

# 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.



### 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.

CAPACITY: 3/4 to 9 tons | STANDARD LIFTS: Up to 20 ft.

### **FEATURES AND BENEFITS**

### 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 accidentally 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 GOLD CHROMATE ZINC-PLATED CHAIN

Protects against corrosion.

### **EASY IDENTIFICATION**

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

### **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.

### **OPTIONAL FEATURES**

### 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.

### SHIPYARD HOOKS

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





# 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.



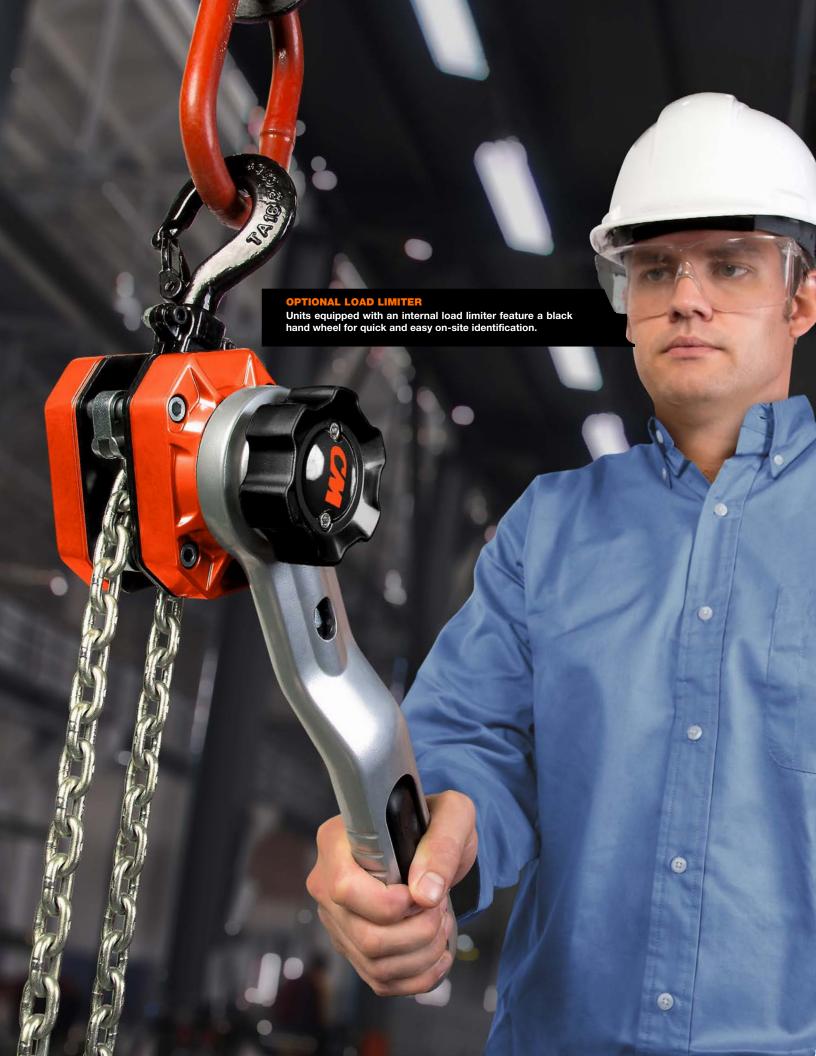
To return handle to upright position, simply pull the handle outward and snap into place inside the lever. FOLD-OUT REVOLVING HANDLE

