



Technical Catalogue

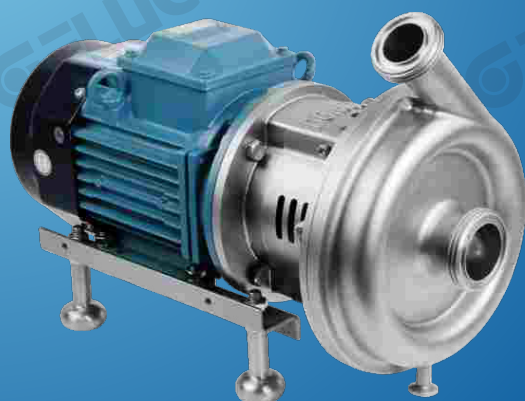


FSNKL-X Series

Centrifugal (Sanitary Motor)

FSNKL-X SERIES

CENTRIFUGAL PUMP



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

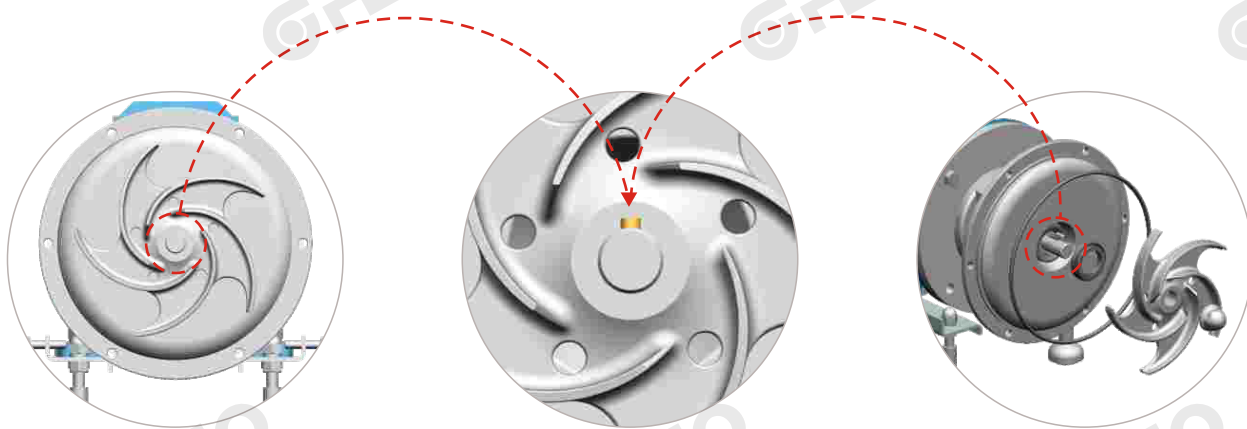
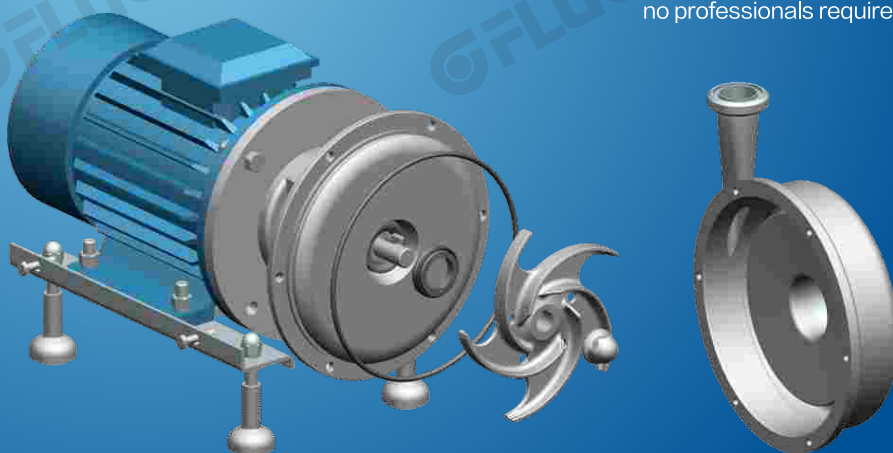


With the change of market demand and the development of technology, we hope to set up new technical standards in the field of high clean pump, for this reason, we have made a series of technology upgrades and optimization with the help of the Fluid science software analysis and our more than 20 years experience in manufacturing and engineering application. Flugo FSNKL-X series Centrifugal pump is upgraded from KS centrifugal pump, not only optimize the internal structure, such as impeller design, dead angle treatment, machine 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, FSNKL-X 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 FSNKL-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		

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.

