



**UNLEASH YOUR IMAGINATION
WITH MRMC MOTION CONTROL**



MARK ROBERTS MOTION CONTROL

A Nikon Company





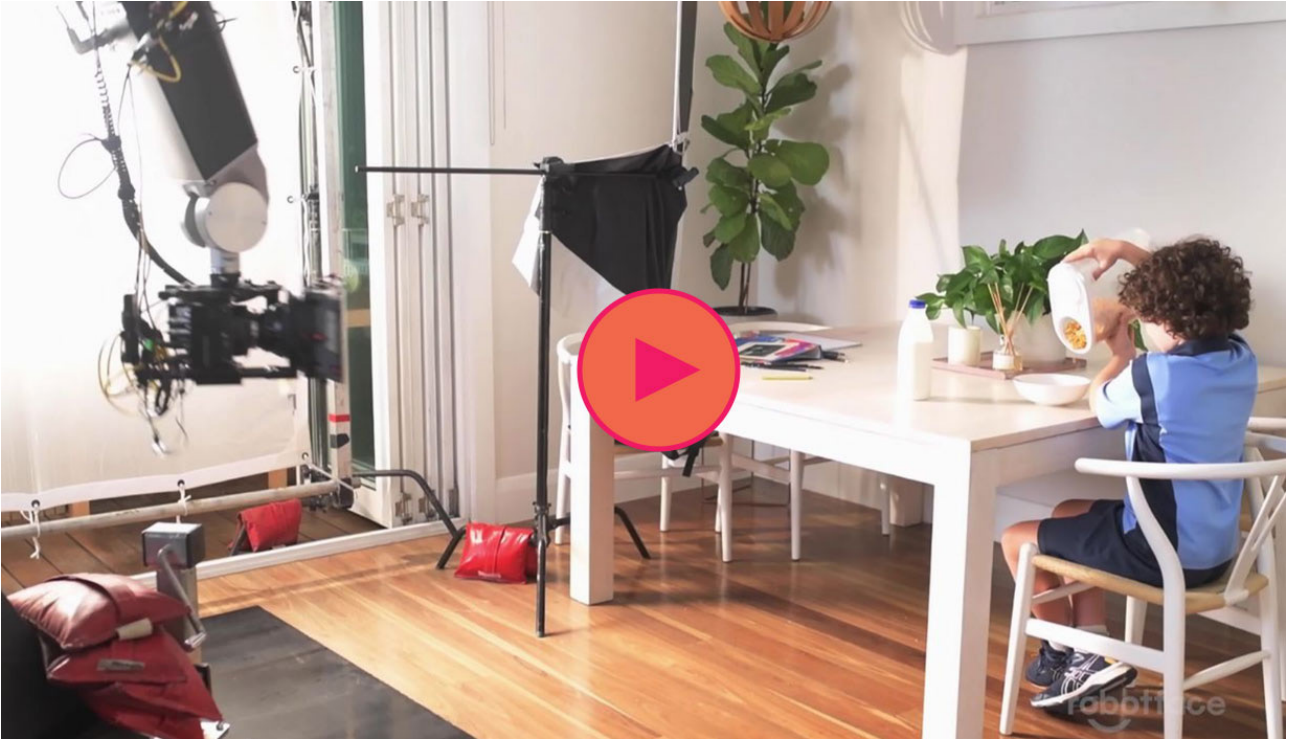
THE POWER OF MOTION CONTROL

In film, tv and commercial production Motion Control refers to the precise and repeatable control of the position and speed of a camera. It can be used for almost anything from creating beautiful product shots, creating mouthwatering food commercials, filming exhilarating live-action sequences to shooting miniature sets and models as well as being able to incorporate live-action camera movements into a CGI workflow. Motion Control is used by some of the worlds most creative filmmakers and cinematographers to make their vision come alive on the screen.

