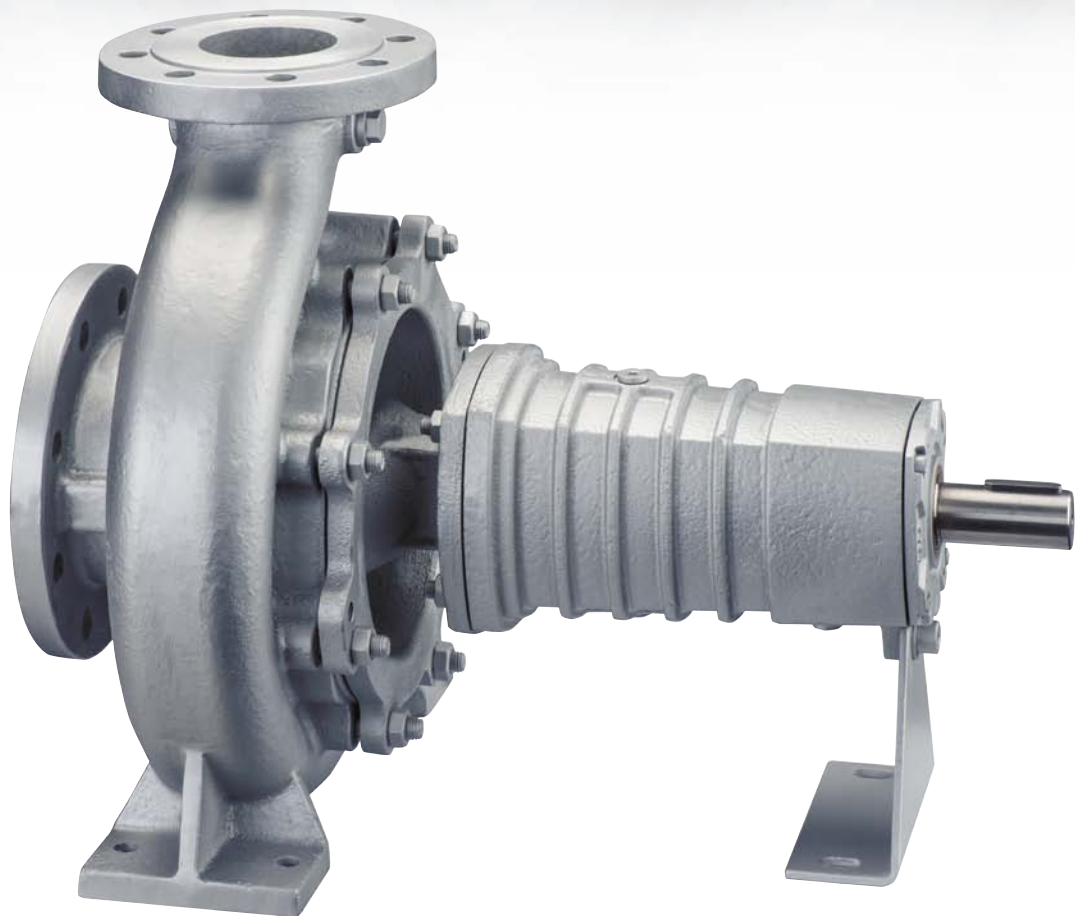




UP TO 662°F / 350°C THERMAL OIL
UP TO 374°F / 190°C HOT WATER

CombiTherm

CENTRIFUGAL PUMP FOR THERMAL OIL / HOT WATER APPLICATIONS



 **Johnson Pump**[®]

The SPX Johnson Pump CombiTherm is developed especially for thermal oil (DIN 4754) and hot water applications EN12953-6 (DIN 4752) (ratings and dimensions to EN 733 (DIN 24255)). CombiTherm ensures uniform process temperatures while keeping damaging heat away from seal faces and bearings. CombiTherm is designed to require no external cooling when working within the given parameters. The throttle bushing, journal bearing and seal placement reduce circulation and temperature along the pump length. This greatly reduces the temperature at the seal face and bearings. Typical liquid temperatures of 482°F (250°C) at the pump inlet will be as low as 212°F (100°C) at the seal faces.

