



Technical Catalogue



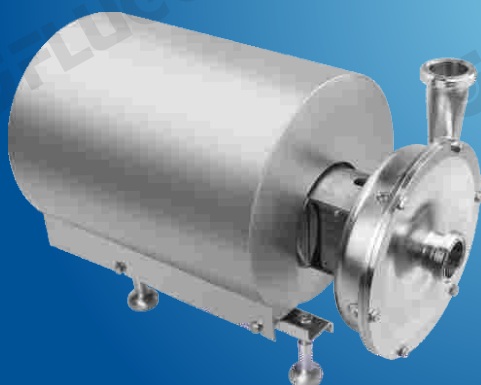
FSNL-X Series

Centrifugal (Sanitary Motor)

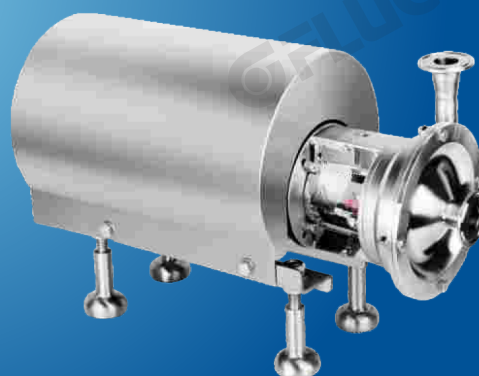
FSNL-X SERIES

CENTRIFUGAL PUMP

Solution for high efficiency, low noise, simple and economical maintenance, high purity



FSNL-X-10-40



FSNL-X-05

With the change of market demand and the development of technology, we hope to set up new technical standards in the field of high clean pump, for this reason, we have made a series of technology upgrades and optimization with the help of the fluid science software analysis and our more than 20 years experience in manufacturing and engineering application.

FSNL-X series centrifugal pump, not only optimize the internal structure, such as impeller design, dead angle treatment, mechanical seal pressure balance design and the machine seal is completely in the flushing area, but also optimize external sanitation of the pump, which makes its internal absolute sanitation and external reduction of dead angle. Since there is no dead angle area, it is easy to be cleaned by CIP and sterilized by SIP. In addition, series pump, has kept the maximum flexibility of combined applications, for example, the pump outlet angle can be arbitrarily adjusted from 0° to 135°, the pump cover adopts hand wheel nut, which keeps high efficiency in the maintenance of the pump and replacement of machine seal, and reduces the highly professional requirements to maintenance personnel without special tools. Therefore, the FSNL-X series centrifugal pump has achieved the goal of high efficiency, health, high reliability and low cost, making it a high performance pump.

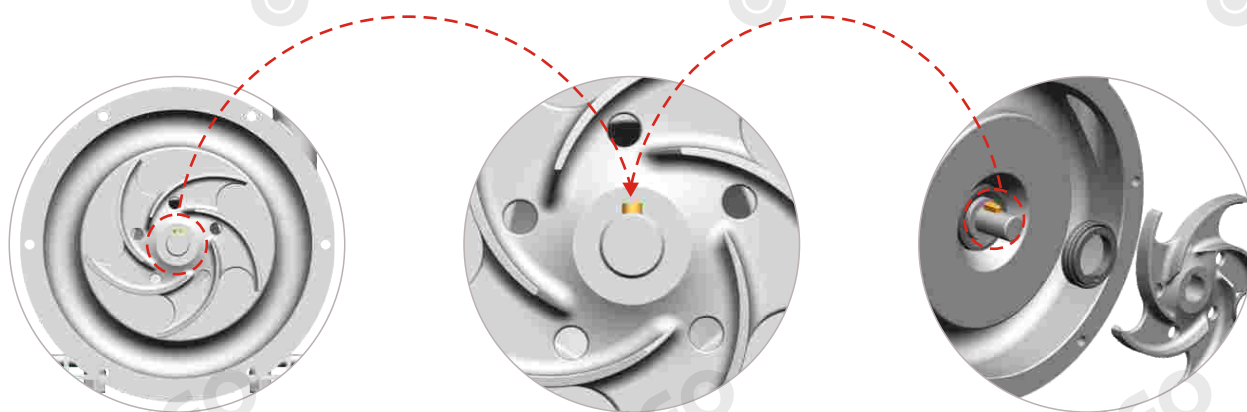
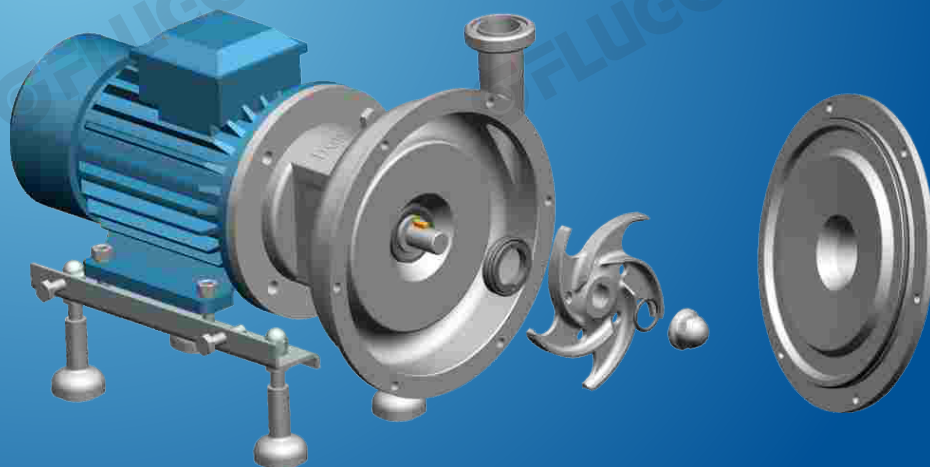
Technical Specifications

