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Intra-vane Pump for Industry Application

Intra-vane Pump for Mobile Equipment

Intra–vane Pump for Industry Application

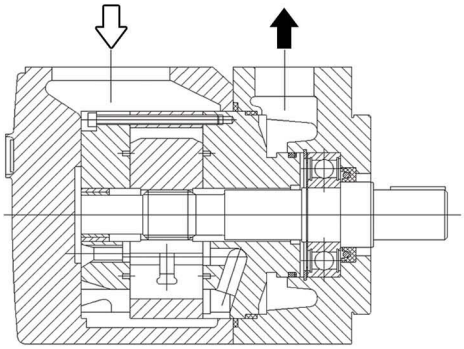
This series of pumps are developed to meet the increasing demands of machine --tool industry. Total 4 series including 19 kinds are available, whose displacement ranges from 18 mL/r to 193 mL/r, max continuous operating pressure is 17.2 MPa, the speed of rotation ranges from 600 rpm to 1800 rpm. The intra-vane structure ensure many good characteristics such as high pressure, large capacity, small volume, smooth operation, low noise, efficient capacity efficiency and long service life etc. The main technical data has reached an advanced level in the international market of the same trade.

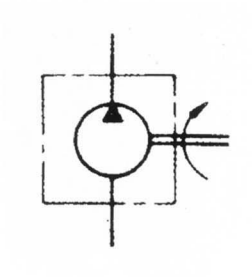
This series of pump is composed of replaceable cartridge kits, which reduce the construction time thus enhance production efficiency. Optimum design of pump core further reduce the pressure shimmy, flow pulsation and noise of the pump, sound pressure balance which compensate the space can have better capacity efficiency. The proper design of oil supply system between vane and intra-vane enables good contact between blade and stator and ensure minimum flow loss. The unique design, high-precision processing and rational material selections prolong the service life of the pump.

With complete specifications, reliable performance, simple and rational structure, convenient installation and repairing (the connection complies with ISO and SAE), the pump is widely used in machine-tool, press and die-casting machines, engineering, plastic injection moulding and other machineries.

Intra-vane Pump for Industry Application

V SERIES SINGLE PUMP





Displacement:18-193mL/r Pressure:17.2MPa
Model Code:
Example:F3 - S20V - 12 A M F -1 A -10 L

Model Code

F3	S**V	12	A	M	F	1	A	10	L
Refit	Series	code	Port connection	Port connection thread	Mounting type	Shaft type	Outlet position	Design number	Rotation
F3- Viton seals	S20V	5,8,9,11 12,14	A-SAE 4-bolt flange	Metric thread	Flange mounting,omit	1- straight keyed	(viewed from cover end of pump)	10	(viewed from shaft end of pump)
	S25V	10,12,14, 17,21				151-splined(For 20V only)	A-opposite inlet port		
Omit if not required	S35V	25,30,35,38		Inch thread,omit	Foot mounting	86-heavy duty straight keyed	B-90° CCW from inlet		L-left hand for counterclockwise
	S45V	42,45,50,60				11-splined (Not available on 20V)	C-inline with inlet		R-right hand for clockwise
							D-90° CW from inlet		

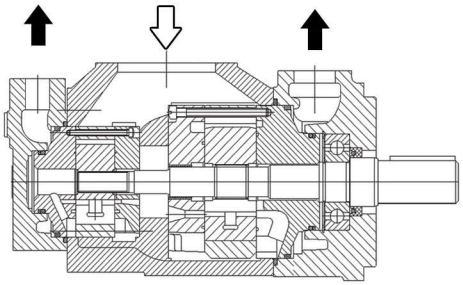
Rated capacity in USgpm an 1200rpm and 0.7 Mpa

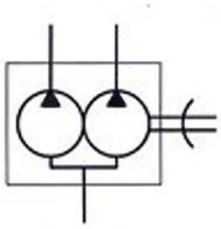
Technical Data

Series	code	Geometric displacement mL/r	Using anti-wear Hydraulic oil or phosphate ester fluid		Using water glycol fluid		Using water-in-oil emulsions		Lowest speed rpm	Sound levels at13.8MPa, 26cSt and 50℃ rpm			Weight kg
			Max. pressure MPa	Max. speed rpm	Max. pressure MPa	Max. speed rpm	Max. pressure MPa	Max. speed rpm		1200	1500	1800	
S20V	5	18	21	1800	16	1500	7	1200	600	62	64	66	12
	8	27	21		16								
	9	30	21		16								
	11	36	21		16								
	12	40	16		16								
	14	45	14		14								
S25V	10	33	17.2	1800	17.2	1500	7	1200	600	63	65	67	14.8
	12	39											
	14	45											
	17	55											
	21	67											
S35V	25	81	17.2	1800	17.2	1500	7	1200	600	64	66	69	22.7
	30	97											
	35	112											
	38	121											
S45V	42	138	17.2	1800	17.2	1500	7	1200	600	67	69	71	34
	45	147											
	50	162											
	60	193											

Intra-vane Pump for Industry Application

V SERIES DOUBLE PUMP





Displacement:18-193mL/r Pressure:17.2MPa

Model Code:

Example:F3 - S2520V - 21/11 A M F - 1 CC - 10 L

Model Code

F3	S****V	21	11	A	M	F	1	CC	10	L
Refit	Series	code view from shaft end pump	code view from cover end pump	Port connection	Port connection thread	Mounting type	Shaft type	Outlet position	Design number	Rotation
F3-Viton seals	S2520V	10,12,14,17,21	5,8,9,11,12,14	A-SAE 4-bolt flange	Metric thread	Flange mounting,omit	1-straight keyed	check description on page 04	10	(viewed from shaft end of pump)
	S2525V	10,12,14,17,21	10,12,14,17,21							
	S3520V	25,30,35,38	5,8,9,11,12,14				86-heavy duty straight keyed			L-left hand for counterclockwise
	S3525V	25,30,35,38	10,12,14,17,21			F-Foot mounting				
Omit if not required	S4520V	42,45,50,60	5,8,9,11,12,14		Inch thread, omit		11-splined keyed(Not avaiable on 2525V)			R-right hand for clockwise
	S4525V	42,45,50,60	10,12,14,17,21							
	S4535V	42,45,50,60	25,30,35,38				174-splined keyed (only for 2525v)			

Rated capacity in USgpm an 1200rpm and 0.7 Mpa

Oil Recommendations

The oil in a hydraulic system serve as the power transmission medium. It is also the system's lubricant and coolant. Selection of the proper oil is a requirement for satisfactory system performance and life.

Important Factors in Selecting Oil

Additives——

Hydraulic fluids contain a number of additive agents which materially improve various characteristics of oil for hydraulic systems. These additives are selected to reduce wear, increase chemical stability ,inhibit corrosion and doers the pour point .Pump performance and reliability and directly affected by the antiwear additive formulation contained in the oil . Oils providing a high level of antiwear protection are recommended for optimum performance and long life.

Intra–vane Pump for Industry Application

OUTLET POSITION

(VIEWED FROM COVER END OF PUMP)

NO.1 OUTLET AS THAT OF SHAFT END OF PUMP , NO.2 OUTLET AS THAT OF COVER END OF PUMP

All Series except S2525V and S4535V(Q) SQPV43

With No.1 outlet opposite inlet

AA-No.2 outlet 135°CCW from inlet

AB-No.2 outlet 45°CCW from inlet

AC-No.2 outlet 45°CW from inlet

AD-No.2 outlet 135°CW from inlet

With No.1 outlet 90°CCW from inlet

BA-No.2 outlet 135°CCW from inlet

BB-No.2 outlet45°CCW from inlet

BC-No.2 outlet45°CW from inlet

BC-No.2 outlet135°CW from inlet

With No.1 outlet in line with inlet

CA-No.2 outlet 135°CCW from inlet

CB-No.2 outlet45°CCW from inlet

CC-No.2 outlet45°CW from inlet

CD-No.2 outlet135°CW from inlet

With No.1 outlet 90°CW from inlet

DA-No.2 outlet 135°CCW from inlet

DB-No.2 outlet 45°CCW from inlet

DC-No.2 outlet 45°CW from inlet

DD-No.2 outlet 135°CW from inlet

Series S2525V and S4535V(Q) SQPV43

With No.1 outlet opposite inlet

AA-No.2 outlet opposite inlet

AB-No.2 outlet 90°CCW from inlet

AC-No.2 outlet in line with inlet

AD-No.2 outlet 90°CW from inlet

With No.1 outlet 90°CCW from inlet

BA-No.2 outlet opposite inlet

BB-No.2 outlet 90°CCW from inlet

BC-No.2 outlet in line with inlet

BD-No.2 outlet 90°CW from inlet

With No.1 outlet in line with inlet

CA-No.2 outlet opposite inlet

CB-No.2 outlet 90°CCW from inlet

CC-No.2 outlet in line with inlet

CD-No.2 outlet 90°CW from inlet

With No.1 outlet 90°CW from inlet

DA-No.2 outlet opposite inlet

DB-No.2 outlet 90°CCW from inlet

DC-No.2 outlet in line with inlet

DD-No.2 outlet 90°CW from inlet

Intra-vane Pump for Industry Application

Technical Data

Series designtion	Code	Geometric displacement (mL/r)	Min speed (rpm)	Using antiwear hydraulic oil or phoshate ester fluid		Using water-in-oil emulsions		Using water glycol fluid	
				Max. speed (rpm)	Operating pressure (MPa)	Max. speed (rpm)	Operating pressure (MPa)	Max. speed (rpm)	Operating pressure (MPa)
S※※20V	5	18	600	1800	21	1200	7	1500	16
	8	27							
	9	30							
	11	36							
	12	40			16				
	14	45			14				14
S25※※V S※※25V	10	33							
	12	39							
	14	45							
	17	55							
	21	67							
S35※※V S※※35V	25	81			17.2				16
	30	97							
	35	112							
	38	121							
S45※※V	42	138							
	45	147							
	50	162							
	60	193							

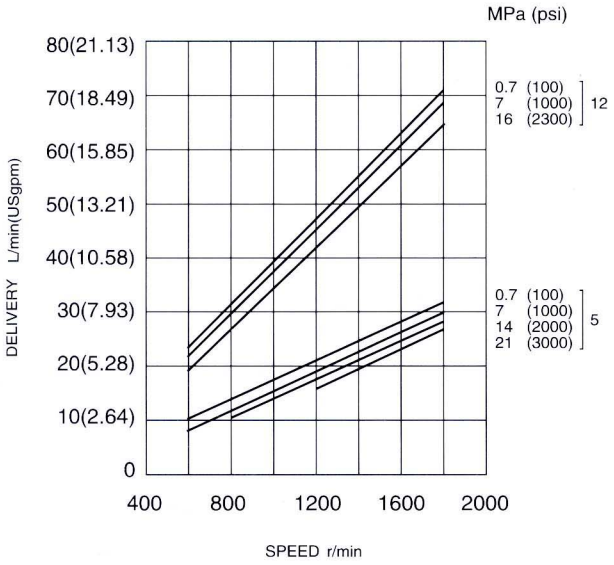
Intra-vane Pump for Industry Application

Output Flow and Input Power Performance Characteristics

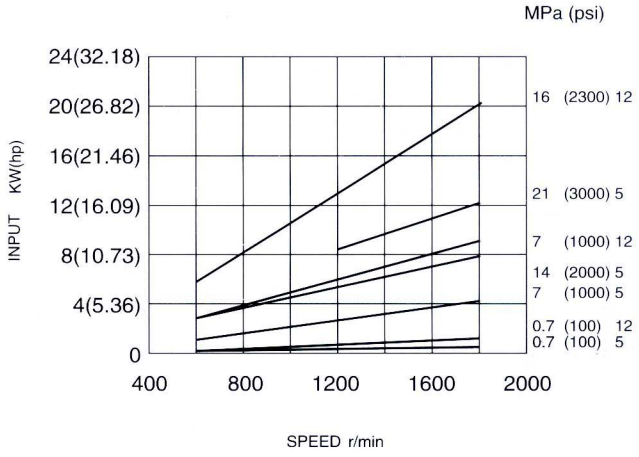
Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speed

S20V S※※20V

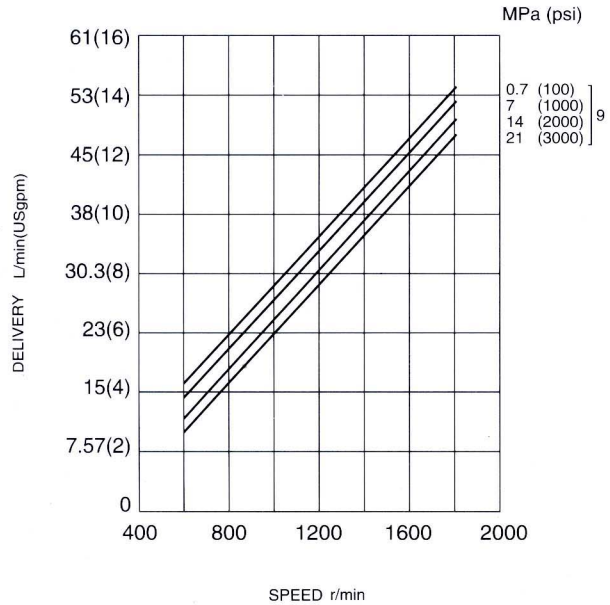
Output Flow: Displacement Codes 5 and 12



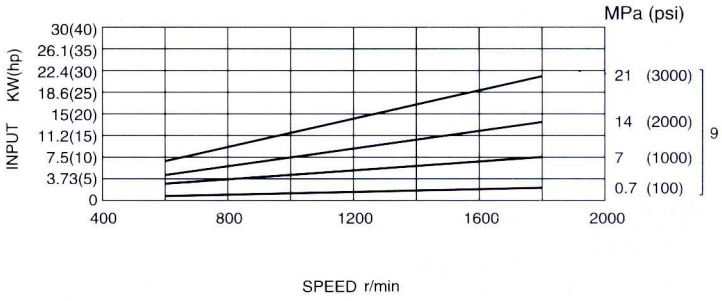
Input Power: Displacement Codes 5 and 12



