

**CITY OF LINCOLN
COUNTY OF LANCASTER**

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QUOTATION REQUEST

Quote Prices F.O.B. Destination
Lincoln, Nebraska

Date - 1/25/02
Order No. - 1206 OQ
Date Due - 02/08/02

QUOTATIONS MUST BE RECEIVED IN
THE PURCHASING DIVISION OFFICE BY
THE DUE DATE SPECIFIED ABOVE

PLEASE MAKE NECESSARY VENDOR
INFORMATION CORRECTIONS ON THIS FORM:

VENDOR INFORMATION

Return Quotation Request To:

Purchasing Division
K-Street Complex
440 S 8th St Ste 200
Lincoln NE 68508
Schauer, Larry - Purchase Order

Buyer

Item Number / Description	Quantity	UM	Unit Price	Total Price
7207340 PUMPS, SUMP, SUBMERSIBLE	1	EA		

Flygt Submersible Dry Pit Configured Wastewater Pump
Model NT3127.180 Impeller Code 422 or Equal. See section 6
on the back of this document.

Supplied in accordance with the attached specifications.

VENDOR MUST COMPLETE THE FOLLOWING

The undersigned represents and warrants that he/she has full and complete authority to submit this quotation and to enter into a contract upon acceptance by the City/County. The undersigned agrees to comply with all conditions above and on reverse side of this document.

COMPANY NAME _____

BY (PRINT NAME) _____

ADDRESS _____

SIGNATURE _____

TELEPHONE _____

TITLE _____

EMPLOYER FEDERAL ID NO. OR

DATE _____

SOCIAL SECURITY NUMBER _____

DELIVERY SCHEDULE _____

DAYS ARO

PURCHASING DIVISION
CITY OF LINCOLN AND LANCASTER COUNTY, NEBRASKA
INSTRUCTIONS TO BIDDERS

1. **BIDDING PROCEDURE** - A bid by a corporation must be signed in the name of such organization by a duly authorized official thereof. Any person signing a bid for a firm, corporation, or other organization must show evidence of his authority so to bind such firm, corporation, or organization. Most departments of the City of Lincoln and Lancaster County agencies are exempt from federal excise taxes and state and local sales and use taxes. Kindly bid without taxes. The City/County will be responsible for paying any taxes which may be due.
2. **FAIR EMPLOYMENT PRACTICES** - Each bidder agrees that he/she will not discriminate against any employee or applicant for employment because of age, race, color, religion, ancestry, national origin, disability, sex or marital status, and that he will take affirmative action to assure that applicants are employed and that employees are treated during employment without regard to age, race, color religion, ancestry, national origin, disability, sex or marital status.
3. **DATA PRIVACY** - Bidder agrees to abide by all applicable State and Federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, patents and patent rights. The bidder agrees to hold the City/County harmless from any claims resulting from the bidder's unlawful disclosure or use of private or confidential information.
4. **INDEPENDENT PRICE DETERMINATION** - By signing and submitting this bid, the bidder certifies that: The prices in this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.
5. **CLARIFICATION OF SPECIFICATION DOCUMENTS** - Bidders shall promptly notify the Purchasing Agent of any ambiguity, inconsistency or error which they may discover upon examination of the specification documents. Interpretations, corrections and changes made to the specification documents will be made by written addenda. Oral interpretations or changes to the Specification Documents made in any other manner, will not be binding on the City/County; and bidders shall not rely upon such interpretations or changes. No addendum will be issued later than forty-eight (48) hours prior to the date and time for receipt of bids, except: An addendum withdrawing or postponing the invitation to bid.
6. **BRAND NAMES** - If and wherever in the material specifications or proposal form brand names, make, manufacturer, trade name, or vendor catalog number is specified, it is for the purpose of establishing a grade or quality of material only; and the term "or equal" is deemed to follow. It is the bidder's responsibility to identify any alternate items offered in the bid, and prove to the City/County that said item is equal to or better than the product specified. If variations are not stated in the proposal, it will be assumed that the item being bid fully complies with the City/County's specifications.
7. **DEMONSTRATION/SAMPLES** - If requested, the bidders shall, at bidder's expense, demonstrate and/or furnish samples of the exact item(s) proposed within seven (7) calendar days from receipt of such request from the City/County.
8. **DELIVERY** - Each bidder shall state on his proposal form the date upon which he can make delivery of all equipment or merchandise. F.O.B. to the City/County at the location specified by the City/County, with all transportation charges paid.
9. **WARRANTIES, GUARANTEES AND MAINTENANCE** - A copy of the manufacturer's warranties and/or guarantees for the items being bid must accompany your proposal. A copy of your company's maintenance policies and costs must also accompany your proposal. Replacement parts of defective components shall be shipped to the City/County at no cost. If defective parts are required to be returned to the bidder, the shipping costs shall be borne by the bidder.
10. **ACCEPTANCE OF MATERIAL** - The finished materials must be new, the latest make or model, of the best quality, unless otherwise specified, and the highest grade workmanship. The material delivered under this proposal shall remain the property of the bidder until a physical inspection and actual usage of this material and/or service is made, and thereafter is accepted by the City/County. The material delivered must be fully in accord with specification documents. In the event the material and/or services supplied to the City/County is found to be defective or does not conform to specification documents, the City/County reserve the right to cancel the order upon written notice to the bidder and return materials to bidder at the bidder's expense. Successful bidder shall be required to furnish title to the material, free and clear of all liens and encumbrances, issued in the name of the City of Lincoln or Lancaster County, Nebraska, as required by the contract documents or purchase orders. Selling dealer's advertising decals, stickers or other signs shall not be affixed to the equipment; vehicle mud flaps shall be installed blank side out with no advertisements. Manufacturer's standard production forings, stampings, nameplates and logos are acceptable.
11. **BID EVALUATION AND AWARD** - The signed bid shall be considered an offer on the part of the bidder. Such offer shall be deemed accepted upon issuance by the City/County of purchase orders, contract award notifications, or other contract documents appropriate to the work. No bid shall be modified or withdrawn for a period of sixty (60) calendar days after the time and date established for receiving bids, and each bidder so agrees in submitting the bid. In case of a discrepancy between the unit prices and their extensions, the unit price shall govern. The City/County reserve the right to accept or reject any or all bids, or part of bids, to waive irregularities and technicalities, and to request rebids on the material described in the specification documents.
12. **TERMS OF PAYMENT** - Unless other specification provisions state otherwise, payment in full will be made by the City/County within thirty (30) calendar days after all labor has been performed and all equipment or other merchandise has been delivered, and all such labor and equipment and other materials have met all contract specifications.
13. **LAWS** - The Laws of the State of Nebraska shall govern the rights, obligations, and remedies of the Parties under this proposal and any agreement reached as a result of this process.

