



## TWIN SCREW PUMP

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### W.V PUMP



Name code:

W.V---twin screw pump

Z ---long shaft design

ZK ---short shaft design

Zi ---inter bearing design

**SILI PUMP,**  
**Your reliable one-stop supplier of marine pumps.**

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

**● THE LEADING FEATURES OF BORNEMANN TWIN SCREW PUMP:**

- \* Delivery various medium smoothly without any disturbing and pulsation. There are medium to be pumped through out in the working elements as sealing liquid which guaranteed by the construction of pump casing. All of the pump possess high self priming ability and can deliver the liquid mixed with gas or air.
- \* The high suction performance, i.e. very low NPSHr was guaranteed by the special design of pump.
- \* Adopted the external bearing which lubricated individually, so can deliver various non-lubrication medium.
- \* Adopted synchronous gear, there is no metallic contact between rotating parts, there is no dangerous even dry running in a short time.
- \* Various construction completely such as horizontal, vertical and casing with liner, and so on. The pump can handle various clean liquid without solid grain, low or high viscosity medium, even can deliver some corrosive medium with a correct material selection.

**● PERFORMANCE RANGE:**

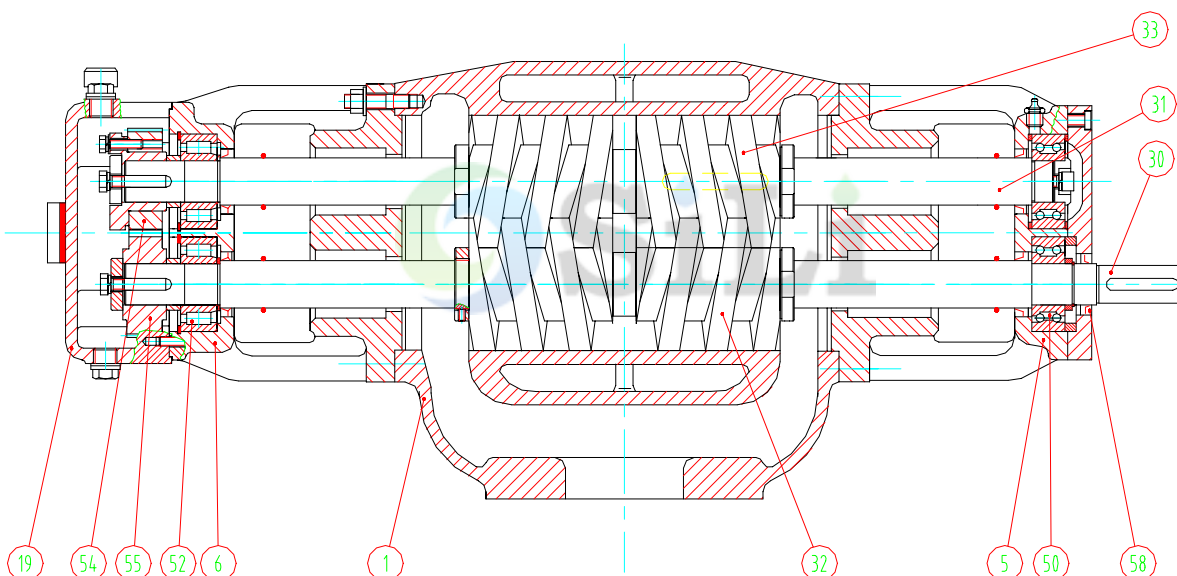
- \* Handling various medium without solid.
- \* viscosity: 1-1500mm<sup>2</sup>/s, the viscosity can reach up to 3 × 10<sup>6</sup>mm<sup>2</sup>/s when reduced the speed.
- \* Pressure range: 4.0MPa
- \* Capacity range: 1-2000m<sup>3</sup>/h
- \* Temperature range: -15°C-280°C