FSNKL-X SERIES

CENTRIFUGAL PUMP VARIOUS CONFIGURATIONS



Thread connection



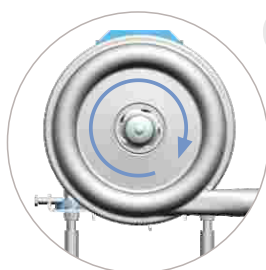
Clamp connection



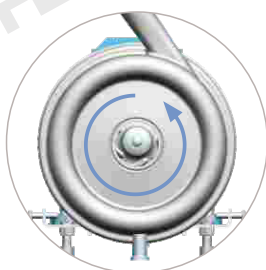
Union nut



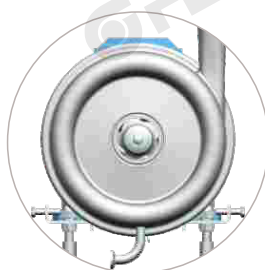
Flange connection inlet / outlet



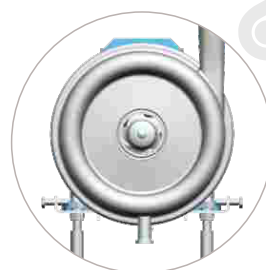
90°0° inclined outlet



90°135° inclined outlet



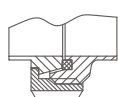
Elbow bottom discharge outlet



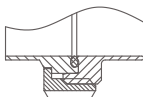
Bottom discharge outlet

Pump Inlet/outlet Connection Standard

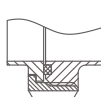
Connection: Thread, Clamp, Flange, Aseptic flange, KF etc.
Standard: DIN SMS ISO IDF RJT ASME BPE 3A I-line



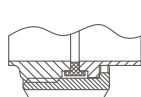
DIN11851



DIN11864-1-A



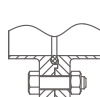
SMS



ISO/IDF



RJT



DIN11864-2



Flange



DIN11864-3



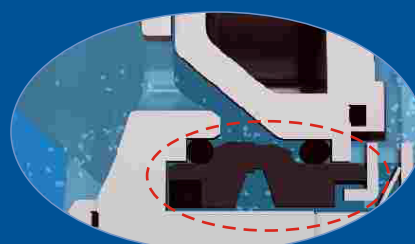
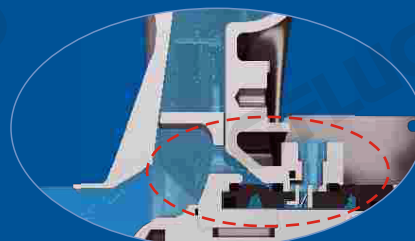
DIN32676
ISO2852



ISO2861

FSNKL-X SERIES

CENTRIFUGAL PUMP MECHANICAL SEAL DESIGN



Double mechanical seal design



Single mechanical seal design

Mechanical Seal Features

Flugo FSNKL-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.

