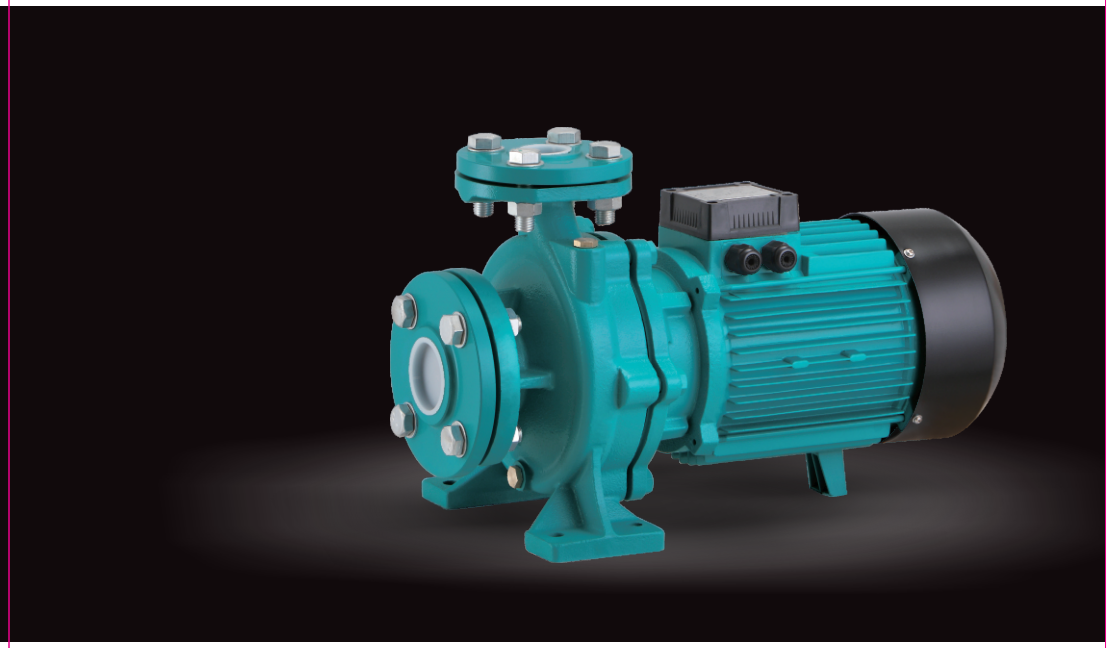
LEO®

3.0 INNOVATION



STANDARD CENTRIFUGAL PUMP

XST

LEO GROUP PUMP(ZHEJIANG) CO.,LTD.

Add: No.1,3rd Street, East Industry Center,317500
Wenling City, Zhejiang P.R.China
Tel: 0086-576-89986360
Fax: 0086-576-89989898
Email:export@leogroup.cn
www.leogroup.cn

CONTENTS

12. Troubleshooting

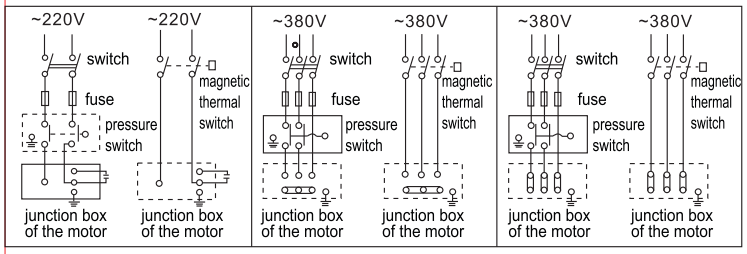
Check the pump after power cut-off.

Symptom	Cause	Corrective Action
The pump does not start	Low voltage; Impeller blocked; Cable broke or one phase disconnected; Stator winding burnout.	Regulate voltage variation between +/-10%; Clean the impeller by removing it; Check out outlet box and replace the cable; Replace the stator winding.
Insufficient liquids pumped	Excessive head; Foot valve clogged or filter screen blocked; Suction pipe leakage; Mechanical seal damage.	Choose appropriate standard pump according to the scope of application; Clean up the float grass; Tighten the adaptor of suction pipe evenly; Replace mechanical seal.
Stator winding burnout	Wrong grounded circuit or phase failure of power; Seal box broken and the coil burns out; Long time of dry operation; Impeller blocked or long-time running; Cable broke and winding exposed to moisture.	Determine the cause. Fix the problems by removing the winding, re-embedding, coating with insulated paint and drying it by heat.

