

Hydraulic Components

for Construction Equipments



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Doosan Corporation Mottrol dreams the bigger world

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Doosan Corporation Mottrol

Moving towards a global comprehensive parts maker



Established in 1974, Doosan Corporation Mottrol (formerly Tongmyung Mottrol) advanced into the unexplored hydraulic industry by making hydraulic parts, hydraulic press and hydraulic systems in the defense industry, steering gears for ships and winches. We kept growing by diversifying our business into almost all hydraulic products. Our competencies in hydraulics, electrical systems and electronics have earned us recognition as Korea's top maker of travel device, swing device, and main pumps.

Our travel device come in many sizes to satisfy diverse needs. Our swing device (used on excavators and other rotating construction equipment) are compact with various built-in valves positioned for optimal user convenience. Our diverse main pump lineup boasts superb output density and efficiency with various sizes. Especially, proprietary developed DPA pump series improved 10~30% in every aspect compared with the previous version, and has a good reputation in the market.

Doosan Corporation Mottrol has been certified for ISO 9001, and ISO 14001, OHSAS 18001. Our ongoing R&D effort has resulted in the localized production of hydraulic equipment, and our travel device for excavators has been named as a "World Best Product" by the Korean MOTIE (Ministry of Trade, Industry and Energy) since 2006. Also we received "New Quality Global System Excellence Award" in 2010 by making a constant effort to improve the quality. In 2011, we exceeded millionth hydraulic unit production first time in Korea.

Doosan Corporation Mottrol established Doosan Mottrol Jiangyin Co., Ltd. (DMJC) as the first overseas production subsidiary in 2011 based on the accumulated technology. The DMJC will be an outpost of future overseas advancement for Doosan Corporation Mottrol that boasts its world class process management.

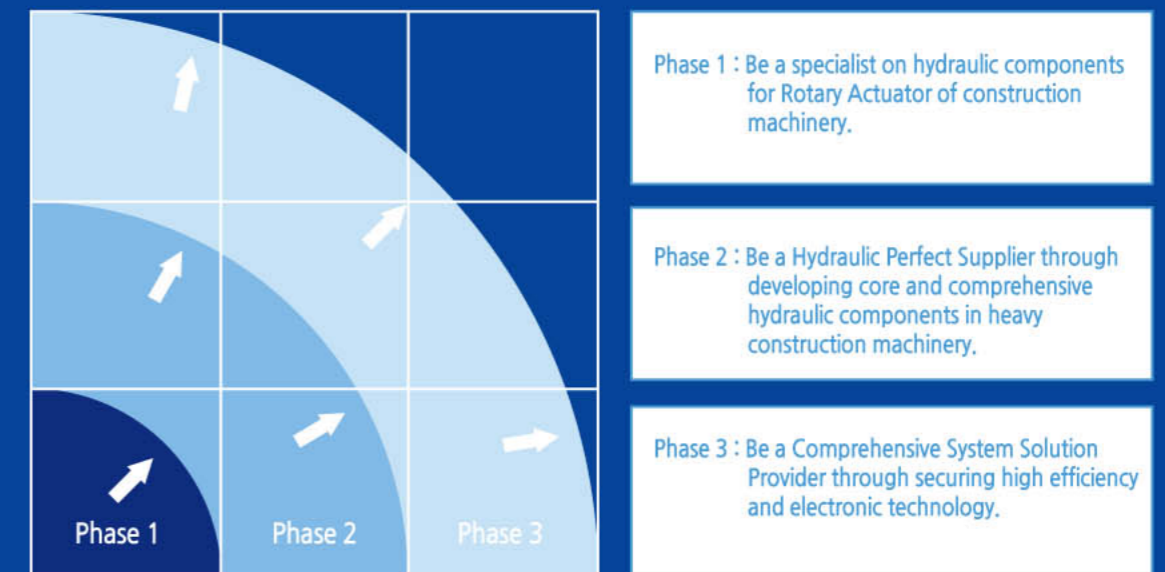
Doosan Corporation Mottrol will step forward to Global comprehensive hydraulic supplier by keeping the basic and challenge to Creative R&D and Quality Innovation.

The brief History of Hydraulic Components

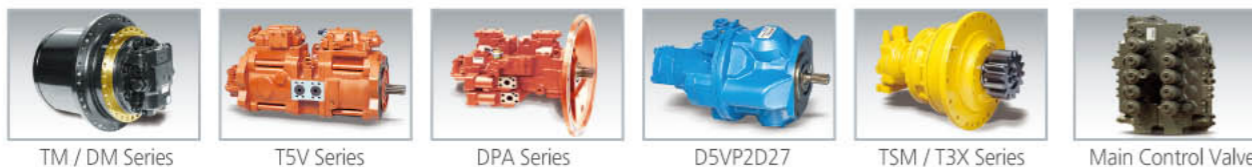
- 1976. 8. Started production of hydraulic valves and motors (SX series) for industrial machinery with the technical cooperation introduced from Kawasaki(Japan)
- 1983. 3. Started production of 22ton class travel device(GM30H)with the technical cooperation introduced from Teijin Seiki(Japan)
- 1989. 5. Started production of high/low speed change-over travel device(GM35VA, GM38V) for 22ton class excavators
- 1989. 7. Started production of main pump(K3V series) and swing motor(M2X series) in the class of 13, 22, 29ton for excavators with the technical cooperation introduced from Kawasaki
- 1994. 1. Started production of travel device(TM07VA) for 5ton class excavator
- 1996. 3. Started production of main pump(K3V180DP) for 35ton class excavator
- 1996. 7. Started production of RV gear type travel device(GM35VL)with the technical cooperation introduced from Teijin Seiki
- 1996. 8. Started production of joystic valves for excavator with the technical cooperation introduced from Kawasaki
- 1997. 7. Started production of travel device(DNB50D, 60D)for 29, 35ton class excavators with the technical cooperation introduced from Kawasaki
- 1998. 10. Started production of K3V180DPH main pump for 40ton class excavator
- 1999. 4. Started production of main pump attached PTO for wheel type excavators
- 1999. 5. Changed the name of travel device according to the end of technical cooperation with Teijin Seiki (GM24V->TM24V, GM35VA -> TM35VA)
- 1999. 6. Changed the name of main pump according to the end of technical cooperation with Kawasaki (K3V Series -> T5V Series, M2X Series -> T3X Series)
- 1999. 9. Changed the name of travel device for 29, 35ton excavators according to the end of technical cooperation with Kawasaki (DNB50D -> TM50VA, DNB60D -> TM60VA)
- 2000. 2. Started production of travel device TM50VA, TM60VA, TM70VA for 29, 35ton excavators
- 2000. 3. Started production of single main pump for industrial machinery
- 2000. 10. Started production of travel device(TBM117) for 13ton wheel-type excavators
- 2001. 9. Started production of travel device improved in reduction gear parts for 29, 35 ton excavators (TM50VA -> TM50VC, TM60VA -> TM60VC, TM70VA -> TM70VC)
- 2002. 1. Started production of T5VP2D25 main pump for 5ton class excavator
- 2003. 9. Started production of TM40VC travel device for 20ton class excavator
- 2005. 3. Started production of TSM86, TSM140 swing motor for 14ton and 20ton class excavators
- 2006. 3. Started production of TM18VC travel device for 13ton class excavator
- 2006. 6. Started production of TM30VC travel device for 17ton class excavator
- 2006. 8. Started production of TSM210 swing motor for 30ton class excavator
- 2007. 9. Started production of TM22VC travel device for 14ton class excavator
- 2007. 10. Started production of TSM32-RG swing device for 5ton class excavator
- 2007. 11. Started production of DPA117 / 140 main pump for 20ton and 30ton class excavators
- 2008. 5. Started production of TM100VD travel device for 45ton~55ton class excavators
- 2008. 8. Started production of TM10VD travel device for 8ton class excavator
- 2009. 5. Started production of T3X170-RG swing device for 29ton and 32ton class excavators
- 2011. 7. Established DMJC, a Chinese subsidiary in Jiangyin
- 2012. 6. Started production of MV270MCV for 20ton~32ton class excavators
- 2013. 3. Started production of travel device at DMJC
- 2014. 8. Started production of hydraulic system comprised of travel device, main pump, swing device and MCV(Main Control Valve)

Vision and Mission

Doosan Corporation Mottrol aims to serve innovative hydraulic technology and service in order to increase customer's business value through continued creative innovation based on the technology in hydraulic components and systems accumulated for over 40 years.