**Specifications
For
Dry Pit Submersible Centrifugal Non-Clog Pump
West D Street Wastewater Liftstation**

1.0 General

- 1.1 Supplier shall furnish a heavy duty, electric, dry pit configured, non-clog, submersible wastewater pump as per the requirements and specifications described herein.
- 1.2 Acceptable manufacturer shall be ITT Flygt, Model NT3127.180

2.0 Operating Requirements and Conditions

- 2.1 Submersible pump shall be sized by the manufacturer for a flow rate of approximately 900 GPM @ 24.5 TDH for operation on 230 volts, 3 phase, 60 hertz service.
- 2.2 Supplied pump shall be suitable and capable to pump municipal un-screened wastewater consisting of both organic and inorganic waste such as grit, heavy sludge, fibrous material, and debris normally associated with municipal wastewater treatment.

3.0 Equipment and Performance Specifications

- 3.1 ITT Flygt NT3127.180 manufacturers specifications attached.
- 3.2 Flygt NT3127.180 performance curve attached.
- 3.3 Flygt NT3127 pump outline dimensions attached.
- 3.4 Flygt NT3127 electrical data sheet attached.
- 3.5 Please note any exceptions to these specifications.

4.0 Miscellaneous

- 4.1 5 Year 10,000 hour manufacturers warranty. (See Attached)
- 4.2 Operation and Maintenance Information

- 4.2.1 Three (3) sets of O&M manuals specific to the pump model supplied shall accompany delivery of the equipment.
- 4.2.2 O&M manual information shall consist of general operating instruction, recommended spare parts, recommended maintenance, trouble shooting guides, and exploded part assembly views specific to the pump model supplied.
- 4.2.3 Supplier shall supply a manufacturers pump performance curve specific to the pump model supplied.

5.0 Delivery Information and Contact

- 5.1 Contact Mr. Steve Crisler, telephone number 402-441-7966 or Mr. Steve Schmalken, telephone number 402-441-7029 with any technical questions regarding this request.
- 5.2 Shipping address is as follows: City of Lincoln, Northeast Wastewater Treatment Facility, 7000 North 70th Street, Lincoln, Ne. 68507

ITT FLYGT C/N-3127 SPECIFICATIONS

REQUIREMENTS

Furnish one (1) submersible non-clog wastewater pump(s). Each pump shall be equipped with an 7.4 HP submersible electric motor connected for operation on 230 volts, 3 phase, 60 hertz, 4 wire service, with 50feet of submersible cable (SUBCAB) suitable for submersible pump applications. The power cable shall be sized according to NEC and ICEA standards and have P-MSHA Approval. The pump shall be capable of delivering 900 GPM at 24.5 TDH. Shut off head shall be 50 feet (minimum).

PUMP CONSTRUCTION

Major pump components shall be of grey cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blow holes or other irregularities. All exposed nuts or bolts shall be AISI type 304 stainless steel construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump.

