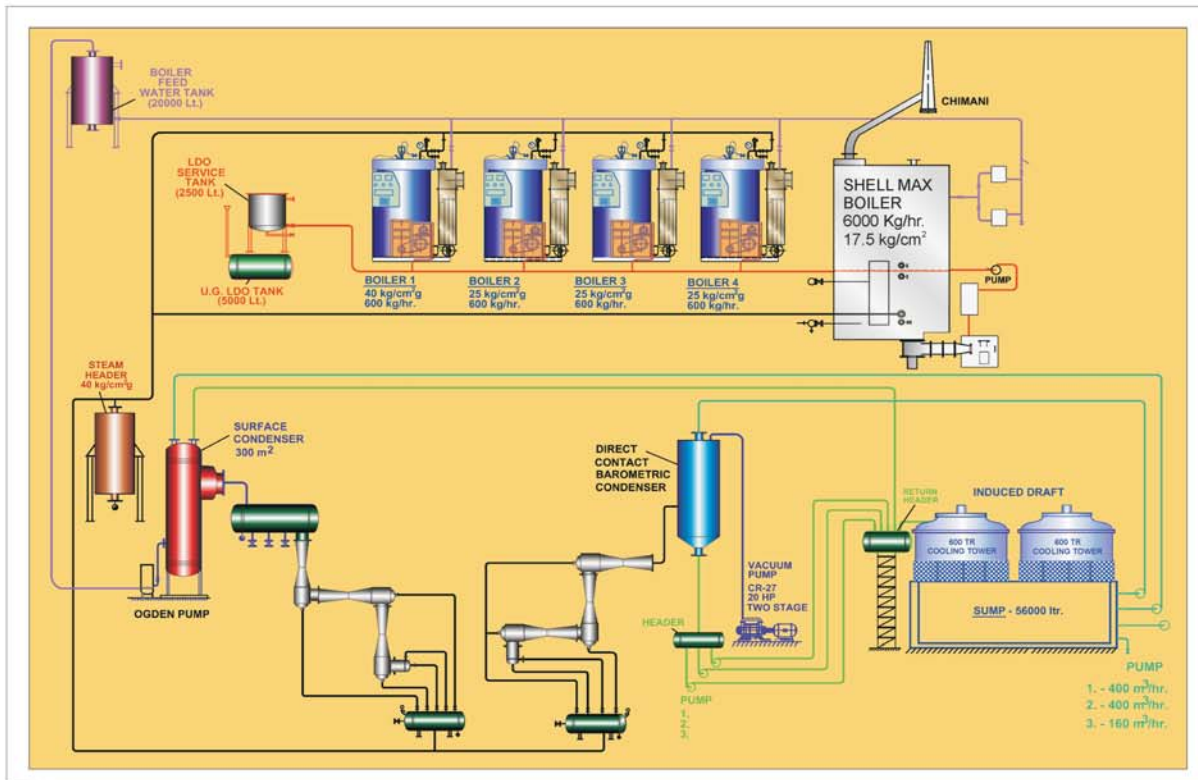


# CROLL-REYNOLDS

**Test Centre in India Include Boilers, Condensers, Cooling towers, Control Valves, Recovery Systems and large capacity Pumps.**



Croll Reynolds has invested over Rs. 10 million, to improve and expand its production testing capabilities and services and gives Mazda the ability to simulate operating conditions and analyse all anticipated variables that may be encountered under actual operating conditions.

Some of the critical performance factors that Mazda is able to analyse at the test center include ejector flow capacity, Ejector stability under varying steam pressure conditions. Croll Reynolds and Mazda guarantees that when the system is operating, it will meet all capacity, steam-consumption and power - limit specifications according to Heat Exchanger institute Standards and ASME PTC code 24. The center also gives Mazda the capability to more accurately measure flow-generated noise during testing of Ejector discharging to atmosphere.

As a part of the commitment to customer support, pick up and break up pressure records are maintained on every system installation. Records include: system and component specification, detailed lists of parts and construction, materials, and performance data.

**This centre is the largest and one of the most advanced facilities of its type in the world.**



## At our Research and Test Facility, quality is assured and performance is proven

Croll-Reynolds, Co., Inc working in concert with Mazda Limited of Ahmedabad, India, is the leading supplier of Innovative, High-Performance Process Vacuum Systems, to the world.

In an effort to provide its customers with a real-world environment for the development of custom system designs and new product concepts, Croll-Reynolds and Mazda has installed the world's largest state-of-the-art-Research and Test facility at its plant in Ahmedabad. With this test facility we are able to test virtually any system that we manufacture. While others make promises about steam consumption and suction capacity, we are able to provide certified curves to confirm the performance of our equipment. Our goal is to provide low cost, high efficiency and total satisfaction.



Main discharge header has three connections for testing ejectors on different diameter lines.



Three large capacity multiple nozzle boosters in series on high vacuum test





Our steam system is arranged to enable us to use all five boilers together, thereby providing a total of 10,000 kgs/hr at 17.5 kg/cm<sup>2</sup> (G).

Customer's satisfaction is paramount for joint business success. This is achieved by providing Quality controlled products and Quality service on time, and at the right price, through a Quality assured organisation working in a systematic mode. Mazda's policy of maintaining standards of work to an exacting level, is the issue of a Quality Control Manual. Suppliers, sub-contractors and company departments are co-ordinated through the Quality system.