For cinematographers, it means the camera movement is precise and repeatable and captures exactly the shot you want every single time. This is great news for producers as it means less time and money spent trying to capture the perfect shot and removes the need for complicated camera rigs or large amounts of post-production work. For VFX artists and producers it gives you the ability to create and repeat frame-accurate camera movement so that all elements and plates can be lined up for that final shot.

The possibilities with Motion Control are endless - the only limits are your imagination.

WHAT IS CAMERA MOTION CONTROL **AN EXPLAINER BY ROBOTFACE**



SHOOTING WITH SLOW MOTION CAMERAS ON ROBOTS **BY BRENDAN ISAAC @ TASTY PICTURES**





AWARD WINNING CREDENTIALS

At MRMC we have been in the business of Motion Control for over 55 years. Over the years we have pioneered many of the advances in the field and were the first company to have a full range of motion control robotics, so it is no surprise that we are considered the industry standard.

Our many innovations in the world of Motion Control have gone on to win some of the most prestigious awards in the world including the Academy Award for Scientific & Engineering for the creation of the Milo Motion-Control rig, and more recently in 2020, our Bolt X high speed Cinebot was named 'Product of The Year' at the NABShow awards.

Our rigs have been used in some of the worlds biggest Tv & movie franchises ranging from Star Wars (including the original in 1977), James Bond, Harry Potter, Fast & Furious, Avatar & Game of Thrones and have gone on to gross billions at the box office.



INDUSTRY STANDARD MOCO RIGS

Our range of robotic camera control rigs gives you the precision and versatility that you need, no matter how big or small the shoot. All of our rigs are the "go-to" industry standard and are backed up with a team of industry experts on hand to provide support and training as required. To help you choose which rig is right for you, check out our quick guide on the following pages.



**FOR HIGH SPEED
& MACRO WORK**

BOLT™

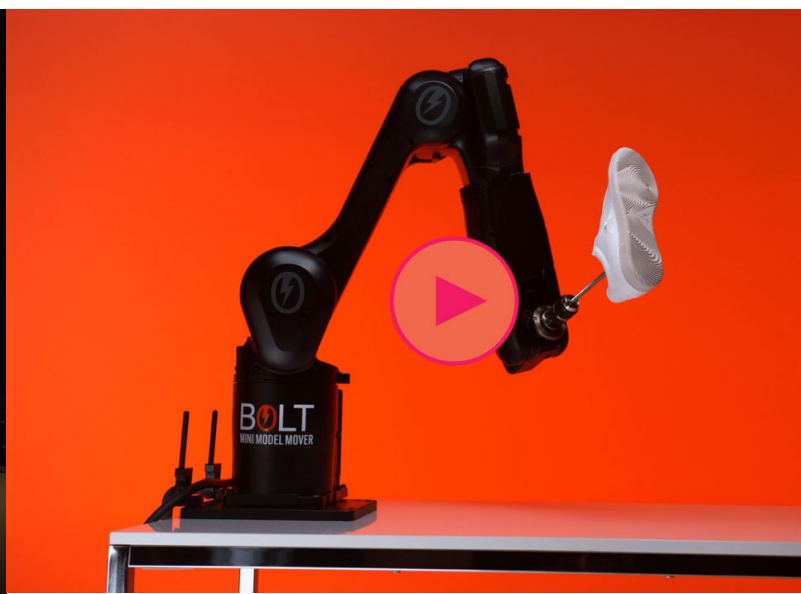
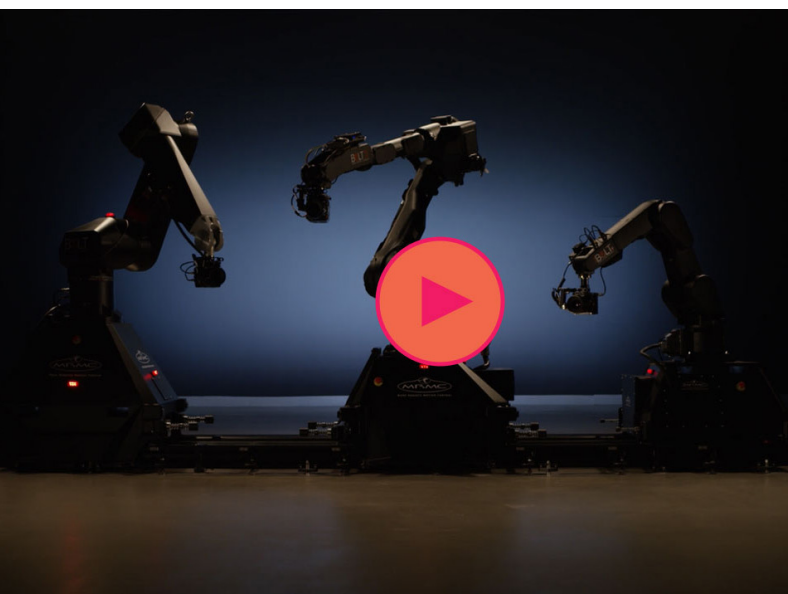
Look no further than our range of Bolt™ Cinebot™ rigs. The repeatability of movement, combined with the ability to speeds at camera of up to 14m/s, make the Bolt high-speed cinebot range the ideal Motion Control robots for the job.

