

FoamChariot® I

COMBAT SUPPORT PRODUCTS INC.

A Division of Cottrell Associates
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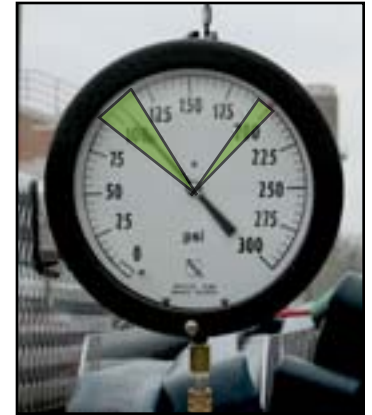
FoamChariot® II



FoamChariot® III

Foam Monitor Stream Reach - Still Air Estimates:
350 gpm 125 ft. - 500 gpm 150 ft. - 750 gpm 175 ft.
1000 gpm 190-200 ft. - 2000 gpm 250 ft.

- A. INSURE FULL SAFETY PPE (SCBA - TURNOUT GEAR, ETC.
- B. POSITION TRAILER.
- C. SET WHEEL CHOCKS
- D. DISCONNECT FROM TOW VEHICLE IF SO DESIRED.
- E. SET LEVELING JACKS.
- F. CONNECT WATER SUPPLY HOSE(S).
- G. OPEN FOAM CONCENTRATE TANK VALVES
- H. INSURE TANK VENTS OPEN OR TANK CAPS REMOVED.



MONITOR OPERATIONS

- 1. IF EQUIPPED, CONNECT LARGE GAUGE TO 1/4" HOSE, HANG IN PLAIN SIGHT. ALTERNATIVELY LOCATE OPS. GAUGE ON WATER RISER.
- 2. CONNECT FOAM SUPPLY HOSE TO MONITOR NOZZLE.
- 3. IF SO EQUIPPED, SET GLADIATOR FLOW & PROPORTIONER METER.
- 4. **AIM AWAY FROM TARGET TILL FLOWING FOAM.**
- 5. OPEN MONITOR VALVE ON RISER.
- 6. CHARGE SUPPLY LINE(S).
PUMP TO MAINTAIN 95 - 110 PSI ON MANIFOLD OR NOZZLE GAUAE
- 6. OPEN NOZZLE'S 1" FOAM SUPPLY VALVE. FOAM IS NOW FLOWING.
- 7. BRING STREAM TO BEAR. **NEVER PLUNGE STREAM INTO SPILLED FUEL!**
- 8. IF EQUIPPED WITH RF MONITOR CONTROLLER, DISMOUNT AND GET SAFE DISTANCE UP TO 600 FT, UPWIND.
- 9. MONITOR FOAM LIQUID LEVEL - WILL DRAIN 30 GPM (3%) AT 1000 GPM NOZZLE SETTING AND 10 GPM AT 1% SETTING.



PUMP (ENGINE) OPERATOR

- A. ESTABLISH COMMUNICATIONS WITH TRAILER OPERATOR.
- B. BE SURE SUPPLY PUMP IS IN CAPACITY/SERIES IF TWO STAGE PUMP.
- C. BE SURE DISCHARGE HOSES ON PUMP ARE CAPABLE OF 1000 GPM.
- D. MAINTAIN DISCHARGE PRESSURE WHICH SATISFIES 100 PSI AT TRAILER RISER GAUGE.
- E. SET PRESSURE RELIEF OR GOVERNOR ACCORDINGLY.
- F. **THROTTLE TO IDLE BEFORE FOAM TRAILER CLOSES DISCHARGE VALVE(S).**


FOAM TRAILER SET UP REV III





Foam Monitor Stream Reach - Still Air Estimates:
 350 gpm 125 ft. - 500 gpm 150 ft. - 750 gpm 175 ft.
 1000 gpm 190-200 ft. - 2000 gpm 250 ft.



SHUTTING DOWN & FLUSHING

1. COMMUNICATE SHUT DOWN ORDER TO SUPPLY PUMP
2. PUMP MUST DROP TO IDLE BEFORE CLOSING TRAILER DISCHARGE VALVES.
3. CLOSE MONITOR'S WATER VALVE ON RISER.
4. KEEP MONITOR'S FOAM SUPPLY VALVE OPEN.
5. CLOSE FOAM (TOTE) TANK VALVE(S).
6. OPERATE FROM TANK TO PUMP IF IDLE PRESSURE IS GREATER THAN >50 PSI
7. SELECT AND CAP A TFT EDUCTOR OUTLET.
8. OPEN CONCENTRATE SUPPLY VALVE TO THE EDUCTOR.
9. SET EDUCTOR METER TO 3%.
10. AIM GLADIATOR DOWN AND AWAY (LEFT OR RIGHT).
11. BACK-FLUSHING FOAM NOZZLE: PUSH RED FLUSH BUTTON  EDUCTOR WILL PASS WATER INTO FOAM CONCENTRATE MANIFOLD AND THROUGH THE MONITOR NOZZLE'S METERING VALVE AND OUT THE NOZZLE AT A TRICKLE. RELEASE BUTTON AFTER 30 SECOND FLUSH.
12. FLUSH FOAM MANIFOLD AND 2" HOSES: WITH TANK VALVES CLOSED, DISCONNECT REAR HOSE FROM TOTE TANK. CAPTURE RESIDUAL CONCENTRATE IN A 5 GALLON PAIL. AGAIN PUSH THE RED BUTTON. CAPTURE CONCENTRATE TILL WATER RUNS FROM OPEN HOSE. REPLENISH SPENT FOAM CONCENTRATE USING TRANSFER PUMP KIT.
13. CLOSE FOAM TANK VALVES
14. RECAP FOAM TANKS IF NECESSARY.
15. RINSE TAILER AND AREA AROUND TRAILER TILL FROTHING STOPS.

