

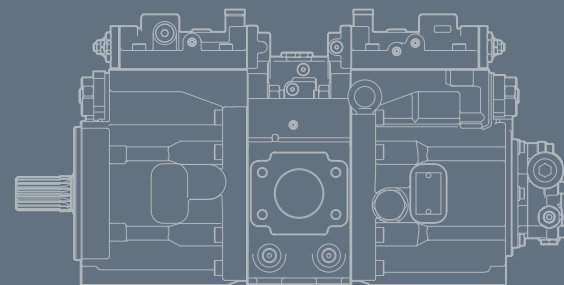
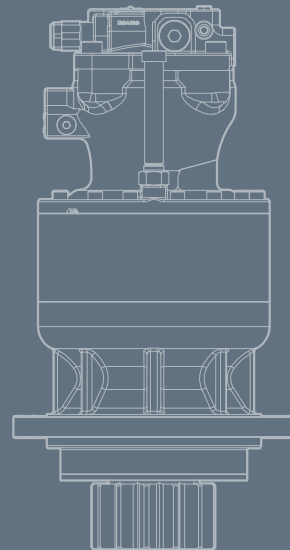
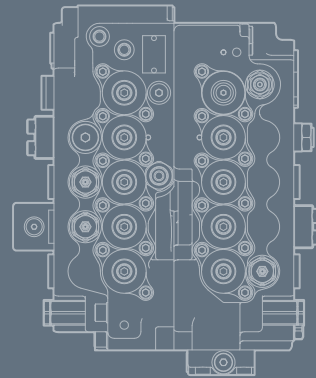
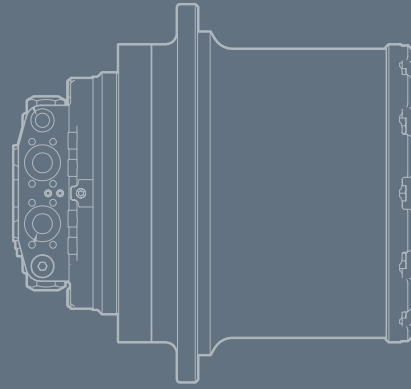
CREATING MOTION & CONTROL

MOTTROL

HYDRAULIC COMPONENTS

for Construction Equipment & General Industrial Machinery





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Mottrol

Beyond 46 years history, Mottrol will open a new future as a global hydraulic components manufacturer.

Mottrol boasts a history of more than forty years and is Korea's best specialist manufacturer of hydraulic parts, with the monthly production capacity of over 45,000 travel and swing devices, main hydraulic pumps, and main control valves for construction heavy equipment. It has obtained world-class quality and Environment, Health, and Safety (EHS) management systems, including the ISO 9001 Quality Management System, ISO 14001 Environmental Management System and OHSAS 18001 Safety and Health Management System.

Its excavator travel device was selected by the Ministry of Trade, Industry and Energy as a "World-Class Product." While pursuing operational excellence based on its stable management structure, Mottrol is operating a R&D Center with the aim of securing leading advanced technology. And it founded Mottrol Jiangyin Co., Ltd. in 2011 to expand its production base globally.

Mottrol is channeling its capabilities to present a new vision in the hydraulic parts sector. The company's goal is to strengthen its business competitiveness based on its world-best quality, price, and R&D competencies so as to emerge as a global top-tier producer of hydraulic parts.

Mottrol Jiangyin Co., Ltd.

In June 2011, Mottrol established Mottrol Jiangyin Co., Ltd. an overseas subsidiary in China, with a production area of 66,670 m² in Port Economic Development Zone in Jiangyin China. Mottrol Jiangyin manufactures and sells travel devices, pumps, MCVs, and swing devices for construction machinery. Mottrol Jiangyin is building an automated production line for 100,000 hydraulic products a year with the second plant and furthermore, we are realizing the localization of the components for travel devices and swing devices.

Mottrol Jiangyin's vision in the Chinese construction machinery market is to become the world's leading hydraulic components company. To build a world-class operational innovation business, we are improving our cost and quality competitiveness, securing productivity, strengthening customer service, and implementing various strategic issues.

Company History

• 1975 ~1989

Establishment

Mottrol entered the unexplored hydraulic industry in 1975 and wrote a history of Korean hydraulic industry as a front-runner.

1974 Established Tongmyung Industries Inc.

1986 Established Tongmyung Heavy Industries R&D Center

1987 Began manufacturing hydraulic travel motors for excavators.



• 1990 ~2000

Expansion and Transformation

Mottrol grew as a professional hydraulic components manufacturer with the production of hydraulic components for excavators.

1990 Began manufacturing hydraulic swing motors and hydraulic pumps for excavators.

1996 Obtained ISO 9001 Quality System Certificate (hydraulic devices and systems)



• 2001 ~2010

Technological Independence and Growth

Mottrol strengthened the trust of customers by developing unique hydraulic components with its in-house technology.

2001 Received “2000 Outstanding Technology Development Award” from Hydraulic Industrial Institute of Japan

2006 Travel devices for excavators were designated as the “World Class Product” by MOTIE

2007 Changed company name to Tongmyung Mottrol Co., Ltd.

2008 Changed company name to Doosan Mottrol

• 2011 ~

Present New Take-off

Mottrol established Mottrol Jiangyin Co., Ltd. to secure global competitiveness.

2011 Established Mottrol Jiangyin Co., Ltd., a Chinese subsidiary in Jiangyin

2017 Cumulative production of hydraulic equipment exceeded 2 million units

2019 Acquired Production Management System (PMS) Level 6 plus


2020 Changed company name to Mottrol Co., Ltd

2022 MJC, a Chinese subsidiary, began build the 2nd plant.



Vision

MOTTROL VISION




MOTTROL

MISSION
Create movement and control precisely, anywhere in the earth, sea, sky and universe.

VISION 2030
The Core Technology global leader of Motion & Control that dominates the global market.

SLOGAN
Creating Motion & Control



MOTTROL CORE VALUE

Since the establishment in 1974, we have made products with continuous technological innovation and quality that our customers trust. Technological innovation and quality are the key factors that defines successes and failures in Mottrol Co., Ltd in the future, and is the value that we pursue on priority.

CORE VALUE

Continuous Technology Innovation

Customer's level Quality

Global Standard Expertise

Communication Trust Cooperation

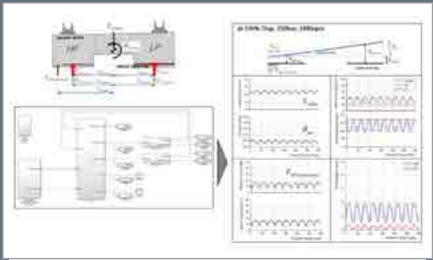
Positive Tenacity Challenge

R&D Overview

R&D center is developing new design and test technologies with domestic and overseas research institutes. The reliable test items and conditions derived from real applications and Mottrol's technology experiences provide good quality and reliability of products. More than 20 kinds of validation&verification tests are performed tests are performed in 1,300m² area with various test equipments.

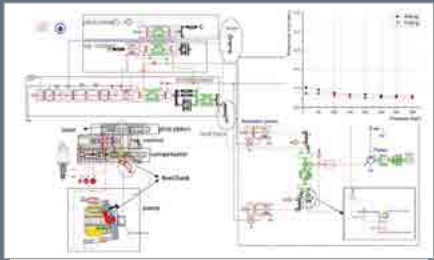
Core Technology

Mottrol's R&D center has strived to develop technologies for the next-generation hydraulic components. Front-ending technology in Mottrol is improving through various simulation techniques such as structural analysis, fatigue analysis, flow analysis, etc.



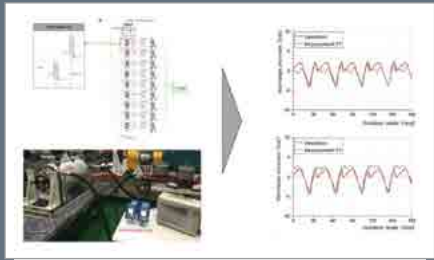
Tribology Analysis for Elementary Parts

- Force balance ratio analysis
- Optimization of Leakage and friction



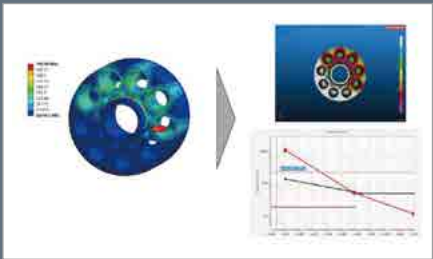
Characteristic Analysis of Pump

- Prediction and improvement of static- and dynamic characteristic



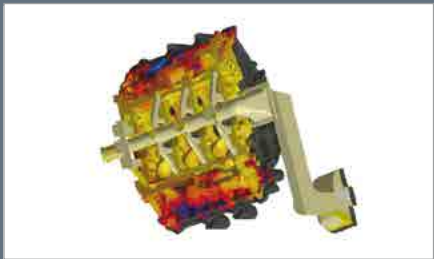
Low Pulsation Design

- Pressure pulsation measurement/ analysis
- Optimization of valve plate



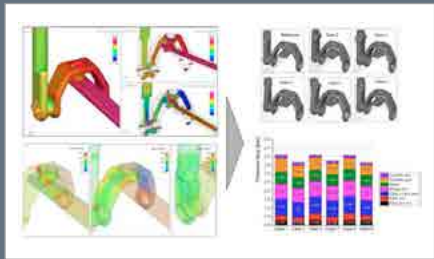
Structural Analysis

- Structure and MFBD analysis
- Fatigue analysis



Casting Analysis

- Simulation and optimization of casting designs and processes

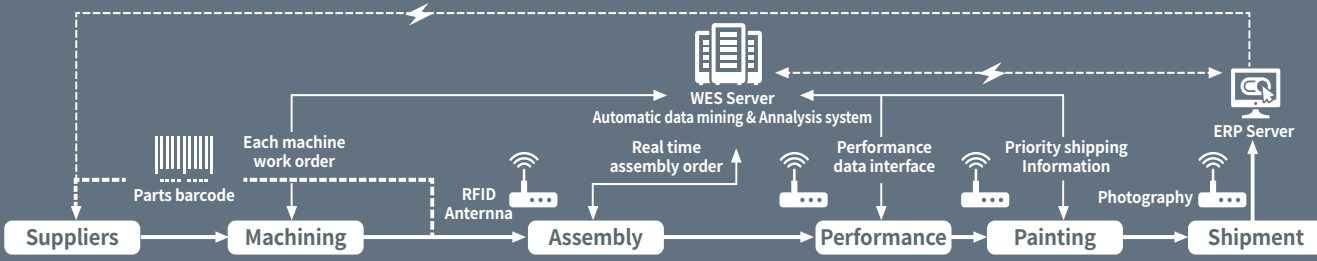


CFD Analysis

- Losses and cavitation analysis
- Improvement of Self-priming ability

Manufacturing Overview

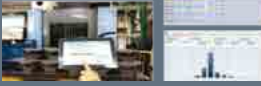
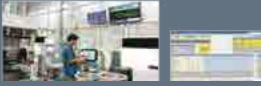


As a Global Top Maker, Mottrol has introduced MES(Manufacturing Execution System) which makes it possible to secure perfect Manufacturing quality and maximize production efficiency. Through the MES system, it ensures the quality, efficiency of overall value chain built by CMMS(Computerized Maintenance Management System), and continues to maintain the best condition of operating facilities in order to meet customer's demand. And Mottrol leads building Smart Factory in overall manufacturing process based on Industry 4.0 strategy.