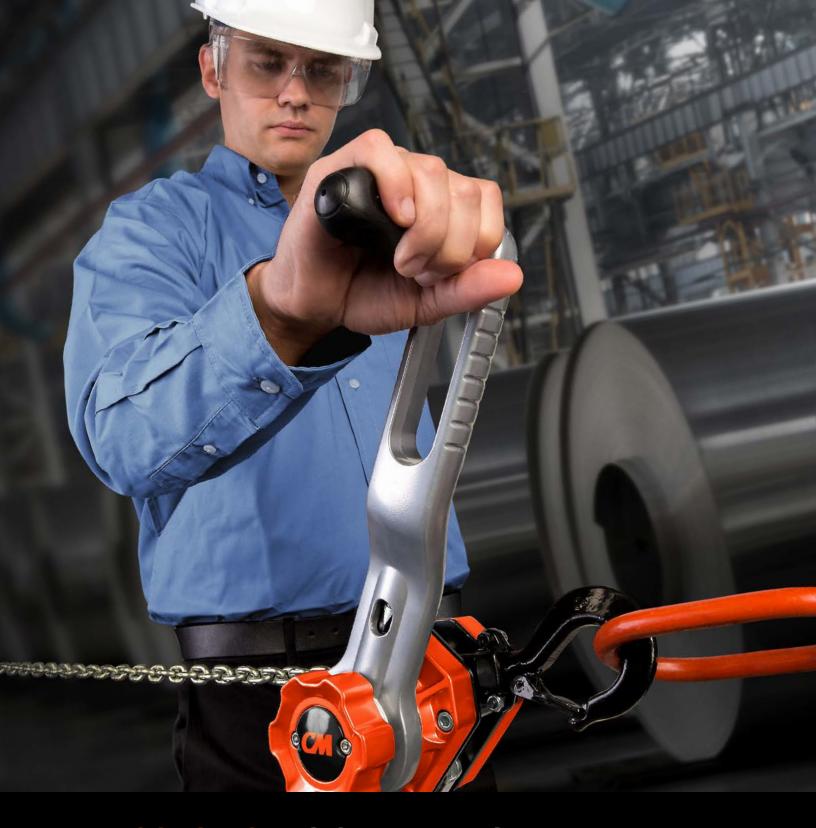




### **EASILY CHANGE YOUR GRIP**TO SUIT THE APPLICATION

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.





## **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.

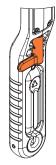


Double reduction gearing and high-quality bearings decrease required pull force by up to 30%, reducing operator fatigue.

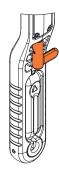
# EASY-TO-USE DIRECTIONAL CONTROL & FREE CHAINING

### **CONVENIENT DIRECTIONAL INDICATOR**

Easy-to-use, highly visible directional indicator window located in the lever clearly shows the operating direction as lifting  $(\mathbf{A})$ , lowering  $(\mathbf{V})$  or neutral  $(\mathbf{N})$ .





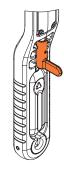




### **EASY & SMOOTH FREE CHAINING**

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  $(\mathbf{N})$  position.





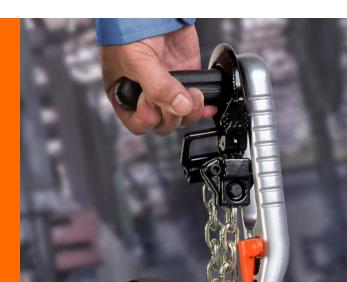


# SAFE & SECURE SELECTOR LEVER LOCKS IN PLACE TO PREVENT ACCIDENTALLY SWITCHING.

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

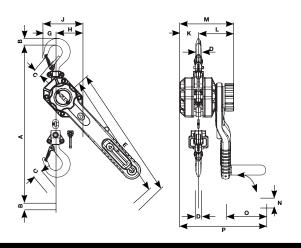
When folded out, the lever handle can serve as a carrying grip for easy transport. Simply attach the end stop to the hook and slip the hook onto the Sidewinder lever handle to lift and carry the unit with one hand.

