

Swash Plate Type Axial Piston Pump for variable speed control

K3VR/K3VL

ECO SERVO
Series



K3VR/K3VL ECO SERVO Series

《Swash Plate Type Axial Piston Pump for variable speed control》

For motor speed control

Combination with servomotor realizes high precision operation in the whole rotation speed range.

Variable capacity

The large/small displacements can be switched by the electric signal. This enables smaller driving torque at high pressure.

Built-in suction valve

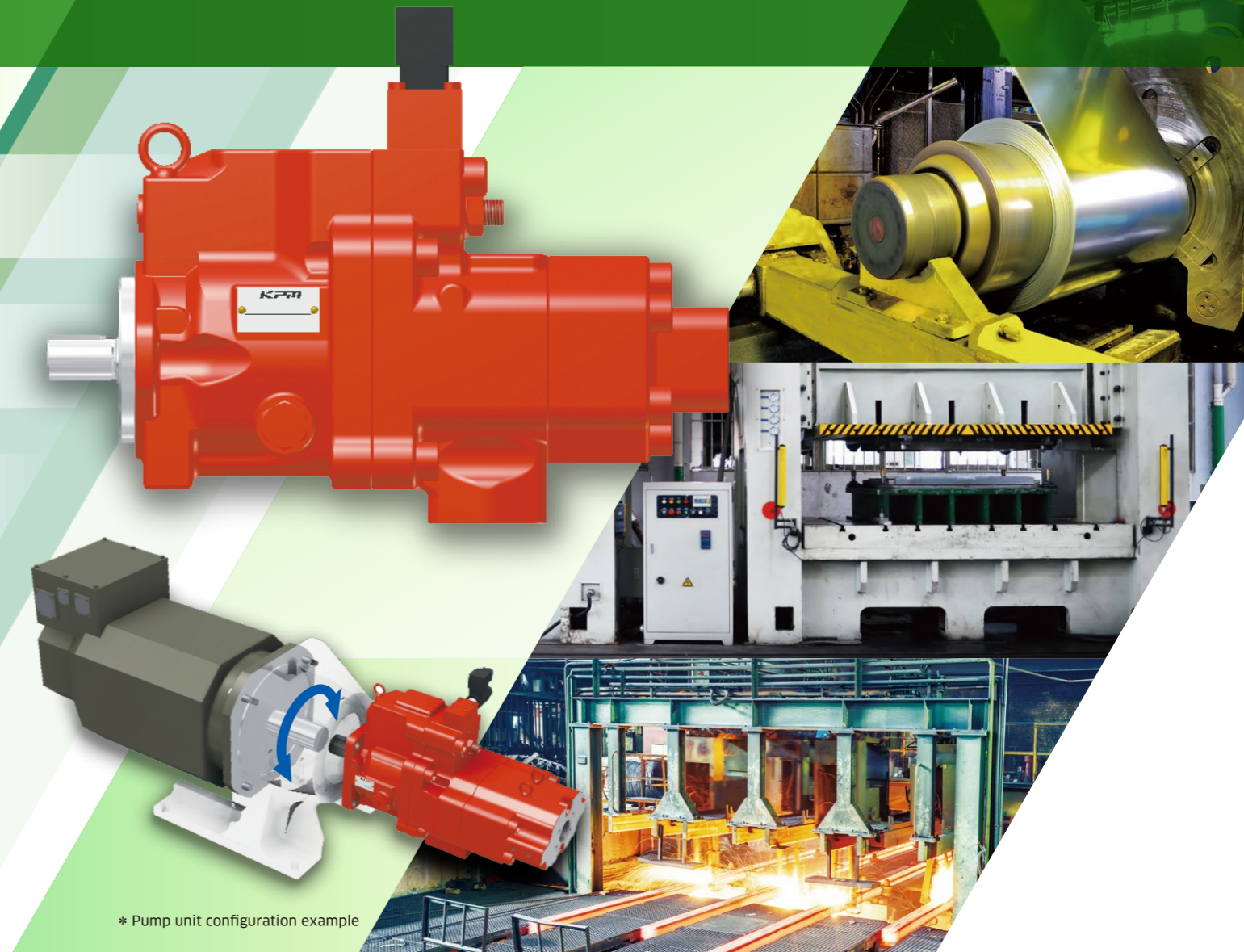
The built-in large capacity suction valve enables easy configuration of the closed circuit for various systems.

