



Linear Press

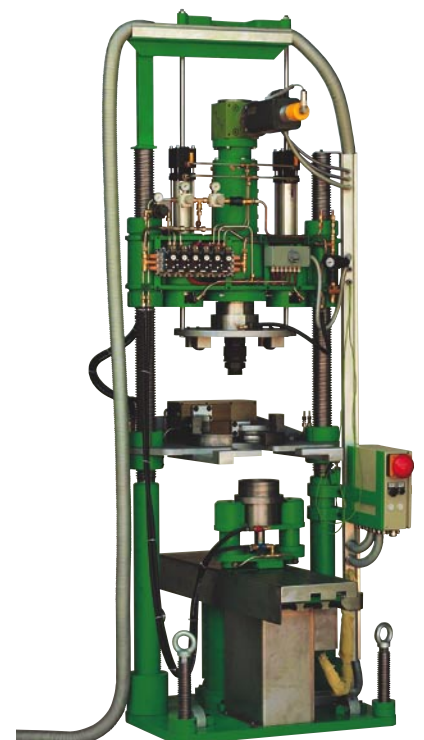
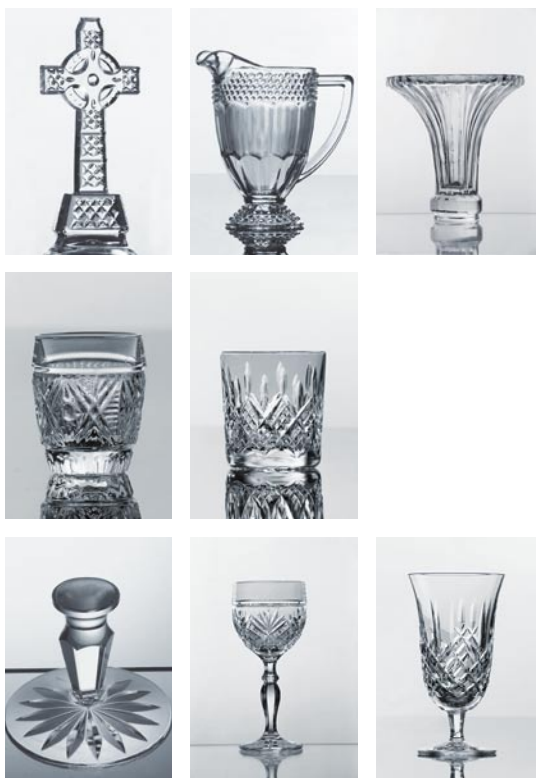
APPLICATION

The pressing manufacturing mode is designed to produce glass items with décor and with a wide range of simple and complex shapes. The pressing system may be combined with gob feeding and continuous casting (in combination with the horizontal movement of the telescope unit and the vertical movement of the lower servo-motor system). It is also compatible with every mould system available (block mould, basket mould, hinge mould).

Füller Glastechnologie
Vertriebs-GmbH
Industriestraße 1
D-94518 Spiegelau

T +49-(0)-85 53-518
F +49-(0)-85 53-514
info@f-gt.de
www.f-gt.de

GLASS ITEMS	goblets, feet for stemware, stems, tumblers, jars, mugs, coasters, plates, vases, dishes, bowls, picture frames, chandelier parts, lampshades, haedlamps, reflectors, lenses
TYPES OF GLASS COMPOSITION	lead glass, soda-lime glass, recycling glass, borosilicate glass
DIMENSIONS OF GLASS ITEM	standard version: - diameter: up to 400 mm - height: up to 300 mm XXL-version: - diameter: up to 600 mm - height: up to 400 mm
GLASS QUANTITY / WEIGHT OF GLASS ITEM	20 g to 10 kg (covering the capacity of the feeder)
PRODUCTION RATE	0,5 piece/min. (i.e. 1 item in 2 min.) to 3 pieces/min.



MODE OF OPERATION

The pressing mould is mounted onto the telescope unit, which moves the pressing mould into different positions. In the feeding station the pressing mould is supplied with a precisely defined quantity of glass by the feeder. The telescope unit then moves the mould into the pressing station. If necessary, the shearmark may be re-heated by infrared burners, before the glass item is pressed. The pressing plunger and ring are moved by the servo-motor pressing unit, which is mounted onto the crossbeam. The pressing unit is equipped with a sensor, which reduces the pressing pressure to a holding pressure as soon as the item is sufficiently pressed. All production steps, including the cooling time, are individually adjusted to the requirements of the article, since the production cycle is freely programmed. The glass item is taken out by hand or fully automatically.