Sealing design shall incorporate **metal-to-metal contact** between machined surfaces. Critical mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit.

Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other devices shall be used.

COOLING SYSTEM

Motors are sufficiently cooled by the surrounding environment or pumped media. A water jacket is not required.

CABLE ENTRY SEAL

The cable entry seal design shall preclude specific torque requirements to insure a watertight and submersible seal. The cable entry shall consist of a single cylindrical elastomer grommet, flanked by washers, all having a close tolerance fit against the cable outside diameter and the entry inside diameter and compressed by the body containing a strain relief function, separate from the function of sealing the cable. The assembly shall provide ease of changing the cable when necessary using the same entry seal. **The cable entry junction chamber and motor shall be separated by a stator lead sealing gland or terminal board, which shall isolate the interior from foreign material gaining access through the pump top. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.**

MOTOR

The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. The stator windings shall be insulated with moisture resistant Class H insulation rated for 180°C (356°F). The stator shall be insulated by the trickle impregnation method using Class H monomer-free polyester resin resulting in a winding fill factor of at least 95%. The stator shall be heat-shrink fitted into the cast iron stator housing. The use of multiple step dip and bake-type stator insulation process is not acceptable. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable. The motor shall be designed for continuous duty handling pumped media of 40°C (104°F) and capable of up to 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of cast aluminum. Thermal switches set to open at 125°C (260°F) shall be embedded in the stator lead coils to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the control panel. The junction chamber containing the terminal board, shall be hermetically sealed from the motor by an elastomer compression seal. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board. The motor and the pump shall be produced by the same manufacturer.

The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15. The motor shall have a voltage tolerance of plus or minus 10%. The motor shall be designed for operation up to 40°C (104°F) ambient and with a temperature rise not to exceed 80°C. A performance chart shall be provided upon request showing curves for torque, current, power factor, input/output kW and efficiency. This chart shall also include data on starting and no-load characteristics.

The power cable shall be sized according to the NEC and ICEA standards and shall be of sufficient length to reach the junction box without the need of any splices. The outer jacket of the cable shall be oil resistant chloroprene rubber. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet.

The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

BEARINGS

The pump shaft shall rotate on two bearings. Motor bearings shall be permanently grease lubricated. The upper bearing shall be a single deep groove ball bearing. The lower bearing shall be a two row angular contact bearing to compensate for axial thrust and radial forces. **Single row lower bearings are not acceptable.**

MECHANICAL SEAL

Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in an lubricant reservoir that hydrodynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating, corrosion resistant **tungsten-carbide** ring.

The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary and one positively driven rotating, corrosion resistant **tungsten-carbide** seal ring. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment nor **depend on direction of rotation for sealing**. The position of both mechanical seals shall depend on the shaft. Mounting of the lower mechanical seal on the impeller hub will not be acceptable. For special applications, other seal face materials shall be available.

The following seal types shall not be considered acceptable nor equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to effect sealing shall be used.

Each pump shall be provided with an lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. **The motor shall be able to operate dry without damage while pumping under load.**

Seal lubricant shall be FDA Approved, nontoxic.

PUMP SHAFT

Pump and motor shaft shall be the same unit. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The shaft shall be AISI type 431 stainless steel.

If a shaft material of lower quality than 431 stainless steel is used, a shaft sleeve of 431 stainless steel is used to protect the shaft material. However, shaft sleeves only protect the shaft around the lower mechanical seal. No protection is provided in the oil housing and above. Therefore, the use of stainless steel sleeves will not be considered equal to stainless steel shafts.

IMPELLER (for N - pumps)

The impeller(s) shall be of gray cast iron, Class 35B, dynamically balanced, semi-open, multi-vane, back-swept, non-clog design. The impeller vane leading edges shall be mechanically self-cleaned upon each rotation as they pass across a spiral groove located on the volute suction which shall keep them clear of debris, maintaining an unobstructed leading edge. The impeller(s) vanes shall have screw-shaped leading edges that are hardened to Rc 45 and shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in waste water. The screw shape of the impeller inlet shall provide an inducing effect for the handling of sludge and rag-laden wastewater. Impellers shall be locked to the shaft and shall be coated with alkyd resin primer.

VOLUTE BOTTOM/INSERT RING (for N - pumps)

The pump volute shall be of A48 Class 35B gray cast iron and shall have (an) integral spiral shaped cast groove(s) at the suction of the volute. The internal volute bottom or insert ring shall provide effective sealing between the pump volute and the multi-vane,

semi-open impeller. The sharp spiral groove(s) shall provide the shearing edge(s) across which each impeller vane leading edge shall cross during its rotation in order to remain unobstructed. The clearance between the internal volute bottom and the impeller leading edges shall be adjustable.

PROTECTION

All stators shall incorporate thermal switches in series to monitor the temperature of each phase winding. The thermal switches shall open at 125°C (260°F), stop the motor and activate an alarm.

