

# Press Technology & Mfg., Inc. Springfield, Ohio USA

Daniel Berner



**PT&M**

# Objectives

- Understand the process for dewatering applications
- Identify use for Press Technology equipment on pulp and paper applications

# Dewatering Applications for Screw Presses in Pulp and Paper Mills

- Stock Thickening
- Rejects Dewatering
- Sludge Dewatering

# Stock Thickening

- **Between Primary and Secondary Refining Stage**
- **Between Secondary and Tertiary Refining Stage**
- **In Front on High-Density Stock Chest**
- **In Front of Dispersion Systems in Recycle Mills**
- **Pulp Washing for Pine Tar and Chemical Removal**

**PT&M**

# Rejects Dewatering

- **Course Rejects: Wet Strength, Plastic, Tertiary**
- **Fine Rejects: Forward & Reverse Cleaners**
- **Knots & Shives**

# Sludge Dewatering

- **Primary Clarifier Underflow**
- **DAF Sludge**
- **Mixed Primary & Secondary Sludge**

# Dewatering Equipment Comparison

\*%Solids by weight

	PT&M SCREW PRESS	BELT PRESS	RAM COMPACTOR
<u>Primary Sludge:</u> Ash 10%	48 – 52%	28 – 35%	N/A
Ash 35%	52 – 57%	32 – 37%	N/A
<u>Mixed Sludge (Low Ash):</u> Secondary 10%	45 – 55%	25 – 30%	N/A
Secondary 25%	41 – 48%	20 – 27%	N/A
Knots & Shives	38 – 50%	N/A	30 – 37%
Fine Rejects	48 – 53%	28 – 35%	35 – 45%
Coarse Rejects: 60% Plastic	51 – 70%	N/A	35 – 52%

The above numbers are approximate; material will need to be tested before dryness can be guaranteed.

**PT&M**

# Screw Press Features

- Screw Shaft
- Center Shaft drainage on Model 18" and up
- Screen Cage Assemblies
- Filtrate Pan
- Split pneumatic Cone Assembly
- Base Frame
- Screen Covers
- Seals
- Inlet Thrust Bearing

The logo consists of a red oval with a black border. Inside the oval, the letters "PT&M" are written in a bold, white, sans-serif font.

