

MILACRON *News*

President Speaks

Enter New Era - we add new words and phrases to our vocabulary.

The spreading globalization gave birth to the expression "World is Flat" for goods, communication, capital and people would move fast across the globe. Such a phrase or an expression conveys more than what is obvious.

Year 2009 popularized the terms "CSR- Corporate Social Responsibility" and "Inclusive Growth".

CSR conveyed to the Corporate world - while you make money by providing high quality goods at competitive prices that the society needs, make sure that you do not infringe on the rights of others, behave responsibly towards environment and be charitable. Other term "Inclusive Growth" received keen attention in GoI Budget, meant reaching the benefits of growing GDP to deprived masses and bringing them into the mainstream of economy by imparting education and necessary skills.

Year 2009 also popularized yet another word, "sustainability" worldwide.

Global warming has turned "Environment Care" into "global priority" and all of us are required to actively address sustainable development issues. Sustainability will remain central to all the human activities in the coming years. Compulsion to control "carbon foot-print" of our activities related to industry, has potential to change economics of manufacturing. Also it will affect our cost of living, will influence our life style.

Much before the "sustainability" occupied the centre stage, innovative solutions were already evolving progressively in that direction. Light weighting of vehicles with use of plastics to replace metals thus improving efficiency of fuel usage, replacing wood in furniture and crates with plastics, creating the sources for renewable energy such as Solar Panels and Wind Turbines are some examples.

"Energy Efficiency and Conserving Natural Resources" in other words "Sustainability" remained central to theme of K2010.

Certainly, advances in Injection Moulding Technologies are now being driven with greater focus on "sustainability".

First, ensure Sustainability of Environment:

- Conserve energy through efficient use of Drive Power and Heating Systems.
- Reduce content of Polymer in mouldings by thin-walling, thus reduce consumption of feed-stock for the intended use or purpose.
- Eliminate / reduce waste of Polymer, Oil, Energy, Water with machines programmed for producing high quality parts at high productivity - All Electrics, Hybrid and Servo Powered machines fall in this class.

Next, ensure the Sustainability of Processors' Operations:

For that cost control is vital. Per piece cost comes down through:

- Controlling process variability - more parts from given quantity of Polymer.
- Reduce cycle time, reduce rejection, reduce changeover time, reduce energy consumption.
- Reduce in process inventory through inline integration of processes - in-line mixing, in-mould finishing, in-line assembly.



N. K. Balgi, President



Next, ensuring the Sustainability of our own product-line & thus our business:

- This is what we are doing through improving “simplicity” of machine to operate and maintain.

Since supply of skilled manpower to operate and maintain machines is far in short of demand, we need to make our machines and controls simple to understand for the ‘not so skilled’ people, thus, make our machine acceptable to processors by making them more userfriendly.

The future demands sustainability - And, our innovations in products & technologies will remain directed towards “sustainability”.

Lead Story



Plasticizing Range : Ferromatik Milacron India Solution Expertise

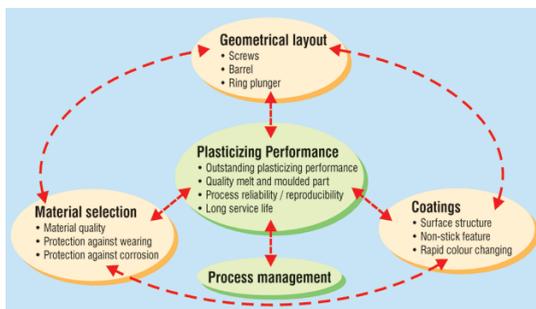
Optimizing uniform process conditions in Injection Moulding is the key to making precise parts. FMI's original plasticizing components provide you with the decisive edge in meeting high qualitative standards in terms of the melt and plasticizing performance.

Fast, Precise, Reliable !

Three outstanding features of FMI machines to enable the manufacture of complex moulded parts in extremely short cycle times. The primary factor in the moulded part manufacturing process is the plasticizing process - the transformation of plastic granules into a processible melt form.

The development of a variety of new plastics, particularly in the technical sector, also necessitates continual adaptation and modification of the plasticizing system. Increased wear as a result of abrasion, adhesion and corrosion due to additives in the materials, as well as constantly increasing material throughput rates and higher processing temperatures, all require maximum performance from all the plasticizing components such as barrels, screws and ring plunger.

FMI is not only a supplier of plasticizing components, but is also a partner that offers solutions that are precisely tailored to the outstanding performance of FMI machines.



Application Technology

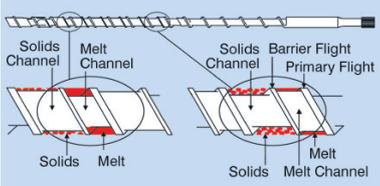
Product-specific specialists are available to help customers select the best possible FMI component application. The benefits to be gained from this specialization are clearly apparent: competent and comprehensive consulting that is tailored to your product range. Spiraling demands on production in terms of cost-efficiency and quality necessitate the application of appropriate machine components, whereby plasticizing - specifically screw geometry - plays a major role. Depending on the application, optimized screw geometry may be required to process different types of thermoplastics.

For optimal melt quality, a plasticizing screw should melt and homogenize the material evenly, including the distribution of any additives. The high output of polyolefins required for packaging applications - including feed rate and melt homogeneity requirements - generally exceeds the capabilities of standard three-zone screws. High performance screws can overcome these limitations. To melt plastics, energy needs to be brought to the granulate. This energy is delivered via the heat conduction of the heater bands as well as the shearing energy of the screw action. At first a melt film forms on the barrel wall in the flow direction. The continuous screw flight movement scrapes this off and a melt pool forms in front of the screw flight. As the process continues, the melt pool between the barrel and the raw material continues to grow.