"It is our hope that our incessant efforts to develop the most advanced technologies and to produce the best quality products meet our client's complete satisfaction"



R&D Overview

R&D Center are developing new analysis and design technologies jointly with domestic and overseas research institutes.

The test laboratory provides test environments as similar as those of the real excavator operation to guarantee the quality and reliability of simulation.

More than 10 kinds of quality tests are performed in 1,300m² area R&D Room.

Following important items are completely inspected and tested to meet the quality level that customers want.

We have developed the optimized design technology for hydraulic pumps and motors, and pump regulators, and minimized pulsation and noise design technology for hydraulic pumps, to upgrade all of our products to be the top tier products.



Performance tester of large pump



Pump accelerated endurance tester



Pump low temperature tester



Swing motor endurance tester



Motor endurance tester



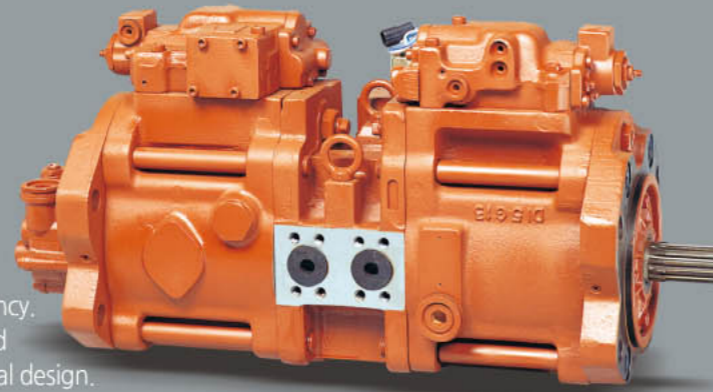
Oil seal endurance tester



Hydraulic Components for Construction Equipments



PISTON PUMP T5V SERIES



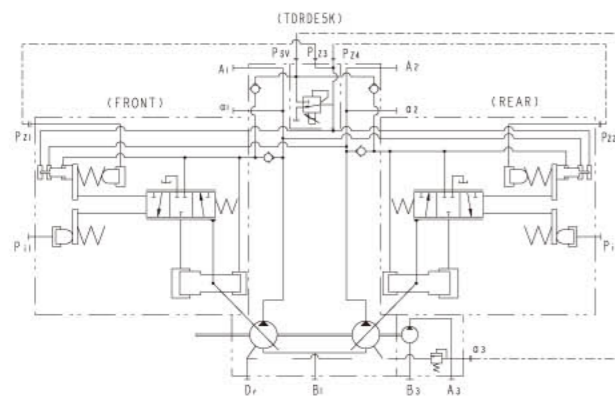
General

The T5V series piston pumps are developed for construction equipments and general industry. These pump provide user with high output density and efficiency. Moreover, they are specialized in construction equipments and general industry applications with high quality by the functional design.

Specification

Model	Max Displacement	Rated Pressure		Max Pressure		Max. Speed for self priming rpm	Max. input torque		Application ton
	cc/rev	kgf/cm ²	MPa	kgf/cm ²	MPa		kgf m	N m	
T5V63	63 X 2	350	34.3	400	39.2	2,650	35	343	12~16
T5V80	80 X 2	350	34.3	400	39.2	2,460	54	529	14~18
T5V112	117 X 2	350	34.3	400	39.2	2,360	60	588	20~25
T5V140	140 X 2	350	34.3	400	39.2	2,150	114	1,120	25~34
T5V180	180 X 2	350	34.3	400	39.2	1,950	114	1,120	34~45

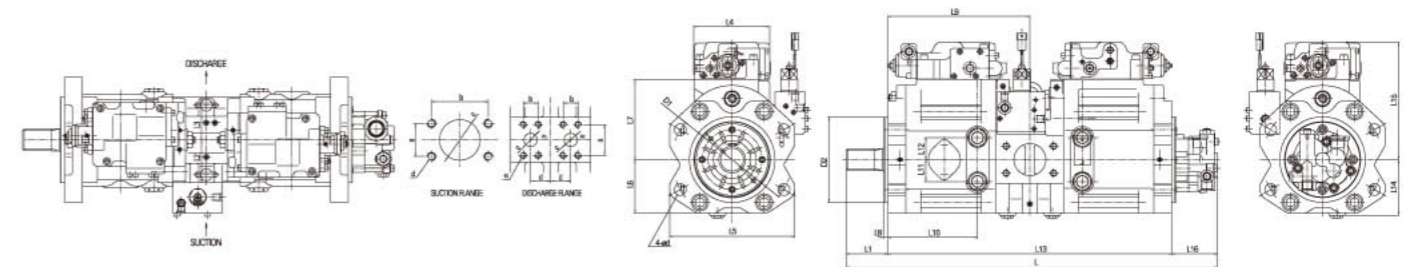
Hydraulic Circuit



Features

The T5V series are high-pressure, swash-plate type pump developed for construction equipments and general industrial machinery based upon our long and rich experience. High reliability and longevity are achieved by adoption of the high-load bearings and unique anti-wear materials for rotating group. The spherical valve plate and improved hydraulic balance provide stable cylinder rotation, thus achieving high efficiency even in a low-pressure and low-speed operating range. The T5V series can be controlled by various methods such as flow control, pressure control, horsepower control, and the combination of these are standardized and available. Optional gear pumps for various sizes can be attached. Accordingly, and separate pump unit is not necessary as control or medium duty system pressure source. Hydraulic units can thus be made compact.

Dimensions



Model	D1	D2	d	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L
T5V63	180	125	18	76	70	70	140	190	89	98	8	228	138	37	37	464	97	195	78	618
T5V80	180	125	18	76	70	70	140	190	89	98	8	228	138	37	37	464	97	195	78	618
T5V112	224	160	22	78	80	80	140	234	100	110	8	265	167	41	41	538	109	220	78	694
T5V140	250	180	22	93	92	92	140	256	112	123	8	305	190	53	53	618	121	245	80	791
T5V180	250	180	22	93	92	92	140	256	112	123	8	305	190	53	53	618	121	245	80	791

Model Information

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

T5V series
 Displacement
 • 63 - 63cc/rev
 • 80 - 80cc/rev
 • 112 - 117cc/rev
 • 140 - 140cc/rev
 • 180 - 180cc/rev

Design code of regulator
 Regulator code for control
 R - Clockwise rotation, L - Counter clockwise rotation
 Pump code
 Design code
 DP - Double pump, DPP Double pump + PTO

Discharge Flange

Model	a	b	c	d	e
T5V63	23.8	50.8	19	31	M10-16
T5V80	23.8	50.8	19	31	M10-16
T5V112	27.8	57.2	25	38	M12-22
T5V140	27.8	57.2	25	38	M12-22
T5V180	27.8	57.2	25	38	M12-22

