

A UNIT OF GENERAL SIGNAL

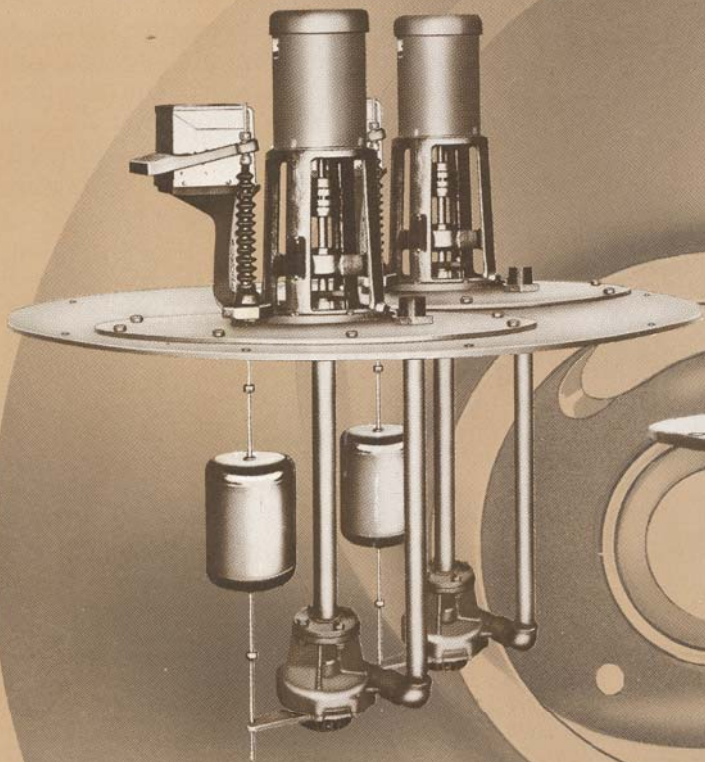


# AURORA PUMP

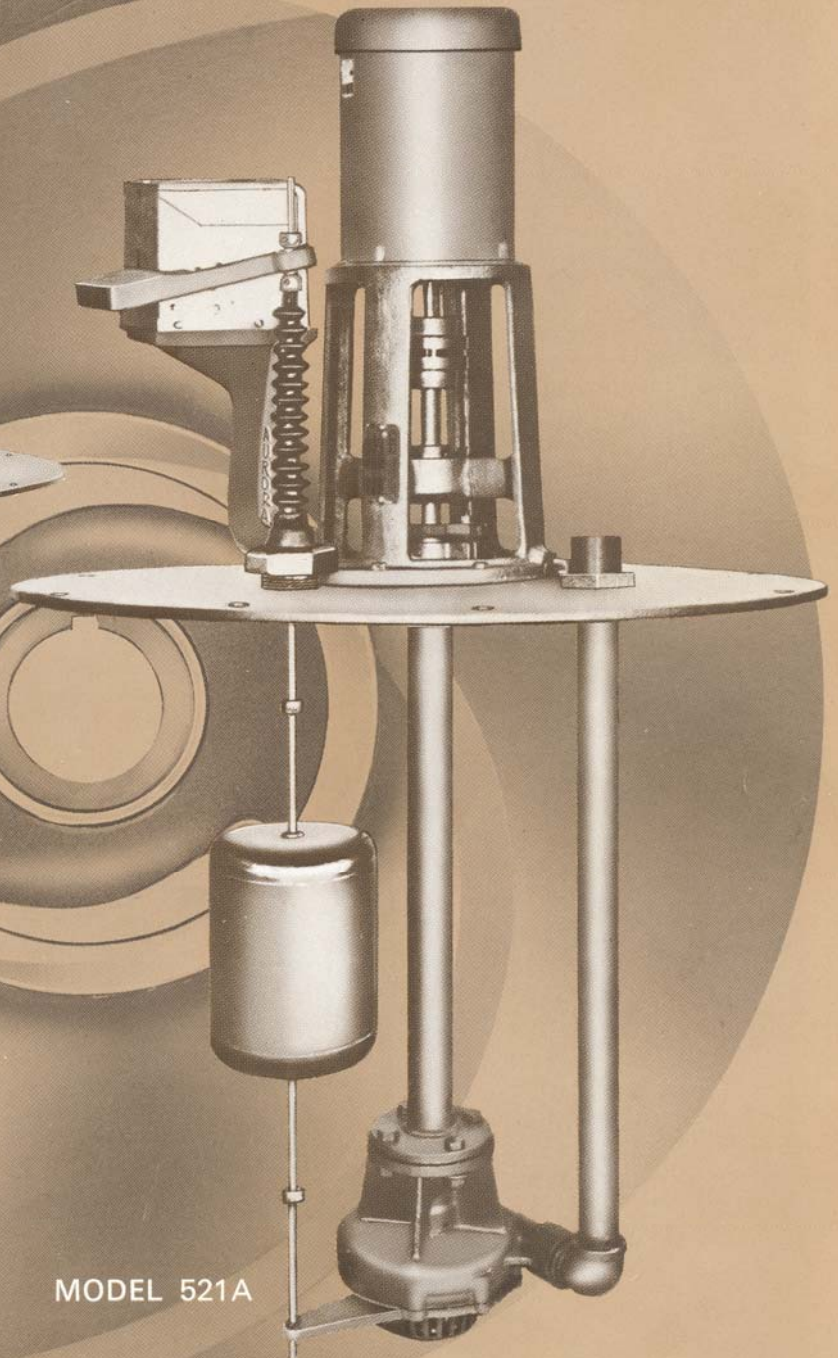
BULLETIN 520E

**520 SERIES  
SINGLE STAGE  
SUMP  
PUMPS—"MSM"**

CAPACITIES TO 110 G.P.M.  
HEADS TO 40 FEET  
TEMPERATURES TO 180°F.



