

Алматы (7273)495-231
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Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
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Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
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Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
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Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
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Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
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Псков (8112)59-10-37
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Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
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Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
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Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
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Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
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Якутск (4112)23-90-97
Ярославль (4852)69-52-93

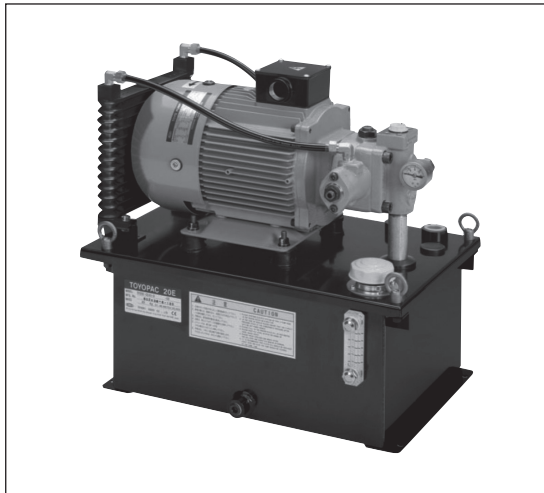
Россия +7(495)268-04-70

Казахстан +7(7172)727-132

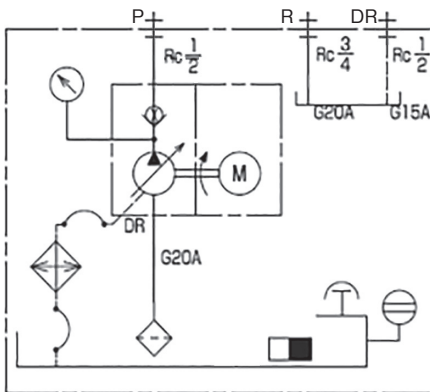
Киргизия +996(312)96-26-47

<https://toyooki.nt-rt.ru> || tik@nt-rt.ru

ENERGY-SAVING HYDRAULIC POWER UNIT-TOYOPAC ECO II



Hydraulic circuit



Description of the model designation

TP10E-BEA1-B- (*) -03

- Model No.
- Option (Please refer to page K-5 for details.)
- Motor capacity (Efficiency level: IE3)
 - B: 0.75kW 4P
 - C: 1.5kW 4P
 - D: 2.2kW 4P
- Pressure adjustment range
 - A1: 1.5 to 2.5 MPa
 - A2: 2.5 to 4 MPa
 - A3: 4 to 7 MPa
 - B3: 4 to 7 MPa (Fixed HP type)
 - (Type that suppresses cut-off pressure and input)
 - A4: 6 to 8 MPa
- Pump capacity
 - BE: 8 cm³/rev
 - CE: 16.7 cm³/rev
- "ECO" series
- Tank capacity
 - 10: 10L
 - 20: 18L
- TOYOPAC

Specifications

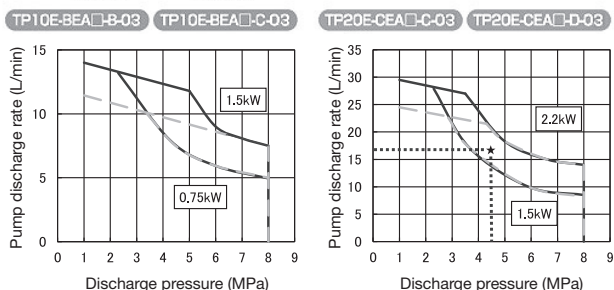
Base model	Motor capacity (kW)	Tank capacity (L)	Pump capacity (cm ³ /rev)	Max. operating pressure (MPa)	Pressure adjustment range (MPa)	Voltage (V)	Mass (kg)* ¹
TP10E-BEA1-B-03	0.75 kW 4P	10	8	2.5	1.5 to 2.5	AC200V 50/60Hz AC220V 60Hz	33
TP10E-BEA2-B-03				4	2.5 to 4.0		
TP10E-BEA3-B-03				7	4.0 to 7.0		
TP10E-BEA3-C-03	1.5 kW 4P	18	16.7	8	6.0 to 8.0		39
TP20E-BEA4-C-03				4	2.5 to 4.0		
TP20E-CEA2-C-03				7	4.0 to 7.0		
TP20E-CEB3-C-03	2.2 kW 4P	18	16.7	7	4.0 to 7.0		47
TP20E-CEA3-D-03				8	6.0 to 8.0		
TP20E-CEA4-D-03							

*1: Hydraulic fluid and options are not included.

Motor selection chart

* Underside of the curve is the allowable operation range at rated output of each motor.

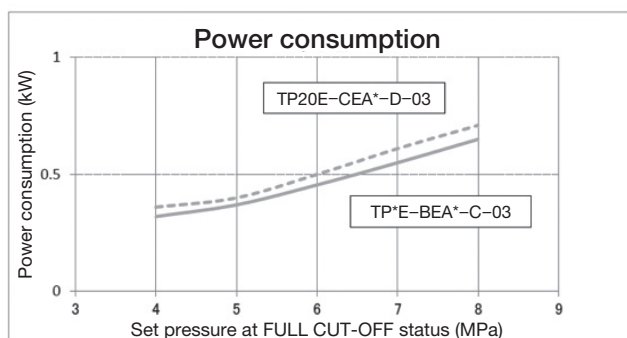
--- 1500min⁻¹ — 1800min⁻¹



Selecting method of motor (example)

As ... in the graph shows, the motor to be selected is found in the area above the point where the pressure 4.5 MPa on the horizontal axis intersects with the displacement 17 L/min on the vertical axis. In this case, select "TP20E-CEA3-D-03" from the motor 2.2 kW (D) and pressure 4 to 7 MPa (A3).

