



# OH1-CH Series

Technical Catalogue  
2015



## Product description

Using modern computer aided design methods, the pumps are specially designed as heavy duty, minimal wear, long life pumps which have been designed in a modular way, with a number of options available, to ensure full compliance to the customers' exact requirements and specifications. A fully compliant API 610 heavy duty baseplate helps achieve low vibration and noise levels which in turn extends the pump's life and ensures maximum running time. A 'space saving' reduced footprint is also available for use where space is at a premium.

The pumps can be fitted with a variety of proprietary components (i.e. seals, motors & couplings) from all the major manufacturers to cater for customers site preferences. Double mechanical seal arrangements can be fitted with an attached seal support system. This can be supplied by Seal Support System which is designed and manufactured by ASK, or another manufacturer's seal support system can be fitted.

To complete the package a full range of standard material options from SG iron and stainless steel, to duplex are available to match your process fluid. NACE compliant materials are also available. Standard documentation packs including manufacturing data books, material certification, and installation & operating manuals are available to suit the application. Performance testing to API610 / ISO 13709 and various NDE (nondestructive examination) & NDT (nondestructive testing) options are offered to ensure full compliance to our customers' applications. Alternative bespoke package can be tailored to fit your exact requirements.

## Fields of Application

For handling aggressive organic and inorganic fluids in the chemical and petrochemical processes, in refinery off-sites, the paper and cellulose industries, the foodstuffs industry, the sugar industry, sea water desalination plants, absorption equipment in environmental engineering, power stations.

They are also used in:

Heating and air-conditioning systems, service water and hot water systems, transferring seawater, brackish water, condensate, brine, oil & cleansing agents, acids, caustic and chlor-alkali, polymers, slurry processing solvents, volatile organic compounds, waste processing.

## Design

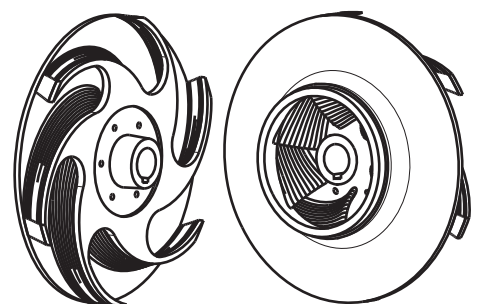
Horizontal, radially split volute casing pump in back pull-out, design, with radial impeller, single-entry, single-stage, to EN 22 858/ISO 2858/ISO 5199.

## Certification

Certified quality management ISO 9001 with scope of "Design and manufacturing of process centrifugal pumps according to API standard 610".

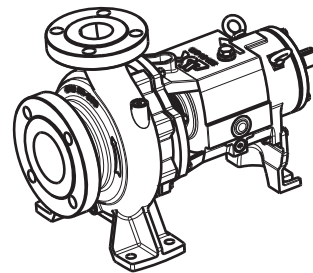
## Key features

- OH1 single stage foot mounted centrifugal pumps
- 16 bar pumps to ISO 5199-2002
- -15°C to 120°C temperature applications
- Special semi-open impeller
- A range of alloys available on request including NACE compliant materials
- Tested to ISO9906/II procedures – Head, Flow, Noise & Vibration
- A range of EN 12756 seals & systems (PED compliant)
- Grouted and non-grouted baseplates to ISO 3361 dimensions



**Product overview**

<b>General description</b>	A range of OH1 single stage foot mounted, radially split centrifugal pumps manufactured in a variety of alloys
<b>Construction</b>	Modular design for optimum adaptation to customer needs and low operating costs
<b>Design methodology</b>	Advanced computer techniques including 3D modeling, FEA & CFD
<b>Design standards</b>	EN 22858/ISO 2858/ISO 5199
<b>Design pressure rating</b>	Up to 16 bar g
<b>Suction pressure rating</b>	Up to 6 bar g
<b>Temperature rating</b>	16 bar g
<b>Design temperature</b>	-15°C to 120°C
<b>Performance envelope</b>	
<b>Flow rate</b>	Up to 500 m <sup>3</sup> /h
<b>Differential head</b>	Up to 160 m
<b>Speed</b>	Up to 3000 rpm
<b>Configuration</b>	Long coupled pump Bare shaft pump Rotating assembly
<b>Frame Sizes</b>	50x32x160 to 200x150x400
<b>Flanges pressure class</b>	ASME B16.5, 150#
<b>Design life</b>	10 years (2 years uninterrupted operation)



