Form P5893
Edition 6
March, 1981

SERIES K4U, K4UL, K5U AND K5UL UTILITY® WINCHES

WARNING

These Winches are not to be used for lifting or lowering people

Always operate and maintain this Winch in accordance with American National Standards Institute Safety Code (ANSI B30.7) and any other applicable safety codes and regulations.

FOR TOP PERFORMANCE AND MAXIMUM DURABILITY OF PARTS, OPERATE THIS WINCH AT 90 psig (6.2 bar/620 kPa) AIR PRESSURE WITH 1-1/2" (38 mm) DIAMETER HOSE.

OPERATING PRACTICES

The two most important aspects of Winch operation are: (1) Allow only qualified people to operate a Winch and (2) Subject each Winch to a regular inspection and maintenance procedure.

A qualified operator must be physically competent. He must have no health condition which might affect his ability to react, and he must have good hearing, vision and depth perception. The qualified Winch operator must be carefully instructed in his duties and must understand the operation of the Winch, including a study of the manufacturer's literature. He must thoroughly understand proper methods of hitching loads. He should have a good attitude regarding safety and should refuse to operate under unsafe conditions.

Regular inspection procedures should be set up, rigidly adhered to and recorded by or under direction of a qualified person. On Winches in continuous service, inspection should be made at the beginning of each shift. The items to be checked include, but are not limited to:

a. LUBRICATION: See lubrication instructions on Page 3.
b. BRAKES: Visually check for proper adjustment.
   Lift a capacity or near capacity load a few inches off the floor and check ability of braking system to stop and hold the load without excessive drift.
c. WIRE ROPE AND HOOKS: Visually inspect the wire rope. Replace it **AT ONCE** if there is indication of fraying, or if it is crushed, cut or otherwise damaged. Follow cable manufacturer's recommended practice for proper use and inspection of wire rope.
   Hooks should be checked for wear, increase in throat opening, and bending.
d. CONTROLS: See that controls function properly and return to neutral when released.
e. GENERAL: Check to see that mounting fastenings are secure, unworn and undamaged. Be alert for unusual visual or audible signs which could indicate a defect. Do not operate the Winch until the defect has been determined and corrected.

Periodically, depending on the severity of the service:

a. Inspect Brake and Locking Dog components for wear or damage.
b. Check all bolts or fasteners.
c. Inspect the Winch structure for damage.

Notice: The use of other than genuine Ingersoll-Rand replacement parts may result in decreased tool performance and increased maintenance, and may, at the Company's option, invalidate all warranties.

PARTS BULLETIN

Refer All Communications to the Nearest Ingersoll-Rand Office or Distributor.

Printed in U.S.A.

INGERSOLL-RAND®
AIR HOISTS & WINCHES

OPERATING INSTRUCTIONS

1. Read the manufacturer's instructions before operating the Winch.
2. Never lift a load greater than the rated capacity of the Winch.
3. Never use the Winch rope as a sling.
4. Always stand clear of the load.
5. Never use the Winch for lifting or lowering people, and never stand on a suspended load.
6. Never carry loads over people.
7. Before each shift, check the Winch for wear or damage. Check brakes, locking dog, etc.
8. Periodically inspect the Winch thoroughly and replace worn or damaged parts.
9. Follow the lubrication instructions.
10. Do not disengage clutch with a load on the Winch. Be sure clutch is fully engaged before operating Winch.
11. Do not "side pull" or "yard".
12. Always rig the Winch properly and carefully.
13. Never operate a Winch with twisted, kinked or damaged wire rope.
14. Be sure cable winds properly on drum.
15. Ease the slack out of the wire rope and sling when starting a lift. Do not jerk the load.
16. Be certain there are no objects in the way of a load or hook when operating the Winch.
17. Be certain the air supply is shut off before performing maintenance work on the Winch.
18. Shut off air supply while Winch is unattended.
19. Properly secure the Winch before leaving it unattended.
20. Be certain the load is properly seated in the saddle of the hook. Do not tipload the hook as this leads to spreading and eventual failure of the hook.
21. Do not allow unqualified personnel to operate a Winch.
22. Do not swing a suspended load.
23. Do not operate a Winch if you are not physically fit to do so.
24. Do not do anything you believe may be unsafe.
25. Do not use the Winch rope as a ground for welding. Do not attach a welding electrode to a Winch or sling chain.
26. Do not divert your attention from the load while operating a Winch.
27. Engage locking dog before leaving load suspended.
28. Do not engage locking dog while drum is in operation.
29. Do not leave a load suspended for any extended period—never unattended.
30. Never splice a sling chain by inserting a bolt between links.
31. Do not force a chain or hook into place by hammering. Do not insert the point of the hook into a chain link.
32. Do not expose the sling chain to freezing temperatures, and do not apply sudden loads to a cold chain.

