

3. Specifications of DC2500CST Die Casting Machine

(1) Main specifications

1	Die clamping system	
	Die clamping force (ton)	2,500
	Die platen dimensions (mm) (vertical by horizontal)	2,500 × 2,400
	Space between tie-bars (mm) (vertical by horizontal)	1,700 × 1,600
	Tie-bar diameter (mm)	330
	Die stroke	1,350
	Maximum die thickness (mm)	1,700
	Minimum die thickness (mm)	1,250
	Die height adjusting speed (mm/min) (Only one (1) speed shall be available as decided at the meeting.)	Low speed 40
2	Injection plunger system	
	Injection force (ton) (intensifying ratio 1 : 2.056) (Maximum accumulator operating pressure 135 kgf/cm ² .)	153 ~ 75
	Plunger stroke (mm)	1,400
	Plunger tip stroke (mm) (from fixed die platen)	450
	Location of injection hole (mm) (only one (1) hole) (downward from machine center)	250
	Shot speed (m/sec) (Water-glycol base hydraulic oil): (Cold shot low speed) (Cold shot high speed) (Accumulator operating pressure, 150 kgf/cm ²)	0.1 ~ 1.0 0.1 ~ 4.0 (Maximum value)
3	Ejector system	
	Ejector force (ton) (Pump pressure 165 kgf/cm ²)	88
	Ejector stroke (mm)	5 ~ 250

4	Core and squeeze pin system	
	Movable cores 1, 2, 3 (Lateral side of movable die platen operating side)	Solenoid valve 1+1/4 – 1 each
	Movable squeeze pins 1 ~ 9 (Upper center of movable die platen)	To be provided by the customer.
	Fixed cores 1, 2 (Lateral side of fixed die platen non-operating side)	Solenoid valve 3/4 – 1 each
	Fixed squeeze pins 1, 2 (Lateral side of fixed die platen non-operating side)	Common use of the valves with fixed cores.
	Hydraulic port diameter of movable cores 1, 2, 3 (for each solenoid valve)	PT1+1/4, 2 sets
	Movable squeeze pins 1 ~ 9 (for each solenoid valve)	PT 3/8, 1 set
	Hydraulic port diameter of fixed cores 1, 2 (for each solenoid valve)	PT1, 2 sets
	Fixed squeeze pins 1, 2 (for each solenoid valve)	PT1, 2 sets
	Metal plug receptacle (19-core, made by Solton)	1 pc.
Fixed die platen	1 pc.	
Movable die platen	1 pc.	
5	Cooling water system	
	Required cooling water: For oil cooler (liters/min) (at water temperature of 35°C) (Differential pressure between the inlet and outlet must be 0.3 kgf/cm ² or over.)	90 ~ 100
6	Air system (for safety hook: 4 kgf/cm ²)	
	Connections	PT 3/8
7	Machine size	
	Floor space requirement (mm)	As per separate layout drawing.
	Machine height (mm)	
Machine weight (ton)	195	

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8 Casting capacity

The shot volume in the following table is calculated on assumption that the molten metal is fully charged into the sleeve at 75 % (1,050 mm) of the full plunger stroke. The shot weight is computed, supposing that the specific weight of aluminum alloy is 2.6.

The values in parentheses are obtainable when the injection force is 75 ton (minimum injection force).

Plunger tip dia. (mm)	Casting pressure (kgf/cm ²)	Casting area (cm ²)	Actual shot volume (cm ³)	Actual shot weight (kg)
115	(720) ~ 1,470	(3,470) ~ 1,700	10,905	28.3
130	(565) ~ 1,150	(4,420) ~ 2,170	13,935	36.2
150	(425) ~ 865	(5,880) ~ 2,890	18,550	48.2

Note: The casting pressure is the value that is calculated, excluding accumulator pressure drop of approximately 10 %.

