



Technical Catalogue



FSNCL-X Series

Centrifugal (Sanitary Motor)

FSNCL-X SERIES

SERIES CENTRIFUGAL PUMP

Solution for high efficiency, low noise, clamp pump head, easy to clean, simple and economical maintenance, high purity



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.

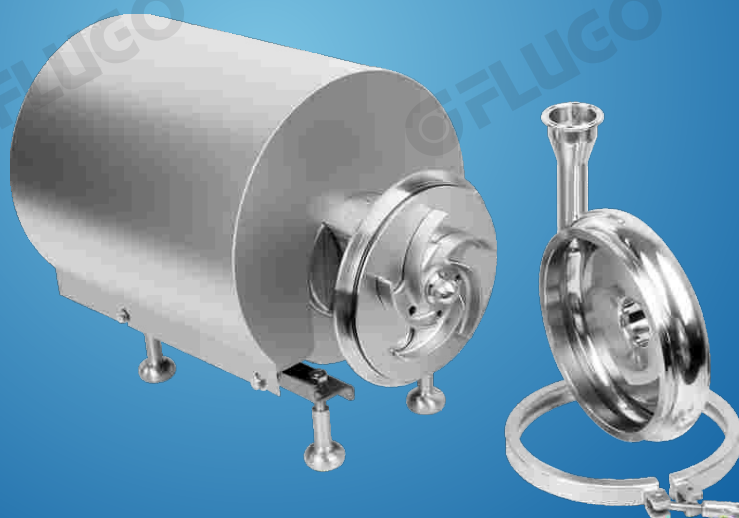
Flugo FSNCL-X series centrifugal pump ,not only optimize the internal structure, such as impeller design、dead angle treatment、mechanical seal pressure balance design and the machine seal is completely in the flushing area ,but also optimize external sanitation of the pump , which makes its internal absolute 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, FSNCL-X series pump, has kept the maximum flexibility of combined applications, for example, the pump outlet angle can be arbitrarily adjusted from 0 ° to 360 °, the pump cover connected with clamp, 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 FSNCL-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

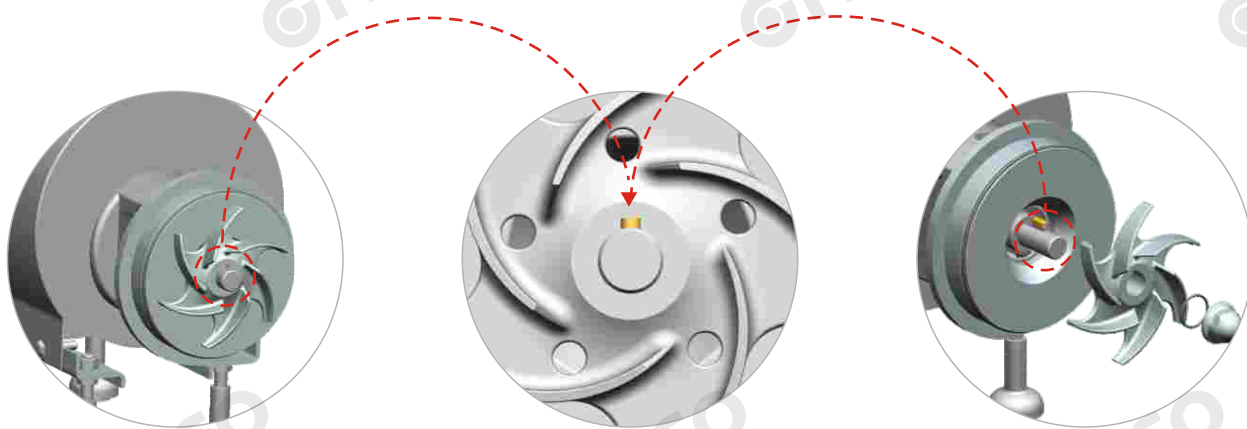
Flow	140m³/h		
Head	70M		
Temperature	From -20℃ to 140℃		
Power	0.37KW-30KW		
Material	304 /316L, 1.4301/1.4404, ASME BPE 316L, 1.4435 BN2 Fe≤0.5%	Dual-phase steel 2205,	Hastelloy alloy C276
Surface treatment	≤ Ra0.8 μm, ≤ Ra0.6 μm, EP≤ Ra0.4 μm		
Mechanical seal	Single mechanical seal double mechanical 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		

FSNCL-X SERIES

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.