MODEL 522A



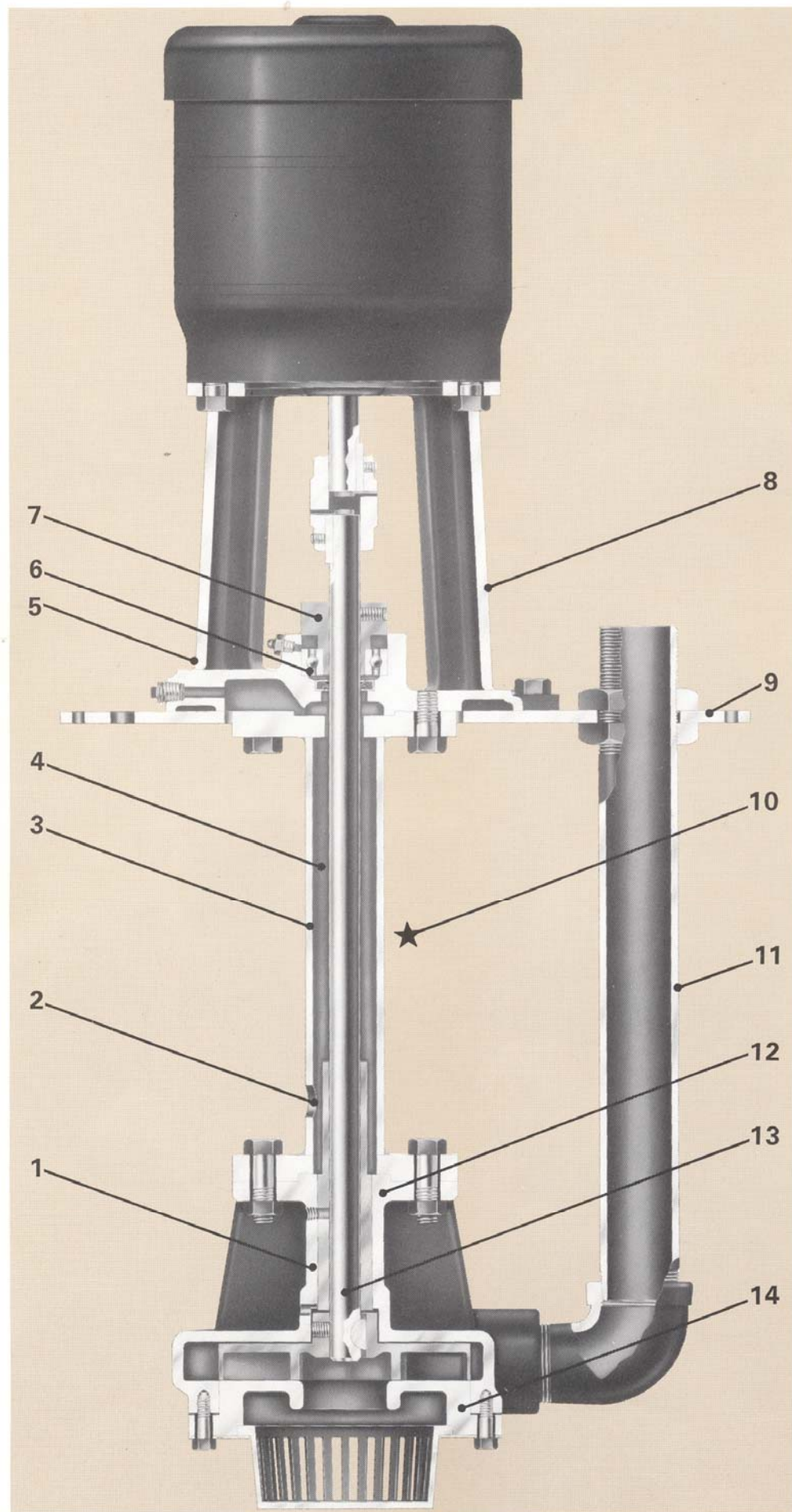
MODEL 521A

A.I.A. FILE NO. 29-C-1

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# INTRODUCTION

## AURORA 520 SERIES PUMPS



There are many requirements for vertical extended shaft single stage centrifugal pumps. These pumps perform the important function of transferring liquid from below ground reservoirs or enclosed tanks. Sump pumps are a logical choice for a variety of applications, among them — sump drainage in building basements, tunnels, pits — wherever water gathers and must be emptied into sewers or be elevated above ground. They are popular for handling wash water, boiler pit service, etc. The 