

AFT Arrow Modules

Extended System Modeling for AFT Arrow 4.0

Building on the most comprehensive system modeling software for compressible flow systems, the *AFT Arrow™* modules extend modeling capabilities two ways —

GSC – Goal Seek and Control to automate the determination input parameters yielding specified output values and simulate a variety of control functions.

CST – CoST calculations of pipes and components

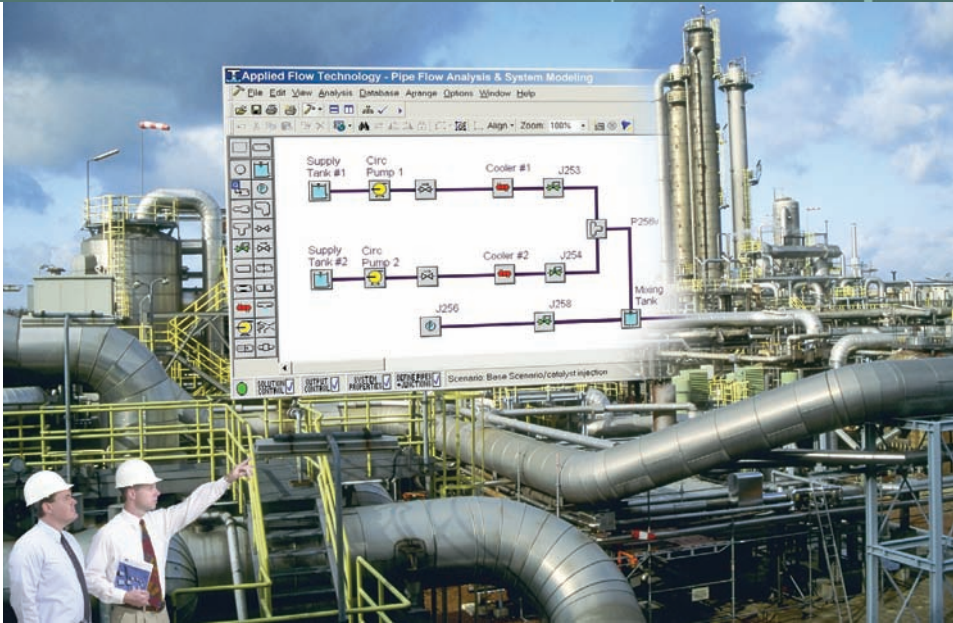
Each of the *AFT Arrow* modules can work individually within *AFT Arrow* or in conjunction with the other module. And since they are add-on modules to *AFT Arrow*, they can work with all of your existing system models.

Goal Seek & Control GSC Module

One of the powerful benefits of system modeling is the what-if potential, the ability to quickly evaluate the effects of changing system parameters. The *AFT Arrow* GSC module automates this process so that it requires much less time than traditional, manual iterative analyses. To determine what valve open percent will achieve a target flow is as easy as identifying the valve loss factor as a variable and specifying the value of the desired flowrate.

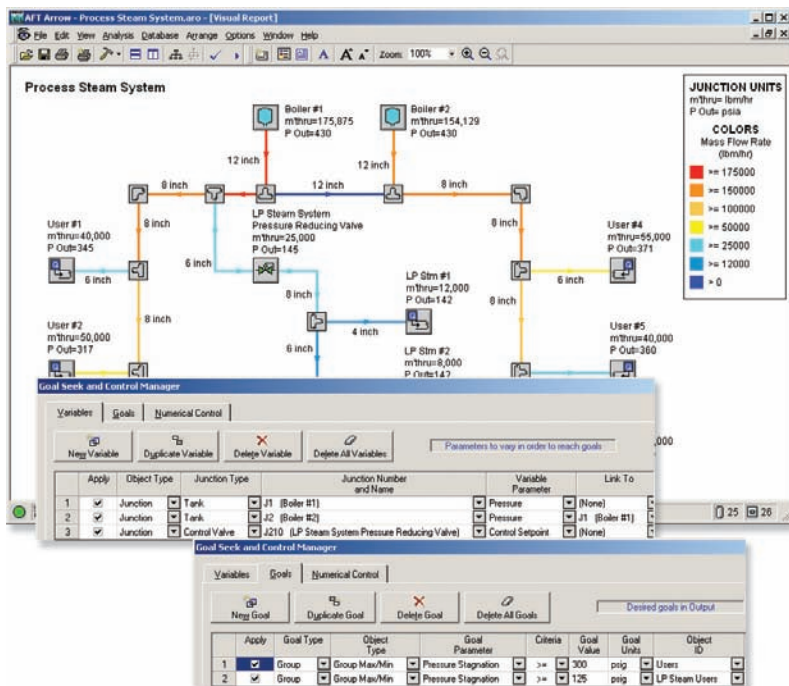
That's only the beginning as the GSC module's sophisticated goal seeking engine allows you to define multiple variables and goals at multiple locations throughout the system. Goals can be single point, differentials or sums. The GSC module answers questions such as: what compressor speed will achieve a specified total flow to multiple, remote demands or what positioning of multiple valves will yield a desired differential supply pressure between pieces of equipment in your system.

