MEGMEET

MV600J6B Electro-hydraulic Servo Drive

Power Solutions

Telecom Power
 Server Power
 Electric Power
 Laser Power
 OA Power
 Flat Panel Power
 Solar & BESS & EV Charging Solution

 Electric Power
 Medical Power
 Display Power
 LED Power

 Flat Panel Power
 Bi-directional Inverters for Portable Power

Industry Automation

Servo System Control System Elevator Controller Linear Motors IOT Solution Encoder
 Variable Frequency Drive Internal Gear Pump

New Energy Solutions

Multiplexed EV Charging System(OBC & DC-DC)
 Power Electronic Unit(2-in-1, 3-in-1)
 E-Compressor
 TV EDU
 Motor Control Unit
 Construction Machinery Controller
 Intelligent Active Hydraulic Suspension (i-AHS)
 Railway A/C Controller
 Railway VFD
 Light Electric Vehicle Controller
 Thermal Mamt. System

Home Appliance Control Solutions

Residential A/C Controller
 Vehicle A/C Controller
 Solar A/C Controller
 Solar A/C Controller
 Washer/Dryer Controller
 Industrial Microwave
 Smart Bidet

Precision Connection

□ FFC

FPC Coaxial Cable

CCS

□ Litz Wire □ Peek Wire

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Global Leading Solution Provider In Electrical Automation

ABOUT MEGMEET

MEGMEET is a comprehensive solution provider for hardware and software R&D, production, sales, and service in the field of electrical automation. With power electronics and automation control at its core, MEGMEET's main businesses include Power Solutions, Industrial Automation, New Energy Solutions, Intelligent Equipment, Home Appliance Control Solutions, and Precision Connection.

MEGMEET has established a robust R&D, manufacturing, marketing, and service platform, with over 7,300 employees worldwide. MEGMEET's global presence includes R&D Centers in China, Germany, and the United States; Manufacturing Centers in Thailand, India, and China; and Regional Offices across North America, Europe, and Asia.

MEGMEET is committed to creating a cleaner living environment for all human beings through more efficient energy utilization and improved manufacturing efficiency. MEGMEET aims to become the world leader in electrical automation and achieve the goal of MEGMEET EVERYWHERE.





Sustainable R&D Investment

Patents & Industry Standards

R&D Employees >2600 為≣

R&D Investment

No. of Patents & IP Rights 1700^{+} **150+** new in 2023

Percentage of Total Employees **35%** (C)

Percentage of Total Sales

23 • 5 lead author

Industry Standards Drafted

>11% 🗠

27

• 16 lead author

Testing Capabilities & Management System







MEGMEET's testing capabilities and management system have been certified by CNAS, TUV, UL-WTDP, & UL-CTF. MEGMEET's test results are recognized globally.

MV600J6B Electro-hydraulic Servo Drive Features

High reliability, high stability

- Wide voltage range design, adapt to a variety of grid environment
- EMC design, adapt to the complex environment on site
- Full range of servo design, fully adapt to highly dynamic, high-intensity load operation of the injection molding machine
- The drives of 90kW and below have built-in braking unit, easy to install and wiring, higher reliability
- PCB board three paint coating process, fully adapt to wet, oil mist, dust, particles and other poor working conditions of the injection molding machine
- Motor temperature detection (support PTC, KTY84) and protection, pressure sensor power failure protection, effectively ensuring the safe operation of the injection molding machine system

Multi-pump parallel flow and multi-pump bypass / parallel flow control

Multi-pump parallel flow

- For the same large-tonnage unit, achieve synchronous operation
- High-speed CAN bus interaction, just need to set the master, slave
- Convenient debugging, hydraulic response is fully controlled by the master PI, the slave follow the master action
- > When holding pressure, the master can be automatically removed from the slave running, more energy-efficient
- > Special treatment of unstable motor speed during the sol when breaking high hardness materials

Multi-pump bypass / parallel flow

In the multi-pump hydraulic injection molding machine system, it can use complex control scheme of multi-pump parallel flow and bypass flow, injection molding machine system switches mode according to the needs of actual process, comparing with a simple multi-pump parallel flow system, with more energy-efficient, more efficient, etc.

