HYBRID precision Injection Molding Machine

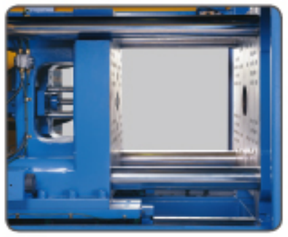
The DG-HB hybrid injection molding machine combine a servo-hydraulic motor with two electric servo motors. The movements of clamping unit and nozzle are driven by the servo-hydraulic motor, injection and metering are driven by the electric servo motor.
The purpose is achieved well between economics and precision.

DG-HB Series

90TON ~ 450TON

尚燁機械科技股份有限公司
DER GANG MACHINERY CO., LTD.

10109C32

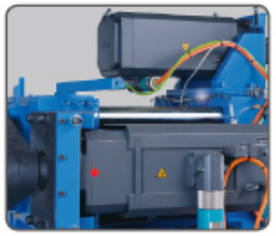


1. High rigid mold platen.
2. The tie-bars are free of contamination with lubricants because of no tie-bar sleeves.
3. The moving platen is provided by linear guides, reduce friction, more precision movement of mold closing and opening.

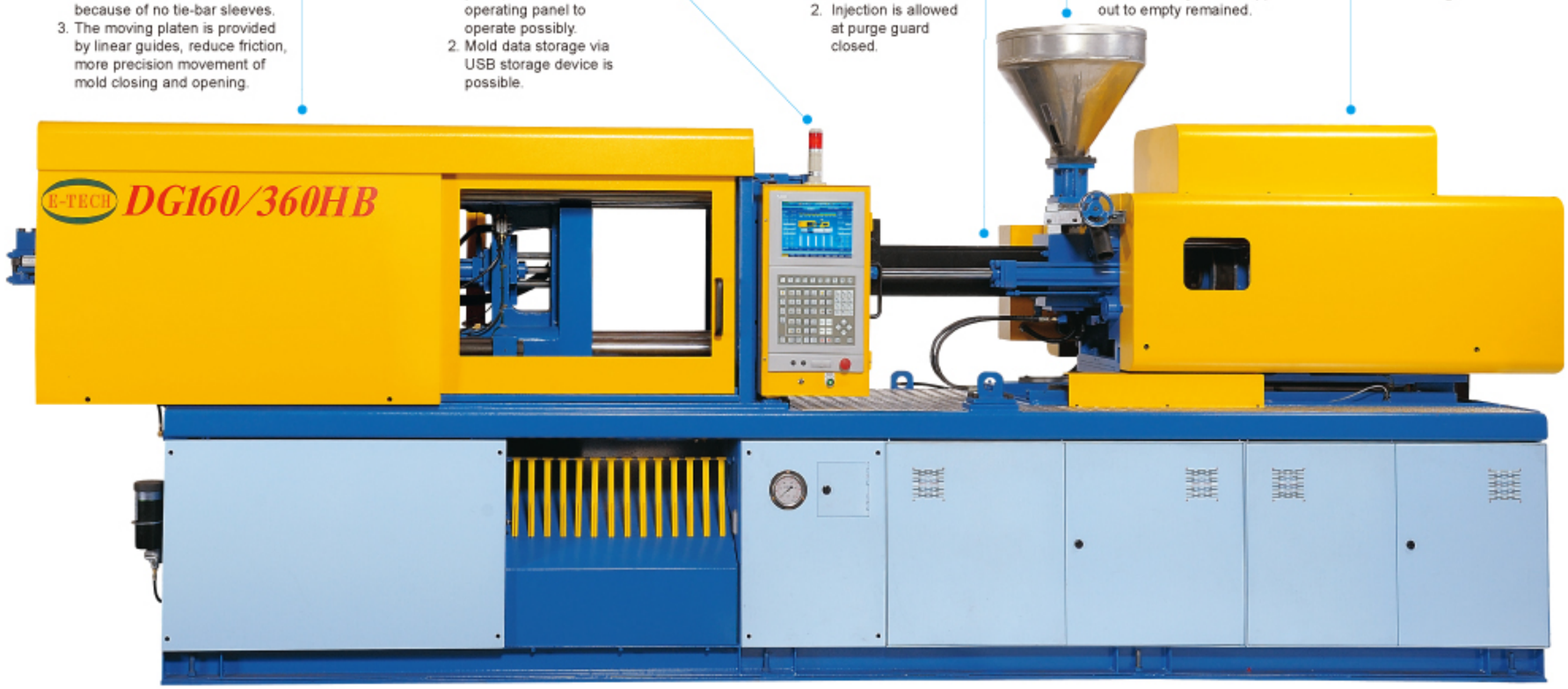
1. 12.1 inch LED display with intelligent touch panel, combine the operating panel to operate possibly.
2. Mold data storage via USB storage device is possible.

