

Basic Orifice Factor Calculation Program:

PROGRAM INPUTS:

D1 = Input Line size I.D. (inches)
D2 = Input Orifice Plate size I.D. (inches)

PROGRAM COMPUTATIONS:

```
B1 = (D2 / D1)
A1 = (0.007 / D1)
A2 = (0.364 + (0.076 / (D1 ^ 0.5))) * (B1 ^ 4)

A3 = (1.6 - (1 / D1))
If A3 <= 0 then
    A3 = 0
Else
    A3 = 0.4 * ((1.6 - (1 / D1)) ^ 5)
End If

A4 = ((0.07 + (0.5 / D1)) - B1)
If A4 <= 0 Then
    A4 = 0
Else
    A4 = (((0.07 + (0.5 / D1)) - B1) ^ (5 / 2))
End If
A5 = A3 * A4

A6 = ((0.009 + (0.034 / D1)))
A7 = (0.5 - B1)
If A7 <= 0 Then
    A8 = 0
Else
    A7 = (0.5 - B1) ^ (3 / 2)
    A8 = A6 * A7
End If

A9 = ((65 / (D1 ^ 2) + 3))
A10 = (B1 - 0.7)
If A10 <= 0 Then
    A11 = 0
Else
    A10 = (B1 - 0.7) ^ (5 / 2)
    A11 = A9 * A10
End If

K1 = (0.5993 + A1 + A2 + A5 - A8 + A11)
B2 = (530 / (D1 ^ 0.5))
E1 = D2 * (830 - (5000 * B1) + (9000 * (B1 ^ 2)) - (4200 * (B1 ^ 3)) + B2)
K2 = K1 / (1 + ((15 * E1) / (1000000 * D2)))

F1 = 338.17 * (D2 ^ 2) * K2      ' Basic Factor: Cubic Feet / HR
F2 = 8.11608 * (D2 ^ 2) * K2   ' Basic Factor: MCFD
```

End Program