Flow	1m³/h-140m³/h		
Head	70M		
Temperature	From -20℃ to 140℃		
Power	0.37KW-30KW		
Material	304/316L, 1.4301/1.4404, ASME BPE 316L, 1.4435 BN2 Fe≤0.5%	Dual-phase steel 2205,	Hastelloy alloy C276
Surface treatment	≤ Ra0.8 μm, ≤ Ra0.6 μm, EP≤ Ra0.4 μm		
Mechanical seal	Single mechanical seal, double mechanical seal, details see configuration table		
Inlet/Outlet Connection	Thread, Clamp, Flange, Aseptic flange		
Certification	3-A-02-12(N.O.1579); MD/06/42-EC(N.O.70521616101-00); FDA 177.2600; USP CLASS-II; EG/VO1935/2004		

FSNL-X SERIES

CENTRIFUGAL PUMP

Very simple maintenance, no special tools required,
no professionals required



Technical Advantages

- ◆ Maintenance disassembly and installation can be completed without professional staff and special tools.
- ◆ Initial use of installation debugging, even if a short reverse rotation will not be damaged.
- ◆ Impeller and shaft are connected by keyway; impeller and mechanical seal rotating ring are connected by pin; mechanical seal static ring and pump body are connected by special-shaped flange.
- ◆ Compatible with single and double machine seal, only need to change machine seal.

FSNL-X SERIES

CENTRIFUGAL PUMP VARIOUS CONFIGURATIONS



Hand wheel nut



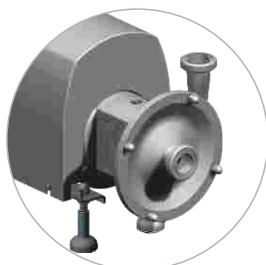
Bottom elbow discharge outlet



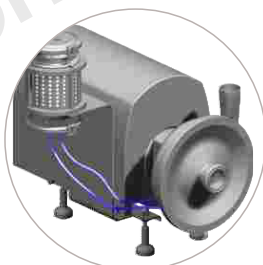
Bottom straight discharge outlet



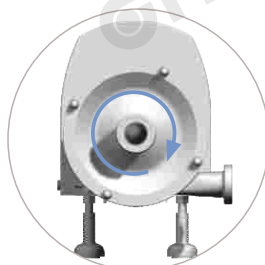
Flange inlet / outlet



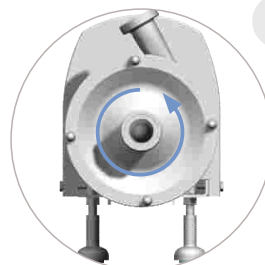
Aseptic Flange (DIN 11864)
Inlet/Outlet



With cooling circulation tank-
FSNL-X series centrifugal pump



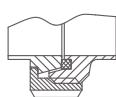
90°0° inclined outlet



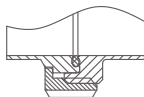
90°135° inclined outlet

Pump Inlet/outlet Connection Standard

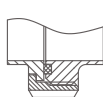
Connection: Thread, Clamp, Flange, Aseptic flange, KF etc.
Standard: DIN SMS ISO IDF RJT ASME BPE 3A I-line



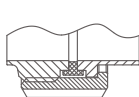
DIN11851



DIN11864-1-A



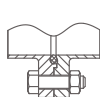
SMS



ISO/IDF



RJT



DIN11864-2



Flange



DIN11864-3



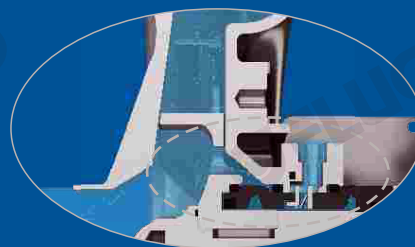
DIN32676
ISO2852



ISO2861

FSNL-X SERIES

CENTRIFUGAL PUMP MECHANICAL SEAL DESIGN



Double mechanical seal design



Single mechanical seal design

Mechanical Seal Features

FSNL-X SERIES series centrifugal pump mechanical seal is researched and developed together with European Swedish famous company. The mechanical seal is designed with pressure balance and super long working life, can be disassembled and maintained easily without special tools. The sanitary purity is according to EU EHEDG, USA 3-A-02-12, FDA1772600 and so on, and has lots of configuration.

