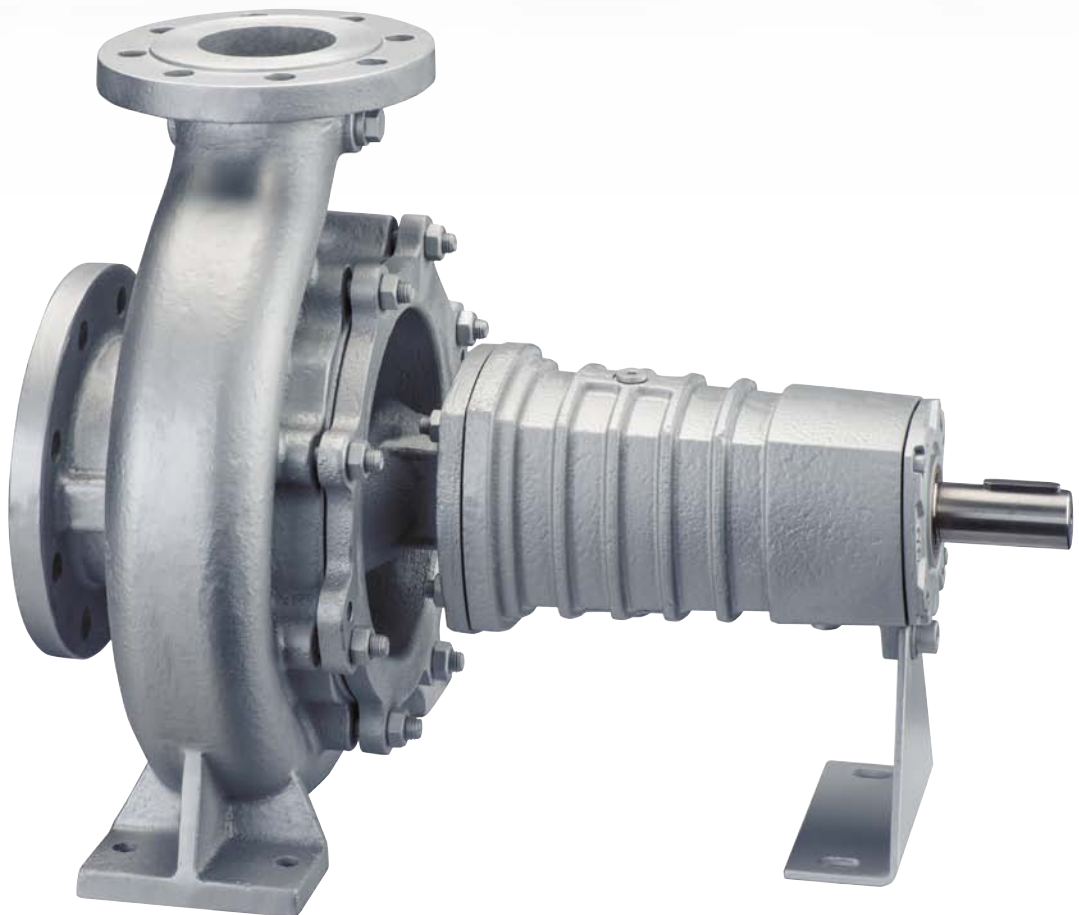


CombiTherm

CENTRIFUGAL PUMP FOR THERMAL OIL / HOT WATER APPLICATIONS



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 bush, 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 250°C (482°F) at the pump inlet will be as low as 100°C (212°F) 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.

