

## NEW HAMPSHIRE FIRE ACADEMY DRIVER / OPERATOR – PUMPING APPARATUS RULE OF THUMB REFERENCE CHART

**Pump Discharge Pressure (PDP) = Nozzle Pressure (NP) + Total Pressure Loss (TPL: Hose, Appliances, Elevation)**

SMOOTH BORE HAND LINE Nozzles @ 50 PSI NP	
7/8"	161 GPM
15/16"	185 GPM
1"	210 GPM
1 1/8"	266 GPM
1 3/16"	296 GPM
1 1/4"	328 GPM

SMOOTH BORE MASTER STREAM NOZZLES @ 80 PSI NP	
1"	267 GPM
1 1/4"	418 GPM
1 3/8"	502 GPM
1 1/2"	598 GPM
1 3/4"	814 GPM
2"	1063 GPM

COMBINATION HAND LINE NOZZLES	
60 - 300 GPM	Depending on Nozzle
50 / 75 / 100 PSI	Depending on Nozzle

COMBINATION MASTER STREAM NOZZLES	
Up to 2000 GPM	Depending on Nozzle
50 / 75 / 100 PSI	Depending on Nozzle

ATTACK HOSE AVERAGE F.L. PER 50 FT LENGTH 275 PSI WORKING PRESSURE			
	1 3/4"	2"	2 1/2"
100 GPM	8 PSI	4 PSI	1 PSI
110 GPM	9 PSI	5 PSI	1 PSI
120 GPM	11 PSI	6 PSI	1 PSI
130 GPM	13 PSI	7 PSI	2 PSI
140 GPM	15 PSI	8 PSI	2 PSI
150 GPM	17 PSI	9 PSI	2 PSI
160 GPM	20 PSI	10 PSI	3 PSI
170 GPM	22 PSI	12 PSI	3 PSI
180 GPM	25 PSI	13 PSI	3 PSI
190 GPM	28 PSI	14 PSI	4 PSI
200 GPM	31 PSI	16 PSI	4 PSI
210 GPM		18 PSI	4 PSI
220 GPM		19 PSI	5 PSI
230 GPM		21 PSI	5 PSI
240 GPM		23 PSI	6 PSI
250 GPM		25 PSI	6 PSI
260 GPM			7 PSI
270 GPM			7 PSI
280 GPM			8 PSI
290 GPM			8 PSI
300 GPM			9 PSI
310 GPM			10 PSI
320 GPM			10 PSI
330 GPM			11 PSI
340 GPM			12 PSI
350 GPM			12 PSI

NH / NST = National Standard Thread  
NPSH = National Pipe / Iron Pipe Thread

SUPPLY HOSE AVERAGE F.L. PER 100 FT LENGTH 185 PSI WORKING PRESSURE (UNLESS ATTACK RATED)				
	2 1/2"	3"	4"	5"
150 GPM	5 PSI	2 PSI	0 PSI	0 PSI
200 GPM	8 PSI	3 PSI	1 PSI	0 PSI
250 GPM	13 PSI	5 PSI	1 PSI	0 PSI
300 GPM	18 PSI	7 PSI	2 PSI	1 PSI
350 GPM	25 PSI	10 PSI	2 PSI	1 PSI
400 GPM	32 PSI	13 PSI	3 PSI	1 PSI
450 GPM	41 PSI	16 PSI	4 PSI	2 PSI
500 GPM	50 PSI	20 PSI	5 PSI	2 PSI
550 GPM		24 PSI	6 PSI	2 PSI
600 GPM		29 PSI	7 PSI	3 PSI
650 GPM			8 PSI	3 PSI
700 GPM			10 PSI	4 PSI
750 GPM			11 PSI	5 PSI
800 GPM			13 PSI	5 PSI
850 GPM			14 PSI	6 PSI
900 GPM			16 PSI	6 PSI
950 GPM			18 PSI	7 PSI
1000 GPM			20 PSI	8 PSI
1050 GPM			22 PSI	9 PSI
1100 GPM			24 PSI	10 PSI
1200 GPM			29 PSI	12 PSI
1250 GPM			31 PSI	13 PSI
1300 GPM			34 PSI	14 PSI
1400 GPM			39 PSI	16 PSI
1500 GPM			45 PSI	18 PSI
1600 GPM				20 PSI
1750 GPM				25 PSI
1800 GPM				26 PSI
1900 GPM				29 PSI
2000 GPM				32 PSI

APPLIANCE F.L.
Negligible when flow is under 350 GPM 10 PSI when flow is 350 GPM +

MASTER STREAM DEVICE F.L.
25 PSI

ELEVATION LOSS (ABOVE PUMP)
+ 5 PSI PER FLOOR

ELEVATION GAIN (BELOW PUMP)
- 5 PSI PER FLOOR

STANDPIPE SYSTEM
25 PSI FOR FDC & RISER + Standpipe Kit / Elevation Gain or Loss / Supply Hose to FDC

SPRINKLER SYSTEM
150 PSI UNLESS MARKED OTHERWISE

RATED PUMP CAPACITY
100% @ 150 PSI
70% @ 200 PSI
50% @ 250 PSI

NFPA HYDRANT COLOR CODE
Light Blue: 1500 GPM +
Green: 1000 - 1499 GPM
Orange: 500 - 999 GPM
Red: Less than 500 GPM

AVAILABLE HYDRANT FLOW % DROP = SP-RP/SP
0-10% Drop = 3x Current Flow
11-15% Drop = 2x Current Flow
16-25% Drop = 1x Current Flow

FOAM PROPORTIONING	
Class A Fire Attack & Overhaul: 0.2% - 0.5% Exposure Protection: 0.5 – 1.0%	Class B 1%, 3%, or 6 % AFFF - Hydrocarbons 3% / 6% AR-AFFF: 3% - Hydrocarbons, 6% - Polar Solvents AR-AFFF is available with a single % for H & PS

IN-LINE FOAM EDUCTOR PRESSURES
120 PSI inlet pressure: Hose, Appliance, Nozzle, & Elevation FL cannot exceed 80 PSI
150 PSI inlet pressure: Hose, Appliance, Nozzle, & Elevation FL cannot exceed 98 PSI
200 PSI inlet pressure: Hose, Appliance, Nozzle, & Elevation FL cannot exceed 130 PSI