TORNADO™ 360°

RATCHET LEVER HOIST

COLUMBUS McKINNON CORPORATION

INNOVATIVE ENGINEERING DESIGNED FOR YOU

To create the best ratchet lever hoist on the market, Columbus McKinnon started with a fundamental question – how do people use ratchet lever tools to perform their jobs?

To answer that question, a global team of CMCO engineers and application specialists worked with the Institute for Product Innovation at the University of Wuppertal, Germany, to perform an in-depth ergonomic study. Research included more than 200 voice-of-customer interviews across 10 countries, as well as numerous on-site evaluations of real-life applications for traditional lever tools.

The study revealed that lever hoists are more often used for pulling and securing than they are for lifting. And, in many applications, proper, safe and ergonomic use is not possible.

Using the data collected, Columbus McKinnon engineered and built a first-in-class product that exceeds the ergonomic and performance expectations of our customers around the world. The result is not simply the best, but rather one of the most innovative and safest ratchet lever hoists in the world – the CM Tornado 360°™ featuring the revolutionary Sidewinder™ lever handle.

FEATURING THE

SIDEWINDER™ LEVER HANDLE

DESIGNED FOR OPTIMAL EFFICIENCY & SAFETY

TORNADO™ 360° RATCHET LEVER HOIST

Redefining lever-operated hoists, the CM® Tornado 360°™ features the revolutionary Sidewinder™ lever handle that allows for efficient operation in both lifting and pulling applications. Ergonomically designed for increased safety, the patent-pending CM Tornado 360° lets the operator work up to 12 times faster and with as much as 30% less pull force than with conventional ratchet lever tools.

¾ TO 9 TON CAPACITIES | STANDARD LIFTS UP TO 20 FT.

BENEFITS & FEATURES

SIDEWINDER LEVER HANDLE
This first-of-its-kind lever handle design is revolutionizing the ratchet lever hoist industry. Its unique foldable handle and 360° rotating lever increases productivity while reducing the risk of operator injury.

CONVENIENT DIRECTIONAL INDICATOR
Easy-to-use, highly visible directional indicator located on the handle clearly shows the operating direction as lifting, lowering or neutral.

EASY & SMOOTH FREE CHAINING
For quick take up and positioning of slack chain – even with one hand. Designed not to accidently free chain while under load. Cast chain end stop allows the user to easily position the chain in free-chaining mode and prevents it from entering the liftwheel and jamming the hoist.

POSITIVE LOAD CONTROL
Fully enclosed Weston-type brake stays clean and dry for precise load positioning.

BUILT TO LAST
Lightweight aluminum housing withstands rigorous use and features high-quality, long-lasting bearings. Powder coat finish provides extra protection in harsh environments.

MEETS ASME B30.21

EXCELLENT CORROSION PROTECTION
Robust chain guide and chain stripper made from cast steel and zinc-plated for corrosion protection.

100% LOAD TESTED ZINC-PLATED CHAIN
Protects against corrosion.

EASY-TO-INSPECT SWIVEL HOOKS
Bolt-on hooks with nylon locks help users comply with ASME B30.21 and B30.10 inspection requirements. Hooks are forged, allowing them to yield under overload without breaking. Cast safety latches provide positive and secure load engagement.

INDUSTRY-LEADING WARRANTY
Our lifetime warranty on all mechanical components, including the Sidewinder lever handle, is the industry's best warranty against manufacturing and material defects.

With our 3-year brake warranty, if the brake discs wear out within 3 years from the date of purchase, CMCO will replace the ratchet disc assembly free of charge.

EASY IDENTIFICATION
Each unit has a unique serial number for easy and accurate identification.

OPTIONAL FEATURES

SHIPYARD HOOKS
Available on 1-1/2 and 3 ton units only.

INTERNAL LOAD LIMITER
Allows the handle to rotate freely, preventing the lifting of an overload sufficient to damage the hoist. Units equipped with a load limiter feature a black hand wheel for quick and easy on-site identification.

