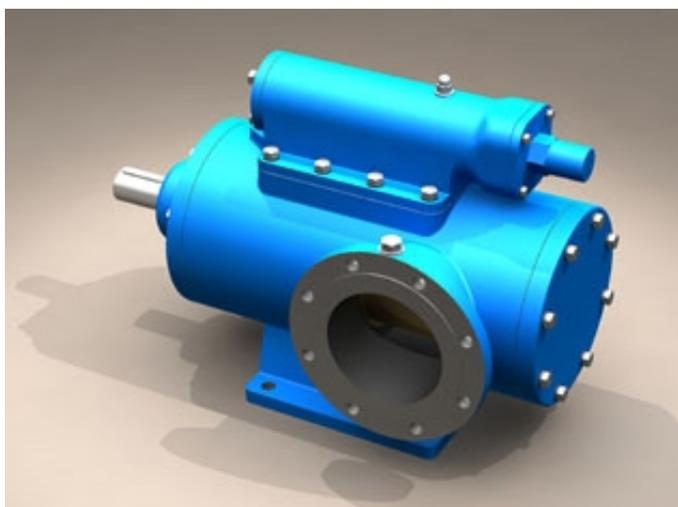




THREE SCREW PUMP

SNH,SNF,SNS PUMP



Name code:

SN---three screw pump

H ---Horizontal type

F ---flange type

S ---vertical type

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(The company reserves the right to make alteration without notice)

SN type three-spindle screw pump

● Main Feature

- SN three-spindle screw pump is of self priming
- Because of the unit assembly system every pump can be supplied as cartridge pump for foot-,flange-or wall mounting, in pedestal-,bracket-or submersible design.
- According to the delivery medium heated or cooled designs are also available.

● Usage

- For the handling of oil and medium with lubricating pvproperties.

● Application

- In heating techniqzzues as fuel oil and medium with lubricating pvproperties.
- In the engineering industry as hydraulic-,and telemotor pumps.
- In the chemical and food industry as cargo-,transfer or supply pumps.
- In the marine field as transfer-,booster-,fuel oil pumps as well for ship hydraulics.

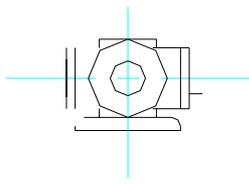
1. Type

Type	Main characteristics	Max capacity[l/min]	Size	Max,delivery pressure[Mpa]
SN	Low pressure; single entry,spindles with hydr, balance of axial thrust	5300	40~5300	4. 0

2. Design

Code	Description of design
H	Horizontal foot mounted pump
F	Flange mounted pump
S	Vertical pedestal mounting pump
E	Cartridge unit pump
T	Cartridge unit pump, to be pushed in from suction side with throttle bush
G	Gear mounted pump without shafe sealing U-turn longitudinal

SN type three-spindle screw pump

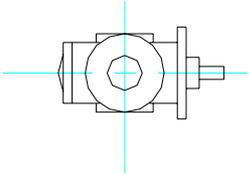


标准结构

Standard Designs

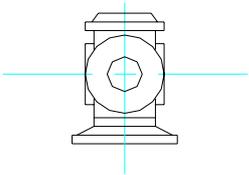
H=卧式底脚安装泵

Foot mounting pump



F=法兰安装式泵

Flange mounting pump



S=立式柱脚泵

Vertical mounting pump

3. pitch angle

Size	40	80	120	210	280	440	660	940	1300	1700	2200	2900	3600	5300
Pitch angle [°]	38	36	42	40	43	40	40	42	38	42	42	40	46	46
	46	42	46	46	46	46	44	46	42	46	46	46		
	54	46	54	54	54	52	46	50	46					
		54				54	51	54	54					
						54								

4. Material in common use

Material code	Casing	Insert	Using range
W1	Cast iron	Special modular cast iron	Used to pump the medium (such as fuel oil) with less lubricity and suitable viscosity at lower pressure
W2	Cast iron	Cast AL	Used to pump the medium (such as lubricant oil) with better lubricity and suitable viscosity at lower pressure
W3	Nodular cast iron	Cast AL	Used in particular case, such as marine pump, to pump the medium (such as lubricant oil) with better lubricity and suitable viscosity at lower pressure.
W5	Nodular cast iron	Special modular cast iron	Used in particular case, such as marine pump, to pump the medium with less lubricity and suitable viscosity as fuel oil at lower pressure.
W21	Cast iron	Special bronze	Used to pump the medium with less lubricity and lower viscosity, such as heavy oil and fuel oil.
W23	Nodular cast iron	Special bronze	Used in particular case, such as marine pump, to pump the medium with less lubricity and lower viscosity, such as heavy oil and fuel oil, at higher pressure.
W29	20(焊接组件)	Special bronze	Only for size 5300

SN type three-spindle screw pump

● Step of selecting SN series pump

When chose the three screw pump, you must know the suing condition of the pump, not only the operating data, such as capacity, pressure but also the specific property and corrosiveness of the medium. At the same time you must know the gas content of the medium, the solid size and the temperature, viscosity of the medium.

