

# Presses, Dies, Peated Platens and Film Maker Systems



## 15 and 25 Ton Manual Hydraulic Presses



*Easy to use, rugged and durable Presses suitable for a wide range of applications*

### Specification of 15 and 25 Ton Presses

|  |        |
|--|--------|
| Max Height (at Handle)                     | 610mm  |
| Max Width                                  | 310mm  |
| Max Depth                                  | 190mm  |
| Weight                                     | 50kg   |
| Lower Piston Stroke                        | 25.4mm |
| Upper Bolster Screw Travel                 | 89mm   |
| Minimum Distance Between Pressing Faces    | 38mm   |
| Maximum Distance Between Pressing Faces    | 152mm  |
| Lower Pressing Face Diameter               | 86mm   |
| Upper Pressing Face Diameter               | 32mm   |
| Max Width of Sampling Area (Side-to-Side)  | 134mm  |
| Max Depth of Sampling Area (Back-to-Front) | 141mm  |

### Features

- Polycarbonate safety guards
- Adjustable upper bolster
- Adjustable pressure control valve
- Evacuation ports
- Pressure release valve
- Gauges for low pressure applications (0-1, 0-2, 0-5 Tons optional)

The Specac 15 and 25 ton Manual Hydraulic Presses have been designed to handle a wide variety of pressing applications. They are specifically suited for the preparation of KBr discs in Spectroscopic laboratories using the Specac Evacuatable Pellet Die assembly.

The Presses can also be used with Specac Heated Platens for applications such as the preparation of thin polymer films.

## 40 Ton Automatic Hydraulic Press



The Specac 40 Ton Automatic Press has been designed for sophisticated pressing applications requiring a high degree of automation and reproducibility.

The automated control system gives ease of use, rapid and flexible sample preparation and minimum maintenance. Electronics and high impact safety guards ensure safe operation even for unskilled operators. A large access area allows heated platens, dies and specialized sample holders up to 200mm in diameter to be accommodated.

The ram has a fast approach facility which greatly reduces the pressing time and the pressure is applied until the set load is reached. Functions such as Lock, Pressing Time/Rate and Diagnostics are all controlled via the microprocessor. An additional feature for unattended operation, such as press cycling, is available and an RS232C interface enables the press to be interfaced to other equipment.

### *A Microprocessor controlled automatic press for high tonnage applications*

#### Features

- 40 Ton capacity. Other ranges available on request
- Optimized for XRF and IR sampling
- CE Safety Approved
- Full programming facility for unattended operation.
- Controlled application and release of pressure.
- Accommodates samples up to 200mm in diameter.

#### Specifications of 40 Ton Automatic Hydraulic Press

|   |                    |
|---|--------------------|
| Maximum load on Ram (Piston)                      | 40 Tons (40,639kg) |
| Load Applied (Displayed To)                       | 0.1 Ton            |
| Digital Display Setting (to 1 Ton)                | 4 to 40 Tons       |
| Top Bolster Diameter                              | 32mm               |
| Top Lead Screw Vertical Travel                    | 35mm               |
| Ram (Piston) Diameter                             | 100mm              |
| Ram (Piston) Stroke                               | 38mm               |
| Maximum / Minimum distance between Pressing Faces | 135mm / 35mm       |
| Sample area size (W, D, H)                        | 210, 240, 210mm    |
| Baseplate (Width x Depth)                         | 400mm x 580mm      |
| Height (with Control Box)                         | 570mm              |
| Weight  | 145kg              |

## Automatic Air Presses



### *A low tonnage automatic press for accurate and reproducible pressing*

In addition to the Hydraulic Presses Specac also produces a low tonnage Automatic Air Press.

Pressures up to 1.5 Tons can be applied in a smooth and efficient manner. The operation allows a consistent load to be applied even when a sample begins to yield on compression. For samples requiring repetitive low tonnage pressing the Specac Air Press is ideal.