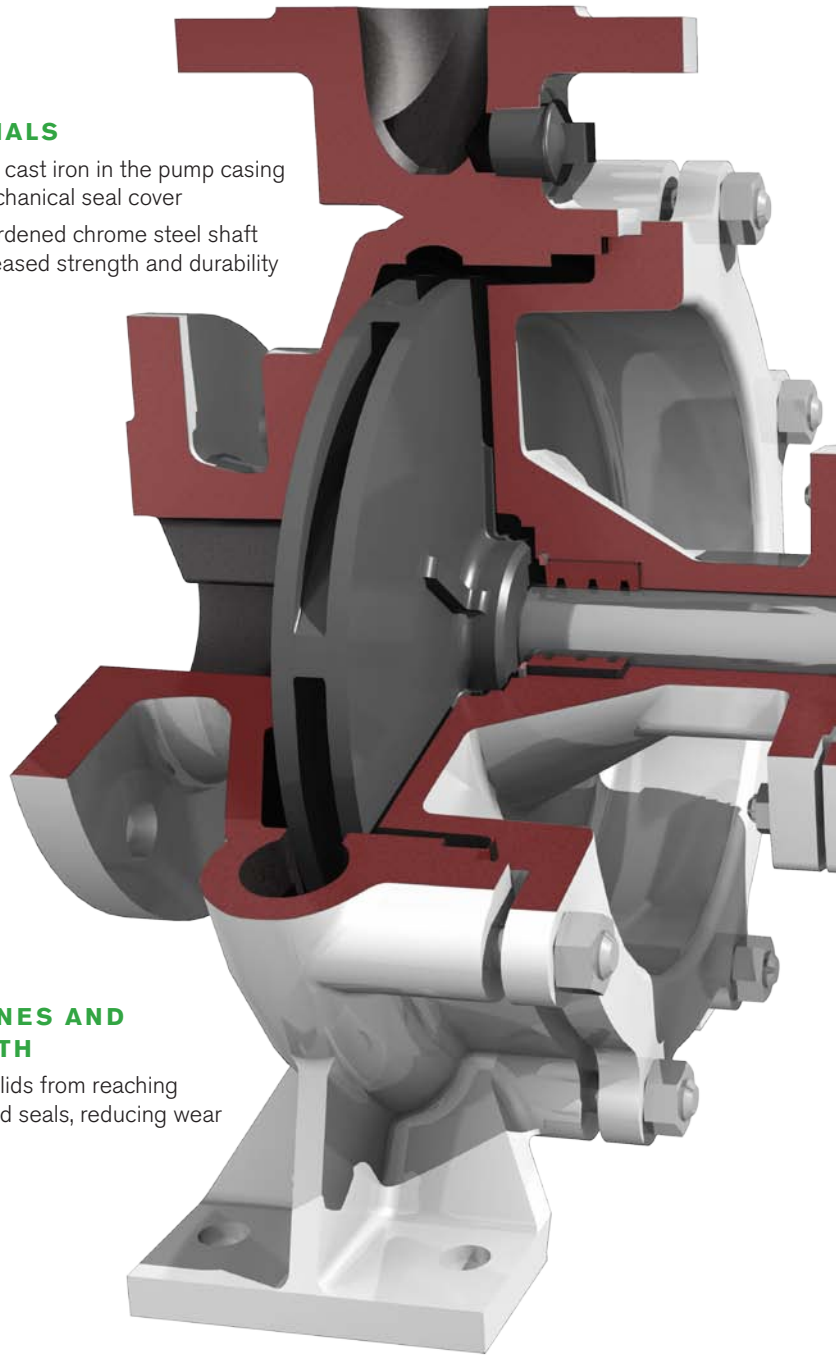
SPX also offers a full line of filters, valves and heat exchangers.

