1469A Steepleton Way
L89 B4

CERTIFICATE OF COMPLETION/OPERATION PERMIT

1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

FILE: 1469A DATE: 4/13/88

TC: 105-152-01,03 ☐ L ☑ CRT

SERIAL № 1098

Name of Owner Bob McLemore Co Juris.:

Address of Property 4441 Steepleton Way

Inspection Data:

Tank Material PCC

Total Length of Drainfield 535'

Number of Lines 5 @ 107'

Cover Depth 24" - 36"

Water Supply Source Community

Distance to Water Source —

Excavation Inspected 4/13/88

Tank(s) Inspected 4/13/88

Wash Line Inspected —

High Water Alarm Inspected 4/13/88

PLOT

Design: 1488, 1500ST, 1000DT, 11 CON, 1665SFT, 126, Carl CTR# 113

The undersigned has inspected the Septic Tank System described above, and certifies it has been

☒ installed or constructed ☐ altered or repaired

☒ in accordance with the permit issued ☐ as detailed in the plot above

and meets the provisions of 10 NCAC 10A .1900, "Laws And Rules For Sanitary Sewage Collection, Treatment, And Disposal" in effect on the date of issuance of the permit. The issuance of this

☐ Certificate of Completion ☒ Operation Permit

does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 10 NCAC 10A .1900 in addition to those listed below under "COMMENTS." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

COMMENTS: —

Linda W. Johnson

Environmentalist

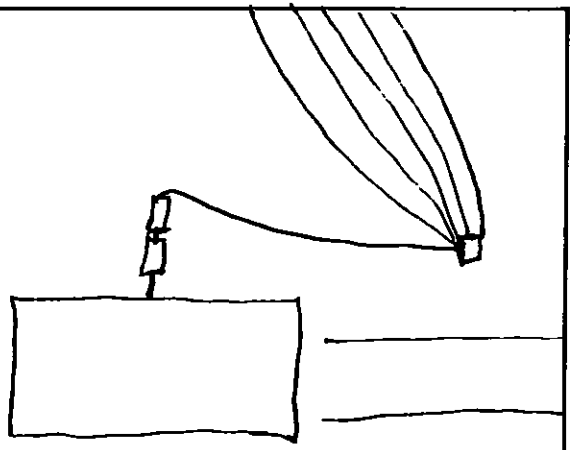
Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

INSTALLATION, CONSTRUCTION, ALTERATION, AND/OR REPAIR PERMIT

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

FILE: 1469-A DATE: 4-8-88
PO
TC: 105-152-01,03 ☐ L
SERIAL № 11741

Permission is hereby given to ✓ Install or Construct, _____ Alter or Repair the individual septic tank wastewater treatment system with subsurface, soil absorption, effluent discharge as specified herein at the described location. This permit is granted based upon the information supplied in the application dated 6-9-86. All work shall be completed on or before 5-8-88, after which date this permit shall be null and void. The system shall meet all of the construction requirements of 10 NCAC 10A .1900 which are in effect on the date of the granting of this permit. A Certificate of Completion or an Operation Permit must be obtained from the Mecklenburg County Department of Environmental Health before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now or hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.



PLOT OF SYSTEM

Liquid Capacity of Septic Tank 1,500 gallons
Liquid Capacity of Dosing Tank 1000 gallons
Tank Construction Tcc

Absorption and/or Nitrification Lines:
Trench Width 3 feet
Total Line Length 535 feet
Number of Lines 5
Depth of Stone 12 inches
Distance from House 15 feet
Distance from Property Line 10 feet
Distance from Well Comm. feet

NAME OF OWNER Bob McLemore Co.
LOCATION OF PROPERTY 4441 Steepleton Way
Comments: 5 lines 3'X107'X12" stone

Division or Section Head

B.R. Ferguson
Environmentalist

* If this permit is for the installation or construction of a new system, it must be signed by the division or a section head of the Department of Environmental Health in order to be valid. Only the signature of the Environmentalist is required where an existing system is being altered or repaired.

WHITE - ENVIRONMENTAL HEALTH DEPARTMENT'S COPY ● CANARY - ENVIRONMENTALIST'S COPY ● PINK - OWNER OR AGENTS COPY

PROPOSED PLOT PLAN

MECKLENBURG COUNTY · ENVIRONMENTAL HEALTH ·

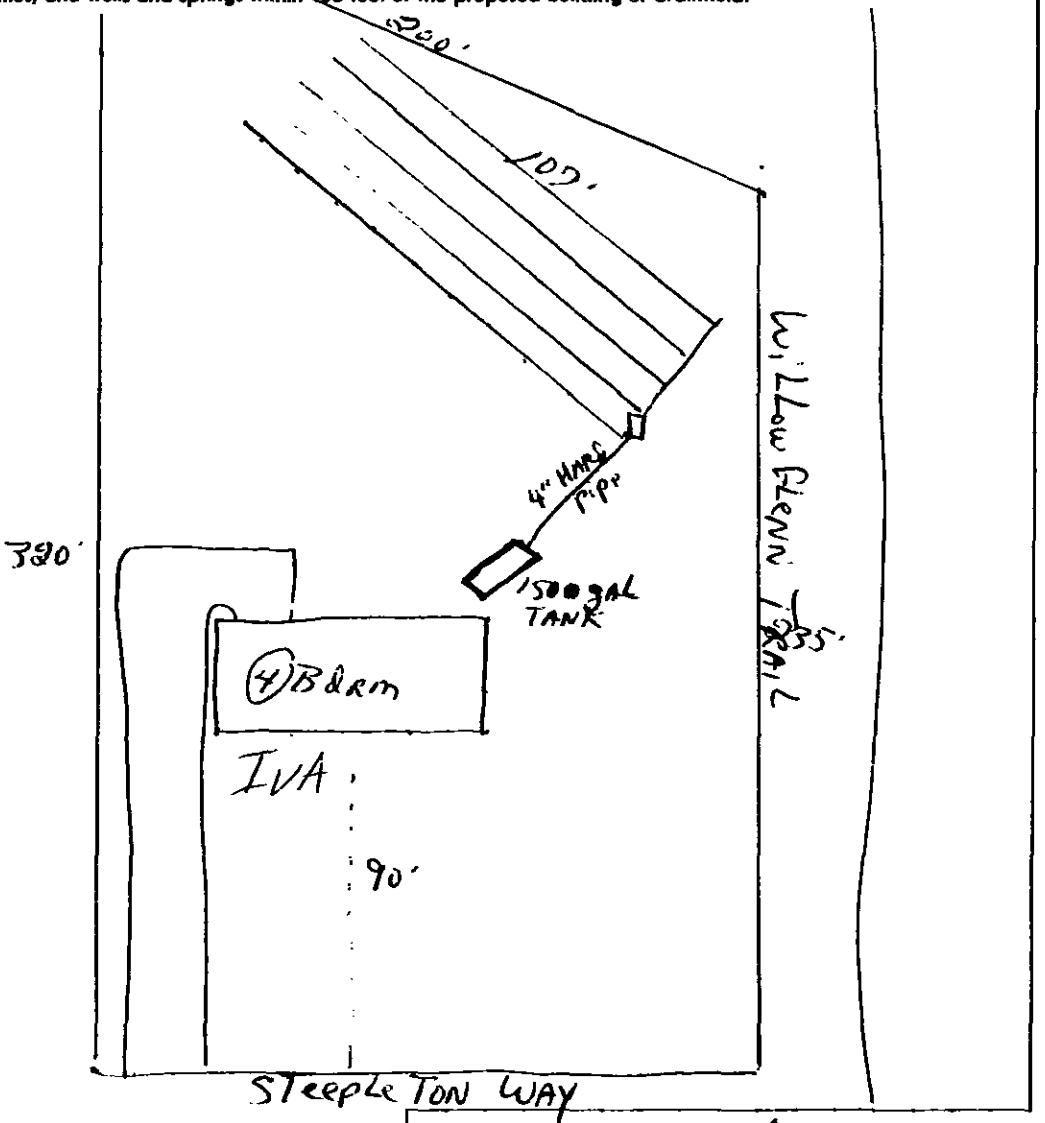
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

