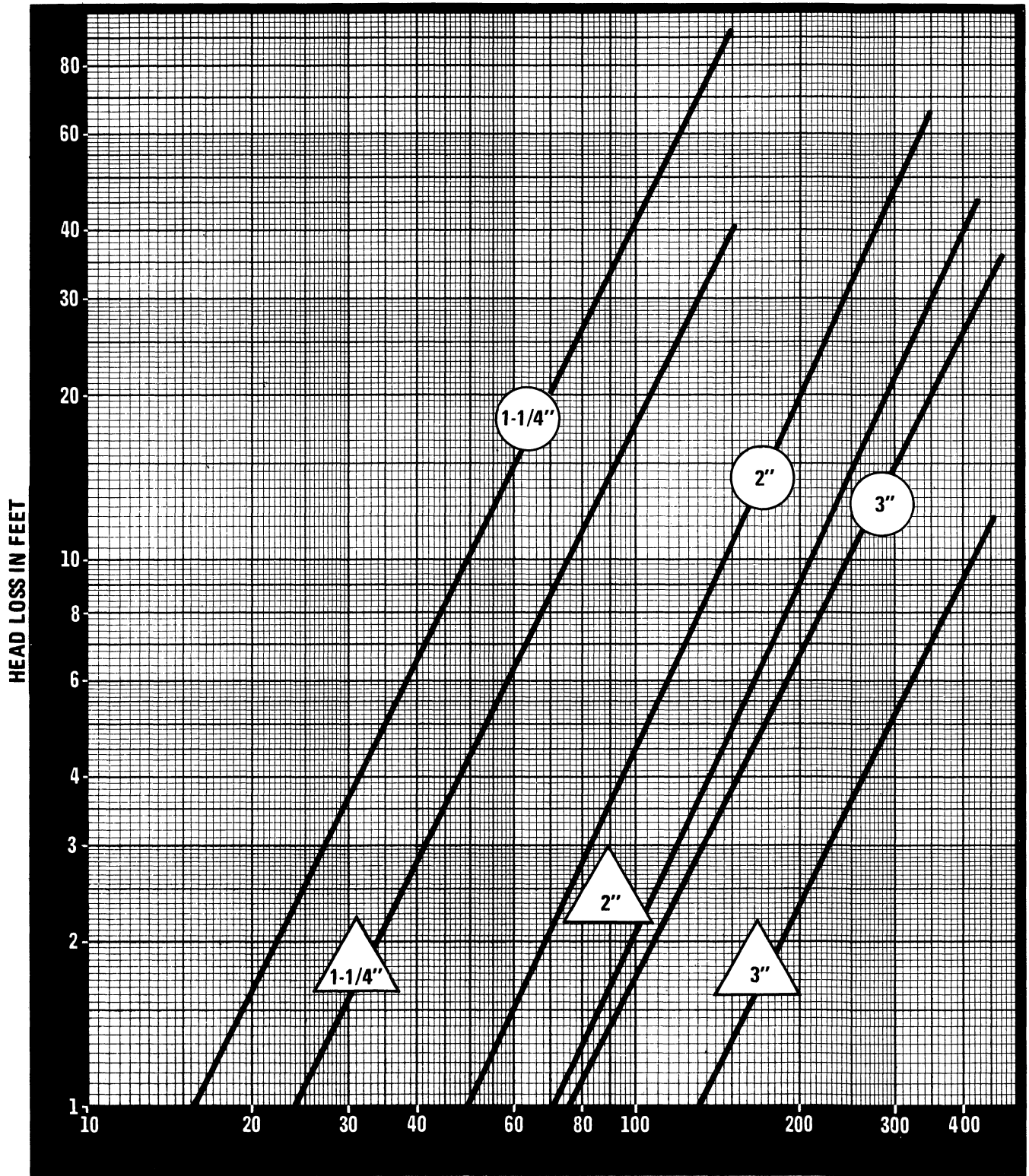
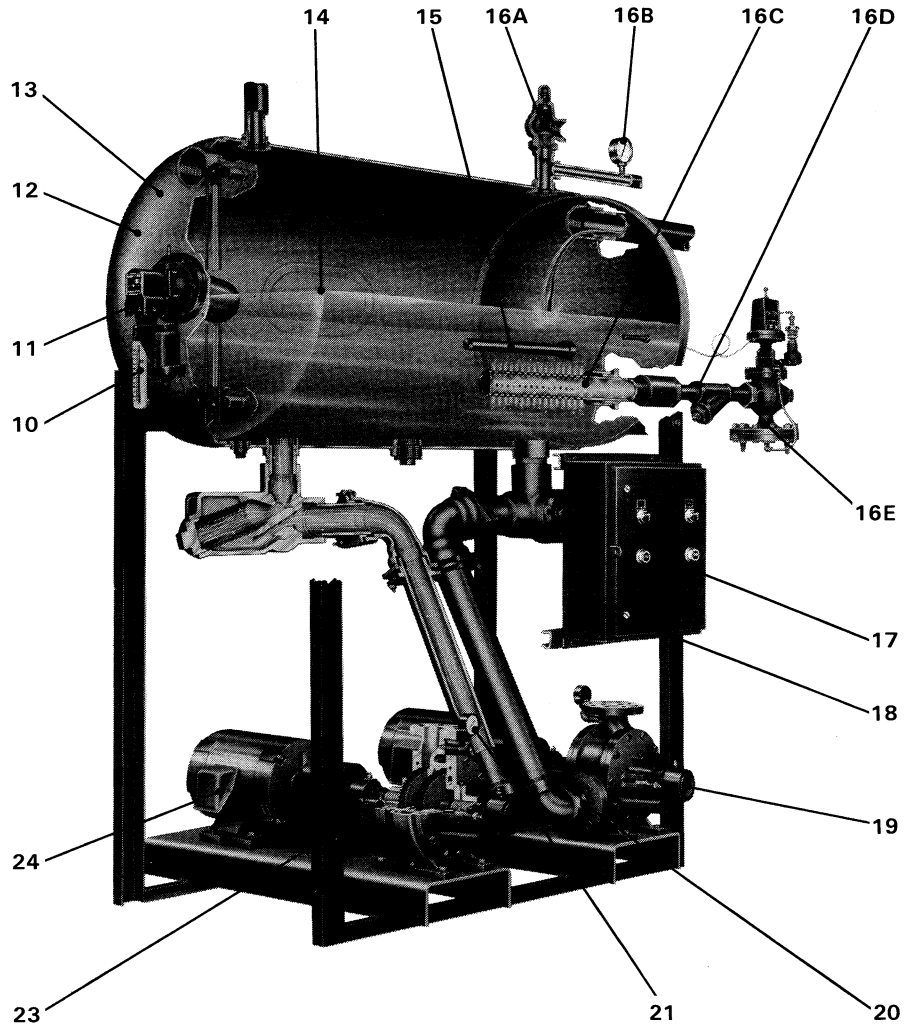
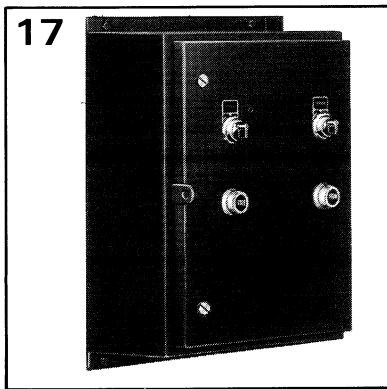
