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TOKIMEC » TOKYO KEIKI

The company name was changed to **TOKYO KEIKI INC.**

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Power packages

Power Packages

Type	Model	(Note) Rated Operating Pressure MPa	Max. Flow L/min (in case of 50 Hz) 1 2 5 10 20 50 100	Page
TS-PAC	TS1A(-R)	3.5		S3
	TS2A(-R)	7		
	TS3A-R	3.5		
	TS4A-R	6		
	TS5A-R	4		
TU-PAC	TU1C	3.5		S7
	TU2C	7		
	TU3C	3.5		
	TU4C	6		
	TU5C	4		
	TU6C	9		
	TU7C	7		
	TU8C	5		
	TU9C	7		
	TU10C	5		
	TU11C	9		
	TU12C	7		
	TU13C	7		
Q-PAC	Q1614	3.5		S18
	Q2134	7		
	Q3134	5		
Direct Coupled Motor-Pump Series (TDM Series)	TDM16074	1.8		S20
	TDM1614	3.5		
	TDM1624	6		
	TDM1634	9		
	TDM2124	4		
	TDM2134	7		
	TDM2154	9		
	TDM3124	3		
	TDM3134	5		
	TDM3154	7		

Note: Operating pressures at 50 Hz max. delivery and within electric motor ratings is indicated.
System max. operating pressure may vary according to operating flow and whether cooler is installed. Consult Tokimec for details.

Operating Considerations

- Use ISO VG32 mineral oil with cleanliness class, ISO 4406 code 19/15 or better (NAS 10 class).
- Oil temperature range should be +5 to +60 deg. C.
- Before startup, fill pump case with oil from the fill port.
- Electrical motor wiring should be as follows.

power supply side { R - U / S - V / T - W } electric motor side

- Pump adjustment method

Pressure	Turn press. adj. screw clockwise to increase pressure
Delivery	Turn delivery adj. screw clockwise to decrease delivery

- After air is bleed from actuators and piping, oil should be added to the TU-PAC and Q-PAC power packages until the mid-way mark on the oil level sight gauge.

Small power packages TS-PAC

- Compact, light weight power package features small tank and small oil volume.
- Incorporates high efficiency piston pump.
- Heat exchanger and return line filter standard equipment.

Model Code

T S 3 A- R - (1234)

1 2 3 4 5

1 Small size power package, TS-PAC Series
2 Model series (1 - 5)
3 Design no.
4 Heat exchanger
Omitted for no heat exchanger (TS1, TS2 only)
R: with heat exchanger

5 Control no.
Omitted for standard

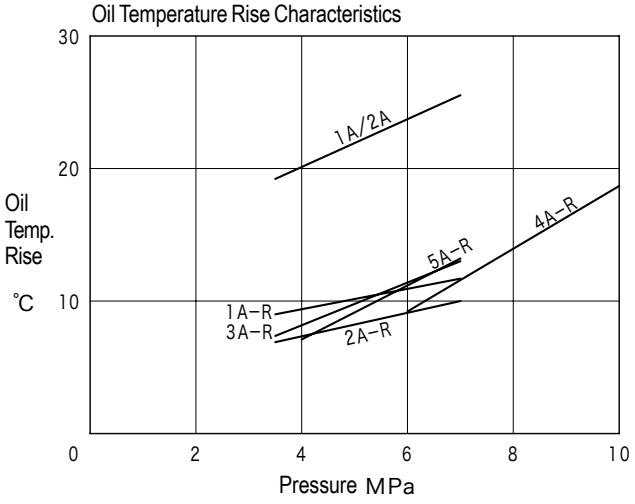
∗Standard tank paint color, Y75-20L (Munsell 5PB2/6)

Specifications

Model	Electric Motor Rating	Piston Pump Displacement cm^3/rev	Rated Working Pressure MPa	Max. Delivery L/min		Tank Capacity L	Weight kg
				50 Hz	60 Hz		
TS1A (–R)	0. 75 kW, 4P	8	3. 5	11	13. 2	10	28
TS2A (–R)	1. 5 kW, 4P	8	7. 0	11	13. 2		33
TS3A–R		16	3. 5	22	26. 4	15	49
TS4A–R	2. 2 kW, 4P	16	6. 0	22	26. 4		53
TS5A–R		21	4. 0	29	34. 6		53

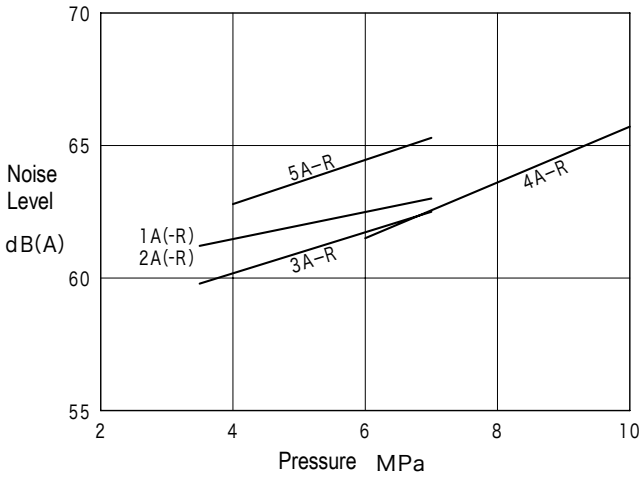
Performance Curves

Oil Temperature Rise Characteristics



(1)Oil temperature = room temperature + temperature rise
(2)R indicates performance with heat exchanger
(3)Data based on well ventilated installation and continuous operation at cutoff (60 Hz).
∗Oil temperature rise characteristics may vary from above depending on operating conditions.

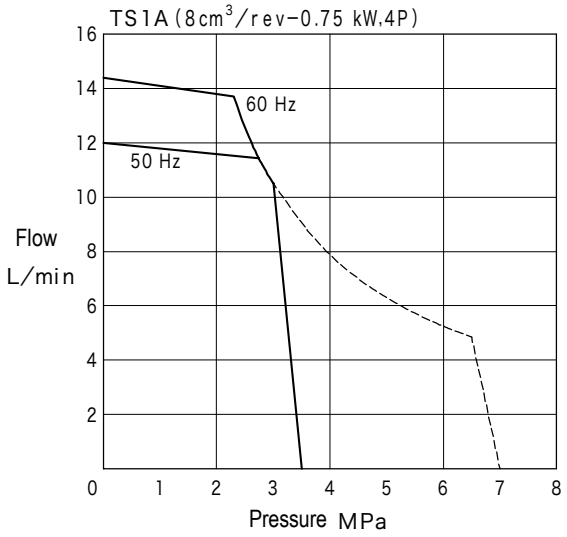
Noise Characteristics

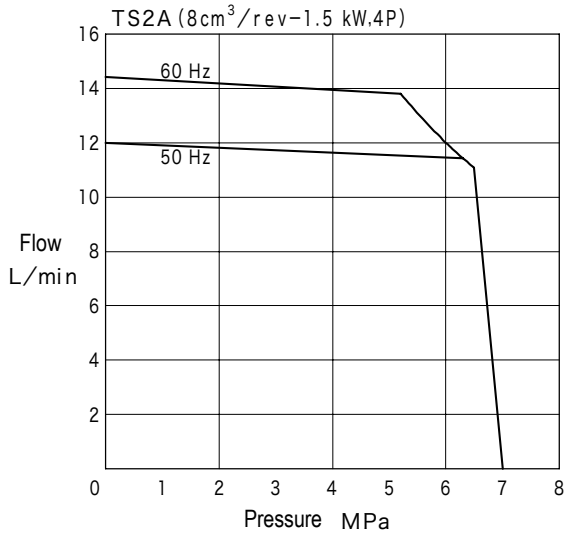


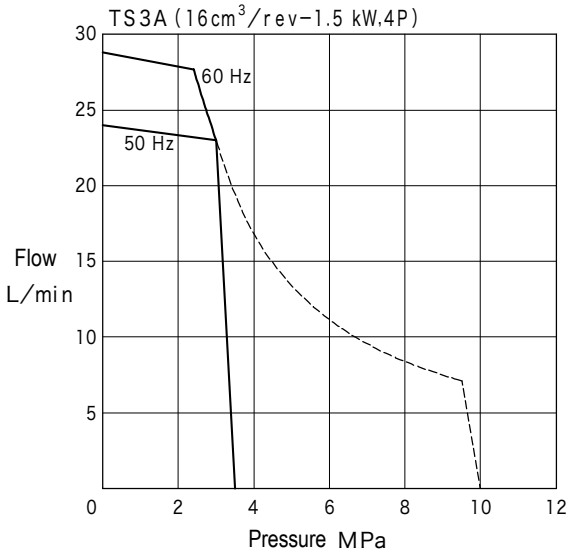
(1)Setting distance: 1m (5 area average of cutoff operation)
(2)Speed: 1800 min^{-1} (60 Hz)
(3)Oil temp.: 40℃
∗Noise characteristics may vary from above depending on operating conditions.

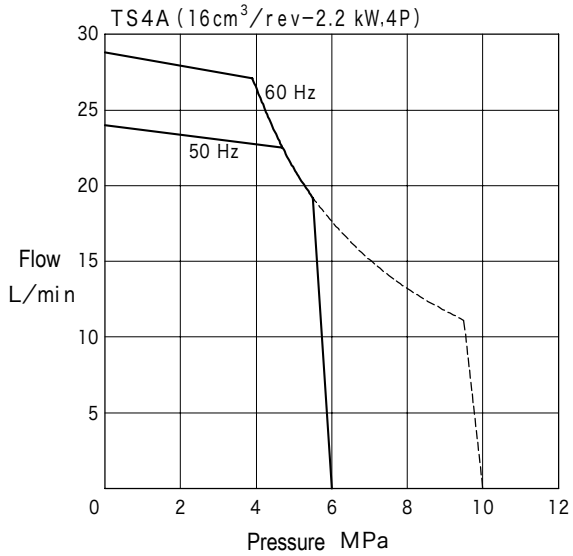
Model Selection Pressure-Flow-Electric Motor Output Curves

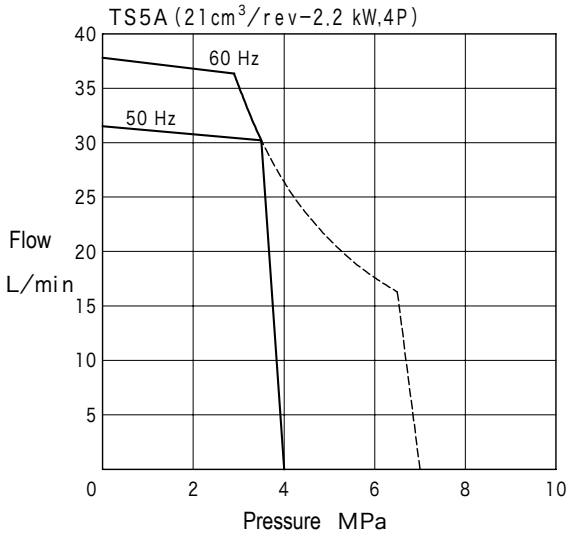
Applicable pressure-flow-electric motor output for each model is the area delineated by the curve.
Select model based on the pressure and flow to be used and which falls within this area. For operation delineated by the dotted line, pump max. flow limit must be adjusted.