FSNCL-X SERIES

CENTRIFUGAL PUMP VARIOUS CONFIGURATIONS



Clamp Inlet/Outlet



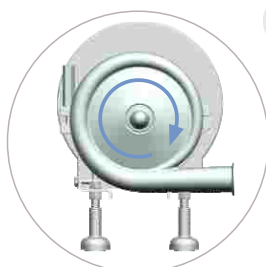
Thread Inlet/Outlet



Union Inlet/Outlet



Aseptic Flange (DIN 11864)
Inlet/Outlet



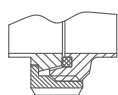
The outlet can be adjusted to any angle $-0-360^{\circ}$



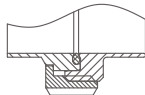
Pump Inlet/outlet Connection Standard

Connection: Thread, Clamp, Flange, Aseptic flange, KF etc.

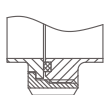
Standard: DIN SMS ISO IDF RJT ASME BPE 3A I-line.



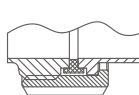
DIN11851



DIN11864-1-A



SMS



ISO/IDF



RJT



DIN11864-2



Flange



DIN11864-3



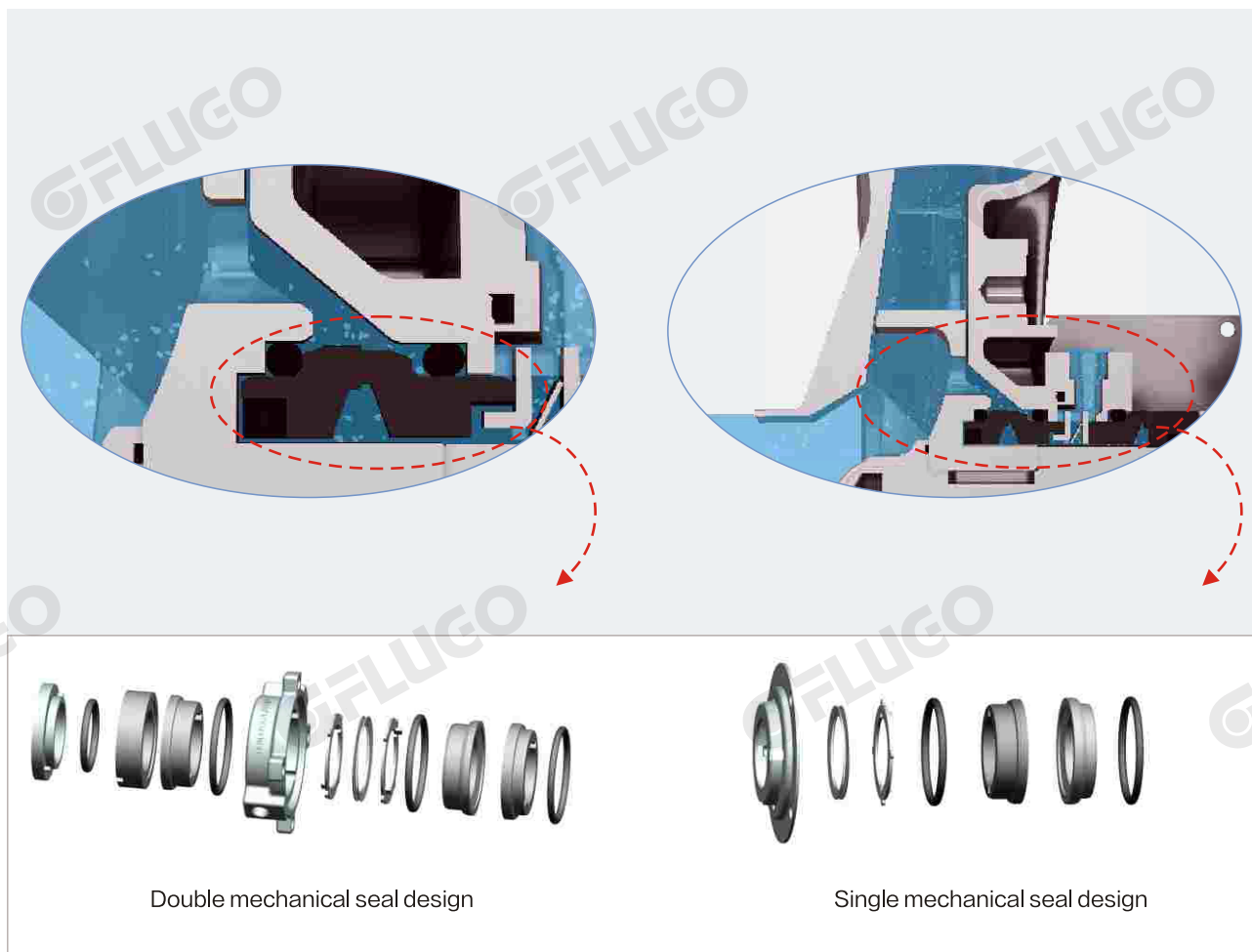
DIN32676
ISO2852



ISO2861

FSNCL-X SERIES

CENTRIFUGAL PUMP MECHANICAL SEAL DESIGN



Mechanical Seal Features

Flugo FSNCL-X 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	Optional
3)SIC/C/HNBR	
4)SIC/SIC/EPDM	
5)SIC/SIC/FKM	
6)SIC/SIC/HNBR	
7)TC/TC/EPDM	
8)TC/TC/FKM	Optional
9)TC/TC/HNBR	

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

