



DALIAN HUANYOU CANNED MOTOR PUMP CO. LTD

HUAN YOU

Business Associate : **PREHENCE ENGINEERS PVT. LTD.**



Brief Introduction of PREHENCE ENGINEERS PVT LTD

- Please to announce DALIAN HUANYOU CANNED MOTOR PUMP CO. LTD is one of the largest canned motor pump manufacturer in the world, who appointed sole representative to M/S. PREHENCE ENGINEERS PVT. LTD., Mumbai for their products, services, installation, commissioning and trouble shooting for all India customers and neighboring countries.
- PREHENCE is well established engineering base company having 7 high qualified engineers group with dedicated supporting staff to promoting business of TEIKOKU canned motor pump from 2004 and established close relation with mot of the industries in India.
- Engineers from Prehence are well trained in Japan, Germany and China for the respective products and having more than 27 year experience in the rotary equipment's.
- Engineers if Prehence installed and commissioned more than 2,500 canned pumps in India satisfactorily without any support of Our principal. We are well independent for handling the products in all aspects which reduce customer follow up and they gets timely service.
- Engineers of our company timely enhance and upgrade their knowledge by taking training on various products time to time.
- Prehence has jointly developed MAG pump for liquid chlorine as an alternative solution of canned motor pump.
- Prehence believes in economical solution and long time business relation to customer for mutual growth and respective service.

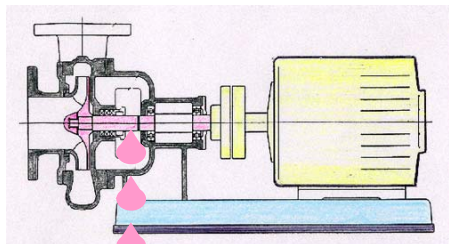
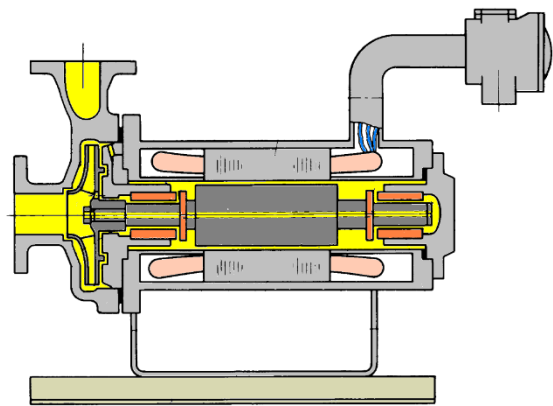
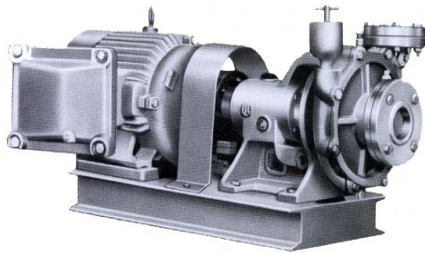
Brief introduction of

DALIAN HUANYOU CANNED MOTOR PUMP CO. LTD

- Dalian Huanyou Canned Motor Pump Co., LTD. (Originally Dalian Canned Motor Pump Factory) was established in **1958**.
- Since **1974**, specializing in the production of canned motor pumps.
- In **1985**, the company introduced technology of the TEIKOKU electric mfg. Co, LTD. Japan with joint venture.
- April **2015** Dalian Huanyou Canned Motor Pump Co., LTD. moved to a new factory and separated from Teikoku , started 100% owned company with much bigger manufacturing facilities and add on technology with new R&D centre.
- Our canned motor pump is widely used in petrochemical, chemical, oil, gas ,vegetable oil industries, fertilizers, metal industries, die &chemical industries, aerospace, pharmaceutical, textile, refrigeration and many other fields.
- From **1992**, our company has provided the canned motor pump for the satellite launch center of China, Xichang, Jiuquan and Taiyuan and provides products for the launch of the "Chang E" "Shenzhou" series satellite.
- In **2002**, the company obtained the ISO9001 quality system certification and also ISO14001 environmental management system and occupational health and safety management system.
- In **2015**, the company took the lead in the development and production of pump with 350KW canned motor pump in china.

What is Canned Motor ?

It is basically a single unit design combining pump and motor together by using single shaft which eliminates mechanical seal and typical API plans. The principal of canned motor pump is same like convectional pump.

