

## 2. Storage and Transportation

### 2.1 Delivery condition

Purifier bowl will be delivered in the box separately from purifier from.

And rubber plates and flexible hoses are also delivered separately from purifier body.

Parts name	Delivery condition
Rubber plate	Tied up with string on the purifier body.
Flexible hose	Tied up with string at eye-bolt of purifier motor.
Pressure gauge (option parts)	Put pressure gauge away in a spar parts box

Please refer to the drawing for construction or completion regarding to the contents and quantity of accessories.

### 2.2 Storage

Store the purifier by the following procedures.

1. Store the purifier in a dry indoor place not directly exposed to wind, rain, sand, dirt, etc.

<b>NOTE</b> For general guidance, the storage period is six months after shipment in the case of local packaging, and one year after shipment in the case of export packaging. If the purifier is to be stored for a longer period, please contact Mitsubishi Kakoki or your nearest dealer.
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2. Carefully store the purifier in such a way as to eliminate the possibility of physical damage.
3. Store the purifier in a place where it can be easily brought out for rigging work.  
Generally, the bowl, spare parts, toolbox, etc. are to be brought out after installation of the purifier proper. Put them together in an easily accessible place so that they can be easily brought out.

## 2. 保管及搬运

### 2.1 购入状态

从本公司出厂时，回转体单独包装。并且，橡胶座，金属软管等已从分油机上拆下。

部件名称	购入状态
橡胶座	用绳将其捆扎在分油机外部
金属软管	用绳将其捆扎在分油机电动机吊环螺栓上
压力表（选购件）	收藏在备件箱内。

有关附件的内容及数量，请参照施工图纸或者完成图。

### 2.2 保管

请按以下要领保管分油机。

1. 请保管在非直接暴露在风雨，砂尘等中的干燥的室内。

<b>注</b> 保管的大致期限，国内包装为发送后 6 个月，出口包装为发送后 1 年内。当保管期限要超过该日期时，请向本公司咨询。
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2. 请妥善保管，防止受到物理损伤。
3. 在装备施工过程中，请将分油机保管在方便搬运的场所。  
特别是像回转体及备件，工具箱等物件，通常总是在安装好分油机本体之后才搬出，因此，请将这些物件集中在一起搬至容易分辨，容易搬出的场所。

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### 2.3 Transportation

1. Prior to transportation, make sure that the bowl is removed from the purifier proper, and that they are independently transported.
2. Prior to transportation, stop up the openings of the purifier proper and bowl for protection against dust and dirt.



#### WARNING

Incorrect hoisting procedures could result in serious personal injury or damage to the purifier.

3. Make sure that hoisting is done by safe and secure procedures.  
Fig2-1 shows an example.

#### NOTE

1. In case of lifting, please take care not to damage to painting.
2. Please be careful not to damage multi-monitor, sensor and solenoid valves by crash to something when lift purifier.