Power Consumption

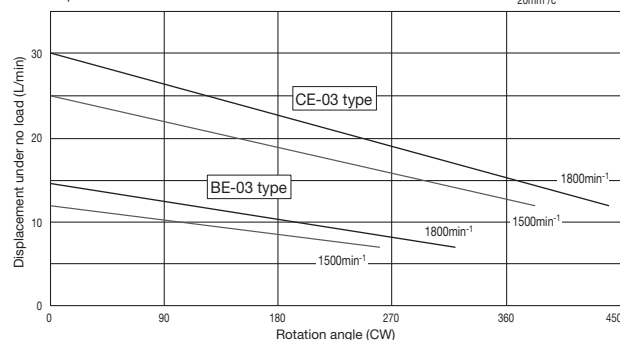


Conditions

● Hydraulic fluid: ISO VG32 ● Fluid temperature: 50°C ● Power supply: AC200V, 60 Hz

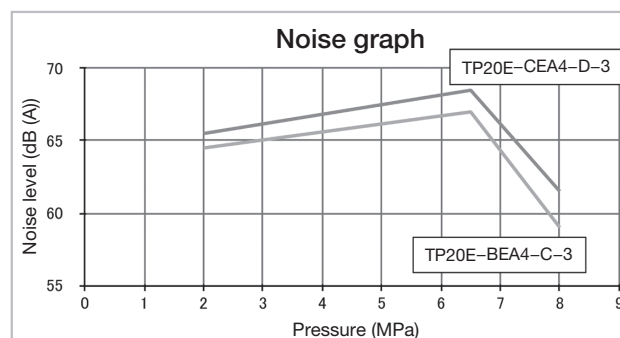
Adjustment of displacement by the pump displacement adjusting screw

Relationship between the rotation angle of pump displacement adjusting screw and the pump displacement under no load



- To adjust the displacement from the factory shipment state (0-deg position), adjust it referring to the angle of rotation in the above graph.
- Do not turn the displacement adjusting screw to left (CCW) from the shipment position.

Noise characteristics



Conditions

● Hydraulic fluid: ISO VG32 ● Fluid temperature: 50°C ● Power supply: AC200V, 60 Hz
● Measurement point: Average of measurements in 4 directions when measured at 1 m from the device horizontally and at 1.2 m above the floor.

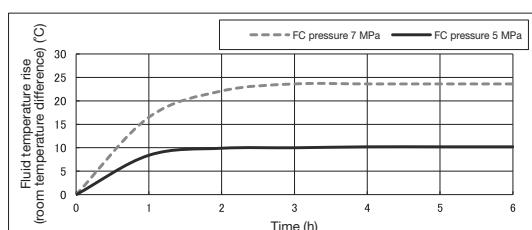
* The data is a representative value which could vary depending on the conditions of installation floor or frame and surrounding objects that reflect noise.

K

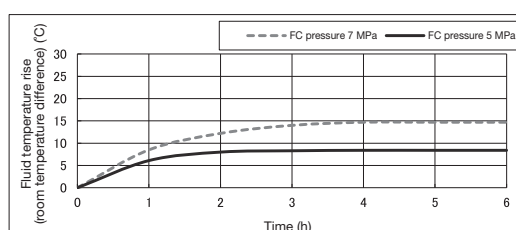
HYDRAULIC POWER UNITS

■ Fluid temperature characteristics

TP10E-BEA3-B-03



TP20E-CEA3-D-03



Conditions

- Hydraulic fluid: ISO VG32 ●Fluid temperature: 35°C ●Power supply: AC200V, 60 Hz
● The data is obtained in windless condition with the discharge side of pump blocked, full cut-off (FC)

Caution

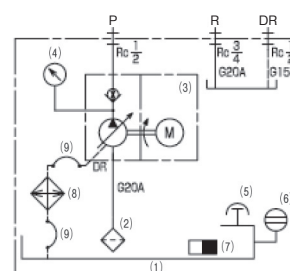
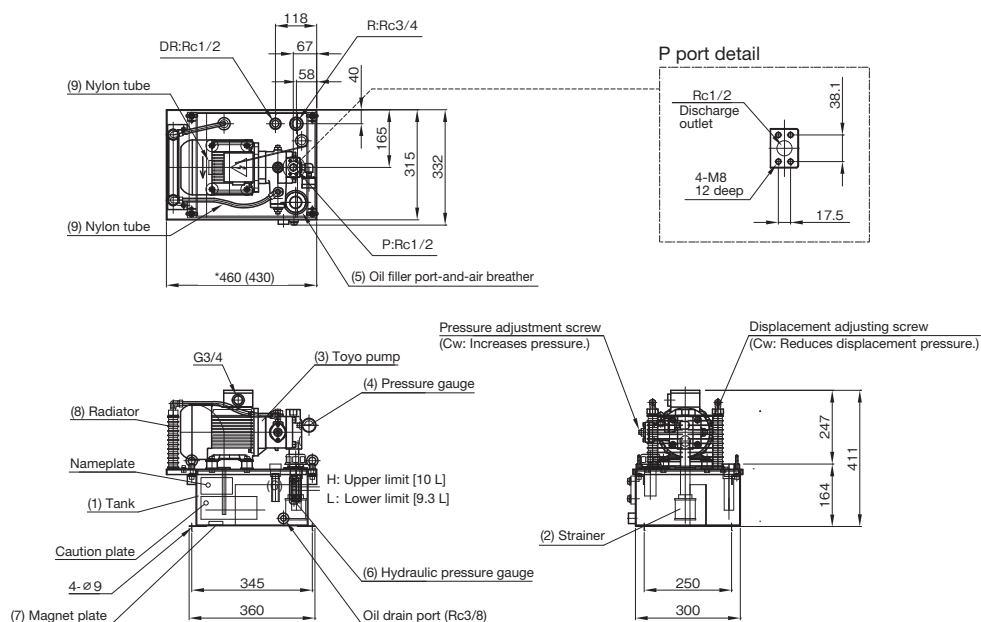
- The data is a representative value which could vary depending on constituting circuit devices and operation cycles.
Fluid temperature should be no higher than 60°C.