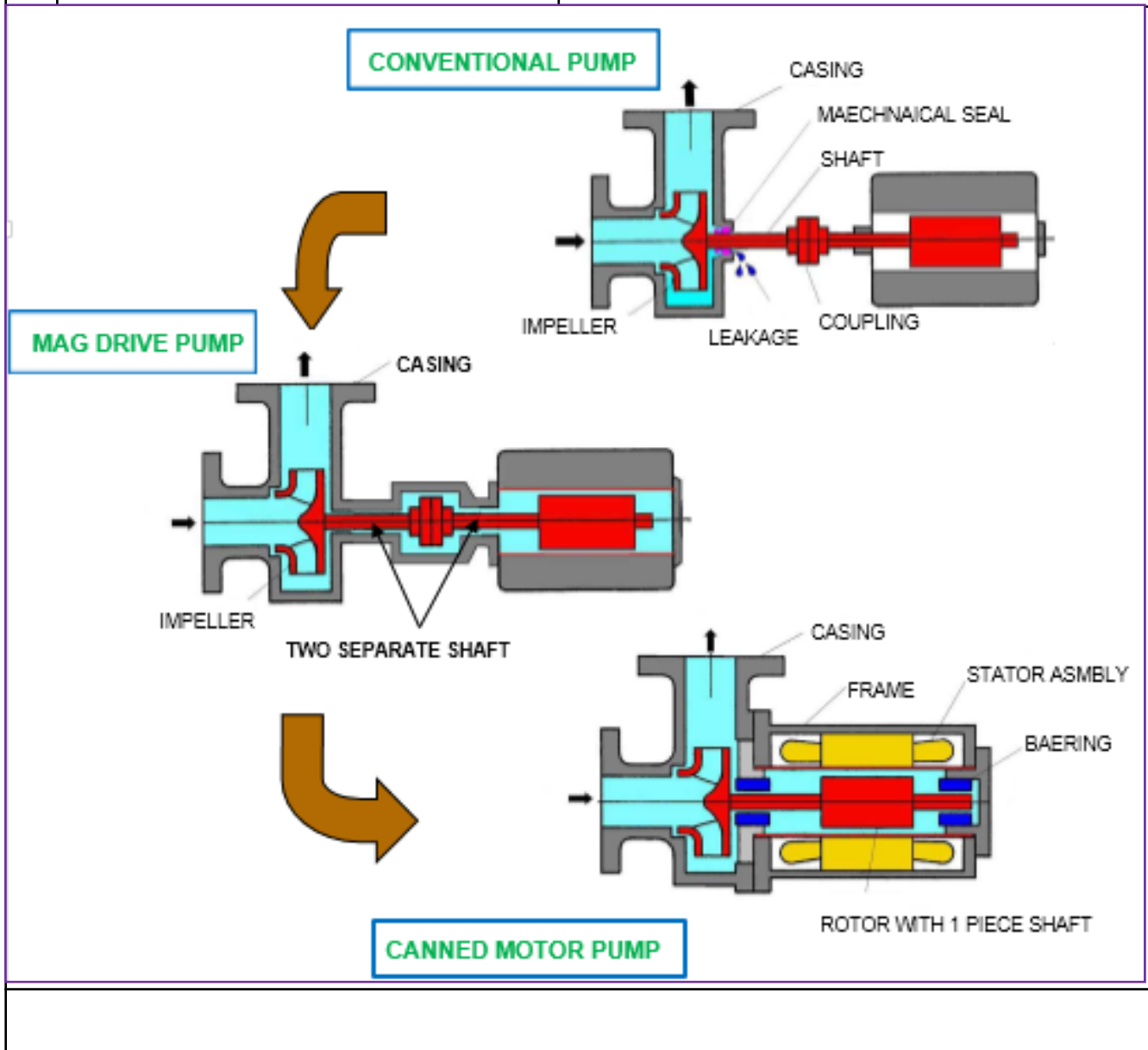


CANNED MOTOR PUMP :-

1. Has no shaft seal to leak
2. No shaft seal to maintain
3. Is Isolated from atmosphere
4. Needs no external lubrication
5. Is as compact as $\frac{1}{2}$ of regular p.
6. Is most quiet pump of all
7. Can best fit hot, cold, high pressure and vacuum applications

COMPARISONS BETWEEN CONVENTIONAL PUMP & CMP

| CONVENTIONAL PUMP | | HUANYOU CANNED MOTOR PUMP |
|-------------------|--|--|
| DESIGN | | |
| 1 | Separate Motor & Pump | Motor & Pump combines in a single unit |
| 2 | Mechanical seal can cause total shutdown when they fail | No mechanical seal used. |
| 3 | No secondary containment exist | Secondary containment exist |
| 4 | Separate motor cooling fan is required, that generate more noise. | No use of cooling fan |
| 5 | Mechanical Coupling is used, that must constantly be kept in proper alignment otherwise it will create vibration | No use of Mechanical coupling |