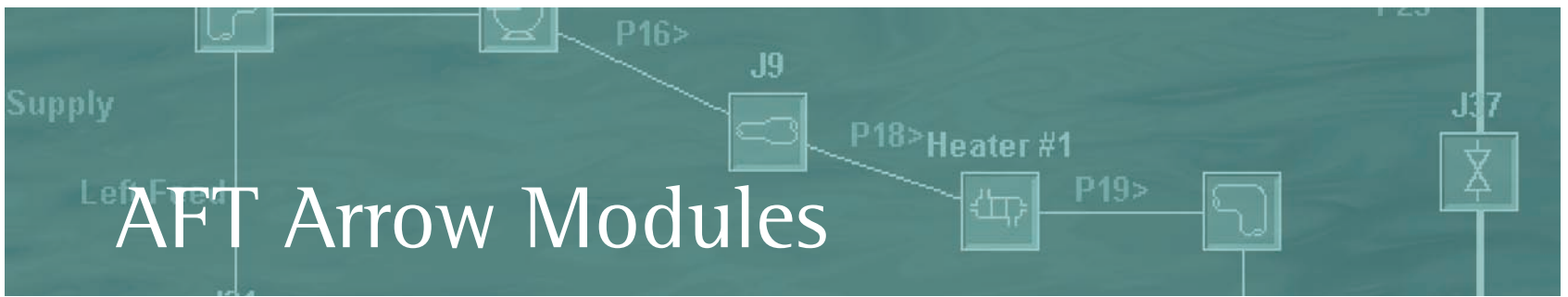
The possibilities are almost endless and raise the productivity of your system modeling to new levels.



Modeling parameters that may be used as variables or goals include:

- Compressors / fans - speed, flow, head rise
- Valves - open percent, Cv/K, deltaP, flow
- Tanks - pressure, temperature
- Control valves - setpoint, open percent
- Orifice - diameter, area
- Heat exchangers – heat rate, temperatures, area, U value
- Spray discharge – area, exit pressure





