



VULCAN

HOIST - PALAN

USER MANUAL

XTS STAINLESS-STEEL PUSH AND GEARED TROLLEYS

1/4 to 5 Tonnes

SPT0.25T to SPT05T
SGT0.25T to SGT05T



Manuel en français de l'autre côté



KEEP THIS MANUAL



WARNING

DO NOT INSTALL, OPERATE, OR PERFORM MAINTENANCE ON THIS EQUIPMENT BEFORE READING AND UNDERSTANDING THIS MANUAL IN ITS ENTIRETY. FAILURE TO READ AND COMPLY WITH THE CONTENTS OF THIS MANUAL COULD RESULT IN SERIOUS BODILY INJURY OR DEATH AND / OR PROPERTY DAMAGE.

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Important Information, Warnings and Safety

This manual contains important safety, installation, operation, and maintenance information. Make this manual available to every person designated for the operation, installation, and maintenance of these products. Unless otherwise noted, tons in this manual are metric tonnes (1000kg, 2205 lbs, or 1.102 US short ton).

Danger, Warning, Caution and Notice

Throughout this manual, there are procedures which, if not followed, may result in injury, death, or substantial property damage if the warning is ignored.



DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or property damage.

NOTICE

Indicates information or company policy which relates directly or indirectly to the safety of personnel or property.

Safety Framework and General Rules



WARNING

This manual cannot cover every possible installation, operation, maintenance, circumstance and situation. You, the owner or operator of the equipment covered in this manual, are responsible for the safe and proper installation, operation, inspection, and maintenance of this equipment in accordance with ASME B30.17 and all applicable laws, regulations and codes.

Anybody interacting with the trolley must have read and understood the instructions laid out in this manual.

Vulcan Hoist will not be liable for any loss, damage, injury, death or compensation if caused, even if partially, by disregarding or misinterpreting an instruction from this manual.

Repairs must only be done with original equipment manufacturer (OEM) parts by a qualified person. Any modification, including re-rating the trolley, must be authorised by the OEM.



CAUTION

Every safety and identification label and plate that came with the trolley, including the nameplate which displays the trolley's serial number, capacity, and manufacturer, must be securely fastened and legible. If any safety or identification label or plate is missing or no longer legible, contact Vulcan Hoist for a replacement.

NOTICE

This manual covers a wide range of trolleys with different capacities and options, as such not all instructions in this manual apply to every trolley. Disregard instructions that do not apply.

Safety Rules Before Installation



WARNING

The trolleys described in this manual are not designed to move people or to move loads near or over people. Ensure that the trolley is installed in a location where loads will not go over or near people or implement appropriate provisions so that people won't go under or near loads.

Ensure that you have read and understood this manual in its entirety before installing.

Verify beam compatibility with your trolley's model. Installing a trolley on a beam which does not fit within the following parameters may damage the trolley, make the trolley fall off the beam or cause the trolley to get stuck on the beam.

Beams must not be tilted by more than 1°.

Vulcan Hoist is not responsible for damage or injuries caused by an incompatibility between the trolley and the beam, as well as damage or injuries caused by the beam itself.

Your beam's load capacity must be known, and it must be enough to hold the combined weight of the trolley and everything it carries such as the load, rigging accessories, hoists, chains, etc.

Stoppers or other provisions must be made to ensure that the trolley will never roll off the end of the beam or collide with other trolleys, rigging equipment (such as beam clamps) or any other equipment present on the same beam.

Model	Beam Width		Maximum Beam Flange Thickness	Minimum Beam Height Inside Flanges	Minimum Beam Curving Radius
	Minimum	Maximum			
1/4	51 [2.01]	153 [6.00]	34 [1.33]	45 [1.78]	1000 [39.4]
1/2	64 [2.52]	203 [8.00]	27.5 [1.08]	52 [2.05]	
1			37.5 [1.47]	63 [2.49]	
2	88 [3.46]		33 [1.29]	68 [2.68]	1300 [51.2]
3	101 [3.98]	37 [1.45]	92 [3.63]		
5		42 [1.65]	98 [3.86]	1600 [63.0]	

XTS push and geared trolleys are made to be compatible with both tapered (I and S) beams and flat (H and W) beams.

