

Syphons, Eductors, Exhausters and Injectors

EJECTORS

Applications

Ejectors perform a variety of functions depending on the application and motive force used. Applications include:

- Air Conditioning & Heating
- Sterilizing
- Exhausting
- Agitating
- Aerating & Circulating
- Pumping, Lifting & Conveying
- Mixing & Condensing
- Pasteurizing
- Bilge Pumps
- Atomizing
- Cryogenics
- Tempering Water
- Water Treatment Systems

Features

- No Moving Parts – No Adjustments
- Operates on Water or Steam Pressure
- Submersible
- Heavy-Duty Bronze or Cast Iron Construction

How It Works

Commonly employing water, steam or air pressure as the motive force, ejectors operate on the principle of a pressure drop through an aperture which increases velocity on the discharge side. The resulting vacuum induces flow in the desired medium.

INLET:

The operating medium (liquid, steam, or gas) enters the inlet under pressure and travels through the nozzle into the suction chamber. The nozzle converts the pressure of the operating medium into a high velocity stream, which passes from the discharge side of the inlet nozzle.

SUCTION:

Pumping action starts when vapor, gases, or liquid in the suction chamber are entrained by the high velocity stream emerging from the inlet nozzle, lowering the pressure in the suction chamber. This results in the liquid, gas, or vapor in the suction chamber to flow toward the discharge.

DISCHARGE:

The entrained material from the suction system mixes with the operating medium and acquires part of its energy in the parallel section. In the diffuser section, part of the velocity of the mixture is converted to a pressure greater than the suction pressure but lower than the operating medium pressure.



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Manufacturers of:

**PRESSURE & TEMPERATURE REGULATORS - RELIEF VALVES - STEAM TRAPS - CLEAN STEAM PRODUCTS
LIQUID DRAINERS - PRESSURE PUMPS - EJECTORS - SPECIALTY PRODUCTS**



SP-530

(1/01)

Ejectors Specifications

Operating Limits

Minimum Motive Force	30 psig
Maximum Motive Force	100 psig
Motive Medium, if water, maximum	130°F
Suction Medium, maximum	130°F

Materials

Bodies (No. 12 - 16).....	Bronze
Bodies (No. 17).....	Cast Iron
Nozzles (all sizes)	Bronze

Capacities

Series No.	GPH Steam Inlet	GPH Water Inlet
12	150	225
13	400	731
14	700	1125
15	1100	1631
16	1600	2250
17	3000	3825

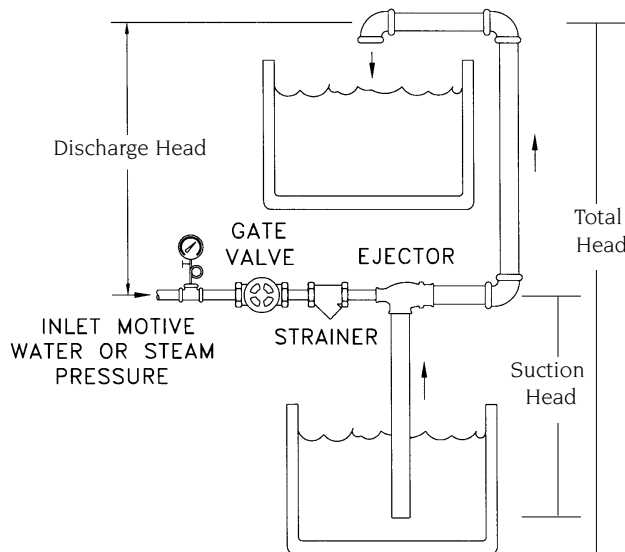
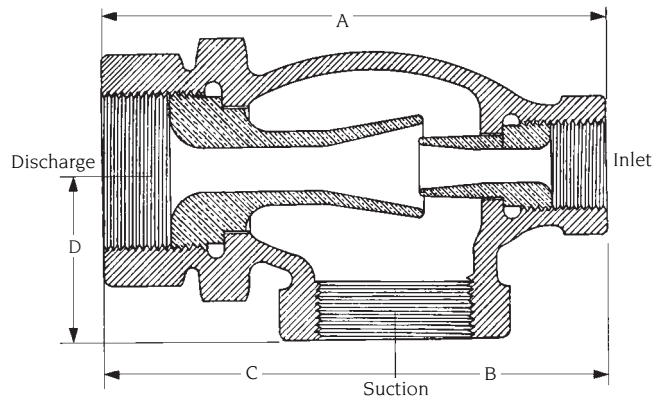
NOTE: MAXIMUM FLOW DEPENDS ON INLET PRESSURE AND TOTAL HEAD. ABOVE CAPACITIES WERE PRODUCED AT ZERO HEAD WITH 50 PSIG OF STEAM PRESSURE AS MOTIVE FORCE. SEE FOLLOWING CAPACITY CHARTS ON PAGE SP-530-2 FOR MORE INFORMATION.

