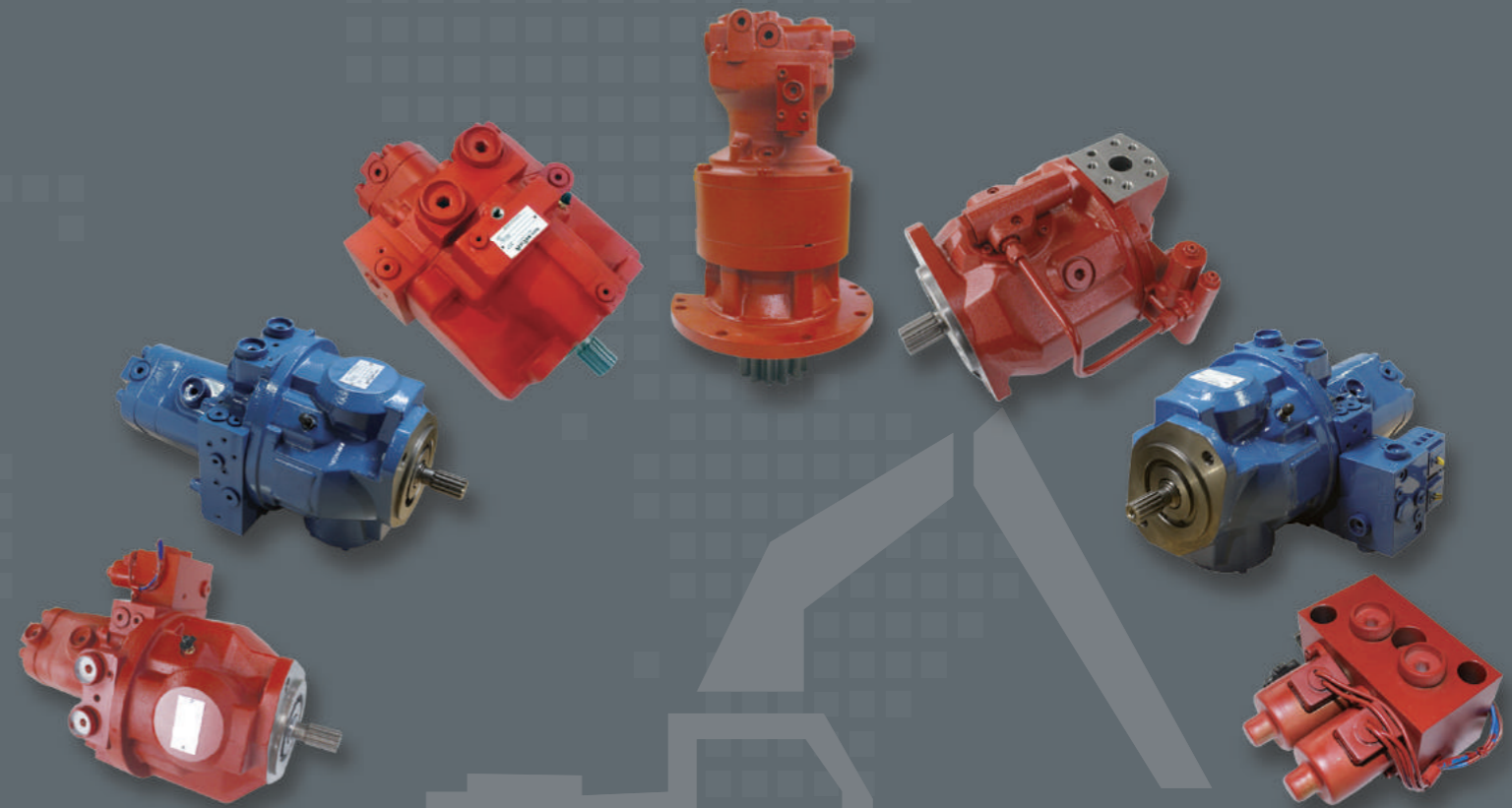


SF HY-WORLD

AXIAL PISTON PUMPS&MOTORS

变量柱塞泵及马达



SF Hy-world

141, Charyongdanji-ro, Uichang-gu, Changwon-si, Gyeongsangnam-do, Korea
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H. <http://www.hyworld.co.kr>



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Printed in oct.2016

THEMA CLUSTER TRANSFER MACHINE HYDRAULIC TOTAL SOLUTION

INTRODUCTION



CEO
Kim Mun Gon

SF Hy-world Co.,Ltd. was established in 2009 and became the major producer in Korea for the parts of Hydraulic Pumps, Motors, Reducers those are critical components of excavators.

In spite of short company history, We accomplished 3 million(USD) turn over in 2012 and 90% is export proportion, it means our potentiality in the after market for Excavators and resulted from accumulated technical experience from the fields.

In 2013, SF Hy-world will open new era for the production base in the new factory with modernized facilities and perfect testing system , to be the best producer of components in the international after market of Excavators.In order to satisfy with every clients who contact with SF Hy-world for the good business, We always focus on customer's desire and do our best. Therefore, please never hesitate to discuss with SF Hy-world whenever you need our supports.

[Thank you very much for your kind attention to our brief company introduce.](#)

SF HY-世界有限公司成立于2009年,并成为生产挖掘机的主要部件;液压泵,马达,减速机的生产企业。

尽管公司成立时间短,2012年我们完成了300万美元(\$),出口比例达到90%;这就意味着我们在挖掘机以后的市场潜力和在这领域积累的技术经验的结果。

2013年是SF HY-WORLD开辟了新纪元,在新的生产基地,随着现代化的设施和完善的检测系统;我们将成为挖掘机部件领域内成为世界上优秀的配件生产商。

为了满足每一个客户接触SF HY-WORLD为良好的业务,我们始终关注客户的愿望和做到最好。因此,当你需要我们的支持时,请不要犹豫与SF HY-WORLD联系。

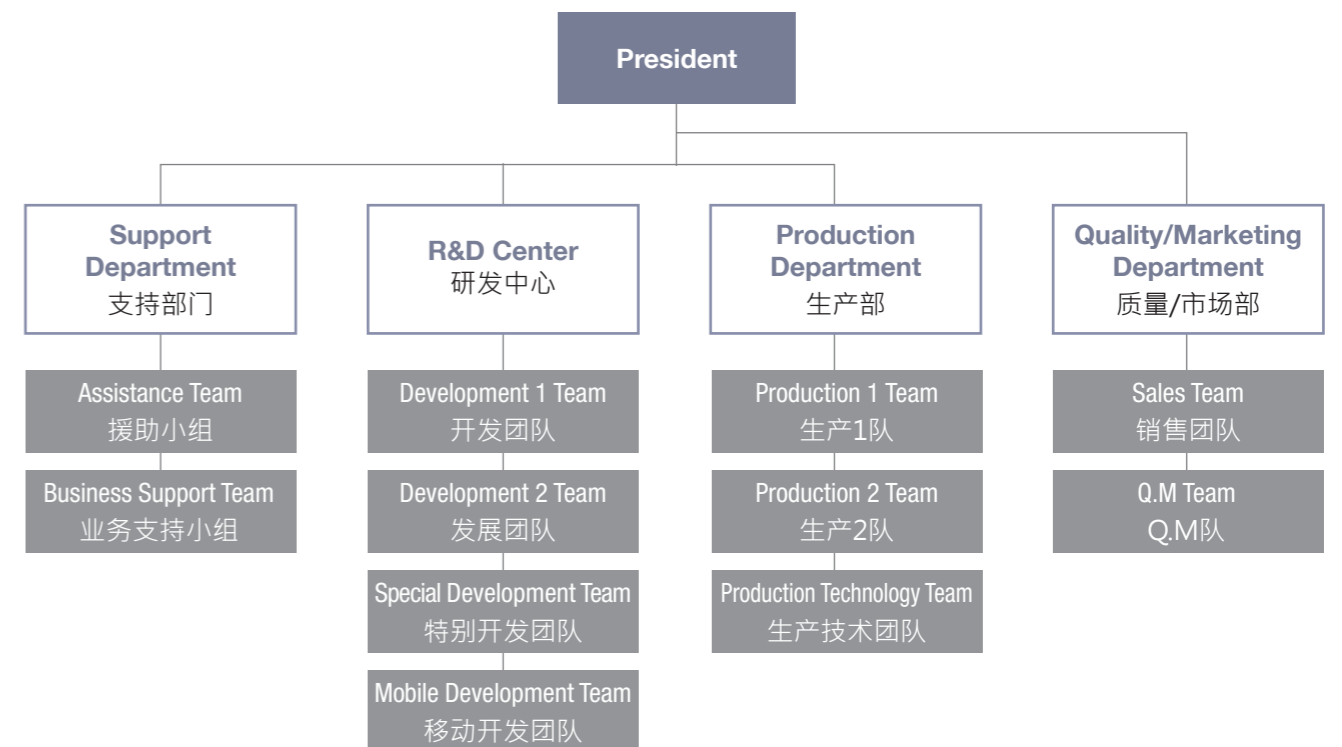
[非常感谢您关注我们的简短的公司介绍。](#)



HISTORY

<p>2009 September. Established KFS co., LTD 九月. 成立KFS有限公司</p> <p>2010 February. Established R&D Center 二月. 成立研发中心</p> <p>2012 December. Obtained Best Family Friendly 十二月. 获得最佳家庭</p> <p>October. Changed Company name into Hy-world 十月. 公司名称变更为HY-world</p> <p>September. Obtained Venture Business Certificate 九月. 获得风险企业证书</p> <p>April. Development and mass 四月. 获得风险企业证书</p> <p>2013 April. Development and mass production of Main Pump (8 ton) 四月. 主泵的开发和批量生产 (8吨)</p> <p>June. Development and mass production Swing Device(8~10 ton) 六月. 开发和批量生产摆动装置 (8~10吨)</p> <p>August. Development and mass production Swing Reduction Gear 22ton (for FLUTEK) 八月. 开发和批量生产的 Swing的减速齿轮22吨 (用于FLUTEK)</p>	<p>September. Development and mass production Main Pump 8 ton. 九月. 着手8.5吨主泵开发及量产</p> <p>2014 April. Clean Workplace Selection / Business Alliance Agreement 四月. 选定为环保企业/签订业务合作合同书</p> <p>May. Prototype Solenoid Valve Development 五月. 开发Solenoid Valve国产化样机</p> <p>June. Designation for Private-Military Cooperation Task(400bar Piston Pump) 六月. 选定为军民合作课题(400bar Piston Pump)</p> <p>2015 July. EPPR VALVE Development 七月. EPPR (电比例减压阀) 阀门发展</p> <p>September. M & A (SAMJIN Hydraulic Co., Ltd., Dongmyong Engineering Co., Ltd.) 七月. M&A (液压有限公司三振有限公司Tongmyong工程)</p> <p>2016 August. Wheel Loader 300hHp Grade Main Pump Development (63ccx60cc, Tanden Type) 八月. 主泵级的轮式装载机发展300HP</p>
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ORGANIZATION OF BUSINESS



QUALITY CONTROL SYSTEM



CERTIFICATE



- ◆ VENTURE (Venture Company) Certificate
- ◆ VENTURE (合资公司) 证书
- ◆ Best Family Frindly-Management System Certificate
- ◆ 最佳家庭友好的管理体系认证证书
- ◆ Corporate r & d Center Certificate
- ◆ 企业R&D中心证书
- ◆ ISO 9001
- ◆ ISO 14001

MANUFACTURE

Order	Type	Spec.	Maker	Amount	Others
1	MCT	TNV-80	S&T	1	
2		VX-65N	WIA	1	
3		VX-500/50	WIA	3	
4		ACE-HM500	DOOSAN	1	
5		H-63G	WIA	2	
6		KH-50G	WIA	2	
7	CNC	ACT-2SP-V3	OKUMA & HOWA	1	
8		PUMA 280F	DOOSAN	1	
9		PUMA 240A	DOOSAN	1	
10		PUMA 10	DOOSAN	2	
11		ML-32C1	MAIER	1	SWISS TYPE
12	LASER MARKING	MCSA F-9020	DAEJU	1	
13	VERTICAL HONING	CVH-033	CLEANRECH	1	



CVH-033 VX-500/50 KH-50G PUMA 280F

TEST EQUIPMENT

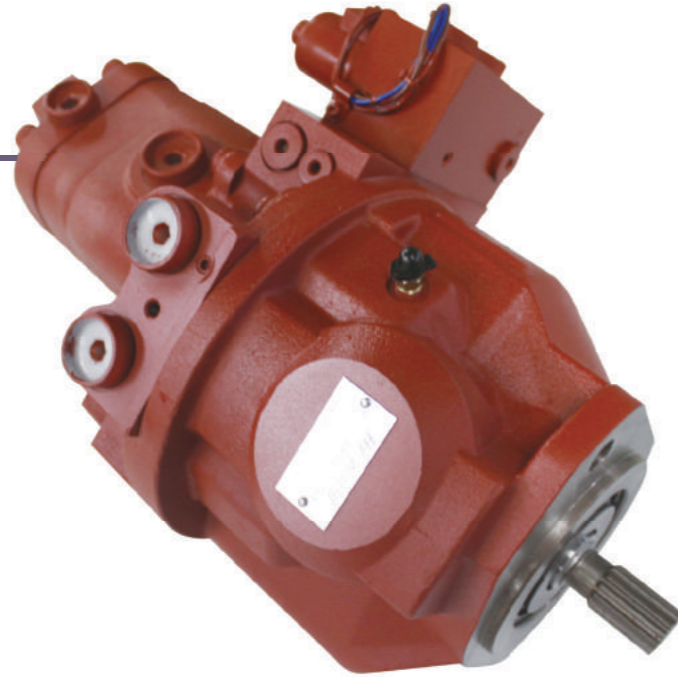
Order	Type	Spec.W	amount	Others
1	Multipurpose Test Stnad	5,000psi	1	
2	Valve Test Stnad	300kg/cm ² , 40Lpm	1	
3	Proportional / Valve Test Stnad	350kg/cm ² , 150Lpm	1	
4	Motor Test Stand	55kw, 2800rpm	1	
5	Pump Test Stnad	110kw, 2,800rpm	1	
6	Test Stnad	1,000psi	2	
7	High-Pressure Test Stnad	2,000kg/cm ² , 4Lpm	1	



