



## Yongjia Welldone Machine Co.,Ltd.

### 永嘉威顿机械有限公司

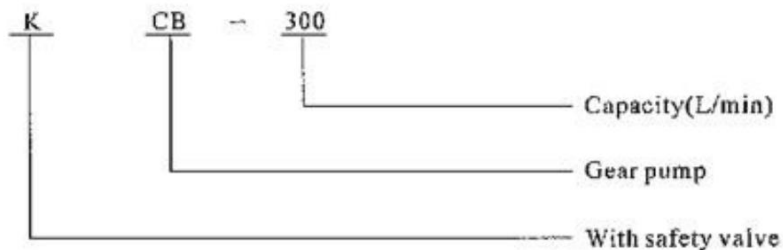
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# KCB/2CY SERIES GEAR OIL PUMP

## APPLICATION

- 1.The pump is suitable to transport various lubrication liquid at temperature not higher than 70℃. If temperature is up to 200 ℃, anti-high temperature material will be matched. Its viscosity is  $5 \times 10^{-5} - 15 \times 10^{-3} \text{m}^2/\text{s}$ .
- 2.The pump is not suitable to transport liquid such as corrosive or containing hard grain or fibre, high volatility or low flash point, for example gasoline, benzene. (Pump can transport gasoline if copper gear is adopted. And pump can transport ordinary corrosive liquid if stainless steel material is adopted).

## DESIGNATION



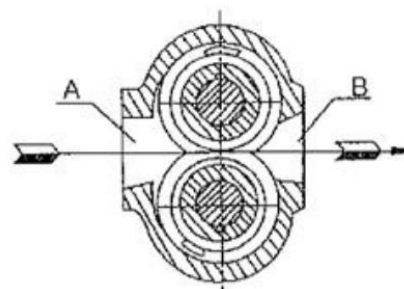
## PERFORMANCE DATA SHEET

Model	inlet and outlet caliber (inch)	output capacity (L/min)	output pressure (MPa)	Suction height (m)	Efficiency (%)	match three phases asynchronous motor		
						power(KW)	Model	rotary speed (r/min)
KCB-18.3 (2CY-1.1/14.5-2)	$\frac{3}{4}$	18.3	1.45	5	≥85	1.5	Y90L-4	1400
KCB-33.3 (2CY-2/14.5-2)	$\frac{3}{4}$	33.3	1.45	5	≥85	2.2	Y100L <sub>1</sub> -4	1420
KCB-55 (2CY-3.3/3.3-2)	1	55	0.33	5	≥85	1.5	Y90L-4	1400
KCB-83.3 (2CY-5/3.3-2)	1 $\frac{1}{2}$	83.3	0.33	5	≥85	2.2	Y100L <sub>1</sub> -4	1420
KCB-133.3 (2CY-8/3.3-2)	2	133.3	0.33	5	≥85	4	Y112M-4	1450
KCB-200 (2CY-12/3.3-2)	2	200	0.33	5	≥85	4	Y112M-4	1450
KCB-200 (2CY-12/6-2)	2	200	0.6	5	≥85	5.5	Y132S-4	1450
KCB-200 (2CY-12/10-2)	2	200	1.0	5	≥85	7.5	Y132M-4	1450
KCB-300 (2CY-18/6-2)	3	300	0.36	5	≥85	5.5	Y132M <sub>2</sub> -6	960~1000
KCB-483.3 (2CY-29/3.6-2)	3	483.3	0.36	5	≥85	7.5	Y132M-4	1440~1500
KCB-483.3 (2CY-29/10-2)	3	483.3	0.36	5	≥85	11	Y160M-4	1450
KCB-633 (2CY-38/2.8-2)	4	633	0.28	5	≥85	11	Y160L-6	960~1000
KCB-960 (2CY-60/3-2)	4	960	0.3	5	≥85	18.5	Y180M-4	1500
KCB-2000 (2CY-120/3-2)	6	2000	0.3	5	≥85	30	Y250M-8	750
KCB-2500 (2CY-150/3-2)	6	2500	0.3	5	≥85	37	Y280S-8	750

Note: pumps above it can be matched different motor as customer's requirement.

