

COMMISSIONING

1MW, 690V SUGAR MILL SYSTEM

by Anil Sanap & Manohar R

YASKAWA India Pvt. Ltd. has commissioned sugar mill systems ranging from 200kW to 1MW at various locations in Maharashtra and Karnataka Sugar belt region.

The unparalleled performance of the Robust A1000HHP and GA700 variable frequency



drives (VFDs) have proven to be the ideal solution for sugar mills, particularly those operating in a master-slave configuration with two motors. These systems require smooth operation with load-sharing capabilities, and the advanced open-loop vector control in 315kW GA700 VFD ensures smooth and easy load sharing without the need for additional encoders.

The built-in protection functions of the VFD and customizable torque limits are engineered to significantly reduce the likelihood of breakdowns and maintenance costs, making them a cost-effective solution for sugar mills.

YASKAWA's cutting-edge solutions for the sugar industry provide the necessary reliability and efficiency for critical systems like those in the Sugar Belt, establishing efficient and user-friendly systems that streamline operations and reduce downtime.

ANNUAL HIGHLIGHTS

Announcing the best Achievements for FY22-23

Key Major Achievement of the D&M&C After Sales and Technical support team for the FY2022-23 are

- ⇒ Application Developments: **17 no's**
- ⇒ Case Stories : **26 no's**
- ⇒ Technical Notes : **52 no's**
- ⇒ Appreciation Letters : **45 no's**
- ⇒ Trainings : **109 Customers**
- ⇒ Panel Testing : **1256 panels**
- ⇒ Project Commissioning : **83**
- ⇒ Technical support : **765 no's**
- ⇒ Product Demo at site : **18**
- ⇒ Mandays at Sites : **2702 days**
- ⇒ Servo Repair at Bengaluru Service Centre : **301 Tickets**
- ⇒ Servo Drive coating at Bengaluru service centre : **792 Drives testing , 455 Drives Coating**
- ⇒ Software Loading : **475 Drives**
- ⇒ AMC Activities : **69 Customers**

COMMISSIONING

On-Line Changeover with Speed Search for Decanter Centrifuge

by Anil Sanap

YASKAWA India Pvt. Ltd. commissioned 210kW GA700 VFDs for the slurry decanter centrifuge at one of the largest Polymer Pipe Industries in India, bringing significant benefits to the manufacturing process.

The GA700's Advanced Speed Search algorithms enable **online changeover of machines**, ensuring seamless operation and minimizing the risk of costly downtime, even in the event of a breakdown.

The installation of GA700 VFDs is particularly advantageous for decanter systems in polymer pipe manufacturing because it ensures efficient and reliable production. By maintaining a constant speed, the VFDs help control product quality, resulting in a more consistent and higher-quality end product.

Additionally, the ability to handle variations in load and speed through VFDs reduces wear and tear on the decanter system, leading to longer equipment life and lower maintenance costs.



"A" Grade Service Centre at YIND, Bengaluru

Yaskawa India D&M&C Service Centre at Bengaluru has reached new heights after accomplishment of being awarded an "A" grade for its service activities. The Service Centre has demonstrated a remarkable commitment to maintaining very high quality standards and has a dedicated hard working team. This achievement is a testament to the reliability of the service activities performed, as well as the effectiveness of the systems in place to achieve this grading.

The Service Centre's achievement is especially noteworthy as it is recognized as the best among the Asian countries that have been set up under the guidance of YEC.

About NEWSLETTER

"Technical Newsletter is a collection of DMC Technical activities, Product updates, New Application developments, Major commissioning activities, Key Retrofit of Servo products & VFD, Trainings and key events . It is prepared to share the technical information across YIND internal and Partners on every quarterly basis."

Pradeep Kumar .A
HOD-D&M&C
After Sales & Technical Support

NEW DEVELOPMENT

Mechanical Failure Prediction and Detection

by Vignesh J & Anil Sanap

All Machines are susceptible to mechanical issues that can lead to malfunctions and damage. These issues can significantly impact the lifespan of the machine.

However, YASKAWA India Pvt. Ltd. has developed a cutting-edge failure prediction program that is available for all Yaskawa VFDs. This advanced system continuously monitors key parameters, such as torque, current, and output characteristics, to accurately predict mechanical deterioration and potential failure.

Lab trials with this application are successfully conducted and is ready to be tested at site installations. With this program, users can proactively address mechanical issues and avoid major failures, thereby improving the overall reliability and efficiency of their VFDs and system."



COMMISSIONING

Gateway Communication with JOHB-SMP3 Card—PID control

by Vignesh J

By incorporating advanced features such as gateway communication, it is now possible to control multiple drives using a single option card and perform complex tasks like PID control. This innovative system has already been adopted by one of the largest wire machine OEMs in India, resulting in significant cost savings and reduced network complexity.