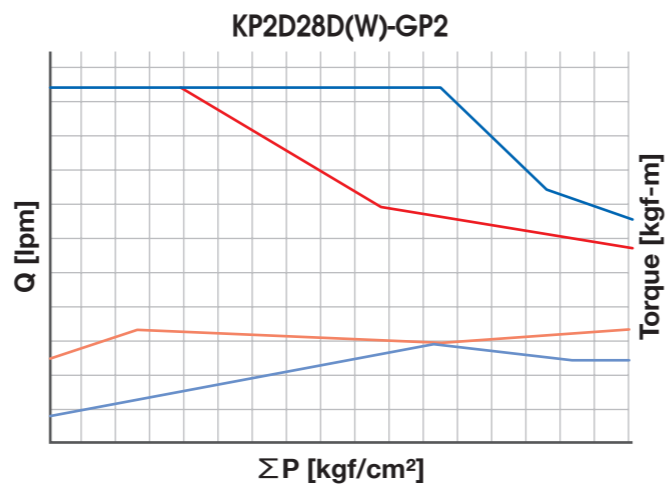
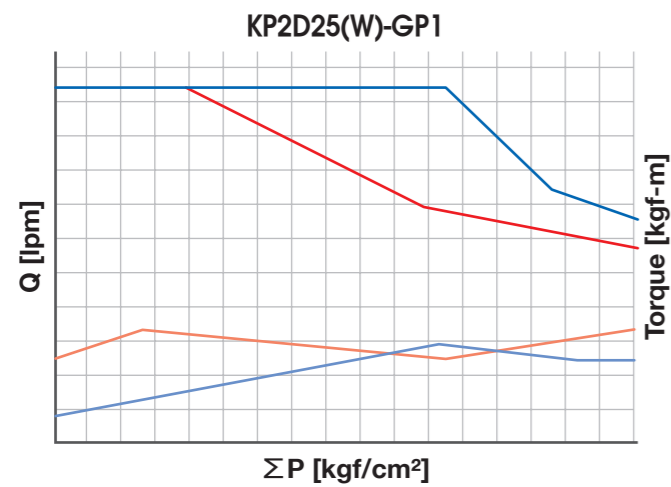
Valve Test Stnad 210kg/cm², 20Lpm Valve Test Stnad 350kg/cm², 80Lpm Proportional / Valve Test Stnad Pump Test Stnad

KP2D25(W)-GP1 / KP2D28D(W)-GP2

Piston Type Main pump for excavator
柱塞式挖掘机主泵



Ordering code	KP2D
SERIES	
SIZE	25
Displacement 25cc	25
27.3cc	28
36cc	36
Option Sol V/V	S
Blank : With out , S : With	
Option Wheel 用 (高壓)	W
Blank : With out , W : With	
Gear Pump	-
GP1 16.2 + 4.5cc	GP1
GP2 18.3 + 4.5cc	
GP3 12.1 + 6.5cc	
GP4 6.5cc	
GP5 16.2 + 6.5cc (高壓用)	
GP6 18.3 + 6.5cc	



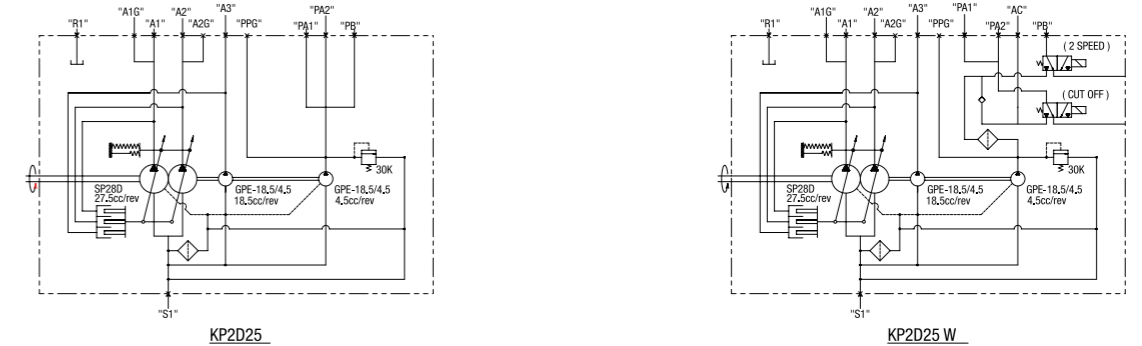
SPECIFICATIONS 规格

Model	Displacement (cm ³ / rev)				Rated pressure (kgf/cm ²)	flow (l/min)	Max speed for self priming (rpm)	Max input torque (kgf-m)	Application (ton)
	A1	A2	A3	A4					
KP2D25(W)-GP1	25	25	16.2	4.5	220	55 X 2	2200	14	7
KP2D28D(W)-GP2	27.3	27.3	18.2	4.5	220	61.6 X 2	2200	14	7

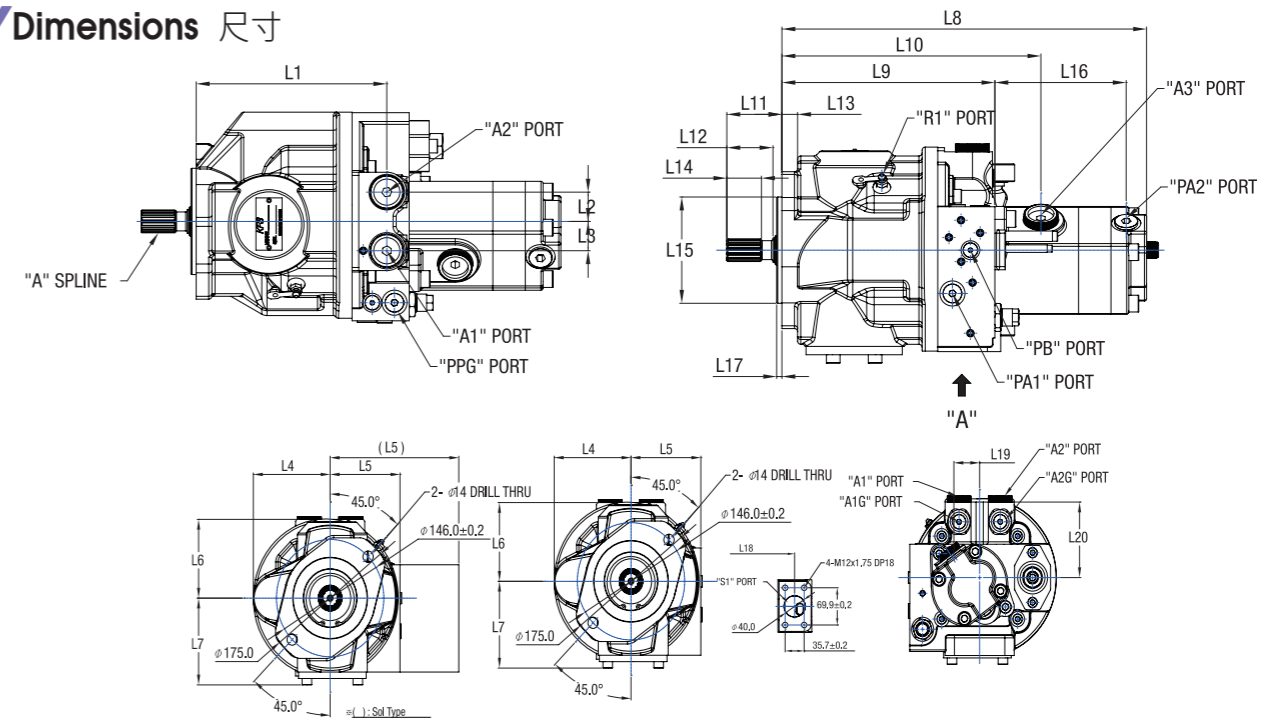
CHARACTERISTICS 特性

- Specialized Main pump for mini Excavator, especially 5~7 ton. 专业主泵·小型挖掘机·特别是5~7吨。
- Undersized and Easy to attach. 过小·容易安装。 - Compact and Suitable for Zero Tail type. 结构紧凑·适用于零尾型。
- Having a high level of efficiency Itself and easy to operate. 拥有一个高层次的效率自侦和容易·以操作的的。

Circuit Diagram 电路图



Dimensions 尺寸



"A" SPLINE

No. of teeth	N	13
Module	M	16/32
Pres.Angle	α	30
Diameter	d	$\phi 20.6375$
Type of teeth	-	Flat root side fit

PORT SIZE

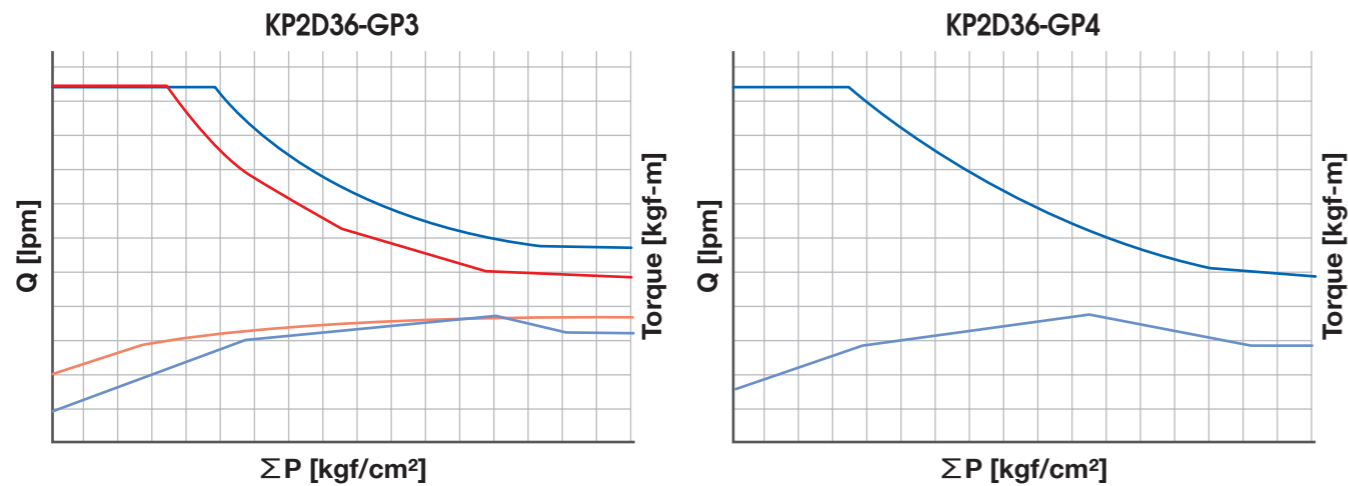
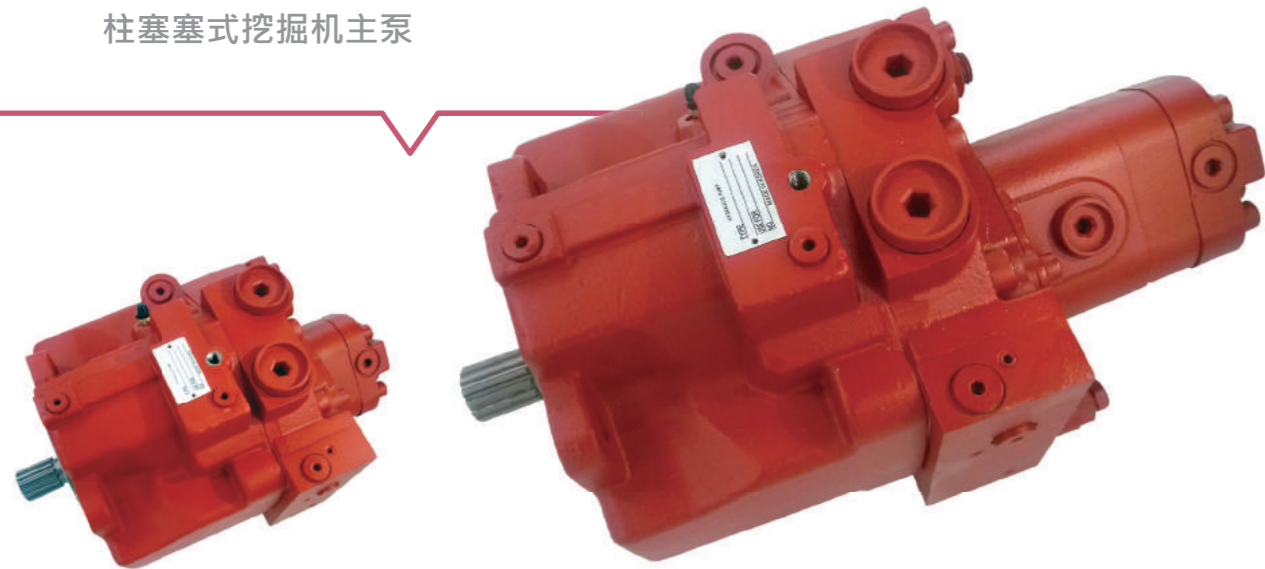
Port size	Description	Port
SAE A 1-1/2	Input port	S1
PF 1/2	Output port	A1, A2, A3
PF 3/8	Output port	PA2
PF 1/4	Output port	PA2
	Gauge port	A1G, A2G, PPG
PF 1/8	Output port	PB
M10 X P1.0	Air port	R1

Dimensions

L1	L2	L3	L4	L5	(L5)	L6	L7	L8	L9	L10
182.2	28.0	28.0	109.3	90.1	162	102.9	103.1	348.6	203.6	247.3
L11	L13	L14	L15	L16	L17	L20				
52.7	15	33	101.6	129.2	5	98				

KP2D36

Piston Type Main pump for excavator
柱塞式挖掘机主泵



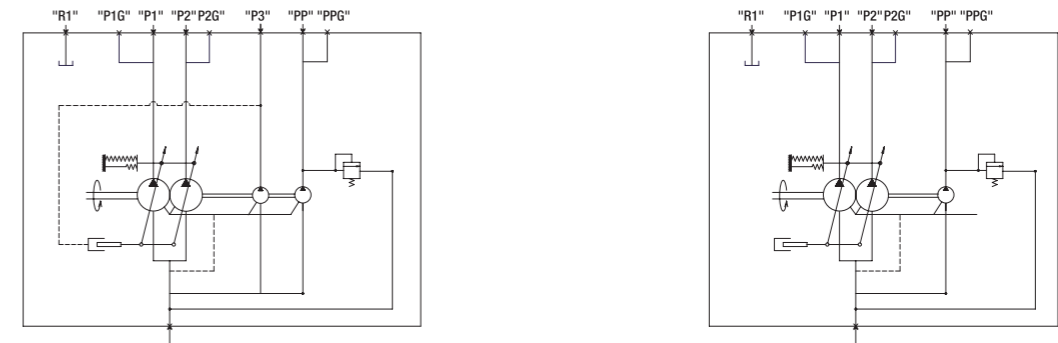
SPECIFICATIONS 规格

Model	Displacement (cm ³ /rev)				Rated pressure (kgf/cm ²)	flow (l/min)	Max speed for self priming (rpm)	Max input torque (kgf-m)	Application (ton)
	A1	A2	A3	A4					
KP2D36-GP3	37	37	12.1	6.5	280	74 X 2	2000	17.8	8
KP2D36-GP4	37	37	-	6.5	280	74 X 2	2000	13.5	8