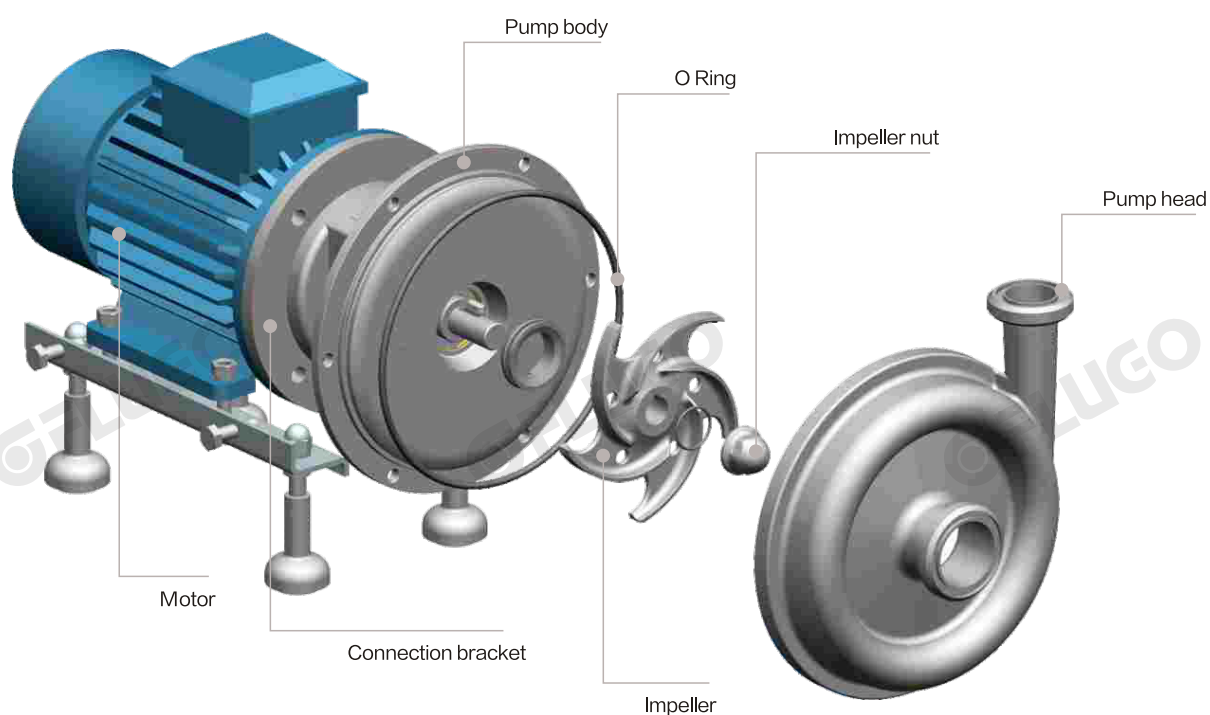
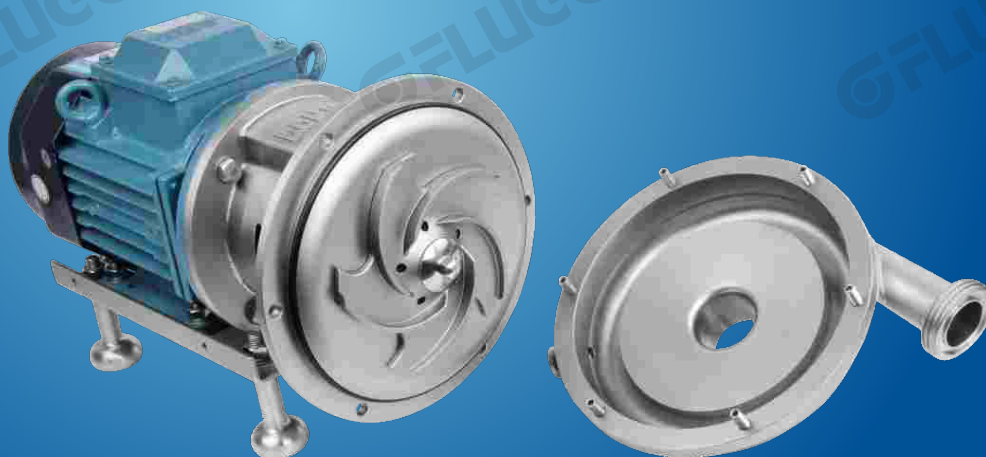
Mechanical Seal Configuration

1)SIC/C/EPDM	Standard
2)SIC/C/FKM	
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