Output Flow: Displacement Codes 9



Input Power: Displacement Codes 9

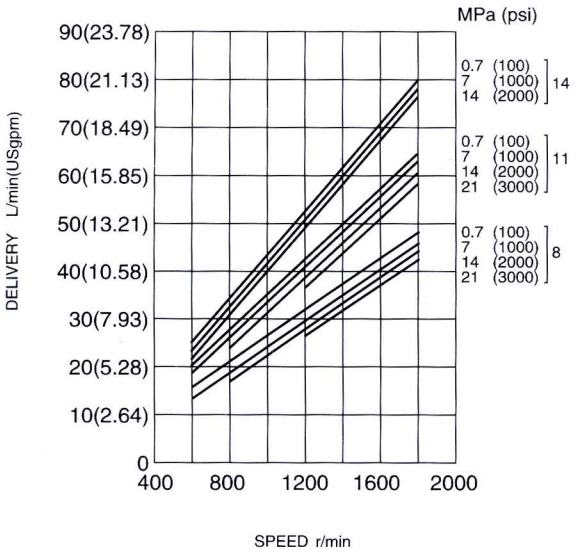


Intra-vane Pump for Industry Application

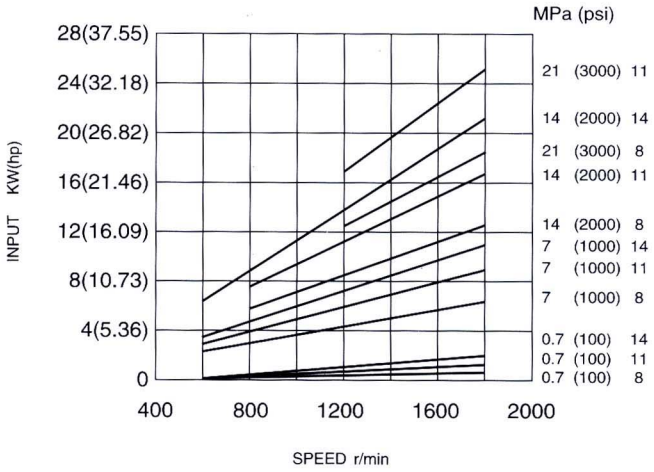
Output Flow and Input Power Performance Characteristics

Typical flows at 50℃(120° F)，26cSt(128SUS),0MPa(0psi) inlet at rated speeds

Output Flow：Displacement Codes 8、11 and 14

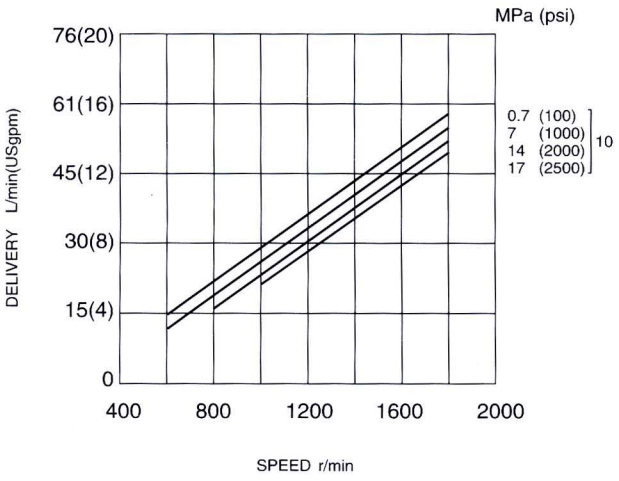


Input Power：Displacement Codes 8、11 and 14

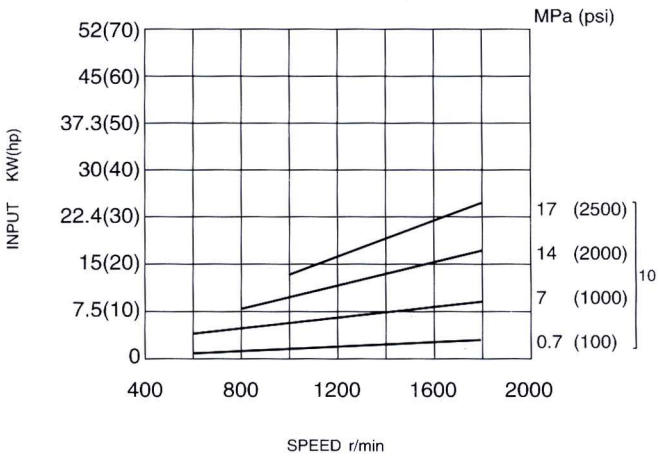


S25V S25※※V S※※25V

Output Flow：Displacement Codes 10



Input Power：Displacement Codes 10

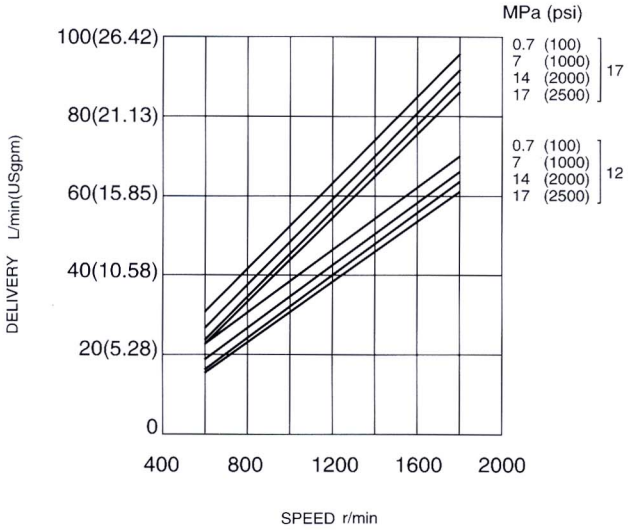


Intra-vane Pump for Industry Application

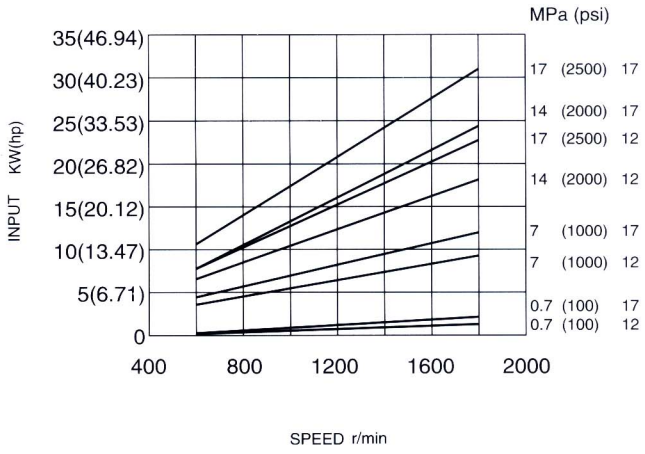
Output Flow and Input Power Performance Characteristics

Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

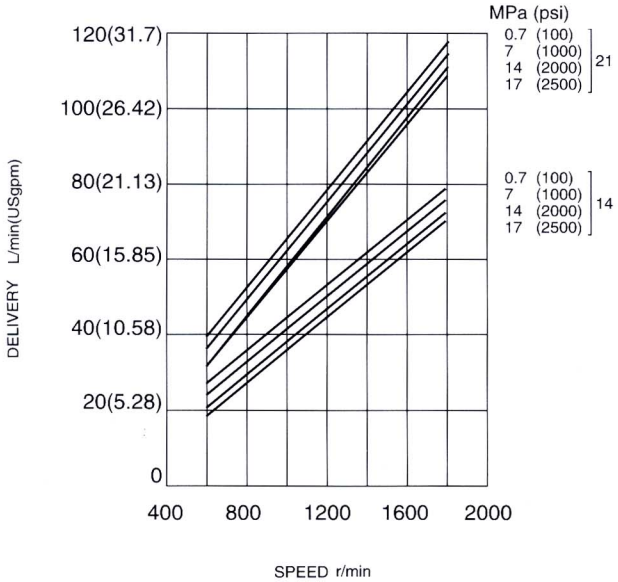
Output Flow: Displacement Codes 12 and 17



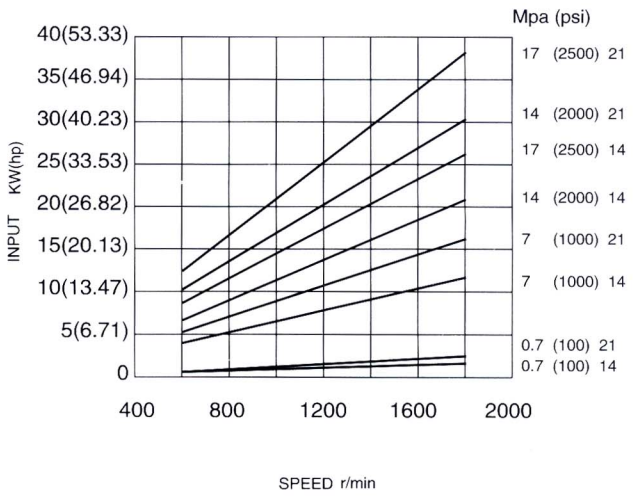
Input Power: Displacement Codes 12 and 17



Output Flow: Displacement Codes 14 and 21



Input Power: Displacement Codes 14 and 21



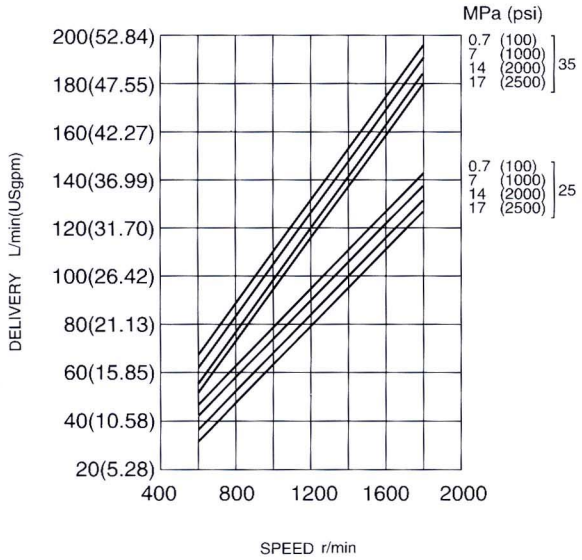
Intra-vane Pump for Industry Application

Output Flow and Input Power Performance Characteristics

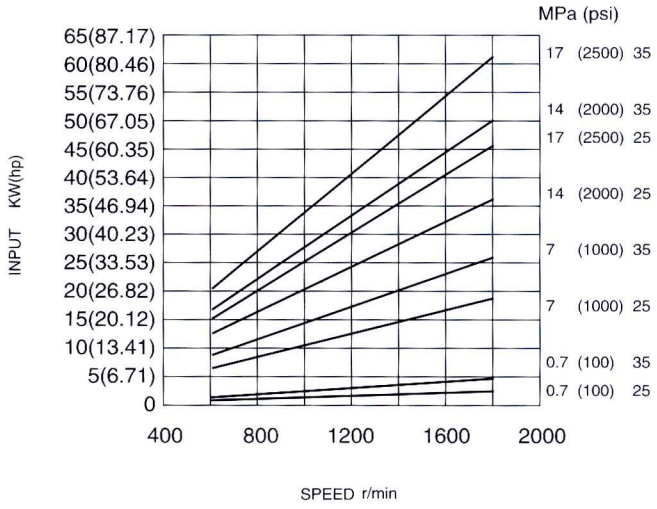
Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

S35V S35※※V S※※35V

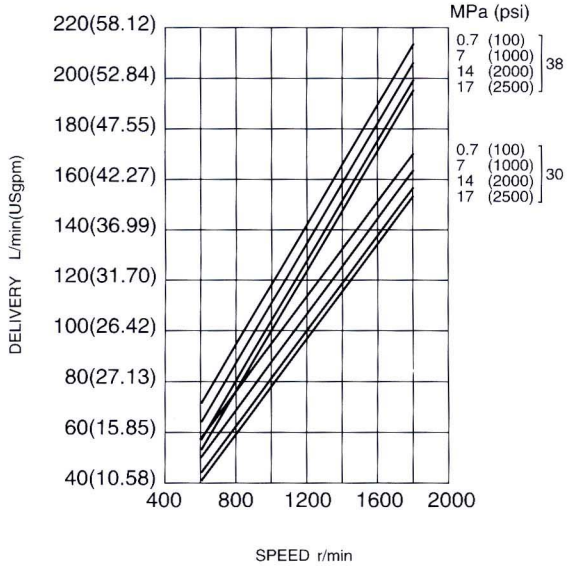
Output Flow: Displacement Codes 25 and 35



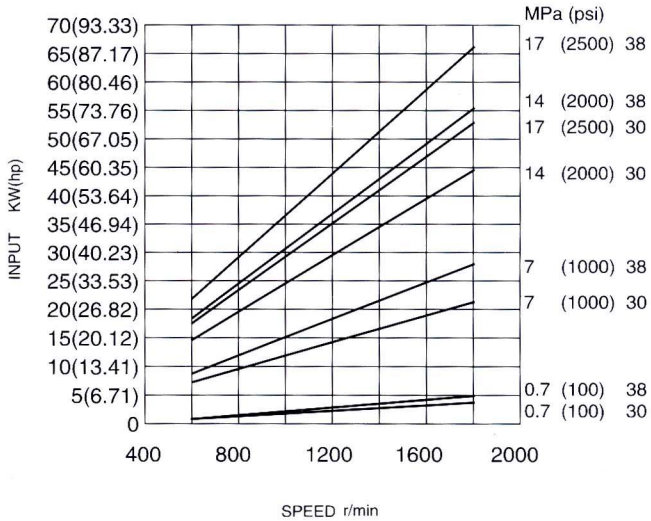
Input Power: Displacement Codes 25 and 35



