

**SPECIFICATION**  
**SOMAT MODEL 1PB-9D SOM-A-SYSTEM**  
**SLUDGE DEWATERING SYSTEM**  
**with POLYMER AUTO FEED**  
**PER DRAWING NO. P-3257-5**

The **SLUDGE DEWATERING SYSTEM** shall include, within a single skid-mounted assembly, one (1) screw press, emulsion-type polymer dilution/feed system, head tank with  $\frac{3}{4}$  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 press.

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** - one (1) Model PB-9D press, as follows:

The housing shall be rigid Type 304 stainless steel weldment, supported by structural carbon 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

## 1PB-9D SOM-A-SYSTEM with POLYMER AUTO FEED (continued)

**SLUDGE CONDITIONING/HEAD TANK** - one (1) 100-gallon capacity, cone bottom, tank fabricate 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 3" flanged. **VALVES** shall be ball type. Cleanout and drain connections shall be provided in the sludge piping. All sludge supply, pressate drainage, and water supply 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 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.

The dewatering system **WEIGHT** is approximately 3500 pounds.

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

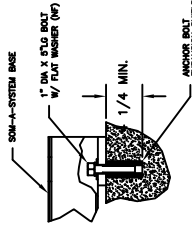
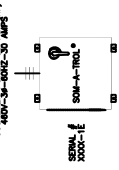
Equipment Manufactured by SOMAT Company  
Lancaster, PA, U.S.A. 17601  
Sold under manufacturer's warranty.

**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"	PRESSURIZED OUTLET		FLANGED
P3	1"	FRESH WATER INLET		FEMALE NPT
P4	3/8"	POLYMER INLET		SIPHON TUBE CONNECTION
P6		CLEANOUT		CAPPED
P7		CAKE DISCHARGE		

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

**WIRING DETAILS**  
CUSTOMER POWER SUPPLY (MFD)



ANCHOR BOLT DETAIL (8 PLCS.)

NOTES:  
1) PREPARED CONTROL PANELS BY SOMAT  
2) CONTROL CIRCUIT TO BE 115 VAC 60 HZ  
3) ALL ELECTRICAL WIRING TO BE IN ACCORDANCE WITH APPLICABLE ELECTRIC CODE  
(M) REPRESENTS ITEM IS NOT FURNISHED BY SOMAT CORPORATION  
(F) REPRESENTS ITEM FURNISHED BY SOMAT CORPORATION

NOTES:  
1) TO BE MOUNTED ON 48 IN. SLURRY PREPARED AND FINISHED.  
2-ALL PIPING IS SCHEDULE 80 PVC UNLESS OTHERWISE SPECIFIED.  
3-SLUDGE CONDITIONING TANK IS OF 304 SERIES STAINLESS STEEL WITH H-LEVEL ALUMINUM LADDER FOR P1 AND P2 ARE APPROXIMATE (42").

ITEM NO.	QTY	PART OR IDENTIFYING NO.	DESCRIPTION
6	1	XXXX-XX	IN-LINE STATIC MIXER - 3 INCH
4	1	XXXX-XX	SOM-A-TROL CONTROL PANEL, NEMA 4X, STAINLESS STEEL
3	1	XXXX-XX	76 GAL. SLUDGE CONDITIONING TANK W/3/4 HP. FLUCCULATOR
2	1	XXXX-XX	EMULSION POLYMER MIX/FEED SYSTEM, BL. (SIZE FOR APPLICATION)
1	1	XXXX-XX	MODEL PB-9D-SOM-A-PRESS W/5 HP. VFD DRIVE

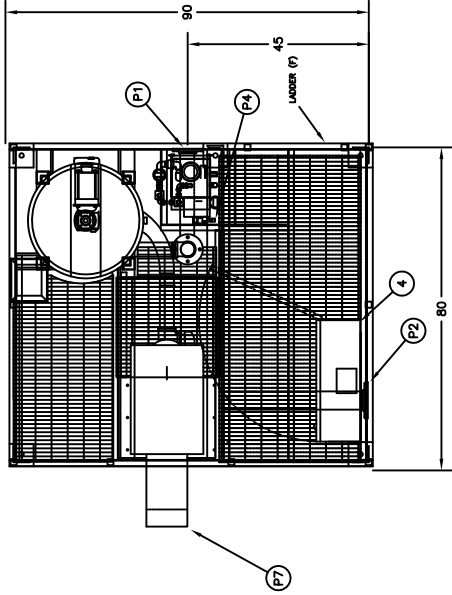
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE AS FOLLOWS:  
MACHINING: FRACTIONS: DECIMALS: CASTINGS: JOBS: INCHES: MILLIMETERS: UNLESS OTHERWISE SPECIFIED FINISH: SURFACE: FILED: PER-DRILL: HOLE: TREATING: AND PLATING:

NOTICE: THE BUYER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE INSTALLATION OF THIS EQUIPMENT.

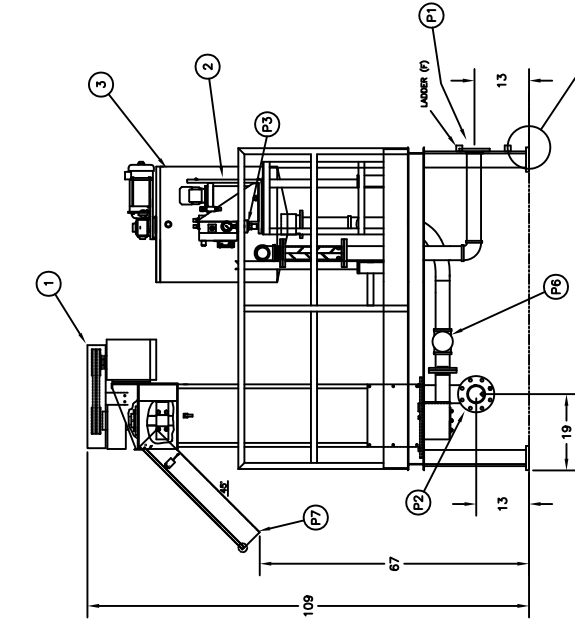
DESIGNED BY: SUE  
CHECKED BY: SUE  
DATE: 9/14/06

1PB-9D SOM-A-SYSTEM  
DEMATERING SYSTEM-STANDARD DESIGN  
SOMAT P/N 1PB-9D SOM-A-SYSTEM

DATE: 9/14/06  
SHEET: 1/12  
P.3257

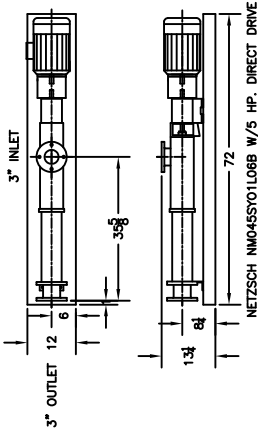


PLAN VIEW

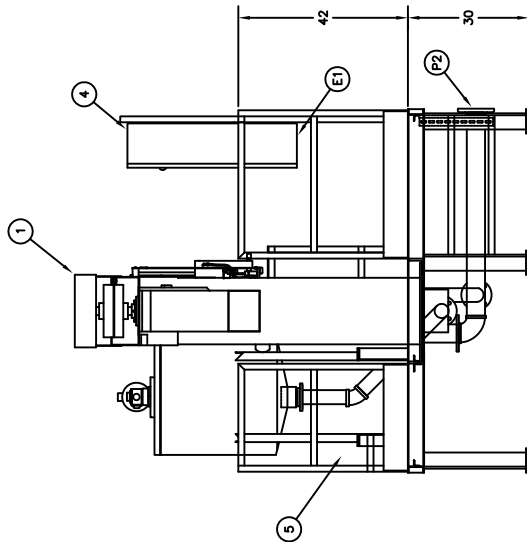


ELEVATION VIEW - SIDE

(CONTROL PANEL NOT SHOWN FOR CLARITY)



ELEVATION VIEW - FRONT



ELEVATION VIEW - FRONT

**SOMAT**

SOMAT COMPANY  
1000 WEST 10TH AVENUE  
DENVER, CO 80202

1PB-9D SOM-A-SYSTEM  
DEMATERING SYSTEM-STANDARD DESIGN  
SOMAT P/N 1PB-9D SOM-A-SYSTEM

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