### 2.3 搬运

1. 搬运时，请务必将回转体从分油机本体上拆下，各自单独搬运。
2. 搬运时，请将分油机本体及回转体的开孔部加封，以防沙尘进入。



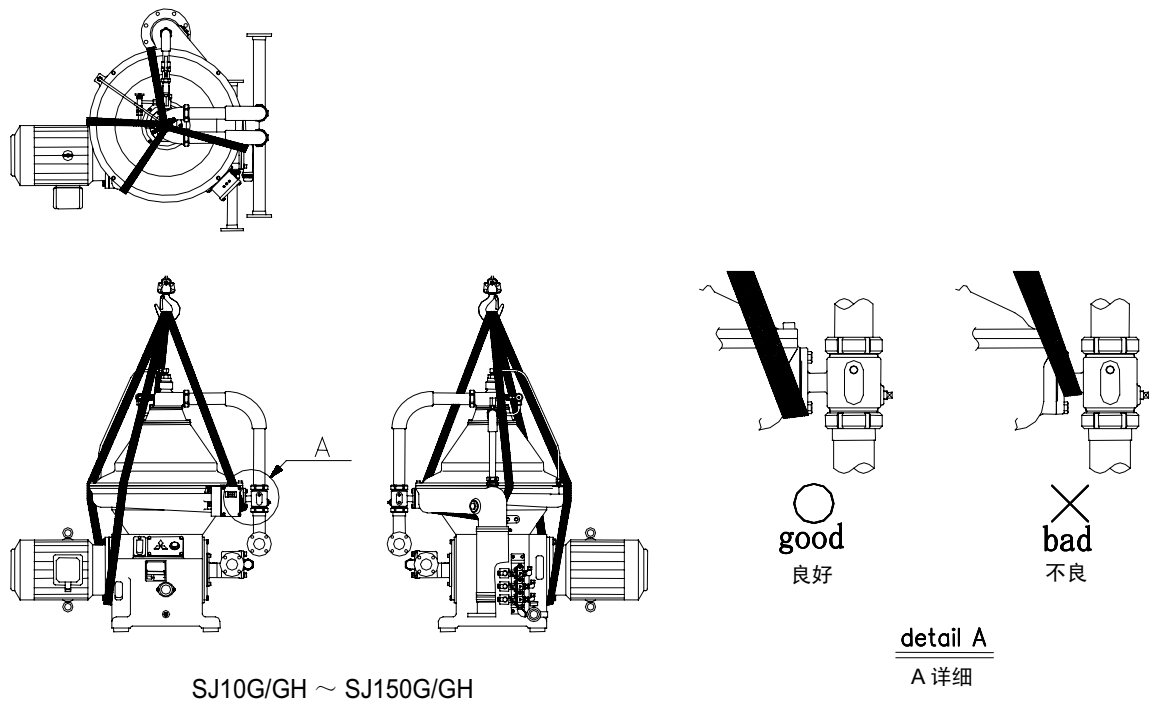
#### 警告

吊装方法错误时，有可能引起重大人身伤害或分油机的损伤。

3. 请利用安全，可靠的方法进行吊装。  
图 2-1 为其中一例。

#### 注

1. 吊装时，请注意不要损伤分油机的涂覆表面。
2. 请特别注意不要损伤检测器、电磁阀、传感器类配管等。



Model	Weight (kgf)
SJ10G/GH	320
SJ20G/GH	330
SJ30G/GH	340
SJ50G/GH	530
SJ60G/GH	540
SJ70G/GH	550
SJ100G/GH	700
SJ120G/GH	710
SJ150G/GH	790

Without bowl weight.  
不包括回转体。

Fig 2-1

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### 3. Installation

#### 3.1 Installation

For installation of the purifier in a ship, pay heed to the following items.

1. Installation place
2. Installation spacing
3. Support base rigidity
4. Installation procedures

Detailed information on each of the above-mentioned items is described below.

##### 3.1.1 Installation place

1. Avoid installing the purifier in a place near vibration generating equipment (compressor etc.).
2. It is desirable that the purifier be installed on the port or starboard bow on the bow side of the engine.
3. Do rigging by installation of ducts, etc. so that the ambient temperature of the purifier will be maintained at 45°C or less. (Though the limit of ambient temperature for the purifier apply to the rule by the associated classification society, we recommend to maintain at 45°C or less.)
4. Install the purifier in such a way that the motor shaft of the purifier will be in parallel with the bow-stern line.
5. Install the fuel oil purifier and lubricant purifier side by side in the same place for ease of management.
6. Provide enough space around the purifier to facilitate maintenance management. (Refer to Fig 3-1)
7. The bowl is to be removed from the purifier for opening. Make sure that the space for the purpose is provided as near the purifier as possible. (Refer to Section 3.2.1)

##### NOTE

If the purifier is installed near a place subject to vibration of other machines or in a high ambient temperature place, the gears of the drive section might be prematurely worn or adverse effects might be produced on the lives of the bearings, gear oil, etc.