The CombiTherm is developed around the well known Combi Modular system. Our modular design provides for maximum interchangeability of components between the variants and also with other pump types of the Combi system; thereby greatly limiting the number of spare parts to be kept in stock.

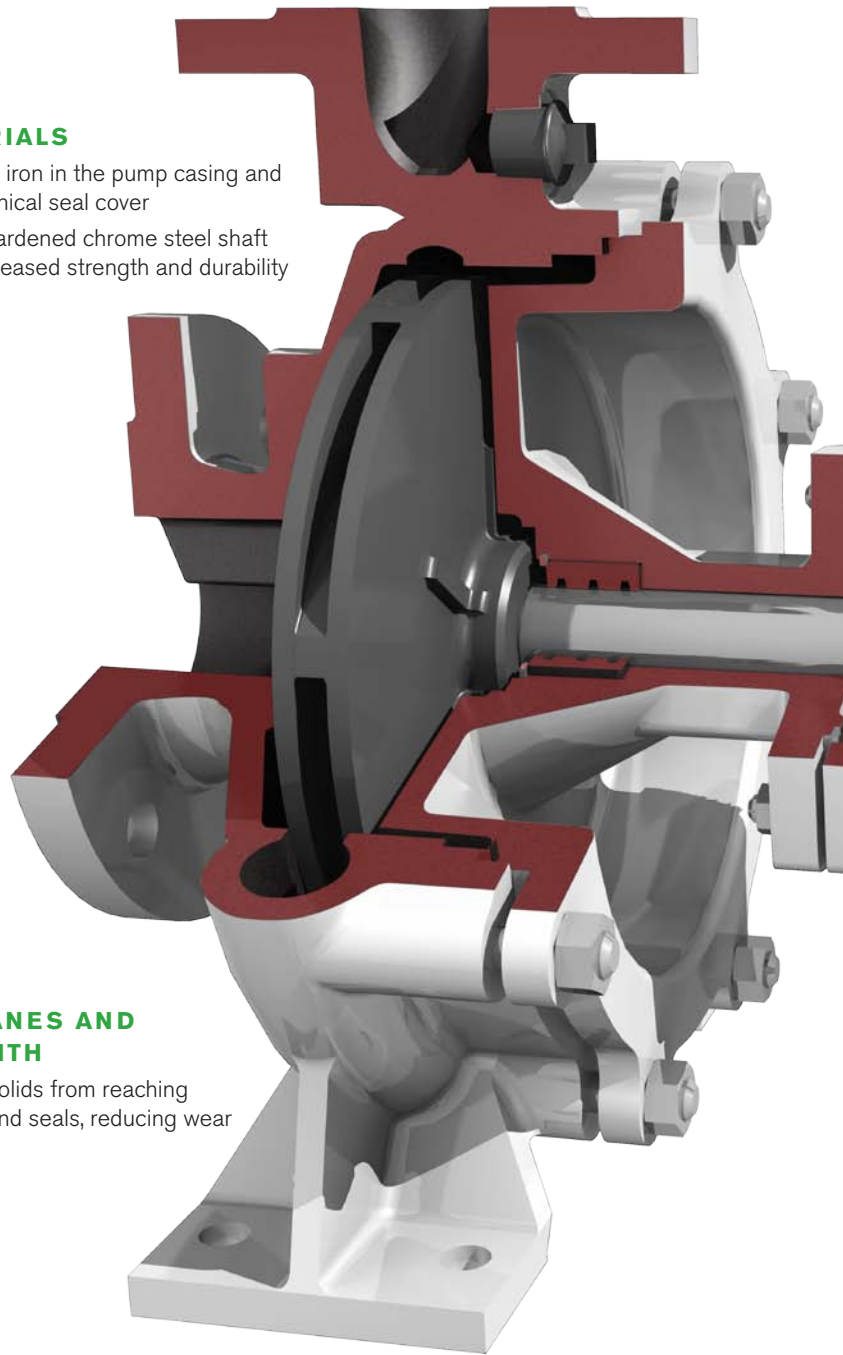
SPX also offers a full line of filters, valves and heat exchangers.