2" pump renders satisfactory service for handling up to 1½" diameter sphere size screened sewage. The vertical pump design is in many ways more critical than those of more standard centrifugal pumping units. Attention must be paid to operating speeds, ball bearing arrangements, shaft design and construction. This bulletin illustrates how this pump solves these problems and will contribute to the solution of your particular pumping problem.

### PUMP FEATURES

**1 BRONZE SLEEVE BEARING** is extra length for long life.

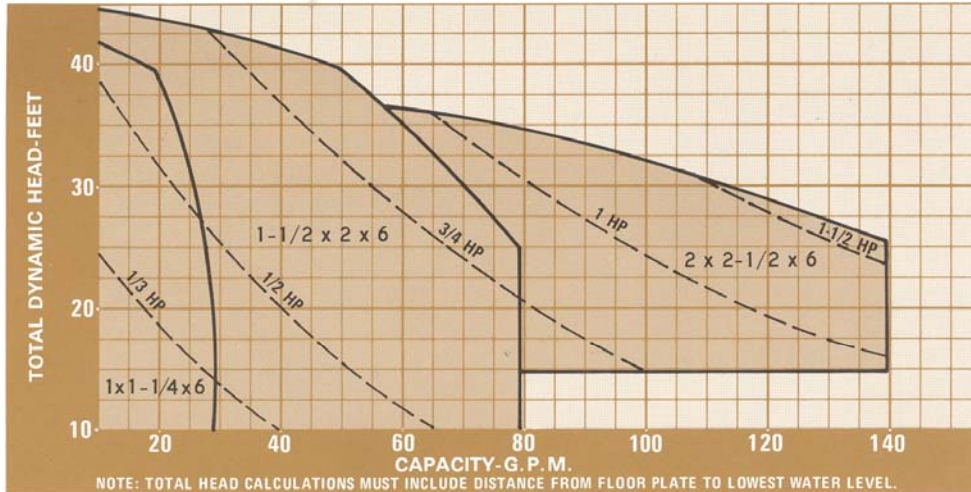
**2 RELIEF HOLES** prevent liquid under pressure from rising above normal sump liquid levels.