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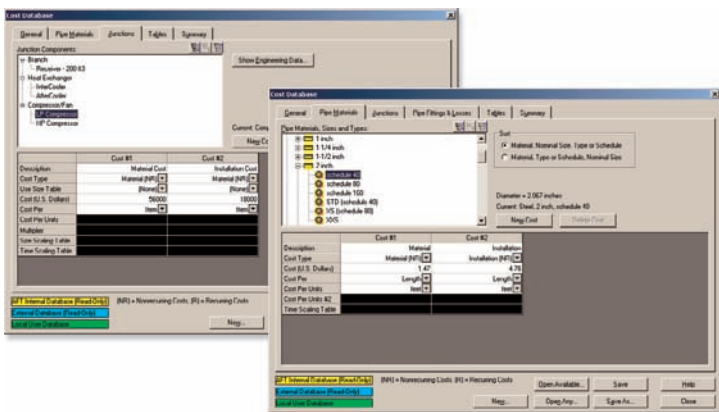
Table Units:	Type	Name	Material	Installation	Non-Recurring Sub Total	Operation	Recurring Sub Total	TOTAL
TOTAL OF ALL MODEL COSTS								
Total of All Shown Costs			253,091	13,074	266,165	3,135,173	3,135,173	3,401,337
Pipe Subtotal			3,250	11,076	14,330	0	0	14,330
P211	Pipe	Pipe	144	466	611	0	0	611
P214	Pipe	Pipe	14	49	63	0	0	63
P217	Pipe	Pipe	12	38	50	0	0	50
P218	Pipe	Pipe	47	152	199	0	0	199
P221	Pipe	Pipe	79	257	336	0	0	336
P222	Pipe	Pipe	9	36	45	0	0	45
Unshown Pipe(s)			2,350	10,077	13,026	0	0	13,026
Branch Subtotal			19,500	0	19,500	0	0	19,500
J3	Branch	Receiver	19,500	0	19,500	0	0	19,500
Compressor/Fan Subtotal			162,000	0	162,000	3,135,173	3,135,173	3,297,173
J525	Compressor/Fan	Compressor - 1st Stage	74,000	0	74,000	1,910,067	1,910,067	1,984,067
J528	Compressor/Fan	Compressor - 2nd Stage	88,000	0	88,000	1,225,106	1,225,106	1,313,106
Heat Exchanger Subtotal			68,000	0	68,000	0	0	68,000
J527	Heat Exchanger	InterCooler	34,000	0	34,000	0	0	34,000
J529	Heat Exchanger	AfterCooler	34,000	0	34,000	0	0	34,000
Fitting Loss Subtotal			336	1,998	2,335	0	0	2,335
P211	(Losses: Fittings)	Pipe	17	80	97	0	0	97
P214	(Losses: Fittings)	Pipe	16	72	87	0	0	87
P218	(Losses: Fittings)	Pipe	17	80	97	0	0	97
P222	(Losses: Fittings)	Pipe	7	47	54	0	0	54
Unshown Losses			280	1,720	1,999	0	0	1,999

Cost Estimation CST Module

Most of the cost of a typical piping or ducting system is fixed in the initial stages of design where system sizing is determined. Traditional methods impose too much distance between this design stage and cost determination, obscuring the impact of design decisions on system costs. By calculating system costs, the CST module lets you tightly integrate your design and cost estimating process, eliminating the barriers to development of cost effective designs. In conjunction with AFT Arrow's energy cost calculation capabilities, the impact of design decisions on both fixed and life cycle costs are clearly shown.

The CST module provides a flexible means of defining system component and piping costs in databases that may be accessed by your AFT Arrow model.

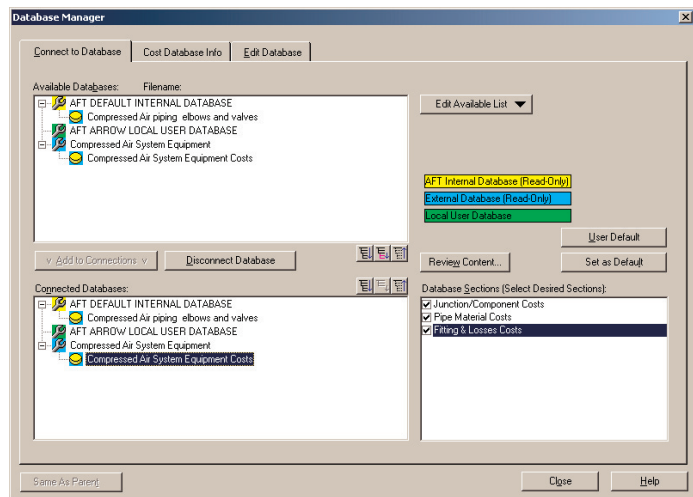
In addition to the traditional hydraulic information, output now also contains the total cost and a cost breakdown by component. The CST module databases provide the flexibility to arrange your cost data as you want, whether it be by component type, equipment category, project or almost any arrangement that best fits your needs.



Database Manager lets you easily move data between databases, create new databases and manage the data used in your system model.

In addition to your own data, the CST module integrates with an optional MeansData™ module, allowing ready access to the extensive cost information available in this industry standard.

If you're serious about developing cost effective designs, you need the tight integration between your design and its cost provided by the CST module.



System Requirements

- Windows 95 and higher or Windows NT or higher
- 128 MB RAM minimum
- 800 x 600 display minimum
- Stand-alone or network



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