JETMASTER *Ai* Second Generation Servo Drive Series

98 to 228 tons

Your Precision Energy Saver

Ai-SVP/2

The Chen Hsong Group

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The Chen Hsong Group

Hand in Hand with You for 50 Years

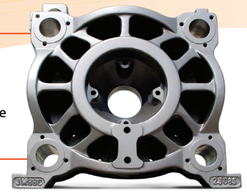
JETMASTER *Ai* Second Generation Servo Drive Series

Driven by the revolutionary intelligent servo system, the JM-SVP/2 series combines a fast-response piston pump with a high-precision servo drive, integrated a proprietary servo controller into an affordable package that guarantees the highest response, highest precision and lowest power consumption at the same time.

Strengthen Clamping Unit , Reinforce Mould Protection

- Strengthen clamping unit with even higher structural strength and stability, ideal for moulding high-precision parts – **yields higher product quality** and extends the useful lives of moulds
- Optimized five-point toggle design **for even higher clamping speed and even longer opening stroke**
- Ultra-high-speed clamping **for the ultimate short cycle time**
- Advanced low-pressure clamping protection algorithm **prevents damages to moulds**

- **Exclusive Circular Platen** (Patented ZL 01 2 57876.2)
  - Even stress distribution to moulds, **improves production stability and quality**
  - Greatly reduces stress concentration, **lengthens mould life**
  - Improved stress distribution, ten years guarantee*



Ai-02 Intelligent Computer Controller, Enhance Management Efficiency

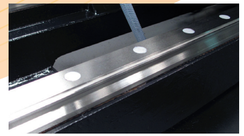
- The high-performance "*Ai*-02" intelligent computer controller enables extremely high-precision process control (when combined with the appropriate temperature and pressure transducers (Optional). It also includes built-in networking, intelligent diagnostics and on-line assistant features.
- Integrates completely with the **iChen System™** and **iChen Wireless™** for shop-floor management

An Injection Unit with Higher Precision, Reliability and Speed

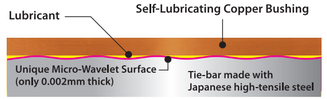
- Uniform Screw L/D Ratio **for Optimal Resin Melt**
- Screws are made only with Japanese high-grade steel plus a final nitridation (hardening) step
- Dual (balanced) Injector Cylinders, the nozzle is co-planar with the two perfectly-balanced injector cylinders – no lateral forces act on the unit during injection, enabling precise injection control
- High-performance linear guide rails, significantly less friction, enables burst speeds that are 10 times higher than possible with guide rods due to low friction and perfect straightness **- essential for very high speed injection processes**
- Screw tips, valves and check rings, made only with high-quality Japanese SKD61 tool-grade steel, ensure durability and injection precision
- High-performance optical encoder with digital interface#, all digital (zero-noise) transmission enables the most accurate positional feedback accuracy up to **0.025mm**

Exclusive Low-Friction Tie-Bars

- Made only with **Japanese high tensile steel**, with **strength and stiffness 5X that of lower quality steel**
- Surface specially hardened, **resistant to impact** (e.g. changing moulds), **scratch-proof**
- **Threads** are specially treated for even stress distribution and **minimal deformation**

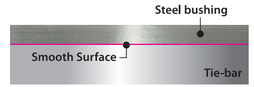


Chen Hsong Low-Friction Tie-Bar



Exclusive technology creates regular, micro-level wavelets, trapping lubricants inside to form a **very thin protective film** on the surface of the tie-bar. Together with high-quality Japanese self-lubricating copper bushing (not low-cost steel bushing commonly used in the industry), **friction of the combination is markedly reduced**

Regular Tie-Bar



The tie-bar's smooth surface constantly rubs against the steel bushing, creating a drag to platen motion (reduces clamping speed), increases heat dissipation, wastes energy, accelerates surface wear, and destroys precision

* Under correct use and normal circumstances, free maintenance up to ten years for first hand owner.

Product images are for reference only and subject to change without notice.

Optional - Potentiometer

Second Generation Servo Drive System

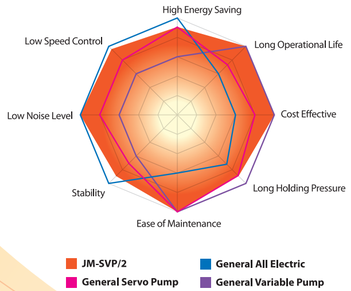
Saves up to 80% Electricity*

Energy Saving
Saves up to 80% of electricity compared to traditional fixed pump systems*

Ultimate Response
The response speed is more than double of a variable displacement pump

Ultimate Precision & Repeatability
Up to 0.5% repeatability even under extremely low speed & prolonged holding conditions

Long Operational Life
Low oil temperature conserves cooling water and reduces the need for hydraulic oil thus extends the useable lives of hydraulic parts



Items	JM-SVP/2	General Servo Pump	General All Electric	General Variable Pump
High Energy Saving	✓	✓	✓	●
High Precision	✓	●	✓	●
High Repeatability	✓	●	✓	●
Dynamic Response	✓	×	✓	●
Low Speed Control	✓	●	✓	×
Long Holding Pressure	✓	●	×	✓
Low Noise Level	✓	✓	✓	×
Low Cooling Water Consumption	✓	✓	✓	×
Long Operational Life	✓	●	×	✓
Ease of Maintenance	✓	✓	×	✓

✓ Excellent ● OK × Weak

* Subject to different product applications and cycle times.