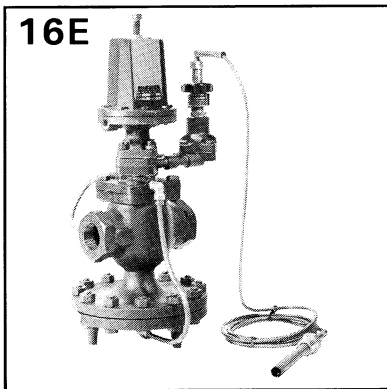
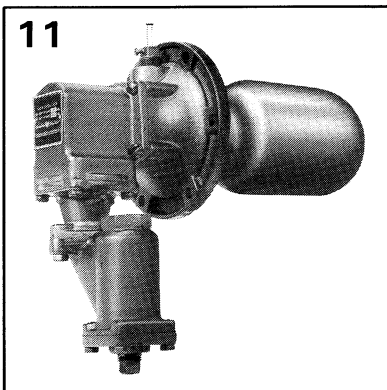
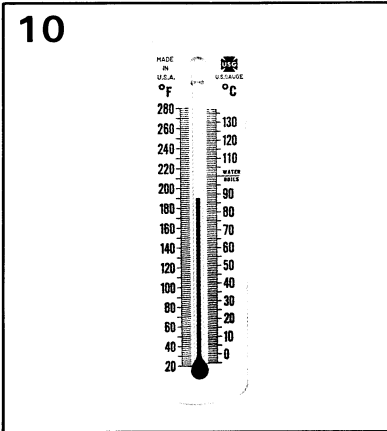