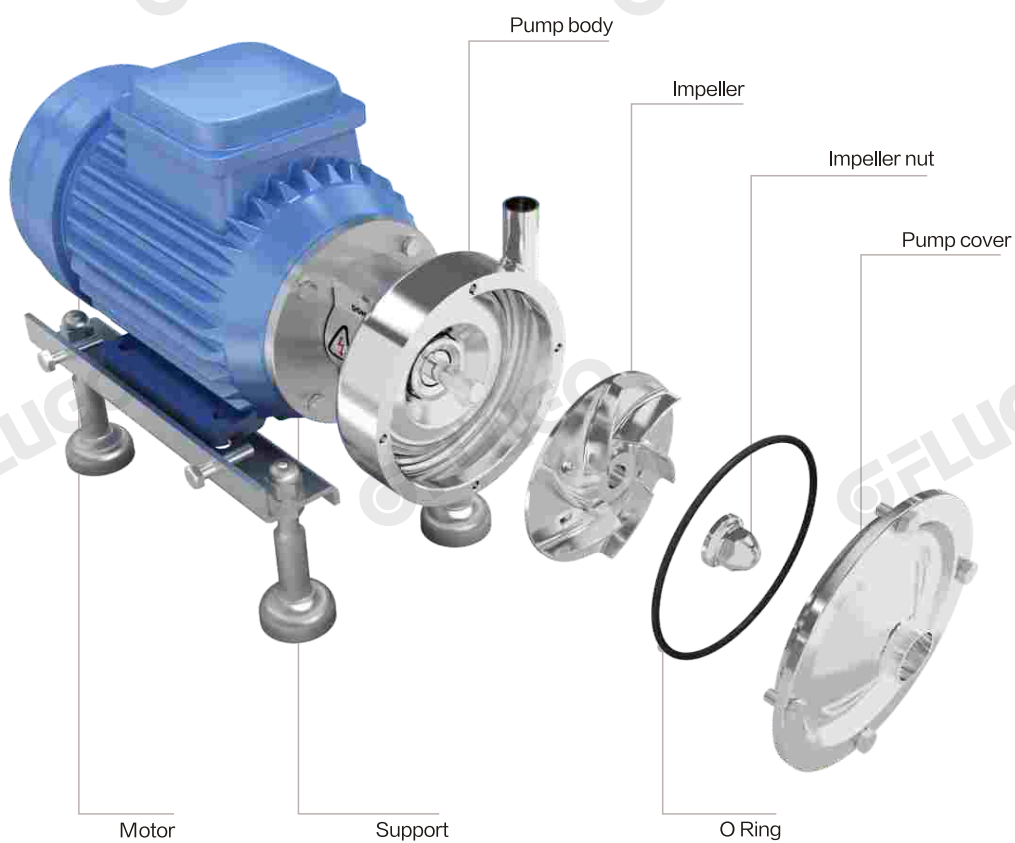
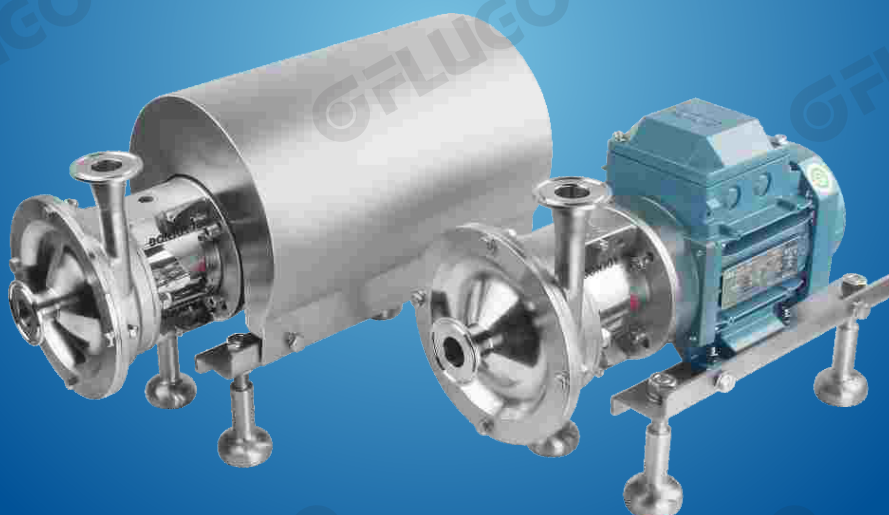
Mechanical Seal Configuration

1)SIC/C/EPDM	Standard
2)SIC/C/FKM	
3)SIC/C/HNBR	
4)SIC/SIC/EPDM	
5)SIC/SIC/FKM	Optional
6)SIC/SIC/HNBR	
7)TC/TC/EPDM	
8)TC/TC/FKM	
9)TC/TC/HNBR	