Bolt: The Bolt High-Speed Cinebot is the most versatile camera robot in the range. Perfect for both smaller more intricate work as well as larger-scale shoots, it is capable of capturing images in crisp focus that would be impossible by hand or any other method. Whether shooting commercials, tabletop work, film or television, the Bolt adds an entirely new perspective to filming and can handle a camera payload of up to 20kg.

Bolt JR+: Our compact, lighter weight high-speed camera robot. The agile, smaller camera robot also comes with a camera payload of 10kg and is an ideal solution for smaller spaces or location work.

Bolt X: The biggest edition of our high-speed Motion Control family has the longest arm reach of our high-speed equipment. With a reach of 3.2m, and a camera payload of 20kg the Bolt X allows for greater flexibility in capturing the shots at high speed in the studio and at location settings.

Bolt Mini Model Mover: This affordable system is our entry-level to start working with high-speed robotics. The mini model mover allows for full manipulation of a product with timed precision and triggering. The unit can stand on its own or be paired with any of the Bolt family to be used in tandem with camera and model object movement creating visually amazing footage impossible to be achieved in any other way.



**FOR THE ULTIMATE
IN STABILITY**

MILO

The Milo is the ideal solution for achieving studio-quality Motion Control with a portable system. Stable enough for macro work, fast enough for live-action shooting and ready to go within an hour of arriving on set, the Milo delivers all the flexibility and control required for filming on location and has a camera payload capacity of 35kg.



TITAN

**FOR EXTRA
CAMERA REACH**

For the longest, steadiest reach the Titan and Titan X are unsurpassed in the film industry. These rigs are well renowned for their impressive range and ability to meet almost any challenge. The Titan has a camera payload of 45kg and a huge 7m telescopic arm, capable of moving 2m per second – giving a 10m reach from the centre of the rig.



[CLICK HERE TO VIEW THE FULL RANGE OF MRMC MOCO RIGS](#)

FLAIR 7

FOR COMPLETE CONTROL



Flair is MRMC's patent premier Motion Control software. Designed to give exceptional command over camera movement, Flair precisely controls up to 500 axes of motion, is fully compatible with all of our Motion Control rigs, heads and accessories and interfaces seamlessly with CGI packages. Flair is a tool that makes your vision a reality.





