

# OPERATING, MAINTENANCE & PARTS MANUAL

MANUAL DE FUNCIONAMIENTO,  
MANTENIMIENTO Y PIEZAS

MAUEL D'ENTRETIEN,  
D'OPÉRATION ET DE PIÈCES

## INTEGRATED TROLLEY HOIST

POLIPASTO DE CADENA

PALAN À CHAÎNE

**CM HURRICANE™ IPR**

**CM HURRICANE™ IGR**

## INTEGRATED TROLLEY HOIST



**Before installing hoist, fill in the information below.**

Antes de instalar el polipasto, rellene los datos siguientes.

Enregistrez les informations suivantes avant de faire l'installation.

Rated Load / Carga Nominal / Charge Nominale \_\_\_\_\_

Serial No. / N° de Serie / No. de Ser. \_\_\_\_\_

Purchase Date / Fecha de Compra / Date d'achat \_\_\_\_\_

### Rated Loads:

**1/2, 1, 2, 3, 5, 10, 15 & 20 tonne  
(500, 1000, 2000, 3000, 5000,  
10000, 15000 & 20000 kg.)**

**Follow all instructions and warnings  
for inspecting, maintaining and  
operating this hoist.**

The use of any hoist presents some risk of personal injury or property damage. That risk is greatly increased if proper instructions and warnings are not followed. Before using this hoist, each operator should become thoroughly familiar with all warnings, instructions and recommendations in this manual. **Retain this manual for future reference and use.**

Forward this manual to operator.  
Failure to operate equipment as  
directed in manual may cause injury.

### Capacidades de Carga:

**1/2, 1, 2, 3, 5, 10, 15 y 20 tonne  
(500, 1000, 2000, 3000, 5000,  
10000, 15000 y 20000 kg.)**

**Siga todas las instrucciones y  
advertencias para inspeccionar,  
mantener y operar este polipasto.**

El uso de cualquier polipasto presenta algunos riesgos de daños a las personas o a las cosas. Este riesgo se ve incrementado si no se siguen correctamente las instrucciones y advertencias. Antes de usar el polipasto el operario debería estar familiarizado con todas las advertencias, instrucciones y recomendaciones de este manual. **Guarde este manual para futuras consultas.**

Entregue este manual al operario. Si el equipo no se maneja tal y como se recomienda en el presente manual, es posible que se produzcan situaciones de peligro que pueden resultar en daños personales.

### Charges nominales:

**1/2, 1, 2, 3, 5, 10, 15 et 20 tonne  
(500, 1000, 2000, 3000, 5000,  
10000, 15000 et 20000 kg.)**

**Veillez vous conformer à toutes les  
instructions et avertissements d'inspection,  
d'entretien et d'opération de ce palan.**

L'utilisation de tout appareil de levage comporte des risques de blessures ou de dégâts matériels. Ces risques sont de beaucoup accrus si les instructions et avertissements ne sont pas suivis. Tous les opérateurs devraient se familiariser complètement avec toutes les recommandations, instructions et avertissements de ce manuel avant d'utiliser ce palan. **Conservez ce manuel pour utilisation et référence future.**

Remettez ce manuel à l'opérateur.  
L'utilisation de cet équipement contrairement  
aux directives de ce manuel peut causer  
des blessures.

## **CM HOIST PARTS AND SERVICES ARE AVAILABLE IN THE UNITED STATES AND IN CANADA**

As a CM Hoist and Trolley user you are assured of reliable repair and parts services through a network of Master Parts Depots and Service Centers that are strategically located in the United States and Canada. These facilities have been selected on the basis of their demonstrated ability to handle all parts and repair requirements promptly and efficiently. To quickly obtain the name of the Master Parts Depot or Service Center located nearest you, call (800) 888-0985. Fax: (716) 689-5644.

## **LAS PIEZAS Y REPARACIONES DE LOS POLIPASTOS DE CM ESTÁN ASEGURADAS EN ESTADOS UNIDOS Y CANADÁ**

Como usuario de un polipasto y carro de CM le aseguramos cualquier reparación o la disponibilidad de cualquier pieza de repuesto a través de una red de almacenes de piezas de repuesto y centros de servicio situados estratégicamente en Estados Unidos y Canadá. Estas instalaciones se han seleccionado en base a su capacidad demostrada en la reparación de equipos y suministro de piezas de repuesto de forma rápida y eficaz. Para obtener la dirección del almacén de piezas de repuesto o del centro de servicio más cercano, llame al teléfono (800) 888-0985. Fax: (716) 689-5644 (sólo en Estados Unidos y Canadá).

## **LE SERVICE DE RÉPARATION ET DE PIÈCES POUR PALANS CM EST DISPONIBLE AUX ÉTATS-UNIS ET AU CANADA**

Soyez assurés qu'en temps d'utilisateur de palan et treuil CM, d'un service de réparation et de pièces fiable par l'entremise d'un réseau de Centres de service et de Dépôts de pièces maîtresses qui sont stratégiquement situés aux États-Unis et au Canada. Ces établissements ont été sélectionnés sur une base de leur habileté démontrée à s'occuper promptement et efficacement des besoins de réparation de pièces. Appelez le (800) 888-0985, Fax: (716) 689-5644 pour obtenir rapidement le nom du dépôt de pièces maîtresses ou du centre de service situé le plus près.

# HOIST SAFETY IS UP TO YOU...

## **⚠ WARNING**

DO NOT LIFT MORE THAN RATED LOAD.

DO OPERATE WITH MANUAL POWER ONLY (ONE OPERATOR)

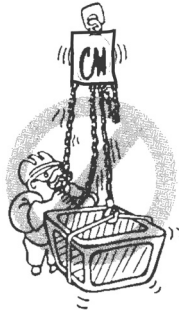
### CHOOSE THE RIGHT HOIST FOR THE JOB...

Choose a hoist with the capacity for the job. Know the capacities of your hoists and the weight of your loads.

Then match them.

The application, the size and type of load, the attachments to be used and the period of use must also be taken into consideration in selecting the right hoist for the job.

Remember, the hoist was designed to ease our burden and carelessness not only endangers the operator, but in many cases, a valuable load.

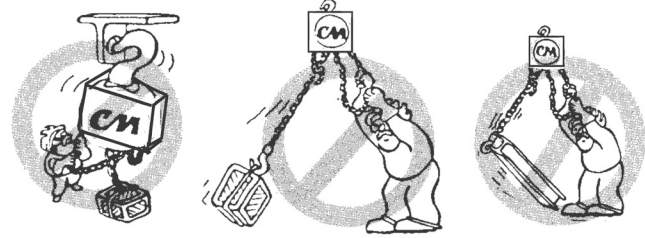


## **⚠ WARNING**

DO NOT PULL AT AN ANGLE. BE SURE HOIST AND LOAD ARE IN A STRAIGHT LINE.

DO NOT USE LOAD CHAIN AS A SLING.

### USE HOIST PROPERLY



Be sure hoist is solidly held in the uppermost part of the support hook arc.

Be sure hoist and load are in a straight line. Do not pull at an angle.

Be sure load is hooked securely. Do not tip load the hook. Do not load hook latch. Hook latch is to prevent detachment of load under slack chain conditions only.

Do not operate with hoist head resting against any object. Lift the load gently. Do not jerk it.



## **⚠ WARNING**

DO NOT OPERATE DAMAGED OR MALFUNCTIONING HOIST.

DO NOT OPERATE WITH TWISTED, KINKED, OR DAMAGED CHAIN.

### INSPECT

All hoists should be visually inspected before use, in addition to regular, periodic maintenance inspections.

Inspect hoists for operations warning notices and legibility.

Deficiencies should be noted and brought to the attention of supervisors. Be sure defective hoists are tagged and taken out of service until repairs are made.

Under no circumstances should you operate a malfunctioning hoist.



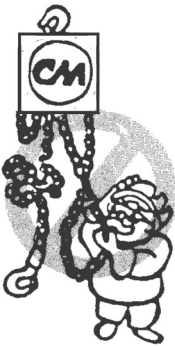
Check for gouged, twisted, distorted links and foreign material. Do not operate hoists with twisted, kinked, or damaged chain links.

Load chain should be properly lubricated.

Hooks that are bent, worn, or whose openings are enlarged beyond normal throat opening should not be used. If latch does not engage throat opening of hook, hoist should be taken out of service.

Chains should be checked for deposits of foreign material which may be carried into the hoist mechanism.

Check brake for evidence of slippage under load.



## **⚠ WARNING**

DO NOT LIFT PEOPLE OR LOADS OVER PEOPLE

### PRACTICE CAUTION ALWAYS

Do not lift co-workers with a hoist.

Make sure everyone is clear of the load when you lift.

Do not remove or obscure operational warning notices.

### OPERATOR SERVICE

#### CLEANING

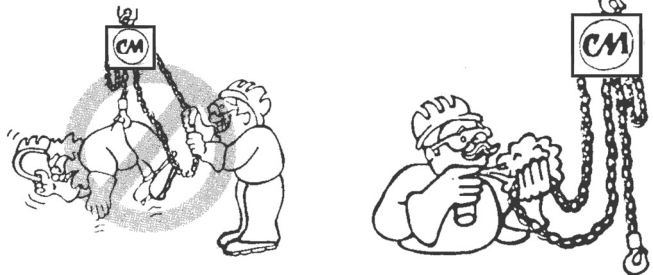
Hoists should be kept clean and free of dust, dirt, moisture, etc., which will in any way affect the operation or safety of the equipment.