### Features

- Smooth Operation
- Adjustable Pressure Limits
- Timed Operation
- CE Safety Approved
- Reproducible Tonnage

## Press Ordering Information

### Ordering Information for 15 and 25 Ton Manual Hydraulic Presses

|       |  |
|-------|--|
| 15011 | Manual Hydraulic Press<br>15 Tons maximum pressure |
| 25011 | Manual Hydraulic Press<br>25 Tons maximum pressure |

### Options for 15 and 25 Ton Manual Hydraulic Presses

|       |                                      |
|-------|--------------------------------------|
| 15051 | Kit to convert press to read 0-1 Ton |
| 15061 | Kit to convert press to read 0-2 Ton |
| 15071 | Kit to convert press to read 0-5 Ton |

### Spares and Consumables

|       |   |
|-------|---|
| 15100 | Seals and Gaskets Kit for 15 and 25 Ton presses   |
| 15101 | Hydraulic Oil for 15 and 25 Ton presses (1 litre) |

### Ordering Information for 40 Ton Automatic Hydraulic Press

|       |   |
|-------|---|
| 25600 | 40 Ton Automatic Hydraulic Press.<br>Specify 220v or 110v |
|-------|---|

### Alternative Pressure Ranges

The 40 Ton Automatic Press can be supplied for different pressure ranges if more accuracy at low tonnage is required, e.g. a version is available with a pressure range of 0.4 - 4 Tons. Other ranges are available. Please call a Specac Representative for a quotation.

### Automatic Air Press

Because of the diversity of applications for this press many configurations are possible. Please call a Specac Representative for a quotation.

## Evacuable Pellet Dies



**Production of high quality sample pellets from 3mm to 45mm diameter**

### Features

- Hardened Stainless Steel.
- Highly polished pellets.
- Evacuable for sample pellet clarity and quality.
- Vacuum pump kit for moisture free pressing (optional)

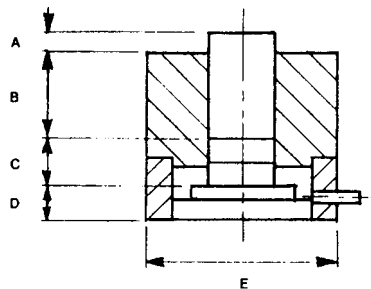
Specac produce a wide range of 440C hardened stainless steel Evacuable Pellet Dies which are used for compacting powdered samples into discs or briquettes.

The dies are used in conjunction with the Specac Hydraulic Presses. Halide discs for Infrared analysis are usually produced with the smaller size dies. The larger size dies are commonly used in briquetting samples for XRF and XRD analysis and many other industrial applications. All of the dies are equipped with nitrile O ring seals and an evacuation port to allow for the removal of air, if desired, during the pressing process.

### Evacuable Pellet Die Specification

#### Recommended load limits for Dies

|                |                |
|----------------|----------------|
| 3mm - 0.5 tons | 20mm - 24 tons |
| 5mm - 2.0 tons | 25mm - 36 tons |
| 13mm - 10 tons | 32mm - 50 tons |
| 16mm - 15 tons | 45mm - 80 tons |



A+B= Plunger Height

C= Stainless Steel Pellet Height (only 1 pellet in 3mm die).

D= Base Height

E= Die Width

A+B+C+D= Total Height of Die

### Specification Dimensions (mm)

| Die Size | 3mm  | 5mm  | 6mm  | 7mm  | 8mm  | 10mm | 13mm | 16mm | 20mm | 25mm | 32mm | 35mm | 40mm | 45mm |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P/N      | 3055 | 3060 | 3070 | 3080 | 3090 | 3100 | 3000 | 3120 | 3165 | 3170 | 3300 | 3350 | 3290 | 3845 |
| A        | 17.6 | 13.7 | 13.7 | 13.7 | 13.7 | 16.0 | 16.0 | 16.0 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 |
| B        | 20.8 | 38.8 | 38.8 | 38.8 | 38.8 | 19.1 | 19.1 | 19.1 | 35.8 | 35.8 | 35.8 | 35.8 | 35.8 | 35.8 |
| C        | 4.8  | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 |
| D        | 15.9 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 |
| E        | 31.8 | 50.8 | 50.8 | 50.8 | 50.8 | 50.8 | 50.8 | 50.8 | 68.3 | 68.3 | 68.3 | 68.3 | 95.3 | 95.3 |