**● APPLICATION:**

- \* Ship building: used for marine as cargo and stripping pump, ballast pump, lubricating oil pump for main machine, fuel oil transfer and spray pump, load or unload oil pump.
- \* Power plant: heavy and crude oil transfer pump, heavy oil burning pump.
- \* Chemical industry: transfer for various acid, alkali solution, resin, color, printing ink, paint glycerin and paraffin wax.
- \* Oil refinery: transfer for various heating oil, asphalt oil, tar, emulsion, asphalt, and also loading and unloading various oil goods for oil tanker and oil pool.
- \* Food industry: used for brewery, food products factory, sugar refinery, tin factory to transfer for alcohol, honey, sugar juice, toothpaste, milk, cream, soy sauce, vegetable oil, animal oil and wine.
- \* Oil field: transfer for various oil goods and crude oil and etc.

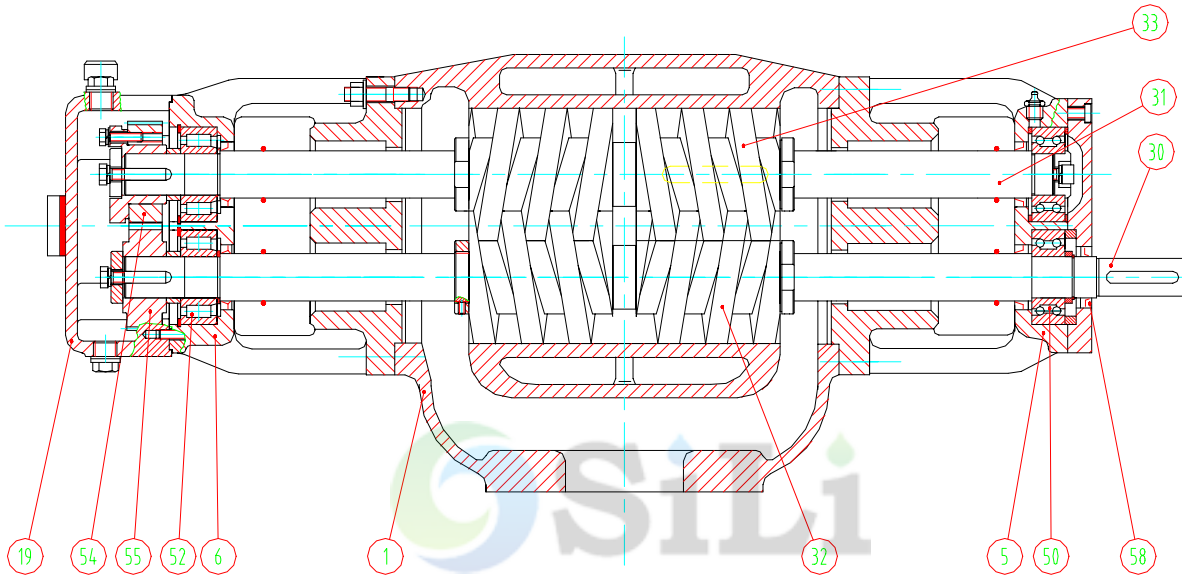
**● STRUCTION**

**Founding horizontal pump of Z**



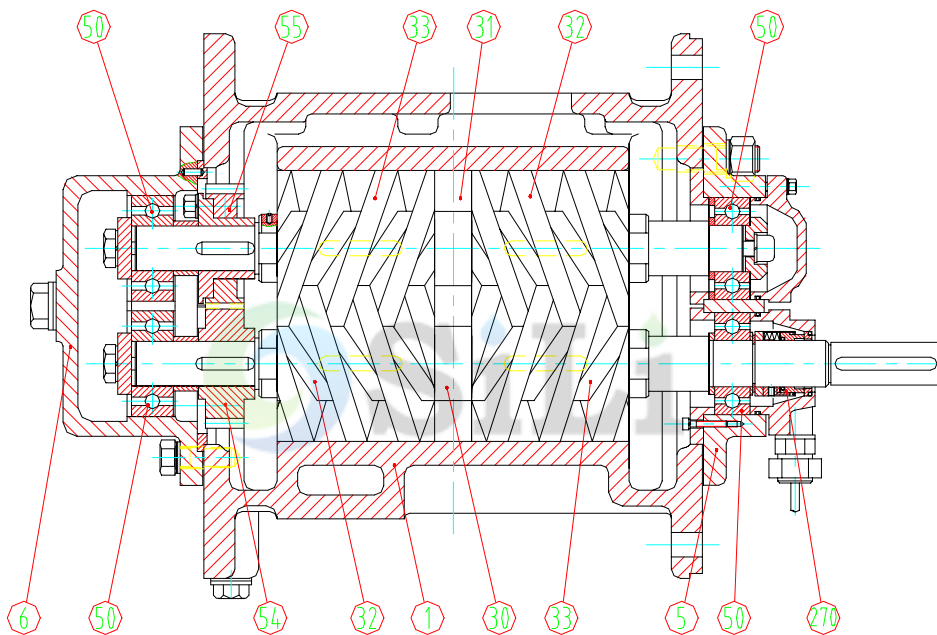