FOAM EDUCTOR OPERATIONS

1. REPETE STEPS A - H ON PAGE ONE.
2. OPEN CONCENTRATE TANK VALVES.
3. INSURE TANK VENTS OPEN OR TANK CAPS REMOVED.
4. CONNECT TRAILER SUPPLY HOSE - SIZED FOR +/-500 GPM.
5. SELECT DESIRED DEVICES - CONNECT CONCENTRATE HOSES.
6. SET COMMUNICATIONS WITH PUMP - WILL NEED TO MAINTAIN 185 TO 200 PSI. 
7. OPEN CONCENTRATE SUPPLY VALVE(S) TO DEVICE(S)
8. SLOWLY OPEN DEVICE'S WATER VALVE, FILL HOSES WITH SOLUTION.
9. AIM DEVICE AWAY FROM FIRE TILL FOAM STREAM IS ESTABLISHED
10. ONCE HOSE IS FILLED, ESTABLISH 185-200 PSI AT MANIFOLD GAUGE. FOAM SOLUTION SHOULD NOW BE FLOWING FROM DEVICE.
11. IF EQUIPPED, INSURE EDUCTOR GO-GAUGE® STAY IN THE GREEN. 
12. REFER TO DISTANCE/HOSE SIZE CHART. ADJUST HOSE AND DISTANCE ACCORDINGLY.



FOAM TRAILER SET UP REV III

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 1000 gpm 190-200 ft. - 2000 gpm 250 ft.



CORRECT BACK PRESSURE PROBLEM SHOULD EDUCTOR'S GO-GAUGE® ENTER RED-ZONE. CAN BE CAUSED BY DEVICE HOSE TOO SMALL, TOO LONG, NOZZLE THROTTLED OR SIZED TOO SMALL. _____

IF USING 350 EDUCTOR AND MAXFORCE NOZZLE ON A LADDER WATERWAY - LADDER PIPE MAY BE TOO HIGH OR NOZZLE PRESSURE SWITCH IS SET IN BLUE RATHER THAN RED.



SHUT DOWN - CLOSE FOAM TANK VALVES

1. SHUT OFF HYDRANT SUPPLY - GO TANK TO PUMP.
2. BRING PUMP TO <50 PSI. FOAM HOSE WILL BURST AT 70 PSI.
3. FLUSHING: TFT EDUCTOR HOSE AND DEVICE STILL CONNECTED.
4. SHUT OFF EDUCTOR CONCENTRATE SUPPLY VALVE AT MANIFOLD.
5. DISCHARGE FRESH WATER THROUGH HOSE AND NOZZLE FOR TWO MINUTES. SHUT FOAM NOZZLE.
6. DISCONNECT EDUCTOR'S CONCENTRATE SUPPLY HOSE AT THE MANIFOLD VALVE.
8. **OPERATE FROM TANK TO PUMP IF IDLE PRESSURE IS GREATER THAN >50 PSI**
7. PRESS THE RED FLUSH BUTTON - HOLD FOR TEN SECONDS AT EACH % SETTING. FUSH 350 GPM BLITZFIRE EDUCTOR THE SAME WAY.
8. RINCE SPILLED CONCENTRATE FROM TRAILER AND SURROUNDINGS
9. REFILL CONCENTRATE TANKS AS NECESSARY.



IF PRESSURE CANNOT BE LESS THAN 50 PSI, FOLLOW THESE STEPS:

1. SHUT EDUCTOR CONCENTRATE SUPPLY VALVE AND DISCONNECT PICKUP HOSE. DISCHARGE THROUGH HOSELINE AT IDLE PRESSURE TILL FROTHING STOPS AT THE FOAM NOZZLE.
2. REMOVE NOZZLE FROM HOSE - PUT PICKUP HOSE IN A CLEAN WATER WASH BUCKET AND PROPORTION AS WERE FOAM THROUGH ALL % SETTINGS.
3. RINCE SPILLED CONCENTRATE FROM TRAILER AND SURROUNDINGS
4. REFILL CONCENTRATE TANKS AS NECESSARY.