Bronze Body & Nozzles

No.	Diameter of Pipe			Dimensions			
	Suction	Discharge	Inlet	A	B	C	D
12	1/2"	1/2"	1/4"	3 1/4"	1 7/16"	1 13/16"	1 1/8"
13	3/4"	3/4"	3/8"	4"	1 1/2"	2 1/2"	1 3/8"
14	1"	1"	1/2"	5 1/8"	2 1/4"	2 7/8"	1 5/8"
15	1 1/4"	1 1/4"	3/4"	5 7/8"	2 7/16"	3 7/16"	1 13/16"
16	1 1/2"	1 1/2"	3/4"	6 1/4"	2 11/16"	3 9/16"	1 15/16"

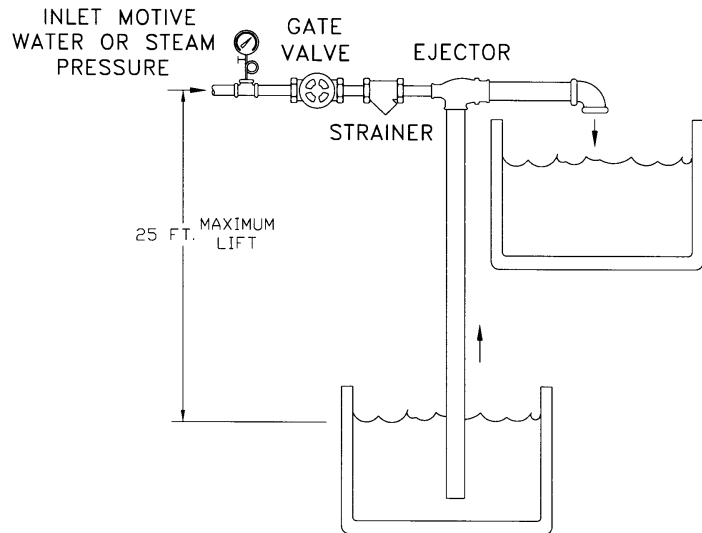
Iron Body & Bronze Nozzles

No.	Diameter of Pipe			Dimensions			
	Suction	Discharge	Inlet	A	B	C	D
17	2"	2"	1"	7 1/4"	3 1/8"	4 1/8"	2 3/8"



Picture I:

It is always desirable to keep the Ejector as close to the actual liquid being pumped as possible. The maximum height the liquid can be pumped depends on the pressure of the "motive" liquid or steam available. Please refer to the capacity graphs for maximum flow rates and maximum achievable heads.



Picture II:

The maximum height that water or any liquid with a specific gravity of one can be lifted is 27 ft. Increases in the temperature of the liquid you are trying to lift will cause this maximum height to decrease. We don't recommend pumping liquid in excess of 130°F. Please consult factory with any specific application.

CAUTION: USED AS A SYPHON, THE DEVICE IS NOT PRACTICAL IF THE MOTIVE FORCE PRESSURE IS BELOW 30 PSIG OR IF THE MOTIVE AND SUCTION MEDIUMS ARE BOTH LIQUIDS AND EITHER HAS A TEMPERATURE ABOVE 150°F.