### 3. 安装

#### 3.1 安装

在将分油机安装到船内时，请考虑以下几点。

1. 安装场所
2. 安装间隔
3. 台座刚性
4. 安装要领

对上述事项详细说明如下：

##### 3.1.1 安装场所

1. 请不要设置在发生振动的设备（空气压缩机等）附近。
2. 希望设置在主发动机的船首端的左舷或者右舷。
3. 装备时，请安设通风管道，使分油机的环境温度能保持在 45°C 以下。（分油机的环境温度条件取决于各船级规范，本公司推荐为 45°C 以下。）
4. 安装时，请使分油机的电动机轴与船首尾轴线保持平行。
5. 请尽量在同一场所并排设置燃油分油机和润滑油分油机，便于管理。
- 6 请在分油机的周围留出空间，以保证可容易地进行维护管理。（参照 Fig 3-1）
7. 打开回转体时，要从分油机上拆下，因此，请尽可能地在分油机的近旁留出空间。（参照 3.2.1 项）

##### 注

如果设置在易受其它设备振动或环境温度高的场所，有可能造成驱动部的齿轮的提前磨损或对轴承及齿轮油的寿命产生不良影响。

### 3.1.2 Installation spacing

When two or more purifiers are to be installed on the same floor, space them a sufficient distance apart from each other so that all the parts can be easily checked. In addition, arrange them so that the operations can be easily performed. Fig 3-1, Table 3-1 shows the minimum dimension for installation spacing. (When one purifier is to be installed, space it the minimum dimension apart from the wall surface.)

When installing two or more purifiers whose model numbers are different from each other, space them in accordance with the dimension specified for larger model.