■ Outside dimensions

TP10E-□□-B-03 [BASE MODEL]

TP10E-□□-C-03 [BASE MODEL]

* () for TP10E-□□-B-03

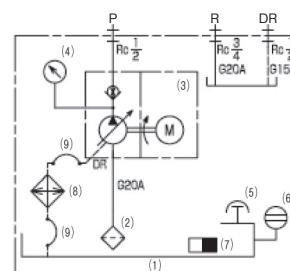
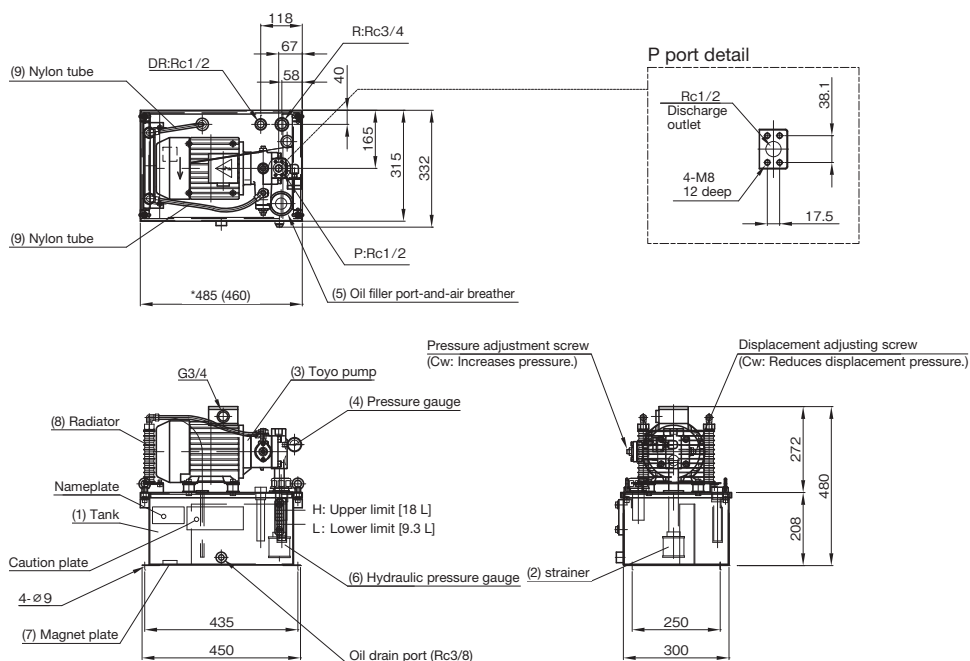


No	Part name
1	Tank
2	Strainer
3	TOYO pump
4	Pressure gauge
5	Oil filler port-and air breather
6	Oil level gauge
7	Magnet plate
8	Radiator
9	Nylon tube

TP20E-□□-C-03 [BASE MODEL]

TP20E-□□-D-03 [BASE MODEL]