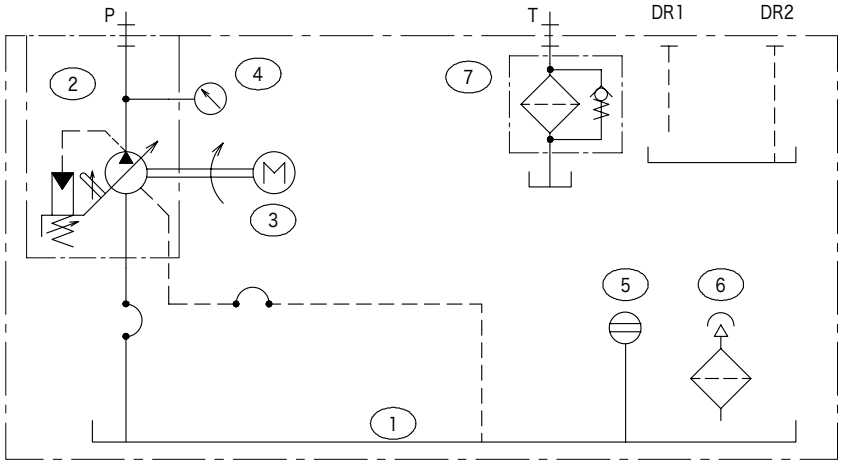




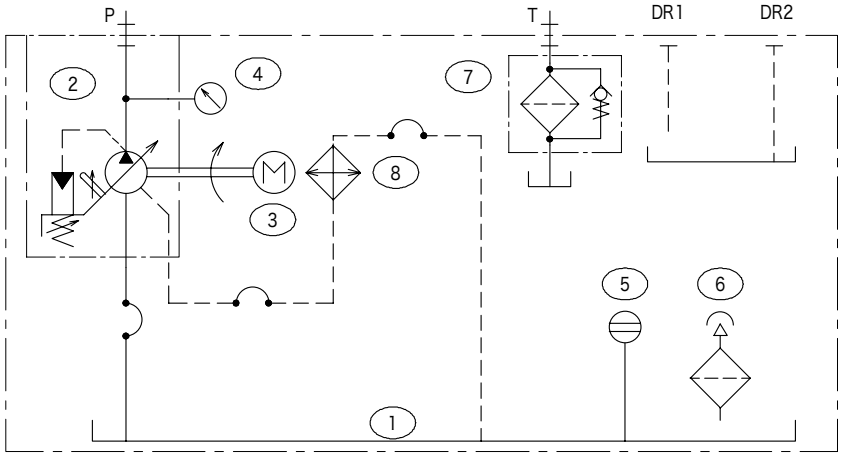


Hydraulic Circuit Diagram

TS1A , TS2A



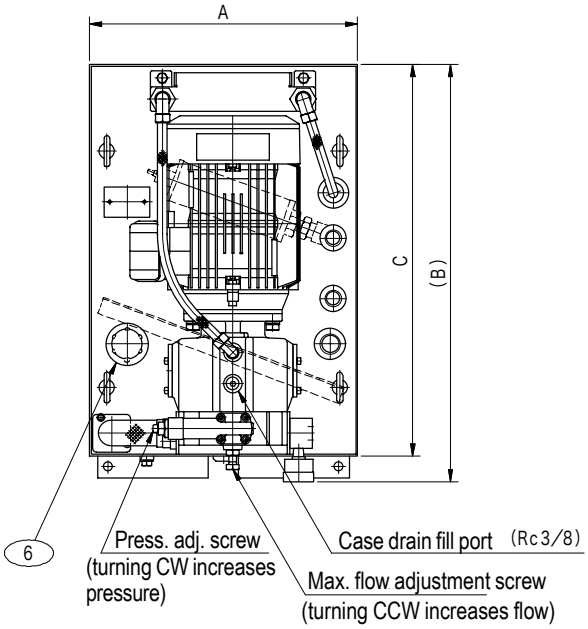
TS*A–R



No.	Equipment Description	No.	Equipment Description
1	Tank	5	Oil level gauge
2	Piston pump	6	Oil fill port and air breather
3	Direct coupled electric motor	7	Return filter
4	Pressure gauge	8	Heat exchanger

* Also available options including level switch, temperature switch, and suction filter.
(temperature switch applicable only for TS4-R and TS5-R)

Dimensions



No.	Equipment Description
1	Tank
2	Piston pump
3	Direct coupled elec. motor
4	Pressure gauge
5	Oil level gauge
6	Oil fill port and air breather
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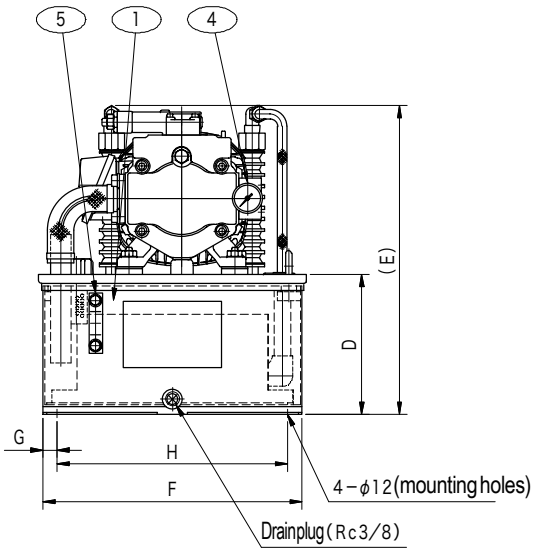
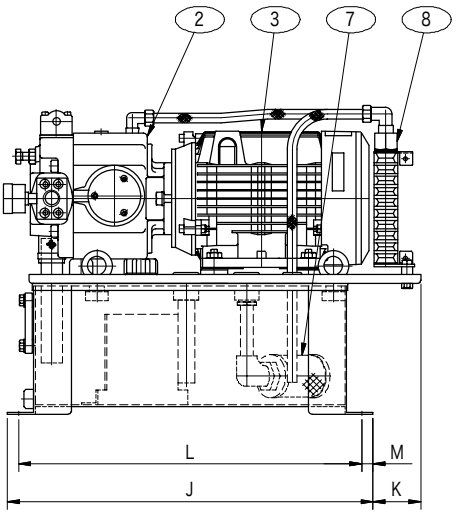
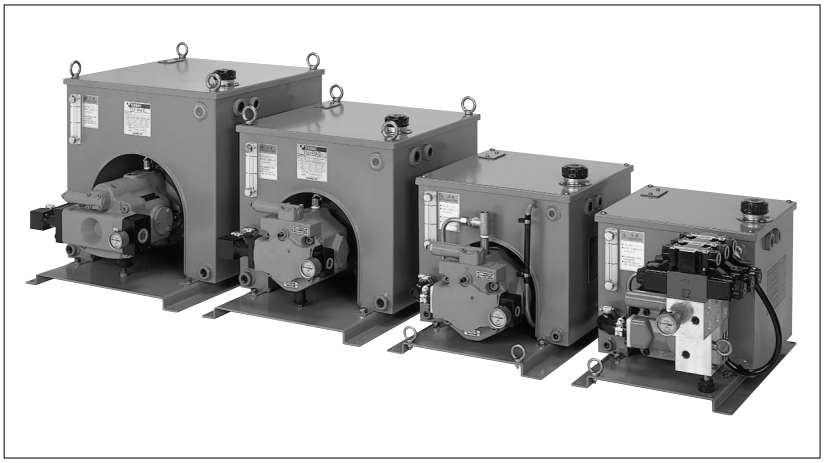




Dimensions Unit mm

Model	A	B	C	D	E	F	G	H	J	K	L	M
TS1A	300	487	446	175	401	288	19	250	444	31	414	15
TS2A	300	516	475	175	411	288	19	250	444	60	414	15
TS3A	355	554	518	185	410	343	19	305	484	63	454	15
TS4A , TS5A	355	589	553	185	413	343	19	305	484	98	454	15

Low noise small power packages TU-PAC



- The TU-PAC power package incorporates a unique inverted "U" shaped tank design which houses the electric motor and pump in a compact, light weight, and low profile configuration.
- TU-PAC boasts high efficiency with good heat dissipation characteristics which allows use of lower oil volumes of comparable output units.
- Optional manifold blocks mounted directly on pump enable easy configuration of circuit to meet application requirements.
- Full return line filter is standard equipment which enables longer system life.
- Variety of options are available, including temperature gauge, magnet, level switch, manifold block, drain cooler, etc.

Model Code

TU 3C -N (T) - (T) (M) (L) (S) (3) (C) (R) - 1234

1 2 3 4 5 6 7 8 9 10 11 12

1 Small power package, TU-PAC Series
2 Model code (1C - 13C)
See 'Specifications' (page S8)
3 Electric motor voltage code (see right table)
4 Solenoid valve voltage code (see right table)
Omitted for no solenoid valve
[Option Codes]
5 Temperature gauge
Omitted for no temperature gauge
T: With temperature gauge
6 Magnet
Omitted for no magnet
M: With magnet
7 Level switch
Omitted for no level switch
L: With level switch
8 Manifold block connection orientation (viewed from pump side)
Omittted for no manifold block
S: Right side (TU1C - 7C)
F: Front (TU1C - 3C only)
A: Special manifold block

☆ Consult Tokimec regarding TU8C - 13C with mani fold block.

☆9 Manifold block stations (ISO4401-08 size)
Numbers indicate no. of stations
For type 'S', 1 to 5 stations
For type 'F', 2 to 4 stations
10 Paint color
Omitted for Munsell N5.5 (standard)
C: Special paint
11 Drain cooler (heat exchanger)
Omitted for no drain cooler
R: With drain cooler
12 Assembly drawing number (4 digit)

Electric Motor Voltage Code

	Code	Power Supply
Standard	N	200/200/220 V 50/60/60 Hz
Special Models	A	400/400/440 V 50/60/60 Hz
	B	380 V 50 Hz
	F	415 V 50 Hz
	D	460 V 60 Hz

Voltages other than those shown are available. Specify voltage and frequency.