Suppliers → Machining → Assembly → Performance → Painting → Shipment

WES Server: Automatic data mining & Analysis system, Real time assembly order, Performance data interface, Priority shipping Information, Photography

ERP Server

	ACHIEVING REAL-TIME QUALITY & PRODUCTION RECORD OF ALL PROCESS THROUGH MES			
PROCESS	Machining	Assembly	Performance	Painting
QUALITY COST	 Automatic product order and Record gathering for each machine Synchronized machining operating based on production plan Statistical process control and analysis(Cpk) Systemic tool life cycle control	 Zero defect in process control Work instruction display Management of production efficiency	 Performance result analysis by SPC Performance test process simplification	 Shortening lead time Painting process quality assurance Real-time lot tracking
TARGET	[Process capability] *CTQ Process, Cpk Management	[Total production efficiency] *Improving work efficiency	[Performance test pass rate] *Improving performance test pass rate	[Lead time] *Shortening the product lead time

Main Products

VE / VF Series

VC / VD Series

DSA Series

TSM/T3X Series

DPB Series

DPA Series

DPA-V Series

T5V Series

DPS27

PLS85

MV270

MV450



The VE and VF series provide powerful output torque and smooth operability with verified for high pressure and high reliability.

Features

1) Compact design

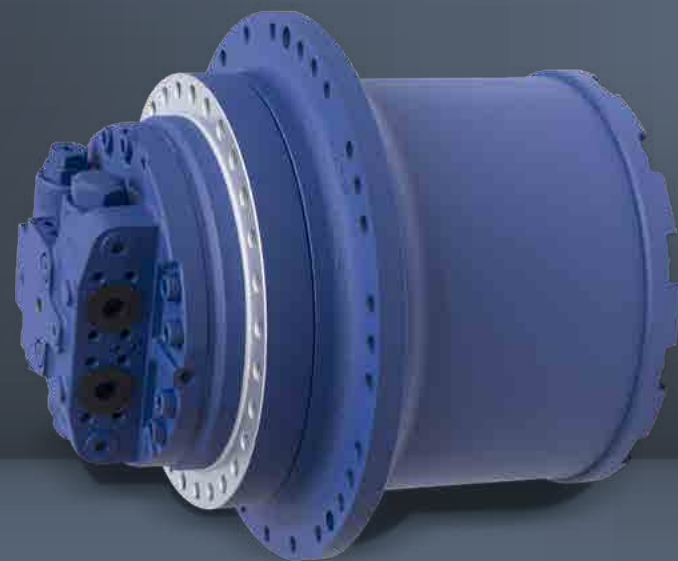
- Reduced weight and total length by optimal design

2) Performance up

- High-pressure design of hydraulic motor
- Enhanced traction with high-starting efficiency
- Improved driving maneuverability with excellent controllability

3) Reliability up

- Verified B5 10,000hr life through severe durability tests
- Improved durability by applying HRFS(High Reliability Floating Seal)



Applications



Excavator



Crawler crane



Crawler drill

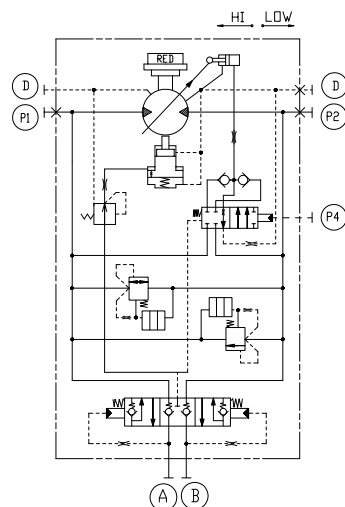


Crusher



Screen

Hydraulic Circuit



Model Information

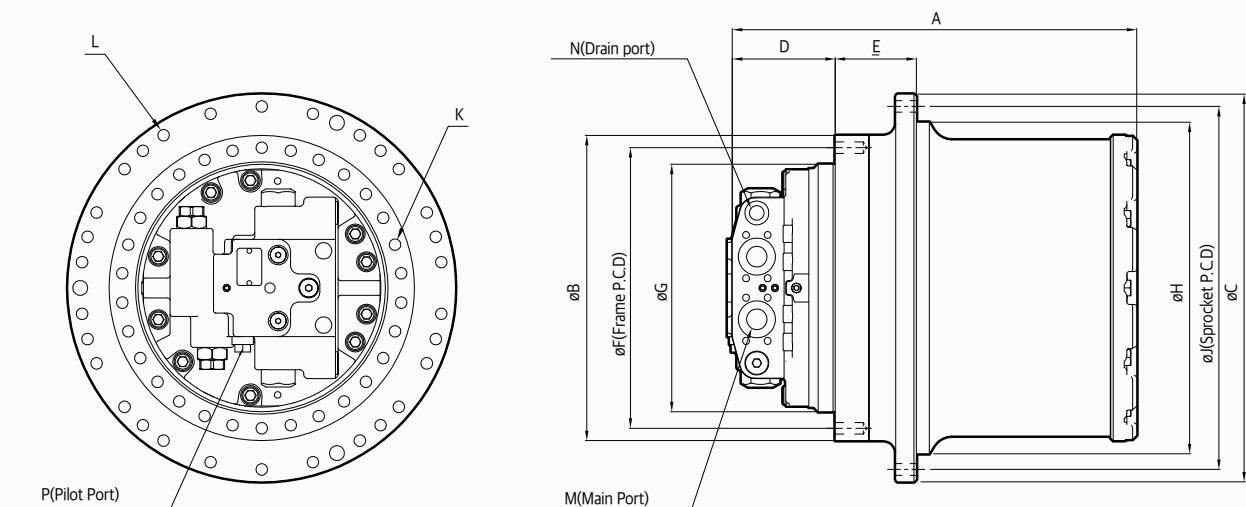


- 1 Type
- 2 Class
- 3 Speed shifting
- 4 Series
- 5 Reduction ratio
- 6 Displacement
- 7 Revision
- 8 Option

Specifications

Model	Travel Device			Hydraulic Motor					Application weight
	Gear ratio(I)	Max. Output torque	Max. Output speed	Min. Displacement	Max. Displacement	Max. Speed	Rated pressure	Brake torque	
	-	N · m	rpm	cm ³ /rev	cm ³ /rev	rpm	MPa	N · m	
DM04VE	48.64	4,340	70	17.3	22.9	4,000	27.5	50	3~4
DM07VE	58.40	8,340	60	30.9	41	3,900	27.5	81	5~6.5
DM12VE	45.97	12,260	60	31.5	55.8	3,900	34.3	150	7~10
DM25VE*	53.71	24,640	65	-	86	3,500	37.3	288	12~14
DM40VE*	49.95	45,600	60	-	174.7	2,800	37.3	489	18~27
DM80VE*	54.47	83,310	45	-	280	2,400	34.3	1,391	38~42
DM100VF	68.23	102,400	40	221	280	2,700	34.3	870	45~55

* Under development



Dimensions

Model	A	B	C	D	E	F (Frame P.C.D)	G	H	J (Sprocket P.C.D)	K (Frame)	L (Sprocket)	M (Main port)	N (Drain port)	P (Pilot port)
DM04VE	247.7	215	255	78	70	192	165	204	232	11-M12XP1.75	9-M12XP1.75	G1/2	G1/4	9/16-18UNF
DM07VE	315.5	246	288	102	75.5	220	180	230	262	14-M14XP2.0	12-M14XP2.0	G1/2	G1/4	G1/4
DM12VE	347.8	280	326	126	80	250	210	265	300	12-M16XP2.0	12-M14XP2.0	G1/2	G3/8	G1/4
DM25VE	401	308	394	129	99.5	280	246	324	364	20-M16X2.0	15-M16X2.0	G3/4	G1/2	G1/4
DM40VE	496	370	470	229	98.5	340	300	402	440	30-M16X2.0	30-M16X2.0	G1	G1/2	G1/4
DM80VE	603	460	570	307	112	425	380	490	535	20-M24X3.0	28-M20X2.5	G1	G1/2	G1/4
DM100VF	668	500	586	207	130	460	420	510	550	26-M24XP3.0	36-M20XP2.5	G-1/4"	G1/2	G1/4

For the purpose of improving products, possible to make design changes without notice.

VC/VD Series

Mottrol's VC and VD series are speed shift travel motors with a gear box, providing powerful output torque, excellent controllability and high reliability.

Features

- 1) Powerful travel device with high performance
- 2) Provides various functions to satisfy customer's requirements
 - Built-in automatic speed shift function
 - Built-in parking brake system
 - Built-in shockless function at start and stop
- 3) Reliable gear box with long life
- 4) Provides advanced technologies to supply value for customers



Applications



Excavator



Crawler crane



Crawler drill

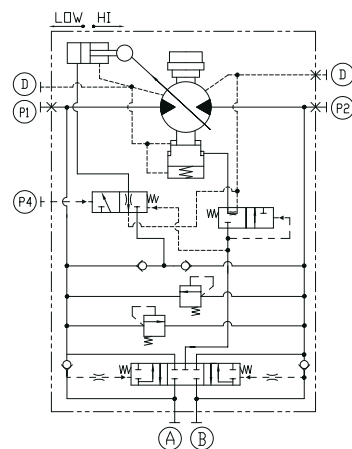


Crusher



Screen

Hydraulic Circuit



Model Information

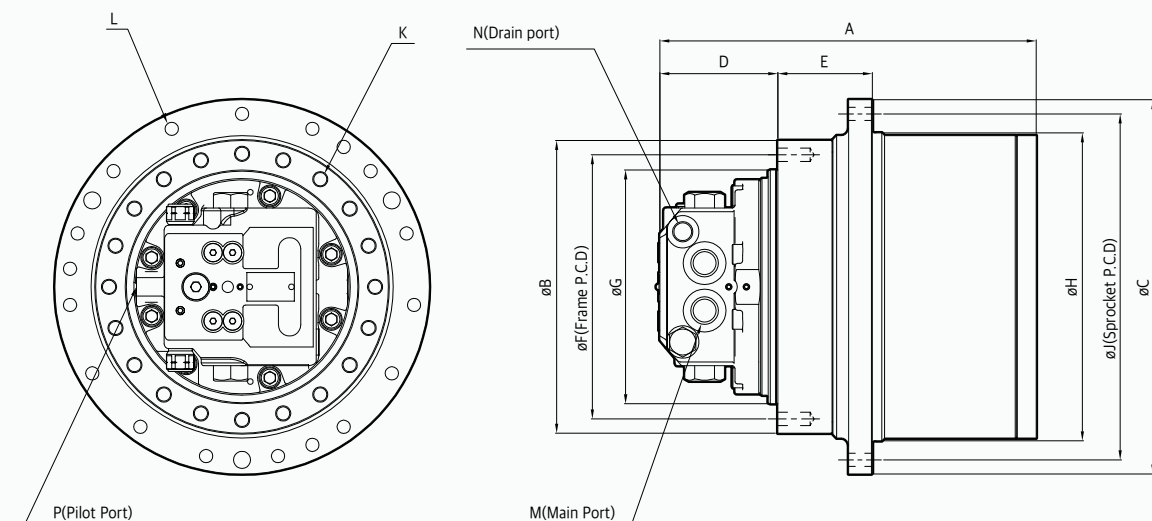
TM 22 V C - A - 43/80 - 1 - FW

1 2 3 4 5 6 7 8

- 1 Type
- 2 Class
- 3 Speed shifting
- 4 Series
- 5 Reduction ratio
- 6 Displacement
- 7 Revision
- 8 Option

