CITY OF LINCOLN
COUNTY OF LANCASTER
Vince M. Mejer, CPPO, C.P.M.
Purchasing Agent
(402) 441-7410 Fax: (402) 441-6513

QUOTATION REQUEST

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

Date -	2/20/01
Order No.-	1099 OQ
Date Due -	03/06/01

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 - Quotes

Buyer

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

Supplier shall furnish a duplex submersible grinder sump pump package, including control panel, controls, hatch assembly, and accessories as per the specifications and requirements.

Mfg _____ Model _____

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 _____
ADDRESS _____
_____
TELEPHONE _____
EMPLOYER FEDERAL ID NO. OR SOCIAL SECURITY NUMBER _____

BY (PRINT NAME) _____
SIGNATURE _____
TITLE _____
DATE _____
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
Duplex Submersible Grinder Pump Sump Package

1.0 General

1.1 Supplier shall furnish a duplex submersible grinder pump sump package, including control panel, controls, hatch assembly, and accessories as per the requirements and specifications described herein.

1.2 The following accessories shall be included and bid as part of the system package.

1.2.1 Control Floats and Stainless Steel Brackets
1.2.2 Stainless Steel Guide Rails and Guide Rail Brackets
1.2.3 Two (2) Discharge Elbows 2 Inch wt Anchor Bolts
1.2.4 Two (2) HDL Ball Check Valves
1.2.5 Stainless Steel Lifting Chain wt Chain Fitting Kits
1.2.6 A Minimum of 30 Feet of Power Cable
1.2.7 Aluminum Treadplate Cover 1/4 Inch Minimum Thickness

1.3 Supplier shall verify sump size, configuration of discharge piping, treadplate cover dimensions, and hatch position.

2.0 Operating Requirements and Conditions

2.1 Submersible pumps shall be sized by the manufacturer for a flow rate of 72 GPM @ 22 TDH for operation on 460 volts, 3 phase, 60 hertz service.

2.2 Supplied pumps and associated valving shall be suitable to pump municipal wastewater consisting of both organic and inorganic waste, such as grit, fiberous material and debris normally associated with municipal wastewater treatment.

3.0 Equipment and Performance Specifications

3.1 (See Attached)

3.2 Please note any exceptions to these specifications.

4.0 Miscellaneous

4.1 Warranty

4.1.1 Supplier shall warrant the specified equipment from defects in materials and workmanship for a period of (5) five years prorated from receipt of equipment.

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. Bill Ebers, telephone number 402-441-7168 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

GRINDER PUMP

Each grinder pump shall be a **heavy duty pump** used as a grinder. Each grinder pump shall contain special cutters to reduce sewage to a fine slurry. The stationary cutter and the rotary cutter shall consist of **hardened stainless steel.** The cutter materials shall provide maximum corrosion and abrasion resistance. The remaining portion of the grinder pumps, with the exception of seal materials and wet end, shall be similar to the heavy duty pumps used in larger pump stations for daily operation.

REQUIREMENTS

Furnish and install __ submersible wastewater grinder pump(s). Each pump shall be equipped with a __HP, submersible electric motor connected for operation on

_____ volts, __ phase, 60 hertz, __ wire service, with 15 feet of submersible cable (SUBCAB) suitable for submersible pump applications. The power cable shall be sized according to NEC and ICEA standards and also meet with P-MSHA Approval. The pump shall be supplied with a mating cast iron ___ inch discharge connection and be capable of delivering _____ GPM at ___ TDH. An additional point on the same curve shall be _____ GPM at __ feet total head. Shut off head shall be __feet (minimum). Each pump shall be fitted with ____ feet of _____ lifting chain or stainless steel cable. The working load of the lifting system shall be 50% greater than the pump unit weight.