* () for TP20E-□□-C-03



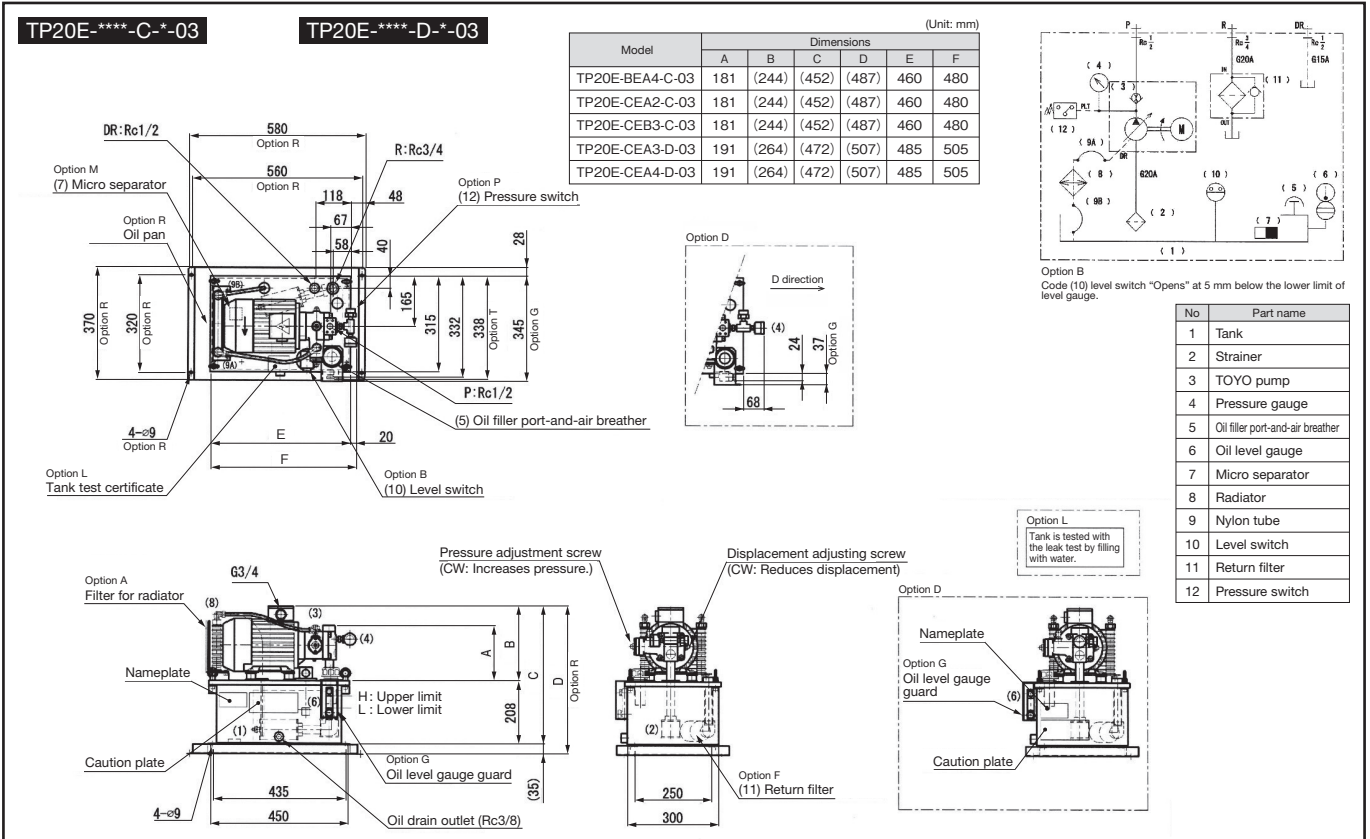
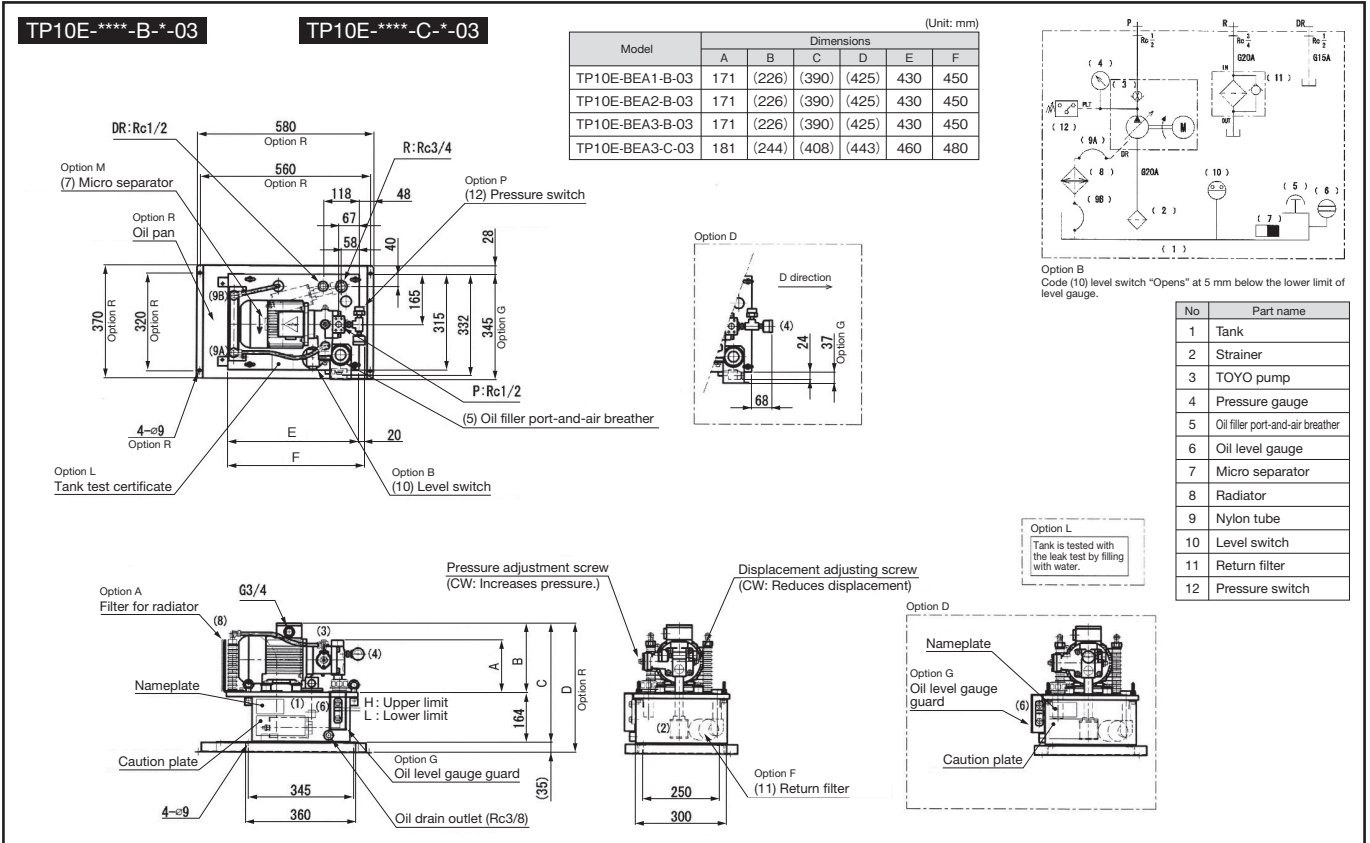
No	Part name
1	Tank
2	Strainer
3	TOYO pump
4	Pressure gauge
5	Oil filler port-and air breather
6	Oil level gauge
7	Magnet plate
8	Radiator
9	Nylon tube