FILE: 1469A

TC: Lot 89

MECK COUNTY DEPARTMENT OF
RECEIVED
JUL 1 3 1986
ENVIRONMENTAL HEALTH

Draw in and name all roads adjoining the property. Draw in and accurately dimension the lot concerned. Accurately indicate property boundaries, proposed and/or existing structures and driveways, underground utilities, and wells and springs within 100 feet of the proposed building or drainfield.



Signed: Richard Williams

Date: 7/14/86

APPLICATION FOR AN IMPROVEMENT PERMIT

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH

MECK COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH
RECEIVED
1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603
JUN 10 1986

Mecklenburg County services are available without regard to ethnic origin, sex, or disability.

(OFFICE USE ONLY)
FILE: 1469A
TC:
SERIAL: No 10937

MECK COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH
RECEIVED
JUN 10 1986

☐ CRT

JOB LOCATION

① ADDRESS: 4441 (STREET NO.) Templeton (STREET) Way ② FILE: 1469A

③ JURISDICTION: ④ TAX PARCEL NO.: P.O. 105-152-01-03

⑤ SUBDIVISION: Farmwood North ⑥ LOT: 89 ⑦ BLOCK: 54

OWNER

⑧ NAME: Bob (FIRST) McLemore (MIDDLE) Co. Inc. (LAST)

⑨ MAILING ADDRESS: P.O. Box 25746

⑩ CITY: Charlotte ⑪ STATE: N.C. ⑫ ZIP: 28212

⑬ PHONE: (WORK) 545-6111 ⑭ (HOME)

REQUEST

This request is for a(n):

⑮ ☑ New permit

⑯ ☐ Repair or alteration permit

⑰ ☐ Authorization for mobile home exchange

⑱ ☐ Other (specify)

DESIGN CRITERIA

System will serve:

⑲ ☑ Residence ⑳ ☐ Mobile home

㉑ ☐ Business or place of public assembly

㉒ Number of bedrooms? 4

㉕ Type?

㉓ Maximum occupancy?

㉖ Maximum number of employees?

㉔ Basement? ☑ yes ☐ no

㉗ Maximum number of seats?

WATER SUPPLY

㉘ Water supply from (present or proposed):

A ☐ Individual well

B ☐ Municipal system

C ☑ Community well

D ☐ Community system

㉙ The undersigned, owner of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH to enter onto the property for the purpose of processing this request.

Signed: Bob McLemore

Date: 6/9/86

IMPROVEMENT PERMIT

The undersigned, an authorized agent of the MECKLENBURG COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH, certifies that the Department has approved the Request for the Job Location contained in this document. This approval is granted in accordance with the provisions of Laws And Rules For Sanitary Sewage Collection, Treatment And Disposal in effect at the time of issuance of the permit and is subject to the following provisions:

. . . No work shall be conducted on the septic tank system until an Installation, Construction, Alteration and/or Repair permit is issued by this Department.

. . . This permit is not transferable, and shall become null and void 36 months from the date of issuance.

Environmentalist: [signature] Date: 8-1-86

Director or Authorized Section Head: John R Adkinson Date: 8/4/86

* This permit must be signed by the Director of Environmental Health or an authorized section head in order to be valid.

MECKLENBURG COUNTY

Department of Environmental Health

June 5th, 1986

Eddie Harper
Bob McLemore Company, Inc.
PO Box 25746
Charlotte, NC 28212

RE: Property located at 4441 Steepleton Way L89 B4
FILE: 1469A
PARCEL: 10515201,03 PO

Dear Sir:

At your request, a field investigation was conducted on the property designated above for the purpose of determining site suitability for the installation of a ground absorption sewage disposal system. Results of the investigation revealed that the lot contains soils which have been classified as PROVISIONALLY SUITABLE in accordance with the provisions of 10 NCAC 10A .1900. A copy of the Site Evaluation Report (Serial Number 10447) deliniating the soil types and there respective classifications is enclosed.

While this classification indicates the site is acceptable for the installation of a septic tank system, no specific system or plans have been approved. The area available for such an installation may impose limitations on the size and/or type construction permitted on the lot. Specific plan approval will be provided upon submission of an Application For An Improvement Permit and determination that the area is adequate to accomodate the proposed construction.

Please note that this classification may be revoked if any filling, grading or construction (including the drilling of a well) is performed on the lot which in the opinion of this Department renders any area previously designated suitable for system installation, unsuitable. Futhermore, this approval may be revoked should any changes occur in the regulations under which it was granted, if such changes would have prevented its approval had they been in effect on the date of issuance.

If there are any questions concerning this matter, do not hesitate to contact me.