PUMP DESIGN

Grinder pump(s) shall be available in the following two configurations:

1. MP - Guide Bar Mounting - 2" Discharge.
2. MF - Free Standing - 1½" Discharge.

The MP Grinder pump(s) shall be automatically and firmly connected to the discharge connection, guided by no less than two guide bars extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal to metal watertight contact. **Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable.** No portion of the pump shall bear directly on the sump floor.

PUMP CONSTRUCTION

Major pump components shall be of grey cast iron, ASTM A-48, Class 30B, with smooth surfaces devoid of blow holes or other irregularities. All exposed nuts or bolts shall be AISI type 304 stainless steel or brass 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 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. **Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.**

MOTOR

The pump motor shall be induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber, NEMA B type. The stator windings and stator leads shall be insulated with moisture resistant Class F insulation rated for 155°C (311°F). The stator shall be dipped and baked three times in Class F varnish and shall be heat-shrink fitted into the stator housing. 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. Optional thermal switches set to open at 125°C (260°F) embedded in the stator lead coils to monitor the temperature of each phase winding shall be available. 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 motor and pump shall be designed and manufactured by the same source.

The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of ____. 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 and lower bearing shall be a single row ball bearing. **Sleeve 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 **ceramic** seal ring and one positively driven rotating **ceramic** 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. Cartridge type systems will not be acceptable. 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 ASTM type 304 stainless steel.

If a shaft material of lower quality than stainless steel is used, a shaft sleeve of 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

The impeller(s) shall be of gray cast iron, Class 30B, dynamically balanced, single shrouded design having a long throughlet without acute turns. The impellers shall be capable of handling fine slurry from the special

cutters. Mass moment of inertia calculations shall be provided by the pump manufacturer upon request. Impeller(s) shall be taper collet fitted and retained with an Allen head bolt. All impellers shall be coated with an acrylic dispersion zinc phosphate primer.

VOLUTE

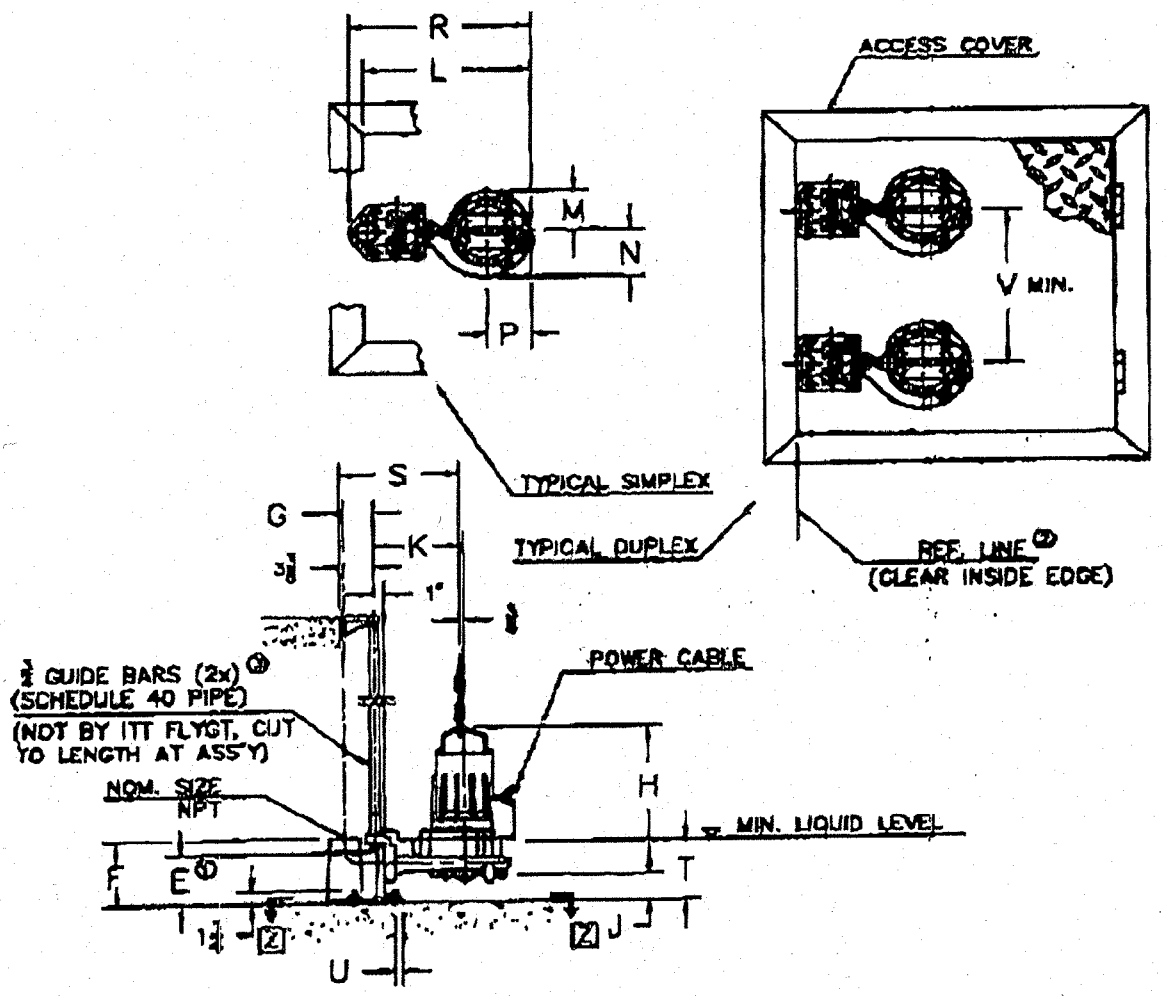
Pump volute(s) shall be single-piece grey cast iron, ASTM A48 Class 30B, non-concentric design with smooth passages large enough to pass any media that may enter the impeller. Minimum inlet and discharge size shall be as specified.