Based in Charlotte, North Carolina, SPX Corporation (NYSE: SPW) is a global, multi-industry manufacturing leader with operations in more than 35 countries. The company's highly-specialized, engineered products and technologies are concentrated in Flow Technology and energy infrastructure. Many of SPX's innovative solutions are playing a role in helping to meet rising global demand for electricity and processed foods and beverages, particularly in emerging markets.

The company's products include food processing systems for the food and beverage industry, critical Flow components for oil and gas processing, power transformers for utility companies, and cooling systems for power plants. For more information, please visit www.spx.com

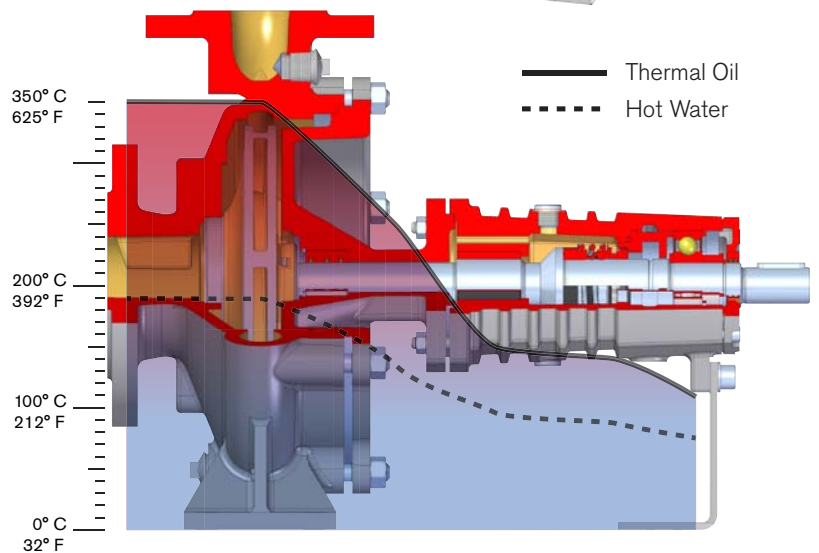
MATERIALS

- Ductile iron in the pump casing and mechanical seal cover
- 17% hardened chrome steel shaft for increased strength and durability



BACK VANES AND LABYRINTH

- Prevent solids from reaching bearing and seals, reducing wear



Typical temperature variations along a CombiTherm, dropping from a maximum of 662°F at the impeller to a manageable 302-284°F at the seal chamber and 230°F at the bearings

CombiTherm

Circulation pump for Thermal Oil and Hot Water applications

SLEEVE BEARING

- Product lubricated

STANDARD MECHANICAL SEAL

- Seal selection according to temperature of pumped liquid
- Optimized for long life
- No external cooling required

