

3. Structural instruction

- 3.1 Locking unit
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- 3.3 Ejection unit
- 3.4 Oil hydraulic system

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3. Structural instruction

3.1 Locking unit

- (1) As double toggle system is adopted for the locking unit, die-clamping and die-opening movements are certainly done at high speed.
- (2) As rigid cast iron is adopted for the die plate, high accuracy is kept even under a severe working condition.
- (3) T-slots for die fitting are machine-finished to take high accuracy dimension, so a die can be fitted easily.
- (4) Anti-abrasion special alloy, which is improved by our company, is used for the toggle pin and the bush, so they can be used for long time even under a severe working condition.
- (5) Concentrated automatic lubrication system is adopted for lubrication, so lubrication is made sufficiently.
- (6) Tie bar removal (manual)
After removal of stationary platen nut and the supporting board in link-housing, the upper tie bar of operator side can be removed by the movement of moving platen while connecting moving platen with the bar by a bolt.
- (7) The die height adjustment is performed by the pushbutton operation of the electric motor.

3.2 Injection unit

- (1) UBE's new developed UNI-FF (Ube No-impact-Flash Free)
- (2) The die casting machine specified here is provided with one piston run-around injection cylinder and any intensifier is not provided.

- (3) UBE's one-piston run-around injection system and the advantageous capacity for force and speed is the most developed die casting system with the cooperation of UNI-FF system for the purpose of higher productivity and automation.
- (4) UNI-FF system equipped with direct speed control system has quick response and high-accuracy for deceleration of injection speed.
- (5) Using the deceleration system, UNI-FF can eliminate the impact peak pressure and minimize the flash, soldering, etc.
- (6) As squeeze timing can be adjusted in stepless, the most suitable casting condition can be set.
- (7) Low, high and deceleration injection speed can be independently adjusted.
- (8) Start position of high injection speed can be freely adjusted by the limit switch.
- (9) Plunger can be stopped at any required position by the operation of select switch.
- (10) The controlled shot speed system is provided for :
 - a. Slow speed to close the shot hole.
 - b. Filling the cavity at high speed.
 - c. Deceleration device to provide impact less final pressure (UNI-FF).
 - d. Adjustable decelerated shot speed.
 - e. Adjustable injection force with constant accumulator pressure.
 - f. Adjustable squeeze timing.
- (11) Accumulator (according to high pressure gas regulation)
 - a. When the gas pressure in the accumulator exceeds the valve set by the safety valve, gas is automatically relieved.
In case of the above, safety valve is changed new one.

b. Piston type accumulator

Since the nitrogen gas and hydraulic oil are separated by the piston, nitrogen gas does not flow into the oil reservoir.

3.3 Ejection unit

- (1) Ejection plate is driven by the oil hydraulic system
- (2) Adjustment of the advance and retraction limits of the ejector stroke can be carried out by limit switches.

3.4 Oil hydraulic system

- (1) Manifold system is adopted for minimizing the oil hydraulic pipes.
So, the maintenance work can be done easily.
- (2) As the suction filter with indicator is adopted, clogging of the filter can be checked from the outside.
- (3) The unload circuit of the hydraulic pump is provided for saving the electric power.