129	-	-	18	68	-	-	45	170	-	-	-	-
15	4.6	8	32	19	72	45	170	18	68	-	-	38	144	-	-	-	-
20	6.1	2	8	-	-	25	95	17	64	-	-	29	110	44	167	-	-
25	7.6	-	-	-	-	-	-	16	61	49	186	16	61	34	129	42	159
30	9.1	-	-	-	-	-	-	14	53	45	171	-	-	23	87	33	125
40	12.2	-	-	-	-	-	-	7	26	35	133	-	-	-	-	22	85
50	15.2	-	-	-	-	-	-	1	4	26	99	-	-	-	-	11	42
60	18.3	-	-	-	-	-	-	-	-	16	61	-	-	-	-	-	-
Shut-off Head:		21 ft.(6.4m)		19.25 ft.(5.9m)		23 ft.(7.0m)		62 ft.(18.9m)		74 ft.(22.6m)		30 ft. (9.1m)		38 ft. (11.6m)		44 ft. (13.4m)	

*Pump powered by ZMW Zoeller Motor Works motor

Prepackaged Systems (Unassembled)

**Centrifugal STEP Packages with Automatic Pumps (BN Models)**

☐ 5040-0002   Automatic BN51 pkg (1, 4)
☐ 5040-0003   Automatic BN51 w/ alarm pkg (1, 3, 4, 5)
☐ 5040-0004   Automatic BN51 w/ check valve pkg (1, 2, 4)
☐ 5040-0005   Automatic BN51 w/ alarm and check valve pkg (1, 2, 3, 4, 5)
☐ 5040-0018   Automatic BN51 w/ Qwik Box (1, 4, 6)
☐ 5040-0019   Automatic BN51 w/ Qwik Box / alarm system (1, 3, 4, 5, 6)
☐ 5040-0020   Automatic BN51 w/ Qwik Box and check valve pkg (1, 2, 4, 6)
☐ 5040-0021   Automatic BN51 w/ Qwik Box / alarm system and check valve pkg (1, 2, 3, 4, 5, 6)
☐ 5040-0029   Automatic BN53 with filter, pump chamber, and pump (1, 4)
☐ 5040-0030   Automatic BN98 with filter, pump chamber, and pump (1, 4)
☐ 5040-0006   Automatic BN142 pkg (1, 4)
☐ 5040-0007   Automatic BN142 w/ alarm pkg (1, 3, 4, 5)
☐ 5040-0008   Automatic BN142 w/ check valve pkg (1, 2, 4)
☐ 5040-0009   Automatic BN142 w/ alarm and check valve pkg (1, 2, 3, 4, 5)
☐ 5040-0022   Automatic BN142 w/ Qwik Box (1, 4, 6)
☐ 5040-0023   Automatic BN142 w/ Qwik Box / alarm system(1, 3, 4, 5, 6)
☐ 5040-0024   Automatic BN142 w/ Qwik Box and check valve pkg (1, 2, 4, 6)
☐ 5040-0025   Automatic BN142 w/ Qwik Box / alarm system and check valve pkg (1, 2, 3, 4, 5, 6)
☐ 5040-0031   Automatic BN145 with filter, pump chamber, and pump
☐ 5040-0032   Automatic BN151 with filter, pump chamber, and pump
☐ 5040-0033   Automatic BN152 with filter, pump chamber, and pump
☐ 5040-0034   Automatic BN153 with filter, pump chamber, and pump
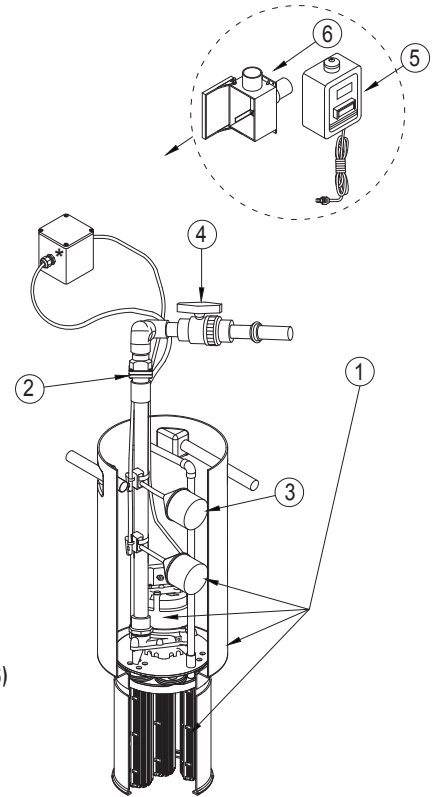
Note: All on/off alarm settings must comply with all state and local codes.