Specifications

Model	Travel Device			Hydraulic Motor					Application weight
	Gear ratio(I)	Max. Output torque	Max. Output speed	Min. Displacement	Max. Displacement	Max. Speed	Rated pressure	Brake torque	
	-	N · m	rpm	cm ³ /rev	cm ³ /rev	rpm	MPa	N · m	
TM07VC	53.71	8,340	60	34	55.8	3,900	34.3	100	5~7
DM09VD	45.97	10,790	60	34	55.8	3,900	34.3	150	7~8
TM10VD	54.47	12,250	70	34	55.8	3,900	34.3	110	8~10
TM18VC	53	18,140	60	54	86	3,200	34.3	193	12~14
TM22VC	53.71	23,340	60	54	86	3,300	34.3	290	14~16
TM30VD	39.14	34,200	56	110	158	2,800	34.3	490	15~18
TM40VD	49.95	45,610	60	119	175	2,800	34.3	490	20~26
TM60VD	46.12	68,640	52	221	280	2,400	34.3	870	30~34
TM70VD	54.47	78,400	45	221	280	2,400	34.3	870	36~42



Dimensions

Model	A	B	C	D	E	F (Frame P.C.D)	G	H	J (Sprocket P.C.D)	K (Frame)	L (Sprocket)	M (Main port)	N (Drain port)	P (Pilot port)
TM07VC	348.5	268	306	126	68	244	210	250	282	12-M14XP2.0	12-M14XP2.0	G1/2	G3/8	G1/4
DM09VD	340	280	326	126	80	250	210	265	300	12-M16XP2.0	12-M14XP2.0	G1/2	G3/8	G1/4
TM10VD	356	278	328	123	80	250	210	265	300	12-M16XP2.0	15-M14XP2.0	G1/2	G3/8	G1/4
TM18VC	388.5	308	394	134	99.5	280	246	324	364	20-M16XP2.0	15-M16XP2.0	G3/4	G1/2	G1/4
TM22VC	396	308	394	124	99.5	280	246	324	364	20-M16XP2.0	18-M16XP2.0	G3/4	G1/2	G1/4
TM30VD	467.5	370	432	140.5	99.5	340	300	362	402	30-M16XP2.0	24-M16XP2.0	G3/4	G1/2	G1/4
TM40VD	502.5	370	470	138	98.5	340	300	402	440	30-M16XP2.0	30-M16XP2.0	G1, SAE 1"	G1/2	G1/4
TM60VD	553	460	525	166	112	425	380	450	490	30-M20XP2.5	28-M20XP2.5	SAE 1"	G1/2	G1/4
TM70VD	553	460	525	166	112	425	380	450	490	24-M24XP3.0	32-M20XP2.5	SAE 1"	G1/2	G1/4

For the purpose of improving products, possible to make design changes without notice.

SWING DEVICE

DSA Series

The DSA series provide high torque capacity, compactness and fine operability by built-in function valves.

Features

- 1) Compact design
 - Reduced weight and total length by optimal design
- 2) Performance up
 - High-pressure design of hydraulic motor
 - High-torque capacity design of reduction gear box
 - Enhanced swing with high-starting efficiency
- 3) Reliability up
 - Verified B5 10,000hr life through severe durability tests
 - Improved durability by applying long life bearing

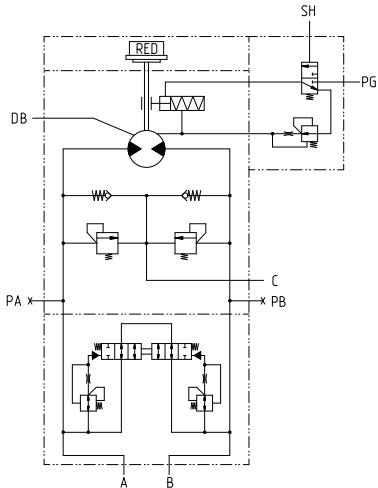


Applications



Excavator

Hydraulic Circuit



Model Information

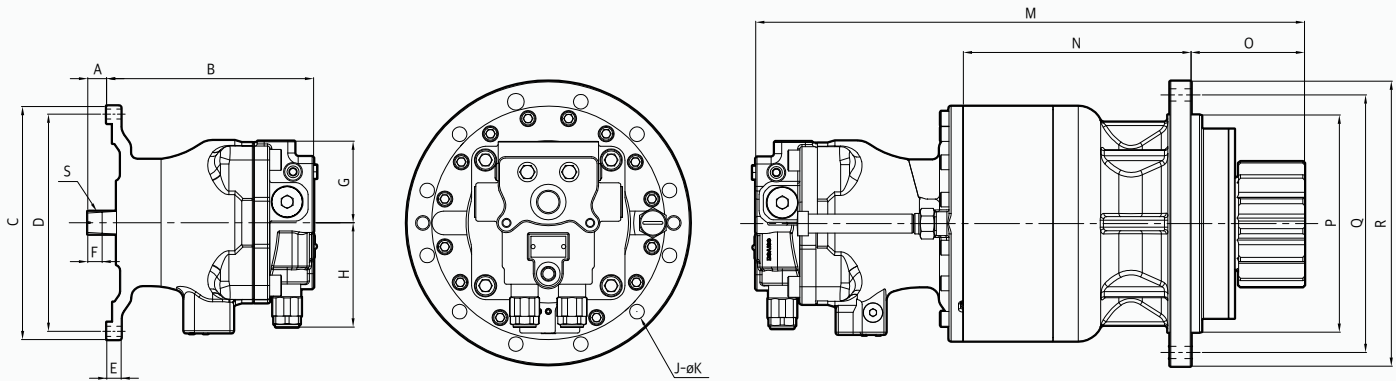
DSA 160 - 149 - IRV

- 1 Type
- 2 Class
- 3 Displacement
- 4 Anti reaction valve code

Specifications

Model	Swing Device			Hydraulic Motor				Application weight
	Gear ratio(I)	Max. Output torque	Max. Output speed	Max. Displacement	Max. Speed	Rated pressure	Brake torque	
	-	N · m	rpm	cm³/rev	rpm	MPa	N · m	
DSA80*	20.00	7,550	110	79.1	2,200	34.3	497	14~16
DSA160	20.04	16,300	85	149	1,750	34.3	1,040	20~24

* Under development



Dimensions

Model	A	B	C	D	E	F	G	H	S	J - Øk	M	N	O	P	Q	R
DSA80	143	513	323	290	22	24.5	97	161	m=1.5, z=20	12 - Ø13	656	252.5	119	Ø220	Ø290	Ø323
DSA160	36.5	301	Ø335	Ø305	18.5	34.5	117	150	m=2.0, z=20	11 - Ø21	788	325	162	Ø310	Ø360	Ø407

For the purpose of improving products, possible to make design changes without notice.

TSM/T3X Series

The TSM/T3X series have various functions (anti-shock relief valve, anti-cavitation valve, anti-reaction valve etc.) to ensure high performance and good feeling of operation.

Features

- 1) Powerful swing device with high performance
- 2) Provides various functions to satisfy customer's requirements
 - Built-in anti-shock relief valve
 - Built-in time delay valve
 - Built-in anti-cavitation valve with make-up function
 - Built-in anti-reaction valve
- 3) Reliable reduction gear box with long life

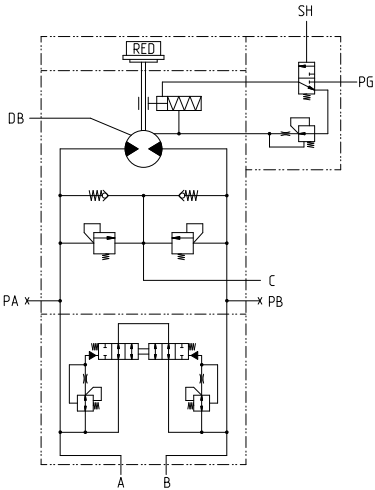


Applications



Excavator

Hydraulic Circuit



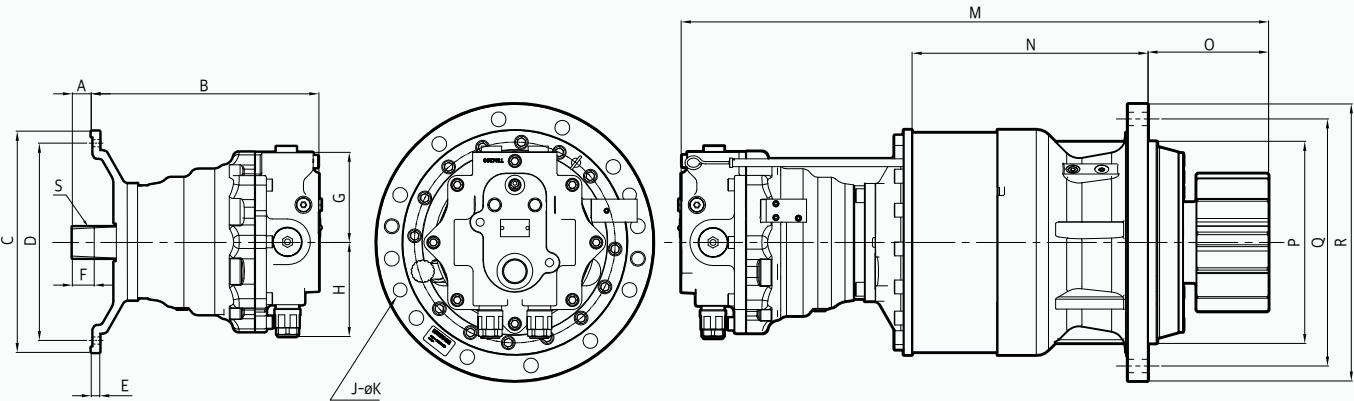
Model Information

TSM **140** **CH** - **B** **IRV**

- 1 Type
- 2 Displacement
- 3 Hydraulic circuit code
- 4 Time delay valve
- 5 Anti reaction valve code

Specifications

Model	Swing Device			Hydraulic Motor					Application weight
	Gear ratio(I)	Max. Output torque	Max. Output speed	Min. Displacement	Max. Displacement	Max. Speed	Rated pressure	Brake torque	
	-	N · m	rpm	cm³/rev	cm³/rev	rpm	MPa	N · m	
TSM32-RG250	19.46	2,450	100	25	31.5	1,600	24.5	137	5~6
TSM56-RG400	19.46	3,920	85	46	55.8	1,600	24.5	177	7~8
TSM86-RG700	19.04	6,870	80	64	86	2,200	29.4	412	13~17
TSM140-RG1600	21.58	15,700	75	128	140.5	1,700	33.3	696	17~23
T3X170-RG2000	24.74	19,600	70	155	169.4	1,500	29.4	696	25~30
TSM260-RG2400	19.57	23,500	70	240	278.8	1,400	29.4	1,315	34~42
TSM260-RG2700	21.97	26,500	65						



Dimensions

Model	A	B	C	D	E	F	G	H	S	J - øK	M	N	O	P	Q	R
TSM32-RG250	16.7	140.5	ø200	ø203	15	20.5	72	108.5	16/32 DP, z=15	6 - ø17	367	129	97	ø175	ø220	ø248
TSM56-RG400	16.7	205	ø235	ø210	15	20.5	66	102.5	16/32 DP, z=15	7 - ø17	438	153	106	ø200	ø275	ø303
TSM86-RG700	17	282	ø288	ø260	19	25	96	168	m=1.667, z=16	9 - ø18	653	228.5	136	ø200	ø290	ø323
TSM140-RG1600	31.5	301.5	ø307	ø282	20.5	34.5	117	169	m=2.5, z=16	11 - ø21	808	344	162	ø310	ø360	ø407
T3X170-RG2000	19	306	ø382	ø344	20	28	117	169	m=2.5, z=16	12 - ø25.5	894.5	392.5	184	ø350	ø430	ø480
TSM260-RG2400	57.5	344	ø183	ø162	18	39.5	99.5	166	m=2.5, z=20	12 - ø25.5	1,002	472.5	194	ø350	ø430	ø480
TSM260-RG2700	57.5	344	ø183	ø162	18	39.5	99.5	166	m=2.5, z=20	12 - ø25.5	1,002	472.5	194	ø350	ø430	ø480

For the purpose of improving products, possible to make design changes without notice.

