UBE

UBE MEDIUM SIZE

DIE CASTING MACHINE

UB TS SERIES

YOUR PRODUCTION ADVANCES
TO THE NEXT STAGE

SERIES LINEUP

UB 530TS

UB 670TS

UB 850TS

UB 1100TS

UB 1300TS

UB 1300TS W

Highest shot speed in its class: Achieving a top shot speed of 12 m/s using a proven meter-out circuit used in UBE's large machine models.
(note) 11 m/sec for 530t,670t only

Minimized intensification time: Single piston intensification for minimum pressure intensification time.

High filling force for thin products: Industry's highest filling forces contribute to improved thin product quality

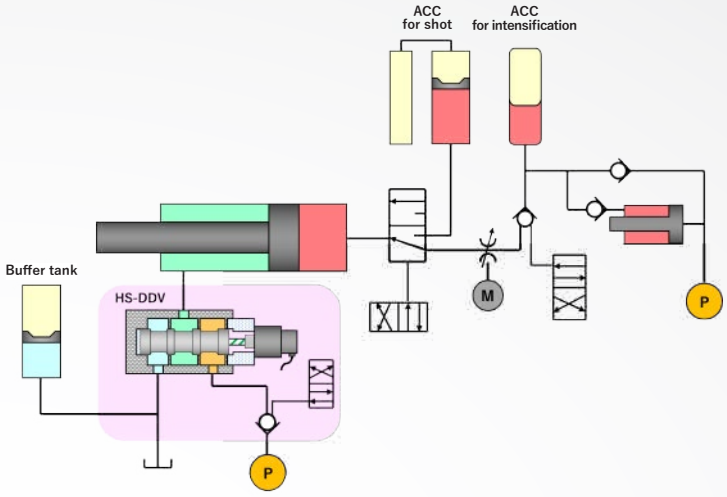
Burr prevention: Inertia force suppression performance at the completion of filling to prevent burrs



High-power, high-speed injection system

・Maximum shot speed of 12 m/sec with meter-out circuit proven in the large iV series

(note)11 m/sec for 530t,670t only

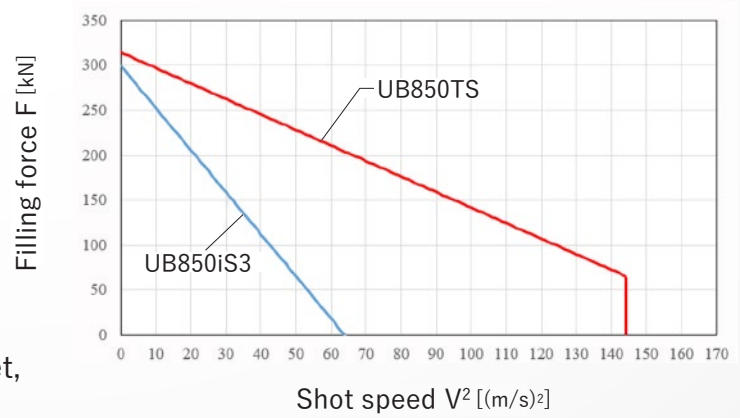


・Equipped with “HS-DDV”, proprietary electric servo valve "HS-DDV” can improve speed response, followability, and acceleration by instantaneously controlling a large volume of hydraulic fluid.

・Short filling time improves casting pressure transfer and reduces external and internal defects in castings

・Intenisification time : 10 m/sec

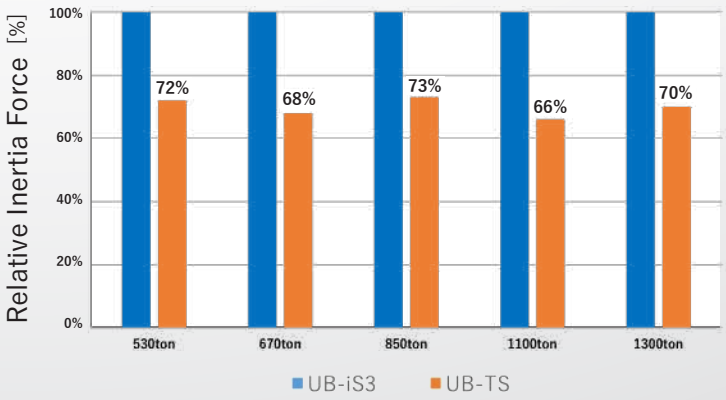
850 ton PQ2 Diagram



・One of the largest filling forces in the market, capable of keeping high speeds even with thinner products

・Inertia force suppression - approximately 30% less burr generation than conventional models.

Relative Injection Inertia Mass



Fastest cycle time "22.5 seconds" is achieved by combining our technologies (optional)

1 Increased hydraulic pump capacity

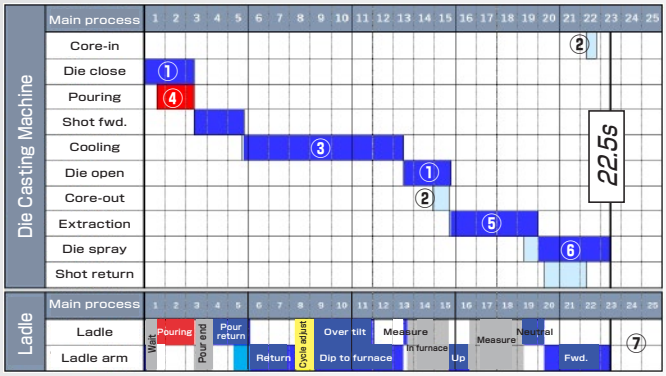
Supplies oil discharged from the pump to the actuator efficiently to reducing die opening/closing and core motion.