PROTECTION

All stators shall have the option to incorporate thermal switches in series to monitor the temperature of each phase winding. At 125°C (260°F) the thermal switches shall open, 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 send an alarm and, if desired, stop the motor. **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 is designed to be mounted in any control panel.



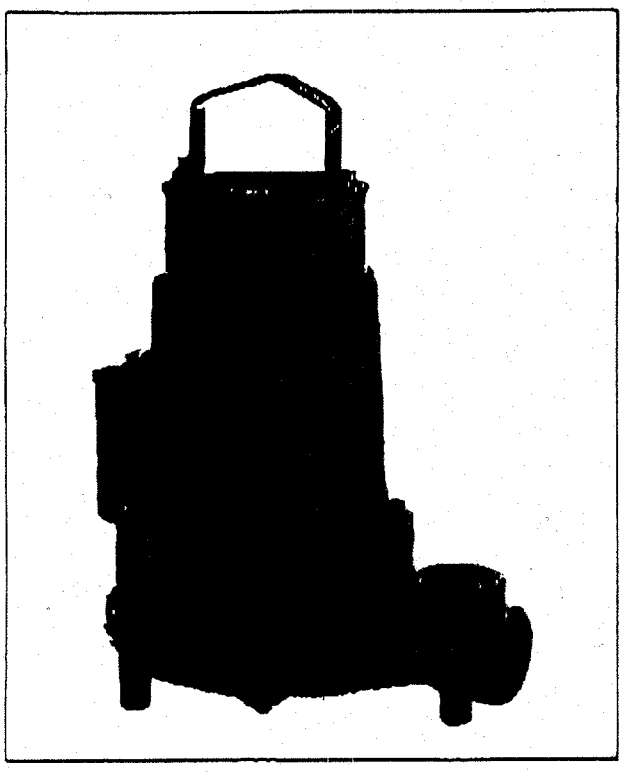
NOM. SIZE	VERSION	WEIGHT (LBS) PUMP	DISCH
2"	HT	58	15

ALL DIMENSIONS IN INCHES

NOM. SIZE	VERSION	DIMENSIONAL CHART A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V
2"	HT	1½	4	4½	2½	5½	6⅜	3	16¾	2	8½	16¾	4½	4½	4⅜	18	11½	6	¾	16

M-3068

Section 9	Submersible Grinder Pump	Issued: 3/99	Supersedes:



Design Features:

A **Junction Chamber:** The junction box is completely sealed off from the surrounding liquid and incorporates separate gland assembly with strain relief clamp.

