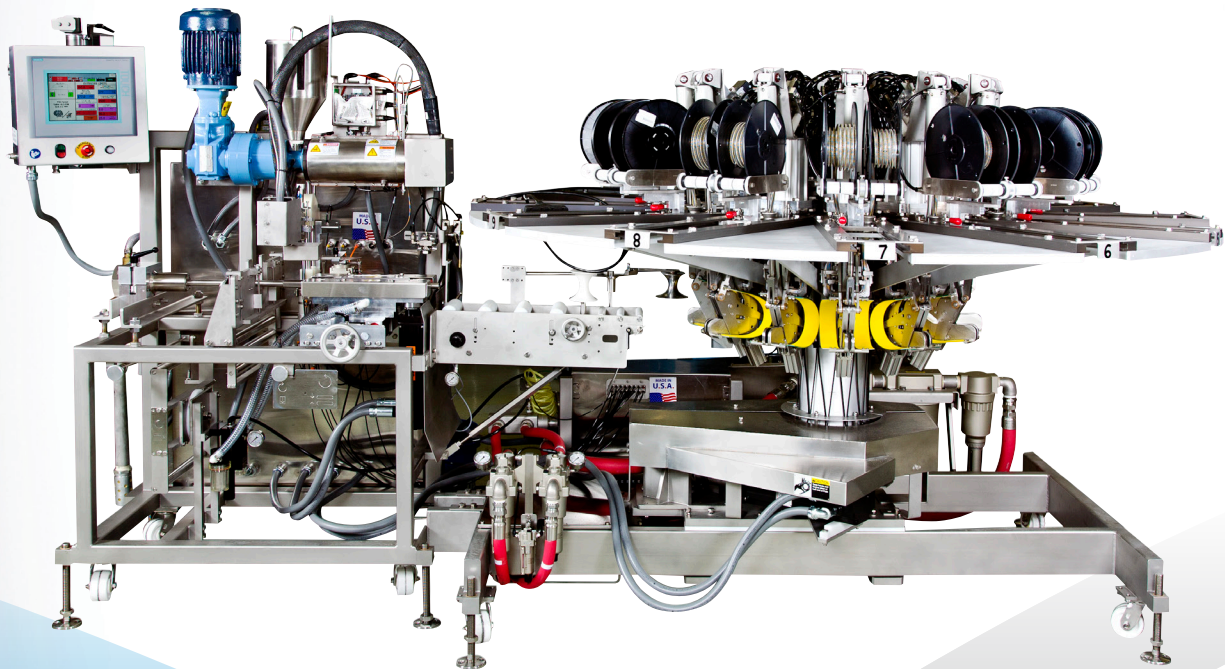




TIPPER TIE™

Rota-Clip

Clipping System



Automated heat-seal and clipping of pumpable products in flexible packaging

TIPPER TIE Rota-Clip Clipping System

The TIPPER TIE Rota-Clip is a state-of-the-art, high speed, automated production system for packaging pumpable product into a wide variety of flexible packaging materials. Around the world, its demonstrated reliability, versatility, and cost effectiveness make it the right choice for any number of industrial applications where throughput and precise control are important. The Rota-Clip meets the strict requirements of the industrial explosives industry. Repeatedly, it has been a proven performer packaging gas and micro-balloon sensitized emulsion and water-gel explosives. Rota-Clip may also be used for some food emulsions.

Technical Highlights

Central to Rota-Clip's high production output is its use of economical roll stock plastic film. It forms and seals the film into a cartridge via a glue seal system. This replaces previously used metal cans, composites, or premade cartridge containers enabling customers to reduce or eliminate expensive material inventory and supply issues.

For each of the three Rota-Clip models, high throughput is generated from a rotating table with up to 12 clipping stations. As it rotates, casings and pumped product are fed into the Rota-Clip reaching production

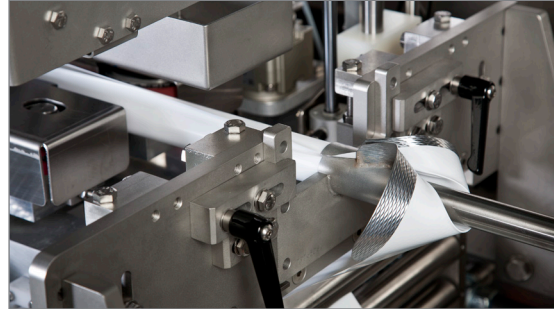
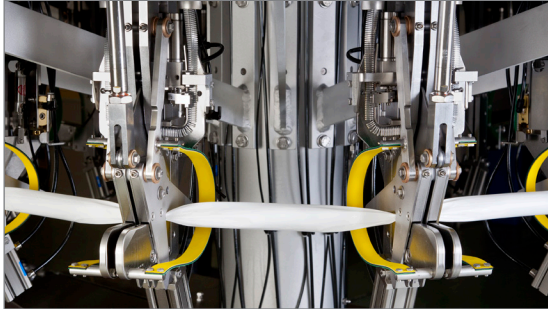
speeds up to 400 pieces per minute depending on product length, emulsion viscosity, film type, and pump capacity. Each station has one double clipper that applies two secure clips, one first tie and one second tie.

Integrated Performance Monitoring

Setup and operation are easy with PLC and user-friendly HMI touch screen control with integrated safety and motion control. Glue seal and clipper are all controlled from a single point. The operator can quickly maneuver through the large touch screen with detailed color graphics and evaluate the machine's performance checking every work step when needed, and clear screen messages provide essential communication. Standard controls store an unlimited number of recipes making product changeovers quick and efficient.