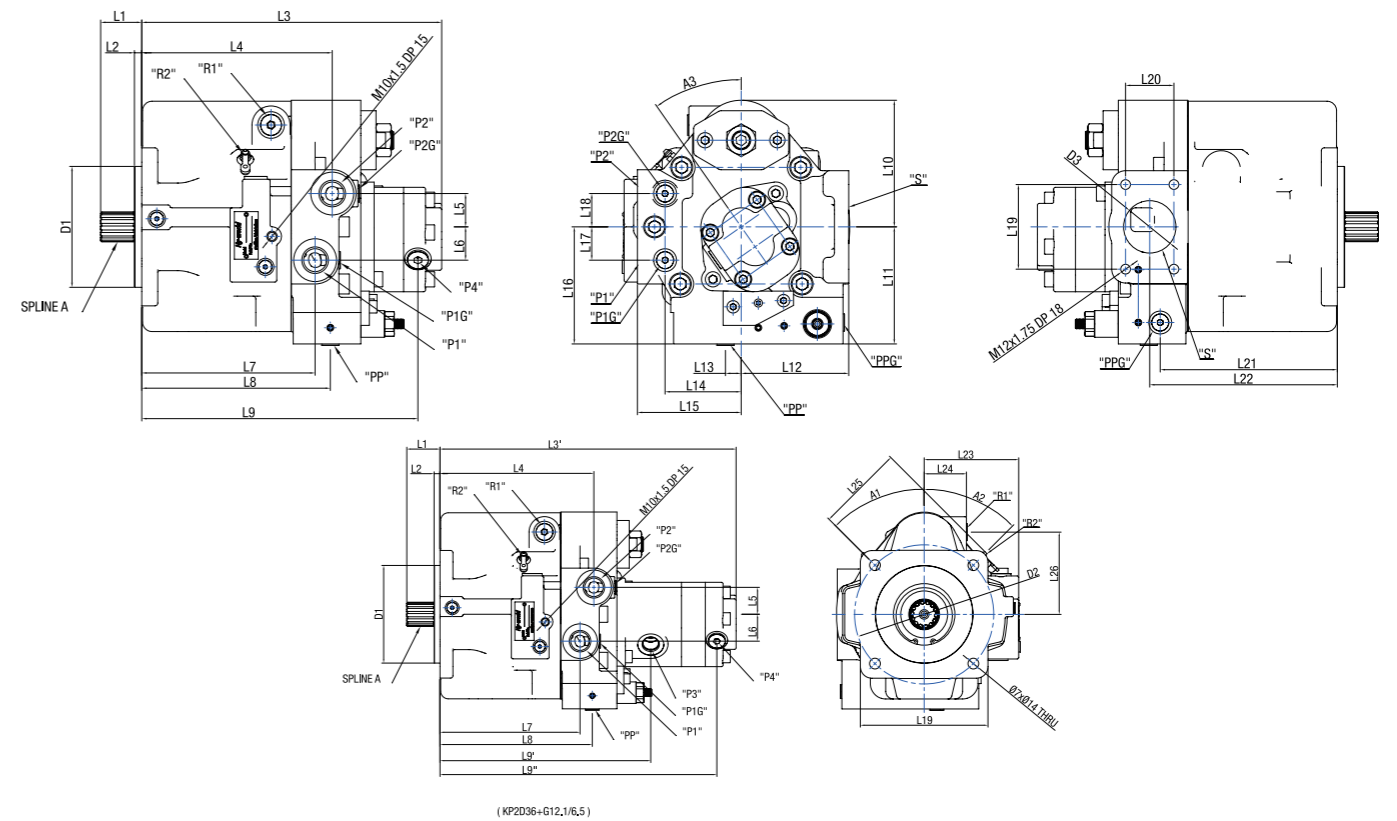
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- Undersized and Easy to attach. 过小·容易安装。
- Compact and Suitable for Zero Tail type. 结构紧凑·适用于零尾型。
- Having a high level of efficiency itself and easy to operate. 拥有一个高层次的效率自侦和容易·以操作的的的。

Circuit Diagram 电路图



Dimensions 尺寸



"A" SPLINE

No. of teeth	N	14
Module	M	12/24
Pres.Angle	α	30
Diameter	d	Ø29.633
Diameter	D	Ø31.2
type of teeth	-	Flat root side fit

PORT SIZE

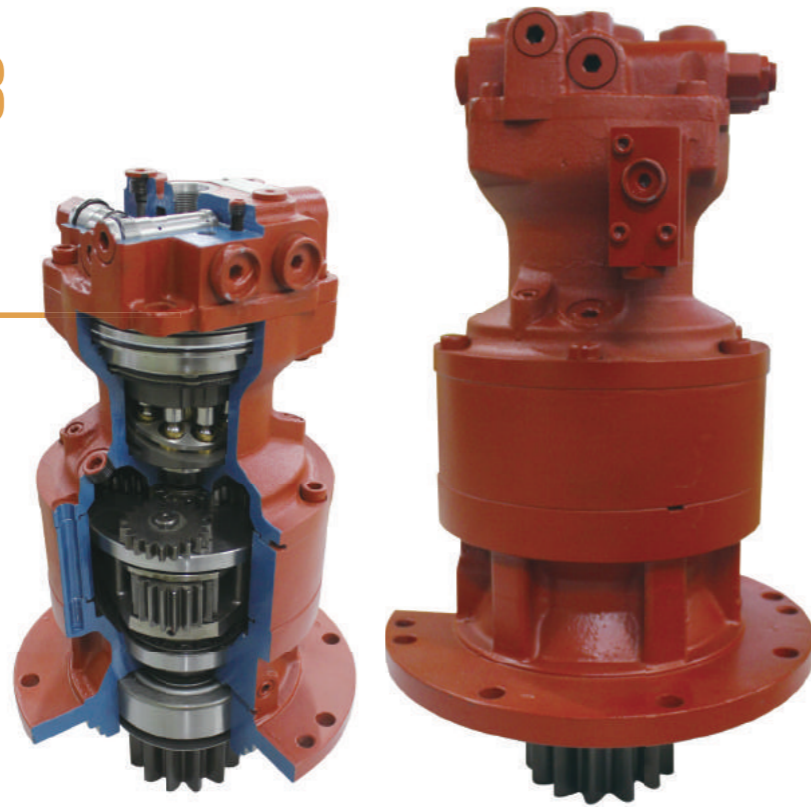
Port size	Description	Port
SAE A 2-1/2	Input port	S
PF 3/4 O-ring Type	Output port	P1, P2
PF 3/8 O-ring Type	Drain port	R1
	Output port	P4
PF 1/4 O-ring Type	Output port	PP
	Gauge port	PPG, P1G, P2G
PF 1/2 O-ring Type	Output port	P3

Dimensions

D1	D2	D3	A1	A2	A3	L1	L2	L3	L3'	L4	L5
Ø127	Ø181	Ø55	45°	45°	35°	43.2	7.7	315.1	385.1	200.1	35.0
L6	L7	L8	L9	L9'	L9''	L10	L11	L12	L13	L14	L15
35.0	182.1	198.1	290.1	274.1	360.1	133.0	123.0	113.0	16.5	80.0	109.0
L16	L17	L18	L19	L20	L21	L22	L23	L24	L25	L26	
123.0	35.0	35.0	88.9	50.8	186.1	197.1	123.0	55.0	113.6	107.0	

KSD 29/33/43

Swing Device
回转马达



Ordering code

SERIES

KMS 43 W - RG02

SIZE

Displacement	28.9cc	29
	33.0cc	33
	43.0cc	43

Option Valve

Blank : With out , W : With

Reduction Gear & Torque

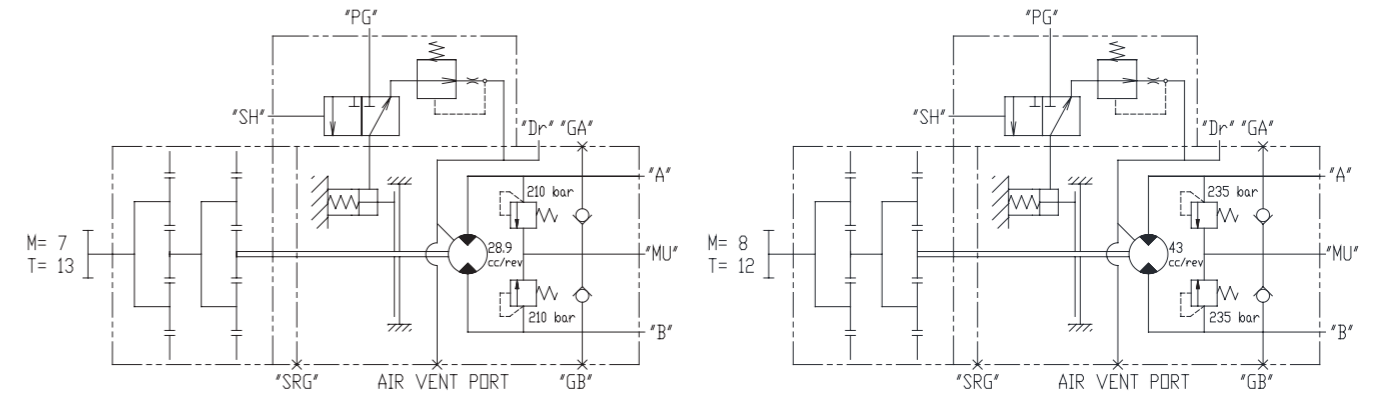
SPECIFICATIONS 规格

Model	REDUCTION GEAR RATIO	GEAR SPEC		Displacement (cc/rev)	Max. output torque (kgf.m[kN.m])	Relief Valve (kgf/cm ² [MPa])
		MODULE	NO OF TOOTH			
KMS29	i=19.464	7	13	28.9	215[2105]	210±5[20.6]
KMS43	i=19.464	8	12	43	293[2873]	235±5[23.0]

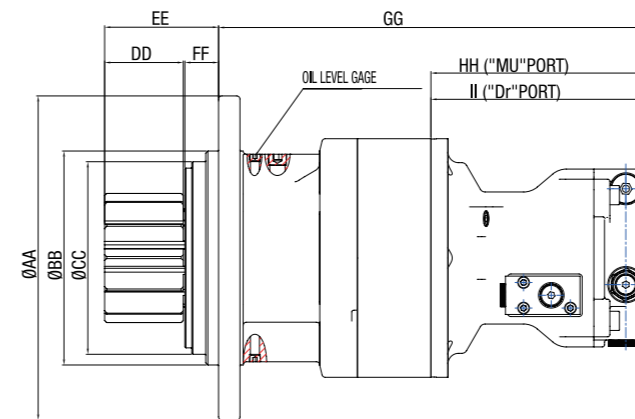
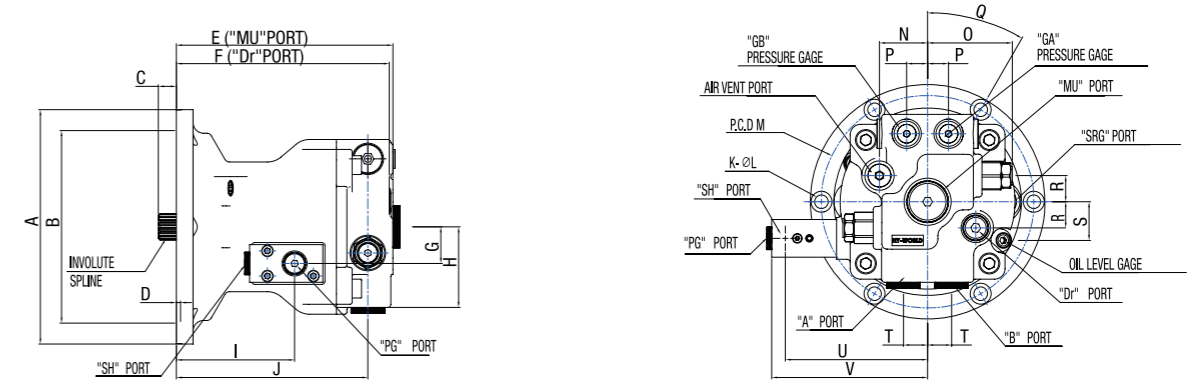
CHARACTERISTICS 特性

- Time delay valve & Relief valve 延时阀及溢流阀
- Included time delay valve and relief valves 延时阀和安全阀
- Mini(5~8ton) excavator, Aerial working platform, Crane, etc. Applicable 迷你(5~8吨)挖掘机,高空作业平台,起重机等适用

Circuit Diagram 电路图



Dimensions 尺寸



PORT SIZE 口尺寸

Port size	Type	Port
PF 1/2	O-ring Type	A, B
PF 3/4	O-ring Type	MU
PF 3/8	O-ring Type	Air Vent, Dr
PF 1/4	O-ring Type	GA, GB, SH, PG
PF 1/2	-	SRG
PF 1/4	-	Level Gage

Dimensions 尺寸

Division	A	B	C	D	E	F	G	H	I	J	K
5-7 ton	224.0	184.0	17.3	4.0	207.0	203.5	35.0	77.0	113.0	183.0	6.0
8-10 ton											
Division	L	M	N	O	P	Q	R	S	T	U	V
5-7 ton	18.0	203.0	46.0	81.0	20.0	30.0	25.0	37.0	23.0	168.0	149.0
8-10 ton											
Division	AA	BB	CC	DD	EE	FF	GG	HH	II		
5-7 ton	303	200	180	73.5	98.2	31.5	406	207.0	203.5		
8-10 ton					106.5						

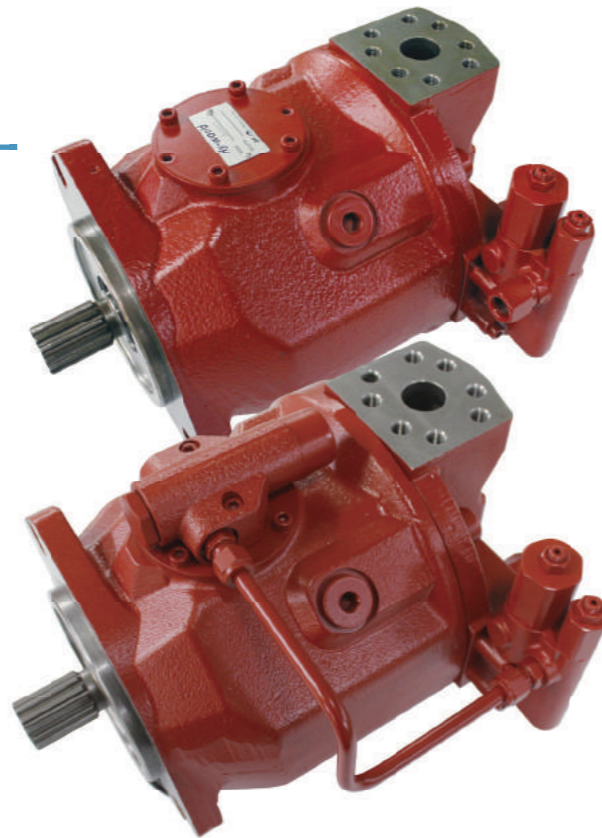
INVOLRUTE SPLINE SPEC INVOLRUTE弹簧规格

NUMBER OF TEETH	15.0	PITCH DIAMETER	Ø23.813
PITCH	16/32	MAJOR DIAMETER	Ø24.8
PRESSUER ANGLE	30°	MINER DIAMETER	Ø21.336

K10V SERIES

(A10V)

Ordering code	K10V
SERIES	
SIZE	71
Displacement 71cc — 71	
Control devices	DFR
Pressure-and flow control	DFR
Pressure-and flow, Torque control	DFRL
Direction of rotation	R
Clockwise	
Design Number	10