1. Purge guard for preventing melt spill out.
2. Injection is allowed at purge guard closed.

1. Hopper forward and backward by a hand-wheel.
2. Fast and easy move hopper out to empty remained.



High-stability and high-precision electric servo motors of injection and metering.



New Creation of Multi Function and Lead

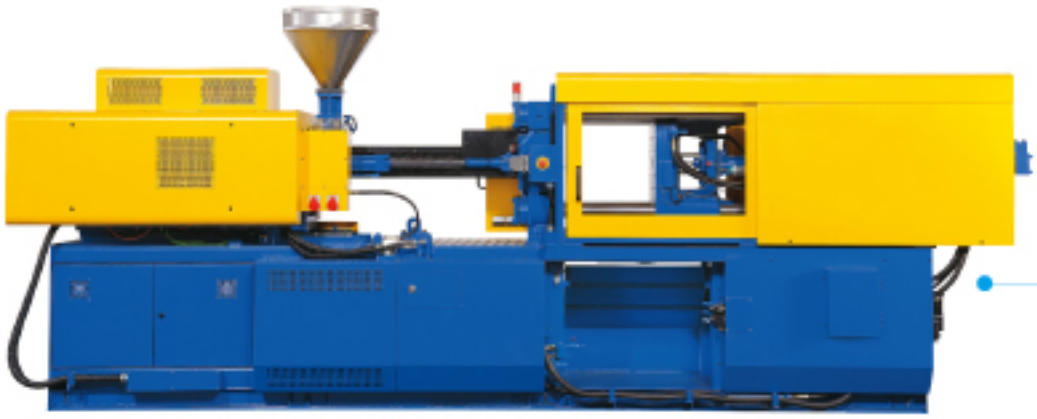
Three axis control of servo motor

1. Two axis control with electric servo motor for injection and metering, the other one axis with servo-hydraulic motor for hydraulic driven.
2. The DG-HB is provided high-speed and low speed injection to product parts in all respects except saving power.
3. Reduce rejects because of injection and metering by high performance servo motor and driven unit.
4. Save money for purchase, because the hybrid IMM productive quality is all the same as full electric IMM.
5. LED touch panel and operating panel can operate together.
6. Power consumption can display on the LED screen.

Combinational Table of Clamping Unit and Injection Unit

Clamp Unit TON	Injection Unit									
	170HB	240HB	360HB	460HB	620HB	800HB	1200HB	2000HB	3000HB	4200HB
90	•	•	•							
120		•	•	•						
160			•	•	•					
200				•	•	•				
250					•	•	•			
300						•	•	•		
350							•	•	•	
450								•	•	•

E-TECH ▶▶▶ DG-HB Series



Neatly Clean Opposite Side.
All the hydraulic pipes and electric wires are integrated into the machine base with protective cover for cleaning easily.