LUBRICATION

Warning: Lubricate the motor before using the Winch. To avoid leakage during shipment, the oil was drained from the motor. A quantity of oil sufficient for one filling is contained in the can packed with the Winch. Before using the Winch, make sure the Drain Plugs (2) are screwed securely into place, then unscrew the Vent Cap (4) and pour the entire contents of the can into the opening in the top of the Motor Case (1).

Motor Lubrication

Check oil daily and maintain level with opening in the side of the Motor Case.

When the Winch is subjected to temperatures above freezing: After the Winch has been idle for several hours or overnight, loosen the Drain Plug (2) located at the bottom of the Motor Case (1) and allow the accumulated water to drain out. After draining the water, tighten the Plug in the bottom and remove the Plug (2) on the side of the Motor Case. Unscrew the Vent Cap (4) and pour a sufficient quantity of the recommended oil through this opening to bring the oil level, within the Motor Case, up to the side opening. Replace the Plug and Vent Cap.

When the Winch is subjected to freezing temperatures: Allow the Winch to remain idle long enough for the water content in the Motor Case (1) to separate from the oil, but not long enough for it to freeze. Drain the water and replenish the oil as above. Should this procedure be impractical, drain the entire contents of the Motor Case immediately after operation ceases and pour the oil back into the Motor Case before resuming operation. If not drained, a sufficient quantity of water will eventually accumulate so that the Oil Splasher (37), which is attached to the Crank (36) will freeze fast.

For temperatures 30° to 80° F (-1° C to 26° C), use Ingersoll-Rand Pneu-Lube® Medium Oil No. 50 or SAE 20 or 20W motor oil.

For temperatures below 30° F (-1° C), use SAE 10 or 10W motor oil.

For temperatures above 80° F (26° C), use SAE 30 motor oil.

Throttle Valve Lubrication

Weekly, insert a small quantity of Ingersoll-Rand Light Grease No. 28 or a good quality No. 2 cup grease into the Grease Fittings (14) located in the Valve Chest (10). Two or three strokes from the No. P25-228 Grease Gun is ample for each Fitting.

Gearing Lubrication

Every sixty to ninety days, remove the Grease Plug (108) from the Gear Case (84) and note if the visible portion of the gears is coated with grease. If the gears appear to lack lubrication, add about 1/2 pound (.23 kg) of the recommended grease. When reassembling a Winch, three pounds (1.4 kg) of grease are required.

Use Ingersoll-Rand Heavy Gear Grease No. 70. As a substitute, Ingersoll-Rand Light Grease No. 28 or a good quality No. 2 cup grease may be used.

For extremely low temperatures, Ingersoll-Rand Medium Gear Grease No. 75, low temperature grease or a heavy gear oil may be used. **Note:** Leakage will probably be experienced if heavy gear oil is used for normal temperatures.

Lubricate the Drum Gear occasionally by pushing a piece of hard stick or block grease 3/4" to 1" (19 mm to 25 mm) long through the hole above the Drum Shaft Long Set Screw (75).

An Air Line Lubricator is recommended for use with Utility Winch. It will improve the efficiency of the Winch and prolong the life of the motor.

HOSE AND HOSE CONNECTIONS

Use 1-1/2" (38 mm) hose with a suitable hose fitting for attaching it to the inlet. Use of smaller hose and fittings will reduce the efficiency of the Winch.

MOUNTING

Mount the Winch so that the axis of the Rope Drum (67) is horizontal. Operation of the Winch with the axis of the Drum more than 10° from horizontal will result in lubrication difficulties and the Wire Rope will tend to pile up on the low end of the Drum.