FEATURES

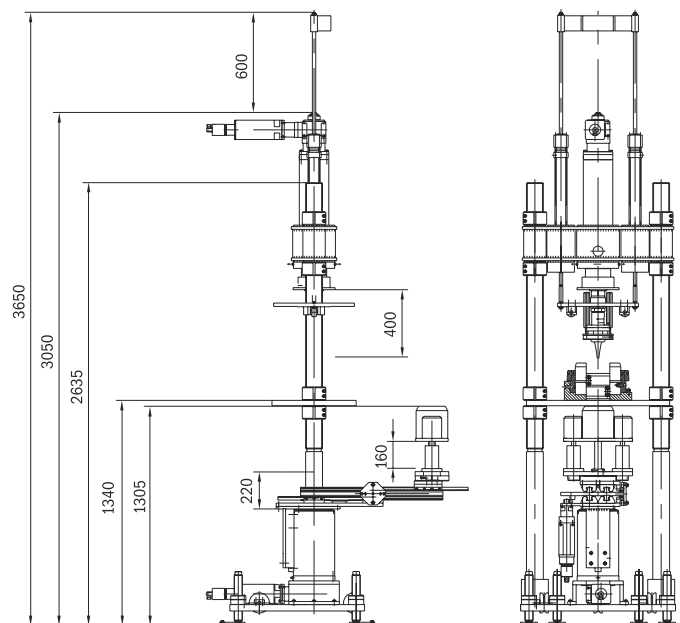
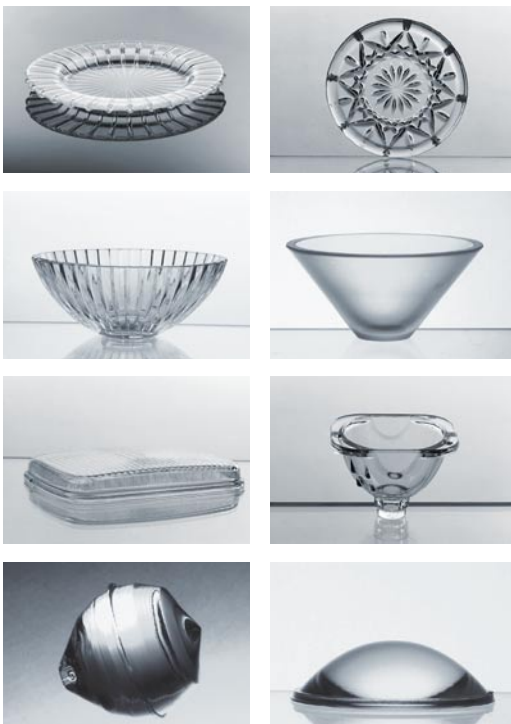
very high quality	<ul style="list-style-type: none">• because the telescope unit moves the mould under the orifice of the feeder and the glass is fed into the mould directly• because the two servo-motor systems – vertical and horizontal movement of the mould – allow a precise positioning of the mould for feeding• since the risk of cord caused by overlaps is eliminated because the electronically controlled positioning of the mould ensures a filling process which is individually adjusted to the mould• due to highly efficient infrared burners which eliminate the shearmark• due to an electronically controlled servo-motor pressing unit which allows a precise pressing pressure adjustment and ensures achieving an optimal pressing pressure (motor torque=pressing force)
very high quality of heavy glass items	<ul style="list-style-type: none">• because a fully electronically controlled servo-motor system (providing for the vertical movement of the substation) allows to lower the mould while being filled in order to keep a minimum distance between the orifice of the feeder and the base of the mould and guarantees a carefully tuned filling process
very high quality for technically challenging designs	<ul style="list-style-type: none">• in order to provide optimal conditions for pressing oval or rectangular glass items (i.e. picture frames), the filling process (continuous casting) may be supported by a horizontal movement of the mould, which is made possible by the fully electronically controlled servo-motor system of the telescope unit
very consistent quality	<ul style="list-style-type: none">• due to an intelligent press sensor, which prevents the glass item from being over-pressed if temperature and weight fluctuations occur and which allows the pressing pressure to be individually and precisely adjusted• due to fully electronically controlled systems for plunger-cooling and ring-heating providing optimal mould and plunger temperatures
highly flexible production	<ul style="list-style-type: none">• because up to three linear systems may be alternately (independently but synchronised with each other) fed by the feeder – thus meeting the capacity of the feeder, while tool costs (moulds and plunger) are reduced to a minimum and an extremely flexible production is guaranteed• due to a quick-change system for the plunger and the mould reducing job-change times to a minimum• due to easy job-changes since the MMC-software provides an efficient product management tool which stores the adjustments of all production parameters under the specific name of the glass item and provides optimal production parameters for later resumption of production
very high productivity	<ul style="list-style-type: none">• because the servo-motor based telescope unit is freely programmed so that an optimum timing of the production cycle is achieved, guaranteeing minimum time-loss between the take-out position and the new feeding cycle