Unique dual displacement pump control

- The right amount of displacement switching, more energy efficient
- Fast response, fast cycling, more precise
- High sensitivity overflow, more reliable
- Saving power configuration, more environmentally friendly





Multi-pump parallel flow program

Easy parameter settings

- Factory empirical parameters, can satisfy the requirement of more than 90% of the field condition
- Many motor tuning mode selectable
- Operation panel rich parameters display
- Multiple sets of PI automatic switching, effective control the system response and overshoot
- Convenient PC TOOLING debugging software



Multi-pump bypass / parallel flow program

MV600J6B Electro-hydraulic Servo Drive Advantages

- The pressure sensor AI channel is 16bit AD with higher precision.
- Motor resolver PG feedback soft decoding, stronger anti-interference ability.
- Standard equipped with dual-channel CAN, system control coordination is more flexible.
- Host computer USB debugging interface, oil pressure online monitoring.
- Optimized oil pressure loop and motor control algorithm.
- The voltage regulation accuracy can be controlled within ±0.5bar.
- Brand new core hardware platform and compact structure.

Servo Motor Features

- The new permanent magnet embedded structure improves the weak magnetic overspeed and anti-demagnetization ability to meet the requirements of various working conditions in the electro-hydraulic industry.
- Industry-leading motor design technology platform, small motor size, light weight, low noise. strong overload capacity, ensure excellent electromagnetic performance.
- Mature manufacturing system, perfect process and quality standards, ensure stable and reliable product quality.
- Permanent magnets come from large domestic manufacturers, high performance, low loss, high energy efficiency, low temperature rise, small current and large torque.
- Built-in PTC and KTY temperature sensors, provide more protection for the motor.
- Support non-standard customization, suitable for a variety of occasions.
- A 9-core 6-meter encoder cable is included.

Injection Molding Machine Electro-hydraulic Servo Solutions

Servo pump system components



Comparison of all kinds of pump system

Traditional quantitative pump injection molding machine has a very serious energy wastage. According to the statistics show that in the past, its maximum operating efficiency is not more than 40%, energy-saving reform for such injection molding machine is imperative.

Variable pump injection molding machine mine energy-saying transformation space of oil circuit from the perspective of hydraulic components, thereby improving the efficiency of the oil circuit system. But restricted by its control mode, the system cannot completely eliminate the throttling, overflow losses.

Servo drive injection molding machine transforms traditional oil circuit from the speed adjustment mode from the perspective of electrical control, using accurate, fast, and reliable characteristics of modern control systems, can eliminate the throttling losses from its source and reduce overflow losses.



Variable pump system





Servo pump system

Injection Molding Machine Hydraulic Servo System Advantages

Energy saving

Servo drives apply modern control technology, fully play the speed adjustment performance of servo motor, combine with a high-speed and high response PID algorithm, provide pressure as required, compared with the original quantitative pump or variable pump system, the highest energy saving rate can reach more than 80%.



Precision

High position repeatability

Fast response servo drive to pressure, flow, ensure the open mold and close mold precision of injection molding machine, injection end position error can be controlled within 0.1mm.

High pressure control precision

Servo drive with high-speed DSP, combined with optimized high response and high precision PID algorithm to ensure the stability of the system pressure, pressure fluctuations can be controlled under ±0.5 bar.

High efficiency

High motor speed

Compared with the original asynchronous motors, higher speed of servo motor enhance the output of the pump to improve the overall efficiency of the injection molding machine.

High response speed

Fastest response speed can be up to 20ms, effectively improve the speed of the hydraulic system to build pressure.

Low noise

Rely on optimized PID control algorithm of servo drive, match high-performance permanent magnet servo motor, greatly reduce operating noise of the injection molding machine, achieve quiet operation, effectively improve the working environment.

MV600J6B Single System Control

Pressure flow control algorithm





Main circuit and control circuit terminal wiring diagram



MV600J6B multiple system control

Single-master multi-slave compound



Single-master multi-slave convergent/parallel flow



Multi-master multi-slave convergent/parallel flow



DI1: Enabling signal DI4: Slave unit switchover

MV600.16B Field Test Waveforms

Building pressure

Building pressure time of 175bar is 64.5ms.