2 Expansion of pipeline

Smoothly drains hydraulic oil without resistance and improves efficiency of cylinder movement.

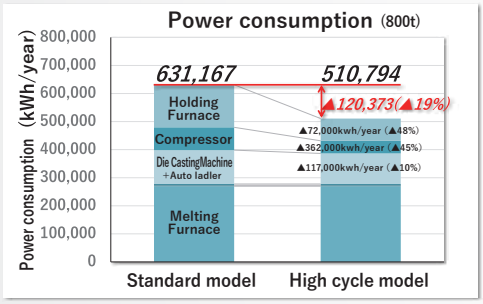
3 Core run-around circuit

Hydraulic oil is supplied to the cylinder more than pump discharge rate. Saves energy and shortens the cycle time.



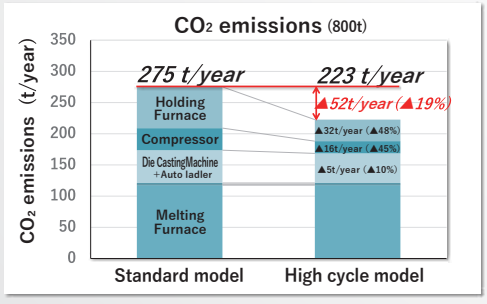
4 Die opening intermediate stop

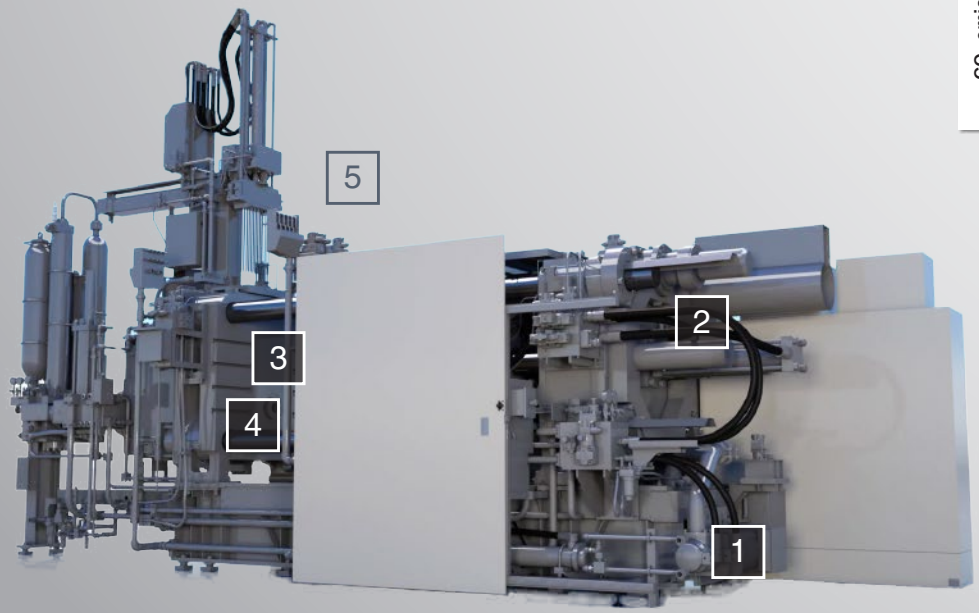
UBE's precision control technology enables intermediate stop of die opening motion even with hydraulic toggle mechanism. Reducing cycle time by enabling simultaneous spraying of fixed and movable dies..



5 Servo motor drive for laddling device

Precise control of ladle angle and arm speed during molten metal transportation to the sleeve. Realizes the fastest possible transfer without spilling molten metal.

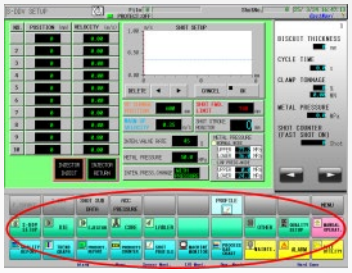




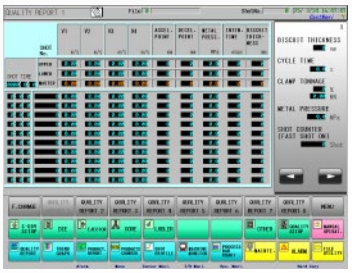
Operation screen "CastNavi" designed for ease finding and operating



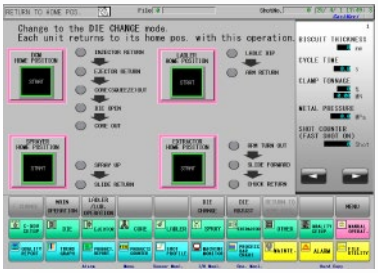
・Identifiable background color by category.
・Friendly and memorable design of screen.



・Equipped with shortcut keys to quickly access to the necessary items.
・Two screens can display set values and actual measured values.



・Increased casting data memorycapacity to 15,000 shots.
・Saving on USB memory and keeping on PC.



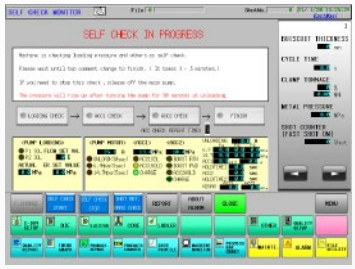
・DCM home position return button is added. In one operation, dieclamping,core,ejection and shot cylinder are returned to the home position(Automatic operation start position).

"Cast Doctor" preventive maintenance with self-diagnostic function. (Some functions are optional equipment.)