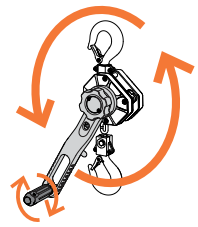
LIFETIME
WARRANTY

THE REVOLUTIONARY SIDEWINDER™ LEVER HANDLE

The patent-pending CM Tornado 360˚ ratchet lever hoist features the revolutionary Sidewinder™ lever handle. What makes the Sidewinder so unique are two innovative components:

1. 360˚ ROTATING LEVER

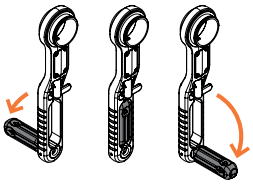
The unique offset, or curved, design of the lever keeps the operator's hand and body aligned with the load chain. This reduces the risk of the twist effect (when a hoist twists around the chain) and the need to stabilize the hoist with another hand.



2. FOLD-OUT REVOLVING HANDLE

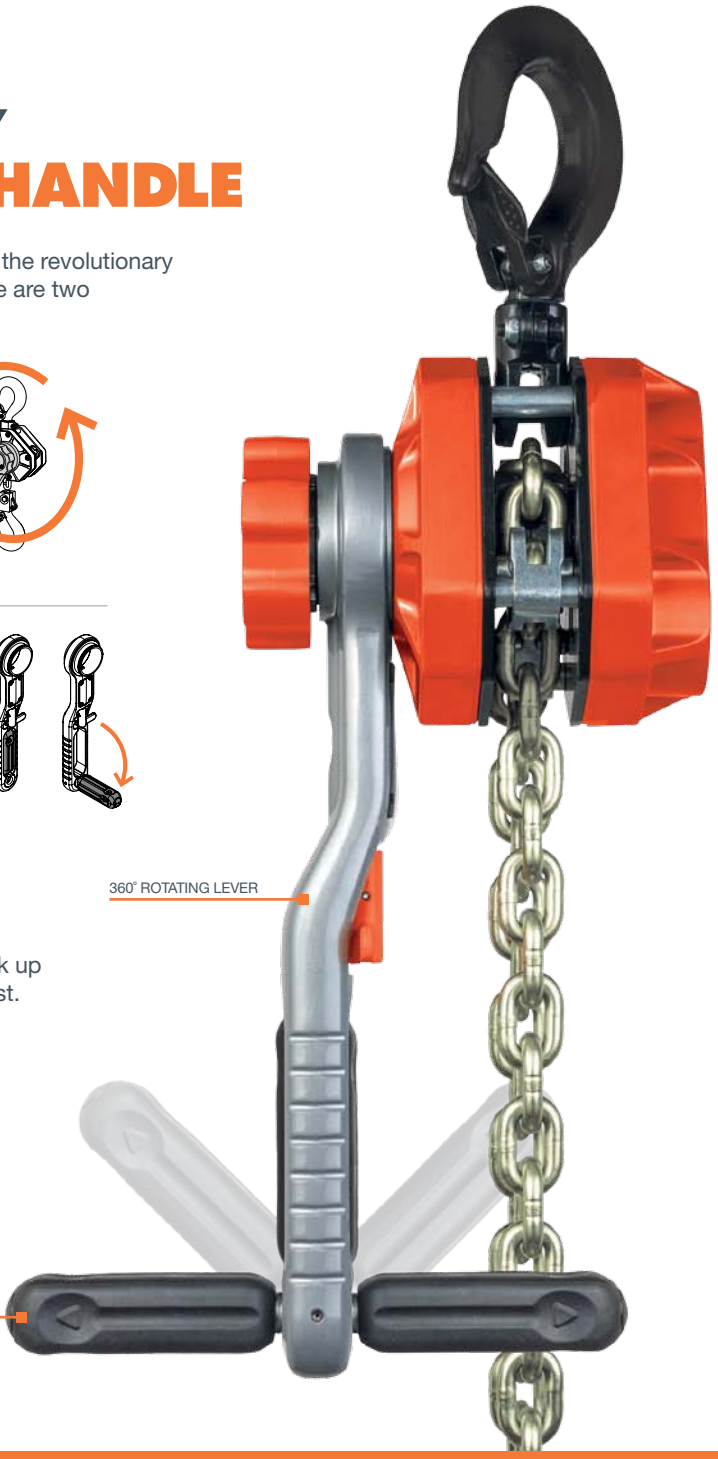
Recessed in the lever, the heavy-duty steel core handle folds down into position on either side of the lever, allowing for easy operation from any angle. The handle is grooved to provide a secure grip – even with gloves.

The handle revolves, allowing the operator to ergonomically and easily maintain control of the lever through its full 360˚ range of motion.



