

SPECIFICATION
SOMAT MODEL 2PB-9D SOM-A-SYSTEM
SLUDGE DEWATERING SYSTEM
with POLYMER AUTO FEED
PER DRAWING NO. P-3257-8

The **SLUDGE DEWATERING SYSTEM** shall include, within a single skid-mounted assembly, two (2) screw presses, emulsion-type polymer dilution/feed system, head tank with ¾ HP variable speed flocculator, control panel and all necessary piping, valves, and wiring to optimize mixing and feeding of polymer with the sludge prior to entering the screw presses.

Cleanout ports and all other equipment necessary for the sludge dewatering process, with the exception of the sludge feed pump, when supplied, shall be on the skid.

SCREW PRESS - two (2) Model PB-9D presses, as follows:

The housing shall be rigid Type 304 stainless steel weldment, supported by structural stainless steel base. Housing shall have removable doors for screen access. Press to have stainless steel discharge chute with hinged lid and safety shut-off switch.

The drive unit shall consist of an electric motor, gear reducer and V-belt/sheave arrangement. The motor shall be a 5 HP, 1200 RPM, TEFC motor. The gear reducer shall be a helical, shaft-mounted reducer, 25:1 gear ratio with side arm tension bar bolted to head flange. Screw speed shall be variable over a range of 1 RPM to 15 RPM through variable speed inverter, mounted on control panel.

The screw assembly shall consist of a stainless steel shaft with welded-on stainless steel helical flight. A plug cutter shall be attached to the screw shaft in the head area. A mono-filament brush shall be attached to the screw flights. The screw shaft shall be attached to the gear reducer and supported in the head by a radial bearing.

The screen assembly shall be Type 304 stainless steel and consist of an inner screen and outer screen. Inner screen shall have .023" diameter holes; outer screen shall have 0.25" diameter holes.

An emulsion-type **POLYMER SYSTEM** shall be furnished for metering and dilution of polymer to the sludge stream. The unit shall be mounted, piped and electrically interlocked as an integral part of the skidded sludge dewatering system.

Polymer unit shall be sized in accordance with the following requirements:

Emulsion Polymer 0.18 – 1.8 gph

Fresh Water Supply 96 - 960 gph @ Max. Pressure 100 PSIG
Min. Pressure 35 PSIG

2PB-9D SOM-A-SYSTEM with POLYMER AUTO FEED (continued)

SLUDGE CONDITIONING/HEAD TANK - one (1) 75-gallon capacity, cone bottom, tank, fabricated of 304 stainless steel. A high level flow cut off and alarm shall be mounted to tank and wired into the system control circuit. Tank assembly shall include a paddle type flocculator, with $\frac{3}{4}$ HP variable speed drive.

All **SLUDGE PIPING** shall be 3", Type 1, Schedule 80, PVC. Sludge feed connection shall be 3" flanged. Pressate discharge connection shall be 4" flanged. **VALVES** shall be ball type. Cleanout and drain connections shall be provided in the sludge piping. All sludge, pressate and water piping, and valves to and from the skid assembly, shall be by others.

All **POLYMER PIPING** shall be 3/4", Type 1, Schedule 80, PVC. **VALVES** shall be ball type.

A carbon steel **PLATFORM with LADDER** shall be supplied to allow observation of polymer mixing and to aid in monitoring the process. The **SKID** frame shall be a rigid support structure fabricated of carbon steel channels of adequate design for rigidity during transport and sliding into place. One inch steel pads shall be welded to all four (4) corners of the skid to facilitate in-place leveling. All skid carbon steel surfaces will be abrasively blasted and coated with an electrostatically applied and baked powder coated paint system.

The **ELECTRICAL CONTROL PANEL** shall be painted, stainless steel, NEMA 4X, U.L. approved, with all necessary electrical components mounted and prewired. All start-stop and speed function shall be controlled via HMI touch screen technology. All touch screen buttons shall be identified as to function and motor affected. The panel shall be designed to accept * ____, 4 wire, A.C. service to the line side of a three pole, molded case, circuit breaker operable from outside the cabinet.

* Customer to specify supply voltage as 208/230 **or** 460 volt, 3 phase, 60 hertz.

Equipment Manufactured by SOMAT Company
Lancaster, PA, U.S.A. 17601
Sold under manufacturer's warranty.