Option model nomenclature

TP10E -*EA*-(B) (L) (M) (A) (F) (T) (P) (G) (R) (D) (1)-03
TP20E

- B : With level switch
L : With leak test by filling with water
M : With micro separator
A : With radiator filter
F : With return filter
T : With thermometer (TP20E only)
- 1 : 1-station manifold
2 : 2-station manifold
3 : 3-station manifold
D : Maintenance direction change
R : With oil pan
G : With oil level gauge cover
P : With pressure switch

Option device external dimensions (* in the fully equipped state, excluding manifold.)



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HYDRAULIC POWER UNITS



Features

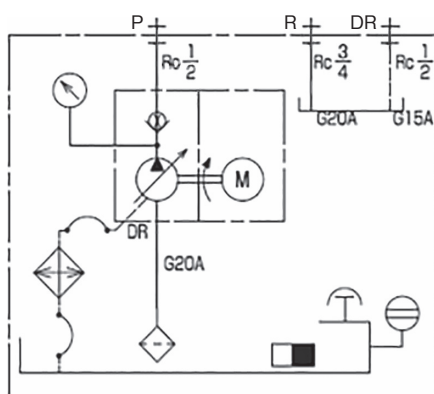
This energy-saving hydraulic unit is compliant to the regulations on the efficiency of low-pressure 3-phase induction motor, which are promoted in many countries over the world.

- Compliant to the high efficiency regulation, China
- Compliant to the high efficiency regulation, Korea
- Compliant to the high efficiency regulation, Europe

(TOYOPAC ECO II, page K-2, is also compliant to the specifications for Europe.)

- Select combinations of pump, motor and tank from the following model designation and specifications.
- Confirm that hydraulic fluid is filled to the H level of oil level gauge in the tank. Replenish hydraulic fluid after operation since the fluid level drops as fluid enters in the tank.
- Use the phases L1 (R)-U, L2 (S)-V and L3 (T)-W at the power supply side and motor side. Run and stop alternately during test run and confirm that the pressure rises on the pressure gauge provided at the discharge side. If it doesn't, check the direction of rotation of the motor. The direction of rotation is CW viewed from the fan side of motor.
- Bleed air. Air can be bled faster if it is connected to the return at the farthest point on the pipeline.
- Always ground the hydraulic power unit. Failure to ground it will cause electric shock or fire. You are recommended to install an earth leakage breaker to prevent electric shock accident and fire with certainty.
- Use a rubber hose of working pressure at 14 MPa or higher and 2 to 3 meters in length to connect the hydraulic device to the pipe at the main unit side, with sufficient sag.
- Use general mineral oil base hydraulic fluid (equivalent to ISO VG32) within the fluid temperature range 5 to 60°C. Using hydraulic fluid outside the specified temperature range may cause failure of the hydraulic power unit and deterioration of the fluid. Fire-resistant fluid cannot be used.
- When replacing the fluid, use fluid of the same brand.
- Use hydraulic devices within the ambient temperature range 5 to 35°C.
- Replace hydraulic oil once every year or when contamination is observed. Control the contamination level to achieve better than Class 12 of NAS1638. Using contaminated fluid will shorten the service life of hydraulic devices and failure in operation.
- The water content of the hydraulic fluid must be 0.1% or less. Water in the hydraulic fluid causes hydraulic power unit failure.