Solenoid Valve Voltage Code

Power	Code	Voltage V	Frequency Hz
AC	T	100	50/60
		110	60
	B	110	50
		115	60
		120	60
	V	200	50/60
		220	60
	D	220	50
		230	60
		240	60
DC	G	12	—
	H	24	

Specifications

Model		Electric Motor Rating	Piston Pump Displacement cm^3/rev	＊1) Rated Operating Press.(no heat exchgr) MPa	＊2) Max. Operating Press.(w/heat exchgr) MPa	＊3) Max. Delivery L/min		Tank Size L	＊4) Weight kg
						50 Hz	60 Hz		
C Series	TU1C	0.75 kW, 4P	8	3.5	—	11	13.2	10	35
	TU2C	1.5 kW, 4P		7.0	—			15	45
	TU3C		16	3.5	—	22	26.4		53
	TU4C	2.2 kW, 4P	16	6.0	＊3) 10.0	22	26.4	25	70
	TU5C		21	4.0	＊3) 7.0	29	34.6		70
	TU6C	3.7 kW, 4P	16	9.0	＊3) 14.0	22	26.4	40	90
	TU7C		21	7.0	＊3) 10.5	29	34.6		90
	TU8C		31	5.0	＊3) 7.0	42.6	51.0		98
	TU9C	5.5 kW, 4P	31	7.0	＊3) 10.0	42.6	51.0	60	130
	TU10C		40	＊5) 5.0	＊3) 7.0	54.9	65.9		144
	TU11C	7.5 kW, 4P	31	9.0	＊3) 10.0	42.6	51.0		130
	TU12C		37	7.0	＊3) 7.0	50.8	60.9		130
	TU13C		40	＊5) 7.0	＊3) 9.0	54.9	65.9		144

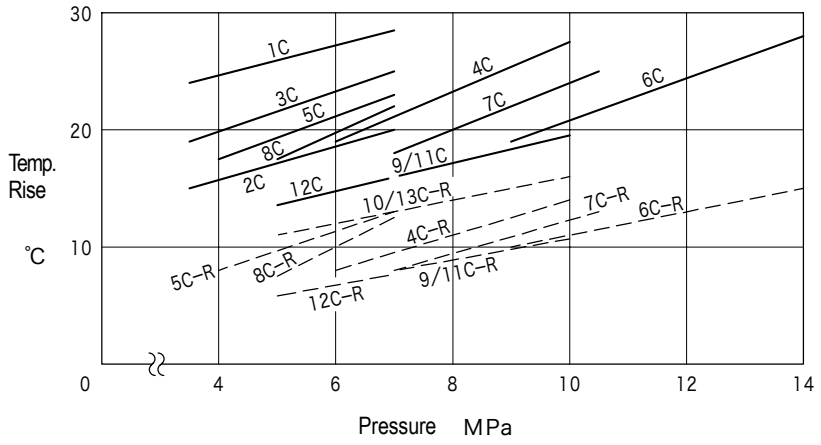
＊1) Operating pressures at 50 Hz max. delivery and within electric motor ratings is indicated.
＊2) With heat exchanger, press. indicated is with oil temp. rise less than room temp. + 20 deg. C, continous operation at cutoff. See oil temp. rise characteristics curve (page S9)
＊3) Relationship of operating delivery and pressure, see graphs under Model Selection (S10 - S11).
＊4) Does not include hydraulic fluid or manifold block.
＊5) TU10C, TU13C is with heat exchanger even within rated operating pressure parameters.

Notes

1) Consult Tokimec for TU-PAC units which conform to fire codes, CE marking, non-flammable fluids (water glycol), etc.
2) ON-OFF electric motor drive operation involves special specifications. Consult Tokimec.
3) Consult Tokimec for other special specifications.
4) CMC and CC pump controls are standard. See pages A8 to A10 regarding other control options.
Note 1: CBC is standard pump control for TU1C/TU2C.
Note 2: Cm is standard pump control for TU8C/TU9C/TU11C/TU12C.

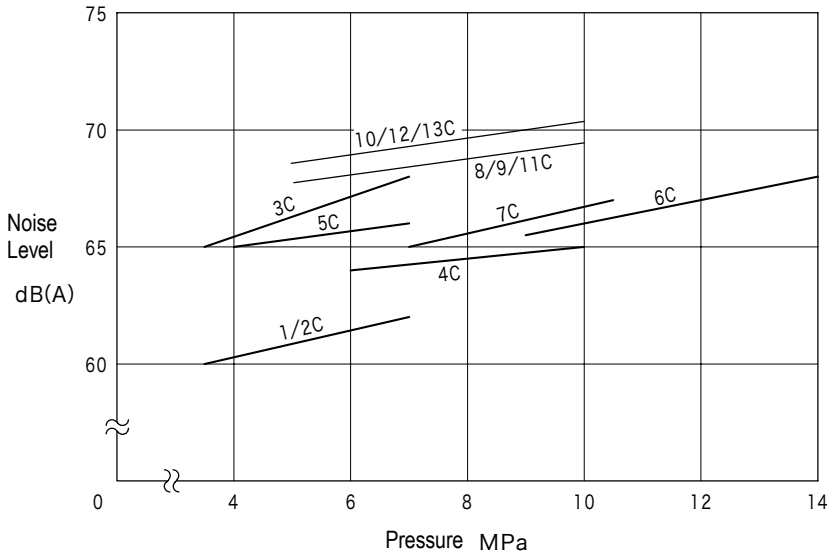
Performance Curves

Oil Temperature Rise Characteristics



(1) Oil temperature = room temperature + temperature rise
(2) Solid line indicates without heat exchanger; dotted line (R) indicates performance with heat exchanger.
(3) Data based on power unit installation in well ventilated location, continuous operation at cutoff (60 Hz)

Noise Characteristics



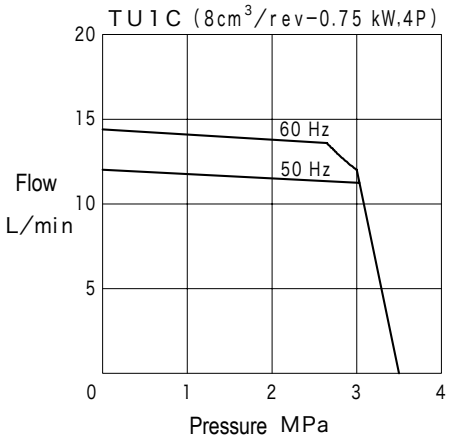
(1) Setting distance: 1m (5 area average of cutoff operation)
(2) Speed : 1800 min^{-1} (60 Hz)
(3) Oil temp : 40℃

TU1C~13C Series

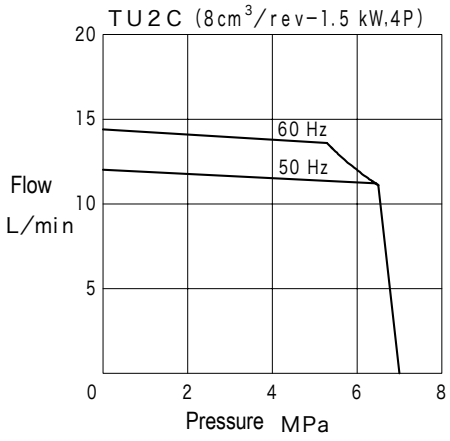
Model Selection Pressure-Flow-Electric Motor Output Curves (TU1C ~TU8C)

Applicable pressure-flow-electric motor output for each model is the area delineated by the curve.
Select model based on the pressure and flow to be used and which falls within this area.

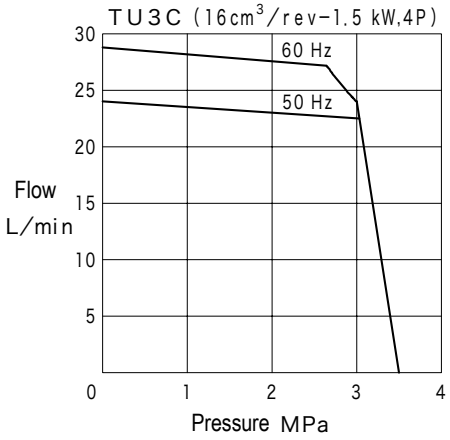
TU1C (8cm³/rev-0.75 kW,4P)



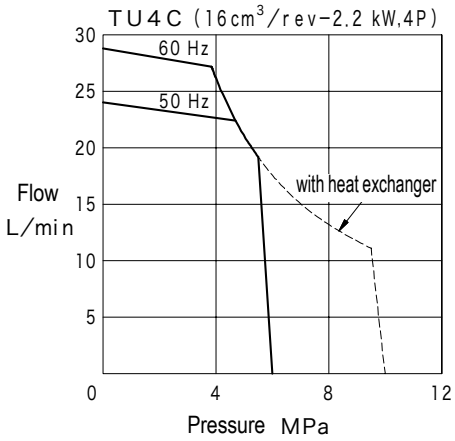
TU2C (8cm³/rev-1.5 kW,4P)



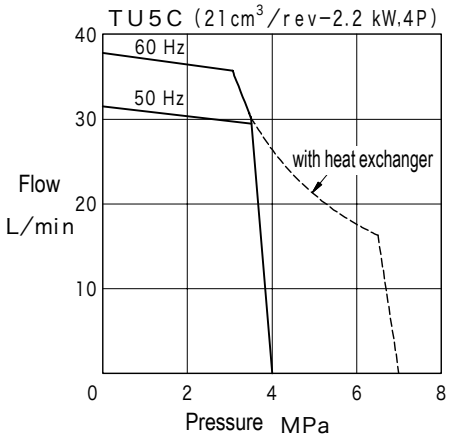
TU3C (16cm³/rev-1.5 kW,4P)



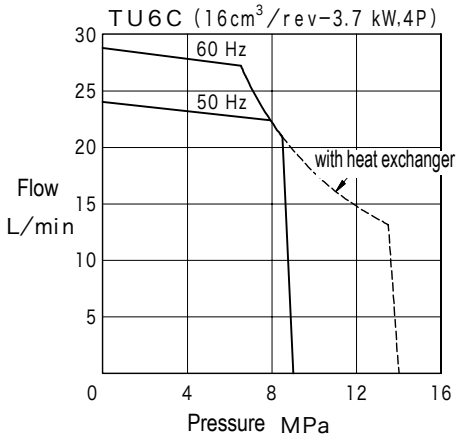
TU4C (16cm³/rev-2.2 kW,4P)



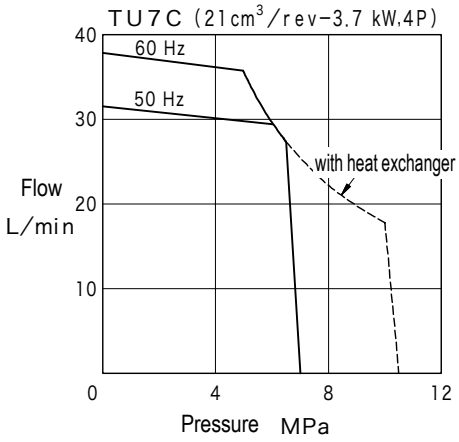
TU5C (21cm³/rev-2.2 kW,4P)



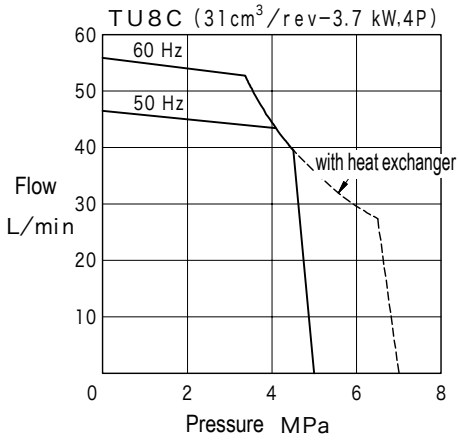
TU6C (16cm³/rev-3.7 kW,4P)