**3 SUPPORT PIPE** is constructed of 1½" schedule 40 pipe.

**4 LINE BEARINGS** are provided on pit depths of 5'-2" and one additional bearing is provided for each 4' thereafter. Each bearing is grease lubricated.

**5 MOTOR MOUNTING** bracket that assures alignment of motor and pump shaft with tongue and groove machining.

# RANGE CHART AND SPECIAL FEATURES



**6 THRUST BALL BEARING** is regreaseable and is protected from contamination.

**7 EXTERNAL IMPELLER ADJUSTMENT** is accomplished with an easy to reach adjusting collar.

**8 ELEVATED HEAD** bearing provides additional bearing protection from washdown and other contaminants. Integral stuffing box is available with packing and a split gland for gastight construction.

**9 STEEL BASEPLATE** is standard with optional designs available.

**10 ELEVATED FLOAT SWITCH ASSEMBLY** is standard. Several enclosures are available.

**11 DISCHARGE PIPE** is securely locked to the baseplate and is threaded.

**12 POSITIVE ALIGNMENT THROUGHOUT** utilizes tongue and groove design to assure true and vibration free operation.

**13 PUMP SHAFT** 1 3/16" in diameter is provided to minimize deflection.

**14 LIQUID END** includes a semi-open bronze impeller as standard. A large area strainer keeps trash from clogging the impeller on 1" and 1 1/2" pumps.

## OPTIONAL EQUIPMENT

- All iron construction
- Gastight stuffing box
- Grease lubricated pump bearing
- Stainless steel shaft
- Round, square or spl. shape baseplates
- 4" Vent
- Various float switch enclosures
- Electric controllers
- High water alarm
- Float guard
- Special pump setting increments
- Flanged discharge elbow
- Strainer optional on 2" pumps

## DESIGN DETAILS

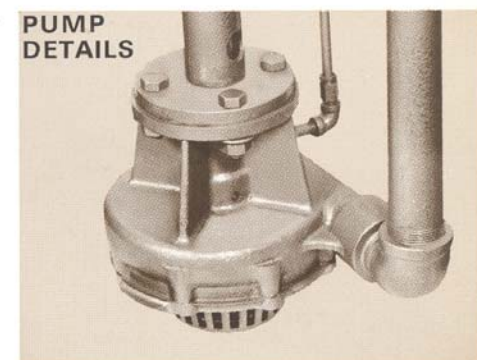
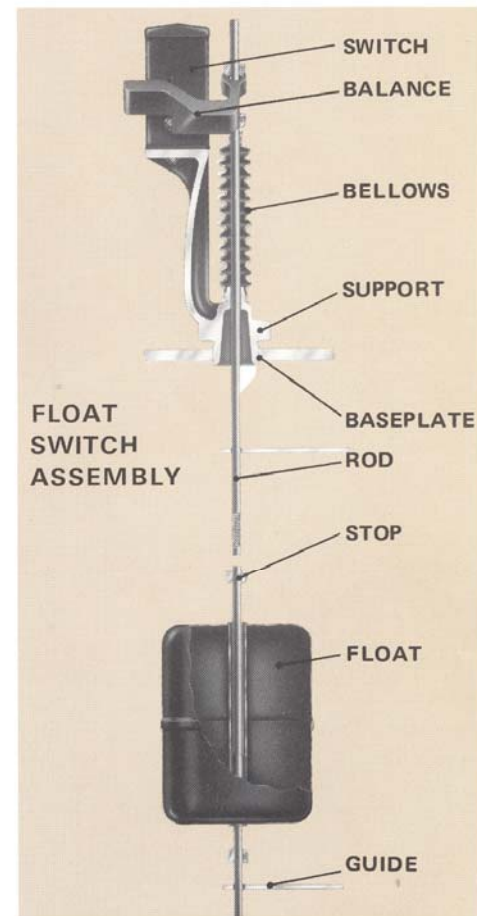
Area	Description	Dim.
Pump Shaft	Rotation — From Driver End	CW
	Diameter — Full Length	1 3/16
	Bearing (Ball) — Head	7305W
Bearing	Bearing (Sleeve) — Pump	6 Lg
	<b>SUPPORT PIPE SIZE</b>	

