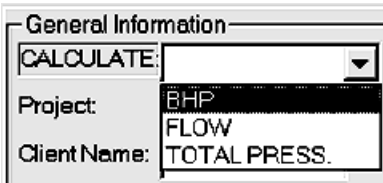




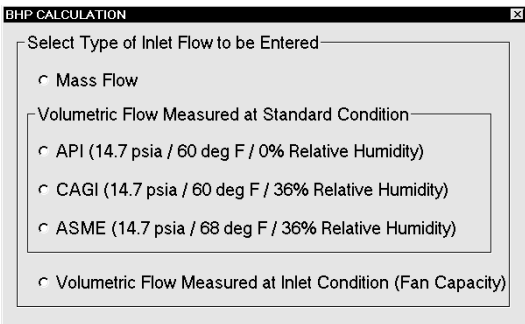
A 32-bit Systems Analysis Software  
for Windows® 95 and Windows NT™

# Fan/Blower Module

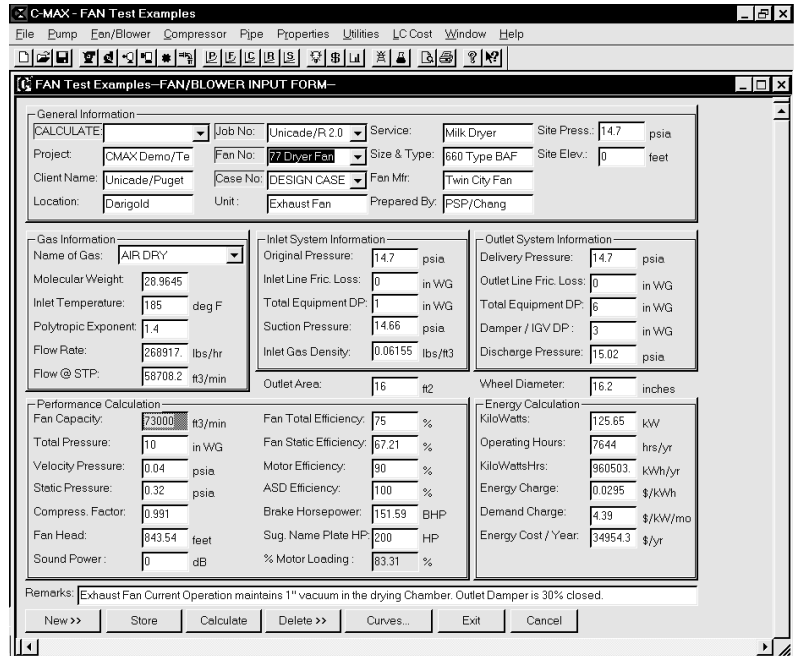
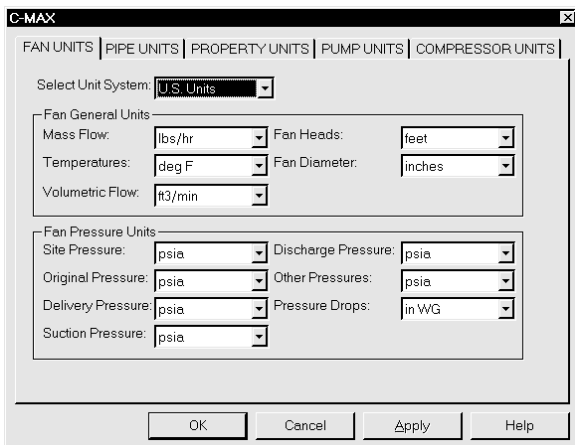
You can use the Fan module to calculate **Break Horsepower, Flow Rate, and Total Pressure** for a fan or blower system.



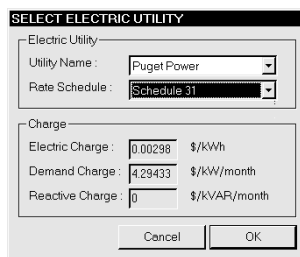
You have choices of mass flow rate, volumetric flow rate in standard conditions (API, CAGI, or ASME), and volumetric flow rate at the inlet conditions (ICFM) when you calculate BHP.



C-MAX provides various engineering units (in U.S. and/or S.I.) for your convenient data entry. You can select different units in a case study, say *in Wg* for total pressure and *psia* for suction pressure.