Suction Flange

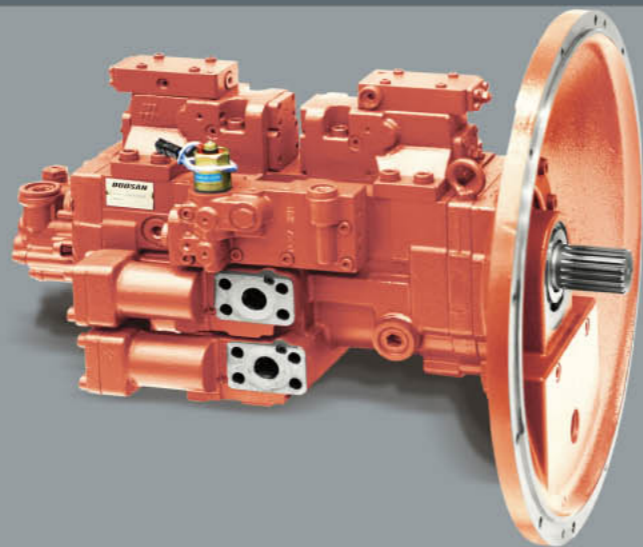
Model	a	b	c	d
T5V63	50.8	88.9	60	M12-18
T5V80	50.8	88.9	60	M12-18
T5V112	50.8	88.9	60	M12-18
T5V140	61.9	106.4	76	M16-24
T5V180	61.9	106.4	76	M16-24

Dimensions of shaft end

Size	no. of teeth	Pitch circle dia	Pressure angle	Module	Rule
T5V63	14	29.6	30°	12/24	SAE
T5V80	12	30.0	20°	2.5	JIS D2001
T5V112	12	30.0	20°	2.5	JIS D2001
T5V140	17	42.5	20°	2.5	JIS D2001
T5V180	17	42.5	20°	2.5	JIS D2001

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

PISTON PUMP DPA SERIES



General

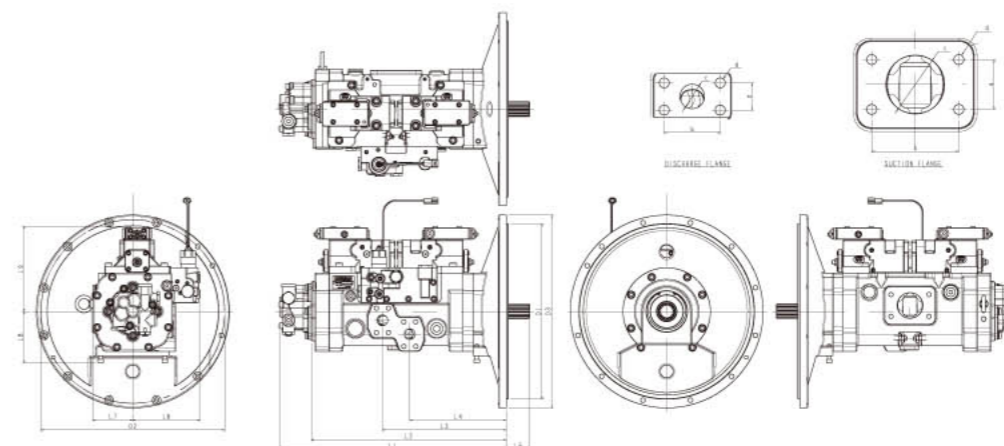
The DPA pump series are developed for construction equipments, especially with high quality by functional design. And they enjoy user's confidence thanks to high output density and efficiency through optimization of structure provided by various bench tests and computer simulation.



Specification

Model	Max Displacement	Rated Pressure		Max Pressure		Max. Speed for self priming	Max. input torque		Application	Remarks
	cc/rev	kgf/cm ²	MPa	kgf/cm ²	MPa	rpm	kgf-m	N m	ton	
DPA63	63 X 2	350	34.3	400	39.2	2600	43	422	12 ~ 16	Tandem Type
DPA90	90 X 2	350	34.3	400	39.2	2520	65	637	14 ~ 18	Tandem Type
DPA117	117 X 2	350	34.3	400	39.2	2450	65	637	20 ~ 25	Tandem Type
DPA140	140 X 2	350	34.3	400	39.2	2400	90	882	25 ~ 34	Tandem Type
DPA210	210 X 2	350	34.3	400	39.2	2000	130	1275	34 ~ 50	Parallel Type

Dimensions



Model	D1	D2	D3	L1	L2	L3	L4	L5	L6	L7	L8	L9
DPA63	409.58	428.6	450	505	432	261	231	49.5	153	91	120	194
DAP90	409.58	428.6	450	528	455	289	225	55	157	93	120	199
DPA117	409.58	428.6	450	548	452	287	223	55	157	93	120	199
DPA140	511.2	530.2	553	595	499	287	277	43	171	104	120	208
DPA210	511.2	530.2	555	555	465	415	415	6	304	129	141	225

Flange mounting face for delivery port

Size	a	b	c	d
DPA63	23.8	50.8	19	M10-16
DAP90	27.8	57.2	25	M12-22
DPA117	27.8	57.2	25	M12-22
DPA140	27.8	57.2	25	M12-22
DPA210	31.8	66.7	32	M12-20

Flange mounting face for suction port

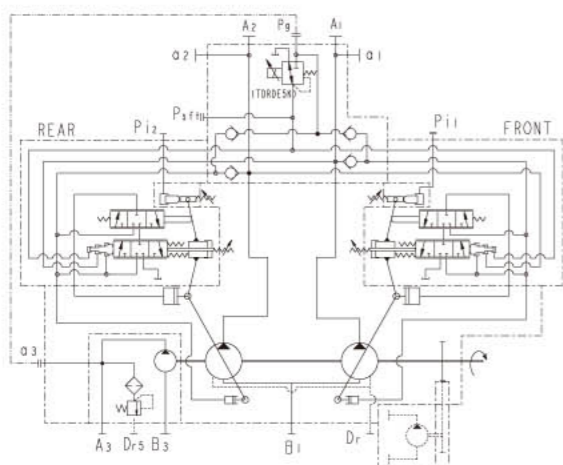
Size	a	b	c	d
DPA63	50.8	88.9	60	M12-18
DAP90	50.8	88.9	60	M12-18
DPA117	50.8	88.9	60	M12-18
DPA140	61.9	106.4	75	M16-24
DPA210	69.9	120.7	90	M16-21

Dimensions of shaft end

Model	No. of teeth	P.C.D	Pressure Angle	Module	Rule
DPA63	12	30.0	20°	2.5	JIS D2001
DPA90	12	30.0	20°	2.5	JIS D2001
DPA117	14	35.0	20°	2.5	JIS D2001
DPA140	17	42.5	20°	2.5	JIS D2001
DPA210	24	48.0	30°	2.0	DIN5480

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

Hydraulic Circuit



Features

Axially Compact

The total length of DPA series is 30% shorter than the conventional tandem pump of same class of displacement.

Wide Range of Control

DPA series can be controlled by hydraulic input either negative pilot pressure or positive one. Beside, it is capable of responding to electrical input signal.

Low Noise

The rigid parts and optimal cylinder pressure profile decreases noise level and pressure ripple.

High Reliability and Long Life

A high reliability is obtained by solving the over-load problem, as well as the fretting corrosion between swash-plate and support, decreasing the possibility of external leakage through one body and several short bolts, and increasing the strength of parts including shaft.

