

CH WINCH ROPE WINDERS

DESCRIPTION AND USE

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1. GENERAL

1.01 This section covers the description and maintenance of CH (chain-type) winch rope winders. These winders are positive drive, level winding devices designed to lay wire rope evenly onto winch drums.

1.02 This section is reissued to add the AT-8414 winders which are intended for use with the AT-8003 winches, with 28-inch or 22-1/2 inch drum lengths, and the AT-8467 winches with 22-1/2 inch or 16-inch drum lengths. Since this reissue is a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The operation and maintenance of the winders illustrated in this section are basically the same. The primary difference is that the AT-8414 winder is designed to be driven by a sprocket which is mounted on the right end of the winch drum, whereas the older CH winder is driven by a sprocket mounted on the left end of the winch drum.

2. DESCRIPTION

2.01 The winch rope winders (Fig. 1 and 2) consist of a carriage that is mounted on two guide bars and is driven back and forth across the length of the winch drum by an endless cross chain. The winder is mounted at one end to the winch drive housing and at the other end to the winch hanger assembly.

Note
Chain Covers Not Shown

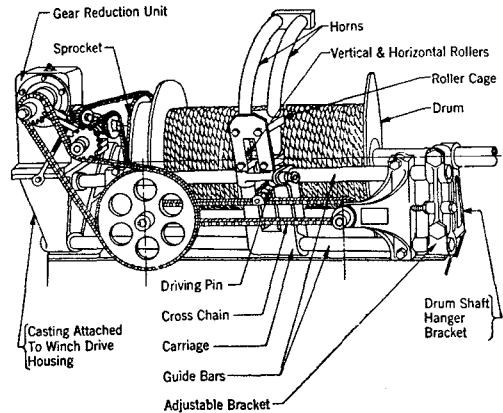


Fig. 1—CH Winch Rope Winder

2.02 The carriage includes a horn assembly that supports the roller assembly. The roller assembly is self-aligning and feeds the wire rope onto the winch drum.

2.03 The roller assembly contains two vertical rollers and two horizontal rollers that guide the winch rope onto the winch drum and control

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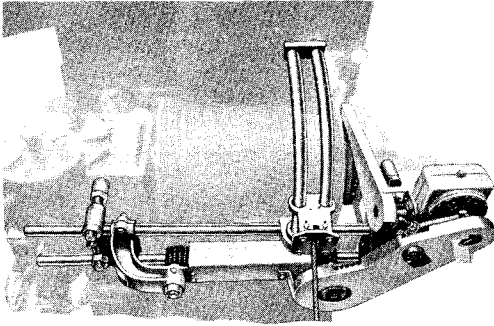


Fig. 2—Winch Rope Winder (AT-8414)

vertical movement of the roller assembly on the horn assembly.

2.04 The winders are driven directly from the winch drum. As the drum rotates, the driving sprocket welded to the winch drum drives a gear reduction unit by means of a roller chain. A chain from the low speed side of the gear unit connects to a sprocket on the shaft of the cross chain driving sprocket. The driving pin which projects from the cross chain pushes the carriage along the guide bars and across the drum at a speed such that one revolution of the drum advances

the carriage a distance approximately equal to the diameter of the rope. Various sprocket diameters are available to accommodate various winch rope diameters. As the driving pin reaches the end sprocket, it is carried around the sprocket and moves up or down in a vertical slot in the carriage. This advances the carriage to the end of its travel and starts it back in the opposite direction. Fig. 3 and 4 identify parts that may be required as repair or replacement parts.

3. PRECAUTIONS

3.01 All personnel associated with winch operation should be familiar with the signals described in Section 620-020-020. However, the responsibility for giving the signals during work operations should be assigned to one individual. Other personnel should not give signals unless an emergency should arise.

3.02 Stand clear of loads suspended by the winch line. Do not stand inside of angles formed by the winch line and, where possible, do not stand where there is a danger of being struck by the winch line if it should break.

3.03 Gloves should be worn when handling the winch line, and the hands should be kept at least 3 feet away from any sheave, block, eye, and the drum when guiding the winch line.