**Material Options**

Materials	Casing	Impeller
I1 - Cast Iron / Cast Iron	ASTM A 48 Class 40B	ASTM A 48 Class 40B
I2 - Cast Iron / Bronze	ASTM A 48 Class 40B	C92200
S1 - Carbon Steel / Cast Iron	ASTM A 216 WCB	ASTM A 48 Class 40B
S3 - Carbon Steel / Ni-resist	ASTM A 216 WCB	ASTM A 435 Type 1,2,3
S4 - Carbon Steel / Cast Iron	ASTM A 216 WCB	ASTM A 48 Class 40B
S5 - Carbon Steel / Carbon Steel	ASTM A 216 WCB	ASTM A744 CF-3M
S6 - Carbon Steel / 12% Cr SS	ASTM A 216 WCB	ASTM A 743 CA6NM
S8 - Carbon Steel / SS 316	ASTM A 216 WCB	ASTM A 216 WCB
C6 - SS 304 / SS 304	304 Stainless steel	304 Stainless steel
A8 - SS 316 / SS 316	ASTM A744 CF-8M	ASTM A744 CF-8M
D1 - Duplex SS / Duplex SS	EN10213-4 / 1.4517	EN10213-4 / 1.4517

- Other alloys, including NACE compliant materials are available on request.
- We offer specific NDT and component documentation to ensure compliance to your exact requirements.

Technical table

Pump model	Bearing bracket	Bearing size		Shaft diameter at Coupling	Mechanical seal size
		Pump side	Motor side		
32-160	24-160	6306	6306x2	24	33
32-200	24-160	6306	6306x2	24	33
32-250	32-250	6308	6308X2	32	43
40-160	24-160	6306	6306x2	24	33
40-200	24-160	6306	6306x2	24	33
40-250	32-250	6308	6308X2	32	43
40-315	32-250	6308	6308X2	32	43
50-160	24-160	6306	6306x2	24	33
50-200	24-160	6306	6306x2	24	33
50-250	32-250	6308	6308X2	32	43
50-315	32-250	6308	6308X2	32	43
65-160	32-250	6308	6308X2	32	43
65-200	32-250	6308	6308X2	32	43
65-250	32-250	6308	6308X2	32	43
65-315	42-315	6310	6310X2	42	55
80-160	32-250	6308	6308X2	32	43
80-200	32-250	6308	6308X2	32	43
80-250	32-250	6308	6308X2	32	43
80-315	42-315	6310	6310X2	42	55
80-400	42-315	6310	6310X2	42	55
100-200	32-250	6308	6308X2	32	43
100-250	42-315	6310	6310X2	42	55
100-315	42-315	6310	6310X2	42	55
100-400	42-315	6310	6310X2	42	55
125-250	42-315	6310	6310X2	42	55
125-315	42-315	6310	6310X2	42	55
125-400	42-315	6310	6310X2	42	55
150-250	42-315	6310	6310X2	42	55
150-315	48-315	6311	6311X2	48	60
150-400	48-400	6311	6311X2	48	60



### Product Benefits

- Reverse vane impeller delivers efficiency and performance and providing optimal, predictable seal chamber pressure and thrust loads.
- Abrasive wear is on the rear cover rather than the more expensive casing.
- Robust, solid shaft extends mechanical seal life.
- External micrometer enables accurate impeller clearance setting, restoring pump efficiency.
- Two-piece bearing housing provides strength and facilitates interchangeability.
- Non-contacting labyrinth oil seals and flingers
- Special arrangement of bearings provide excellent axial and radial load support.
- Oil-lubricated Bearing Housing Bath uses a bull's-eye sight glass with constant level oiler as an option.
- ASK offers several pre-engineered baseplate designs to improve pump performance while reducing costs.