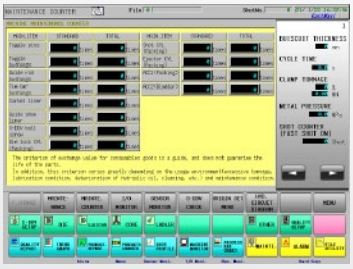
Preventive maintenance can be done instead of after-the-fact maintenance. Machine self-diagnosis contributes to advance repair planning



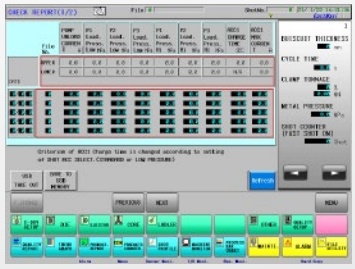
At the set date and time, the die casting machine performs a self-diagnosis of equipment condition.



・The past 5 results of the CBM diagnosis function are displayed on the touch panel.
・can compare the previous diagnosis with the latest.
・Historical data can be saved as CSV.



・Record the number of actuators operate and inform when to replace parts (die clamping, ejection, injection, ACC, etc.)

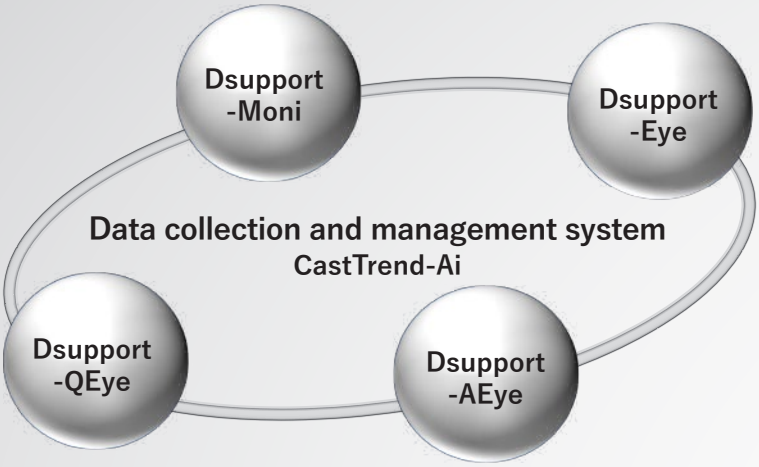


・The machine determines if the pressure, flow rate, current, etc. are normal values.

ICT Systems to Advance Die Casting Production

It makes casting "visible," "understandable," and "easy."

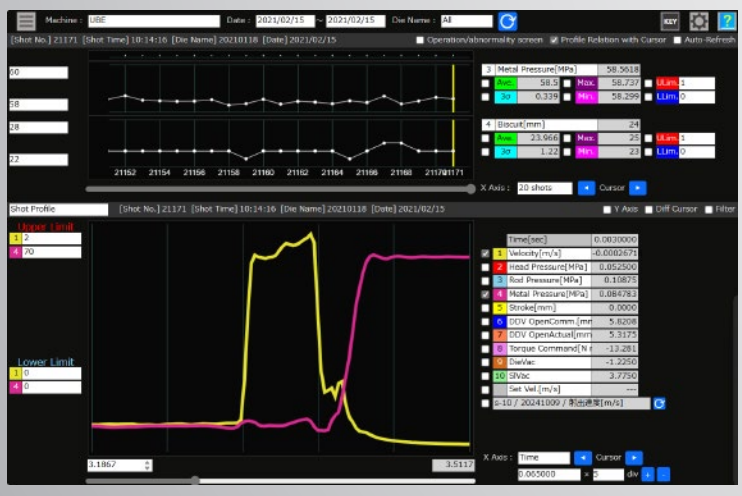
Upgrade production management by adding casting applications to die casting machines. Linking CastTrend-Ai as the core system with the Dsupport series is effective in synchronizing each shot information with production and quality and enhancing traceability.



CastTrend-Ai Data collection and management system

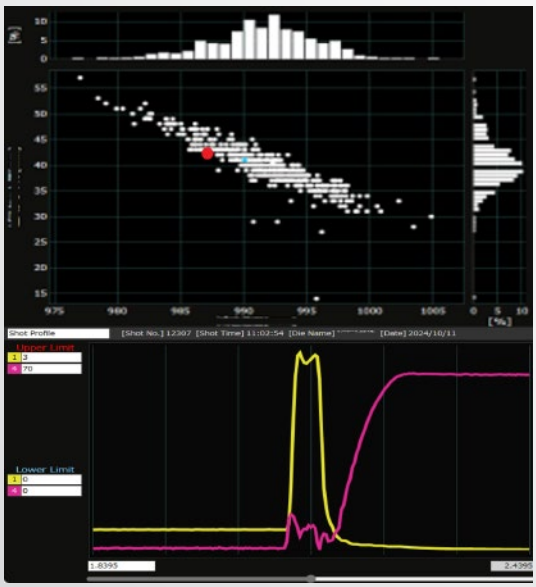
・Significantly enhanced CastTrend's casting data analysis capabilities
・Support tool for production sites for analyzing casting data
・Expanded range of evaluation by linking with Dsupport series

Basic function



・Intuitive operation system greatly improves operability and visibility
・Expanded evaluation range with increased number of shot profiles in display,, master data superimposition, etc.

Simple analysis function

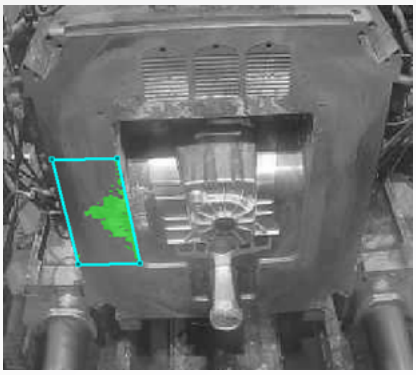


・Scatter plots and histograms make it easy to check correlations and variations
・It can be linked to shot profile to find peculiar data out,etc.