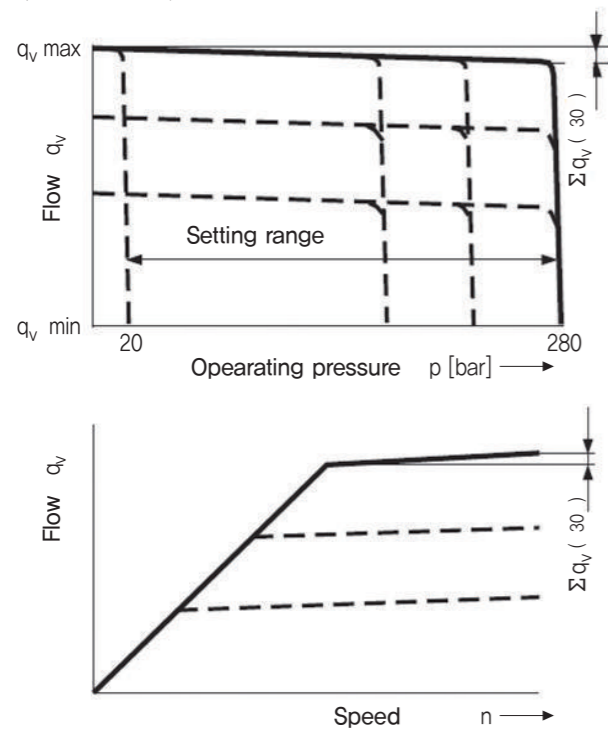
SPECIFICATIONS 规格

Model	Displacement (m ³ /rev)			Rated pressure (kgf/cm ²)	Rated pressure (kgf/cm ²)			Max speed (rpm)	Max input torque (kgf-m) Δp=280 bar	Application (ton)
	A1	A2	A3		A1	A2	A3			
K10V71 DFR	71	-	-	280	156	-	-	2200	32.5	8
K10V71 DFRL	71	-	10	280	156	-	20	2200	32.5	8

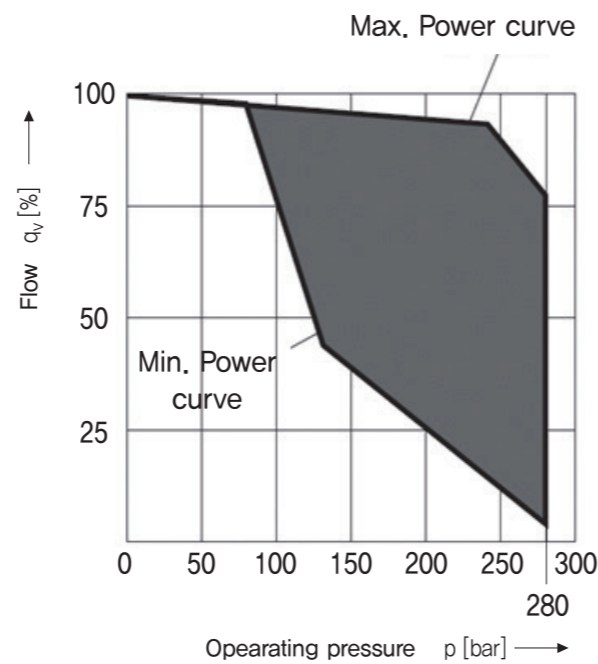
STATIC CHARACTERISTIC 静态特性

(n₁=1500rpm, t_{oil}=50°C)

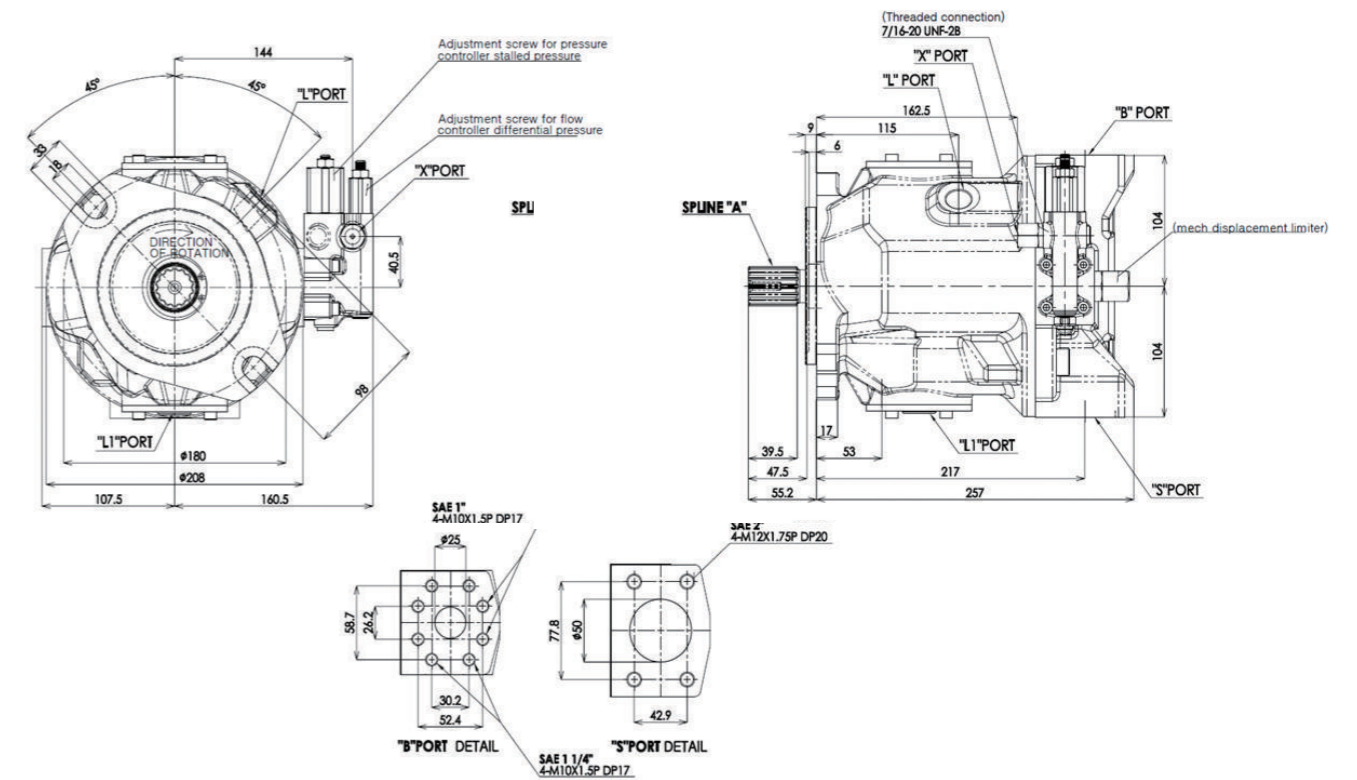
(DFR TYPE)



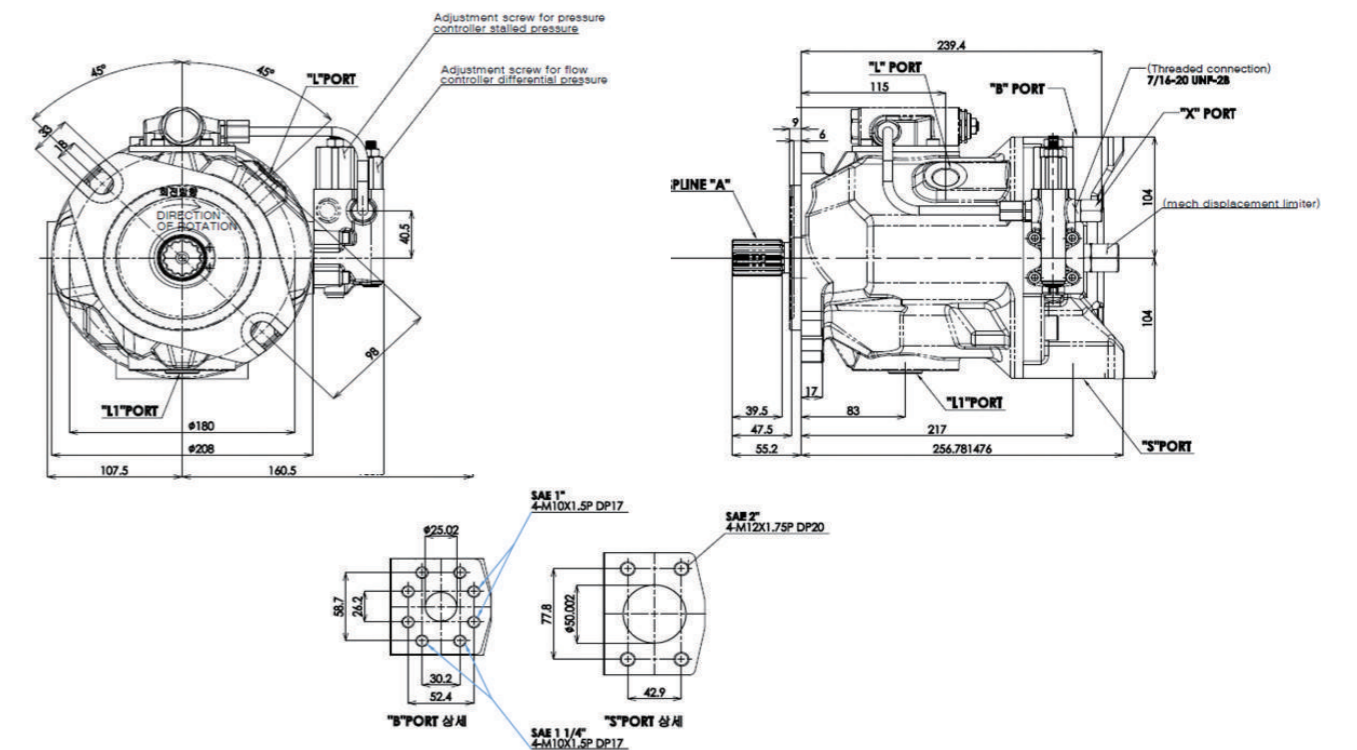
(DFRL TYPE)



DFR TYPE



DFRL TYPE



"A" SPLINE

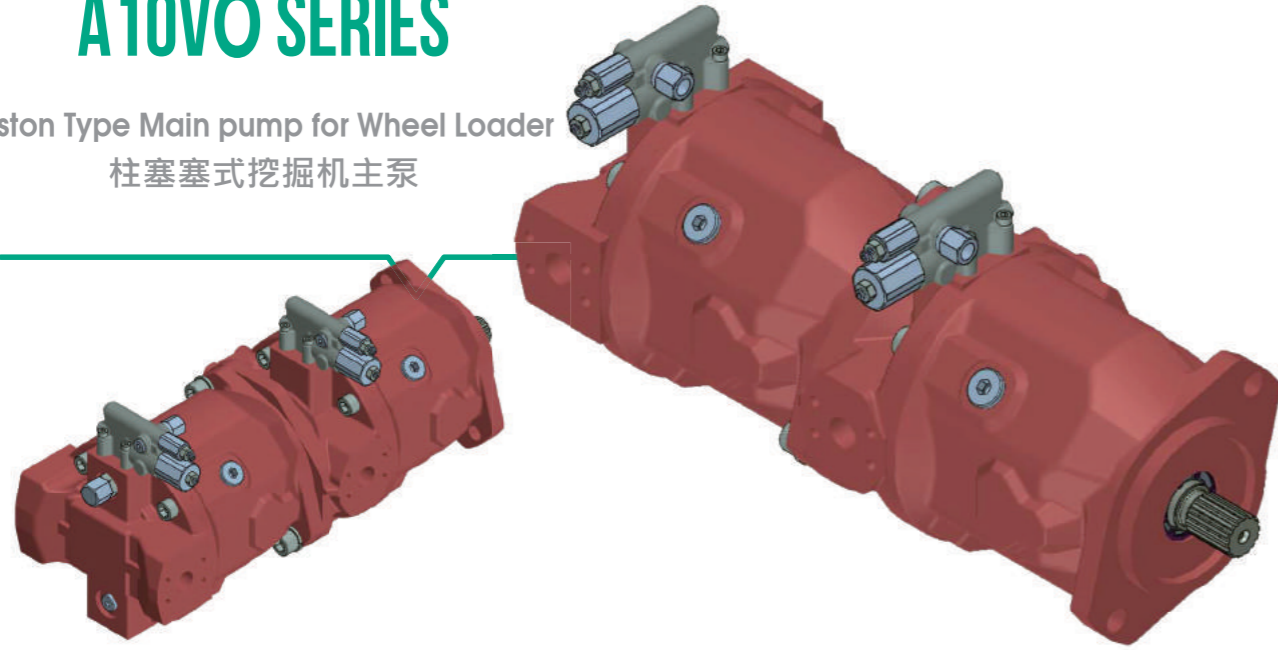
No. of teeth	N	14
Module	M	12/24
Pres. Angle	°	30°
Diameter	d	Φ26.99
Diameter	D	Φ31.22
Type of teeth	-	Flat root side fit

PORT SIZE 口尺寸

Port	Title	Configuration
B	OUTPUT	SAE 1" or 1 1/4"
S	INPUT	SAE 2"
L / L1	DRAIN	M22 x 1.5P
X	PILOT	M14 x 1.5P DP12

A10VO SERIES

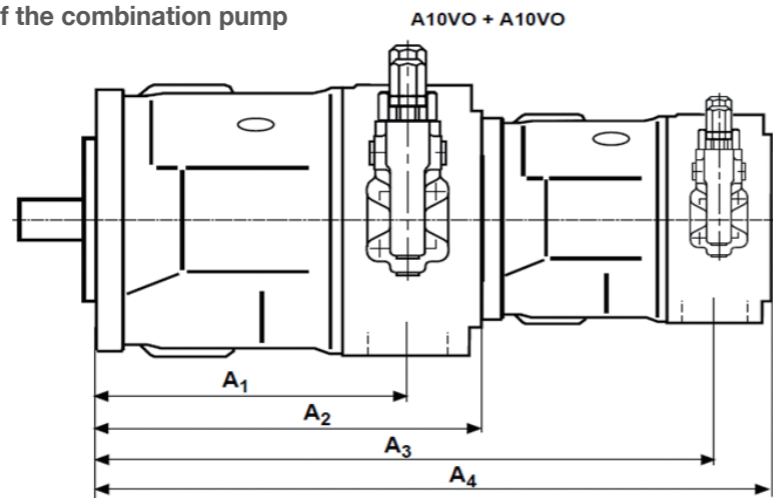
Piston Type Main pump for Wheel Loader
柱塞式挖掘机主泵



SPECIFICATIONS 规格

Grade	Unit	H社		D社	
		STEERING	ATTATCH	STEERING	ATTATCH
300 HP	Displacement(cc/rev)	60	63	74	74
	Pressure (Kgf / cm ²)	280	280	280	280
400 HP	Displacement(cc/rev)	110	61	140	100
	Pressure (Kgf / cm ²)	210	280	210	280

