



Aerial photograph of the Company's Wakefield site
Left: Technical Design Department



CONTROL SYSTEM

Rhodes Adaptive Motion (RAM) control system incorporating Siemens Series 7 PLC with colour touch screen monitor. The software has been designed specifically for indexing applications and programming is both intuitive and user friendly. The system allows for the storing and retrieval of an infinite number of pitch combinations. Once programmed, each sheet pattern is identified by name or reference number, and stored in the press control memory under this identity. Recalling each programme by name or reference automatically sets the sheet indexing mechanism to that particular stored programme.

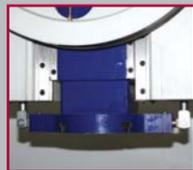
Use of a common processor and I/O ensures the seamless integration and synchronisation of the sheet feeding axes and the stroking of the press slide. The system is designed to record total number of press strokes and run hours for press and process maintenance purposes. Also included is a unique individual tool maintenance recording function to enable pre-planned tool maintenance to be carried out. The PLC can be fitted with a modem and mobile phone SMS service to allow remote monitoring and interrogation of the press and process.

OPTIONS -

- Sheet Destacker/Unloader
- Datum Station
- Sheet Lubrication
- Sheet Web Ejection System
- Component Retrieval System



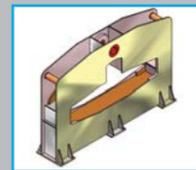
Sheet Clamp



Pre-loaded linear bearing guides.



Clutch & Brake



3D Modelling



A Group Rhodes Company

Special Purpose Machinery for the Metal Packaging Industry



SERVO STAGGER FEED PRESS

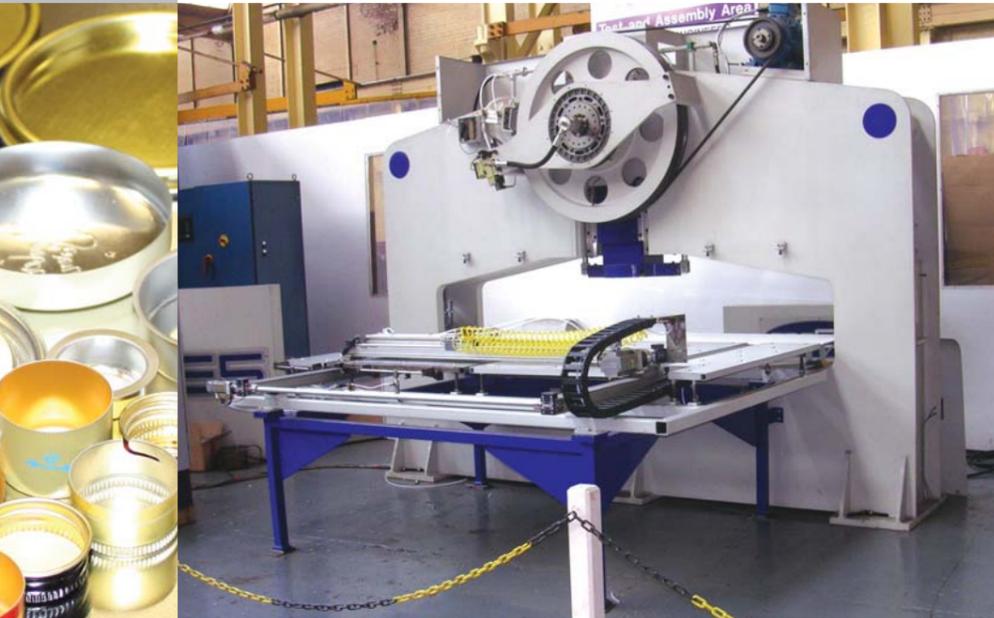


Data provided in this literature is an approximate guide and shall not be contractually binding. The policy of Joseph Rhodes is one of continuous product development. The right to change specification and design at any time without notice is reserved. 0.1M/1108/A

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Our Engineering Heritage

From the early years of manufacturing metal packaging products, Joseph Rhodes has offered unrivalled expertise in the supply of Stagger Feed Presses, with over 2000 units sold worldwide.



Main (Left): Servo Stagger Feed Press under construction.

Below (Top): Low inertia beam with clamps.

Below (Bottom Left): PLC Control.

Below (Bottom Right): AC Servo Motor Drive.

Below: Application examples:

Below (Top Left): Wine Bottle Screw Tops.

Below (Top Right): Paint Tin Lids.

Below (Bottom): Siemens colour touch screen.

Quality Engineering

Joseph Rhodes has a reputation in the market place not only for the technical and innovative nature of its products, but also for the workmanship, longevity, service and finish of its machinery.

KEY DESIGN FEATURES (CONT.)