AURORA SERIES 280 HEAD LOSS CHART 3-WAY VALVE



○ - STRAINER △ - BY-PASS

CAPACITY - G.P.M.



OPTIONAL EQUIPMENT

10 THERMOMETER provides readings in F° and C° scales.

- A) Back angle (illustrated)
- B) 3" Dial

11 MAKE-UP FEEDER VALVE.

- A) Series 21 for 30, 60 & 100 gallon receivers
- B) Series 25 for 200, 250 & 350 gallon receivers
- C) Special order over 500 gallon receivers

12 125# ASME CODE RECEIVERS of equivalent capacity. Manholes 11" x 15" are included in receiver sizes 350 gallons thru 1000 gallons.

13 ADDITIONAL PIPE TAPS in receiver.

14 MANHOLE 11" x 15" for receiver capacities of 750 and 1000 gallons.

15 MAGNESIUM ANODE provides electrolytic corrosion protection.

16 STEAM HEATER PACKAGE consisting of the following:

- 16A** Relief valve
- 16B** Pressure gauge

16C Preheater tube

16D "Y" strainer

16E Temp. regulating valve:

- a) Low pressure 25T (5-15 P.S.I. steam) WITHOUT pressure reducing attachment.
- b) High pressure 25PT (50-200 P.S.I. steam) WITH pressure reducing attachment.

NOTE: Item 16 components can be provided separately.

17 PREWIRED CONTROL PANEL to all integral H.P. motors includes external reset buttons and hand-off-automatic switches. See Bulletin 280 for details.

18 ELECTRIC ALTERNATOR mounted and wired on duplex.

19 MECHANICAL SEALS for turbine pumps.

20 SPECIAL PUMPS.

21 PRESSURE GAUGES.

23 DUPLEX, DUAL AND TRIPLEX units. See Bulletin 280.

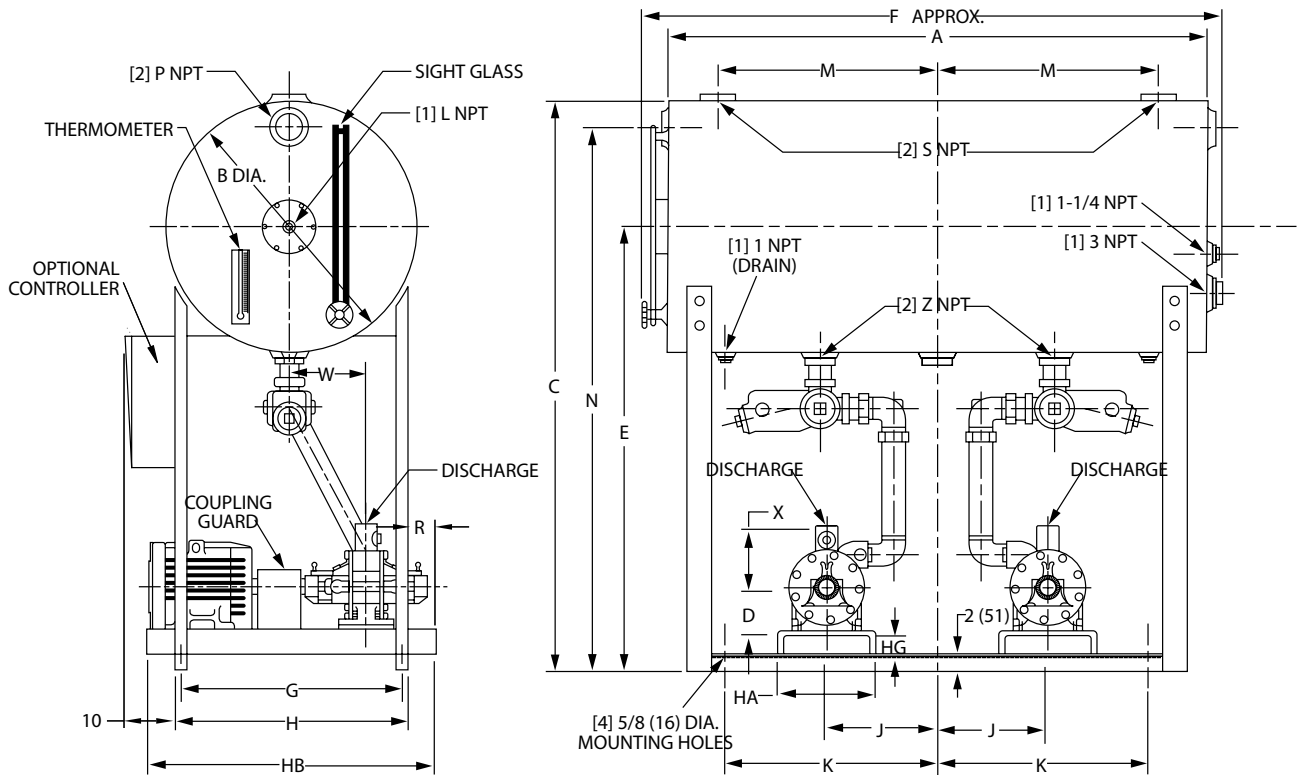
24 SPECIAL MOTORS.

