

OPERATING,
MAINTENANCE &
PARTS MANUAL
SUPPLEMENT

ARMY TYPE TROLLEY HOIST

Yale[®]

ARMY TYPE TROLLEY HOIST

Rated Loads:

Army Type Trolley Hoists 1/4 through 12 tons.

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

The use of any trolley 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 trolley hoist, each operator should become thoroughly familiar with all warnings, instructions and recommendations in this manual supplement. **Retain this manual supplement for future reference and use.**

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



Before installing trolley hoist, fill in the information below.

Rated Load _____

Serial No. _____

Purchase Date _____

GENERAL INFORMATION

SPECIFICATIONS

The Yale Hand Hoist has been expanded to include trolley suspended units. The Yale Army Type Trolley Hoist consists of the lightweight, durable Yale 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. As a result, the components of the hoist including the lower hook parts are shown and described in Manual No. Y646. The manual should also be used for operating instructions, safety procedures, inspections and maintenance procedures, lubrication information, troubleshooting, hoist exploded view, parts list and load chain reeving information.



YALE REPAIR/REPLACEMENT POLICY

All Yale Hand Hoists and Army Type Trolley Hoists are thoroughly inspected and performance tested prior to shipment. If any properly maintained Trolley Hoist develops a performance problem due to a material or workmanship defect, as verified by Yale or an authorized service station, repair or replacement of the unit will be made to the original purchaser without charge. This repair/replacement policy applies only to Trolley Hoist installed, maintained and operated as outlined in this manual, and specifically excludes parts 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-Yale replacement parts voids the guarantee and could lead to dangerous operation. For full Terms of Sale, see Sales Order Acknowledgment. Also, refer to the back cover of Manual No. Y646 for Limitations of Warranties, Remedies and Damages and, Indemnification and Safe Operation.

Army Type Trolley Hoists

This compact trolley hoist features reduced headroom, side clearances and end approach which make it ideal for operation in tight spaces. Integral trolley has hardened universal tread flanged trackwheels which minimize rolling friction. Yale's Internal Load Limiter™ automatically guards against damaging overloads without increasing overall dimension. Capacities range from 1/4 thru 12 ton - plain or geared trolley. Adapts to a wide range of beam adjustments.



SPECIFICATIONS

Capacity	Ton	1/4	1/2	1	1-1/2	2	3	4	5	6	8	10	12
Code	Plain Trolley	925-02400	925-03400	925-05400	925-06400	925-07400	925-09400	925-11400	925-13400	925-14400	925-16400	925-17400	925-18400
	Geared Trolley	925-02500	925-03500	925-05500	925-06500	925-07500	925-09500	925-11500	925-13500	925-14500	925-16500	925-17500	925-18500
Standard Lift	Ft.	8	8	8	8	8	8	8	8	8	8	8	8
Strands of Chain		1	1	1	1	1	2	2	3	3	4	5	5
American Standard Shape Adjustment Ranges †	Depth	In. 6-12*	6-12*	6-12*	6-15	6-15	7-15	7-15	8-18	8-18	12-24	12-24	15-24
	Flange Width	In. 3 3/8-5 1/2	3 3/8-5 1/2	3 3/8-5 1/2	3 3/8-5 5/8	3 3/8-5 5/8	3 3/8-5 5/8	3 3/8-5 5/8	4-6 1/4	4-6 1/4	5-8	5/8	5 1/2-8
Chain Pull To Lift Full Capacity Load	Lbs.	23	46	69	80	83	85	87	74	89	91	93	95
Chain Overhauled to Lift Load One Foot	Ft.	22 1/2	22 1/2	30	40 1/2	52	81	104	156	156	208	260	312
Minimum Headroom	In.	11 7/16	11 7/16	11 3/4	15 5/16	15 5/16	19	19	22 9/16	23 1/16	29 5/16	29 5/16	31 13/16
Minimum Radius Curve	In.	30	30	30	30	30	48	48	60	60	72	72	96

*1/4 thru 1 ton plain Trolley Hoist can be adapted to 4" & 5" depth - American Standard Shapes (2 5/8"-3" flange widths) - at no extra charge.
 † Specify exact beam size when ordering.