10. Electrical Connections

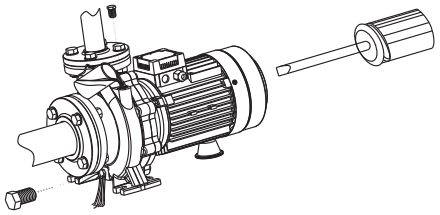
Make sure that there is no voltage at the line wire terminals before connecting.
The electric pump shall be grounded reliably to avoid electric leakage and an earth leakage circuit breaker shall be equipped.

The electrical connection shall be carried out according to the local regulations. Check that the pump operates within the specified range on the nameplate. Connect up the pump (making sure that there is an efficient grounding circuit) according to the diagram on the nameplate on the motor.
The correct direction of rotation for three-phase motors is clockwise, looking at the pump from the motor fan side. If this is not the case, invert two of the phases.



11. Startup and Maintenance

Do not operate the pump unless the pump chamber is fully filled with clean water. Dry operation of the pump will cause damage to the mechanical seal.
Do not touch the electric pump unless the power of pump is cut off for over 5 minutes.
Do not remove the pump bonnet unless the water in pump chamber is completely drained.



Rotate the fan with a screwdriver to check if the pump rotates flexibly before startup. Remove the filling plug and prime the pump chamber fully with clean water, then tighten the filling plug. Keep the valve narrow opened during startup. When the pump runs normally, adjust the valve to the required flow.
When not using the pump and the ambient temperature is below 4℃ , empty the pump completely for frost and freeze protection. The priming procedure must be repeated to restart the pump.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Attention!
If the appliance or the supply cord is damaged, it must be repaired by manufacturer, its service agent or qualified person.

Meaning of crossed –out wheeled dustbin:
Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
Contact you local government for information regarding the collection systems available.

Before installing and using the pump, read the following instructions carefully. The manufacturer declines all responsibility in case of accident or damage due to negligence or lack of observance of the instructions described in this booklet or in conditions that differ from those indicated on the nameplate; it also declines all responsibility for damage caused by improper use of the pump.

1. Applications

1). XST standard pumps are qualified to handle clean water or liquids similar to water in physical and chemical properties. The PH value of the transmission liquids shall be between 6.5 and 8.5.

2). It is widely used for farm irrigation and drainage in factories, mines, schools, hospitals, hotels and cities. It can also be used as circulation pump for central air-conditioning and central heating system. With impeller of welding stainless steel or casting copper, it can be used as pumps for fire fighting system and spraying system.

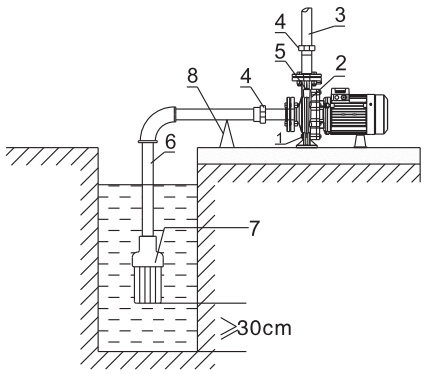
2. Model Description

XST m 32 – 200 I / 40

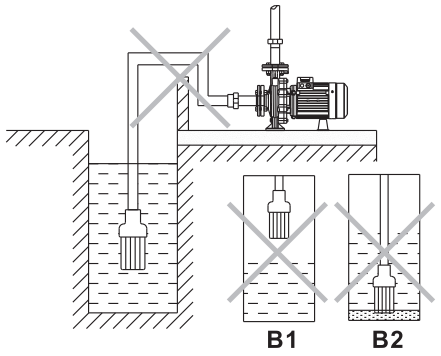
- Rated Power (1/10 kW)
- Extented Model
- Impeller Nominal Diameter (mm)
- Outlet Diameter (mm)
- Single Phase (m is omitted for three-phase)
- Standard Centrifugal Pump