Sincerely,

Bill D. Hardister, Jr., R.S.
Environmental Health Supervisor

enclosure

MECKLENBURG COUNTY ENVIRONMENTAL HEALTH
SITE EVALUATION REPORT
SERIAL NUMBER 10447

File: 1469A

Action 4H

Parcel: 105-152-01,03

PC

Location: Steepleton Way

Subdivision: Farmwood North

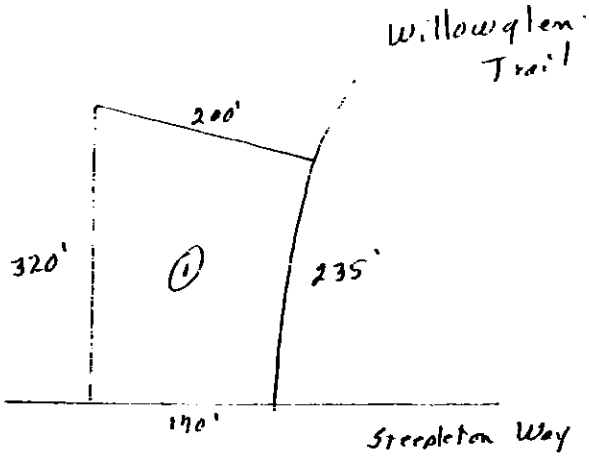
Lot: 89 Block: 4 Acres: 1.08

Owner: Bob McLemore & Co., Inc.
Address: PO Box 25746
Charlotte, NC 28212

Comments: _____

Described by: _____

Date: _____



***** EVALUATION KEY *****

S = Suitable U = Unsuitable
PS = Provisionally Suitable
The "Area Classification" below indicates the suitability of areas in the diagram.

FACTORS	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Topography	S (PS) U 15-25%	S PS U	S PS U	S PS U	S PS U	S PS U
Texture	S (PS) U Clay	S PS U	S PS U	S PS U	S PS U	S PS U
Structure	S (PS) U Blocky	S PS U	S PS U	S PS U	S PS U	S PS U
Drainage	S (PS) U > 36" to water	S PS U	S PS U	S PS U	S PS U	S PS U
Depth	S (PS) U 36"+	S PS U	S PS U	S PS U	S PS U	S PS U
Restrictive Horizons	S (PS) U 36"	S PS U	S PS U	S PS U	S PS U	S PS U
Available Space	S (PS) U	S PS U	S PS U	S PS U	S PS U	S PS U
Other (specify)	S PS U	S PS U	S PS U	S PS U	S PS U	S PS U
Soil Group/Series	IIA Cecil/Lloyd					
Area Classification	S (PS) U	S PS U	S PS U	S PS U	S PS U	S PS U

DATE 5/22/86

TO: ENVIRONMENTAL HEALTH

FROM: COUNTY ENGINEERING

EHD FILE 1469A JURISDICTION CODE Meck

PARCEL NUMBER 105-152-01,03

ASSIGNED ADDRESS 4441 Stapleton Wy

EXISTING ADDRESS 11 89

PROJECT NAME Farmwood North

THE ABOVE DESCRIBED LOCATION HAS BEEN CHECKED CONCERNING:

	APPROVED	NOT APPROVED
1. SUBDIVISION REGULATIONS	[ ]	[ ] *
2. FLOODWAY REGULATIONS	[ ]	[ ] *
3. EROSION CONTROL REGULATIONS	[ ]	[ ] *
4. COMMERCIAL DRAINAGE PLAN	[ ]	[ ] *
	PRESENT	NOT PRESENT
5. PUBLIC UTILITY EASEMENT	[ ] *	[ ]
	YES	NO
6. PROPERTY FRONTS ON PUBLIC ROADWAY	[ ] *	[ ]
	YES	NO
7. DRIVEWAY PERMIT REQUIRED	[ ] *	[ ]

* If checked, further investigation will be required to determine whether a building permit may be issued by Building Standards for the site.

REMARKS:

NOTE: THIS FORM MUST BE TURNED IN AT THE CASHIERS OFFICE AT BUILDING STANDARDS WHEN PAYING PERMIT FEES.
A CERTIFICATE OF OCCUPANCY WILL NOT BE GRANTED UNTIL THE TRANSPORTATION DIVISION GRANTS FINAL APPROVAL ON DRIVEWAY(S).

SIGNED: DCH

OPWEAR 02/86

APPLICATION FOR SOIL INVESTIGATION

1200 BLYTHE BOULEVARD
CHARLOTTE, NC 28203
PHONE (704) 376-4603

(OFFICE USE ONLY)

FILE: 1469A

TC: V

MECK COUNTY DEPARTMENT OF
RECEIVED
FEB 11 1986
ENVIRONMENTAL HEALTH

JOB LOCATION

① ADDRESS: STEEPLETON WAY

② SUBDIVISION: Farmwood North ③ LOT: 89 ④ BLOCK: 4

⑤ PARCEL REFERENCE: BOOK NO.: 105 PAGE NO.: 152 PARCEL NO.: P.O.105-152-01-03

⑥ DEED REFERENCE: BOOK NO.: 5122 PAGE NO.: 977

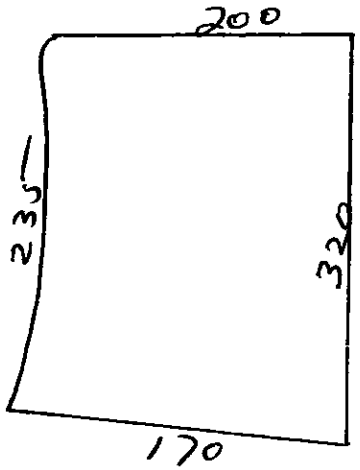
⑦ NAME: Bob McLemore & Co., Inc.
(FIRST) (MIDDLE) (LAST)

⑧ MAILING ADDRESS: P.O. Box 25746

⑨ CITY: Charlotte ⑩ STATE: NC ⑪ ZIP: 28212

⑫ PHONE: (WORK) 545 6111 (HOME)

⑬ Accurately diagram and dimension lot.



⑭ The undersigned, owner of the property described above as the "JOB LOCATION" has read the foregoing application, acknowledges that the contents of same are true, and authorizes agents of the MECKLENBURG COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH to enter onto the property for the purpose of processing this request.

Signed: Bob McLemore & Co., Inc.

Date: 2/7/86

WHITE - ENVIRONMENTAL HEALTH DEPARTMENT'S COPY ● CANARY - ENVIRONMENTALIST'S COPY ● PINK - OWNER'S COPY

SWITCH-MATE MERCURY FLOAT SWITCH

WARNING — REFER TO OTHER SIDE FOR INSTRUCTIONS FOR ALL APPLICATIONS.