On all 4-cylinder Winches, the Motor Case (1) can be rotated on the Motor Mounting Bracket (66) to any one of eight different positions. When a Winch is shipped from the factory, the Motor Case is positioned for operation when the Winch is mounted upright on its base. Therefore, the Motor Case must be repositioned if the Winch is to be mounted with the Vent Cap (4) more than 25° off top vertical center. To change the position of the Motor Case:

1. Drain the oil.
2. Unscrew the eight Motor Case Screws (57).
3. Rotate the Motor Case to bring the Vent Cap as near top vertical center as possible.
4. Replace the Cap Screws.
5. Fill with oil.

On Model K5UL or K5U, the Motor Case (1) can be rotated on the Motor Mounting Bracket (66) to any one of five differend positions. When a Winch is shipped from the factory, the Motor Case is positioned for operation when the Winch is mounted upright on its base. Therefore, the Motor Case must be repositioned if the Winch is to be mounted with the Drain Plug (2) more than 25° off bottom vertical center. To change the position of the Motor Case:

1. Drain the oil.
2. Unscrew the Motor Case Screws (57).
3. Rotate the Motor Case to bring the Drain Plug as near bottom vertical center as possible.
4. Replace the Cap Screws.
5. Fill with oil.

The Winch should not be operated with one of the Cylinders at bottom vertical center.

Apply the Wire Rope to wind on the Rope Drum in the direction indicated by the instruction plate on the Winch.

Adjust the brake so that considerable pressure is required to push the Brake Handle (126) past center for locking. Make adjustment by removing the Brake Shoe Long Pin (131) and rotating the Brake Adjusting Screw (130).

Remove the Throttle Valve Spring (21), Poppet Throttle Valve (20) and Throttle Valve Ball (22) from the Valve Chest (10) before attempting to withdraw the Reverse Valve (24) from the Reverse Valve Bushing (13).

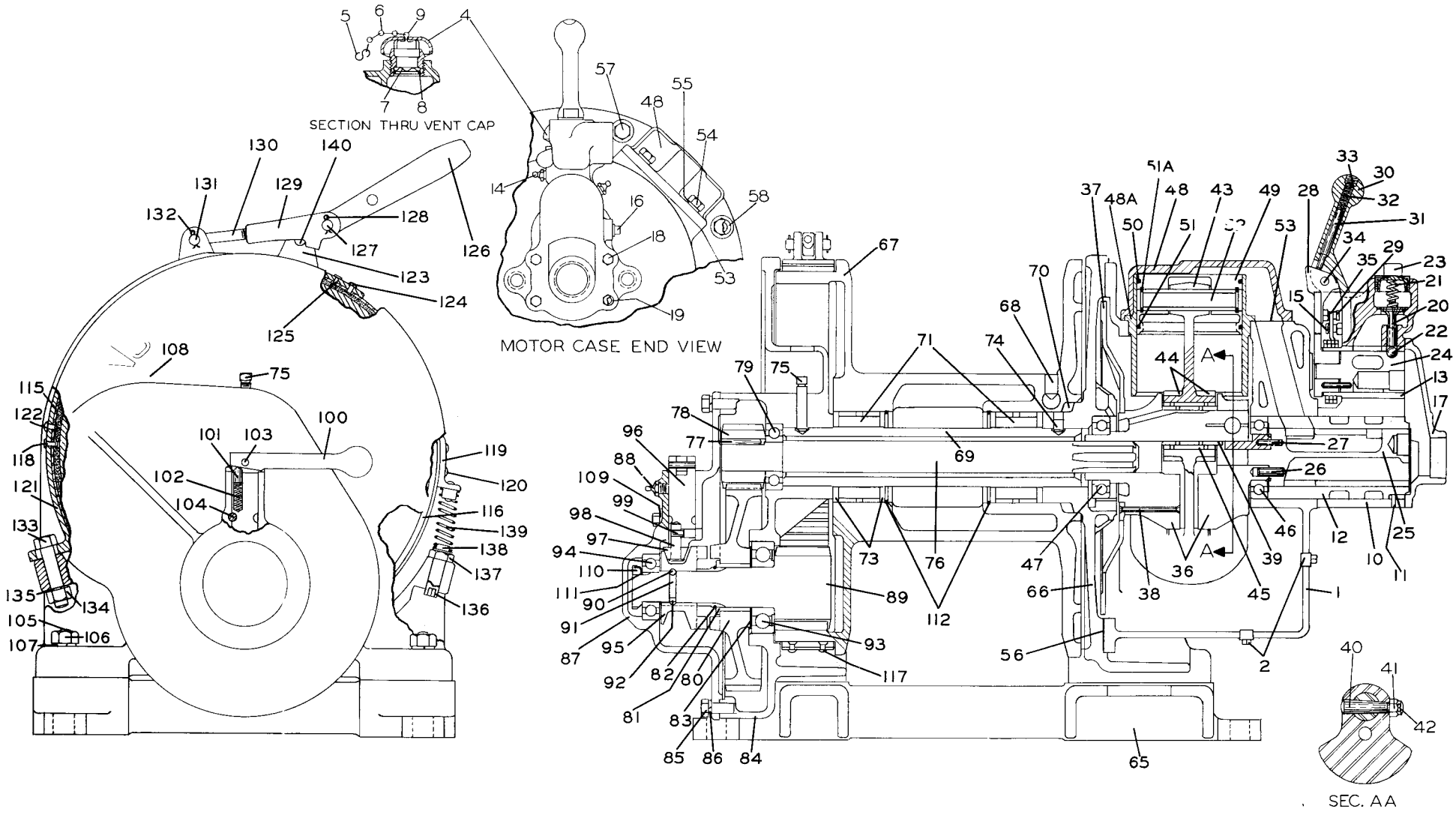
The following procedure is recommended when replacement of the Rotary Valve Bushing (12) or Reverse Valve Bushing (13) is necessary:

1. Unscrew the Valve Chest Screws (18) and remove the Valve Chest Cover (17).
2. Screw a No. HU-932 Jack Bolt into each tapped lug on the Valve Chest (10) until the Jack Bolts contact the Motor Case (1). Turn each Bolt a little at a time to jack the Chest with assembled parts from the Motor Case.
3. Unscrew the Throttle Valve Cap (23) and remove the Spring (21), Poppet Throttle Valve (20) and Ball (22) from the Valve Chest (10).
4. Withdraw the Rotary Valve (25) and Reverse Valve (24), and remove the Throttle Lever Spring (35).
5. Support the face of the Valve Chest (10) that contacts the Motor Case (1), and press out the old Bushings with an arbor **that will clear the Bushing Keys (11).**
   Caution: Failure to use an arbor that will clear the Bushing Keys, or pressing the Bushings in the opposite direction than instructed, will destroy the Keys.
6. Support the face of the Valve Chest (10) that contacts the Valve Chest Cover (17); align the keyslot in the new Reverse Valve Bushing with the Bushing Key (11), and press the Bushing into the Chest until the leading face of the Bushing is flush with the supported face of the Chest. Align the keyslot in the new Rotary Valve Bushing with the Bushing Key and press the Bushing into the Chest until the bushing shoulder is flush with the supported face of the Chest.
7. Insert the No. 23470 Throttle Valve Stem Reamer or a .505" (12.8 mm) hand reamer through the throttle valve chamber in the Valve Chest and ream the hole through the wall of the new Reverse Valve Bushing.
8. Check the fit of the Rotary Valve (25) in the new Rotary Valve Bushing. If the Valve is tighter than a good running fit in the Bushing, lap in the Valve, using a fine grain lapping compound whose abrasive agent will break up rapidly. Remove all trace of the compound after obtaining the desired fit.
9. Check the fit of the Reverse Valve (24) in the new Reverse Valve Bushing. If the fit is too tight, ream the Bushing 1.875" (47.625 mm).
   Caution: The Reverse Valve is chromo-plated; do not lap.
10. Rotate the Reverse Valve in the Reverse Valve Bushing until the arrows on the two parts align, and install the Throttle Valve Ball, Poppet Throttle Valve, Spring and Cap.
11. Install the Throttle Lever Spring (35) and Throttle Control Arm (28).
12. Align the holes through the Valve Chest (10) with those in the face of the Motor Case (1) and squarely start the protruding end of the Rotary Valve Bushing into the Case. Place a hardwood block on the chest face and press or drive in the Bushing until the Valve Chest contacts the Motor Case.

The two sections of the Crank (36) are matched before final machining, and the web of each section is stamped with an identification mark as **AA17, CC21, XX19,** etc. Only sections bearing identical marking can be used together. If more than one Crank is disassembled at one time, be sure only matched parts are assembled together.

Slide the Crank Pin Sleeve (39), plain end first, onto the crank pin when assembling the Crank (36).

Install the Connecting Rod Rings (44) so that the internally beveled ends are toward the Connecting Rods (43) when assembling the Crank (36).



