1. Select (insert) mode: **'ATTACK'** vs. **OVERHAUL**

2. Pull insert "OUT" to current Hoselay Length in feet.

3. Rotate DIAL "A" to TOTAL of Nozzle Pressure (NP) + Friction Loss (FL) upon number of "Laterals" operating row by the **Nozzle Flow** (NFPA 1002)

   (20/60C or 25/75C GPM 'ATTACK') column to LEFT.

4. Again rotate DIAL "A" until estimated (%+) HEAD (in FEET) lines up with TOTAL of NP + FL of #3

5. Read estimated ENGINE PRESSURE (EP) upon RED NEEDLE of Dial "A" on 'Fixed' GAUGE "B"

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**Note:**

- TOTAL Friction Loss (FL) is calculated upon 10 GPM Laterals w/ 10/23 or 10/30 Comb. Nozzles

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"Is not Friction Loss a direct mathematical function of Gallons Per Minute?" Each individual (GPM) affected section of hose is subject to: \[ \text{Friction Loss (FL)} = (\text{GPM}/100)^2 \times C \times L/100' \] (SDTDC-2005: "C" for 1.5" hose is 35 and 1" is 250)

On a 32% Grade, the Standard method MUST STOP at 600' before exceeding MAX 400 PSI; at 1,100' pump DOWNHILL -288'

The 'HENWAY' can EFFICIENTLY pump a FULL 500'/83% FARTHER and 639' HIGHER in elevation for FIREFIGHTER SAFETY!

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29 CFR 1910.156(c)(1) & (2) NFPA 1002/1041 REQUIRES YOU to STOP at 400 PSI! - FIREFIGHTER SAFETY -

"NP" and "FL" ("A" is 'NUL') Pressure Losses are one (1) variable for up to all laterals flowing simultaneously in both 'ATTACK' and 'OVERHAUL' modes. The remaining pressure LESS from the MAX 400 PSI when divided by 0.434 PSI/ft. determines the MAX % Grade then verifies the MAX Length

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Use 'OVERHAUL' inserts AFTER containment. ALL pressures are "Color-Coded" to indicate your DANGER ZONE in case 'ATTACK' PRESSURES are required for an ESCAPE or severe BLOW-UP!
DO THE MATH!
This is a 1,000’ hoselay as illustrated:
There are eight (8) contour lines.
Each contour line is 40 feet INCREASED elevation.
Eight (8) times (X) 40'/contour line = 320’
320’ over a 1,000’ run is a 32% Grade
320’ times 0.434 PSI/ft. = 139 PSI HEAD pressure.

Per NFPA 1002, 139 PSI HEAD pressure LOSS [PLUS TOTAL (FL) AND (NP)] MUST BE COMPENSATED at the pump for SAFETY!

The Standard method must STOP at 600’ on a 32% Grade upon utilizing 75 GPM /10 GPM nozzles for HEAVY FIRE ATTACK for far BETTER PROTECTION and EFFICIENCY to INCREASE FIREFIGHTER SAFETY!

Upon extending only 100’ from 900’ feet to 1,000’ increases FL by only 19.7 PSI or 6%

BUT when extending only 100’ from 1,000’ to 1,100’, and therefore ADDING an EXTRA lateral at 10 GPM, the OVERAL FLOW from the Engine to the first lateral increases from 115 GPM to 125 GPM, and each AFFECTED section thereafter, to cause FL to INCREASE a FULL 90 PSI at 28%

This CANNOT EVER and SHALL NEVER be disregarded to ensure FIREFIGHTER SAFETY!

The HEN-WAY method, reduces the water flow (GPM) to the ATTACK and each Lateral nozzle by one-half (1/2); thus the overall Friction Loss (upon squaring this fraction of 1/2 X 1/2 = 1/4), in each INDIVIDUALLY AFFECTED SECTION by an INCREDIBLE:

75% LESS FRICTION LOSS!!!

Thus, a 75 GPM /10 GPM hoselay can be SAFELY EXTENDED 500’ @ 83% to 1,100’ to INCREASE FIREFIGHTER SAFETY!