

An Overview of Indian Pump Industry

Pumps play a dominant role in the sectors like agriculture, production of oil and natural gas, petroleum refining, petrochemicals, power generation, domestic and household utilities, etc, and contribute a major part in nation's economy.

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Pump is not a new concept in the Indian industry. In fact, the 'Pichkari' which Lord Krishna and his playmates used for splashing coloured water on Gopis, can be termed as the oldest reference to a pump concept, especially of the reciprocating plunger type. Thus, pumps must be an Indian invention, but commercial production of pumps in India, as contemporarily understood, is quoted to be way back in the first decade of twentieth century.

Manufacturing Scenario

Presently, the gross value of pump's production in India is estimated to be in the order of US\$ 450 million (approx. 1.2 million No.). The scales of production and corporate structures of manufacturers range from the small scale industries, medium to large scale industries, both in the unorganised sectors and also public sector units.

In terms of drive ratings, the range of manufacture extends from fractional horsepower designs to large pumps of drive rating of the order of three MW. Almost all types of pumps, manufactured internationally, are also made in India.

Demand and Supply Situation

Indian pumps have contributed to the nation's economy significantly. Prominent sectors amongst them are agriculture, onshore and offshore production of oil and natural gas, petroleum refining, petrochemicals, mining, ship-building and marine duties, power generation, public water supply and sanitation, domestic and household utilities, process industries producing fertilizers, insecticides, pesticides, drugs and pharmaceuticals, textiles, soaps and detergents, cosmetic and health care products, dairies, vegetable oil and processed and packed food products, breweries, paints, etc.

Indian pump manufacturers seem to fulfil all the demands of pump-usage, since imports are not very significant. Some special construction pumps of special materials used for special duties like requirements of very fine vacuum are also imported. The quantities are small although the unit cost of these pumps may be high.

Globalisation of Indian economy enthused some importers to sporadically import a few container-loads of run-of-the mill type pumps for agriculture and domestic duties. However, those events do not seem to have caught any fancy in the Indian markets.

Pumps automatically get imported with systems, not de-packaged for items, that can be procured indigenously. Yet,

users do seek import substitutes due to the cost-effectiveness of Indian manufacture and for better guarantee of support with respect to after-sales service.

Technologies, Collaborations and Indigenous R&D

Most of the world-renowned technologies have been operative in India. Majority of them seem to be European, to name a few, KSB, Sulzer, Weir, SPP, Allweiler, Bornemann, Alstom, Stork, Terromecanica, Godiva, Pleuger, Grundfos, ABS, Flygt, Denver Orion, etc. Amongst them American, Japanese and Australian technologies can be sighted in Worthington-Dresser, Ingersoll Rand, Goulds, Durco, Ebara, Asia LMI, Warman, etc. Indian technical skills and engineering aptitudes have shown good capabilities of almost immediate absorption of the involved design, manufacturing and quality control specifications and application engineering needs. That gives a good picture of the internationally competitive field already in play in India.

The Indian craftsman often enterprises in reverse engineering at very competitive costs. Amongst the notable achievements of indigenous development and R&D can be cited, the primary coolant pumps and sodium coolant pumps for nuclear power, large 2250 mm delivery-size vertical turbine pumps and concrete volume pumps for cooling water circulation in thermal power generation can also be cited.

Cavitation studies and CFD (Computational Fluid Dynamics) analysis of flow patterns at pump suction and deriving improvements in pump and sump designs are all becoming common practice.

The popularity of field-rewindable and hence user-friendly, wet motor borewell submersible pumps in Indian market place, can be considered unique. Indian manufacturers have also competently evolved motor designs to work against vagaries of power-supply. The ingenious and wholly indigenous development of polyester-coated polypropylene wrapped winding wire, possibly merits international recognition.

National and International Standards in Practice

Indian standards on agricultural pumps have been trail-blazing even in the international context, with respect to minimum efficiency norms which were incorporated in the standards, since 1979, and they have been reviewed and upgraded periodically. Comparatively, only the 1994 edition of Hydraulic Institute Standards gives a monogram on estimating efficiency of centrifugal pumps. These are again, not mandatory, because there is no certification marking system in practice for compliance with the HIS-monogram efficiencies.

Many companies in the organized sector and some, even in the medium-scale sector, have attained ISO-9000 certification.

Amongst process pumps, the dimensions and ratings often follow the ISO-2858 specifications, whereas API-610's technical requirements like centre-line supports for high temperature applications, vibrations levels, nozzle loads and moments, are also widely popular.

In the associated field of mechanical seals, Sealol, Durametall, Mars Cyclam, Burgmann makes have been manufacturing for quite some time and Flexibox and John Crane are also known to be actively interested to chip in. Alongside, magdrive and canned motor pumps have been successfully developed indigenously.

National Issues and IPMA

IPMA had contributed an important role in having the norms for minimum efficiency incorporated in the IS-standards. Hence, this is an example of how IPMA lends thrust on issues like energy conservation, which are issues of national concern.

Exports and Share in the Global Market

Exports have been a regular feature of Indian pump industry for years. Indian pumps have reached more than sixty countries around the world including developed countries.

Some buy-back arrangements have also consistently been in operation for nearly twenty in some cases, showing the strong confidence and trust, earned in the process.

But, by and large, the size and potential of the domestic market has itself been so good that majority of manufacturers take little interest in exports to the global market is admittedly insignificant. In contrast, the size of domestic markets of most individual European countries has been so small that perforce of such situation. European manufactures have developed a culture of being a global player, right from the launch of an enterprise.

Reservations or Constraints?

It is not easy to explain why manufacturing technologies, like on-line welded sheet metal fabrication do not have an appeal for real large-scale production as the truly appropriate technology. Such a venture is bound to be very capital-intensive and Indian enterprises are typically shy of big

Investments. Alongside, there are natural apprehensions of being able to garner a market position, which would give an assured and sustainable returns on such large-scale investments. Yet conveyerised assembly lines have been there, especially, in the production of agricultural pumps, CNC machines have also been in vogue for long. So, Indian psyche is shy but definitely open-minded, often needing only an attitude adaptation.

Forecast of Workable Strategies for Foreign Investments

International pump community has been viewing the globalisation of Indian economy with growing interest. Considering the maturity and initiative on technological aspects, evident in the Indian pump industry, the strategy of importing pumps manufactured abroad for scale in the Indian market does not appear to be workable. Also the ground realities of the poor power supply may often demand modifications.

Alternatively, for any international brand, a manufacturing base in India can prove strategic, not only for the Indian market but for catering to markets in Africa, Middle East, South East and Far East and also for buy-backs and re-exports. Ready availability of skilled, qualified and intelligent, engineering, managerial and technical manpower ought to prove a very confident, strong point for investing in an Indian manufacturing base.

Future of the Industry

The resilience exhibited by the Indian economy, in the midst of the turmoil in South Eastern economics and politically motivated economic sanctions, has underscored the basic growth-prospective characteristics of the Indian economy. That should be a strong enough base to reason that except for the place of the growth rate, growth by itself will be always there. Since pumps are needed in every sector of the economy, the Indian pump industry will always grow.

Reference Book:

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