Installation



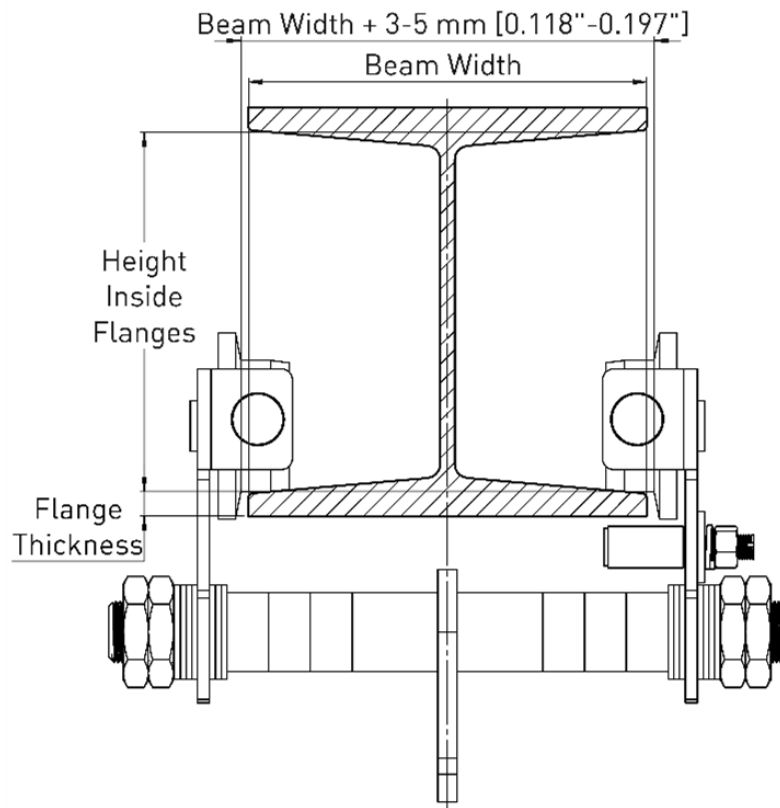
WARNING

Failure to properly center the lifting ring, aligning the lifting ring vertically, tightening the stay bolt's nuts thoroughly, correctly space the wheel flanges in relation to the beam, and/or having all wheels resting on the beam may result in damage to your trolley or beam or the trolley falling off the beam.

NOTICE

XTS products are metric. Using imperial tools to work on the trolley, especially to tighten the stay bolt, may damage your trolley, your tools, or both.

1. Measure the width of the beam's lower flange in multiple spots to determine its maximum width.



2. Arrange the washers, stay pipes, and lifting ring on the stay bolts so that:

2a. the distance between opposing wheel flanges is at least 3 mm [0.118"] and at most 5 mm [0.197"] longer than the beam's widest width.

2b. the lifting ring is centered.

2c. the longest stay pipes are touching the lifting ring on both sides.

2d. the shorter stay pipe and washer placement inside the side plates is symmetrical. Put all remaining washers outside the side plates.

2e. there is at least one washer on each side of both side plates.

2f. the number of washers and stay pipes outside the side plates doesn't have to match.

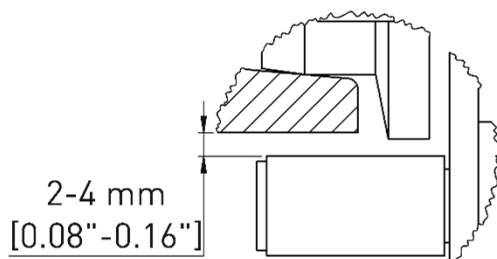
2g. all stay pipes and washer must be on the stay bolt, inside the stay bolt nuts.

3. Put the trolley on the beam. Screw on and lightly tighten the first nut on both sides.

4. Check that the lifting ring is vertical and that each wheel is equally bearing the trolley's weight. Suspend a light load from the lifting ring to help align the wheels on the beam and the lifting ring to the vertical.

5. Torque the first nuts on either side to spec. Re-check that each wheel is still equally bearing the trolley's weight. After, screw on and torque the second nuts to spec.

Model	Thread Diameter, mm	Wrench Size, mm	Tightening Torque, Nm [ft-lb]
1/4	16	24	69-78 [51-58]
1/2	24	36	220-251 [162-185]
1.0	30	46	412-470 [304-347]
2.0	42	65	1063-1215 [784-896]
3.0	48	75	1578-1803 [1164-1330]
5.0	52	80	1921-2195 [1417-1620]



6. Fasten the under-beam roller. There must be a gap between the roller and the beam between 2 mm [0.08"] and 4 mm [0.16"].