COMPARISONS OF CONVENTIONAL PUMP & CMP

| | | HUANYOU CANNED MOTOR PUMP |
|--------------------|--|---|
| PERFORMANC | | |
| 1 | Noisy operation due to cooling fan. | Quit operation, as it does not use cooling fan |
| 2 | Leakage problem due to mechanical seal | No leakage, as it do not use mechanical seal at all. |
| 3 | Not suitable for fluids like toxic, explosive, hazardous, expansive, etc. | Suitable for all kind of fluids. |
| 4 | Short bearing life due to vibration caused by misalignment of Mechanical coupling | Long Bearing Life as it does not use Mechanical seal & Coupling that create vibration. |
| 5 | Installation cost is high due to separate Motor and pump. | This pump reduces installation cost drastically as it combines in a single unit. |
| SAFETY | | |
| 1 | Due to leakage problem it is not suitable for explosive and hazardous fluids. | Applicable for all type of fluids as it has no leakage problem. |
| 2 | It has no secondary containment to restrict the leakage fluid from the seal. | It has true secondary containment that insures 0% leakage. |
| 3 | No device to monitor bearing life. | It uses TRG meter that shows actual life of bearing and also gap between rotor & stator. |
| 4 | It is not recommended where environmental safety pint comes. | It can be used any where considering environmental safety. |
| MAINTENANCE | | |
| 1 | Time consuming maintenance | Field repairable and take less time for maintenance |
| 2 | Lubrication level must be continuously monitored. | Internally lubricated by pumped liquid, hence no external lubrication required. |
| 3 | Alignment of mechanical coupling takes more time. | No mechanical seal required in this pump hence no addition cost required on account of mechanical seal. |
| 4 | Frequent seal failure increase the maintenance cost. | This pump reduce mechanical seal cost. |
| 5 | Different kind of API plan required, considering various type of mechanical seal and Application . | No API plan required . |
| 6 | Huge inventory cost on account of mechanical seal, bearings, impeller and other consumable parts. | Comparatively less consumable parts required (around 10% of conventional pump) |

| Sr. No. | MODEL | TYPE |
|----------------|--------------|---|
| 1 | B | Basic Type |
| 2 | BA | Basic Type with Adapter |
| 3 | BV | Basic Type With Hollow Shaft |
| 4 | BA-V | Basic Type with Adapter & Hollow Shaft |
| 5 | N | Reverse Circulation Type |
| 6 | NA | Reverse Circulation Type with Adapter |
| 7 | | Low NS Pump |
| 8 | G | High Temperature Insulation Type |
| 9 | Z | Self Priming Type |
| 10 | R | Full Steam Jacket Type |
| 11 | B-X | Super Heat Resistance Pump (For Handling Fluid with High Temperature) |
| 12 | Y | Super Heat Resistance Pump (For Handling Fluid with High Melting Point) |
| 13 | V | Slurry Seal Type |
| 14 | MS | Multi Stage Type |
| 15 | J | Gas Slurry Seal Type |
| 16 | K | Gas Slurry Type |
| 17 | BN | Reverse Pressurizing Type |
| 18 | R | Double Suction Type |

1. Basic Type (B Type)

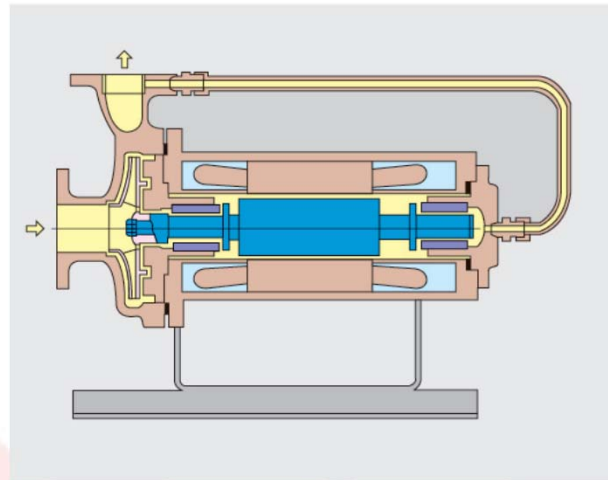
This is the basic model of Dalian HUANYOU canned motor pump and most commonly used for a variety of applications.

SPECIFICATIONS:

Capacity : 15 m³/min

Head : 160 m

Output : 220 KW



| PUMPED LIQUIDS | | |
|---------------------|-------------------------|------------------------|
| Acetic anhydride | Ethanol | W-MIBK |
| Acetic acid | Ethyl benzene | Nitric acid |
| Acrolein | EG | Oleum |
| Acrylic acid | Formic acid | Silicon oil |
| Amine | Formarin | Silicon tetrachloride |
| Ammonium chloride | Gasoline | Styrene |
| Aniline | Iso butyl alcohol | Sulfuric acid |
| Butyl acrylate | IPA(Iso-propyl alcohol) | Titanium tetrachloride |
| Butyl acetate | Hydrogen cyanide | Toluene |
| Chloroform | MMA | Vynyl cetate |
| Chlorosulfuric acid | MDI | Xylene |
| Ethyl acetate | MgSO ₄ | Phosgene |
| Dichlorobenzene | MEK | TDI |
| Epichlorohydrin | N-MIBK | |