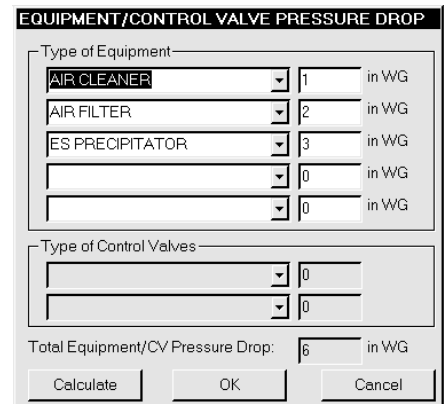
Easy-To-Learn and Use Unique “All-In-One” System Input Forms



C-MAX calculates electrical energy costs comprised of energy charge, demand charge, and reactive charge by using the standard formulas. You can apply the same utility rates to other case studies to ensure the consistency.

Adjustments to the fan efficiency and system pressure drops, including pressure drop across damper or inlet guide vane, are made automatically when the fan is operated on its base characteristic curve.

Part load change in adjustable speed drive & electric motor efficiencies are automatically computed.

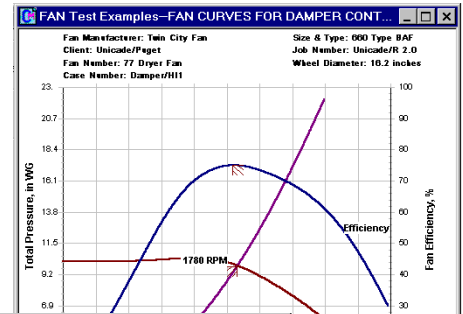


You can create these industry-standard, ready-to-use reports from C-MAX Fan module!

FAN/BLOWER DATA SHEET			
CLIENT: Unicaide/Puget	JOB NO: Unicaide/R 2.0		
LOCATION: Daringold	FAN NO: 77 Dryer Fan		
PLANT / UNIT: Exhaust Fan	CASE NO: DESIGN CASE		
SERVICE: Milk Dryer	NO OF UNITS: 1	SERIAL NO:	
OPERATING CONDITIONS			
GAS: AIR DRY	CFM AT FLOW TEMP: 73000	CFM	
SP GR (AIR = 1)	REL HUMIDITY AT FLOW TEMP:	%	
FLOW RATE: 268917.38	lbshr	SUCTION PRESS: 14.66	psia
STD CFM: 58708.22	CFM	DISCH PRESS: 15.02	psia
FLOW TEMP: 185	deg F	DIFFERENTIAL PRESS: 10	in WG
MECHANICAL DATA			
EVALMED: Turb./Fan/Exp.   BREAKING: TWGE			

FAN / BLOWER SYSTEM FORM			
GENERAL INFORMATION			
FAN / BLOWER SYSTEM	Job No: Unicaide/R 2.0	Service: Milk Dryer	Site Pressure: 14.7 psia
Project: CMAX Demo/Test	Fan No: 77 Dryer Fan	Size & Type: 660 Type BA	Site Elevation: 0 feet
Client Name: Unicaide/Puget	Case No: DESIGN CASE	Fan Mfr: Twin City Fan	
Location: Daringold	Unit: Exhaust Fan	Prepared By: PSP/Chang	
GAS INFORMATION			
Name of Gas: AIR DRY	Inlet Temperature: 185 deg F	Molecular Weight: 28.9645	Polytropic Exponent: 1.4
Flow Rate: 268917.38 lbshr	Flow @ STP: 58708.22 ft <sup>3</sup> /min	Inlet Gas Density: 0.08155 lbm/ft <sup>3</sup>	
INLET SYSTEM INFORMATION		OUTLET SYSTEM INFORMATION	
Original Pressure: 14.7 psia	Inlet Line Fric. Loss: 0 in WG	Delivery Pressure: 14.7 psia	Outlet Line Fric. Loss: 0 in WG
Total Equipment DP: 1 in WG	Suction Pressure: 14.66 psia	Total Equipment DP: 6 in WG	Damper / IGV DP: 3 in WG
	Outlet Area: 16 sq ft	Discharge Pressure: 15.02 psia	Wheel Diameter: 16.2 inches

C-MAX graphs fan performance & characteristic curves, system curve, efficiency curve, horsepower curves, and adjustable speed drive curves. It will also plot the fan characteristic curves when the fan is operated under inlet guide vane control.