BOILER FEED UNIT

Date **JANUARY 2004**

110A TURBINE PUMP DIMENSIONS

Supersedes Section 280 Page 251
Dated JANUARY 1999

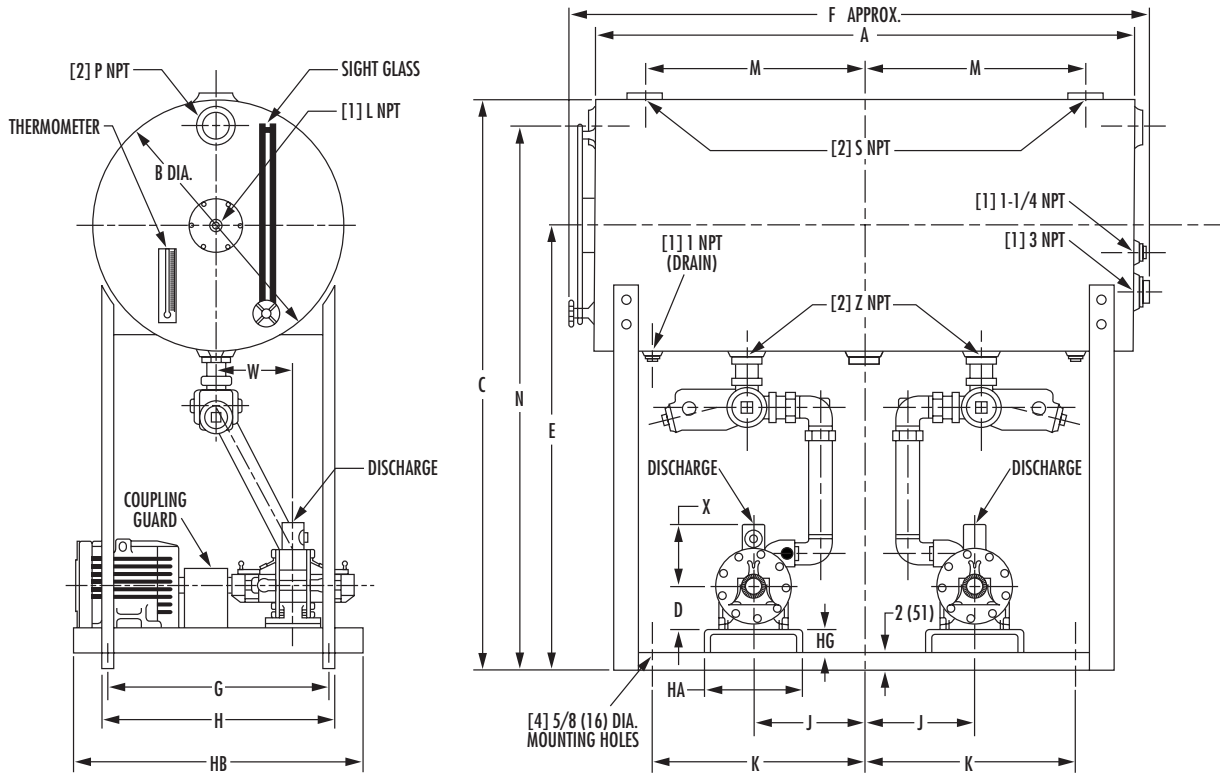


PUMP MODEL	PUMP TYPE	PUMP SIZE	DISCHARGE	D	W	X	FRAME	MOTOR D
114A	4R	A35, A4, B4, C4, D4, E4, F4, G4, H4, I4, I4A	1-1/4 NPT	3-1/2 (89)	5-15/16 (151)	6-1/4 (159)	56	3-1/2 (89)
	4RA	N4, P4, R4	1-1/2 NPT	3-1/2 (89)	8-1/8 (206)	5-3/8 (137)	143T	3-1/2 (89)
	4RTL	D4T, E4T, F4T, G4T, I4T, I4TA	1-1/4 NPT	3-1/2 (89)	6-3/4 (171)	5-3/8 (137)	145T	3-1/2 (89)
115A	5R	D5, E5, F5, G5, H5, I5	1-1/4 NPT	4-3/4 (121)	8-3/8 (213)	7-1/2 (191)	182T	4-1/2 (114)
	5RA	J5, K5, L5, M5, N5, P5	1-1/2 NPT	4-3/4 (121)	9-3/8 (238)	7-1/2 (191)	184T	4-1/2 (114)
	5RTL	D5T, E5T, F5T, G5T, H5T, I5T	1-1/4 NPT	4-3/4 (121)	8-5/8 (219)	7-1/2 (191)	213T	5-1/4 (133)
116A	6RA	G6, H6, J6, K6	2-1/2 - 250#	6-1/4 (159)	12-3/16 (310)	8 (203)	215T	5-1/4 (133)
	6RTL	D6T, E6T, F6T	2 - 250#	6-1/4 (159)	12-3/16 (310)	7-1/2 (191)	254T	6-1/4 (159)
	6RATL	G6T, H6T, J6T, K6T	2-1/2 - 250#	6-1/4 (159)	13-13/16 (335)	7-1/2 (191)	256T	6-1/4 (159)
							284TS	7 (178)
							284T	7 (178)
							286TS	7 (178)
							286T	7 (178)

- NOTES:
- All dimensions in inches (mm).
 - Dimensions may vary $\pm .25"$ (6).
 - Not for construction purposed unless certified.
 - Duplex Model 282 illustrated.
Simplex is Model 281.
Duplex is Model 282.
 - Inlet and vent piping by customer.
 - Two "D" dimensions are given. Always use the larger figure.
 - Two base numbers are given. Always use the larger base number.