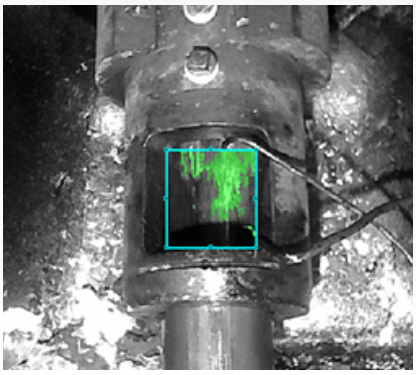
Dsupport series（Option）

Dsupport-Eye Production sensing system

・Cameras linked to die-casting machines capture and analyze images from the production site
・Image monitoring and judgment tools that do not overlook trouble factors



Example of casting burr detection for moving die

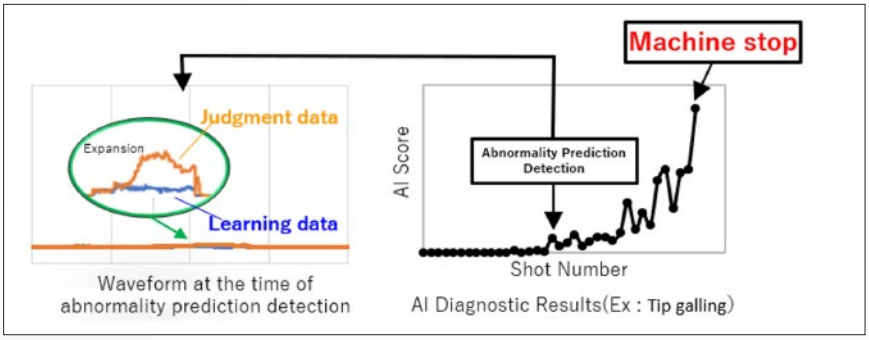


Example of detecting aluminum soldering in plunger sleeve

Quantify the state of the specified range. Monitoring and early detection of factors that impede die casting production, such as burrs, aluminum soldering,pin breakage etc.

Dsupport-AEye AI diagnostic system

・AI diagnostic system dedicated to die casting
・Condition monitoring tool for early detection without missing the slightest change or abnormality



Early detection reduces long-term outages and maintenance costs, contributing to higher productivity

Dsupport-Moni Production monitoring system

・Check the die casting machine condition in hand
・Production monitor with integrated production information and camera images



Real-time monitoring of die casting machine operation status at a distance from the operation panel

Peripheral Equipment

UBE's proud Peripheral equipment with long-time performance at field.
High Reliability supports stable production and high cycle.

Automatic Ladler

Adopting inverter control with arm and ladle drive enables smooth movement.
Improves accuracy of ladling by refined control method.

No.	Items	USL-03	USL-04	USL-05	USL-05L	USL-06
1	Applicable die casting machine	UB530TS	UB670TS	UB850TS	UB1100TS	UB1300TS
2	Maximum pouring weight	4.0kg	5.6kg	8.0kg (Option 10kg・12kg)	15kg	20kg
3	Accuracy ladling	±1.5% (with the Max. ladling weight)				
4	Power drive	・Arm driving motor : 0.75kw AC motor (Inverter control) ・Ladle driving motor : 0.2kw AC motor (Inverter control)		・Arm driving motor : 1.5kw AC motor (Inverter control) ・Ladle driving motor : 0.4kw AC motor (Inverter control)		・Arm driving motor:3.7kw AC motor (Inverter control) ・Ladle driving motor:0.4kw AC motor (Inverter control)



Automatic Ladler

Automatic Sprayer

Spraying device that can be sprayed individually to fixed and moving side.

No.	Items	SD2-65M5	SD2-80M5	WTP-XL5#
1	Applicable die casting machine	UB530TS / UB670TS	UB850TS	UB1100TS
2	Number of air blow nozzle (Standard)	20pcs (Copper tube)		26pcs (Copper tube)
3	Number of spray nozzle (Standard)	Fixed platen side : 37pcs (Copper tube)		Fixed platen side : 25pcs (Atomaizer)
		Moving platen side : 37pcs (Copper tube)		Moving platen side : 25pcs (Atomaizer)
4	Air pressure	0.5～0.8Mpa		0.6Mpa
5	Air supply port diameter	Rc : 1・1/4B		Rc : 2B
6	Liquid pressure	0.3～0.5Mpa		0.3Mpa
7	Liquid supply port diameter	Rc : 1/2B		Rc : 3/4B
8	Power drive	Y-axis up and down / X-axis slide : Air cylinder		Y-axis up and down / X-axis slide : Servomotor



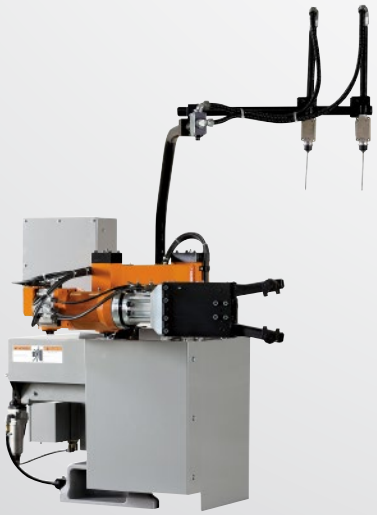
Automatic Sprayer

Automatic Extractor

Adopting inverter control with arm drive enables smooth movement.