Low pulsation / low noise

Low pulsation and low noise operation is possible by utilizing the features of piston pump that can operate even at low speed.

Wide line-up

For open/closed circuits,
Wide flow rate range/wide power range



* Pump unit configuration example

SPECIFICATION

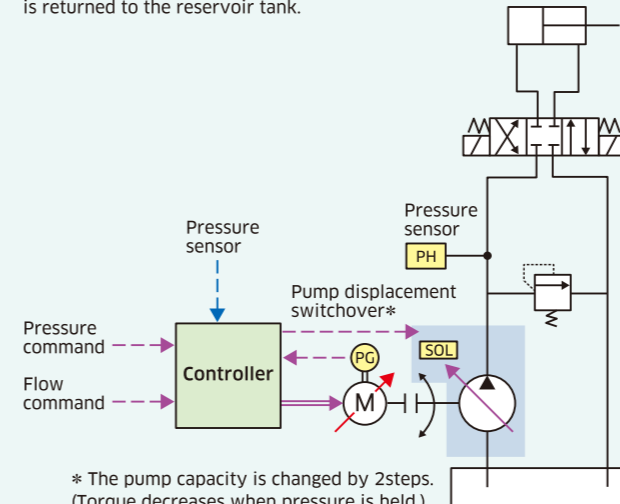
Model		For closed circuit					For open circuit			
		22	45	80	140	200	45	80	140	200
Max. Displacement	cm ³	22	45	80	140	200	45	80	140	200
Min. Displacement *1	cm ³	5.5	11	20	35	50	11	20	35	50
Pressure	Rated	32								
	Peak	35								
Speed	Max. for self-priming *2	1,500	1,500	1,500	1,500	1,500	2,700	2,400	2,200	1,900
	Max.*3	1,800	1,800	1,800	1,800	1,800	3,250	3,000	2,500	2,200
Case drain pressure	Rated	0.1								
	Peak	0.4								
Weight	kg	30	46	48	91	201	25	35	65	95
Max. allowable input torque	N·m	145	225	400	980	1,000	225	400	980	1,000
Fluid type	Type *4	Anti-wear type mineral hydraulic fluid								
	Temperature range	-20~+95								
	Viscosity range *5	10~1,000*5								

*1 Min. displacement indicates the standard value. Other displacements available. *2 Suction pressure should be kept at 0MPa and above at suction flange port (steady state). *3 Boost pressure should be kept at 0.1MPa and above. *4 Consult us for use with other kinds of working fluid. *5 For viscosity of 200 to 1,000mm²/s, warming up operation is necessary before full-scale operation.

HYDRAULIC SYSTEM

Open circuit / pressure-flow control

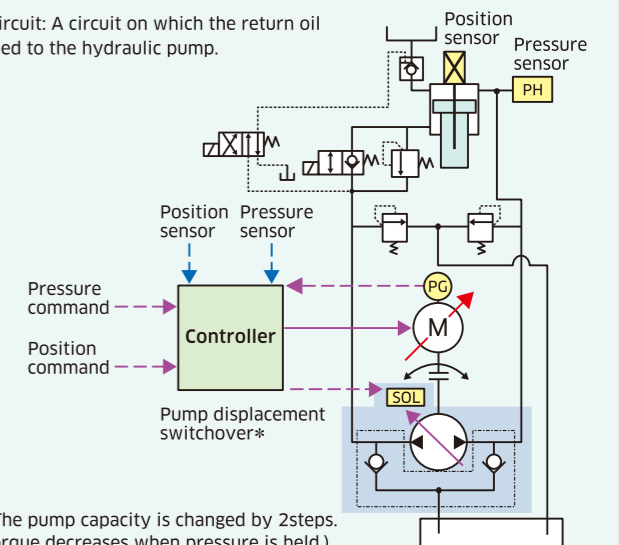
Open circuit: A circuit on which the return oil is returned to the reservoir tank.



* The pump capacity is changed by 2steps. (Torque decreases when pressure is held.)

Closed circuit / pressure-position control

Closed circuit: A circuit on which the return oil is returned to the hydraulic pump.