The user can fill the data sheet of the pump.

The manufacture will choose the pump for you.

1. Confirm the pump speed: (the max speed of the SN series pump is <6000rpm)

A. The speed should be chosen according to the transferring medium's viscosity and the pump's type speed limits. Normally high viscosity medium should chose low speed, low viscosity medium should chose high speed.

For big size pump (driving spindle outside diameter ϕ above 60mm), when viscosity $V > 20^\circ E$, the speed should be between 970-720rpm. When $V > 80^\circ$ like viscose, the speed should be between 200-500rpm.

For the small size pump (the outside diameter ϕ under 60mm). When $V > 20^\circ E$, the speed should be between 1450-970rpm. When $V > 80^\circ E$, the speed should be between 300-600rpm.

B. The high speed of the pump is and the high friction power will get. So the pump wears badly and the service life will be shorten. If the transferring medium's lubrication is not good or the medium has some micro foreign matter, the speed should be 1450rpm.

2. Choose the structure of the pump

Chose the structure of the pump is according to the operating and installing environment. Chose suitable installing structure should adhere to the following principle.

A. Transfer medium with lubrication, temperature $T < 80^\circ C$, chose internal ball bearing type pump.

B. Transfer medium with bad lubrication, temperature $T > 80^\circ C$, chose external ball bearing type pump.

C. Transfer medium with bad flow, high viscosity the medium needs keep warm and heating. Chose casing with jacket type pump.

D. Transfer high temperature medium, chose high temperature-resistant and parts cool type pump.

E. About the suction ability please check the data sheet of the pump.(catalog)

3. The pump material code please check the data sheet of the pump (catalog).

4. NPSHr of the pump

Reduce the speed and heating the medium reduce the viscosity can get high NPSHr. Please see the NPSHr sheet.

5. Select motor for the pump.

After chose the pump, please check the data sheet. You will get the shaft power N. The shaft power N add dump power. This is the basis for selecting motor. Normally motor power N_m is not less than the shaft power N. Shaft power N times dump power coefficient K. You can get $N_m \geq K \cdot N$. The K value please check the following sheet.

N(kw)	K
$N \leq 5$	1.25
$5 < N \leq 10$	1.2
$10 < N \leq 50$	1.15
$N > 50$	1.1

6. In order to let the clean medium to the pump, it is better to fix a filter on the suction part. The filter should be 40-80 mesh.

In addition, some times you can't find the exact pump data you needed. This is because our pump function data in the data sheet under the condition of special viscosity and speed. In this case you

SN type three-spindle screw pump

should adhere to the following principle. If you want to have the exact data, it is better to seek advice from our engineer.

- A. Three screw pump's capacity and pressure at the same viscosity, speed will be rectilinear relation, the high pressure and the small capacity.
- B. Same viscosity and pressure the pump's capacity and speed is direct ratio.
- C. Same speed and viscosity, the shaft power and pressure is direct ratio.
- D. Same viscosity and pressure, the shaft power and speed is direct ratio.

If the viscosity is higher, the capacity and shaft power will be increased. In this case it is better to seek advice from our engineer.

Example: At normal atmospheric temperature to transfer $V=75\text{cst}$ lub-oil, $Q=11.5\text{m}^3/\text{h}$, $P=1.0\text{MPa}$

According to the above data check the pump catalog to chose SNH210R46U12.1.

The pump data is : $Q=203\text{l}/\text{min}=12.18\text{m}^3/\text{h}$, $p=1.0\text{MPa}$, $n=1450\text{rpm}$, $N=4.24\text{kw}$. Chose the motor according to the shaft power.

Check the dump power coefficient $K=1.25$. The motor power $N_m = K \cdot N = 1.25 \cdot 4.24 = 5.3\text{kw}$.

Check the motor catalog Y132S-4 motor power is 5.5kw.

So SNH210R46U12.1-Y132S-4 is in keeping with the requirement.