MAIN PUMP

DPB Series

The DPB series provides high capacity, high reliability and high performance with various controls for mobile applications such as excavators, cranes, etc.

Features

1) Increased Displacement

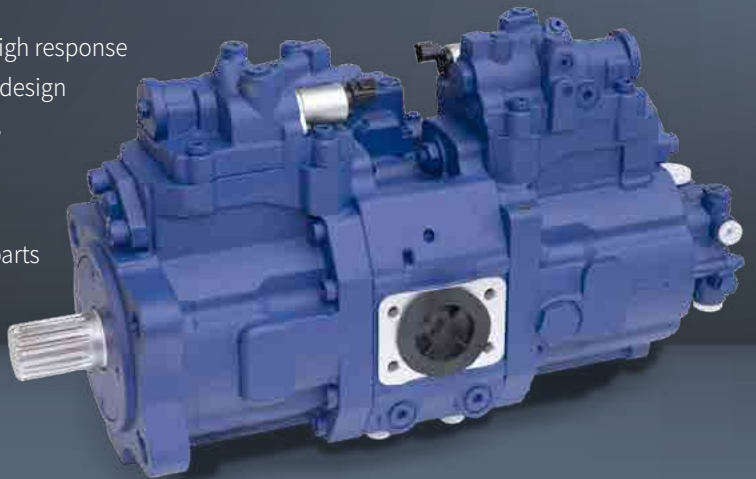
- Increased 10% from DPA117 for engine speed down
- Possible to match customer requirements on faster operating speed of machine

2) High Performance

- Developed new regulator with low hysteresis and high response
- Reduced pressure pulsation by optimal valve plate design
- Improved efficiency by optimization of sliding parts

3) High Reliability

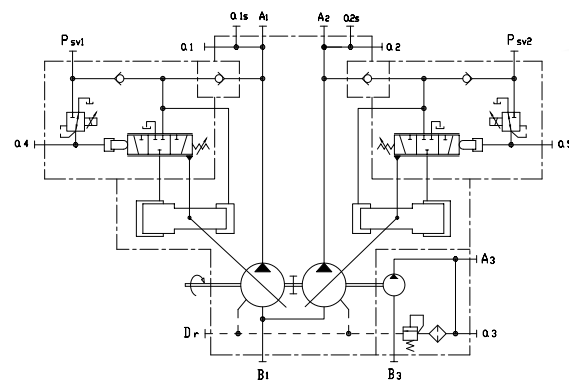
- Increased bearing capacity
- Improved reliability by stronger design of rotating parts
- Applied metal sealing plug to prevent oil leakage



Applications



Hydraulic Circuit



Model Information

DPB 125 - T S 4 D - 2 N - CO1

- 1 Type

2 Displacement

3 PUMP code (Tandem, Parallel, Single)

4 PTO code

5 Pilot gear pump code
- 6 EPPR valve code

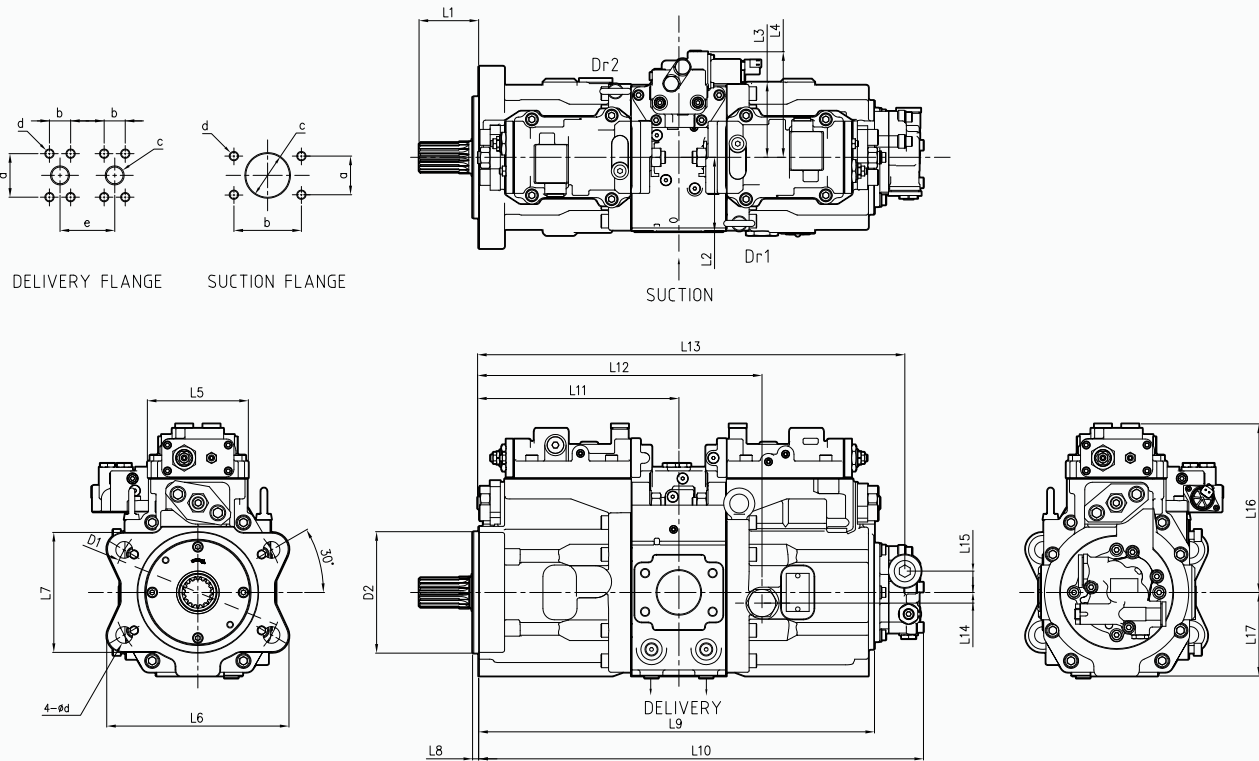
7 Power control code

8 Flow control code

9 Design code

Specifications

Model	Max. Displacement	Rated pressure	Max. Pressure	Max. Speed for self priming	Max. Input torque	Application weight	Remarks	Weight
	cm³/rev	MPa	MPa	rpm	N · m	Ton		kgf
DPB125	130 X 2	34.3	39.2	2,380	910	20~25	Tandem type	124
DPB140	140 X 2	34.3	39.2	2,320	910	26~30	Tandem type	124



Dimensions

Model	D1	D2	d	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17
DPB125	ø224	ø160	ø22	78	98	95	139	133	240	158	8	521	586	263	373	561	14	28	229	110
DPB140	ø224	ø160	ø22	78	98	95	139	133	240	158	8	521	586	263	373	561	14	28	229	110

Flange mounting face for delivery port

Model	a	b	c	d	e
DPB125	57.2	27.8	ø25	M12-22	72
DPB140	57.2	27.8	ø25	M12-22	72

Flange mounting face for suction port

Model	a	b	c	d
DPB125	50.8	88.9	ø60	M12-18
DPB140	50.8	88.9	ø60	M12-18

Dimensions of shaft end

Model	No. of teeth	Pitch circle dia	Pressure angle	Module	Rule
DPB125	14	35.0	20°	2.5	JIS D2001
DPB140	17	42.5	20°	2.5	JIS D2001

For the purpose of improving products, possible to make design changes without notice.

MAIN PUMP

DPA Series

The DPA series provides low pulsation, low-noise, high efficiency and high reliability with various controls for excavators.

Features

1) Compact Design

- The total length of DPA series is 30% shorter than T5V series pumps
- Possible to match customer requirements on faster operating speed of machine

2) Various kinds of controls

- Power control, Power shift control, Negative flow control, Positive flow control, Electric flow control, Electric pressure control

3) Low Noise

- Applied PCU(Pressure Control Unit) device to minimize pressure pulsation
- Improved the stiffness of main casing to reduce sound level
- Improved the low pulsation by optimal design of valve plate

4) High Reliability

- Applied copper alloy between swash plate and support
- Applied mono type casing to reduce the possibility of external leakage and vibration
- Improved the strength of rotary parts