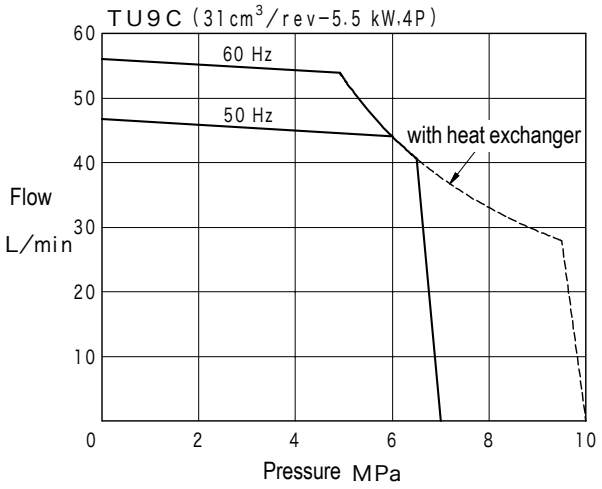
TU7C (21cm³/rev-3.7 kW,4P)

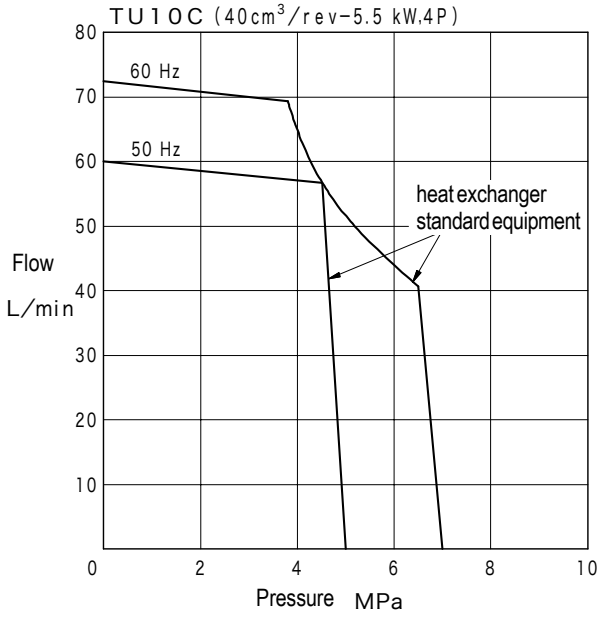


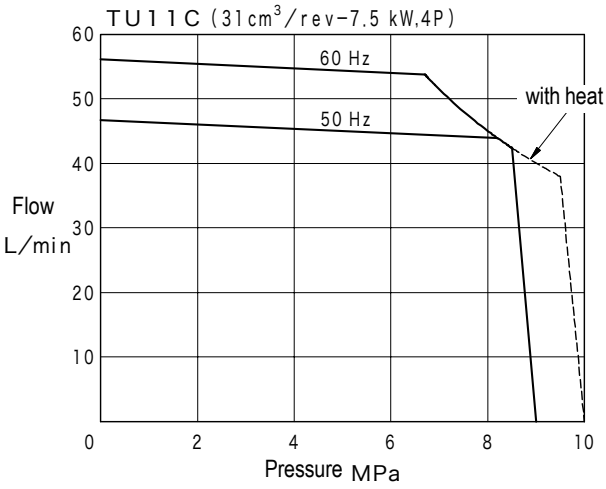
TU8C (31cm³/rev-3.7 kW,4P)

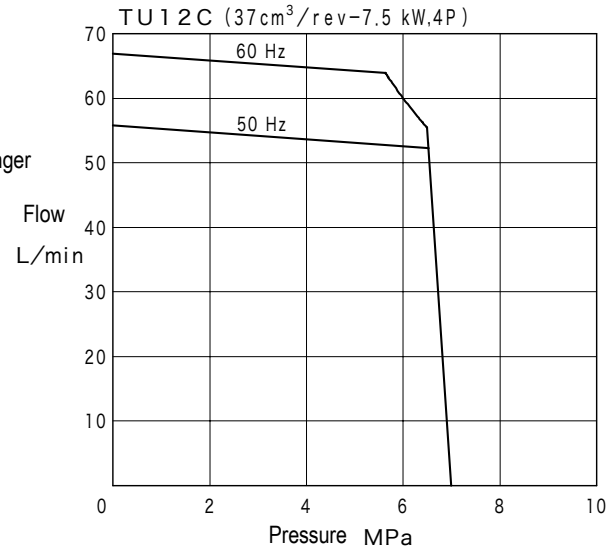


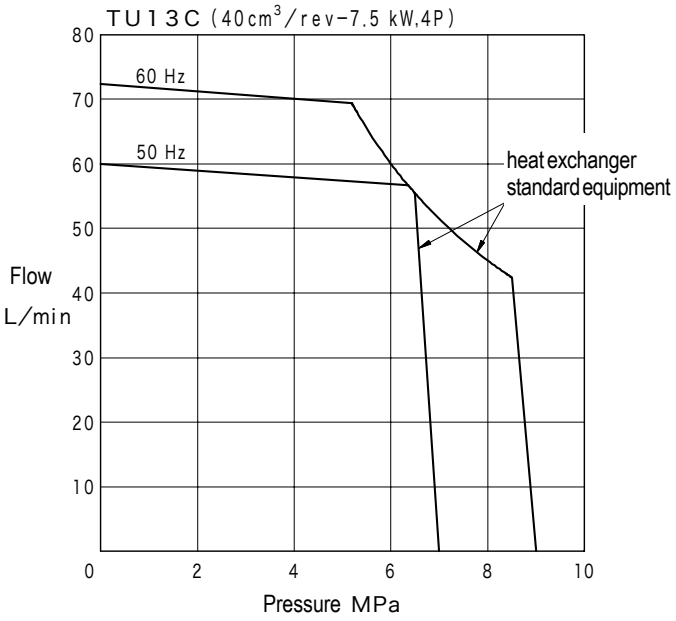
Model Selection Pressure-Flow-Electric Motor Output Curves (TU9C～TU13C)





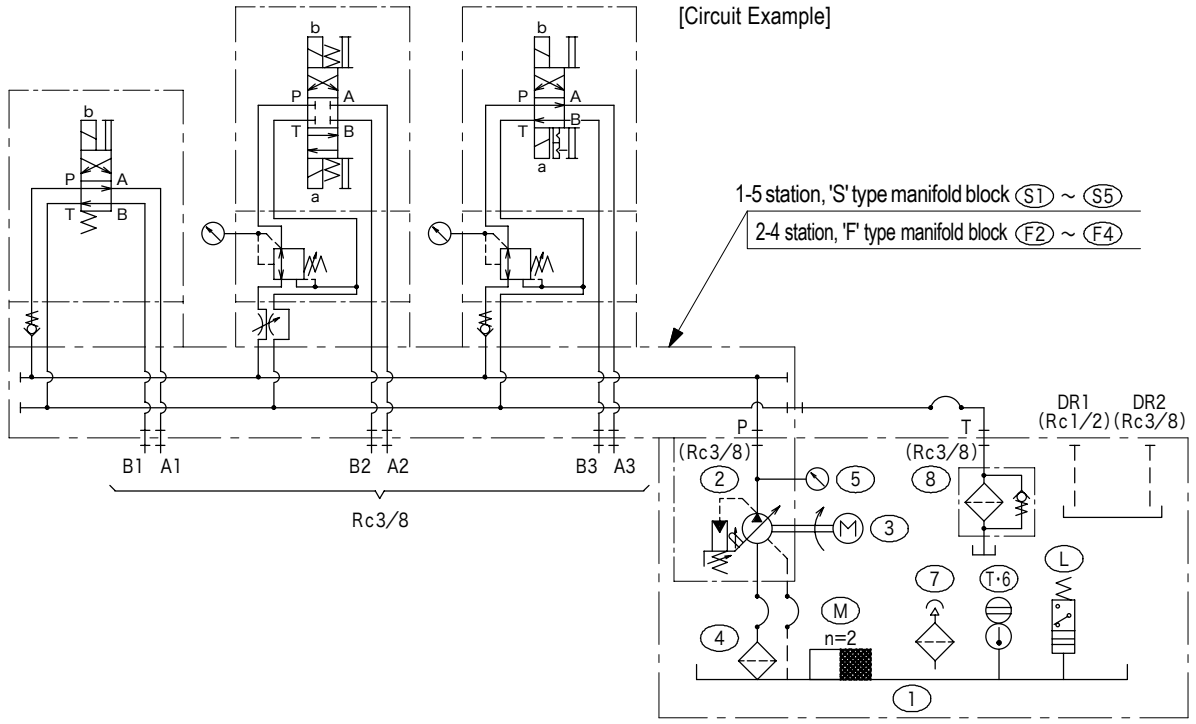






TU1C~3C Series

Hydraulic Circuit Diagram



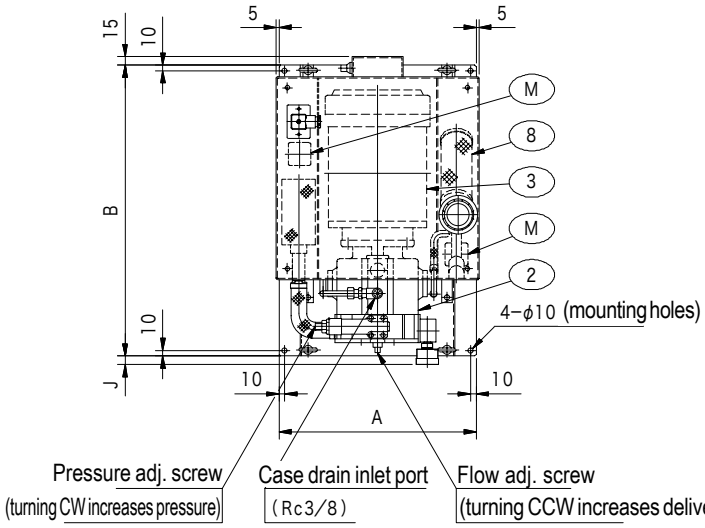
Code	Description of Equipment	Model Code			Qty
		TU1C	TU2C	TU3C	
1	Tank	10 L	15 L		1
2	Piston pump	P8VM (8 cm^3/rev)		P16VM (16 cm^3/rev)	1
3	Direct coupled electric motor	0.75 kW, 4 P	1.5 kW, 4 P		1
4	Filter	OFS-06-S1-M1 (150 μm)			1
5	Pressure gauge (glycerine filled)	ϕ40×10 MPa	ϕ40×25 MPa	ϕ40×10 MPa	1
T·6	Oil level gauge (T: with temperature gauge)	OLG (T) 2-100K (T : option)			1
7	Oil fill port and air breather	MSA-V30			1
8	Filter	51-500400 (10 μm)			1
M	Magnet	MG40 (option)			2
L	Level switch	T-LSN, AC 100 V, 0.1 A / DC 24 V, 0.05 A (option)			1
S*	Manifold block (connec. port orientation: right side)	1~5 (option)			1
F*	Manifold block (connec. port orientation: front)	2~4 (option)			1