- 1—Casing      5 —Front bearing frame      6 —Back bearing frame      19—Gear box      30—Driving screw-spindle  
 31—Driven screw-spindle      32—screw sleeve      33—screw sleeve      50—Bearing  
 52—Bearing      54—Driven gear      55—Driving gear      58—seal

**Founding horizontal pump of ZK**



- 1—Casing      5 —Front bearing frame      6 —Back bearing frame      19—Gear box      30—Driving screw-spindle  
 31—Driven screw-spindle      32—screw sleeve      33—screw sleeve  
 50—Bearing      52—Bearing      54—Driven gear      55—Driving gear      58—seal      59—mechanical seal

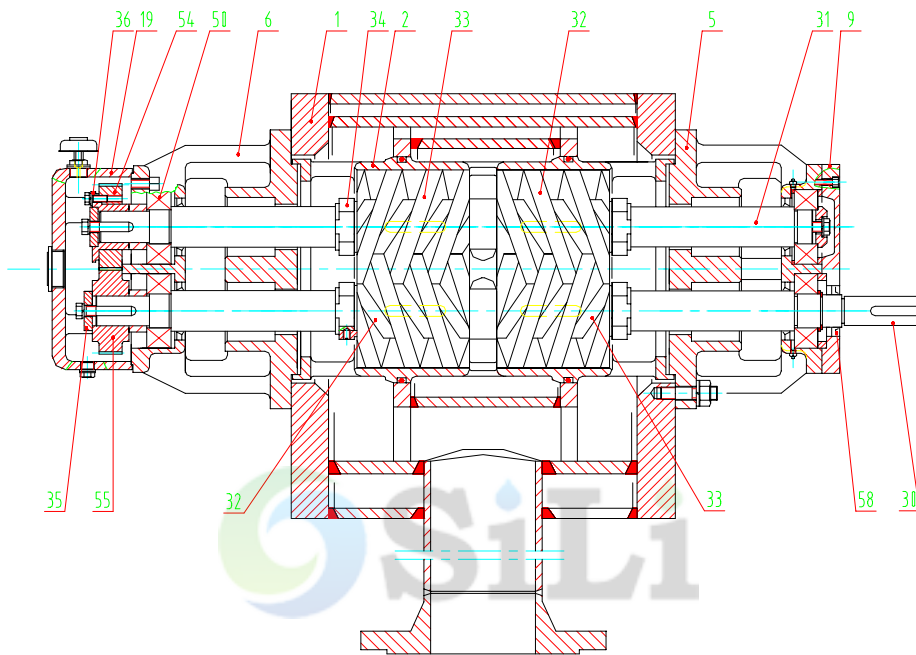
**Founding horizontal pump of Zi**



- 1—Casing      5 —Front bearing frame      6 —Back bearing frame      30—Driving screw-spindle

31—Driven screw-spindle    32—screw sleeve    33—screw sleeve    50—Bearing    54—Driving gear  
 55—Driven gear    270—mechanical seal