Output Flow: Displacement Codes 30 and 38



Input Power: Displacement Codes 30 and 38



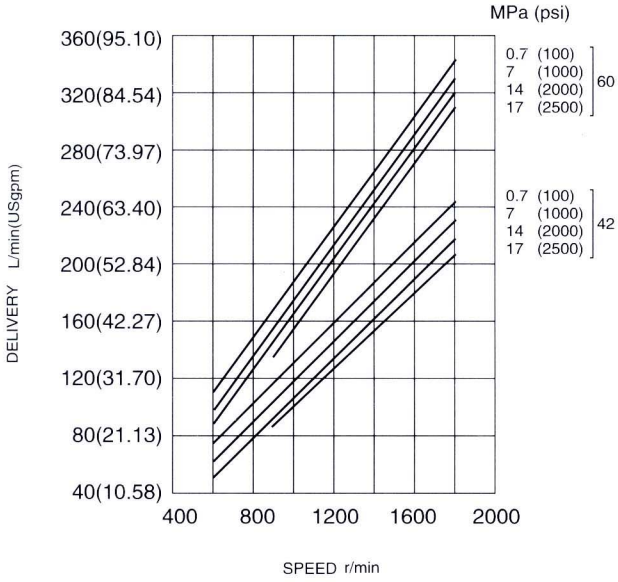
Intra-vane Pump for Industry Application

Output Flow and Input Power Performance Characteristics

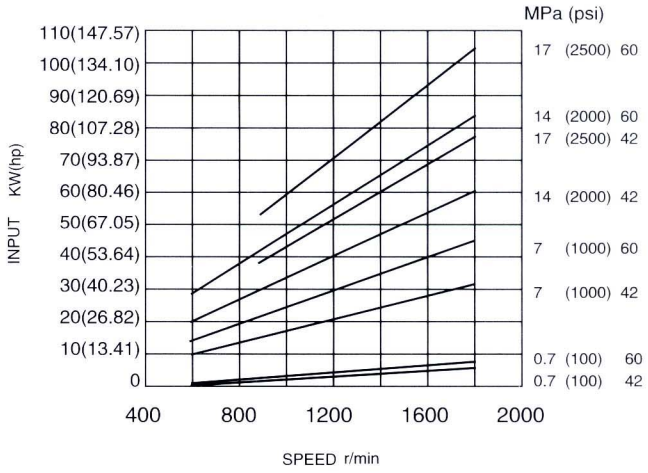
Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

S45V S45※※V

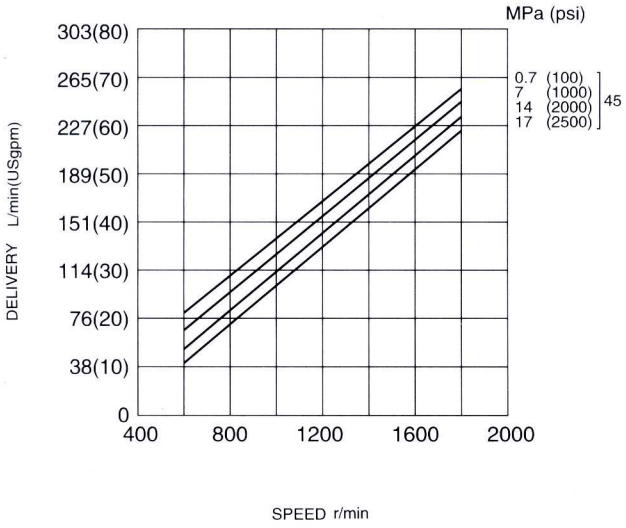
Output Flow: Displacement Codes 42 and 60



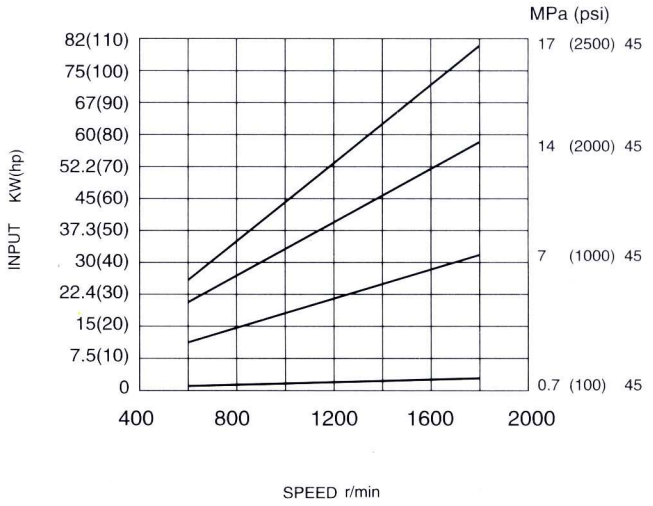
Input Power: Displacement Codes 42 and 60



Output Flow: Displacement Codes 45



Input Power: Displacement Codes 45



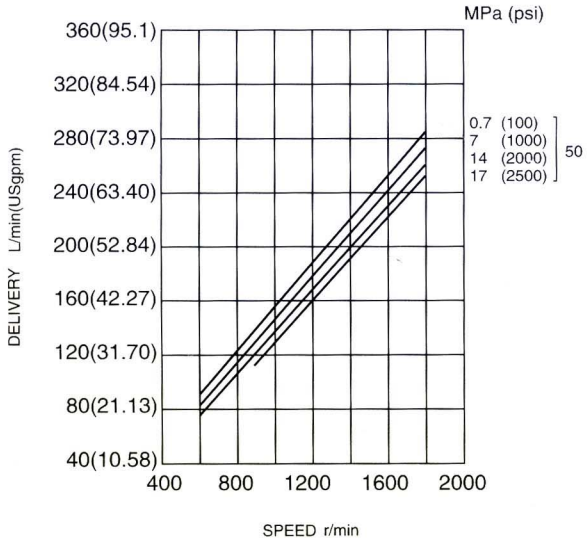
Intra-vane Pump for Industry Application

Output Flow and Input Power Performance Characteristics

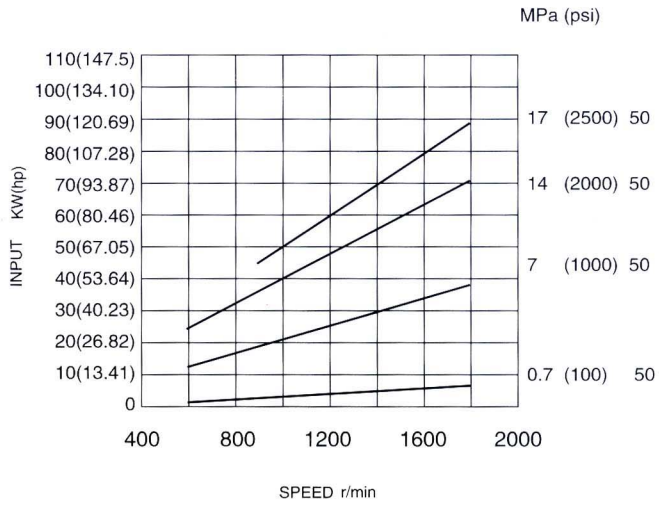
Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speed

S45V S45※※V

Output Flow: Displacement Codes 50



Input Power: Displacement Codes 50



The Input Power Formula of Oil Pump

The calculation of input power is the basis of choosing the motor of oil pump. At particular pressure △P , the driving power W changes with the change of output flow Q.

$$W = \frac{Q \times \triangle P}{61.2 \times \eta m} \text{ (kW)}$$

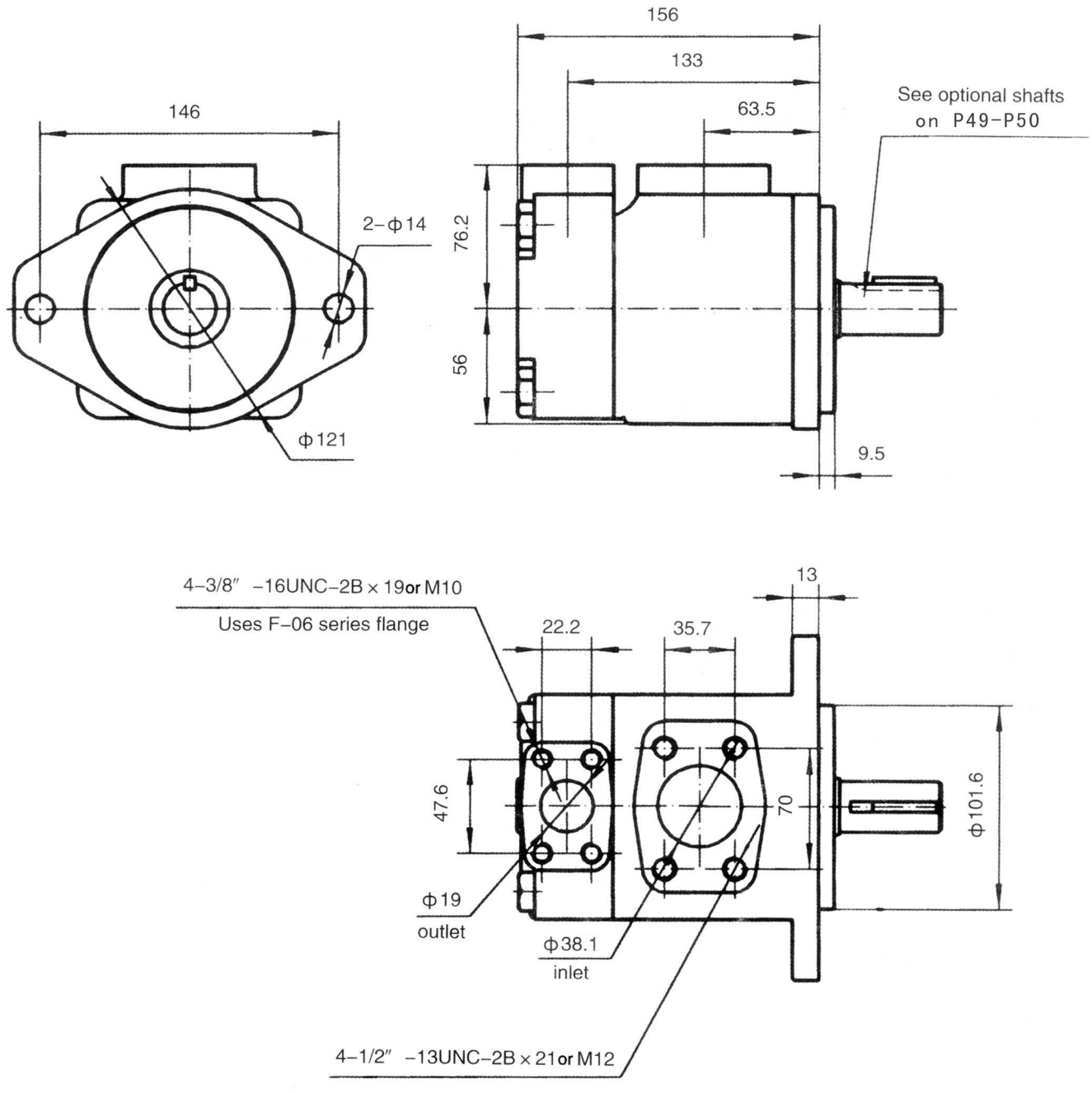
Note: △P——The pressure difference betwwen inlet and outlet position of pump(MPa).

ηm——The mechanical efficiency of pump (Generally, the mechanical efficiency of intra-vane pump is 0.90).

Intra-vane Pump for Industry Application

Configuration and Installation Dimension(mm)

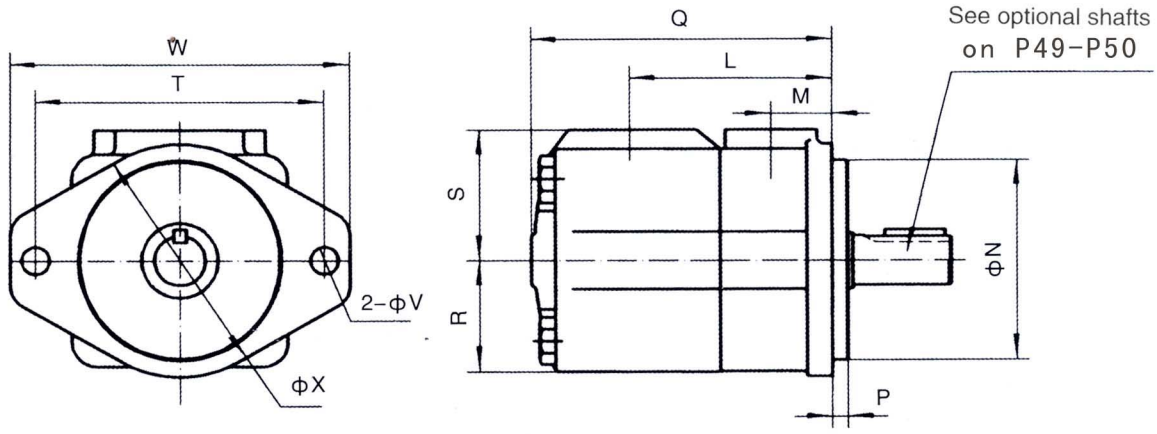
S20V



Intra-vane Pump Industry Application

Configuration and Installation Dimension(mm)

S25V S35V S45V

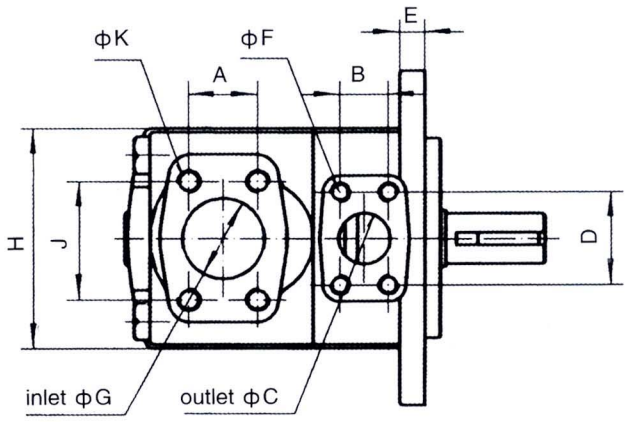


ΦC

S25V Uses F-08 Series flange
S35V Uses F-10 Series flange
S45V Uses F-12 Series flange

