TECHNICAL REFERENCES

STANDARD THREAD ABBREVIATIONS

NPT = National Pipe Thread	MP = Medium Pressure Cone & Thread Connection	G9 = 9/16 Thread with O-ring Groove Face Seal
NPTM = National Pipe Thread Male	HP = High Pressure Cone & Thread Connection	G12 = 3/4" Thread with O-ring Groove Face Seal
NPTF = National Pipe Thread Female	LH = Left-hand Direct Tube-end Thread Connection	G16 = 1-12 UNF Thread with O-Ring Face Seal
BSPP = British Standard Parallel Pipe	RH = Right-hand Direct Tube-end Thread Connection	K = 1-1/8 Thread with O-ring Groove Face Seal

STANDARD UNIT ABBREVIATIONS

PRESSURE	FLOW	DISTANCE	WEIGHT	TEMPERATURE
psi = pounds per square inch	gpm = gallons per minute	in. = inches	lb = pounds	°F = degree Fahrenheit
b = bar	l/min = liters per minute	ft = feet	kg = kilograms	°C = degree Celsius
	Cv = flow coefficient	mm = millimeters		
	Cd = discharge coefficient	cm = centimeters		
		m = meters		

MEASUREMENT CONVERSIONS

FROM	TO	MULTIPLY BY
meters (m)	feet (ft)	3.281
feet (ft)	meters (m)	0.3048
millimeters (mm)	inches (in.)	0.0394
inches (in.)	millimeters (mm)	25.4
l/min	gpm (US)	0.2642
l/min	gpm (Brit)	0.2200
gpm (US)	l/min	3.785
gpm (Brit)	l/min	4.546
gpm (US)	gpm (Brit)	0.8327
gpm (Brit)	gpm (US)	1.201
bar	psi	14.5
psi	bar	0.0689
kilograms (kg)	pounds (mass) (lb)	2.205
pounds (mass) (lb)	kilograms (kg)	0.4536
newtons (N)	pounds (force) (lb)	0.2248
pounds (force) (lb)	newtons (N)	4.448
kilowatts (kW)	horsepower (hp)	1.341
horsepower (hp)	kilowatts (kW)	0.7457

PRESSURE AND FLOW EQUATIONS

Q = FLOW IN GPM	$Q = 29.92 \times d^2 \times P^{1/2} \times Cd$
V = VELOCITY IN FT/SEC	$V = 12.186 \times P^{1/2} = Cd \times .4085 \times Q/d^2$
P = PRESSURE IN PSI	$P = .00112 \times Q^2/(d^4 \times Cd^2)$
HP = HORSEPOWER	$Hp = .0174 \times d^2 \times P^{3/2} \times Cd, \approx P \times Q/1714$
CV = FLOW COEFFICIENT	$Cv = Q/\Delta P^{1/2}, = 53 \times (D^{2.5}/L^{1/2})$
ΔP = PRESSURE DROP	$\Delta P = (Q/Cv)^2$
F = THRUST IN LB	$F = \Pi/2 \times d^2 \times P \times Cd, = .052 \times P^{1/2} \times Q, \approx .0018 \times (Q/D)^2 \times Cd$
ΔT = TEMP CHANGE °F	$\Delta T = \Delta P/337.6$

FOR ALL EQUATIONS:

- L = Tube length in feet
- D = Tube I.D. in inches
- d = Orifice diameter in inches
- Cd = Discharge Coefficient
   - Cd = 0.90 for long cone orifice
   - Cd = 0.70 for drilled steel orifice
   - Cd = 0.65 for sapphire orifice

OPERATING WATERBLASTING EQUIPMENT CAN BE POTENTIALLY HAZARDOUS.

See page 9.10 for important safety information