SLIDE

The slide is constructed of a high tensile high-grade aluminium alloy to give maximum strength and minimum weight. Slide guidance is by precision, pre-loaded linear roller bearings with prismatic adjustment to achieve 'play-free' operation with minimal friction. Die height adjustment is effected via a manually adjusted precision ballscrew ensuring precise bottom dead centre (BDC) position. Twin pneumatic cylinders balance the reciprocating mass of the slide and top tool to provide positional repeatability and improved die life.

PRESS LUBRICATION

Press lubrication is provided by a fully automatic, recirculating oil lubrication system equipped with a pressure line filter and fluid level gauge. Lubrication of the roller slide bearings is via a manually operated grease system.

SHEET INDEX

A fully automatic CNC controlled two axes sheet feed system is rigidly fixed to the press frame so as to ensure complete press/feeder repeatability. The system is designed with the minimum of moving parts providing precision linear indexing capable of pitches up to 60mm at maximum press speed. Both X and Y axis movements are guided on pre-loaded, linear bearings ensuring a positional accuracy of +/- 0.05mm. Direct mounted, AC servo motors with integral resolvers for highly accurate closed loop control, drive two linear slides securely connected by a rigid torque shaft ensuring repeatable accuracy of sheet position. Sheet feeder operation controls the press cycling when in automatic mode.

Sheet feeder is fully programmable to accommodate:

- Non Staggered Punching Pattern (Strip and Sheet)
- Staggered Punching Pattern
- Staggered Punching Pattern of Scroll Cut Sheets.

MATERIAL CLAMPS

Two light weight, pneumatically operated material clamps are fitted to a low inertia beam. The clamps are locked/released by a foot switch and have an electronically protected safety zone to prevent the clamps being indexed beneath the press tool. Clamps can be easily adjusted along the clamp beam to suit different strip/sheet widths.

SHEET SUPPORT

The press is fitted with a sheet support table with inset roller balls to support the sheet material, thus preventing "sagging" whilst the sheet is being transferred, indexed and formed. The sheet support table also incorporates the sheet edge datum for accurate registration of the printed sheet prior to punching.

TOOL HOLDER

The press slide and bolster are designed and machined to accommodate single or multi-impression tooling. The tooling fixing points can be customised to customer requirements.

GUARDING

Main motor drive, flywheel, and clutch and brake are enclosed in fixed sheet metal guards. The slide and tool area are enclosed by a steel mesh guard arranged for ease of access and tool set-up. The operators guarding is electrically interlocked with the press control.

NEW CONCEPT SERVO STAGGER FEED PRESS

The new concept Rhodes Servo Stagger Feed Press is the latest machine development by Joseph Rhodes. It has been designed to offer unrivalled production flexibility as a priority for today's "just-in-time" world.

The Stagger Feed's unique ability to blank, form and draw components makes the press ideal for producing lids and tops. Offering a rigid fabricated frame capable of withstanding the rigors of rapid stamping, the Servo Stagger Feed Press can operate at up to 240 strokes per minute and exhibits all of the standard qualities users have come to expect of a Rhodes machine.

KEY DESIGN FEATURES

FRAME

Rigid, portal design, fabricated steel frame optimised for maximum strength with minimum deflection utilising the latest FEA software techniques. The frame is fully heat stress relieved prior to machining so as to remove residual stresses due to the welding process thus ensuring maximum die life. Positive location of the CNC sheet feed system ensures repeatability of feed pitch with minimum web thickness between cut blanks.

DRIVE

An AC variable speed motor, driving a dynamically balanced, quill mounted flywheel supported on heavy duty roller bearings ensures smooth operation of the crank slider mechanism. Initiation of the press stroke is via an Ortlinghaus low inertia, combined pneumatic friction clutch and brake unit, complete with safety dual solenoid control valve electrically interlocked to the press control system. A pneumatically operated flywheel brake brings the flywheel and press drive to a controlled stop. The brake is electrically interlocked to the press control system.

SPECIFICATION (SF 20)

| | |
|------------------------|---|
| Pressure | 20 tonnes |
| Stroke | 140 mm |
| Speed, variable | 240 spm (maximum) |
| Maximum Sheet Size | 1200 mm x 1200 mm |
| Maximum Blank Size | 140 mm diameter |
| Slide Adjustment | 50 mm |
| Bedplate to Slideface | 460 mm stroke up/adjustment up |
| Main Frame | Steel fabrication |
| Drive | Mechanical, direct flywheel drive |
| Variable speed | AC Inverter |
| Clutch/Brake | Ortlinghaus pneumatic |
| Slide | Mounted in linear precision guides |
| Die Cushion Force | 18kn |
| X/Y axis | Servo motor drive, precision guides, rotary encoders |
| Sheet grippers | Pneumatic |
| Sheet locations | Top and Side |
| Controls | Siemens PLC, 17" Touch Screen |
| Guards | Sheet metal guards for motor drive etc. |
| | Mesh guards around tool space |
| Option Extras include: | Automatic Sheet Feed: Pneumatic or Spring Cushion: Air Blast system |