ΦG

S25V Uses F-12 Series flange
S35V Uses F-16 Series flange
S45V Uses F-24 Series flange



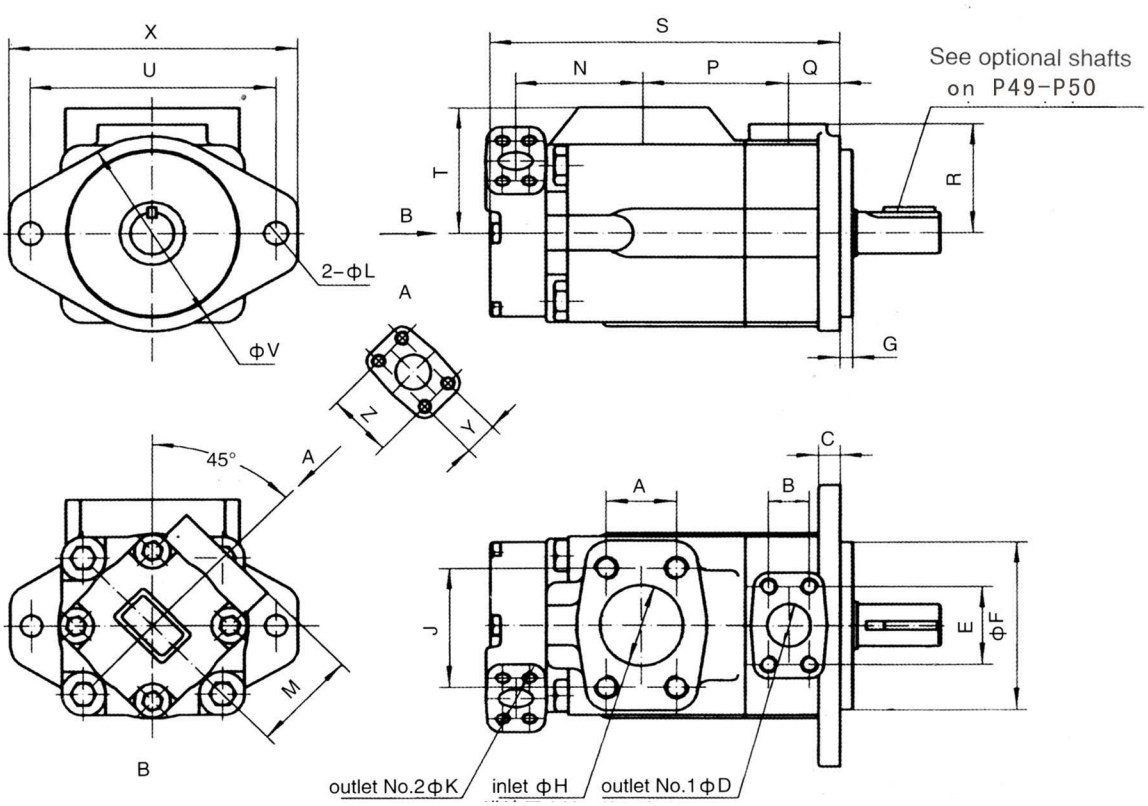
Model	A	B	ΦC	D	E	ΦG	H	J	L	M	ΦN
S25V	35.7	26.2	25.4	52.4	12.7	38.1	117.4	69.9	120.7	38.1	101.60 101.55
S35V	42.9	30.2	31.8	58.7	15.7	50.8	140	77.7	125.5	38.1	127.00 126.95
S45V	61.9	35.7	38.1	69.9	16.0	76.2	159	106.4	153	42.9	127.00 126.95

P	Q	R	S	T	ΦV	W	ΦX	ΦFxFull thread depth 4holes	ΦKxFull thread depth 4holes
9.53	164.1	63.5	76.2	146	14.2	174.5	121	3/8″ -16UNC-2B×19deepM10	1/2″ -13UNC-2B×23.8deepM12
9.53	186.9	69.9	82.6	181	17.5	213	147.6	7/16″ -14UNC-2B×22.3deepM12	1/2″ -13UNC-2B×22.3deepM12
12.7	216.9	82.6	93.7	181	17.5	213	147.6	1/2″ -13UNC-2B×23.8deepM12	5/8″ -11UNC-2B×30deepM16

Intra-vane Pump for Industry Application

Configuration and Installation Dimension(mm)

S25※※V S35※※V S45※※V



ΦK

S※20V Uses F-06 Series flange

S※25V Uses F-08 Series flange

ΦH

S2520V Uses F-20 Series flange

S35※V Uses F-24 Series flange

S45※V Uses F-28 Series flange

ΦD

S2520V Uses F-08 Series flange

S35※V Uses F-10 Series flange

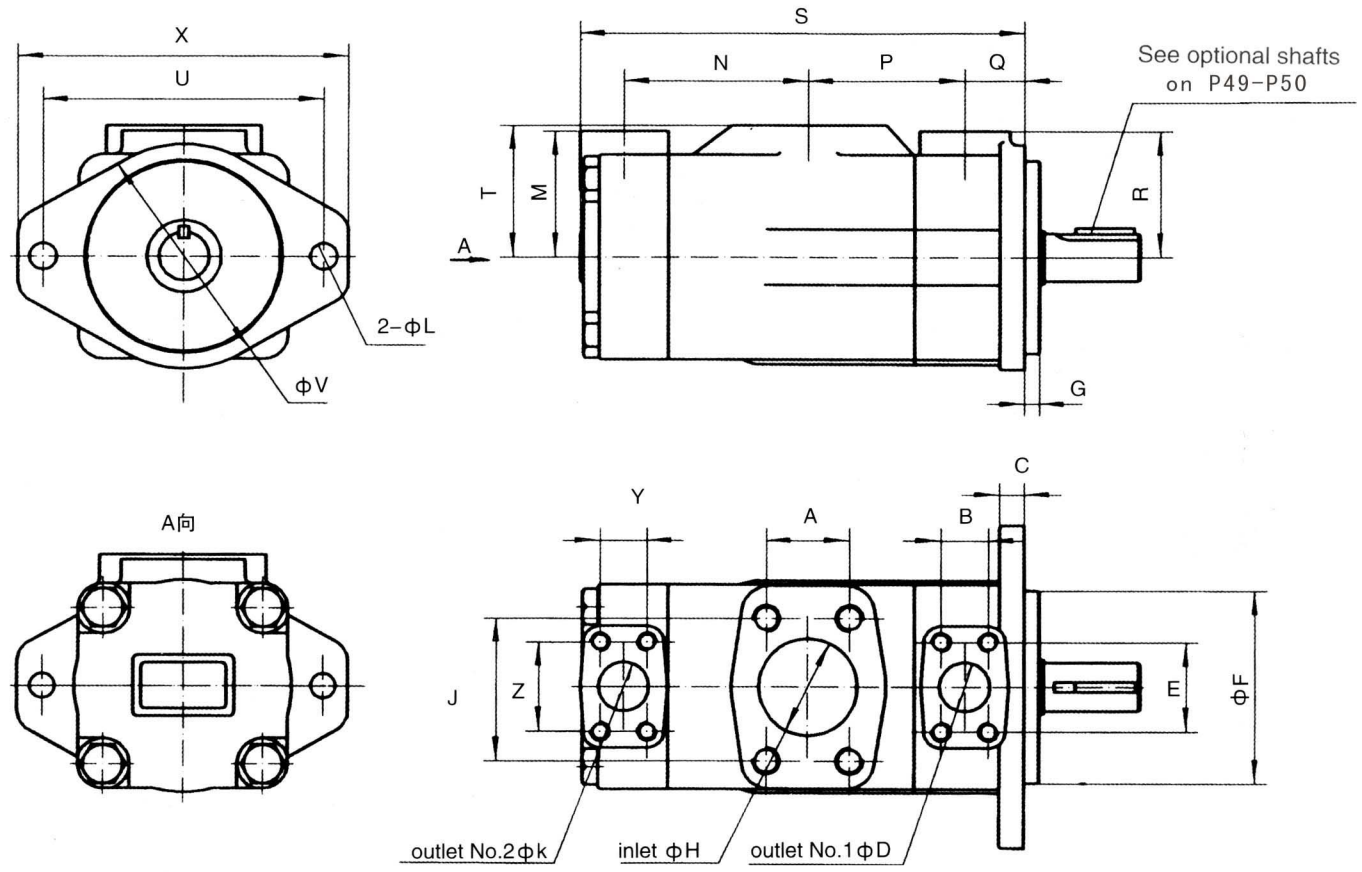
S45※V Uses F-12 Series flange

Model	A	B	C	ΦD	E	ΦF	G	ΦU	J	ΦK	ΦL	M
S2520V	50.8	26.2	12.7	25.4	52.4	101.60 101.55	9.53	63.5	88.9	19.1	14.2	76.2
S2525V	50.8	26.2	12.7	25.4	52.4	101.60 101.55	9.53	63.5	88.9	25.4	14.2	74.7
S3520V	61.9	30.1	15.9	31.7	58.7	127.00 126.95	9.53	76.2	106.4	19.1	17.5	76.2
S3525V	61.9	30.1	15.9	31.7	58.7	127.00 126.95	9.53	76.2	106.4	25.4	17.5	74.7
S4520V	69.9	35.7	15.9	38.1	69.9	127.00 126.95	12.7	88.9	120.7	19.1	17.5	76.2
S4525V	69.9	35.7	15.9	38.1	69.9	127.00 126.95	12.7	88.9	120.7	25.4	17.5	74.7
S4535V	77.8	35.7	15.9	38.1	69.9	127.00 126.95	12.7	101.6	130.2	31.7	17.5	101.6

Intra-vane Pump for Industry Application

Configuration and Installation Dimension(mm)

S2525 V S4535V



ΦK

S2525V Uses F-08 Series flange

S4535V Uses F-10 Series flange

ΦH

S2525V Uses F-20 Series flange

S4535V Uses F-32 Series flange

ΦD

S2525V Uses F-08 Series flange

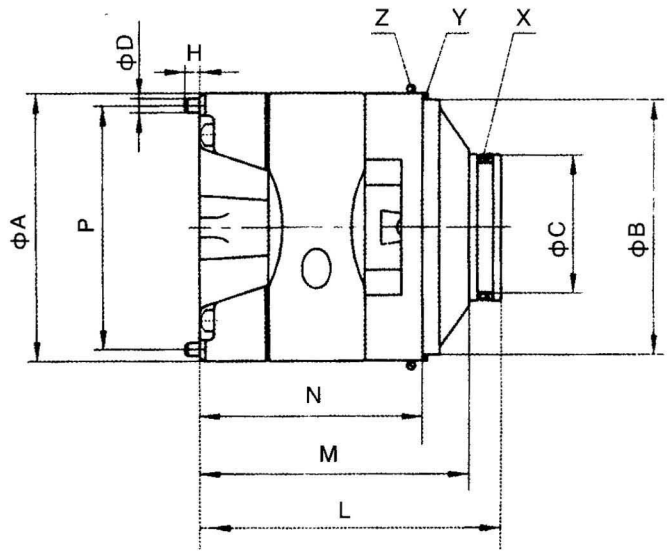
S4535V Uses F-12 Series flange

Model	N	P	Q	R	S	T	U	ΦV	X	Y	Z
S2520V	88.1	101.6	38.1	76.2	252.5	85.3	146.1	121	174.7	22.2	47.6
S2525V	97.5	101.6	38.1	76.2	263	84	146.1	121	174.7	26.2	52.4
S3520V	99.6	114.3	38.1	82.6	276.6	88.9	181	147.6	213	22.2	47.6
S3525V	109.5	114.3	38.1	82.6	293.9	88.9	181	147.6	213	26.2	52.4
S4520V	119.9	119.4	42.9	93.7	306.8	102.4	181	147.6	213	22.2	47.6
S4525V	136	119.4	42.9	93.7	329.9	102.4	181	147.6	213	26.2	52.4
S4535V	148.3	133.3	42.9	93.7	353	102.4	181	147.6	213	30.2	58.7

V series Cartridge Kits

Model Code

Example: CK(1) – S25V(2) – 14(3) R(4) B(5) – 10(6)



1.CK—Cartridge kits
2.S25V—Series
S20V—18~45ml/rev S25V—33~67ml/rev
S35V—81~121ml/rev S45V—138~193ml/rev
3.14—Displacement code

Series	Code	Geometric displacement	
		mL/r	in^3/r
S20V	5	18	1.10
	8	27	1.67
	9	30	1.85
	11	36	2.22
	12	40	2.49
	14	45	2.78
S25V	10	33	2.01
	12	39	2.47
	14	45	2.78
	17	55	3.39
	21	67	4.13
S35V	25	81	4.49
	30	97	5.91
	35	112	6.83
	38	121	7.37
S45V	42	138	8.41
	45	147	8.95
	50	162	9.85
	60	193	11.75

4.R— Rotation
(Viewed from smaller end)
L— Left hand for counter clockwise
R—Right hand for clockwise,omit
5.B— No Bush,omit if not required
6.10—Design number

Model	ΦA	ΦB	ΦC	ΦD	L	M	N	P	H	X	Y	Z
S20V	82.5	76.2	47.1	4.8	81.3	70.5	64.5	73.66	6	2–222	76.76×3×3.5	2–236
S25V	96.8	90.5	52.2	4.8	98.7	86.6	77.6	88.18	7	2–224	91×3×3.5	2–241
S35V	114.3	108	72.1	6.4	117.2	104.5	90.8	103.94	7	2–230	108.5×3×3.5	2–247
S45V	133.3	127	80.1	6.4	140.4	119	105.6	123.8	8	2–233	127.6×3×3.5	2–253

Intra-vane Pump for Mobile Equipment

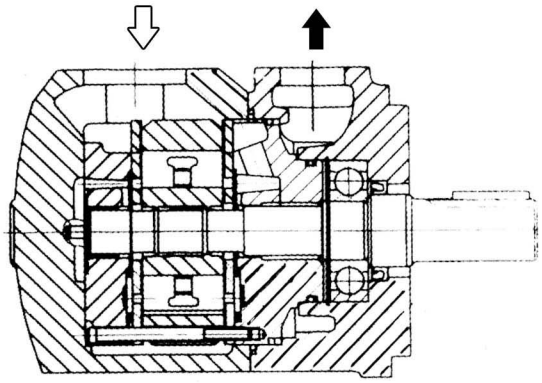
This series of pumps are developed to meet the increasing demands of vehicle industry.Total 5 series including 23 kinds are available, whose displacement ranges from 18 mL/r to 193 mL/r, maximum continuous operating pressure is 21MPa, the speed of rotation ranges from 600 rpm to 2200 rpm. The adopting of intra-vane structure ensure many good characteristics such as high pressure, large flow, small volume, smooth operation, low noise, efficient capacity efficiency and long service life etc. The main technical data has reached an advanced level in the international market of the same trade.