A leakage sensor shall be available as an option to detect water in the stator chamber. The Float Leakage Sensor (FLS) is a small float switch used to detect the presence of water in the stator chamber. When activated, the FLS will stop the motor and send an alarm both local and/or remote. **USE OF VOLTAGE SENSITIVE SOLID STATE SENSORS AND TRIP TEMPERATURE ABOVE 125°C (260°F) SHALL NOT BE ALLOWED.**

The thermal switches and FLS shall be connected to a Mini CAS (Control and Status) monitoring unit. The Mini CAS shall be designed to be mounted in any control panel.

Note: FLS not available in CZ/NZ configuration.

MODIFICATIONS

Dry Pit Installations (CT).

Refer to the General Guide Specifications for additional information.

GENERAL GUIDE SPECIFICATION

GENERAL

The general guide specification is intended to cover the items applying to all ITT Flygt pumps for this project. Pump specifications follow the general section. Thus; Quality, Technical Support, Testing, and Experience apply to all ITT Flygt pumps for this project.

SCOPE

The specifications shall govern all work necessary to furnish, install and place into operation the electrical submersible pump(s) required to complete this project. This section includes electric submersible pump(s) to be supplied with motor, close coupled volute, cast iron discharge elbow, guide bar brackets, power cable and accessories. The pumps are available for wet pit (CP), dry pit (CT) and portable (CS) installations.

QUALITY ASSURANCE

The pump(s) shall be heavy duty, electric submersible, centrifugal non-clog units designed for handling raw, unscreened sewage and wastewater and shall be fully guaranteed for this use. The pumps provided shall be capable of operating in an ambient liquid temperature of **104 DEGREES F**. Since the high temperature of **104 DEGREES**

F is specified by the National Electrical Manufacturers Association (NEMA) and Factory Mutual (FM), motors with a maximum ambient temperature rating below **104 DEGREES F** shall not be acceptable.

The pump and motor unit shall be suitable for continuous operation at full nameplate load while the motor is completely submerged, partially submerged or totally non-submerged. The use of shower systems, secondary pumps or cooling fans to cool the motor shall not be acceptable.

The pump, mechanical seals and motor units provided under this specification shall be from the same manufacturer in order to achieve standardization of operation, maintenance, spare parts, manufacturer's service and warranty.

SUBMITTALS

Submittal data shall be provided to show compliance with these specifications, plans or other specifications that will influence the proper operation of the pump(s).

Standard submittal data for approval must consist of:

- a. Pump Performance Curves.
- b. Pump Outline Drawing.
- c. Station Drawing for Accessories.
- d. Electrical Motor Data.
- e. Control Drawing and Data.
- f. Access Frame Drawing.
- g. Typical Installation Guides.
- h. Technical Manuals.
- i. Parts List.
- j. Printed Warranty.
- k. Manufacturer's Equipment Storage Recommendations.
- l. Manufacturer's Standard Recommended Start-Up Report Form.

Lack of the above requested submittal data is cause for rejection.

TESTING

Testing performed upon each pump shall include the following inspections:

- a. Impeller, motor rating and electrical connections shall be checked for compliance with this specification.
- b. Prior to submergence, each pump shall be run dry to establish correct rotation.
- c. Each pump shall be run submerged in water.
- d. Motor and cable insulation shall be tested for moisture content or insulation defects.

Upon request, a written quality assurance record confirming the above testing/inspections shall be supplied with each pump at the time of shipment.

Each pump (when specified) shall be tested in accordance with the latest test code of the Hydraulic Institute (H.I.) at the manufacturer to determine head vs. capacity and kilowatt draw required. Witness tests shall be available at the factory upon request.

The pump(s) shall be rejected if the above requirements are not satisfied.

START-UP SERVICE

The equipment manufacturer shall furnish the services of a qualified factory trained field service engineer for 8-hour working day(s) at the site to inspect the installation and instruct the owner's personnel on the operation and maintenance of the pumping units. After the pumps have been completely installed and wired, the contractor shall have the manufacturer do the following:

- a. Megger stator and power cables.
- b. Check seal lubrication.
- c. Check for proper rotation.
- d. Check power supply voltage.
- e. Measure motor operating load and no load current.
- f. Check level control operation and sequence.

During this initial inspection, the manufacturer's service representative shall review recommended operation and maintenance procedures with the owner's personnel.

FACTORY SERVICE

Factory-Approved service facilities with qualified factory-trained mechanics shall be available for prompt emergency and routine service.

GUARANTEE

See individual market sector **Warranty** policies as presented under **General Information** in this catalog.

The warranty shall be in printed form and previously published as the manufacturer's standard warranty for all similar units manufactured.

EXPERIENCE

The pump manufacturer shall have a minimum of 10,000 heavy-duty submersible wastewater pumps installed and operating for no less than 5 years in the United States.