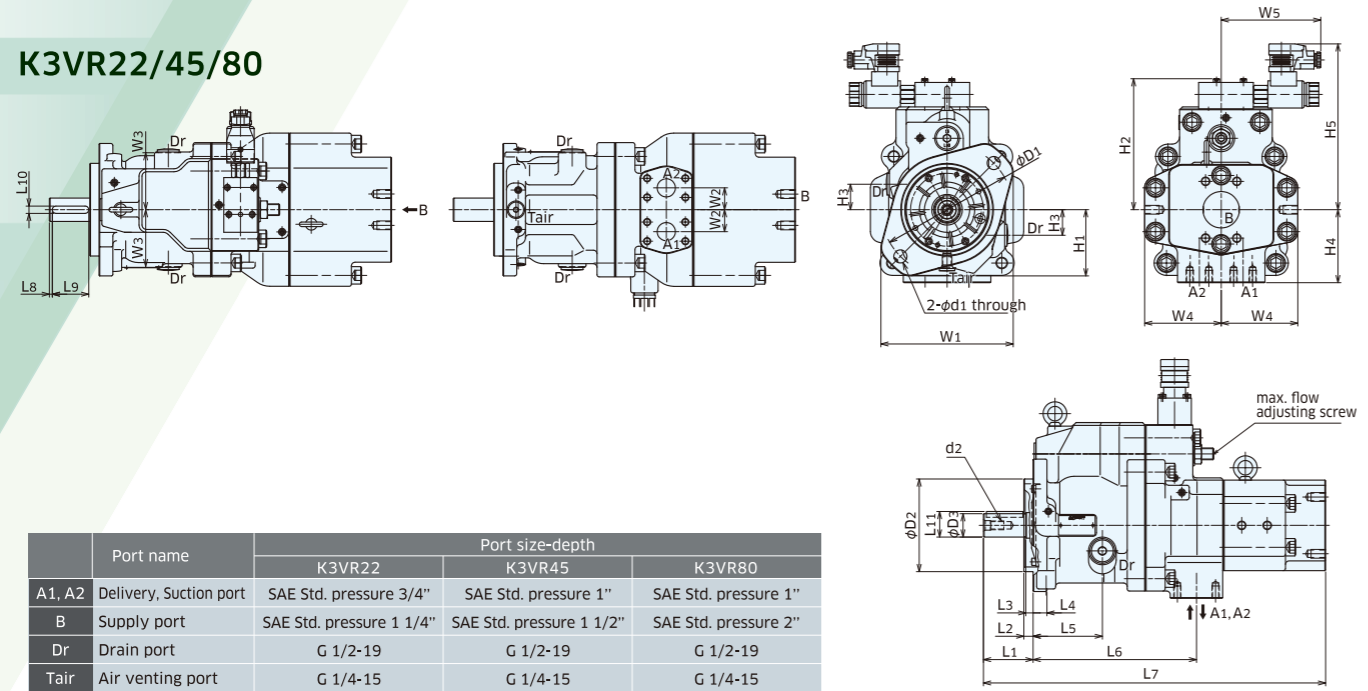
* The pump capacity is changed by 2steps. (Torque decreases when pressure is held.)



SIZE Dimensions vary by model code.
Installation drawings available upon request.