No.	Items	TD5L-80M5	ULE-05L
1	Applicable die casting machine	UB530TS / UB670TS / UB850TS	UB1100TS
2	Location of installation	Standing on floor at machine helper side	
3	Chuck type	Biscuit chuck type	
4	Number of product sensors	2pcs (Limit switch)	2pcs (Photoelectric sensor)
5	Travelling stroke	2,095mm	2,525mm
6	Die thickness adjustment stroke	200mm	220mm
7	Removal stroke	350mm	250mm
8	Chuck rotaing angle	90°	
9	Air supply port diameter	Rc : 1/2B	
10	Power drive	Taking out : AC motor, Others : Air actuator	

※Robotic extracting system shall be applied for 1300t



Automatic Extractor

UB-TS Series Specfication Item (Standard and Standard Option)

		Specification item		Std.	Opt.
Die clamping	1	Die plate (Fixed, Moving) with Horizontal T-Slot machining		●	
	2	Die plate (Fixed, Moving) with Vertical T-Slot machining			○
	3	Toggle unit automatic lubrication device		●	
	4	Electrical die height adjustment		●	
	5	Die height automatic setting		●	
	6	Platen Ni welding (Die mounting surface)			○
	7	Moving platen shoe adjustment mechanism	MP Integrated Shoe (530,670t)	●	
			Shim-Type Adjustment (850～1300T)	●	
	8	Digital load meter(lower tie bar on helper side)		●	
	9	Die clamping force automatic adjustment		●	
	10	Die clamping force automatic compensation control		●	
	11	Automatic tie bar pull-out device			○
	12	Tie bar and guide rod chrome plating		●	
	13	Die support			○
	14	Ejection plate clamp (C plate clamp)			○
	15	Hydraulic die clamping device			○
	16	Die projection cylinder			○
	17	Pre-pouring start signal(for UBE ladler)			○
	18	Drain port beneath die clamp at machine base		●	
	19	Slide mechanism oil pan for tie bar pull-out			○
Ejection	1	Ejector speed digital setting		●	
	2	Ejector forward limit digital setting		●	
	3	Ejection pressure-reducing circuit			○
Injection	1	Injection with multi speed setting (HS-DDV) Real time feed back		●	
	2	Boost cylinder for injection force build up		●	
	3	Without boost cylinder			○
	4	Intencification time control valve			○
	5	Adaptation to short sleeve (ladler with slide mechanism)			○
	6	Casting parameter load for 100 dies conditions		●	
	7	Injection digital setting		●	
	8	Piston type accumulator (for injection forward)		●	
	9	Bladder type accumulator (for intensification)		●	
	10	Interface for vacuum device			○
	11	Analog pressure guages on injection unit			○
	12	Accumulator automatic pressure-release circuit		●	
	13	Cover of wiring duct under Injection CYL		●	
	14	Dust pan under injection CYL			○
Die core	1	Core sequence-selection circuit		●	
	2	Core spray circuit			○
	3	Core on moving platen (#1～#3)			○
	4	Core on fixed platen (#1,#2)			○
	5	Additional core port on moving platen			○
	6	Additional core port on fixed platen			○
	7	Core pressure release circuit			○
	8	Local squeeze circuit(Fixed・Moving side)			○
	9	Pressure reducing valve for Core Pressure reducing circuit for Core			○
	10	Double pilot check valve for Core (Self-weight fall prevention)			○

		Specification item	Std.	Opt.
Control	1	Programmable controller (Mitsubishi)	●	
	2	I-Stop Servo Pump Drive Source : AC Servo motor	●	
		Pump Drive Source:3Phase Induction Motor :530t,670t,850t,1100t		○
	3	Rotating red light on top of control panel	●	
	4	LS error display	●	
	5	Symbolic operation nameplate	●	
	6	Interface for automatic devices of other manufacturers		○
	7	Outlet (100V) on control panel		○
	8	Electric cable protection		○
	9	Earthing interrupter		○
	10	Die temperature monitor		○
	11	Control Panel Cooler:1300t～530t	●	
		Control Panel Cooler:530t,670t,850t,1100t		○
	12	Lighting in control panel		○
	13	Touch panel on control panel (15 inch)	●	
	14	PLC programming software		○
	15	CastNavi ／Japanese, English, Chinese, Korian-languages selectable	●	
	16	Casting quality report (15,000shots memory)	●	
	17	Memory utility function/USB port on operation panel for datas out-put/CSV output of screen, quality / production report, and mold data	●	
	18	On-screen maintenance guide	●	
	19	Oil flow chart on the screen	●	
	20	Origin return function	●	
	21	Voltage adapt (Standard:200V,220V)		○
	22	Voltmeter installed		○
	23	Ammeter installed		○
	24	Integrating wattmeter		○
Timer / Counter	1	Lot counter	●	
	2	Product (shot) counter	●	
	3	Tip lubrication timer	●	
	4	Cumulative shot counter	●	
	5	Total maintenace counter	●	
	6	Maintenance counter by dies	●	
Hydraulic cooling	1	Nonflammable hydraulic fluid specification (Water Glycol Fluid applicable)		○
	2	Mineral type of hydraulic oil applicable	●	
	3	Die cooling water flow control ball valves (fixed side)	●	
	4	Die cooling water flow control ball valves(moving side)	●	
	5	Die cooling water drain box	●	
	6	Glycerin filled pressure gauges	●	
	7	Hydraulic hose with wire-blade		○
	8	Hydraulic hose with plastic cover		○
	9	Line filter(SMC)	●	
	10	In-line oil cleaner (Maker/RRR)		○
	11	Magnetic separator (one pc)	●	
	12	Size up of oil-cooler		○