TROLLEY INSTALLATION

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 exact distribution of spacer washers. 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. Also, the use of other than Yale supplied washers may result in trackwheel to beam flange variations and thus Figure 1 will not apply.

WARNING
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 1 to determine the arrangement of the spacer washers for that flange width.

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.

WARNING
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.

Flange Width (In.)	DISTRIBUTION OF SPACER WASHERS																			
	1/4, 1/2 & 1 Ton Trolley				1-1/2 & 2 Ton Trolley				3 & 4 Ton Trolley				5 & 6 Ton Trolley				8, 10 & 12 Ton Trolley			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
2-5/8	20	7	7	20																
2-3/4	19	8	8	19																
3	17	10	9	18																
3-1/4	16	11	11	16																
3-3/8	15	12	12	15	6	6	6	16												
3-5/8	14	13	13	14	14	8	7	15	13	0	0	13								
3-7/8	12	15	14	13	13	9	9	13	12	1	2	11								
4	9	16	15	12	12	10	10	12	11	2	3	10	14	0	0	15				
4-1/8	9	16	16	9	11	11	11	11	10	3	3	10	13	1	1	14				
4-5/8	7	20	19	8	8	14	13	9	7	6	6	7	10	4	4	11				
5	6	21	22	5	6	16	15	7	5	8	9	4	8	6	6	9	18	3	3	18
5-1/8	5	22	22	5	5	17	16	6	4	9	9	4	7	7	7	8	17	4	4	17
5-1/4	4	23	23	4	4	18	18	4	3	10	10	3	6	8	8	7	16	5	5	16
5-1/2	1	26	26	1	2	20	20	2	2	11	11	2	5	9	10	5	15	6	7	14
5-5/8					1	21	21	1	1	12	12	1	4	10	11	4	14	7	8	13
6													2	12	13	2	11	10	10	11
6-1/4													1	13	14	1	10	11	12	9
6-3/8														9	12	12	9			
7																	5	16	15	6
7-1/8																	5	16	16	5
7-1/4																	4	17	16	5
7-7/8																	0	21	20	1
8																	0	21	21	0

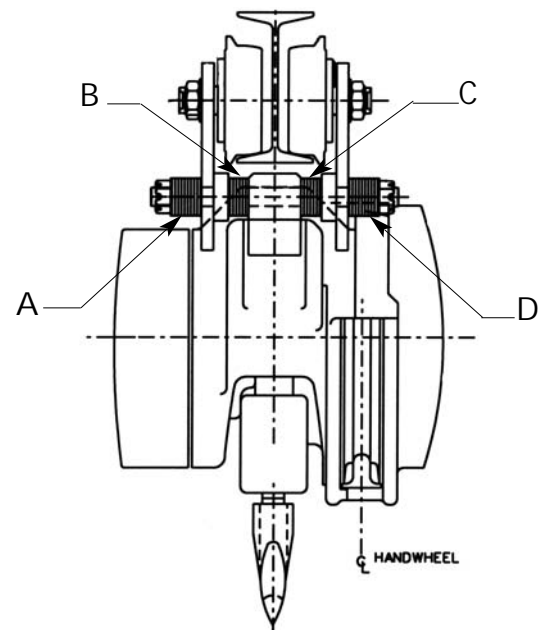


Figure 1

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.

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 Table 1 of Manual No. Y646.

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 Table 2 of Manual No. Y646.

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.

PARTS LIST

ORDERING INFORMATION

The following information must accompany all correspondence or repair parts orders.

- 1) Hoist capacity.
- 2) Serial Number - this is stamped on the hoist frames as shown below.