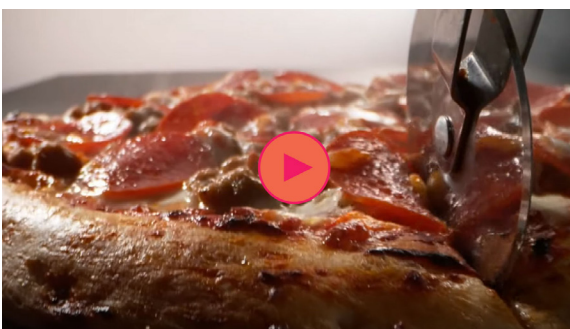
MOCO TECHNIQUES TO CREATE YOUR VISION

PRECISION PATHS

Ever seen those shots where the camera appears to smoothly move over or around an object like a toy or where it gets up close to a slice of pizza? Or where a camera does a 3 point move around a series of objects? If you need to follow an exact path with your camera or move a subject or object in a precise way then you can by creating pinpoint accurate moves first in Flair 7. The arm of the camera will follow the precise trajectory of any plotted path that the software tells it to, ensuring that you get an accurate path around a subject or object at whatever speed you need to shoot in, creating smooth pathways to make your product look great!



Example: The team at Lema Slow created this excellent commercial for Mumm Champagne



Example: Check out expert visual engineer Steve Giralt's stunning Pizza shot.

HIGH-SPEED SLOW MOTION

Some of the most beautiful shots are created using Motion Control. If you want to see in detail droplets of water falling from a bottle or the granular details of a powder bomb exploding, then by filming a sequence at high speed and using a high frame camera like a Phantom Flex you will be able to capture every grain moving slowly in action. Some of the worlds best visual engineers like Steve Giralt use these techniques with MRMC robotics to make tantalising food commercials and beautiful product packshots.

STOP-FRAME ANIMATION

Motion Control can be used for stop-frame animation. Moves can be planned in real-time and then shot step by step frame by frame as the animation is creatively changed. MRMC have designed purpose-built systems such as the Animoko for affordable stop-frame shooting with motion control precision, though any of our live-action systems can also be used to create stop-frame moves. Flair 7 has a wealth of tools for stop-frame animators and seamlessly integrates with Dragon Frame for a single interface when running the moves and shooting the stills.



Example: An amazing 2.5 min, one-shot stop-frame piece from Visual Distractions



Example: ToBe Productions put together this fantastic spot for a Ukranian retail commercial

MULTIPLE/REPEAT PASS

Motion Control rigs can repeat the exact same move as many times as is required with a degree of accuracy that could not be achieved by human hand. In a multiple / repeat pass shot, in each pass, something is changed such as a person or an object or even a background. The resulting footage is then composited together resulting in the elements appearing on the screen at the same time when in actual fact they were never together on-screen at all! Typically when shots using multiple copies of the same person are taken a stand-in will be used to help choreograph the shot.

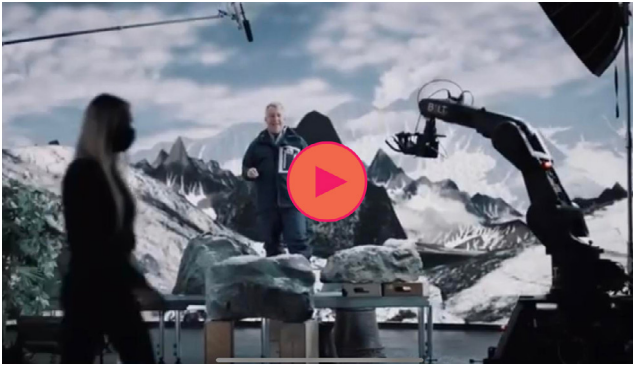
TRIGGERING/TIMING

You can give your shot an even more cinematic feel by building in triggered events to a scene. This can be built into your workflow using trigger boxes, where you can programme exactly what you want to turn on and off or activate during a shot. This can range from controlling a turntable, a piston, a valve, electric motor, controlled mini-explosions or even to activate lighting or other special effects. As the trigger is perfectly coordinated with the camera move, you can precisely time to the millisecond when the effect should be activated and the camera move can be timed to capture it. This can range from anything from flipping a burger to shooting a full action scene with fast-moving objects like a sports car.