FSNCL-X SERIES

CENTRIFUGAL PUMP MECHANICAL SEAL DESIGN



The FSNCL-X series is equipped with a clamp-type pump head connection, which is very flexible for disassembly, repair, pipe connection and various application combinations.

FSNCL-X SERIES

CENTRIFUGAL PUMP MODEL INSTRUCTION



FSNCL-X	10	6T	22	1.5KW	380V	50HZ	M	1.5/1.5	S
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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: FSNCL-X

For example:
FSNCL-X-10-6T-22-1.5KW-380V-50HZ-M-1.5"/1.5"-S

FSNCL-X SERIES

CENTRIFUGAL PUMP SELECTION TABLE

Selection table

Model	Power	(m³/h) Flow	(M) Head	Inlet/Outlet	(KG)
FSNCL-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
FSNCL-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
FSNCL-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
FSNCL-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
FSNCL-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

FSNCL-X SERIES

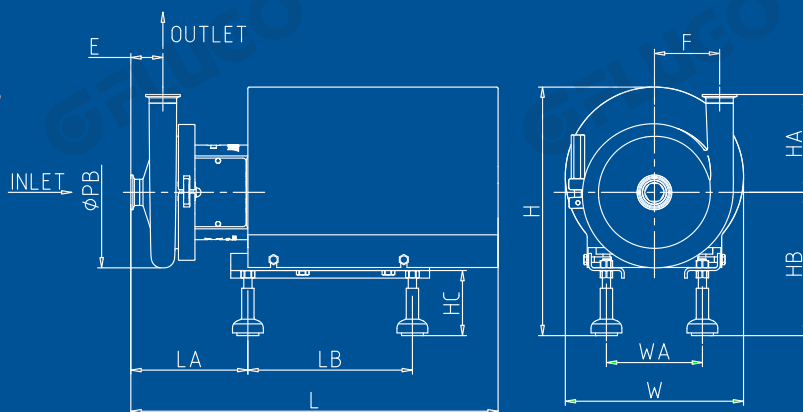
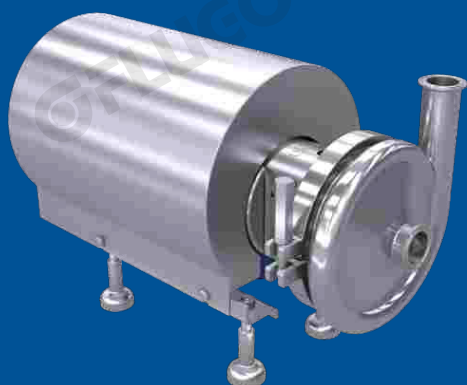
CENTRIFUGAL PUMP SELECTION TABLE