"Quality in Action" is reflected in the brief daily "TEN O' CLOCK" meeting of departmental representatives, who critically review the previous day's performance and decide co-operative, planned action and priorities for the coming day. Quality circles meet regularly to debate and recommend improved working procedures to advance Product Quality. Full identification and traceability is maintained from receipt to finished product.

**MAZDA LIMITED**

GIDC, NARODA, AHMEDABAD 382 330, INDIA.

**PERFORMANCE TEST REPORT**

CUSTOMER CROLL-REYNOLDS CO. INC.  
PO. NO. 78643  
ITEM W-X Stage Ejectors

Date : 6/22/99  
JOB NO. : VO-99-1094

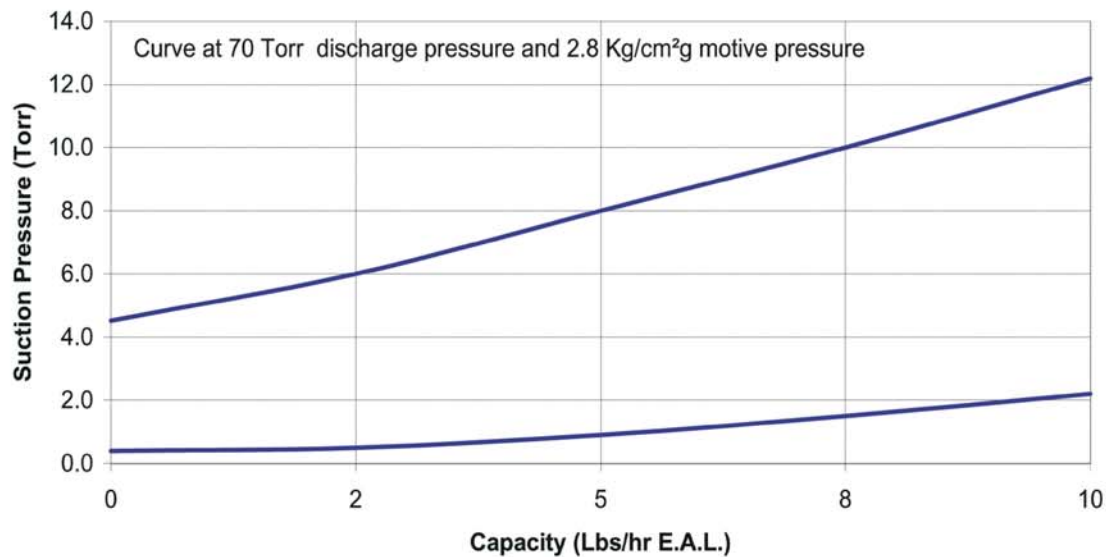
**DESIGN DATA**

Suction Load : 5 Lbs./hr E.A.L. @ 1.0 Torr suction pressure to 70 Torr discharge pressure  
Motive : 40 PSIG (2.81 Kg/cm<sup>2</sup>g.) At Saturated temperature

**Observation :**

Sr. No.	Motive Pre. (Kg/cm <sup>2</sup> g)		Suction Capacity (Lbs./hr E.A.L.)	Suc. Pre. (Torr)		Dis. Pre. (TORR)
	W stage	X stage		W stage	X stage	
1	2.8	2.8	0	0.4	5	70
2	2.8	2.8	2	0.5	6	70
3	2.8	2.8	5	0.9	8	70
4	2.8	2.8	8	1.5	10	70
5	2.8	2.8	10	2.2	12	70
6	2.1 BU / 2.5 PU	2.8	0	0.6	-	70
7	2.2 BU / 2.6 PU	2.8	5	1.2	-	70
8	2.8	2.2 BU / 2.4 PU	0	-	7	70
9	2.8	2.3 BU / 2.7 PU	5	-	10	70

**CAPACITY V/S. SUCTION PRESSURE CURVE**



for, MAZDA LIMITED



(Pradip Panchal)



Steam jet and water jet ejector combination, testing facility



High pressure accumulator to provide additional steam at 17.5 Kg/cm<sup>2</sup> (G) and also at 40 Kg/cm<sup>2</sup> (G).



Three numbers of split range control valves installed for very accurate control of discharge pressure of ejectors and thermocompressor under test Break-up, Pick-up pressures are very accurately measured.



Large discharge header of 42" to Direct contact barometric condenser, employed to test very large boosters and thermocompressors.



Silencer under test for a start-up ejector to ensure operation at minimum noise level in accordance with OSHA mandated noise exposure limits.

Computer room adjoining main test centre will control, monitor and record all test procedures.



## Pilot Plant EVAPORATORS

In order to determine the most suitable type of evaporator, to simulate the actual process conditions, and understand the effectiveness of the equipment Mazda has installed a full fledged pilot plant evaporator facility.

The Pilot Plant consists of Falling Film Evaporator, Forced Circulation Evaporator & Rising Film Evaporator systems complete with vapour thermo-recompressor and slurry filters.

The Pilot Plant is manned by skilled engineers & technicians who will provide advice and assistance during trials.







Our test condensers are surface and barometric. The surface condenser has 300 m<sup>2</sup> of heat transfer and the direct contact barometric condenser in size 1350 mm (54") is capable of handling 480 m<sup>3</sup>/hr of cooling water capacity. Both are serviced by circulated water through the cooling towers.



Two numbers of cooling towers having a total capacity of 1200 TR.

## MAZDA LIMITED

Mazda House, Panchwati 2nd Lane, Ambawadi, Ahmedabad 380 006. INDIA.

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