### Designation

Example: OH1-CH 65-250 / 15 2 A8 S 1161 A / SA

OH1-CH	65	250	15	2 <sup>(1)</sup>	A8	S	1161 <sup>(2)</sup>	A	SA <sup>(3)</sup>
Pump type	Discharge nominal diameter in millimeters	Impeller nominal diameter in millimeters	Nominal power of installed driver in kW	No. of poles	Material class acc. to table H1 of API610	Seal type	Seal plane code acc. to API682	Options	Area Classification
<b>OH1-CH:</b> Single stage, Overhung, Foot mounted, centrifugal process pumps	Up to 150mm	(Refer to Technical tables)	up to 400kW	2:3000rpm 4:1500rpm 6:1000rpm	I-1 I-2 S-1 S-3 S-4 S-5 S-6 C-6 A-8 D-1	<b>P:</b> Single mechanical seal <b>S:</b> Single mechanical seal	Each two digits stands for a plan: For example "1161" means plans 11 and 61 have been utilized together.	<b>A:</b> No option <b>B:</b> Oil mist lubrication <b>C:</b> Vibration sensors <b>D:</b> Temp. Sensors <b>E:</b> Heating jacket <b>F:</b> Special bearing arrangement	<b>SA:</b> Safe area <b>EX:</b> Explosion proof <b>T1-T6:</b> Temperature class

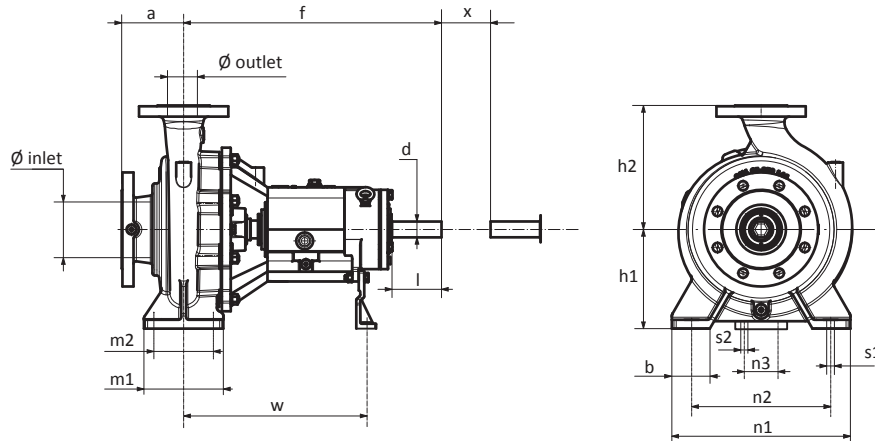
1) For diesel engine refers to the drive speed only.

2) Other seal arrangements are available on request.

3) For other types of driver (nonelectric drivers) abbreviation of the used type will be interpolated, examples: (ST → Steam Turbine)/(DE → Diesel Engine)/etc.