For parts orders also specify:

- 1) Quantity desired.
- 2) Key number of part.
- 3) Part name.
- 4) Part number.

When ordering replacement parts, consideration should be given to the need to replace other items: bearings, fasteners, gaskets, etc. Items that may be damaged or lost during disassembly or just unfit for future use because of deterioration from age or service.



WARNING

Using "Commercial" or other manufacturer's parts to repair the Yale Hand and Army Type Trolley Hoists may cause load loss.

To Avoid Injury:

Order all replacement parts from Yale. Parts may look alike but often Yale parts are made of specific materials or processed to achieve specific properties.

Parts should be ordered from Yale's Authorized Parts Depots conveniently located throughout the United States. Refer to page i of Manual No. Y646 to locate the Authorized Parts Depot nearest you.

YALE ARMY TYPE TROLLEY HOIST PARTS LIST

Key No.	No. Req'd.	Part Name	Capacity - Tons							
			1/4, 1/2 & 1	3/4	1-1/2 & 2	3 & 4	5 & 6	8 & 10	12	
			Part Number							
646-264	1	Side Frame-Hoist Handwheel Side-Plain Trolley	46694	46684	46688	46381	46392	46406	46504	
	1	Side Frame-Hoist Handwheel Side-Geared Trolley	46375	--	46679	46381	46392	46406	46504	
646-265	1	Side Frame-Hoist Geared Side-Plain Trolley	46695	46685	46689	46382	46393	46407	46505	
	1	Side Frame-Hoist Geared Side-Geared Trolley	46376	--	46680	46383	46396	46500	46506	
646-266	1	Upper Load Bar	46361	46686	46367	46378	46389			
646-267	1	Lower Load Bar	46362		46368	46379	46368			
646-268	2	Suspension Bolt-Plain	46364	46366	46369	46380	46390	70420		
	2	Suspension Bolt-Geared	46374	--	46371	46386	46394	70428		
646-269	4	Suspension Bolt Nut	948803				958818			
646-269A	4	Suspension Bolt Nut Cotter Pin	988343				988368			
646-270	2	Load Bar Screw	946764				946766			
646-270A	2	Load Bar Screw Lockwasher	936850				946767			
646-271	4	Trackwheels (Plain Trolley)	35774		50762	39016	39017	39006		
	2	Trackwheels (Geared Trolley)	39002			39016	39017	39006	39006	
	2	Trackwheels (With Gears)	35642			--	--	--	--	
646-272	4	Trackwheel Stud-Plain	987790		35838	39375	39377	39379		
		Trackwheel Stud Nut-Plain	982520		948804	988097	982613	988158		
		Trackwheel Stud Lockwasher-Plain	987923		987924	987927	987928	--		
	2	Trackwheel Stud-Plain Side-Geared	36361			39375	39377	39379		
		Trackwheel Stud Nut-Plain Side-Geared	988155			988097	982613	988158		
		Trackwheel Stud Lockwasher-Plain Side-Geared	987926			987927	987928	--		
	2	Trackwheel Stud-Geared Side-Geared	36362			39376	39378	39380		