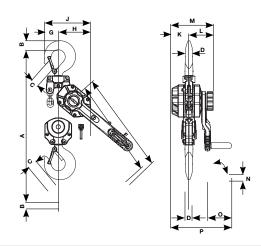




### **DIMENSIONS & SPECIFICATIONS**

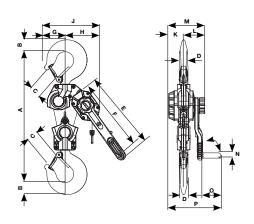
Capacity Tons (kg)	Product Code		Standard Lift	Pull Force to Lift Rated Load lbf. (kgf.)		Reeving	Weight	Dimensions in. (mm)														
	without load limiter	with load limiter	ft. (m)	Sidewinder Lever Handle Operation	Traditional Lever Operation	noovilly	lbs. (kg)	A (Min.)	В	C	D	E	F	G	Н	J	K	L	М	N	0	Р
<b>0.75</b> (750)	T0R07505	T0R07505LL	5 (1.5)		47.2 (21.4)	1	14.7 (6.7)															
	T0R07510	TOR07510LL	- (,	38.2			16.8 (7.6)	12.60	0.79	1.06	0.71	12 87	11.81	1 57	3 19	4 76	2 20	4 13	6.33	1 18	4 72	10.1
	T0R07515	T0R07515LL	15 (4.5)	(17.3)			18.9 (8.6)	(320)				(327)				(121)			(161)	1	(120)	1 1
	T0R07520	TOR07520LL	20 (6.0)				21 (9.5)															
	TOR075LCX	TOR075LCXLL					12.3 (5.6)															
<b>1.5</b> (1,500)	T0R15005	TOR15005LL	5 (1.5)	58.5	60.7 (27.5)	1	21.1 (9.6)	14.76 (375)		1.22 (31)		12.87 (327)	11.81			5.79 (147)	2 71				4.72 (120)	
	TOR15010	TOR15010LL	10 (3.0)				24.6 (11.2)															10.7
	TOR15015	TOR15015LL	15 (4.5)	(26.5)			28.2 (12.8)															
	T0R15020	TOR15020LL	20 (6.0)	, , ,			31.7 (14.4)										(00)	(110)				(273)
	TOR150LCX TOR150LCXLL						17 (7.7)															
	00002145		Optional Upper Shipyard Ho				4.4 (2.0)	14.02	1.10													
	3315WLP			Optional Lower Shipyard H		ook	2.87 (1.3)	(356)	(28)	(27)	(23)	(327)	(300)	(37)	(96)	(133)	(69)	(110)	(179)	(30)	(120)	(273)
<b>3</b> (3,000)	T0R30005	TOR30005LL	5 (1.5)	ļ		1	38 (17.2)	17.52 (445)			1.10	14.84							8.15 (207)			
	T0R30010	TOR30010LL	10 (3.0)	79.4	90.4		45.4 (20.6)						13.78 (350)		4.84	7 09	3 39				4 72	11 77
	T0R30015	T0R30015LL	15 (4.5)	(36)	(41)		52.7 (23.9)														(120)	
	T0R30020	T0R30020LL	20 (6.0)	, , ,			60.1 (27.3)				(,	(/			( /	( , ,	( , ,					
	TOR300LCX		Less Chain	<u> </u>			29.2 (13.2)	47.47	1 10	4 40	4.40	4404	10.70	1.00	101	0.70	0.00	4 70	0.45	4.40	4 70	44.77
	00002383 3403WLP		Optional Upper Shipyard Hoo Optional Lower Shipyard Hoo				4.23 (1.92)	17.17	1.46				13.78									
				tional Lower	Snipyard H	оок	4.81 (2.18)	(436)	(37)	(36)	(28)	(377)	(350)	(48)	(123)	(1/1)	(86)	(121)	(207)	(30)	(120)	(299)
<b>6</b> (6,000)	T0R60005	TOR60005LL	5 (1.5)	-	92.6 (42)	2	63.7 (28.9)															
	T0R60010	TOR60010LL	10 (3.0)	83.8 (38)			78.4 (35.6)	22.17	1.77	1.73	1.38	14.84	13.78	2.80	6.38	9.17	3.39	4.76	8.15	1.18	4.72	11.77
	T0R60015 T0R60020	TOR60015LL TOR60020LL	15 (4.5)				93.1 (42.2)	(563)	(45)	(44)	(35)	(377)	(350)	(71)	(162)	(233)	(86)	(121)	(207)	(30)	(120)	(299)
	TOR600LCX	TOR600LCXLL	20 (6.0)				107.8 (48.9) 45 (20.4)															
		TOR90005 TOR90005LL					109.1 (49.5)													_		
<b>9</b> (9,000)	T0R90005	TOR90005LL	5 (1.5) 10 (3.0)	94 (42.6)	112.9 (51.2)	3	131.1 (59.5)															
	T0R90015	TOR90015LL	15 (4.5)				153.2 (69.5)	27.36	2.67	2.67	1.96	14.84	13.78	4.56	7.83	12.40	3.39	4.76	8.15	1.18	4.72	11.77
	T0R90020	TOR90020LL	20 (6.0)				175.2 (79.5)	(695)	(68)	(68)	(50)	(377)	(350)	(116)	(199)	(315)	(86)	(121)	(207)	(30)	(120)	(299)
	TOR900LCX	TOR900LCXLL					82.6 (37.5)															
	IONSOULUA	TOTIOUULUALL	Less Chain	l			02.0 (37.3)															





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

### 6 TON UNITS



### ZINC-PLATED BULK CHAIN & CHAIN DRUM

Product Code	Description	Weight lbs. (kg)			
635221	Bulk Chain (per foot) for 3/4 ton units	.42 (.19)			
635221D500	Chain Drum (500 ft.) for 3/4 ton units	224 (101)			
85961Z	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)			