### 3.1.2 安装间隔

在同一层面安装 2 台以上时，必须保持一定间隔，以便容易地对各部位进行检查，同时，其排列应便于作业。

安装间隔的最小尺寸如 Fig 3-1, Table 3-1 所示。

（安装 1 台分油机时，离开墙面的最近距离也应保证该尺寸。）

另外，当安装型号不同的 2 台以上的分油机时，请按型号大的那个尺寸进行安装。

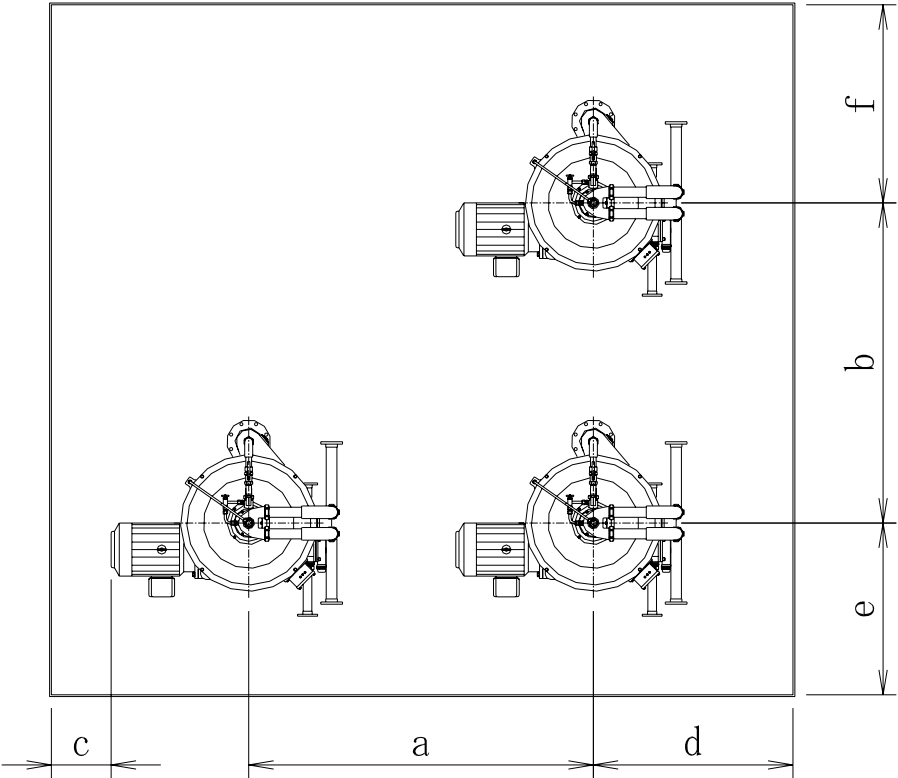


Fig 3-1

Table 3-1

	SJ10G/GH	SJ20G/GH SJ30G/GH	SJ50G/GH SJ60G/GH SJ70G/GH	SJ100G/GH SJ120G/GH	SJ150G/GH
a	1450	1450	1700	1900	1950
b	1450	1450	1550	1700	1750
c	200	200	250	250	250
d	800	800	900	1000	1050
e	1000	1000	1100	1100	1100
f	850	850	950	1050	1050

### 3.1.3 Support base

1. Make sure that the installation side of the support base on which the purifier is installed is level. Thoroughly reinforce the support base so that it will be a rigid structure.
2. For the support base, be sure to provide a dam (more than 50mm in height) to prevent outflow of oil.

#### NOTE

If the rigidity of the support base is low, the gears of the drive section might be prematurely worn or adverse effects might be produced on the life of the bearing, etc. because of the effects of vibration of the engine and auxiliaries.

The purifier can be operated safely only when the vibration as measured at the point A of Fig 3-2 is below  $100\mu\text{m}$  (peak to peak).

Even if readings are below  $100\mu\text{m}$ , continuous cruising ship vibrations 4-5 times higher than registered when external vibrating forces are small, such as when the main engine is not in operation, could adversely affect the durability of SELFJECTOR.

In such case, it's possible that the support base is short of hardness.

### 3.1.3 台座

1. 安装分油机的台座，请采用安装面水平、并且进行了充分加固的结实的结构。
2. 请在台座上加设用以防止油流出的集油盘（高度 50mm 以上）。

#### 注

如果台座的刚性不够，有可能受主机及辅机的振动的影响而造成驱动部的齿轮提前磨损或对轴承的寿命带来不良影响。

分油机可安全运转的振动为：在 Fig 3-2 本体机架 A 点的振动小于  $100\mu\text{m}$ （两峰振幅）。

另外，即使其振幅小于该值，当巡航时的振动达到主机停止时等，外部起振力较少的状态下的振动值的 4~5 倍，且持续出现时，应考虑是台座的刚性不足。

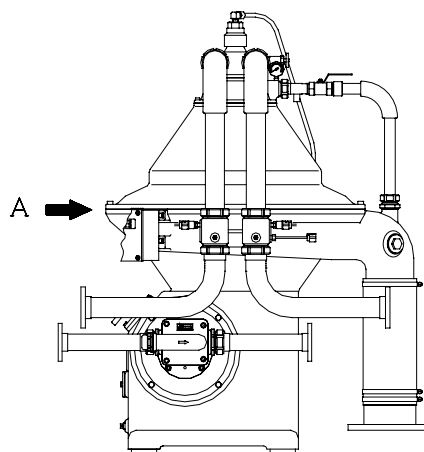


Fig 3-2

3.1.4 Installation procedures

Before mounting the foundation bolts and installing the purifier, be sure to check that the foundation (support base) is level.

Mount the foundation bolts and install the purifier by the following procedures. (Refer to Fig 3-3, Table 3-2)

1. Mount the foundation bolts to the foundation (support base) by welding.
2. Make sure that the installation rubber seats (standard accessories) are mounted.
3. The foundation bolts are double tightened by use of lock nuts. Don't tighten them so firmly that the elasticity of the rubber seats is lost.

Follow the tightening procedures described below.

1. First tighten the nuts all the way by hand.
2. Then tighten the nuts a quarter of a turn (90°) by use of a spanner. In this case, it is important that the nuts in four places are equally tightened.