FEATURES

easily adapted to any existing production surroundings	<ul style="list-style-type: none"> because the telescope unit is compatible with different feeding systems: manual feeding, ball feeder and all other available feeder systems
large cost-savings	<ul style="list-style-type: none"> because the décor pressing-moulds replace cost-intensive engraving, cutting and acid-polishing because tool costs are significantly reduced since only one mould for each item is required due to a mould-check system, which eliminates the risk of damaging the pressing tools if moulds are not empty and reduces standstills for tool changes and maintenance to a minimum
optimal production conditions	<ul style="list-style-type: none"> because the relevant parameters may be altered while the machine is in operation and optimal results may thus be achieved immediately because the MMC-software facilitates noting, connecting and keeping record of all adjustments and events and helps to efficiently control and monitor the production process
extremely user-friendly	<ul style="list-style-type: none"> due to the uncomplicated user menu of the MMC-software due to the MMC-software's graphic programming tool which includes all movement cycles, the pressing process and the pressing sensor

TECHNICAL DETAILS

ELECTRICAL SUPPLY	3 / N / PE AC 50/60 Hz 230/400 V 3 x 220 V optional
COMPRESSED AIR	0,5 – 0,6 MPa
DISTILLED COOLING WATER IN THE CIRCULATION	0,3 MPa
GAS	5 kPa
OXYGEN	0,5 Mpa



THE PACKAGE INCLUDES

BASIC EQUIPMENT

- base plate, 2 columns and a crossbeam
- telescope unit for linear horizontal movement
- servo-motor system for the vertical movement of the mould (reducing the distance between the mould and the orifice of the feeder to a minimum)
- mould plate (with quick change system)
- pneumatic kick-out
- mould checker

PRESSING EQUIPMENT

- fully electronically controlled servo-motor pressing unit
- reinforced pneumatic press plate for the ring
- holder for the plunger and ring, attached to the pressing unit by a quick-change system

TEMPERATURE REGULATION

- thermocouples for the temperature control of the mould, plunger and ring
- plunger-cooling and ring-heating (electrical resistance heating)
- cooling system for the glass item (airmover, based on injector principle)

ELECTRONIC CONTROL SYSTEM

- PC-based real time system with MMC-software and Windows 2000 operating system, incl. cooling system

OPTIONS

MACHINE LAYOUT

- standard (for standard mould sizes)
- XXL (for extremely large moulds)

PRESSING EQUIPMENT

- servo-motor pressing unit in combination with reinforced pneumatic press plate for the ring
- 2 servo-motor pressing units for separately moving plunger and ring

PERFORMANCE OF PRESS UNITS

- force: 2,2 t to 4,5 t, 9 t
- speed: 100 mm/s to 600 mm/s

MOULD EQUIPMENT

- air-cooled mould plate / mould holder
- water-cooled mould plate / mould holder
- electrically isolated mould plate / mould holder
- quick change system for mould plate / mould holder
- pneumatic opening- and closing device for the mould
- fully electronically and position-controlled servo-motor system for opening and closing of mould
- pneumatic mould clamp
- pneumatic double-clamp system for the moulds
- fully electronically and position-controlled servo-motor system for clamping the mould
- mould holder for block mould
- mould holder for basket mould
- mould holder for hinge mould
- mould holder 2-parted mould
- mould holder 3-parted mould
- mould holder 4-parted mould

TEMPERATURE REGULATION FOR TOOLS

- thermocouples for measuring the temperature of the tools
- cooling
- air-cooling / air manifold
 - airmover based on injector principle
 - airmover based on water / air-mixture
 - water-cooling (closed circulation)
- heating
- burner system
 - electrical resistance heating

TEMPERATURE CONTROL FOR GLASS ITEM

- air-cooling / air manifold
- airmover based on injector principle
- airmover based on water / air-mixture

FUNCTIONAL STATION EQUIPMENT

- station for re-heating the shearmark
- burner system for fire-polishing rims and seams
- pneumatic kick-out
- mould-checker (control system which assures that the mould is ready to be re-filled)
- fully automatic take-out device (mechanical gripper or vacuum)

EXTENSIONS

- Four-in-One Combi-System (combination of injecting, pressing, spinning and / or casting manufacturing mode)

ELECTRONIC CONTROL

- external control panel, when there is insufficient space to install the control panel close to the press