FPST 2483 Lab #14 Fire Pump Inspection & Test

Name: _____

OBJECTIVE: After completing this laboratory unit the student will be able to inspect a fire pump to determine the required information and obverse a standard test on a fire pump installation and properly evaluate and analyze the test results.

PART A PROCEDURE:
Students are to inspect the fire pump installation at the SWJTU lab. A fire pump data sheet is to be filled out for pump (only the top half).

PART B PROCEDURE:
Using the test methods outlined in NFPA 25 and Chapter 10 of your text, a standard pump test is to be conducted for the horizontal electric pump within the FPST lab building.

Observe the fire pump test on the video(s). The attached form is to be completed (fill out all of the data cells) and submitted following the fire pump tests.

After completion of the test, Plot the expected curve (based upon the rating of the pump) and plot the observed pump performance curve from the data collected.

PUMP ACCEPTANCE TEST DATA

PROPERTY OF | TESTED BY | DATE

ADDRESS

CITY | STATE

SUBJECT | DIAMETER; AT GAUGE SUCTION DISCHARGE | CONFERRED WITH

PUMP

SHAFT ☐ HORIZONTAL ☐ VERTICAL | MANUFACTURER | LISTED ☐ YES ☐ NO | SHOP OR SERIAL NO. | MODEL OR TYPE

RATED GPM | RATED HEAD-FT. (psi) | RATED RPM | SUCTION FROM | TANK SIZE | TANK HEIGHT

IF VERTICAL TYPE

VERTICAL DIST. DISCH. GAUGE TO WATER LEVEL — STATIC ____ FT; PUMPING ____ FT

RIGHT-ANGLE GEAR DRIVE — MANUFACTURER | SHOP OR SERIAL NO. | LISTED ☐ YES ☐ NO

MODEL OR TYPE | PERFORMANCE ☐ SMOOTH ☐ ROUGH

DRIVER

MANUFACTURER | LISTED ☐ YES ☐ NO | SHOP OR SERIAL NO. | MODEL OR TYPE | RATED H.P. | RATED RPM

☐ ELECTRIC MOTOR | RATED VOLT. | OPERATING VOLT. | RATED F.L. AMPS | AMPS AT 150% | PHASE | CYCLES | SERVICE FACTOR

☐ DIESEL ENGINE ☐ GASOLINE ENGINE ☐ GAS ENGINE ☐ STEAM TURBINE | ☐ PRESS. GOVERNOR BUILT IN ☐ INDEPENDENT ☐ TURBINE STEAM PRESS