#### LUBRICATION

Chain should be properly lubricated.

#### AFTER REPAIRS

Carefully operate the hoist before returning it to full service.



**VIOLATIONS OF ANY OF THE WARNINGS LISTED MAY RESULT IN SERIOUS PERSONAL INJURY TO THE OPERATOR OR NEARBY PERSONNEL BY NATURE OF RELEASED LOAD OR BROKEN HOIST COMPONENTS.**

## WARNING

Improper operation of a hoist can create a potentially hazardous situation which, if **not** avoided, could result in death, or serious injury. To avoid such a potentially hazardous situation, the operator shall:

1. **NOT** operate a malfunctioning or unusually performing hoist.
2. **NOT** operate the hoist until you have thoroughly read and understood this manual.
3. **NOT** operate a hoist which has been modified.
4. **NOT** lift or pull more than rated load for the hoist.
5. **NOT** use damaged hoist or hoist that is **Not** working properly.
6. **NOT** use hoist with twisted, kinked, damaged, or worn load chain.
7. **NOT** use the hoist to lift, support, or transport people.
8. **NOT** lift loads over people and make sure all personnel remain clear of the supported load.
9. **NOT** attempt to lengthen the load chain or repair damaged load chain.
10. Protect the hoists load chain from weld splatter or other damaging contaminants.
11. **NOT** use load chain as a sling or wrap load chain around load.
12. **NOT** apply the load to the tip of the hook or to the hook latch.
13. **NOT** apply load unless load chain is properly seated in the chain wheel(s) or sprocket(s).
14. **NOT** apply load if bearing prevents equal loading on all load supporting chains..
15. **NOT** operate beyond the limits of the load chain travel
16. **NOT** leave load supported by the hoist unattended unless specific precautions have been taken.
17. **NOT** allow the chain or hook to be used as an electrical or welding ground.
18. **NOT** allow the chain or hook to be touched by a live welding electrode.
19. **NOT** remove or obscure the warnings on the hoist.
20. **NOT** operate a hoist which has **Not** been securely attached to a suitable support..
21. **NOT** operate a hoist unless load slings or other approved single attachments are properly sized and seated in the hook saddle.
22. **NOT** operate a hoist when it is restricted from forming a straight line from hook to hook in the direction of loading.
23. **NOT** lift loads that are **Not** balanced and that the holding action is **Not** secure, taking up slack carefully.
24. **NOT** operate a hoist unless all persons are and remain clear of the supported load.
25. Report malfunctions or unusual performances of a hoist, after it has been shut down until repaired.
26. **NOT** operate a hoist on which the safety placards or decals are missing or illegible.
27. Be familiar with operating controls, procedures and warnings.

## CAUTION

Improper operation of a hoist can create a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. To avoid such a potentially hazardous situation, the operator shall:

1. Maintain a firm footing or be otherwise secured when operating the hoist.
2. Check brake function by tensioning the hoist prior to each lift or pulling operation.
3. Use hook latches. Latches are to retain slings, chains, etc. under slack conditions only.
4. Make sure the hook latches are closed and **not** supporting any parts of the load.
5. Make sure the load is free to move and will clear all obstructions.
6. Avoid swinging the load or hook.
7. Inspect the hoist regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
8. Use Columbus McKinnon parts when repairing the unit.
9. Lubricate load chain as recommended in this manual.
10. **NOT** operate except with manual power.
11. **NOT** permit more than one operator to pull on manual chain hoist at the same time. More than one operator is likely to cause hoist overload.
12. **NOT** allow your attention to be diverted from operating the hoist.
13. **NOT** allow the hoist to be subjected to sharp contact with other hoists, structures, or objects through misuse.
14. **NOT** adjust or repair the hoist unless qualified to perform such adjustments or repairs.

**The hoists are intended for general industrial use for moving loads within their load ratings. Prior to installation and operation, the user should review the application for abnormal environmental or handling conditions.**

## GENERAL SAFETY INFORMATION

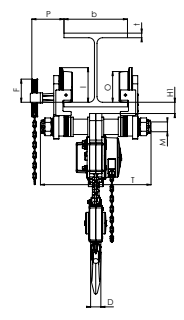
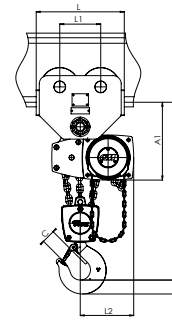
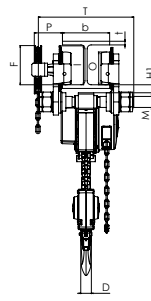
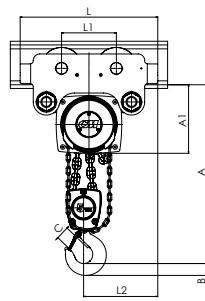
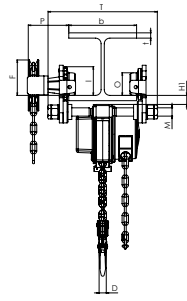
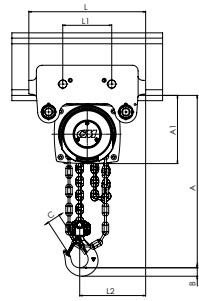
### ADVERSE ENVIRONMENTAL CONDITIONS

Do not use the hoists in areas containing flammable vapors, liquids, gasses or any combustible dust or fibers. Do not use the hoist in highly corrosive, abrasive, wet environments or in applications involving exposure to temperatures below -10°F or above 130°F.

### MOVING HAZARDOUS LOADS

The hoists are not recommended for lifting materials that could cause widespread damage if dropped. The lifting or moving of materials that could explode or cause chemical or radioactive contamination requires fail-safe, redundant supporting devices that are not incorporated into these hoists.

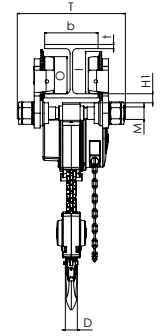
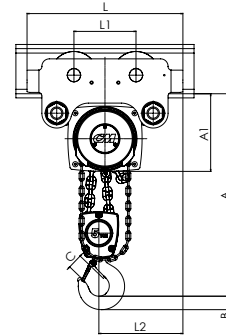
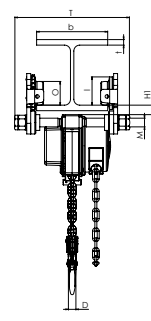
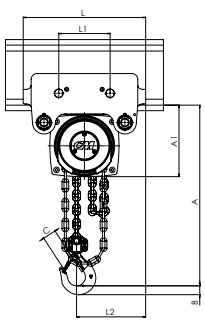
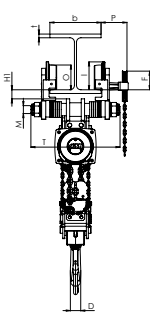
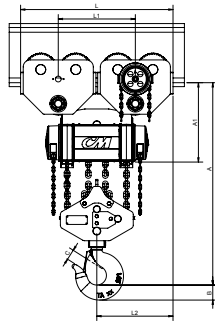
# SPECIFICATIONS



Hurricane IGR 0.5 Tonne - 3 Tonne

Hurricane IGR 5 Tonne

Hurricane IGR 10 Tonne



Hurricane IGR 20 Tonne

Hurricane IPR 0.5 Tonne - 3 Tonne

Hurricane IPR 5 Tonne

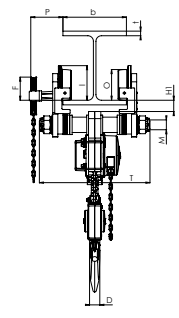
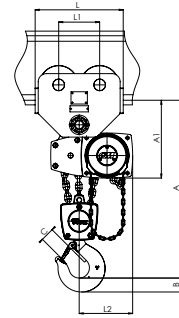
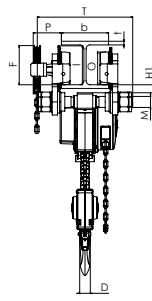
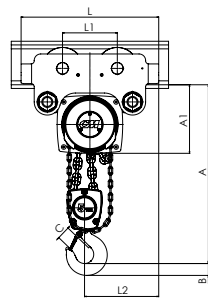
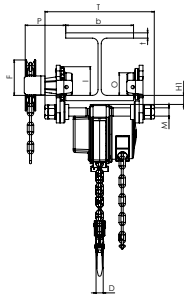
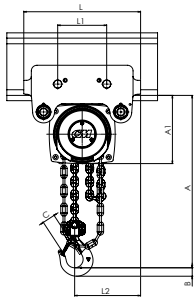
Figure 1 – Specifications - Weights