MANUFACTURERS

- a. The pump, mechanical seals and motor shall be from the same manufacturer.
- b. The pump, mechanical seals and motor manufacturer shall be ITT Flygt.

MODIFICATIONS:

DRY PIT INSTALLATION (CT):

Motor cooling shall be sufficient for continuous operation under full nameplate load

in a dry environment. The pump(s) shall be capable of handling pumped media up to **104 DEGREES F.**

OIL FILLED MOTORS - Since the complete motor requires total oil immersion for adequate heat dissipation, **oil filled motors shall not be considered for dry pit installations.**

DRY TYPE - EXTERNAL FAN COOLED MOTORS - When external fan cooling is required, two **SEPARATE** motors are required one for the pump and one for the fan. This results in higher input power, increased operating costs and possible fan motor failure. A submersible pump is used for dry pit installation because of the high possibility of flooding. If the fan motor is operating when submerged, the down thrust developed will damage the fan motor. A pump motor of about **200 HP** **DEPENDS** on the performance of a **3 HP** fan motor. **Thus, air cooled fans shall not be considered for dry pit installations.**



PERFORMANCE CURVE

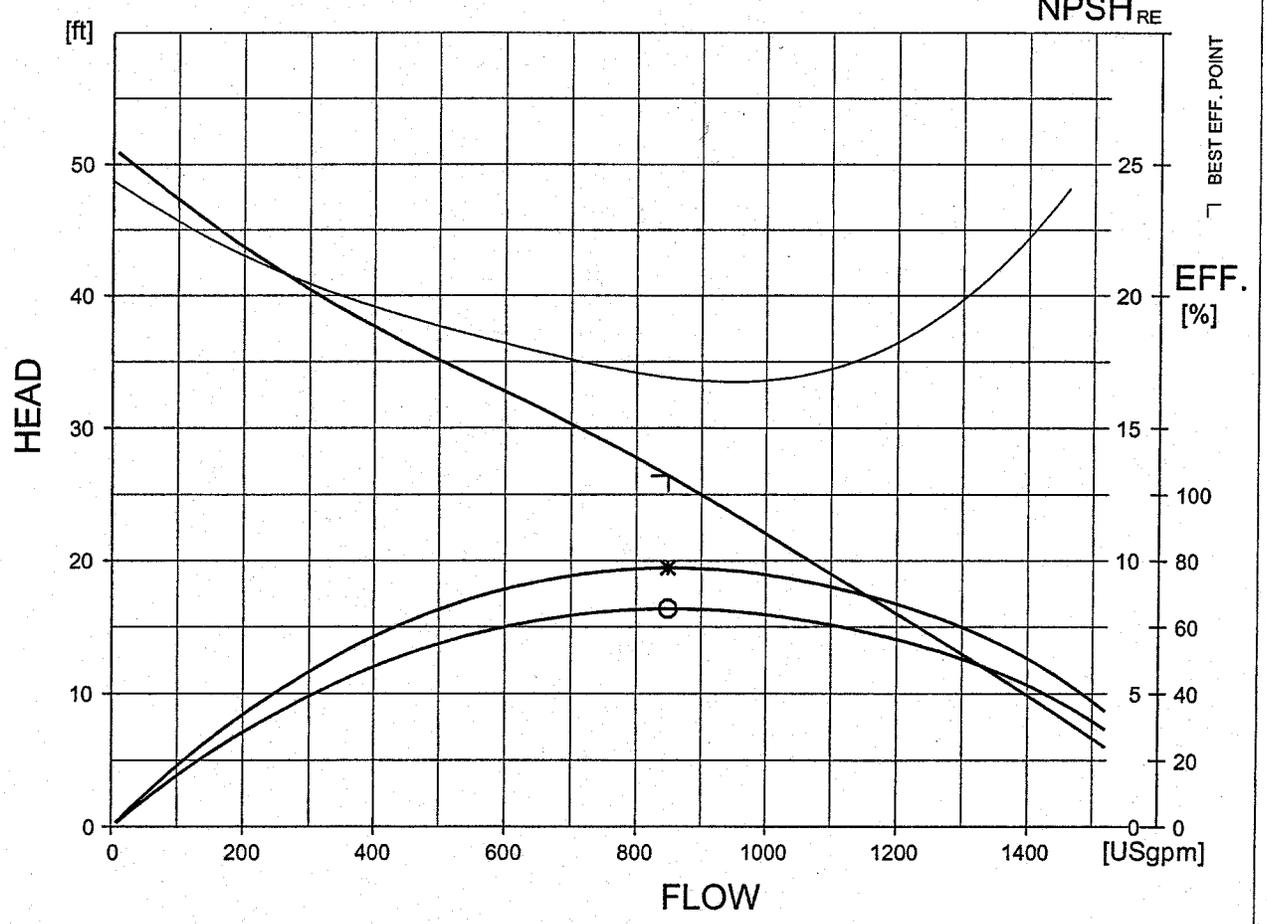
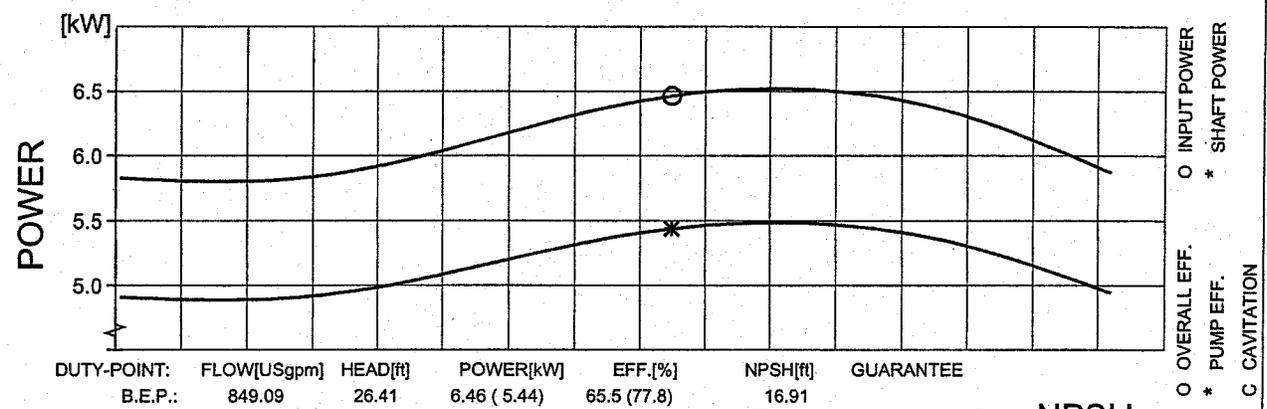
PRODUCT	TYPE
NT3127.180	LT