Unloading pressure

Unloading pressure time of 175 bar is less than 100ms.

Steady pressure

Pressure sensor range 250bar, 0 ~ 10V output. Hold pressure 175bar, pressure fluctuations is \pm 0.65kg / cm2.

Full cycle

Fast response to cyclical building pressure, hold pressure, unloading pressure instructions.

MV600J6B Ouick Selection

Calculate the torque required by pump, determine motor selection

A rated displacement q (ml / rev) of the pump, produce a certain pressure p (bar), according to the hydraulic theory, the torque required to drive the pump is as follows:

T pump =0.0159*p*q(N⋅m)

Considering that the motor has a certain overload capability, and the injection molding machine is not been in a state of maximum torque, rated torque of pump motor is calculated as follows:

T motor=T pump /1.4~1.6

Related motor parameters table, firstly select the motor torque. According to the data provided by different motor manufacturers, usually a motor torque have three speed segments 1500rpm, 1700rpm, 2000rpm, according to different pump of system configuration, select the speed, determine the motor.

Calculate the drive rated current, determine the drive selection

After the motor is determined, according to the value of the motor kt, calculating the drive maximum current required to provide:

I drive max=T pump /kt

Computing according to drive overload 1.5 times in 1 min, the drive rated current is:

| rated = 1.2 * | drive max/1.5

Note: Due to the accuracy of the parameters provided by each motor and pump manufacturers is different, in order to improve the safety and stability of the system, multiplied by a safety factor of 1.2 should be considered in the drive selection. The drive model can be preliminary selected according to drive rated current.

MV600J6B Naming, Specifications

Electro-hydraulic servo drive	Input power	Rated capacity (kVA)	Rated input current (A)	Rated output current (A)	Braking resistor value (Ω)	Braking torque (%)	Braking unit	Note
MV600J6B-4T5.5		8.5	14.5	13.0	1000W/45Ω	120		
MV600J6B-4T7.5		11.0	20.5	17.0	1000W/45Ω	200		are
MV600J6B-4T11		17.0	26.0	25.0	1500W/32Ω	200		uctu
MV600J6B-4T15		21.0	35.0	32.0	1500W/32Ω	200		ic sti
MV600J6B-4T18.5		24.0	38.5	37.0	2500W/25Ω	200		lasti
MV600J6B-4T22		30.0	46.5	45.0	2500W/20Ω	200	lt-in	с.
MV600J6B-4T30		40.0	62.0	60.0	3000W/20Ω	150	Bui	
MV600J6B-4T37		50.0	76.0	75.0	4000W/16Ω	120		
MV600J6B-4T45		60.0	92.0	90.0	5000W/16Ω	200		
MV600J6B-4T55	Three phase	72.0	113.0	110.0	6000W/9Ω	160		
MV600J6B-4T75	380V~480V	100.0	157.0	152.0	8000W/9Ω	120		
MV600J6B-4T90	-15%~+10%	116.0	180.0	176.0	10000W/7Ω	200		ture
MV600J6B-4T110		138.0	214.0	210.0	12000W/6Ω	160		ruct
MV600J6B-4T132		167.0	256.0	253.0	14000W/6Ω	130		tal st
MV600J6B-4T160		200.0	307.0	304.0	15000W/4Ω	200		me
MV600J6B-4T200		250.0	385.0	380.0	9600W/13.6Ω*3	130	lar	heet
MV600J6B-4T220		280.0	430.0	426.0	40kW/3.2Ω*1	140	terr	S
MV600J6B-4T280		355.0	525.0	495.0	40kW/2Ω*1	140	ŵ	
MV600J6B-4T315		445.0	590.0	585.0	60kW/3.2Ω*1	120		
MV600J6B-4T355		500.0	665.0	650.0	60kW/3.2Ω*1	110		
MV600J6B-4T400		565.0	785.0	725.0	60kW/2Ω*1	110		

Note: *2 means that two braking resistors are connected in parallel, and so on.