		Trackwheel Stud Nut-Geared Side-Geared	988155			988097	982613	988158		
		Trackwheel Stud Lockwasher-Geared Side-Geared	987926			987927	987928	--		
646-273	2	Capacity Label	946768		946769	46772 46773	46774 46775	46776 46777	46778	
646-273A	1	Warning Label	936984							
646-274	--	Trolley Spacer Washers (Specify Amount Req'd.)	948700			958726				
	--	Hanger Bolt Washers (Specify Amount Req'd.)	--			948701				
	--	Chain Anchor Bolt Washers (Specify Amount Req'd.)	--			958726				
646-276	2	Hanger Bolt Nut	--			945835		--		
	4		--			--		945835		
646-276A	2	Hanger Bolt Cotter Pin	--			988382		--		
	4		--			--		988382		
646-277	1	Hanger Assembly	--			46614		46409		
646-278	1	Hanger Sheave	--			45085		45436 (8 Ton)		
	2		--			--		45436 (10 & 12 Ton)		
646-279	2	Hanger Sheave Bearing	--			83670		88542 (10 & 12 Ton)		
	1		--			88542 (8 Ton)		--		
646-280	2	Hanger Sheave Bearing Retainer	--			45151		--		
646-281	1	Hanger Sheave Snap Ring	--			45765		--		
646-282	2	Sheave Shaft	--			--		46413		
646-283	2	Keeper Plate	--			--		46414		
646-284	4	Keeper Plate Screw	--			--		982693		
646-285	4	Keeper Plate Screw Lockwasher	--			--		982226		
646-286	1	Dead End Block	--			--		46422		
646-287	1	Dead End Pin	--			--		45944		
646-288	1	Chain Anchor	--			--		48021 (10 Ton) 46303		
646-289	1	Sheave Hanger Bottom Plate	--			46415 (8 Ton)		--		
	2		--			46415 (10 & 12 Ton)		--		
646-290	4	Sheave Hanger Bottom Plate Screw	--			982706 (8 Ton)		--		
	8		--			982706 (10 & 12 Ton)		--		
646-291	1	Hanger Bolt-Plain Trolley	--			46391		--		
	2		--			--		46408		
	1	Hanger Bolt-Geared Trolley	--			46395		--		
	2		--			--		46405		
646-292	1	Chain Anchor Bolt-Plain	--			--		70420		
		Chain Anchor Bolt-Geared	--			--		70428		
646-293	2	Chain Anchor Bolt Nut	--			--		958818		
646-293A	2	Chain Anchor Bolt Cotter Pin	--			--		988368		
646-294	2	Hook Block Half	--			46416 (8 Ton)		--		
	2		--			46507 (12 Ton)		--		
	1		--			46502 (10 Ton - Hoist Gear Housing Side)		--		
	1		--			46503 (10 Ton - Hoist Handwheel Side)		--		
646-295	1	Hook Block Top Plate	--			46307		46305		
646-296	6	Top Plate Screw	--			946781 (8 & 10 Ton)		--		
	8		--			946781 (12 Ton)		--		
646-297	2	Hook Block Bolt	--			--		946780		
646-298	2	Hook Block Bolt Nut	--			--		948804		
646-299	2	Hook Block Bolt Lockwasher	--			--		987924		
646-300	2	Hook Block Bolt Pipe Spacer	--			--		46420		
646-301	2	Hook Block Sheave	--			--		45436	--	
	3		--			--		--	45436	
646-302	2	Hook Block Sheave Bearing	--			--		88542	--	
	3		--			--		--	88542	