9 Hydraulic piping system

	Operating pressure	Rated delivery 50 Hz, 1,200 min ⁻¹	
Vane pump	165 kgf/cm ²	56 liters/min	1 pc.
Vane pump	155 kgf/cm ²	201 liters/min	1 pc.
Vane pump	80 kgf/cm ²	347 liters/min	1 pc.
Oil tank capacity (center of level gage)			2,500 liters
Required hydraulic oil volume (including hydraulic oil in the circuit)			3,600 liters

10 Manufacturers of main devices

Hydraulic pump	TOKIMEC
Pressure control valve	TOKIMEC, Yuken Kogyo
Directional control valve (with lamp)	TOKIMEC, Yuken Kogyo
Pilot check valve	Yuken Kogyo
Flow control valve with check valve	Yuken Kogyo
Check valve	Yuken Kogyo, TOKIMEC
Pressure gage, vacuum gage	Nagano Keiki, ASK
Gage valve	ASK
Suction filter	Daiko Kiki
Pneumatic device	CKD, SMC
Automatic oil lubricator	Nabuko, Lube

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11	Automatic lubricating system		
	Pump	100 kgf/cm ² , 50 Hz, 44 cc/min	1 pc.
	Filled tank capacity		5.5 liters
	Pump	15 kgf/cm ² , 50 Hz, 120 cc/min	1 pc.
	Filled tank capacity		4.2 liters
	Lubricant oil volume (toggle lubrication) (when operating and stopping the pump for 30 seconds and 18 minutes, respectively)		1,210 cc/16 H
12	Motors		
	3-phase induction motor for hydraulic pump (totally-enclosed-fan-cooled type)	6 P, 415 V, 22 kW, 50 Hz, continuous rating	1 pc.
	3-phase induction motor for hydraulic pump (totally-enclosed-fan-cooled type, both shafts)	6 P, 415 V, 55 kW, 50 Hz, continuous rating	1 pc.
	3-phase induction motor for lubricant pump (totally-enclosed-fan-cooled type)	4 P, 200 V, 0.2 kW, 50 Hz, continuous rating	1 pc.
	3-phase induction motor for lubricant pump (totally enclosed type)	2 P, 100 V, 17 W, 50 Hz, continuous rating	1 pc.

(2) Accessories

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|---|-------|
| a) Installation parts
(Tap seat, bolt, washer, hexagon nut, leveling block) | 1 set |
| b) Plunger sleeve: Not required as decided at the meeting. | |
| c) Plunger tip: Not required as decided at the meeting. | |
| d) Other injection parts (for ø150)
Plunger rod, plunger tip joint, coupling, spacer | 1 set |

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- e) Hydraulic rubber hoses for die casting machine cores
- 210KG-25 (1") × 2500NN-WA 12 pcs.
 - Self-sealing coupling (S1 half only)
 - IN side: Y-5601-24S (1+1/4") 6 pcs.
 - OUT side: Y-5601-20S (1") 6 pcs.
- f) Rubber hose for charging nitrogen gas: One (1) hose shall be attached.
- g) Attached tools: Only special tools shall be attached.
- h) Ladle horizontal fixtures: Not required as decided at the meeting.
- i) Spray head positioning fixtures: Not required as decided at the meeting.

(3) Die clamp

- 1) T-slots on both fixed and movable die platens shall be only for mounting the die clamps (eight (8) pcs. in horizontal direction).
For details, see the die mounting drawing No. F307740.
- 2) In all, ten (10) ejection holes ($\phi 44$) shall be machined on the movable die platen, as specified by the customer. Cast iron bushings shall be inserted into the four (4) places of the center.
For details, see the die mounting drawing No. F307740.
- 3) A disposable bushing shall be attached to the fixed link pin hole.
- 4) A knock of the link pin shall be equipped with a key.
- 5) For lubrication of the sliding parts such as link pin and tie-bar, a Treborne type automatic grease lubricator (Shell Alvania EP Grease R0) shall be employed.
For the die height adjusting device, fixed nut unit and tie-bar draw-out unit, flowrate control distribution type automatic oil lubricators (MO valves made by Lube) shall be mounted. (Shell Omara Oil 320)
- 6) A level switch (lower limit alarm) shall be used for the lubricant tank. When the lower limit alarm has generated, a message urging an operator to fill the oil shall be displayed and execution of the next cycle shall be stopped by means of the counter.

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