DATE	PROJECT
1/1/01	

CURVE NO	ISSUE
63-422-00-2210	2

	1/1-LOAD	3/4-LOAD	1/2-LOAD	RATED POWER	5.5	kW
POWER FACTOR	0.83	0.77	0.67	STARTING CURRENT ...	75	A
EFFICIENCY	85.0 %	84.0 %	81.0 %	RATED CURRENT ...	9.8	A
MOTOR DATA	---	---	---	RATED SPEED	1760	rpm
COMMENTS	INLET/OUTLET			TOT.MOM.OF	0.048	kgm2
	150/150 mm			INERTIA ...		
	IMP. THROUGHLET			NO. OF	2	
	---			BLADES		

IMPELLER DIAMETER			
188 mm			
MOTOR #	STATOR	REV	
21-12-4AL	38D	10	
FREQ.	PHASES	VOLTAGE	POLES
60 Hz	3	460 V	4
GEARTYPE		RATIO	
---		---	



FLYPS 2.0 (1118)

Performance with clear water and ambient temp 40 °C



CURVE

CT/NT-3127

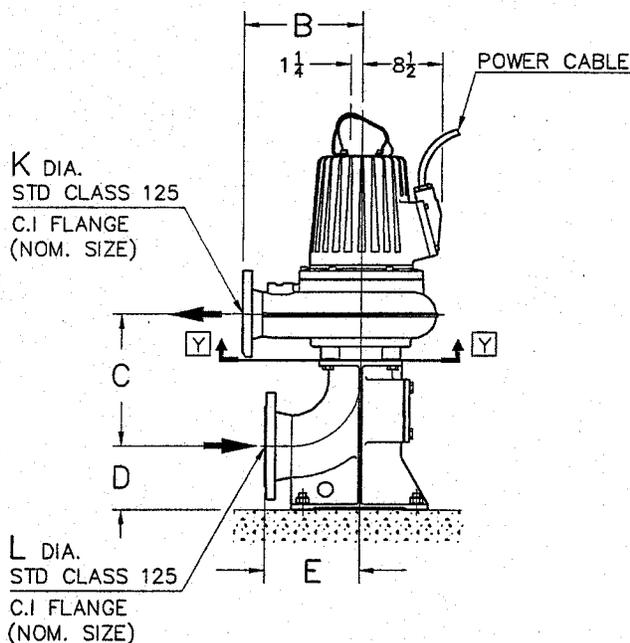
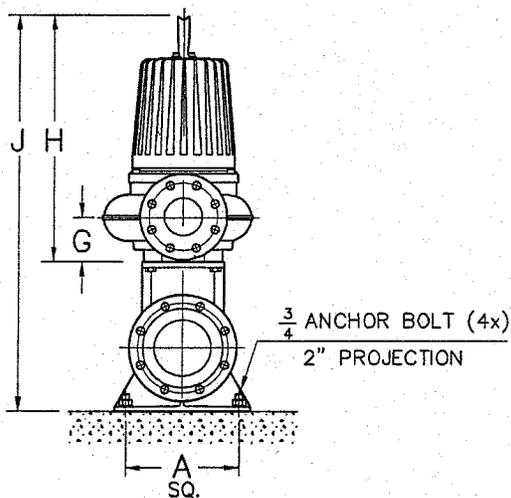
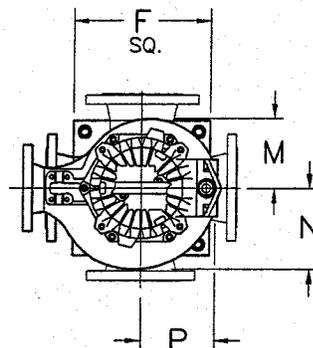
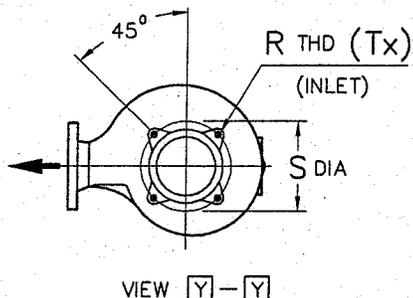
Section 4



