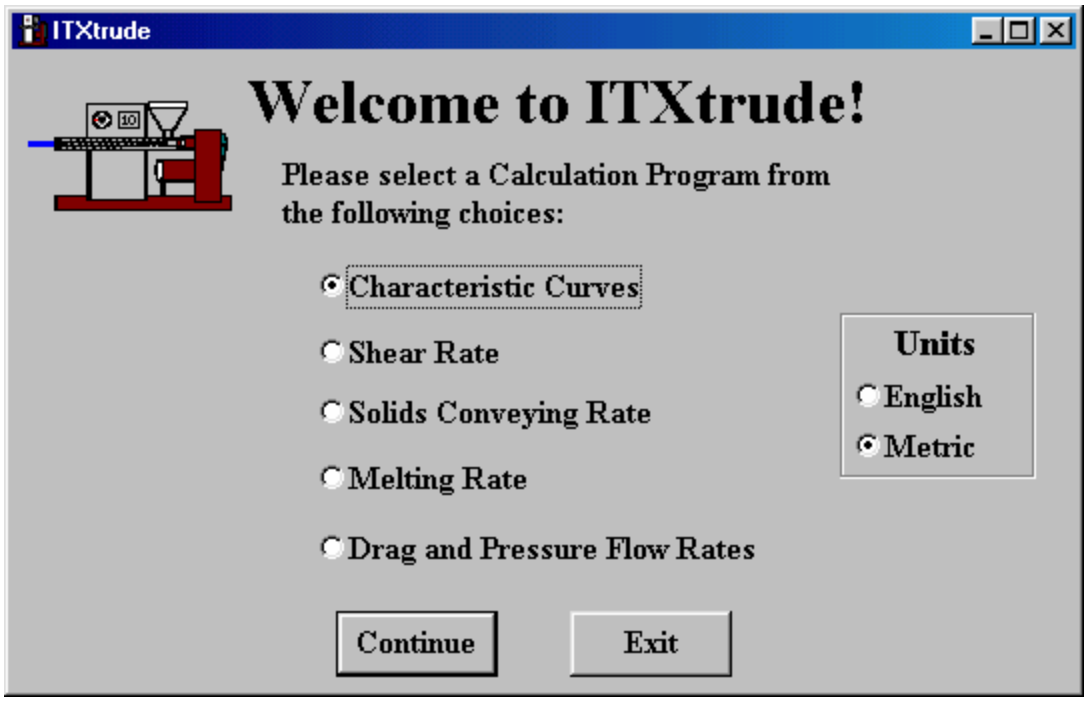
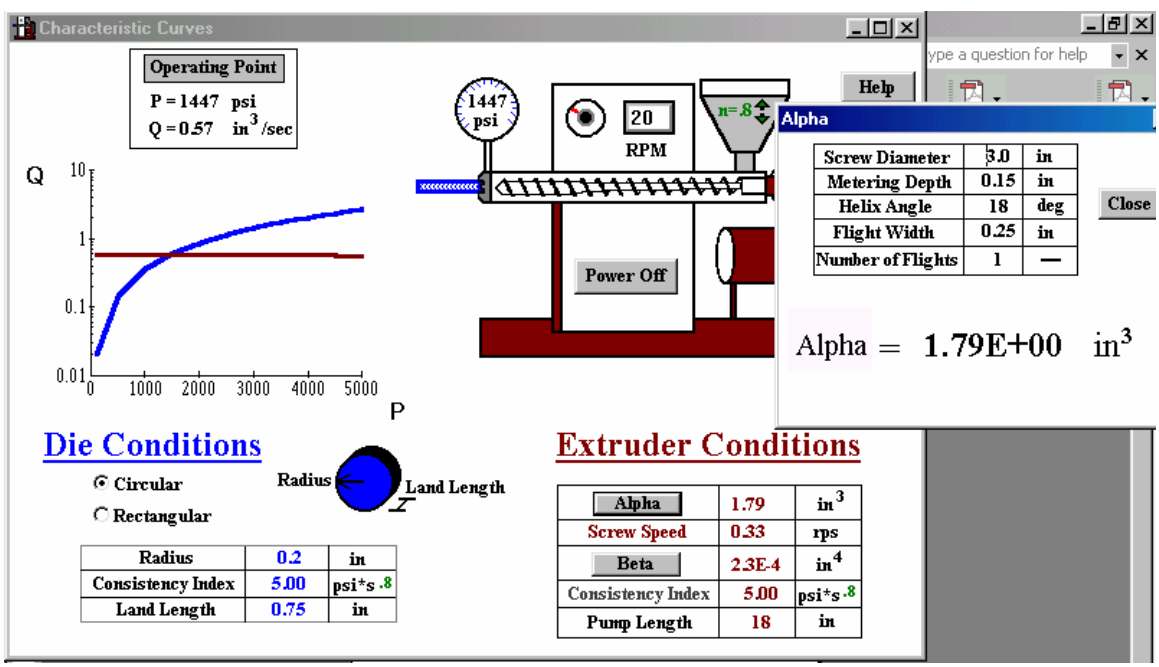