Model Information

DPA 140 T - H4C O - 1 F - 9N 1T

DPA series
 Displacement
 ·63 - 63cc/rev
 ·80 - 80cc/rev
 ·117 - 117cc/rev
 ·140 - 140cc/rev
 ·210 - 210cc/rev
 T - Tandem type double pump
 P - Parallel type double pump

Design code of regulator
 Regulator code for control
 EPPR Valve code
 Pilot gear pump code
 O - standard, P - with PTO
 Design code

PISTON PUMP D5VP2D25/27 SERIES

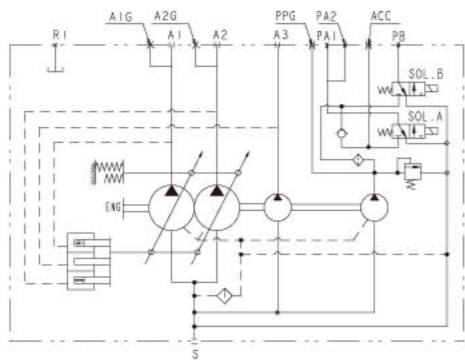


General

D5VP2D is a piston pump designed for mini construction vehicles such as excavators. This pump incorporates compactly, and has long life and high efficiency. Gear pump for auxiliary pilot pump is connected directly with spline, so you can handle this pump easily and variously.



Hydraulic Circuit



Features

This is a variable displacement double-piston pump discharging with two equal displacements from one cylinder block. This pump is so compact as to be appeared a single pump though this is actually a double pump.

Model Information

D5VP2D XX - G X P X - XX XX

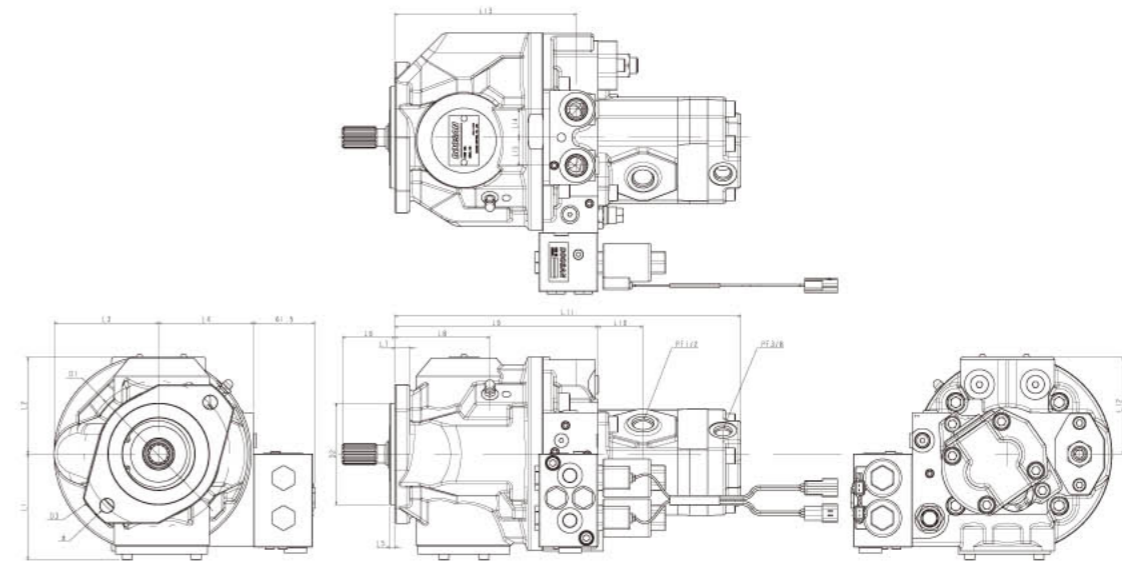
Model name
Displacement of Piston P/P
·25~25cc/rev ·26~26cc/rev
·27~27cc/rev
Gear pump
Displacement of P3 Gear P/P
·1 - P3 Gear P/P exclusion
·6 - 16cc/rev
·8 - 18cc/rev
Pilot Gear pump

Design Code
Solenoid valve option
·NS - Not included solenoid valve
·2S - Included solenoid valve
·Z - Power shift
Displacement of P4 Gear P/P
·1 - P4 Gear P/P exclusion
·4 - 4.5cc/rev
·6 - 6.5cc/rev

Specification

MODEL	Max Displacement (cc/rev)	Pressure (MPa)		Max. Speed rpm	Max. input torque N m	Hydraulic fluid	
		Rated	Max			Oil temp. range	Oil viscosity range
D5VP2D27	27.5 X 2	24.5	27.4	2,700	172	-20 ~ +95°C	10 ~ 1,000 cSt

Dimensions



Dimensions

MODEL	D1	D2	D3	d	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14
D5VP2D27	146	101.6	175	14	106	97	104	95	5	44	14.5	95	203	45	346	93.5	181.5	28

Dimensions of shaft end

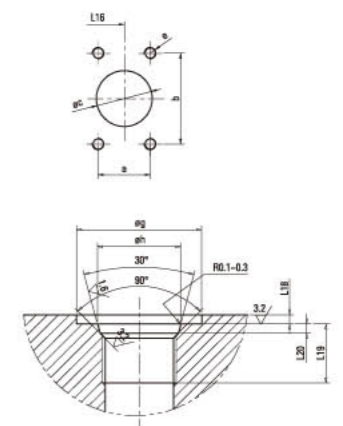
MODEL	No. of teeth	pressure angle	module	major diameter	minor diameter	rule
D5VP2D27	13	30°	16/32	ø21.8mm	ø18.63mm	SAE

Flange mounting face for suction port

MODEL	a	b	c	e	L16
D5VP2D27	37.5	69.9	40	M 12-18	177.5

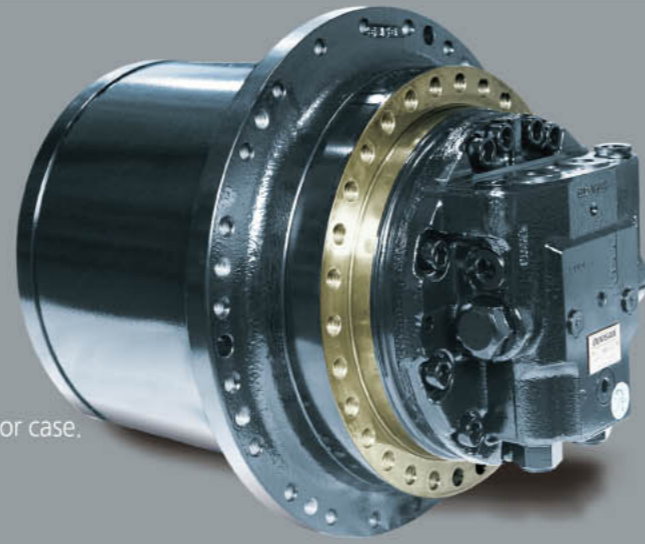
Flange mounting face for delivery port

Port size	g	h	L18	L20	L19	O-ring
PF 3/4	ø45	ø29.8	2.5	3.5	20	P24
PF 3/8	ø28	ø18.6	2.0	2.5	15	P14
PF 1/2	ø34	ø22.6	2.5	2.5	19	P18
PF 1/4	ø24	ø15.6	1.5	2.5	15	P11



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

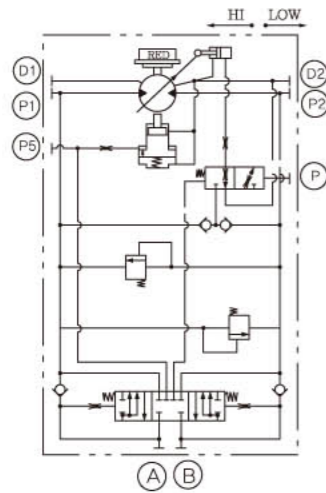
PISTON MOTOR TM / DM SERIES



General

The TM / DM Series are travel device designed for crawler machines such as excavators, drilling machines, cranes etc. The motor is a case-rotation, high-torque motor which can be installed inside the crawler by connecting sprocket with motor case.

