



# Fire Protection Training

Procedures Handbook 4300

PUMPING

**TOPIC:** HOW TO PUMP FROM DRAFT, CDF ENGINE MODEL #9 OR #11

**TIME FRAME:** :30

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* A CDF Model #9 or #11 engine, 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 without relief valve. 1 minute, 15 seconds with relief valve, according to the job breakdown.



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## ***MATERIALS NEEDED:***

- One (1) CDF Model #9 or #11 engine with an empty water tank
- One (1) 100' length of 1 ½" or 1 ¾" hose with nozzle and shut off
- Three (3) Sections hard suction hose
- One (1) Suction hose strainer
- One (1) Shovel
- One (1) 15' length of rope
- One (1) Stop watch
- One (1) Performance examination 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.



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## OPERATIONS

## KEY POINTS

1. Place foot on service brake
2. Start main engine

### TIME START

3. Set engine idle
4. Close tank suction valve
5. Engage primer
  
6. Start pump engine
7. If equipped with pressure relief valve, turn 4-way valve switch
8. Adjust pump panel throttle
  
9. State "Water coming"
10. Open discharge valve
11. Adjust pump panel throttle
12. If equipped with pressure relief valve, set relief valve

- 3a. At 1200 RPM ( $\pm$  200 RPM)
- 4a. Completely
- 5a. 30 seconds maximum
  - b. Look for continuous flow from primer
  - c. Listen for change of pitch
  - d. Feel weight of water in hard suction hose
  - e. Look for compound gauge to drop below (0)
  
- 7a. To "ON" position
  
- 8a. To indicate 100 PSI on the pump pressure gauge
  - b.  $\pm$  20 PSI
  - c. If prime is lost, return pump engine to idle, shut off pump engine and repeat steps 3 through 7
  
- 9a. Loudly
- 10a. Slowly
  - b. Completely
- 11a. To indicate 150 PSI ( $\pm$  20 PSI) on the pump pressure gauge
- 12a. 150 PSI ( $\pm$  20 PSI)



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## OPERATIONS

## KEY POINTS

### TIME STOP

13. State "Shut down"

14. Close discharge valve

15. Adjust pump panel throttle

16. If equipped with a pressure relief valve,  
turn the 4-way valve switch

17. Shut off pump engine

18. Open tank suction valve

19. Return to cab

20. Reduce main engine RPM

21. Shut off main engine

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

13a. Loudly

14a. Slowly

b. Completely

15a. Slowly

b. Until pump engine returns to idle

c. Idle for 30 seconds

16a. To the "OFF" position

18a. Completely

19a. Place foot on service brake

20a. Slowly

b. To idle



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## ***APPLICATION:***

The student to practice until proficient.

## ***EVALUATION:***

A performance examination.

## ***ASSIGNMENT:***

To be determined by instructor(s).



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