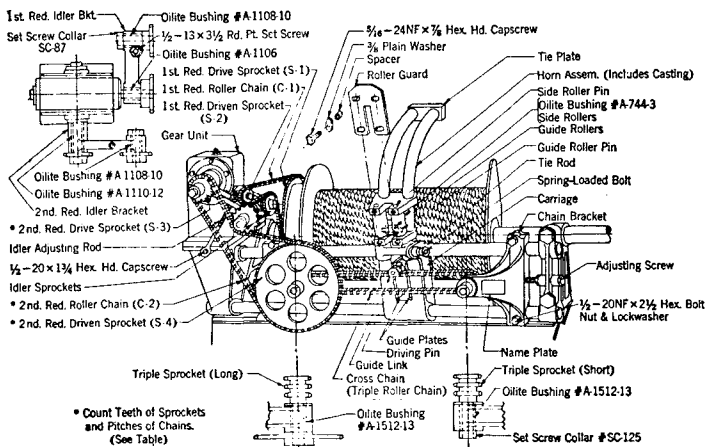


Fig. 3—Parts Identification—CH Winch Rope Winder

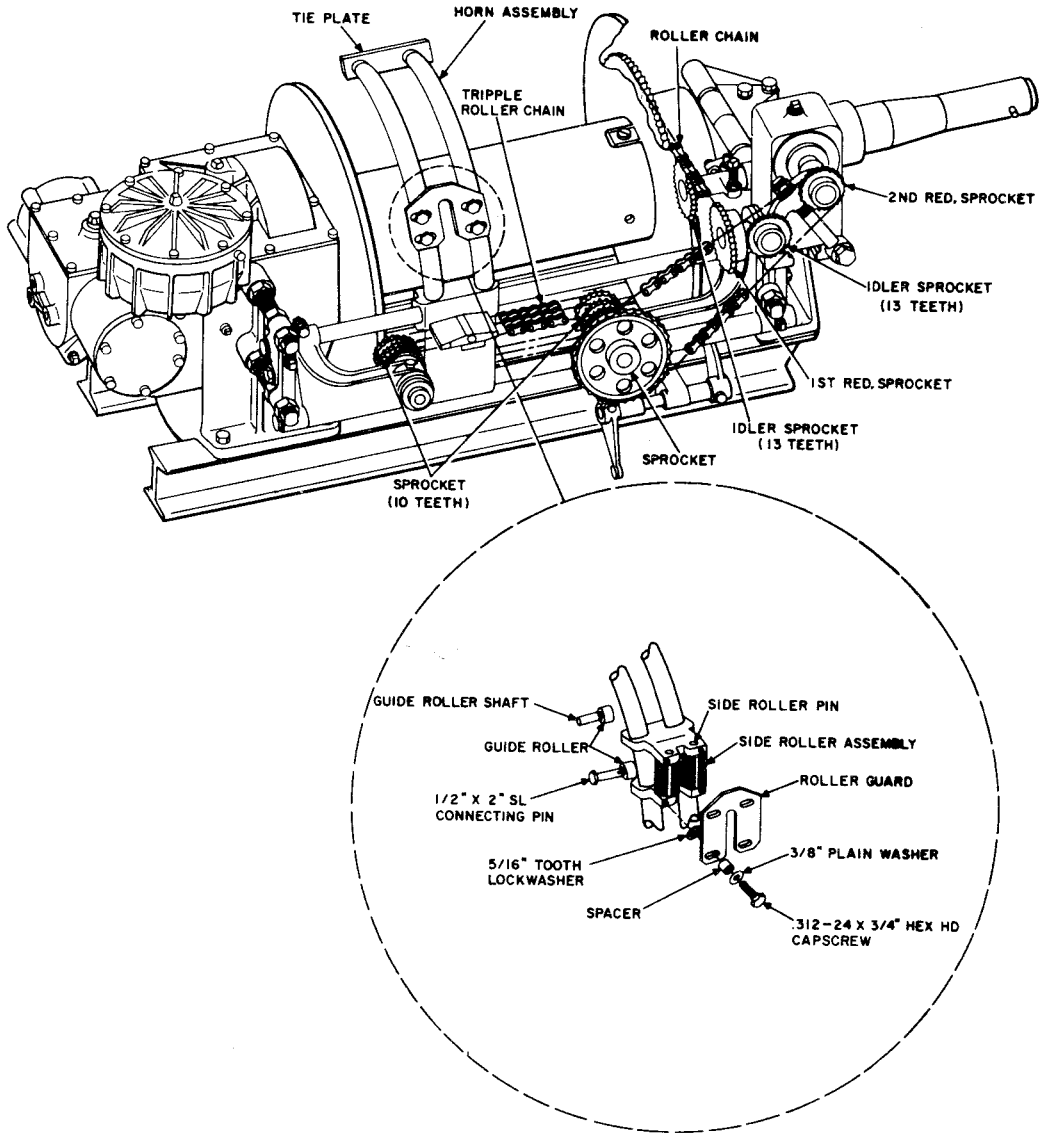


Fig. 4—Parts Identification—Winch Rope Winder (AT-8414)

3.04 The direction of pull from the winch should be as nearly in line with the winch drum as practicable. The winder is designed to distribute the line under all conditions; however, the loads on the winder and the bending of the winch line will be less severe if the direction of pull approaches a straight line.