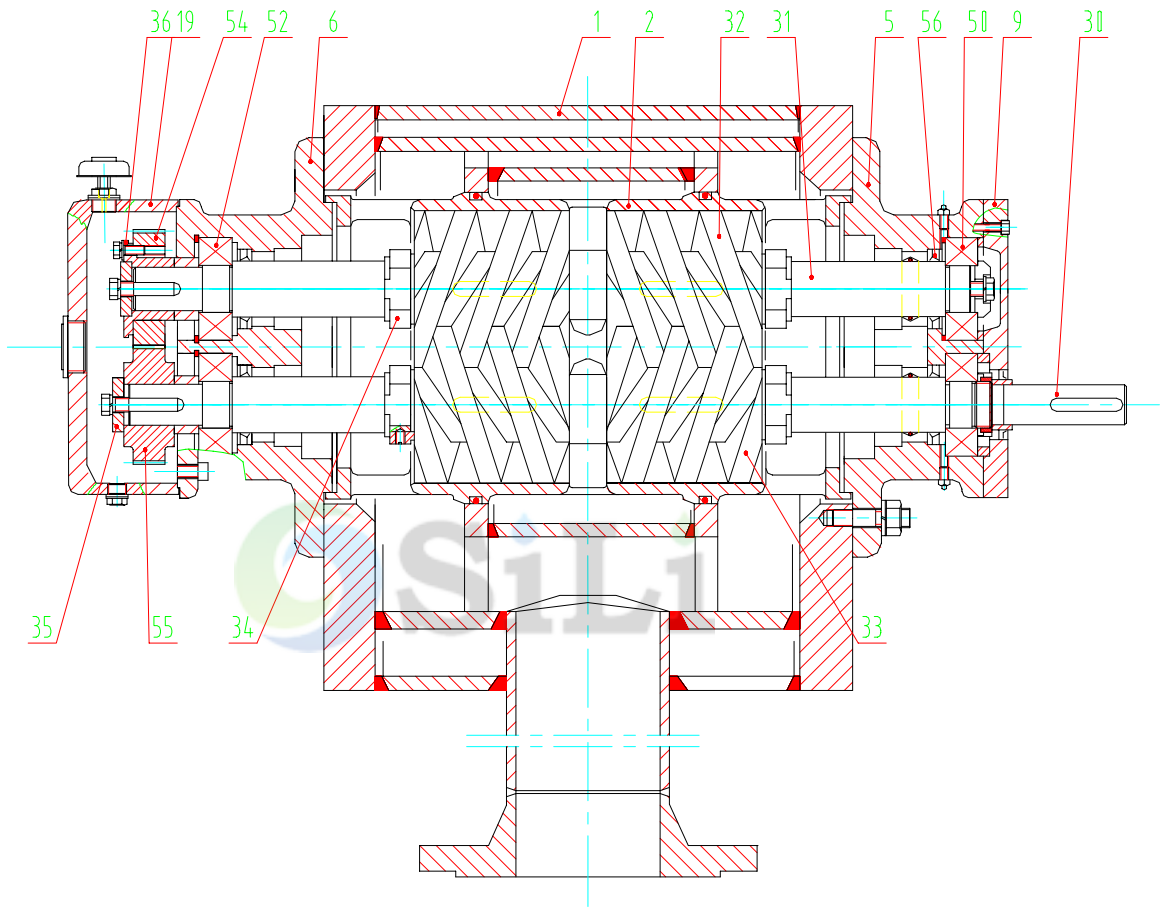
**Jointing horizontal pump of Z**



1—Casing    2—Insert    5—Front bearing frame    6—Back bearing frame    9—Bearing cover  
 19—Gear box    30—Driving screw-spindle    31—Driven screw-spindle    32—screw sleeve  
 33—screw sleeve    34—Locking nut    35—Gear retainer ring    36—Gear tension push    50—Bearing  
 54—Driving gear    55—Driven gear    58—seal