Together, the Sidewinder's lever and handle allow the operator to realize the full potential of 360˚ rotation, making the CM Tornado 360˚ unlike any other ratchet lever hoist on the market:

- 360˚ rotation increases efficiency, allowing operators to work up to 12 times faster than with a conventional ratchet lever hoist.
- Minimal effort with best-in-class lever pull force that beats the competition. For example, 38.2 lb./ft. for the 3/4 ton unit and 58.5 lb./ft. for the 1-1/2 ton unit.



DISTINCTIVE CLICKING SOUND
ENSURES THE HANDLE IS LOCKED INTO POSITION

To return handle to upright position, simply pull the handle outward and snap into place inside the lever.

EASILY CHANGE YOUR GRIP TO SUIT THE APPLICATION

The CM Tornado 360˚ gives operators ultimate flexibility. When an application requires a customary ratcheting hand grip, the Tornado 360˚ can be operated like a traditional lever tool when the lever handle is in the upright position.

OPTIONAL LOAD LIMITER
Units equipped with an internal load limiter feature a black hand wheel for quick and easy on-site identification.

ERGONOMIC DESIGN DELIVERS OPTIMAL OPERATOR SAFETY

Hoist design allows the operator to work in a safe and ergonomic position.

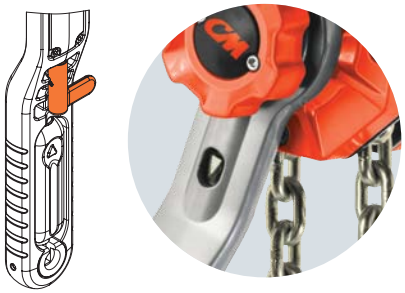
Sidewinder lever handle enables smooth 360˚ operation, reducing repetitive wrist action experienced with traditional ratchet lever hoists.

Double reduction gearing and high-quality bearings decrease required pull force by up to 30%, reducing operator fatigue.

EASY-TO-USE DIRECTIONAL CONTROL & FREE CHAINING

CONVENIENT DIRECTIONAL INDICATOR

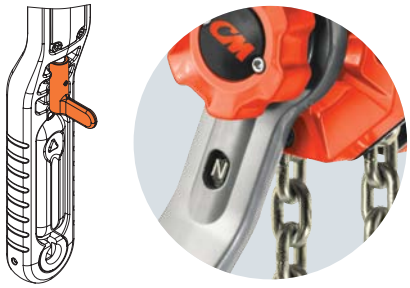
Easy-to-use, highly visible directional indicator window located in the lever clearly shows the operating direction as lifting (▲), lowering (▼) or neutral (**N**).

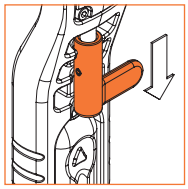


EASY & SMOOTH FREE CHAINING

Allows for quick take up and positioning of slack chain – even with one-handed use. Designed not to accidently free chain while under load. Cast chain end stop allows the user to quickly position the chain in free-chaining mode and prevents it from entering the liftwheel and jamming the hoist.

In this mode of operation, the chain can be pulled through the hoist in either direction by hand for quick attachment to the load. To engage the free chaining feature, remove the load and move the directional lever to the neutral (**N**) position.





SAFE & SECURE

SELECTOR LEVER LOCKS IN PLACE TO PREVENT ACCIDENTALLY SWITCHING.

Pull down on the selector lever to unlock it, turn it to the desired direction, and release it into the locking position.

EASILY CARRY & TRANSPORT WITH JUST ONE HAND

When folded out, the lever handle can serve as a carrying grip for easy transport. Simply attach the end stop to the hook and slip the hook onto the Sidewinder lever handle to lift and carry the unit with one hand.