3. Technical Data

Flow rate: 0 - 220 m^3/h
Head: 9 - 99 m
Speed: 2900 rpm
Insulation class: F
Protection class: IP54
Max. operating pressure: 12 bar
Max. ambient temperature: +40℃
Max. liquid temperature: +85℃



Correct Installation Diagram [A]



Incorrect Installation Diagram [B]

A:

1. Discharge plug
2. Electric pump
3. Outlet pipeline
4. Joint
5. Filling plug
6. Inlet pipeline
7. Foot valve
8. Support

Notes for inlet pipeline installation:

1). Do not use soft rubber tube for inlet pipeline during pump installation.
2). The foot valve shall be vertically installed with a distance of at least 30 cm from the water bottom to avoid suction of sediment (A).
3). All connections of the inlet pipeline must be sealed. To ensure water suction, it's necessary to reduce the quantity of bents of the pipelines.
4). The diameter of inlet pipeline must not be less than that of the pump inlet to avoid big hydraulic loss and small water flow.
5). Pay attention to the water level during operation. The foot valve shall not be above the water surface (B).
6). In case the inlet pipeline is more than 10 m in length or over 4 m in hoisting height, the diameter of the inlet pipeline must be greater than that of the pump inlet.
7). The pipelines should be anchored so that no stresses whatsoever is transmitted to the pump.
8). It is recommended to install a filter on inlet pipeline to avoid incoming of solid particles to the electric pump.

Note for outlet pipeline installation:
The diameter of the outlet pipeline shall be not less than that of the pump outlet to reduce the pressure drop, high flow rate and noise to the lowest level.

9. Prior to Use

During installation apply all the safety regulations issued by the competent authorities and dictated by common sense.

1). With the appropriate bolts secure the pump to flat and solid surfaces to avoid vibrations. The resistance of the motor shall be more than 50 MΩ.

2). Before startup, check if the pump turns freely by rotating the fan. Remove the filling plug and fully fill the pump chamber with clean water, then tighten the filling plug.

3). In case the electric pump is far from the power supply, it's necessary to use a thicker cable. Otherwise the pump cannot work properly due to the big voltage drop.

4). Do not use soft rubber tube for inlet pipeline during installation. A foot valve shall be vertically installed with a distance of at least 30 cm from the water bottom to avoid suction of sediment.

5). Pay attention to the water level during operation. The foot valve shall not be above the water surface.

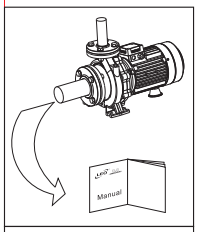
6). If the pump is not be used for a long time, it is advisable to empty it completely, wash it with clean water and store it in a dry, well-ventilated place.

This product shall be installed and maintained by a qualified person who is proficient with this instruction.
The installation and operation must be in accordance with local regulations and the recognized operation criteria.
Install the pipeline properly according to the requirement of this instruction, and protect it from freezing.

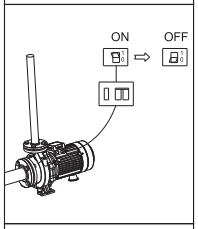
4. Implementation Standards

- 73/23/CEE
- 89/392/CEE
- 89/336/CEE
- Mechanical seal in compliance with DIN 24960
- Inlet and outlet DN in compliance with EN 733 and UNI 7467
- Flanges in compliance with UNI 2236 and DIN 2532

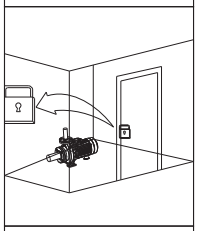
5. Safety Precautions



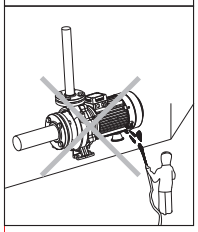
1).Read this instruction carefully before using the pump.