Hydraulic circuit



Description of the model designation

Option		
TP10E-BEA2-B-(B)(L)(M)-3NC		
TOYOPAC		
Tank capacity		
10: 10 L		
20: 18 L		
ECO series		
Pump capacity		
BE: 8 cm ³ /rev		
CE: 16.7 cm ³ /rev		
Pressure adjustment range		
A2: 2.5 to 4 MPa		
A3: 4 to 7 MPa		
A4: 6 to 8 MPa		
B3: 4 to 7 MPa		
(Pump capacity "CE type" only)		
Motor capacity		
B: 0.75 kW 4P		
C: 1.5 kW 4P		
D: 2.2 kW 4P		
	Compliant to countries' efficiency regulation	
	Compliant to Chinese efficiency regulation	Compliant to European efficiency regulation
	NC: AC200V, 50 Hz	NN: AC200V, 50 Hz
	WC: AC380V, 50 Hz	WN: AC380V, 50 Hz
	BC: AC220V, 50 Hz	AC400V, 50 Hz
	Compliant to Korean efficiency regulation	
	NK: AC220V, 60 Hz	
	WK: AC440V, 60 Hz	
	FK: AC380V, 60 Hz	
	Efficiency level: Motor compliant to IE3	
	Option	
	M: With micro separator	
	No code: With small magnet	
	Option	
	L: Tested with the leak test by filling with water	
	No code: Not tested	
	Option	
	B: With level switch	
	No code: Without level switch	

* Select combinations of the tank capacity, pump capacity and motor capacity from the base model column in the table of specifications.

Specifications

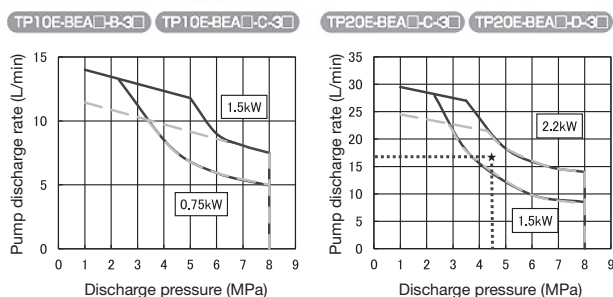
Base model	Motor capacity (kW)	Tank capacity (L)	Pump capacity (cm ³ /rev)	Max. operating pressure (MPa)	Pressure adjustment range (MPa)	Voltage (V)	Mass (kg) ^{*1}
TP10E-BEA2-B-3**	0.75kW 4P	10	8	4	2.5 to 4.0	China AC200V/50Hz AC380V/50Hz AC220V/50Hz	39
TP10E-BEA3-B-3**				7	4.0 to 7.0		
TP10E-BEA3-C-3**	1.5kW 4P	18	16.7	8	6.0 to 8.0	Korea AC220V/60Hz AC440V/60Hz AC380V/60Hz	48
TP20E-BEA4-C-3**				4	2.0 to 4.0		
TP20E-CEA2-C-3**				7	4.0 to 7.0	Europe AC200V/50Hz AC380V/50Hz AC400V/50Hz	58
TP20E-CEB3-C-3**				8	6.0 to 8.0		
TP20E-CEA3-D-3**	2.2kW 4P						
TP20E-CEA4-D-3**							

*1: Hydraulic fluid and options are not included.

Motor selection chart

* Underside of the curve is the allowable operation range at rated output of each motor.

----- 1500min⁻¹ ——— 1800min⁻¹

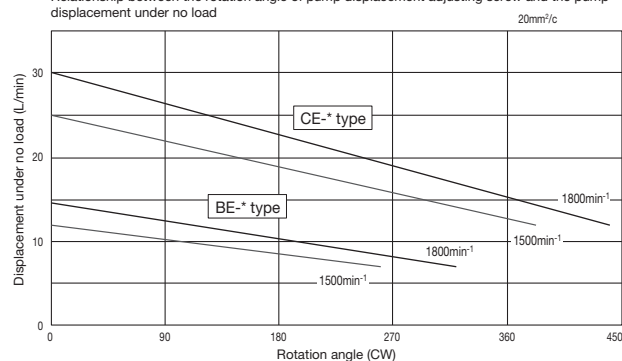


Selecting method of motor (example)

As ... in the graph shows, the motor to be selected is found in the area above the point where the pressure 4.5 on the horizontal axis intersects with the displacement 17 L/min on the vertical axis. In this case, select "TP20E-CEA3-D-03" from the motor 2.2 kW (D) and pressure 4 to 7 MPa (A3).

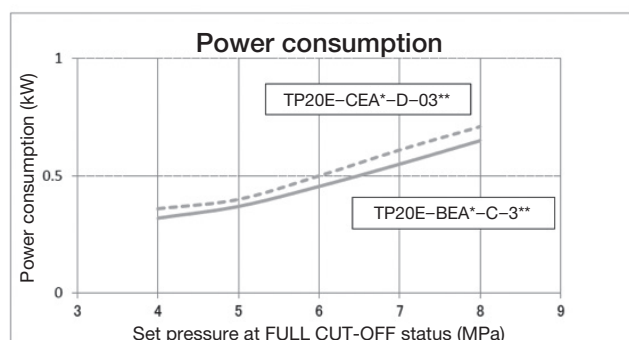
Adjustment of displacement by the pump displacement adjusting screw

Relationship between the rotation angle of pump displacement adjusting screw and the pump displacement under no load



- To adjust the displacement from the factory shipment state (0-deg position), adjust it referring to the angle of rotation in the above graph.
- Do not turn the displacement adjusting screw to left (CCW) from the shipment position.

