

ENGINE 28 Pump Operators Reference Guide 2012

1.75" HOSE LINES	HOSE LENGTH	ENGINE PRESSURE	Nozzle Pressure	Nozle Type	GPM Max Flow Rate
PRECONNECT 1 (Combat)	200 Feet	110	45	1" Smooth Bore	200
PRECONNECT 2	200 Feet	115	45	Green Fog / Screw Off Smooth Bore	150 Fog, 195 Smooth
FORESTY LINE Officer Side	200 Feet	80	50	Orange 60 GPM Fog	60
TRASH LINE Front Bumper	100 Feet	80	45	Green Fog / Screw Off Smooth Bore	150 Fog, 195 Smooth
FOAM EDUCTOR	~200 Feet	200		Red Nozzle must be within 200' of Eductor	60

2.5" & 3" HOSE LINES	HOSE LENGTH	ENGINE PRESSURE	Nozzle Pressure	Nozle Type	GPM Max Flow Rate
2.5" Preconnect w/Smooth Bore Handline 1.25" tip	250 Feet	70	45	Angus Ultima II Smooth Bore B-877A w/ 1 1/4 Tip	200
	250 Feet	85	45		250
	250 Feet	100	45		300

2.5" Preconnect w/ Green Fog Nozzle	250 Feet	115	75	Angus Ultima II SM30FLP Low Pressure Automatic	250
	250 Feet	130	85		300

R.A.M. Monitor w/ 3.0" Hose	300 Feet	65	25 + Base 10	Smooth Bore	300
	300 Feet	110	50 + Base 10		400
	300 Feet	160	75 + Base 10		500

DECK GUN (Truck Mounted)	Truck Mounted	80	80	1 3/8 Tip	500
	Truck Mounted	80	80	1 1/2 Tip	600
	Truck Mounted	80	80	1 3/4 Tip	800
	Truck Mounted	80	80	2" Tip	1060
	Truck Mounted	100	100	SM100 FOG	1000

TURBO DRAFT Operating Pressures and Capacity

Distance from Supply Length of 5" or 2.5"	Lift (feet)	ENGINE PRESSURE	GPM Max Flow Rate
50	10	175	670
	20	175	470
100	10	180	570
	20	180	400
150	10	185	480
	20	185	325
200	10	190	440
	20	190	280

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EP (Engine Pressure) = NP (Nozzle Pressure) + FL (Total Friction Loss) + Elev (Elevation)

Total FL = FL (Hose) + FL (Appliance(s))

Elevation = +/- 5 psi per floor (or 10 feet)

FL = C * (GPM/100) * (GPM/100)	PSI LOSS PER 100 FT SECTION				
	Hose Type:	1.75 ANGUS	1.75 Combat	2.5 ANGUS	3.0 Angus
Coefficient of Friction "C"	15.5	9.6	2	0.8	0.08
GPM:	FL:	FL:	FL:	FL:	FL:
100	16	10	2	1	
150	35	22	5	2	
200	62	38	8	3	
250			13	5	
300			18	7	
400				13	1
500				20	2
600					3
700					4
800					5
900					6
1000					8
1100					10
1200					12

Forestry Hose	PSI LOSS PER 100 FT SECTION			Critical (Max) Flow	
	1.0 Booster	1.0 Forestry	1.5 Forestry	Hose	GPM
GPM:	FL:	FL:	FL:	1 "	30
10	2	3	1	1.5 "	100
20	6	9	2	1.75 "	200
30	14	18	5	2.5 "	300
40	24	31	8	3 "	500
50	38	47	12	5 "	1200
60	54	66	16		
70	74	88	22		
80			28	Standpipes & Sprinklers Pumping Pressure Normal 150 psi MAX 200 psi	
90		35			
100		43			
150		76			

Hose Capacity & Weight per 100 feet					
Hose	Length	Hose Wgt	Gals	Total Wgt w/ water (lbs)	Diameter
1 " Forestry	100	7.5	4	42	1
1" Booster	100	10	4	44	1
1.5 " Forestry	100	13.5	9	90	1.5
1.75 " Double Jacketted	100	38	12	142	1.75
1.75 " Hi-Combat	100	36	15	159	1.9
2.5 " Double Jacketted	100	62	25	275	2.5
3 " Double Jacketted	100	78	37	384	3
5 " Supply	100	109	102	960	5

HOSE Friction Loss	Friction Coefficients		Appliance Friction Loss											
	Size	C	RAM Monitor											
Booster Hose	1.00	150.00	Appliance flowing > 350 gpm	10 psi										
Angus Red Chief, Hi-Combat	1.75	9.60	Hydrant Color Code <table border="1"> <thead> <tr> <th>Color</th> <th>Flow (GPM)</th> </tr> </thead> <tbody> <tr> <td>RED</td> <td>0 to 499</td> </tr> <tr> <td>ORANGE</td> <td>500 to 999</td> </tr> <tr> <td>GREEN</td> <td>1000 to 1499</td> </tr> <tr> <td>BLUE</td> <td>1500 and over</td> </tr> </tbody> </table>		Color	Flow (GPM)	RED	0 to 499	ORANGE	500 to 999	GREEN	1000 to 1499	BLUE	1500 and over
Color	Flow (GPM)													
RED	0 to 499													
ORANGE	500 to 999													
GREEN	1000 to 1499													
BLUE	1500 and over													
Double Jacketted, Rubber Lined	1.75	15.50												
Double Jacketted, Rubber Lined	2.50	2.00												
Double Jacketted, Rubber Lined	3.00	0.80												
Rubber Supply	5.00	0.08												