Note: Above configurations is suitable for single and double mechanical seal

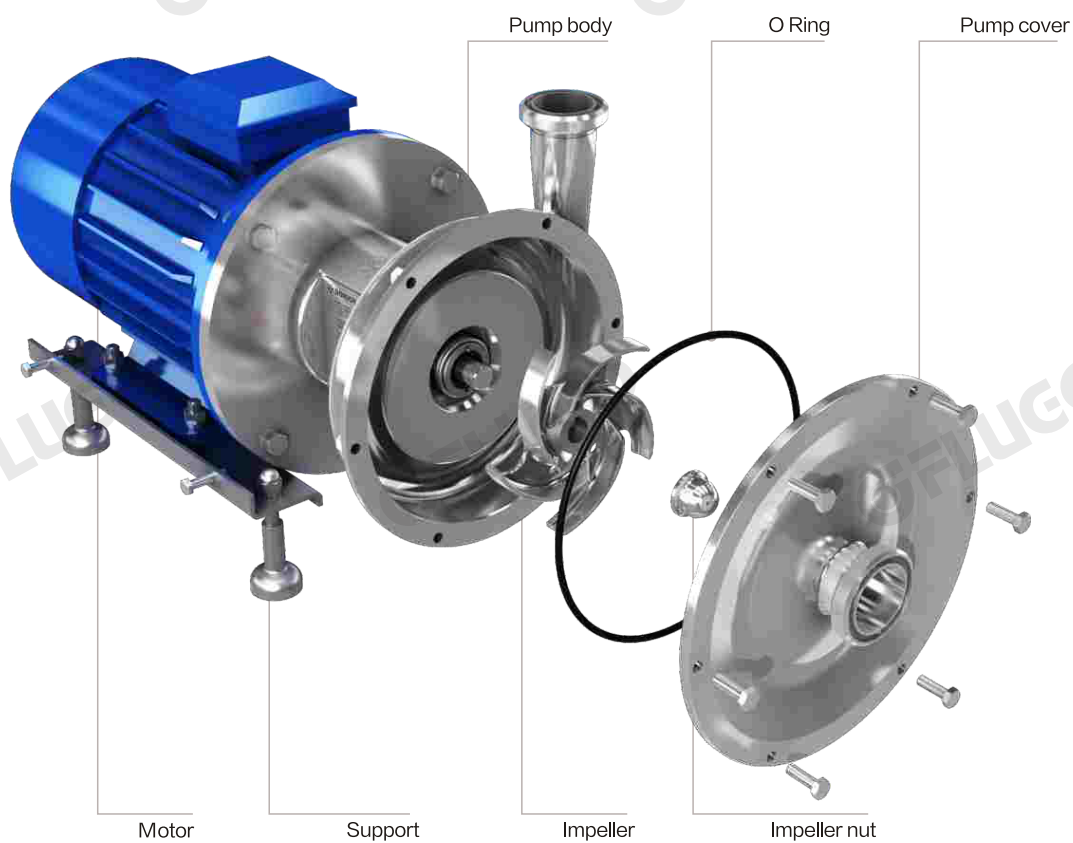
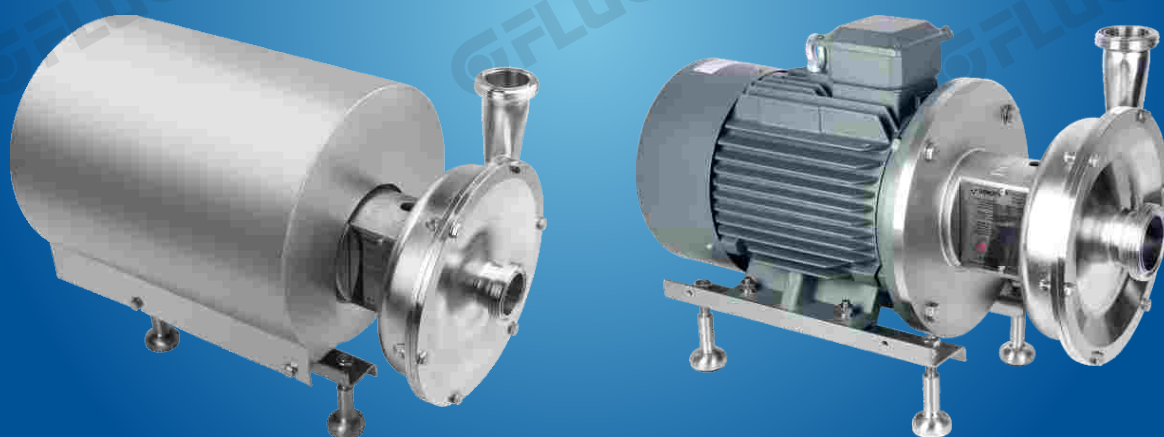
FSNL-X 05

MINI CENTRIFUGAL PUMP



FSNL-X-10-40

SERIES CENTRIFUGAL PUMP



FSNL-X-10-40

CENTRIFUGAL PUMP MODEL INSTRUCTION



FSNL-X 10 5T 22 1.5KW 380V 50HZ M 1.5/1.5 S

Connection standard
DIN(D) SMS(S) 3A(A)RJT (R)ISO/IDF (I)

Inlet/Outlet size

Connection method: Thread (M) Clamp (C) Flange (F)

Motor frequency
50HZ; 60HZ

Voltage: 110V 220V 380V (see table)

Motor power: 1.1kw 1.5kw 2.2kw.....

Centrifugal pump head (see table)

Centrifugal pump flow(see table)

Centrifugal pump model

Centrifugal pump code: FSNL-X

For example:

FSNL -X-10-5T-22-1.5KW-380V-50HZ-M-1.5"/1.5"-S

FSNL-X SERIES

CENTRIFUGAL PUMP SELECTION TABLE

(applicable to: FSNL-X/FSNKL-X/FSNCL-X) Selection table

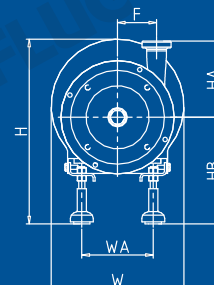
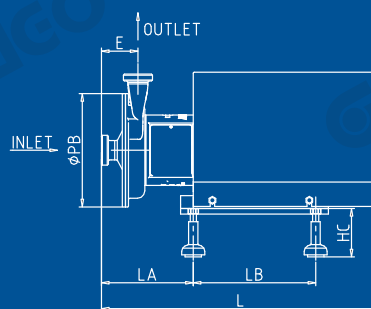
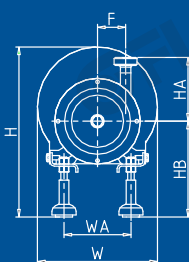
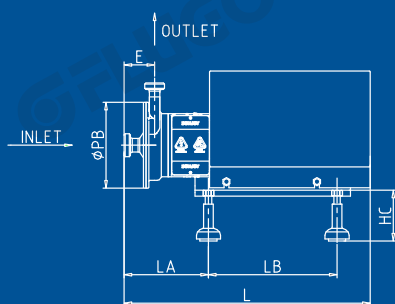
Model	Power	(m³/h) Flow	(M) Head	Inlet/Outlet	(KG)
FSNL-X-05	0.55KW	1	20	1.5"/0.75"	19
	0.55KW	2	20		19
	0.75KW	3	19		22
	0.75KW	4	18		22
	0.75KW	5	16		22
FSNL-X-10	1.1KW	3	22	1.5"/1.5"	30
	1.1KW	5	22		30
	1.5KW	3	22		36
	1.5KW	5	22		36
	1.5KW	8	22		36
	1.5KW	9	22		36
	1.5KW	12	20		36
	1.5KW	15	18		36
	2.2KW				40
	2.2KW	18	16		40
FSNL-X-15	1.5KW	3	28	2"/1.5"	39
	1.5KW	5	28		39
	1.5KW	8	26		39
	2.2KW				42
	2.2KW	10	25		42
	2.2KW	15	22		42
	2.2KW	18	18		42
	3.0KW				54
	2.2KW	20	16		42
	3.0KW				54
FSNL-X-20-1	2.2KW	5	36	2"/2"	47
	3.0KW				56
	3.0KW	10	36		56
	4.0KW				61
	4.0KW	15	35		61
	4.0KW	20	33		61
	4.0KW	25	30		61
	5.5KW				83
	5.5KW	30	30	2.5"/2"	83
	5.5KW	38	22		83
FSNL-X-20-2	5.5KW	20	40	2"/2"	82
	5.5KW	25	37		82
	5.5KW	30	36	2.5"/2"	82
	5.5KW	36	32		82
	7.5KW	40	30		86
	7.5KW	45	28		86

Model	Power	(m³/h) Flow	(M) Head	Inlet/Outlet	(KG)
FSNL-X-25	4.0KW	5	50	2.5"/1.5"	61
	5.5KW	10	50		82
	5.5KW	15	48		82
	5.5KW	20	45		82
FSNL-X-30	5.5KW	10	60	2.5"/1.5"	83
	5.5KW	15	55		83
	7.5KW	20	50		87
	7.5KW	25	45		87
	7.5KW	30	40		87
FSNL-X-35-1	11KW	10	70	3"/1.5"	152
	11KW	15	65		152
	11KW	20	65		152
	11KW	25	60		152
	11KW	30	60		152
	11KW	35	55		152
	15KW	40	50		165
	15KW	45	50		165
	15KW	50	45		165
FSNL-X-35-2	15KW	20	70	3"/1.5"	165
	15KW	25	70		165
	15KW	30	70		165
	15KW	35	65		165
	15KW	40	65		165
	18.5KW	45	60		174
	18.5KW	50	55		174
FSNL-X-40-1	11KW	45	42	3"/2.5"	148
	11KW	50	42		148
	15KW	60	40		162
	15KW	65	40		162
	15KW	70	38		162
	15KW	80	35		162
	15KW	90	33		162
	18.5KW	100	30		171
	18.5KW	110	28		171
FSNL-X-40-2	15KW	50	50	3"/2.5"	162
	15KW	60	48		162
	18.5KW	70	47		171
	18.5KW	80	46		171
	22KW	85	45		205
	22KW	90	44		205
	22KW	100	43		205
	22KW	110	40		205
	22KW	120	35		205
	30KW	130	30		263
	30KW	140	20		263

Note: The relevant dimensions of the above data diagrams are not regarded as the final basis of the actual object. Flugo reserves the right to update the data without further notice.

FSNL-X SERIES

CENTRIFUGAL PUMP DATA CHART



FSNL-X centrifugal pump with cover (FSNL-X05)

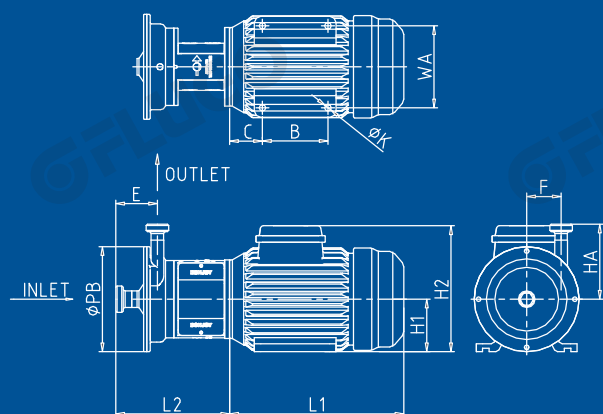
FSNL-X centrifugal pump with cover (FSNL-X10 - FSNL-X40)