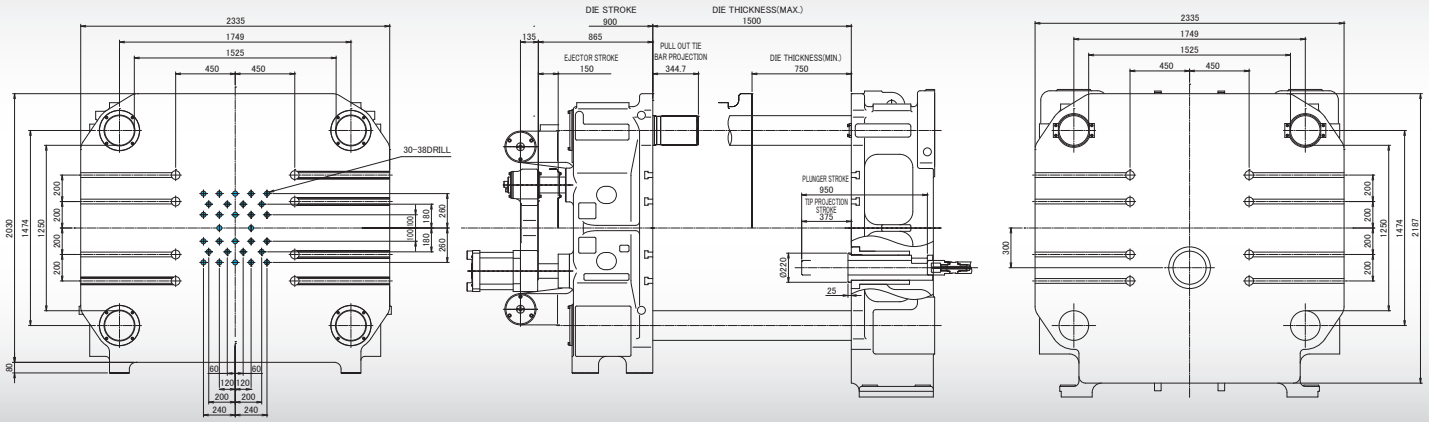
		Specification item	Std.	Opt.
Hydraulic cooling	13	Hydraulic oil preheating circuit		○
	14	Hydraulic oil level alarm (two junction)	●	
	15	Hydraulic oil temperature alarm (two junction)	●	
	16	Oil cooler cooling water ON-OFF circuit		○
	17	Die cooling water, main stop valve (manual)	●	
	18	Line filter clogging detection		○
	19	Suction filter clogging detection (Digital switch)		○
Safety	1	Manual safety door on operator side	●	
	2	Toggle cover (operator side, helper side)	●	
	3	Injection unit cover on helper side	●	
	4	Safety fence on helper side		○
	5	Die open limit safety hook (stopper type)	●	
	6	Emergency stop button (3 locations)	●	
	7	Control panel door with interlock	●	
	8	Control panel handle enable securing of padlock	●	
	9	Automatic safety door on operator side		○
	10	Manual safety door on helper side		○
	11	Automatic safety door on helper side		○
	12	Photoelectric tube safety device		○
	13	Latchet-type safety hook		○
Foundation,Color	1	H-shape steel embedded in the foundation	●	
	2	Special foundation method (Type Base frame or Tapered liner)		○
	3	Paint color (Munsell N5 Approximate color / Gray)	●	
	4	Customer specified machine color		○
Others	1	Tip lubricator/Dripping type		○
	2	Tip lubricator/Mixing type		○
	3	Adjustable tip lubricating volume		○
	4	Automatic ladler/Molten metal surface level drop signal output (hot charge)		○
	5	Automatic ladle / (3 detection)		○
	6	Automatic sprayer (Enable forward and backward movement in dies)		○
	7	Automatic parts extractor (Photoelectric product detector (2 PCs))		○
	8	GF (Gass Free) device		○
	9	Tank for Spray Liquid (Volume:200L)		○
	10	Automatic Trimming Machine press		○
Tools	1	Tools (with tool box)		○
	2	Nitrogen gas filling hose		○
Diagnosis function	1	CastTrend (LAN cable connection)	●	
	2	Self-diagnosis function:SPEC1	●	
	3	Self-diagnosis function:SPEC2 (SPEC1 + Sensor)		○
	4	IoT applicable (data out-put, net work devices connection, etc.)		○
Overseas standards	1	Compliance of North America standards and requirement (ANSI ASME)		○
	2	Compliance of European standards and requirement (CE)		○
	3	Compliance of Chinese standards and requirement (GB)		○
	4	Compliance of Korea standards and requirement		○