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

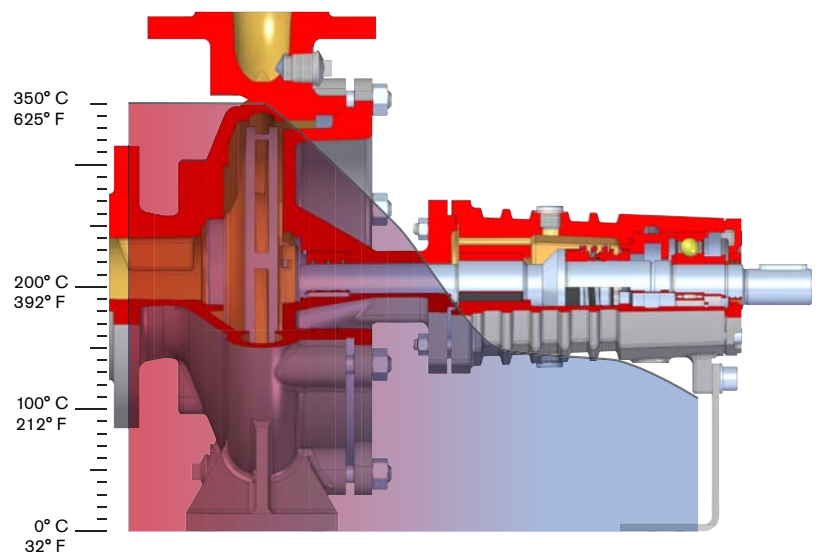
MATERIALS

- Nodular cast 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 350°C (625°F) at the impeller to a manageable 150–140°C (284–302°F) at the seal chamber and 110°C (230°F) at the bearings.

CombiTherm Circulation pump for Thermal Oil and Hot Water applications

SLIDE BEARING

- Product lubricated

STANDARD MECHANICAL SEAL

- Seal execution 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

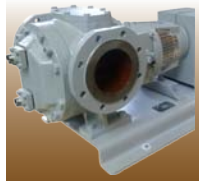
Maximum capacity:	350 m ³ /h (1541 GPM) [50 Hz] 400 m ³ /h (1761 GPM) [60 Hz]
Maximum delivery head:	110 m (361 ft) [50 Hz] 160 m (525 ft) [60 Hz]
Maximum liquid temperature:	Thermal oil 350°C (662°F), Hot water 190°C (374°F)
Maximum operating pressure:	16 bar (232 psi)
Maximum speed:	3600 rpm

MATERIAL	
PUMP CASING	NODULAR CAST IRON
IMPELLER	CAST IRON OR STAINLESS STEEL
MECHANICAL SEAL COVER	NODULAR CAST IRON
PUMP SHAFT	17% CHROME STEEL
MECHANICAL SEAL MATERIAL	CARBON TO CERAMIC

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

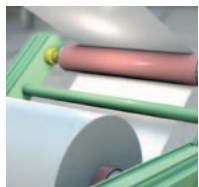


CHEMICAL

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

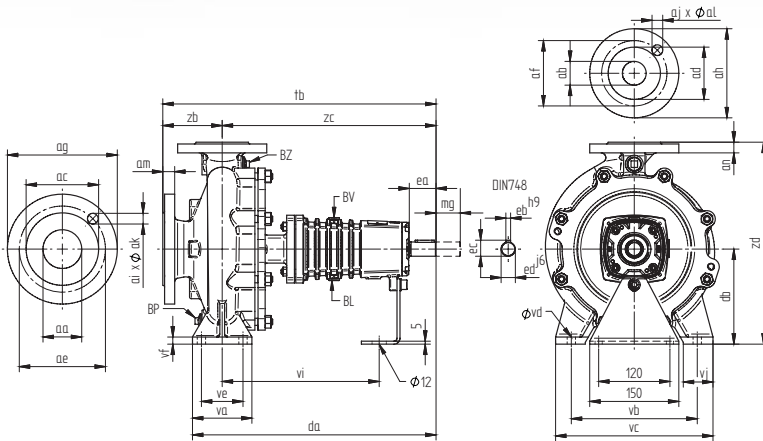




Thermal Oil & Hot Water
Applications

Dimensions

CAD dimensional drawings available on request.