B **Motor:** Squirrel cage induction motor NEMA type B. Class F (155°C) insulated stator winding. Capable of starting up to 15 times/hour (max.).

Cooling: Motor casings with integral cooling ribs for maximum heat dissipation.

C **Pump/motor shaft:** Common pump/motor shaft and compact seal design permit short overhang minimizing shaft deflection.

D **Shaft mounting:** Robust maintenance free design, comprising pre-greased ball bearings.

E **Shaft sealing:** Two independent mechanical face seals assembled in tandem provide reliable and durable sealing performance and maximum resistance to abrasion and thermal shock.

F **Oil Casing:** Oil filled housing for lubricating and cooling mechanical seal units provides an additional leakage barrier.

G **Pump Volute:** Volute incorporates replaceable hardened cutting ring at the inlet.

H **Impeller:** Multi-vane semi-open impeller with replaceable cutting head.

Grinder Pump:

3.0 HP, 2 HP 3Ø and 2.0 HP 1Ø

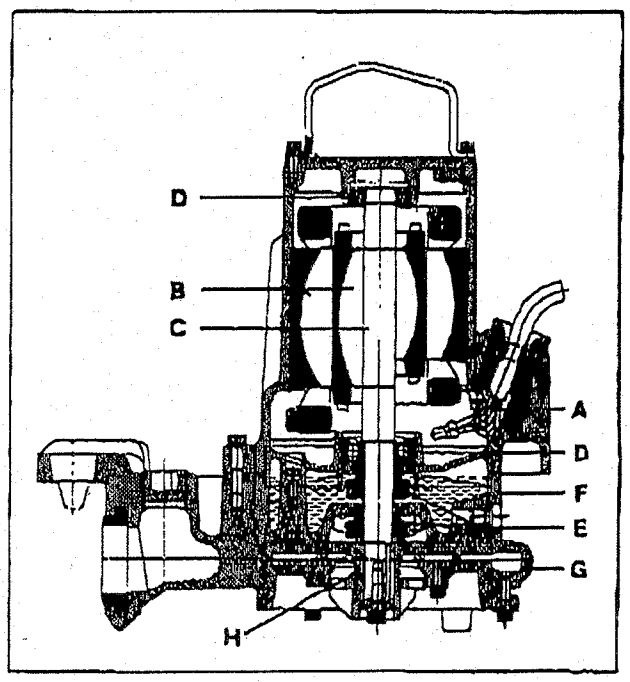
Available in the following configurations:

Type MP - Wet pit installation. Pump lowered via guide bars to automatically connect to a permanently mounted discharge connection.

Type MF - Portable, free standing. For pipeline connection in restricted sumps.

Application:

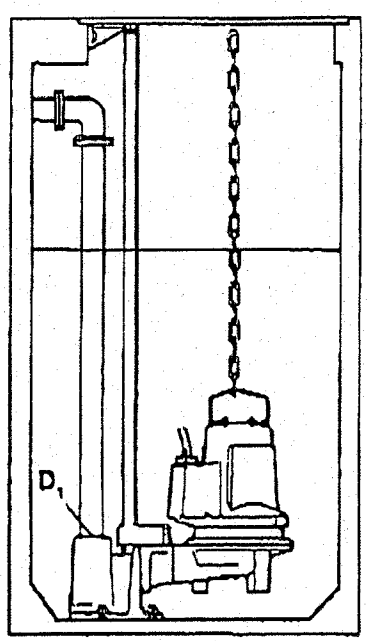
The M-3068 is designed for residential and commercial wastewater.