Model	Power (KW)	Pump head dimension		Assembly dimension							Inlet / outlet connection											
		Inlet/Outlet	PB	F	LB	H	HB	HC	W	WA	SMS (Thread)				INCH (Clamp)				DIN (Thread)			
											E	LA	HA	L	E	LA	HA	L	E	LA	HA	L
FSNL-X05	0.37~0.55KW	1.5"/0.75"	160	53	240	298	170	94.8	204	112	51	153	109	453	53	153	103	446	51	152	109	453
	0.75~1.1KW	1.5"/0.75"	160	53	240	317	178	94.8	224	125	51	153	109	453	53	153	103	446	51	152	109	453
FSNL-X10	1.1kw	1.5"/1.5"	222	77	240	337	199	94.8	250	125	66	173	150	514	57	166	143	506	66	173	150	514
	1.5~2.2KW	1.5"/1.5"	222	77	240	362	209	94.8	260	140	66	173	150	536	57	166	143	529	66	173	150	541
FSNL-X15	1.5~2.2KW	2"/1.5"	268	100	240	362	209	94.8	260	140	66	173	180	536	57	166	173	529	67	174	180	537
	3KW	2"/1.5"	268	100	300	416	218	94.8	320	160	66	153	180	578	57	146	173	571	67	154	180	579
FSNL-X20-1	3KW	2"/2"	282	101	300	416	218	94.8	320	160	74.5	166	200	584	67	158	193	577	75.5	166.5	201	585
	4KW	2"/2"	282	101	300	421	210	94.8	340	190	74.5	173	200	591	67	165	193	584	75.5	173.5	201	592
	5.5~7.5KW	2"/2"	282	101	330	466	231	94.8	380	216	74.5	206	200	675	67	199	193	688	75.5	207	201	676
FSNL-X20-2	5.5~7.5KW	2.5"/2"	282	101	330	466	231	94.8	380	216	78.5	210	200	679	67	199	193	688	77.5	209	201	678
FSNL-X25	4KW	2.5"/1.5"	328	128	300	421	210	94.8	340	190	72	172	210	591	61	160	203	580	71	170	210	590
	5.5~7.5KW	2.5"/1.5"	328	128	330	466	231	94.8	380	216	72	206	210	685	61	194	203	674	71	204.5	210	684
FSNL-X30	5.5~7.5KW	2.5"/1.5"	328	128	330	466	231	94.8	380	216	72	206	210	685	61	194	203	674	71	204.5	210	684
FSNL-X35-1	11~15KW	3"/1.5"	363	141	450	551	260	94.8	470	254	79.5	234	235	809	67	222	228	797	79.5	233.5	235	809
FSNL-X35-2	15KW	3"/1.5"	363	141	450	551	260	94.8	470	254	79.5	234	235	809	67	222	228	797	79.5	233.5	235	809
	18.5KW	3"/1.5"	363	141	450	551	260	94.8	470	254	79.5	234	235	809	67	222	228	797	79.5	233.5	235	809
FSNL-X40-1	11~15KW	3"/2.5"	335	120	450	551	260	94.8	470	254	89.5	246	239	820	78	234	228	809	88.5	244.5	238	819
	18.5KW	3"/2.5"	335	120	450	551	260	94.8	470	254	89.5	246	239	820	78	234	228	809	88.5	244.5	238	819
FSNL-X40-2	22KW	3"/2.5"	335	120	515	583	281	94.8	510	279	89.5	241	239	916	78	229	228	904	88.5	239.5	238	915
	30KW	3"/2.5"	335	120	580	655	301	94.8	580	318	89.5	252	239	962	78	240	228	950	88.5	250.5	238	961

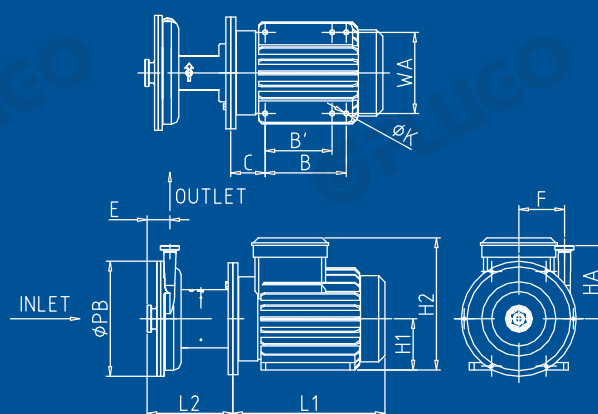
Note: The relevant dimensions of the above data diagrams are not regarded as the final basis of the actual object, Flugo reserves the right to update the data without further notice.

FSNL-X SERIES

CENTRIFUGAL PUMP DATA CHART WITHOUT COVER



FSNL-X centrifugal pump without cover (FSNL-X05)