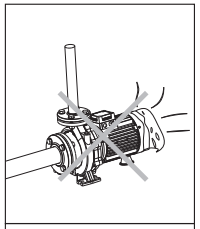
2).To avoid electric shock, make sure that the pump is safely grounded and equipped with an earth leakage circuit breaker. Do not get the plug wet and do not use any socket in an area with high humidity.



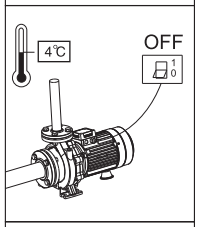
3).Do not touch the electric pump while working; do not wash or swim near the working area or let livestock into the water to avoid accident.



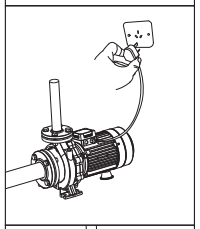
4). Avoid splashing pressured water to the electric pump.



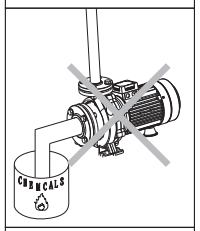
5).Make sure the pump is installed in a well-aired place.



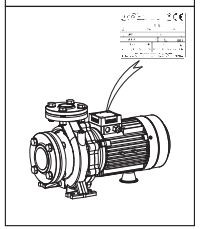
6).Before carrying out checks or doing any maintenance, clear the system by disconnecting the voltage, and then remove the pump plug from the socket.



7). Ensure the pump will not be accidently turned on while installing and maintaining; if not used for a long time, cut off the power first and then turn off valves in inlet and outlet of the pump.



8).The pump must operate with clean water. It is not suitable for pumping inflammable, gasified or explosive liquids.



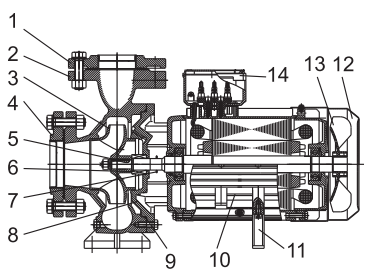
9).The power supply shall be in accordance with the voltage stated on the nameplate.

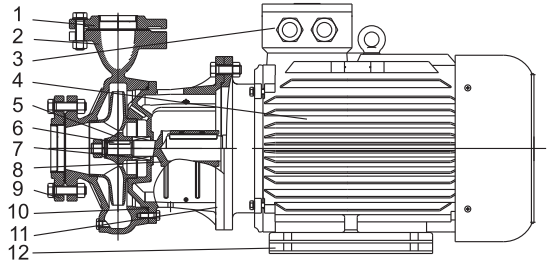
Model	Speed (r/min)	Rated flow (m^3/h)	Rated head (m)	Rated effi (%)	Power (W)	NPSHc (m)
XST50-200/110	2900	60	45	72	11000	2.5
XST50-250/150		50	60	63	15000	
XST50-250/185		55	68	64	18500	
XST50-250/220		60	75	65	22000	
XST65-125/40		62	16	74	4000	4
XST65-125/55		74	19	76	5500	
XST65-125/75		85	23	78	7500	
XST65-160/92		62	30	67	9200	3.5
XST65-160/110		74	33	72	11000	
XST65-160/150		85	38	75	15000	
XST65-200/150		62	44	67	15000	
XST65-200/185		74	50	71	18500	
XST65-200/220		85	54	73	22000	
XST65-200I/185		110	39	75	18500	5
XST65-200I/220		120	44	76	22000	
XST65-200I/300		130	55	77	30000	
XST65-250/220		62	60	62	22000	3
XST65-250/300		74	72	65	30000	
XST65-250/370		85	83	66	37000	
XST80-160/110		130	22.5	79	11000	6
XST80-160/150		145	27	80	15000	
XST80-160/185		160	31	81	18500	
XST80-200/220		130	42	78	22000	5.5
XST80-200/300		160	50	80	30000	
XST80-250/370		130	63	75	37000	5
XST80-250/450		145	70	76	45000	
XST80-250/550		160	82	76	55000	