Hydraulic Circuit



Features

Piston motor has a variable displacement (two speed) swash plate and incorporates a brake valve and a mechanical brake needed for traveling. TM/DM Series travel device with planetary reduction gear offers outstanding features. Hydraulically balanced piston motor ensures reliable changeover of the displacement by external pilot control (1.5 ~ 2 : 1 speed ratio)

The motor offers speed control and braking to minimize shock with a built-in counterbalance valve and shockless relief valve. The mechanical brake is a negative. The brake is automatically activated or released when the stop or start.

The case rotation type gear reducer has improved durability and reliability because of its simple and equally loaded design in addition to high-precision machine parts. The motor uses heavy duty bearings to ensure long life. An efficient floating seal also prevents dust and water from entering into the motor.

Model Information

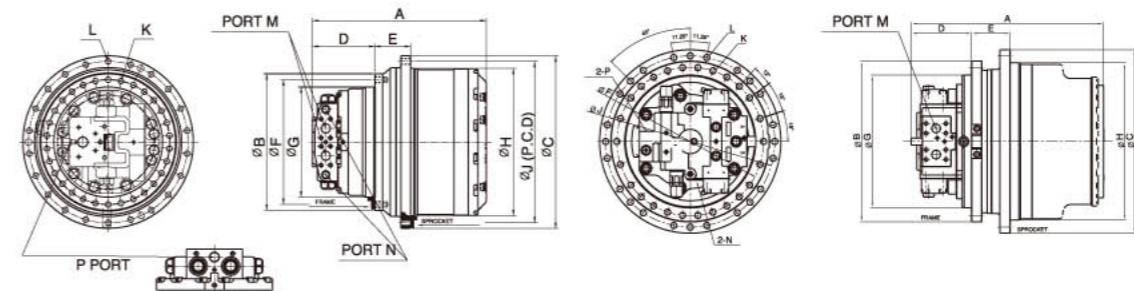


- Design number
- High / Low displacement.(cc/rev)
- Symbol of Gear Ratio
- Model number
- V - 2 Speed, S - 1 Speed
- Size number
- TM / DM Series

Specification

Model	Reduction Gear				Hydraulic Motor				Application		
	Gear Ratio i	Theoretical Output Torque kgf·m	Theoretical Output Torque N·m	Output Speed max rpm	Displacement cc/rev	Output Speed max rpm	Max Pressure kgf/cm ² MPa		Brake Torque (at Motor Shaft) kgf·m N·m		ton
DM05VD	56.436	663	6,499	90	33.5	4,500	300	29.4	6.3	62	4~5
DM06VD	58.943	750	7,755	76	33.5	4,500	300	29.4	6.3	62	5~6
TM07VA	53.706	780	7,651	65	39.8	3,500	300	29.4	8.4	82	5~8
TM07VC	53.706	850	8,335	72	55.8	3,900	350	34.3	8.4	82	5~8
DM09VD	45.970	1,100	10,787	80	55.8	3,900	350	34.3	8.4	82	6~8
TM10VC	53.0	1,512	14,823	60	86	3,200	350	34.3	19.7	193	8~10
TM10VD	54.467	1,250	12,250	70	55.8	3,900	350	34.3	12	117.6	8~11
TM18VC	53.0	2,151	21,094	60	86	3,200	350	34.3	19.7	193	10~14
TM22VC	53.706	2,616	25,655	60	86	3,200	350	34.3	19.7	193	13~15
TM30VC	39.14	3,488	34,207	70	157.5	2,800	350	34.3	40.6	398	15~20
TM40VC	48.0	4,651	45,609	50	183.9	2,400	350	34.3	49.3	483	18~25
TM40VD	49.95	4,651	45,609	56	174.4	2,800	350	34.3	40.6	398	18~25
TM60VC	63.843	6,977	68,414	40	195	2,600	350	34.3	44.5	436	29~34
TM60VD	46.127	7,200	70,607	52	280	2,400	350	34.3	87	853	29~34
TM70VC	70.15	7,558	74,115	36	195	2,600	350	34.3	44.5	436	34~37
TM70VD	54.470	8,000	78,400	45	280	2,400	350	34.3	87	853	34~42
TM100VD	68.23	10,000	98,060	40	280	2,700	350	34.3	115.7	1,135	45~55

Dimensions



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P
DM05VD	288	264	290	92	68	240	200	230	262	12-M14 X P2.0	9-M14 X P2.0	3/4-16UNF	9/16-18UNF	9/16-18UNF
DM06VD	288	264	290	92	68	240	200	230	262	12-M14 X P2.0	9-M14 X P2.0	3/4-16UNF	9/16-18UNF	9/16-18UNF
TM07VA	340	268	306	119	68	244	210	250	282	12-M14 X P2.0	12-M14 X P2.0	PF1/2	PF3/8	PF1/4
TM07VC	345	268	306	124	68	244	210	250	282	12-M14 X P2.0	12-M14 X P2.0	PF1/2	PF3/8	PF1/4
DM09VD	340	280	326	126	80	250	210	265	300	12-M16 X P2.0	12-M14 X P2.0	PF1/2	PF3/8	PF1/4
TM10VC	389	298	362	134	88	270	230	292	332	15-M16 X P2.0	12-M16 X P2.0	PF3/4	PF1/2	PF1/4
TM10VD	353	278	328	120	80	250	210	265	300	12-M16 X P2.0	12-M16 X P2.0	PF1/2	PF3/8	PF1/4
TM18VC	392	308	394	134	99.5	280	246	324	364	20-M16 X P2.0	15-M16 X P2.0	PF3/4	PF1/2	PF1/4
TM22VC	398	308	394	124	99.5	280	246	324	364	20-M16 X P2.0	15-M16 X P2.0	PF3/4	PF1/2	PF1/4
TM30VC	464	372	432	138	99.5	340	300	362	402	30-M16 X P2.0	24-M16 X P2.0	PF1, PF3/4	PF1/2	PF1/4
TM40VC	540	370	470	159	98.5	340	300	402	440	30-M16 X P2.0	30-M16 X P2.0	SAE 1"	PF1/2	PF1/4
TM40VD	502	370	470	138	98.5	340	300	402	440	30-M16 X P2.0	30-M16 X P2.0	SAE 1"	PF1/2	PF1/4
TM60VC	569	462	525	175	112	425	380	450	490	26-M20 X P2.5	24-M20 X P2.5	SAE 1"	PF1/2	PF1/4
TM60VD	553	460	525	166	112	425	380	450	490	30-M20 X P2.5	28-M20 X P2.5	SAE 1"	PF1/2	PF1/4
TM70VC	569	462	525	175	112	425	380	450	490	26-M20 X P2.5	24-M20 X P2.5	SAE 1"	PF1/2	PF1/4
TM70VD	553	460	525	166	112	425	380	450	490	24-M24 X P3.0	32-M20 X P2.5	SAE 1"	PF1/2	PF1/4
TM100VD	668	500	586	207	130	460	420	510	550	26-M24 X P3.0	36-M20 X P2.0	SAE 1-1/4"	PF1/2	PF1/4

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

PISTON MOTOR TSM / T3X SERIES



General

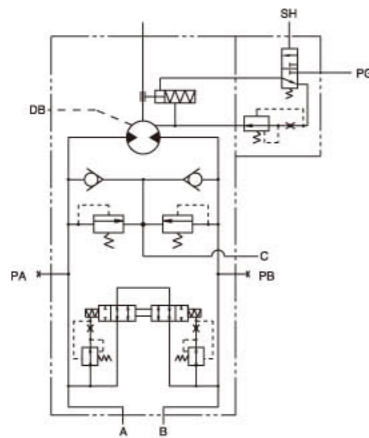
The TSM / T3X series are swing devices designed for construction vehicles such as excavators, cranes etc. Compactly it incorporates various functions (parking brake, high-pressure relief valve, make-up valve, swing reactionless valve etc.)