YALE ARMY TYPE TROLLEY HOIST PARTS LIST

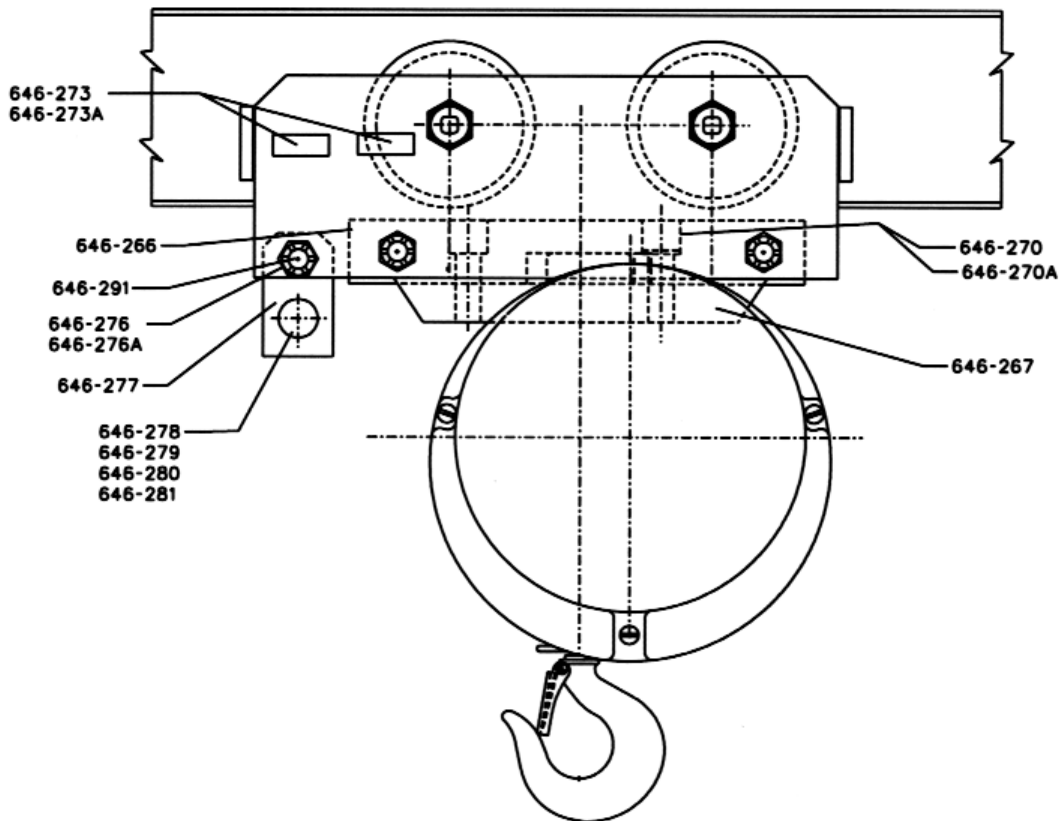
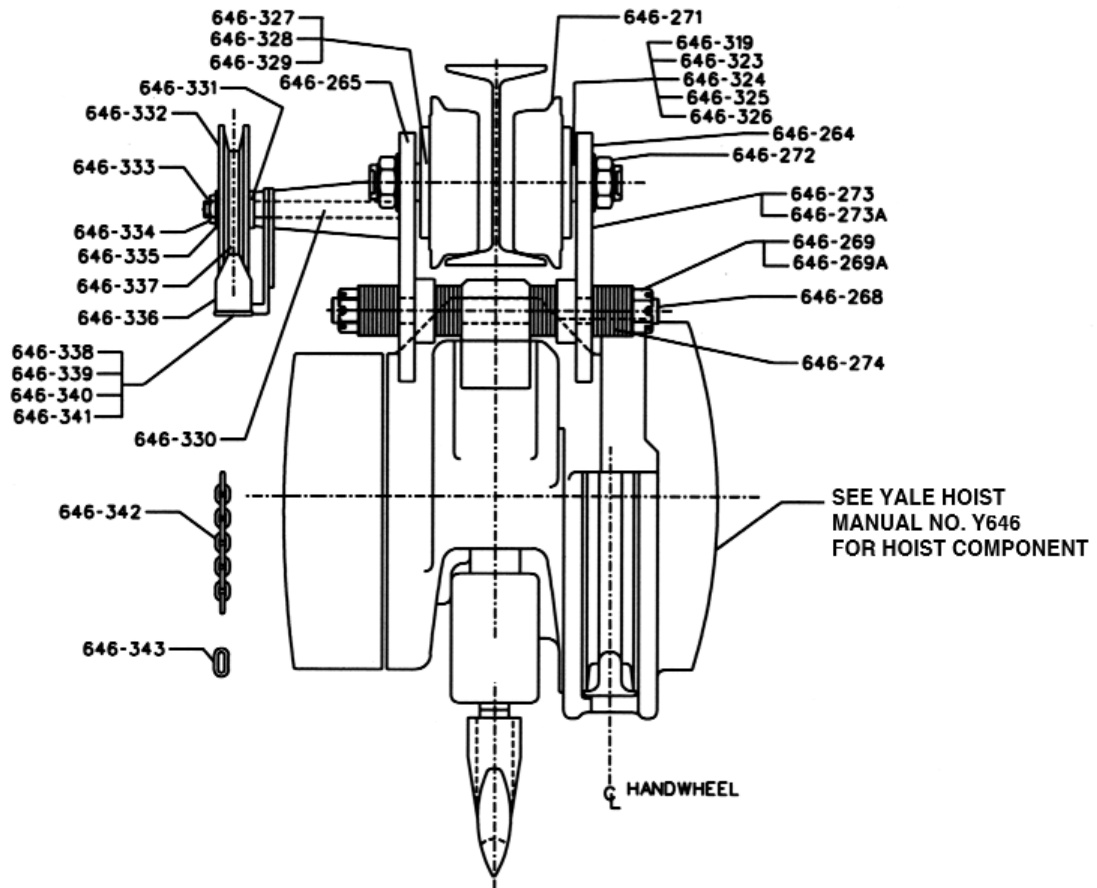
Key No.	No. Req'd.	Part Name	Capacity - Tons						
			1/4, 1/2 & 1	3/4	1-1/2 & 2	3 & 4	5 & 6	8 & 10	12
			Part Number						
646-303	2	Hook Block Sheave Bolt						46421	--
	3								46421
646-304	4	Sheave Bolt Nut						988149	--
	6								988149
646-305	4	Sheave Bolt Lockwasher						987924	
	6								987924
646-306	1	Chain Anchor Bolt						46421 (10 Ton Only)	
646-307	2	Chain Anchor Bolt Nut						988149 (10 Ton Only)	
646-308	2	Chain Anchor Bolt Lockwasher						987924 (10 Ton Only)	
646-309	2	Hook Block Plate - Warning Label							70283
646-310	2	Hook Block Capacity Label						46917 - (8 Ton), 46916 - (10 Ton), 46915 - (12 Ton)	
646-311	16	Capacity Plate Screw							988271
646-312	1	Lower Hook						46006	46304
646-313	1	Latch Kit						52707	71913
646-314	1	Hook Trunnion							46424
646-315	1	Hook Thrust Bearing							88511
646-316	1	Hook Nut						945836	82468
646-317	1	Hook Nut Pin						983788	82466
646-318	1	Hook Sleeve						46425	--
646-319	4	Trackwheel Bearing		82113		82119	82115		--
646-320	8	Trackwheel Cup							88523
646-321	8	Trackwheel Cone							88519
646-322	8	Trackwheel Bearing Washer							81008
646-323	8	Trackwheel Snap Ring							39715