### WORKING PRINCIPLE

Twin rotary gears are set in the pump body. One is active, the other is passive. Whole working chamber in pump is separated into two independent parts as two gear mutual joggle. (Picture 1) A is input chamber, B is output chamber. Active gear drives passive gear to rotate when pump works. When Gears rotate from joggle to come away, A(input chamber) turn into part vacuum and liquid is suck. Suck liquids fill various gear vale and then are taken in B(output chamber). Liquids turn into high pressure liquid and are put out of output when gears joggle.



Picture 1

### STRUCTURE AND CHARACTERISTIC

#### 1. Structure:

- A. The pump is a horizontal rotary pump. It consists of pump body and gear and bearing seat and safety valve and bearing and seal device etc.
- B. Material of pump body and bearing seat are cast iron. Gear is made of high grade carbon steel. Gear can be made of bronze or stainless steel material as customer's requirement.
- C. There is a stuffing chamber on bearing seat. It has the effect of axial seal. KCB-300-960 model adopts mechanical seal device and its bearing is single line centripetal ball bearing. KCB-18.3-83.3 model adopts two plastic rings anti-oil and liner baffle ring in the middle. Adjust nut on the pressure cover for seal. Bearing is bronze dust with lubrication bearing. The pump can use flexible graphite of anti-high and low temperature with stable chemical character as stuffing seal.
- D. Safety valve is set in pump. Safety valve is automatically opened when pump or output pipeline are in trouble or high pressure or high pressure impact for output valve being entirely closed. Discharge part or all high pressure liquids to come to low pressure chamber so that there is a safe protection for pump and pipeline.
- E. Flexible couple is connected with driver motor and mounted on cast iron base plate.

## 2. Characteristic:

- A. Pump has the advantages of single and compact structure and convenient operation and maintenance.
- B. Pump has the good self-priming performance. So pump need not pour liquid when pump starts.
- C. Lubricant of pump is automatic by transported liquid. So in everyday work pump need not add lubrication.
- D. Flexible couple driver can settle little tolerance for installation. It can relax impact of liquid pressure when pump works.

## NOTICE ITEMS

### 1. Install

- A. Check if pump is damaged in transport and motor is wet and dustproof cover onto input and output of pump is damaged to dirty matter in pump chamber.
- B. Clean inner pipeline wall with clean water or steam water before install pipeline. Weight of pipeline should not be supported by pump when install pipeline.
- C. Various connection parts should not leak otherwise liquid can not be suck.
- D. Metal filter net should be installed in suction avoid coming into pump for grain and impurity.

### 2. Check before pump starts

双击可隐藏空白

- A. All fix tightly parts are stable or not.
- B. Active shaft rotates flexibly or not.
- C. Valves of input and output pipeline are open or not.
- D. Rotary direction meets requirement or not. (Viewed from pump end to motor, rotary direction is anticlockwise.

### 3. Maintenance for pump

- A. Notice pressure of pump and reading of vacuum gauge should be accordant with stated technical requirement.
- B. Notice that stuffing case works. If stuffing case leaks, please screw tightly cover as its degree. (Don't give a tight screw to the cover avoid stuffing case heating greatly and seal ring wearing quickly)
- C. Please stop the pump instantly and check when noise is too big or temperature of pump rises too high in the operation of pump.
- D. Normally safety valve should not been adjusted random. If safety valve need be adjusted, use apparatus to proofread. Seal pressure for safety valve: Model KCB-18.3, Model KCB-33.3 1.7MPa;  
Model KCB-55, Model KCB-83.3, Model KCB-300, Model KCB-483.3 0.45MPa;  
Model KCB-200 three kind pumps respective pressure: 0.45MPa, 0.8MPa, 1.4MPa.