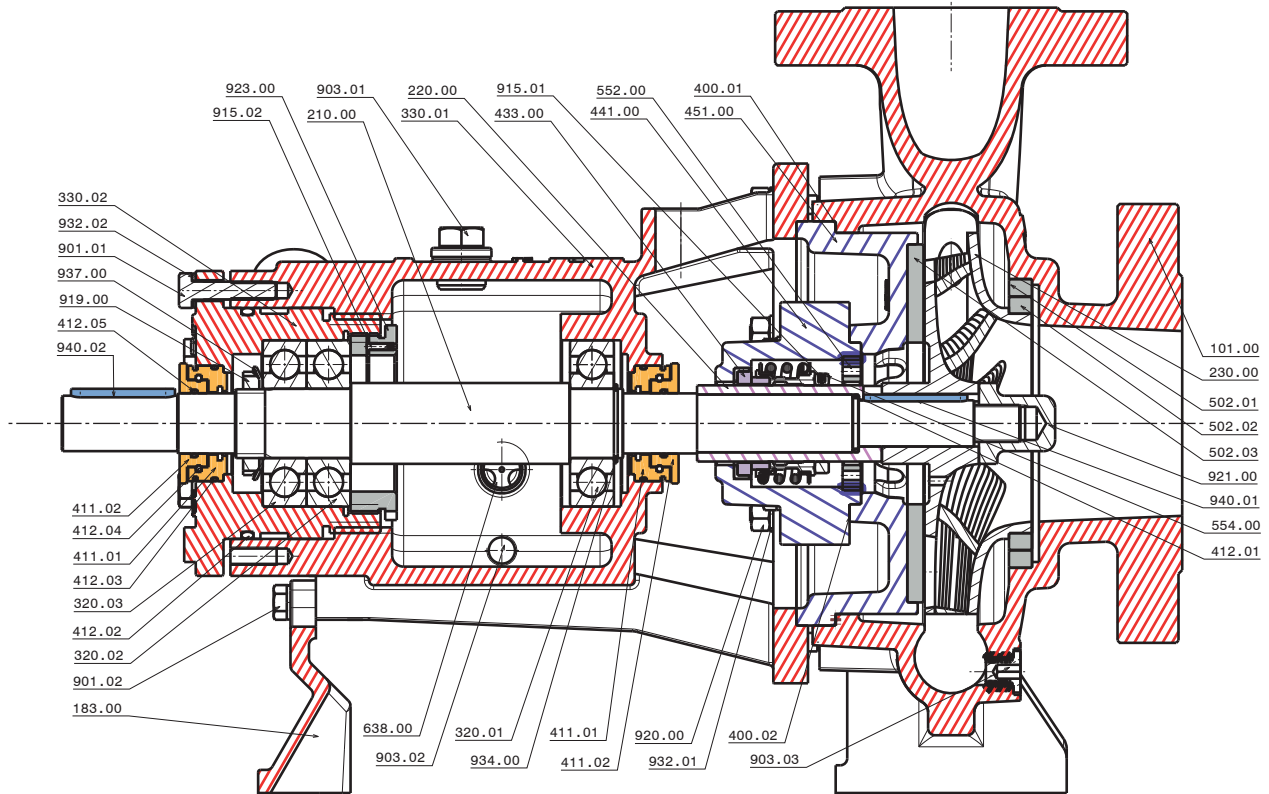


**Dimensional Drawing**



Pump Size	Weight Kg	Ø inlet	Ø outlet	Pump				Support						Clearance Holes for bolts		Shaft end			
				a	f	h1	h2	b	m1	m2	n1	n2	n3	w	s1	s2	d	l	x
32-160	43	50	32	80	385	132	160	50	100	70	240	190	110	285	M12	M12	24	50	100
32-200	45	50	32	80	385	160	180	50	100	70	240	190	110	285	M12	M12	24	50	100
32-250	57	50	32	100	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	100
40-160	47	65	40	80	385	132	160	50	100	70	240	190	110	285	M12	M12	24	50	100
40-200	49	65	40	100	385	160	180	50	100	70	265	212	110	285	M12	M12	24	50	100
40-250	82	65	40	100	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	100
40-315	102	65	40	125	500	200	250	65	125	95	345	280	110	370	M12	M12	32	80	100
50-160	50	80	50	80	385	132	160	50	100	70	240	190	110	285	M12	M12	24	50	100
50-200	51	80	50	100	385	160	200	50	100	70	265	212	110	285	M12	M12	24	50	100
50-250	59	80	50	125	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	100
50-315	105	80	50	125	500	225	280	65	125	95	345	280	110	370	M12	M12	32	80	100
65-160	52	100	65	100	385	160	180	50	100	70	265	212	110	285	M12	M12	24	50	100
65-200	81	100	65	100	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	140
65-250	92	100	65	125	500	200	250	80	160	120	360	280	110	370	M16	M12	32	80	140