10-0032 - 115V Max. 1 HP 15' cord for EFFLUENT, SEWAGE and DEWATERING.
***10-0033 - 230V Max. 1½ HP 15' cord for EFFLUENT, SEWAGE and DEWATERING.**
10-0034 - 115V/Max. ½ HP 15' cord for EFFLUENT, SEWAGE and DEWATERING.
10-0035 - 230V/Max. 1 HP 15' cord for EFFLUENT, SEWAGE and DEWATERING.
10-0248 - 115V/10' cord for EFFLUENT and DEWATERING, for use with Zoeller "50 & 97" Series pumps only.
10-0250 - 115V/15' cord for EFFLUENT and DEWATERING, for use with Zoeller "50 & 97" Series pumps only.
10-0251 - 230V/15' cord for EFFLUENT and DEWATERING, for use with Zoeller "50 & 97" Series pumps only.

Switch Mate Mercury Float Switches are designed for use with the appropriate voltage and horsepower, non-automatic, single phase, Zoeller pumps

Switch Mate Mercury Float Switches can be used as a control switch for a magnetic or combination starter Maximum temperature 130° F

NOTE Consult factory for controlling units over 1 HP with mercury float switches

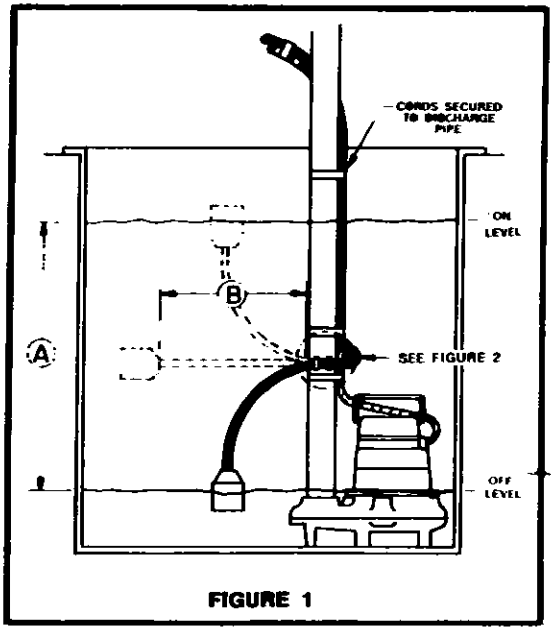


FIGURE 1

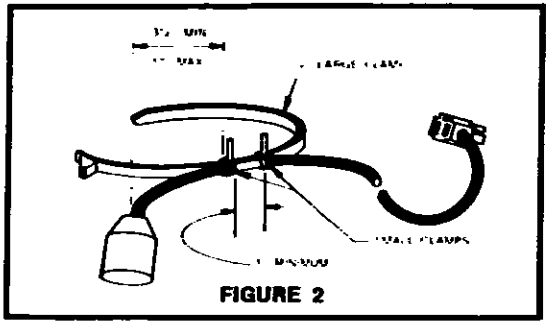
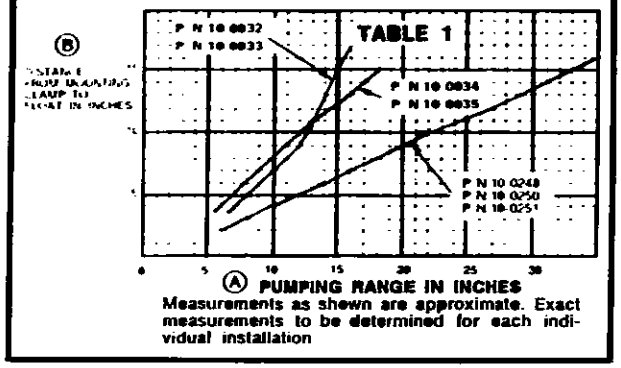


FIGURE 2



A PUMPING RANGE IN INCHES

Measurements as shown are approximate. Exact measurements to be determined for each individual installation

INSTALLATION INSTRUCTIONS

1 Decide the desired pumping range for your installation See Fig 1 and Table 1 (B) is the distance between the mounting point of attachment and the float The distance (B) determines (A) the desired pumping range

2 At Distance (B) (determined from Table 1) attach float cable to large strap clamp using the two small clamps provided Space small clamps a minimum of 1 inch apart See Fig 2

3 Position the float to the desired "OFF" level and secure the large strap clamp to the discharge pipe See Figure 1 noting water line The included large and small clamps are releasable, permitting readjustment and removal

NOTICE: Do not adjust "Off" Level below discharge on pump.

4 Insert the piggyback plug from the switch into a standard grounded outlet of appropriate voltage For automatic operation plug the pump directly into the piggyback plug (See Fig 3) Pump can be manually operated by bypassing the piggyback plug

NOTICE: For installation utilizing watertight junction box or similar connections, see Figure 4.

NOTICE: For installation as a control switch for magnetic or combination starter, see Figure 5.

5 Tape or clamp both piggyback switch and pump cords to the discharge pipe clear of float operation (See Fig 1) Excess cord should be coiled and fastened outside the basin

6 Clean basin free of debris after installation

7 Check your installation Fill basin with water and allow pump to cycle to insure proper range and operation

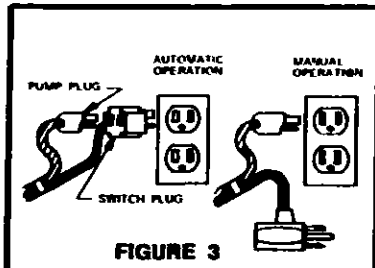


FIGURE 3

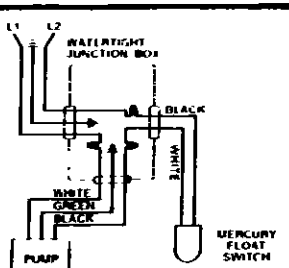


FIGURE 4

A) Remove (cut) Piggyback Plug from Mercury Float Switch. Remove approx. 3½" of Cord Jacket and 1" Insulation from Wires.

B) Wire Switch into Circuit as shown.

C) Return to Instructions.

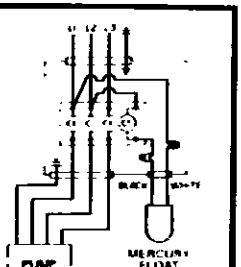


FIGURE 5

"Quality Pumps Since 1939"

ZOELLER CO.

FM 478
0785

3280 OLD MILLERS LANE
P. O. BOX 18347 • LOUISVILLE, KY. 40218
(502) 778-2731

READ INSTRUCTIONS BEFORE INSTALLING

INSTRUCTIONS — ALL APPLICATIONS

Make sure the pump electrical supply circuit is equipped with fuses or circuit breakers of adequate capacity. A separate branch circuit is recommended, sized according to the NEC for the current shown on the pump name plate. **WARNING: FOR YOUR PROTECTION ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING.** Single phase pumps are supplied with a 3-prong grounded plug to protect you against the possibility of electrical shock. **DO NOT UNDER ANY CIRCUMSTANCES REMOVE THE GROUND PIN.** The 3-prong plug must be inserted into a mating 3-prong grounded receptacle. If the installation does not have such a receptacle, it must be changed to the proper type and grounded in accordance with the National Electrical Code and all applicable local codes and ordinances.