### 4. Stop pump

- (1) Cut off electric power      (2) Close valves for input and outlet pipeline



## TROUBLE AND SETTLE WAYS

Trouble	Reason	Settle ways
No discharge or lack discharge	<ol style="list-style-type: none"> <li>1.Suction height is over stated value</li> <li>2.Suction pipeline leaks</li> <li>3.Rotary direction is not true</li> <li>4.Suction pipeline is blocked or valve is close</li> <li>5.Safety valve is blocked or damaged</li> <li>6.Liquid temperature is too low and viscosity is too great.</li> </ol>	<ol style="list-style-type: none"> <li>1.Improve suction liquid surface</li> <li>2.Check various connection and it is better to add asbestine seal material</li> <li>3.Adjust rotary direction</li> <li>4.Check if pipeline is blocked and valve is open</li> <li>5.Clean safety valve and rub bore of valve to let it connect</li> <li>6.Heat liquid first or reduce output pressure or capacity</li> </ol>
Seal leaks	<ol style="list-style-type: none"> <li>1.Shaft seal is not adjusted well</li> <li>2.Seal ring is damaged and tolerance is too wide</li> <li>3.Dynamic and static ring surface of mechanical seal is damaged.</li> <li>4.Spring is loose</li> </ol>	<ol style="list-style-type: none"> <li>1.Adjust it again</li> <li>2.Replace seal ring or fit nut tightly for tolerance.</li> <li>3.Replace dynamic and static ring</li> <li>4.Replace spring</li> </ol>
Great noise and vibration	<ol style="list-style-type: none"> <li>1.Suction pipe or filter net is blocked</li> <li>2.Depth of suction pipe into liquid surface is lack</li> <li>3.There is air in suction pipeline</li> <li>4.Resistance of output pipeline is too great</li> <li>5.Bearing of gear or side board is damaged</li> <li>6.Rotary parts are in trouble</li> <li>7.Viscosity of suction liquid is too great.</li> <li>8.Suction height is over stated value</li> </ol>	<ol style="list-style-type: none"> <li>1.Clean impurity onto filter net</li> <li>2.Suction pipe should be taken into liquid pool</li> <li>3.Check various connection for seal</li> <li>4.Check if output pipeline and valve is blocked</li> <li>5.Disassemble it then clear it and repair it or replace it</li> <li>6.Disassemble it and settle the trouble</li> <li>7.Test the viscosity and deal it</li> <li>8.Improve height of suction liquid surface</li> </ol>

## WEARING PARTS SHEET

1. Model:KCB-18.3-83.3

Name	Material	No.	Remark
Seal ring	Flexible graphite	2	Match it for temperature of transported liquid over 200°C
Spring for safety valve	Spring steel wire	1	
Roll bearing	6-6-3 Tin bronze powder	4	Four pieces are divided into two forms.
Seal ring	Anti-oil rubber	2	Match it for temperature of transported liquid below 70°C.

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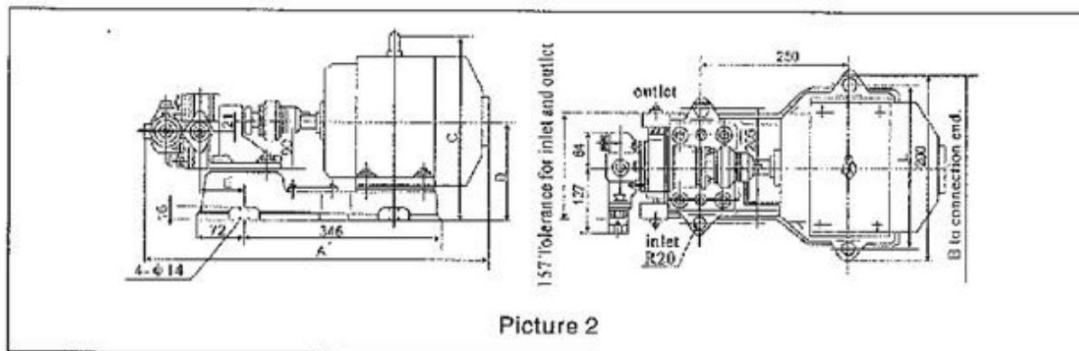
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2. Model: KCB-300-960