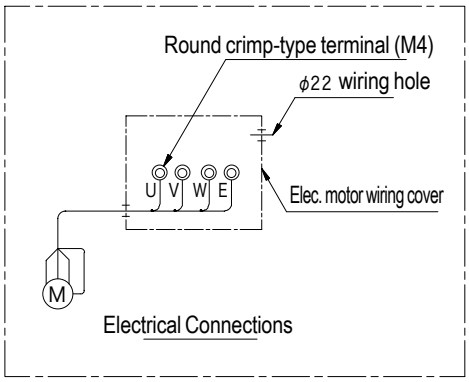
Dimensions (K. L indicates fluid volume)

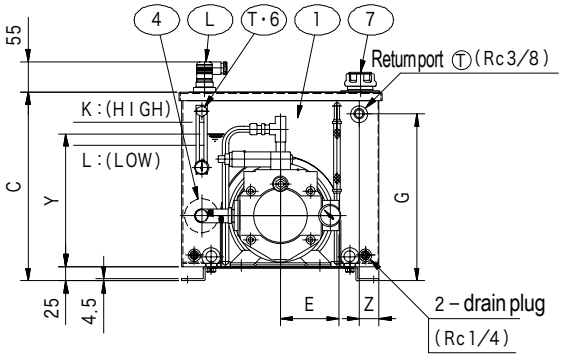
	A	B	C	D	E	F	G	H	J	K	L	M	P	Q	R	S	T	U	V	W	Y	Z
TU1C	320	465	307	390	80	105	270	185	-14	11.9L	8.1L	395	169	126	450	55	21	277	400	155	210	32.5
TU2C	350	515	337	444	85	115	295	235	-10	17.4L	12.6L	449	179	126	504	55	26	287	454	165	235	35
TU3C	350	515	337	469	104	115	295	235	15	17.4L	12.6L	474	179	145	529	80	45	287	479	165	235	35

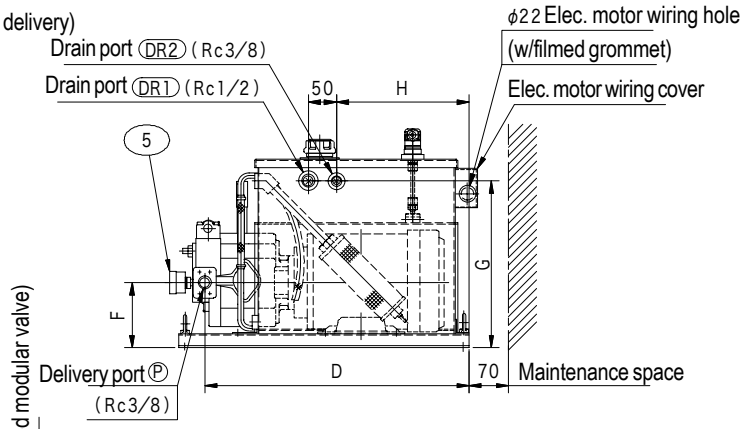
Dimensions (TU1C~3C)

● Standard Model



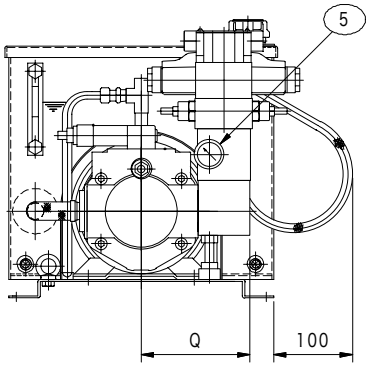


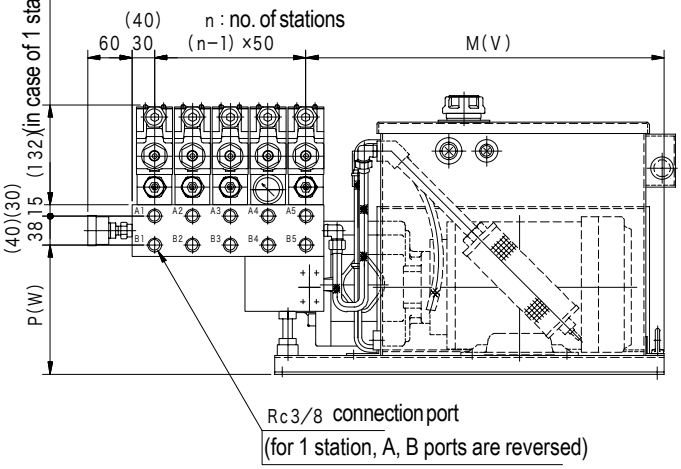




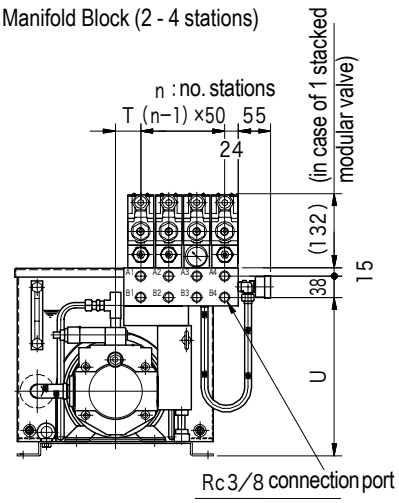
●Model with 'S' Type Manifold Block (1 - 5 stations)

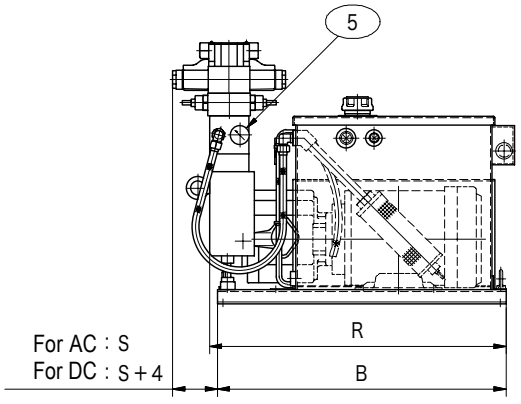
Note: Dimensions in ( ) refer to 1 station.





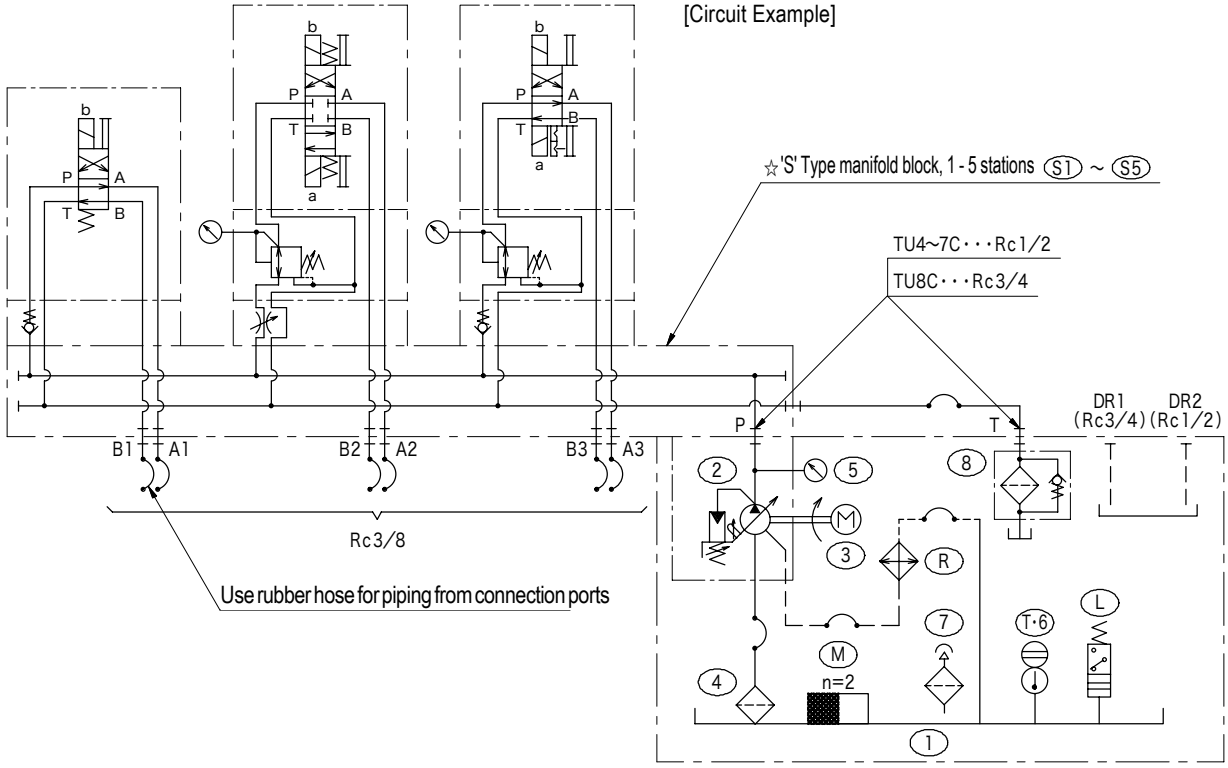
● Model with 'F' Type Manifold Block (2 - 4 stations)





TU4C~8C Series

Hydraulic Circuit Diagram



☆ : Consult Tokimec for TU8C with manifold block.