Centrifugal STEP Packages with Nonautomatic Pumps (N Models)

☐ 5040-0010   Nonautomatic N51 pkg (1, 4)
☐ 5040-0011   Nonautomatic N51 w/ control panel pkg (1, 3, 4)
☐ 5040-0012   Nonautomatic N51 w/ check valve pkg (1, 2, 4)
☐ 5040-0013   Nonautomatic N51 w/ control panel and check valve pkg (1 ,2, 3, 4)
☐ 5040-0035   Nonautomatic N53 with filter, pump chamber, and pump (1, 4)
☐ 5040-0036   Nonautomatic N98 with filter, pump chamber, and pump (1, 4)
☐ 5040-0014   Nonautomatic N142 pkg (1, 4)
☐ 5040-0015   Nonautomatic N142 w/ control panel pkg (1, 3, 4)
☐ 5040-0016   Nonautomatic N142 w/ check valve pkg (1, 2, 4)
☐ 5040-0017   Nonautomatic N142 w/ control panel and check valve pkg (1, 2, 3, 4)
☐ 5040-0037   Nonautomatic N145 with filter, pump chamber, and pump (1)
☐ 5040-0038   Nonautomatic N151 with filter, pump chamber, and pump (1)
☐ 5040-0039   Nonautomatic N152 with filter, pump chamber, and pump (1)
☐ 5040-0040   Nonautomatic N153 with filter, pump chamber, and pump (1)

SK2027
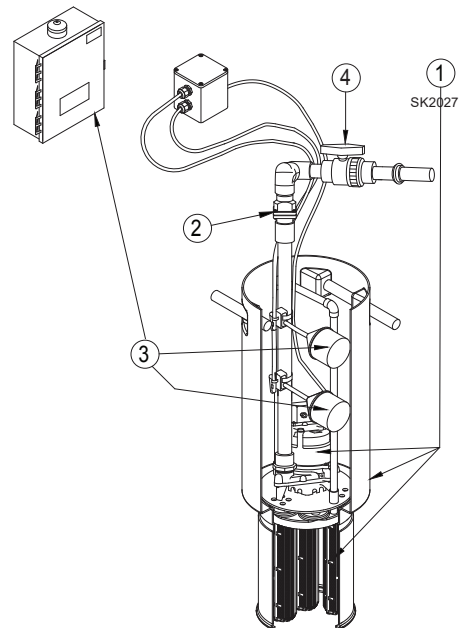
Note: It is the responsibility of the installer & designer to assure all state and local codes are met.

Custom Applications

The following is intended to aid selection of the components needed for the widest variety of systems.
Prepackaged systems (unassembled) are also available for the most commonly selected systems.

(A) Centrifugal STEP Vault

Includes filter pak with handle and pump chamber preassembled at factory.

☐ 5040-0001 46" Centrifugal STEP Vault Wgt. 20.0 lbs.

☐ 5040-0026 50" Centrifugal STEP Vault Wgt. 30.0 lbs.

☐ 5040-0027 63" Centrifugal STEP Vault Wgt. 30.0 lbs.

☐ 5040-0041 Centrifugal STEP Vault Stand (page 2)

☐ 5040-0042 46" Centrifugal STEP Vault w/ Stand (page 2)
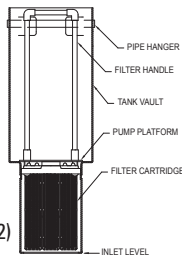
PIPE HANGER
FILTER HANDLE
TANK VAULT
PUMP PLATFORM
FILTER CARTRIDGE
INLET LEVEL
SK2031

(C) Discharge Assembly

Discharge pipe assembly consists of a reducer, schedule 40 PVC piping, elbows, flexible PVC pipe, union / ball valve, pipe seal, and 1-1/4" flexible stub to extend outside of riser. Preassembled and welded at the factory.

☐ 170-0083 - 1-1/4" diameter - Wgt. 4.0 lbs.

☐ 170-0084 - 1-1/4" diameter, with check valve - Wgt. 4.0 lbs.
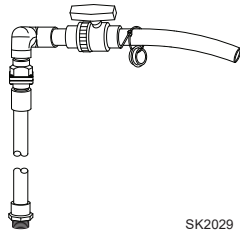
SK2029

(E) Junction Boxes * / Pre-wired Conduit

Prewired conduits are designed to make the electrical wiring easier. Assemblies come with the correct number of wires of the correct gauge for the application. Junction box is included if needed.

For automatic or float switch control - with or without alarm:

☐ 5100-0011   25' long w/J-Box (3 cord seals, 2 plugs) - Wgt. 10 lbs.

☐ 5100-0012   35' long w/J-Box (3 cord seals, 2 plugs) - Wgt. 14 lbs.

☐ 5100-0013   50' long w/J-Box (3 cord seals, 2 plugs) - Wgt. 18 lbs.

☐ 5100-0014   75' long w/J-Box (3 cord seals, 2 plugs) - Wgt. 26 lbs.

☐ 5100-0015   100' long w/J-Box (3 cord seals, 2 plugs) - Wgt. 33 lbs.

For Qwik Box pump control - with or without alarm:

☐ 5100-0016   25' long - Wgt 10 lbs.

☐ 5100-0017   35' long - Wgt. 12 lbs.