measurements in mm unless specified otherwise

FLANGES ACCORDING TO ISO 7005 PN16 ≅ EN1092-2

aa	ab	ac	ad	ae	af	ag	ah	ai x ak	aj x al	am	an
50	32	102	78	125	100	165	140	4 X 18	4 X 18	20	18
65	40	122	88	145	110	185	150	4 X 18	4 X 18	20	18
65	50	122	102	145	125	185	165	4 X 18	4 X 18	20	20
80	65	138	122	160	145	200	185	4 X 18	4 X 18	22	18
100	80	158	138	180	160	220	200	8 X 18	8 X 18	22	22
125	100	188	158	210	180	250	220	8 X 18	8 X 18	24	22
150	125	212	188	240	210	285	250	8 X 23	8 X 18	24	24

FLANGES ACCORDING TO ISO 7005 PN16/ASME B16.5 150 LBS RF

aa*	ab*	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 ¾	4 X ¾	20	18
2.56	1.57	4.12	2.88	5.50	3.88	7.28	5.91	4 X ¾	4 X ¾	20	18
2.56	1.97	4.12	3.62	5.50	4.75	7.28	6.50	4 X ¾	4 X ¾	20	20
3.15	2.56	5.00	4.12	6.00	5.50	7.87	7.28	4 X ¾	4 X ¾	22	18
3.94	3.15	6.19	5.00	7.50	6.00	8.66	7.87	8 X ¾	4 X ¾	22	22
4.92	3.94	7.31	6.19	8.50	7.50	9.84	8.66	8 X ¾	8 X ¾	24	22
5.91	4.92	8.50	7.31	9.50	8.50	11.22	9.84	8 X ¾	8 X ¾	24	24

NB! ASME flanges available only in the Americas and the Asian/Pacific areas

*inches

CT	aa	ab	da	db	ea	eb	ec	ed	mg	fb	va	vb	vc	vd	ve	vf	vi	vj	zb	zc	zd	KG
32(C)-160	50	32	410	132	45	8	27	24	100	440	100	190	240	14	70	12	268	50	80	360	292	35
32(C)-200	50	32	410	160	45	8	27	24	100	440	100	190	240	14	70	12	268	50	80	360	340	40
32-250	50	32	423	180	45	8	27	24	100	460	125	250	320	14	95	14	268	65	100	360	405	61
40C-160	65	40	410	132	45	8	27	24	100	440	100	190	240	14	70	12	268	50	80	360	292	37
40C-200	65	40	410	160	45	8	27	24	100	460	100	212	265	14	70	12	268	50	100	360	340	44
40-250	65	40	423	180	45	8	27	24	100	460	125	250	320	14	95	14	268	65	100	360	405	53
50C-160	65	50	410	160	45	8	27	24	100	460	100	212	265	14	70	12	268	50	100	360	340	40
50C-200	65	50	410	160	45	8	27	24	100	460	100	212	265	14	70	12	268	50	100	360	360	45
50C-250	65	50	423	180	45	8	27	24	100	460	125	250	320	14	95	14	268	65	100	360	405	56
65C-160	80	65	423	160	45	8	27	24	100	460	125	212	280	14	95	12	268	65	100	360	360	45
65C-200	80	65	423	180	45	8	27	24	140	460	125	250	320	14	95	14	268	65	100	360	405	52
65A-250	80	65	550	200	75	10	35	32	140	570	160	280	360	18	120	14	346	80	100	470	450	80
80C-160	100	80	423	180	45	8	27	24	140	485	125	250	320	14	95	14	268	65	125	360	405	53
80C-200	100	80	533	180	75	10	35	32	140	595	125	280	345	14	95	14	346	65	125	470	430	72
80C-250	100	80	550	200	75	10	35	32	140	595	160	315	400	18	120	15	346	80	125	470	480	86
100-160	125	100	550	200	75	10	35	32	100	595	160	280	360	18	120	15	346	80	125	470	515	88
100C-200	125	100	550	200	75	10	35	32	140	595	160	280	360	18	120	15	346	80	125	470	480	99
100C-250	125	100	550	225	75	10	35	32	140	610	160	315	400	18	120	16	346	80	140	470	505	97
125-250	150	125	550	250	75	10	35	32	140	610	160	315	400	18	120	18	346	80	140	470	605	123

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