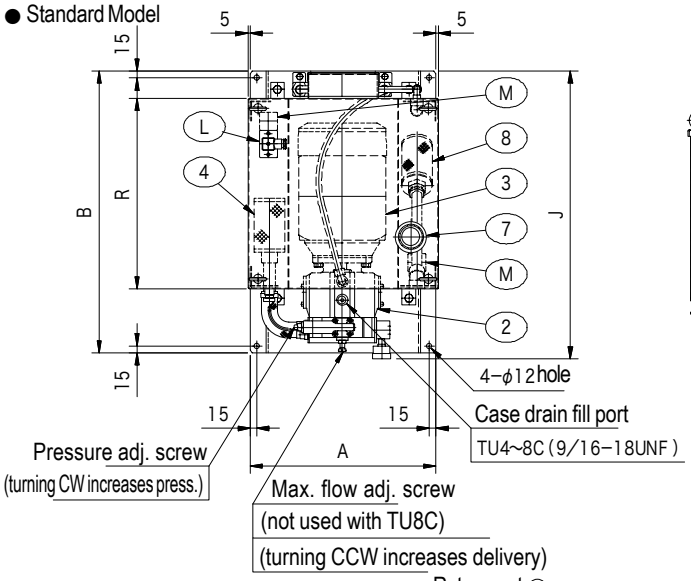
Code	Description of Equipment	Model Code					Qty
		TU4C	TU5C	TU6C	TU7C	TU8C	
1	Tank	25 L		40 L			1
2	Piston pump	P16VM (16 cm^3/rev)	P21VM (21 cm^3/rev)	P16VM (16 cm^3/rev)	P21VM (21 cm^3/rev)	P31V (31 cm^3/rev)	1
3	Direct coupled electric motor	2.2 kW, 4 P		3.7 kW, 4 P			1
4	Filter	OFS-06-S1-M2 (150 μm)					1
5	Pressure gauge (glycerine filled)	ϕ40×16 MPa		ϕ40×25 MPa		ϕ40×16 MPa	1
T・6	Oil level gauge (T: with temp. gauge)	OLG(T)2-100K (T : option)					1
7	Oil fill port/air breater	MSA-V30					1
8	Filter	Y-440600 (10 μm)					1
M	Magnet	MG40 (option)					2
L	Level switch	T-LSN, AC 100 V, 0.1 A / DC 24 V, 0.05 A (option)					1
☆S*	Manifold block (side ported)	1~5 station (option)					1
R	Drain cooler (heat exchanger)	RA-4 (option)					1

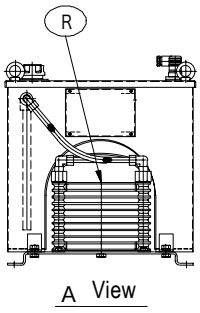
Dimensions (K. L refers to fluid volume)

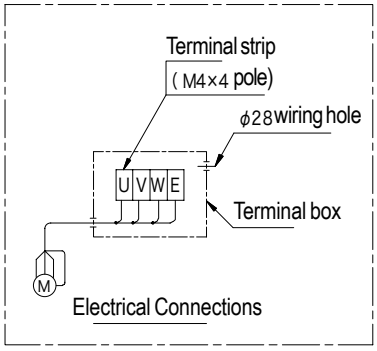
	A	B	C	D	E	F	G	H	J	K	L	M	P	R	S	V	W
TU4/5C	410	620	407	570	105	150	360	325	631	28.3L	21.7L	575	214	420	290	580	200
TU6/7C	460	670	477	620	105	162	430	375	681	44.2L	35.8L	625	226	470	360	630	212
TU8C	460	670	477	657	125	162	430	375	728	44.2L	35.8L	—	—	470	360	—	—

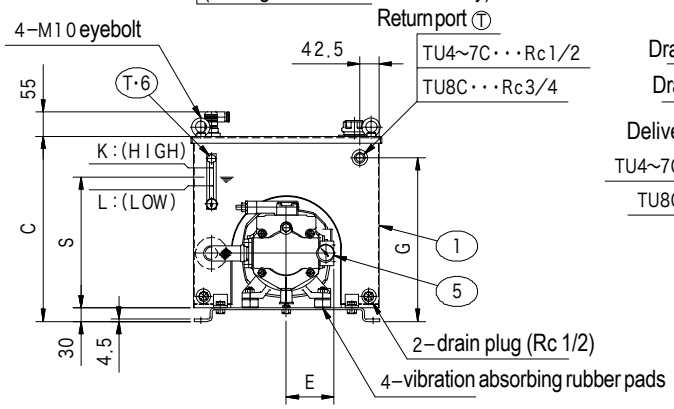
Dimensions (TU4C~8C)

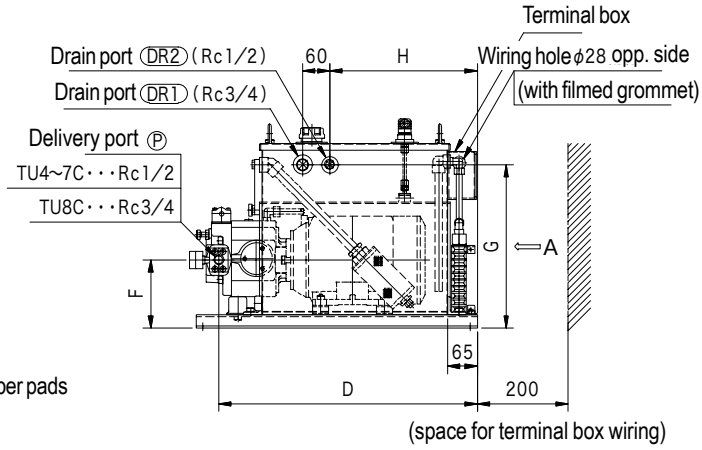
● Standard Model





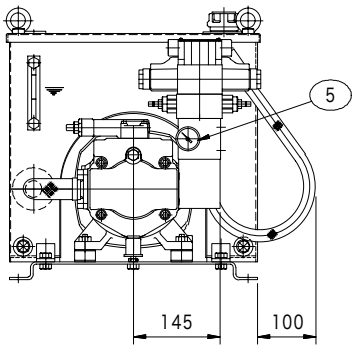


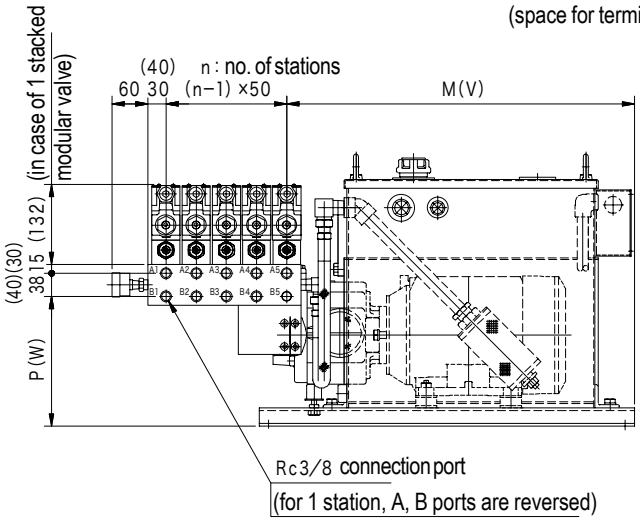




● Model with 'S' Type Manifold Block (1 - 5 stations)

Note: Dimensions in ( ) refer to 1 station.

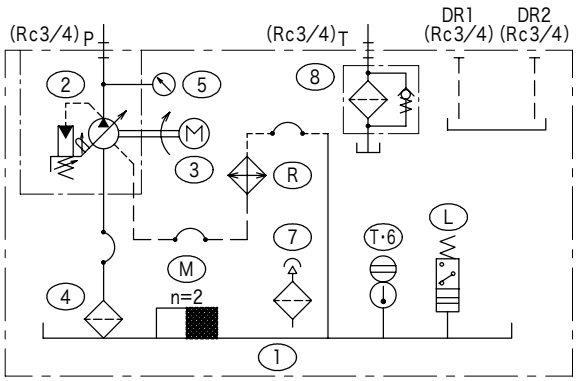




TU9C~13C Series

Hydraulic Circuit Diagram

[Circuit Example]

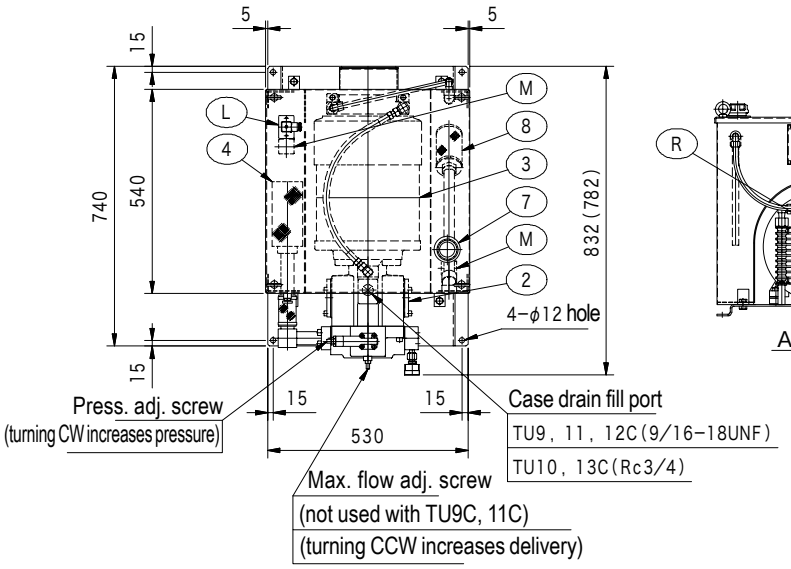


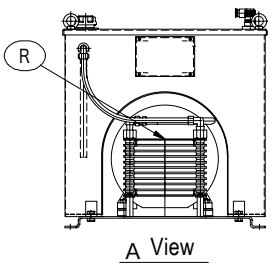
Note: Consult Tokimec for TU9 - 13C with manifold block.

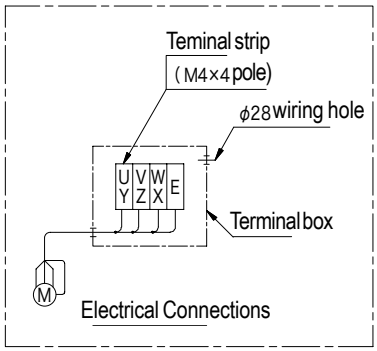
Code	Description of Equipment	Model Code					Qty
		TU9C	TU10C	TU11C	TU12C	TU13C	
1	Tank	60 L					1
2	Piston pump	P31V (31 cm^3/rev)	P40V (40 cm^3/rev)	P31V (31 cm^3/rev)	P37V (37 cm^3/rev)	P40V (40 cm^3/rev)	1
3	Direct coupled electric motor	5.5 kW, 4 P		7.5 kW, 4 P			1
4	Filter	OFS-08-S1-M3 (150 μm)					1
5	Pressure gauge (glycerine filled)	ϕ40×25 MPa	ϕ40×16 MPa	ϕ40×25 MPa			1
T·6	Oil level gauge (T: with temp. gauge)	OLG (T) 2-100K (T : option)					1
7	Oil fill port and air breather	MSA-V30					1
8	Filter	Y-440600 (10 μm)					1
M	Magnet	MG40 (option)					2
L	Level switch	T-LSN, AC 100 V, 0.1 A / DC 24 V, 0.05 A (option)					1
R	Drain cooler (heat exchanger)	RA-4 (option)					1

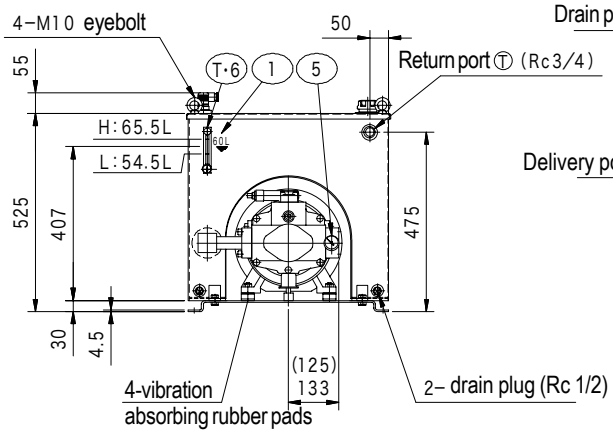
Dimensions (TU9C～13C)

