



# Fire Protection Training

Procedures Handbook 4300

PUMPING

**TOPIC:** HOW TO PUMP FROM HYDRANT, CDF ENGINE MODEL #5

**TIME FRAME:** :30

**LEVEL OF INSTRUCTION:** Level II

**BEHAVIORAL OBJECTIVE:**

*Condition:* A CDF Model #5 engine with 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, a hydrant wrench, and a 3" to 2 ½" adapter

*Behavior:* The student will: Spot the engine at the hydrant, set the spring brake, chock the engine in accordance with CDF policy, start the pump, connect 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. 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 engine with full tank of water
- One (1) 100' Length 1 ½" hose or 1 ¾" hose with nozzle and shut off
- One (1) 20' Length 2 ½" soft suction hose
- One (1) Hydrant wrench
- One (1) Spanner wrench
- One (1) 3" X 2 ½" double female adapter
- One (1) Stopwatch
- One (1) Performance exam per student
- Two (2) Red pens for scoring
- One (1) Clipboard
- One (1) Tally sheet

4314.31



# Fire Protection Training

Procedures Handbook 4300

PUMPING

---

## **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.



# Fire Protection Training

Procedures Handbook 4300

HOW TO PUMP FROM HYDRANT,  
CDF ENGINE MODEL #5

## OPERATIONS

## KEY POINTS

1. Spot engine at hydrant

1a. Wheels at 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 set chocks properly will be cause for failing the examination

5. Shift transfer case

5a. Place foot on service brake

b. To neutral

c. If equipped with air shift skip this step

6. Engage mid-ship pump

6a. Use pump lever/switch in cab

7. Shift transmission

7a. Into 4th or Drive

b. If equipped with air shift transmission must be put in reverse, to insure transfer case is disengaged, before shifting into 4th or Drive

8. Adjust pump panel throttle

8a. Until transmission shifts into selected gear

9. Adjust pump panel throttle

9a. To indicate 150 PSI on midship pump pressure gauge

b. ± 20 PSI

10. Connect discharge hose

10a. 1 1/2" or 1 3/4" hose

b. To 1 1/2" discharge valve



# Fire Protection Training

Procedures Handbook 4300

HOW TO PUMP FROM HYDRANT,  
CDF ENGINE MODEL #5

## OPERATIONS

## KEY POINTS

- | OPERATIONS                       | KEY POINTS   |
|----------------------------------|--|
| 11. State "water coming"         | 11a. Loudly  |
| 12. Open discharge valve         | 12a. Slowly<br>b. Completely   |
| 13. Adjust pump panel throttle   | 13a. To indicate 150 PSI on midship pump pressure gauge<br>b. $\pm$ 20 PSI                                     |
| 14. Remove equipment from engine | 14a. Soft suction hose<br>b. Hydrant wrench<br>c. Spanner wrench   |
| 15. Uncap hydrant                | 15a. Using hydrant wrench  |
| 16. Open hydrant                 | 16a. Using hydrant wrench<br>b. Counterclockwise<br>c. Slowly<br>d. Completely<br>e. Until water stream clears |
| 17. Close hydrant                | 17a. Clockwise<br>b. Slowly<br>1) Prevent water hammer<br>c. Completely<br>d. Using hydrant wrench             |
| 18. Unroll soft suction          | 18a. At hydrant  |
| 19. Connect soft suction hose    | 19a. To hydrant<br>b. To suction inlet valve   |
| 20. Open hydrant                 | 20a. Using hydrant wrench<br>b. Slowly<br>c. Completely<br>d. Counter clock wise<br>e. Removing kinks in hose  |



# Fire Protection Training

Procedures Handbook 4300

HOW TO PUMP FROM HYDRANT,  
CDF ENGINE MODEL #5

## OPERATIONS

## KEY POINTS

- | OPERATIONS   | KEY POINTS  |
|--|---|
| 21. Open suction inlet valve   | 21a. Slowly<br>b. Completely<br>c. If prime is lost, open suction inlet valve completely immediately.   |
| 22. Simultaneously close tank suction valve and adjust midship pump throttle | 22a. To indicate 150 PSI ( $\pm$ 20 PSI) on midship pump pressure gauge.  |
| 23. TIME STOP  | 23a. Student raises hands to indicate completion of timed portion of exam<br>b. Failure to maintain an effective fire stream (150 PSI $\pm$ 20 PSI) will be cause for failing the examination |
| 24. State "shut down"  | 24a. Loudly   |
| 25. Close discharge valve  | 25a. Slowly<br>1) Prevent water hammer<br>b. Completely   |
| 26. Adjust pump panel throttle   | 26a. To idle<br>b. Slowly   |
| 27. Return to cab  | 27a. Place foot on service brake  |
| 28. Shift transmission   | 28a. To neutral   |
| 29. Disengage midship pump   | 29a. Use pump lever/switch<br>b. Acceptable to put transmission in reverse then back into neutral for ease in disengaging pump  |
| 30. Shift transfer case  | 30a. To high range<br>b. If equipped with air shift, skip this step   |
| 31. Shift transmission   | 31a. With foot still on service brake<br>b. Into a road gear<br>c. Until lurch is felt  |
| 32. Shift transmission   | 32a. To Neutral   |



# Fire Protection Training

Procedures Handbook 4300

HOW TO PUMP FROM HYDRANT,  
CDF ENGINE MODEL #5

## OPERATIONS

## KEY POINTS

33. Return to pump panel

34. Open tank fill valve

35. Close tank fill valve

36. Close hydrant

37. Open tank suction valve

38. Close suction inlet valve

39. Disconnect soft suction hose

40. Replace hydrant cap

41. Replace suction inlet cap

42. Return equipment to engine

43. Return equipment to engine

44. Replace discharge valve cap

34a. Fill tank

35a. Slowly

b. Completely

36a. Slowly

1) Prevent water hammer

b. Completely

c. Clockwise

d. Using hydrant wrench

37a. Completely

1) Relieves pressure in soft suction hose

b. Slowly

38a. Completely

39a. From hydrant

b. From suction inlet valve

40a. Wrench tight

41a. Hand tight

42a. Soft suction

1) Drained & rolled

b. Hydrant wrench

1) To brass compartment

c. Spanner wrench

1) To brass compartment

44a. Hand tight

4314.31



# Fire Protection Training

Procedures Handbook 4300

HOW TO PUMP FROM HYDRANT,  
CDF ENGINE MODEL #5

## OPERATIONS

## KEY POINTS

45. Return chock blocks

45a. To proper place

46. Return engine

46a. To starting point



# Fire Protection Training

Procedures Handbook 4300

HOW TO PUMP FROM HYDRANT,  
CDF ENGINE MODEL #5

---

## ***APPLICATION:***

The student will practice until proficient.

## ***EVALUATION:***

A performance examination.

## ***ASSIGNMENT:***

To be determined by instructor(s).