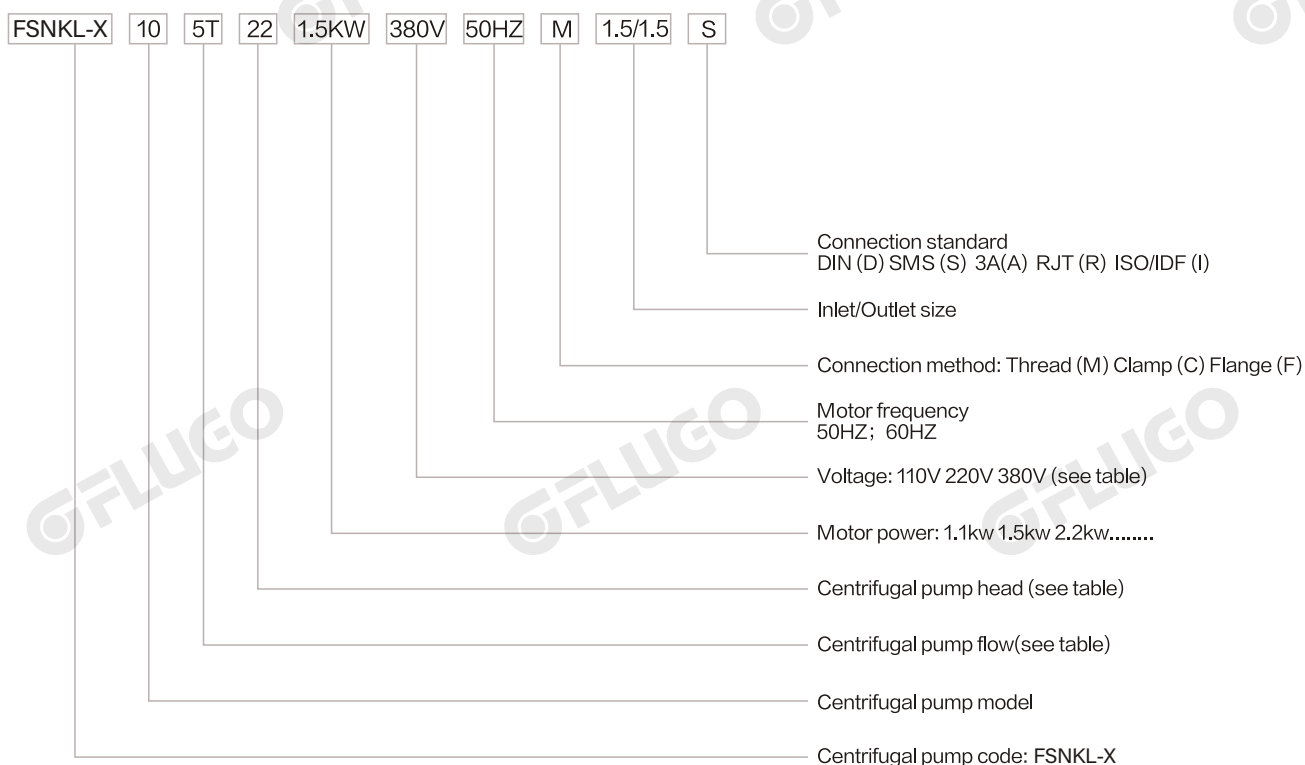
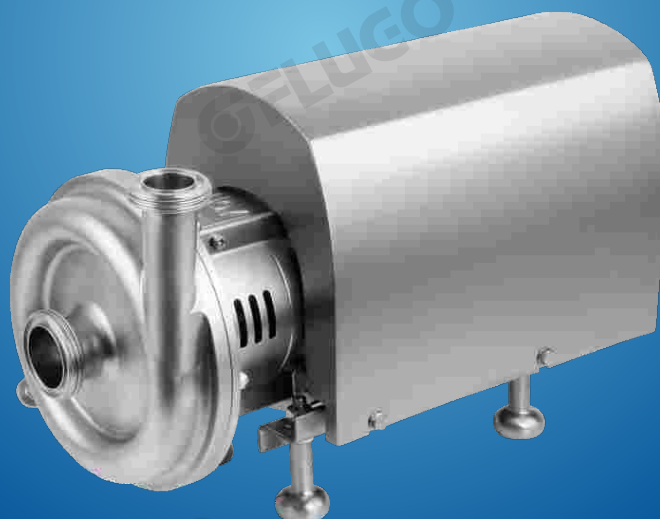
FSNKL-X SERIES

CENTRIFUGAL PUMP



FSNKL-X SERIES

CENTRIFUGAL PUMP MODEL INSTRUCTION



For example:
FSNKL-X-10-5T-22-1.5KW-380V-50HZ-M-1.5"/1.5"-S

FSNKL-X SERIES

CENTRIFUGAL PUMP SELECTION TABLE

Selection table

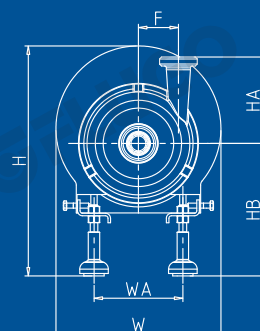
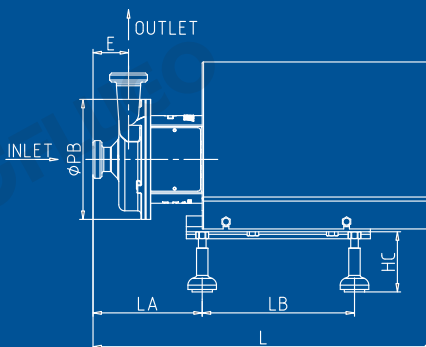
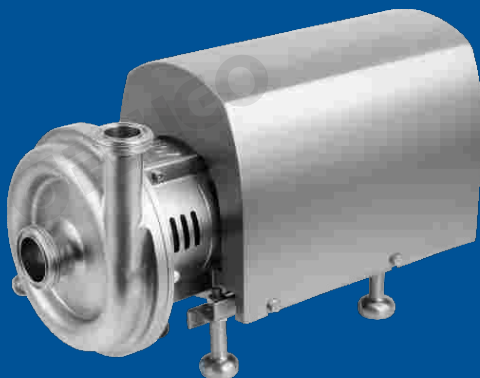
Model	Power	(m³/h) Flow	(M) Head	Inlet/Outlet	(KG)
FSNKL-X-10	1.1KW	3	22	1.5"/1.5"	30
	1.1KW	5	22		30
	1.5KW	3	22		36
	1.5KW	5	22		36
	1.5KW	8	22		36
	1.5KW	9	22		36
	1.5KW	12	20		36
	1.5KW	15	18		36
	2.2KW				40
	2.2KW	18	16		40
FSNKL-X-15	1.5KW	3	28	2"/1.5"	39
	1.5KW	5	28		39
	1.5KW	8	26		39
	2.2KW				42
	2.2KW	10	25		42
	2.2KW	15	22		42
	2.2KW	18	18		42
	3.0KW				54
	2.2KW				42
	3.0KW	20	16		54
FSNKL-X-20-1	2.2KW			2"/2"	47
	3.0KW	5	36		56
	3.0KW				56
	4.0KW	10	36		61
	4.0KW	15	35		61
	4.0KW	20	33		61
	4.0KW				61
	5.5KW	25	30		83
	5.5KW	30	30	2.5"/2"	83
	5.5KW	38	22		83
FSNKL-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)
FSNKL-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
FSNKL-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
FSNKL-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
	15KW	20	70		165
FSNKL-X-35-2	15KW	25	70	3"/1.5"	165
	15KW	30	70		165
	15KW	35	65		165
	15KW	40	65		165
	18.5KW	45	60		174
	18.5KW	50	55		174
	11KW	45	42	3"/2.5"	148
FSNKL-X-40-1	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
	15KW	50	50	3"/2.5"	162
FSNKL-X-40-2	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.