MV600J6B Series Outline, Mounting Dimensions

Enclosure model	Drive model	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	Mounting aperture diameter (mm)	Gross weight ±0.5(kg)
R3	MV600J6B-4T5.5 MV600J6B-4T7.5 MV600J6B-4T11 MV600J6B-4T15	137	236	249	155	198	5.5	4
R4	MV600J6B-4T18.5 MV600J6B-4T22 MV600J6B-4T30	186	314.5	330	209	206	6.5	9
R5	MV600J6B-4T37 MV600J6B-4T45	220	437.5	451.5	284.5	213	6.5	21
R6	MV600J6B-4T55 MV600J6B-4T75	270	549	570	335	262	7	41
R7	MV600J6B-4T90	270	579	600	335	292	7	49
R7P	MV600J6B-4T110 MV600J6B-4T132 MV600J6B-4T160	290	641	672	374	296	12	55
R9P	MV600J6B-4T200	370	827.5	849.5	530	350	12	154
R10	MV600J6B-4T220 MV600J6B-4T280 MV600J6B-4T315	500	932	956	700	361.5	14	216
R11	MV600J6B-4T355 MV600J6B-4T400	-	-	1624	710	610	-	250

R11

Motor Naming

Motor Structure Size

NYS2-20F

Motor mode	NYS2-20F-055	NYS2-20F-065	NYS2-20F-080	NYS2-20F-105	NYS2-20F-130	NYS2-20F-155	NYS2-20F-180	NYS2-20F-200
A (mm)	345	361	381	417	453	489	525	575
B (mm)	265	265	285	310	350	395	395	470

NYS2-26F

Motor model	NYS2-26F-225	NYS2-26F-250	NYS2-26F-300	NYS2-26F-340	NYS2-26F-370	NYS2-26F-440	NYS2-26F-500	NYS2-26F-560
A (mm)	523.5	577	577	630.5	630.5	684	757.5	811
B (mm)	365.5	419	419	472.5	472.5	526	599.5	653
C (mm)	14 ⁰ _{-0.027}	18 ⁰ -0.027	18 ⁰ -0.027					
D (mm)	48 +0.011 -0.005	48 +0.011 -0.005	48 +0.011 -0.005	48 +0.011 -0.005	48 +0.011 -0.005	48 +0.011 -0.005	60 ^{+0.03} +0.011	60 ^{+0.03} +0.011

Motor Parameters

1500rpm

Motor model	Rated power (kW)	Rated current (A)	Rated torque (N.m)	Rated speed (rpm)	Rated frequency (Hz)	Back-EMF (V)	Kt Thermal state	Number of motor poles (2P)	Peak speed (rpm)	Peak torque (N.m)	Peak current (A)	Inertia (kg.cm²)
NYS2-20F-055-15RH42	8.6	16.3	55	1500	100	320	3.37	8	2200	88	27.5	62
NYS2-20F-065-15RH42	10.2	19.1	65	1500	100	321	3.4	8	2200	104	32.5	73
NYS2-20F-080-15RH42	13.2	24.6	84	1500	100	327	3.41	8	2200	145	45	87
NYS2-20F-105-15RH42	17	31.8	108	1500	100	327	3.4	8	2200	195	63	112
NYS2-20F-130-15RH42	20.4	39.2	130	1500	100	312	3.32	8	2200	248	83	137
NYS2-20F-155-15RH42	24.5	44.7	156	1500	100	327	3.49	8	2200	300	104	160
NYS2-20F-180-15RH42	28.3	52	180	1500	100	327	3.46	8	2200	360	130	187
NYS2-20F-200-15RH42	32.2	61.8	205	1500	100	312	3.32	8	2200	400	140	213
NYS2-26F-225-15RH48	33.8	63	215	1500	100	328	3.41	8	2200	355	118	380
NYS2-26F-250-15RH48	39.2	73.3	250	1500	100	328	3.41	8	2200	400	130	440
NYS2-26F-300-15RH48	45.9	87	292	1500	100	312	3.36	8	2200	500	160	500
NYS2-26F-340-15RH48	53.4	100	340	1500	100	318	3.38	8	2200	520	170	560
NYS2-26F-370-15RH48	58.1	110	370	1500	100	312	3.36	8	2200	600	228	630
NYS2-26F-440-15RH48	76	126	429	1500	100	328	3.41	8	2200	675	230	720
NYS2-26F-500-15RH60	77.3	146	492	1500	100	328	3.37	8	2200	750	260	815
NYS2-26F-560-15RH60	85.6	166	545	1500	100	312	3.28	8	2200	830	292	905