7. Rock the trolley side-to-side to make sure it can't fall off the beam, even if a wheel flange rolls onto the beam.

8. Load the trolley at capacity and push it along the entire length of beam to make sure it rolls smoothly.

9. Perform a Daily Inspection and a Periodic Inspection as described in this manual.

It is recommended to draw a line across the nuts and stay bolt to see if they loosen.

Safety Rules Before Operation



DO NOT USE the trolley and remove it immediately from service if you notice that:

- the lifting ring is bent or stretched
- the side plates are opening, deformed, or bent
- the stay bolt is bending
- the lifting ring, stay pipes, spacing washers, stay bolt nuts or under-beam roller are loose
- other parts are missing



ALWAYS ensure that you have read and understood this manual in its entirety. Be certain to have also read and understood the user manual of each equipment in the same system as the trolley (hoist, crane, rigging hardware...)

ALWAYS ensure that the nameplate and safety warning labels and plates are present, securely fastened and legible.

ALWAYS perform the daily inspection described in the Daily Inspection section of this manual if it is the chain trolley's first use of the shift.

ALWAYS be certain that the weight of the load to be moved is lower or equal to the trolley's rated capacity.

ALWAYS plan your move. Warn people that may come near or under the load. Make sure that you have somewhere to safely land the load before you lift it.

ALWAYS make sure that the planned moves won't interfere with other operations and that the load won't go near or over people.

NEVER apply non-vertical loads on the trolley. Make sure that the load's centre of gravity and attachment point are vertically aligned with the trolley.

ALWAYS observe proper rigging procedures.

Safety Rules During Operation



ALWAYS check that the load is well balanced before moving it with the trolley.

NEVER use a damaged trolley, a trolley that is not working properly or that requires excessive force to move.

NEVER use a trolley if it makes excessive or unusual noise.

NEVER swing a load. The load must remain centered under the trolley. Accelerate slowly.

NEVER ram the trolley into the beam's stoppers. If you must rest the trolley on a stopper, make the impact as soft as possible.

NEVER push the trolley into another trolley, beam clamp or other obstacle on the beam.

NEVER use the trolley as a welding electrode, weld a load attached to the trolley or cut a suspended load.

NEVER allow your attention to be diverted from operating the trolley.

Safety Rules After Operation



NEVER leave a load suspended for an extended period of time.

ALWAYS secure unattended suspended loads. If a load is left suspended, provisions must be taken so that the trolley and its load won't move on their own and that people won't go under or near the suspended load.

ALWAYS land the load under the trolley. Do not push the load to land it away from the trolley.

Inspection



The beams on which the trolley travels are your responsibility. You must inspect your beams to ensure that the trolley doesn't wear down or damage them.

If a trolley fails any one of the following inspection items, do not use it and remove it from its installation immediately. Do not reinstall it until every issue has been resolved.

Failure to inspect the trolley as instructed may result in damage, injury, or death.

Contact Vulcan Hoist for spare parts. Do not use non-OEM parts.

These instructions are based on ASME B30.17. Also observe any other regulation that may apply.

There are two types of inspection: daily and periodic. A daily inspection must be done by the trolley's operator, or a person qualified to do so at the beginning of each working shift or the first time the trolley is used in a shift. A periodic inspection must be done by a qualified person at intervals determined by the trolley's service severity.

Service Severity and Periodic Inspection Frequency

Service	Description	Periodic Inspection Frequency
Normal Service	Randomly distributed loads within the rated load limit, or uniform loads less than 65% of rated load for not more than 15% of the time	monthly to yearly
Heavy Service	Within the rated load limit but exceeds normal service	weekly to monthly
Severe Service	Normal or heavy service with abnormal operating conditions (high humidity, extreme temperatures, salty air, etc.)	daily to weekly