ROLLER BEARINGS

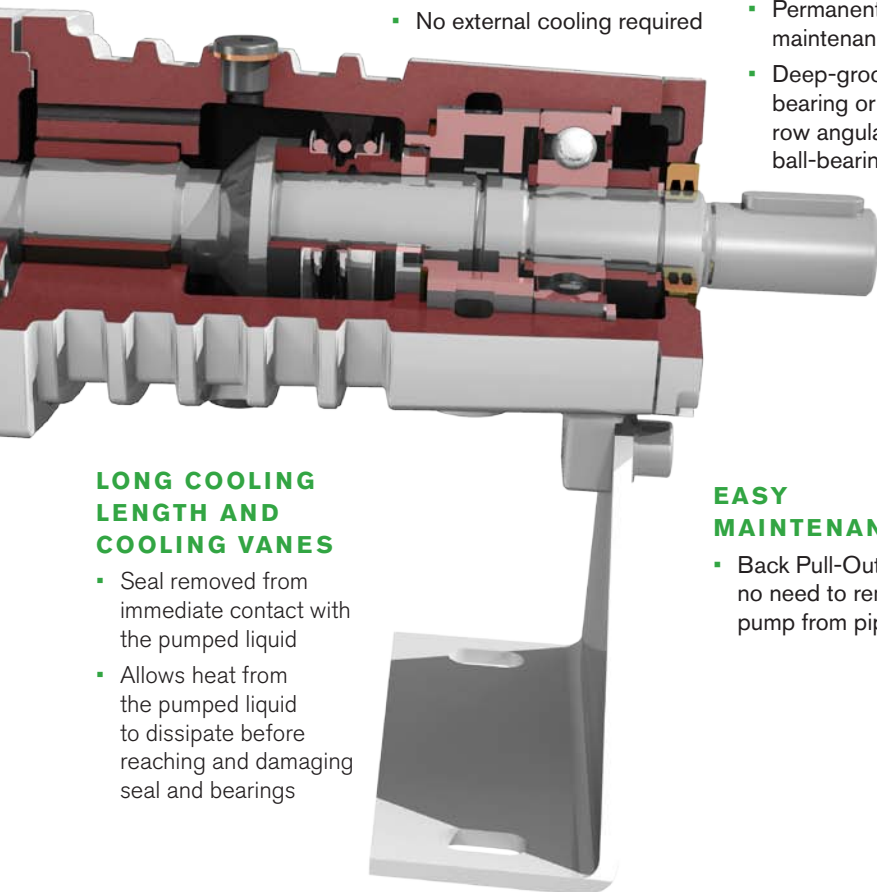
- Permanently greased, maintenance free
- Deep-groove ball-bearing or a double-row angular contact ball-bearing

LONG COOLING LENGTH AND COOLING VANES

- Seal removed from immediate contact with the pumped liquid
- Allows heat from the pumped liquid to dissipate before reaching and damaging seal and bearings

EASY MAINTENANCE

- Back Pull-Out design; no need to remove pump from piping



Technical data

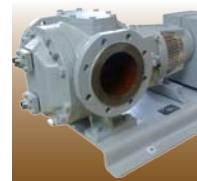
| | |
|-----------------------------|--|
| Maximum capacity: | 1761 GPM (400 m ³ /h) [60 Hz] 1541 GPM (350 m ³ /h) [50 Hz] |
| Maximum delivery head: | 525 ft (160 m) [60 Hz] 361 ft (110 m) [50 Hz] |
| Maximum liquid temperature: | Thermal oil 662°F (350°C), Hot water 374°F (190°C) |
| Maximum operating pressure: | 232 psi (16 bar) |
| Maximum speed: | 3600 rpm |

| MATERIAL | |
|--------------------------|---------------------------------|
| PUMP CASING | DUCTILE IRON |
| IMPELLER, WEAR RING | CAST IRON OR 316 SS |
| MECHANICAL SEAL COVER | DUCTILE IRON |
| PUMP SHAFT | 17% CHROME STEEL |
| MECHANICAL SEAL MATERIAL | CARBON/CrMo-STEEL OR CARBON/SiC |

Typical product applications

THERMAL OIL HEAT TRANSFER

OEM systems, maintaining temperature in jacketed equipment



MARINE AND FLOATING PRODUCTION SYSTEMS

Fuel tank heaters and fuel preheating, cargo and product heating, steam generation



FOOD

Ovens, fish frying, distillation of fatty acids and glycerine, fat softening, potato chips, milk powder plants