Example: A fantastic example of triggering from Steve Giralt

MOCO IN VIRTUAL PRODUCTION

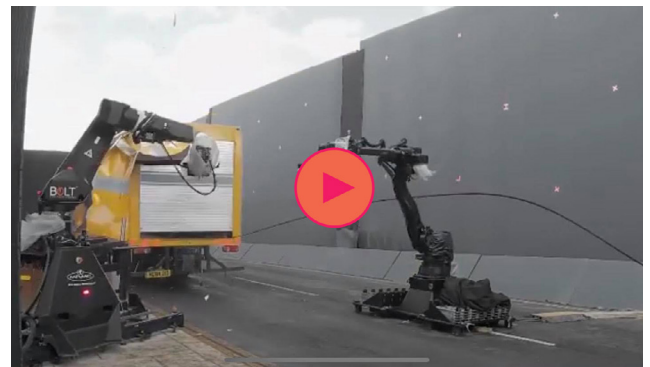


Example: Virtual Production experts DiamondView flex their skills for this years SuperBowl

MOCO IN VFX

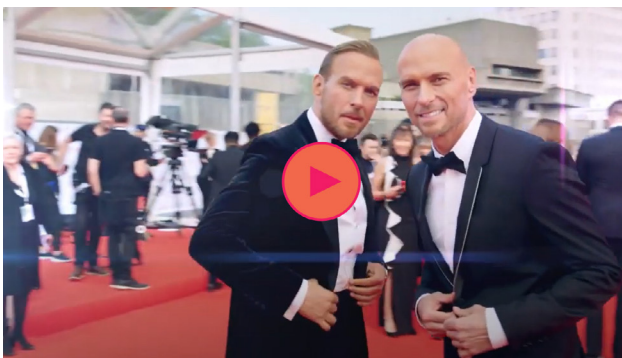
At MRMC we have joined the worlds of Motion Control and 3D graphics for over three decades, allowing camera moves created on the motion control rigs to be transferred to the 3D computer graphics world, and similarly allowing 3D pre-visualised moves to be transferred to and shot by a motion control rig. Over the years we have constantly added more features to simplify the process, interface to more systems and make it easier for the VFX supervisors to achieve their vision. Our Flair software will import/export FBX files, output real-time camera positional data in handfuls of different formats, and input real-time data to achieve esoteric techniques such as live move scaling.

Motion Control is an effective addition to the virtual production tool kit as it can be used to create camera angles that are simply not possible by hand, as well as creating the stability and accurate repeatability of camera movement. The use of camera robotics in your virtual production enables improved accuracy and more stable camera position data, which means better, more stable backgrounds which then allows for using multiple passes for improved lighting and additional effects. Pre-programmed moves straight from pre-vis also create better background rendering by allowing for pre-rendering time which streamlines the production workflow straight from pre-vis with fewer takes!



Example: Multiple MoCo rigs were used to create this insane shot for the 9th Fast & Furious installment.

HIGH-SPEED RED CARPET SHOWS



Example: Check out the Showbolt showreel to see what our exciting solution could bring to your event

You've probably seen those red carpet events with super cool slow-motion selfie style footage of A list stars posing on the red carpet. If you've ever wondered who does that, the likelihood is it's us! We have developed specifically for the experiential and events sector, our 'Showbolt' product which is a high-speed BOLT robot arm and camera capable of shooting and editing cinematic quality content in seconds. Our solution offers endless edit and sharing customisation, flexible for the unique requirements of the event. A typically shot that we produce for a red carpet event would be around 10-20 sec video clip with effects such as slo-mo, hyper-lapse, boomerang and filters. These are completely customisable and can be tailored to the event specifications.

CUSTOMER TESTIMONIALS

WHY OUR PARTNERS USE MRMC

We have partners across the globe that use MRMC robotics on a daily basis to enhance their creative vision and level up their productions. Click below to see what some of our fantastic customers have to say or read on for some more testimonials.