8. Performance Data

Model	Speed (r/min)	Rated flow (m^3/h)	Rated head (m)	Rated effi (%)	Power (W)	NPSHc (m)
XST32-125/7	2900	12.5	13.5	61	750	2
XSTm32-125/7						
XST32-125/11		17	16	63	1100	
XSTm32-125/11						
XST32-160/15		16	18	58	1500	
XSTm32-160/15						
XST32-160/22		18	22	59	2200	
XSTm32-160/22						
XST32-160/30		20	24	60	3000	
XSTm32-160/30						
XST32-200/30		20	29	53	3000	
XST32-200/40		24	32	54	4000	
XST32-250/55		16	60	50	5500	
XST32-250/75		19	72	52	7500	
XST40-125/11		25	11	69	1100	
XSTm40-125/11						
XST40-125/15		29	12.5	71	1500	
XSTm40-125/15						
XST40-125/22		35	16.5	74	2200	
XSTm40-125/22						
XST40-160/30		29	25	69	3000	
XST40-160/40		35	29	71	4000	
XST40-200/55		29	37	60	5500	
XST40-200/75		35	42	63	7500	
XST40-250/92		28	54	52	9200	
XST40-250/110		31	60	53	11000	
XST40-250/150		35	70	54	15000	
XST50-125/22		50	12	75	2200	3
XSTm50-125/22						
XST50-125/30		55	15	76	3000	
XST50-125/40		60	18	78	4000	
XST50-160/55		50	27	73	5500	2.5
XST50-160/75		60	32.5	76	7500	
XST50-200/92		50	42	70	9200	

6. Product Structure

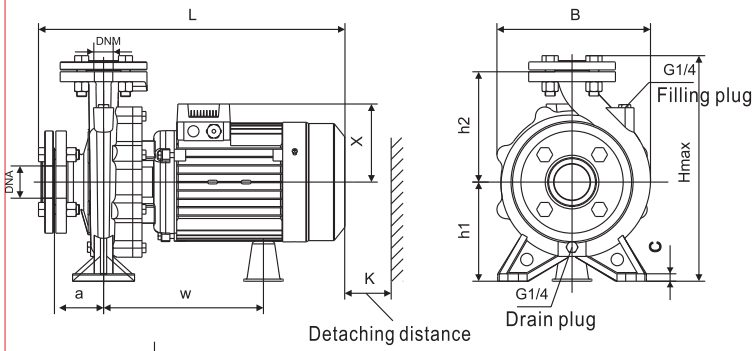


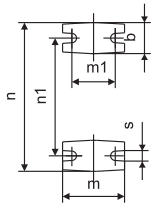


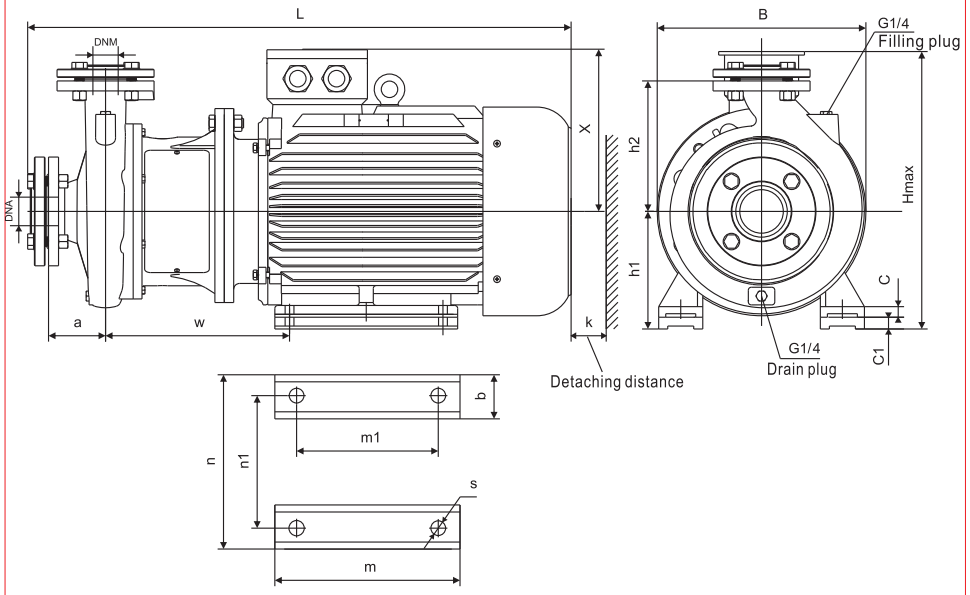
POS.	Part
1	Outlet flange
2	Pump body
3	Impeller
4	Inlet flange
5	Key
6	Mechanical seal
7	Water-proof gland
8	Connecting part
9	O-ring
10	Motor
11	Motor foot
12	Fan cover
13	Fan
14	Terminal box