1700rpm

Motor model	Rated power (kW)	Rated current (A)	Rated torque (N.m)	Rated speed (rpm)	Rated frequency (Hz)	Back-EMF (V)	Kt Thermal state	Number of motor poles (2P)	Peak speed (rpm)	Peak torque (N.m)	Peak current (A)	Inertia (kg.cm²)
NYS2-20F-055-17RH42	9.8	18.5	55	1700	113.3	318	2.97	8	2500	89	32.5	62
NYS2-20F-065-17RH42	11.5	21.3	65	1700	113.3	321	3.05	8	2500	104	37.5	73
NYS2-20F-080-17RH42	15	28.3	84	1700	113.3	318	2.97	8	2500	147	54	87
NYS2-20F-105-17RH42	18.7	35.3	105	1700	113.3	318	2.97	8	2500	202	74	112
NYS2-20F-130-17RH42	23	44.8	129	1700	113.3	309	2.88	8	2500	247	89	137
NYS2-20F-155-17RH42	27.8	53.3	156	1700	113.3	318	2.93	8	2500	302	110	160
NYS2-20F-180-17RH42	31.3	61.5	176	1700	113.3	309	2.86	8	2500	370	138	187
NYS2-20F-200-17RH42	36.5	70	205	1700	113.3	318	2.93	8	2500	425	157	213
NYS2-26F-225-17RH48	38.8	74	218	1700	113.3	318	2.95	8	2500	440	162	380
NYS2-26F-250-17RH48	44	83.5	247	1700	113.3	310	2.96	8	2500	490	173	440
NYS2-26F-300-17RH48	50.2	95	282	1700	113.3	318	2.97	8	2500	510	180	500
NYS2-26F-340-17RH48	59.8	110	336	1700	113.3	317	3.05	8	2500	580	215	560
NYS2-26F-370-17RH48	64.6	126	363	1700	113.3	310	2.88	8	2500	600	225	630
NYS2-26F-440-17RH48	76	146	427	1700	113.3	318	2.92	8	2500	670	255	720
NYS2-26F-500-17RH60	86.3	168	485	1700	113.3	310	2.89	8	2500	755	298	815
NYS2-26F-560-17RH60	96.1	183	540	1700	113.3	318	2.95	8	2500	830	326	905

2000rpm

Motor model	Rated power (kW)	Rated current (A)	Rated torque (N.m)	Rated speed (rpm)	Rated frequency (Hz)	Back-EMF (V)	Kt Thermal state	Number of motor poles (2P)	Peak speed (rpm)	Peak torque (N.m)	Peak current (A)	Inertia (kg.cm²)
NYS2-20F-055-20RH42	11.3	21	54	2000	133.3	322	2.57	8	2600	88	36	62
NYS2-20F-065-20RH42	13.6	24.8	65	2000	133.3	327	2.62	8	2600	104	44.5	73
NYS2-20F-080-20RH42	17.4	31.6	82	2000	133.3	327	2.59	8	2600	145	62	87
NYS2-20F-105-20RH42	21.8	38.3	104	2000	133.3	332	2.72	8	2600	194	80	112
NYS2-20F-130-20RH42	26.8	51.3	128	2000	133.3	312	2.5	8	2600	248	110	137
NYS2-20F-155-20RH42	32.5	60.9	155	2000	133.3	312	2.55	8	2600	310	140	160
NYS2-20F-180-20RH42	36.4	66.8	174	2000	133.3	327	2.6	8	2600	360	154	187
NYS2-20F-200-20RH42	40.8	74	195	2000	133.3	332	2.64	8	2600	400	185	213
NYS2-26F-225-20RH48	43.4	81.5	207	2000	133.3	312	2.54	8	2600	365	160	380
NYS2-26F-250-20RH48	50.8	91.6	243	2000	133.3	328	2.65	8	2600	400	170	440
NYS2-26F-300-20RH48	58.6	104	280	2000	133.3	333	2.69	8	2600	490	205	500
NYS2-26F-340-20RH48	69.1	125	330	2000	133.3	328	2.65	8	2600	520	210	560
NYS2-26F-370-20RH48	75.4	143	360	2000	133.3	312	2.52	8	2600	595	273	630
NYS2-26F-440-20RH48	88.6	167	423	2000	133.3	312	2.53	8	2600	670	308	720
NYS2-26F-500-20RH60	101	181	482	2000	133.3	328	2.66	8	2600	755	330	815
NYS2-26F-560-20RH60	111	203	530	2000	133.3	333	2.62	8	2600	820	345	905