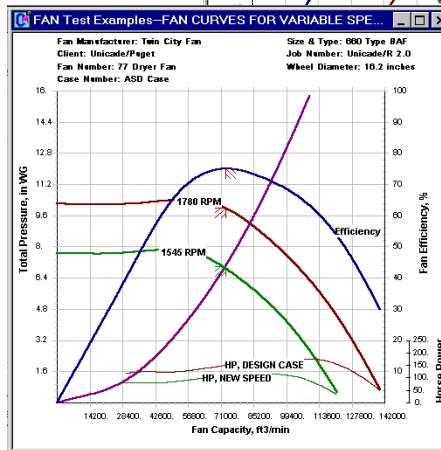
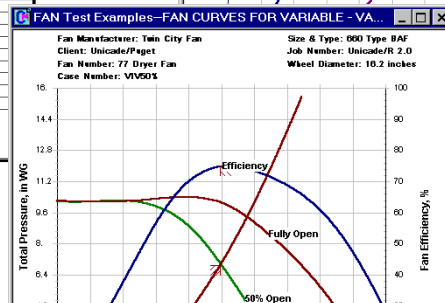
SYSTEM PRESSURE DROP REPORT			
GENERAL INFORMATION			
Job No: Unicaide/R 2.0	Project: CMAX Demo/Test	Service: Milk Dryer	
Equipment No: 77 Dryer Fan	Client: Unicaide/Puget	Site Pressure: 14.7 psia	
Case No: VIV75%Open	Site: Daringold	Prepared By: PSP/Chang	
SYSTEM PRESSURE DROP SUMMARY			
INLET SYSTEM			
Milk Dryer	1.00	in WG	
AIR FILTER	3.00	in WG	
DAMPER	2.00	in WG	
ES PRECIPITATOR	2.40	in WG	
GAS INCINERATOR	0.60	in WG	
<b>TOTAL PRESSURE DROP</b>	<b>9.00</b>	<b>in WG</b>	

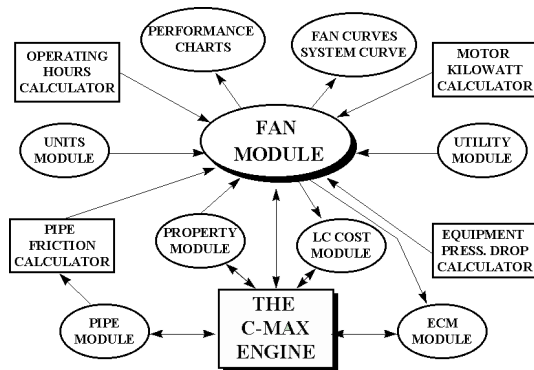
SYSTEM CALCULATION			
Power:	125.65	kW	
Cost:	7644	hrs/year	
Cost:	980503.87	kWh/year	
Charge:	0.0295	\$/kWh	
Charge:	4.39	\$/kW/mo	
Cost/Yr:	34954.35	\$/year	

SYSTEM PRESSURE DROP SUMMARY (Pie Chart)			
Milk Dryer	0.7%		
AIR FILTER	26.7%		
DAMPER	11.1%		
ES PRECIPITATOR	30.2%		
GAS INCINERATOR	22.2%		



The Fan module is fully integrated with the Pipe module, Energy Conservation Measure (ECM) module, Life Cycle Costing module, and other modules.



The fan/blower module is designed using Buffalo Forge Company's Fan Engineering Handbook and Mark's Standard Handbook for Mechanical Engineers.

- C-MAX Modules**
- ⇒ Centrifugal Pump
  - ⇒ Fans & Blowers
  - ⇒ Compressors
  - ⇒ Centrifugal Recip. & Rotary Screw
  - ⇒ Flow of Fluids (Piping)
  - ⇒ ECM Compare
  - ⇒ Economic Evaluation
  - ⇒ Non-Energy Benefits
  - ⇒ Performance Charts
  - ⇒ Utility Rates
  - ⇒ Properties Database
  - ⇒ US/SI Units

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