**NOTE**

Avoid adjusting the level by changing the amount the nuts are tightened, as vibration could result. Make sure that the level is not adjusted by changing the amount the nuts are tightened.

Tightening torque:50N-m {500Kgf-cm} ±5%

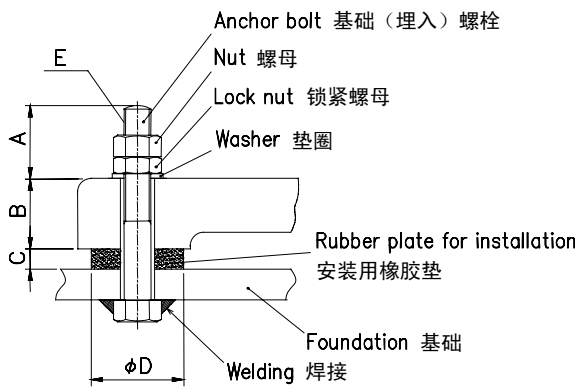


Fig 3 -3

3.1.4 安装要领

在安装基础螺栓及分油机之前，请务必确认基础（台座）水平。

基础螺栓的固定及安装要领如下所示。

（参照 Fig 3-3、Table 3-2）

1. 请将基础螺栓焊接到基础（台座）上。
2. 请务必安装橡胶垫（标准附件）。
3. 基础螺栓应使用锁定螺母双重固定，请不要过度拧紧，以免橡胶垫失去弹性。

紧固方法如下所示：

1. 首先，用手完全拧紧螺母。
2. 然后，用扳手将螺母紧固 1/4 圈（90°）。重要的是此时 4 处的螺母要均匀收紧。

**注**

如果在紧固螺母过程中失去了水平度，有可能引起振动，因此在紧固时，请注意保持水平度。

收紧扭矩 50N-m {500Kgf-cm} ±5%

Table 3-2

Model	A	B	C	D	E	Weight (kg)
SJ10G/GH	44	50	15	60	M20	350
SJ20G/GH	44	50	15	60	M20	370
SJ30G/GH	44	50	15	60	M20	390
SJ50G/GH	44	55	15	60	M20	590
SJ60G/GH	44	55	15	60	M20	600
SJ70G/GH	44	55	15	60	M20	670
SJ100G/GH	52	60	20	80	M24	900
SJ120G/GH	52	60	20	80	M24	910
SJ150G/GH	52	60	20	80	M24	1100

With bowl weight  
包括回转体重量



### 3.2 Hoisting equipment

Since the bowl is removed from the purifier for opening, the opening space must be provided near the purifier. In addition, hoisting equipment is necessary for carrying the bowl to the opening space.

#### 3.2.1 Opening space

Fig 3-4, Table 3-3 shows the minimum space necessary for opening the bowl.

Please establish the space where puts the part of the frame-cover etc (1 m × 1 m or more). that you removed. If the bowl disassembly base (standard tool) is installed in the opening space, it will be convenient. (Fig 3-5, Table 3-4)