This series of pump is composed of replaceable cartridge kits, which reduce the construction time thus enhance production efficiency. Optimum design of pump core further reduce the pressure shimmy, flow pulsation and noise of the pump. Reliable pressure balance which compensate the space can have better capacity efficiency. The proper design of oil supply system between vane and intra-vane enables good contact between vane and stator and ensure minimum flow loss. The unique design, high-precision processing and rational material selections prolong the service life of the pump.

With complete specifications, reliable performance, simple and rational structure, convenient installation and repairing (the connection complies with ISO and SAE), the pump is widely used in machine-tool, press and die-casting machines, engineering, plastic injection moulding and other machineries.

Intra-vane Pump for Mobile Equipment

VQ series single pump



Displacement:18-193mL/r Pressure:21MPa

Model Code:

Example:F3 - S20VQ - 12 A M F -1 A -10 L

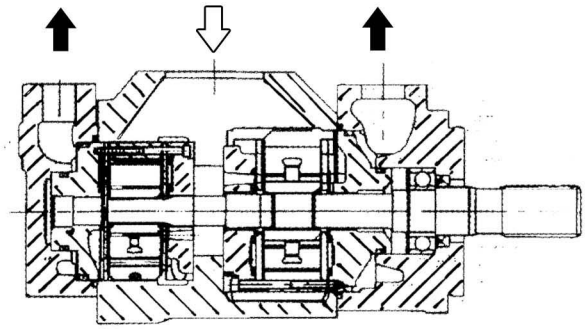
Model Code

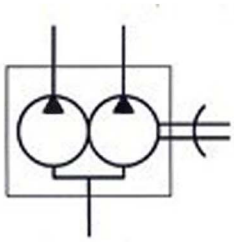
F3	S**V	12	A	M	F	1	A	10	L
Refit	Series	Code	Port connection	Port connection thread	Mounting type	Shaft type	Outlet position	Design number	Rotation
F3- Viton seals Omit if not required	S20VQ	5,8,9,11 12,14	A-SAE 4-bolt flange	Metric thread	Flange mounting,omit	1- straight keyed	(viewed from cover end of pump)	10	(viewed from shaft end of pump)
	S25VQ	12,14, 17,19,21				151-splined(For 20VQ only)	A-opposite inlet port		L-left hand for counterclockwise
	S30VQ	24,28		Inch thread, omit	Foot mounting	86-heavy duty straight keyed	B-90° CCW from inlet		
	S35VQ	21,25,30,35,38				11-splined (Not available on 20V)	C-inline with inlet		R-right hand for clockwise
	S45VQ	42,47,50,57,60					D-90° CW from inlet		

Rated capacity in USgpm an 1200rpm and 0.7 Mpa

Intra-vane Pump for Mobile Equipment

VQ series double pump





Displacement:18-193mL/r Pressure:21MPa
Model Code:
Example:F3 - S2520VQ - 21/11 A M F - 1 CC - 10 L

Model Code

F3	S****VQ	21	11	A	M	F	1	CC	10	L
Refit	Series	code view from shaft end pump	code view from cover end pump	Port connection	Port connection thread	Mounting type	Shaft type	Outlet position	Design number	Rotation
F3-Viton seals Omit if not required	S2520VQ	12,14,17,19,21	5,8,9,11,12,14	A-SAE 4-bolt flange	Metric thread Inch thread, omit	Flange mounting,omit F-Foot mounting	1-straight keyed 86-heavy duty straight keyed 11-splined keyed	check description on page 04	10	(viewed from shaft end of pump) L-left hand for counterclockwise R-right hand for clockwise
	S3020VQ	24,28	5,8,9,11,12,14							
	S3520VQ	21,25,30,35,38	5,8,9,11,12,14							
	S3525VQ	21,25,30,35,38	12,14,17,19,21							
	S3530VQ	21,25,30,35,38	24,28							
	S4520VQ	42,47,50,57,60	5,8,9,11,12,14							
	S4525VQ	42,47,50,57,60	12,14,17,19,21							
	S4530VQ	42,47,50,57,60	24,28							
	S4535VQ	42,47,50,57,60	21,25,30,35,38							

Rated capacity in USgpm an 1200rpm and 0.7 Mpa

Intra-vane Pump for Mobile Equipment

Technical Data

Series	Code	Geometric displacement (mL/r)	Min speed (rpm)	Using antiwear hydraulic oil or phoshate ester fluid		Using water-in-oil emulsions		Using water glycol fluid	
				Max. speed (rpm)	operating pressure (MPa)	Max. speed (rpm)	operating pressure (MPa)	Max. speed (rpm)	operating pressure (MPa)
S※※20VQ	5	18	600	2700	21	1800	14	1500	16
	8	27.4							
	9	29.3							
	11	36.4							
	12	39.5			16				
	14	45.9			14				14
S25※※VQ S※※25VQ	12	40.2		2500	21	1500			16
	14	45.4							
	17	55.2							
	19	60.7							
	21	67.5							
S30※※VQ S※※30VQ	24	76.2		2500	14				14
	28	88.2							
S35※※VQ S※※35VQ	21	67.9		2500	21			1200	16
	25	81.6							
	30	97.7							
	35	112.8							
	38	121.6							
S45※※VQ	42	138.7		2200	17.2				
	47	148.3							
	50	162.3							
	57	179.6							
	60	193.4							

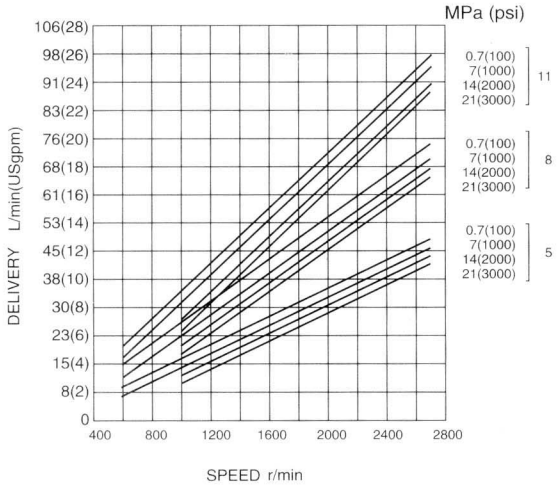
Intra-vane Pump for Mobile Equipment

Output Flow and Input Power Performance Characteristics

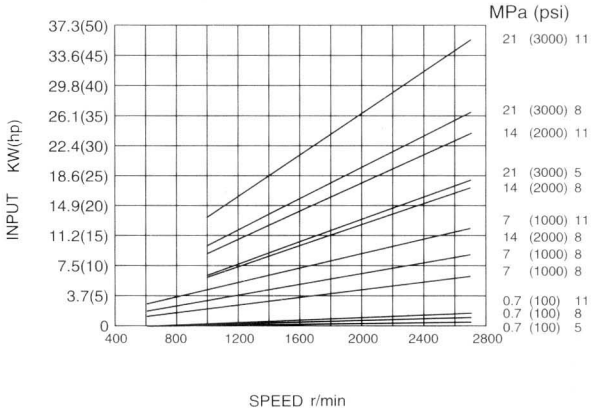
Typical flows at 50℃(120° F)，26cSt(128SUS),0MPa(0psi) inlet at rated speeds

S20VQ　S※※20VQ

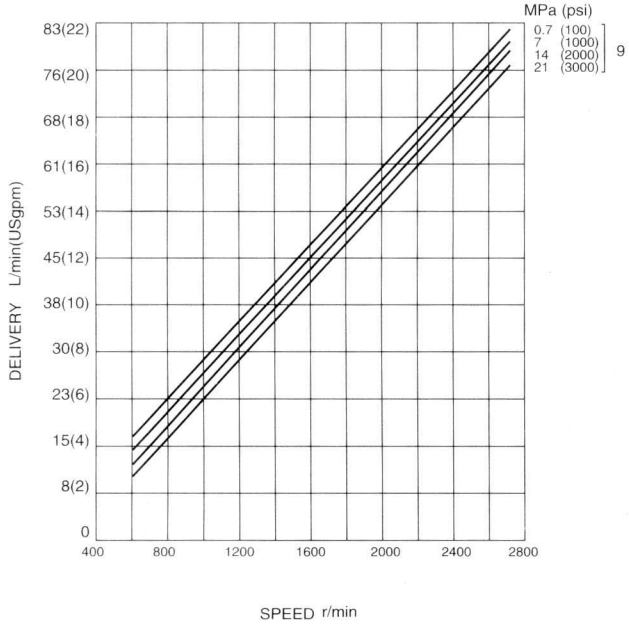
Output Flow：Displacement Codes 5、8 and 11



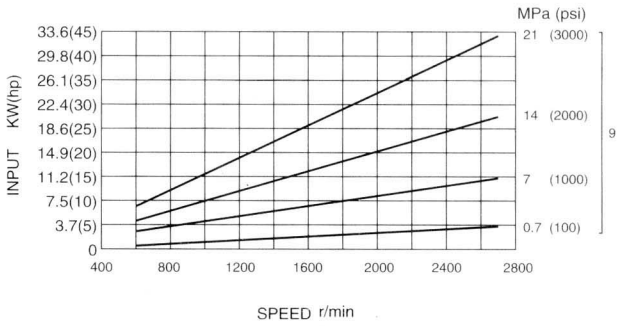
Input Power：Displacement Codes 5、8 and 11



Output Flow：Displacement Codes 9



Input Power：Displacement Codes 9

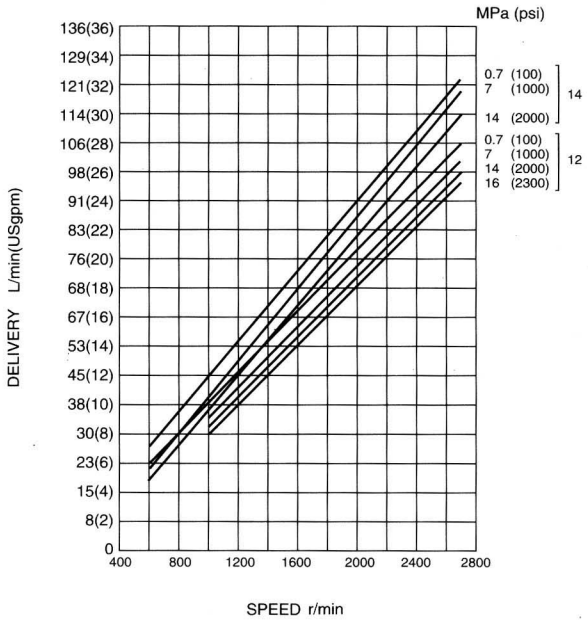


Intra-vane Pump for Mobile Equipment

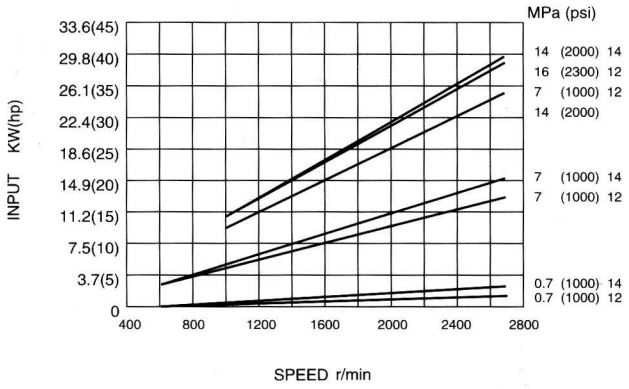
Output Flow and Input Power Performance Characteristics