646-324	4	Trackwheel Spacer-Plain Trolley		--		39716	39717		81009
	2	Trackwheel Spacer-Geared Trolley-Plain							81009
	2	Trackwheel Spacer-Geared Trolley-Geared							39386
646-325	4	Trackwheel Stud Washer		81014		81015	81016		--
646-326	4	Trackwheel Spacer Washer-Geared		82046					--
	4	Trackwheel Spacer Washer-Plain		--	987903				--
	4	Trackwheel Spacer Washer		--	--	82047	82048		--
646-327	2	Trackwheel Gear		35425		39382	39383		39384
646-328	6	Trackwheel Gear Pin		983777			983778		--
	4								983781
646-329	4	Trackwheel Gear Screw							982687
646-330	1	Handwheel Shaft & Pinion		46677		46676	46398		46501
646-331	2	Handwheel Shaft Bushing				82054			
646-332	1	Handwheel				33143			
646-333	1	Handwheel Key				59967			
646-334	1	Handwheel Shaft Nut				988095			
646-335	1	Handwheel Shaft Lockwasher				986270			
646-336	1	Hand Chain Guide		46678			58152		
646-337	1	Hand Chain Guide Bushing		--			58727		
646-338	1	Guide Screw		--			987065		
646-339	1	Guide Screw Nut		--			945822		
646-340	1	Guide Screw Lockwasher		--			945853		
646-341	1	Guide Screw Washer		--			986224		
646-342	AIR	Hand Chain				85808			
	AIR	Hand Chain - Zinc Plated				619022			
646-343	1	Hand Chain Connecting Link				945490			
	1	Hand Chain Connecting Link - Zinc Plated				945491			
646-344	1	Capacity Insert							46918