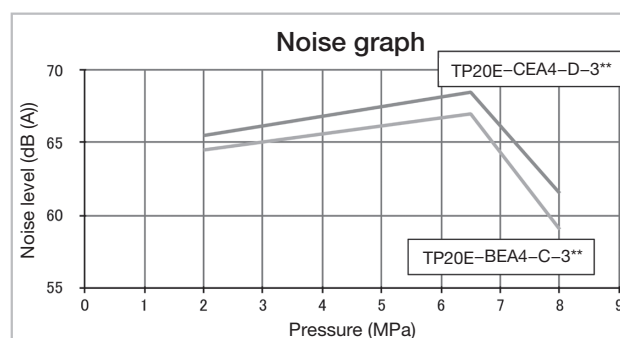
Power consumption



Conditions

● Hydraulic fluid: ISO VG32 ● Fluid temperature: 50°C ● Power supply: AC200 V, 60 Hz

Noise characteristics



Conditions

● Hydraulic fluid: ISO VG32 ● Fluid temperature: 50°C ● Power supply: AC200 V, 60 Hz
● Measurement point: Average of measurements in 4 directions when measured at 1 m from the device horizontally and at 1.2 m above the floor.

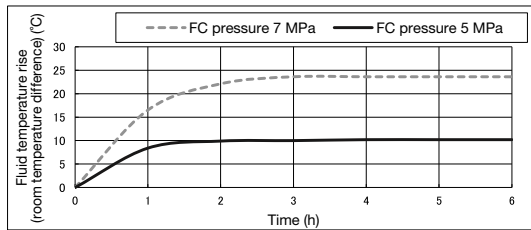
* The data is a representative value which could vary depending on the conditions of installation floor or frame and surrounding objects that reflect noise.

K

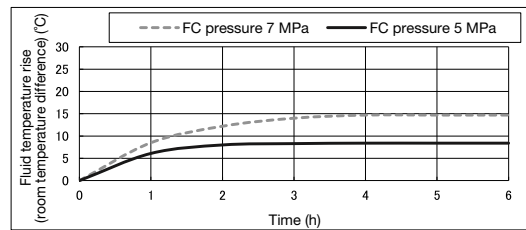
HYDRAULIC POWER UNITS

Fluid temperature characteristics

TP10E-BEA3-B-03**



TP20E-CEA3-D-03**

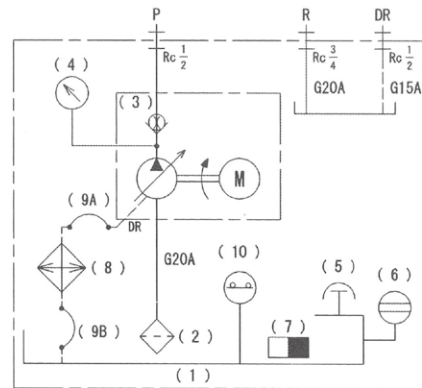
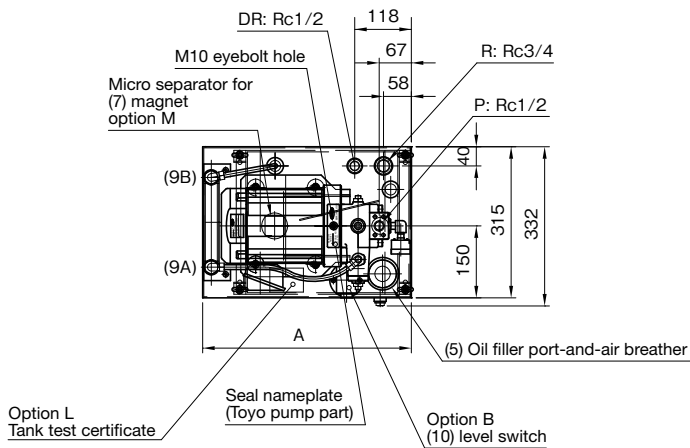


Conditions: ● Hydraulic fluid: ISO VG32 ● Fluid temperature: 35°C ● Power supply: AC200V, 60 Hz
 ● The data is obtained in windless condition with discharge side of pump blocked, full cut-off (FC).
 Caution: ● The data is a representative valve which could vary depending on constituting circuit devices and operation cycles.
 Fluid temperature should be no higher than 60°C.

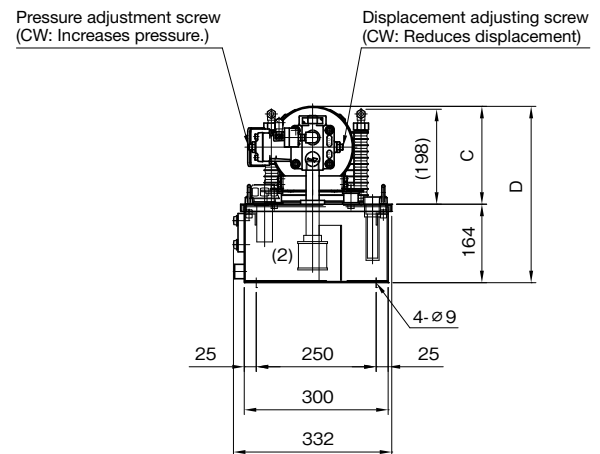
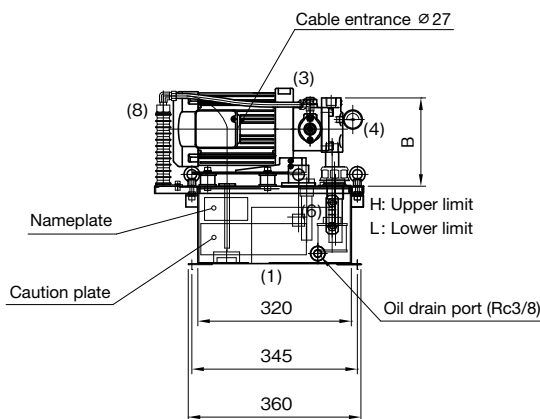
Outside dimensions of option device (* In the fully equipped state)

TP10E-****-B-* -3**

TP10E-****-C-* -3**



Option B
 Code (10) level switch "opens" at 5 mm below lower limit of level gauge.