30% More Output with Barrier Screws

A better option for overcoming this challenge is the use of a barrier screw. The typical barrier screw is comprised of three sections similar to the conventional feedscrew. However, with the barrier screw, the compression or transition section is replaced by a two channel barrier section. As the two channels begin, the wider and deeper solids channel leads the shallow, narrow melt channel. The two channels are separated by a “barrier” flight, whose diameter is smaller than the primary flight.



As the plastic pellets or “solids” move into the barrier section of the screw, they are blocked from passing into the “melt” channel by their size. As the pellets are compacted against the inner barrel surface by the rising solids channel, frictional heat energy is generated, applying a film of polymer melt on the barrel ID. The melted polymer passes over the barrier flight and is wiped off the barrel surface by the primary flight. Melted polymer collects in the deepening melt channel. The removal of the melted plastic from the solids channel allows for the continuous renewal of solids to the barrel surface, resulting in more efficient heat generation and transfer. This can also have the effect of maintaining the compaction of the solid bed longer. When solids are held together and in contact with the barrel surface, melting is most efficient. The plasticizing rates of barrier screws are 30% higher than with general purpose screws. The added costs of this solution are balanced out by shorter cycle times and improved melt quality.

To ensure the optimal melt quality, FMI supplies special high-performance plasticizing units for PET processing.

Benefits

- Outstanding Plasticizing Performance
- Mild material preparation providing minimum AA values
- Excellent Melt Quality
- Energy efficient Plasticizing
- The optimal solution for all PET Applications

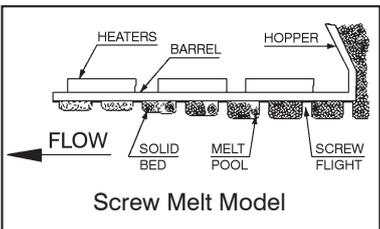


FMI Standard Screw

Impressive in the melt preparation for numerous conventional applications, the standard screw has proved itself as a versatile and cost efficient solution. The standard screw really comes to the fore with a broad range of materials when implemented for technical and engineering material applications with medium and low rotational speeds. The balanced geometry ensures exceptional temperature management and homogeneity within a broad process latitude when processing materials such as PA, ABS, PC, PMMA or POM.

Benefits

- Exceptional temperature management and homogeneity for technical and engineering material applications
- Excellent reproducibility and process reliability within a broad process latitude
- Universally deployable for a broad range of material with medium plasticizing requirements



Protection against Wear	Protection against Corrosion	Screw	Barrel	Application area
1	1	Nitriding	Nitriding	Non-reinforced plastics, standard packaging application
4	3	Tool Steel*	Bi-metallic Alloys*	Reinforced plastics with medium filling ratio
5	2	Powder Metal Tool Steel*		Reinforced plastics with high filling ratio
2	5	Stainless Steel*		Reinforced plastics with low filling ratio

* Selection of Bi-metallic Barrel & Hardened screw is based on Application & Raw Material used. 1 to 5 indicates the Performance from Lowest to Highest. i.e 1- Lowest & 5 - Highest.

Protection against Wear

Plasticizing components are subjected to exceptionally high stress loads. A variety of additives such as glass fiber, fillers and colorings call for targeted measures to avoid adhesive and abrasive wear. For adhesive and abrasive wear the recommended high strength materials include bi-metallic barrels and screws. FMI's range of products feature high quality materials that are coordinated to produce favorable friction conditions and thereby optimally protect the components against surface wear.

In addition to the appropriate choice of materials, through intelligent geometric design FMI focuses on ensuring that no unnecessary stress is exerted on the plasticizing components. In barrier screws, for example, the friction resulting from ring plunger or melt pressures is reduced, thereby achieving an exceptionally long service life even where great demands are placed on the plasticizing process.

Protection against Corrosion

Above all, the rapid development of new technical plastics frequently calls for additional protection of the plasticizing components against corrosion. Solution-oriented coatings largely prevent corrosion from oxidation and intercrystalline.

Recognition

Running a business is like running a marathon. You stay course relentlessly and maintain winning attitude while hearing to the cheering crowd.



Mr. Jay Woerner & Mr. N. K. Balgi presenting Mr. Jigish Shah, Mr. Mukesh Mahajan & Mr. Shirish Divgi with 15 year service pin

At FMI we built our team to run marathon.

It is our motivated team remaining emotionally engaged into the business, while, rationally observing, evaluating and assimilating new knowledge, and skills to maintain the leadership position. FMI has always recognized these invaluable efforts of our employees. Mr. Jigish Shah, Mr. Mukesh Mahajan and Mr. Shirish Divgi have been presented with 15 year service pin. We value their contribution.

Visit us @



Ferromatik Milacron India cordially invites you to visit us @ **Hall-1, Stall-E1-3, *Plastivision India 2011*** The 8th International Plastics Exhibition & Conference being held at **Bombay Exhibition Centre, Goregaon, Mumbai, india** from **20 - 24 January, 2011.**



FERROMATIK MILACRON INDIA LTD.

(Formerly known as Cincinnati Milacron Ltd.)

92, Phase-I, G.I.D.C. Vatva, Ahmedabad - 382 445, India.

Tel.: +91-79-2589 0081, 2589 0133, 2583 0063 Fax : +91-79-2583 0125

E-mail : salesfmi@milacron.com Website : www.milacronindia.com