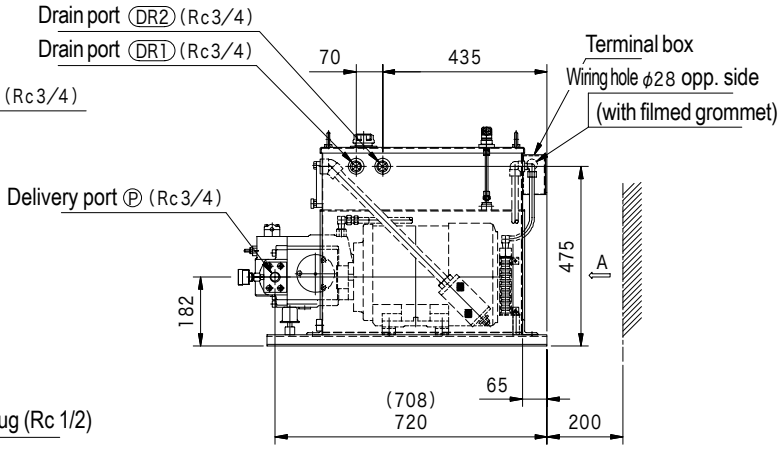
Note:Dimensions in ()refer to TU9C,11Cand 12C





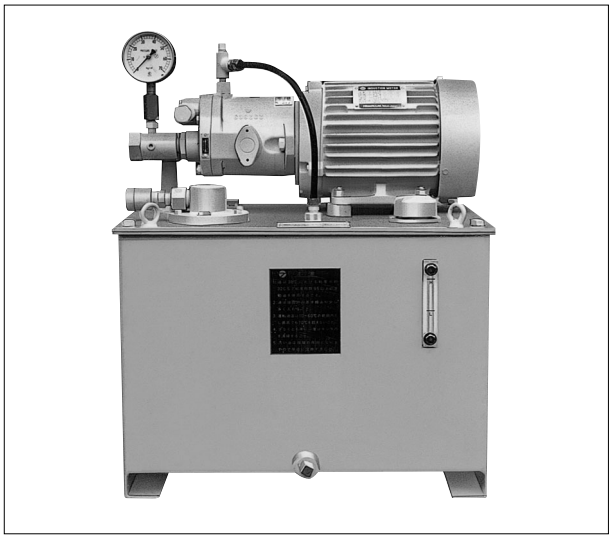






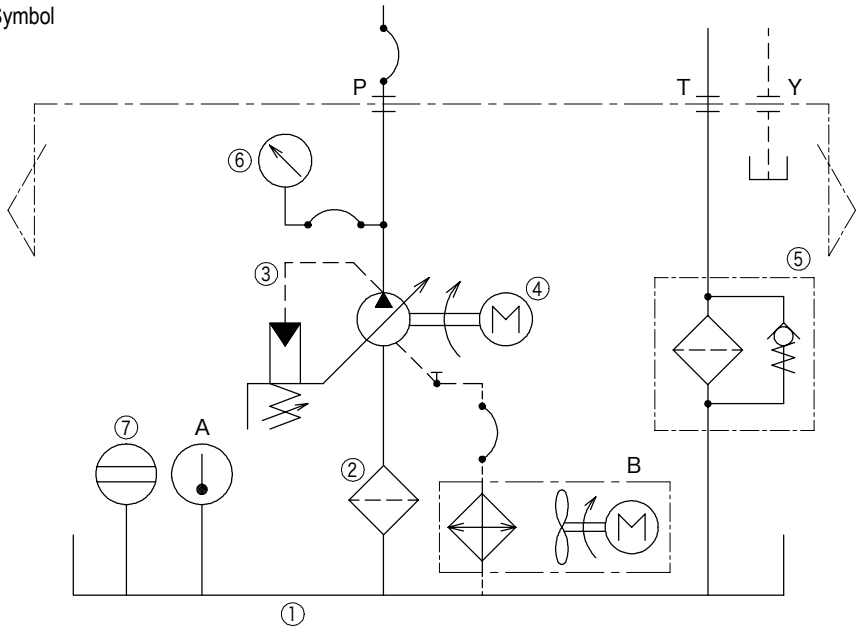
(space for terminal box wiring)

Standard power packages Q-PAC



- The Q-PAC standard power package incorporates a pressure compensated variable piston pump in an easy-to-use, low noise, and small package. It offers the following benefits.
  - Savings in power consumption
  - Small heat rise
  - Longer fluid life
- Q-PAC power packages incorporate miniature Flui-Trol modular valves and compact TGM Series modular valves which enable configuration of efficient systems for machine tools and general industrial machinery.

Functional Symbol



Code	Equipment
B	Mini-fan cooler
A	Temperature gauge
7	Oil level gauge
6	Pressure gauge
5	Filter
4	Electric motor
3	Piston pump
2	Tank filter
1	Tank

Model Code

Q 16 14 - 20 - A

1 2 3 4 5

1 Q-PAC Series
2 Pump
16:P16V
21:P21V
31:P31V
3 Electric motor rating
14:1.5kW 4P
34:3.7kW 4P
4 Design no.
5 Options
A:Temperature gauge
B:Mini-fan cooler
E:Terminal box

Specifications

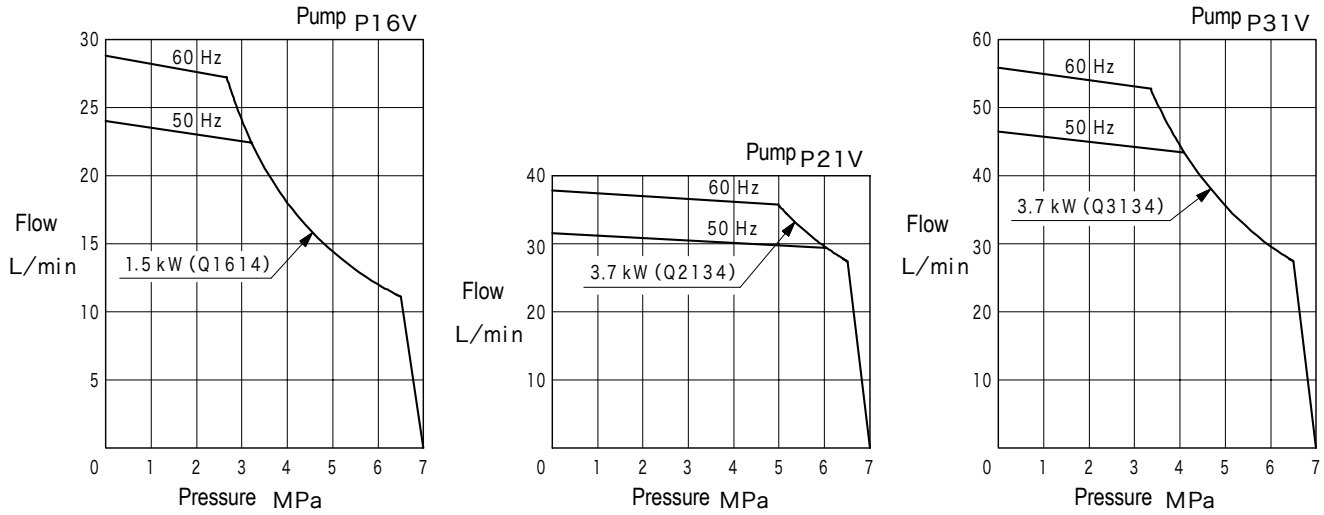
Model	Pump Model	Electric Motor	Max. Delivery L/min		Rated Operating Pressure ＊1) MPa (for max. delivery)		Tank Size L	＊2) Weight kg
			50 Hz	60 Hz	50 Hz	60 Hz		
Q1614	P16V	1.5 kW 4P	22	26.4	3.5	3	50	70
Q2134	P21V	3.7 kW 4P	29	34.6	7	5	100	150
Q3134	P31V	3.7 kW 4P	42.6	51	5	3.5	100	150

＊1) Indicates pressure within electric motor rating.
＊2) Weight not including hydraulic fluid.

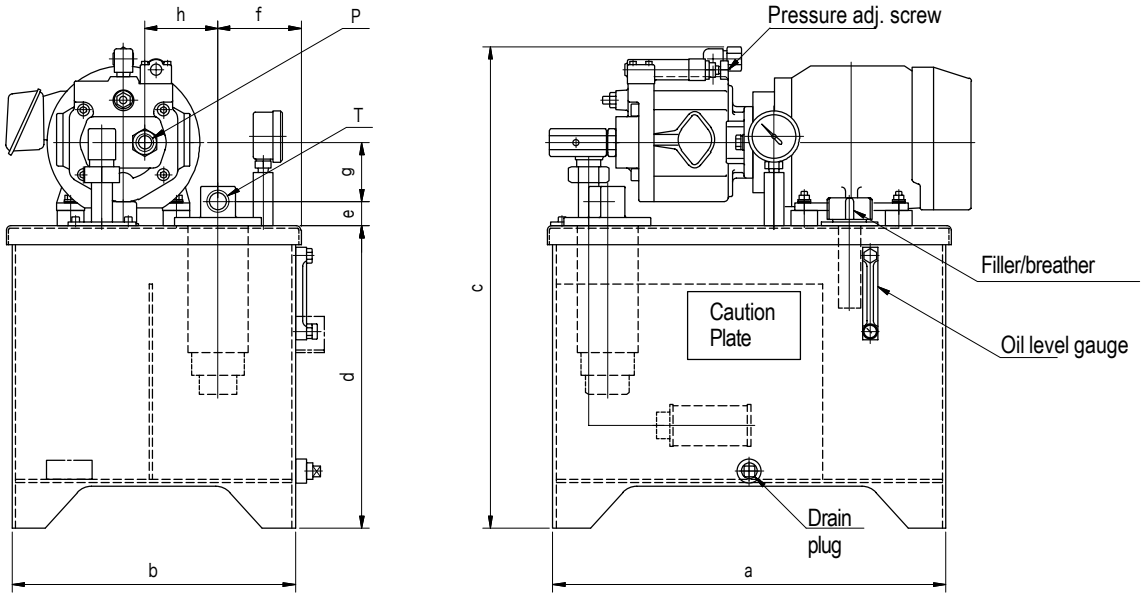
Model Selection

Applicable pressure-flow-electric motor output for each model is the area delineated by the curve.
Select model based on the pressure and flow to be used and which falls within this area.

Pressure - Flow - Electric Motor Output Curves



Dimensions



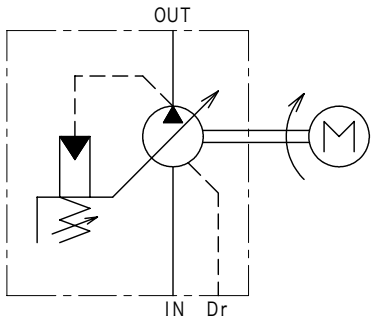
Dimensions

Model	a	b	c	d	e	f	g	h	Connec. Port
Q1614	520	380	675	400	32	80	78	120	Rc1/2
Q2134 Q3134	700	500	820	500	32	110	114	150	Rc3/4

Motor-pump direct coupled types

- See page A2 - A20 for details of variable piston pump specifications.
  Control types in addition to pressure compensator ('C' type) also applicable.
- AC200V 50/60Hz or AC220V 60Hz are standard.
  Consult Tokimec for other voltages.