Note:

Liquid shall Contain no solids

Be Less than 2 bars A in vapor pressure at 35 degree C

Be in mid range in its temperature

Be less viscous than 100 mPas

(Max operable viscosity is 350 mPas with some design modifications)

2. Basic Type With Adapter (BA Type)

Similar to B Type, but to make combination of different size of pump and motor, an adapter is placed between motor and pump. It is used for heavy liquids and relatively large capacity at lower head applications

SPECIFICATIONS:

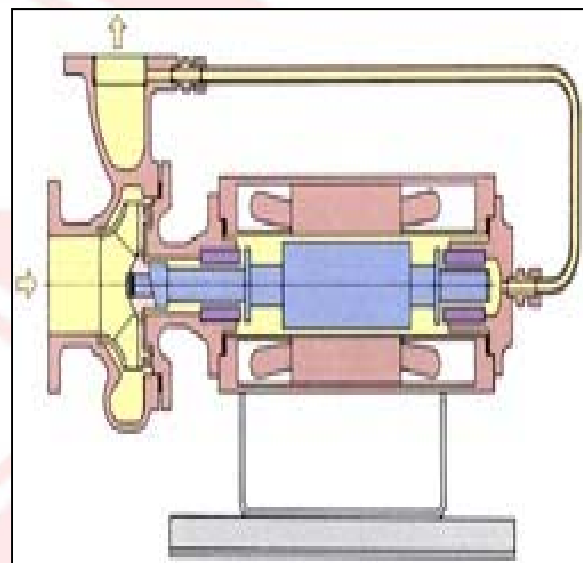
Capacity : 15 m³/min

Head : 160 m

Output : 220 KW

Pumped Liquid:

| |
|-----------------------------|
| Carbon tetrachloride (CC14) |
| Caustic Soda |
| Hydrogen peroxide (H2O2) |
| KOH |
| Phosphoric acid |
| Perchloroethylene |
| Sulfuric acid |
| Trichlorethylene |
| Etc. |



3. Basic Type With Hollow Shaft (B-V Type)

Fundamental design of canned motor pump. Most commonly used for wide application.

SPECIFICATIONS:

Capacity : 15 m³/min

Head : 160 m

Output : 220 KW



Pumped Liquid:

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4. Basic Type With Adapter & Hollow Shaft (BA-V Type)

Similar to BV, but to combine different size of pump and motor, an adapter is placed between motor and pump.

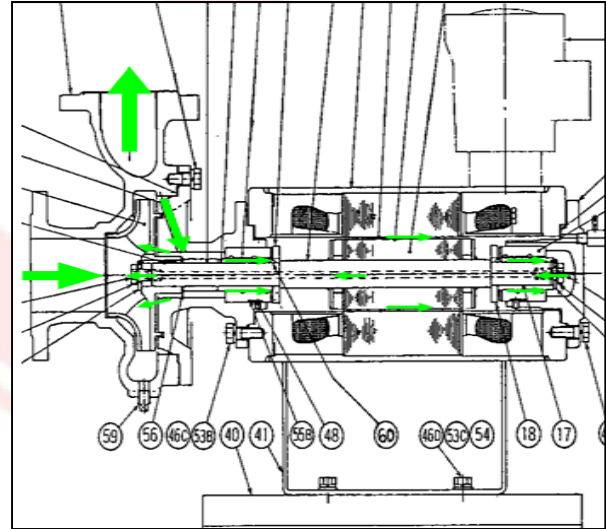
SPECIFICATIONS:

Capacity : 15 m³/min

Head : 160 m

Output : 220 KW

Pumped Liquid:



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5. Reverse Circulation Type (N-Type)

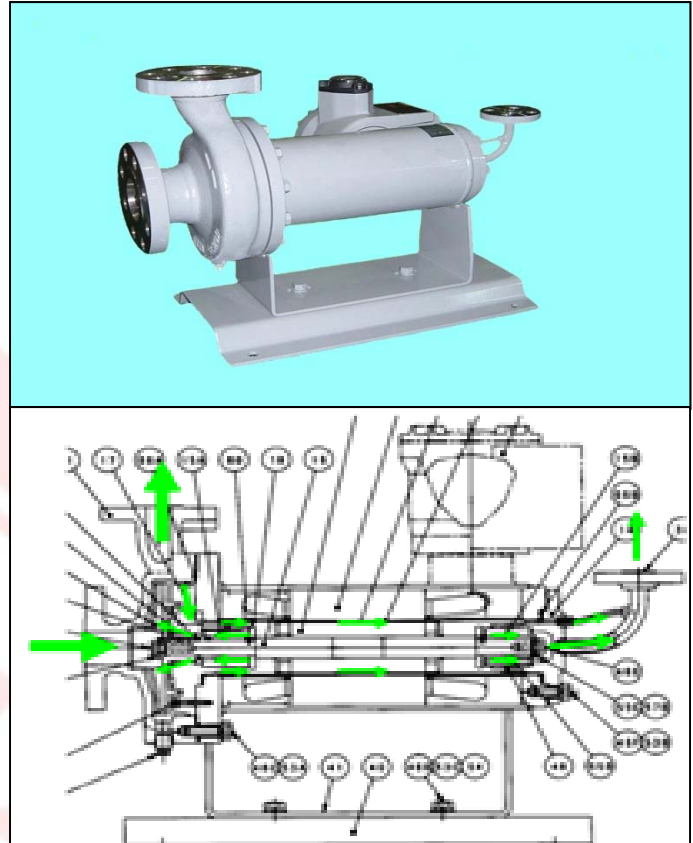
This type of pump is suitable for handling volatile fluids, such as ammonia, Freon and other liquidity gases which have high vapor pressure, low specific gravity, low specific heat and system have very low NPSH application.