Name	Material	No.	Remark
Seal ring	Flexible graphite	4	Match it for temperature of transported liquid over 200 °C
Safety spring	Middle II steel wire	1	
Dynamic ring	T8A	1	
Static ring	T8A	1	
Push board	HT20-40	4	

3. Pump leaves factory without wearing parts. Please indicate details in the order when place an order.

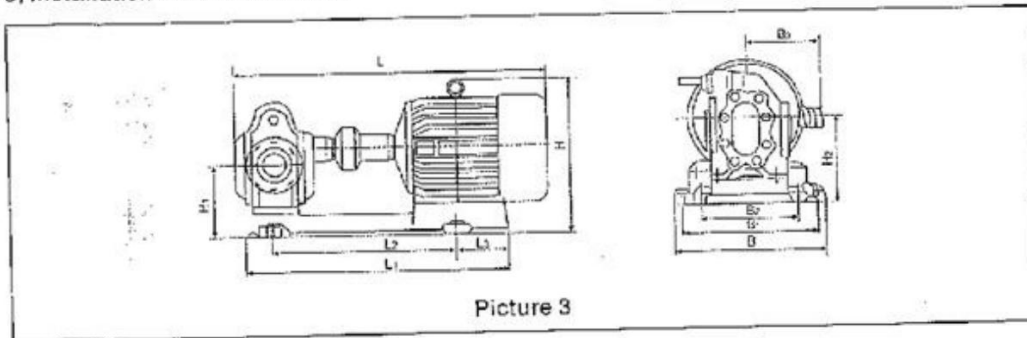
**OUTLINE AND INSTALLATION DIMENSION**



**OUTLINE DIMENSION SHEET FOR GEAR OIL PUMP**

Model	Motor		A	B	C	D	E	L	G <sup>n</sup>
	Model	Power							
KCB-18.3 (2CY-1.1/14.5-2)	Y90L-4	1.5	583	300	230	130	79	230	$\frac{3}{4}$ "
KCB-33.3 (2CY-2/14.5-2)	Y100L-4	2.2	618	325	285	140	79	250	$\frac{3}{4}$ "
KCB-55 (2CY-3.3/3.2-2)	Y90L-4	1.5	588	300	230	130	86.5	230	1"
KCB-83.3 (2CY-5/3.3-2)	Y100L-4	2.2	658	325	285	140	99	250	$1\frac{1}{2}$ "

Outline of pump KCB-200, KCB-300, KCB-483.3, KCB-633, KCB-960, please see picture 3, installation dimension sheet.



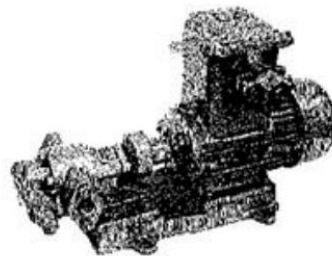
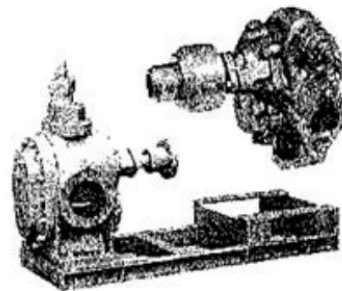
Picture 3