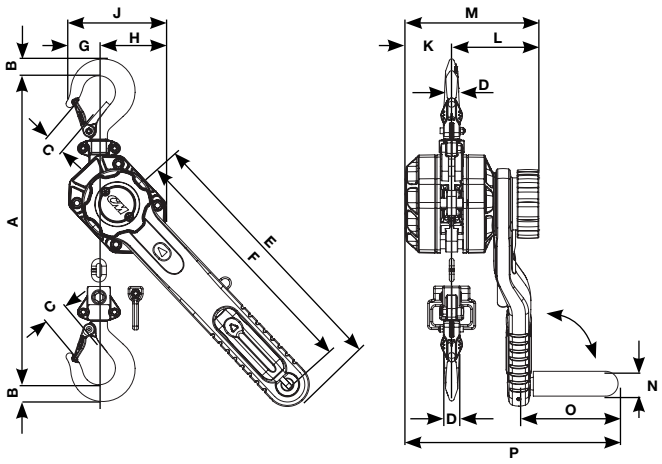
EASY & SAFE POINT LOADING

With a blunt tip and the ability to point load, CM shipyard hooks are ideal for positioning steel plates and fixtures during welding applications in shipbuilding and metal fabrication industries. Optional on 1-1/2 and 3 ton CM Tornado 360° units, these hooks are forged from 8630 quenched and tempered alloy in the USA and have a 4:1 design factor.

