Purpose: The purpose of this guideline is to provide an informational guide to help obtain desirable engine operating pressures for the various attack hose configurations which are standard to NKFD apparatus.

This information will list standardized engine pressures, on standard hose lengths, for the specific nozzles attached to each hose line. Designated engine pressures may change if the hose length or type, or nozzle type is changed.

150’ Mattydale
The 150' Mattydale with a TFT nozzle operated at an engine pressure of 130 psi will deliver approx. 130 GPM. This figure is from a chart supplied with the nozzle from the manufacturer.

200’ Mattydale
The 200' Mattydale with the Akron 1724 "break-a-part nozzle" at 130 psi engine pressure will deliver 95 GPM from the fog tip, and 160 GPM from the 7/8" solid bore tip.

The calculations for the Akron 1724 "break-a-part nozzle" are:

> The 95 GPM fog @ 100 PSI nozzle pressure, friction lose is 14 lbs. Per 100 ft. of 1 3/4" hose for a total of 28 lbs. in 200' FL plus 100 lbs. nozzle pressure = an engine pressure of 128psi - round to 130psi.
>
> The 160 GPM 7/8" solid bore tip @ 50 PSI nozzle pressure, friction lose is 39.5 per 100 ft. of 1 3/4" hose for a total of 79 lbs. In 200' FL plus 50 lbs. nozzle pressure = an engine pressure of 129psi - rounded to 130psi.

Increase GPM flow amounts are obtainable in both nozzle types by manual selection in the case of the Akron 1724 and appropriate increases in engine pressure.

Blitzfire

The 200' Rear 3” pre-connect with a TFT Blitzfire nozzle operated at an engine pressure of 145 psi will delivery approx. 250 GPM and 175psi will deliver approx. 500 GPM

The calculations for the TFT Blitzfire are:

> The 250 GPM fog @ 100 PSI nozzle pressure, friction lose is 5 lbs. Per 100 ft. of 3" hose for a total of 10 lbs. in 200' FL plus 100 lbs. nozzle pressure, plus 35lbs friction loss in the appliance = an engine pressure of 145psi.
>
> The 500 GPM fog @ 100 PSI nozzle pressure, friction lose is 20 per 100 ft. of 3" hose for a total of 40 lbs. In 200' FL plus 100 lbs. nozzle pressure, plus 35lbs friction loss in the appliance = an engine pressure of 175psi.

The 250’ Rear Pre-Connect

The 250’ rear pre-connect with the TFT Vortex solid bore nozzle operated at 150psi engine pressure will provide 160 GPM from the 7/8” solid bore tip.

The calculations for the TFT Vortex solid-bore nozzle are:

> 160 GPM 7/8” solid bore tip @ 50 PSI nozzle pressure, friction lose is 39.5 lbs. per 100 ft. of 1 ¾ hose (99 lbs. total). At 250’ of hose + 50 lbs. nozzle pressure = engine operating pressure of 149 PSI (Rounded to 150 PSI)

TASK FORCE TIP® AUTOMATIC

HANDLINE FLOW CHART AND ENGINE PRESSURE GUIDE

ENGINE PRESSURE (psi)	1½" Hose			1¾" Hose			2" Hose			2½" Hose			ENGINE PRESSURE (psi)
	150 Ft.	200 Ft.	250 Ft.	150 Ft.	200 Ft.	250 Ft.	150 Ft.	200 Ft.	250 Ft.	200 Ft.	300 Ft.	400 Ft.	
110	50	—	—	70	60	50	90	75	65	135	110	95	110
120	65	50	—	100	90	75	130	100	95	200	150	135	120
130	75	65	55	130	110	100	160	135	125	250	200	170	130
140	90	75	65	150	130	120	185	160	140	300	230	200	140
150	100	85	75	175	150	130	210	180	160	325	260	225	150
160	110	95	85	190	160	145	230	200	175	350+	290	250	160
170	120	105	90	200	175	160	250	225	195	—	310	275	170
180	130	110	100	220	190	170	270	235	210	—	335	290	180
190	140	120	105	235	200	180	290	250	225	—	350+	310	190
200	150	125	110	250	215	190	300	265	235	—	—	325	200
225	165	140	125	280	240	210	345	295	265	—	—	350+	225
250	180	155	140	305	265	235	—	325	290	—	—	—	250

NOTE: (1) Average nozzle pressure 100 psi. (3) Flows may vary with brand or condition of hose.
(2) Flows are approximate (nearest 5 gpm) and do not include losses in preconnect piping.