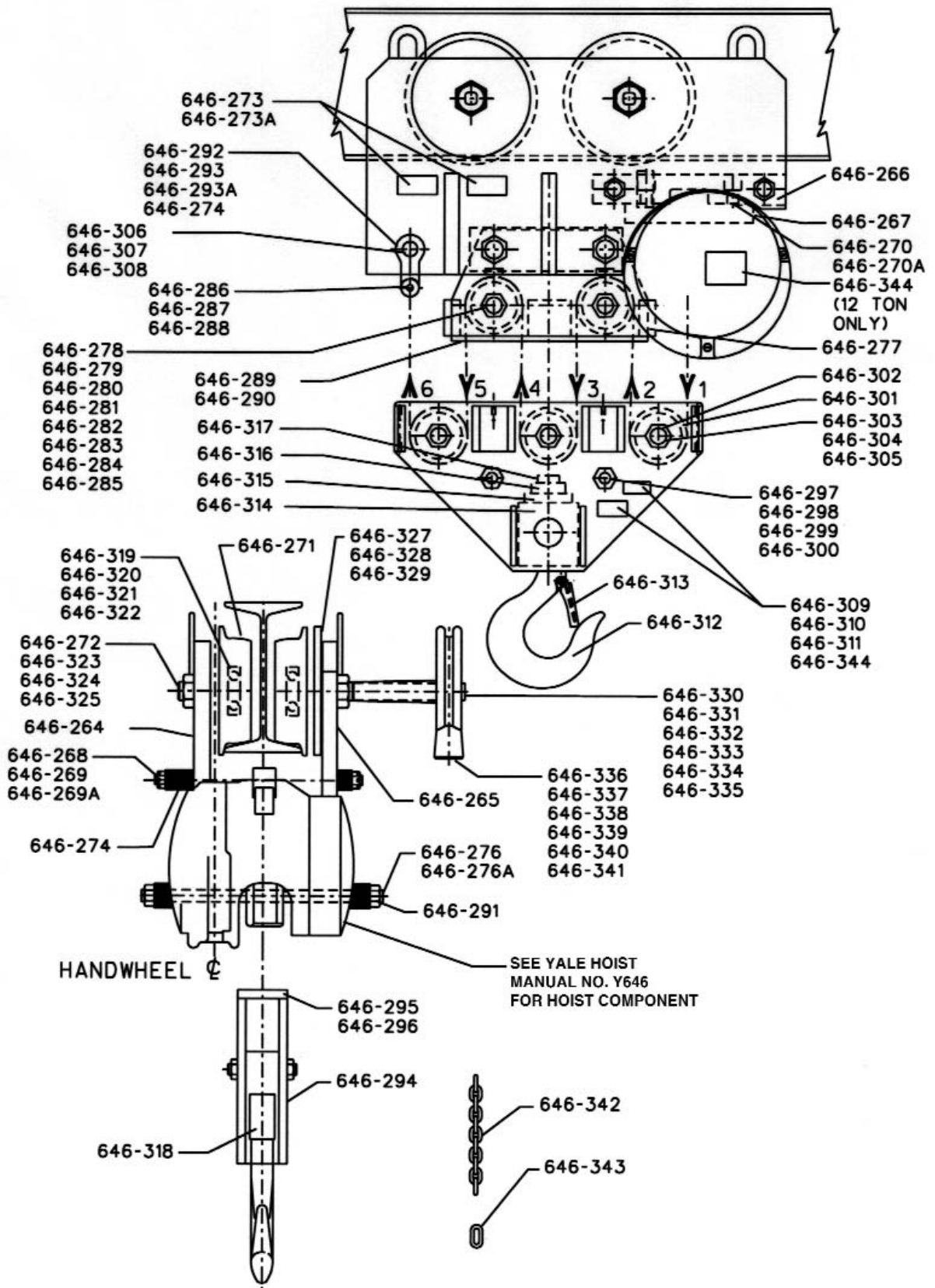
Part Numbers for packaged lubricants used in Yale Hand and Army Type Trolley Hoists		
Lubricant Usage	Type of Lubricant	Part Numbers and packaged Quantities of Lubricants
Gears	Grease	28610 (1# can) 28632 (4# can)
Handwheel Threads	Spray	46698 (16 oz.)
Chain	Oil	28608 (1 pt. can) 28619 (1 gal. can)
Trackwheel Bearings	Grease	28610 (1# can) 28632 (4# can)
Trackwheel Gears	*Heavy Cup Grease	--
Handwheel Shaft	*Light Machine Oil	--

