

Quantum

FORMING SYSTEMS

Celebrating 33 Years of Forming System Solutions for the Glass Container Industry



Having the GLASSPEX in India punctuates the growth and technological advancements being made in a traditionally recognized low tech industry. The growth in both production and technology is moving faster here in the subcontinent than in many other recognized industrialized regions...

The Indian Glass Container Industry is rapidly moving toward the newest forms of glass melting, forming process controls, and advancing the cold end inspection to create a world class manufacturing base for the coming years for their domestic and export markets.

*Quantum is honored to be a part of this region's dramatic growth in the launching of new technology and forming concepts in India. We at Quantum applaud the members of the **AIGMF** - All India Glass Manufacturers' Federation for bringing the **GLASSPEX** to India and we wish a successful exhibition.*

My very best to all,

Joseph W. Kozora
CEO

Sanjay
Somany

Mukesh
Agarwal

Jay
Sarin



33
YEARS

TOTAL FORMING ANALYSIS

The redesign of the basic TWT®/CPMS® outputs using new digital enhancements and proven Quantum sensor array for the forming process is now available for use. The long term evaluation and development by Quantum has resulted in the first of the new series to be installed at **Hindusthan National Glass** in the Bahadurgarh location.

The innovative features of the TFA™ allow not only Process Control of the NNPB Process, **but also** the Blow & Blow process for complete blank side observation.

Quantum was the first to supply the full stroke readout in 1991 and the new TFA™ builds upon the proven technology with the software and hardware improvements of today.

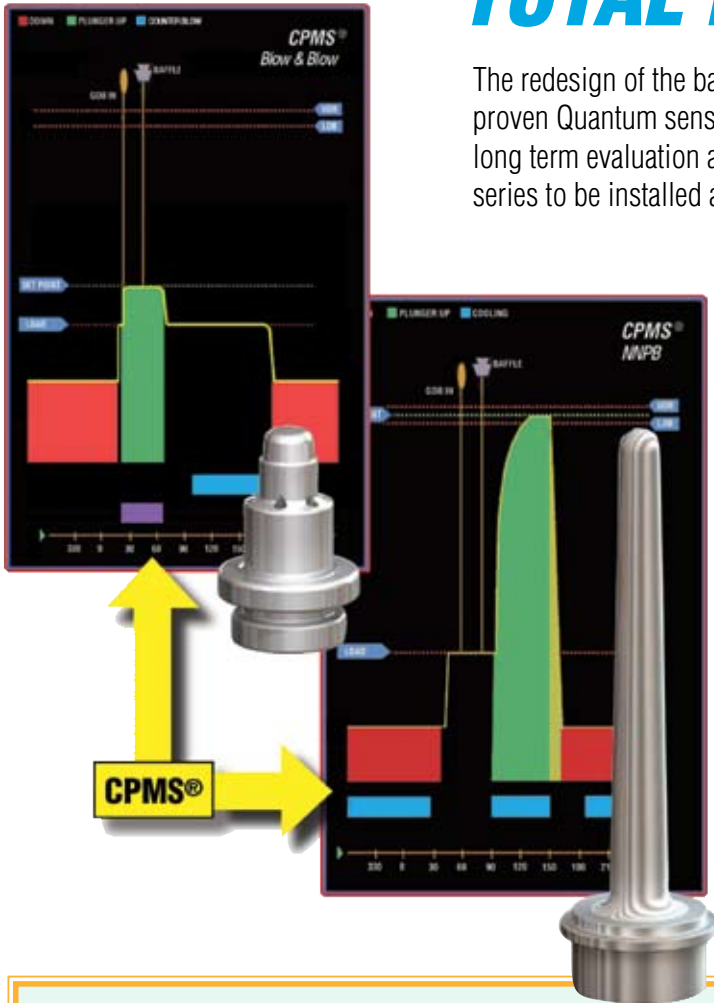
All Quantum equipment is cable ready and convertible to electronic readout in your factory.

- The Quantum TWT®/CPMS® collects data showing exactly what is going **right -and wrong -** inside the blank side molds while each container is being formed.
- The computerized **TFA™** system instantly analyzes the blank side data. The full stroke of the forming plunger is graphically displayed immediately on the IS machine operator's terminal: **the operator can literally "see" the entire forming cycle to the intended timing commands.**

• You can use the **TFA™** to...

