



Courtoy

Industrial Rotary
Tablet Presses

R53



The R53: Applications

The R53 is probably the most versatile industrial rotary press on the market for single-layer tablet and component production. The sample applications below are ample proof that the R53 is capable of meeting any industry's demands.

Electronic industry

E The R53 is perfectly suited for the production of ferrite cores used for power supplies, rotating transformers, pulse transformers and many other magnetic circuit applications. The materials most frequently used for compression are MnZn and NiZn.

Special Courtoy features include the vibra fluid feeder, which ensures a better flowing of the product in the dies, and specially shaped punch heads extending the dwell time.



Electrical components

Another application the R53 is particularly fit for is the manufacture of metal contacts used in relays and fuses. These can be medium voltage or high voltage.

Shapes can vary from round over rectangular to cubic.

The powders used are mostly AgC and TuCa mixtures. To be able to resist the abrasive nature of some of these powders, the R53 is equipped with removable die wear plates.

As some of the electrical components are quite big, the R53's high compression force is a very valuable asset.

The carbon brushes used in motors to make the connection with the moving surface can also be produced on the R53.



Batteries

The R53 has long proven its competitiveness in the production of rectangular 9 V batteries and 1,5 V round batteries.

For 1,5 V battery production, the R53 is available with a core rod system.

The take-off system ensures the controlled removal of the pressed components from the die table.



Ceramics

In this wide area, the R53 is often preferred over its competitors to compress very thin discs of less than 0,6 mm used as capacitors and varistors.

As many green parts are sintered, the density and the neutral line in the tablet are very important.

Therefore, Courtoy has fitted the R53 with a unique "top compensator", which ensures that no variations occur.

This is particularly important when compressing Uranium Oxide, the fuel for nuclear reactors. These tablets or pellets are almost exclusively pressed on the R53.



High tablets often show a tendency to start capping. The cause of this phenomenon can be twofold: the density distribution in

the tablet is not constant and (or) the ejection force is high.

To overcome the capping problem, Courtoy uses the Hold up - Hold down system. This system keeps the tablet under pressure during the ejection and prevents it from breaking.

Metallurgy

Tungsten Carbide balls and many other shapes used as cutting tools can also be pressed on the R53.

Its capability of handling abrasive products, the high compression forces, the density control and the prevention of capping make the R53 the perfect choice for many types of products.

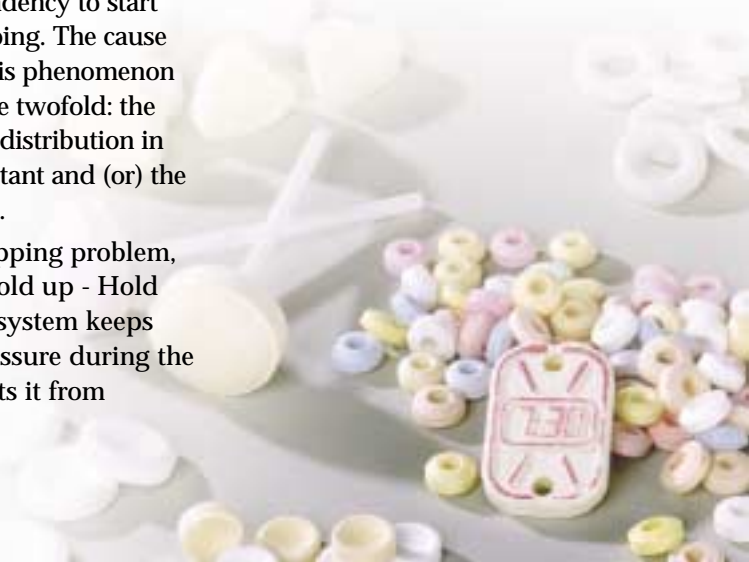


Food and confectionery

The compression of stock cubes is a complicated matter, as the powders used are very sticky and have poor flow ability. Courtoy offers special technologies for making perfectly shaped stock cubes. A forced paddle feeder or Vibra fluid feeder and special scrapers to clean the die table or punches greatly facilitate the production process. Additionally, special coatings on the punch tips can be used.