*These are not furnished by Yale in Packaged Quantities. When ordering lubricants, specify the type of lubricant, part number and packaged quantity required.

Touch-up Paints for Yale Hand and Army Type Trolley Hoists:
 1. Hoist. Order *(1) case (12-12 oz. Aerosol Cans) of Yellow Touch-up paint Part Number 40215.
 2. Trolley. Order *(1) case (12-12 oz. Aerosol Cans) of Black Touch-up paint Part Number 84189.
 ** Touch-up paints are only available in case quantities.

NOTE: When painting Hoists or Trolleys, also order warning labels, identification labels, etc. that may be coated during painting.





Note: When ordering parts, always furnish hoist model and serial number, motor horsepower, voltage, phase, frequency and rated capacity of hoist on which the parts are to be used.
For the location of the nearest Authorized Repair Station, Contact Yale, (see inside of Manual No. Y646).

LIMITATION OF WARRANTIES, REMEDIES AND DAMAGES

THE WARRANTY STATED BELOW IS GIVEN IN PLACE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, NO PROMISE OR AFFIRMATION OF FACT MADE BY ANY AGENT OR REPRESENTATIVE OF SELLER SHALL CONSTITUTE A WARRANTY BY SELLER OR GIVE RISE TO ANY LIABILITY OR OBLIGATION.

Seller warrants that on the date of delivery to carrier the goods are free from defects in workmanship and materials.

SELLER'S SOLE OBLIGATION IN THE EVENT OF BREACH OF WARRANTY OR CONTRACT OR FOR NEGLIGENCE OR OTHERWISE WITH RESPECT TO GOODS SOLD SHALL BE EXCLUSIVELY LIMITED TO REPAIR OR REPLACEMENT, F.O.B. SELLER'S POINT OF SHIPMENT, OF ANY PARTS WHICH 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.

Any action against Seller for breach of warranty, negligence or otherwise, must be commenced within one year after such cause of action occurs.

NO CLAIM AGAINST SELLER FOR ANY DEFECT IN THE GOODS SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE YEAR FROM THE DATE OF SHIPMENT.


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 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 law, instructions or recommendations.

UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES AS THOSE TERMS ARE DEFINED IN SECTION 2-715 OF THE UNIFORM COMMERCIAL CODE.

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.

 WARNING
Alterations or modifications of equipment and use of non-factory repair parts can lead to dangerous operation and injury.
TO AVOID INJURY:
<ul style="list-style-type: none">• Do not alter or modify equipment.• Do use only factory provided replacement parts.

Yale[®]

HOISTS

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MUSKEGON, MICHIGAN 49443-0769
1-866-805-2962 • Fax: 1-800-742-9270