Unit dimension of the combination pump

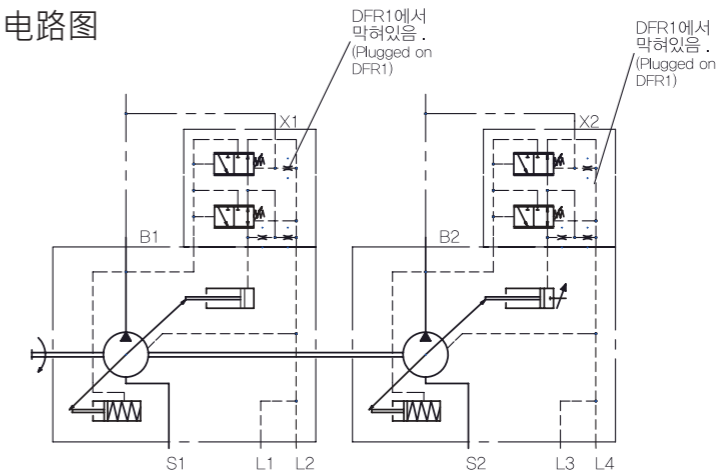


PUMP1 \ PUMP2	A10VO 28				A10VO 45				A10VO 71				A10VO 100				A10VO 140			
	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A3	A4	A1	A2	A3	A4
A10VSO 18	165	204	349	399	184	229	374	424	217	267	412	462	275	338	483	533	275	350	495	545
A10VO 28	165	204	369	398	184	229	394	423	217	267	432	461	275	338	503	532	375	350	515	544
A10VO 45	-	-	-	-	184	229	413	448	217	267	451	486	275	338	522	557	275	350	534	569
A10VO 71	-	-	-	-	-	-	-	-	217	267	484	524	275	338	555	595	275	350	567	569
A10VO 100	-	-	-	-	-	-	-	-	-	-	-	-	275	356	631	673	275	368	643	685
A10VO 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	275	368	643	685

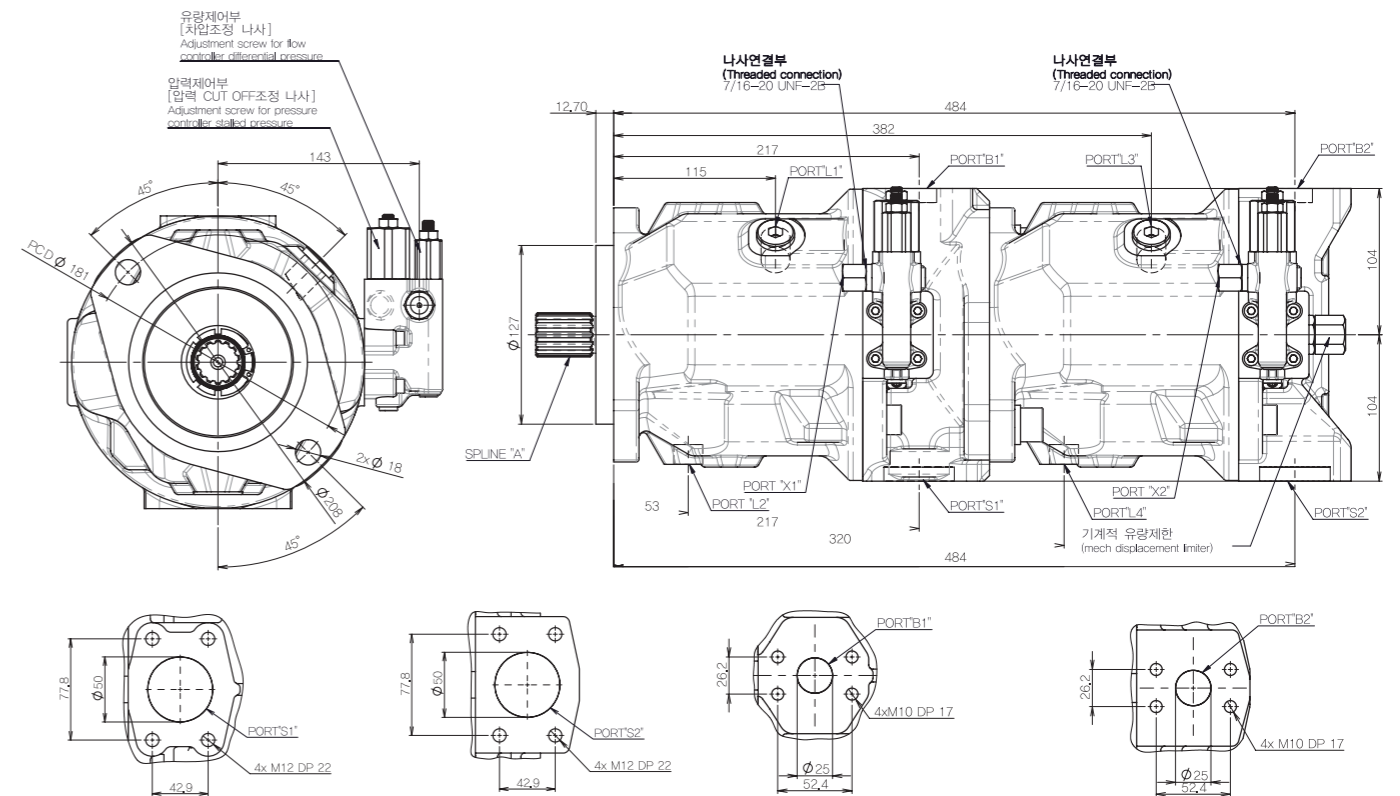
CHARACTERISTICS 特性

- Time delay valve & Relief valve 延时阀及减压溢流阀
- Included time delay valve and relief valves 延时阀和安全阀
- Mini(5~8ton) excavator, Aerial working platform, Crane, etc. Applicable 迷你(5~8吨)挖掘机,高空作业platform,起重机等适用

Circuit Diagram 电路图



Dimensions 尺寸

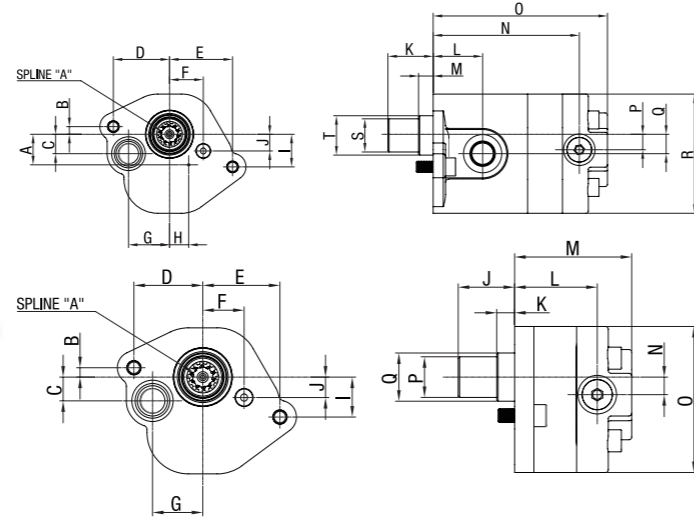
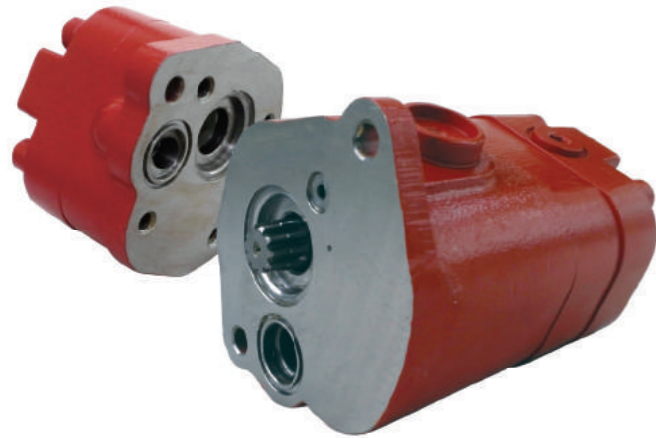


San Involute Spline(A)		
Flat Route Side Fit		
Sae J498B, Class 1		
TOOLS	Pitch	12/14
	Pressure Angle	30°
	NO.OF Teeth	14
Major Dia	$\Phi 31.22$	⁰ _{-0.13}
Minor Dia	$\Phi 26.99$	⁰ _{-0.33}

PORT SIZE

Port	Title	Configuration
B1, B2	Output	Sae 1"
S1, S2	Input	Sae 2"
L1, L2, L3, L4	Drain	M22X1.5P
X1, X2	Pilot	M14X1.5P DP12

GEAR PUMP



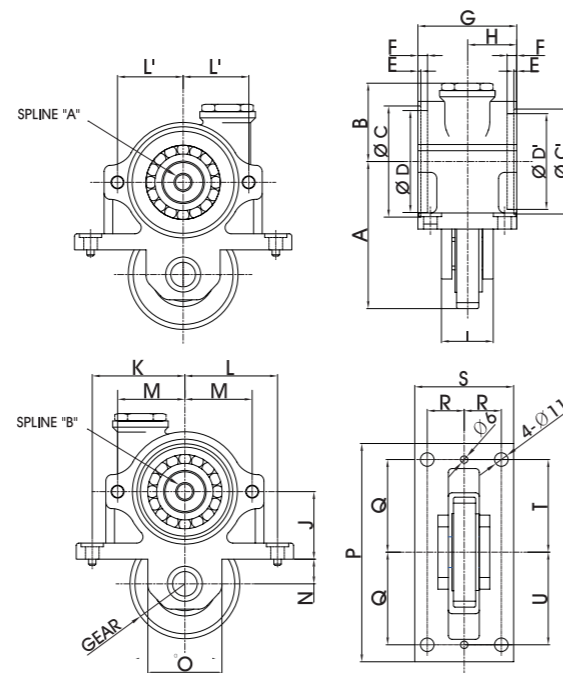
Model	A	B	C	D	E	F	G	H	I
KGPS (6.5cc)	26	7.8	16.25	50	56	30	36.5	17	28
	J	K	L	M	N	O	P	Q	
	40.95	13	60	85	13	106	35	30	

Model	A	B	C	D	E	F	G	H	I	J
KGPD (12.1+6.5, 16.2+4.5, 18.3+4.5)	26	7.8	16.25	50	56	30	36.5	17	28	18.66
	K	L	M	N	O	P	Q	R	S	T
	40.25	44	13	130	155	13	16	160	35	30

/ SPLINE "A"

Module	16/32
Pressure	30°
No. of teeth	13
Standard pitch circle diameter	∅30.638

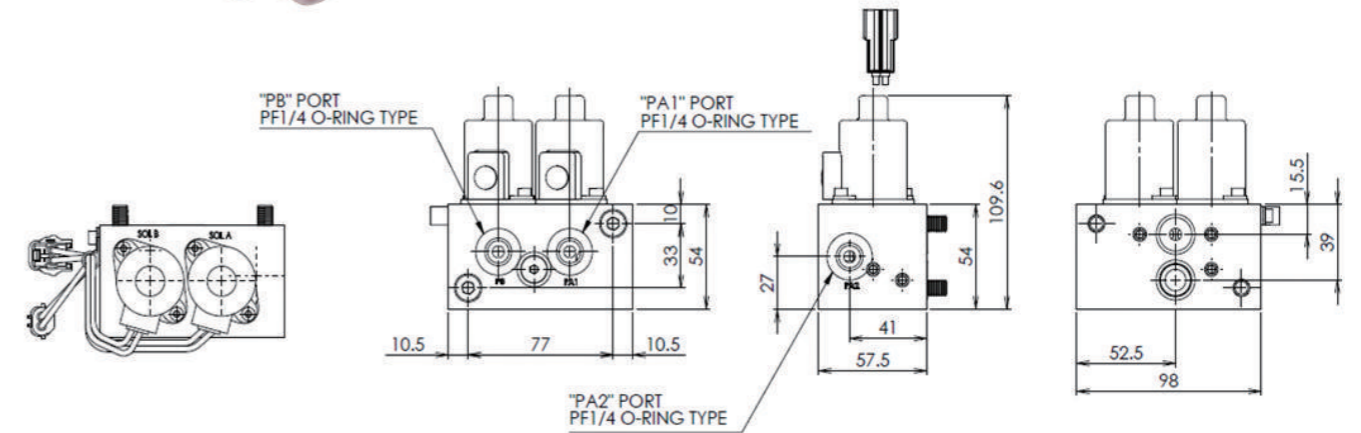
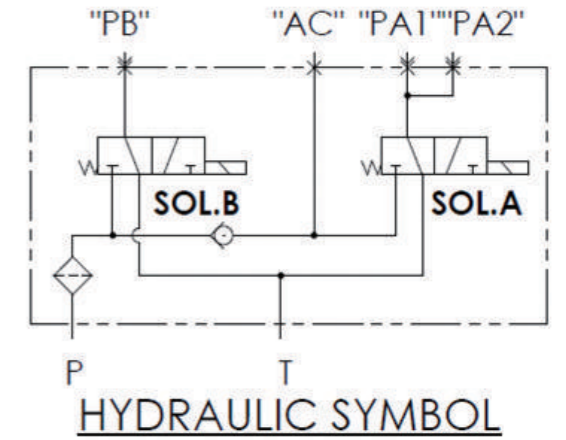
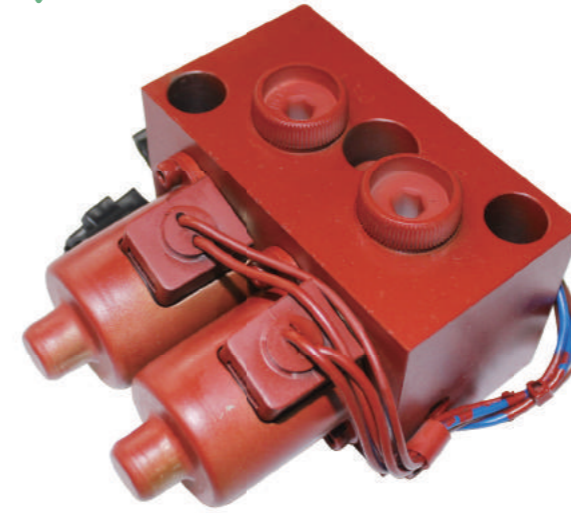
PTO (K3V/K5V DTP SERIES)



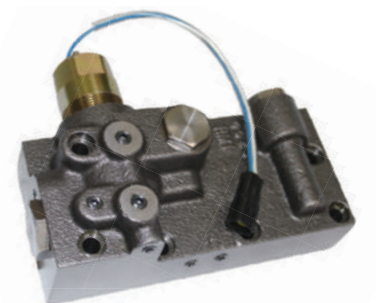
Model	A	B	C	D	C'	D'	E	F
PTO(A)	120	64	90	82.55	85	77.5	2.4	7.8
PTO(B)					90	82.5		
Model	G	H	I	J	K	L	M	N
PTO(A)	80	40	42	55	75	75	54.5	20
PTO(B)								
Model	O	P	Q	R	S	T	U	
PTO(A)	60	176	75	30	80	75	75	
PTO(B)								

	SPLINE "B"	SPLINE "A"	GRAR
Module	1	16/32	2
No. of teeth	13	10	42
Pressure	20°	30°	20°
Standard pitch circle diameter	∅13	∅15.875	∅84