BITUMEN

Asphalt production, roads and roofing



RUBBER AND PLASTICS

Injection molding, PVC tape, manmade fibers

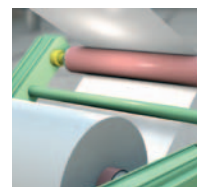
CHEMICAL

Agitators, reactors, drying plants, polymerisation, plastics



PAPER AND WOOD

Calender rolls, cardboard, washing machines, driers, floor board and wood panel



HIGH TEMPERATURE HOT WATER CIRCULATION

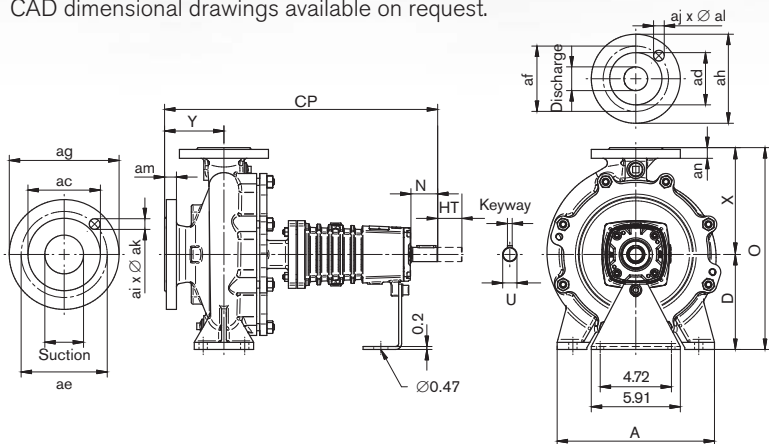
Hospitals, heating systems





Dimensions

CAD dimensional drawings available on request.



FLANGES ACCORDING TO ISO 7005 PN16/ ASME B16.5 150 LBS DRILLED (ANSI 150LBS)

| Suction | Discharge | ac | ad | ae | af | ag | ah | ai x ak | aj x al | am | an |
|---------|-----------|------|------|------|------|-------|------|---------|---------|------|------|
| 1.97 | 1.26 | 3.62 | 2.50 | 4.75 | 3.50 | 6.50 | 5.51 | 4 X 3/4 | 4 X 5/8 | 0.79 | 0.71 |
| 2.56 | 1.57 | 4.12 | 2.88 | 5.50 | 3.88 | 7.28 | 5.91 | 4 X 3/4 | 4 X 5/8 | 0.79 | 0.71 |
| 2.56 | 1.97 | 4.12 | 3.62 | 5.50 | 4.75 | 7.28 | 6.50 | 4 X 3/4 | 4 X 3/4 | 0.79 | 0.79 |
| 3.15 | 2.56 | 5.00 | 4.12 | 6.00 | 5.50 | 7.87 | 7.28 | 4 X 3/4 | 4 X 3/4 | 0.87 | 0.79 |
| 3.94 | 3.15 | 6.19 | 5.00 | 7.50 | 6.00 | 8.66 | 7.87 | 8 X 3/4 | 4 X 3/4 | 0.87 | 0.87 |
| 4.92 | 3.94 | 7.31 | 6.19 | 8.50 | 7.50 | 9.84 | 8.66 | 8 X 7/8 | 8 X 3/4 | 0.94 | 0.87 |
| 5.91 | 4.92 | 8.50 | 7.31 | 9.50 | 8.50 | 11.22 | 9.84 | 8 X 7/8 | 8 X 3/4 | 0.94 | 0.94 |