BOILER FEED UNIT

RECEIVER AND BASE DIMENSIONS

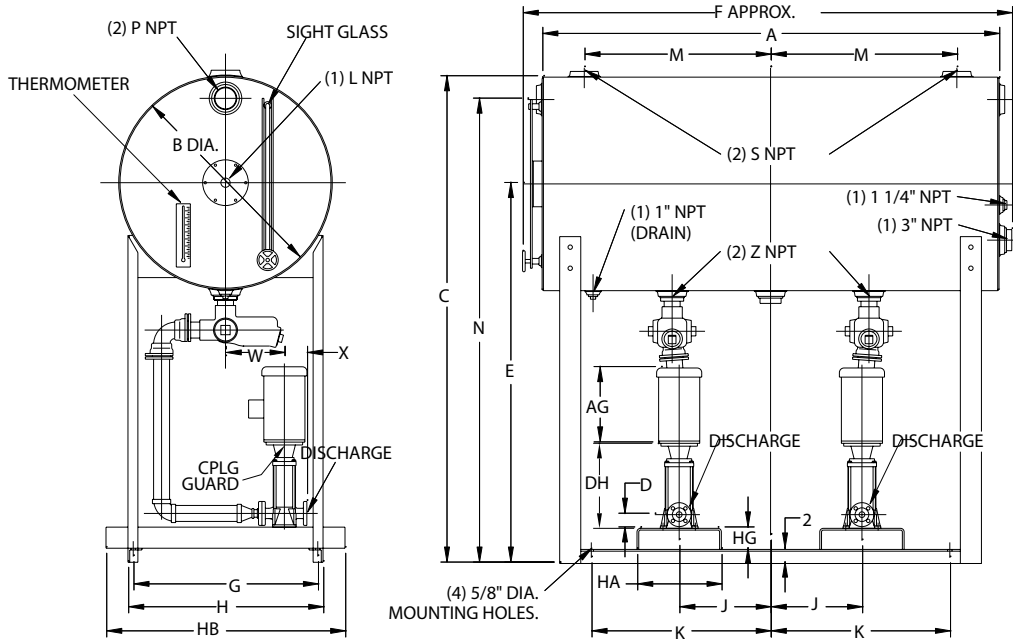


RECEIVER CAPACITY GALLONS	DIMENSIONS														RECEIVER BASE NUMBER	BASE NUMBER			
	A	B	C	E	F	G	H	J	K	L	M	N	P	S		Z	HA	HB	HG
30	37 (940)	16 (406)	42-3/16 (1072)	34 (864)	44 (1118)	14-1/4 (362)	15-3/4 (400)	9 (229)	16 (406)	3/4 (19)	14-1/2 (368)	40 (1016)	2 (51)	2 (51)	1-1/4 (32)	1	7 (178)	18 (457)	2 (51)
60	37 (940)	22 (559)	49-11/16 (1262)	38-1/2 (978)	44 (1118)	20-3/8 (518)	21-7/8 (556)	9 (229)	16 (406)	3/4 (19)	15 (381)	47 (1194)	2 (51)	2 (51)		2	9 (229)	24 (610)	2-7/16 (62)
100	51 (1295)	24 (610)	59-11/16 (1516)	47-1/2 (1207)	58 (1473)	21-1/4 (540)	22-3/4 (578)	11 (279)	21 (533)	3/4 (19)	20-1/2 (521)	57 (1448)	2 (51)	3 (76)		2	10 (254)	26 (660)	2-5/8 (67)
200	65 (1651)	30 (762)	77-3/16 (1961)	62 (1575)	72 (1829)	26-1/4 (667)	27-3/4 (705)	17 (432)	25-1/2 (648)	1	26-1/2 (673)	74 (1880)	3 (76)	3 (76)		4	12 (305)	30 (762)	3 (76)
250	60 (1524)	36 (914)	80-3/16 (2037)	62 (1575)	67 (1702)	28-3/8 (721)	29-7/8 (759)	17 (432)	25-1/2 (648)	1	26-1/2 (673)	77 (1956)	3 (76)	3 (76)		5	12 (305)	39 (991)	3-1/4 (83)
350	60 (1524)	42 (1067)	80-3/16 (2037)	59 (1499)	67 (1702)	36-3/4 (933)	38-1/4 (972)	17 (432)	25-1/2 (648)	1-1/2 (38)	26-1/2 (673)	76 (1930)	3 (76)	3 (76)	3 (76)	6	13 (330)	40 (1016)	4 (102)
500	84 (2134)	42 (1067)	80-3/16 (2037)	59 (1499)	91 (2311)	37-3/8 (949)	38-7/8 (987)	17 (432)	28-1/2 (724)	1-1/2 (38)	38-1/2 (978)	76 (1930)	3 (76)	3 (76)		6	15 (381)	40 (1016)	3-3/8 (86)
750	96 (2438)	48 (1219)	88-3/16 (2240)	64 (1626)	103 (2616)	45-1/2 (1156)	47 (1194)	17 (432)	35-1/2 (902)	1-1/2 (38)	40 (1016)	85 (2159)	3 (76)	3 (76)		10	15 (381)	44 (1118)	3-3/8 (86)
1000	120 (3048)	48 (1219)	88-3/16 (2240)	64 (1626)	127 (3226)	45-1/2 (1156)	47 (1194)	17 (432)	47-1/2 (1207)	1-1/2 (38)	52 (1321)	85 (2159)	3 (76)	3 (76)	3 (76)	10	18 (457)	48 (1219)	3-3/8 (86)
																			4 (102)