FSNKL-X SERIES

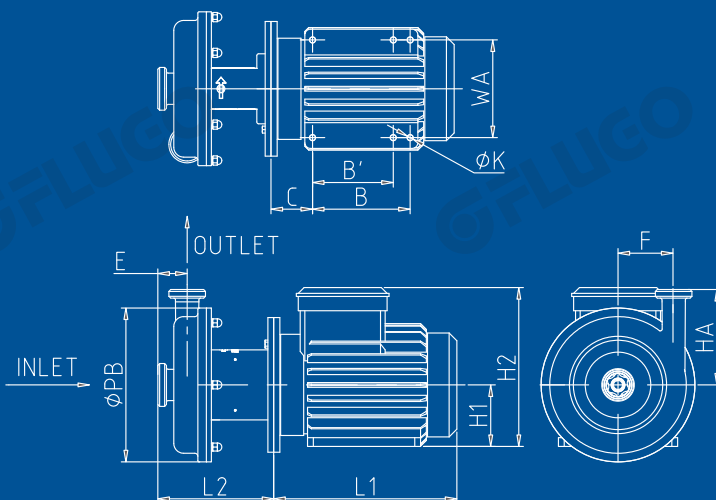
CENTRIFUGAL PUMP DATA CHART



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
FSNKL-X10	1.1KW	1.5"/1.5"	189	63	240	337	199	94.8	250	125	56	171	136	517	49	164	129	510	56	171	136	517
	1.5KW	1.5"/1.5"	189	63	240	359	209	94.8	260	140	56	177	136	542	49	170	129	535	56	177	136	542
	2.2KW	1.5"/1.5"	189	63	240	359	209	94.8	260	140	56	177	136	542	49	170	129	535	56	177	136	542
FSNKL-X15	1.5KW	2"/1.5"	250	95	240	359	209	94.8	260	140	48	178	155	543	41	171	148	536	48	178	155	543
	2.2KW	2"/1.5"	250	95	240	359	209	94.8	260	140	48	178	155	543	41	171	148	536	48	178	155	543
	3KW	2"/1.5"	250	95	300	413	219	94.8	320	140	48	160	155	590	41	153	148	583	48	160	155	590
FSNKL-X20-I FSNKL-X20-II	2.2KW	2"/2"	250	92	240	359	209	94.8	260	140	45	182	170	543	38	175	163	536	45	182	170	543
	3KW	2"/2"	250	92	300	413	219	94.8	320	160	45	164	170	590	38	157	163	583	45	164	170	590
	4KW	2"/2"	250	92	300	422	211	94.8	340	190	45	171	170	590	38	164	163	583	45	171	170	590
	5.5KW	2"/2"	250	92	330	466	231	94.8	380	216	45	207	170	686	38	200	163	679	45	207	170	686
	7.5KW	2"/2"	250	92	330	466	231	94.8	380	216	45	207	170	686	38	200	163	679	45	207	170	686
FSNKL-X25	4KW	2.5"/1.5"	328	127.5	300	422	211	94.8	340	190	60	179	190	598	49	168	183	587	61	180	190	599
	5.5KW	2.5"/1.5"	328	127.5	330	466	231	94.8	380	216	60	213	190	693	49	202	183	682	61	214	190	694
FSNKL-X30	5.5KW	2.5"/1.5"	328	127.5	330	466	231	94.8	380	216	60	213	190	693	49	202	183	682	61	214	190	694
	7.5KW	2.5"/1.5"	328	127.5	330	466	231	94.8	380	216	60	213	190	693	49	202	183	682	61	214	190	694
FSNKL-X35-I	11KW	3"/1.5"	365	131	450	551	260	94.8	470	254	76	255	229	830	65	244	222	819	81	260	229	835
	15KW	3"/1.5"	365	131	450	551	260	94.8	470	254	76	255	229	830	65	244	222	819	81	260	229	835
FSNKL-X35-II	15KW	3"/1.5"	365	131	450	551	260	94.8	470	254	76	255	229	830	65	244	222	819	81	260	229	835
	18.5KW	3"/1.5"	365	131	450	551	260	94.8	470	254	76	255	229	830	65	244	222	819	81	260	229	835
FSNKL-X40-I FSNKL-X40-II	11KW	3"/2.5"	335	105	450	551	260	94.8	470	254	73.5	255	214	830	61	242.5	202	817.5	78.5	260	215	835
	15KW	3"/2.5"	335	105	450	551	260	94.8	470	254	73.5	255	214	830	61	242.5	202	817.5	78.5	260	215	835
	18.5KW	3"/2.5"	335	105	450	551	260	94.8	470	254	73.5	255	214	830	61	242.5	202	817.5	78.5	260	215	835
	22KW	3"/2.5"	335	105	515	583	281	94.8	510	279	73.5	250	214	925	61	237.5	202	912.5	78.5	255	215	930
	30KW	3"/2.5"	335	105	515	655	301	94.8	580	318	73.5	261	214	971	61	248.5	202	958.5	78.5	266	215	976