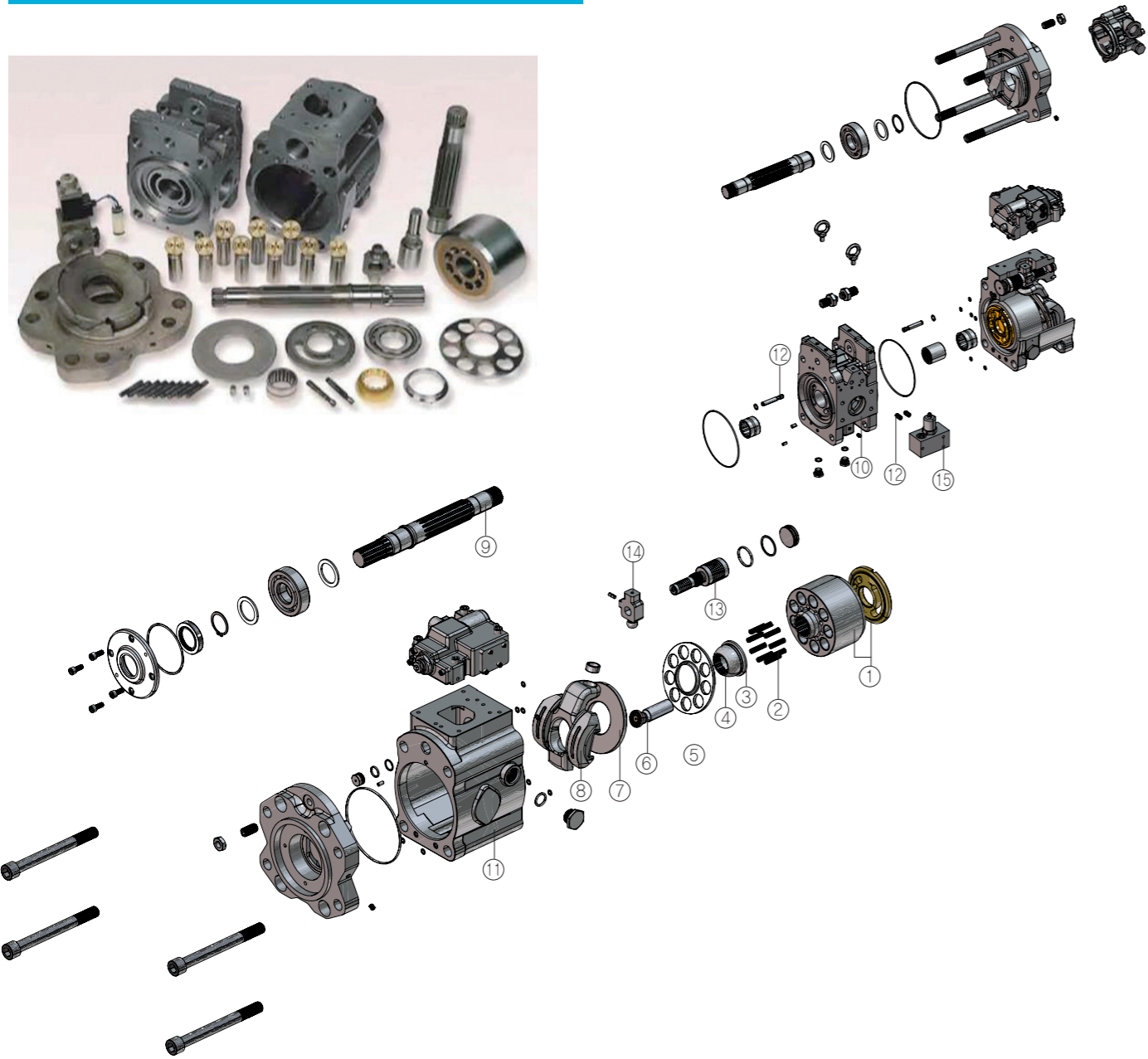
SOL. VALVE



EPPR VALVE



K3V63/112/140/180DT



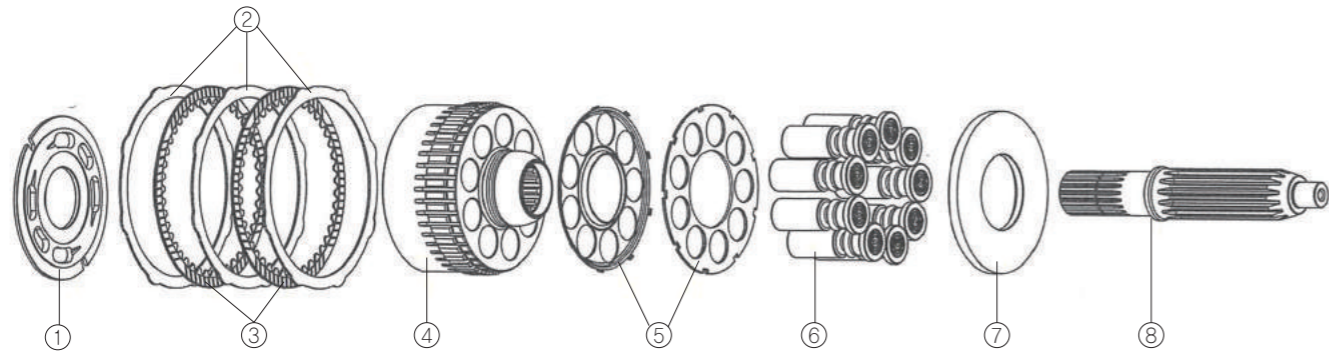
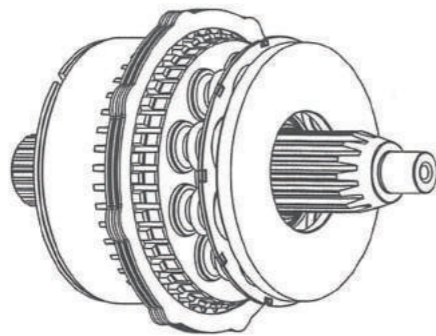
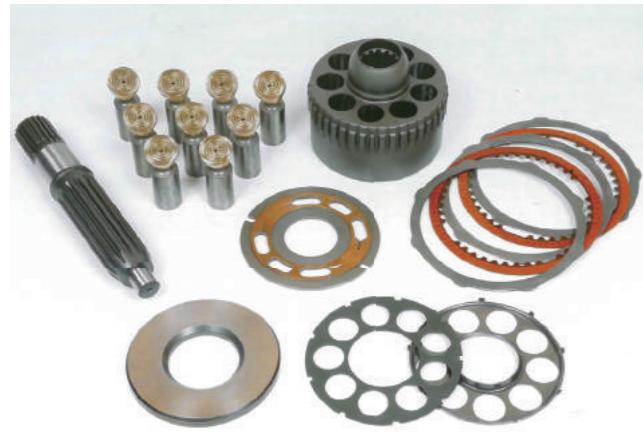
NO.	Part Name	Q'ty	Unit	Remarks
1-a	Cylinder Block Ass'y(with Valve Plate- RH)	1	set	
1-b	Cylinder Block Ass'y(with Valve Plate- LH)	1	set	
2	Coil Spring (9pcs/set)	2	set	
3	Spacer	2	pcs	
4-a	Spherical Bush(Ball Guide)Casting type	2	pcs	
4-b	Spherical Bush(Ball Guide)Bronze type	2	pcs	
5	Push Plate (Set Plate)	2	pcs	
6	Piston Ass'y(9pcs/set)	2	set	
7	Shoe Plate	2	pcs	
8	Swash Plate & Support	2	pcs	
9	Drive Shaft (RH/LH)	2	pcs	
10	Valve Block	2	pcs	
11	Case(Housing)	2	pcs	
12-a	Check Valve – long	2	pcs	
12-b	Check Valve – short	2	pcs	
13	Servo Piston	2	pcs	
14	Tilting Pin	2	pcs	
15	Eppr v/v assy	1	pcs	

M2X120/146/150/170/210



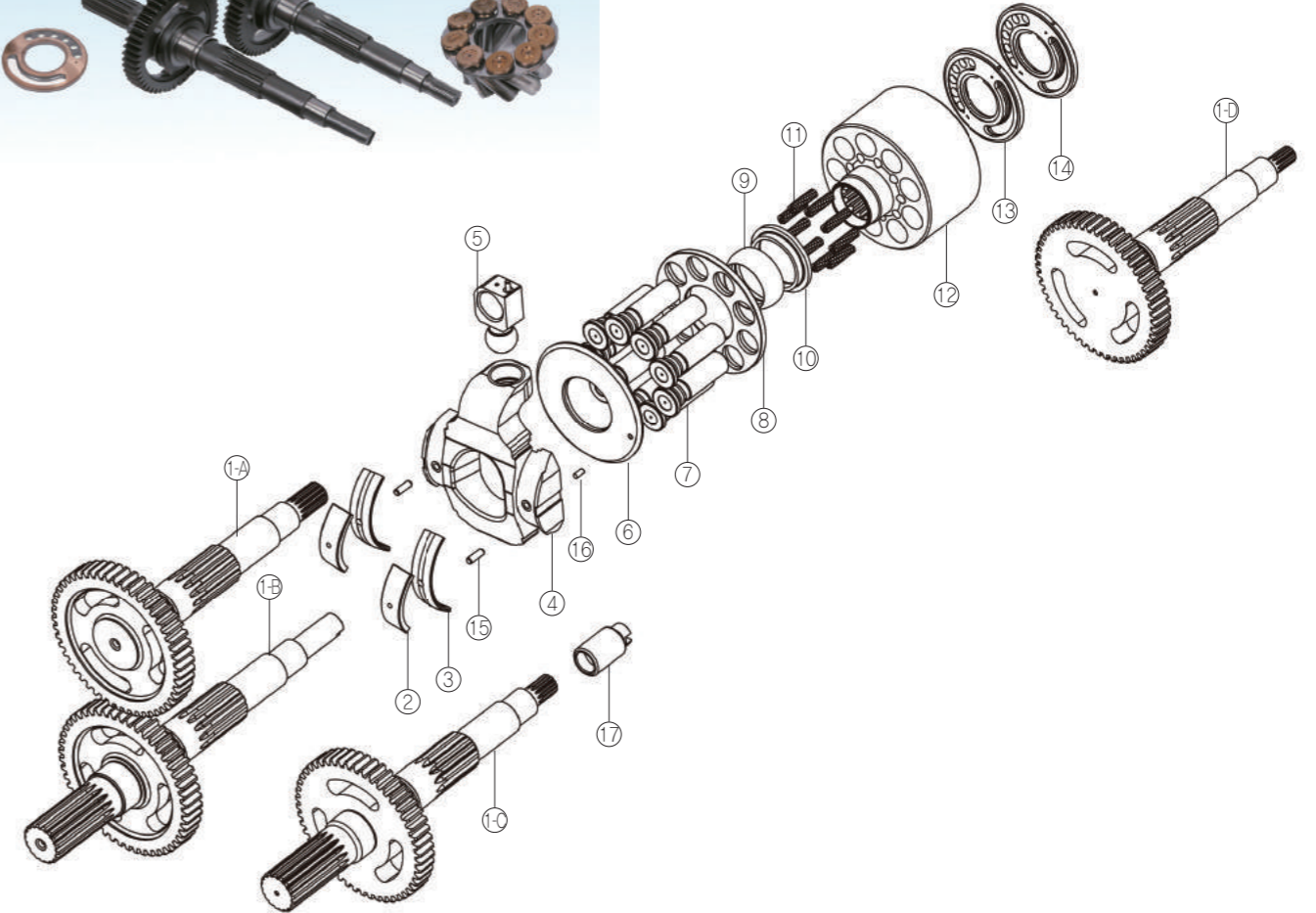
NO.	Part Name	Q'ty	Unit	Remarks
1	Drive Shaft	1	pcs	
2	Shoe Plate	1	pcs	
3	Piston Assy (9pcs/set)	1	set	
4	Push Plate(Set Plate)	1	pcs	
5	Ball Guide	1	pcs	
6	Washer	1	pcs	
7	Pin	6	pcs	
8	Cylinder Block	1	pcs	
9	Coil Spring	1	pcs	
10	Washer	1	pcs	
11	Valve Plate	1	pcs	
12	Separate Plate	3(4)	pcs	
13	Friction Plate	2(3)	pcs	
14	Snap Ring	1	pcs	

M5X130/180



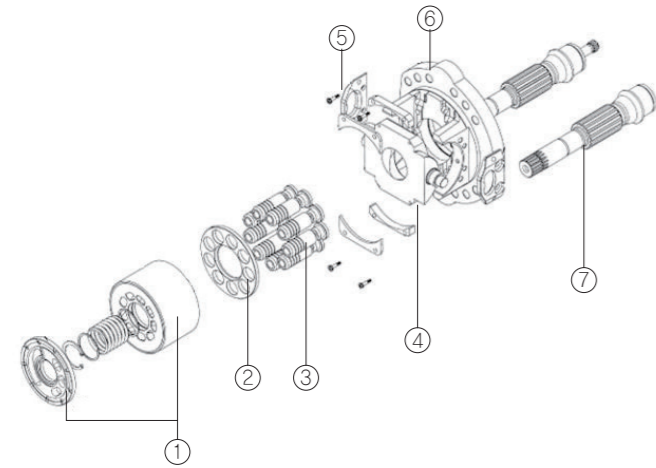
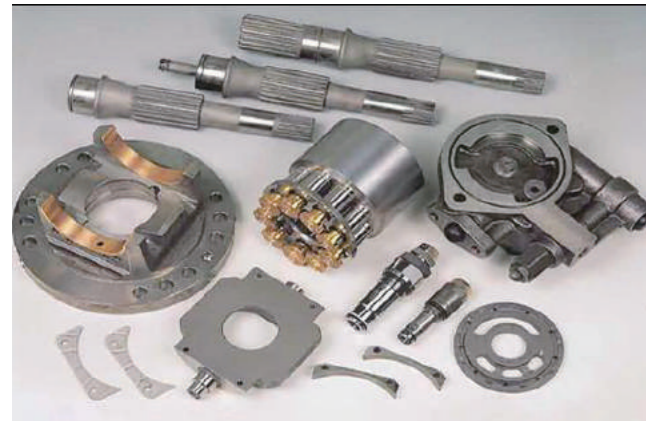
NO.	Part Name	Q'ty	Unit	Remarks
1	VALVE PLATE	1		
2	SEPARATION PLATE	3		
3	FRICITION PLATE	2		
4	CYLINDER BLOCK	1		
5	SET PLATE	1		
6	PISTONE SHOE	9		
7	SHOE PLATE	1		
8	DRIVE SHAFT	1		

SBS80/120/140(FOR CATERPILLAR 320C/325C)