For closed circuit [K3VRP-1MJM*-*]**

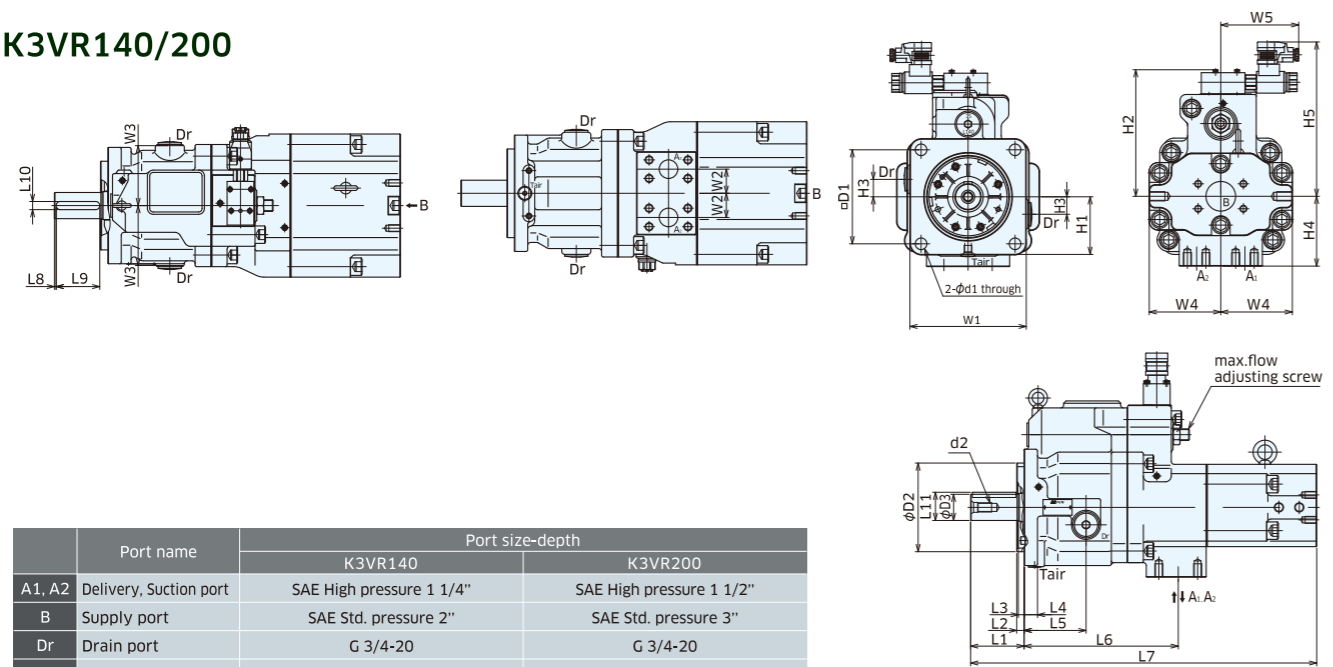
K3VR22/45/80



Port name	Port size-depth		
	K3VR22	K3VR45	K3VR80
A1, A2	Delivery, Suction port	SAE Std. pressure 3/4"	SAE Std. pressure 1"
B	Supply port	SAE Std. pressure 1 1/4"	SAE Std. pressure 1 1/2"
Dr	Drain port	G 1/2-19	G 1/2-19
Tair	Air venting port	G 1/4-15	G 1/4-15

SIZE	φD ₁	φD ₂	φD ₃	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	H ₁	H ₂	H ₃	H ₄	H ₅	W ₁	W ₂	W ₃	W ₄	W ₅	φd ₁	d ₂
22	146	101.6	22	52.3	9.7	11.3	13	84	174	346.3	3	36	6	24.5	60	152	26	65	198.8	174	27	67.5	77	130	14	M8
45	146	101.6	25	53.3	9.7	11.3	13	91	214	414.3	-	36	8	28	60	169	40	100	214	174	30	68	84.5	136	14	M8
80	181	127	32	68	12.7	10	19	95	224	469	4	50	10	35	91	179.5	35	100	228	181	30	78	105	136.5	18	M12

K3VR140/200



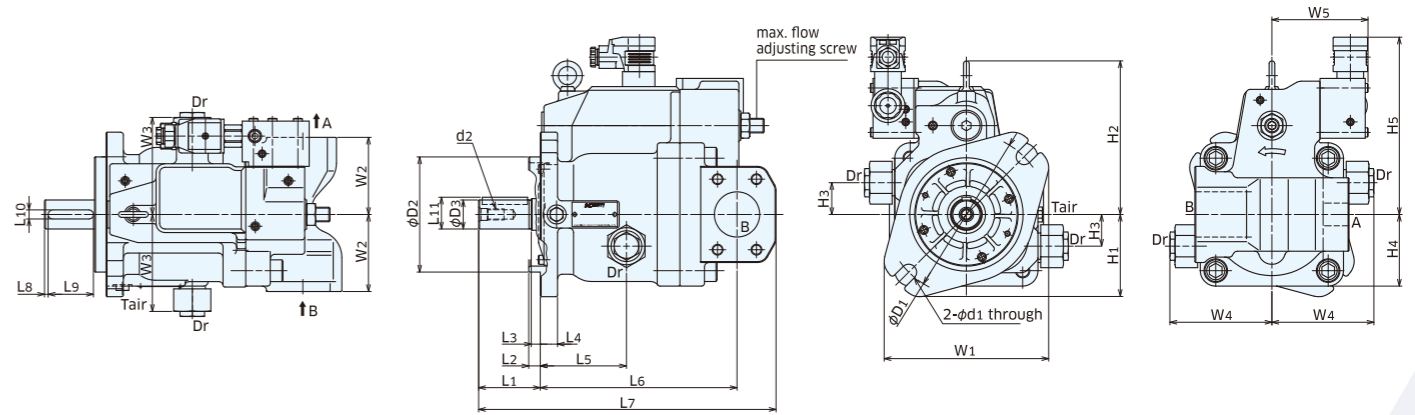
Port name	Port size-depth		
	K3VR140	K3VR200	
A1, A2	Delivery, Suction port	SAE High pressure 1 1/4"	
B	Supply port	SAE Std. pressure 2"	
Dr	Drain port	G 3/4-20	
Tair	Air venting port	G 1/4-15	