3.05 The winch line must be under tension when being wound on the drum to ensure that the line will wind properly. It is desirable that the line be held under some tension at all times while being used so that slack will not work back into the coils of wire rope already on the drum. If slack coils develop, they should be worked out.

3.06 Do not place tools or materials on the truck where they will interfere with the free movement and operation of the winder.

3.07 The horns on the carriage must be in the raised or operating position before the winch is started or they will be forced against the drum flanges at the end-of-travel positions and damage the horn assembly.

3.08 Do not pull the winch line eye closer than 2 feet from the roller assembly. The eye will not pass through the roller cage and will damage the winder if pulled into the cage.

3.09 *The winch rope winders shall not be operated unless the chain covers provided as component parts of the winders are in place.* Chain covers for the CH winch rope winder are shown in Fig. 5.

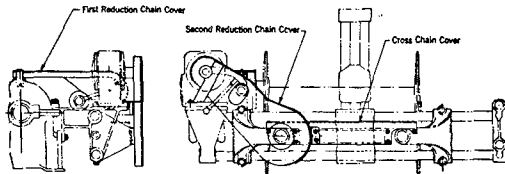


Fig. 5—Chain Covers for CH Winch Rope Winder

4. INSPECTION AND LUBRICATION

4.01 At the beginning of each day of operation, the winder should be inspected to see that

all parts are in good condition, in proper adjustment, and are properly lubricated. During operation, be constantly alert to detect unusual oil leakage or noises that may indicate trouble. If trouble is detected, it should be reported in accordance with established procedures.

4.02 Fig. 6 and 7 show the lubrication points on the winders and indicate the lubricant required. Oil cups and chains should be checked for sufficient lubrication at the beginning of each day of operation.

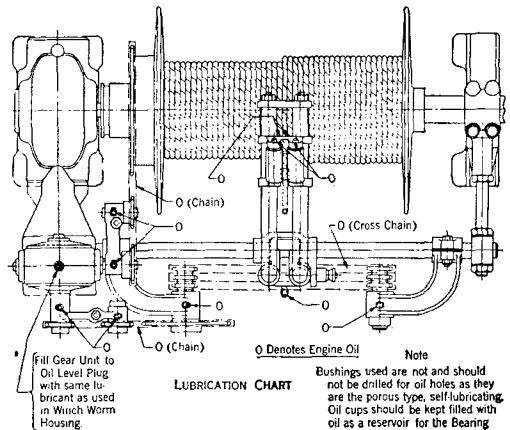


Fig. 6—Lubrication Chart

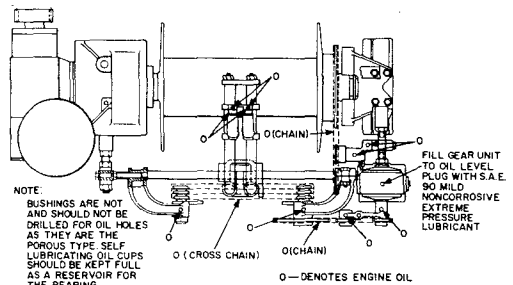


Fig. 7—Lubrication Chart (AT-8414)

5. ADJUSTMENTS

5.01 The adjustments covered in the following paragraphs are those that may be required in field operation. Winder installation and initial adjustments are covered in the manufacturing specifications.

5.02 The cross chains and sprockets must be centered on the winch drum. If they are not, the winch line will pile up at one end of the winch drum. Center the cross chain on the drum by loosening the clamping bolts and turning the adjusting screws until equal spacing is obtained. (See Fig. 8.) It may be necessary to loosen the second reduction roller chain in order to make the cross chain adjustment. Retighten the second reduction chain when the cross chain adjustment has been completed.

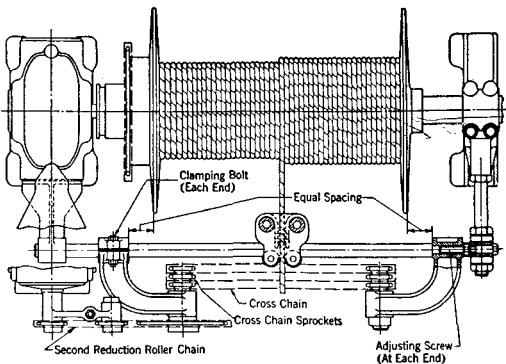


Fig. 8—Carriage Travel Adjustment

5.03 The cross chain should be kept tight to prevent excessive tipping of the link to which the driving pin is attached. Tighten the cross chain by taking up equal amounts on the adjusting screws. The first and second reduction roller chains should be operated with considerable slack (the amount of slack is controlled by adjustable chain idlers), but not enough slack to cause the chains to jump the teeth on the sprockets.

