



Fire Protection Training

Procedures Handbook 4300

PUMPING

TOPIC: HOW TO PUMP FROM HYDRANT – HYDROSTAT MODEL #14, #15

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A CAL FIRE hydrostat engine Model 14 or 15, with empty water tank, a complement of hard suction hose, and the following items and conditions: tank to pump valve open, tank fill valve closed, suction inlet valve closed.

Behavior: The student, and an assistant, will travel to a static water source, spot the engine, prime the pump, obtain a draft, engage the main pump, charge a 1-1/2" or 1-3/4" line, and deliver an uninterrupted stream of water at 150 PSI (\pm 20). After completing the evolution, the apparatus will be returned to its original condition.

Standard: Completing all operations according to the job breakdown

MATERIALS NEEDED:

- One (1) CAL FIRE Model 14 or 15 hydrostat engine
- One (1) pre-connected 1-1/2" or 1-3/4" hoseline with nozzle and shut off
- One (1) 2-1/2" or 3" soft suction intake hose
- One (1) assistant in appropriate PPE per CAL FIRE policy
- One (1) hydrant wrench
- Two (2) spanner wrenches

REFERENCES:

- Vehicle Operation and Maintenance Guide,
- IFSTA Essentials 5th Edition, Chapter 12

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.

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HOW TO PUMP FROM HYDRANT- HYDROSTAT
MODEL #14 OR #15

OPERATIONS

KEY POINTS

- | OPERATIONS | KEY POINTS |
|---|--|
| 1. Spot engine at designated hydrant | 1a. All occupants wearing seat belts,
b. Windows and doors closed for safety
c. Within reach of chosen hydrant discharge outlet |
| 2. Shift transmission to neutral | |
| 3. Set spring brake | |
| 4. Exit engine and set chock blocks | 4a. In accordance with CAL FIRE policy
b. Gloves may be removed after chock blocks are set in order to operate the pump, but must be donned when working with equipment such as hoses, appliances and the hydrant |
| 5. Instruct assistant to deploy a pre-connected 1-1/2" or 1-3/4" hoseline | 5a. Hoseline must be at least 100' |
| 6. Return to cab | 6a. Place foot on brake |
| 7. Set transfer valve | 7a. In "PRESSURE" position |
| 8. Adjust engine throttle | 8a. To 2000 RPM
b. \pm 200 RPM |
| 9. Engage hydrostatic pump control | 9a. Move pump control lever toward the "pump" position
b. To indicate 100 psi on pump pressure gauge
c. \pm 20 psi |
| 10. Confirm assistant is ready for water loudly stating "Water coming" | 10a. Do not charge hoseline without assistant confirmation that they are ready for water |
| 11. Charge hoseline | 11a. Open discharge valve slowly and completely
b. Allowing assistant to check for adequate nozzle pattern and water |

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KEY POINTS

12. Return to cab

13. Increase pump pressure to 150 PSI (\pm 20 PSI)

14. Set relief valve

15. Remove engine suction inlet cap

16. Remove equipment from engine

17. Uncap hydrant

18. Open hydrant

19. Close hydrant

20. Unroll soft suction hose

21. Connect hydrant adapter

flow

c. Do not increase pump pressure until assistant has checked nozzle pattern and flow

12a. Place foot on brake

13a. Move pump control lever to indicate 150 PSI (\pm 20 PSI) on the discharge gauge

14a. To 150 psi (+/- 20 PSI)

15a. Wearing gloves

b. Store in brass box, if not attached to engine

16a. Soft suction hose

b. Hydrant adapter

c. Hydrant wrench

d. Spanner wrench

17a. Using hydrant wrench

18a. Using hydrant wrench

b. Slowly

c. Completely

d. Until water stream is clear

19a. Slowly

1) Prevent water hammer

b. Completely

20a. At hydrant

21a. Hand tight

b. Gasket in place

c. Do not flush hydrant with adapter connected

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22. Connect soft suction hose

22a. To hydrant

b. To suction inlet valve

23. Open hydrant

23a. Completely and slowly

b. Do not allow hydrant wrench to spin freely or falling to ground

c. Do not allow the hydrant wrench to hit any part of your body

24. Remove any kinks from soft suction intake hose

24a. Ensuring an effective water supply

25. Open suction inlet valve

25a. Slowly and completely

b. Do not close tank to pump valve

c. Ensuring you have an uninterrupted water supply to pump, in case of a hydrant failure

d. Suction drain may be used to exhaust air from system

26. Close tank suction valve

26a. Completely

27. Return to cab

27a. Place foot on brake

28. Adjust pump control

28a. Until relief valve closes

b. To indicate 150 psi on the midship pump pressure gauge

c. ± 20 psi

29. Preparing to shut down

29a. Notifying assistant that you are shutting down hoseline,

30. Close discharge valve

30a. Slowly and completely

b. **NO WATER HAMMERS**

31. Return to cab

31a. Place foot on brake

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KEY POINTS

- 32. Disengage pump
- 33. Adjust engine throttle
- 34. Turn pressure relief valve to "OFF" position
- 35. Return engine to response ready condition

- 32a. Move pump control lever, to "ROAD" position
- 33a. Slowly
 - b. Until engine returns to idle
- 35a. Fill engine water tank if not full
 - b. Open tank fill valve and fill tank prior to shutting down the hydrant
 - c. Close hydrant slowly and completely
 - d. **NO WATER HAMMERS**
 - After shutting hydrant down, crack tank fill valve
 - e. Close the suction inlet valve
 - f. Replacing tools, hose, and appliances in proper engine compartments



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HYDROSTAT ENGINE MODEL #14 OR #15

APPLICATION:

The student will practice performing the operations in the job breakdown while under supervision.

EVALUATION:

The student will complete a manipulative performance test at a time determined by the instructor.

ASSIGNMENT:

Practice this job in order to prepare yourself for the upcoming performance test. Study for our next session.