SPECIFICATIONS:

Capacity : 12 m³/min

Head : 160 m

Output : 220 KW



| Pumped Liquid: | |
|-------------------|------------------------------|
| Acetaldehyde | Formaldehyde |
| Aceton | MEK |
| Acrolein | Methylene chloride |
| Acrylonitril | Propylene oxide |
| Anhydrous ammonia | Pentane |
| Amine | Ammonia |
| Carbon dioxide | Freon and other refrigerants |
| Chloroform | Vinyl acetate |
| Diethylamine | Anhydrous hydrofluoric acid |
| Ethylene oxide | Hydrogen cyanide |
| Etc. | |

6. Reverse Circulation with Adapter Type (NA-Type)

Similar to N-Type, but an adapter is placed between pump and motor to increase pump and motor combination.

SPECIFICATIONS:

Capacity : 12 m³/min

Head : 160 m

Output : 220 KW



Pumped Liquid:

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7. Low NS Type

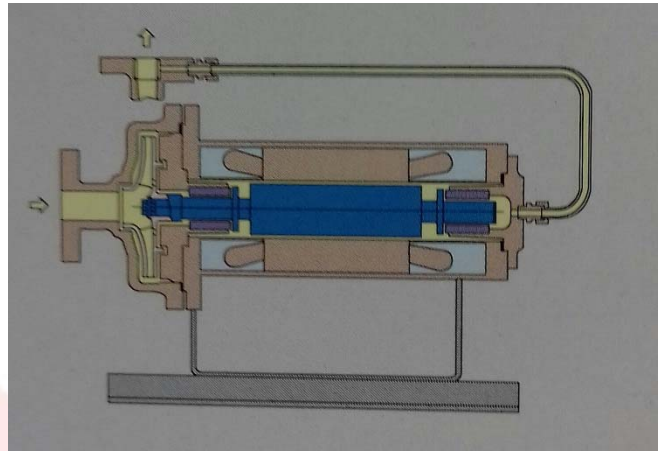
This type of pump is suitable to handle fluids with low capacity and higher head system.

SPECIFICATIONS:

Capacity : 12 m³/min

Head : 160 m

Output : 150 KW



Pumped Liquid:

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8. High Temperature Insulation Type (G Type)

This type of pump is suitable for handling high temperature fluids, such as heat transfer oil, vegetable oil etc.

Narrow neck inside the adaptor isolates motor from casing.

Auxiliary impeller at the shaft pumps the liquid inside the motor.

Heat Exchanger keeps the temperature of the liquid inside the motor as low as 150 deg C.

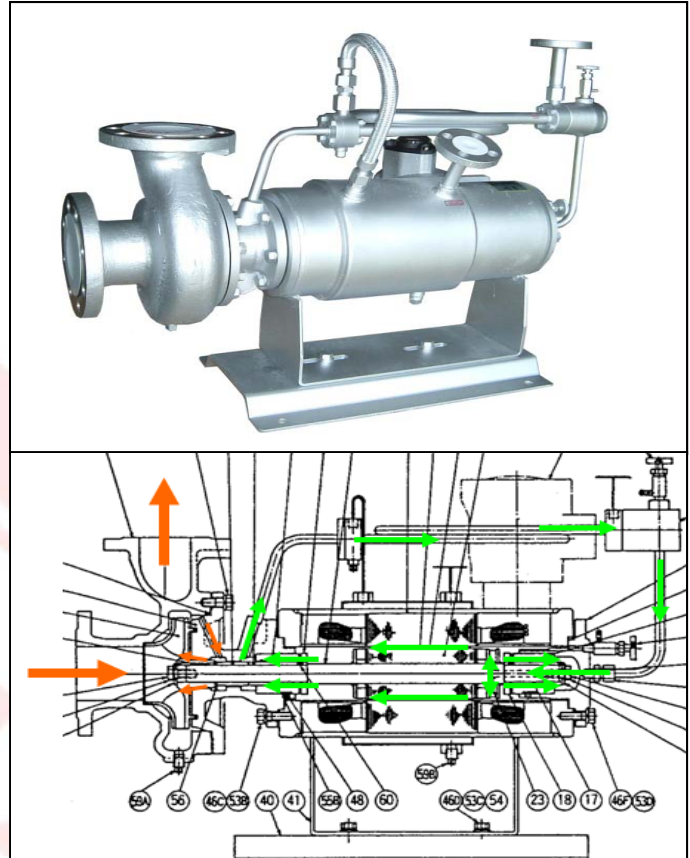
SPECIFICATIONS:

Capacity : 13 m³/min

Head : 170 m

Output : 210 KW

Tem.: 450° C



| Pumped Liquid: | | |
|------------------|----------------|----------------------------|
| BP Transeal N | Santo therm 66 | Therm S#330, 600, 700, 800 |
| Dowtherm #500 | Seriola K-2120 | Barrel therm #40, 200, 700 |
| Essotherm #500 | Silicone oil | KSK #280, 300, 330 |
| HM Marlo therm S | SK oil #1400 | Therminol #55,66,VP-1 |
| Mobil therm #603 | Syltherm #800 | |

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9. Self Priming Pump (Z-Type)

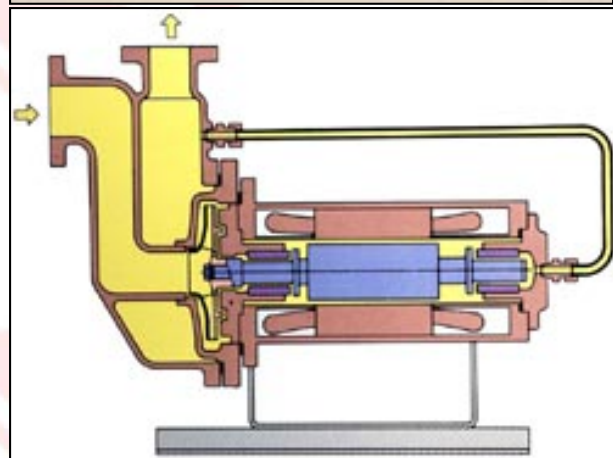
This type of pump used for pumping fluids from underground tank or unloading containers.

SPECIFICATIONS:

Capacity : 3 m³/min

Head : 90 m

Output : 55 KW



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10. Full Steam Jacket Pump (R-Type)

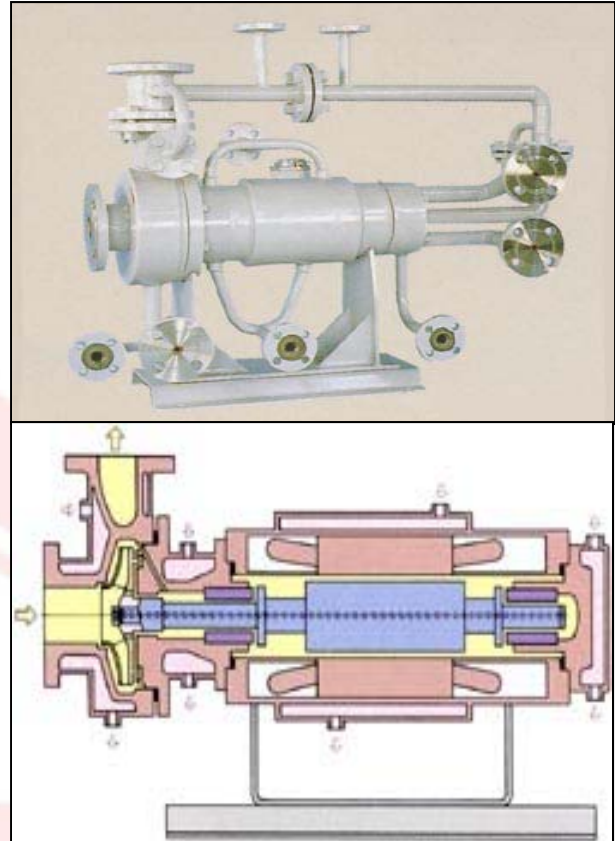
This type of pump is suitable for handle fluids with high melting points.

SPECIFICATIONS:

Capacity : 5 m³/min

Head : 75 m

Output : 85 KW



| Liquids with high melting points | | |
|---|-------------------|------------------|
| Oleic acid | Caustic soda | MDA |
| Fatty acid | p-Xylene | TDA |
| Acetic acid | Fatty acid | TDI |
| Amines | Heptane | Maleic anhydride |
| Phenol | L-SO ₃ | MDI |
| Etc. | | |

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11. Super Heat Resistance Pump (B-X Type) (For Handling Fluid with High Temperature)

This pump have similar application as G Type pump. The main difference is that, this pump does not required external cooling.