Product Code - Plain Trolley	Product Code - Geared Trolley	Load Rating (Tonnes)	Lift ft. (kg)	Net Weight Plain Trolley A lbs (kg)	Net Weight Geared Trolley A lbs (kg)	Net Weight Plain Trolley B lbs (kg)	Net Weight Geared Trolley B lbs (kg)	Reeving	Hand Chain pull to Lift Rated Load lbs (kg)	Hand Chain Overhauled to Lift Load one Foot ft. (m)	American Standard Shape Adjustment Ranges Depth in. (mm)	Minimum Radius Curve (mm)	
HU500PA10	HU500GA10	1/2	10 (3.0)	44 (19)	53 (24)	46 (20)	55 (25)	1 Chain Fall	44 (20)	30 (9.0)	0.74 (19)	A= 50-180mm B= 180-300mm	0.035 (0,9)
HU500PA15	HU500GA15		15 (4.5)	45 (20)	54 (24)	48 (21)	57 (26)						
HU500PA20	HU500GA20		20 (6.0)	47 (21)	56 (25)	51 (23)	60 (27)						
HU500PA30	HU500GA30		30 (9.0)	50 (22)	59 (27)	56 (25)	65 (29)						
HU1000PA10	HU1000GA10	1	10 (3.0)	60 (27)	71 (32)	64 (29)	73 (33)	1 Chain Fall	54 (25)	49 (15.0)	0.74 (19)	A= 50-180mm B= 180-300mm	0.035 (0,9)
HU1000PA15	HU1000GA15		15 (4.5)	62 (28)	73 (33)	66 (30)	75 (34)						
HU1000PA20	HU1000GA20		20 (6.0)	65 (29)	76 (34)	69 (31)	78 (35)						
HU1000PA30	HU1000GA30		30 (9.0)	70 (31)	81 (37)	74 (34)	83 (38)						
HU2000PA10	HU2000GA10	2	10 (3.0)	97 (43)	108 (49)	101 (46)	110 (50)	1 Chain Fall	74 (34)	71 (21.6)	0.74 (19)	A= 58-180mm B= 180-300mm	0.045 (1,15)
HU2000PA15	HU2000GA15		15 (4.5)	102 (46)	113 (51)	106 (48)	115 (52)						
HU2000PA20	HU2000GA20		20 (6.0)	106 (48)	117 (53)	110 (50)	119 (54)						
HU2000PA30	HU2000GA30		30 (9.0)	115 (52)	126 (57)	119 (54)	128 (58)						
HU3000PA10	HU3000GA10	3	10 (3.0)	170 (77)	181 (82)	174 (78)	185 (83)	1 Chain Fall	92 (42)	87 (26.5)	1.06 (27)	A= 74-180mm B= 180-300mm	A=0.059 B=0.055 (A=1,5mm B=1,4mm)
HU3000PA15	HU3000GA15		15 (4.5)	177 (80)	188 (85)	181 (82)	192 (87)						
HU3000PA20	HU3000GA20		20 (6.0)	184 (83)	195 (88)	188 (85)	199 (90)						
HU3000PA30	HU3000GA30		30 (9.0)	198 (89)	209 (95)	202 (92)	213 (97)						
HU5000PA10	HU5000GA10	5	10 (3.0)	275 (124)	286 (130)	284 (129)	295 (134)	2 Chain Falls	76 (35)	174 (53.0)	1.06 (27)	A= 98-180mm B= 180-300mm	A=0.078 B=0.070 (A=2,0mm B=1,8mm)
HU5000PA15	HU5000GA15		15 (4.5)	289 (131)	300 (136)	298 (135)	309 (140)						
HU5000PA20	HU5000GA20		20 (6.0)	304 (138)	315 (143)	313 (142)	324 (145)						
HU5000PA30	HU5000GA30		30 (9.0)	333 (151)	344 (156)	342 (155)	353 (160)						
-	HU10000GB10	10	10 (3.0)	-	-	-	445 (202)	3 Chain Falls	102 (46)	261 (79.5)	1.57 (40)	B= 125-310mm	0.070 (1,8)
-	HU10000GB15		15 (4.5)	-	-	-	466 (211)						
-	HU10000GB20		20 (6.0)	-	-	-	488 (221)						
-	HU10000GB30		30 (9.0)	-	-	-	531 (241)						
-	HU15000GB10	15	10 (3.0)	-	-	-	894 (406)	6 Chain Falls	2x76 (2x34)	522 (2x261)	1.57 (40)	B= 180-310mm	3.75 (9,5mm)
-	HU15000GB15		15 (4.5)	-	-	-	936 (425)						
-	HU15000GB20		20 (6.0)	-	-	-	978 (444)						
-	HU15000GB30		30 (9.0)	-	-	-	1062 (482)						
-	HU20000GB10	20	10 (3.0)	-	-	-	894 (406)	6 Chain Falls	2x102 (2x46)	522 (2x261)	1.57 (40)	B= 180-310mm	3.75 (9,5mm)
-	HU20000GB15		15 (4.5)	-	-	-	936 (425)						
-	HU20000GB20		20 (6.0)	-	-	-	978 (444)						
-	HU20000GB30		30 (9.0)	-	-	-	1062 (482)						



# SPECIFICATIONS

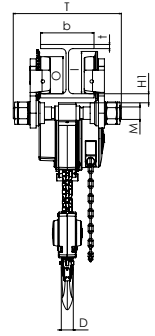
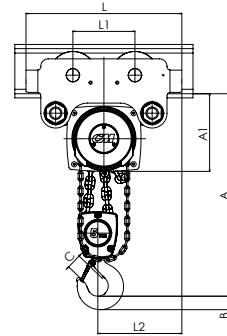
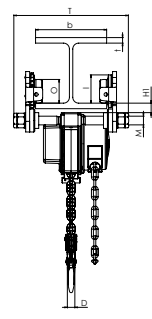
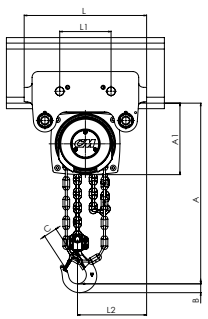
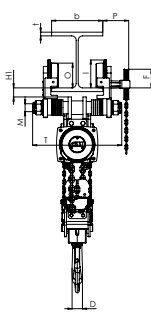
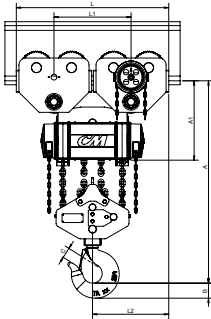
ENGLISH



Hurricane IGR 0.5 Tonne - 3 Tonne

Hurricane IGR 5 Tonne

Hurricane IGR 10 Tonne



Hurricane IGR 20 Tonne

Hurricane IPR 0.5 Tonne - 3 Tonne

Hurricane IPR 5 Tonne

Figure 2 – Specifications - Dimensions

Product Code - Plain Trolley	Product Code - Geared Trolley	Load Rating (Tonnes)	Lift ft. (kg)	Reeving	Dimensions in inches (mm)																
					A	A1	B	C	D	F (geared)	H1	I (pushed)	I (geared)	L	L1	L2	M	O	P (geared)	T (A size)	T (B size)
HU500PA10	HU500GA10	1/2	10 (3.0)	1 Chain Fall	9.65 (245)	6.22 (158)	0.67 (17)	0.94 (24)	0.55 (14)	3.62 (92)	0.96 (24.5)	2.81 (71.5)	3.01 (76.5)	10.63 (270)	5.12 (130)	6.26 (159)	M18	2.36 (60)	4.25 (108)	11.02 (280)	15.75 (400)
HU500PA15	HU500GA15		15 (4.5)																		
HU500PA20	HU500GA20		20 (6.0)																		
HU500PA30	HU500GA30		30 (9.0)																		
HU1000PA10	HU1000GA10	1	10 (3.0)	1 Chain Fall	10.71 (272)	7.01 (178)	0.87 (22)	1.14 (29)	0.75 (19)	3.62 (92)	0.94 (24)	2.81 (71.5)	3.01 (76.5)	12.2 (310)	5.12 (130)	6.89 (175)	M22	2.36 (60)	4.33 (110)	11.42 (290)	16.14 (410)
HU1000PA15	HU1000GA15		15 (4.5)																		
HU1000PA20	HU1000GA20		20 (6.0)																		
HU1000PA30	HU1000GA30		30 (9.0)																		
HU2000PA10	HU2000GA10	2	10 (3.0)	1 Chain Fall	12.72 (323)	8.09 (205.5)	1.18 (30)	1.38 (35)	0.87 (22)	3.58 (91)	0.93 (23.5)	3.76 (95.5)	3.86 (98)	14.17 (360)	5.91 (150)	8.15 (207)	M27	3.15 (80)	4.41 (112)	12.01 (305)	16.73 (425)
HU2000PA15	HU2000GA15		15 (4.5)																		
HU2000PA20	HU2000GA20		20 (6.0)																		
HU2000PA30	HU2000GA30		30 (9.0)																		
HU3000PA10	HU3000GA10	3	10 (3.0)	1 Chain Fall	15.04 (382)	9.92 (252)	1.5 (38)	1.57 (40)	1.18 (30)	4.21 (107)	1.26 (32)	5.16 (131)	5.22 (132.5)	17.52 (445)	7.09 (180)	10.08 (256)	M30	4.41 (112)	4.41 (112)	12.6 (320)	17.32 (440)
HU3000PA15	HU3000GA15		15 (4.5)																		
HU3000PA20	HU3000GA20		20 (6.0)																		
HU3000PA30	HU3000GA30		30 (9.0)																		
HU5000PA10	HU5000GA10	5	10 (3.0)	2 Chain Falls	21.65 (550)	10.26 (260.5)	1.77 (45)	1.85 (47)	1.46 (37)	5.89 (149.5)	1.2 (30.5)	5.61 (142.5)	5.85 (148.5)	20.67 (525)	8.23 (209)	11.14 (283)	M42	4.92 (125)	4.61 (117)	14.33 (364)	19.06 (484)
HU5000PA15	HU5000GA15		15 (4.5)																		
HU5000PA20	HU5000GA20		20 (6.0)																		
HU5000PA30	HU5000GA30		30 (9.0)																		
-	HU10000GB10	10	10 (3.0)	3 Chain Falls	30.87 (784)	14.96 (380)	2.68 (68)	2.68 (68)	1.97 (50)	4.45 (113)	2.17 (55)	-	6.65 (169)	16.93 (430)	7.87 (200)	10.28 (261)	M48	5.91 (150)	6.22 (158)	-	21.26 (540)
-	HU10000GB15		15 (4.5)																		
-	HU10000GB20		20 (6.0)																		
-	HU10000GB30		30 (9.0)																		
-	HU15000GB10	15	10 (3.0)	6 Chain Falls	45.47 (1155)	17.83 (453)	3.39 (86)	2.52 (64)	2.2 (56)	4.45 (113)	2.17 (55)	-	6.65 (169)	34.25 (870)	17.32 (440)	17.13 (435)	M48	5.91 (150)	6.22 (158)	-	21.26 (540)
-	HU15000GB15		15 (4.5)																		
-	HU15000GB20		20 (6.0)																		
-	HU15000GB30		30 (9.0)																		
-	HU20000GB10	20	10 (3.0)	6 Chain Falls	45.47 (1155)	17.83 (453)	3.39 (86)	2.52 (64)	2.2 (56)	4.45 (113)	2.17 (55)	-	6.65 (169)	34.25 (870)	17.32 (440)	17.13 (435)	M48	5.91 (150)	6.22 (158)	-	21.26 (540)
-	HU20000GB15		15 (4.5)																		
-	HU20000GB20		20 (6.0)																		
-	HU20000GB30		30 (9.0)																		