Features Overview

	NO.	Item	Standars	Optional
Clamping Unit	1	Greasless toggle bushings	○	
	2	Automatic greasing	○	
	3	High performance mold platen support	○	
	4	Hydraulical safety device for mold closing	○	
	5	Electrical safety device for mold closing	○	
	6	Mechanical safety device for mold closing	○	
	7	Hydraulic driven mold thickness adjusting system	○	
	8	Automatic clamping force adjustment device	○	
	9	5 stages of pressure & speed control on open mold	○	
	10	5 stages of pressure & speed control on close mold	○	
	11	Low pressure mold protecting device	○	
	12	Ejection: Standard, Vibrating & Half eject	○	
	13	Ejector plate return confirmation circuit	○	
	14	Ejection mode change		•
	15	No.1 hydraulic core puller circuit	○	
	16	No.2 hydraulic core puller circuit		•
	17	No.3 hydraulic core puller circuit		•
	18	Cores and mold sets protection	○	
	19	No.1 air jet		
	20	No.2 air jet		•
	21	Hydraulic motor for unscrewing		•
	22	Photocell type product chute confirmation		•
	23	Automatic safety door opening and closing device		•
	24	Drilling of product take-out robot mounting holes		•
	25	Circuit for product take-out robot (EUROMAP 12)		•
	26	Dual function (ejector during mold opening)		•
	27	Dual function (screw rotation during mold opening)		•
	28	Daylight extension		•
	29	T-grooved plate		•
Hydraulic Unit & Related Equipment	1	Servo motor for energy saving device	○	
	2	Oil temperature display	○	
	3	Oil low level alarm		•
	4	Oil temperature upper and lower limits alarm	○	
	5	Oil preheating circuit		•
	6	"Y" strainer of cooling water		•
	7	Mold cooling water with flow indicator		•
	8	Mold cooling water with flow controller	○	
Monitor	1	Cylinder temperature upper and lower alarm	○	
	2	Production quantity control	○	
	3	Packaging quantity control	○	
	4	Abnormal alarm buzzer	○	
	5	Abnormal flashlight	○	
	6	Upper and lower limit for molding conditions	○	
	7	Cycle monitor display	○	
	8	Machine process monitor	○	
	9	History of alarm (200 sets)	○	
	10	History of molding conditions value (200 sets)	○	
	11	Display the power comsumption device	○	

	NO.	Item	Standars	Optional
Injection unit	1	Screw cylinder (one set of H, A, B or C)	○	
	2	Back flow preventing ring	○	
	3	Open nozzle	○	
	4	Open long nozzle		•
	5	Bi-metal cylinder for abrasion		•
	6	Bi-metal screw for abrasion		•
	7	Screw for rigid PVC		•
	8	Hopper move-out device	○	
	9	Cold start-up prevention	○	
	10	Swivel for injection unit	○	
	11	Barrel temperature pause changeover function	○	
	12	24 hours warm keeping and temperature control	○	
	13	PID control on temperature control	○	
	14	Automatic purging circuit	○	
	15	Retraction select for injection unit	○	
	16	Suck-back device before screw charge	○	
	17	Suck-back device after screw charge	○	
	18	1-6 steps injection speed (adjust.)	○	
	19	1-6 steps injection pressure (adjust.)	○	
	20	1-6 steps holding speed (adjust.)	○	
	21	1-4 steps holding pressure (adjust.)	○	
	22	1-4 steps holding time (adjust.)	○	
	23	1-5 steps screw speed (adjust.)	○	
	24	1-5 steps screw back pressure (adjust.)	○	
	25	Transfer to holding pressure by sensing injection position	○	
	26	Transfer to holding pressure by sensing injection time	○	
	27	Transfer to holding pressure by pressure sensor	○	
	28	Screw revolution display	○	
	29	Purge cover (with interlock)	○	
	30	Cooling time before screw charge	○	
	31	Speed curve of screw charge display immediately	○	
	32	Back pressure curve display immediately	○	
	33	Torgue curve of screw charge display immediately	○	
	34	Injection pressure and speed curve display immediately	○	
	35	Temperature control to material loading zone	○	
Controller	1	Color LCD for C-9000 controller	○	
	2	200 sets memory of molding conditions	○	
	3	USB for memory of molding conditions	○	
	4	Configuration unit description	○	
	5	Diagnose input and output status	○	
	6	Execute input / output detecting	○	
	7	Input and output detecting	○	
	8	Multiple layer password setting	○	
	9	5 language switching function (Chinese, English, Spain, Portugal, Turkey)	○	
	10	Other language select		•

DER GANG MACHINERY CO., LTD.
Add: 42, lane 349, Chung Cheng South Road, Yung Kang Dist., Tainan City, 710 Taiwan
E-mail: sales@dergang.com.tw
Tel: +886-6-2536886 **Fax:** +866-6-2538587