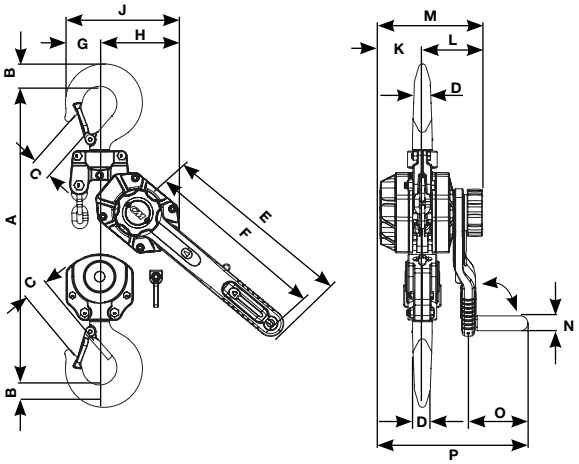
DIMENSIONS & SPECIFICATIONS

Capacity Tons (kg)	Product Code		Standard Lift ft. (m)	Pull Force to Lift Rated Load lbf. (kgf.)		Reeving	Weight lbs. (kg)	Dimensions in. (mm)															
	without load limiter	with load limiter		Sidewinder Lever Handle Operation	Traditional Lever Operation			A (Min.)	B	C	D	E	F	G	H	J	K	L	M	N	O	P
0.75 (750)	**TOR07505**	**TOR07505LL**	5 (1.5)	38.2 (17.3)	47.2 (21.4)	1	14.7 (6.7)	12.60 (320)	0.79 (20)	1.06 (27)	0.71 (18)	12.87 (327)	11.81 (300)	1.57 (40)	3.19 (81)	4.76 (121)	2.20 (56)	4.13 (105)	6.33 (161)	1.18 (30)	4.72 (120)	10.1 (257)
	TOR07510	**TOR07510LL**	10 (3.0)				16.8 (7.6)															
	TOR07515	**TOR07515LL**	15 (4.5)				18.9 (8.6)															
	TOR07520	**TOR07520LL**	20 (6.0)				21 (9.5)															
	TOR075LCX	**TOR075LCXLL**	Less Chain				12.3 (5.6)															
1.5 (1,500)	**TOR15005**	**TOR15005LL**	5 (1.5)	58.5 (26.5)	60.7 (27.5)	1	21.1 (9.6)	14.76 (375)	1.02 (26)	1.22 (31)	0.83 (21)	12.87 (327)	11.81 (300)	2.01 (51)	3.78 (96)	5.79 (147)	2.71 (69)	4.33 (110)	7.05 (179)	1.18 (30)	4.72 (120)	10.7 (273)
	TOR15010	**TOR15010LL**	10 (3.0)				24.6 (11.2)															
	TOR15015	**TOR15015LL**	15 (4.5)				28.2 (12.8)															
	TOR15020	**TOR15020LL**	20 (6.0)				31.7 (14.4)															
	TOR150LCX	**TOR150LCXLL**	Less Chain				17 (7.7)															
	00002145		Optional Upper Shipyard Hook				4.4 (2.0)	14.02 (356)	1.10 (28)	1.06 (27)	0.91 (23)	12.87 (327)	11.81 (300)	1.46 (37)	3.78 (96)	5.24 (133)	2.72 (69)	4.33 (110)	7.05 (179)	1.18 (30)	4.72 (120)	10.75 (273)
	3315WLP		Optional Lower Shipyard Hook				2.87 (1.3)															
3 (3,000)	**TOR30005**	**TOR30005LL**	5 (1.5)	79.4 (36)	90.4 (41)	1	38 (17.2)	17.52 (445)	1.46 (37)	1.57 (40)	1.10 (28)	14.84 (377)	13.78 (350)	2.24 (57)	4.84 (123)	7.09 (180)	3.39 (86)	4.76 (121)	8.15 (207)	1.18 (30)	4.72 (120)	11.77 (299)
	TOR30010	**TOR30010LL**	10 (3.0)				45.4 (20.6)															
	TOR30015	**TOR30015LL**	15 (4.5)				52.7 (23.9)															
	TOR30020	**TOR30020LL**	20 (6.0)				60.1 (27.3)															
	TOR300LCX	**TOR300LCXLL**	Less Chain				29.2 (13.2)															
	00002383		Optional Upper Shipyard Hook				4.23 (1.92)	17.17 (436)	1.46 (37)	1.42 (36)	1.10 (28)	14.84 (377)	13.78 (350)	1.89 (48)	4.84 (123)	6.73 (171)	3.39 (86)	4.76 (121)	8.15 (207)	1.18 (30)	4.72 (120)	11.77 (299)
	3403WLP		Optional Lower Shipyard Hook				4.81 (2.18)															
6 (6,000)	**TOR60005**	**TOR60005LL**	5 (1.5)	83.8 (38)	92.6 (42)	2	63.7 (28.9)	22.17 (563)	1.77 (45)	1.73 (44)	1.38 (35)	14.84 (377)	13.78 (350)	2.80 (71)	6.38 (162)	9.17 (233)	3.39 (86)	4.76 (121)	8.15 (207)	1.18 (30)	4.72 (120)	11.77 (299)
	TOR60010	**TOR60010LL**	10 (3.0)				78.4 (35.6)															
	TOR60015	**TOR60015LL**	15 (4.5)				93.1 (42.2)															
	TOR60020	**TOR60020LL**	20 (6.0)				107.8 (48.9)															
	TOR600LCX	**TOR600LCXLL**	Less Chain				45 (20.4)															
9 (9,000)	**TOR90005**	**TOR90005LL**	5 (1.5)	94 (42.6)	112.9 (51.2)	3	109.1 (49.5)	27.36 (695)	2.67 (68)	2.67 (68)	1.96 (50)	14.84 (377)	13.78 (350)	4.56 (116)	7.83 (199)	12.40 (315)	3.39 (86)	4.76 (121)	8.15 (207)	1.18 (30)	4.72 (120)	11.77 (299)
	TOR90010	**TOR90010LL**	10 (3.0)				131.1 (59.5)															
	TOR90015	**TOR90015LL**	15 (4.5)				153.2 (69.5)															
	TOR90020	**TOR90020LL**	20 (6.0)				175.2 (79.5)															
	TOR900LCX	**TOR900LCXLL**	Less Chain				82.6 (37.5)															

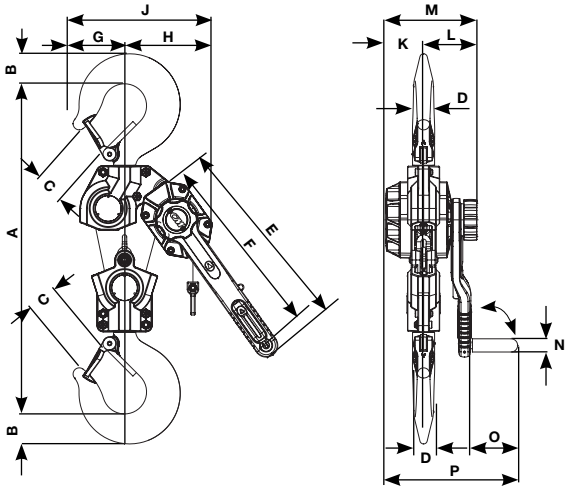
3/4, 1-1/2 AND 3 TON UNITS



6 TON UNITS



9 TON UNITS



ZINC-PLATED BULK CHAIN & CHAIN DRUM

Product Code	Description	Weight lbs. (kg)
T56Z	Bulk Chain (per foot) for 3/4 ton units	.42 (.19)
635221D500	Chain Drum (500 ft.) for 3/4 ton units	224 (101)
85961ZFT	Bulk Chain (per foot) for 1-1/2 ton units	.708 (.32)
85961ZD500	Chain Drum (500 ft.) for 1-1/2 ton units	354 (160.6)
85394	Bulk Chain (per foot) for 3 & 6 ton units	1.471 (.66)
85394D500	Chain Drum (500 ft.) for 3 & 6 ton units	735.5 (333.6)
85339	Bulk Chain (per foot) for 9 ton units	1.471 (.66)
85339D500	Chain Drum (500 ft.) for 9 ton units	735.5 (333.62)

AVAILABLE IN
¾ TO 9 TON CAPACITIES WITH STANDARD LIFTS UP TO 20 FT.