Courtoy has supplied many R53s to candy manufacturers, one of whom even produces double-layer lollipops on the machine.

The design of the press is such that no product will come into contact with the mechanical sections of the machine, even when using core rods for tablets with holes.



Standard Features of the R53

- Single-sided tablet press with a compression force of up to 13 tons
- Highly resistant cast iron frame with epoxy coating
- Play-free worm wheel drive directly on the turret
- Main motor with frequency inverter, brake and clutch
- Punch holders with high-pressure heads and guiding rollers
- Non-forced feeder for gravity flow of product
- Pre-compression cam adjustable with spring-loaded safety
- Nickel-coated forged steel turret
- Die table with replaceable hard chromium wear plates
- Isolated compression module
- Dust aspiration nozzles
- Air compensator at main compression for tooling overload protection
- Automatic central and punch lubrication systems



Operator interface panel



Punch holders with high-pressure heads and guiding rollers



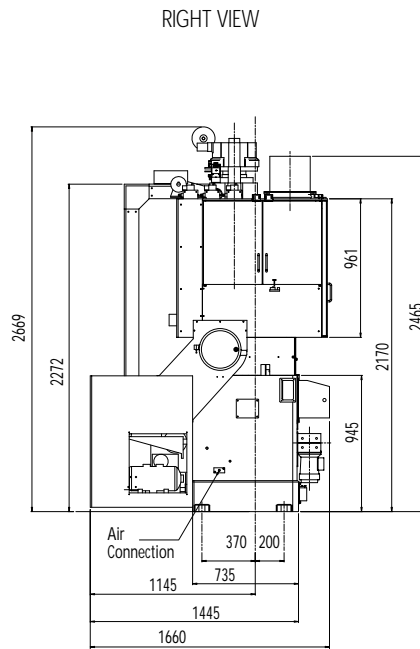
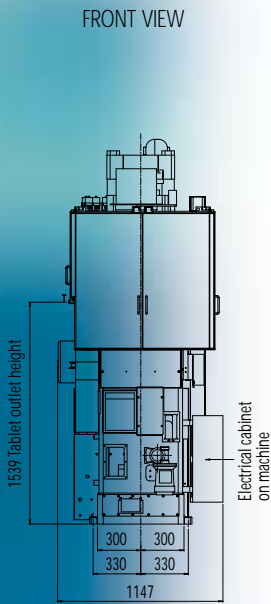
Tablet take-off and transfer



Vibrafluid feeder



Layout



Optional Features

- Adjustable upper punch penetration in the die
- Compression with upper and lower air compensator for constant-density tablets
- Single or multiple paddle forced feeder or Vibra fluid feeder
- Wide variety of overfill cams up to 55 mm
- Adjustable or fixed height core rod for vertical holes
- Die wall lubrication
- Tablet hold-up/hold-down system during ejection
- Ejection force monitoring
- Tablet take-off and transfer system
- Quick-lock system for punch – punch holder
- Simple production control with PLC-based OC3 system
- Fully automated press with PLC-based ITS system

Technical Data

Models	R53-A	R53-B	R53-C	R53-D	R53-E
Number of stations	20	18	16	14	12
Maximum compression force [kN]	130	130	130	130	130
Maximum fill [mm]	55	55	55	55	55
Top punch penetration in the die [mm]	16	16	16	16	16
Outside die diameter [mm]	35	40	48	56	70
Punch-holder body diameter [mm]	22	25	40	45	45
Output capacity 8 to 32 rpm [tab/min]	160 to 640	144 to 576	128 to 512	112 to 448	96 to 384
Press height [mm]	2030 to 2700				
Floor space [mm]	1150 x 1660				
Net weight [kg]	1950				

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