SIZE	φD ₁	φD ₂	φD ₃	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	H ₁	H ₂	H ₃	H ₄	H ₅	W ₁	W ₂	W ₃	W ₄	W ₅	φd ₁	d ₂
140	161.6	152.4	45	92	12.7	10	23	106.5	265	595	3	75	14	48.5	100	217.5	30	120	266	200	41.5	103	123	134	20	M16
200	224.5	165.1	50	90	16	8	26	122	300	689	5	70	14	53.5	132.5	251.5	53	133	300	265	50.5	113	158	134	22	M16

For open circuit [K3VL/B-10RJM-**S]***

K3VL45/80

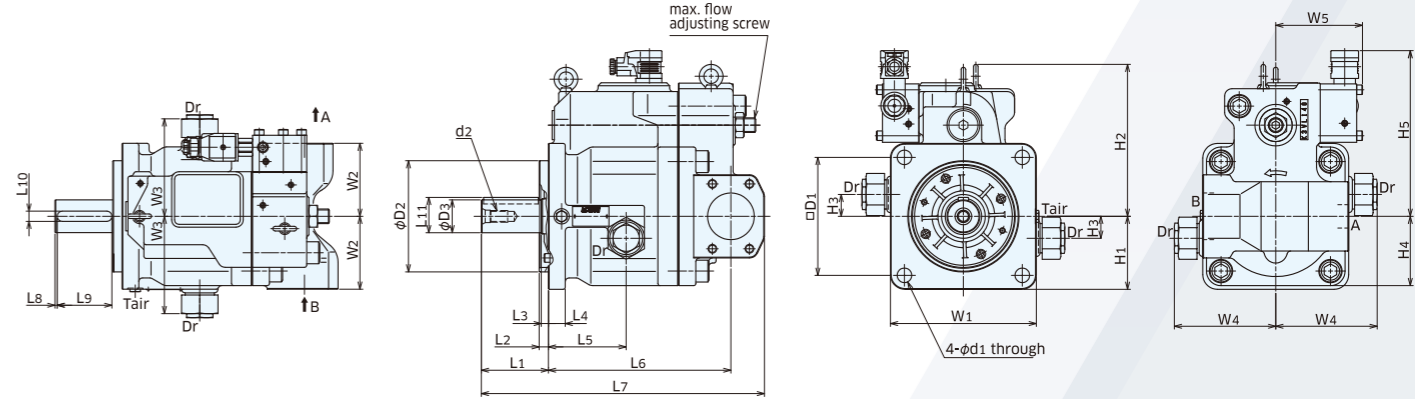
*S Low pulsation type designed for speed control



Port name	Port size-depth	
	K3VL45	K3VL80
A	Delivery port	SAE Std. pressure 1"
B	Suction port	SAE Std. pressure 1 1/2"
Dr	Drain port	G 1/2-19
Tair	Air venting port	7/16-20UNF-2B-14

SIZE	φD ₁	φD ₂	φD ₃	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	H ₁	H ₂	H ₃	H ₄	H ₅	W ₁	W ₂	W ₃	W ₄	W ₅	φd ₁	d ₂
45	146	101.6	25	52	9.7	10	13	91	184	270	-	36	8	28	73	144	40	73	185	146	80	98	105.5	106	14.3	M8
80	180	127	32	68	12.7	10	19	95	217	328	4	50	10	35	91	169	35	79	196	181	85	107	112.5	106	17.5	M12

K3VL140/200

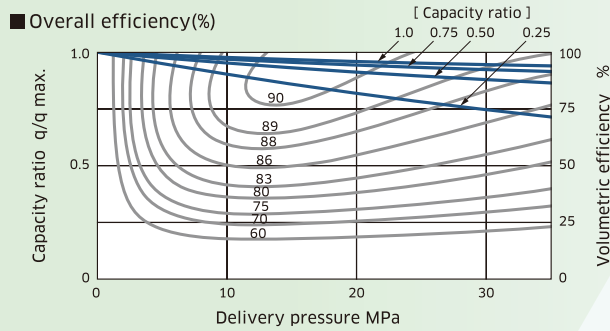


Port name	Port size-depth	
	K3VL140	K3VL200
A	Delivery port	SAE High pressure 1 1/4"
B	Suction port	SAE Std. pressure 2 1/2"
Dr	Drain port	G 3/4-20
Tair	Air venting port	7/16-20UNF-2B-14