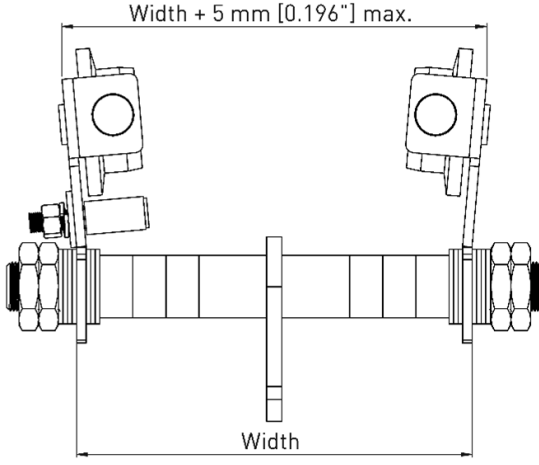
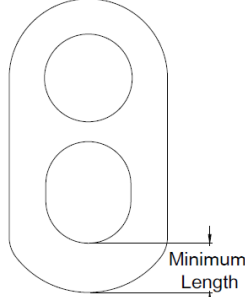
Daily Inspection

The daily inspection can be done from the ground if the inspector sees the trolley clearly enough to check the following items.

Part	Items to Inspect
Tags, labels, nameplate	Warning plates, labels and tags must be present, securely fastened and legible The nameplate and the trolley's capacity tags must be present, securely fastened and legible
Function	The trolley must roll smoothly on the beam
Lifting ring	The lifting ring must not be visibly bent, stretched, or damaged
Side plates	The side plates must be straight. There must not be significant bends, stretches, or damage
Stay bolt	The stay bolt must not bend at all
Under-beam roller	The under-beam roller must be well fastened and parallel to the beam.
Loose or missing parts	There must not be any play between the side plates, stay bolt, lifting ring, stay pipes, spacing washers, and stay bolt nuts

Periodic Inspection

The periodic inspection must be done in situ or with the trolley removed from the beam. The inspector must be able to measure and see the trolley up close.

Part	Item to Inspect and Discard Criteria																		
Nameplate and other labelling	The nameplate must be present, securely fastened and legible. Warning plates, labels and tags must be present, securely fastened and legible																		
Side plates	 <p>The side plates must remain straight. There can be a maximum of 5 mm [0.196"] difference between the top and bottom distance of the side plates.</p> <p>The side plates must be free of deformations and significant nicks.</p>																		
Lifting ring	<p>The lifting ring must be free of bends, stretching, deformations, and significant nicks. The minimum length under the hook is:</p> <table border="1"> <thead> <tr> <th>Capacity (t)</th> <th>Standard, mm [in]</th> <th>Discard, mm [in]</th> </tr> </thead> <tbody> <tr> <td>¼</td> <td>15 [0.59]</td> <td>≤13.5 [0.532]</td> </tr> <tr> <td>½, 1.0</td> <td>19 [0.75]</td> <td>≤17.1 [0.673]</td> </tr> <tr> <td>2.0</td> <td>22 [0.87]</td> <td>≤19.8 [0.780]</td> </tr> <tr> <td>3.0</td> <td>25 [0.98]</td> <td>≤22.5 [0.886]</td> </tr> <tr> <td>5.0</td> <td>32 [1.26]</td> <td>≤28.8 [1.134]</td> </tr> </tbody> </table> 	Capacity (t)	Standard, mm [in]	Discard, mm [in]	¼	15 [0.59]	≤13.5 [0.532]	½, 1.0	19 [0.75]	≤17.1 [0.673]	2.0	22 [0.87]	≤19.8 [0.780]	3.0	25 [0.98]	≤22.5 [0.886]	5.0	32 [1.26]	≤28.8 [1.134]
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Stay bolt	The stay bolt must be perfectly straight and without any signs of damage or wear																		
Stay pipes	The stay pipes must not show any deformation. In particular, check that the stay pipe ends are still completely perpendicular.																		
Stay bolt nuts torque	Re-torque the stay bolts nuts to spec																		
Wheels	Recheck the gap between the wheel flanges and the beam's lower flange. The wheels must not have significant surface wear, cracks, or gouges																		
Wheel bearings	The wheels must turn smoothly and not have significant play. Their axis of rotation must remain perpendicular to the side plates																		
Drop stops	The drop stops must not be deformed, damaged, cracked, or bent further than 90°. Look for cracks especially inside the bend or weld																		
Gears	The gears should mesh and turn smoothly. The hand chain wheel and gears must not be damaged nor have significant surface wear.																		

Maintenance



After performing maintenance, test the trolley and perform a Daily Inspection.

NEVER perform maintenance while the trolley is being used or supporting a load.

Failure to perform maintenance as instructed may result in damage, injury or death.