Technical Data

Model			DG90									DG120								
Item \ Inj. Model			170HB			240HB			360HB			240HB			360HB			460HB		
Electric Injection	Screw symbol		H	A	B	H	A	B	H	A	B	H	A	B	H	A	B	H	A	B
	Screw diameter	mm	26	28	32	28	32	36	32	36	40	28	32	36	32	36	40	36	40	45
	Theoretical shot volume	cm^3	66	77	100	92	120	152	144	183	226	92	120	152	144	183	226	183	226	286
	Injection pressure (MAX.)	bar	2800	2414	1848	2800	2143	1693	2531	2000	1620	2800	2143	1693	2531	2000	1620	2500	2025	1600
	Holding pressure (MAX.)	bar	2520	2170	1660	2520	1920	1520	2280	1800	1460	2520	1920	1520	2280	1800	1460	2220	1800	1420
	Plasticizing capacity (PS)	kg / h	40	48	70	48	70	96	52	72	96	48	70	96	52	72	96	72	96	122
	Injection rate	cm^3 / S	159	184	240	184	240	305	201	254	314	184	240	305	201	254	314	254	314	398
	Injection speed	mm / S	300			300			250			300			250			250		
	Screw revolution	rpm	350			350			300			350			300			300		
Hydraulic Clamping	Mold clamping force	kn	900									1200								
	Mold clamping stroke	mm	300									390								
	Mold thickness (min-max)	mm	100 - 350									150 - 450								
	Daylight opening	mm	650									810								
	Space between tie-bars	mm	360 X 360									410 X 410								
	Mold platen	mm	560 X 560									640 X 640								
	Ejector force	kn	39.5									39.5								
	Ejector stroke	mm	80									130								
	Ejector point		5									5								
Other	Oil tank		100									120								
	Heater	kw	5.6			5.8			7			5.8			7			8.2		
	Machine dimensioms	m	4.7 X 1.3 X 1.7			4.8 X 1.3 X 1.75			4.8 X 1.3 X 1.75			5.25 X 1.33 X 1.8			5.25 X 1.33 X 1.8			5.25 X 1.33 X 1.8		
	Machine weight	ton	4.4			4.6			4.6			5.4			5.4			5.5		

Model			DG250									DG300								
Item \ Inj. Model			620HB			800HB			1200HB			800HB			1200HB			2000HB		
Electric Injection	Screw symbol		H	A	B	H	A	B	H	A	B	H	A	B	H	A	B	H	A	B
	Screw diameter	mm	40	45	50	45	50	55	50	55	60	45	50	55	50	55	60	60	65	70
	Theoretical shot volume	cm^3	251	318	392	365	451	546	510	617	735	365	451	546	510	617	735	848	995	1154
	Injection pressure (MAX.)	bar	2531	2000	1620	2345	1900	1570	2299	1900	1596	2345	1900	1570	2299	1900	1596	2230	1900	1638
	Holding pressure (MAX.)	bar	2280	1800	1460	2110	1710	1410	2070	1710	1440	2110	1710	1410	2070	1710	1440	2007	1710	1474
	Plasticizing capacity (PS)	kg / h	96	122	174	110	148	180	148	180	210	110	148	180	148	180	210	210	275	320
	Injection rate	cm^3 / S	251	318	392	254	314	380	314	380	452	254	314	380	314	380	452	452	530	616
	Injection speed	mm / S	200			160			160			160			160			160		
	Screw revolution	rpm	300			250			250			250			250			250		
Hydraulic Clamping	Mold clamping force	kn	2500									3000								
	Mold clamping stroke	mm	530									600								
	Mold thickness (min-max)	mm	200 - 680									250 - 750								
	Daylight opening	mm	1210									1350								
	Space between tie-bars	mm	560 X 560									620 X 620								
	Mold platen	mm	830 X 830									930 X 930								
	Ejector force	kn	53.8									110								
	Ejector stroke	mm	160									200								
	Ejector point		9									13								
Other	Oil tank		250									350								
	Heater	kw	9			11			12.6			11			12.6			17		
	Machine dimensioms	m	6.2 X 1.6 X 2.15			6.3 X 1.6 X 2.15			6.4 X 1.6 X 2.15			6.6 X 1.65 X 2.28			6.8 X 1.65 X 2.28			7.2 X 1.65 X 2.28		
	Machine weight	ton	10			10.5			11			13			13.6			14		

Remarks:

1. PC, HPVC, other engineering plastic, etc. low temperature setting and high speed molding may require a high torque depending on the grade or molding conditions. Please contact us with your plan.
2. Due to continul improvements, specifications are subject to change without notice.