(Dwg. TPA254-2)

Model K4U Utility Winch
(Typical of Model K5UL)

MOTOR PARTS

			PART NUMBER FOR ORDERING
	1	Motor Case	
		for K4U or K4UL	KU-501
		for K5U or K5UL	K5M-501
	2	Drain Plug (2)	D02-402
	*	Motor Eyebolt (2 for K5U or K5UL; 1 for others)	KU-888
	*	1-1/4" Pipe Plug (for K5U or K5UL)	E5UD-947
	4	Vent Cap	D02-303A
	5	S-Hook	D02-421
	6	Vent Cap Chain	D02-891
	7	Vent Cap Screen	D02-889
	8	Vent Cap Screen Retainer	6CND-233-1/2
	9	Vent Cap Cotter	D02-893
†	10	Valve Chest	
		for K4U or K4UL	KU-545A
		for K5U or K5UL	KK5UM-545
†	11	Bushing Key (2)	HU-538
†	12	Rotary Valve Bushing	
		for K4U or K4UL	KU-525S
		for K5U or K5UL	K5M-525S
†	13	Reverse Valve Bushing	KU-945S
†	14	Grease Fitting (2)	23-188
†	15	Throttle Lever Spring Stop Pin	D02-553
†	16	Brake Inlet Plug (2)	D02-402
†	17	Valve Chest Cover	KU-546A
†	18	Valve Chest Screw (4)	KU-548
†	19	1/2" Lock Washer (4)	D10-322
†	20	Poppet Throttle Valve	KU-940
●†	21	Poppet Throttle Valve Spring	HU-942
†	22	Poppet Throttle Valve Ball	D10-280
†	23	Poppet Throttle Valve Cap	KU-943
†	24	Reverse Valve	
		for Winch with standard brake	KU-944
		for Winch with automatic brake	KU-744
†	25	Rotary Valve	
		for overwinding Winch	KU-526A
		for underwinding Winch	KU-526RA
●†	26	Large Valve Drive Pin	KU-527
●†	27	Small Valve Drive Pin (2)	HU-527
†	28	Throttle Control Arm	KU-555A
†	29	Throttle Lever Spring Stop Pin	D02-553
●	30	Throttle Lever	HU-556
	31	Throttle Lever Latch	HU-869
●	32	Throttle Lever Latch Spring	HU-567
	33	Throttle Lever Set Screw	HU-842
	34	Throttle Lever Pin	HU-870
	*	Throttle Lever Pin Cotter (2)	D02-524

			PART NUMBER FOR ORDERING
	35	Throttle Lever Spring	KU-412
		Crank Assembly	
		for K4U or K4UL	KU-A516
		for K5U or K5UL	K5M-A516
	36	Crank Bare (consists of 2 matched parts which are not sold separately)	KU-540
	37	Oil Splasher	KU-640
	38	Oil Splasher Long Rivet (2)	KU-541
	*	Oil Splasher Short Rivet (2)	KU-542
●	39	Crank Pin Sleeve	KU-519
	40	Crank Lock Pin	KU-520
	41	Crank Lock Pin Nut	D02-317
	42	Crank Lock Pin Cotter	D02-330
●	43	Connecting Rod	
		for K4U or K4UL (4)	KU-509
		for K5U or K5UL (5)	K5M-509
	44	Connecting Rod Ring (2)	KU-510
●	45	Connecting Rod Bushing	KU-511
●	46	Crank Valve End Bearing	KU-518
●	47	Crank Pin End Bearing	KU-895
		Cylinder Assembly (5 for K5U or K5UL; 4 for others)	KU-A505A
	48	Cylinder Head	KU-H505A
	48A	Cylinder Sleeve	KU-L505A
	49	Piston Assembly (5 for K5U or K5UL; 4 for others)	K5W-A513A
●	50	Piston Ring (1 for each Piston)	KU-337
	51	Oil Regulating Ring (1 for each Piston)	KU-338
	51A	Wrist Pin Retaining Ring (2 for each Piston)	ILA902A9-589
	52	Piston Wrist Pin (5 for K5U or K5UL; 4 for others)	K5W-514
●	53	Cylinder Gasket (5 for K5U or K5UL; 4 for others)	KU-507
	54	Cylinder Cap Screw (4 for each Cylinder)	215-13
	55	Cylinder Cap Screw Washer (4 for each Cylinder)	KU-504
●	56	Motor Case Gasket	
		for K4U or K4UL	KU-592
		for K5U or K5UL	K5M-592
	57	Motor Case Screw (10 for K5U or K5UL; 8 for others)	215-36
	58	5/8" Lock Washer (10 for K5U or K5UL; 8 for others)	A-67
	*	Motor Nameplate	K5W-99
	*	Nameplate Screw (4)	R4K-302
	*	Winch Nameplate	DU-301
	*	Nameplate Screw (4)	R4K-302
	*	Caution Plate	TA-147A
	*	Caution Plate Screw (4)	R4K-302

* Not illustrated.