COMMISSIONING

U1000 Jumbo Series in Sugar Segment

by Manohar R

YASKAWA India Pvt. Ltd. has provided a ground-breaking regenerative solution to address the continuous regenerative requirements of various applications in the sugar industries such as sugar centrifuge machines. The U1000—900Amps Jumbo VFD is supplied for the sugar centrifuge application which provides low-harmonics solution (complies IEEE:519), continuous regeneration with huge energy saving along with unity power factor.

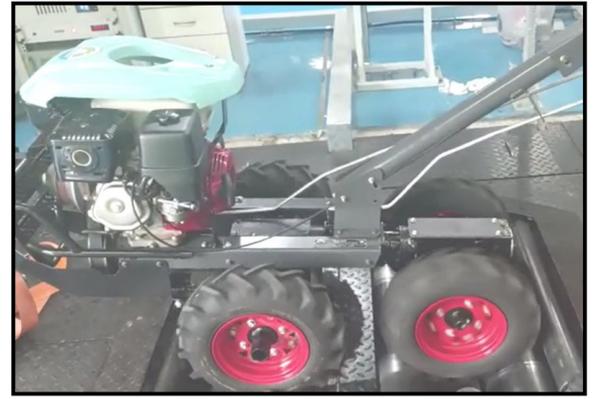


APPLICATION DEVELOPMENT

Automobile Test Bench with Precise Torque Control

by Anil Sanap & Varun Rai

The Hand Tractor is a manually operated device that finds application in the agricultural industry. One of India's major manufacturers of this equipment has adopted YASKAWA U1000 Matrix drives to facilitate crucial quality tests for the hand tractor testing. The precise torque control availability in U1000 allows the user to test the operation of these machines efficiently. The drive's compact design further enables efficient planning of the testing area.



Moreover, these test benches are also furnished to various other testing units, such as Auto-Rickshaws, eRickshaws, Two-wheelers, and more.

Notably, the U1000 does not necessitate additional peripherals such as chokes, regenerative units, synchronization devices, etc. The U1000 Matrix technology drive is available up to and can support multiple testing machines with ease.

OEM DEVELOPMENT

400kW TRACTION MOTOR Testing Machine

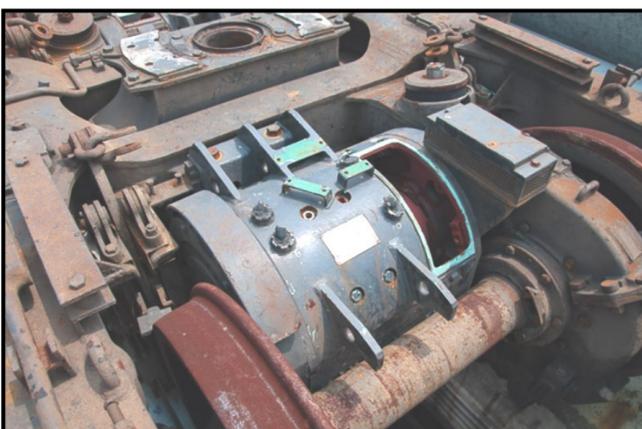
by Anil Sanap & Varun Rai

Traction motors are critical components in heavy-duty applications such as railway or metro cars, and ensuring their reliability and performance is of utmost importance. To achieve this, highly accurate and precise torque control techniques are required during testing.



YASKAWA offered a solution with the revolutionary Flux Vector control technique with a capacity of 930Amp U1000 Jumbo VFD that utilizes Matrix technology as a regenerative solution while providing accurate control to the motor simultaneously. By incorporating step-up transformers at the output of the VFD, machine manufacturers can easily test and verify the performance of these motors rated 1.2kV accurately.

U1000 matrix drive is a compact, user-friendly, and dependable solution for testing traction motors, offering exceptional precision and compliance with industry standards.



COMMISSIONING

REGENERATIVE Solution for Main Hoists

by Anil Sanap

YASKAWA India Pvt Ltd has successfully commissioned the U1000 for main hoist applications at various locations in India.

The crane is capable of lifting loads up to 20 tons in capacity at maximum speed of 8mpm.

This application has the potential to generate a significant amount of regenerative energy, which is commonly lost in the form of heat in standard installations. However, with the implementation of YASKAWA's U1000 matrix drive, this valuable energy can be effectively harnessed by other equipment connected to the grid, resulting in reduced overall energy consumption. In fact, the U1000 drive can achieve **energy savings of up to 35%** when compared to traditional solutions. Additionally, the U1000's compact and straightforward installation method allows for its deployment at any location.