DG-HB Series

Model			DG160									DG200								
Item \ Inj. Model			360HB			460HB			620HB			460HB			620HB			800HB		
Electric Injection	Screw symbol		H	A	B	H	A	B	H	A	B	H	A	B	H	A	B	H	A	B
	Screw diameter	mm	32	36	40	36	40	45	40	45	50	36	40	45	40	45	50	45	50	55
	Theoretical shot volume	cm^3	144	183	226	183	226	286	251	318	392	183	226	286	251	318	392	365	451	546
	Injection pressure (MAX.)	bar	2531	2000	1620	2500	2025	1600	2531	2000	1620	2500	2025	1600	2531	2000	1620	2345	1900	1570
	Holding pressure (MAX.)	bar	2280	1800	1460	2220	1800	1420	2280	1800	1460	2220	1800	1420	2280	1800	1460	2110	1710	1410
	Plasticizing capacity (PS)	kg / h	52	72	96	72	96	122	96	122	174	72	96	122	96	122	174	110	148	180
	Injection rate	cm^3 / S	201	254	314	254	314	398	251	318	392	254	314	398	251	318	392	254	314	380
	Injection speed	mm / S	250			250			200			250			200			160		
	Screw revolution	rpm	300			300			300			300			300			250		
Hydraulic Clamping	Mold clamping force	kn	1600									2000								
	Mold clamping stroke	mm	400									470								
	Mold thickness (min-max)	mm	150 - 500									150 - 570								
	Daylight opening	mm	900									1040								
	Space between tie-bars	mm	460 X 450									510 X 510								
	Mold platen	mm	690 X 690									740 X 740								
	Ejector force	kn	39.5									53.8								
	Ejector stroke	mm	130									160								
	Ejector point		5									9								
Other	Oil tank		130									180								
	Heater	kw	7			8.2			9			8.2			9			11		
	Machine dimensioms	m	5.33 X 1.36 X 1.87			5.33 X 1.36 X 1.87			5.33 X 1.36 X 1.90			5.73 X 1.4 X 1.95			5.73 X 1.4 X 1.95			5.85 X 1.4 X 2		
	Machine weight	ton	6.3			6.3			6.5			8.6			8.6			8.8		

Model			DG350									DG450								
Item \ Inj. Model			1200HB			2000HB			3000HB			2000HB			3000HB			4200HB		
Electric Injection	Screw symbol		H	A	B	H	A	B	H	A	B	H	A	B	H	A	B	H	A	B
	Screw diameter	mm	50	55	60	60	65	70	70	75	80	60	65	70	70	75	80	75	80	90
	Theoretical shot volume	cm^3	510	617	735	848	995	1154	1347	1546	1759	848	995	1154	1347	1546	1759	1943	2211	2799
	Injection pressure (MAX.)	bar	2299	1900	1596	2230	1900	1638	2181	1900	1670	2230	1900	1638	2181	1900	1670	2161	1900	1501
	Holding pressure (MAX.)	bar	2070	1710	1440	2007	1710	1474	1962	1710	1503	2007	1710	1474	1962	1710	1503	1944	1710	1350
	Plasticizing capacity (PS)	kg / h	148	180	210	210	275	320	280	320	370	210	275	320	280	320	370	300	390	480
	Injection rate	cm^3 / S	314	380	452	452	530	616	616	707	804	452	530	616	616	707	804	707	804	1018
	Injection speed	mm / S	160			160			160			160			160			160		
	Screw revolution	rpm	250			250			200			250			200			180		
Hydraulic Clamping	Mold clamping force	kn	3500									4500								
	Mold clamping stroke	mm	670									760								
	Mold thickness (min-max)	mm	300 - 800									350 - 850								
	Daylight opening	mm	1470									1610								
	Space between tie-bars	mm	710 X 710									810 X 810								
	Mold platen	mm	1060 X 1060									1210 X 1210								
	Ejector force	kn	110									172								
	Ejector stroke	mm	240									240								
	Ejector point		13									17								
Other	Oil tank		400									500								
	Heater	kw	12.6			17			21			17			21			27		
	Machine dimensioms	m	7.5 X 1.8 X 2.3			7.8 X 1.8 X 2.3			8.1 X 1.8 X 2.3			8.4 X 1.95 X 2.3			8.6 X 1.95 X 2.3			9 X 1.95 X 2.3		
	Machine weight	ton	16			17			18			21			22			23		