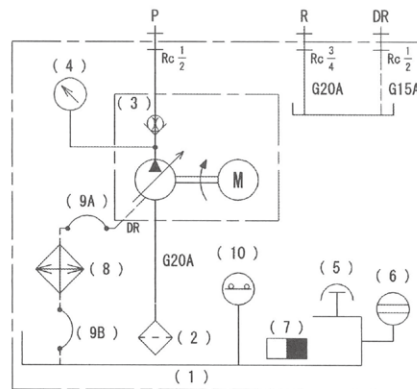
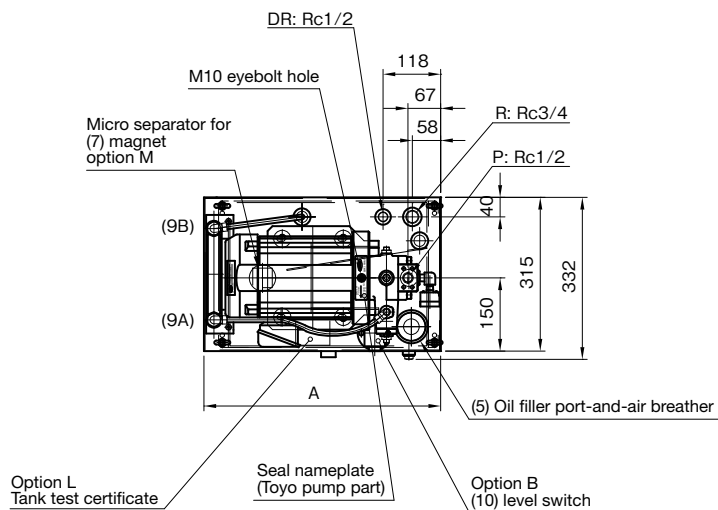
Unit: mm

Model	Dimensions			
	A	B	C	D
TP10E-BEA2-B-* -3**	435	184	204	368
TP10E-BEA3-B-* -3**	435	184	204	368
TP10E-BEA3-C-* -3**	480.5	192	223	387

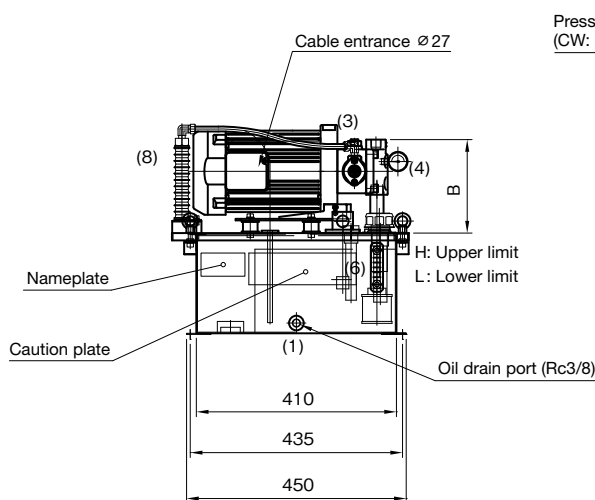
No	Part name	No	Part name
1	Tank	6	Oil level gauge
2	Strainer	7	Micro separator
3	TOYO pump	8	Radiator
4	Pressure gauge	9	Nylon tube
5	Oil filler port-and-air breather	10	Level switch

TP20E-****-C-*.3**

TP20E-****-D-*.3**

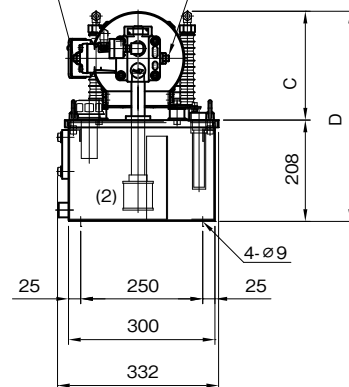


Option B
Code (10) level switch "opens" at 5 mm below lower limit of level gauge.



Pressure adjustment screw
(CW: Increases pressure.)

Displacement adjusting screw
(CW: Reduces displacement)



Unit: mm

Model	Dimensions			
	A	B	C	D
TP20E-BEA4-C-*.3**	485	192	223	431
TP20E-CEA2-C-*.3**	485	192	223	431
TP20E-CEB3-C-*.3**	485	192	223	431
TP20E-CEA3-D-*.3**	500	200	242	450
TP20E-CEA4-D-*.3**	500	200	242	450

No	Part name	No	Part name
1	Tank	6	Oil level gauge
2	Strainer	7	Micro separator
3	TOYO pump	8	Radiator
4	Pressure gauge	9	Nylon tube
5	Oil filler port-and-air breather	10	Level switch

Алматы (7273)495-231
Ангарск (3955)60-70-56
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Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
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Владивосток (423)249-28-31
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Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
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Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
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Киров (8332)68-02-04
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Кострома (4942)77-07-48
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