Test conditions:

1)The motor is placed horizontally in free still air and the ambient temperature is 25 °C.

2) The rated data of the motor is based on the temperature rise of 100K (typical tolerance value ±5%), and the alarm temperature of the temperature sensor is 130°C.

System Configuration Table

Single machine configuration recommendations

Maximum system pressure (bar)	Maximum system flow (L / min)	Recommended pump displacement (CC)	Recommended motor model	Recommend servo drive model
140	66	32	NYS2-20F-055-17RH42	MV600J6B-4T11
140	82	40	NYS2-20F-065-17RH42	MV600J6B-4T11
140	103	50	NYS2-20F-080-17RH42	MV600J6B-4T15
140	147	63	NYS2-20F-105-20RH42	MV600J6B-4T22
140	180	80	NYS2-20F-130-20RH42	MV600J6B-4T30
140	213	100	NYS2-20F-155-20RH42	MV600J6B-4T37
140	265	125	NYS2-20F-200-20RH42	MV600J6B-4T45

Maximum system pressure (bar)	Maximum system flow (L / min)	Recommended pump displacement (CC)	Recommended motor model	Recommend servo drive model
160	66	32	NYS2-20F-055-17RH42	MV600J6B-4T11
160	82	40	NYS2-20F-065-17RH42	MV600J6B-4T15
160	103	50	NYS2-20F-080-17RH42	MV600J6B-4T18.5
160	147	63	NYS2-20F-105-20RH42	MV600J6B-4T30
160	180	80	NYS2-20F-130-20RH42	MV600J6B-4T37
160	213	100	NYS2-20F-180-20RH42	MV600J6B-4T45
160	265	125	NYS2-26F-225-20RH48	MV600J6B-4T55

Maximum system pressure (bar)	Maximum system flow (L / min)	Recommended pump displacement (CC)	Recommended motor model	Recommend servo drive model
175	66	32	NYS2-20F-065-17RH42	MV600J6B-4T11
175	82	40	NYS2-20F-080-17RH42	MV600J6B-4T15
175	103	50	NYS2-20F-105-17RH42	MV600J6B-4T22
175	147	63	NYS2-20F-130-20RH42	MV600J6B-4T30
175	180	80	NYS2-20F-155-20RH42	MV600J6B-4T37
175	213	100	NYS2-20F-200-20RH42	MV600J6B-4T45
175	265	125	NYS2-26F-250-20RH48	MV600J6B-4T55

Confluence configuration example

Note: x1 means that the number of motors or drives is 1, x2 means 2, and so on.

C	Recommended motor model	Recommended servo drive model
	NYS2-20F-155-17RH42 x1+ NYS2-20F-130-17RH42 x1	MV600J6B-4T37x1+ MV600J6B-4T30x1
	NYS2-20F-180-17RH42 x1+ NYS2-20F-105-17RH42 x1	MV600J6B-4T45x1+ MV600J6B-4T22x1
	NYS2-20F-105-17RH42 x3	MV600J6B-4T22x3
	NYS2-20F-130-17RH42 x2+ NYS2-20F-105-17RH42 x1	MV600J6B-4T30x2+ MV600J6B-4T22x1
	NYS2-20F-155-17RH42 x1+ NYS2-20F-105-17RH42 x1+ NYS2-20F-080-17RH42 x1	MV600J6B-4T37x1+ MV600J6B-4T22x1+ MV600J6B-4T15x1
	NYS2-20F-155-17RH42 x 1 + NYS2-20F-105-17RH42 x 3	MV600J6B-4T30x1+ MV600J6B-4T22x3