**PT&M**

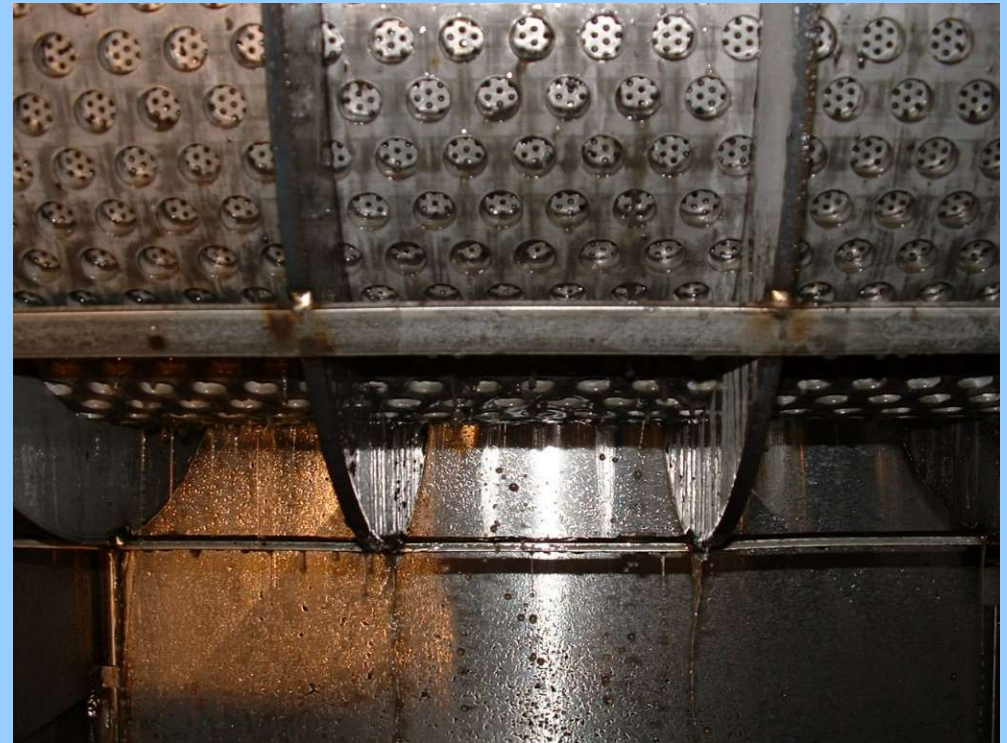


# Screw Press



**PT&M**

# Screens



**PT&M**

# Screen type is available in multiple styles and sizes

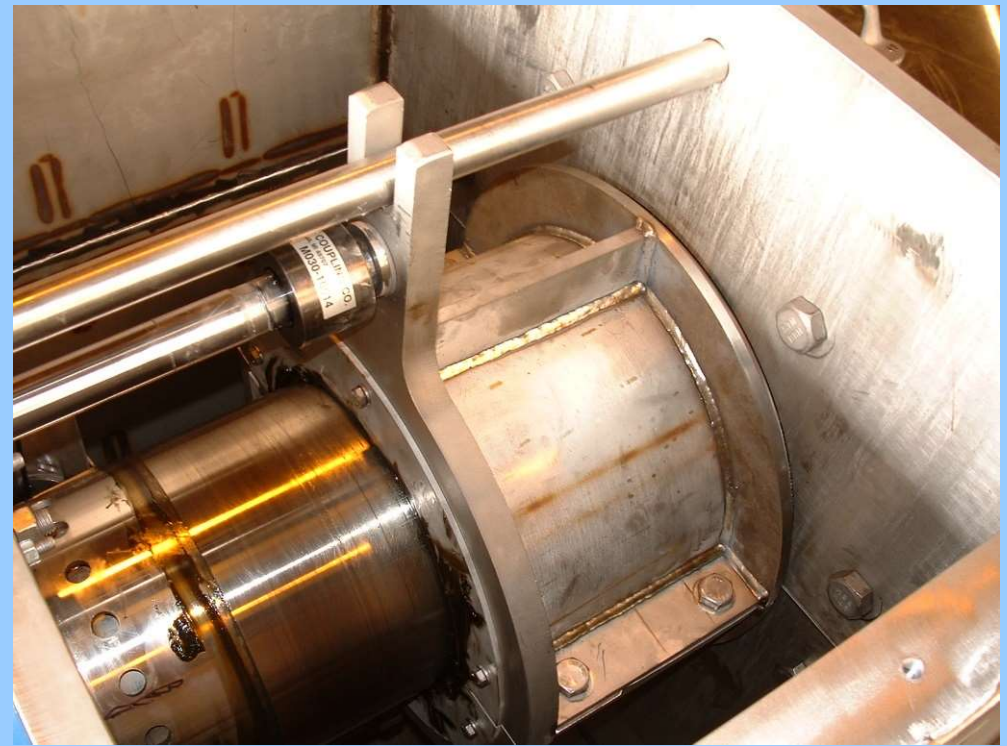
