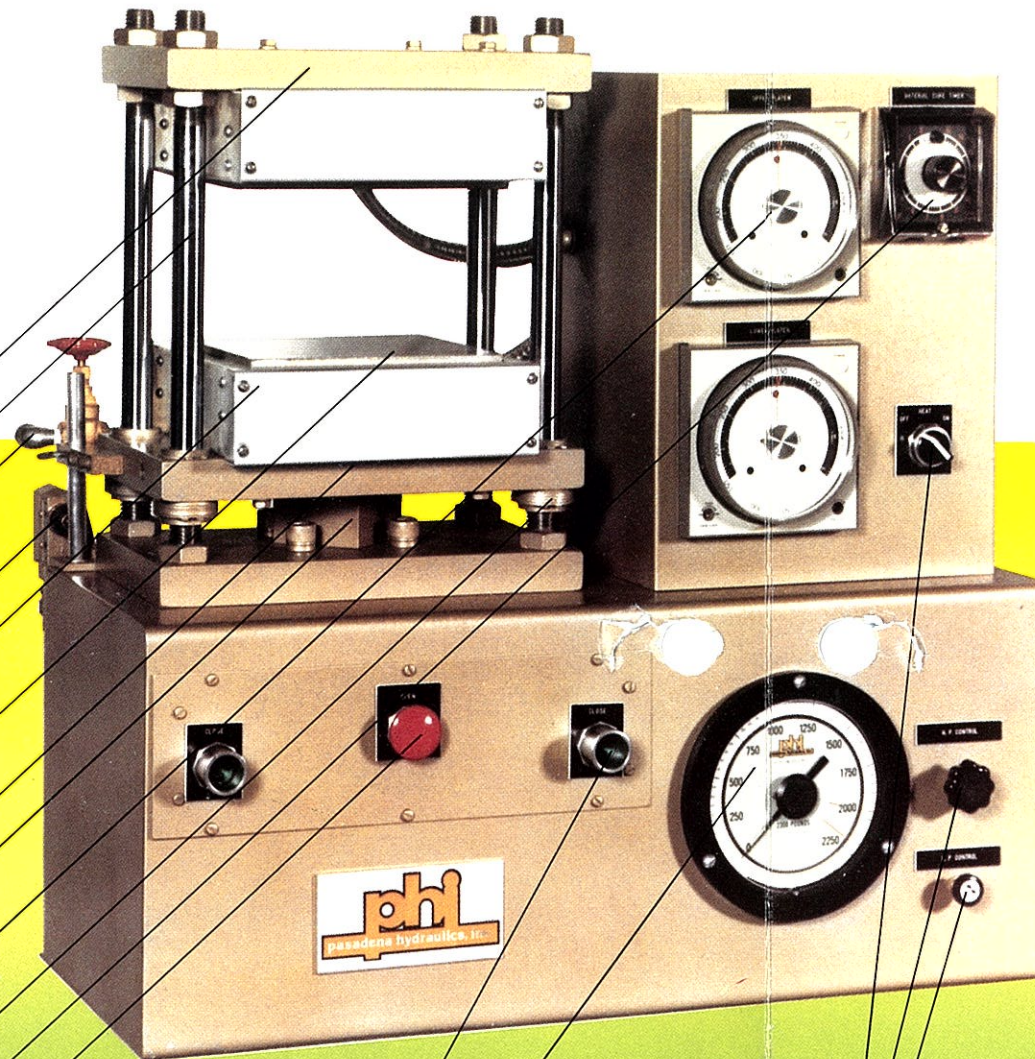


PHI
PRECISION
PRESSES

WHEN ACCURATE
CONTROL OF
PRESSURE,
TEMPERATURE,
AND PARALLELISM
IS REQUIRED...



Surface Ground Plates

Chrome Plated Strain Rods

Water Cooled Frame

Limit Switch for
Automatic Slowdown
of Closing Speed

Peripheral Insulation

Electrically Heated Platens
Surface Ground

Insulating Plates
Separate Press Platens

Low Friction Cylinder

Time Proportioning
Temperature Controllers

Linear Ball Bushings
for Frictionless Closing

Cycle Timer

Open Pushbutton

Dual Closing Pushbuttons

1/4% Accuracy Precision
Test Gauge Calibrated
in Lbs. Force

Heat Off-On
Selector Switch

Pressure Control Valve

Closing Speed Control

PRECISION PRESSES

Standard air actuated presses that incorporate PHI's specialized platen designs and advanced Pneumatic/Air over Oil systems into a precision four post press, intended for applications requiring accurate control of pressure, temperature and parallelism.

FORCE

Standard models with capacity rated from 2000 lbs. to 60,000 lbs.

DIE SPACE

Standard models with die space, or platen size, from 8" x 8" to 18" x 18".

PHI design is based on a building block concept that allows customers to select, for a given capacity and die space, the platen design most suitable to their application (Table 2).

No matter which platen design is selected, parallelism of .001"/ft. of span will be achieved utilizing surface ground plates, guided on ball bushings, and chrome plated strain rods with fine threads for optimum parallelism alignment.