☐ 5100-0018   50' long - Wgt. 16 lbs.

☐ 5100-0019   75' long - Wgt. 24 lbs.

☐ 5100-0020   100' long - Wgt. 31 lbs.

For control panels and nonautomatic pumps:

☐ 5100-0001   25' long w/J-Box (4 cord seals, 1 plug) - Wgt. 10 lbs.

☐ 5100-0002   35' long w/J-Box (4 cord seals, 1 plug) - Wgt. 14 lbs.

☐ 5100-0003   50' long w/J-Box (4 cord seals, 1 plug) - Wgt. 18 lbs.

☐ 5100-0004   75' long w/J-Box (4 cord seals, 1 plug) - Wgt. 26 lbs.

☐ 5100-0005   100' long w/J-Box (4 cord seals, 1 plug) - Wgt. 33 lbs.

NEMA 4X Junction Boxes:

Select junction box based on number of cords present in riser.

☐ 10-1030   4"L x 4"W x 2"H (2 UF & 2 round cord seals-unassembled) - Wgt. 1 lb.

☐ 10-0776   4"L x 4"W x 2"H (3 round cord seals, 3/4" hub-unassembled) - Wgt. 1 lb.

☐ 10-1399   4"L x 4"W x 4"H (4 round cord seals, 1-1/2" hub-unassembled) - Wgt. 2 lbs.

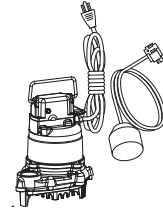 * Junction box not required w/ Qwik Box system.

(B) Pump

Pump should be selected based on pump performance. (All other pump models when purchased a la carte must be purchased through an authorized Zoeller Pump Company distributor.)

115 V Automatic Units (BN)

☐ 51-0006   - Wgt. 28 lbs.

☐ 142-0006 - Wgt. 55 lbs.

115 V Nonautomatic Units (N)

☐ 51-0002   - Wgt. 27 lbs.

☐ 142-0002 - Wgt. 54 lbs.

SK2030

(D) Control / Alarm

A high water alarm is recommended and most codes require one. For automatic pumps choose from the following alarm boxes. For nonautomatic pumps, the alarm is integral with control panel.

Qwik Box Control/Alarm System

☐ 10-0579 Qwik Box, 115 V - Wgt. 3 lbs.

☐ 10-1359 Qwik Box, 115 V w/ alarm (indoor) - Wgt. 7 lbs.

Indoor/Outdoor Alarm

☐ 91104-0001   Alarm System with 15' Float - Wgt. 5 lbs.

   ☐ 10-0744   20' Mechanical Control Switch

   ☐ 10-1877   25' Mechanical Control Switch

   ☐ 10-1874   50' Mechanical Control Switch

☐ 91104-0003   Alarm System without Float - Wgt. 5 lbs.

Controls

☐ 10-0125 Simplex Panel, 115/230V, 1Ph, 0-20 Amps, NEMA 4X, 3 Floats - Wgt. 11.5 lbs.

☐ 10-0684 Timed Dose Panel 115 V, 1Ph, 0-20 Amps, NEMA 4X, ETM, Cycle Counter, 3 Floats - Wgt. 20 lbs.

Note: All variable level control switches in this section are mechanically activated and do not contain mercury.

(F) Standard Riser Systems

An access riser is required on the outlet of the septic tank for proper installation of the STEP system. Many codes require a locking latch to prevent tampering with the system.
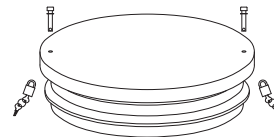
SK1838B

24" Access Riser

☐ 172-0003   24" dia x 1' long - Wgt. 32 lbs.

☐ 172-0044   24" dia x 18" long - Wgt. 39 lbs.

☐ 172-0004   24" dia x 2' long - Wgt. 46 lbs.

☐ 172-0005   24" dia x 3' long - Wgt. 60 lbs.

☐ 172-0019   Adhesive (for mounting in pre-cast groove) quart- Wgt. 1 lb.

☐ 172-0020   Lockable Latch Assembly - Wgt. 2 lb.

☐ 172-0048   Seal Ring - Wgt. 5 lb.

☐ 172-0047   Bolt Down Kit - Wgt. 2 lb.

30" Access Riser

☐ 172-0029   30" dia x 1' long - Wgt. 59 lbs.

☐ 172-0045   30" dia x 18" long - Wgt. 75 lbs.

☐ 172-0030   30" dia x 2' long - Wgt. 92 lbs.

☐ 172-0031   30" dia x 3' long - Wgt. 125 lbs.

☐ 172-0019   Adhesive (for mounting in pre-cast groove) quart- Wgt. 1 lb.

☐ 172-0056   Lockable Latch Assembly - Wgt. 2 lbs.

☐ 172-0049   Seal Ring - Wgt. 5 lb.

☐ 172-0057   Bolt Down Kit - Wgt. 2 lb.