DOUBLE PIGGYBACK MERCURY FLOAT SWITCH

10-0229 - 115V/1HP - 15 ft. cord ***10-0230 - 230V/1½ HP - 15 ft. cord**

Designed for EFFLUENT, SEWAGE AND DEWATERING applications.

WARNING: 10-0229 and 10-0230 Double Piggyback Mercury Float Switches are designed for use with the appropriate voltage and horsepower, non-automatic, single phase, Zoeller pumps.

CAUTION: Use 10-0229 for 115V and 10-0230 for 230V. Both 10-0229 and 10-0230 can be used as a control switch for a magnetic or combination starter. Maximum temperature 130° F.

NOTE: UL Listed (clear water only). NOTE: Consult factory for controlling units over 1 HP with mercury float switch

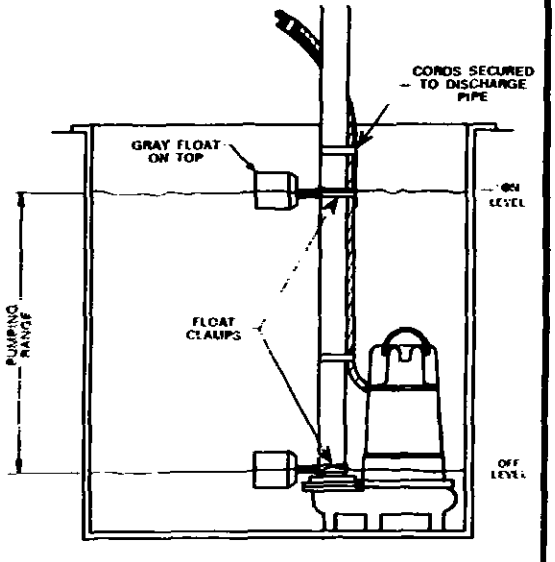


FIGURE 1

INSTALLATION INSTRUCTIONS

1. Decide the desired pumping range for your installation. (See Fig. 1.) The distance between the float mounting clamps is equal to the pumping range. Secure the float cable clamps to the discharge pipe at the distance you desire. The gray float must be on top. (The cable clamps are releasable, which permits readjustment and removal.)

NOTICE: Do not adjust "Off" Level below discharge on pump.

2. Insert the piggyback plug from the switches into a standard grounded outlet of appropriate voltage. For automatic operation plug the pump directly into the piggyback plug. (Pump can be manually operated by bypassing piggyback plug.) See Fig. 2.

NOTICE: For installation utilizing watertight junction box or similar connections, see Figure 3.

NOTICE: For installation as a control switch for magnetic or combination starter, see Figure 4.

3. Tape or clamp both piggyback switch and pump cords to the discharge pipe, clear of float operation. (See Fig. 1.) Excess cord should be coiled and fastened to the discharge pipe.

4. Clean basin free of debris after installation.

5. Check your installation. Fill basin with water and allow pump to cycle to insure proper range and operation.

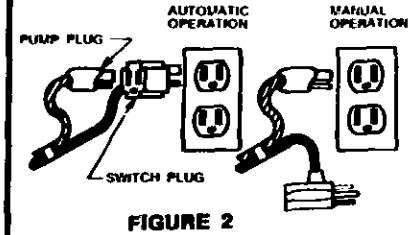


FIGURE 2

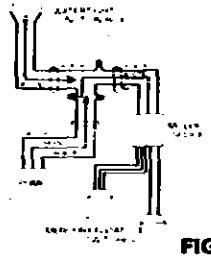


FIGURE 3

A) Remove (cut) Piggyback Plug from Mercury Float Switch. Remove approx. 3½" of Cord Jacket and 1" insulation from Wires.

B) Wire Switch into Circuit as shown.

C) Return to Instructions.

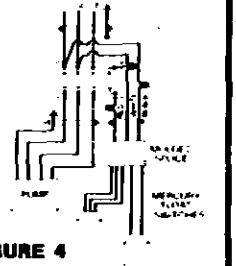


FIGURE 4

"Quality Pumps Since 1939"

Product information presented here reflects conditions at time of publication. Consult factory regarding discrepancies or inconsistencies

ZOELLER CO.

3280 Old Millers Lane
P.O. Box 16347 • Louisville, Kentucky 40216
(502) 778-2731 • FAX (502) 774-3624

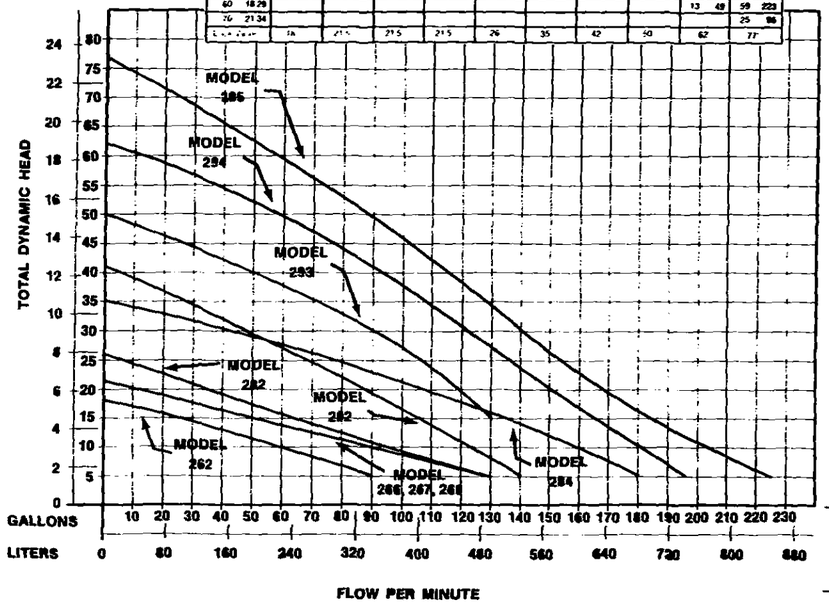
HEAD/CAPACITY CURVE

SEWAGE and DEWATERING

WARNING: Model 293 should not be subjected to less than 15 feet TDH.