## LIMITATIONS

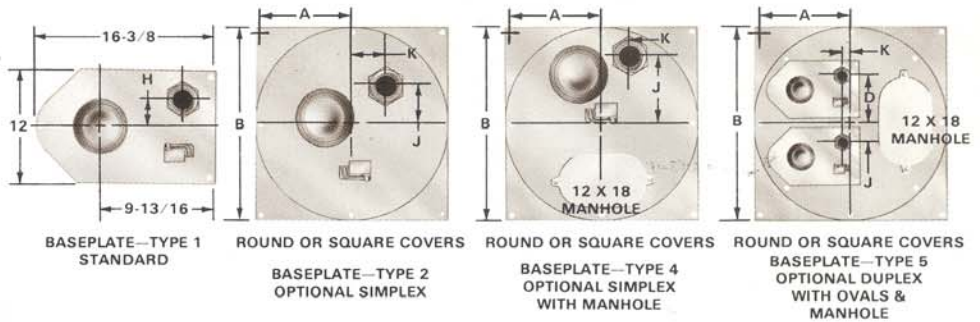
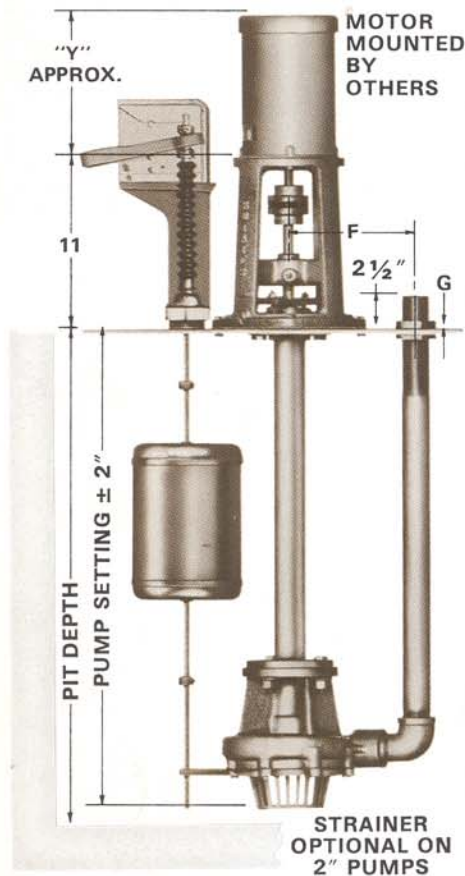
Maximum Limitations Based on Standard Materials and Pumping Clear Water	
Speed — R.P.M.	1750
Minimum Horsepower	1/3
Temperature °F	180
Basin Pressure — P.S.I.	2
Basin Cover Size — w/o Oval or Manhole Ovals or Manhole	28"
	53"

## LINE SHAFT BEARINGS

Pit Depths	Number of Line Shaft Bearings
1'-4" to 5'-1"	0
5'-2" to 9'-0"	1
9'-1" to 10'-6"	2



# ENGINEERING SPECIFICATIONS AND PUMP DIMENSIONS



STEEL BASEPLATE										MOTOR — O.D.P.				
A	B	Type 1		Type 2		Type 4		Type 5		Frame	Horsepower		Wgt. (Lbs.)	Y
		G	Wgt.	G	Wgt.	G	Wgt.	G	Wgt.		1750	1150		
—	Oval	1/4	20	—	—	—	—	—	—	—	1 1/2	—	18	—
11	24	—	—	3/8	28	—	—	—	—	56	1/2	1/3	20	10
13	28	—	—	3/8	76	—	—	—	—	—	1/2	1/2	26	—
16	34	—	—	—	—	3/8	125	1/2	135	—	3/4	1/2	37	9 1/2
19	40	—	—	—	—	3/8	173	1/2	183	143TC	1	3/4	46	10 1/2
22	46	—	—	—	—	3/8	299	1/2	309	—	1 1/2	1	—	—
25 1/2	53	—	—	—	—	3/8	397	1/2	504	145TC	2	1 1/2	—	—

### NOTES:

1. Dimensions and weights are approximate.
2. All dimensions are in inches and may vary  $\pm 1/2$ ".
3. Not for construction purposes unless certified.