Model	Power	(m ³ /h) Flow	(M) Head	Inlet/Outlet	(KG)
FSNCL-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
FSNCL-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
FSNCL-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
FSNCL-X-35-1	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
FSNCL-X40-1	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
FSNCL-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.

FSNCL-X SERIES

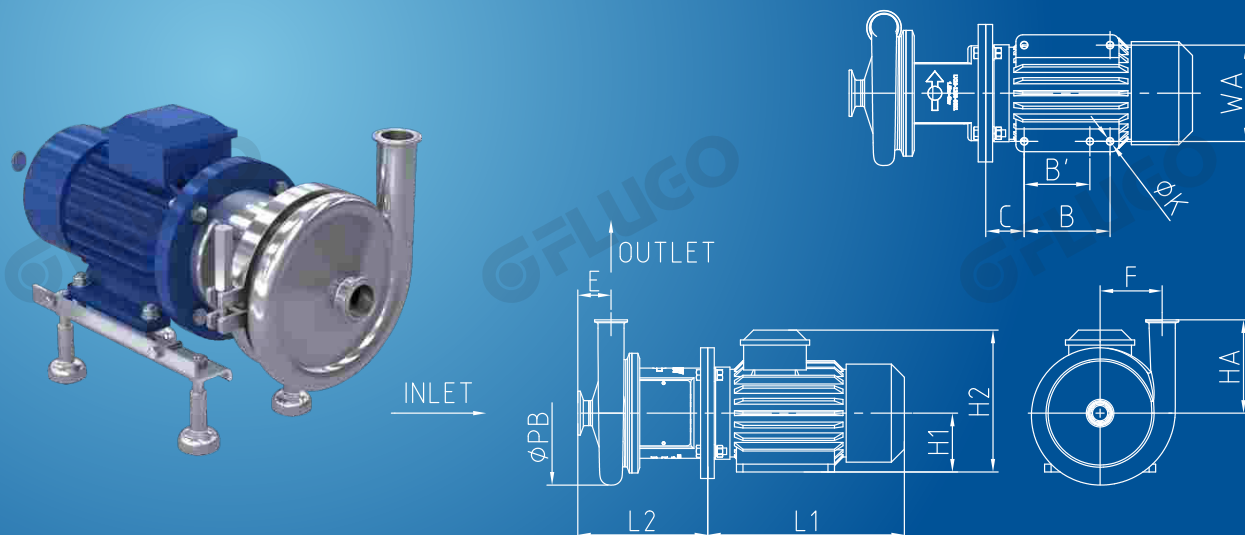
CENTRIFUGAL PUMP DATA CHART



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
FSNCL-X-05	0.37~0.55KW	1.5"/0.75"	169	53	240	298	170	94.8	204	112	42	146	109	448	35	139	103	441	42	146	107	448
	0.75~1.1KW	1.5"/0.75"	169	53	240	317	178	94.8	224	125	42	146	109	448	35	139	103	441	42	146	107	448
FSNCL-X-10	1.1kw	1.5"/1.5"	220	77	240	337	199	94.8	250	125	51	168	150	514	43	160	143	506	51	168	150	514
	1.5~2.2KW	1.5"/1.5"	220	77	240	362	209	94.8	260	140	51	174	150	539	43	156	143	530	51	174	150	439
FSNCL-X-15	1.5~2.2KW	2"/1.5"	265	100	240	362	209	94.8	260	140	45	175	180	540	38	167	173	532	46	176	180	541
	3KW	2"/1.5"	265	100	300	416	218	94.8	320	160	45	157	180	582	38	149	173	574	46	158	180	583
FSNCL-X-20-1	3KW	2"/2"	265	101	300	416	218	94.8	320	160	41.5	151	200	576	34	144	193	569	42.5	152	201	577