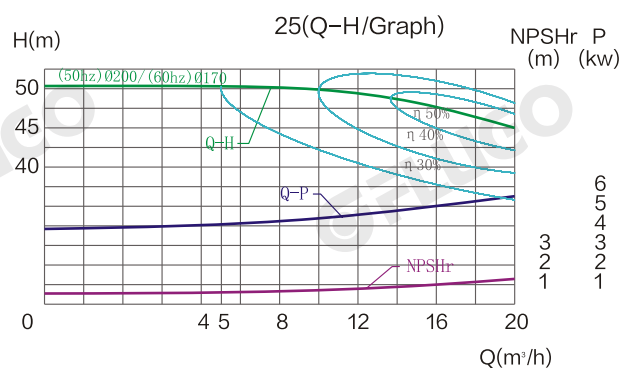
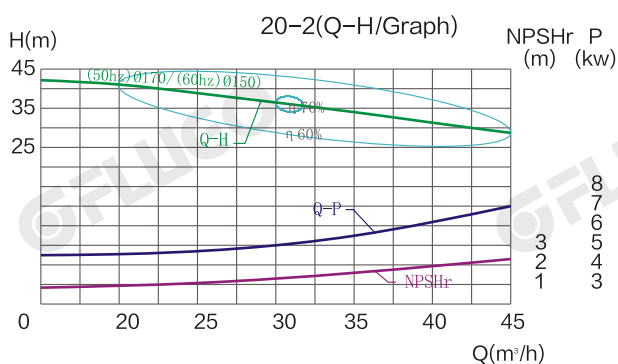
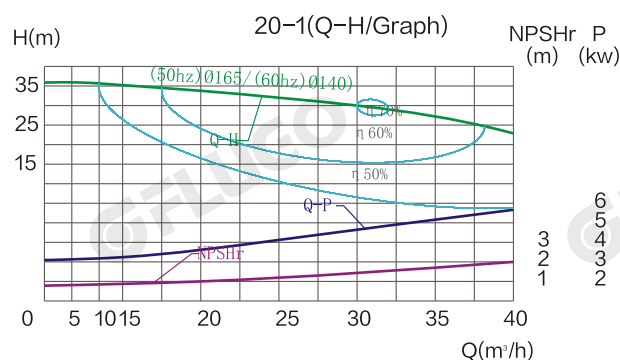
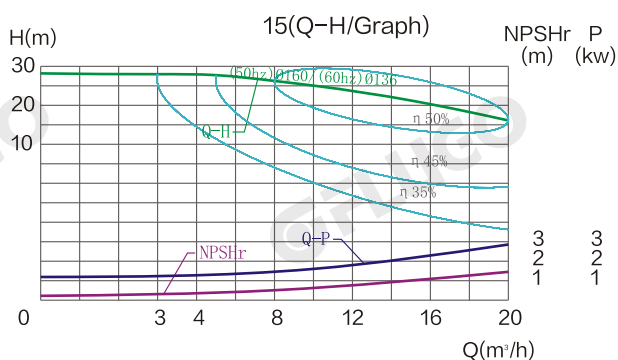
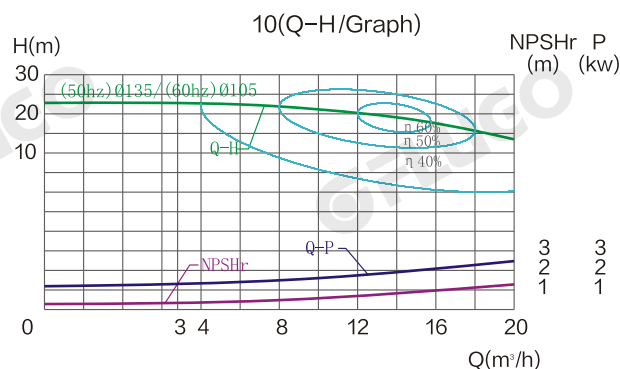
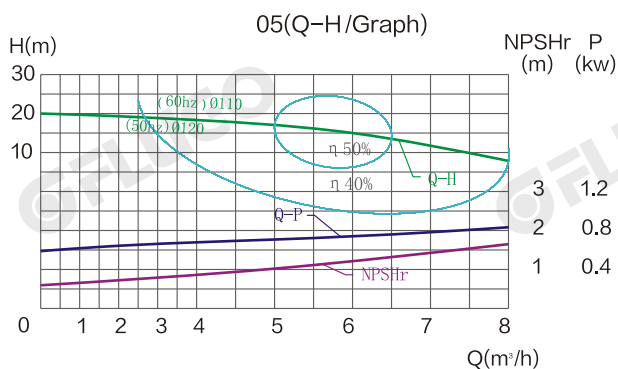


FSNL-X centrifugal pump without cover (FSNL-X10-FSNL-X40)