Typical flow a 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

Output Flow: Displacement Codes 12and 14

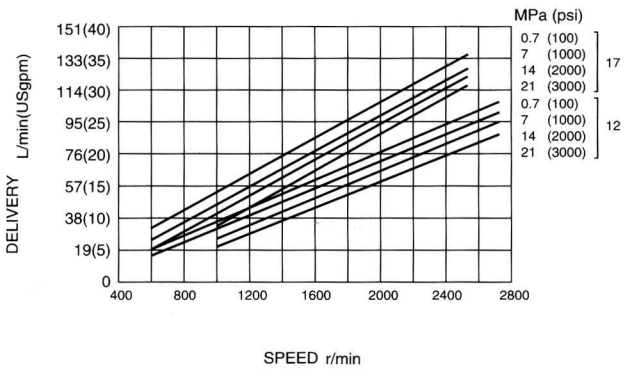


Input Power: Displacement Codes 12 and 14

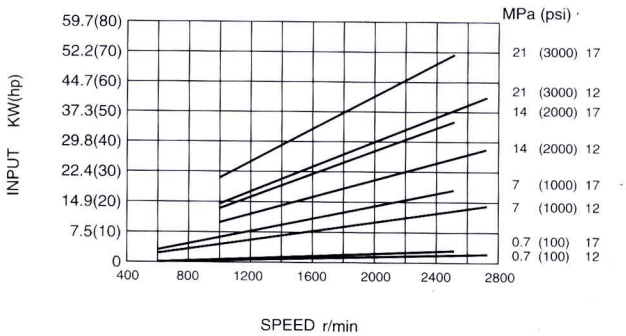


S25VQ S25※※VQ S※※25VQ

Output Flow: Displacement Codes 12and 17



Input Power: Displacement Codes 12 and 17

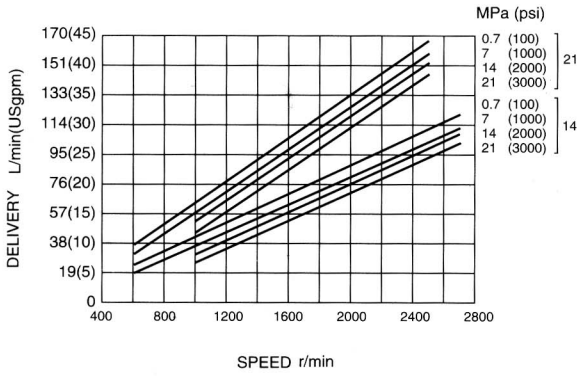


Intra-vane Pump for Mobile Equipment

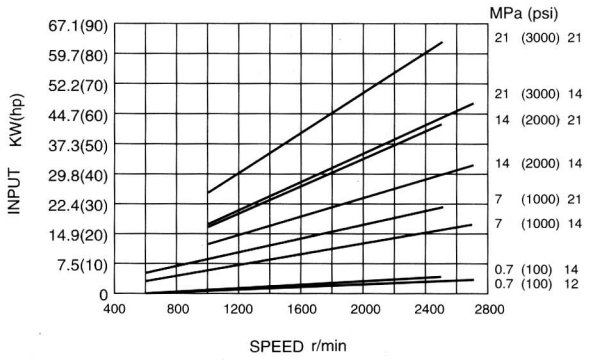
Output Flow and Input Power Performance Characteristics

Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

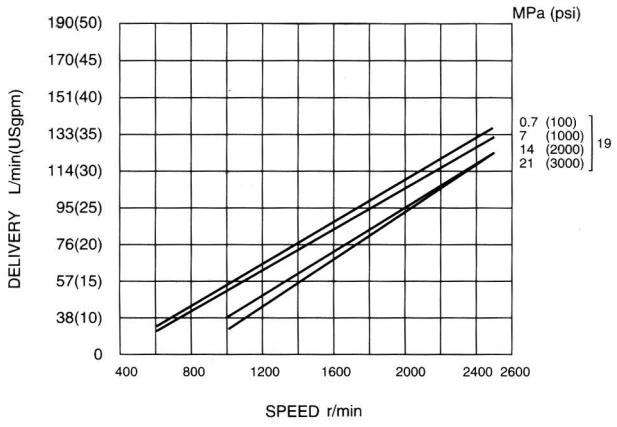
Output Flow: Displacement Codes 14 and 21



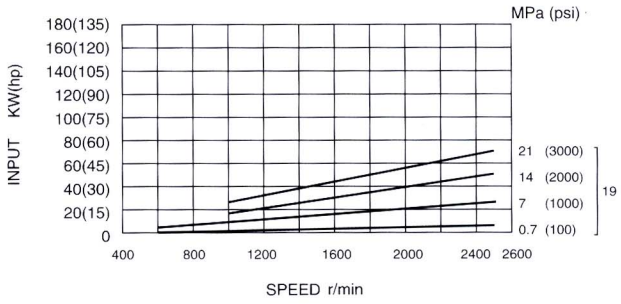
Input Power: Displacement Codes 14 and 21



Output Flow: Displacement Codes 19



Input Power: Displacement Codes 19



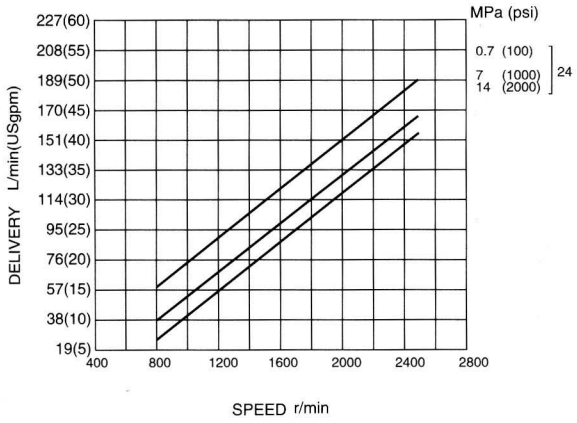
Intra-vane Pump for Mobile Equipment

Output Flow and Input Power Performance Characteristics

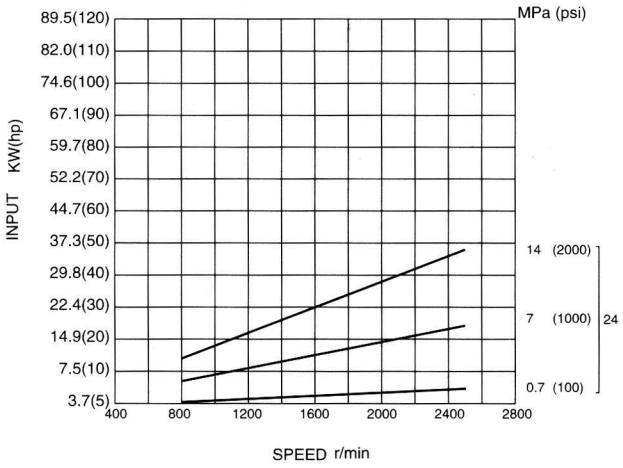
Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

S30VQ S30※※VQ S※※30VQ

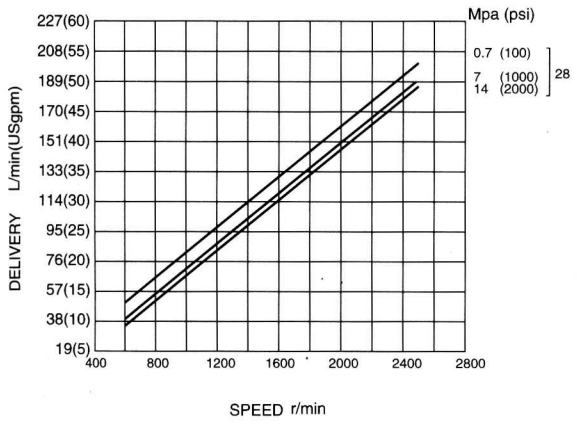
Output Flow: Displacement Codes 24



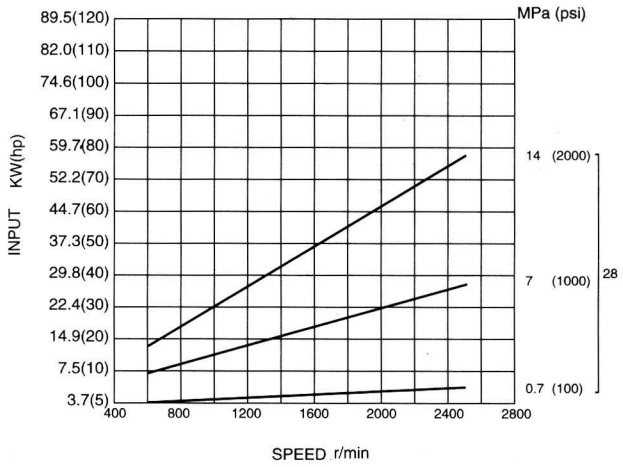
Input Power: Displacement Codes 24



Output Flow: Displacement Codes 28



Input Power: Displacement Codes 28



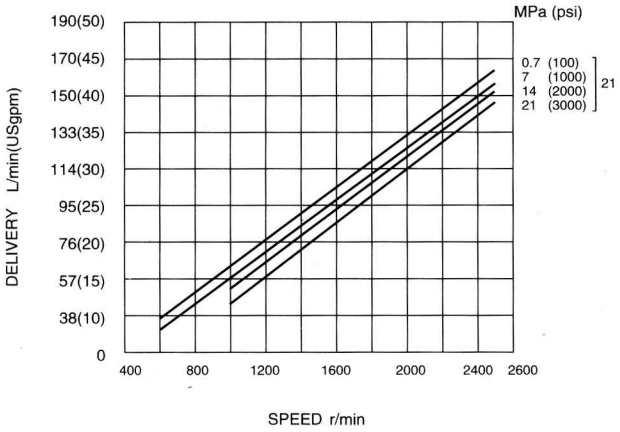
Intra-vane Pump for Mobile Equipment

Output Flow and Input Power Performance Characteristics

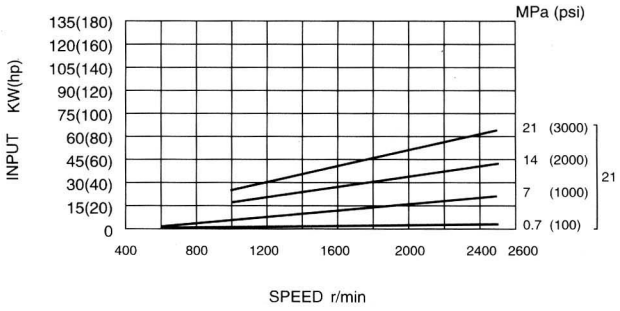
Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

S35VQ S35※※VQ S※※35VQ

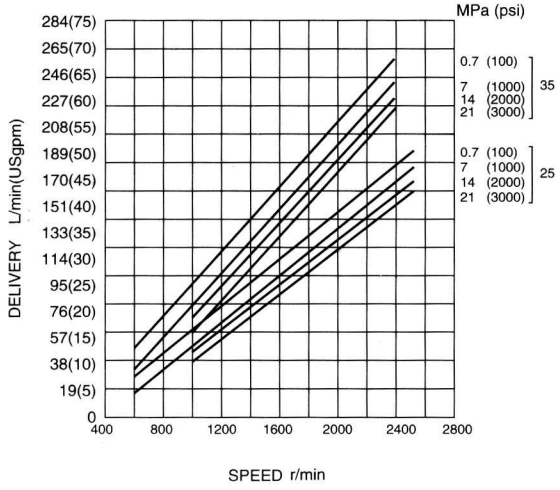
Output Flow: Displacement Codes 21



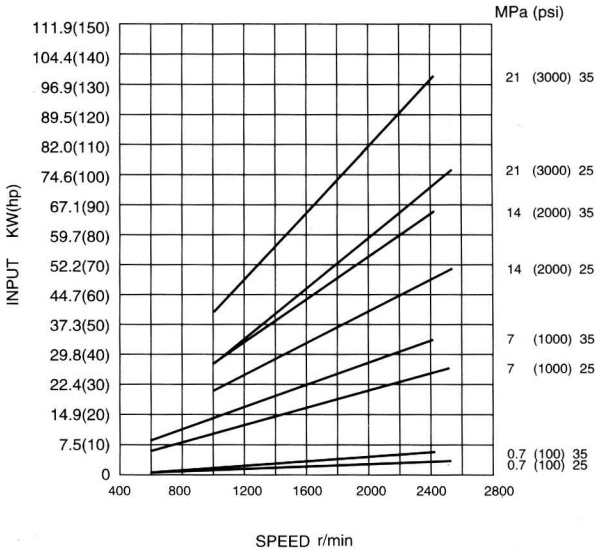
Input Power: Displacement Codes 21



Output Flow: Displacement Codes 25 and 35



Input Power: Displacement Codes 25 and 35

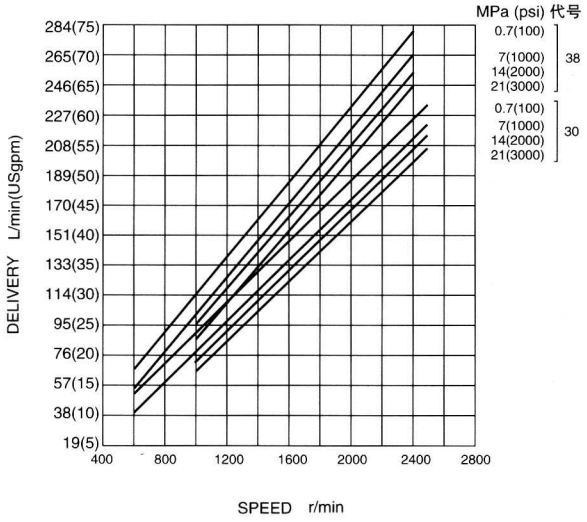


Intra-vane Pump for Mobile Equipment

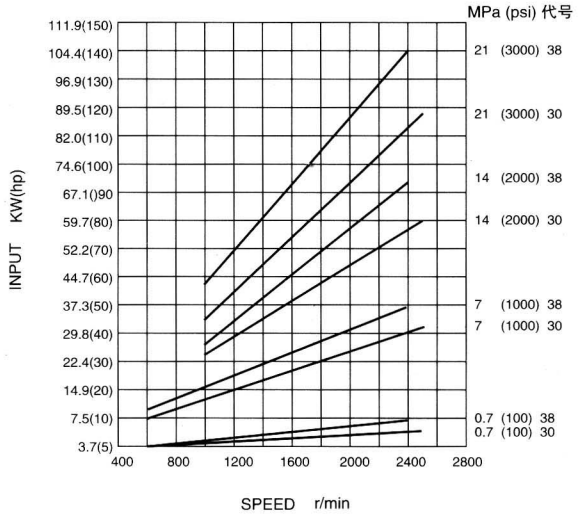
Output Flow and Input Power Performance Characteristics