※This specification item for improvement, may be changed without notice

Die Mounting Dimensional Diagram

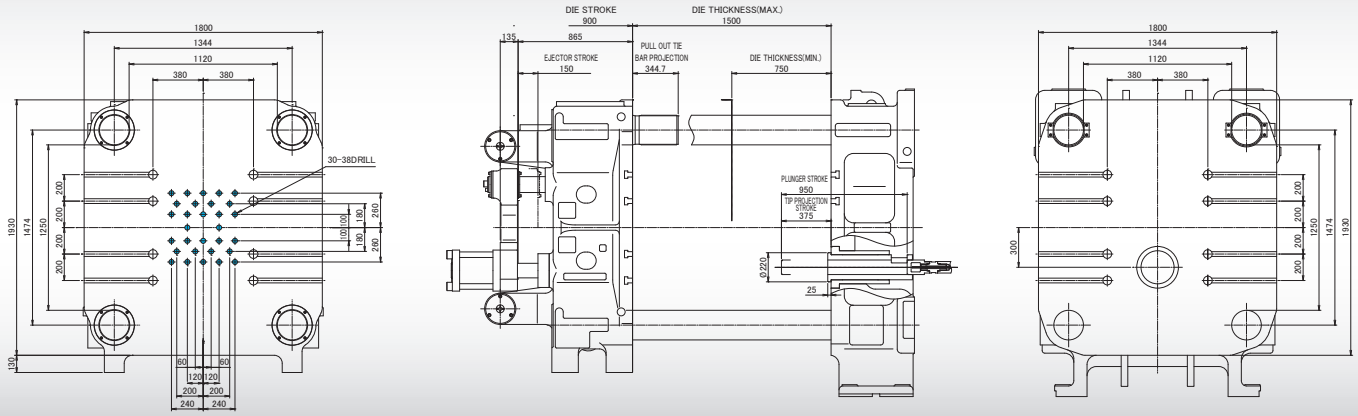
UB1300TS W

1. About 30 holes marked ●, ejector rod can be connected to ejector plate with nut. 2. Suitable minimum die size is 840mm × 1,020mm.



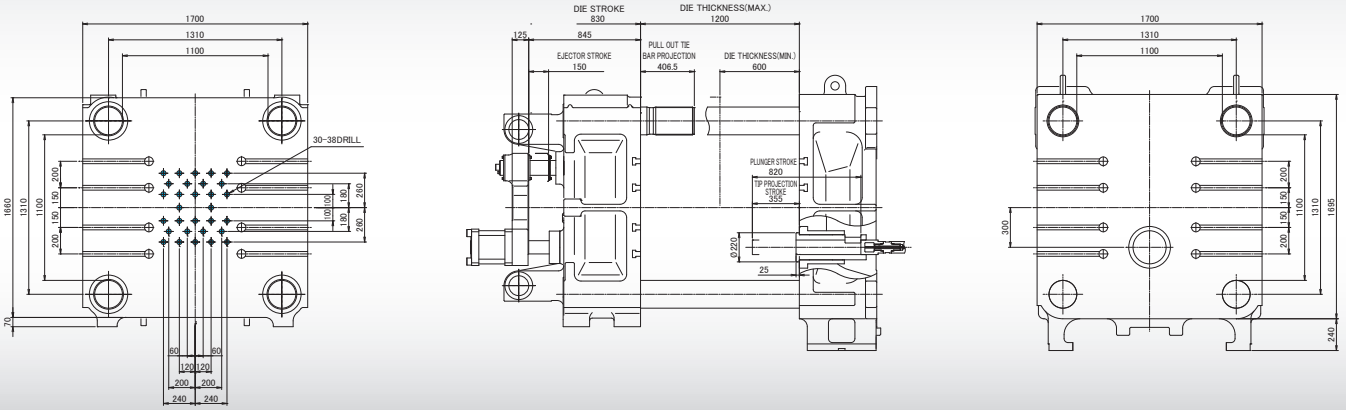
UB1300TS

1. About 30 holes marked ●, ejector rod can be connected to ejector plate with nut. 2. Suitable minimum die size is 840mm × 750mm.



UB1100TS

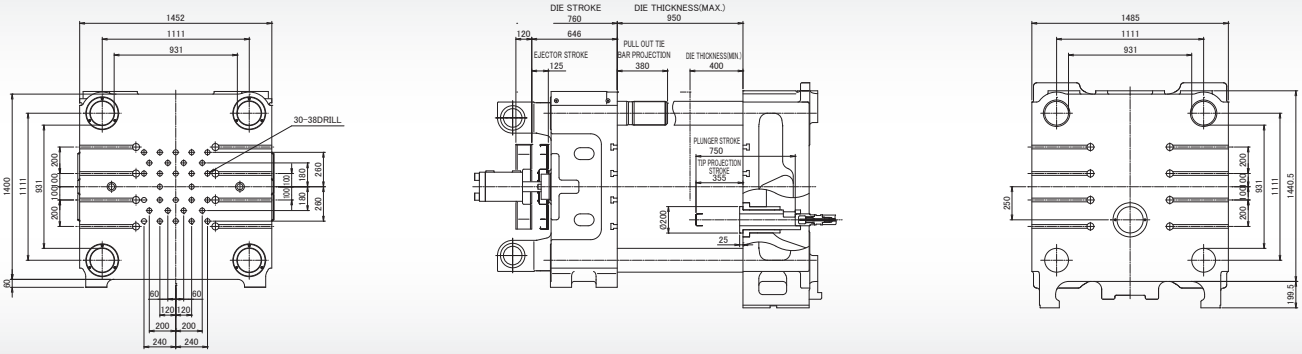
1. About 30 holes marked ●, ejector rod can be connected to ejector plate with nut. 2. Suitable minimum die size is 733mm×733mm.



Die Mounting Dimensional Diagram

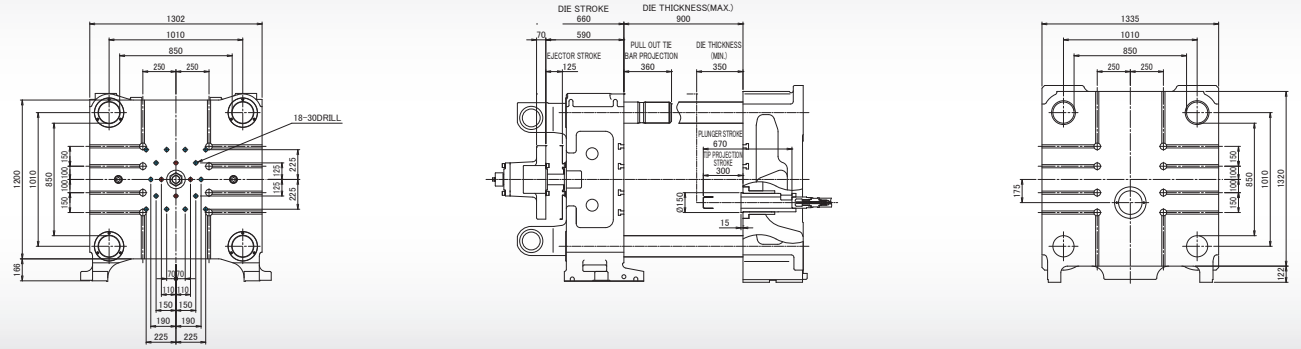
UB850TS

1. About 30 holes marked ●, ejector rod can be connected to ejector plate with nut. 2. Suitable minimum die size is 620mm×620mm.