## GENERAL INFORMATION

The CM® Hurricane 360 hand operated chain hoist has been expanded to include trolley suspended units. The CM Hurricane IPR/IPG Integrated Trolley Hoist consists of the lightweight, durable Hurricane 360 Hand Hoist rigidly suspended from a four wheel trolley. To suspend the hoist from the trolley, the upper hook is replaced by a pair of load bars. All other components of the hoist including the lower hook parts are shown and described in Hurricane 360 Hoist manual (P/N 656).

In addition to the Hurricane IPR/IPG Integrated Trolley manual (P/N 192048551), please review the hoist manual (P/N 192048547) for operating instructions, safety procedures, inspections and maintenance procedures, lubrication information, troubleshooting, hoist exploded view, parts list and load chain reeving information.

Hoists with integrated trolleys with load ratings of 1/2, 1, 2, 3, 5, 10 and 20 metric ton are available and this manual applies to all of these units. Standard lifts are 10, 15, 20, and 30 feet and hoists with longer lifts are available on a special, per order basis. Zinc-plated steel hand chain is provided with a drop that is 2 feet less than the lift of the hoist.

CM® Hurricane IPR/IPG Integrated Trolley Hoists are built in accordance with the specifications contained herein and at the time of manufacture complies with our interpretation of the American Society of Mechanical Engineers (ASME) Standard B30.16, "Overhead Hoists." Copies of this standard can be obtained from ASME Order Department, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300, USA.

This manual contains important information to help you properly install, operate and maintain your CM® Hurricane IPR/IPG Integrated Trolley Hoists for maximum performance, economy and safety.

Please study its contents thoroughly before putting your Integrated Trolley Hoists into operation. By practicing correct operating procedures and by carrying out the recommended preventive maintenance suggestions, you will be assured of long, dependable and safe service.

After you have completely familiarized yourself with the contents of this manual, we recommend that you carefully file it for future reference.

## REPAIR/REPLACEMENT POLICY

All Columbus McKinnon (CM®) Hurricane IPR/IPG Integrated Trolley Hoists are inspected and performance tested prior to shipment. If any properly maintained hoist develops a performance problem, within one year of shipment, due to a material or workmanship defect, as verified by CM, repair or replacement of the unit will be made to the original purchaser without charge. This repair/replacement policy applies only to CM® Hurricane IPR/IPG Integrated Trolley Hoists installed, maintained and operated as outlined in this manual, and specifically excludes hoists subject to normal wear, abuse, improper installation, improper or inadequate maintenance, hostile environmental effects and unauthorized repairs/modifications.

We reserve the right to change materials or design if, in our opinion, such changes will improve our product. Abuse, repair by an unauthorized person, or use of non-CM® replacement parts voids the guarantee and could lead to dangerous operation. For full Terms of Sale, see Sales Order Acknowledgement. Also, refer to the back cover for Limitations of Warranties, Remedies and Damages, and Indemnification and Safe Operation.

## UNPACKING

After opening the carton, the integrated trolley hoist should be carefully inspected for damage which may have occurred during shipment or handling. Check the hoist frame for dents or cracks and inspect the load chain for nicks and gouges. If shipping damage has occurred, refer to the packing list envelope on the carton for claim procedure.

### **WARNING**

Operating a unit with obvious external damage may cause load to drop and that may result in personal injury and/or property damage.

### **WARNING**

#### **TO AVOID INJURY:**

Carefully check unit for external damage prior to installation.

## INSTALLATION

Before installing the hoist:

1. Determine the weight of the load that is to be lifted or moved and make sure it does not exceed the rated load of the hoist.
2. Make sure the support or beam to which the trolley is attached is strong enough to hold several times the weight of the load to be lifted or moved. Be sure the integrated trolley hoist is solidly held on the beam.

### **WARNING**

Attaching the hoist to an inadequate support may allow the hoist and load to fall and cause injury and/or property damage.

#### **TO AVOID INJURY:**

Make sure the structure has sufficient strength to hold several times the hoist and its rated load.

3. The area in which the hoist is installed must provide sufficient room for:
  - The operator to operate the hand chain.
  - The operator and other personnel to stand clear of the load at all times.
  - Firm footing for the operator.
  - Clearance between the hoist frame and any object.
  - The frame to be free to swivel on the upper hook.

## BEFORE INSTALLING THE TROLLEY:

### **WARNING**

Operating the trolley hoist on a beam that has no rail stops may allow the trolley hoist to fall off the end of the beam.

#### **TO AVOID INJURY:**

Install rail stops at each end of the beam on which the trolley hoist is to operate.

The railstops must be positioned so as to not exert impact force on the hoist portion of the unit or the trolley wheels. They must contact the ends of the trolley side frames. Due to the variations in beam flange widths, it is suggested that the beam flange width be measured to determine the necessary trolley flange width adjustment. The distance between trackwheel flanges (dimension "X") should be 1/8 to 3/16 inch greater than the beam flange width for straight runway beams, and 3/16 to 1/4 inch greater than the beam flange width if runway system includes sharp curves.

## INSPECTION OF THE ATTACHMENT POINT

The attachment point for the hoist must be selected so that the supporting structure to which it is to be fitted has sufficient stability and to ensure that the expected forces can be safely absorbed. The unit must align freely also under load in order to avoid impermissible additional loading. The selection and calculation of the appropriate supporting structure are the responsibility of the operating company.

## INSTALLING THE TROLLEY UP TO 5 TONNES (5000 KG)

The trolleys are built to fit beam range A or B which is indicated on the identity plate. Before installation, make sure that the track beam width is within this beam range. The further procedure for assembly of the unit on the track beams depends on whether the track beam has an accessible open end or not. If the beam has an open end, it is recommended that the unit be preassembled on the ground and then be pushed onto the open end of the beam.

1. Unscrew locking nuts (10) and hexagonal nuts (9) from the suspension bolt (1) and remove both side plates (2) from the trolley.
2. Measure flange width "b" of the track beam. See Figure 3.
3. Adjust or pre-adjust dimension "B" between the outer flanges of the round nuts (6) on the four free threaded ends of the suspension bolts (1). Make sure that the four drill holes in the round nuts face outwards. Select dimension "B" between the outer flanges of the round nuts on the suspension bolts in such a way that it corresponds to flange width "b" plus 4 mm. Ensure that the suspension bar (4) is centered between the round nuts (6).
4. Assembly of one side plate: The roll pins (7) fitted to the side plate (2) must be seated in one of the four drill holes of the round nuts (6). If necessary the position of the round nuts must be slightly re-adjusted.
5. Position the washer (8) and tighten the hexagonal nuts (9). Finally screw on the locking nuts (10) by hand and tighten by 1/4 to 1/2 rotation.

**ATTENTION: THE LOCKING NUTS (10) MUST ALWAYS BE FITTED!**

6. Place the second side plate onto the suspension bolts without tightening. Then screw on washers (8), hexagonal nuts (9) and locking nuts (10) without tightening to facilitate assembly.
7. Place the entire pre-assembled unit onto the beam.

**ATTENTION: PAY ATTENTION TO THE POSITION OF THE GEAR DRIVE (5).**

8. Insert the roll pins (7) driven into the second side plate in one of the appropriate four drill holes of the round nuts (6). If necessary the round nuts must be slightly re-adjusted.
9. Tighten the hexagonal nuts (9) on the second side plate. Finally screw on the locking nuts (10) by hand and tighten by 1/4 to 1/2 rotation.

**ATTENTION: THE LOCKING NUTS (10) MUST ALWAYS BE FITTED!**

10. Check the fitted unit:
  - The lateral play dimension "A" must not exceed 2 mm between the wheel flange (3) and the outer edge of the beam.
  - The suspension bar (4) must be positioned centrally between the side plates.
  - All nuts (9) and locking nuts (10) must be firmly tightened.