† For Valve Chest (10) with Poppet-Type Throttle Valve (20), used beginning serial 7000 and illustrated in the sectional views. Parts for the superseded Valve Chest with taper-plug type Throttle Valve that was used under serial 7000 are no longer available. When any part is required for the superseded Valve Chest, order the listed Valve Chest Assembly. It can be used as a replacement for the assembly with taper-plug type Valve, provided a new Throttle Control Arm (28) is also used.

● To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (●) for every four tools in service.

BASE, ROPE DRUM AND GEAR PARTS

		PART NUMBER FOR ORDERING
65	Base	
	for K4U or K5U	K4U-564A
	for K4UL or K5UL	K4UL-564A
66	Motor Mounting Bracket	K4U-502
67	Rope Drum	
	for K4U or K5U	K5U-324
	for K4UL or K5UL	K5UL-324
68	Wire Rope Set Screw (2)	215-140
69	Drum Shaft	
	for K4U or K5U	K4U-459
	for K4UL or K5UL	K4UL-459
*	Drum Shaft Oil Seal (2)	K4UL-271
70	Drum Packing	207-136
● 71	Drum Bearing (2) (Hyatt CW99212 or its equivalent)	K4U-466
73	Drum Bearing Plate (4)	K4U-469
74	Drum Shaft Short Set Screw	HU-867
75	Drum Shaft Long Set Screw	HU-868
76	Motor Shaft	
	for K4U or K5U	K4U-316C
	for K4UL or K5UL	K4UL-316C
77	Motor Pinion Key	EEG-768
78	Motor Shaft Pinion	K4U-319B
● 79	Motor Shaft Bearing	K4U-589B
*	Motor Shaft Bearing Seal	R10V-310
80	Intermediate Gear	K4U-364
81	Intermediate Gear Bushing	K4U-363
82	Intermediate Gear Bushing Retainer	K4U-362
83	Fiber Washer	K4U-871
84	Gear Case	K4U-353A
85	Gear Case Screw (10)	215-148
86	Lock Washer (10)	D10-322
87	Gear Cover	K4U-352
88	Grease Fitting	23-188
89	Drive Shaft	K4U-358
90	Clutch Jaw Lock Ball	G601-65
91	Clutch Jaw Lock Spring	K4U-863
92	Clutch Jaw Lock Plug	HU-864
● 93	Drive Shaft Inner Bearing	2325-41
● 94	Drive Shaft Outer Bearing	215-63
95	Clutch Jaw	K4U-568
96	Clutch Eccentric Shaft	HU-857
97	Clutch Eccentric Roller	HU-858
98	Clutch Eccentric Pin	HU-859
99	Eccentric Pin Lock Screw	HU-860
100	Clutch Lever	HU-565
101	Clutch Latch	HU-566
102	Latch Spring	HU-567
103	Clutch Lever Pin	HU-861
104	Eccentric Shaft Lock Screw	HU-865
105	Base Bolt (3/4"-10 thd. 3-1/2" long [8])	K4U-775
106	Base Bolt Nut (8)	DU-562
107	Base Bolt Lock Nut Washer (8)	D01-692
108	Grease Plug (2)	22SR-165
109	3/8" Lock Washer	D02-321
110	Drive Shaft Nut	215-73
111	Drive Shaft Nut Lock	215-74
112	Drum Bearing Retainer (2)	K4U-340
*	Grease Gun	P25-228
*	Wire Rope Set Screw Wrench	K-27
*	Valve Chest Jack Bolt (2 required)	HU-932
*	Piston Ring Compressor	KU-933
*	Throttle Valve Stem Reamer	23470
*	Throttle Valve Seat Reamer	25670

* Not illustrated.

