



# **Integrated Swing Arm Solution**

Provides Cost Savings & Simplifies  
Assembly in High-performance  
Motorcycle



**CCTV**



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Rather than simply supplying components, CCTY partnered with the customer to co-create a solution that delivered cost savings, operational efficiency, enhanced reliability and a long-term engineering partnership.

– **Pramod Francis**  
*Head of Application  
Engineering, India*

## EXECUTIVE SUMMARY

A leading motorcycle OEM had a demanding swing arm bearing requirement. They turned to CCTY's engineers to design a solution, and in the process, CCTY identified an opportunity to improve the assembly and delivered long-term cost savings and enhanced reliability.

## THE CHALLENGE

A high-performance swing arm application that combined transmission and differential integration required a specialized spherical plain bearing. The operating conditions were extreme, with requirements that included:

- High-frequency swing cycles
- Severe pothole impact loads
- Maintenance-free operation

The customer needed a durable bearing capable of handling heavy loads and resisting wear over the motorcycle's lifetime, without scheduled maintenance.

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At every stage of development, CCTY's engineering expertise helps customers unlock smarter solutions that improve reliability and reduce complexity.

– **Mitul Dave**  
*Managing Director, India*

## THE SOLUTION

CCTY proposed a maintenance-free spherical plain bearing featuring a PTFE fabric liner, selected for its high load-bearing capability, excellent wear resistance and proven reliability in theoretical life calculations. The solution underwent a rigorous multi-phase validation process that also included rig testing to validate mechanical performance, dyno durability testing by the customer that exceeded expectations and field testing.

During discussions on adjacent component integration and mounting, CCTY identified an opportunity to integrate the flanged bush with the bearing's inner ring. This innovation offered multiple benefits including component reduction, assembly simplification and quality assurance.

This integration not only streamlined operations but also reduced the potential for costly field failures or recalls.

## THE RESULTS

By integrating design innovation with deep technical understanding, CCTY helped the customer achieve a more reliable, efficient, and simplified swing arm bearing solution.

The OEM is now enjoying:

- **Component Reduction**  
Eliminated the need to procure and inventory a separate flanged bush
- **Assembly Simplification**  
Removed one assembly step from the customer's production process
- **Quality Assurance**  
Minimized risk of fitment issues between bush and bearing inner ring
- **Supplier Accountability**  
Shifted full responsibility for the integrated component to CCTY

This case highlights the value of proactive collaboration in solving complex engineering challenges.





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