Applications

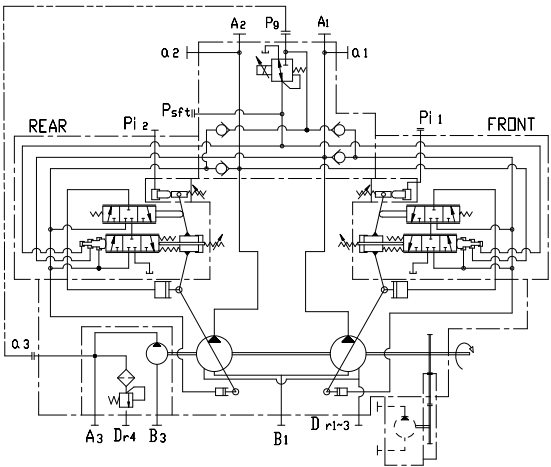


Excavator

Crawler crane

Crawler drill

Hydraulic Circuit



Model Information

DPA 140 T - S S 4 D - 2 N 1T

- 1 Type

2 Displacement

3 T - Tandem type double pump with mounting cover
- 4 PTO code

5 PCU code

6 Pilot gear pump code

7 EPPR valve code

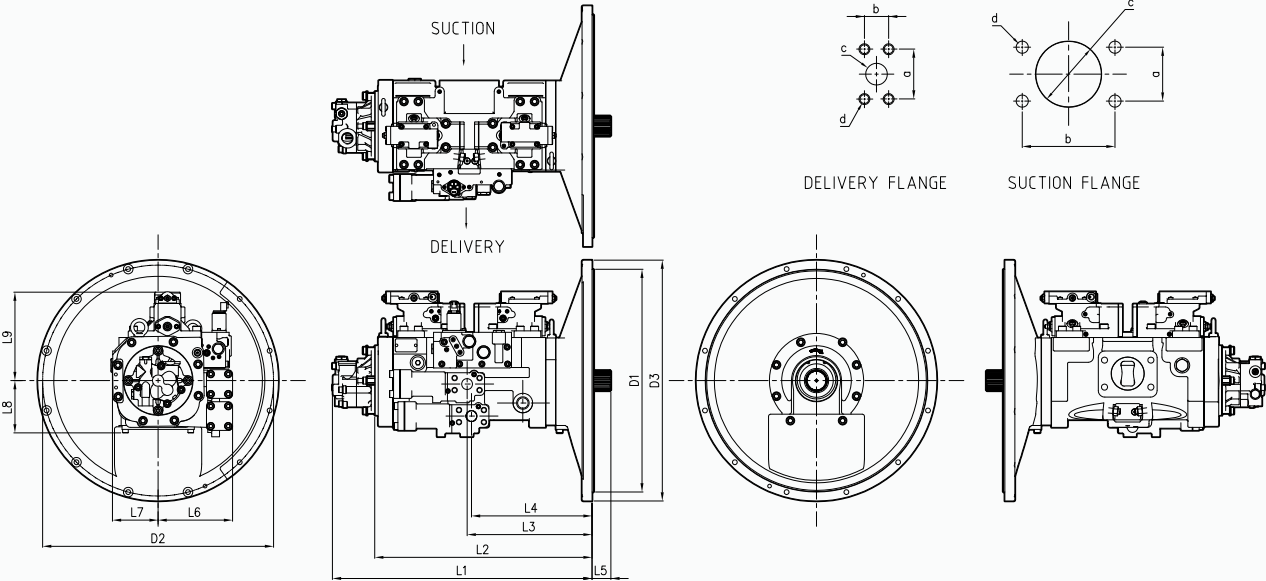
8 Power control code

9 Flow control code

10 Design code

Specifications

Model	Max. Displacement	Rated pressure	Max. Pressure	Max. Speed for self priming	Max. Input torque	Application weight	Remarks	Weight
	cm ³ /rev							kgf
DPA63	63 X 2	34.3	39.2	2,600	422	12 ~ 16	Tandem type	95
DPA90	90 X 2	34.3	39.2	2,520	618	14 ~ 18	Tandem type	106
DPA117	117 X 2	34.3	39.2	2,450	637	20 ~ 25	Tandem type	117
DPA140	140 X 2	34.3	39.2	2,400	882	26 ~ 30	Tandem type	143



Dimensions

Model	D1	D2	D3	L1	L2	L3	L4	L5	L6	L7	L8	L9
DPA63	ø409.6	ø428.6	ø450	507	432	261	231	49.5	153	91	120	194
DPA90	ø409.6	ø428.6	ø450	530	455	289	225	55	157	93	120	199
DPA117	ø409.6	ø428.6	ø450	548	452	287	223	55	157	93	120	199
DPA140	ø511.2	ø530.2	ø553	595	499	287	277	43	171	104	120	208

Flange mounting face for delivery port

Model	a	b	c	d
DPA63	50.8	23.8	ø19	M10-16
DPA90	57.2	27.8	ø25	M12-22
DPA117	57.2	27.8	ø25	M12-22
DPA140	57.2	27.8	ø25	M12-22

Flange mounting face for suction port

Model	a	b	c	d
DPA63	50.8	88.9	ø60	M12-18
DPA90	50.8	88.9	ø60	M12-18
DPA117	50.8	88.9	ø60	M12-18
DPA140	61.9	106.4	ø75	M16-24

Dimensions of shaft end

Model	No. of teeth	Pitch circle dia	Pressure angle	Module	Rule
DPA63	12	30	20°	2.5	JIS D2001
DPA90	12	30	20°	2.5	JIS D2001
DPA117	14	35	20°	2.5	JIS D2001
DPA140	17	42.5	20°	2.5	JIS D2001

For the purpose of improving products, possible to make design changes without notice.

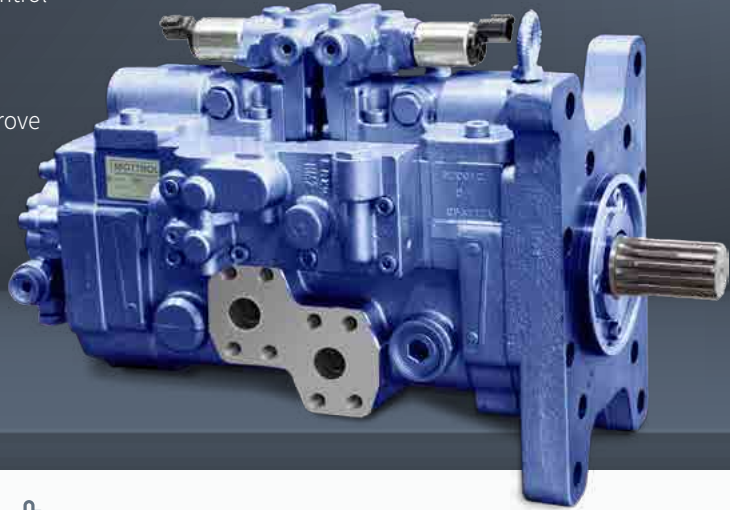
MAIN PUMP

DPA-V Series

The DPA-V series provides high power density, low-noise, high efficiency and high reliability with various controls for excavators.

Features

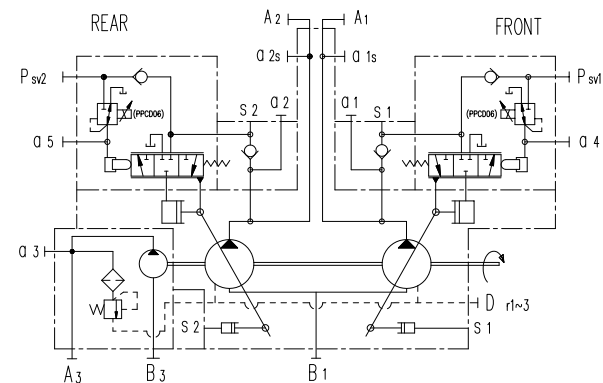
- 1) High Power Density
- Reduced pump weight and size through structure optimization
- 2) Various kinds of controls
- Power control, Power shift control, Negative flow control, Positive flow control, Electric flow control, Electric pressure control
- 3) Low Noise
- Optimized valve plate to minimize pressure pulsation
- Reduced sound level at high frequency region to improve sound quality
- 4) High Efficiency & Long Life
- Shoe and swash plate bearing to decrease leakage loss
- Improved tensile strength of shoe material



Applications



Hydraulic Circuit



Model Information

DPA 117 V - O N 8 D - 2 N 1A

1

2

3

4

5

6

7

8

9

10

- 1

Type
- 2

Displacement
- 3

V-Tandem type double pump without mounting cover
- 4

PTO code
- 5

PCU code
- 6

Pilot gear pump code
- 7

EPPR valve code
- 8

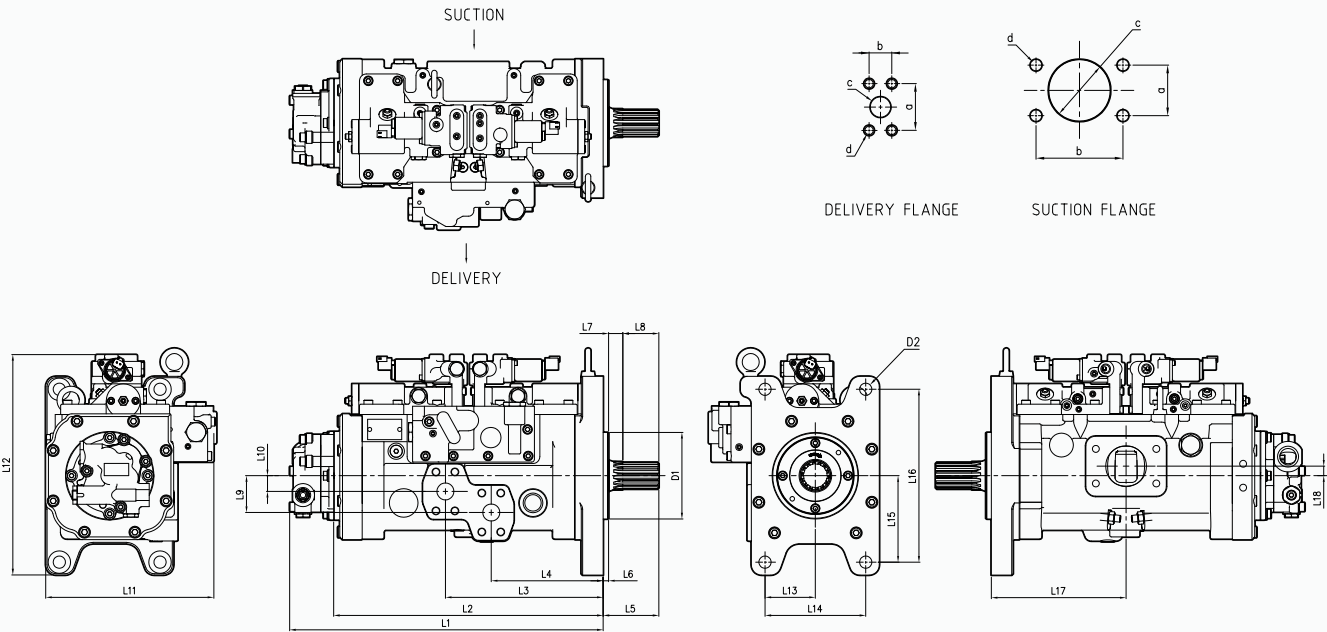
Power control code
- 9

Flow control code
- 10

Design code

Specifications

Model	Max. Displacement	Rated pressure	Max. Pressure	Max. Speed for self priming	Max. Input torque	Application weight	Remarks	Weight
	cm ³ /rev		MPa		N · m			kgf
DPA117V	117 X 2	34.3	39.2	2,450	637	20 ~ 25	Tandem type	91
DPA140V	140 X 2	34.3	39.2	2,400	882	26 ~ 30	Tandem type	114



Dimensions

Model	D1	D2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18
DPA117V	ø127	ø18	459	396	231.5	164.5	78	8	15	63	21	53	251	341	74	148	127	254	198	14
DPA140V	ø160	ø22	514	439	225	215	78	10	13.5	48	8	81.5	318	312	125	250	72	144	220	16

Flange mounting face for delivery port

Model	a	b	c	d
DPA117V	57.2	27.8	ø25	M12-22
DPA140V	57.2	27.8	ø25	M12-22

Flange mounting face for suction port

Model	a	b	c	d
DPA117V	60	88.9	ø50.8	M12-18
DPA140V	75	106.4	ø61.9	M16-24

Dimensions of shaft end

Model	No. of teeth	Pitch circle dia	Pressure angle	Module	Rule
DPA117V	14	35.0	20°	2.5	JIS D2001
DPA140V	17	42.5	20°	2.5	JIS D2001

For the purpose of improving products, possible to make design changes without notice.

MAIN PUMP

T5V Series

The T5V series are swash plate type hydraulic pumps, which provides high durability and good efficiency with various controls for construction and industrial machines.