COMMISSIONING

Low Harmonics Solution for Caustic Soda Chemical Plant

by Brijesh Patel

Utilizing YASKAWA's innovative Matrix Technology, the U1000 Variable Frequency Drive (VFD) presents an exceptional solution for clients in search of low harmonic options without compromising on space. Being a prominent player in the automation industry we have recently furnished 132kW U1000 VFDs of to one of the most prominent Caustic Soda Chemical Plants in India. In this industry, where precision and efficiency in the production process are paramount, the Matrix U1000 is thoughtfully designed to cater to every requirement. The compact form factor significantly reduces harmonic levels, consequently enhancing the overall dependability and robustness of the machine.



EXHIBITION

Boiler Expo, Navi Mumbai 2022

YASKAWA India Pvt. Ltd. was a proud participant in the Boiler India Expo 2022, held on 14th, 15th, and 16th September 2022, at the CIDCO Exhibition & Convention Centre in Navi Mumbai. Our state-of-the-art solutions and latest technological advancements were on full display, drawing the attention of all attendees.

One of the key attractions of our stall was the Hot-Standby changeover kit, which is a critical requirement in today's industrial landscape. Our team's MP-controller logic development was also highly impressive and received praise from attendees.

Overall, our participation in the Boiler India Expo 2022 was a great success, and we look forward to continuing to innovate and deliver cutting-edge solutions to the industry.



EXHIBITION

INDIA Energy Week 2023, BIEC Bengaluru

India Energy Week is an annual event that brings together experts and stakeholders from the energy sector to discuss the latest developments and trends in the industry. The event features exhibitions, conferences, and networking opportunities and covers topics such as renewable energy, oil and gas, power generation, and energy storage. The event provides a platform for industry leaders, policymakers, and innovators to share insights, discuss challenges, and explore opportunities in the energy sector in India.

At the India Energy Week exhibition, one of the products on display was the Yaskawa VFD (Variable Frequency Drive) **Hot-Standby demonstration**. This device demonstrates the on-line changeover capabilities of the VFD along with the advanced MP Controller to achieve the same.

The Yaskawa VFD Demo showcased at the India Energy Week exhibition is an innovative solution for improving energy efficiency in industrial processes and highlights the importance of adopting sustainable technologies in the energy sector.



OEM DEVELOPMENT

Advanced Safety Feature on Elevator

by Varun Rai

A special application is developed for Yaskawa V1000 VFDs which are used in elevators.

This application implements additional safety functions in the elevator door operation movement which improves the performance of the machine and provides the user a comfortable ride.



COMMISSIONING

YASKAWA Servo Sigma 5 Series: Revolutionizing Hot Strip Mills

by Yogeshwara S

In the heart of central Karnataka lies one of the largest steel plants in the region, boasting of an impressive array of equipment and machinery that drives the production of high-quality steel products. Amongst the many machines and tools that make up the plant, the YASKAWA Servo Sigma 5 Series stands out for its robustness and efficiency. Installed at the looper section of the plant capable of a production rate of 150mpm, the 7.5kW YASKAWA Servo Sigma 5 *SGDV-260D11A* is responsible for ensuring a particular strip tension between any two stands. This is crucial in preventing the necking of the strip due to excessive tension, which can ultimately lead to a strip break. The primary objective of a hot strip mill is to reheat thick steel slabs into thin



sheets with varying thickness. To achieve this, hot metal from the electric furnace is passed through several rolling mill stands that are driven by powerful motors.

The looper and tension control systems in hot strip mills play a vital role in maintaining the quality of the strip and ensuring smooth strip threading. The YASKAWA Servo Sigma 5 Series, with its robust nature, is well-equipped to handle the demanding conditions of the hot strip mill environment. These installations can experience temperatures of up to 60 degrees Celsius, making it imperative that the equipment can withstand extreme conditions and continue to operate efficiently.

TRAINING

TECHNICAL TRAINING to Customers & Partners

Technical trainings also provide a valuable opportunity to clarify any key doubts or questions that customers may have regarding the usage of Variable Frequency Drives (VFDs) or other related products. By addressing these concerns in a timely and effective manner, we can ensure that our customers are able to get the most out of their equipment and avoid any potential issues or problems that could arise from improper use.



PUBLICATION

Case Story and Appreciation Letter Volume 2

YASKAWA India Pvt Ltd has had an exciting year, marked by the publication of Volume- 2 of two essential technical books.

The first book is a Case Story that showcases our technology, its capabilities and the results it has achieved in the field.

The second book is an Appreciation Letter that attests to the high level of satisfaction of our customers with our past installations. Both these books inspire confidence in our customers and demonstrate our commitment to delivering exceptional solutions.