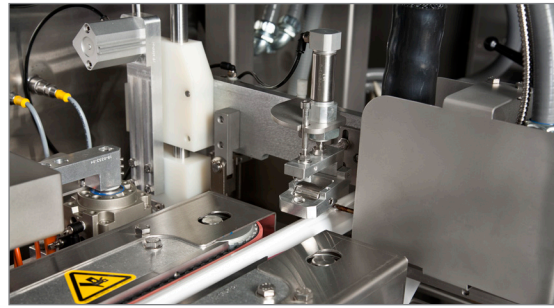
Accessories

Processes requiring extended, uninterrupted production runs require a roll-to-roll film splicer for increased productivity and reduced package costs. An automatic package code dater can also be added. The system is also available with left or right hand operation.



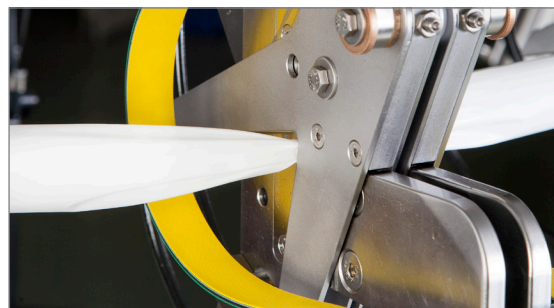
The Total Package

TIPPER TIE provides complete, turnkey solutions for automated, clipped packaging systems. Whatever the need, we have the packaging solutions and processing systems to maximize customers' productivity. Across industries and applications, TIPPER TIE maintains its reputation for quality, reliability, and design safety. Combined with worldwide support and service, customers profit from many hours of safe, uninterrupted production.



Customer Value

- Single operator reduces labor costs
- Minimized film and product waste from short tail after clip and consistent packaging
- Meets or exceeds highest safety standards
- Extended run time with optional roll-to-roll film splicer
- Precise, consistent package size
- Long-term dependability with high integrity triple glue seal on roll stock plastic film
- Compatible with leading brands of constant output pumps



TIPPER TIE Rota-Clip Specifications

| Technical Specifications | RCEG1 | RCEG2 | RCEG3 |
|------------------------------------|---|---|---|
| Package Diameter with 12 stations: | 25mm - 150mm (1" - 6") | 25mm - 130mm (1" - 5") | 25mm - 150mm |
| Package Length with 12 stations*: | 152mm - 350mm (6" - 14") | 152mm - 457mm (6" - 18") | 152mm - 457mm (6" - 18") |
| Maximum Speed: | 340 pieces/minute | 333 pieces/minute | Up to 400 pieces/minute |
| Air Requirements: | 160 SCFM (4528 NI) maximum @ 80 psi (5.5 bar) | 170 - 270 SCFM (4770 - 7580NI) @ 80 psi (5.5 bar) | 160 SCFM (4528 NI) maximum @ 80 psi (5.5 bar) |
| Clip Types: | 100T, 120T, Z201, Z213 spool type | | |
| Electrical Requirements: | 3 Phase 380V or 480V, 15 Amps | | |
| Dimensions (LxWxH): | 2.8 m x 4.6 m x 2.4 m (110" x 183" x 96") | | |
| Machine Weight: | 1508 kg (3325 lb) including heat seal | | |
| Optional Accessories: | Roll-to-roll film splicer, automatic package code dater | | |

*Package length may be tripled using four stations.

Testimonials

The Rota-Clip is operating smoothly, requires fewer employees and enables high speed and accurate packaging. It has improved our capacity dramatically.

Vice President - Huainan Shuntai Chemical Ltd.

Working together, TIPPER TIE and Dyno Nobel placed the first high speed Rota-Clip into full production in 1993 at the Dyno Nobel plant in Carthage, Missouri. TIPPER TIE's experienced professionals, innovative thinking, and determination made the Rota-Clip a success for both companies. While Dyno Nobel installed several additional Rota-Clips around the world, TIPPER TIE worked on developing a Rota-Clip that would produce larger diameter products for the Carthage plant. Highly productive, efficient, and easily maintained, the Rota-Clip has proven itself to Dyno Nobel for almost two decades.

Principal Engineer / Packaged Products - Dyno Nobel Inc.

BME has been using the Rota-Clip machine at its Losberg facility since 1996. The first machine has served BME successfully over the past 15 years while the supply support from both the USA and TIPPER TIE in Germany was nothing less than exceptional. A recent request to urgently supply a new Rota-Clip machine was met with enthusiasm and the professional response was remarkable. The new upgraded machine which incorporated latest technology has just been put into operation and BME has no doubt that the decision to stay with the Rota-Clip technology was the right one. The superb technology and reliability offered by the Rota-Clip machine backed up by the excellent support clearly puts TIPPER TIE and their equipment in a class of their own.

Director - BME, A Division of Omnia Group (Pty) Ltd

JBT PROTEIN PROCESSING

SECONDARY

BRINE PREPARATION | HOMOGENIZATION | INJECTION
INJECTION & RETURN MILLING | MACERATION | MASSAGING | TENDERIZATION
X-RAY TECHNOLOGY | AUTOMATED TRAY LOADING

FURTHER

WEIGHING | PORTIONING/TRIMMING | COATING | FRYING & FILTRATION | PROOFING
COOKING | COOLING | CHILLING | FREEZING | REFRIGERATION | CLIPPING & PACKAGING
SOLUTIONS | X-RAY TECHNOLOGY | HIGH-PRESSURE PROCESSING (HPP)



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