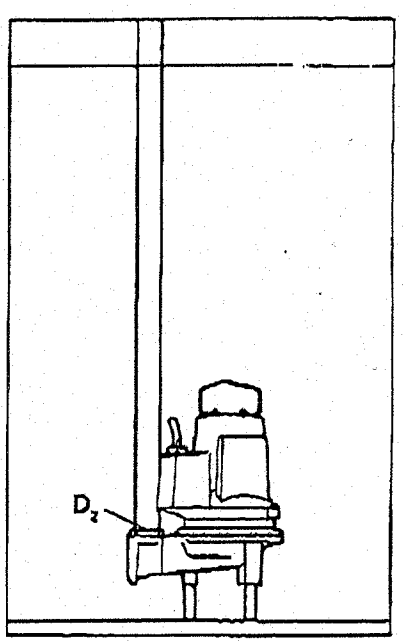
M-3068

GRINDER MODEL	IMPELLER CODE	HP RATING MP	HP RATING MF	VAC	RPM	D1	D2
M-3068 3Ø	214 HT	3.0	3.0	200 230/460 575	3290	2"	1.5"
	216 HT	2.0	2.0		3225		
M-3068 1Ø	218 HT	2.0	2.0	230	3300	2"	1.5"

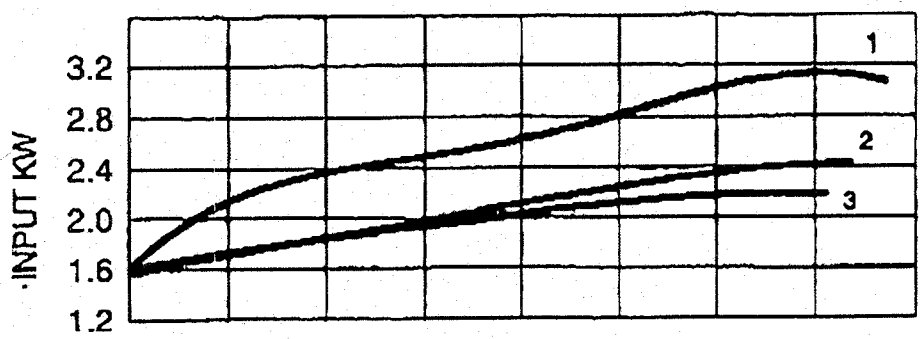
Notice:
For other than domestic grinder pump usage, please consult Flygt Engineering for evaluation of product application.