Outline Dimensions

Issued: 11/00

Supersedes:



	TYPE	NOM SIZE (K x L)	VERSION	WEIGHT(LBS) TOTAL W/STAND
*	CT	4"x4"	HT	340
**	CT	4"x4"	HT	340
	CT/NT	4"x6"	MT	420
	CT/NT	6"x6"	MT	420
	CT/NT	6"x8"	LT	485

ALL DIMENSIONS IN INCHES

NOTES:

PUMP CAN BE ROTATED ABOUT ITS VERTICAL CENTERLINE TO (4x) POSITIONS RELATIVE TO THE INLET ELBOW. INCREMENTS ARE 90°.

* EQUIPPED WITH IMPELLER 485

** EQUIPPED WITH IMPELLER 462 OR 463

	TYPE	NOM SIZE (K x L)	VERSION	DIMENSIONAL CHART																
				A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
*	CT	4"x4"	HT	8 3/4	12 1/4	11 1/4	5 1/2	8	11	4 3/4	25	36 3/4	4	4	7 3/4	9 1/4	8 1/4	M12	7 1/16	4
**	CT	4"x4"	HT	8 3/4	12 1/4	10 3/4	5 1/2	8	11	4 1/2	24 3/4	36 1/4	4	4	7 1/2	8 1/2	8 1/4	M12	7 1/16	4
	CT/NT	4"x6"	MT	11 3/4	12 1/4	14	6 3/4	10	14 1/4	5	26	41 3/4	4	6	7 1/2	8 1/2	8	M16	9 7/16	4
	CT/NT	6"x6"	MT	11 3/4	12 1/4	14 3/4	6 3/4	10	14 1/4	5	26	41 3/4	6	6	7 1/4	9 1/2	8 1/4	M16	9 7/16	4
	CT/NT	6"x8"	LT	14 1/2	13 3/4	17 3/4	8 1/4	12	17	6	26 3/4	46 1/2	6	8	7 1/4	10	8 1/2	M16	9 7/16	4

C/N-3127

Section 6

Electrical Data

Issued: 4/00

Supersedes: 5/97

Motor Data

RATED OUTPUT POWER HP (kW)	Ø	VOLTS NOM.	FULL LOAD AMPS	LOCKED ROTOR AMPS	LOCKED ROTOR KVA	LOCKED ROTOR CODE LETTER KVA/HP	RATED INPUT POWER KW	POLES/RPM
6.4 (4.8)	3	200	21.0	138	48	G	5.7	4/1750
		230	18.0	120				
		460	9.0	60				
		575	7.2	48				
7.4 (5.5)	3	200	22.0	173	60	G	6.5	4/1750
		230	19.0	150				
		460	9.6	75				
		575	7.7	60				
7.4 (5.5)	1	230	30.0	58	13	A	6.6	4/1750
7.5 (5.6)	3	200	23.0	138	48	G	6.7	4/1740
		230	20.0	120				
		460	10.0	60				
		575	8.0	48				
10.0 (7.5)	3	200	29.0	173	60	G	8.9	4/1745
		230	26.0	150				
		460	13.0	75				
		575	10.0	60				

PUMP MOTOR HP	EFFICIENCY			POWER FACTOR		
	100% LOAD	75% LOAD	50% LOAD	100% LOAD	75% LOAD	50% LOAD
6.4	84.0	83.0	80.0	0.82	0.77	0.66
7.4 3Ø	85.0	84.0	81.0	0.84	0.77	0.71
7.4 1Ø	83.0	84.5	83.0	0.96	0.99	0.99
7.5	84.0	84.0	80.0	0.84	0.80	0.72
10.0	84.0	85.0	84.0	0.87	0.85	0.77