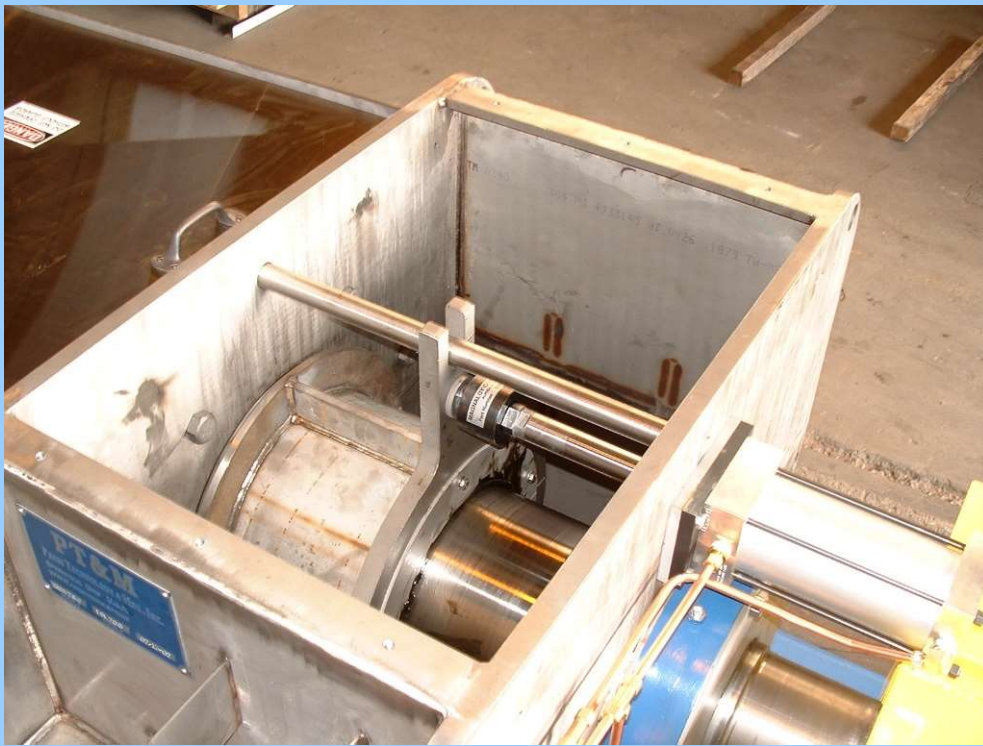
- Wedge wire 0.006" – 0.035"
- Laser Slots 0.010" – 0.065" 3 mm SS plate
- Perforated 3 mm holes in 3 mm SS plate