	4KW	2"/2"	265	101	300	421	210	94.8	340	190	41.5	158	200	577	34	151	193	570	42.5	159	201	578
FSNCL-X-20-2	5.5~7.5KW	2"/2"	265	101	330	466	231	94.8	380	216	41.5	197	200	676	34	189	193	669	42.5	198	201	677
FSNCL-X-25	5.5~7.5KW	2.5"/2"	265	101	330	466	231	94.8	340	216	45.5	201	200	680	34	189	193	669	44.5	200	201	679
	4KW	2.5"/1.5"	322	128	300	421	210	94.8	340	190	44.5	164	210	583	33	162	203	571	43.5	163	210	582
FSNCL-X-30	5.5~7.5KW	2.5"/1.5"	322	128	330	466	231	94.8	380	216	44.5	198	210	677	33	186	203	666	43.5	197	210	676
	11~15KW	3"/1.5"	363	141	450	551	260	94.8	470	254	49.5	222	235	797	37	211	228	786	49.5	223	235	798
FSNCL-X-35-1	15KW	3"/1.5"	363	141	450	551	260	94.8	470	254	49.5	222	235	797	37	211	228	786	49.5	223	235	798
	18.5KW	3"/1.5"	363	141	450	551	260	94.8	470	254	49.5	227	235	802	37	215	228	791	49.5	228	235	803
FSNCL-X-40-1	11~15KW	3"/2.5"	328	120	450	551	260	94.8	470	254	62	239	239	814	60	227	228	802	62	239	238	814
	18.5KW	3"/2.5"	328	120	450	551	260	94.8	470	254	62	241	239	816	60	229	228	804	62	241	238	816
FSNCL-X-40-2	22KW	3"/2.5"	328	120	515	583	281	94.8	510	279	62	234	239	909	60	222	228	897	62	234	238	909
	30KW	3"/2.5"	328	120	580	655	301	94.8	580	318	62	246	239	956	60	234	228	944	62	246	238	956

FSNCL-X SERIES

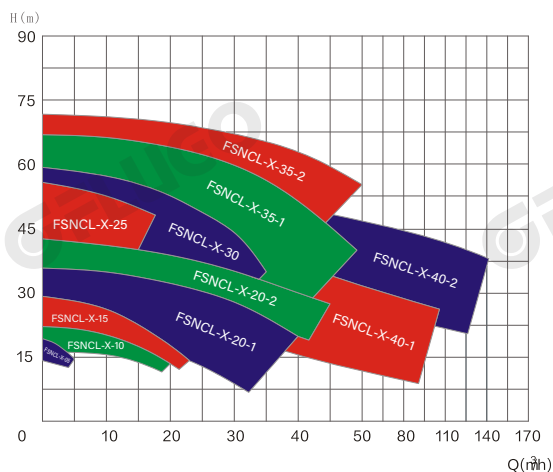
CENTRIFUGAL PUMP DATA CHART(WITHOUT COVER)