Typical flows at 50℃(120° F)，26cSt(128SUS),0MPa(0psi) inlet at rated speeds

Output Flow：Displacement Codes 30 and 38

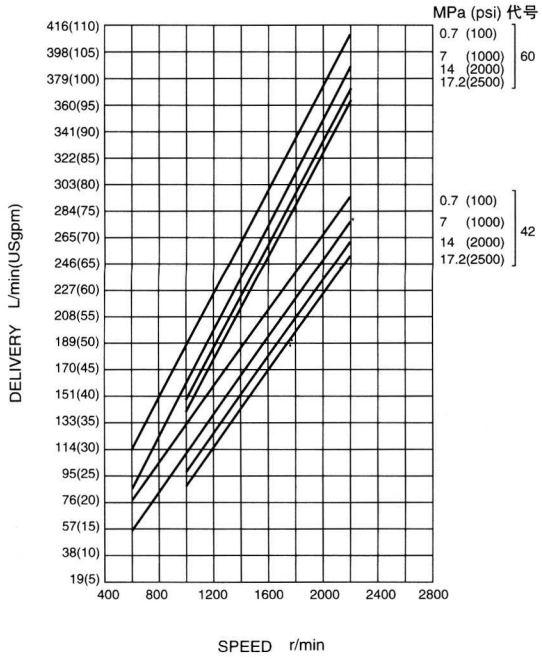


Input Power：Displacement Codes 30 and 38

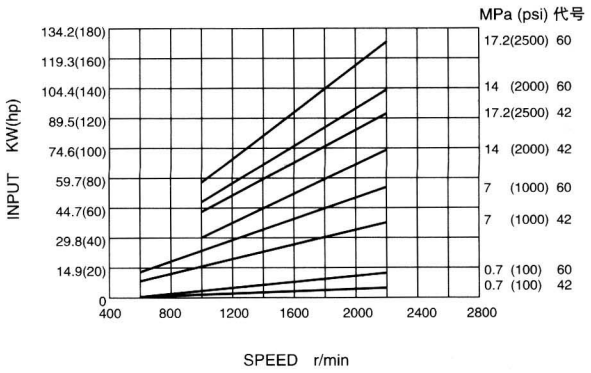


S45VQ S45※※VQ

Output Flow：Displacement Codes 42 and 60



Input Power：Displacement Codes 42 and 60

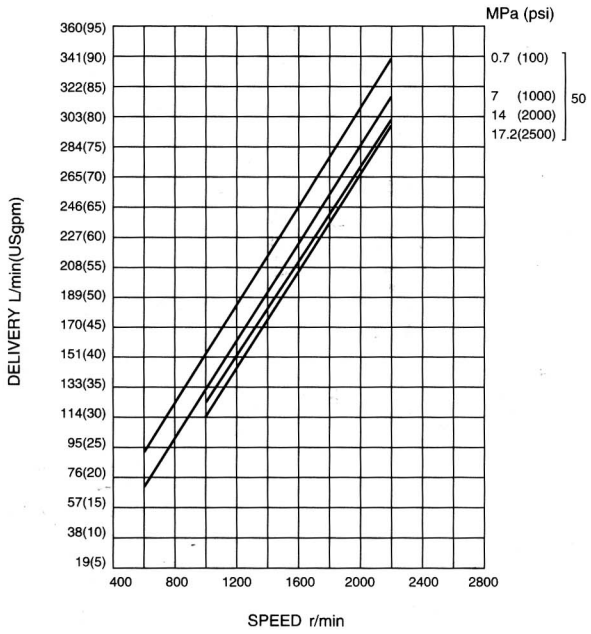


Intra-vane Pump for Mobile Equipment

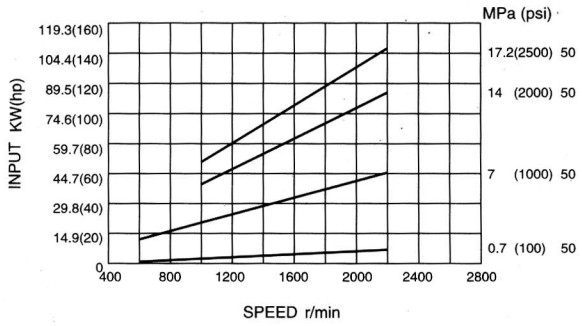
Output Flow and Input Power Performance Characteristics

Typical flows at 50℃(120° F), 26cSt(128SUS),0MPa(0psi) inlet at rated speeds

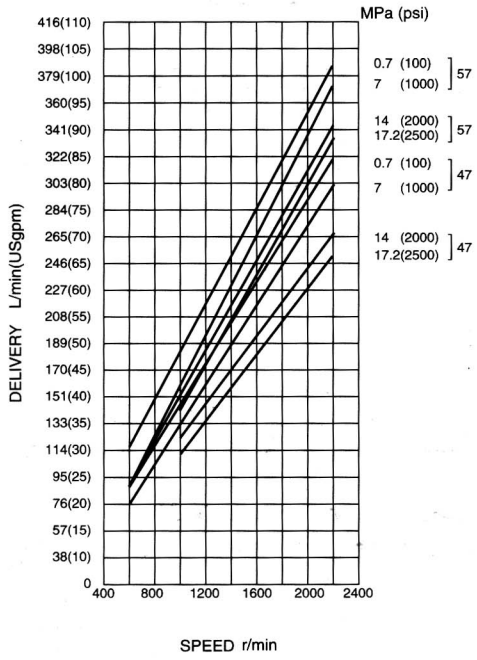
Output Flow: Displacement Codes 50



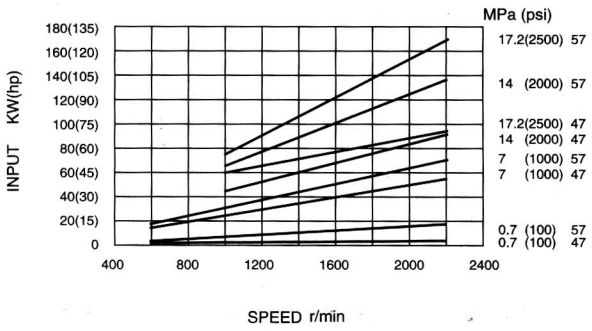
Input Power: Displacement Codes 50



Output Flow: Displacement Codes 47 and 57



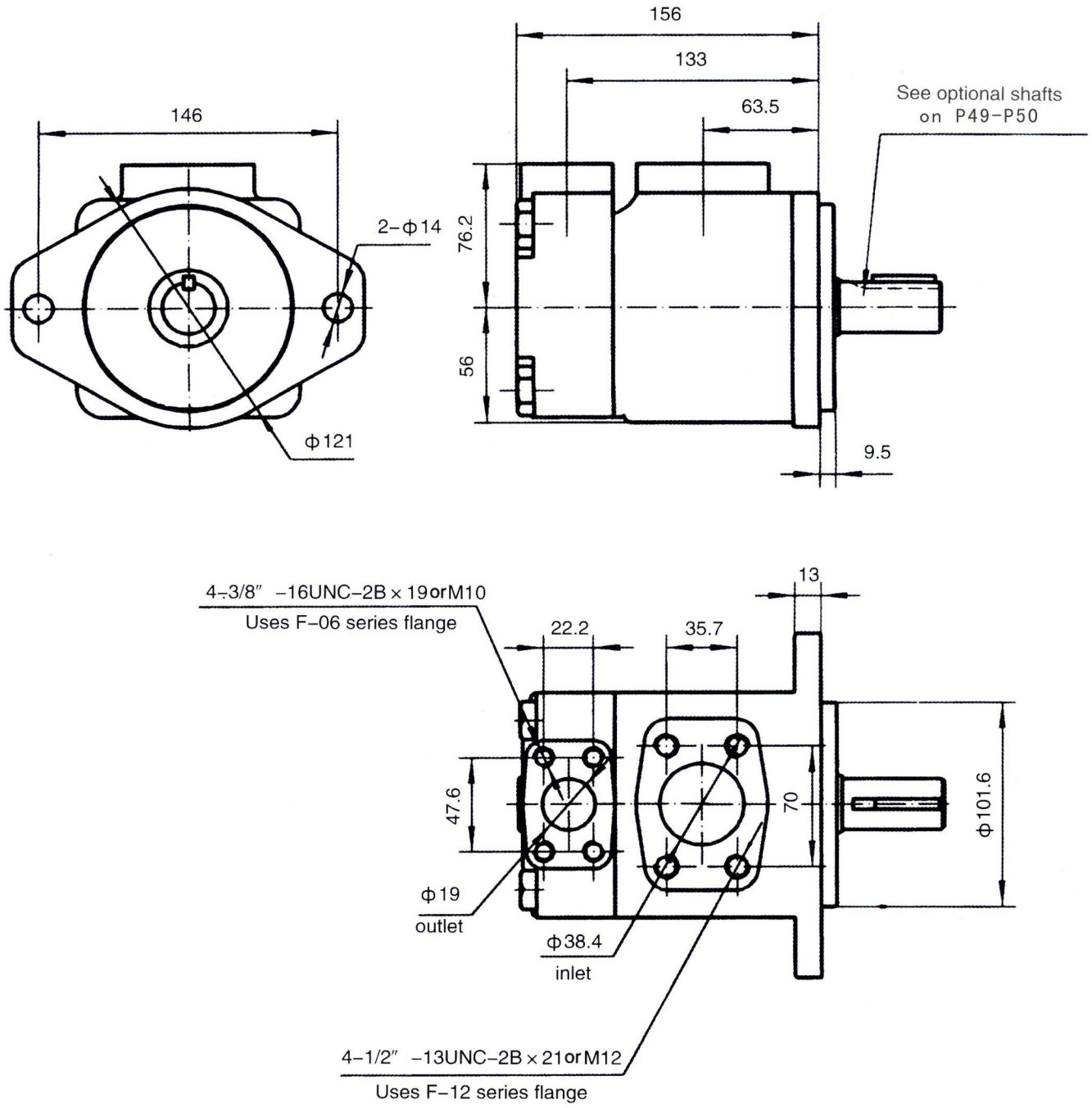
Input Power: Displacement Codes 47 and 57



Intra-vane Pump for Mobile Equipment

Configuration and Installation Dimension(mm)

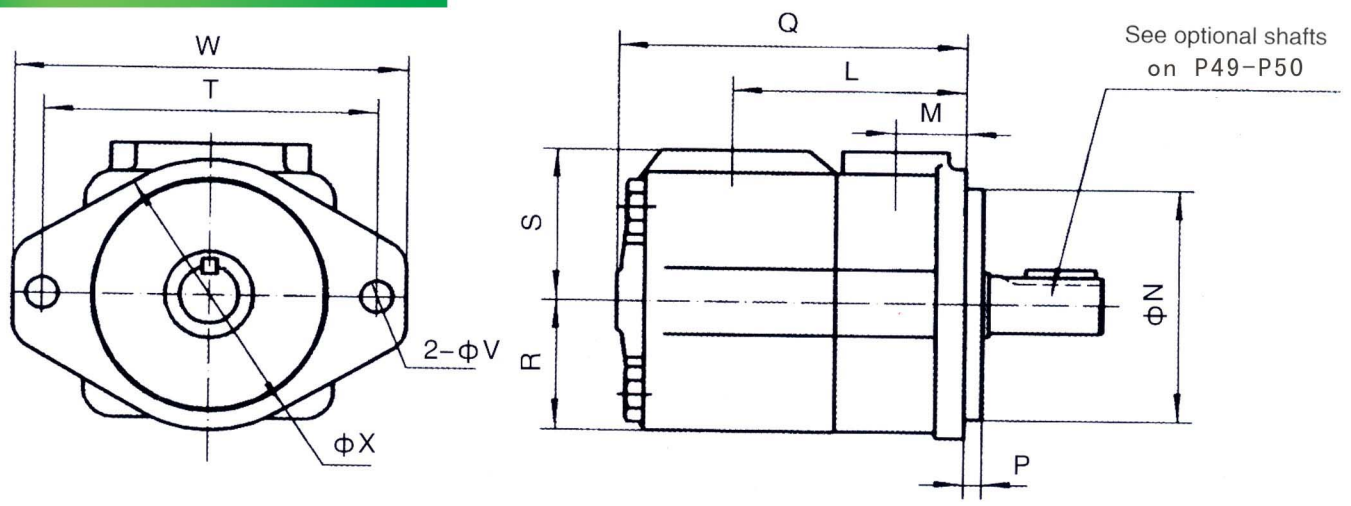
S20VQ



Intra-vane Pump for Mobile Equipment

Configuration and Installation Dimension(mm)

S25VQ S30VQ S35VQ S45VQ

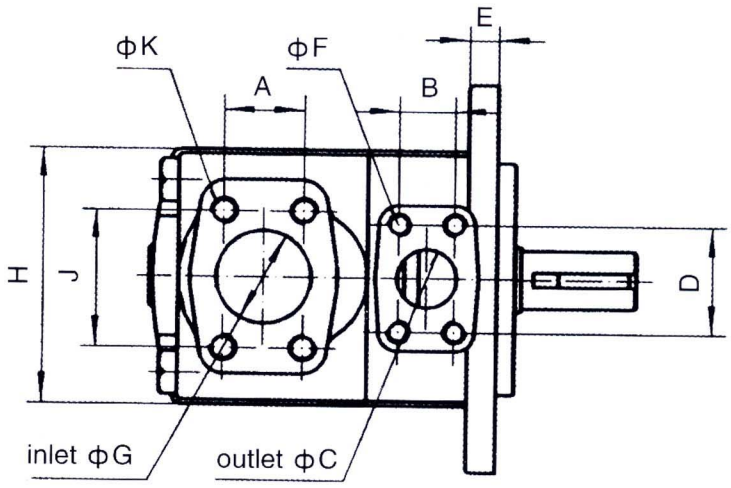


ΦC

S25VQ Uses F-08 Series flange
S30VQ Uses F-08 Series flange
S35VQ Uses F-10 Series flange
S45VQ Uses F-12 Series flange

ΦG

S25VQ Uses F-12 Series flange
S30VQ Uses F-12 Series flange
S35VQ Uses F-16 Series flange
S45VQ Uses F-24 Series flange