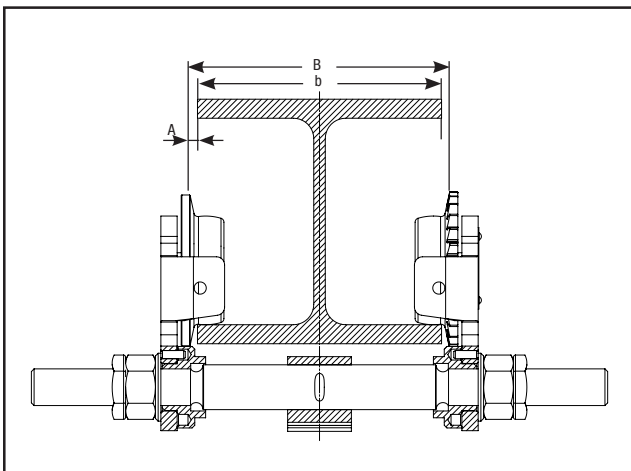


Figure 3 - Trolley Installed on I-Beam

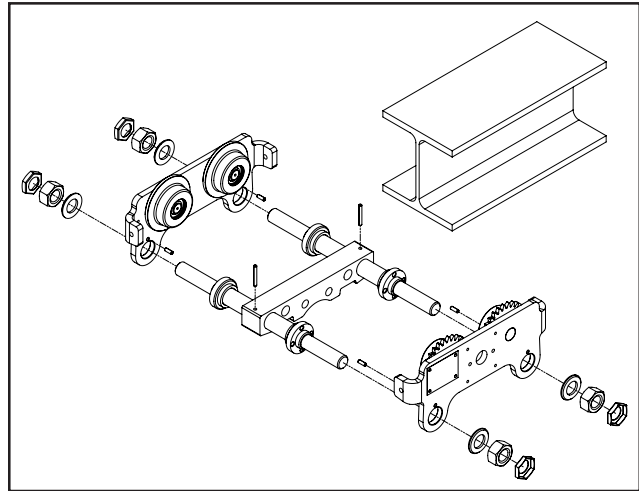


Figure 4 - Trolley Installation

**INSTALLING THE TROLLEY, 10 - 20 TONNES (10000 KG - 20000 KG)**

1. 15 and 20 tonne Integrated Trolley units are shipped from the manufacturer with both trolleys connected by a bolt through the bumper mounting holes. There is one bolt on each side. These bolts must be removed before operation. Failure to do so can affect wheel contact with beam and trolley performance on curved beams. See Figure 5 for details.
2. Measure the flange width of the beam.

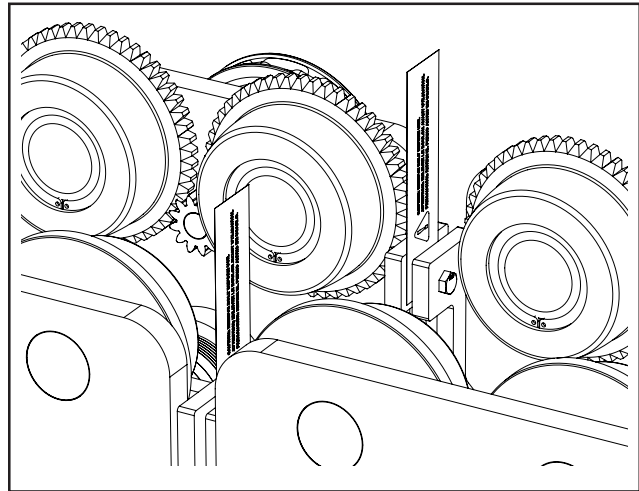


Figure 5 - Warning Tag

3. Evenly distribute the spacer sleeves and spacer washers on both sides of the suspension bolt accordingly. A clearance of 2 mm between the wheel flange and the beam flange must be maintained (inner dimension = flange width + 4 mm).
4. After adjustment of the inner dimension, evenly distribute the remaining spacer sleeves and spacer washers on the outside of the side plates on the suspension bolt. In each case, at least 3 spacer washers and 1 spacer sleeve must be mounted between the side plates and the castle nut.

Tip: For easier assembly, tighten one side plate. Observe the required position of the drive side. Only slide on the other side plate without tightening.

5. Then lift the entire unit onto the track beam and firmly tighten all castle nuts.
6. Secure all castle nuts with cotter pins.



**ATTENTION: A TROLLEY MUST NEVER BE USED ON A BEAM WITH A FLANGE WIDTH THAT EXCEEDS THE MAXIMUM ADJUSTABLE WIDTH OF THE TROLLEY (OBSERVE TOTAL CLEARANCE OF 5 MM, DEPENDS ON MODEL) OR WITH A PROFILE WHICH DOES NOT CORRESPOND TO THE PROFILE THE TROLLEY HAS BEEN DESIGNED FOR.**

**SHORTEN OR EXTEND THE HAND CHAIN**

Adjust the length of the hand chain so that the distance of the lower end to the floor is between 500 – 1000 mm.

NOTE
For safety reasons, hand chain links may only be used once.

- Look for the non-welded link of the hand chain, bend to open and discard it.
- Shorten or extend the chain to the required length.

**ATTENTION: ALWAYS REMOVE OR ADD AN EVEN NUMBER OF CHAIN LINKS.**


- Use a new link to close the loose chain ends by bending it (for extending the hand chain, two new chain links are required).


**ATTENTION: MAKE SURE THAT HAND CHAINS ARE NOT TWISTED WHILE THEY ARE FITTED.**

Immediately after installation, operate trolley with a capacity load over the entire length of runway or monorail system to be sure that all adjustments and operations are satisfactory.

When applying a load, it should be directly under the trolley. Avoid off center loading of any kind. Side loading may spread trolley side frames.

On systems with curves, the edges of the rail at the curved sections should be lightly lubricated with grease.

 <b>WARNING</b>
If washer spacing recommendations are not followed, trolley hoist may fall from beam.
TO AVOID INJURY:
Measure the actual beam flange on which the trolley hoist is to operate and use Figure 3 to determine the arrangement of the spacer washers for that flange width.

 <b>WARNING</b>
An excessively worn beam flange may fail and allow the trolley hoist to fall from the beam.
TO AVOID INJURY:
Periodically inspect the beam flange for wear. Replace beam if flange is worn.

**INSPECTION**

To maintain continuous and satisfactory operation, a regular inspection procedure must be initiated to replace worn or damaged parts before they become unsafe. Inspection intervals must be determined by the individual application and are based on the type of service to which your hoist will be subjected and the degree of exposure to wear, deterioration or malfunction of the critical components. As a minimum, a monthly inspection of the suspension plate, trackwheels and pin nuts should be carried out.

The type of service to which the hoist is subjected can be classified as “Normal”, “Heavy” and “Severe”.

**Normal Service.** Involves operation with randomly distributed loads within the rated load limit, or uniform loads less than 65% of rated load for not more than 25% of the time.

**Heavy Service.** Involves operating the hoist within rated load limit which exceeds normal service.

**Severe Service.** Is normal or heavy service with abnormal operating conditions.

Following are the recommended, minimum intervals of inspection. When the unit is subjected to extra heavy usage or dusty, gritty, moist, or other adverse atmospheric conditions, shorter time intervals must be assigned. During the Periodic Inspection, inspection must be made of all parts for unusual wear, corrosion effect or damage in addition to those specifically mentioned.

**MINIMUM INSPECTION SCHEDULE**


**Frequent Inspections.** These inspections are visual examinations by the operator or other designated personnel. Records of such inspections are not required. The frequent inspections are to be performed monthly for normal service, weekly to monthly for heavy service, and daily to weekly for severe service and they should include those items listed in the hoist installation manual (P/N 656).

**Periodic Inspections.** These inspections are visual inspections of external conditions by an appointed person. Records of periodic inspections are to be kept to provide the basis for continuing evaluation of the condition of the hoist.

Periodic inspections are to be performed yearly for normal service, semi-annually for heavy service and quarterly for severe service and they are to include those items listed in hoist installation manual (P/N 656).

Any parts that are deemed unserviceable are to be replaced with new parts before the unit is returned to service. It is very important that the unserviceable parts be destroyed and properly disposed of to prevent their possible future use as a repair item.

**REPAIR PARTS LIST**

 <b>WARNING</b>
Using "commercial" or other manufacturer's parts to repair the CM Hurricane 360 Integrated Trolley may cause load loss.
TO AVOID INJURY:
Order all replacement parts from CM. Some parts may look alike but often CM parts are made of specific materials or processed to achieve specific properties.