65-315	107	100	65	125	580	225	280	80	160	120	400	315	110	370	M16	M12	42	110	140
80-160	79	125	80	125	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	140
80-200	87	125	80	125	500	180	250	65	125	95	345	280	110	370	M12	M12	32	80	140
80-250	100	125	80	125	500	225	280	80	160	120	400	315	110	370	M16	M12	32	80	140
80-315	116	125	80	125	580	250	315	80	160	120	400	315	110	370	M16	M12	42	110	140
80-400	169	125	80	125	580	280	355	80	160	120	435	355	110	370	M16	M12	42	110	140
100-200	98	125	100	140	500	200	280	80	160	120	360	280	110	370	M16	M12	32	80	140
100-250	125	125	100	140	580	225	280	80	160	120	400	315	110	370	M16	M12	42	110	140
100-315	123	125	100	140	580	250	315	80	160	120	400	315	110	370	M16	M12	42	110	140
100-400	184	125	100	140	580	280	355	100	200	150	500	400	110	370	M20	M12	42	110	140
125-250	134	150	125	140	580	250	355	80	160	120	400	315	110	370	M16	M12	42	110	140
125-315	173	150	125	140	580	280	255	100	200	150	500	400	110	370	M20	M12	42	110	140
125-400	196	150	125	140	580	315	400	100	200	150	500	400	110	370	M20	M12	42	110	140
150-250	175	200	150	160	580	280	375	100	200	150	500	400	110	370	M20	M12	42	110	180
150-315	199	200	150	160	670	315	400	100	200	150	550	450	140	500	M20	M16	48	110	180
150-400	224	200	150	160	670	315	450	100	200	150	550	450	140	500	M20	M16	48	110	180