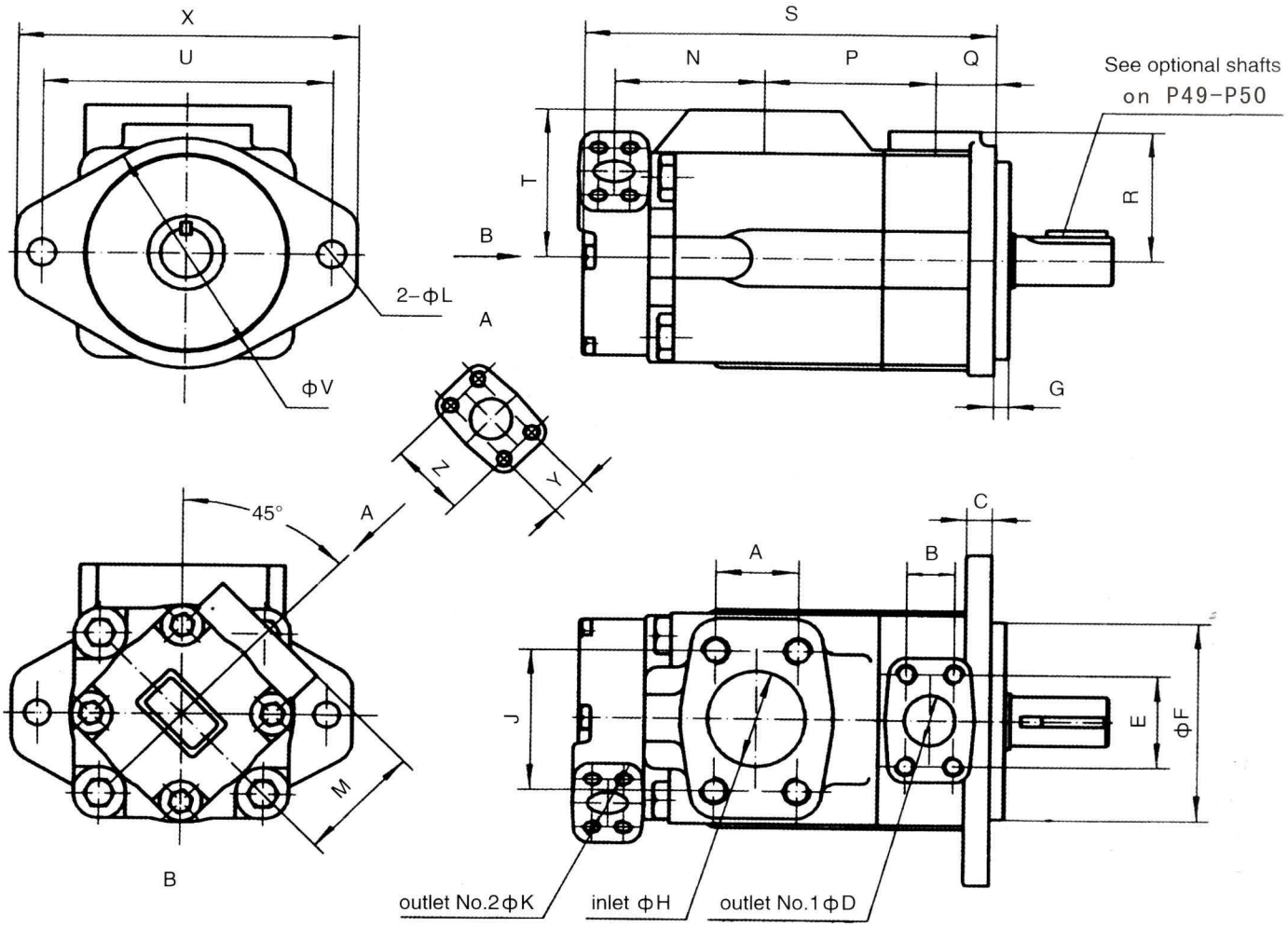
Model	A	B	ΦC	D	E	ΦG	H	J	L	M	ΦN
S25/30VQ	35.7	26.2	25.4	52.4	12.7	38.1	117.4	69.9	120.7	38.1	101.60 101.55
S35VQ	42.9	30.2	31.8	58.7	15.7	50.8	140	77.7	125.5	38.1	127.00 126.95
S45VQ	61.9	35.7	38.1	69.9	16.0	76.2	159	106.4	153	42.9	127.00 126.95

P	Q	R	S	T	ΦV	W	ΦX	ΦFxFull thread depth 4holes	ΦKxFull thread depth 4holes
9.53	164.1	63.5	76.2	146	14.2	174.5	121	3/8" -16UNC-2B×19deep orM10	1/2" -13UNC-2B×23.8deep orM12
9.53	186.9	69.9	82.6	181	17.5	213	147.6	7/16" -14UNC-2B×22.3deep orM12	1/2" -13UNC-2B×22.3deep orM12
12.7	216.9	82.6	93.7	181	17.5	213	147.6	1/2" -13UNC-2B×23.8deep orM12	5/8" -11UNC-2B×30deep orM16

Intra-vane Pump for Mobile Equipment

Configuration and Installation Dimension(mm)

S25※※VQ S30※※VQ S35※※VQ S45※※VQ



ΦK

S※※20VQ Uses F-06 Series flange
S※※25VQ Uses F-08 Series flange
S※※30VQ Uses F-08 Series flange

ΦH

S2520VQ Uses F-20 Series flange
S3020VQ Uses F-20 Series flange
S35※※VQ Uses F-24 Series flange
S45※※VQ Uses F-28 Series flange

ΦD

S2520VQ Uses F-08 Series flange
S3020VQ Uses F-08 Series flange
S35※※VQ Uses F-10 Series flange
S45※※VQ Uses F-12 Series flange

Intra-vane Pump for Mobile Equipment

Configuration and Installation Dimension(mm)

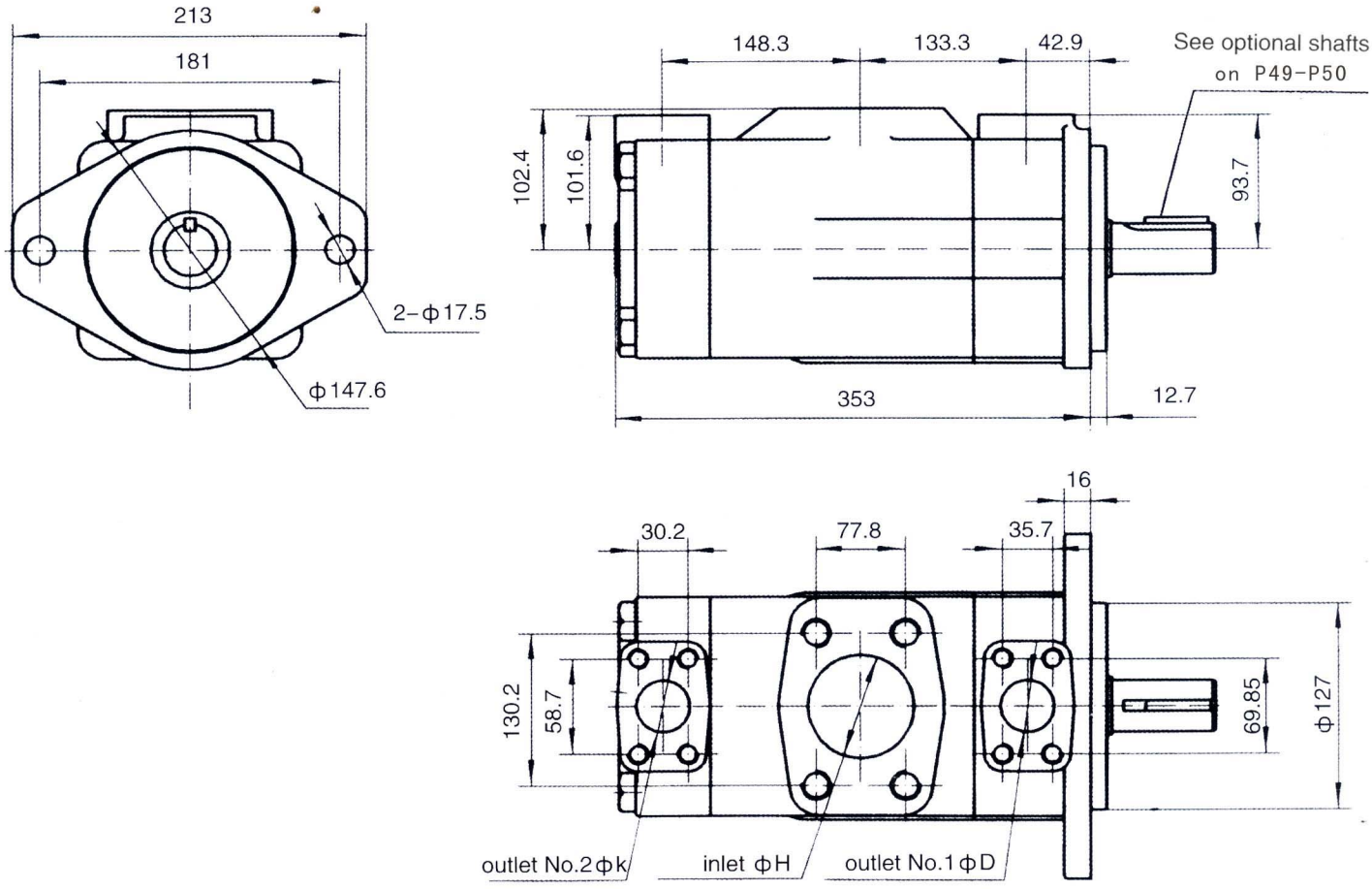
Model	A	B	C	ΦD	E	ΦF	G	ΦU	J	ΦK	ΦL	M
S2520VQ S3020VQ	50.8	26.2	12.7	25.4	52.4	101.60 101.55	9.53	63.5	88.9	19.1	14.2	76.2
S3520VQ	61.9	30.2	12.7	31.8	58.7	127.00 126.95	9.53	76.2	106.4	19.1	17.5	76.2
S3525VQ S3530VQ	61.9	30.2	15.9	31.7	58.7	127.00 126.95	9.53	76.2	106.4	25.4	17.5	74.7
S4520VQ	69.9	35.7	15.9	38.1	69.9	127.00 126.95	12.7	88.9	120.7	19.1	17.5	76.2
S4525VQ S4530VQ	69.9	35.7	15.9	38.1	69.9	127.00 126.95	12.7	88.9	120.7	25.4	17.5	74.7

Model	N	P	Q	R	S	T	U	ΦV	X	Y	Z
S2520VQ S3020VQ	88.1	101.6	38.1	76.2	252.5	85.3	146.1	121	174.7	22.2	47.6
S3520VQ	99.6	114.3	38.1	82.6	276.6	88.9	181	147.6	213	22.2	47.6
S3525VQ S3530VQ	109.5	114.3	38.1	82.6	293.9	88.9	181	147.6	213	26.2	52.4
S4520VQ	119.9	119.4	42.9	93.7	306.8	102.4	181	147.6	213	22.2	47.6
S4525VQ S4530VQ	136	119.4	42.9	93.7	329.9	102.4	181	147.6	213	26.2	52.4

Intra-vane Pump for Mobile Equipment

Configuration and Installation Dimension(mm)

S4535VQ



ΦK(31.7)
Uses F-10 Series flange

ΦH(101.6)
Uses F-32 Series flange

ΦD(38.1)
Uses F-12 Series flange

Intra-vane Pump for Mobile Equipment

VQ Series Cartridge Kits

Displacement:18~193mL/r **Pressure:21MPa**

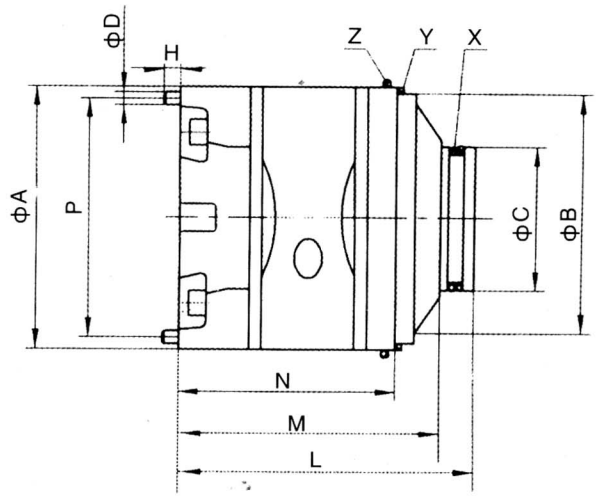
Model Code

Example: CK — S25VQ — 14 R B — 10

1 2 3 4 5 6

1.CK— Cartridge kits
2.S25VQ— Series
S20VQ—18~45mL/rev S25VQ—33~67mL/rev
S30VQ—76~88mL/rev
S35VQ—67~121mL/rev S45VQ—138~193mL/rev
3.14— Code

Series	Code	Geometric displacement	
		mL/r	in³/r
S20VQ	5	18.0	1.10
	8	27.4	1.67
	9	29.2	1.85
	11	36.4	2.22
	12	39.5	2.41
	14	45.9	2.80
S25VQ	12	40.2	2.45
	14	45.4	2.77
	17	55.2	3.37
	19	60.7	3.70
	21	67.5	4.12
S30VQ	24	76.2	4.65
	28	88.2	5.38
S35VQ	21	67.9	4.14
	25	81.6	4.98
	30	97.7	5.96
	35	112.8	6.88
	38	121.2	7.42
S45VQ	42	138.7	8.46
	47	148.3	9.05
	50	162.3	9.90
	57	79.6	10.96
	60	193.4	11.80



4.R—Rotation
(Viewed from smaller end)
L—Left hand for counter clockwise
R—Right hand for clockwise,omit
5.B—No Bush,omit if not required
6.10—Design number

Model	ΦA	ΦB	Φ C	ΦD	L	M	N	P	H	X	Y	Z
S20VQ	82.5	76.2	47.1	4.8	81.3	70.5	64.5	73.66	6	2–222	76.76×3×3.5	2–236
S25VQ	96.8	90.5	52.2	4.8	98.7	86.6	77.6	88.18	7	2–224	91×3×3.5	2–241
S30VQ	96.8	90.5	52.2	4.8	109.8	97.7	88.7	88.18	7	2–224	91×3×3.5	2–241
S35VQ	114.3	108	72.1	6.4	117.2	104.5	90.8	103.94	7	2–230	108.5×3×3.5	2–247
S45VQ	133.3	127	80.1	6.4	140.4	119	105.8	123.8	8	2–233	127.6×3×3.5	2–253