**ORDERING INSTRUCTIONS**

The following information must accompany all correspondence orders for replacement parts:

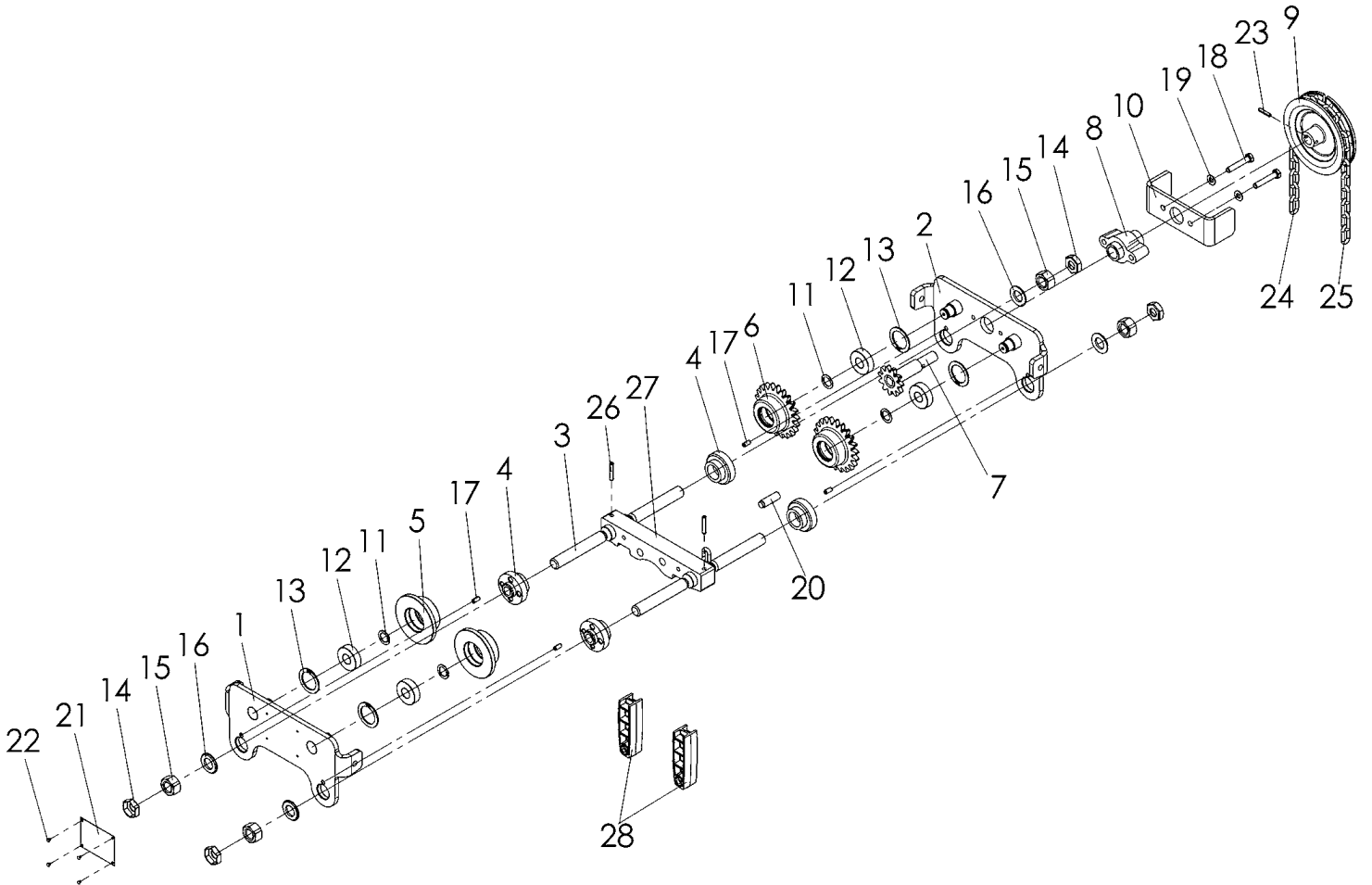
1. Serial number of trolley (two letters stamped on the identification plate).
2. Capacity of trolley from nameplate.
3. Part name from parts list.
4. Part number and key number of part from parts list.
5. Quantity of parts required.

Parts should be ordered from CM's authorized Master Parts Depot conveniently located throughout the United States and Canada. Refer to [www.cmworks.com](http://www.cmworks.com) to locate the Master Parts Depot nearest you.



**FIGURE 6: PUSH AND GEARED TROLLEY 0.5 TONNE - 2 TONNE**

ENGLISH



**FIGURE 6: PUSH AND GEARED TROLLEY 0.5 TONNE - 2 TONNE**

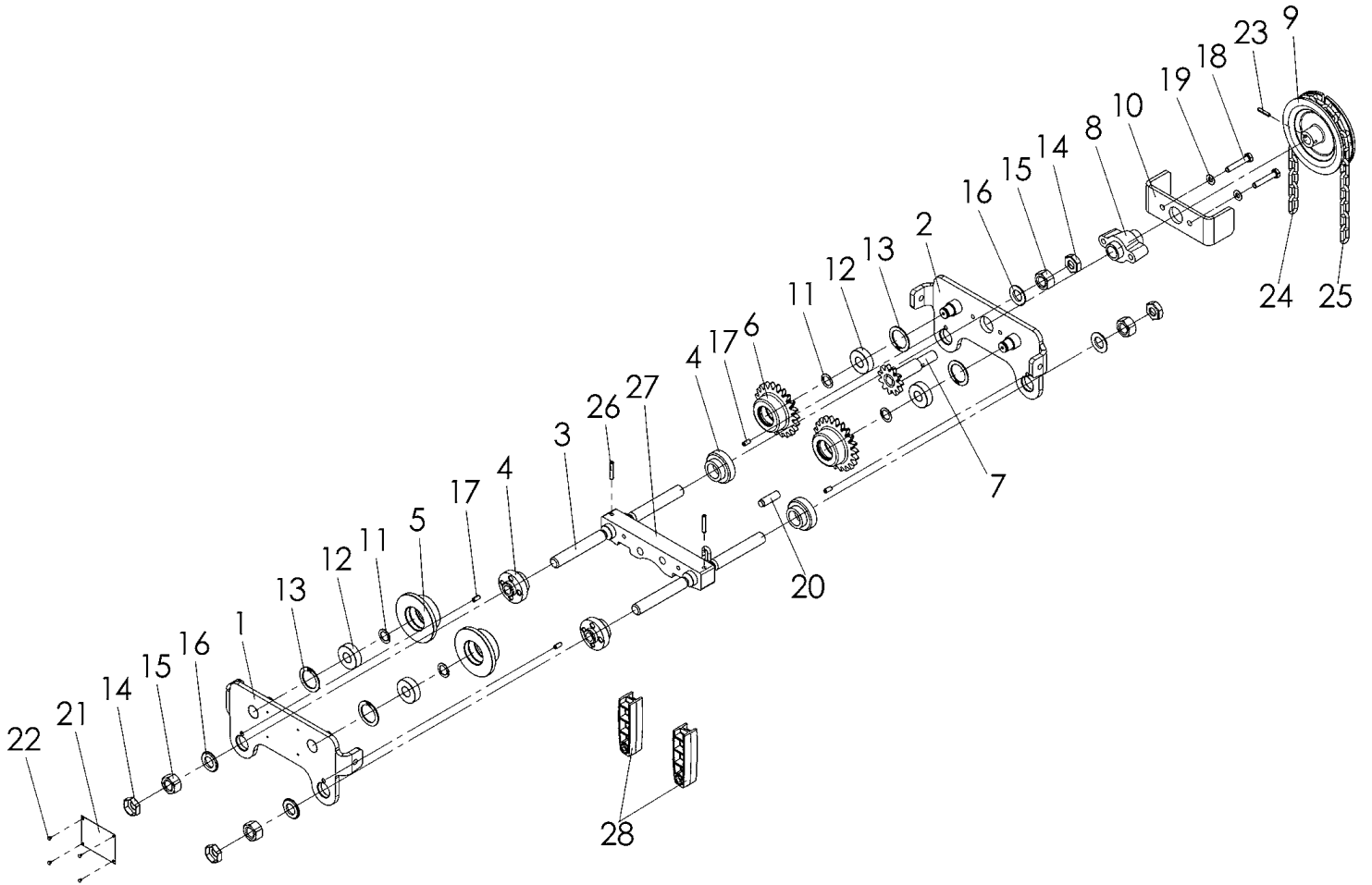
Ref	Description	Capacity			Qty.
		0,5 t Single Reeved	1,0 t Single Reeved	2,0 t Single Reeved	
1	Side Plate, Geared Wheel Side	00550133	00559089	00550137	1
2	Side Plate, Plain Wheel Side	00550135	00559096	00550139	1
3	Load Bar, Flange Width A	00552000	00552002	00552004	2
	Load Bar, Flange Width B	00552001	00552003	00552005	2
4	Nut	00559083	00559090	00559146	4
5	Track Wheel, Plain	00508207	00508207	00508208	2
6	Track Wheel, Geared	00508211	00508211	00508212	1
7*	Driving Pinion, Handwheel Assembly	-	-	-	1
8*	Bearing Block, Handwheel Assembly	-	-	-	1
9*	Hand chain wheel	-	-	-	1
10*	Hand chain guide	-	-	-	1
11	Retaining ring	09129029	09129029	09129025	4
12	Bearing	09151074	09151074	09151011	4
13	Retaining ring	09130024	09130024	09130027	4
14	Self-locking Counter Nut	09115151	09115152	09115153	4
15	Hex Nut	09115081	09115089	09115803	4
16	Washer	09121115	09121021	09121146	4
17	Spring pin	09134067	091340055	09134057	4
18*	Screw, Handwheel Assembly	-	-	-	2
19*	Washer, Handwheel Assembly	-	-	-	2
20	Bolt	00550129	00550119	00550141	1
21	Name Plate, Geared Trolley*	00550259	00550259	00550259	1
21	Name Plate, Plain Trolley	192038987	192038987	192038987	1
22	Round head grooved pin	09128004	09128004	09128004	4
23	Spring Pin, Handwheel Assembly	-	-	-	1
24*	Hand Chain, Handwheel Assembly	04307654	04307654	04307654	As Req**
25*	Connecting Link, Handwheel Assembly	04307654CZPB	04307654CZPB	04307654CZPB	1-2
26	Spring pin	09134058	09134074	09134084	2
27	Middle bar	00550130	00550126	00550140	1
28	End cover	00400725	00400724	00400728	2
29*	Handwheel and Gear Kit, Geared Trolley (includes 7, 8, 9, 10, 19, 18 and 23)	192039060	192039061	192039062	1

\*These items only required on Geared Trolley Hoists. These items included in Handwheel and Gear Kit for Geared Trolleys. See table above.