3/4 TON CAPACITY

HEADROOM: 12.60 in. (320 mm)

PULL FORCE:
Sidewinder Lever Handle:
38.2 lbf (17.3 kgf)
Traditional Lever Operation:
47.2 lbf (21.4 kgf)

WEIGHT: 5 ft./1.5 m lift
14.7 lbs. (6.7 kg)

1-1/2 TON CAPACITY

HEADROOM: 14.76 in. (375 mm)

PULL FORCE:
Sidewinder Lever Handle:
58.5 lbf (26.5 kgf)
Traditional Lever Operation:
60.7 lbf (27.5 kgf)

WEIGHT: 5 ft./1.5 m lift
21.1 lbs. (9.6 kg)

3 TON CAPACITY

HEADROOM: 17.52 in. (445 mm)

PULL FORCE:
Sidewinder Lever Handle:
79.4 lbf (36 kgf)
Traditional Lever Operation:
90.4 lbf (41 kgf)

WEIGHT: 5 ft./1.5 m lift
38 lbs. (17.2 kg)

6 TON CAPACITY

HEADROOM: 22.17 in. (583 mm)

PULL FORCE:
Sidewinder Lever Handle:
83.8 lbf (38 kgf)
Traditional Lever Operation:
92.6 lbf (42 kgf)

WEIGHT: 5 ft./1.5 m lift
63.7 lbs. (28.9 kg)

9 TON CAPACITY

HEADROOM: 27.36 in. (695 mm)

PULL FORCE:
Sidewinder Lever Handle:
94 lbf (42.6 kgf)
Traditional Lever Operation:
112.9 lbf (51.2 kgf)

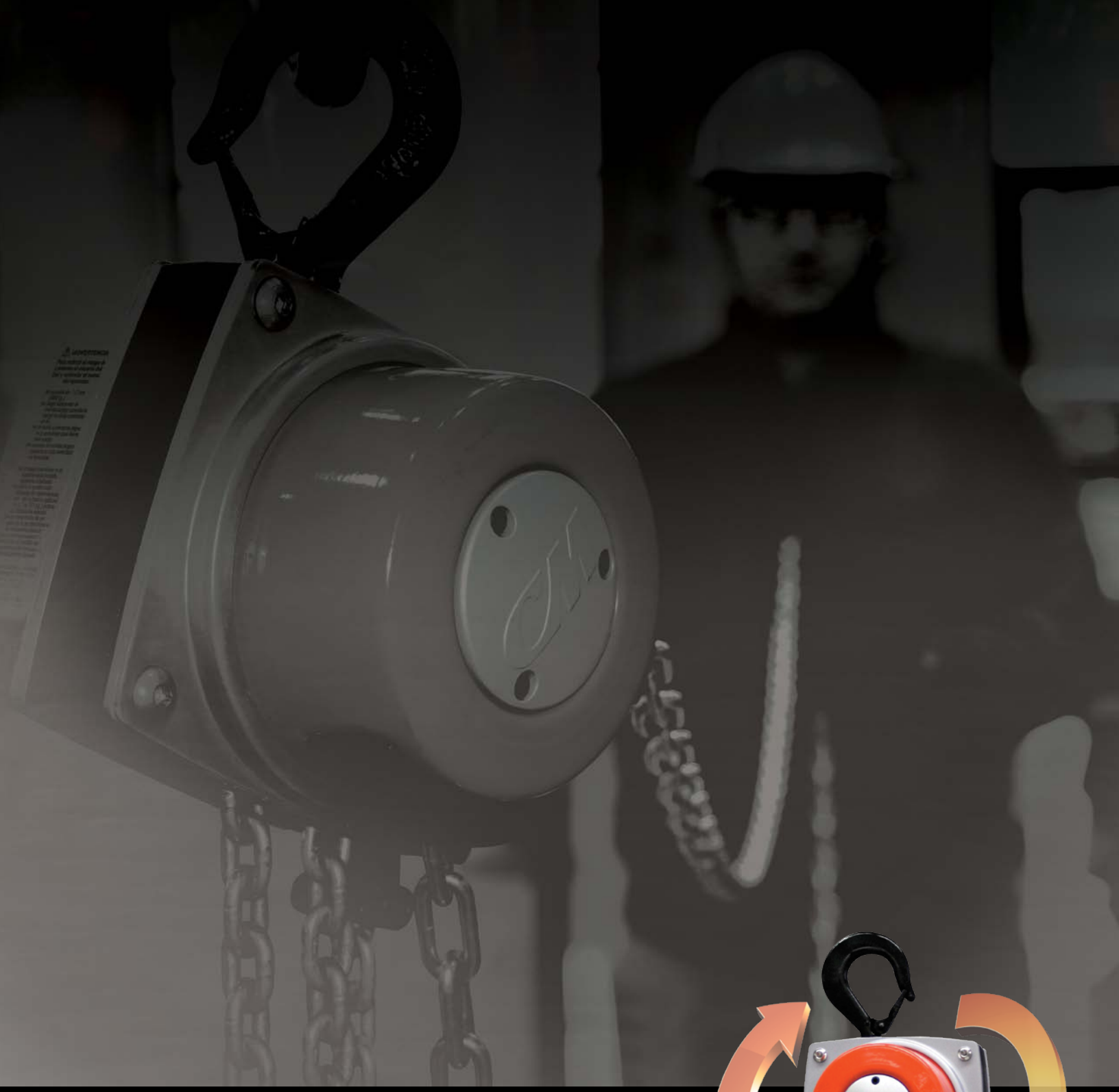
WEIGHT: 5 ft./1.5 m lift
109.1 lbs. (49.5 kg)