FSNKL-X SERIES

CENTRIFUGAL PUMP DATA CHART (WITHOUT COVER)

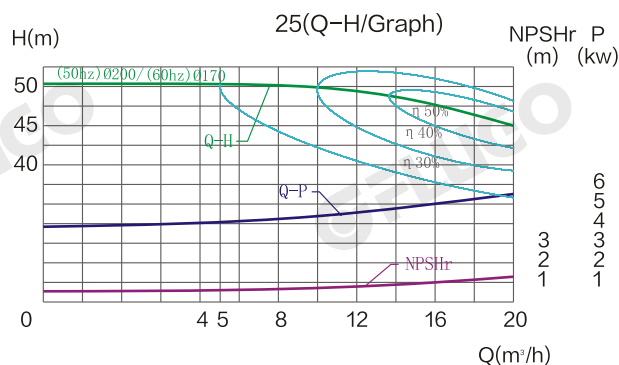
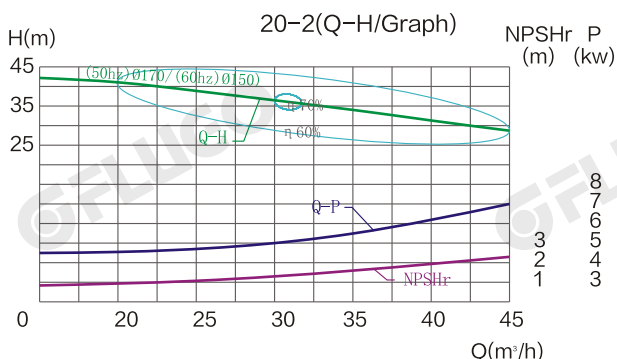
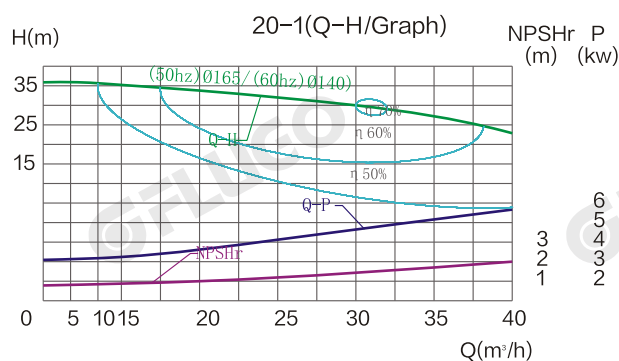
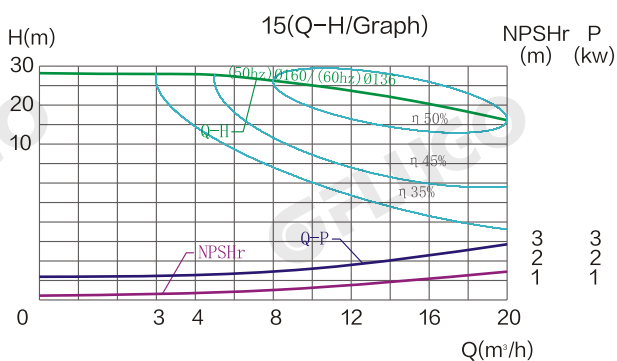
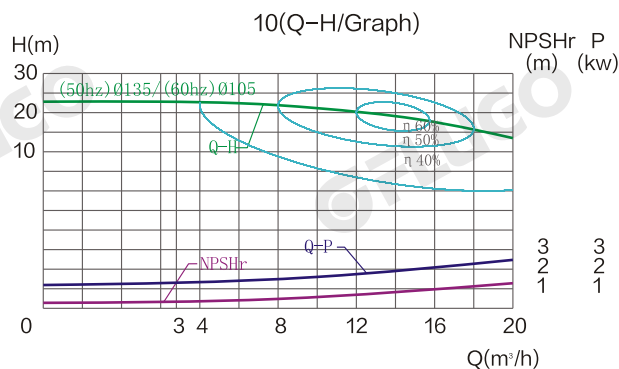
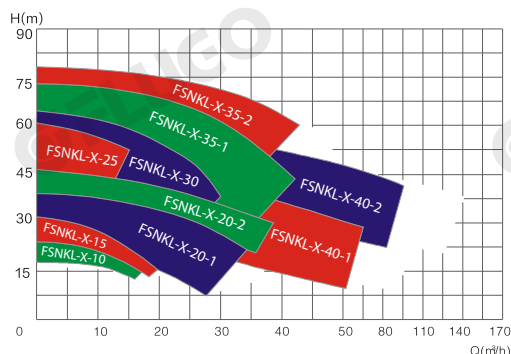