Practical Example

Resin : PPT
Product : Computer exhaust fan leaves (4 cavities)

Energy Consumption*

Model	Pump	Cycle Time(s)	Injection Holding Time(s)	Time for Test(h)	Electricity Consumption (kWh)	Product(pcs)	Electricity Consumption for each piece (kWh)	Consumption(%)	Energy Saving(%)
JM88MK III	Fixed Pump	14	2	8	55.4	2057	0.027	100%	-
JM98 Ai	VDP	14	2	8	30.8	2057	0.015	56%	44%
JM98Ai-SVP/2	**SVP/2 Servo System**	**13.5**	**2**	**8**	**18.8**	**2133**	**0.009**	**33%**	**67%**

Energy Saving & Efficiency Comparsion*

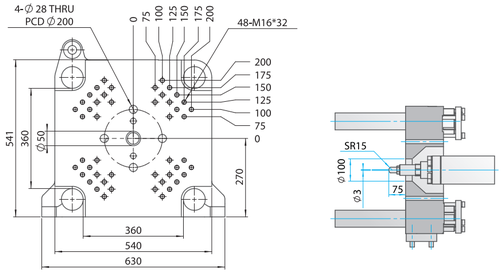
(For 1,000,000 pieces of product, roughly one year at 18 hours/day, 6 days/week, 52 weeks)

	JM88MK III		JM98 Ai		JM98Ai-SVP/2	
	Fixed Pump		VDP		SVP/2	
	kWh	USD	kWh	USD	kWh	USD
Production time(Days)	227	-	227	-	219	-
Product(Per piece)	0.032	0.004	0.02	0.003	0.014	0.002
1,000,000 pieces total	32,006	4,061.2	20,028	2,541.3	13,763	1,746.4

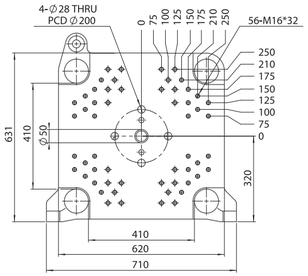
Based on USD 0.13 / kwh

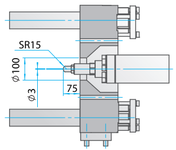
Time Savings per year : 8 days
Cost Saving per year : USD 2,314.8

JM98*Ai*-SVP/2

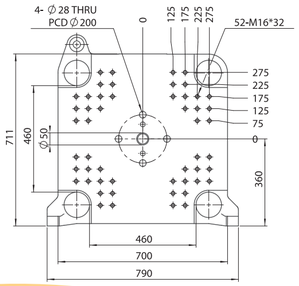


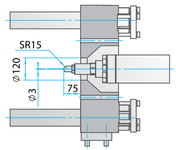
JM138*Ai*-SVP/2



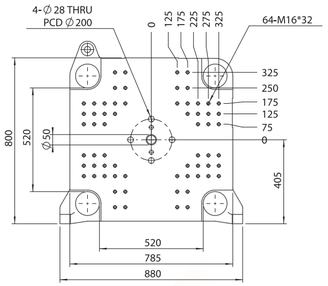


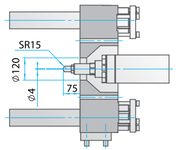
JM178*Ai*-SVP/2





JM228*Ai*-SVP/2





JM *Ai*-SVP/2

INJECTION UNIT	Unit	JM98*Ai*-SVP/2			JM138*Ai*-SVP/2			JM178*Ai*-SVP/2			JM228*Ai*-SVP/2		
Swept Volume	cm^3	106	158	231	158	231	332	231	341	478	341	499	735
Shot Weight(PS)	g	96	144	210	144	210	303	210	310	435	310	454	669
	oz	3.4	5.1	7.4	5.1	7.4	10.7	7.4	10.9	15.3	10.9	16	23.6
Screw Diameter	mm	31	36	41	36	41	46	41	46	52	46	52	60
Injection Pressure(Max.)	kgf/cm^2	2549	1890	1457	2755	2124	1687	2368	1881	1472	2543	1990	1495
Screw L/D Ratio	mm/mm		20			20			20			20	
Plasticizing Rate	kg/h	34	58	85	53	75	107	65	90	130	90	130	165
Injection Rate	cm^3/s	79	107	139	95	122	153	134	169	219	176	225	299
Screw Stroke	mm	140	155	175	155	175	200	175	205	225	205	235	260
Screw Rotation Speed(Max.)	rpm		261			240			206			186	
CLAMPING UNIT													
Clamping Force(Max.)	t		98			138			178			228	
Opening Stroke	mm		320			360			440			490	
Space Between Tie Bar(HxV)	mm		360 x360			410 x 410			460 x 460			520 x 520	
Maximum Daylight	mm		700			810			960			1040	
Mould Thickness(Min-Max)	mm		125 - 380			150 - 450			175 - 520			200 - 550	
Ejector Stroke	mm		100			120			140			150	
Ejector Force(Max.)	t		3.4			3.4			5.5			5.5	
Mould Register Hole (H7)	mm		100			100			120			120	
POWER/HEATING UNIT													
System Pressure	kgf/cm^2		175			175			175			175	
Pump Motor Power	kW		11			15			18			25	
Electrial Heating Power	kW		6.5			11			13.3			15.5	
Temperature Control Zones			3 +1			3 +1			3 + 1			3 + 1	
OTHERS													
Dry Cycle Time	s		1.8			1.8			1.8			2	
Oil Tank Capacity	liter		180			258			360			465	
Machine dimensions(LxWxH)	m × m × m		4.42 x 1.21 x 1.78			4.83 x 1.29 x 1.8			5.31 x 1.3 x 1.9			5.9 x 1.5 x 2.2	
Machine Weight(Approx.)	t		2.85			3.89			4.94			6.5	