Function Symbol



Model Code

TDM - 21 34

1 2 3

1 Direct coupled electric motor-pump series
2 Pump model
16:P16V
21:P21V
31:P31V

3 Electric motor rating/insulation class
074:0.75kW 4P/E
14:1.5kW 4P/E
24:2.2kW 4P/E
34:3.7kW 4P/E
54:5.5kW 4P/B

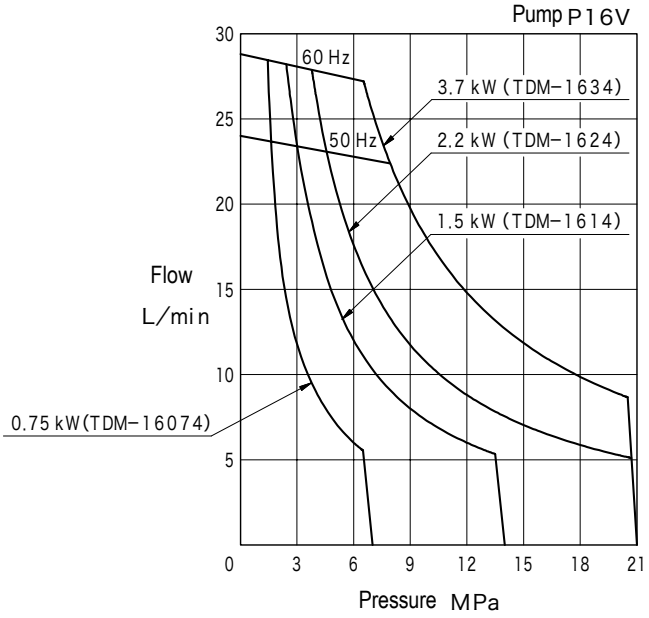
Electric Motor - Hydraulic Pump Configurations

Elec. Motor Rating \ Pump Model	P16V	P21V	P31V
0.75 kW 4P	TDM-16074	—	—
1.5 kW 4P	TDM-1614	—	—
2.2 kW 4P	TDM-1624	TDM-2124	TDM-3124
3.7 kW 4P	TDM-1634	TDM-2134	TDM-3134
5.5 kW 4P	—	TDM-2154	TDM-3154

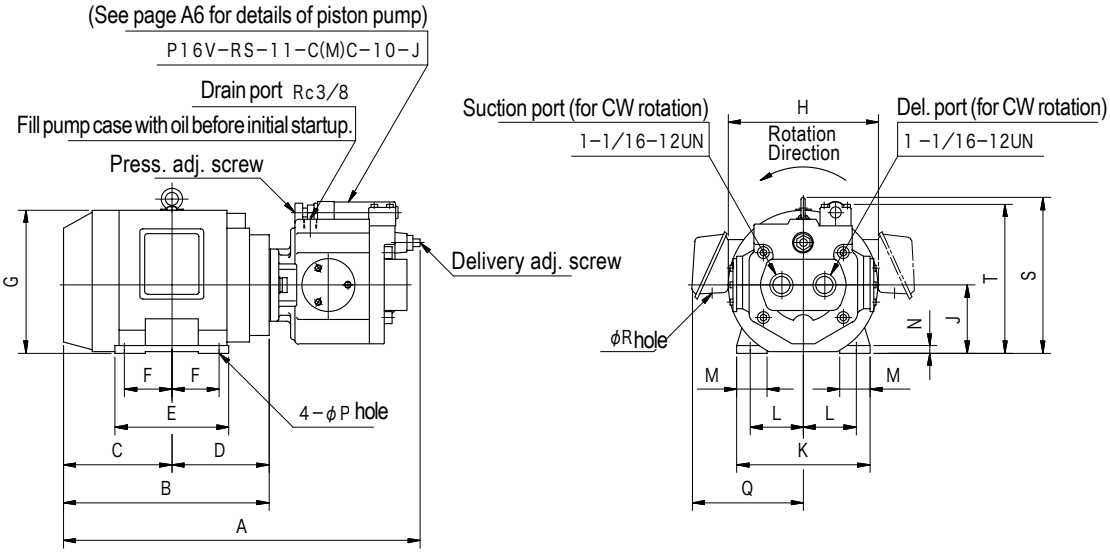
Model Selection

Applicable pressure-flow-electric motor output for each model is the area delineated by the curve.
Select model based on the pressure and flow to be used and which falls within this area.

Pressure-Flow-Electric Motor Output Curve



Dimensions



Dimensions

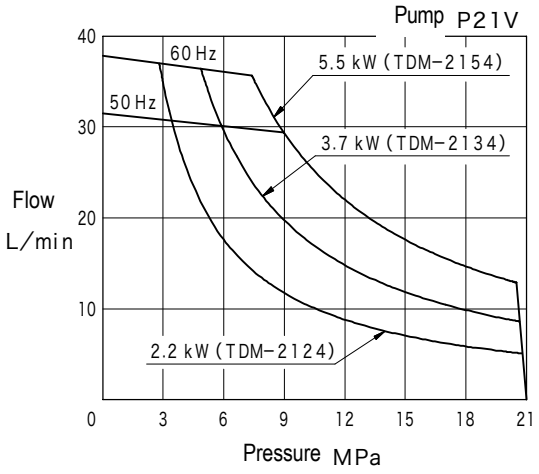
Model	Dimensions mm																		Wt. kg
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	
TDM-16074	437	238.5	133	105.5	130	50	165	170	80	165	62.5	35	4.5	10	146	22	—	190.5	29
TDM-1614	485.5	287	158.5	128.5	150	62.5	191	202	90	176	70	40	10	10	156	22	—	200.5	39
TDM-1624	510.5	312	173	139	168	70	201	202	100	200	80	40	12	12	161	27	239	210.5	45
TDM-1634	515.5	319	174	145	175	70	232	239	112	224	95	45	14	12	175	28	273	222.5	54

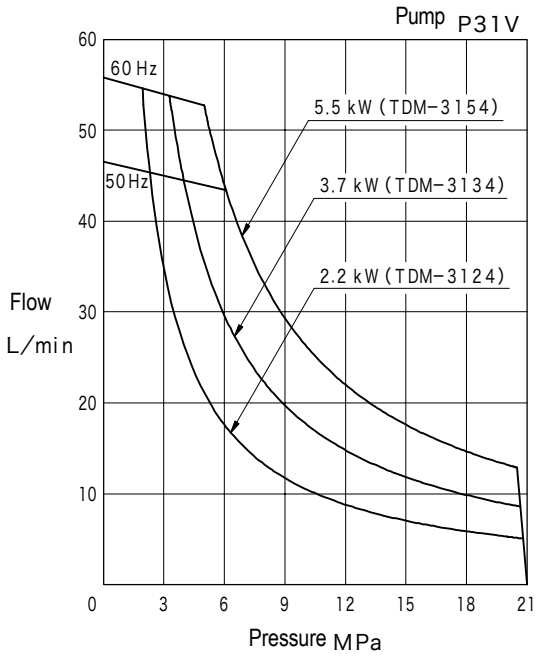
- Dimensions may be subject to change. Consult Tokimec for dimensional detail for specific models.
- Rotation direction and teminal box location shown above is standard. Consult Tokimec for opposite rotation and box location.
- Fittings for pump connection ports must be ordered separately. (See pages A17, Q15)

Model Selection

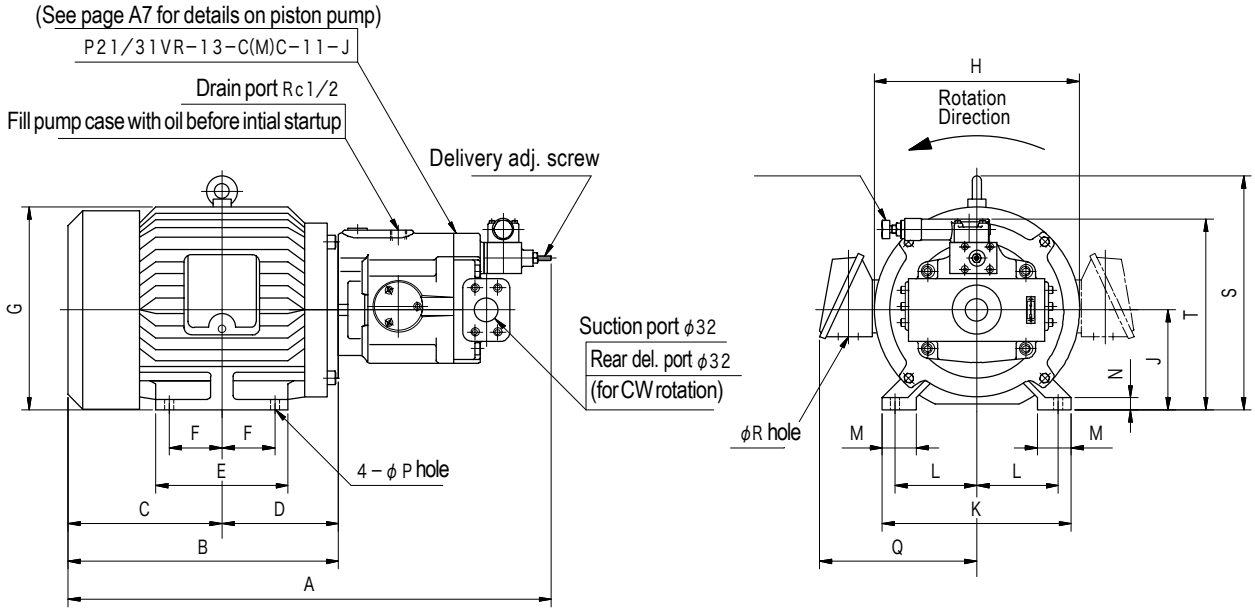
Applicable pressure-flow-electric motor output for each model is the area delineated by the curve.
Select model based on the pressure and flow to be used and which falls within this area.

Pressure-Flow-Electric Motor Output Curves





Dimensions



Dimensions

Model	Dimensions mm																		Wt. kg
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	
TDM-2124 TDM-3124	509	301	167	134	175	70	209. 5	219	100	195	80	45	12. 5	12	165	22	250. 5	182. 5	45. 5
TDM-2134 TDM-3134	609. 6	328	183	145	168	70	233. 5	243	112	220	95	40	12	12	177	27	274	232. 7	64
TDM-2154 TDM-3154	639. 6	358	204	154	175	70	268	272	132	250	108	45	16	12	208	36	309	252. 7	87

- Dimensions may be subject to change. Consult Tokimec for dimensional detail for specific models.
- Rotation direction and terminal box location shown above is standard. Consult Tokimec for opposite rotation and box location.
- Fittings for pump connection ports must be ordered separately. (See pages A17, Q12)