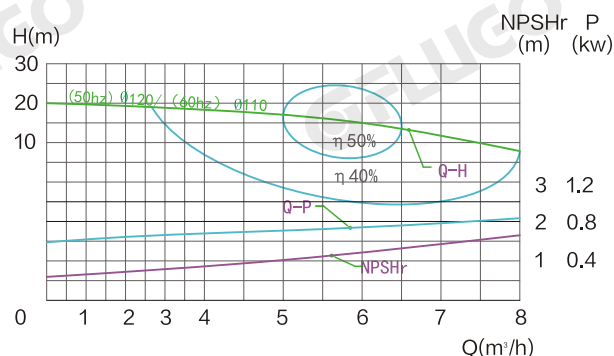
Model	Power (kW)	Pump head dimension		Assembly dimension										Inlet / outlet connection								
		Inlet/Outlet	PB	F	L1	H1	H2	B	B'	C	K	WA	SMS (Thread)			INCH (Clamp)			DIN (Thread)			
													E	L2	HA	E	L2	HA	E	L2	HA	
FSNCL-X05	0.37~0.55KW	1.5"/0.75"	169	75	227	71	175	100	\	50	7	125	42	156	109	35	149	103	42	156	107	
	0.75~1.1KW	1.5"/0.75"	169	75	269	80	192	100	\	50	10	125	42	156	109	35	149	103	42	156	107	
FSNCL-X10	1.1kw	1.5"/1.5"	220	93	269	80	192	100	\	50	10	125	51	198	150	43	190	143	51	198	150	
	1.5KW	1.5"/1.5"	220	93	285	90	217	100	\	56	10	140	51	198	150	43	190	143	51	198	150	
	2.2KW	1.5"/1.5"	220	93	285	90	217	125	\	56	10	140	51	198	150	43	190	143	51	198	150	
FSNCL-X15	1.5KW	2"/1.5"	265	114	285	90	217	100	\	56	10	140	45	199	180	38	191	173	46	200	180	
	2.2KW	2"/1.5"	265	114	301	90	217	125	\	56	10	140	45	199	180	38	191	173	46	200	180	
	3KW	2"/1.5"	265	114	316	100	240	140	\	63	12	160	45	199	180	38	191	173	46	200	180	
FSNCL-X20-1	3KW	2"/2"	265	109	316	100	240	140	\	63	12	160	41.5	193	200	34	186	193	42.5	194	201	
	4KW	2"/2"	265	109	351	112	252	140	\	70	12	190	41.5	193	200	34	186	193	42.5	194	201	
	5.5~7.5KW	2"/2"	265	109	399	132	301	140	\	89	12	216	41.5	193	200	34	186	193	42.5	194	201	
FSNCL-X20-2	5.5~7.5KW	2.5"/2"	265	109	399	132	301	140	\	89	12	216	45.5	197	200	34	186	193	44.5	196	201	
FSNCL-X25	4KW	2.5"/1.5"	322	142	399	112	252	140	\	70	12	190	44.5	199	210	33	187	203	43.5	198	210	
	5.5~7.5KW	2.5"/1.5"	322	142	399	132	301	140	\	89	12	216	44.5	199	210	33	187	203	43.5	198	210	
FSNCL-X30	5.5.7.5KW	2.5"/1.5"	322	142	399	132	301	140	\	89	12	216	44.5	199	210	33	187	203	43.5	198	210	
FSNCL-X35-1	11~15KW	3"/1.5"	363	162	477	160	413	254	210	108	15	254	49.5	267	235	37	254	228	49.5	267	235	
FSNCL-X35-2	15KW	3"/1.5"	363	162	477	160	413	254	210	108	15	254	49.5	267	235	37	254	228	49.5	267	235	
	18-5KW	3"/1.5"	363	162	477	160	413	254	210	108	15	254	49-5	267	235	37	254	228	49-5	267	235	
FSNCL-X40-1 FSNCL-X40-2	11~15KW	3"/2.5"	328	137	477	160	413	254	210	108	15	254	62	282	239	60	270	228	62	282	238	
	18.5KW	3"/2.5"	328	137	477	160	413	254	210	108	15	254	62	282	239	60	270	228	62	282	238	
	22KW	3"/2.5"	328	137	573	180	434	279	241	120	15	279	62	282	239	60	270	228	62	282	238	
	30KW	3"/2.5"	328	137	618	200	473	305	267	133	19	318	62	282	239	60	270	228	62	282	238	