TOTAL DYNAMIC HEAD/CAPACITY PER MINUTE
SEWAGE AND DEWATERING

SERIES		262		266		267		268		284		285		288		294		295	
FT	M	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs	Gal	Ltrs
5	1.52	90	341	128	484	128	484	128	484	130	492	180	681	140	530			196	742	225	852
10	3.05	60	227	89	337	89	337	89	337	95	360	154	583	124	469			181	685	205	776
15	4.57	22.5	85	50	189	50	189	50	189	63	238	135	511	106	401	130	492	166	625	185	700
20	6.10			10	38	10	38	10	38	31	125	106	401	86	333	119	450	150	568	169	638
25	7.62											76	288	68	257	106	401	136	515	153	580
30	9.14											43	163	47	178	90	340	121	458	140	530
40	12.19													5	19	50	189	94	356	115	486
50	15.24																	58	220	89	337
60	18.29																	13	49	59	223
70	21.34																			25	95
[illegible]		18		21.5		21.5		21.5		26		35		42		50		62		77	



SSPMA MEMBER

YOUR ASSURANCE OF QUALITY

EASY DO'S & DON'TS FOR INSTALLING A SUMP PUMP

1. **DO** read thoroughly all installation material provided with the pump
2. **DO** inspect pump for any damage caused by shipping. Contact dealer if pump appears to be damaged
3. **DO** clean all debris from the sump. Be sure that the pump will have a hard, flat, stable surface beneath it. **DO NOT** install on sand, gravel, or dirt
4. **DO** be sure that the sump is large enough to allow proper clearance for the level control switch(es) to operate properly
5. **DO Always Disconnect Pump From Power Source Before Handling.**
   DO always connect to a separately protected and properly grounded circuit
   DO NOT ever cut, splice, or damage power cord
   DO NOT carry or lift pump by its power cord
   DO NOT use an extension cord with a pump
6. **DO** install a check valve and a union in the discharge line
   DO NOT use a discharge pipe smaller than the pump discharge
7. **DO NOT** use a sump pump as a trench or excavation pump or for pumping sewage, gasoline, or other hazardous liquids
8. **DO** test pump immediately after installation to be sure that the system is working properly
9. **DO** cover sump with a proper sump cover
10. **DO** review all applicable local and national codes and verify that the installation conforms to each of them
11. **DO** consult manufacturer for clarifications or questions

ZOELLER CO. / 3280 Old Millers Lane P.O. Box 16347 Louisville, Kentucky 40216 (502) 778-2731 / Manufacturers of . . . "Quality Pumps Since 1939"

NOTICE TO INSTALLING CONTRACTOR: Instructions must remain with installation.

"Quality Pumps Since 1939"

NOTICE: VENT HOLE FOR CHECK VALVE SEE #10 BELOW AND # 6 PAGE 2

ZOELLER CO.

3280 OLD MILLERS LANE
P.O. BOX 16347 • LOUISVILLE, KY. 40216
(502) 778-2731 • FAX (502) 774-3624

FM 0447
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Supersedes
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INSTALLATION INSTRUCTIONS

RECOMMENDED MODELS

SEWAGE	EFFLUENT*	DEWATERING
262 Series 266, 267, 268 Series 282, 284 Series 293, 294, 295 Series 292 Series	53, 55, 57, 59 Series 97 Series 137, 139 Series 161, 163, 165 Series 185, 188, 189 Series	All Models

*Effluent systems should specify that pumps should not handle solids exceeding three fourths inch (¾") in order to prevent large solids from entering leeching fields, mound systems and etc. (50/90 Series have ½", 130 Series have ⅝", 160/180 Series have ¾", solids capability.) Where codes permit, sewage pumps can be used for effluent systems.

PREINSTALLATION CHECKLIST — ALL INSTALLATIONS

1. **Inspect your pump.** Occasionally, products are damaged during shipment. If the unit is damaged, contact your dealer before using.

2. **Carefully read the literature** provided to familiarize yourself with specific details regarding installation and use. These materials should be retained for future reference.

3. **Make sure there is a properly grounded receptacle available.** All pumps are furnished with provisions for proper grounding to protect you against the possibility of electrical shock.
(SEE WARNING BELOW)

4. Make certain that the receptacle is within the reach of the pump's power supply cord. **DO NOT USE AN EXTENSION CORD.** Extension cords that are too long or too light do not deliver sufficient voltage to the pump motor. But, more important, they could present a safety hazard if the insulation were to become damaged or the connection end were to fall into the sump.

5. Check to be sure your power source is capable of handling the voltage requirements of the motor, as indicated on the pump name plate.

6. **Make sure the pump electrical supply circuit is equipped with fuses or circuit breakers of proper capacity.** A separate branch circuit is recommended, sized according to the "National Electrical Code" for the current shown on the pump name plate.

7. **Testing for Ground.** As a safety measure, each electrical outlet should be checked for ground using an Underwriters Laboratory Listed circuit analyzer which will indicate if the power, neutral and ground wires are correctly connected to your outlet. If they are not, call a qualified licensed electrician.

8. **For Added Safety.** Pumping and other electrical equipment must be connected to a three prong grounded outlet interrupter device (ground fault interrupter).

9. **WARNING:** The installation of automatic pumps with mercury float switches or non-automatic pumps using auxiliary mercury float switches is the responsibility of the installing party and care should be taken that the tethered float switch will not hang up on the pump apparatus or pit peculiarities and is secured so that the pump will shut off. It is recommended to use rigid piping and fittings and the pit be 18" or larger in diameter.

10. **Information - vent hole purpose.** It is necessary that all submersible sump, effluent, and sewage pumps capable of handling various sizes of solid waste be of the bottom intake design to reduce clogging and seal failures. If a check valve is incorporated in the installation, a vent hole (approx. 3/16") must be drilled in the discharge pipe below the check valve and pit cover to purge the unit of trapped air. Trapped air is caused by agitation and/or a dry basin. This vent hole should be checked periodically for clogging. The 50 Series pumps have a built in vent hole.

CAUTIONS & WARNINGS

WARNING:
FOR YOUR PROTECTION, ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING. Single phase pumps are supplied with a 3-prong grounded plug to help protect you against the possibility of electrical shock. **DO NOT UNDER ANY CIRCUMSTANCES REMOVE THE GROUND PIN.** The 3-prong plug must be inserted into a mating 3-prong grounded receptacle. If the installation does not have such a receptacle, it must be changed to the proper type, wired and grounded in accordance with the National Electrical Code and all applicable local codes and ordinances. Three phase pumps must be installed in accordance with the National Electrical Code and all applicable local codes and ordinances.