The Appreciation Letter, in particular, speaks volumes about our dedication to customer service and the quality of our work. We are honoured by the positive feedback we have received and are committed to maintaining the high standards that have earned us such high praise.



COMMISSIONING

150 Ton Portable Goliath Crane

by Mihir B & Srujal P



A Goliath Crane, also known as a Gantry Crane, is a type of overhead crane that has a single or double girder structure supported by separate legs.

The crane moves on wheels or a rail system along a track and is generally considered when an overhead runway system is not feasible.

YASKAWA India Pvt. Ltd. along with Authorized Business Partners offers a solution for a portable type overhead launching double girder construction Goliath or Gantry Crane for **150 Ton hoist, 6 MPM at 25m height with the Yaskawa GA700 210kW** drive, which comes with built-in crane software that provides smooth control and dynamic performance.

The GA700's dedicated software for crane applications ensures proper brake release commands based on torque, current, and speed parameters.

The crane also features jerk-free operation during the lifting and lowering of the load, as well as brake sequence logic and dedicated S-Curve parameters for optimal tuning.

Additionally, the Yaskawa GA700 drive offers better torque control during start/stop to prevent load slippage and provide smooth operation, even without the requirement of an encoder.

Furthermore, the drive is designed to operate in high ambient temperatures of up to 60°C.

The portable version of these cranes are installed in construction areas usually along the highways or railway construction site. They can easily be relocated and girders can be placed as they move along. There is no re-



COMMISSIONING

Textile Sizing Machine

by Brijesh Patel

The A1000 drive was successfully commissioned for a textile sizing machine. With the help of 5 drives ranging from 5.5kW to 7.5kW, the customer was able to **synchronize the weaving process** and achieve outstanding results. Thanks to the A1000 Vector Control, the output is a cloth with uniform thread count.



AUDITS

Panel Installation Audits

YASKAWA India Pvt Ltd conducts periodic panel audits at customer locations, typically after months of commissioning of the equipment. The objective of these audits is to ensure optimal operation of the machinery and to perform performance verification as mandated by our discerning customers. We have completed more than 20 such audits in the past 12 months. During these audits, our expert team visits the plant and actively solicits feedback from customers, which is duly incorporated into our processes.

APPLICATION DEVELOPMENT

External Rotary Table Axis in VMC with Sigma 7

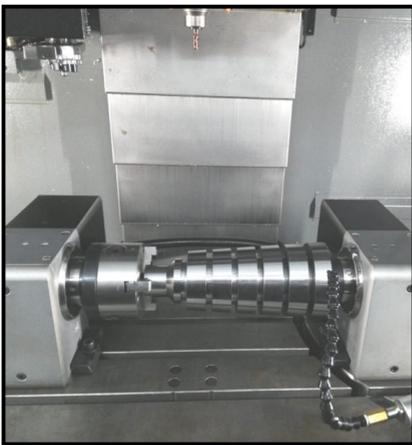
by Sahil Malwanker

YASKAWA India Pvt. Ltd. has developed an application for External Axis in VMC with a 1kW SGD7S-7R6A00A module which was integrated with its pre-existing axis without the need of network configuration of EtherCAT from Sigma-5 (existing). The Pulse Train Output was used from the Host Servopack to synchronize the additional Rotary Table axes.



The commissioning of the machine was a success, as load trials demonstrated its precise following of the external rotary axis, in accordance with the Pulse Input configuration.

The machine's exceptional performance in this regard was on display at IMTEX 2023, showcasing its advanced technology and impressive capabilities. This feature ensures that the machine can handle complex tasks and deliver reliable, consistent results, which is essential in industries where precision is a top priority.



COMMISSIONING

AUTOMOBILE DRUM BRAKE Testing Machine

by Nandakumar R



YASKAWA India Pvt. Ltd. has successfully commissioned an automobile brake testing machine for a leading OEM in the southern region of India. The GA700 VFD 250kW, paired with the regenerative R1000 220kW VFD, provides an optimal solution for meeting all the regeneration requirements of the application. The GA700 VFD works with precise control of the Baldor Reliance motor. Meanwhile, the R1000 can dissipate all the regenerative energy and help utilize the regenerated power in other loads connected across the grid. This ensures not only the system remains in operation but also huge energy savings during testing. The VFD accurately controls torque, even at speeds as low as 1Hz, ensuring uniform braking performance. Additionally, the system enables the machine to come to a complete stop within 1.5 seconds, facilitating testing of the brake's capabilities. The state-of-the-art machine represents a significant achievement in the automotive industry, providing an innovative solution that enhances efficiency and reliability in brake testing.