FSNCL-X SERIES

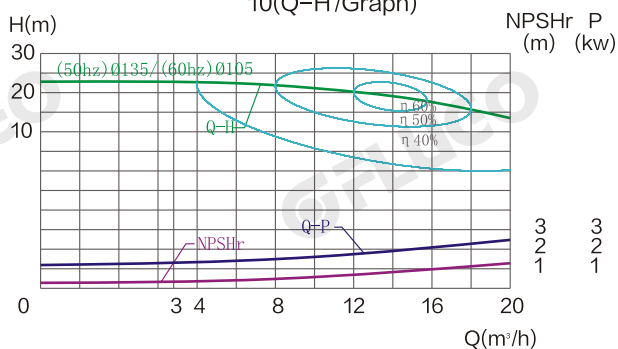
CENTRIFUGAL PUMP GRAPH



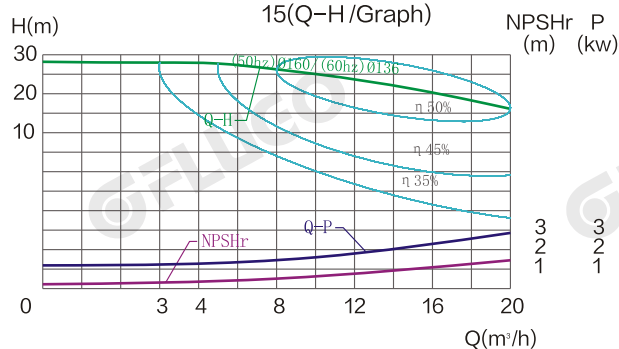
FSNCL-X-05(Q-H/Graph)



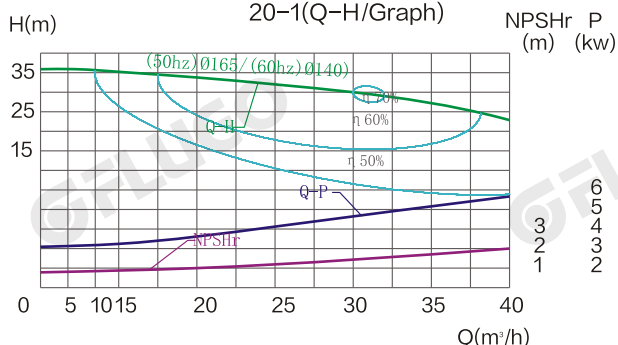
10(Q-H/Graph)



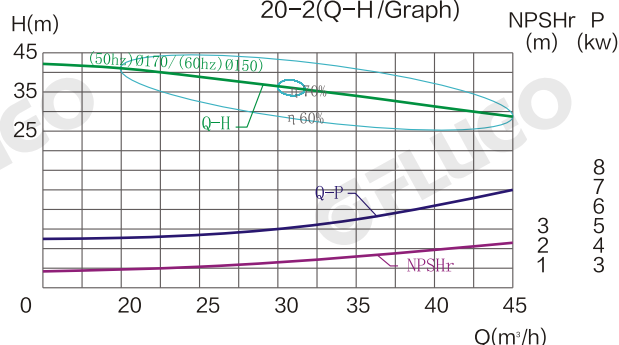
15(Q-H/Graph)



20-1(Q-H/Graph)