REV	DESCRIPTION	DATE	APPROVED
A	REMOVED VOGELSANG PUMP OPTION	12/20/06	SME
B	REMOVED VARIOUS MEMBERS OF BASE ASSTY	9/12/04	SME
B	STAINLESS STEEL TANK WAS POLYETHYLENE	9/12/04	SME
C	FIXED PRESSATE LOCATIONS IN ELEV VIEW	10/04/06	RLZ

SLUDGE FEED PUMP INFO

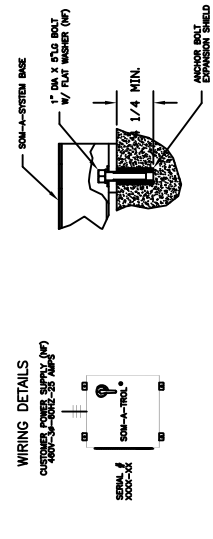
NOTE: POSITIVE DISPLACEMENT PUMP IS REQUIRED TO METER THE FLOW OF SLUDGE TO THE Dewatering SYSTEM.
 THE FEED SOLIDS PUMP ILLUSTRATED IS SIZED TO MATCH THE PROCESSING CAPABILITY OF THE SYSTEM SHOWN. FINAL PUMP SIZING IS DEPENDENT ON IN-COMING FEED SOLIDS (%) AND SPECIFIC SLUDGE CHARACTERISTICS.

MACHINE INSTALLATION CONNECTION CHART

ALL FLANGED PIPE CONNECTIONS ARE ACCORDING TO ANSI STANDARD B 16.5.

CONNECTION	DIMENSION	SERVICE	CUSTOMER POWER SUPPLY	COMMENTS
E1	-	-	-	-
P1	3"	SLUDGE INLET	-	FLANGED
P2	4"	PRESSATE OUTLET	-	FLANGED
P3	1"	FRESH WATER INLET	-	FEMALE NPT
P4	3/8"	POLYMER INLET	-	SIPHON TUBE CONNECTION
P6	-	CLEANOUT	-	CAPPED
P7	-	CAKE DISCHARGE	-	FLANGED
P8	30X"	SLUDGE INLET	-	FLANGED
P8	30X"	SLUDGE OUTLET	-	FLANGED

CONNECTION NUMBERS BEGINNING WITH 'E' REPRESENT ELECTRICAL CONNECTIONS, CONNECTION NUMBERS BEGINNING WITH 'P' REPRESENT PIPE CONNECTIONS.



NOTES:
 1) PREWIRED CONTROL PANELS BY SOMAT
 2) CONTROL CIRCUIT FOR 115 VAC NOMINAL IN ACCORDANCE WITH APPLICABLE ELECTRIC CODE
 3) CONTROL CIRCUIT FOR 230 VAC NOMINAL IN ACCORDANCE WITH APPLICABLE ELECTRIC CODE
 4) REPRESENTS ITEM IS NOT FURNISHED BY SOMAT CORPORATION
 5) REPRESENTS ITEM FURNISHED BY SOMAT CORPORATION

NOTES:
 1- UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES
 2- ALL PIPING IS SCHEDULE 80 PIPE UNLESS OTHERWISE SPECIFIED
 3- ALL PIPING IS SCHEDULE 40 PIPE UNLESS OTHERWISE SPECIFIED
 4- DIMENSIONS FOR P1 AND P2 ARE APPROXIMATE (F.T.)

ITEM NO.	QTY	PART OR NO.	DESCRIPTION
5	1	XXXX-XX	IN LINE STATIC MIXER - 3 INCH
4	1	XXXX-XX	SOM-A-TROL CONTROL PANEL, NEMA 4X, CARBON STEEL
3	1	XXXX-XX	100 GAL. SLUDGE CONDITIONING TANK W/3/4 HP. FLOCCULATOR
2	1	XXXX-XX	EMULSION POLYMER MIX/FEED SYSTEM (SIZE FOR APPLICATION)
1	2	XXXX-XX	MODEL PB-9D-SE SOM-A-PRESS W/5 HP. VFD DRIVE

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FINISHES: MILL, POLISH, GALV, STAINLESS, CASTINGS, ANGLE, JOINT, CHAMFER.