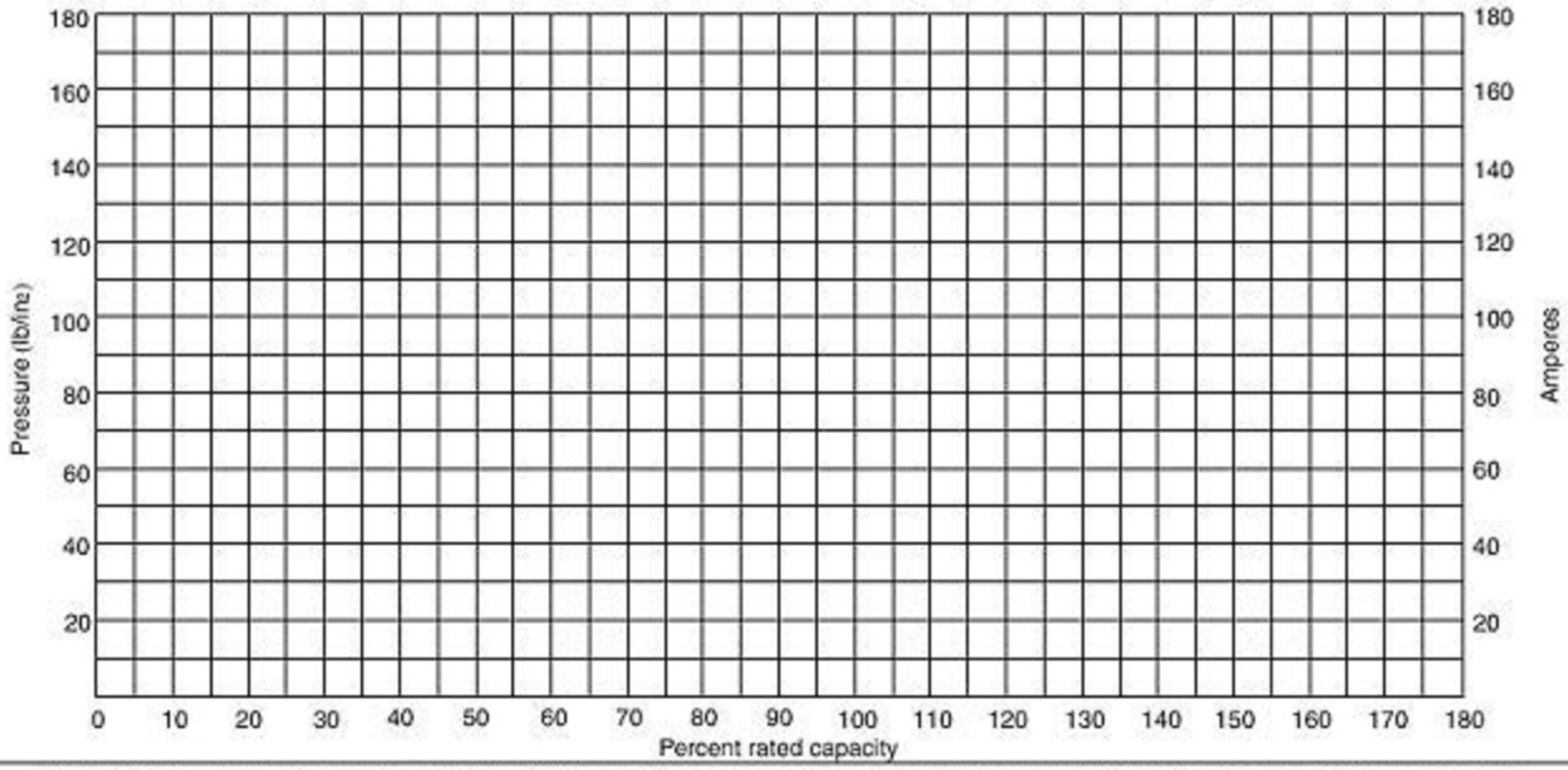
CONTROLLER

MANUFACTURER | LISTED ☐ YES ☐ NO | START ____ psi ☐ MANUAL ☐ AUTO ☐ PRESS DROP ☐ WATER FLOW | STOP ____ psi ☐ MANUAL ☐ AUTO | JOCKEY PUMP ☐ YES ☐ NO ON ____ psi OFF ____ psi

SHOP OR SERIAL NO. | MODEL OR TYPE

SPEED RPM	DISCHARGE PRESSURE PSI	SUCTION PRESSURE PSI	NET HEAD PSI	STREAMS NO.	STREAMS SIZE	STREAMS PITOT PRESSURE	GALLONS PER MINUTE	PERCENT OF RATED CAPACITY	VOLTS	AMPS

Readings marked (+) in suction column are heads above atmosphere, those marked (–) are lifts.
For vertical shaft pumps omit suction pressure and net head readings.



Plot discharge pressure and net head curves for horizontal shaft pump. For vertical shaft pump, plot discharge pressure curve. For electric-driven pump, plot ampere curve also.