Jointing horizontal pump of ZK



- 1—Casing 2—Insert 5—Front bearing frame 6—Back bearing frame  
 9—Bearing cover 19—Gear box 30—Driving screw-spindle  
 31—Driven screw-spindle 32—screw sleeve 33—screw sleeve  
 34—Locking nut 35—Gear retainer ring 36—Gear tension push  
 50—Bearing 52—Bearing 54—Driving gear 55—Driven gear 56—seal



## ● BORNEMANN TWIN SCREW PUMP CODE:

W 6.4(5) ZK 100

W                    Series code  
 6.4(5)            Size and variety code  
 ZK                Type code  
 100               Screw pitch

### One、 Series code specification:

W---horizontal pump            V---vertical pump

### Two、 Size and variety code specification:

The pumps imported from Bornemann of Tianjin Pump & Machinery Group Co., Ltd are divided into two constructions: horizontal and vertical, there are 2, 3, 4, 5, 6, 7, 7T, 8, 9, 10 sizes and altogether 10.

The combination of sizes and variety is showed as following table:

Size and Variety		2	3	4	5	6	7	7	8	9	10
W	Founding	2.1	3.1	4.1	5.1	6.4	7.2	7T.2	8.4	9.2	
	Jointing		3.2	4.2	5.2	6.5	7.3	7T.3	8.5	9.3	10.1
V	Founding			4.1	5.1	6.4	7.2	7T.2	8.4		
	Jointing			4.2	5.2	6.5	7.3	7T.3	8.5	9.3	

### Three、 Type code specification:

Bornemann twin screw pump has 3 main constructions: Z、 ZK and Zi.

Z—long shaft design: Packing seal, double end seal or metal seal is required in design, when the medium temperature exceed 150-200℃.

ZK—short shaft design: adopt mechanical seal, medium temperature <120℃。

Zi—Internal bearing design: adopt mechanical seal, medium temperature <80℃, only used for delivery lubricant medium.

※ Welded pump can deliver the high-temperature medium reach to 280℃.

### Four、 Heating method of pump casing specification:

The different pump casing heating methods of Bornemann twin screw pump depend on whether the pump casing is cast or welded.

Adopt heating to the middle section of the pump casing for all pump casing which is welded. Adopt different heating method with different size, all cast pump casing is showed as following table:

code	Heating method of pump casing	Pump type
Z0	The middle section of the pump casing for all pump	W3.2Z W3.2ZK W4.2Z W4.2ZK W5.2Z W5.2ZK W6.5Z W6.5ZK W7.3Z W7.3ZK W7T.3Z W7T.3ZK W8.5Z W8.5ZK W9.3ZK W10.1Z
Z1	Low half part of pump casing with heating jacket	W4.1Z W5.1Z W7T.2Z W4.1ZK W5.1ZK W7T.2ZK W5.1Zi W7T.2Zi
Z2	Low half part of pump casing with diffuse heating jacket	W2.1Z W3.1Z W7.2Z W2.1ZK W3.1ZK W7.2ZK W7.2Zi
Z3	Insert snakelike heating tube into pump casing	W6.4Z W8.4Z W9.2Z W6.4ZK W8.4ZK W9.2ZK W6.4Zi W8.4Zi W9.2Zi