## Evacuable Pellet Dies Ordering Information

| Evacuable Pellet Dies Complete |      | Options              | Pump and Spares |  |
|--------------------------------|------|----------------------|-----------------|--|
| Die Size (dia)                 |      | Sample Pellet Holder |                 |  |
| 3mm                            | 3055 | 3395                 | 3640            | Vacuum Pump Kit - For producing clear, moisture free sample pellets with the Evacuable Pellet Dies. Includes Vacuum Pump (1x10 <sup>-1</sup> mbar), gauge, connector tube. |
| 5mm                            | 3060 | 3400                 |                 |  |
| 6mm                            | 3070 | 3401                 | 3641            |  |
| 7mm                            | 3080 | 3402                 | 3642            | Seal kit for Vacuum Pump   |
| 8mm                            | 3090 | 3403                 | 3643            | Mist filters for Vacuum Pump   |
| 10mm                           | 3100 | 3404                 |                 | Oil for Vacuum Pump  |
| 13mm                           | 3000 | 3410                 |                 |  |
| 16mm                           | 3120 | 3450                 |                 |  |
| 20mm                           | 3165 | 3193*                | 3600            | <b>Spares and Consumables</b><br>Agate Pestle and Mortar (Mortar Bowl diameter 4cm)  |
| 25mm                           | 3170 | 3172*                | 3610            | KBr Powder (50g)   |
| 32mm                           | 3300 | 3520*                | 3460            | Paper rings for 13mm die (11mm diameter aperture) (100)  |
| 35mm                           | 3350 | 3530*                | 3470            | Paper frames for 13mm die (11mm x 2mm aperture) (100)  |
| 40mm                           | 3290 | 3298*                | 3475            | Paper frames for 13mm die (4 x 1mm aperture) (100)   |
| 45mm                           | 3845 | 3542*                |                 |  |

\* These pellet holders are sample retaining rings only and do not have a rectangular mounting plate.

| Die Spares |                |         |      |      |                |            |
|------------|----------------|---------|------|------|----------------|------------|
| Dia (mm)   | Set of Pellets | Plunger | Body | Base | Extractor Ring | O Ring Kit |
| 3mm        | 3056           | 3058    | 3065 | 3054 | 3059           | 3057       |
| 5mm        | 3061           | 3063    | 3064 | 3050 | 3069           | 3062       |
| 6mm        | 3071           | 3073    | 3074 | 3050 | 3079           | 3072       |
| 7mm        | 3081           | 3083    | 3084 | 3050 | 3089           | 3082       |
| 8mm        | 3091           | 3093    | 3094 | 3050 | 3099           | 3092       |
| 10mm       | 3101           | 3103    | 3104 | 3050 | 3109           | 3102       |
| 13mm       | 3010           | 3030    | 3040 | 3050 | 3025           | 3020       |
| 16mm       | 3130           | 3150    | 3160 | 3050 | 3125           | 3140       |
| 20mm       | 3166           | 3168    | 3169 | 3191 | 3192           | 3167       |
| 25mm       | 3180           | 3210    | 3220 | 3230 | 3171           | 3200       |
| 32mm       | 3310           | 3330    | 3340 | 3230 | 3521           | 3320       |
| 35mm       | 3360           | 3380    | 3390 | 3355 | 3531           | 3370       |
| 40mm       | 3291           | 3293    | 3294 | 3295 | 3297           | 3292       |
| 45mm       | 3846           | 3847    | 3848 | 3849 | 3543           | 3871       |

## Constant Thickness Film Maker Systems

### Constant Thickness Film Maker System



#### Features

- Up to 300°C operation
- 15 minute cycle time
- 4 Ton load limit
- 0.015, 0.025, 0.050, 0.100, 0.250, 0.500mm films of 29mm diameter
- Easy film release
- Operates with Heated Platens P/N 15515

*Film Making systems to produce high quality, reproducible polymer films*

Two versions of Constant Thickness Film Maker Systems are offered for the preparation of reproducible thickness polymer films.