A red oval logo with a black border containing the text "PT&M" in white.

**PT&M**



# Split Backpressure Cone



**PT&M**

# Consistent Discharge





**PT&M**



# ADVANTAGES OF PT&M SCREW PRESSES

- Thrust Bearing At Inlet End For Easy Maintenance
- 9:1 Screw Diameter To Screen Length. Increased Hydraulic Capacity
- All Screen Cages Split For Easy Maintenance & Shaft Removal
- Backing Ribs On All Screen Cages. Increased Screen Support For Split Cages
- Pneumatic Cone With A By-Directional Air Regulator. Consistent Discharge Solids Regardless Of Inlet Flow Rates
- PT&M Offers A Heavy-Duty Design Resulting In Less Maintenance & Longer Life
- Center Shaft drainage on model 18" and up.

The logo consists of the letters "PT&M" in a bold, white, sans-serif font, centered within a red oval with a thin black border.

**PT&M**

# Screw Shaft



**PT&M**



# Screw Press Sizes

- Standard Screw Press Sizes 9 to 1 ratio & 6:1 Ratio
- 6,8,10,12,16,18,22,24,28,32,36,42 & 48
- 42" and 48" screw press on 6 to 1 ratio Only

**PT&M**

# AGP STYLE SCREW PRESS



**PT&M**

# **ADVANTAGES OF PT&M AGP STYLE SCREW PRESS**

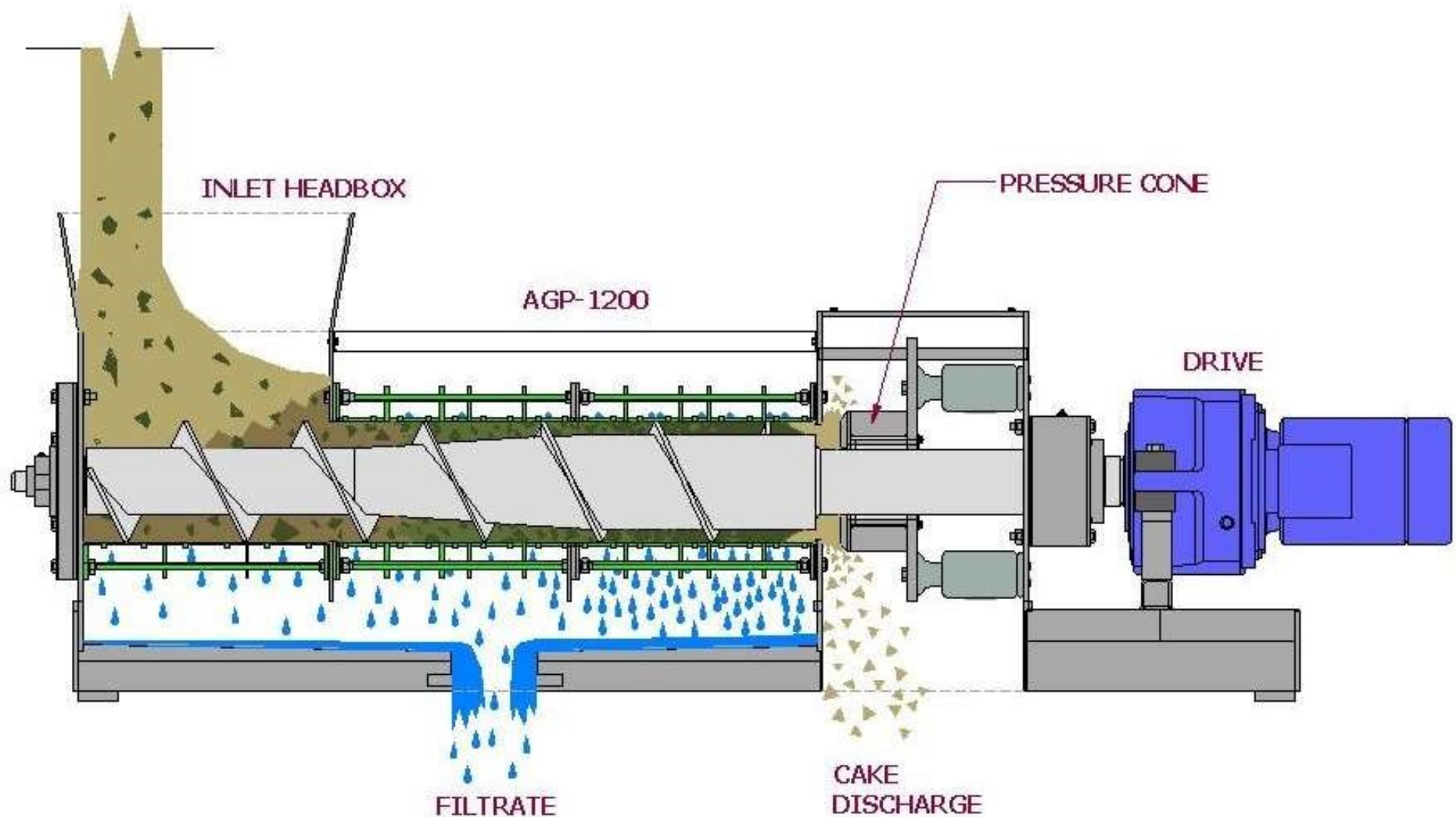
- All Screen Cages Split For Easy Maintenance & Shaft Removal
- Backing Ribs On All Screen Cages. Increased Screen Support For Split Cages
- Pneumatic Cone With A By-Directional Air Regulator. Consistent Discharge Solids Regardless Of Inlet Flow Rates
- PT&M Offers A Heavy-Duty Design Resulting In Less Maintenance & Longer Life
- Compact design

The logo consists of a red oval with a black border. Inside the oval, the text "PT&M" is written in a bold, white, sans-serif font.

**PT&M**



# PT&M AGRI-PRESS® SYSTEM SCREW PRESS MODEL AGP-1200 CUT-AWAY VIEW



LAST PLOT  
DATE: 10/24/07

THIS DRAWING IS PREPARED FOR THE CUSTOMER'S USE AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF PT&M.