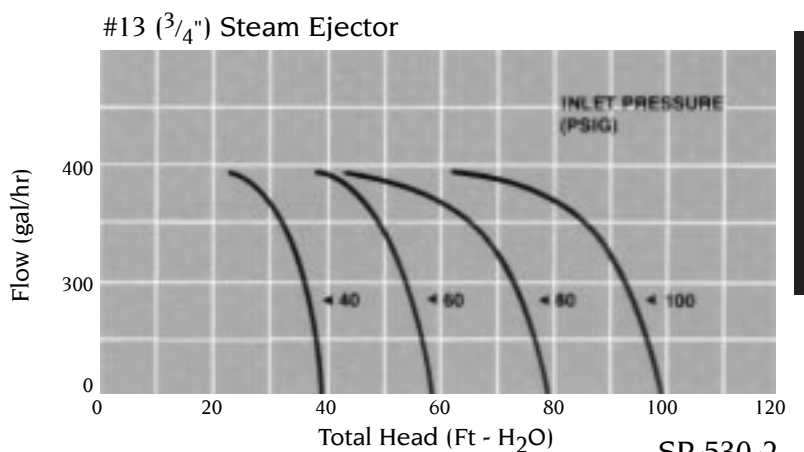
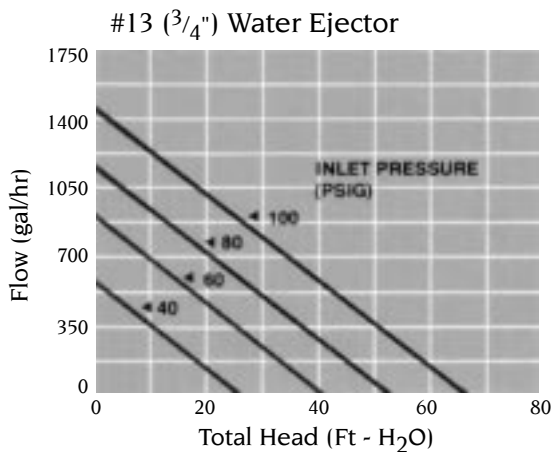
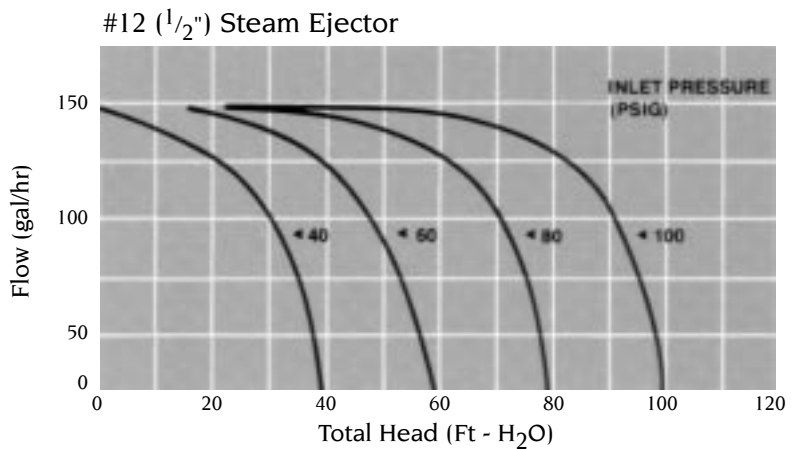
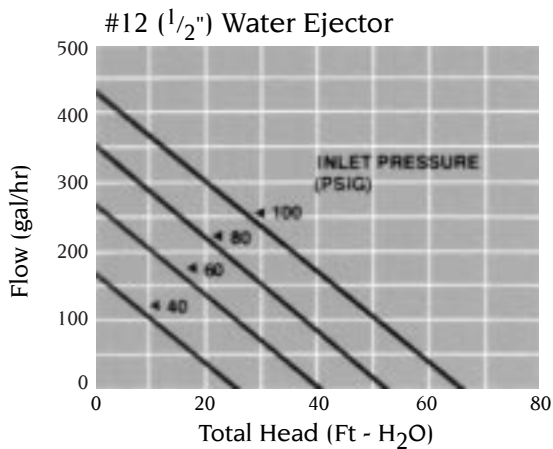
Flow Charts for Water & Steam Ejectors

Example : 1

A #14 1" Ejector using 60 lbs. of steam pressure as a motive force will pump water to a maximum height of 60 ft. When pumping water to a height of 53 ft. using 60 lbs of steam pressure the amount of water being pumped is 650 Gal/hr.

Example : 2

A #14 1" Ejector using 60 lbs. of water pressure as a motive force will pump water to a maximum height of 40 ft. When pumping water to a height of 20 ft. using 60 lbs of water pressure the maximum amount of water being pumped is 700 Gal/hr.



SPECIALTY PRODUCTS

SP-530-2

(1/01)

Flow Charts for Water & Steam Ejectors