4. Add pump(s), base(s), head and motor weight(s) for unit weight.
5. Aurora Pump reserves the right to make revisions to its products and their specifications, and to this bulletin and related information, without notice.

PUMP SIZE				PUMP WGT.				MINIMUM BASEPLATE SIZE								
Disch.	Suct.	Case Bore	Sphere Size	5'-0" Pit Depth	Add For Ea. Add'l. 1' Pit	F	Type 1		Type 2		Type 4		Type 5			
							H	Size	J	K	Size	J	K	Size	D	J
1	1 1/4	6	3/16	190	15	6 3/8	3 3/8	—	4 3/8	3 7/8	10 3/8	3 7/8	—	9 7/8	2 13/16	
1 1/2	2	6	3/16	195	15	6 3/8	3 1/2	24	4 3/4	4 3/8	30	10 3/4	4 3/8	34	9 3/8	2 3/8
2	2 1/2	6	1 1/2	200	15	6 3/8	3 1/2	—	4 3/4	4 3/8	—	10 3/4	4 3/8	—	9 3/8	2 3/8

## ENGINEERING SPECIFICATIONS

The contractor shall furnish (and install as shown on the plans) Aurora Model (521A Simplex) (522A Duplex) centrifugal sump pumps size . . . x . . . of (bronze fitted) (all iron) construction. Each pump shall have a capacity of . . . G.P.M at . . . ft. total head, with a temperature of . . . °F., . . . specific gravity.

The units shall be designed for a sump depth of . . . feet and shall be furnished with the discharge terminating at the baseplate with a male threaded connection.

A steel baseplate (round) (square) — (Simplex) (Simplex with manhole) (Duplex with manhole) will be provided.

The pump casing and suction cover shall be of cast iron. The casing is to be of the single stage design and cast integrally with the bearing cover.

A strainer of sufficient size (optional on 2" pumps) shall be provided. The impeller is of the semi-open type and shall be constructed of bronze. The impeller is to be dynamically balanced and keyed to the pump shaft. The column pipe must be 1 1/2" diameter having machined tongue and grooved joints to insure shaft alignment. A pump bearing will be located directly above the impeller and shall be of the bronze sleeve type.

Line bearings must be provided on pit depths of 5'-2" and one additional bearing for each 4' thereafter. Line bearings must be (grease) (oil) (water) lubricated through separate Nylon tube lubrication lines terminating at the baseplate.

The motor pedestal is to be of cast iron, one piece construction, fitted with a sealed thrust ball bearing located 3" above the baseplate. An optional packed stuffing box complete with a split gland shall be provided

for gas-tight construction. The ball bearing collar is to allow external axial adjustment of the shaft and impeller. A grease seal shall be provided to retain grease and to prevent contamination of the ball bearing. A grease fitting will be provided to allow regreasing of the bearing.

The pump shall be controlled by an enclosed (heavy-duty) (watertight and explosion resisting) (heavy-duty with built-in overload protection) (explosion proof) type float operated switch 6" above the baseplate with reinforced plastic float and float rod. A flexible bellows will provide gas-tight construction.

An automatic alternator shall be furnished on duplex pumps to allow the pumps to alternate on each successive cycle of operation. The pumps are to be driven by and flexible coupled to a standard "C" flange . . . H.P., . . . volt, . . . cycle, . . . R.P.M., . . . enclosure, vertical electric motor.

## AURORA PUMP

### A UNIT OF GENERAL SIGNAL

800 AIRPORT ROAD • NORTH AURORA, ILLINOIS • 60542

SALES OFFICES IN ALL MAJOR CITIES AND COUNTRIES  
Refer to "Pumps" in the yellow pages of your phone directory

MAIN OFFICE AND MANUFACTURING FACILITY IS  
LOCATED IN NORTH AURORA, ILLINOIS (GREATER CHICAGO)

Export Dept. Telex 720411 Cable Address "NYABINT"

The Trade-mark AURORA is registered in U.S. Patent Office