TOLERANCES	
ALL DIMENSIONS	UNLESS OTHERWISE SPECIFIED
Ø	± .11
Ø	± .03
Ø	± .005
Ø	± .002

DATE	10/24/07
BY	PT&M
CHECKED	PT&M
APPROVED	PT&M

**PT&M Press Tech**  
SPRINGFIELD OHIO 45503

MODEL AGP-1200 CUTAWAY

OUTLINE DRAWING

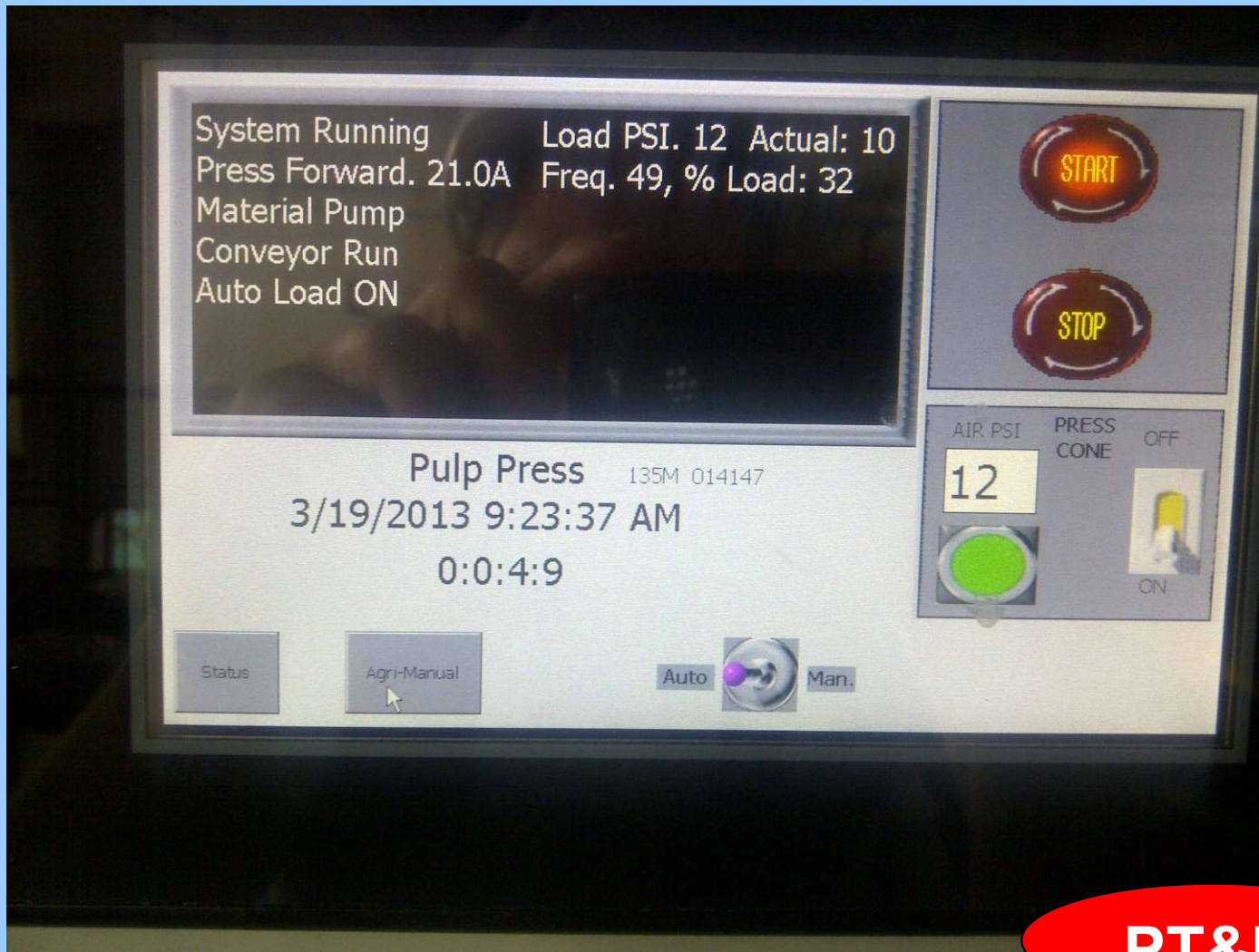
# AGRI-PRESS® Sizes

- 6,8,10,12 &16 inch diameter screws
- Screw to screen ratio 4 to 1



**PT&M**

# Embedded Touch Screen Controller



**PT&M**



# Controls

- The controls come standard in a NEMA 4 panel VFD drive.
- Touch with embedded controller monitors the motor torque and additional inputs.
- High or low motor will prompt the controller to increase/decrease shaft speed and pneumatics pressure on the cone.
- Control can be integrated with a DCS control through ethernet or operate independently