FRAME	PUMP BASE NUMBER								
	4R	4RA	4RTL	5R	5RA	5RTL	6RA	6RTL	6RTL
56	1		2						
143T	2	2	2	3					
145T	2	2	2	3	3	3			
182T			3	3	3	4		6	
184T				3	3	4	6	6	
213T					5	5	7	7	8
215T					5	5	7	7	8
254T							7	7	9
256T								9	9
284TS									9
284T									9
286TS									11
286T									11

- NOTES:**
- All dimensions in inches (mm).
 - Dimensions may vary ± .25" (6).
 - Not for construction purposes unless certified.
 - Duplex Model 282 illustrated.
Simplex is Model 281.
Duplex is Model 282.
 - Inlet and vent piping by customer.
 - Two "D" dimensions are given. Always use the larger figure.
 - Two base numbers are given. Always use the larger base number.

**BOILER FEED UNIT
MULTI-STAGE VERTICAL IN-LINE
CENTRIFUGAL PUMPS**



PUMP SIZE	DISCHARGE	D	X	AG	DH
391-3	1-1/4-250#	3	4.92	11.82	12
391-8	1-1/4-250#	3	4.92	11.76	16
391-9	1-1/4-250#	3	4.92	11.76	17
391-10	1-1/4-250#	3	4.92	16.5	18.63
391-11	1-1/4-250#	3	4.92	16.5	19.5
391-13	1-1/4-250#	3	4.92	16.5	21.13
391-15	1-1/4-250#	3	4.92	16.5	22.81
391-16	1-1/4-250#	3	4.92	16.5	23.75
391-18	1-1/4-250#	3	4.92	16.5	25.25

PUMP SIZE	DISCHARGE	D	X	AG	DH
392-3	1-1/4-250#	3	4.92	11.82	12
392-4	1-1/4-250#	3	4.92	11.76	12.75
392-8	1-1/4-250#	3	4.92	11.76	17
392-9	1-1/4-250#	3	4.92	16.5	17.88
392-10	1-1/4-250#	3	4.92	16.5	18.63
392-11	1-1/4-250#	3	4.92	16.5	19.50
392-113	1-1/4-250#	3	4.92	16.5	21.13
392-15	1-1/4-250#	3	4.92	16.5	22.75
392-16	1-1/4-250#	3	4.92	16.5	23.63

PUMP SIZE	DISCHARGE	D	X	AG	DH
393-3	2-250#	3.5	5.91	16.5	15.5
393-7	2-250#	3.5	5.91	16.5	19.75
393-8	2-250#	3.5	5.91	16.5	20.88
393-10	2-250#	3.5	5.91	19.5	23
393-12	2-250#	3.5	5.91	19.5	25.5
393-14	2-250#	3.5	5.91	19.5	27.5
394-9	2-250#	3.5	5.91	21.13	25.5
394-10	2-250#	3.5	5.91	21.13	27
394-12	2-250#	3.5	5.91	23.37	28.88

RECEIVER CAPACITY GALLONS	A	B	C	E	F	G	H	J	K	L	M	N	P	S	W	Z	RECEIVER BASE NUMBER	HA	HB	HG
30	37	16	69.19	61	44	14.25	15.75	9	15.5	3/4	14.5	67	2	2	2	1-1/4	1A	10	16	2.63
60	37	22	76.69	65.5	44	20.38	21.88	9	15.5	3/4	15	74	2	2	6	1-1/4	2A	10	24	2.63
100	51	24	86.69	74.5	58	21.25	22.75	11	21	3/4	20.5	84	2	3	6	3	3A	12	26	3
200	65	30	101.19	86	72	26.25	27.75	17	25.5	1	26.5	98	3	3	8	3	5	12	30	3
250	60	36	104.19*	86	67	28.38	29.88	17	25.5	1	26.5	101	3	3	8	3	5	12	30	3
350	60	42	116.19*	95	67	36.75	38.25	17	25.5	1-1/2	26.5	112	3	3	12.5	3	6	12	39	3.25
500	84	42	116.19*	95	91	37.38	38.88	17	28.5	1-1/2	38.5	112	3	3	12.5	3	6	12	39	3.25
750	96	48	124.19*	100	103	45.5	47	20	35.5	1-1/2	40	121	3	3	17	3	10	15	48	3.38
1000	120	48	124.19*	100	127	45.5	47	20	47.5	1-1/2	52	121	3	3	17	3	10	15	48	3.38