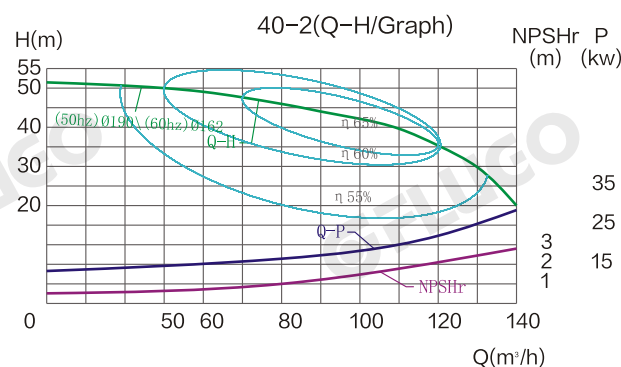
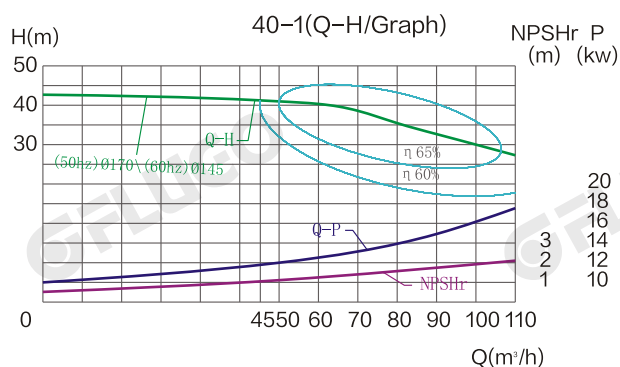
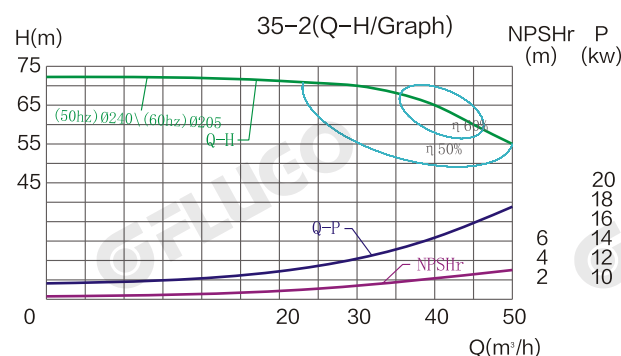
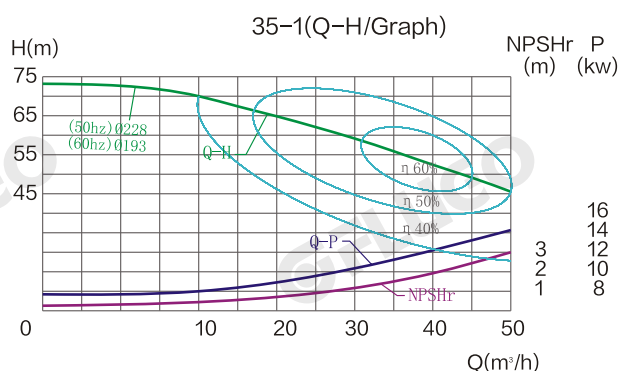
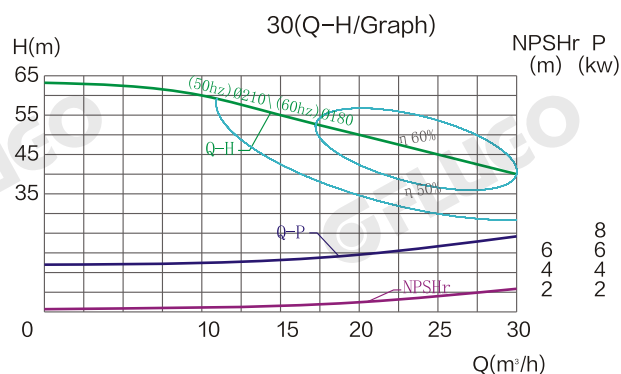
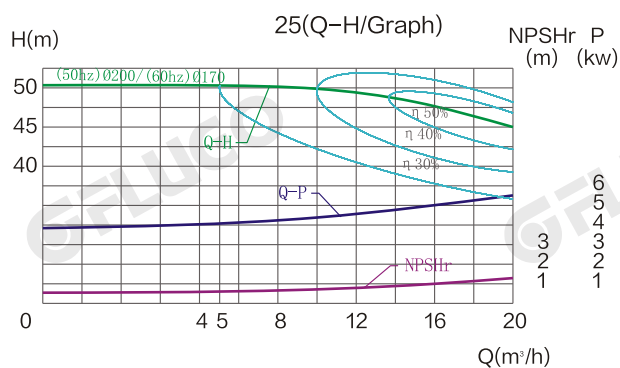
20-2(Q-H/Graph)



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

FSNCL-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



FSNCL-X Series - Centrifugal Pump