### 3.2 吊装装置

打开回转体时，要从分油机上将其拆下，因此，在分油机的近旁必须有打开时使用的空间。

另外，还必须使用吊装装置，以便将拔出后的回转体移动到打开用的空间。

#### 3.2.1 打开空间

Fig 3-4 和 Table 3-3 列出了打开回转体所必需的最小空间。

此外，请留出放置拆卸后的机盖等部件的空间（1m × 1m 以上）。

同时，如果事先在打开空间安装好回转体的拆解台（标准工具）则更方便。（Fig 3-5, Table 3-4）

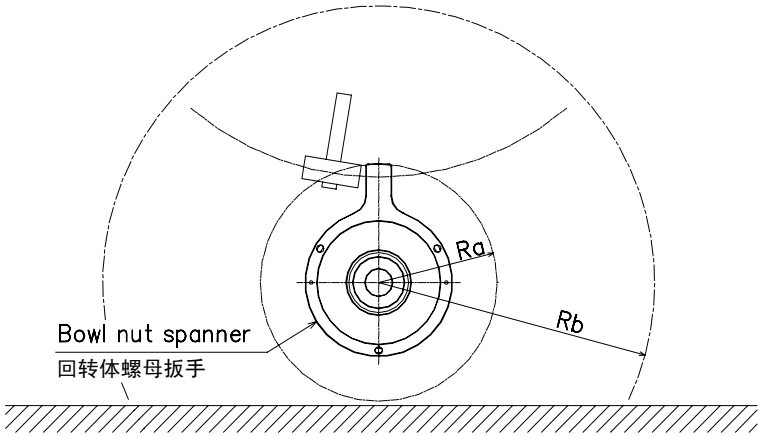


Fig 3-4

Table 3-3

(mm)							
	SJ10G/GH	SJ20G/GH	SJ30G/GH	SJ50G/GH SJ60G/GH	SJ70G/GH	SJ100G/GH SJ120G/GH	SJ150G/GH
R a	225	235	235	295	305	385	395
R b	1250	1250	1250	1300	1350	1400	1400

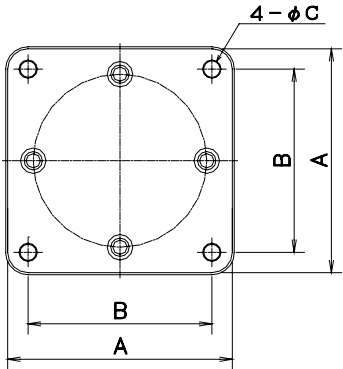


Fig 3-5

(mm)		
	SJ10G/GH ~SJ70G/GH	SJ100G/GH ~SJ150G/GH
A	200	220
B	160	180
C	18	18
Thickness: 板厚	12	16

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### 3.2.2 Hoisting equipment

For the hoisting equipment used to carry the bowl removed from the purifier to the opening space, install a monorail (I beam) through over the center of purifier and mount a trolley type chain block (geared type) to the monorail to facilitate movement of the bowl.

Mount an Eye plate right above the motor lifting eyebolt so that the chain block will hang down.

(Refer to Fig 3-6)



#### CAUTION

The center axis of the motor deviates from that of the monorail (I beam) for chain block. Never attempt to remove or install the motor by using the chain block. It can make a greater risk of injuring the personnel and damaging the purifier.

The monorail and chain block mounting heights differ between when one purifier is used and when the lifted bowl is passed over the top of another purifier. Determine the respective heights according to, Table 3-5.

### 3.2.2 吊装装置

对于将从分油机拔出的回转体运送到打开空间的吊装装置，请设置通过分油机中心线的上方设置其单轨（工字梁），并在上面安装便于回转体移动的悬挂式链动滑轮吊（齿轮传动型）。