One version, P/N 15800, is used with high melting point polymers up to 400°C. A standard version, P/N 15620, when used in conjunction with the heated platens P/N 15515 is used for lower temperature applications up to 300°C. Both film maker systems are designed for use in all Specac presses. The high temperature system (P/N 15800) is a compact unit which combines the film maker device, heated platens and cooling chamber as an integral unit. Further features of this system include a sample cup making device, non-drip water connections, low voltage operation and a high stability temperature controller.

### High Temperature Film Maker System



#### Features

- Up to 400°C operation
- 10 minutes cycle time
- CE Safety Approved
- Integral heating and cooling
- 2 Ton load limit
- 0.015, 0.025, 0.050, 0.100, 0.250, 0.500mm films of 29mm diameter
- Easy film release

## Film Maker Systems Ordering Information

### Film Maker Systems

15620 Constant Thickness Film Maker

Includes 0.015, 0.025, 0.050, 0.100, 0.250 and 0.500 mm spacer rings

Aluminum disc foils 40mm diameter (200)

Specacards 10mm diameter clear aperture (20)

Stainless steel forceps

15800 High Temperature Constant Thickness Film Maker (Specify 220v or 110v)

Includes 0.015, 0.025, 0.050, 0.100, 0.250 and 0.500 mm spacer rings

Aluminum disc foils 40mm diameter (200)

Aluminum foil sample cup making tool

Specacards 10mm diameter clear aperture (20)

Stainless steel forceps

High stability digital automatic temperature controller (400°C)

Non-drip water connectors

### Constant Thickness Film Maker Kits

15630 Constant Thickness Film Maker Kit I (Specify 220v or 110v)

Includes Constant Thickness Film Maker System (15620)

Heated Platens and Digital Automatic Temperature Controller (300°C) (15515)

15632 Constant Thickness Film Maker Kit II (Specify 220v or 110v)

Includes Constant Thickness Film Maker System (15620)

Heated Platens and Digital Automatic Controller (300°C) (15515)

15 Ton Manual Hydraulic Press (15011)

15810 High Temperature Constant Thickness Film Maker Kit (Specify 220v or 110v)

Includes High Temperature Constant Thickness Film Maker System (15800)

15 Ton Manual Hydraulic Press (15011)

## Heated Platens



The Specac Water Cooled Heated Platens have been designed to provide heatable pressing surfaces compatible with all Specac Hydraulic Presses.

The platens are simply inserted into a press by replacing the bolster fixing of the press for the top platen and placing the bottom platen over the lower pressing face of the press.

The platens have a large pressing surface, are rugged, durable and have full CE safety approval. They are fitted with a permanent thermocouple which monitors the temperature close to the pressing surface. Water cooling of the press connection ports of the platens allows for an efficient heating and cooling cycle. The platens and thermocouple are operated by a digital automatic temperature controller with a stability of  $\pm 1^{\circ}\text{C}$

*A quick and simple accessory to convert standard Presses to heatable versions*

### Features

- Digital Temperature Display.
- Controlled temperature to 300°C with water cooling.
- 15 Ton load bearing capacity.
- CE Safety Approved.
- 100mm diameter pressing surface.
- Compatible with all Specac Hydraulic Presses.

### Ordering Information for Heated Platens

15515 Water Cooled Heated Platens and Automatic Temperature Controller with Digital Display. Includes 2 metres of 6mm i.d. PVC tubing and flow connectors. Specify 220v or 110v.

### Spares and Consumables

15601 Teflon sheets 0.25mm thick for Water Cooled Heated Platens (10)

15512 Replacement heater set for Platens (220v)

15522 Replacement heater set for Platens (110v)

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