Features

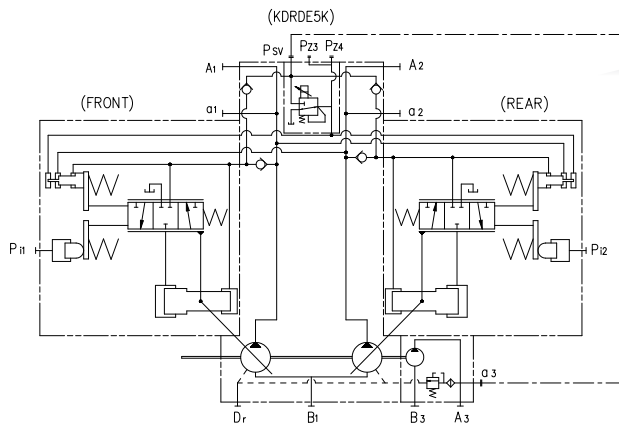
- 1) High durability with high strength bearing and anti-wear design
- 2) Low pulsation by optimal design of rotary parts
- 3) Various kinds of controls
 - Flow control, Power control,
 - Power shift control, Electric control
- 4) Available to various attachments through optional high pressure gear pump



Applications



Hydraulic Circuit



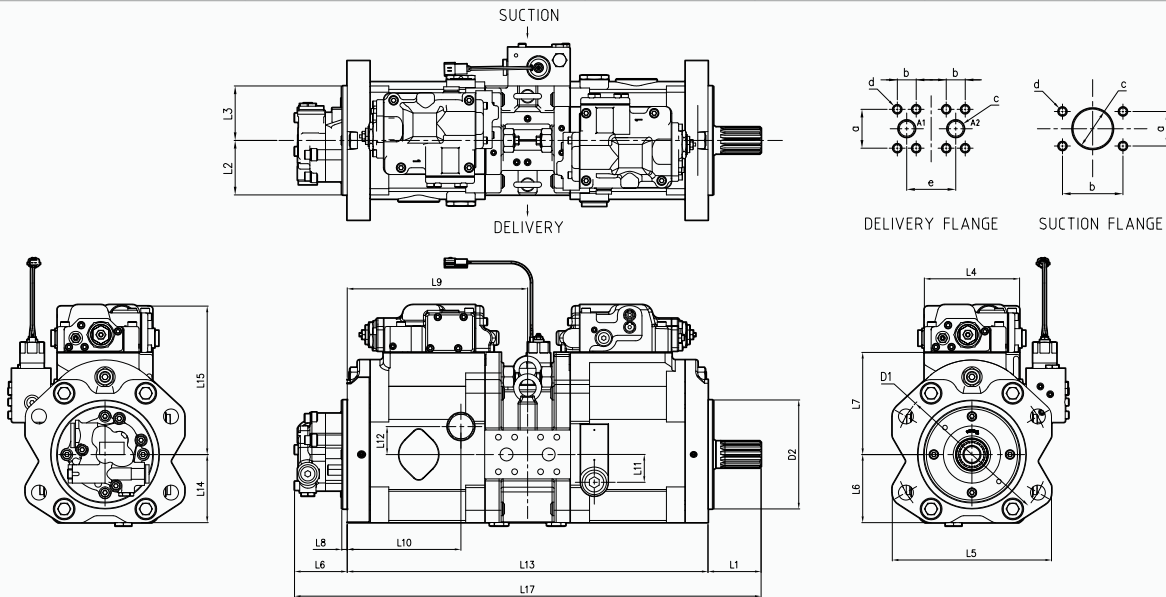
Model Information

T5V 112 DP - 1P2 R - 9N 1T

- 1 T5V series
- 2 Displacement
- 3 DP - Double pump, DPP - Double pump + PTO
- 4 Design code
- 5 R - Clockwise rotation, L - Counter clockwise rotation
- 6 Regulator code for control
- 7 Design code of regulator

Specifications

Model	Max. Displacement	Rated pressure	Max. Pressure	Max. Speed for self priming	Max. Input torque	Application weight	Weight
	cm ³ /rev	MPa	MPa	rpm	N · m	Ton	kgf
T5V63	63 X 2	34.3	39.2	2,650	343	12~16	87
T5V80	80 X 2	34.3	39.2	2,460	529	14~18	87
T5V112	117 X 2	34.3	39.2	2,360	588	20~25	129
T5V140	140 X 2	34.3	39.2	2,150	1,120	26~30	172



Dimensions

Model	D1	D2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17
T5V63	ø180	ø125	76	70	70	140	190	89	98	8	228	138	37	37	464	97	195	78	618
T5V80	ø180	ø125	76	70	70	140	190	89	98	8	228	138	37	37	464	97	195	78	618
T5V112	ø224	ø160	78	80	80	140	234	100	110	8	265	167	41	41	538	109	220	78	694
T5V140	ø250	ø180	93	92	92	140	256	112	123	8	305	190	53	53	618	121	245	80	791

Flange mounting face for delivery port

Model	a	b	c	d	e
T5V63	50.8	23.8	ø19	M10-16	62
T5V80	50.8	23.8	ø19	M10-16	62
T5V112	57.2	27.8	ø25	M12-22	76
T5V140	57.2	27.8	ø25	M12-22	76

Flange mounting face for suction port

Model	a	b	c	d
T5V63	50.8	88.9	ø60	M12-18
T5V80	50.8	88.9	ø60	M12-18
T5V112	50.8	88.9	ø60	M12-18
T5V140	61.9	106.4	ø76	M16-24

Dimensions of shaft end

Model	No. of teeth	Pitch circle dia	Pressure angle	Module (DP)	Rule
T5V63	14	29.6	30°	(12/24)	SAE
T5V80	12	30	20°	2.5	JIS D2001
T5V112	12	30	20°	2.5	JIS D2001
T5V140	17	42.5	20°	2.5	JIS D2001

For the purpose of improving products, possible to make design changes without notice.

MAIN PUMP

DPS27

The DPS27, which is duplex swash plate pump, provides superior work performance with it's compact size and high efficiency.

Features

- 1) Double pump with one cylinder block
- 2) Compact size with simple casing structure design
- 3) Excellent durability by adopting high strength bearings and anti-wear design
- 4) Low pulsation by optimal design of rotary parts
- 5) Power shift control using EPPR valve(option)



Applications

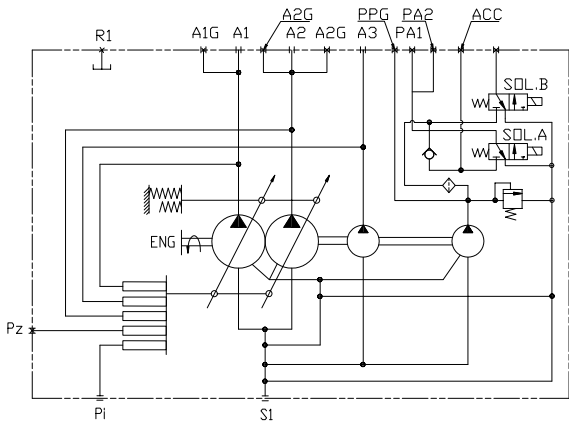


Excavator

Crawler crane

Crawler drill

Hydraulic Circuit



Model Information

DPS27 **X** - **X** **X** **X** **X** - **X** **XXX**

- 1 Model name

 - 27 : Max. Displacement of piston pump
- 2 Adding control options

 - P : Proportional power control
 - F : Flow control
 - E : Electric control
- 3 P3 Gear pump displacement

 - 6 : 16.2cc
 - 8 : 18.2cc
- 4 P4 Gear pump displacement

 - F : 4.5cc
 - S : 6.5cc
 - N : 9.5cc
- 5 Option1

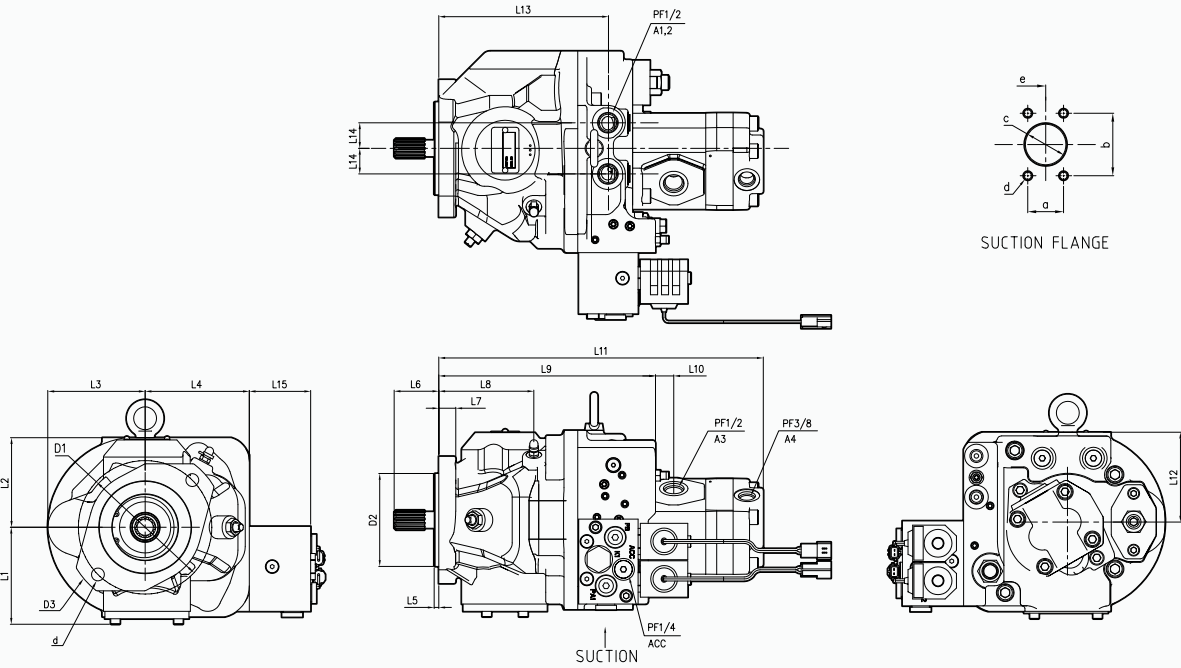
 - N : without 2 solenoid valve
 - S : with 2 solenoid valve
 - P : with EPPR valve
- 6 Option 2

 - 0 : Power control
 - Z : Power control +On/Off power shift(10%)
- 7 Design code 1

 - C : Crawler type
 - W : Wheel type
 - I : Industrial use
- 8 Design code 2

Specifications

Model	Max . Displacement	Rated pressure	Max. Pressure	Max. Speed for self priming	Max. Input torque	Hydraulic fluid		Weight
	cm³/rev		MPa			Oil temp. range	Oil viscosity range	
P1, P2 Piston pump	27.5 X 2	24.5	27.4	2,700	172	-20 ~ +95°C	10 ~ 1,000 cSt	40
P3 Gear pump	16.2/18.2	21.5	24.5					
P4 Gear pump	4.5/6.5	3.9	4.3					



Dimensions

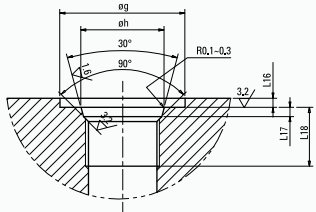
Model	D1	D2	D3	d	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15
DPS27	ø146	ø101.6	ø175	ø14	106	98	106	114	5	48.8	18.5	104	237	20	355	93.5	185	28	67

Flange mounting face for suction port

Model	a	b	c	d	e
DPS27	35.7	69.9	ø40	M12-18	181.2

Delivery port

Port size	g	h	L16	L17	L18	O-ring
PF 1/4	ø24	ø15.6	1.5	2.5	15	P11
PF 3/8	ø28	ø18.6	2.0	2.5	15	P14
PF 1/2	ø34	ø22.6	2.5	2.5	19	P18



Dimensions of shaft end

Model	No. of teeth	Pessure angle	Diameter Pitch	Major diameter	Minor diameter	Rule
DPS27	13	30°	16/32	ø21.8	ø18.63	SAE

For the purpose of improving products, possible to make design changes without notice.