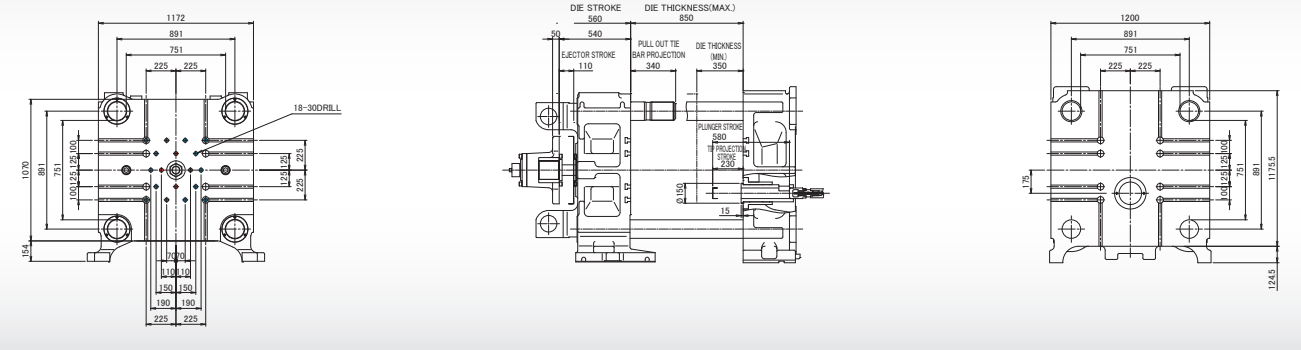
UB670TS

1. About 14 holes marked ●, ejector rod can be connected to ejector plate with nut. 2. About 4 holes marked ●, ejector rod can not be connected to ejector plate. 3. Suitable minimum die size is 567mm × 567mm.



UB530TS

1. About 14 holes marked ●, ejector rod can be connected to ejector plate with nut. 2. About 4 holes marked ●, ejector rod can not be connected to ejector plate. 3. Suitable minimum die size is 500mm × 500mm.



UB-TS Series Main Specifications

		Units	UB530TS	UB670TS	UB850TS	UB1100TS	UB1300TS	UB1300TSW
Clamping	Clamping force	kN	5300	6700	8500	11000	13000	13000
	Dimension of die plate (LxW)	mm	1070×1172	1200×1302	1400×1452	1660×1700	1930×1800	2030×2335
	Read between tie bars (LxW)	mm	751×751	850×850	931×931	1100×1100	1250×1120	1250×1525
	Die stroke	mm	560	660	760	830	900	900
	Die thickness (min. to max.)	mm	350~850	350~900	400~950	600~1200	750~1500	750~1500
Injection	Nominal injection force	kN	170~461 ※139~307	195~530 ※160~353	236~641 ※193~427	383~895 ※269~597	422~1089 ※327~726	422~1089 ※327~726
	Nominal filling force	kN	226	259	314	439	533	533
	Plunger stroke	mm	580	670	750	820	950	950
	Tip projection stroke	mm	230	300	355	355	375	375
	Shot position (from machine center)	mm	-175	-175	-250	-300	-300	-300
	Injection speed	m/sec	0.03~11	0.03~11	0.03~12	0.03~12	0.03~12	0.03~12
	Applicable Plunger tip diameter	mm	70,80,90	75,85,95	80,90,100	90,110,120	90,110,130	90,110,130
	Plunger tip diameter (Standard)	mm	80	85	90	110	110	110
	Nominal Metal pressure (Standard Tip diameter)	MPa	33~86 ※31~59	34~88 ※31~60	37~95 ※32~64	40~89 ※29~40	44~108 ※34~73	44~108 ※34~73
	Deceleration adjustment	mm	Adjustable	Adjustable	Adjustable	Adjustable	Adjustable	Adjustable
Ejection	Ejector force	kN	235	286	343	539	588	588
	Ejector stroke	mm	0~110	0~125	0~125	0~150	0~150	0~150
	Distance from moving platen to ejection plate	mm	540	590	646	845	865	865
General	Motor for hydraulic pump	-	Servo motor / Induction motor				Servo motor	
	Oil tank capacity	L	1000	1030	1300	1420	1760	1940
	Cooling water flow rate for oil cooler	L/min	100 (water temp. at 30℃ or below)					
	Hydraulic system pressure	MPa	16.2					

※: Low metal pressure mode (Decompress gas pressure of Intencification accumulator)

Note 1: Appearance, Specifications, Numerical Data of die casting machine may be changed for improvement without notice.

Note 2: The maximum injection speed values are based on the use of mineral oil.

UBE DIE CASTING MACHINE LINEUP

UB iS3-s/i Series (530 – 1300 ton)



UB iV2 Series (1650 – 6500 ton)



UBE MACHINERY CORPORATION, LTD.

Website
(English)