It is recommended to perform maintenance at the same frequency as periodic inspections. Only qualified personnel must perform maintenance. Vulcan Hoist offers inspection, maintenance and repair services.

1. Clean the trolley and load chain without getting water inside the wheel bearings.
2. For geared trolleys: clean excess worn grease and apply new grease on the gear teeth. If the pinion does not turn smoothly, disassemble it, lubricate the shaft and reassemble it.
3. If the under-beam roller does not turn smoothly, disassemble it, clean the bearing surface, and lubricate it. Re-assemble the under-beam roller and make sure it rolls smoothly.

Storing

Always store above freezing temperatures in a dry environment.

Do not use a trolley in storage to hold or support a load.

Perform a periodic inspection before using a trolley which is coming out of storage.

Outdoor Installations

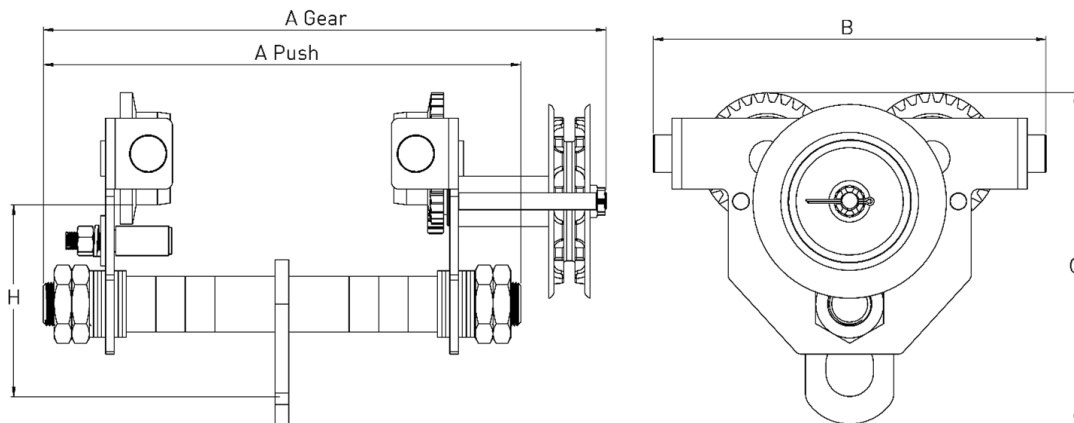
1. Even though the trolley is completely made from stainless steel, outdoor trolleys should be sheltered from rain and snow or brought inside when not in use.
2. If the chain block is exposed to salty air, extreme temperature, high humidity environments or exposure to rain or snow, increase the inspection and maintenance frequency.

Warranty

Your XTS Stainless-Steel Push Trolley is guaranteed against defects in materials and workmanship for **1 year** from the date of purchase if all the following conditions are met:

1. Any part replacement or modification of the XTS Stainless-Steel Push Trolley **must** be approved in writing by Vulcan Hoist.
2. No credit will be issued for defective parts. Vulcan Hoist will ship only replacement parts, subject to warranty inspection.
3. For major problems, the XTS Stainless-Steel Push Trolley must be returned prepaid to Vulcan Hoist for inspection and repair. If the repairs are under warranty, the chain block will be returned prepaid.

Overall Specifications



Model	Capacity, kg [short ton, lbs]	Weight*, kg [lbs]	Dimensions*, mm [in]				
			A Push	A Gear	B	C	H
¼	250 [0.27, 551]	3.5 [7.7]	254 [10.0]	275 [10.9]	218 [8.6]	172 [6.8]	102 [4.0]
½	500 [0.55, 1102]	6.3 [13.9]	310 [12.2]	350 [13.8]	236 [9.3]	198 [7.8]	117 [4.6]
1.0	1000 [1.10, 2204]	10.3 [22.7]	325 [12.8]	365 [14.4]	266 [10.5]	224 [8.8]	129 [5.1]
2.0	2000 [2.20, 4409]	18 [40]	340 [13.4]	380 [15.0]	296 [11.7]	268 [10.6]	161 [6.3]
3.0	3000 [3.30, 6613]	37 [82]	370 [14.6]	450 [17.8]	346 [13.6]	329 [13.0]	197 [7.8]
5.0	5000 [5.51, 11023]	48 [106]	420 [16.5]	466 [18.4]	406 [16.0]	383 [15.1]	231 [9.1]