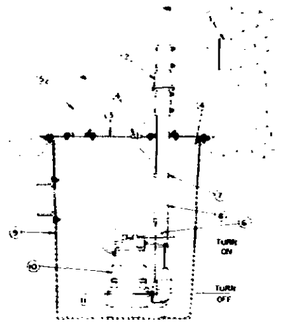
CAUTION: Installation and checking of electrical circuits and hardware should be performed by a qualified licensed electrician.

CAUTION: Repair and service should be performed by Zoeller Company Authorized Service Station only.

CAUTION: Dewatering sump pumps are not designed for use in septic tanks to handle sewage or effluent.

CAUTION: Maximum continuous operating temperature for standard model pumps must not exceed 130°F - 54°C.

All installations must comply with all applicable electrical and plumbing codes, including, but not limited to, National Electrical Code, local, regional, and/or state plumbing codes, etc.



TYPICAL SEWAGE INSTALLATION-RECOMMENDED INSTALLATION

(1) Electrical wiring and protection must be in accordance with National Electrical Code and any other applicable state and local electrical requirements.

(2) Install proper Zoeller unicheck (combination union and check valve), preferably just above the basin to allow easy removal of the pump for cleaning or repair. On sewage, effluent or dewatering, if high head installation is required, use Zoeller 30 Series PVC type check valve with compression end fittings on 1½" and 2" installation; on 3" use 30-0160. See (6) below.

(3) All installations require a basin cover to prevent debris from falling into the basin and to prevent accidental injury.

4 Gas tight seals are required in all sewage installations to contain gases and odors.

5 Vent gases and odors to the atmosphere through vent pipe

6 When a Unicheck is installed, drill a 3/16" dia. hole in the discharge pipe even with the top of the pump. The 50 Series pumps have a built in vent hole. NOTE: The hole must also be below the basin cover.

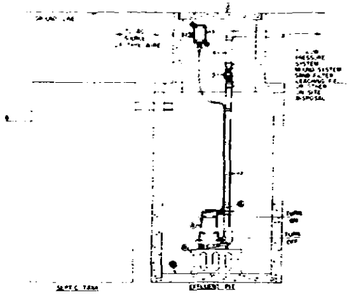
7 Securely tape or clamp power cord to decharge pipe clear of the float mechanism

8 Use full-size discharge pipe.

9 Basin must be in accordance with applicable codes and specifications.

* 10 Pump must be level and float mechanism clear of sides of basin before starting pump.

11 Basin must be clean and free of debris after installation.



TYPICAL EFFLUENT INSTALLATION-RECOMMENDED INSTALLATION

1 Electrical wiring and protection must be in accordance with National Electrical Code and any other applicable state and local electrical requirements.

2 All installations require a basin cover to prevent debris from falling into the basin, and to minimize accidental injury.

3 Wire pump to power through a Zoeller J-Pak; watertight junction box or watertight splice. NOTE: Watertight enclosure is a must in damp areas.

4 Use full-size discharge pipe.

5 Install proper Zoeller unicheck (combination union and check valve), preferably just above the basin to allow easy removal of the pump for cleaning or repair. On sewage, effluent or dewatering, if high head installation is required, use Zoeller 30 Series PVC type check valve with compression end fittings on 1½" and 2" installation; on 3" use 30-0160. For below cover installation use Zoeller model 30-0200 on 1½" pipe, and PVC compression end check valve on 2 or 3 inch pipe. See (6) below.

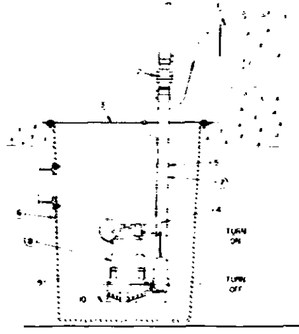
6 When a Unicheck is installed, drill a 3/16" dia. hole in the discharge pipe even with the top of the pump. The 50 Series pumps have a built in vent hole. NOTE: The hole must also be below the basin cover.

7 Securely tape or clamp power cord to discharge pipe clear of the float mechanism.

* 8 Pump must be level and float mechanism clear of sides of basin before starting pump.

9 Install blocks or bricks under pump to provide a settling basin.

10 Basin must be clean and free of debris after installation.



TYPICAL DEWATERING INSTALLATION-RECOMMENDED INSTALLATION

1 Electrical wiring and protection must be in accordance with National Electrical Code and any other applicable state and local electrical requirements.

2 Install proper Zoeller unicheck (combination union and check valve), preferably just above the basin to allow easy removal of the pump for cleaning or repair. On sewage, effluent or dewatering, if high head installation is required, use Zoeller 30 Series PVC type check valve with compression end fittings on 1½" and 2" installation; on 3" use 30-0160. For below cover installation use Zoeller model 30-0200 on 1½" pipe, and PVC compression end check valve on 2 or 3 inch pipe. See (4) below.

(3) All installations require a basin cover to prevent debris from falling into the basin and to prevent accidental injury.

4 Securely tape or clamp power cord to discharge pipe clear of the float mechanism.

(5) Minimum 18" dia. x 24" deep basin.

(6) When a Unicheck is installed, drill a 3/16" dia. hole in the discharge pipe even with the top of the pump. The 50 Series pumps have a built in vent hole. NOTE: The hole must also be below the basin cover.

7 Use a full-size discharge pipe.

*(8) Pump must be level and float mechanism clear of sides of basin before starting pump.

(9) Install blocks or bricks under pump to provide a settling basin.

(10) Basin must be clean and free of debris after installation.

*Check specific control installation instruction for other type control usage.

SERVICE CHECK LIST

WARNING: ELECTRICAL PRECAUTIONS — Before servicing a pump, always shut off the main power breaker and then unplug the pump - making sure you are not standing in water and are wearing insulated protective sole shoes. Under flooded conditions, contact your local electric company or a qualified licensed electrician for disconnecting electrical service prior to pump removal.

WARNING: Submersible pumps contain oil which becomes pressurized and hot under operating conditions- **allow 2½ hours after disconnecting before attempting service.**

CONDITION	COMMON CAUSES
A. Pump will not start or run.	Check fuse, low voltage, overload open, open or incorrect wiring, open switch, impeller or seal bound mechanically, defective capacitor or relay when used, motor or wiring shorted. Float assembly held down. Switch defective, damaged, or out of adjustment.
B. Motor overheats and trips overload or blows fuse.	Incorrect voltage, negative head (discharge open lower than normal) impeller or seal bound mechanically, defective capacitor or relay, motor shorted.
C. Pump starts and stops too often.	Float tight on rod, check valve stuck or none installed in long distance line, overload open, level switch(s) defective, sump pit too small.
D. Pump will not shut off.	Debris under float assembly, float or float rod bound by pit sides or other, switch defective, damaged or out of adjustment.
E. Pump operates but delivers little or no water.	Check strainer housing, discharge pipe, or if check valve is used vent hole should be open. Discharge head exceeds pump capacity. Low or incorrect voltage. Incorrect motor rotation. Capacitor defective. Incoming water containing air or causing air to enter pump.
F. Drop in head and/or capacity after a period of use.	Increased pipe friction, clogged line or check valve. Abrasive material and adverse chemicals could possibly deteriorate impeller and pump housing. Check line. Remove base and inspect.