MAIN PUMP

DPLS85

The DPLS85 is a load sensing pump, which provides high efficiency and high reliability with various controls including pressure cut-off control and electric control.

Features

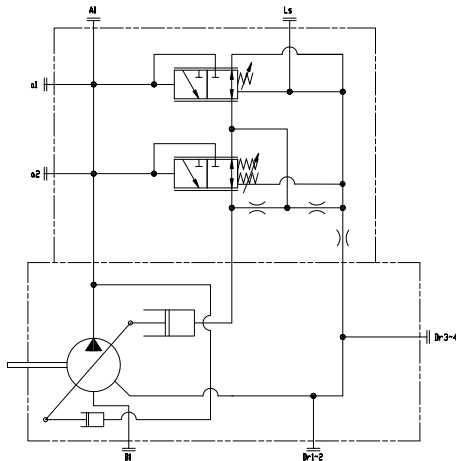
- 1) High-efficiency by optimal design of rotary parts
- 2) Applied mono casing type combined with main case and valve block
- 3) Applied large capacity bearings to improve life time and durability
- 4) Strong control stability and rapid dynamic response
- 5) Provide various controls(flow control, pressure cut-off, power control, power shift control, electric control)



Applications



Hydraulic Circuit



Model Information

DPLS **85** - **S** **2** **2** **1T**

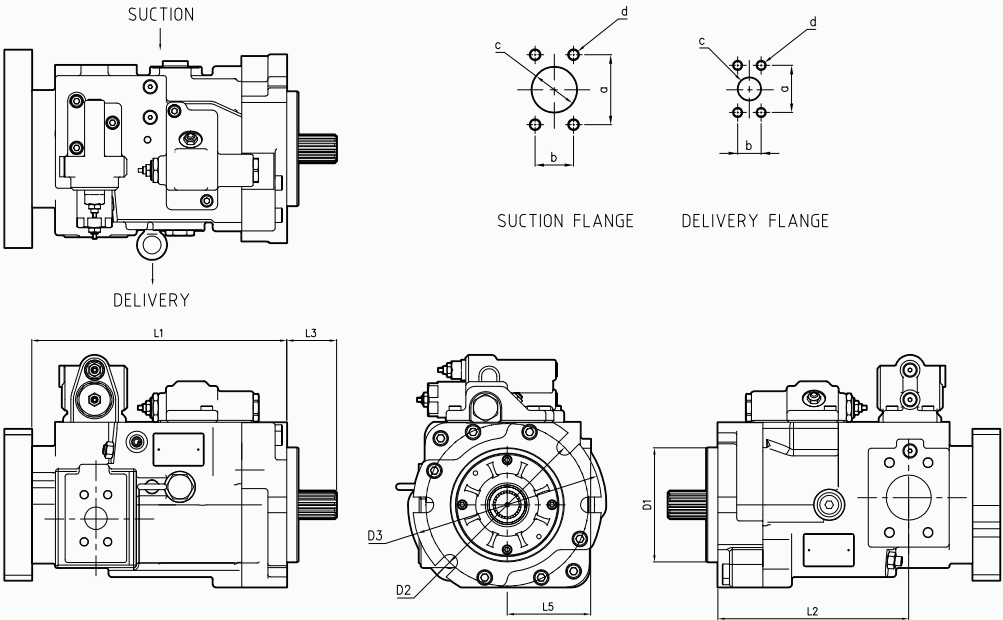
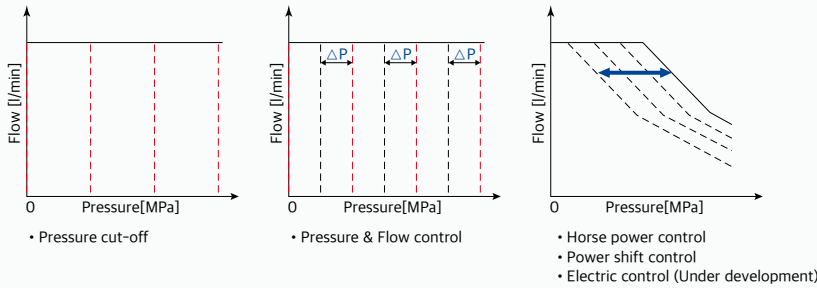
1 2 3 4 5 6

- 1 Type
- 2 Displacement
- 3 Control type
- 4 Connect option
- 5 Power shift
- 6 Design code

Specifications

Model	Max. Displacement	Rated pressure	Max. Pressure	Max. Speed for self priming	Max. Input torque	Application weight	Remarks	Weight
	cm ³ /rev							kgf
DPLS	85	31.4	34.3	2,700	424	7~8	Load sensing	47

Control option



Dimensions

Model	D1	D2	D3	L1	L2	L3	L4	L5	L6	L7
DPLS85	ø127	ø181	ø210	284	212.5	55.4	100	98	91.5	161

Flange mounting face for delivery port

Model	a	b	c	d
DPLS85	52.4	26.2	ø25	M10-17

Flange mounting face for suction port

Model	a	b	c	d
DPLS85	77.8	42.9	ø50	M12-17

Dimensions of shaft end

Model	No. of teeth	Pitch circle dia	Pressure angle	Module	Rule
DPLS85	14	29.6	30°	12/24	SAE J744

For the purpose of improving products, possible to make design changes without notice.

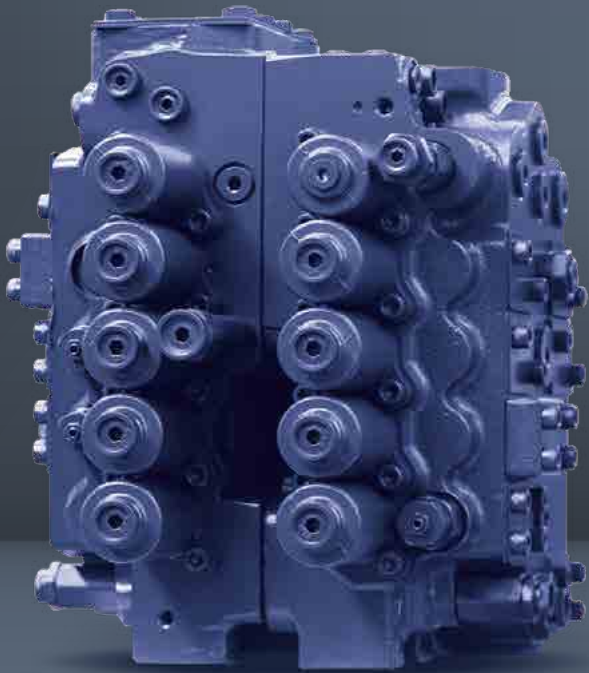
MAIN CONTROL VALVE

MV270

The MV270 provides the excellent controllability and reliability with various priority functions for 20~30ton excavators.

Features

- 1) 2-Block Type MCV
- 2) Various priority functions
- 3) Built-in Bucket conflux function for bucket speed up
- 4) Overload relief valve with make-up function
- 5) Long life with high reliability

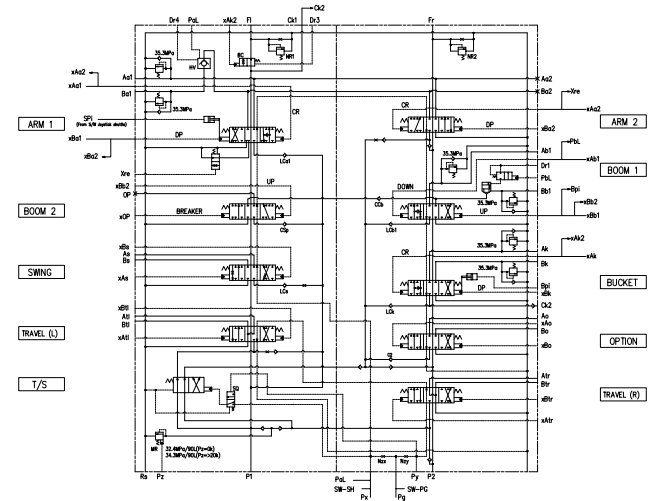


Applications



Excavator

Hydraulic Circuit



Model Information

MV 270 - NC 34 T - D 22

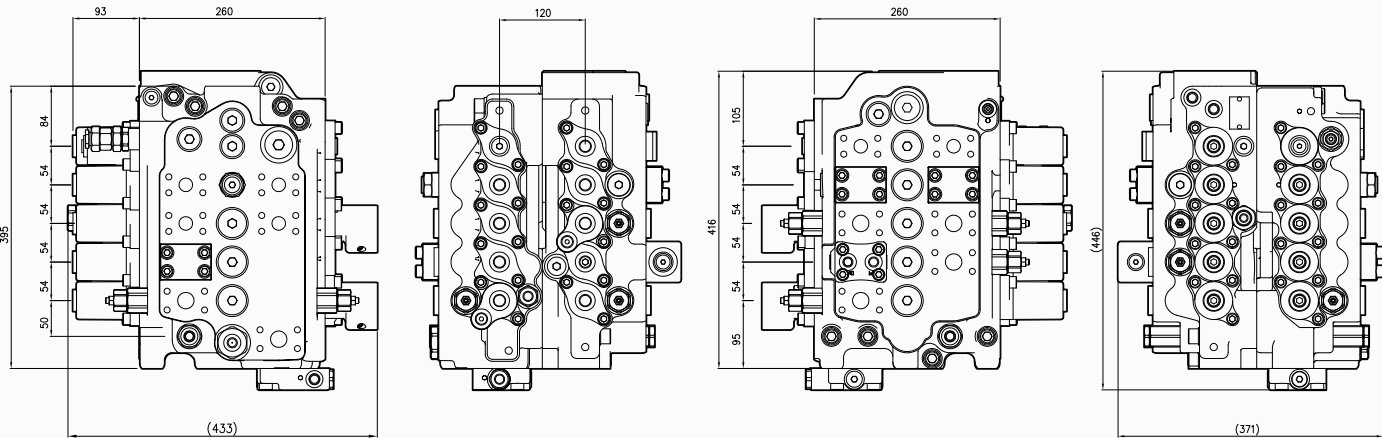
① ② ③ ④ ⑤ ⑥ ⑦

- ① Series
- ② Rated flow
- ③ System type: NC(Negative control)/PC(Positive control)
- ④ Rated pressure
- ⑤ Block type : T(Two block type)
- ⑥ Customer code
- ⑦ Ton of Excavator : 20~30ton

Specifications

Items		Specifications	Basic	Option	Remark	
Control type		Negative / Positive	●	●		
Rated	Pressure	34.3 MPa @ 90 lpm	●	●	Max. 36.3 MPa	
	Flow	270 lpm x 2	●	●		
Overload relief valve	Front	35.3 MPa @ 20 lpm	●	●	Max. 39.2 MPa	
	Option	24.5 MPa @ 20 lpm	-	●		
Priority function	Swing+Boom	Priority valve	●	●		
	Swing+Arm	Priority valve	-	●		
	Boom+Arm	① AM2 fixed orifice	①	②		
		② Priority valve				
	Boom+Bucket	Stroke limiter	-	●		
Travel + Front	Travel straight(TS)	●	●			
Conflux	Bucket / Option	BC Cut (External)	●	●		
	Boom	Internal(BM1+BM2)	●	●		
	Arm	Internal(AM1+AM2)	●	●		
Spool regen	Boom/Arm	Spool internal type	●	●		
	Bucket	Spool internal type	-	●		
Arm regen valve		① External pressure type ② Internal pressure type	①	②		
Holding valve	Boom	Internal type	●	●		
	Arm	Internal type	●	●		
Durability	Main relief valve	B5 10,000	●	●		
	Overload relief valve	B5 10,000	●	●		
	Housing	B5 10,000	●	●		
	Operation durability	B5 10,000	●	●		

Dimensions



For the purpose of improving products, possible to make design changes without notice.