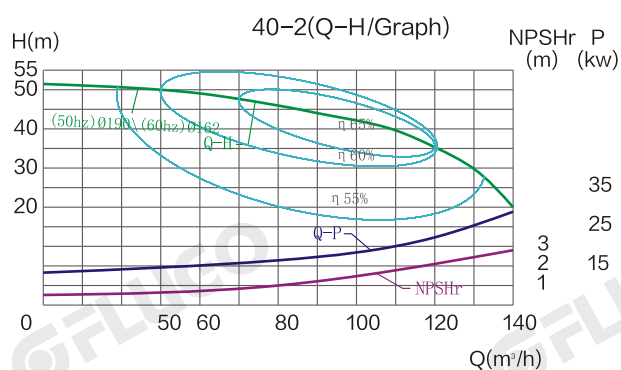
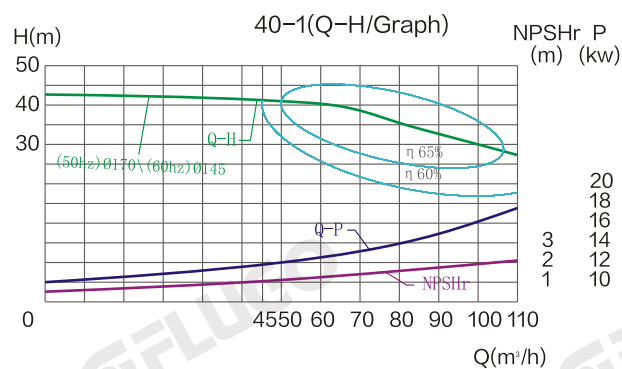
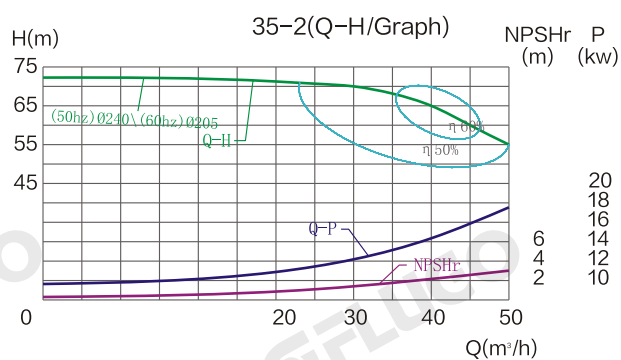
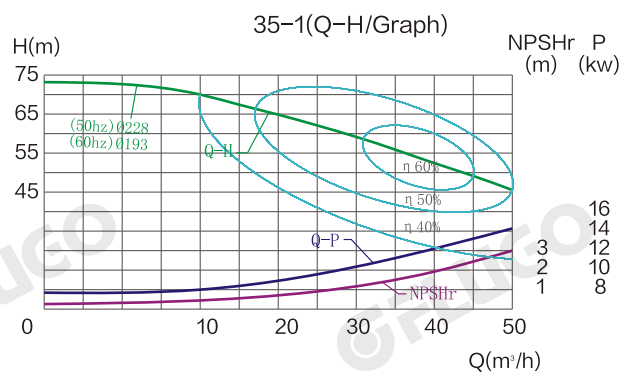
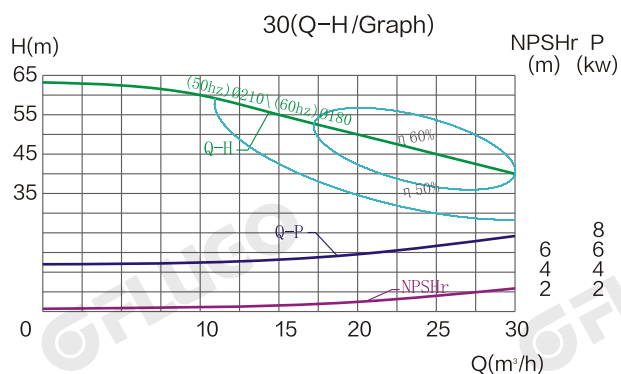
Model	Power (kW)	Pump head dimension		Assembly dimension										Inlet / outlet connection								
		Inlet/Outlet	PB	F	L1	H1	H2	B	B'	C	K	WA	SMS (Thread)			INCH (Clamp)			DIN (Thread)			
													E	L2	HA	E	L2	HA	E	L2	HA	
FSNL-X05	0.37~0.55kW	1.5"/0.75"	160	53	227	71	175	100	\	50	7	125	51	161	109	53	163	93	51	162	109	
	0.75~1.1kW	1.5"/0.75"	160	53	269	80	192	100	\	50	10	125	51	161	109	53	163	93	51	162	109	
FSNL-X10	1.1kw	1.5"/1.5"	222	77	269	80	192	100	\	50	10	125	66	198	150	58	191	143	66	198	150	
	1.5kW	1.5"/1.5"	222	77	285	90	217	100	\	56	10	140	66	198	150	58	191	143	66	198	150	
	2.2kW	1.5"/1.5"	222	77	285	90	217	125	\	56	10	140	66	198	150	58	191	143	66	198	150	
FSNL-X15	1.5kW	2"/1.5"	268	100	285	90	217	100	\	56	10	140	66	195	180	59	188	173	66	195	180	
	2.2kW	2"/1.5"	268	100	301	90	217	125	\	56	10	140	66	195	180	59	188	173	66	195	180	
	3kW	2"/1.5"	268	100	316	100	240	140	\	63	12	160	66	195	180	59	188	173	66	195	180	
FSNL-X20-1	3kW	2"/2"	282	101	316	100	240	140	\	63	12	160	75	207	200	67	200	193	76	208	201	
	4kW	2"/2"	282	101	351	112	252	140	\	70	12	190	75	207	200	67	200	193	76	208	201	
	5.5~7.5kW	2"/2"	282	101	399	132	301	140	\	89	12	216	75	207	200	67	200	193	76	208	201	
FSNL-X20-2	5.5~7.5kW	2.5"/2"	282	101	399	132	301	140	\	89	12	216	79	211	204	67	200	193	78	210	201	
FSNL-X25	4kW	2.5"/1.5"	328	128	399	112	252	140	\	70	12	190	72	207	210	61	196	203	71	206	210	
	5.5~7.5kW	2.5"/1.5"	328	128	399	132	301	140	\	89	12	216	72	207	210	61	196	203	71	206	210	
FSNL-X30	5.5~7.5kW	2.5"/1.5"	328	128	399	132	301	140	\	89	12	216	72	207	210	61	196	203	71	206	210	
FSNL-X35-1	11~15kW	3"/1.5"	363	141	477	160	413	254	210	108	15	254	79.5	276	230	67	265	223	79.5	275	230	
FSNL-X35-2	15kW	3"/1.5"	363	141	477	160	413	254	210	108	15	254	79.5	276	230	67	265	223	79.5	275	230	
	18.5kW	3"/1.5"	363	141	477	160	413	254	210	108	15	254	79.5	276	230	67	265	223	79.5	275	230	
FSNL-X40-1	11~15kW	3"/2.5"	335	120	477	160	413	254	210	108	15	254	90	289	239	78	278	228	90	289	239	
	18.5kW	3"/2.5"	335	120	477	160	413	254	210	108	15	254	90	289	239	78	278	228	90	289	239	
FSNL-X40-2	22kW	3"/2.5"	335	120	573	180	434	279	241	120	15	279	90	289	239	78	278	228	90	289	239	
	30kW	3"/2.5"	335	120	618	200	473	305	267	133	19	318	90	289	239	78	278	228	90	289	239	

FSNL-X SERIES

CENTRIFUGAL PUMP GRAPH



Testing condition: medium water, temperature 20 °C, impeller speed 2900 RPM (This graph also applies to motor 60HZ, impeller speed 3600RPM) Q-Flow rate (m³/h), H-head (meter), P-power (KW), η % pump efficiency



Testing condition: medium water, temperature 20 °C, impeller speed 2900 RPM (This graph also applies to motor 60HZ, impeller speed 3600RPM) Q-Flow rate (m³/h), H-head (meter), P-power (KW), η % pump efficiency



FSNL-X Series - Centrifugal Pump