If the above check list does not uncover the problem, consult the factory - Do not attempt to service or otherwise disassemble pump.

LIMITED WARRANTY

Zoeller Company warrants, to the purchaser and subsequent owner during the warranty period, every new Zoeller Company product to be free from defects in material and workmanship under normal use and service, when properly installed, used, and maintained, for a period of one year from date of installation or 18 months from date of manufacture, whichever comes first. Part(s) that fail (within one year of installation or 18 months from the date of manufacture, whichever comes first) that inspection determine to be defective in material or workmanship, will be repaired, replaced, or remanufactured at Zoeller Company's option provided, however, that by so doing we shall not be obligated to replace an entire assembly, the entire mechanism or the complete unit. No allowance will be made for shipping charges, damages, labor or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to any material which has been disassembled without prior approval of Zoeller Company, subjected to misuse, misapplication, neglect, alteration, accident or act of God; that have not been installed, operated or maintained in accordance with Zoeller Company installation instructions; that has been exposed to but not limited to the following: sand, gravel, cement, mud, tar, hydro carbons or hydro carbon derivatives (oil, gasoline, solvents, etc.) or other abrasive or corrosive substances, is in lieu of all other warranties expressed or implied; and we do not authorize any representative or other person to assume for us any other liability in connection with our products.

Contact Zoeller Company, 3280 Old Millers Lane, Louisville, Kentucky 40216, Attention: Customer Service Department to obtain any needed repair or replacement of part(s) or additional information pertaining to our warranty.

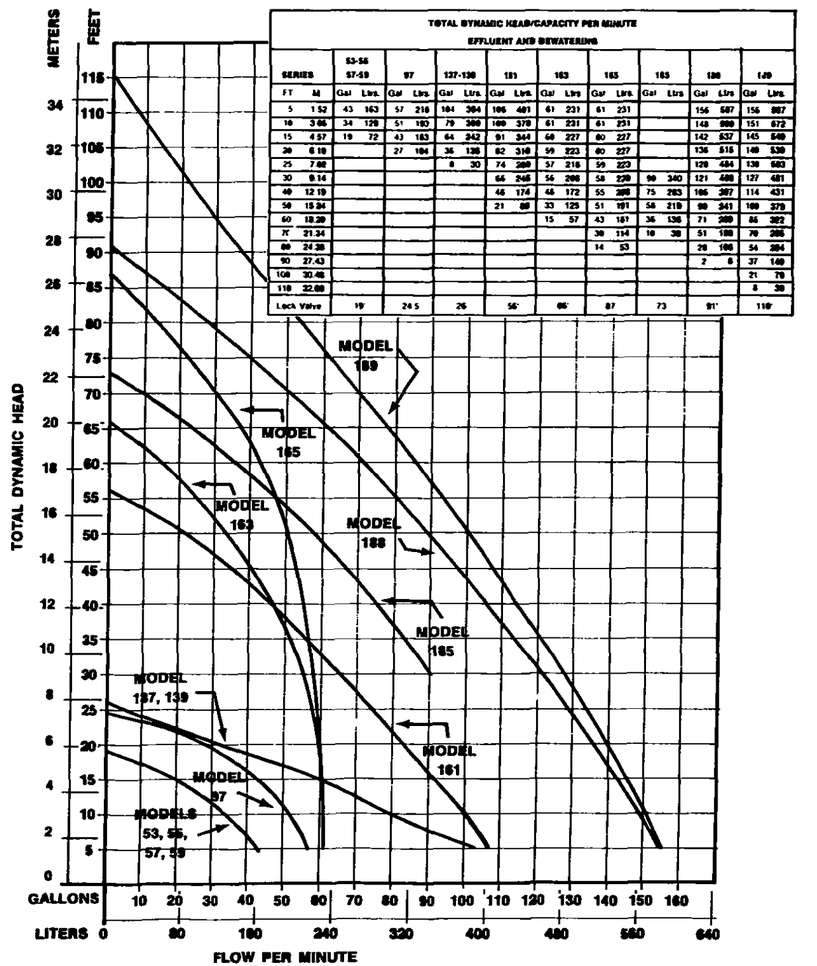
ZOELLER COMPANY EXPRESSLY DISCLAIMS LIABILITY FOR SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES OR BREACH OF EXPRESSED OR IMPLIED WARRANTY; AND ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICLUAR PURPOSE AND OF MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY.

Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

HEAD/CAPACITY CURVE
EFFLUENT and DEWATERING

WARNING: Model 185 should not be subjected to less than 30 feet TDH.



TOTAL DYNAMIC HEAD/CAPACITY PER MINUTE
EFFLUENT AND DEWATERING

SERIES	53-55 57-59		97		137-139		161		163		165		185		188		189	
FT M	Gal	Ltrs.	Gal	Ltrs.	Gal	Ltrs.	Gal	Ltrs.	Gal	Ltrs	Gal	Ltrs.	Gal	Ltrs	Gal	Ltrs.	Gal	Ltrs.
5 1.52	43	163	57	216	104	394	106	401	61	231	61	231			156	587	156	587
10 3.05	34	128	51	193	79	300	100	379	61	231	61	231			148	560	151	572
15 4.57	19	72	43	163	64	242	91	344	60	227	60	227			142	537	145	549
20 6.10			27	104	36	136	62	310	59	223	60	227			136	515	140	530
25 7.62					8	30	74	280	57	216	59	223			128	484	130	493
30 9.14							66	246	56	208	58	220	90	340	121	458	127	481
40 12.19							46	174	46	172	55	208	75	283	106	397	114	431
50 15.24							21	80	33	125	51	191	58	219	90	341	100	379
60 18.29									15	57	43	161	36	136	71	269	85	322
70 21.34											30	114	10	38	51	193	70	265
80 24.38											14	53			28	106	54	204
90 27.43															2	8	37	140
100 30.48																	21	79
110 32.69																	8	30
Lock Valve	19'		24.5		26		56'		66'		87		73		91'		110'	

Note: For Head Capacity on Model 112, industrial column-explosion proof pump, see FM 219.