Model	Power (kW)	Pump head dimension		Assembly dimension										Inlet / outlet connection								
		Inlet/Outlet	PB	F	L1	H1	H2	C	B	B'	K	WA	SMS (Thread)			INCH (Clamp)			DIN (Thread)			
													E	L2	HA	E	L2	HA	E	L2	HA	
FSNKL-X10	1.1KW	1.5"/1.5"	189	63	269	80	192	50	100	\	10	125	56	186	136	49	193	129	56	186	136	
	1.5KW	1.5"/1.5"	189	63	285	90	217	56	100	\	10	140	56	186	136	49	193	129	56	186	136	
	2.2KW	1.5"/1.5"	189	63	301	90	217	56	125	\	10	140	56	186	136	49	193	129	56	186	136	
FSNKL-X15	1.5KW	2"/1.5"	250	95	285	90	217	56	100	\	10	140	48	188	155	41	195	148	48	188	155	
	2.2KW	2"/1.5"	250	95	301	90	217	56	125	\	10	140	48	188	155	41	195	148	48	188	155	
	3KW	2"/1.5"	250	95	316	100	240	63	140	\	12	140	48	188	155	41	195	148	48	188	155	
FSNKL-X20-I FSNKL-X20-II	2.2KW	2"/2"	250	92	301	90	217	56	125	\	12	140	45	188	170	38	195	163	45	188	170	
	3KW	2"/2"	250	92	316	100	240	63	140	\	12	160	45	191	170	38	198	163	45	191	170	
	4KW	2"/2"	250	92	351	112	252	70	140	\	12	190	45	191	170	38	198	163	45	191	170	
	5.5KW	2"/2"	250	92	399	132	301	89	140	\	12	216	45	191	170	38	198	163	45	191	170	
	7.5KW	2"/2"	250	92	399	132	301	89	178	\	12	216	45	191	170	38	198	163	45	191	170	
FSNKL-X25	4KW	2.5"/1.5"	328	127.5	351	112	252	70	140	\	12	190	60	192	190	49	203	183	61	193	190	
	5.5KW	2.5"/1.5"	328	127.5	399	132	301	89	140	\	12	216	60	192	190	49	203	183	61	193	190	
FSNKL-X30	5.5KW	2.5"/1.5"	328	127.5	399	132	301	89	140	\	12	216	60	192	190	49	203	183	61	193	190	
	7.5KW	2.5"/1.5"	328	127.5	399	132	301	89	178	\	12	216	60	192	190	49	203	183	61	193	190	
FSNKL-X35-I	11KW	3"/1.5"	365	131	477	160	413	108	254	210	14.5	254	76	275	229	65	286	222	81	280	229	
	15KW	3"/1.5"	365	131	477	160	413	108	254	210	14.5	254	76	275	229	65	286	222	81	280	229	
FSNKL-X35-II	15KW	3"/1.5"	365	131	477	160	413	108	254	210	14.5	254	76	275	229	65	286	222	81	280	229	
	18.5KW	3"/1.5"	365	131	477	160	413	108	254	210	14.5	254	76	275	229	65	286	222	81	280	229	
FSNKL-X40-I FSNKL-X40-II	11KW	3"/2.5"	335	105	477	160	413	108	254	210	14.5	254	73.5	273	214	61	286	202	78.5	278	215	
	15KW	3"/2.5"	335	105	477	160	413	108	254	210	14.5	254	73.5	273	214	61	286	202	78.5	278	215	
	18.5KW	3"/2.5"	335	105	477	160	413	108	254	210	14.5	254	73.5	273	214	61	286	202	78.5	278	215	
	22KW	3"/2.5"	335	105	573	180	434	121	279	241	14.5	279	73.5	273	214	61	286	202	78.5	278	215	
	30KW	3"/2.5"	335	105	618	200	473	133	305	267	18.5	318	73.5	273	214	61	286	202	78.5	278	215	