Specification

Model	Reduction Gear					Hydraulic Motor					Application			
	Gear Ratio	Theoretical output Torque	Max. Speed	Theoretical output Torque	Max. Speed	Displacement	Brake Torque		Max. Pressure					
Hydraulic Motor	Reduction Gear	i	kgf-m	N-m	rpm	kgf-m	N-m	rpm	cc/rev	kgf-m	N-m	Kgf/oil	MPa	ton
TSM32	RG250	19.464	250	2,453	100	12.5	122.9	1600	31.5	14.0	137.3	250	24.5	5-6
TSM56	RG400	19.464	400	3,924	85	22.2	217.7	1600	55.8	18.0	176.5	250	24.5	7-8
T3X63	-	-	-	-	-	35.7	349.6	2200	64.0	32.0	313.8	350	34.3	13-14
TSM72	RG700	19.041	700	6,867	80	40.1	393.3	2200	72.0	36.0	353.0	350	34.3	13-14
TSM86	RG700	19.041	700	6,867	80	47.9	469.8	2200	86.0	42.0	411.9	350	34.3	13-17
T3X118	-	-	-	-	-	65.6	643.5	1600	117.8	71.0	696.3	350	34.3	17-18
T3X128	RG1600	21.581	1,600	15,696	75	71.2	698.7	1700	127.9	71.0	696.3	350	34.3	17-22
TSM140	RG1600	21.581	1,600	15,696	75	78.3	767.5	1700	140.5	71.0	696.3	350	34.3	17-25
T3X150	-	-	-	-	-	82.7	811.2	1600	148.5	71.0	696.3	350	34.3	21-25
T3X160	RG2000	24.739	2,000	19,620	70	88.5	868.0	1600	158.9	71.0	696.3	350	34.3	29
T3X170	RG2000	24.739	2,000	19,620	70	94.4	925.4	1500	169.4	71.0	696.3	350	34.3	29-32
TSM180	RG2000	24.739	2,000	19,620	70	100.3	983.3	1500	180.0	120.0	1176.8	350	34.3	25-30
TSM195	-	-	-	-	-	108.3	1062.5	1500	194.5	120.2	1176.8	350	34.3	30-32
TSM210	-	-	-	-	-	117.0	1147.2	1500	210.0	120.0	1176.8	350	34.3	25-32
TSM250	RG2400	19.560	2,400	23,544	70	139.3	1365.7	1400	250.0	134.0	1314.5	350	34.3	32-34
	RG2700	21.968	2,700	26,487	65									
TSM280	RG2400	19.560	2,400	23,544	70	142.0	1392.5	1400	278.8	134.0	1314.5	320	31.4	34-42
	RG2700	21.968	2,700	26,487	65									

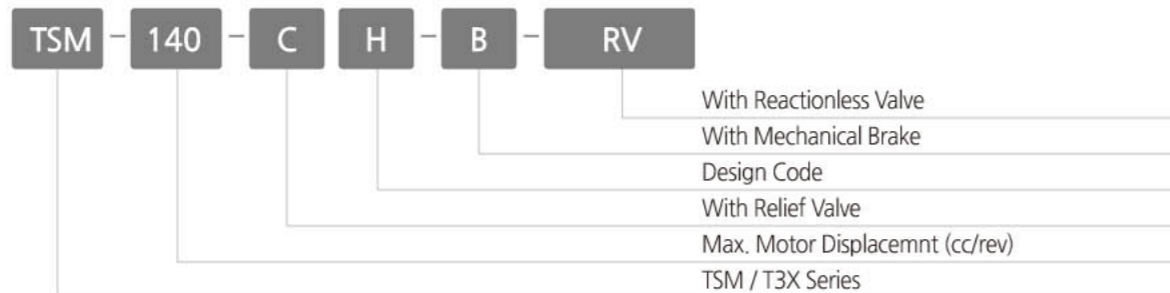
Hydraulic Circuit



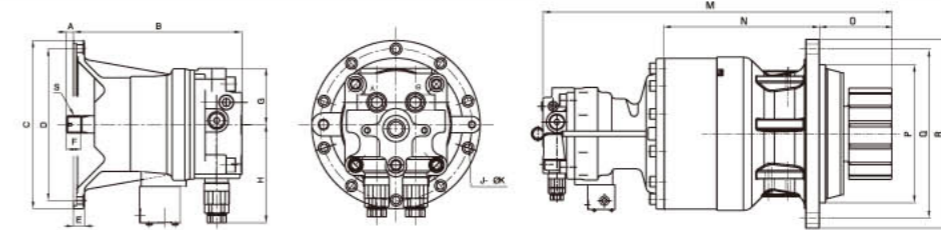
Features

Piston motor has a swash plate and incorporates a mechanical brake needed for slewing. Hydraulically balanced motor ensures high-pressure and high-performance for a long time. Relief valve with shock-absorb function and make-up valve are appropriately integrated to shorten total length. Parking brake and swing reactionless valve are equipped as standard.

Model Information



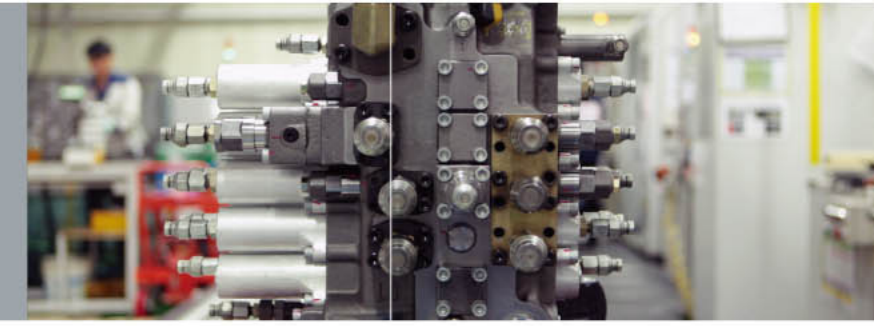
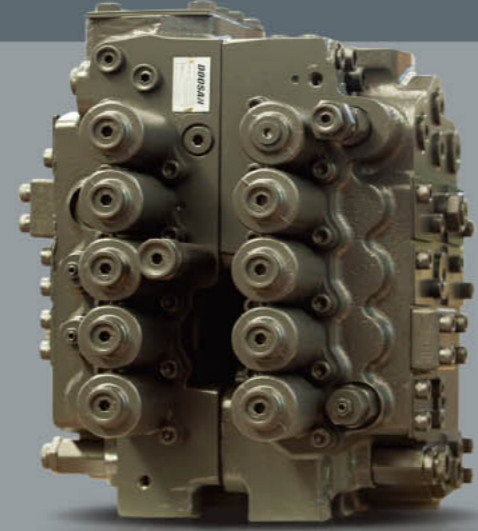
Dimensions