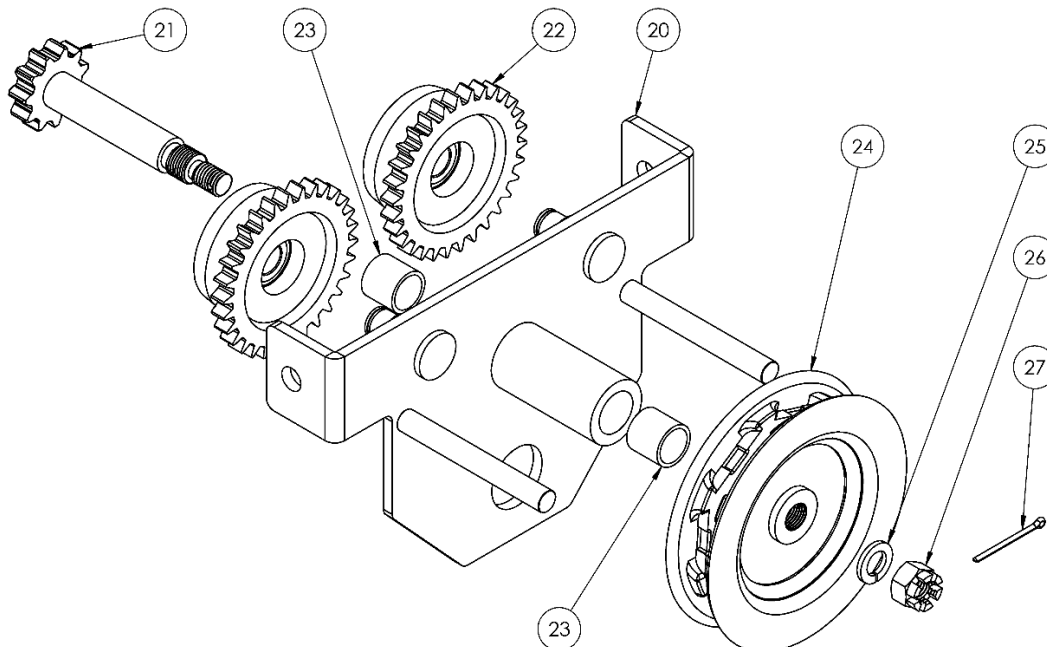
*Approximate values. Actual values may slightly differ.

Parts - Pièces

Part #	Description	Part #	Description
1	Side Plate Assembly - Plain Side	15	Under-beam Roller Shaft
2	Side Plate Assembly - Roller Side	16	Under-beam Roller
3	Stay Bolt	17	Under-beam Roller Washer
4	Lifting Ring	18	Under-beam Roller Lock Washer
5	Stay Pipe - Long	19	Under-beam Roller Nut
6	Stay Pipe - Short	20	Side Plate Assembly - Gear Side
7	Spacing Washer	21	Pinion and Pinion Shaft
8	Stay Bolt Nut	22	Gear Wheel
9	Wheel	23	Pinion Shaft Bushing
10	Wheel Internal Snap Ring	24	Hand Chain Wheel
11	Bearing Cover	25	Lock Washer
12	Bearing External Snap Ring	26	Castle Nut
13	Wheel Bearing	27	Cotter Pin
14	Buffer		

No. Pièce	Description	No. Pièce	Description
1	Assemblage plaque latérale - Côté plein	15	Arbre du rouleau sous-poutre
2	Assemblage plaque latérale - Côté rouleau	16	Rouleau sous-poutre
3	Boulon d'ancrage	17	Rondelle du rouleau sous-poutre
4	Anneau de levage	18	Rondelle auto-bloquante du rouleau
5	Tuyau entretoise - Long	19	Écrou du rouleau sous-poutre
6	Tuyau entretoise- Court	20	Assemblage plaque latérale - Engrenage
7	Rondelle entretoise	21	Pignon et arbre de pignon
8	Écrou du boulon d'ancrage	22	Roue dentée
9	Roue	23	Bague portante de l'arbre du pignon
10	Bague intérieure de la roue	24	Roue de chaîne à main
11	Couvert du roulement	25	Rondelle auto-bloquante
12	Bague extérieure du roulement	26	Écrou crénelé
13	Roulement de la roue	27	Goupille fendue
14	Tampon		

Gear Exploded View - Vue explosée de l'engrenage



Exploded View – Vue explosée