Super heat resistant motor

Motor coil = Ceramic-insulated winding

Terminal box extended to keep away from motor heat

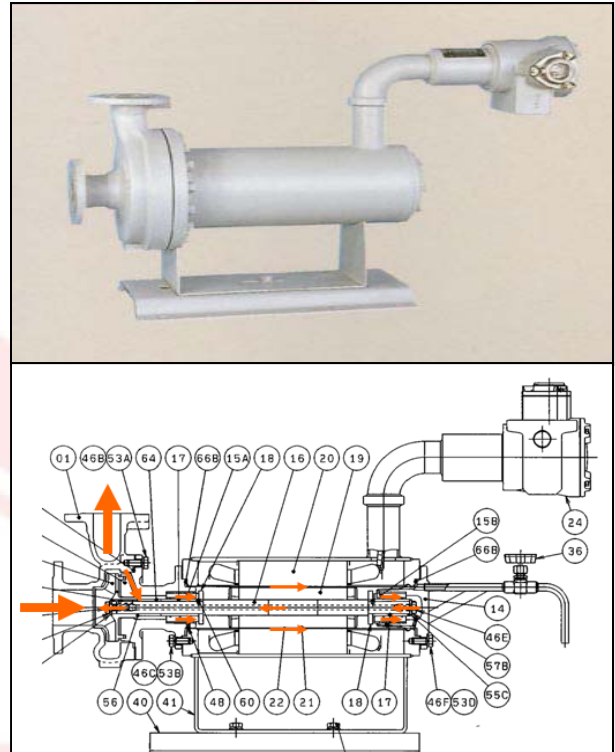
SPECIFICATIONS:

Capacity : 12 m³/min

Head : 160 m

Output : 250 KW

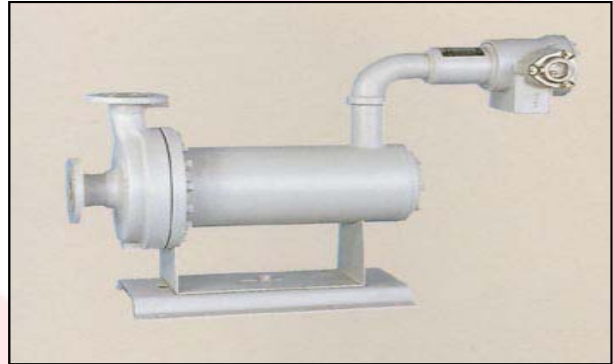
Tem : 450° C



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12. Super Heat Resistance Pump (For Handling Fluid with High Melting Point)

Heat resistance temperature of motor increases by a wide margin. Pump and motor use jacket suitable for handling fluids with high melting point.



SPECIFICATIONS:

Capacity : 9 m³/min

Head : 90 m

Output : 135 KW

Tem : 450° C

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13. Slurry Pump (V-Type)

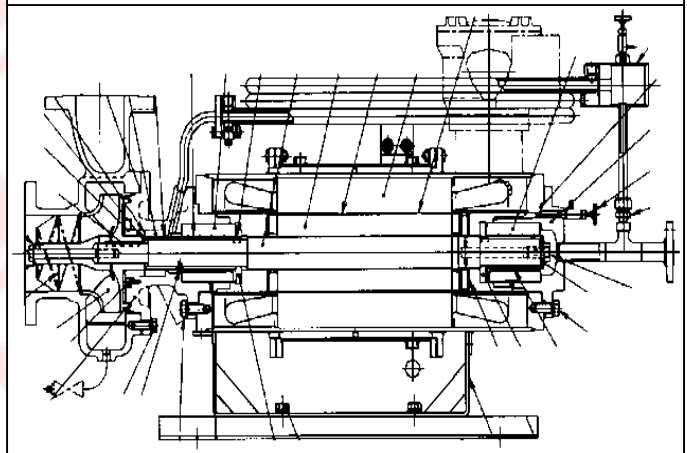
This type of pump is suitable for handling fluids with little amount of fine solids contained.

SPECIFICATIONS:

Capacity : 10 m³/min

Head : 170 m

Output : 135 KW



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14. Multi Stage Pump

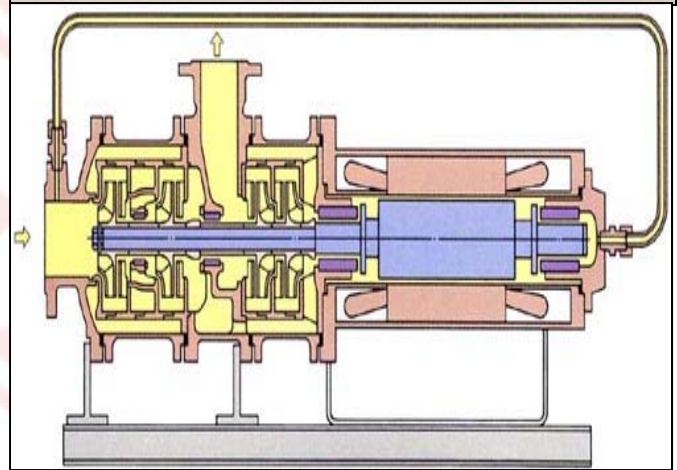
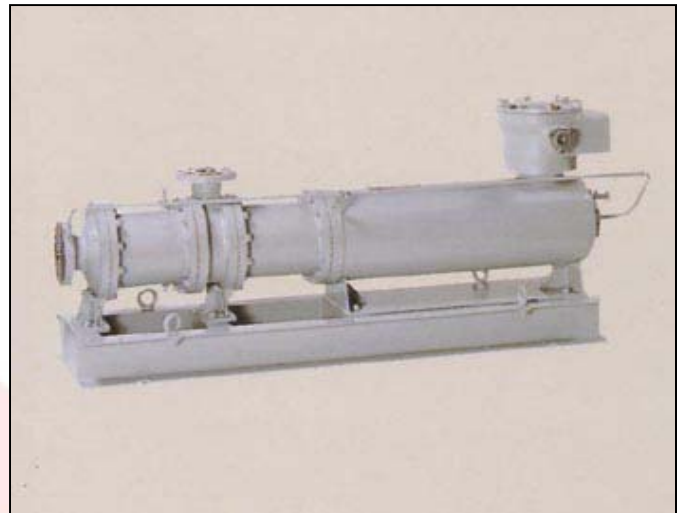
This type of pump is suitable for higher head, higher efficiency pump besides B, N and G Type..

SPECIFICATIONS:

Capacity : 2.5 m³/min

Head : 650 m

Output : 220 KW



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15. Gas Slurry Type (J-Type)

This type of pump is suitable for handle fluids with much slurry.

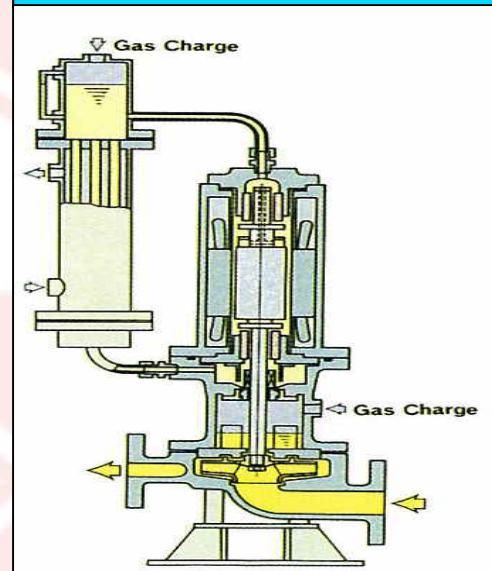
SPECIFICATIONS:

Capacity : 100 m³/h

Head : 120 m

Output : 45 KW

Slurry : 30% by weight.



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16. Gas Slurry Type (K-Type)

This type of pump is suitable for handle fluids with much slurry. It uses external flushing.

SPECIFICATIONS:

Capacity : 100 m³/h

Head : 120 m

Output : 45 KW

Slurry : 30% by weight



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17. Reverse Pressurizing Pump

This type of pump is suitable for handling volatile fluids.

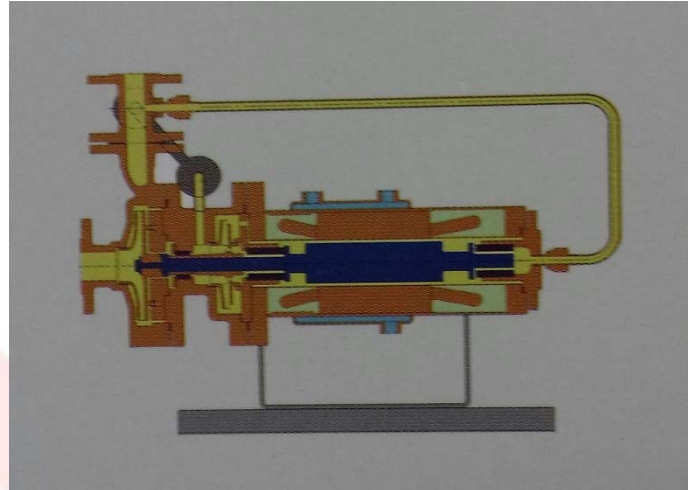
SPECIFICATIONS:

Max Capacity : 350 m³/h

Max Head : 120 m

Max Output : 135 KW

Slurry :



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18. Double Suction Type

This type of pump is suitable for handle large flow and low head system.

SPECIFICATIONS:

Max Capacity : 1600 m³/h

Max Head : 50 m

Max Output : 200 KW



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THANK YOU FOR YOUR ATTENTION

PREHENCE ENGINEERS PVT. LTD.

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