**General Sectional Drawing**

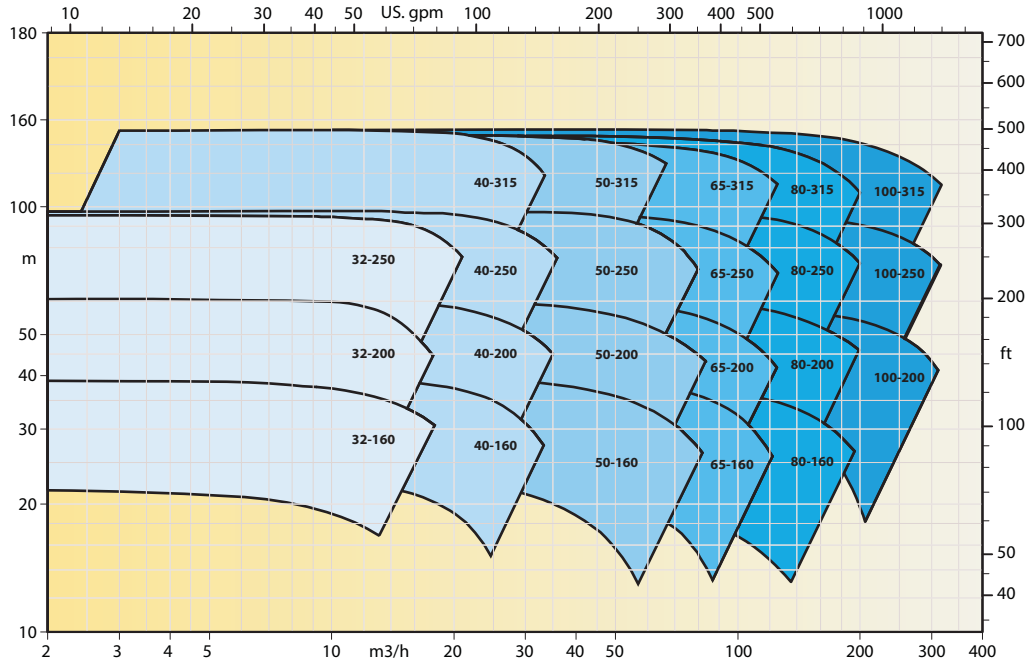


Part Name	Part No.	Part Name	Part No.	Part Name	Part No.
Casing	101.00	O-ring	412.02	Oil refill plug	903.01
Right angle support	183.00	O-ring	412.03	Oil drain plug	903.02
Shaft	210.00	O-ring	412.04	Screw plug	903.03
Shaft sleeve	220.00	O-ring	412.05	Set screw	915.01
Impeller	230.00	Mechanical seal	433.00	Set screw	915.02
Deep groove ball bearing	320.01	Mechanical seal seat	441.00	Chuck nut	919.00
Deep groove ball bearing	320.02	Seal chamber	451.00	Hex nut	920.00
Deep groove ball bearing	320.03	Case wear ring	502.01	Impeller nut	921.00
Bearing housing	330.01	Impeller wear ring	502.02	Tightening nut	923.00
Bearing housing chamber	330.02	Wear plate	502.03	Spring washer	932.01
Gasket	400.01	Throat bushing	552.00	Spring washer	932.02
Gasket	400.02	Mech. seal Locking collar	554.00	Circlip	934.00
Shaft seal ring	411.01	Oil level sight gauge	638.00	Chuck nut washer	937.00
Shaft seal ring	411.02	Hex head bolt	901.01	Parallel key	940.01
O-ring	412.01	Hex head bolt	901.02	Parallel key	940.02

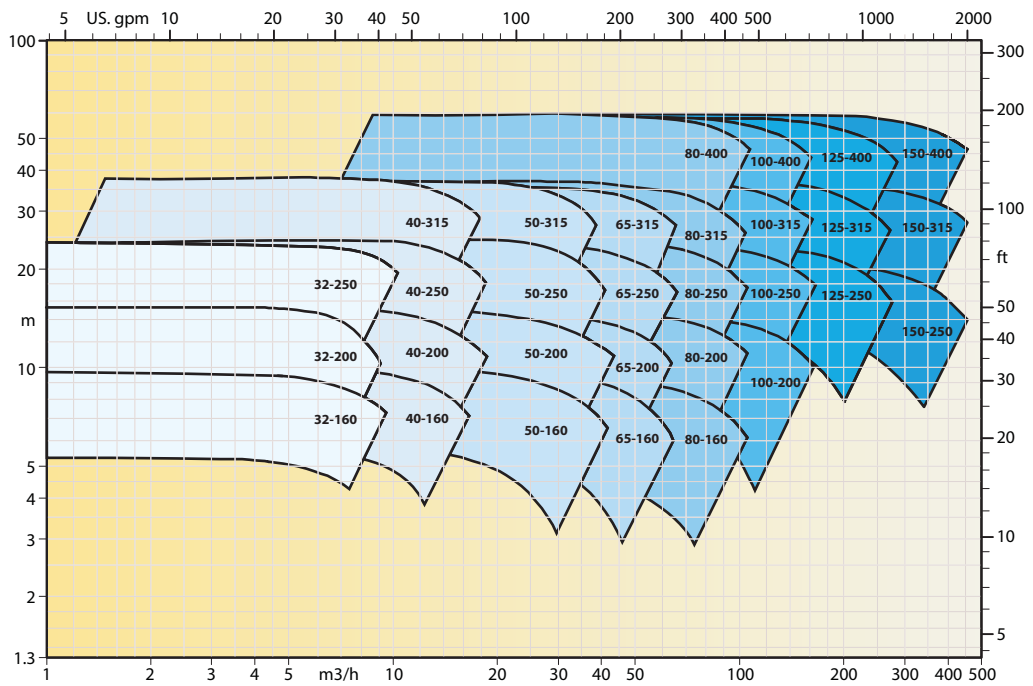


Overlapping curves

2900 rpm.



1450 rpm.







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