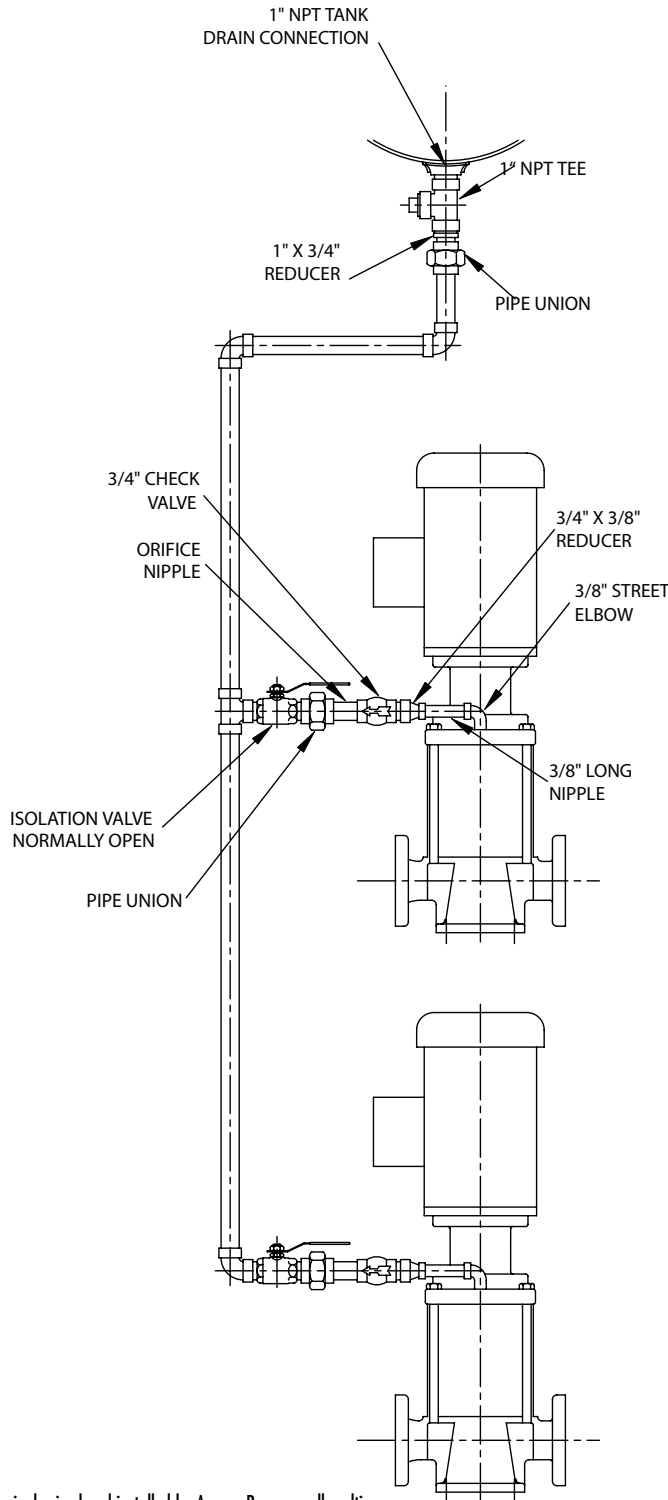
* "C" DIMENSIONS OVER 103 WILL REQUIRE SPECIAL SHIPPING ARRANGEMENTS.

NOTES:

1. All dimensions in inches (mm).
2. Dimensions may vary ± .25" (6).
3. Not for construction purposes unless certified.
4. Duplex Model 282 illustrated. Simplex is Model 281. Duplex is Model 282.
5. Inlet and vent piping by customer.

AURORA MODEL 281, 282, 282A

BOILER FEED UNIT MULTI-STAGE VERTICAL IN-LINE CENTRIFUGAL PUMPS STANDARD BY-PASS PIPING ARRANGEMENT



NOTES:

1. Orifice by-pass nipple sized and installed by Aurora Pump on all multi-stage vertical in-line centrifugal pumps.
2. Drawing depicts typical piping arrangement for 282 or 282A units. Simplex 281 units have one pump.