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

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A CDF Hydrostat engine Model #5, #14, or #15 properly chocked and set up to draft, with spring brake set, transmission in neutral, an empty water tank, 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, a preconnected 100 foot length of 1 ½" or 1 ¾" hose with nozzle attached laying on the ground.

Behavior: The student will: Start the engine, prime the pump, obtain a draft, engage the main pump, charge an 1 ½" or 1 ¾" line, and deliver an uninterrupted stream of water to a simulated fire, using a drafting tank as a water source. The student will then return the apparatus to its original condition.

Standard: With a minimum of 70% accuracy, within 1 minute and 20 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 shutoff
- Three (3) Sections hard suction hose
- One (1) Suction hose strainer
- One (1) Shovel
- One (1) 15' Length rope
- One (1) Stop watch
- One (1) Performance exam per student
- Two (2) Red pens for scoring
- One (1) Clipboard
- One (1) Tally sheet

REFERENCES:

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

PREPARATION:

In rural settings it is often not possible to locate a hydrant system as a water source for fire suppression activities. Alternative water sources such as rivers, lakes, ponds, or swimming pools may have to be utilized in these cases. The quickest method of obtaining water from these sources may be by drafting. The ability to draft from an external water source is a basic engine operator skill.

OPERATIONS	KEY POINTS
1. Place foot on service brake	
2. Start engine	2a. Allow engine to idle
START TIME	
3. Close tank suction valve	3a. Completely
4. Open suction inlet valve	4a. Completely
5. Engage primer	5a. 30 seconds maximum b. Look for continuous flow from primer c. Listen for change of pitch d. Feel for weight of water in hard suction hose e. Look for compound gauge to drop below (0)
6. Return to cab	6a. Place foot on service brake
7. Set transfer valve	7a. In “proper” position
8. Set engine idle	8a. Using throttle control on pump panel b. To 2000 RPM (± 200 RPM)
9. Adjust pump control on pump panel (If prime is lost, student must return pump control to idle and repeat steps 3 through 7)	9a. Using midship pump lever b. To indicate 100 PSI on pressure gauge c. ± 20 PSI
10. Return to pump and state "Water coming"	10a. Loudly
11. Open discharge valve	11a. Slowly b. Completely
12. Return to cab	12a. Place foot on brake
13. Adjust pump control	13a. To indicate 150 PSI on pump pressure gauge

OPERATIONS	KEY POINTS
	b. ± 20 PSI
14. Turn 4-way valve switch	14a. To the “ON” position
15. Set relief valve	15a. To 150 PSI (+/- 20 PSI)
TIME STOP	Student raises hands to indicate completion of timed portion of examination Failure to produce an effective fire stream will be cause for failing the examination
16. Return to pump panel and state “Shut down”	16a. Loudly
17. Close discharge valve	17a. Slowly b. Completely
18. Return to cab	18a. Place foot on brake
19. Disengage pump	19a. Using pump control
20. Adjust pump panel throttle	20a. Slowly b. Until engine returns to idle c. Idle for 1 minute
21. Turn 4-way valve switch	21a. To the “OFF” position
22. Shut off engine	

APPLICATION:

Student to practice until proficient.

EVALUATION:

A performance examination.

ASSIGNMENT:

To be determined by instructor(s).

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