TOPIC: HOW TO PUMP FROM HYDRANT - CDF HYDROSTAT ENGINE MODEL #5, #14, #15

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A CDF Hydrostat engine Model #5, #14, or #15 and a full tank of water, a predetermined engine pressure of 150 PSI and the following items and conditions: Tank suction valve open, tank fill valve closed, suction inlet valve closed, 100 feet of 1 ½"" or 1 ¾" hose with nozzle attached laying on the ground, a 20 foot section of 2 ½" soft suction hose, a spanner wrench, and a hydrant wrench.

Behavior: The student will: Spot the engine at the hydrant, set the spring brake, chock the engine in accord with CDF policy, start the pump, connect the discharge hose to 1 ½" discharge outlet, apply an uninterrupted stream of water to a simulated fire, and change over from using the tank as a water source to using the hydrant as a water source. After completing this evolution the student will then return the apparatus to its original condition.

Standard: With a minimum of 70% accuracy, within 3 minutes and 45 seconds, according to the job breakdown

MATERIALS NEEDED:

- One (1) Model #5, #14, or #15 Hydrostat engine
- One (1) Length 1 ½" hose or:
- Two (2) Lengths 1 ¾" hose
- One (1) 1 ½" combination nozzle with shut-off
- One (1) Section 2 ½" soft suction hose
- One (1) Hydrant wrench
- One (1) Spanner wrench
- One (1) Stop watch
- One (1) Performance examination per student
- Two (2) Red pens for scoring
- One (1) Clipboard

REFERENCES:

- Vehicle Operation and Maintenance Guide, (CDF Handbook 6804)

PREPARATION:

It is standard operating procedure in most municipal fire departments to establish adequate water supplies by using a hydrant system. The ability to initiate a fire stream with tank water and switch over to the hydrant system, without interrupting the fire stream, is a basic engine operator skill.

OPERATIONS	KEY POINTS
1. Spot engine at hydrant	1a. Wheels 45° angle to curb b. Place engine to avoid kinks in soft suction c. Place engine to avoid water stream from hydrant
2. Shift transmission to neutral	
3. Set spring brake	
TIME START	
4. Set chock blocks	4a. In accord with CDF policy b. Use gloves c. Failure to properly set chock blocks will be cause for failing the examination
5. Set tank suction valve switch	5a. To “open” position
6. Return to cab	6a. Place foot on brake
7. Set transfer valve	7a. Proper position
8. Adjust engine idle	8a. Using throttle control b. To 2000 RPM c. ± 200 RPM
9. Engage midship pump lever	9a. To indicate 100 PSI on pump pressure gauge b. ± 20 PSI
10. Return to pump panel and connect discharge hose	10a. To 1 1/2" discharge valve b. 1 1/2" or 1 3/4" hose
11. State "Water coming"	11a. Loudly
12. Open discharge valve	12a. Slowly b. Completely
13. Return to cab	13a. Place foot on brake

OPERATIONS	KEY POINTS
14. Adjust pump control	14a. To indicate 150 PSI on pump pressure gauge b. ± 20 PSI
15. Turn 4-way valve switch	15a. To the “on” position
16. Set relief valve	16a. To 150 PSI (+/- 20 PSI)
17. Remove equipment from engine	17a. Soft suction hose b. Hydrant wrench c. Spanner wrench
18. Uncap hydrant	18a. Using hydrant wrench
19. Open hydrant	19a. Using hydrant wrench b. Slowly c. Completely d. Until water stream clears e. Counterclockwise
20. Close hydrant	20a. Slowly 1) Prevent water hammer b. Completely
21. Unroll soft suction hose	21a. At hydrant
22. Connect soft suction hose	22a. To hydrant b. To suction inlet valve
23. Open hydrant	23a. Slowly b. Completely c. Using hydrant wrench d. Counterclockwise e. Removing any kinks in hose
24. Open suction inlet valve	24a. Slowly b. Completely c. If prime is lost, open suction inlet valve completely immediately

OPERATIONS	KEY POINTS
	d. Suction drain or primer may be used to exhaust air from system
25. Close tank suction valve	25a. Completely
26. Return to cab	26a. Place foot on brake
27. Adjust pump control	27a. Until relief valve closes
	b. To indicate 150 PSI on the midship pump pressure gauge
	c. ± 20 PSI
TIME STOP	Student raises hands to indicate completion of the timed portion of examination
	Failure to produce or maintain effective fire stream will be cause for failing the examination
28. Return to pump panel and state "Shut down"	28a. Loudly
29. Close discharge valve	29a. Slowly
	1) Prevent water hammer
	b. Completely
30. Return to cab	30a. Place foot on brake
31. Disengage pump	31a. Using midship pump lever
32. Adjust pump panel throttle	32a. Slowly
	b. Until engine returns to idle
33. Turn 4-way valve	33a. To “off” position
34. Return to pump panel and open tank fill valve	34a. Fill tank
35. Close tank fill valve	35a. Slowly
	b. Completely
36. Close hydrant	36a. Slowly
	1) Prevent water hammer

OPERATIONS	KEY POINTS
	b. Completely c. Using hydrant wrench d. Clockwise
37. Open tank suction valve	37a. Slowly 1) Relieves pressure in soft suction hose b. Completely
38. Close suction inlet valve	38a. Completely
39. Disconnect soft suction hose	39a. From hydrant b. From suction inlet valve
40. Replace hydrant cap	40a. Wrench tight
41. Replace suction inlet cap	41a. Hand tight
42. Return equipment to engine	42a. Soft suction 1) Drained and rolled b. Hydrant wrench 1) To brass compartment c. Spanner wrench 1) To brass compartment
43. Disconnect discharge hose	
44. Replace discharge valve cap	44a. Hand tight
45. Replace chock blocks	45a. To proper place
46. Return engine	46a. To starting point

APPLICATION:

Student to practice until proficient.

EVALUATION:

A performance examination.

ASSIGNMENT:

To be determined by instructor(s).

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