The reason we chose MRMC Motion Control is because they are the industry standard for camera robotics. We really wanted a new perspective on our footage and we felt that the Bolt Cinebot enabled us to do that. We love the fact that these robots can get shots that no one else can produce and really push the boundaries on what is visually possible. MRMC is changing the industry on how video content is made and is not as complex as some would think. We had only 4 hours of training and were ready to shoot our first commercial that afternoon. MRMC made the process smooth and their expertise is unrivalled.

- TIM MOORE, DIAMOND VIEW STUDIOS, TAMPA



Motion Control is an extremely creative yet efficient way of producing high-quality content. For us as visual engineers, the challenge in front of the camera is that you have all of this chaos going on like falling objects, water, air and explosions and behind the camera, we need the ability to capture all of this frame perfectly, sometimes to millisecond timelines as any variation can make or break a shot. The reason I've always used MRMC camera robotics is that they are so accurate and so precise that I can guarantee I will always get the shot I want. It saves us so much time and money as once you've programmed the moves in Flair 7 you just hit one button and the whole thing takes place in front of you.

- STEVE GIRALT, THE GARAGE, NEW YORK

MRMC's camera robots have always been an important part of how we realise our vision. Most recently Bolt Jr+ has become an integral part of our Motion Control arsenal and is helping us to expand the potential of virtual production. It's agile, compact nature means we can easily transport the rig around the studio as well as take it to any given location. It has a great camera payload capacity and with Flair 7 we knew that we could capture anything our imagination can conjure.

- MIKE COSENTINO, RITE MEDIA, ATLANTA





**LOOKING FOR MORE
INSPIRATION?**

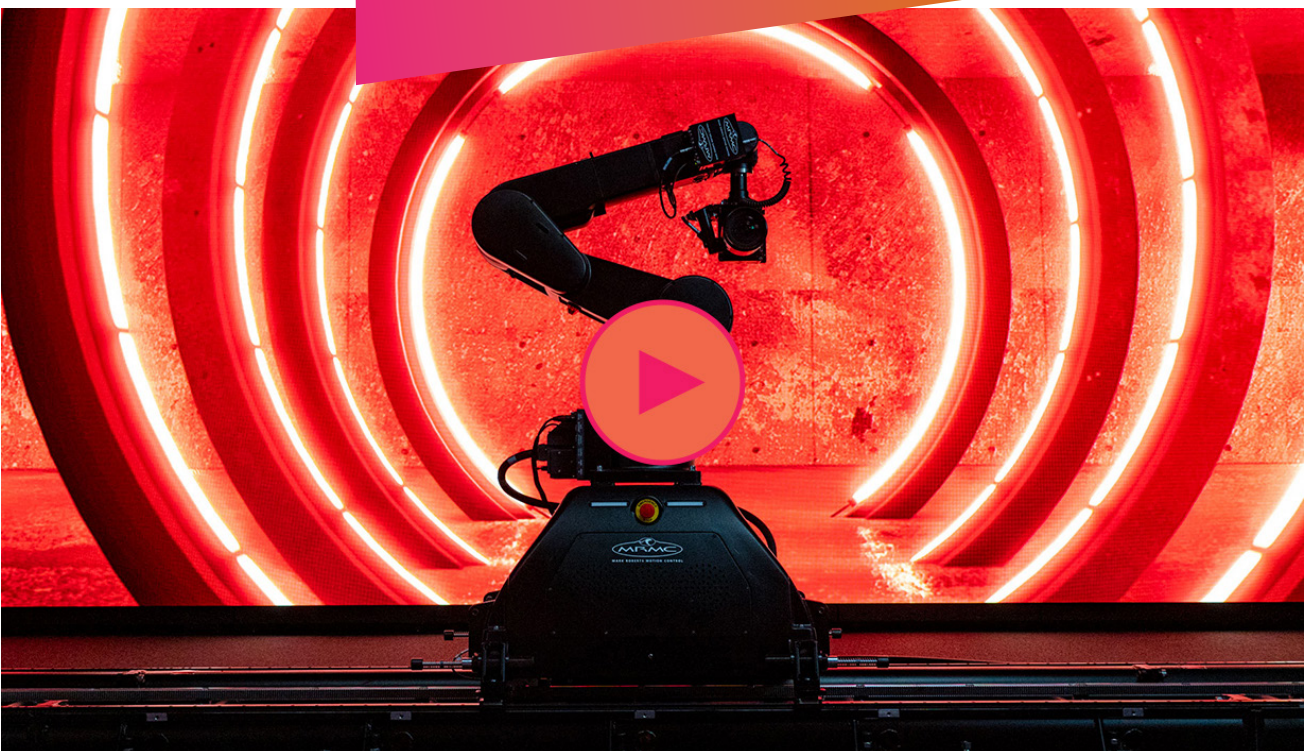
We must bring this document to a close with a huge thanks to our wonderful partners who have over the years shared some exceptional content with us! If you're looking for more MoCo inspiration then please check out the following videos. First up, our latest High-Speed showreel!