BETTER BY DESIGN
Unique body design allows the CM Tornado 360˚ to lay flat to minimize tipping or slipping during operation.

EASIER MAINTENANCE & INSPECTION

For quicker maintenance and lower repair costs, screws are set into the hoist body to protect them from potential damage.

To ensure optimal performance and safety, demand genuine CMCO parts. Protect your investment, maintain warranty requirements and preserve the integrity of your hoist's superior design – ask for Parts Star™ by Columbus McKinnon.



EXPERIENCE THE 360° ADVANTAGE

The CM Tornado 360° joins the CM family of hoist products that harness the versatility and safety of 360° engineering. The Tornado's companion product – the CM Hurricane 360° – is a one-of-a-kind hand chain hoist. Its patented hand chain cover rotates a full 360° to allow for pulling and lifting of loads from virtually any angle, helping to minimize side pulling.

With capacities from 1/2 to 10 tons and ultimate flexibility, the CM Hurricane 360° hand chain hoist is ideal for a wide range of applications.

PARTNERS IN MOTION CONTROL.

Columbus McKinnon is focused on becoming the leading industrial technology company in safe and productive motion control. Together, with our network of value-add Channel Partners, we are uniquely positioned to offer solutions to solve our customer's high-value problems. From variable speed electric chain hoists featuring CM HI-Tech™, our exclusive performance interface platform, to the CM Tornado 360°™ and its revolutionary Sidewinder™ lever handle, Columbus McKinnon is engineering motion control solutions for tomorrow's workforce.

BE SAFE. GET TRAINED.

Columbus McKinnon is committed to providing expert safety training on the proper use and inspection of rigging and overhead lifting equipment. Our company offers comprehensive programs at our national training centers as well as on-site at your facility. Courses include hoist and rigging safety and inspection; crane operation and safety; and load securement.

Columbus McKinnon's corporate headquarters in Getzville, New York, is home to our state-of-the-art **Niagara Training Center**. The 3,000-square-foot facility is dedicated to training Channel Partners and end users on the safe and proper use of hoist and rigging products. The Center offers a one-of-a-kind training experience on chain and rigging equipment with more than 75 manual and powered hoists, enclosed track systems and our 50-foot-wide crane system with 3-ton Yale Global King wire rope hoist.

CMCO UNIVERSITY™

Win in the marketplace with CMCO University. This intense program is designed to give Channel Partners intimate product and application knowledge that they can use to advise their end-user customers during the product selection and sales processes.

CMCO COLUMBUS McKINNON CORPORATION

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