9 TON UNITS

### **AVAILABLE IN**

# 3/4 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)



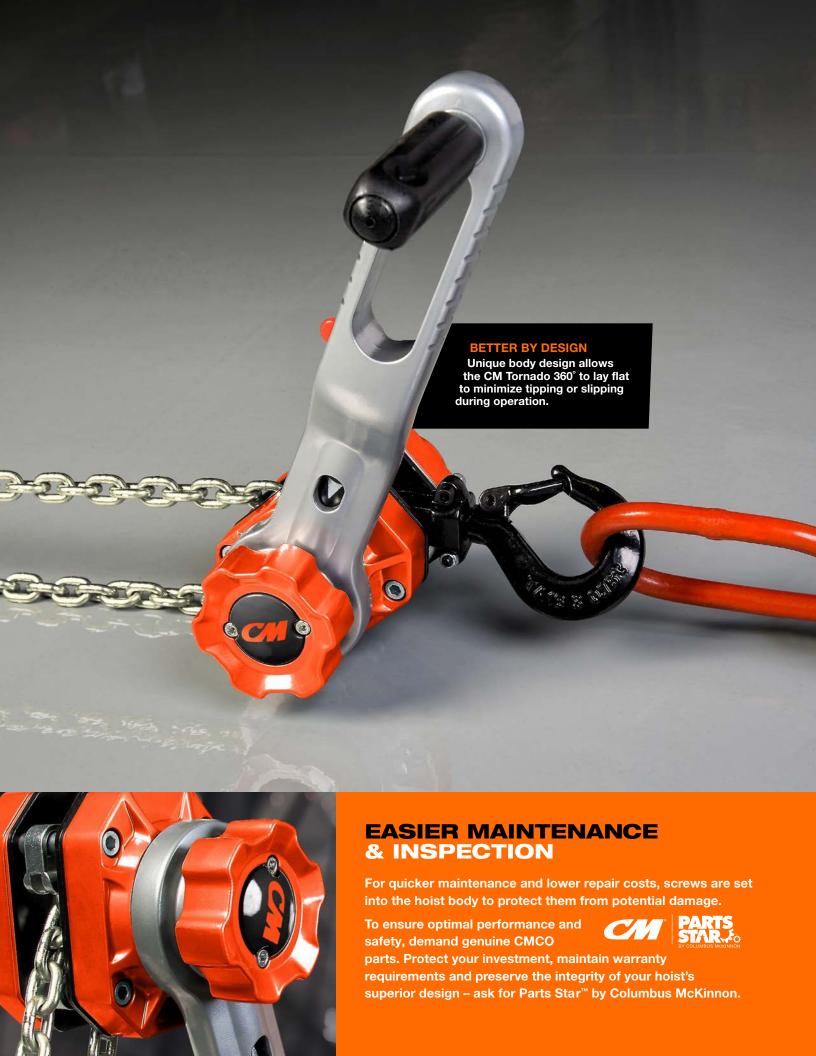
9 TON CAPACITY

HEADROOM: 27.36 in. (695 mm)

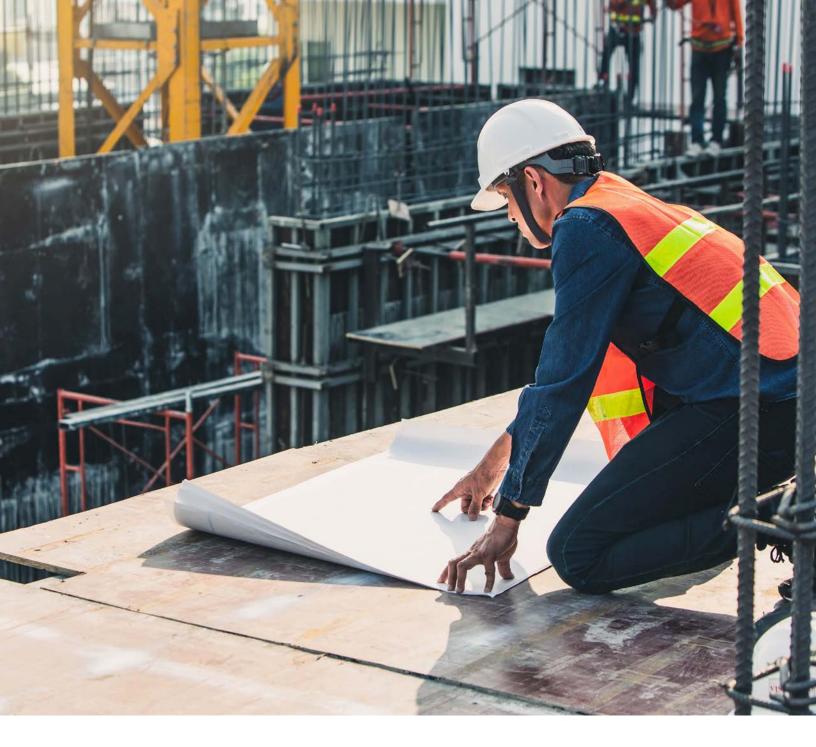
**PULL FORCE:** 

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)









LIFTING SOLUTIONS













USA CAN

p: 800.888.0985 p: 800.792.7253 p: 716.689.5400 p: 905.828.1526 f: 716.689.5400 f: 905.828.5707

www.cmco.com | CMCOPartners@cmworks.com