而且，请在电动机吊装用吊环螺栓的正上方安装眼板，使其形成链式葫芦起吊的结构。（参照 Fig 3-6）



#### 注意

因电动机的轴心与链动滑轮吊用单轨（工字梁）的轴心不同，请不要用链动滑轮吊安装或拆卸电动机。否则，有可能造成伤害或损坏分油机。

并且，单轨及链动滑轮吊的安装高度在单独 1 台分油机时与吊起后要越过另外的分油机上方时会有不同。

各自的高度请按 Table 3-5 确定。

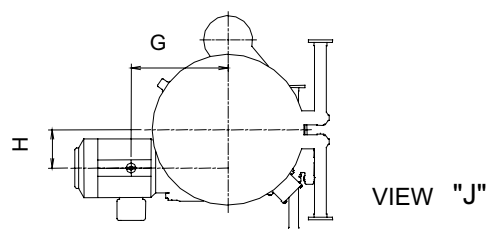
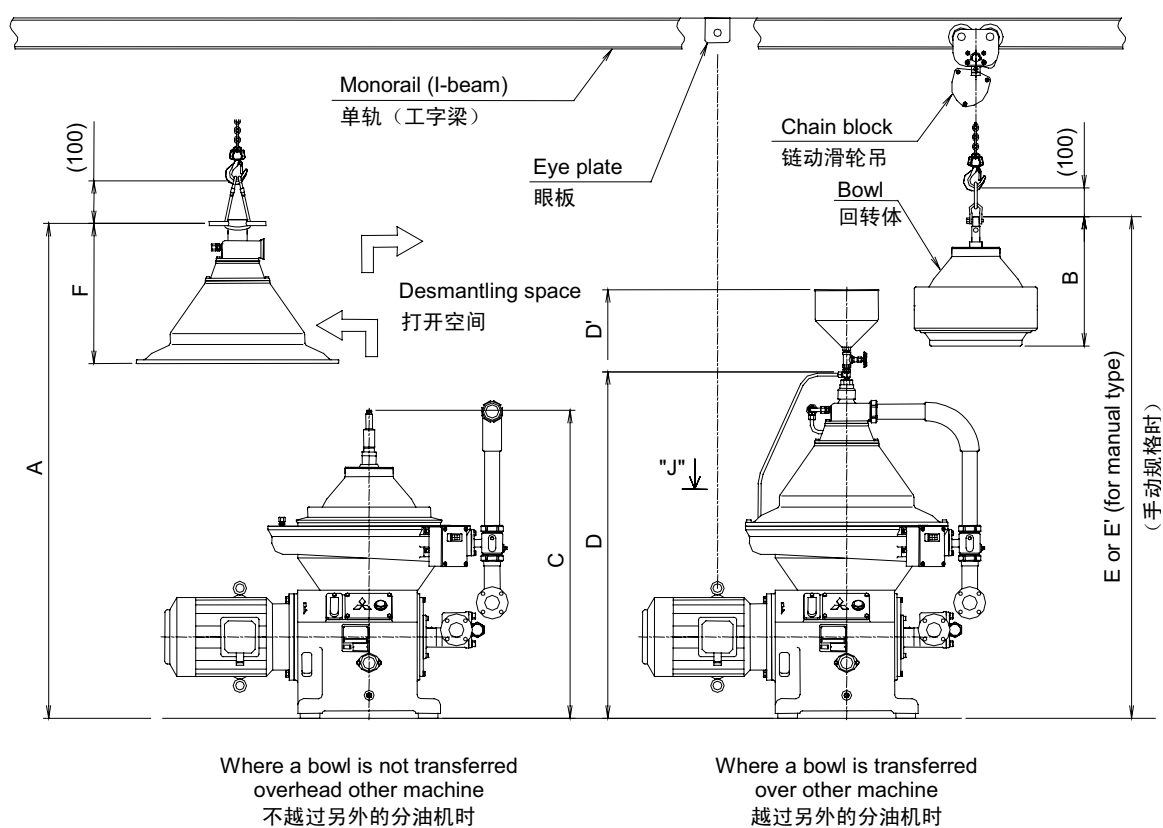


Fig 3-6

Table 3-5

(mm)

Model	A	B	C	D	D'	E	E'	F	G	H	Bowl Weight (kg)
SJ10G/GH	1370	382	949	996	1234	1430	1670	370	379	155	45
SJ20G/GH	1390	382	955	1002	1240	1430	1670	376	413	155	50
SJ30G/GH	1440	382	980	1027	1265	1460	1700	401	413	155	60
SJ50G/GH	1700	449	1171	1216	1522	1720	2020	478	485	160	110
SJ60G/GH	1700	449	1171	1216	1522	1720	2020	478	505	160	120
SJ70G/GH	1730	449	1190	1236	1541	1740	2040	487	505	160	135
SJ100G/GH	2010	536	1361	1407	1712	1990	2300	598	588	160	240
SJ120G/GH	2010	536	1361	1407	1712	1990	2300	598	588	160	250
SJ150G/GH	2090	536	1398	1444	1749	2030	2330	635	588	165	310

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