Cable Data

HP	VOLTS	MAX. LENGTH FT.	CABLE SIZE/ NOMINAL DIA.	CONDUCTORS (IN ONE CABLE)	PART NUMBER
6.4	200	150	10/3-2-1-GC 21.3mm (0.84")	(3) 10 AWG (PWR) (2) 12 AWG (CTRL) (1) 10 AWG (GND) (1) 12 AWG (GC)	94 21 06
	230	205			
	460	815			
	575	1275			
7.4 or 7.5 3Ø	200	135	8/3-2-1-GC 28.2mm (1.11")	(3) 8 AWG (PWR) (2) 10 AWG (CTRL) (1) 8 AWG (GND) (1) 10 AWG (GC)	94 21 08
	230	170			
	460	710			
	575	1110			
7.4 1Ø	230	140	8/3-2-1-GC 28.2mm (1.11")	(3) 8 AWG (PWR) (2) 10 AWG (CTRL) (1) 8 AWG (GND) (1) 10 AWG (GC)	94 21 08
10.0	200	165			
10.0	230	135	10/3-2-1-GC 21.3mm (0.84")	(3) 10 AWG (PWR) (2) 12 AWG (CTRL) (1) 10 AWG (GND) (1) 12 AWG (GC)	94 21 06
	460	535			
	575	870			

Warranty



General Information

Issued: 4/01

Supersedes: 6/94

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ITT FLYGT 5 YEAR (10,000 HOUR) PUMP WARRANTY MUNICIPAL: PERMANENT INSTALLATIONS

For the period defined below, ITT FLYGT offers a Commercial Warranty to the original End Purchaser against defects in workmanship and material covering Parts and Labor on its pumps when used in permanent installations, in compliance with the requirements of the ITT FLYGT Catalog and Technical Manual specifications, for use in Sewage Collection Systems or for intermittent (40% duty cycle or less) pumping of Raw Sewage, Municipal Wastewater, Potable or Raw Water, Storm Water or similar, abrasive free non-corrosive liquids ("Qualified Liquids").

ITT FLYGT Pumps used with Qualified Liquids in Sewage Lift Stations are Warranted for 5 years. ITT FLYGT pumps used for Sewage Treatment Processing or for more continuous (41% duty cycle or more) pumping of Qualified Liquids are Warranted for 10,000 hours of operation. Warranty begins on the date of shipment from ITT FLYGT. ITT FLYGT will pay the following share of the cost of replacement parts and labor provided the Pump, with Cable attached, is returned prepaid to an Authorized ITT FLYGT Service Facility for repairs. Cutting Plates and Impellers for FP Pumps are not included in this warranty.

	<u>TIME AFTER SHIPMENT</u>		
Months:	0-18	19-39	40-60
Hours:	0-3000	3000-6500	6500-10,000
Warranty:	100%	50%	25%

Unless otherwise specified by ITT FLYGT Corporate Headquarters, time after shipment shall be determined from shipping date, to date of receipt of defective product (or Warranty Claim) by ITT FLYGT or any of ITT FLYGT's Authorized Service Facilities.

Start-up report and electrical System Schematics (including Bills of Material) will be required to support any Warranty Claims. This Warranty shall not apply to any Product or Part of Product which has been subjected to misuse, accident, negligence, used in a manner contrary to ITT FLYGT's printed instructions or damaged due to a defective power supply, improper electrical protection or faulty installation or repair. The 5 year (or 10,000 hour) Warranty applies to the following Accessories if originally purchased with the pumps: Discharge Connection, Access Cover, HDL Valve, Guide Bar Bracket(s) and Pump Power Cable(s).

IMPORTANT: For warranty purposes, Monitoring devices supplied with specific pumps for protection must be connected and utilized. Failure to do so will invalidate the warranty.

ITT FLYGT's sole obligation under this Warranty shall be to Repair, Replace or Grant a Credit Reimbursement at its discretion, through its Warranty Processing Procedures for defective products when returned prepaid to ITT FLYGT and upon ITT FLYGT's exclusive examination found to be defective. Products repaired or replaced under this warranty will be returned freight prepaid.

ITT FLYGT neither assumes, nor authorizes any person or company to assume for it, any other obligation in connection with the sale of its equipment. Any enlargement or modification of this Warranty by a Representative, or other Selling Agent shall become his exclusive responsibility.

ITT Flygt will not be held responsible for travel expenses, rented equipment, outside contractor's fees, unauthorized repair shop expenses, or for pumps purchased or used without ITT Flygt supplied cable or controls unless suitable for the purpose and equal to ITT Flygt cables or controls. The warranties made herein by ITT Flygt are in lieu of any and all other warranties, expressed or implied and the implied warranties of merchantability and fitness for a particular purpose are hereby expressly disclaimed. ITT Flygt assumes no liability for loss of use or for any direct, indirect or consequential damages of any kind in respect to the use or operation of ITT Flygt products, or any equipment or accessories in connection therewith.

THE ITT FLYGT CORPORATION
FUS 4-2001