6. ATTACHING WINCH LINE TO DRUM

6.01 To attach a winch line to the winch drum, run the winch until the roller assembly is

at the extreme end of its travel and aligned with the winch line clamp on the drum. The driving pin on the cross chain will be at the midpoint of the vertical slot in the carriage. Stop the drum with the clamp in the top position. Place the end of the winch line through the roller assembly and secure it to the drum with the clamp. (See Fig. 9.)

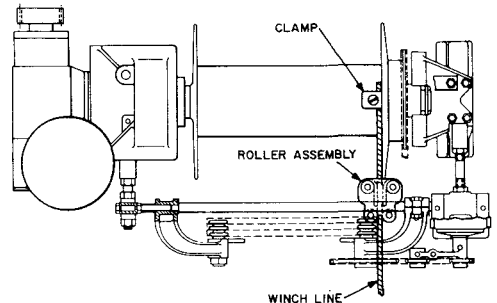


Fig. 9—Attaching Winch Line to Drum

6.02 Wind the winch line onto the drum using a forward winch speed. Maintain considerable tension on the line so that smooth, firm layers of line on the drum will result. The need for centering the cross chain, if necessary, will be apparent after one or two layers of line have been wound on the drum.

6.03 The performance of the winder depends largely on maintaining tension on the coils of winch line on the drum. Any portion of the winch line may be unwound by driving the winch in reverse or by disengaging the winch clutch and permitting the winch to operate with a free drum. In either case, the carriage will maintain uniformity of the coils, since it is driven by the drum, if some tension is maintained on the winch line.

7. REMOVING WINCH LINE FROM CARRIAGE

7.01 If it becomes necessary to remove the winch line from the carriage while part of the line is wound on the drum, remove the tie plate from the upper end of the horns and slide the roller cage off of the horns. There must be enough slack in the winch line to permit the roller cage to clear the ends of the horns. To free the winch line from the cage, remove the guide roller pin

and horizontal guide roller from the lower portion of the cage. (See Fig. 10.)

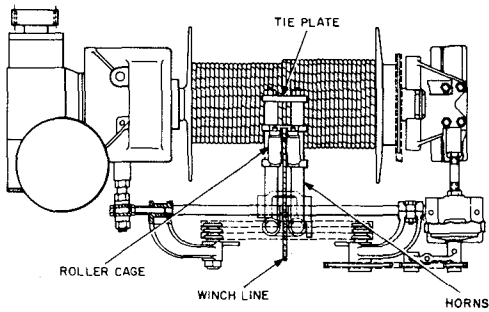


Fig. 10—Removing Winch Line From Carriage

8. CHANGING THE WINCH LINE SIZE

8.01 The winders will operate with different sizes of winch rope if the proper sprocket and chain sizes are used. (See Table A.)

8.02 If the winch line is changed to one of a different size, certain sprockets and chain lengths must also be changed. When the sprockets and chains of the correct size have been obtained, they can readily be placed on the winder. To change a sprocket and chain, loosen the idler and open the chain at the connecting link. Loosen the setscrew holding the sprocket and remove the sprocket. Replace with the desired sprocket and chain. Adjust the chain to the proper amount of slack.

TABLE A

SPROCKET AND CHAIN SIZES FOR DIFFERENT ROPE SIZES

SIZE OF SPROCKET					CHAIN LENGTH (CH)		CHAIN LENGTH (CD, LCD)			
WINCH ROPE	SPROCKET S-1 NUMBER OF TEETH	SPROCKET S-2 NUMBER OF TEETH	SPROCKET S-3 NUMBER OF TEETH	SPROCKET S-4 NUMBER OF TEETH	CHAIN C-1	CHAIN C-2, CH 16-6, CH 22	CHAIN C-1	CHAIN C-2		
								16 IN.	22 IN.	28 IN.
					PITCHES	PITCHES	PITCHES	PITCHES	PITCHES	PITCHES
5/16	58	23	11	36	94	74	96	74	74	74
3/8	58	19	11	36	92	74	94	74	74	74
7/16	58	16	12	40	90	76	92	76	76	76
1/2	58	14	12	40	88	76	91	76	76	76
CH 16-6 Winder for D Single Drum Winch							8414 Winder for 16 LCD			
CH 22 Winder for UG Single Drum Winch							8414 Winder for 22 LCD, CD			
							8414 Winder for 28 CD			