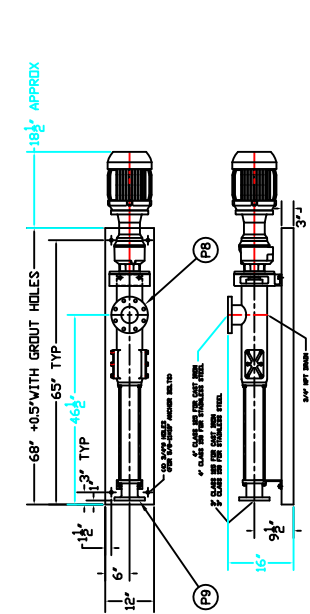
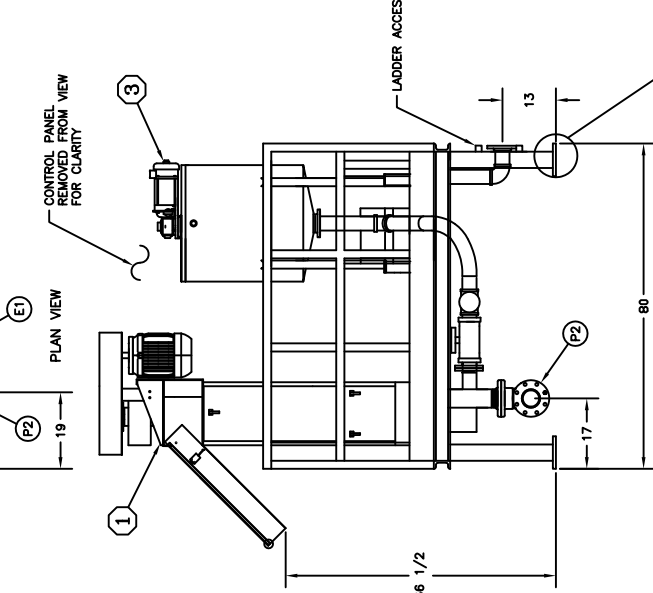
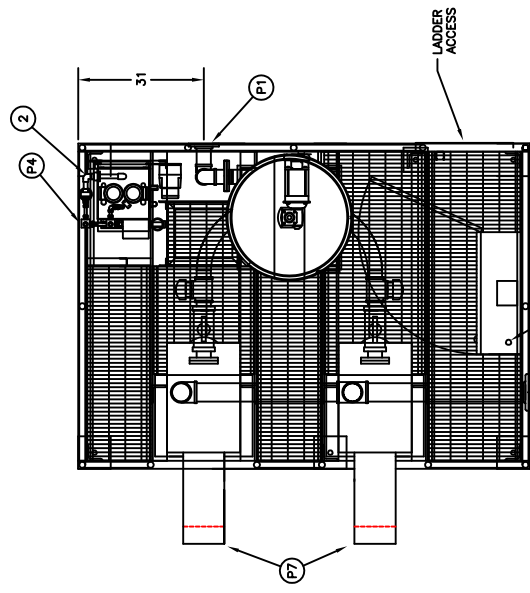
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ITEM NO. 11-8-98

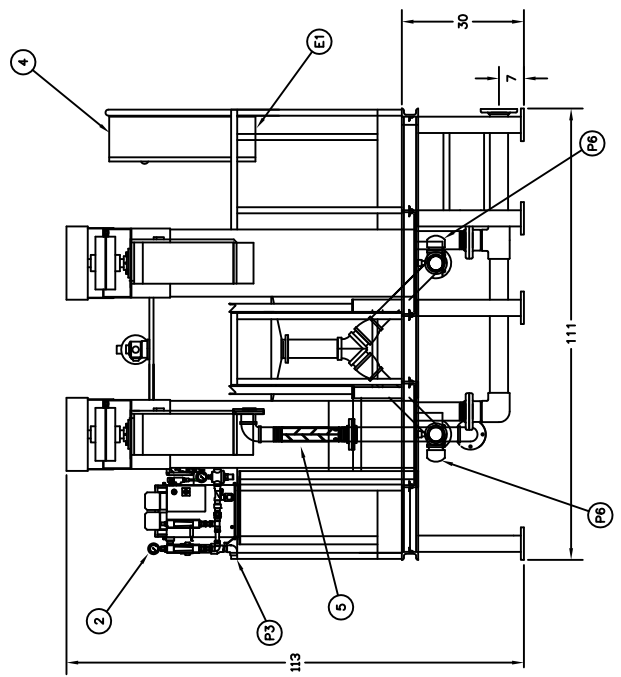
DATE: 11-8-98

FORM: 3/4"

REV: 8



SLUDGE FEED PUMP
 NETZSCH MODEL N100S35V01104B
 WITH 7 1/2 HP DIRECT DRIVE
 MAXIMUM SPEED 400 RPM
 MAXIMUM FLOW 112 GPM



SEE ANCHOR BOLT DETAIL