Model	A	B	C	D	E	F	G	H	S	J-øK	M	N	O	P	Q	R
TSM32-RG250	16.7	189.0	ø223	ø203	15	20.5	72	108.5	15tooth-16/32 Pitch	6-ø13	419	129.0	101	ø200	ø275	ø303
TSM56-RG400	16.7	205.0	ø235	ø210	15	20.5	66	102.5	15tooth-16/32 Pitch	6-ø13	464	153.0	106	ø200	ø275	ø303
T3X63	17.0	255.0	ø288	ø260	19	25.0	90	159.0	m=1.667, z=16	10-ø13	-	-	-	-	-	-
TSM72-RG700	17.0	282.0	ø288	ø260	19	25.0	96	168.0	m=1.667, z=16	10-ø13	630	228.5	119	ø220	ø290	ø323
TSM86-RG700	17.0	282.0	ø288	ø260	19	25.0	96	168.0	m=1.667, z=16	10-ø13	630	228.5	119	ø220	ø290	ø323
T3X118	22.0	303.0	ø340	ø306	30	28.0	117	168.5	m=2.5, z=16	12-ø17	-	-	-	-	-	-
T3X128-RG1600	31.5	299.0	ø307	ø282	20.5	34.5	117	168.5	m=2.5, z=16	16-ø13	805	344.0	162	ø310	ø360	ø400
TSM140-RG1600	31.5	301.5	ø307	ø282	20.5	34.5	117	168.5	m=2.5, z=16	16-ø13	808	344.0	162	ø310	ø360	ø400
T3X150	22.0	303.0	ø340	ø306	30	28.0	117	168.5	13tooth-8/16 Pitch	12-ø17	-	-	-	-	-	-
T3X160-RG2000	19.0	306.0	ø382	ø344	20	28.0	117	168.5	m=2.5, z=16	12-ø19	906	416.0	184	ø390	ø520	ø570
T3X170-RG2000	19.0	306.0	ø382	ø344	20	28.0	117	168.5	m=2.5, z=16	12-ø19	906	416.0	184	ø390	ø520	ø570
TSM180-RG2000	19.0	303.0	ø382	ø344	20	26.5	120	195.0	13tooth-8/16 Pitch	12-ø19	903	416.0	184	ø390	ø520	ø570
TSM195	19.0	303.0	ø382	ø344	20	26.5	120	195.0	13tooth-8/16 Pitch	16-ø18	-	-	-	-	-	-
TSM210	19.0	303.0	ø382	ø344	20	26.5	120	195.0	13tooth-8/16 Pitch	12-ø19	-	-	-	-	-	-
TSM250-RG2400	57.5	344.0	□183	□162	18	39.5	157	185.0	m=2.5, z=20	4-ø18	990	409.0	194	ø350	ø430	ø480
TSM280-RG2700	57.5	344.0	□183	□162	18	39.5	157	185.5	m=2.5, z=20	4-ø18	990	409.0	194	ø350	ø430	ø480

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

Main Control Valve



General

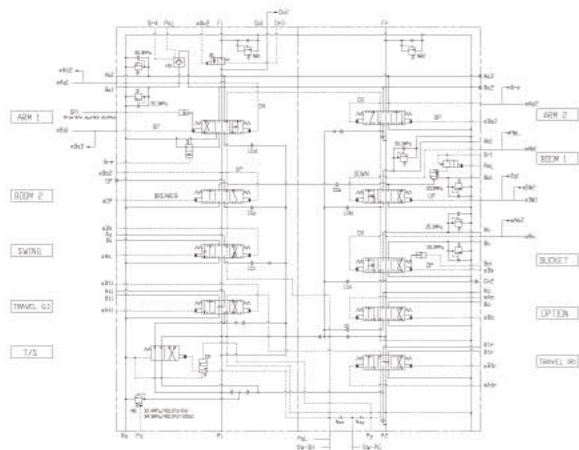
The Main Control Valve(MCV) provide minimized pressure loss and enhanced precise controllability through advanced main and pilot flow path design.

Features

MCV controls the flow route of the hydraulic oil from pump in order to operate the actuators such as the travel device, swing device or cylinders. 2-Block Type MCV meets diversified customers' requirements with excellent controllability and extendibility.

- 2-Block Type MCV
- Adopted Overload Relief Valve with built-in Make-up function
- Variable arm regen valve built-in (High excavation power)
- Bucket joining valve built-in (Fast bucket speed)
- Selection of swing priority in movements of boom or swing

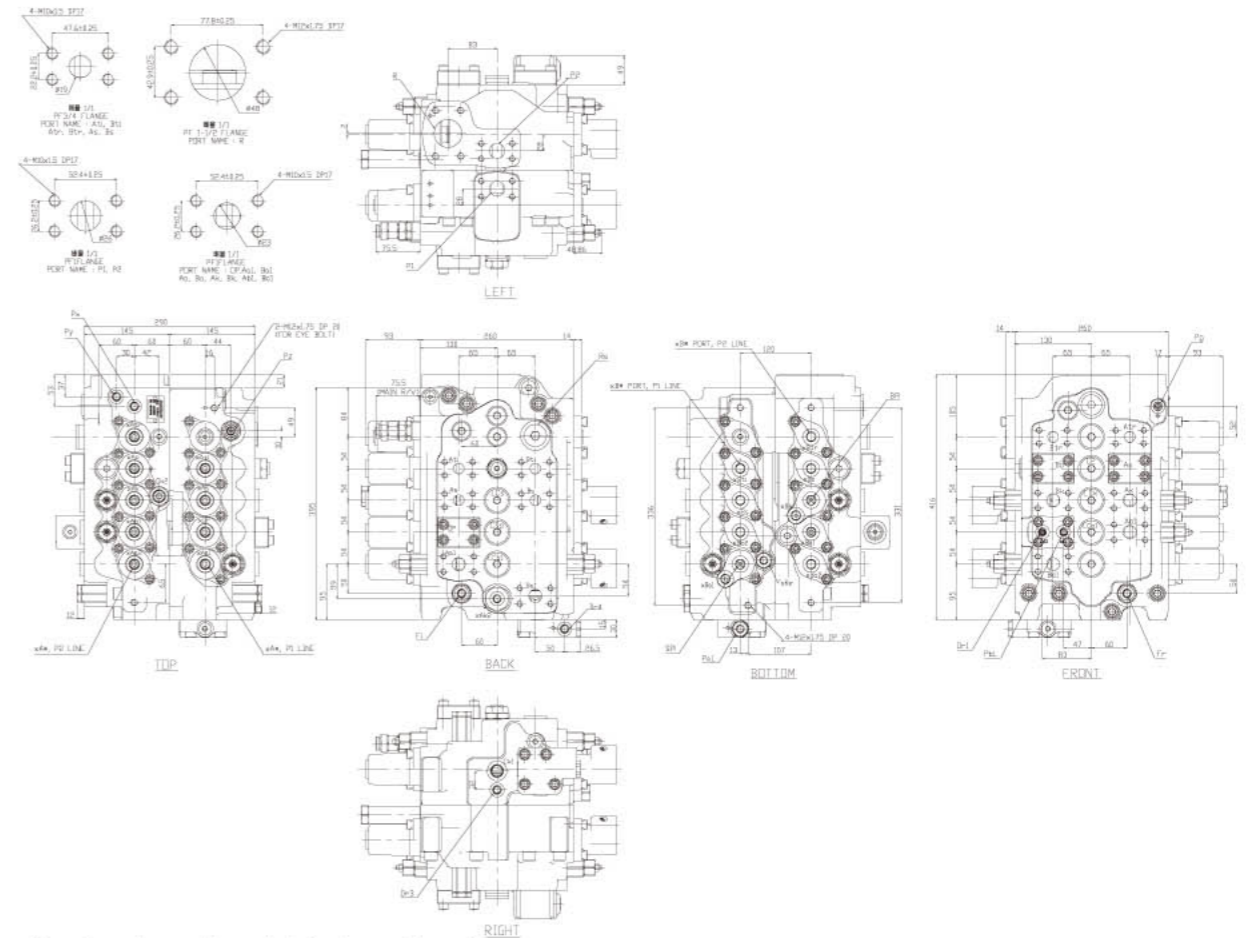
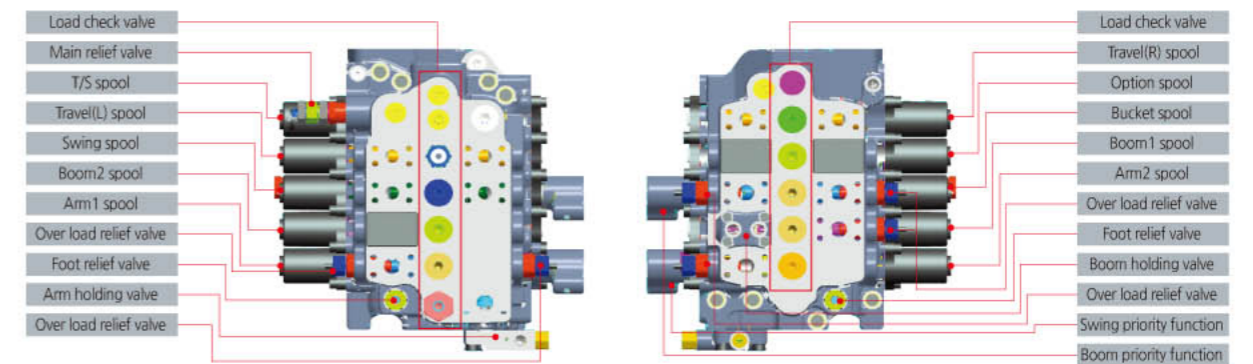
Hydraulic Circuit