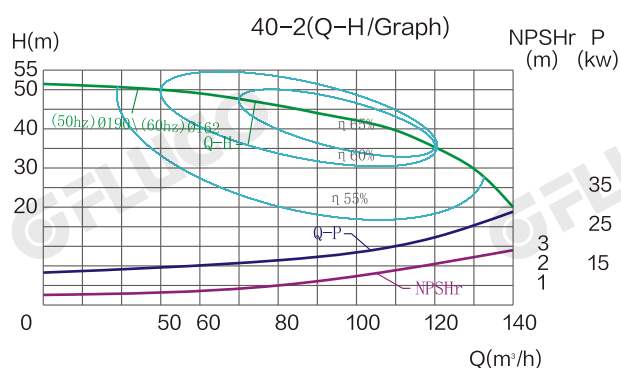
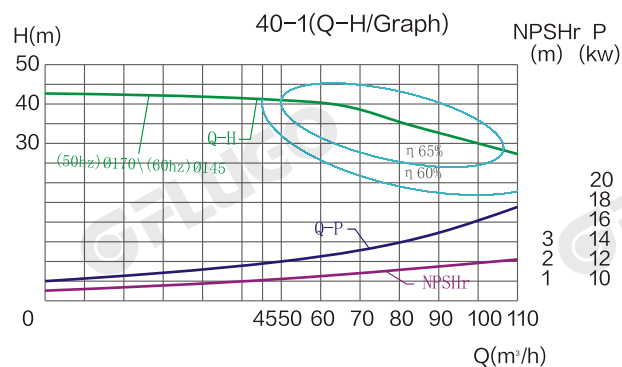
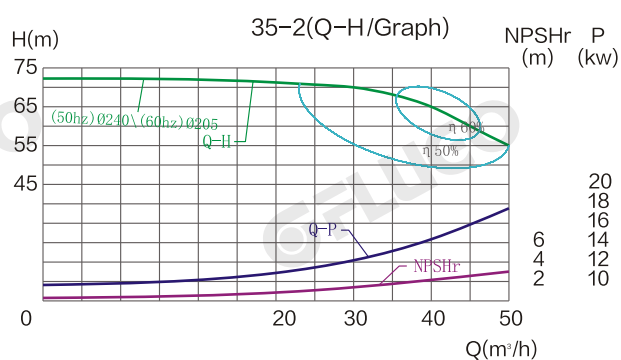
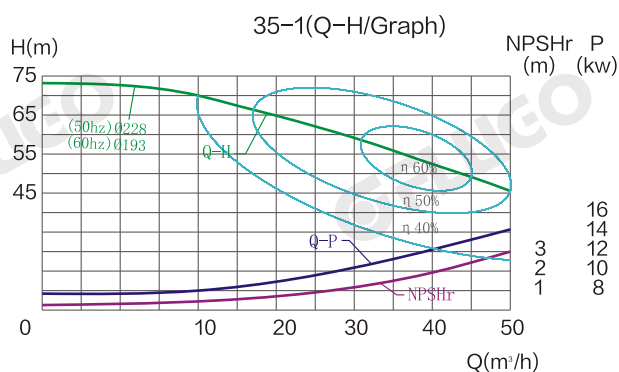
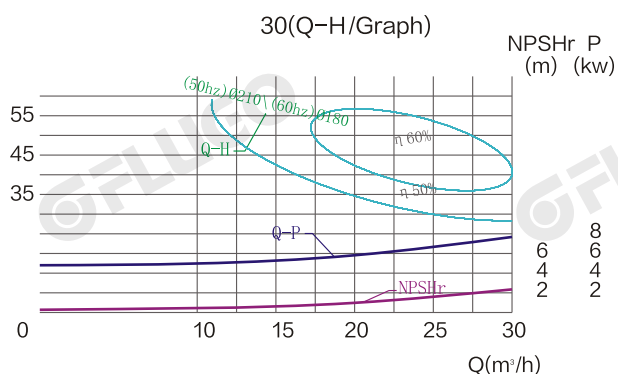
FSNKL-X SERIES

CENTRIFUGAL PUMP GRAPH

FSNKL-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



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FSNKL-X Series - Centrifugal Pump