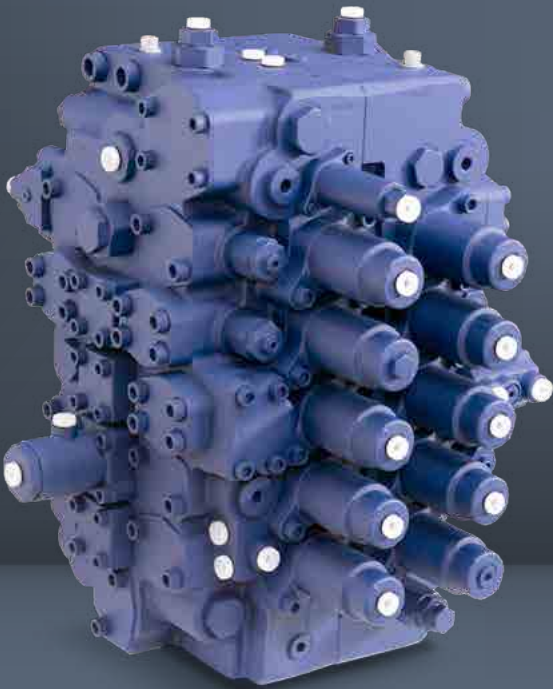
MAIN CONTROL VALVE

MV450

The MV450 provides the excellent controllability and reliability with low pressure loss, full electric control for 34~70ton excavators.

Features

- 1) Provide excellent single and combined operations
- Various priority functions(swing priority, arm priority, straight travel etc.)
 - Possible to tune the optimized operation according to applications (tuning technique)
- 2) Low fuel consumption
- Reduced pressure loss
 - Provides full electric control function (optional)
- 3) Long life with high reliability

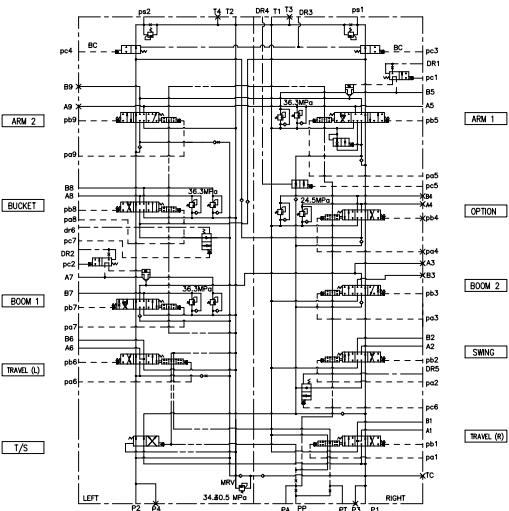


Applications



Excavator

Hydraulic Circuit



Model Information

MV 450 - NC 34 T - D 36

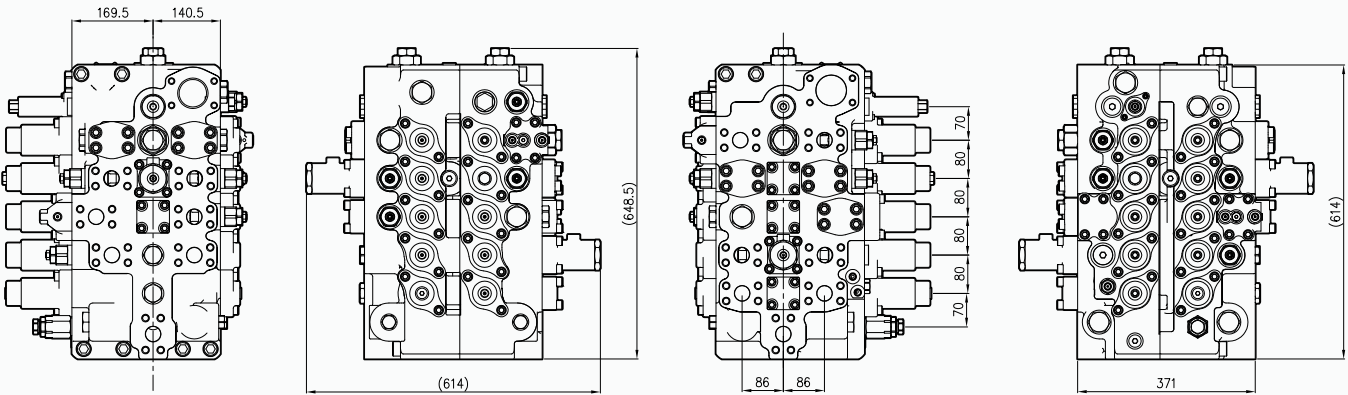
① ② ③ ④ ⑤ ⑥ ⑦

- ① Series
- ② Rated flow
- ③ System type: NC(Negative control)/PC(Positive control)/FEH (Full Electro Hydraulic)
- ④ Rated pressure
- ⑤ Block type : T(Two block type)
- ⑥ Customer code
- ⑦ Ton of Excavator : 34~70ton

Specifications

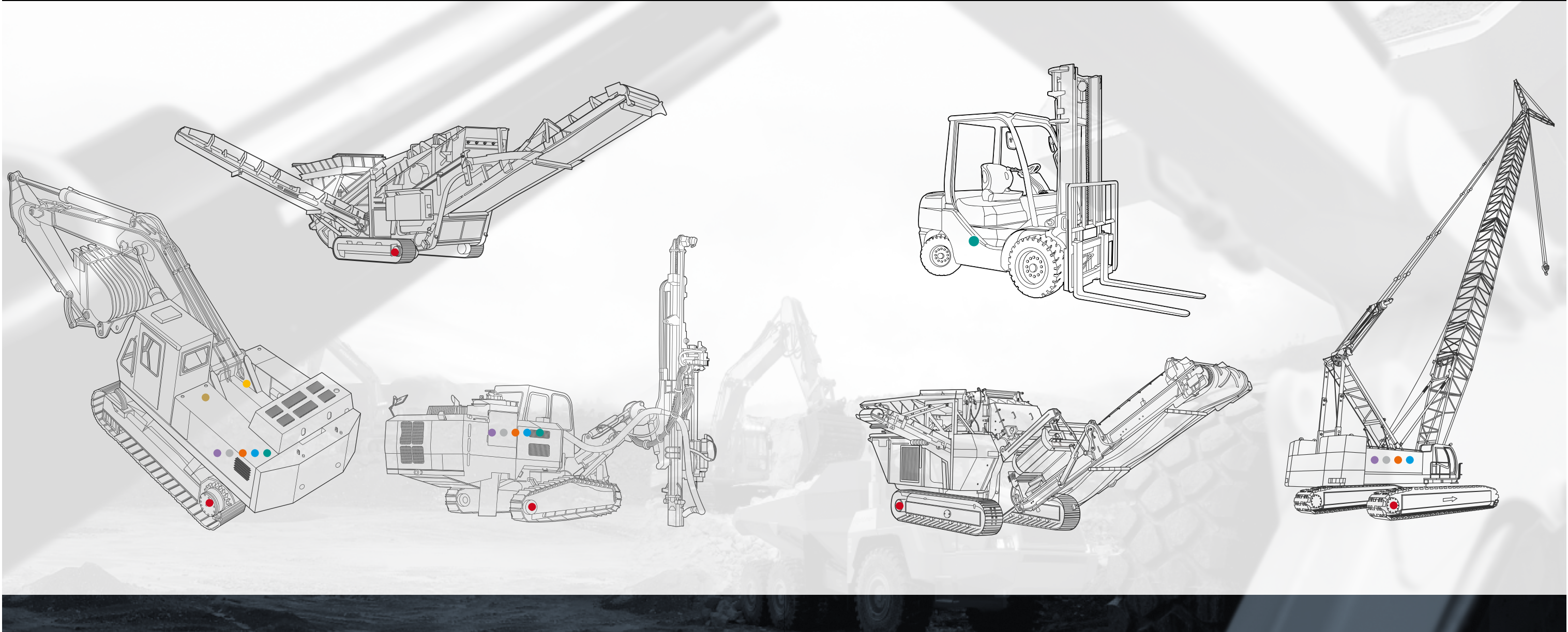
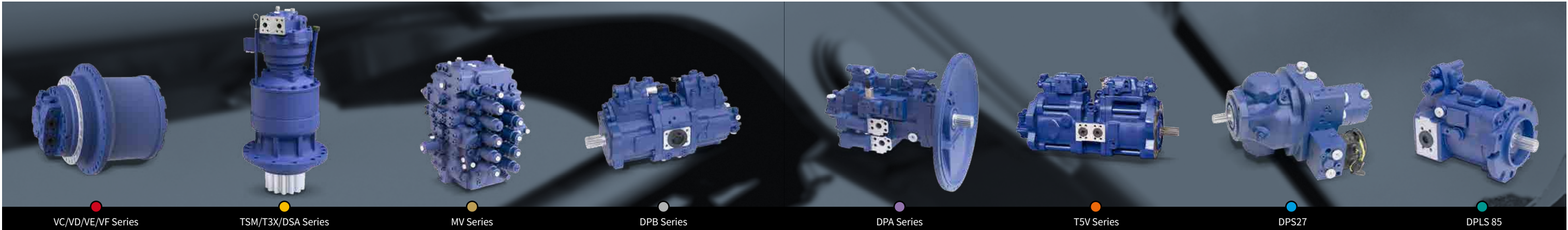
Items		Specifications	Basic	Option	Remark	
Control type		Negative / Positive / FEH(Full Electro Hydraulic)	●	●		
Rated	Pressure	34.3 MPa @ 150 lpm	●	●	Max. 37.4 MPa	
	Flow	450 lpm x 2	●	●	Max. 500 lpm x 2	
Overload relief valve	Front	35.3 MPa @ 20 lpm	●	●	Max. 39.2 MPa	
	Option	24.5 MPa @ 20 lpm	-	●		
Priority function	Swing+Boom	Priority valve	●	●		
	Swing+Arm	Priority valve	-	●		
	Boom+Arm	① AM2 fixed orifice	①	②		
		② Priority valve + AM2 fixed orifice				
	Boom+Bucket	Priority valve	-	●		
Travel + Front	Travel straight(TS)	●	●			
Conflux	Bucket / Option	BC Cut (Internal)	●	●	Boom2 external possible	
	Boom	Internal(BM1+BM2)	●	●		
	Arm	Internal(AM1+AM2)	●	●		
Spool regen	Boom/Arm	Spool internal type	●	●		
	Bucket	Spool internal type	-	●		
Arm regen valve		① Internal pressure type ② External pressure type	①	②		
Holding valve	Boom	Internal type	●	●	Boom2 possible	
	Arm	Internal type	●	●		
Durability	Main relief valve	B5 10,000	●	●		
	Overload relief valve	B5 10,000	●	●		
	Housing	B5 10,000	●	●		
	Operation durability	B5 10,000	●	●		

Dimensions



For the purpose of improving products, possible to make design changes without notice.

Application



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