- Reduce MDT* to safely improve production
- Improve container quality by process control
- Increase the speed and percentage of pack **in any forming process**

*Machine Dead Time



Hindusthan National Glass continues standardizing their lines using Quantum equipment

The lines running throughout **HNG** go from the TG Miniature systems to full sized 4-1/4" TG units for B&B and NNPB Production. A support program of information and hands on training is conducted annually in the **HNG** plants by Quantum staff along with strategic visits by **HNG** to Quantum in the United States.

From this cooperation, **the first TFA™ Process Control system in the world is now installed in Bahadurgarh producing NNPB containers.** This real time process control combines the intended timing commands with the actual movements of the cylinder and process equipment. The information provides safe and efficient improvements to the hidden blank side forming process, allowing the first steps toward Intelligent Automation of the IS Machine...

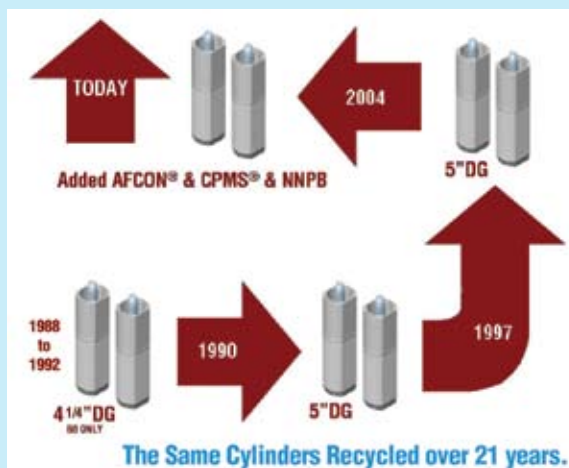


Quantum Cylinders Recycle Indefinitely...

The TWT[®] cylinders have been used continuously in **Anchor Glass Container's** manufacturing facilities in the USA for the past 21 years.

Even though most of these cylinders were manufactured in 1988 they are easily adapted to use any of the Quantum seal or coating advancements during routine maintenance.

At this time **each** of these cylinders has produced over 132,000,000 containers and are still going strong. **AGCC's** high speed NNPB machines use the cylinders in DG and TG arrangements.



AGCC continues to use the Quantum cylinders year after year making the corporate decision to convert to Quantum a profitable return on investment.



TFA™ HMI In Quantum's Forming Simulation Laboratory

Robotic MAZAK Integrex

The new Integrex machine has allowed timely deliveries for the orders in hand for many worldwide producers using the Quantum concept as a standard. The robotic feature and automatic part /tool checking is the first of a series of ongoing improvements for quality and production enhancements being made at Quantum.

The robotically controlled Mazak Integrex has been a welcome addition to the manufacturing portion of Quantum in Saxonburg.



Representing Quantum in India



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Jay Sarin and
his granddaughter
Suranya

Jay Sarin of **CERACON** has been providing technical and commercial service for Quantum from its Delhi location since 1998.

Arun Bahl has joined **CERACON** as Vice President and is very familiar with the Quantum Forming System, as shown in this recent training session with Steven Kozora at **HNG**.



SGD Group in Mers France...

Quantum has delivered special Machine sets of the TG to DG/SG and Quad gob forming TWT[®] cylinders to the Mers plant. This equipment is cable ready for the TFA[™] process and uses the flat bottomed **Super System** developed by Quantum for rapid conversion from under 85 mm TG center distance to normal 4-1/4" production without re-alignment or re-piping of the section.



Vitro Envases in Mexico continues their IS Machine standardization using Quantum Equipment

Vitro and Quantum began a supply agreement in 2005 to have the TWT[®] as the standard for all **Vitro** plants and affiliates. Quantum supplied the original forming equipment to **Vitro** in 1994 and has over 45 lines producing in Latin America. In the past few months alone, Quantum has delivered four lines of 4-1/4" TG ELS mechanisms fitted with the **Heye International** 40 mm sensor coupled to **Heye's Process Control** for Gob Weight control.



FAMA in Monterrey has also delivered Quantum equipped IS Machines to the Central American plants of **VICAL** located in Guatemala, Costa Rica and Panama. Using the Quantum NNPB techniques for continuous cooling, the plants can reduce the use of High Pressure cooling air completely.



Look for Quantum's new website to launch after the first of the year!

www.quantumforming.com



Proudly Made In The USA...