Specification

Items	Specification	
Application	21~30ton Excavators	
Rated flow	270LPM	
Rated pressure	34.4MPa	
Main Functions	Boom up confluence	Internal
	Arm in confluence	Internal
	Arm out confluence	Internal
	Bucket in confluence	External
	Boom regen	Available
	Arm regen	Available
	Bucket regen	Available
	Breaker port	Available
	Bypass cut valve	Available
	Travel straight	Available
	Swing priority(vs Arm)	Available
	Boom Priority(vs Arm, Swing, Bucket)	Available
	Boom holding valve	Available
Arm holding valve	Available	

Dimensions



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

Application



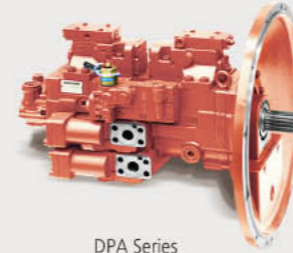
TM/DM SERIES



TSV Series



D5VP2D27 Series



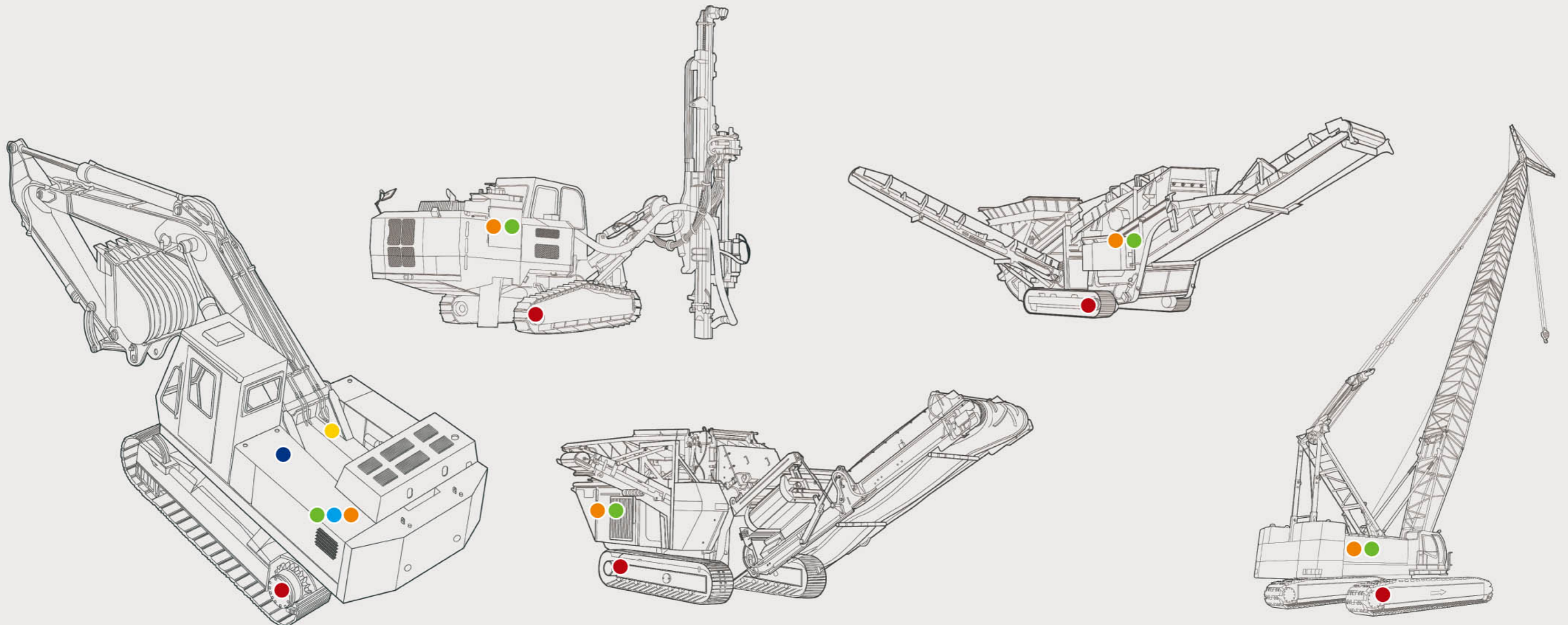
DPA Series



TSM/T3X Series



Main Control Valve



*For specification and application, it will be determined along with the review of Mottrol R&D.

Global Network

As a global leading comprehensive components manufacturer, Doosan Corporation Mottrol values customer satisfaction.



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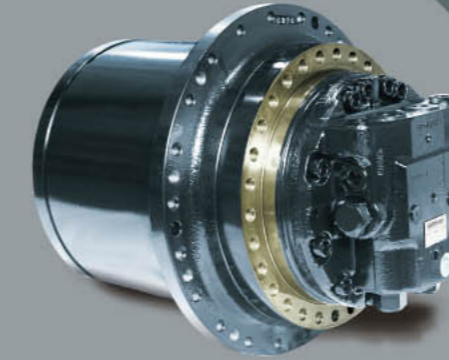
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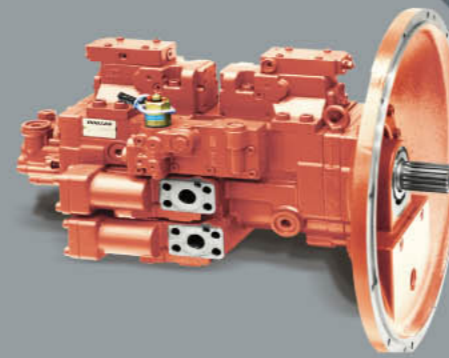


Global Company Best Product



Travel Device

World Class Product since 2006



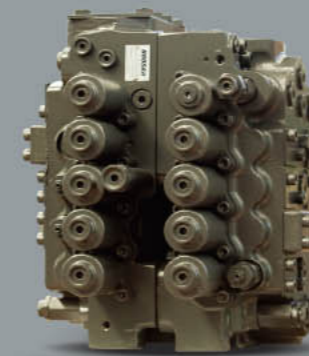
Hydraulic Pump

High Power Density by light weight
Low Noise & Pulsation



Swing Device

Tooth Optimization Design for
better efficiency and noise effect



MAIN CONTROL VALVE

Minimized pressure loss and
enhanced precise controllability