\*\*Please inform Customer Service of requested hand chain drop length. Actual chain length will be 2 x (Drop Length) + 0.72 ft

**FIGURE 7: PUSH AND GEARED TROLLEY 3 TONNE - 5 TONNE**

**ENGLISH**



**FIGURE 7: PUSH AND GEARED TROLLEY 3 TONNE - 5 TONNE**

Ref	Description	Capacity		Qty.
		3,0 t Single Reeved	5,0 t Single Reeved	
1	Side Plate, Geared Wheel Side	00550145	00550149	1
2	Side Plate, Plain Wheel Side	00550146	00550151	1
3	Load Bar, Flange Width A	00552006	00552008	2
	Load Bar, Flange Width B	00552007	00552009	2
4	Nut	00559157	00559168	4
5	Track Wheel, Plain	00508209	00508210	2
6	Track Wheel, Geared	00508213	00508214	2
7*	Driving Pinion, Handwheel Assembly	-	-	1
8*	Bearing Block, Handwheel Assembly	-	-	1
9*	Hand chain wheel	-	-	1
10*	Hand chain guide	-	-	1
11	Retaining ring	09129002	09129003	4
12	Bearing	09151046	09151079	8
13	Retaining ring	09130046	09130060	4
14	Self-Locking Counter Nut	09115154	09115155	4
15	Hex Nut	09115090	09115156	4
16	Washer	09121016	09121213	4
17	Spring pin	09134054	09134120	4
18*	Screw, Handwheel Assembly	-	-	2
19*	Washer, Handwheel Assembly	-	-	2
20	Bolt	00550147	00550147	1
21	Name Plate, Push Trolley	192038987	192038987	1
21	Name Plate, Geared Trolley*	00550259	00550259	1
22	Round head grooved pin	09128004	09128004	4
23*	Spring Pin, Handwheel Assembly	09134052	09134052	1
24*	Hand Chain, Handwheel Assembly	04307654	04307654	As Req*
25*	Connecting Link, Handwheel Assembly	04307654CZPB	04307654CZPB	1-2
26	Spring pin	09134084	09134047	2
27	Middle bar	00550142	00550128	1
28	End cover	00400733	00400733	2
29*	Handwheel and Gear Kit, Geared Trolley (includes 7, 8, 9, 10, 19, 18 and 23)	192039063	192039064	1

\*These items only required on Geared Trolley Hoists. These items included in Handwheel and Gear Kit for Geared Trolleys. See table above.

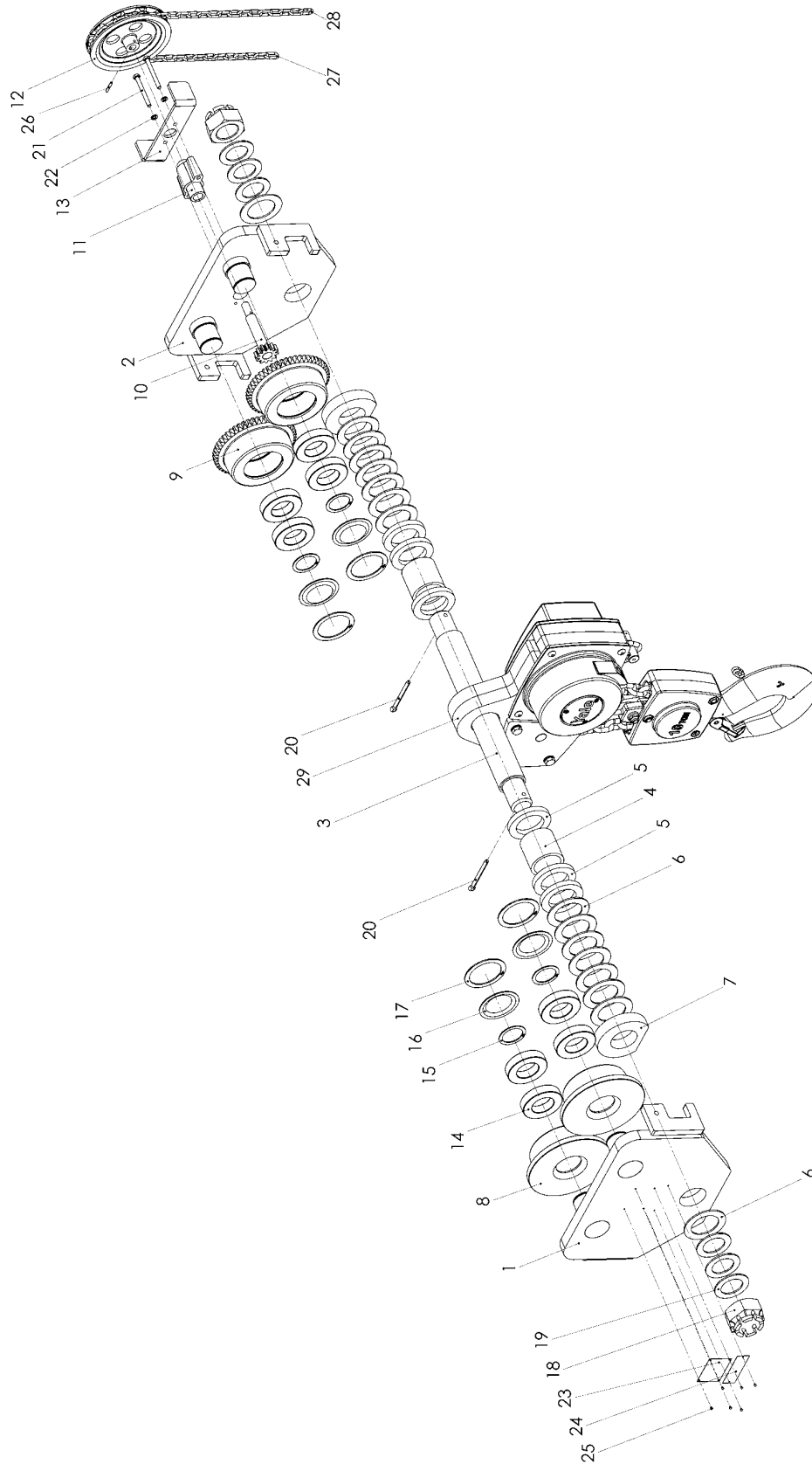
\*\*Please inform Customer Service of requested hand chain drop length. Actual chain length will be 2 x (Drop Length) + 0.72 ft

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**FIGURE 8: GEARED TROLLEY 10 TONNE**

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**FIGURE 8: GEARED TROLLEY 10 TONNE**

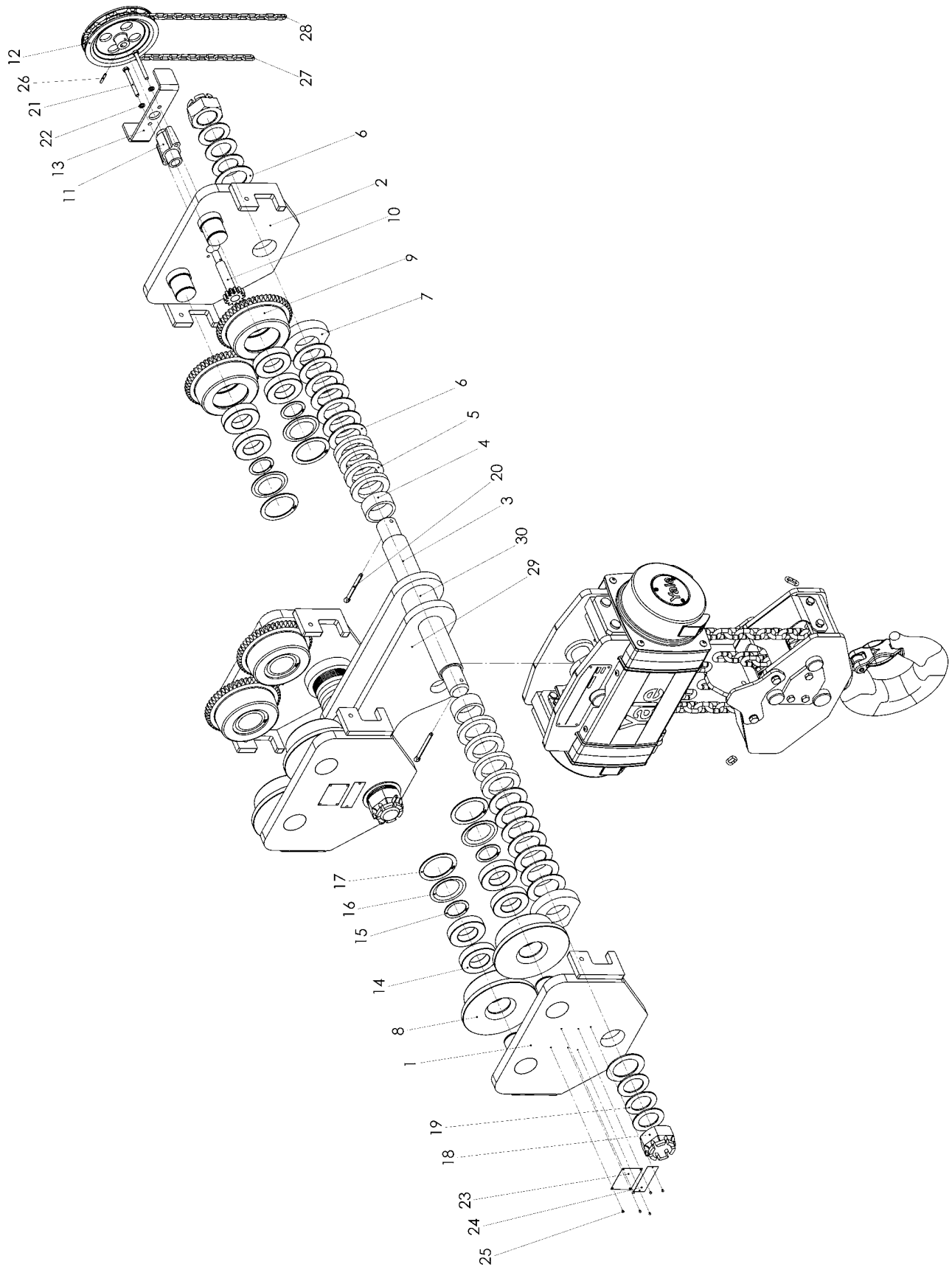
Ref	Description	Capacity	Qty.
		10,0 t Single Reeved	
1	Side Plate, Plain Wheel Side	00530004	1
2	Side Plate, Geared Wheel Side	00530005	1
3	Load Bar, Flange Width B	00530009	1
4	Spacer Sleeve	00530010	2
5	Spacer Washer, Thick	00530011	6
6	Spacer Washer, Thin	00530012	16
7	Brace	00530025	2
8	Track Wheel, Plain	00530006	2
9	Track Wheel, Geared	00530007	2
10	Driving Pinion, Handwheel Assembly	-	1
11	Bearing Block, Handwheel Assembly	-	1
12	Hand chain wheel	-	1
13	Hand chain guide	-	1
14	Groove ball bearing	09150020	8
15	Retaining ring	09129010	4
16	Cap	00530008	4
17	Retaining ring	09130009	4
18	Castle nut	00530014	2
19	Washer	00530013	6
20	Cotter pin	09125035	2
21	Screw, Handwheel Assembly	-	2
22	Lockwasher, Handwheel Assembly	-	2
23	Name plate	00508223	1
24	Capacity plate	00407702	1
25	Round head grooved pin	09128004	6
26	Spring Pin, Handwheel Assembly	-	1
27	Hand Chain, Handwheel Assembly	004307654	As Req*
28	Connecting Link, Handwheel Assembly	00404733	1-2
29	Suspension lug	00401078	1
30	Handwheel and Gear Kit, Geared Trolley (includes 10, 11, 12, 13, 21, 22, 26)	192047895	1