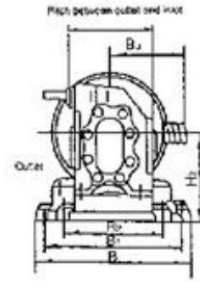
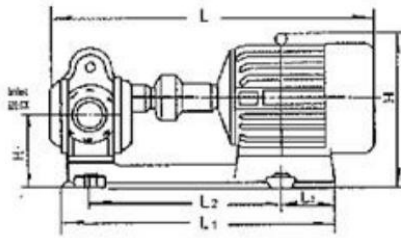
Model	L	L1	L2	L3	H	H1	H2	B	B1	B2	B3
KCB-133.3 (2CY-8/3.3-2)	750	580	350	100	360	188	220	350	300	250	210
KCB-200 (2CY-12/10-2)	855	690	470	100	413	188	230	410	370	315	210
KCB-300 (2CY-18/3.6-2)	855	690	470	100	413	188	230	410	370	315	210
KCB-483.3 (2CY-29/3.6-2)	800	655	450	116	315	182	220	380	340	250	210
KCB-633 (2CY-38/2.8-2)	1116	898	570	163	510	210	305	440	390	280	237
KCB-960 (2CY-60/3-2)	1156	941	600	176	555	210	305	460	410	280	237

Specifications and technical parameters of 2CY oil pumps

Model	Flow (m³/h)	Pressure (bar)	Power (kW)	Shaft Diameter (mm)	Speed (rpm)	Weight (kg)
2CY1.1/14.5-2	1.1	1.45	0.05	3/4"	1.5	500
2CY2/14.5-2	2	1.45	0.05	3/4"	2.2	500
2CY3.3/3.3-2	3.3	0.33	0.05	1"	1.5	500
2CY5/3.3-2	5	0.33	0.05	1 1/2"	2.2	500
2CY8/3.3-2	8	0.33	0.05	2"	3	500
2CY8/6-2	8	0.6	0.05	2"	4	500
2CY12/1.5-2	12	0.13	0.05	2"	4	500
2CY12/3.3-2	12	0.33	0.05	2"	5.5	500
2CY12/6-2	12	0.6	0.05	2"	5.5	500
2CY12/10-2	12	1.0	0.05	2"	7.5	500
2CY18/3.6-2	18	0.36	0.05	3"	5.5	500
2CY18/6-2	18	0.6	0.05	3"	7.5	500
2CY29/3.6-2	29	0.36	0.05	3"	7.5	500
2CY29/10-2	29	1.0	0.05	3"	11	500
2CY38/2.8-2	38	0.28	0.05	4"	11	500
2CY60/3-2	60	0.3	0.05	4"	18.5	500
2CY100/3-2	100	0.3	0.05	6"	30	500
2CY100/6-2	100	0.6	0.05	6"	55	500
2CY120/3-2	120	0.3	0.05	6"	30	500
2CY120/6-2	120	0.6	0.05	6"	55	500
2CY150/3-2	150	0.3	0.05	6"	37	500
2CY150/7-2	150	0.7	0.05	6"	75	500

\* Denotes gear pump in stainless steel





KCB200-960 2CY8-150 Mounting dimensions

KCB-200 (2CY-12/1.3)	850	890	350	100	413	188	230	360	305	250	210
KCB-200 (2CY-12/10-2)	800	655	450	116	315	182	220	380	340	250	210
KCB-300 (2CY-18/3.5-2)	855	690	470	100	413	188	230	410	370	315	210
KCB-483.3 (2CY-29/3.8-2)	855	690	470	100	413	188	230	410	370	315	210
KCB-633 (2CY-38/2.8-2)	1116	898	570	163	810	210	305	440	360	280	237
KCB-960 (2CY-60/3-2)	1156	941	600	176	555	210	305	460	410	280	237
2CY-100/3-2	1460	1446	931.5	274.5	922	387	475	490	440	370	405
2CY-120/3-2	1460	1446	931.5	274.5	922	387	475	490	440	370	405
2CY-150/3-2	1790	1614	1071	303	952	387	475	625	578	370	508

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