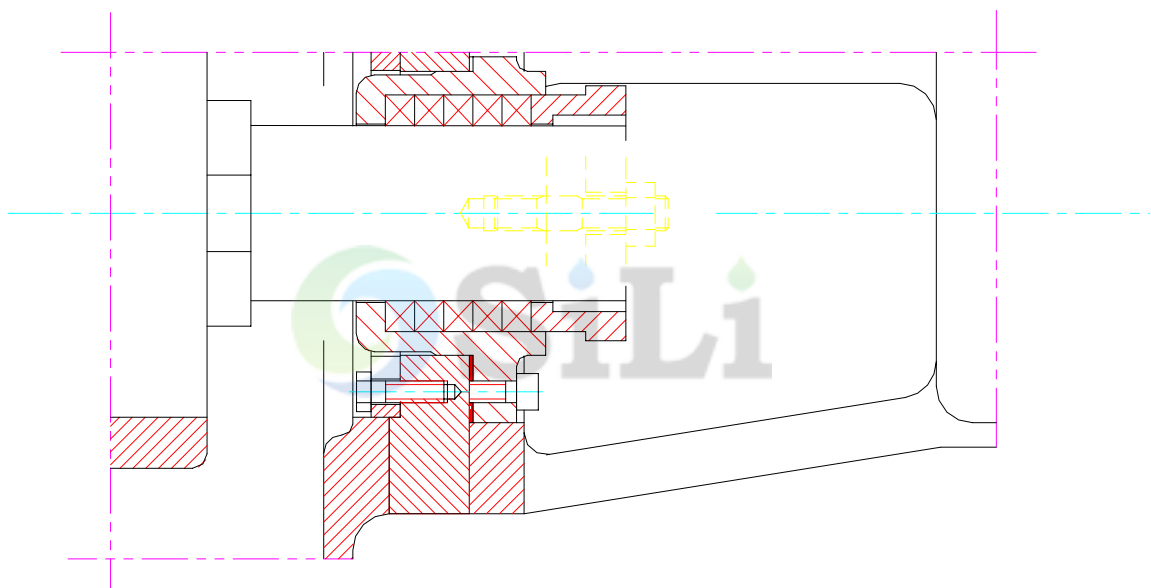
Note: The code is omitted when the pump casing without heating jacket. The type V vertical pump without heating method.

**Five、 Specification of seal code:**

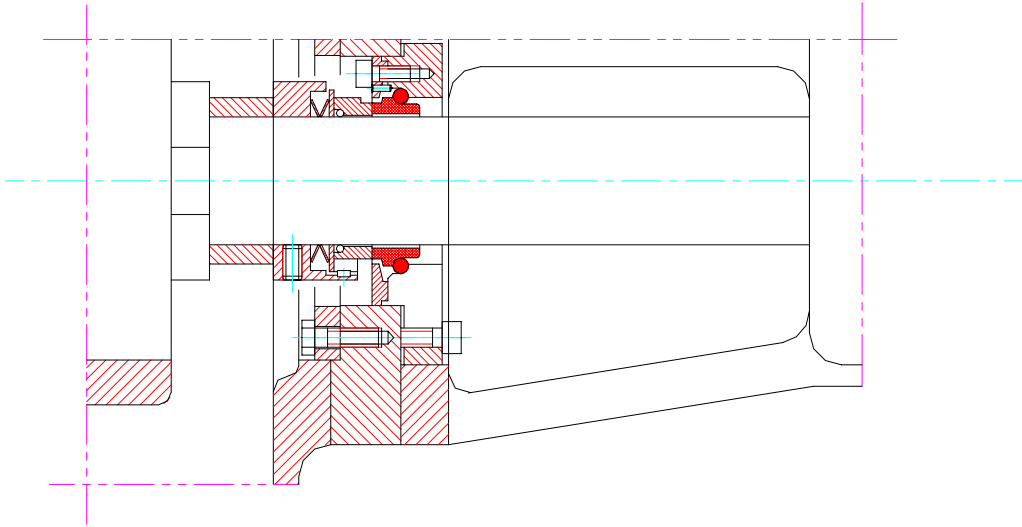
The different type of seal is depended on the different pump design.