Flanges according to ISO 7005 PN16 \cong EN1092-2 available in Europe, the Middle East, Africa and Asia

measurements in inches unless specified otherwise

| CT | Suction | Discharge | D | N | Keyway | U | HT | CP | A | Y | O | X | [LBS] |
|-----------|---------|-----------|------|-----|--------|------|-----|------|------|-----|-------|-------|-------|
| 32(C)-160 | 1.97 | 1.26 | 5.20 | 1.8 | 0.31 | 0.94 | 3.9 | 17.3 | 9.4 | 3.1 | 11.50 | 6.30 | 77.2 |
| 32(C)-200 | 1.97 | 1.26 | 6.30 | 1.8 | 0.31 | 0.94 | 3.9 | 17.3 | 9.4 | 3.1 | 13.39 | 7.09 | 88.2 |
| 32-250 | 1.97 | 1.26 | 7.09 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 12.6 | 3.9 | 15.94 | 8.86 | 134.5 |
| 40C-160 | 2.56 | 1.57 | 5.20 | 1.8 | 0.31 | 0.94 | 3.9 | 17.3 | 9.4 | 3.1 | 11.50 | 6.30 | 81.6 |
| 40C-200 | 2.56 | 1.57 | 6.30 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 10.4 | 3.9 | 13.39 | 7.09 | 97.0 |
| 40-250 | 2.56 | 1.57 | 7.09 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 12.6 | 3.9 | 15.94 | 8.86 | 116.8 |
| 50C-160 | 2.56 | 1.97 | 6.30 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 10.4 | 3.9 | 13.39 | 7.09 | 88.2 |
| 50C-200 | 2.56 | 1.97 | 6.30 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 10.4 | 3.9 | 14.17 | 7.87 | 99.2 |
| 50C-250 | 2.56 | 1.97 | 7.09 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 12.6 | 3.9 | 15.94 | 8.86 | 123.5 |
| 65C-160 | 3.15 | 2.56 | 6.30 | 1.8 | 0.31 | 0.94 | 3.9 | 18.1 | 11.0 | 3.9 | 14.17 | 7.87 | 99.2 |
| 65C-200 | 3.15 | 2.56 | 7.09 | 1.8 | 0.31 | 0.94 | 5.5 | 18.1 | 12.6 | 3.9 | 15.94 | 8.86 | 114.6 |
| 65A-250 | 3.15 | 2.56 | 7.87 | 3.0 | 0.39 | 1.26 | 5.5 | 22.4 | 14.2 | 3.9 | 17.72 | 9.84 | 176.4 |
| 80C-160 | 3.94 | 3.15 | 7.09 | 1.8 | 0.31 | 0.94 | 5.5 | 19.1 | 12.6 | 4.9 | 15.94 | 8.86 | 116.8 |
| 80C-200 | 3.94 | 3.15 | 7.09 | 3.0 | 0.39 | 1.26 | 5.5 | 23.4 | 13.6 | 4.9 | 16.93 | 9.84 | 158.7 |
| 80C-250 | 3.94 | 3.15 | 7.87 | 3.0 | 0.39 | 1.26 | 5.5 | 23.4 | 15.7 | 4.9 | 18.90 | 11.02 | 189.6 |
| 100-160 | 4.92 | 3.94 | 7.87 | 3.0 | 0.39 | 1.26 | 3.9 | 23.4 | 14.2 | 4.9 | 20.28 | 12.40 | 194.0 |
| 100C-200 | 4.92 | 3.94 | 7.87 | 3.0 | 0.39 | 1.26 | 5.5 | 23.4 | 14.2 | 4.9 | 18.90 | 11.02 | 218.3 |
| 100C-250 | 4.92 | 3.94 | 8.86 | 3.0 | 0.39 | 1.26 | 5.5 | 24.0 | 15.7 | 5.5 | 19.88 | 11.02 | 213.8 |
| 125-250 | 5.91 | 4.92 | 9.84 | 3.0 | 0.39 | 1.26 | 5.5 | 24.0 | 15.7 | 5.5 | 23.82 | 13.98 | 271.2 |

FOR YOUR LOCAL REPRESENTATIVE:

<http://www.spx.com/en/johnson-pump/where-to-buy/>

SPX reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.spx.com and www.johnson-pump.com.

The green ">" is a trademark of SPX Corporation, Inc.

JP_419_USA Version: 02/2014 Issued: 07/2014

COPYRIGHT © 2014 SPX Corporation