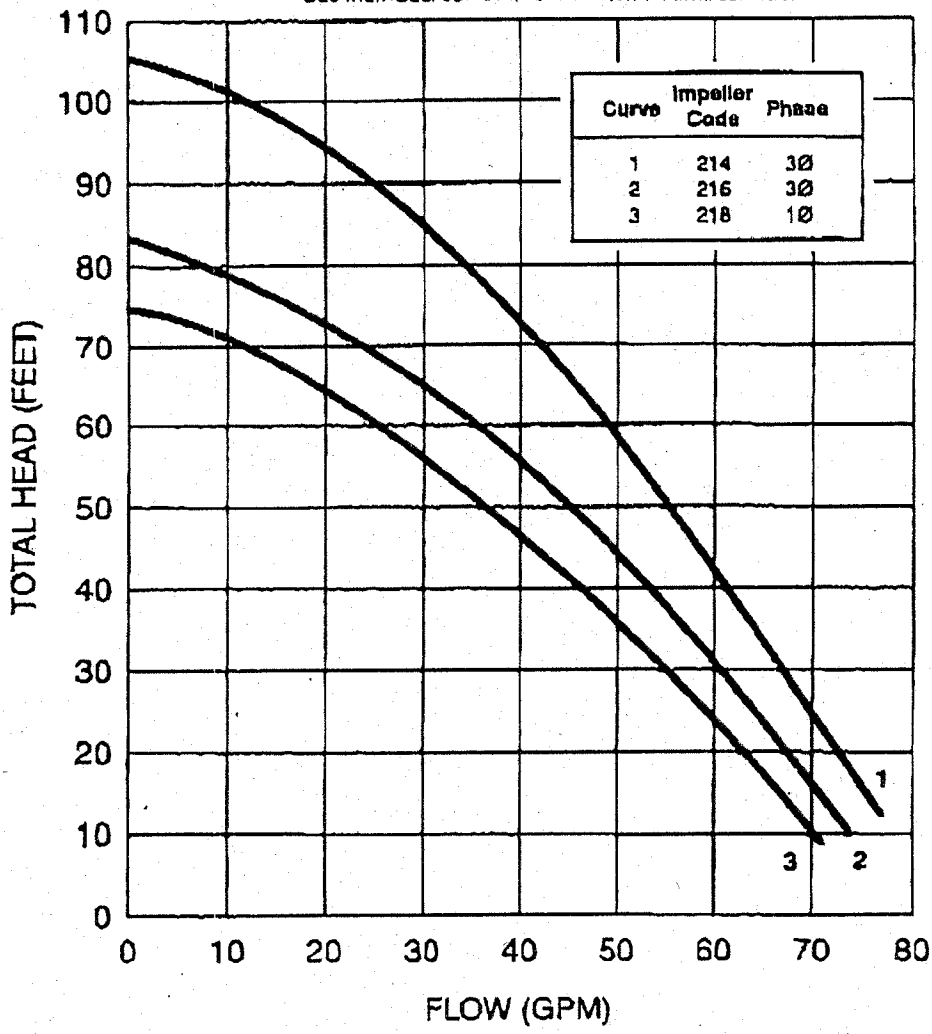
MP



MF



NOTE: Family of performance curves are for pre-selection only. See individual curves in this section for final selection



Motor Data

NAMEPLATE HP (KW)	SERVICE FACTOR	S.F. HP (KW)	Ø	VOLTS	S.F. AMPS	LOCKED ROTOR AMPS	LOCKED ROTOR KVA	NEC CODE LETTER	INPUT kW	RPM
3.0 (2.2)	1.27	3.8 (2.8)	3	200 230 460 575	12.0 10.0 5.2 4.0	60 52 26 21	20.7	F	3.6	3295
2.0 (1.5)	1.35	2.7 (2.0)	3	200 230 460 575	8.5 7.5 3.7 2.9	19	15.1	F	2.6	3280
2.0 (1.5)	1.15	2.3 (1.7)	1	230	10	37	8.5	C	2.3	3350

Pump Motor HP at (SF)	EFFICIENCY			POWER FACTOR		
	100% LOAD	75% LOAD	50% LOAD	100% LOAD	75% LOAD	50% LOAD
3.8	78.0	81.0	82.0	0.89	0.85	0.76
2.7	77.5	80.0	81.0	0.89	0.85	0.76
2.3	74.5	75.0	71.0	0.95	0.94	0.90

Cable Data

(SF) HP	VOLTS	MAX. LENGTH FT.	CABLE SIZE/ NOMINAL DIA.	CONDUCTORS (IN ONE CABLE)	PART NUMBER
2.3	230	111	14/4 * 15.0mm (.58")	(3) 14AWG (PWR) (1) 14AWG (GND)	94 21 01
2.7	200 230 460 575	139 182 736 1174			
3.8	200 230 460 575	99 136 524 851	14/7 ** 19.0mm (.75")	(3) 14AWG (PWR) (2) 14AWG (CTRL) (1) 14AWG (GND) (1) 14AWG (G.C.)	94 21 02

* For versions without thermal switches ** For versions with thermal switches