FOAM TRAILER SET UP REV III - 8/14

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FOAM TRAILER SET UP & OPERATION - REV 3
TECH SUPPORT 919-414-5360 - 919-815-0103



Foam Eductor Distance

Foam Eductor GPM @ 200 PSI	Fire Control size AFFF & AR-AFFF	Concentrate flow GPM	Nozzle or Hose outlet psi	Distance Hose I.D.		Distance Hose I.D.		Distance Hose I.D.		Distance Hose I.D.		
				1.5"	1.75	2	2.5	3	4	5		
60 gpm	Hydrocarbon 600 sq ft AFFF & AR-AFFF Polar Solvent 300 sq ft	1% = 0.6 3% = 1.8 6% = 3.6	100 75 50 10	LEVEL GROUND			LEVEL GROUND		LEVEL GROUND			
				300 ft	700 ft	850 ft	3300					
				600 ft	1250 ft	1550 ft	6100					
95 gpm	Hydrocarbon 950 sq ft AFFF & AR-AFFF Polar Solvent 425 sq ft	1% = 1.0 3% = 3.0 6% = 6.0	100 75 50 10	100 ft	200 ft	350 ft	1200 ft	3300 ft				
				250 ft	350 ft	650 ft	2200 ft	6100 ft				
				350 ft	500 ft	1000 ft	3200 ft	8850 ft				
125 gpm	Hydrocarbon 1250 sq ft AFFF & AR-AFFF Polar Solvent 625 sq ft	1% = 1.25 3% = 3.75 6% = 7.2	100 75 50 10	50	100	250	750	1900				
				175	200	450	1400	3500				
				250	300	650	2200	5100				
250 gpm	Hydrocarbon 2500 sq ft AFFF & AR-AFFF Polar Solvent 1250 sq ft	1% = 2.5 3% = 7.5 6% = 15	100 75 50 10	100	200	400	800	1200	1920	3000		
				200	400	800	1600	3200	4800	8000	12000	
				300	600	1200	2400	4800	9600	19200		
350 gpm	Hydrocarbon 3500 sq ft AFFF & AR-AFFF Polar Solvent 1750 sq ft	1% = 3.5 3% = 10.5 6% = 21	100 75 50 10	150	250	400	600	1000	1250	2300	4800	
				250	450	750	1100	1600	2300	3600	8800	
				350	650	1000	1500	2200	3300	5000	12800	
500 gpm	Hydrocarbon 5000 sq ft AFFF & AR-AFFF Polar Solvent 2500 sq ft	1% = 5 3% = 15 6% = 30	100 75 50 10	50	100	150	200	300	450	600	2000	
				100	200	300	400	600	900	1200	3600	
				150	300	450	600	900	1350	2000	5300	



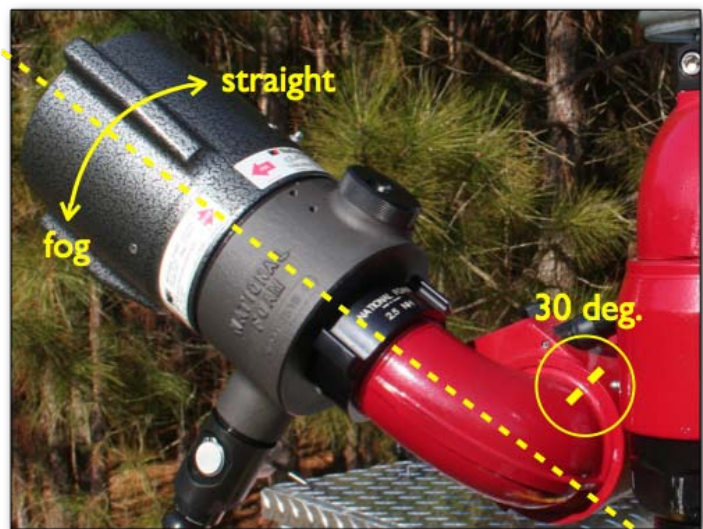
NFPA 11 requires a 15 minute foam concentrate supply for spill fires (one-inch or less)
NFPA 11 requires a 65 minute foam concentrate supply for fires in depth (tank type fires)
Eductor back pressure cannot exceed 65% of inlet pressure. BP is sum of hose friction loss, elevation and nozzle pressure.
Put a pressure gauge on eductor inlet and outlet. At 200 psi inlet pressure, do not exceed 130 psi on the outlet gauge (65% of inlet psi).
Distance to hose outlet is based on NFPA friction loss tables and or actual field experience. BE SURE TO ADD OR SUBTRACT ELEVATION HEAD.
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Remember Range To Target



Foam Stream Reach (aerated)	Cooling water (narrow pattern)
95 gpm 70 ft.	90 ft.
125 gpm 90 ft.	110 ft.
350 gpm 125 ft.	140 ft.
500 gpm 150 ft.	175 ft.
750 gpm 175 ft.	200 ft.
1000 gpm 190 ft.	220 ft.
2000 gpm 250 ft.	275 ft.



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