TEMPERATURE CONTROL

PHI Precision Presses are designed to operate with a variety of platens, steam or electrically heated, with or without cooling, depending on your application. As different applications call for different temperature ranges, heat rise, temperature uniformity and heating modes; we at PHI have designed a complete line of platens ranging from standard industrial platens to exotic high temperature platens for laboratory applications. No matter what your application, proven PHI platens are the answer.

All PHI platens utilize special thermocouples, one for each platen, and time proportioning temperature controllers to prevent overshoot and to provide uniform, predictable heating.

AIR/OIL HYDRAULICS

All Precision Presses are designed to operate on shop air, without pumps or motors. The smaller capacity presses utilize low friction air cylinders and a pneumatic system that includes precise relieving type air pressure regulators, air filters and an air amplifier for pressure accuracy and exact control. Once press is closed it remains pressurized with virtually no air consumption, resulting in energy conservation and silent operation.

The larger capacity presses utilize large diameter rams, for lower system pressure, and combine an air circuit for fast closing, with a state-of-the-art air/oil hydraulic system for building and holding pressure. The low system pressure results in lower friction and longer life as all components operate below their rated capacity.

This design combines the best of two technologies, pneumatics and hydraulics, resulting in controllable, repeatable pressure with low maintenance cost and silent operation.

OPTIONS AVAILABLE

We at PHI are aware that special applications may require special features in a press, above of what is offered in the standard Precision Presses. For these special applications we have developed features such as nickel alloy platens for temperatures up to 1200°F, special heaters for heat rise up to 50°F/Min., 1/4% accuracy temperature controllers, controlled platen cooling and many others.

We solicit your special applications.

PHI PRECISION PRESSES are the answer!

TABLE 1. PRESS SPECIFICATIONS

MODEL	TS-21	AS-21	GS-21	RA-22	DA-22	CA-23	CA-24	HA-24	JA-25	QA-25
Capacity (lbs)	2000	3000	5000	4000	7000	9000	9000	16000	22000	60000
Platen Size (in. x in.)	8x8	8x8	8x8	12x9	12x9	12x12	18x12	18x12	18x18	18x18
Stroke and Daylight (in.) [Ⓛ]	5	6	6	6	6	6	6	6	8	8
Ram Area (sq. in.)	24	36	36	50	50	113	113	113	154	154
Ram Equiv. Diameter (in.)	5.5	6.8	6.8	8.0	8.0	12.0	12.0	12.0	14.0	14.0
Operating Pressure (psi)	85	85	140	80	150	80	80	150	150	390
Air Supply (psi)	90	90	90	90	90	90	90	90	90	90
Air Booster	No	No	Yes	No	Yes	No	No	Yes	Yes	Yes
	PNEUMATIC			AIR OVER OIL HYDRAULICS						
Dimensions (LxWxH—in.)	32x16x32	32x18x34	32x30x34	40x24x42	40x32x56	40x22x56	47x24x58	47x30x58	47x30x68	47x30x68
Weight (lbs) [Ⓜ]	250	275	350	625	725	1075	1425	1675	2800	3100
Initial Air Consumption (scfm)	6	9	75	12	66	30	30	95	110	200
Closing Speed (ipm)	60	60	60	60	60	60	60	60	60	60

Notes: [Ⓛ]With Platens installed [Ⓜ]With "U" type platens installed (typical)

Above presses can be supplied with any of the following:

TABLE 2. PLATEN HEATING SYSTEM PERFORMANCE/CONTROL SPECIFICATIONS

FEATURES PERFORMANCE CONTROL	SYSTEM DESIGNATION CODE	NON HEATED	STEAM HEATED			ELECTRICALLY HEATED			
		A	B	C	E	U	H	J	
PLATEN	Max. Temp. (°F)	—	400	400	450	600	600	800	
	Heat Rise (°F/Min.)	—	50	50	13	8	13	15	
	Material	Steel	Steel	Steel	Alum.	Steel	Steel	Steel	
	Hard Anodized	—	—	—	Yes	—	—	—	
	Surface Ground	No	No	Yes	Yes	Yes	Yes	Yes	
	Edge Insulation	No	No	No	Yes	Yes	Yes	Yes	
TOTAL KW	PLATEN SIZE	8"x8"	—	—	—	1.6	1.6	2.6	3.0
		12"x9"	—	—	—	3.0	3.0	5.0	5.7
		12"x12"	—	—	—	4.0	4.0	6.5	7.5
		18"x12"	—	—	—	6.0	6.0	9.5	11.0
		18"x18"	—	—	—	9.0	9.0	14.0	16.0
TEMPERATURE UNIFORMITY	± °F@350°F	—	—	3	4	8	6	10	
	± °F@550°F	—	—	—	—	15	10	20	
	± °F@750°F	—	—	—	—	—	—	30	
TEMPERATURE CONTROLLER	Sensitivity (%)	—	—	.1	.1	.2	.1	.1	
	Set Point Acc. (°F)	—	—	1.0	1.0	1%	1.0	1.0	
	Scale	—	—	Digital	Digital	Analog	Digital	Digital	
	Manufacturer	—	—	Barber Colman	Barber Colman	Barber Colman	Barber Colman	Barber Colman	
	Model No.	—	—	523	523	120	523	523	

REPRESENTED BY:



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