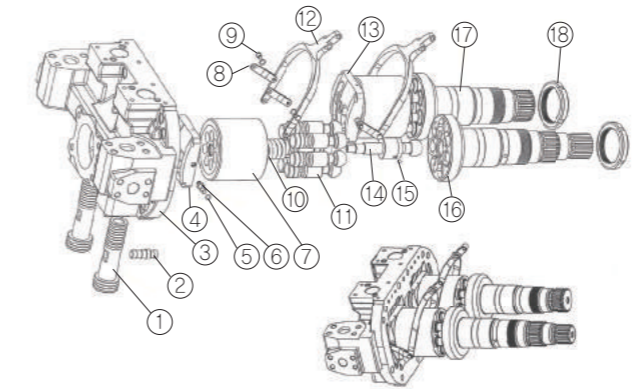
NO.	Part Name	Q'ty	Unit	Remarks	NO.	Part Name	Q'ty	Unit	Remarks
1-A	DRIVE SHAFT(L)	1		15T	8	SET PLATE	1		
1-B	DRIVE SHAFT(R)	1		KEY	9	BALL GUIDE	1		
1-C	DRIVE SHAFT(L)	1		17T	10	SPACE	1		
1-D	DRIVE SHAFT(R)	1		11T	11	COIL SPRING	9		
2	SLIDING BEARING OF SUPPORT	2			12	CYLINDER BLOCK	1		
3	SLIDING BEARING OF SWASH PLATE	2			13	VALVE PLATE(SBS120)	1		
4	SWASH PLATE	1			14	VALVE PLATE(SBS140)	1		
5	TILTING PIN	1			15	PIN OF SWASH PLATE	2		
6	SHOE PLATE	1			16	PIN OF SHOE PLATE	1		
7	PISTON	9			17	COUPLING	1		

HPV90/160 FOR PC200-3/5 & PC300-3/5



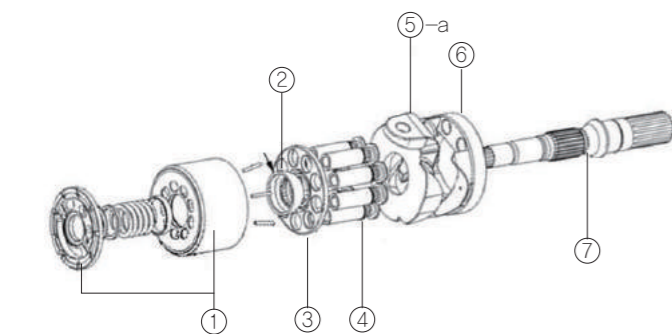
NO.	Part Name	Q'ty	EA	Remarks
1-a	Cylinder Block Ass'y(with Valve Plate(RH))	1	set	
1-b	Cylinder Block Ass'y(with Valve Plate(LH))	1	set	
2	Push Plate(Set Plate)	1	pcs	
3	Piston Ass'y(9pcs/set)	1	set	
4	Cam Rocker(Swash Plate)	1	pcs	
5	Thrust Bearing(Plate)	1	pcs	
6-a	Cradle(FR)	1	pcs	Round type
6-b	Cradle(RR)	1	pcs	
7	Drive Shaft(RH)	1	pcs	
	Drive Shaft(LH) - Key type	1	pcs	PC200-5
	Drive Shaft(LH) - Spline type	1	pcs	PC200-5

HPV050/102/105/135



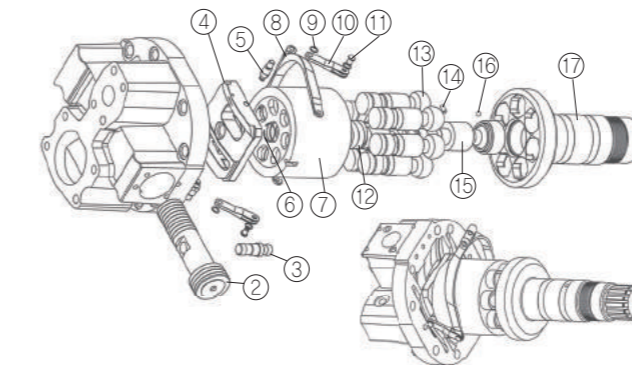
NO.	Part Name	Q'ty	EA	Remarks
1	SERVO PISTON	2		
2	SERVO PISTON PIN	2		
3	HEAD COVER	1		
4	VALVE PLATE(R)	1		
5	SNAP RING	8		
6	BOLT OF VALVE PLATE	4		
7	ROTOR	2		
8	LINK OF VALVE PLATE	4		
9	PIN OF LINK	4		
10	COIL SPRING	2		
11	PISTON	14		
12	FEEDBACK LEVER	2		
13	VALVE PLATE(L)	1		
14	CENRER PIN	2		
15	BALL OF CENTER PIN	2		
16	DRIVE SHAFT(R)	1		
17	DRIVE SHAFT(L)	1		
18	LOCK NUT	2		

HPV95/132 FOR PC200-6/7 & PC300-6/7

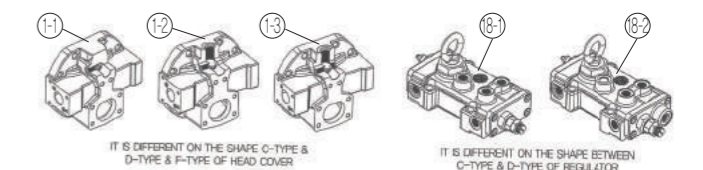


NO.	Part Name	Q'ty	EA	Remarks
1-a	Cylinder Block Ass'y(with Valve Plate(RH))	1	set	
1-b	Cylinder Block Ass'y(with Valve Plate(LH))	1	set	
2	Ball Guide	1	pcs	
3	Push Plate(Set Plate)	1	pcs	
4	Piston & Shoe(9pcs)	1	set	9pcs
5-a	Cam Rocker(Swash Plate)-OLD	1	pcs	PC200-6
5-b	Cam Rocker(Swash Plate)-NEW	1	pcs	PC200-6E/7
6	Cradle	1	pcs	
7	Drive Shaft(RH)	1	pcs	

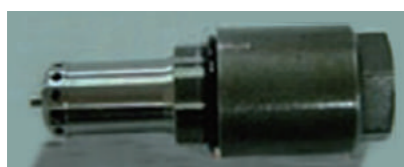
HPV116 & HPV145



NO.	Part Name	Q'ty	EA	Remarks
1-1	HEAD COVER	1		C-TYPE
1-2	HEAD COVER	1		D-TYPE
1-3	HEAD COVER	1		F-TYPE
2	SERVO PISTON	1		
3	SERVO PISTON PIN	1		
4	VALVE PLATE	1		
5	BOLT OF VALVE PLATE	2		
6	SNAP RING OF CENTER	2		
7	ROTOR	1		
8	FEEDBACK LEVER	1		
9	SNAP RING OF BOLT	6		
10	LINK OF VALVE PLATE	2		
11	PIN OF LINK	2		
12	COIL SPRING	1		
13	PISTON	7		
14	PIN OF CENTER PIN	1		
15	CENTER PIN	1		
16	PIN OF CENTER PIN	1		
17	DRIVE SHIFT	1		
18-1	REGULATOR ASS'Y	1		C&D TYPE
18-2	REGULATOR ASS'Y	1		F TYPE



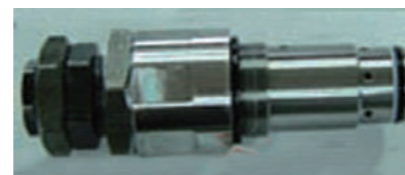
RELIEF VALVE



Model	Part No.
PC200-3	709-70-61201



Model	Part No.
PC200-3	709-70-51200



Model	Part No.
PC200-5	709-70-51401



Model	Part No.
PC200-6	723-40-50100



Model	Part No.
PC200-6	723-40-56100



Model	Part No.
PC200-6	723-40-56302



Model	Part No.
PC200-6E	723-40-51102



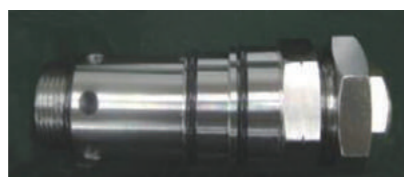
Model	Part No.
PC200-6E	723-40-51401



Model	Part No.
KAYABA	21113-40051



Model	Part No.
M2X146	KRD21EK10-350/315/140-T

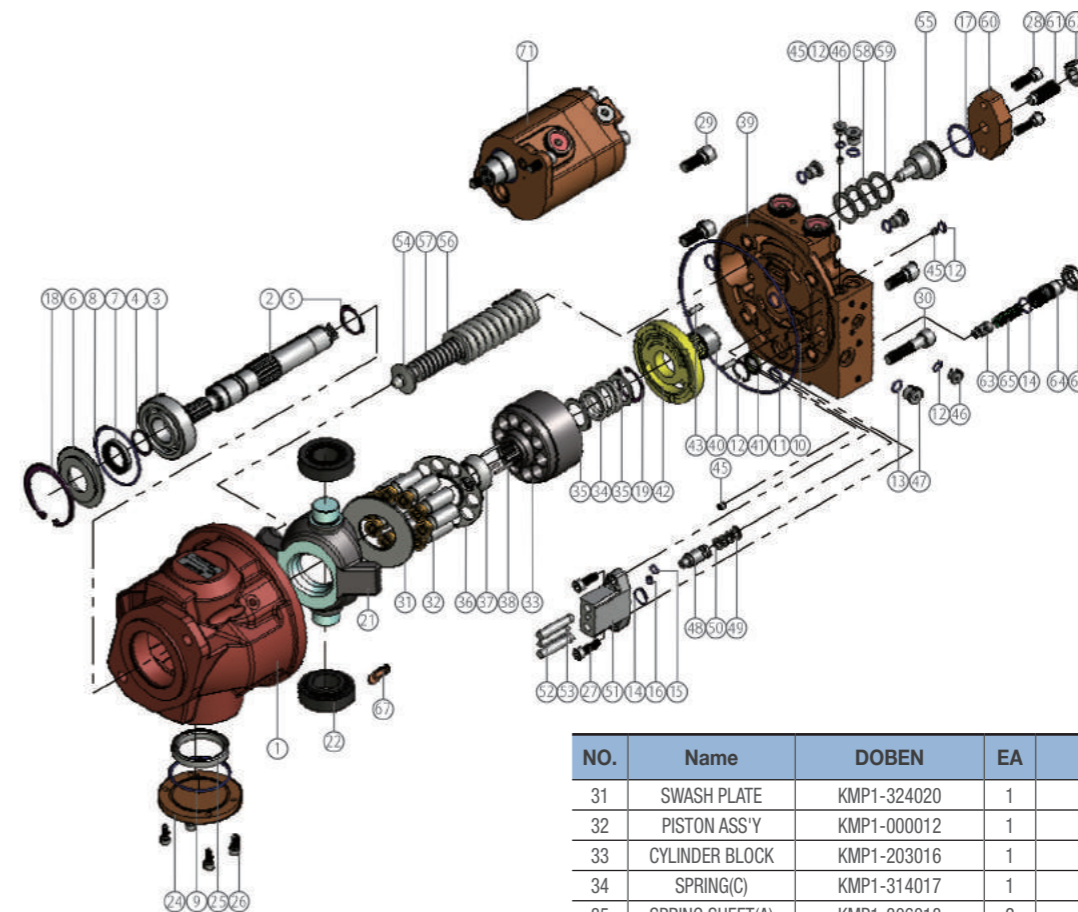


Model	Part No.
CAT320B/C	171-0030



Model	Part No.
M2X150/170	V9612039829

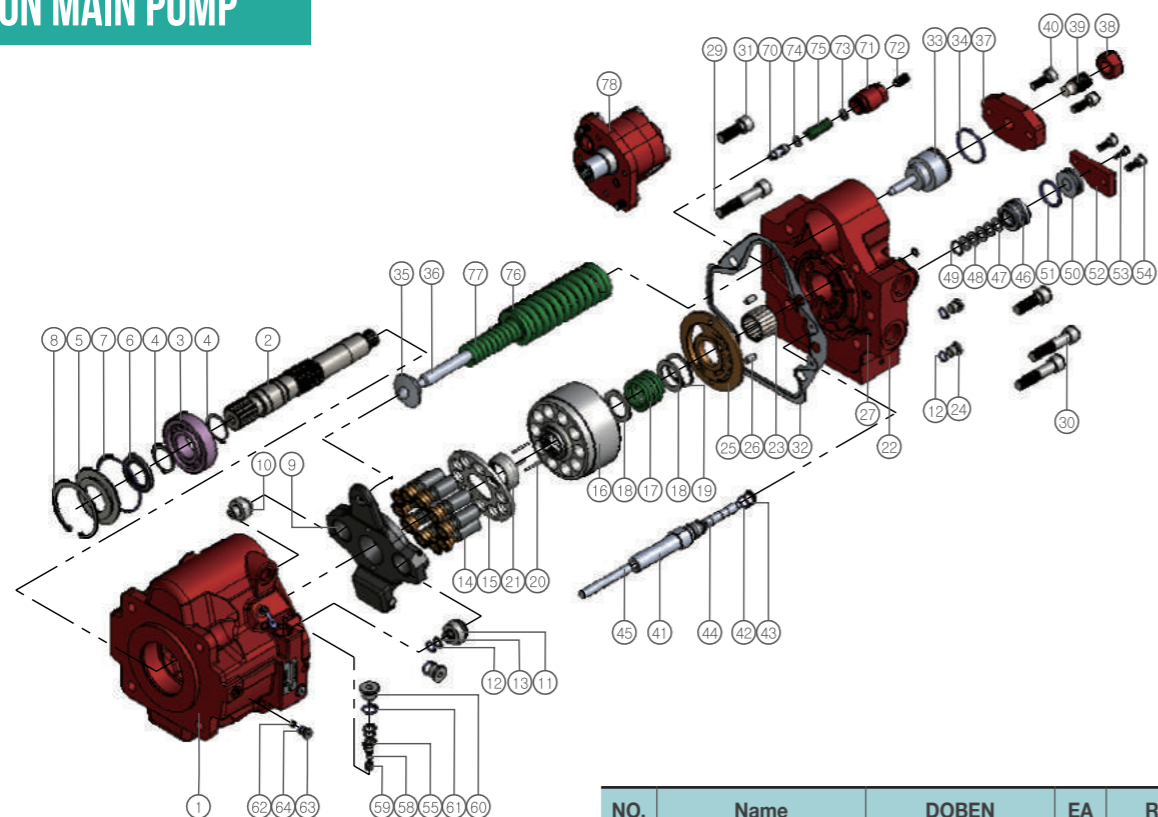
5-7 TON MAIN PUMP



NO.	Name	DOBEN	EA	Remarks
1	HOUSING	KMP1-201004	1	
2	SHAFT	KMP1-319005	1	
3	BALL BEARING	K909-6306	1	30X72X19
4	SNAP RING	K904-EXT028	1	C TYPE SHAFT 28
5	SNAP RING	K904-EXT030	1	C TYPE SHAFT 30
6	SEAL CASE	KMP1-320006	1	
7	OIL SEAL	K910-TCV284006	1	
8	O-RING	K903-001A147	1	AS568-147
9	O-RING	K903-001A144	1	AS568-144
10	O-RING	K903-001A168	1	AS568-168
11	O-RING	K903-002P015	4	P015
12	O-RING	K903-002P008	3	P008
13	O-RING	K903-002P011	4	P011
14	O-RING	K903-001A016	2	AS568-016
15	O-RING	K903-001A011	1	AS568-011
16	O-RING	K903-001A009	1	AS568-009
17	O-RING	K903-001P034	1	P034
18	SNAP RING	K904-INT072	1	C TYPE HOLE 72
19	SNAP RING	K904-INT040	1	C TYPE HOLE 40
20	SNAP RING	K904-INT025	1	C TYPE HOLE 25
21	KMP1-211008	KMP1-211008	1	
22	TAPER ROLLER BEARING	K909-HR32206J	2	30X62X21.25
23	SEAT	KMP1-305009	1	
24	SIDE COVER	KMP1-321010	1	
25	SPACER	KMP1-322011	1	
26	SOC.HD CAP SCREW	K907-SM06016	4	M6 x 16
27	SOC.HD CAP SCREW	K907-SM08025	2	M8 x 25
28	SOC.HD CAP SCREW	K907-SM08030	2	M8 x 30
29	SOC.HD CAP SCREW	K907-SM12030	3	M12 x 30
30	SOC.HD CAP SCREW	K907-SM12055	1	M12 x 55