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PUMP ACCEPTANCE TEST DATA

PROPERTY OF	OSU FPST	TESTED BY	DATE
ADDRESS	FPST Laboratory Building		
CITY	Stillwater	STATE OK	
SUBJECT	Pentair Fairbanks Nijhuis Fire Pump	CONFERRED WITH	

PUMP

SHAFT	MANUFACTURER	APPROVED	SHOP OR SERIAL NO.	MODEL OR TYPE
☒ HORIZONTAL ☐ VERTICAL	Fairbanks Nijhuis	☒ YES ☐ NO	18-2545563	4"1823DF

RATED GPM	RATED HEAD-FT. (psi)	RATED RPM	SUCTION FROM	TANK SIZE	TANK HEIGHT
750	120 psi	3560	Water Main		

IF VERTICAL TYPE

VERTICAL DIST. DISCH. GAUGE TO WATER LEVEL	STATIC FT / PUMPING FT	RIGHT-ANGLE GEAR DRIVE	MANUFACTURER	MODEL OR TYPE	SHOP OR SERIAL NO.	PERFORMANCE	APPROVED
						☐ SMOOTH ☐ ROUGH	☐ YES ☐ NO

DRIVER

MANUFACTURER	APPROVED	SHOP OR SERIAL NO.	MODEL OR TYPE	RATED H.P.	RATED RPM
WEG	☒ YES ☐ NO	11587734	075360P3EFP364TS	75	3555

☒ ELECTRIC MOTOR	RATED VOLT.	OPERATING VOLT.	RATED FL. AMPS	AMPS AT 150%	PHASE	CYCLES	SERVICE FACTOR
	230/460	460	84.3		3	60	1.15

☐ DIESEL ENGINE ☐ GASOLINE ENGINE ☐ GAS ENGINE ☐ STEAM TURBINE ☐ PRESS. GOVERNOR BUILT IN ☐ INDEPENDENT ☐ TURBINE STEAM PRESS

CONTROLLER

MANUFACTURER	APPROVED	START	STOP	JOCKEY PUMP
Firetrol	☒ YES ☐ NO	115 psi ☐ MANUAL ☒ PRESS DROP ☐ AUTO ☐ WATER FLOW	☒ MANUAL ☐ AUTO	☐ YES ☐ NO ON 130 psi OFF 185 psi

SHOP OR SERIAL NO. 819209-01RE MODEL OR TYPE FTA1000-AM75B ☒

SPEED RPM	DISCHARGE PRESSURE PSI	SUCTION PRESSURE PSI	NET HEAD PSI	STREAMS NO.	STREAMS SIZE	STREAMS PITOT PRESSURE	GALLONS PER MINUTE	PERCENT OF RATED CAPACITY	VOLTS	AMPS

Readings marked (+) in suction column are heads above atmosphere, those marked (–) are lifts.
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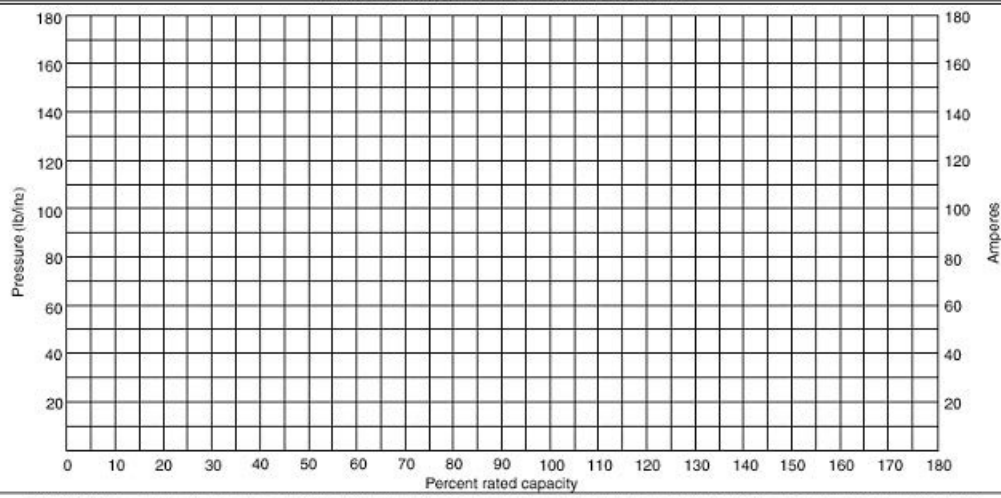

Plot discharge pressure and net head curves for horizontal shaft pump. For vertical shaft pump, plot discharge pressure curve. For electric-driven pump, plot ampere curve also.