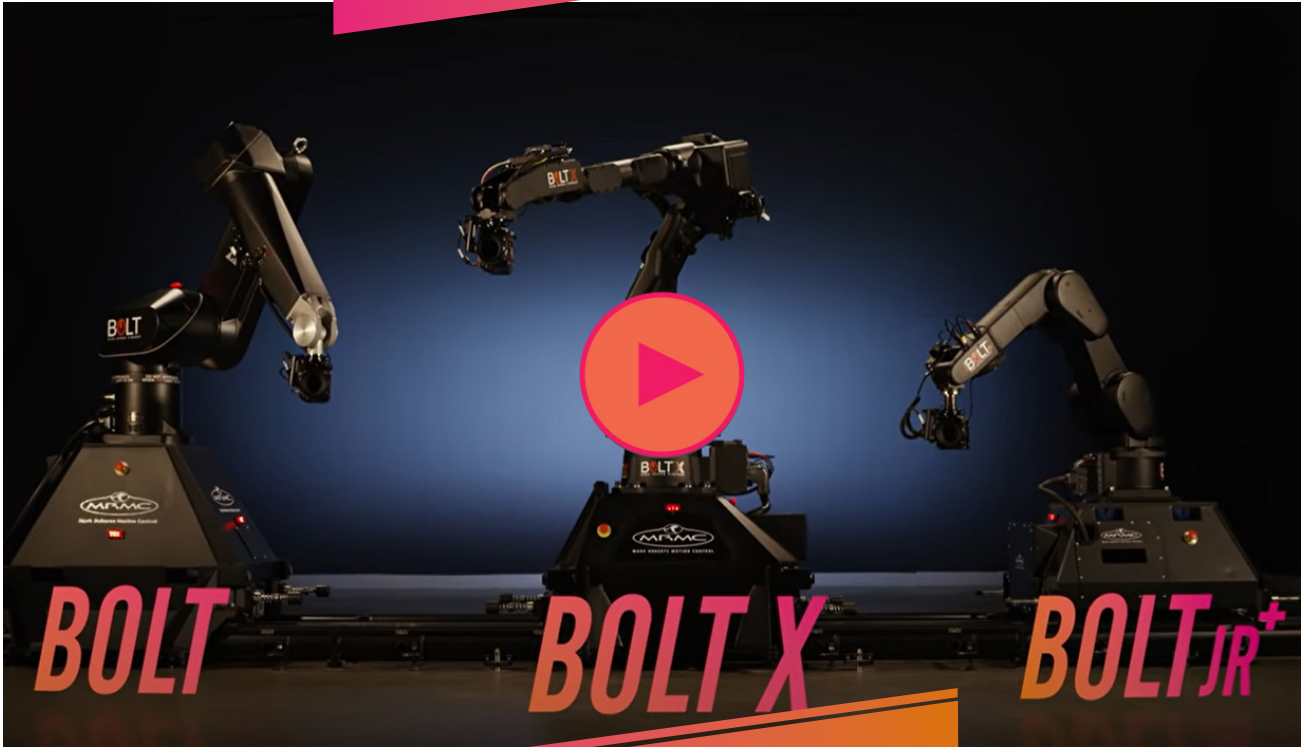
MILO SHOWREEL



THE NEW BOLT JR+



INTRODUCING THE
BOLT FAMILY

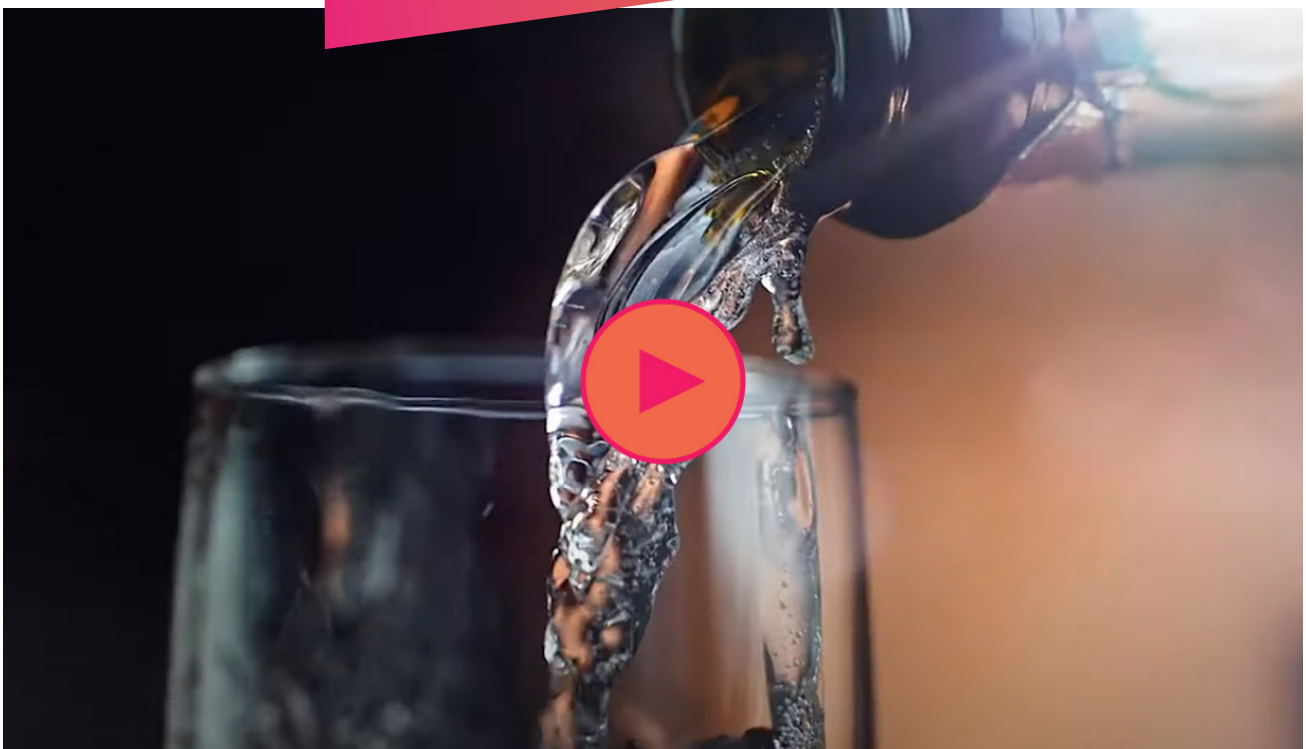


BOLT

BOLT X

BOLT JR+

HIGH-SPEED REEL
NOVEMBER 2020



**WE'D LOVE TO
HEAR FROM YOU!**

We hope you've found this document a useful insight in to the exciting world of Motion Control. If you have any questions, or would like to enquire about hiring or buying a rig of your own then please get in touch, we'd be happy to assist in any way we can!

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