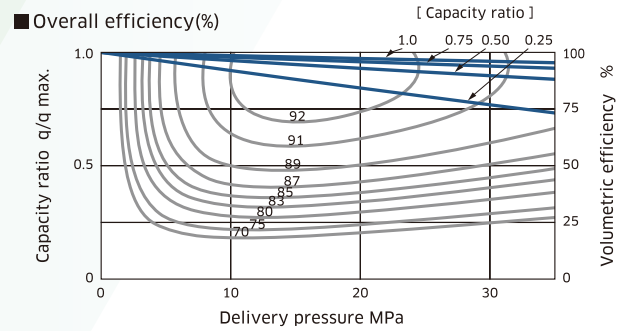
SIZE	φD ₁	φD ₂	φD ₃	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	H ₁	H ₂	H ₃	H ₄	H ₅	W ₁	W ₂	W ₃	W ₄	W ₅	φd ₁	d ₂
140	161.6	152.4	45	92	12.7	10	23	106.5	250	388	3	75	14	48.5	100	208	30	95	227	200	100	133.5	139	119	20	M16
200	224.5	165.1	50	90	16	8	26	122	292	435	5	70	14	53.5	132.5	231	53	112	242	265	115	143.5	149	129	22	M16

PERFORMANCE CURVE

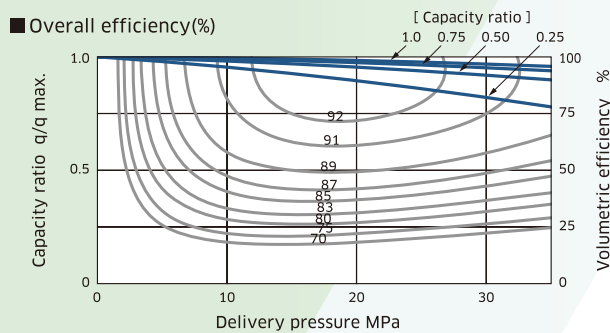
K3VL45



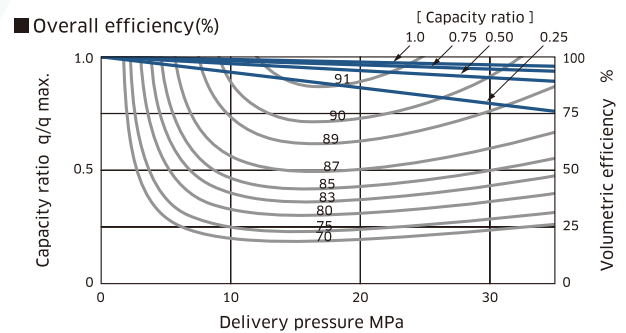
K3VL80



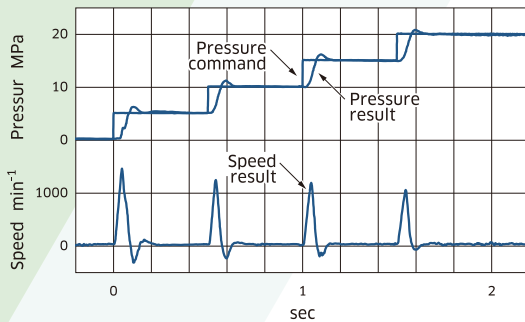
K3VL140



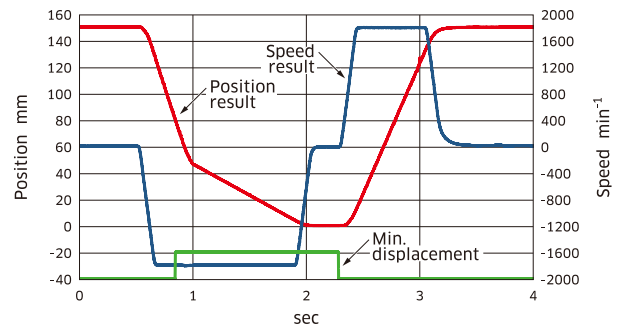
K3VL200



Pressure control



Position control



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