Design	Seal type	Seal code	Remarks
Z	Packing seal	M0	temperature <200℃
	Single end mechanical	M1	temperature <180℃
	Double end mechanical	M2	temperature <200℃
	Metal seal	Mb	temperature <320℃
ZK	Single end mechanical	M1	temperature <120℃
Zi	Single end mechanical	M3	temperature <80℃

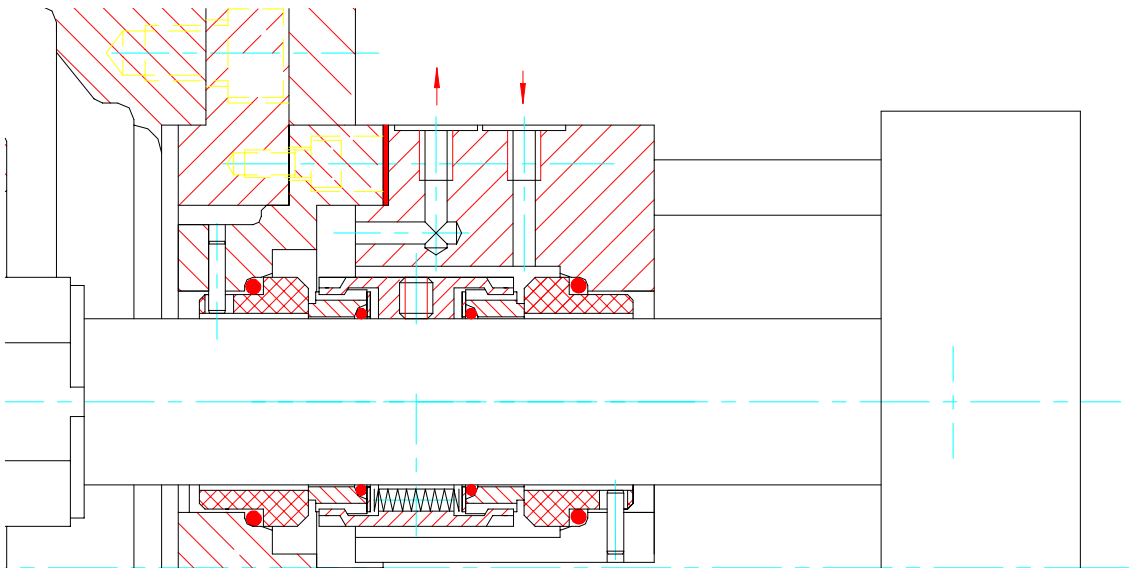
**Packing seal M0**



Single end mechanical seal M1

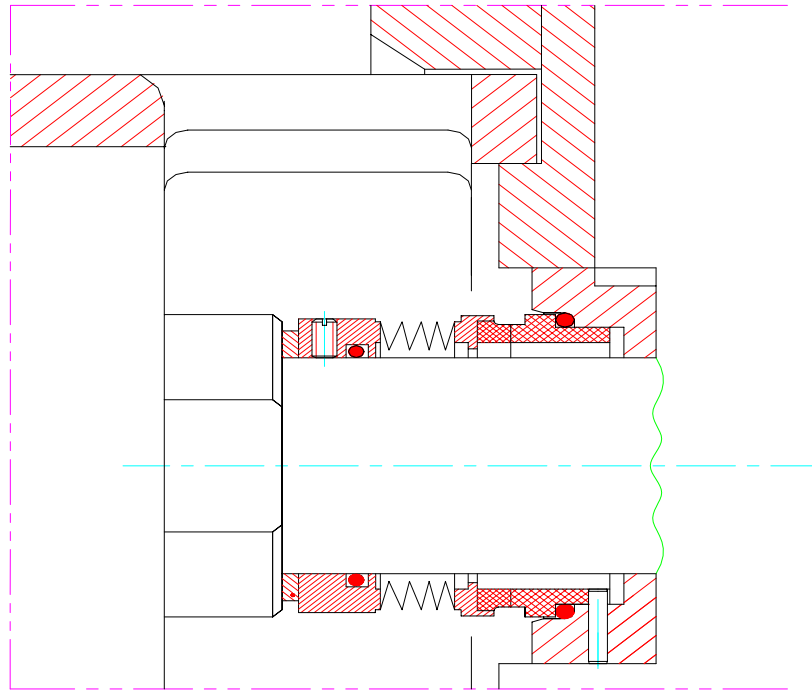


Double end mechanical seal M2





Single end mechanical seal M3



Metal seal Mb