\* Please inform Customer Service of requested hand chain drop length. Actual chain length will be 2 x (Drop Length) + 0.72 ft

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**FIGURE 9: GEARED TROLLEY 15 TONNE - 20 TONNE**

**ENGLISH**



**FIGURE 9: GEARED TROLLEY 15 TONNE - 20 TONNE**

Ref	Description	Capacity	Qty.
		15,0 - 20,0 t Sextuple Reeved	
1	Side Plate, Plain Wheel Side	00530004	2
2	Side Plate, Geared Wheel Side	00530005	2
3	Load Bar	00530009	2
4	Spacer Sleeve	00530010	4
5	Spacer Washer, Thick	00530011	16
6	Spacer Washer, Thin	00530012	32
7	Brace	00530025	4
8	Track Wheel, Plain	00530006	4
9	Track Wheel, Geared	00530007	4
10	Driving Pinion, Handwheel Assembly	00530016	1
11	Bearing Block, Handwheel Assembly	00530015	1
12	Hand chain wheel	00558061	1
13	Hand chain guide	00558062	1
14	Groove ball bearing	09150020	16
15	Retaining ring	09129010	8
16	Cap	00530008	8
17	Retaining ring	09130009	8
18	Castle nut	00530014	4
19	Washer	00530013	12
20	Cotter pin	09125035	4
21	Screw, Handwheel Assembly	09101038	2
22	Lockwasher, Handwheel Assembly	09122016	2
23	Name plate	00508223	1
24	Capacity plate	00407704	1
25	Blind rivet	09128004	6
26	Spring Pin, Handwheel Assembly	09134082	1
27	Hand Chain, Handwheel Assembly	004307654	As Req*
28	Connecting Link, Handwheel Assembly	04307654CZPB	1 - 2
29	Suspension Lug	00400941	2
30	Spacer Sleeve, Suspension Lug	00400942	2

\* Please inform Customer Service of requested hand chain drop length. Actual chain length will be  $2 \times (\text{Drop Length}) + 0.72 \text{ ft}$

ENGLISH







# WARRANTY

## LIMITATION OF WARRANTIES, REMEDIES AND DAMAGES

### INDEMNIFICATION AND SAFE OPERATION

Buyer shall comply with and require its employees to comply with directions set forth in instructions and manuals furnished by Seller and shall use and require its employees to follow such instructions and manuals and to use reasonable care in the use and maintenance of the goods. Buyer shall not remove or permit anyone to remove any warning or instruction signs on the goods. In the event of personal injury or damage to property or business arising from the use of the goods, Buyer shall within 48 hours thereafter give Seller written notice of such injury or damage. Buyer shall cooperate with Seller in investigating any such injury or damage and in the defense of any claims arising therefrom.

If Buyer fails to comply with this section or if any injury or damage is caused, in whole or in part, by Buyer's failure to comply with applicable federal or state safety requirements, Buyer shall indemnify and hold Seller harmless against any claims, loss or expense for injury or damage arising from the use of the goods.

### CMCO Warranty (HOISTS)

- A. Columbus McKinnon Corporation ("Seller") warrants to the original end user ("Buyer") that: (a) for a period of one (1) year from the date of Seller's delivery of the goods (collectively, the "Goods") to the carrier, the electrical components of the Goods will be free from defects in workmanship and materials; and (b) for the life of the Goods, the mechanical components of the Goods will be free from defects in workmanship and materials.
- B. IN THE EVENT OF ANY BREACH OF SUCH WARRANTY, SELLER'S SOLE OBLIGATION SHALL BE EXCLUSIVELY LIMITED TO, AT THE OPTION OF SELLER, REPAIR OR REPLACEMENT, F.O.B. SELLER'S POINT OF SHIPMENT, OF ANY GOODS THAT SELLER DETERMINES TO HAVE BEEN DEFECTIVE OR, IF SELLER DETERMINES THAT SUCH REPAIR OR REPLACEMENT IS NOT FEASIBLE, TO A REFUND OF THE PURCHASE PRICE UPON RETURN OF THE GOODS TO SELLER. NO CLAIM AGAINST SELLER FOR ANY BREACH OF (i) SUCH WARRANTY WITH RESPECT TO THE ELECTRICAL COMPONENTS OF ANY GOOD SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE (1) YEAR FROM THE DATE OF SELLER'S DELIVERY TO THE CARRIER AND (ii) SUCH WARRANTY WITH RESPECT TO THE MECHANICAL COMPONENTS OF ANY GOOD SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE (1) YEAR FROM THE DATE THE DATE ANY ALLEGED CLAIM ACCRUES. EXCEPT FOR THE WARRANTY SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES WITH RESPECT TO THE GOODS, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTIES

OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUALITY AND/OR THOSE ARISING BY STATUTE OR OTHERWISE BY LAW OR FROM ANY COURSE OF DEALING OR USE OF TRADE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED.

- C. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY THIRD PARTY WITH RESPECT TO ANY GOOD, WHETHER IN CONTRACT, TORT OR OTHER THEORY OF LAW, FOR LOSS OF PROFITS OR LOSS OF USE, OR FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, DIRECT OR INDIRECT DAMAGES, HOWSOEVER CAUSED. SELLER'S MAXIMUM LIABILITY TO BUYER WITH RESPECT TO THE GOODS SHALL IN NO EVENT EXCEED THE PRICE PAID BY BUYER FOR THE GOODS THAT ARE THE SUBJECT OF THE APPLICABLE CLAIM.
- D. Seller shall not be liable for any damage, injury or loss arising out of the use of the Goods if, prior to such damage, injury or loss, such Goods are: (1) damaged or misused following Seller's delivery to the carrier; (2) not maintained, inspected, or used in compliance with applicable law and Seller's written instructions and recommendations; or (3) installed, repaired, altered or modified without compliance with such laws, instructions or recommendations.
- E. This warranty is limited and provided only to the original end user. **Each Good must be registered within sixty (60) days of receipt of each product to establish eligibility.** Please register at [www.cmworks.com/hoist-warranty-registration](http://www.cmworks.com/hoist-warranty-registration) or submit registration card via US mail.
- F. Any action against Seller for breach of warranty, negligence or otherwise in connection with the electrical components of any Good must be commenced by Buyer within one (1) year after: (a) the date any alleged claim accrues; or (b) the date of delivery of the Goods to Buyer, whichever is earlier. Any action against Seller for breach of warranty, negligence or otherwise in connection with the mechanical components of any Good must be commenced by Buyer within one (1) year after the date any alleged claim accrues.

### WARNING

Alterations or modifications of equipment and use of non-factory repair parts can lead to dangerous operation and injury.

#### TO AVOID INJURY:

- Do not alter or modify equipment.
- Do use only factory replacement parts.



COLUMBUS McKINNON  
CORPORATION

FAMILY OF BRANDS



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