POS.	Part
1	Outlet flange
2	Pump body
3	Terminal box
4	Motor
5	Impeller
6	Key
7	Mechanical seal
8	Shaft
9	Inlet flange
10	O-ring
11	Connecting part
12	Base

7. Installation







Model	DNM	DNA	a	w	x	h2	b	C	C1	h1	m	m1	n	n1	s	B	Hmax	L	k
XST32-125/7	32	50	80	223	113	140	48	12	—	112	100	70	190	140	15	192	281	427	85
XST32-125/11																			
XST32-160/15				231	122	160	50	16		132			240	190	14	240	320	430	95
XST32-160/22																			
XST32-160/30				266	141													496	
XST32-200/30				258	127	180	48	12					240	190	15	248	369	490	
XST32-200/40																			
XST32-250/55			155	264	180	198	60	15		160			272	212		308	386	610	60
XST32-250/75																		640	
XST40-125/11	40	65	80	255	127	140	45	12	—	112	100	70	210	160	15	218	282	489	95
XST40-125/15																			
XST40-125/22																			
XST40-160/30				238	127	168	48			132			240	190		249	330	494	105
XST40-160/40																			
XST40-200/55			100	259	180	180	50			160			264	212		275	370	553	
XST40-200/75																		583	
XST50-125/22	50	65	100	262	127	160	50	12	—	132	100	70	240	190		243	322	518	110
XST50-125/30																			
XST50-125/40																			
XST50-160/55				262	180	180	52			160			264	212		272	370	556	
XST50-160/75																		586	
XST65-125/40	65	80	100	265	180	180	68	14	—	160	125	95	280	212		283	372	564	
XST65-125/55																			
XST65-125/75																		594	
XST40-250/92	40	65	100	310	260	225	65	20	20	180	260	210	320	254	14.5	350	440	845	110
XST40-250/110																			
XST40-250/150																			
XST50-200/92	50	65	100	310	260	200	65	20	—	160	260	210	320	254		350	420	845	120
XST50-200/110																			
XST50-250/150						225			20	180							440		110
XST50-250/185											304	254						895	
XST50-250/220				323	275		70	25	—		311	241	355	279			455	925	
XST65-160/92	65	80	100	310	260	200	65	20	—	160	260	210	320	254	14.5	350	420	845	125
XST65-160/110																			
XST65-160/150																			
XST65-200/150									20								440		
XST65-200/185											304	254						895	
XST65-200/220				323	275	225	70	22	—	180	311	241	355	279		355	455	925	
XST65-200I/185				337	260		65	20	20		304	254	320	254			440	920	
XST65-200I/220				350	275		70	22	—		311	241	355	279			455	950	
XST65-200I/300				362	305			25			369	305	395	318	16.5		505	1020	
XST65-250/220				353	275	250		22			311	241	355	279	14.5		455	956	
XST65-250/300				365	305			25		200	369	305	395	318	16.5	400	505	1026	
XST65-250/370																			
XST80-160/110	80	100	125	315	260	225	65	20	—	160	260	210	320	254	14.5	350	420	870	130
XST80-160/150																			
XST80-160/185																		926	
XST80-200/220				352	275	250	70	22		180	311	241	355	279		355	461	978	
XST80-200/300				365	305			25		200	369	305	395	318	16.5	400	505	1050	
XST80-250/370						280											508		120
XST80-250/450				381	330		75	28		225	404	311	435	356	18.5	450	555	1098	
XST80-250/550				433	365		80	30	30	280	450	349	490	406	24	550	646	1192	