NO.	Name	DOBEN	EA	Remarks
31	SWASH PLATE	KMP1-324020	1	
32	PISTON ASS'Y	KMP1-000012	1	
33	CYLINDER BLOCK	KMP1-203016	1	
34	SPRING(C)	KMP1-314017	1	
35	SPRING SHEET(A)	KMP1-306018	2	
36	RETAINER	KMP1-312019	1	
37	PIVOT	KMP1-325021	1	
38	DAWEL PIN	K915-D03030	3	φ3X30
39	VALVE BLOCK	KMP1-205023	1	
40	MIDDLE BEARING	K909-HMK2620	1	
41	STRAINER	KMP1-401027	1	
42	VALVE PLATE	KMP1-324024	1	
43	PARALLEL PIN	K905-D06020	2	φ6X20
44	PIPE PLUG	K911-NPT1/16	10	NPT 1/16
45	ORIFICE	KMP1-315025	3	
46	RO PLUG	K914-PF1/8	2	PF 1/8PF 1/8
47	RO PLUG	K914-PF1/4	4	PF 1/4
48	CONTROL PISTON	KMP1-309040	1	
49	SPRING SHEET	KMP1-306043	1	
50	CONICAL WASHER	KMP1-328044	3	
51	CONTROL CYLINDER	KMP1-215039	1	
52	CONTROL PIN(A)	KMP1-326041	2	
53	CONTROL PIN (B)	KMP1-326042	1	
54	SPRING SEAT(A)	KMP1-306029	1	
55	SPRING SEAT(B)	KMP2-306030	1	
56	SPRING(OUT)	KMP1-314034	1	
57	SPRING(IN)	KMP1-314035	1	
58	SHIM(A)	KMP1-327036	3	T=0.5
59	SHIM (B)	KMP1-327037	1	T=1.0
60	SPRING COVER	KMP1-204032	1	
61	ADJUSTMENT SCREW	KMP1-316033	1	M16XP1.5
62	HEX. NUT	K902-HM16	1	M16
63	SPOOL	KMP1-302045	1	
64	ADJUST SCREW	KMP1-316046	1	
65	SPRING, RELIEF	KMP1-314047	1	
66	NUT, RELIEF	KMP1-318048	1	M18XP1.0
67	AIR VENT	KMP1-501049	1	
71	GEAR PUMP ASS'Y	KGP1-000002	1	16.2cCX4.5cc

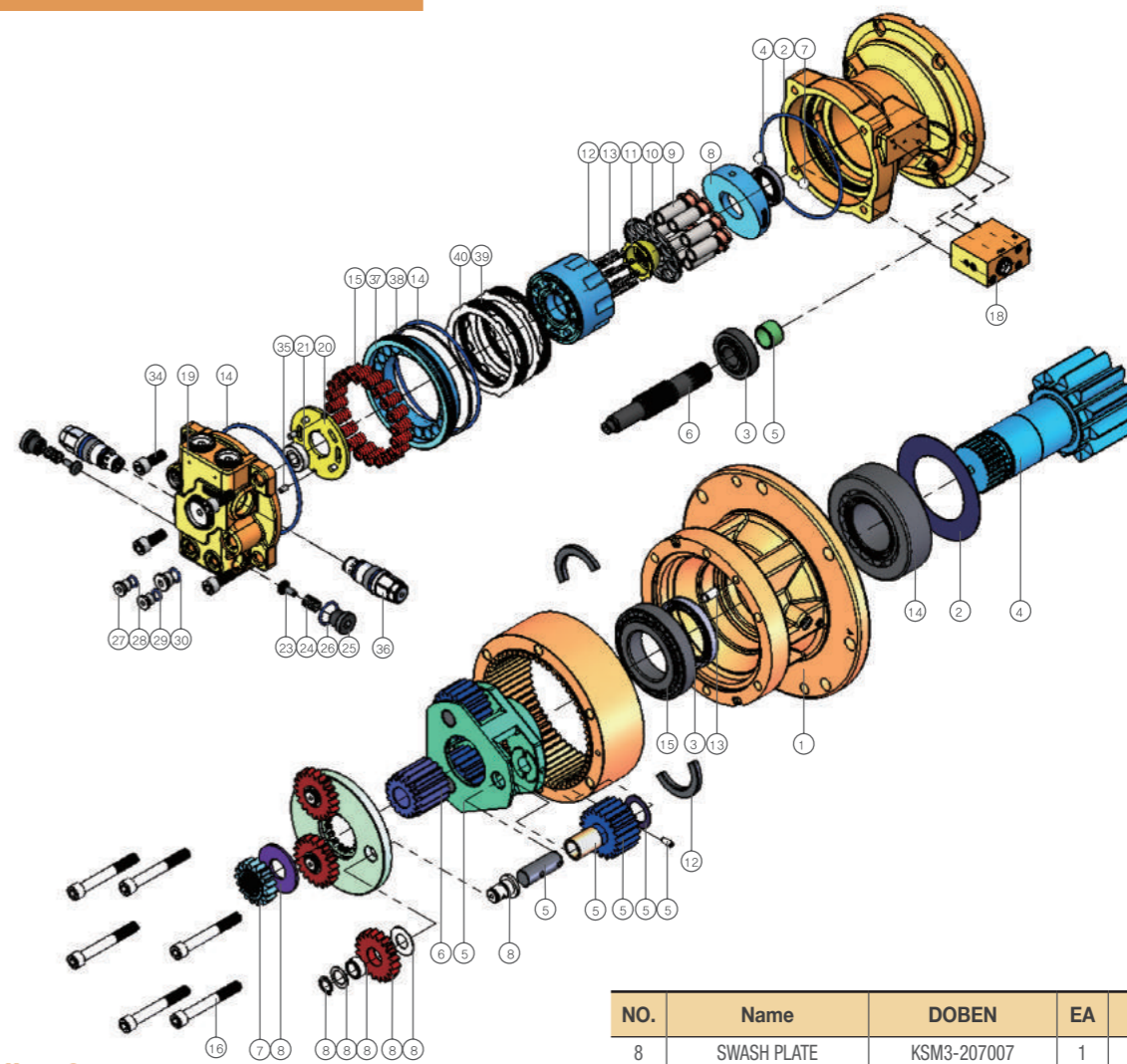
8 TON MAIN PUMP



NO.	Name	DOBEN	EA	Remarks
1	HOUSING	KMP5-201004	1	
2	SHAFT	KMP5-319005	1	
3	BALL BEARING	K909-6307	1	6307
4	SNAP RING	K904-EXT035	2	C TYPE SHAFT 35
5	SEAL CASE	KMP5-320006	1	
6	OIL SEAL	K910-TCV35X52X6	1	
7	O-RING	K903-001A151	1	
8	SNAP RING	K904-INT080	1	AS568-147
9	SWASH PLATE ASS'Y	KMP5-000007	1	AS568-144
10	BALL GUIDE(A)	KMP5-332012	1	AS568-168
11	BALL GUIDE(B)	KMP5-332013	1	P015
12	O-RING	K903-002P011	5	P008
13	BACK UP RING	K916-P011	1	P011
14	PIST ON ASS'Y	KMP5-000014	10	AS568-016
15	RETAINER	KMP5-312017	1	AS568-011
16	CYLINDER BLOCK	KMP5-203019	1	AS568-009
17	SPRING,CYL'D BLOCK	KMP5-314020	1	P034
18	WASHER	KMP5-328021	2	C TYPE HOLE 72
19	SNAP RING	K904-INT045	1	C TYPE HOLE 40
20	DAWEL PIN	K915-D03030	3	C TYPE HOLE 25
21	PIVOT	KMP5-325022	1	
22	VALVE BLOCK	KMP5-205024	1	30X62X21.25
23	NEEDLE ROLLER BEARING	K909-304030	1	
24	RO PLUG	K914-PF 1/4	4	
25	VALVE PLATE	KMP5-324025	1	
26	PARALLEL PIN	K905-D080106	2	M6 x 16
27	O-RING	K903-002P009	4	M8 x 25
28	PIPE PLUG	K911-PY1/16	7	M8 x 30
29	SOC.HD CAP SCREW	K907-SM14075	1	M12 x 30
30	SOC.HD CAP SCREW	K907-SM14065	2	M12 x 55
31	SOC.HD CAP SCREW	K907-SM14040	2	
32	GASKET	KMP5-409026	1	
33	SPRING SEAT	KMP5-306027	1	
34	O-RING	K903-002P044	1	
35	SPRING SHEET(A)	KMP5-306029	1	
36	SPRING GUIDE	KMP5-307030	1	

NO.	Name	DOBEN	EA	Remarks
37	SPRING COVER	KMP5-204034	1	
38	HEX.NUT	K902-HM20	1	3X30
40	SOC.HD CAP SCREW	K907-SM10030	2	
41	SLEEVE	KMP5-304036	1	
42	O-RING	K903-002P015	1	
43	BACK UP RING	K916-P015	1	
44	SPOOL	KMP5-302037	1	6X20
45	CONTROL PIN	KMP5-326038	1	NPT 1/16
46	CONTROL PISTON	KMP5-309039	1	
47	WASHER	KMP5-328040	1	PF 1/8PF 1/8
48	CONICAL WASHER	KMP5-328041	4	PF 1/4
49	SNAP RING	K904-INT020	1	
50	STOPPER	KMP5-310042	1	
51	O-RING	K903-002P032	1	
52	COVER	KMP5-321043	1	
53	SOC.HD CAP SCREW	K907-SM05016	1	
54	SOC.HD CAP SCREW	K907-SM08020	2	
55	PLUG, SUTTLE V/V	KMP5-308051	1	
56	SEAL WASHER,SUTTLE V/V	KMP5-328052	1	
57	WASHER, SUTTLE V/V	KMP5-328053	1	
58	STEEL BALL	K917-D006	1	
59	SEAT,SUTTLE V/V	KMP5-305054	1	T=0.5
60	RO PLUG	K914-M8X1.5	1	T=1.0
61	O-RING	K903-002P016	1	
62	ORIFICE	KMP1-315025	1	M16XP1.5
63	RO PLUG	K914-PF1/8	2	M16
64	O-RING	K903-002P008	3	
65	RO PLUG	K914-PF3/8	1	
66	O-RING	KMP1-314047	1	
70	SPOOL, RELIEF V/V	KMP1-318048	1	
71	BODY, RELIEF V/V	KMP1-501049	1	
72	ADJUST SCREW,RELIEF V/V	KMP5-316045	1	
73	SPING FOLLOW,RELIEF V/V	KMP5-336047	1	
74	WASHER,RELIEF V/V	KMP5-314049	1	
75	SPRING,RELIEF V/V	KMP5-314048	1	
76	SPRING(OUT)	KMP5-314032	1	
77	SPRING(IN)	KMP5-314031	1	
78	GEAR PUMP ASS'Y	KGPE-000001	1	

5-8 TON SWING DEVICE



Reduction Gear

NO.	Name	DOBEN	EA	Remarks
1	GEAR CASE	KSR2-202004	1	
2	COVER(BEARING)	KSR1-321005	1	
3	OIL SEAL	K901-TC659013	1	TC65X90X13
4	DRIVE SHAFT	KSR2-319006	1	
5	CARRIER ASS'Y(NO.2)	KSR1-000008	1	
6	SUN GEAR(NO.2)	LSR1-331016	1	
7	SUN GEAR(NO.1)	KSR1-331025	1	
8	CARRIER ASS'Y(NO.1)	KSR1-000017	1	
9	RING GEAR	KSR1-331015	1	
10	PIPE PLUG	K911-PT 1/8	2	PT 1/8
11	PIPE PLUG	K911-PT 3/8	1	PT 3/8
12	HALF COLLAR	KSR1-333007	2	
13	PARALLEL PIN	K905-D10022	2	Ø10X22
14	TAPER POLLER BEARING	K909-HR32313J	2	HR30212J
15	TAPER POLLER BEARING	K909-HR30213J	1	HR30212J
16	SOC.HD CAP SCREW	K907-SM12095	6	X12 x 95

Motor

NO.	Name	DOBEN	EA	Remarks
1	HOUSING	KSM1-201004	1	
2	O-RING	K903-001A252	1	AS568-252
3	TAPER ROLLER BEARING	K909-HR30305J	1	HR30305J
4	OIL SEAL	K910-TCV1709	1	30X50X11(TCV1709)
5	BUSH	K919-253020	1	IR25X30X20
6	SHAFT	KSM1-319005	1	
7	STEEL BALL	K917-5/16"	2	5/16"

NO.	Name	DOBEN	EA	Remarks
8	SWASH PLATE	KSM3-207007	1	17.5°
9	PISTON ASS'Y	KSM1-000008	9	
10	RETAINER	KSM1-312011	1	
11	PIVOT	KSM1-325012	1	
12	CYLINDER BLOCK	KSM1-215016	1	
13	SPRING	KSM1-314017	9	
14	O-RING	K903-001A254	2	AS568-254
15	SPRING	KSM1-314020	20	
16	PIPE PLUG	K911-PT1/2	1	PT 1/2
17	PIPE PLUG	K911-PT1/4	2	PT 1/4
18	TIME DELAY VALVE ASS'Y	KSM1-000049	1	
19	REAR CASE	KSM1-202031	1	
20	VALVE PLATE	KSM1-324032	1	
21	TAPER ROLLER BEARING	K909-30202	1	#30202
22	SHIM(TAPER BEARING)	KSM1-327033	1	
23	POPPET	KSM1-303046	2	
24	SPRING	KSM1-314047	2	
25	PLUG	KSM1-308048	2	
26	O-RING	K903001D026	2	ID26X2.5
27	RO PLUG	K914-PF1/4	2	PF 1/4
28	O-RING	K903-002P011	2	P011
29	RO PLUG	K914-PF3/8	1	PF 3/8
30	O-RING	K903-002P014	1	P014
34	SOC.HD CAP SCREW	K907-SM12030	4	M12 x 30
35	PARALLEL PIN	K905-D06012	2	6X12
36	RELIFE VALVE ASS'Y	KSM1-000060	2	
37	BRAKE PISTON	KSM1-216019	1	
38	BACK UP RING	K916-00A254	1	AS568-254
39	FRICITION PLAT E ASS'Y	KSM1-000013	2	
40	SEPARATER PLATE	KSM1-404014	2	