ITXtrude
Welcome to ITXtrude!
Please select a Calculation Program from the following choices:
Characteristic Curves
Shear Rate
Solids Conveying Rate
Melting Rate
Drag and Pressure Flow Rates
Units
English
Metric
Continue
Exit


Characteristic Curves
Operating Point
P = 1447 psi
Q = 0.57 in3/sec
Q
10
1
0.1
0.01
0
1000
2000
3000
4000
5000
P
1447 psi
20
RPM
n=.8
Power Off
Help
Alpha
Screw Diameter 3.0 in
Metering Depth 0.15 in
Helix Angle 18 deg
Flight Width 0.25 in
Number of Flights 1 —
Close
Alpha = 1.79E+00 in3
Die Conditions
Circular
Rectangular
Radius
Land Length
Radius 0.2 in
Consistency Index 5.00 psi*s.8
Land Length 0.75 in
Extruder Conditions
Alpha 1.79 in3
Screw Speed 0.33 rps
Beta 2.3E-4 in4
Consistency Index 5.00 psi*s.8
Pump Length 18 in

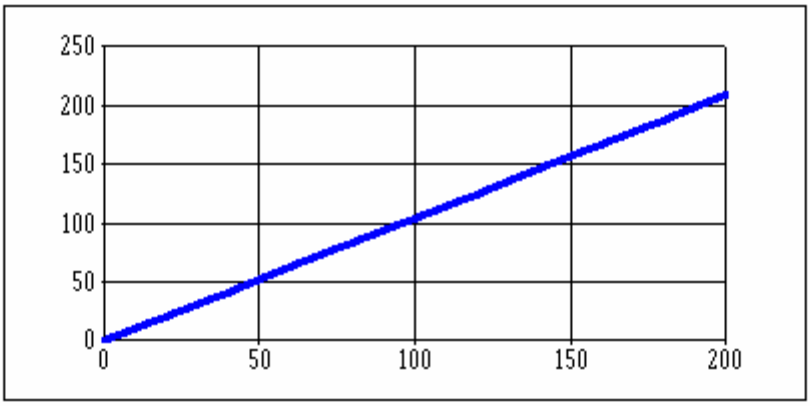
Shear Rate

Shear Rate Calculations

Please input values for the following parameters:

Screw Diameter	3.0	in
Metering Channel Depth	0.15	in

Shear Rate (1/s)



Nominal Clearance: .0030 in

Screw Speed (RPM)

Return to ITXtrude

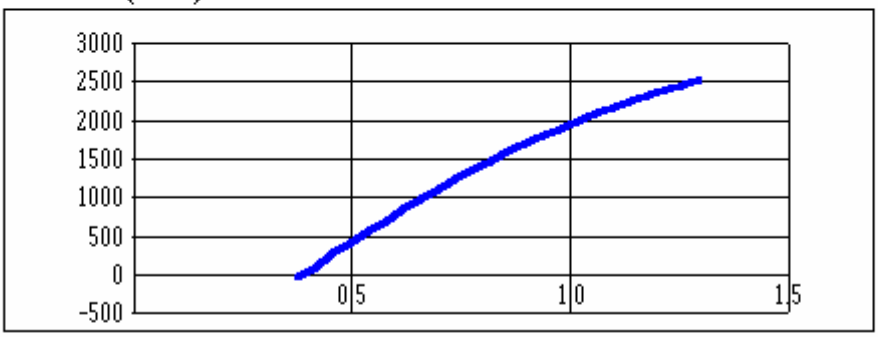
Solids Conveying Rate

Solids Conveying Rate Calculations

Please input values for the following parameters:

Screw Diameter	3.0	in	Initial Pressure	20	psi
Screw Speed	100	RPM	Final Pressure	50	psi
Number of Flights	1	—	Coefficient of Friction: Screw	0.30	—
Feed Helix Angle	18	deg	Coefficient of Friction: Barrel	0.30	—
Flight Width	0.25	in	Solid Density	0.036	lb/in^3

Flow Rate (lb/hr)



Nominal Clearance: .0030 in

Solids Channel Depth (in)

Return to ITXtrude

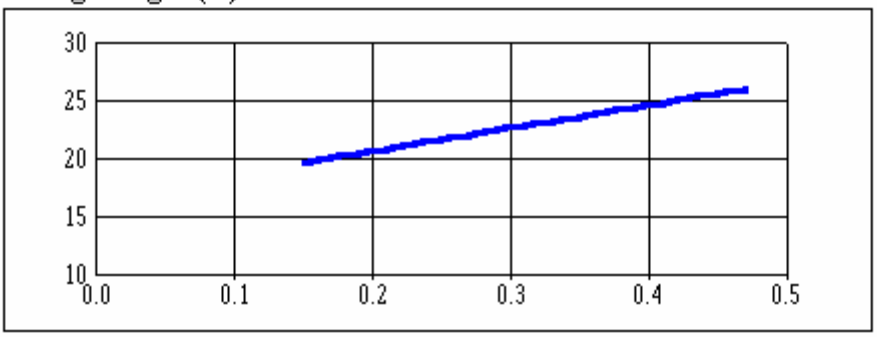
Melting Rate

Melting Rate Calculations

Please input values for the following parameters:

Screw Diameter	3.0	in	Barrel Temperature	400	deg F
Screw Speed	100	RPM	Polymer Melting Point	260	deg F
Number of Flights	1	—	Enthalpy	0.06	hp*hr/lb
Transition Helix Angle	18	deg	Thermal Conductivity	0.14	BTU / ft*hr*F
Flight Width	0.25	in	Solid Density	0.036	lb/in^3

Melting Length (in)



Nominal Clearance: .0030 in

Metering Channel Depth (in)

Return to ITXtrude

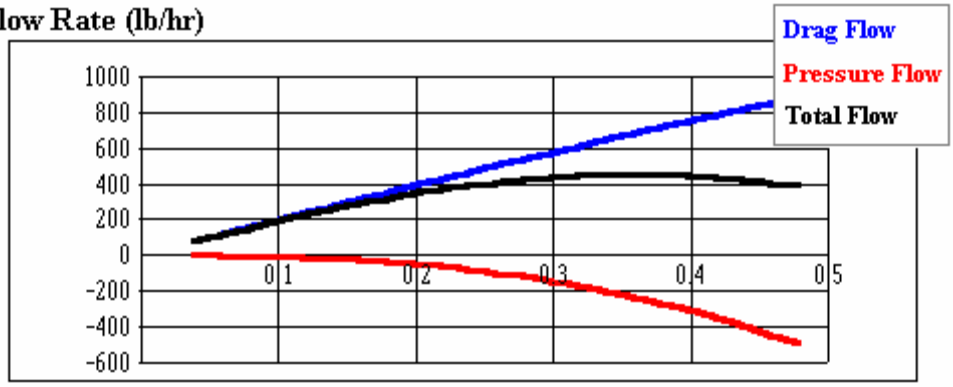
Drag and Pressure Flow Rates

Drag and Pressure Flow Rate Calculations

Please input values for the following parameters:

Screw Diameter	3.0	in	Flight Width	0.25	in
Screw Speed	100	RPM	Pressure Gradient	75	psi/in
Number of Flights	1	—	Consistency Index	0.25	$psi*s^{.8}$
Metering Helix Angle	18	deg	Power Law Index (n)	.8	—
			Melt Density	0.03	lb/in^3

Flow Rate (lb/hr)



Nominal Clearance: .0030 in

Metering Channel Depth (in)

Return to ITXtrude