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BRAKE PARTS

		PART NUMBER FOR ORDERING K4U K4UL	K5U K5UL
	Brake Band Assembly	K4U-A152	K5U-A152A
● 115	Brake Band	K4U-152	K5U-152A
116	Brake Lining	K4U-155	K4U-155
117	Brake Lining Short Rivet (16)	K4U-156	K4U-156
118	Brake Lining Long Rivet (17)	235-98	235-98
119	Brake Support Spring Bracket	K4U-161A	K4U-161A
120	Spring Bracket Rivet (2)	107-153	107-153
120	Brake Shoe Rivet (13)	107-153	107-153
● 121	Brake Shoe	K4U-145	K5U-145
122	Brake Shoe Rivet (9)	107-153	KU-542
118	Brake Lining Long Rivet (12)	235-98	235-98
123	Brake Lever Bracket	K4U-193	K5U-193
124	Brake Lever Bracket Rivet (5)	107-153	107-153
125	Brake Lining Long Rivet (5)	235-98	235-98
● 126	Brake Handle	107-151	107-151
127	Brake Handle Pin	107-149	107-149
128	Brake Handle Pin Cotter (2)	107-146	107-146
129	Brake Yoke	107-159	107-159
130	Brake Adjusting Screw	107-158	107-158
131	Brake Shoe Long Pin	107-147	107-147
132	Brake Shoe Pin Cotter (2)	D02-330	D02-330
133	Brake Anchor	K4U-206	K4U-206
134	Brake Anchor Nut	HU-776	HU-776
135	Brake Anchor Lock Washer	A-67	A-67
136	Brake Support Screw	K4U-162	K4U-162
137	Brake Support Screw Jam Nut	G7-18	G7-18
138	Brake Support Screw Washer	K4U-343	K4U-343
139	Brake Support Spring	T03-119	T03-119
140	Brake Lever Bracket Pin	107-148	107-148
*	Bracket Pin Cotter	107-146	107-146

* Not illustrated.

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WARNING

DISENGAGING CLUTCH PARTS

For reasons of safety, it is emphatically recommended that Automatic Brake and Disengaging Clutch features not be used on any Winch used for hoisting or otherwise subjected to an overhauling load. If for any reason the Disengaging Clutch is left operative in a Winch used under either of the above conditions, it is the responsibility of the user to make provision to prevent accidental operation of the Winch motor with the clutch disengaged. **Operation of the motor with the clutch disengaged while holding a suspended load will allow the load to drop.**

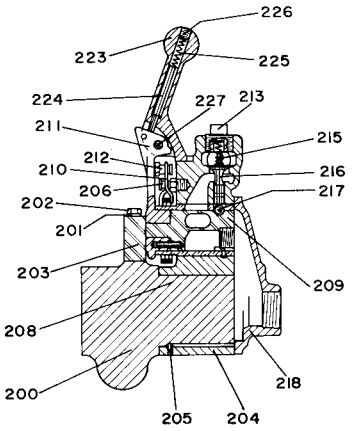
Because the combination of Automatic Brake and Disengaging Clutch is not sanctioned, the three parts marked "‡" should be ordered and installed if conversion from manual to automatic brake is made on a Winch equipped with the engaging clutch.

Use the parts as follows:

Install the Clutch Jaw Spacer (251) between the Drive Shaft Outer Bearing (94) and the Clutch Jaw (95) on the Drive Shaft (89) to lock the Clutch Jaw in engagement with the Intermediate Gear (80).

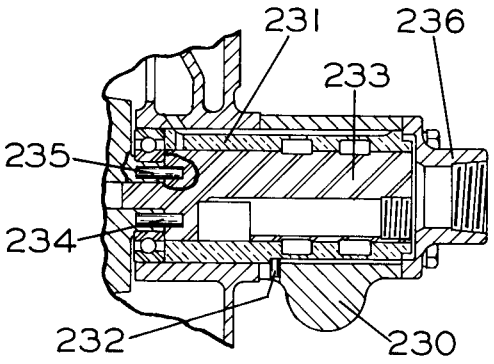
Remove the Clutch Eccentric Shaft (96) and included parts along with the Clutch Lever (100). Insert the Gear Cover Plug Seal (253) and Plug (252) into the hole in the Gear Cover (87) previously occupied by the Eccentric Shaft.

REMOTE CONTROL PARTS



Remote Control Block Assembly

(Dwg. TPD201)



Remote Control Valve Chest Assembly

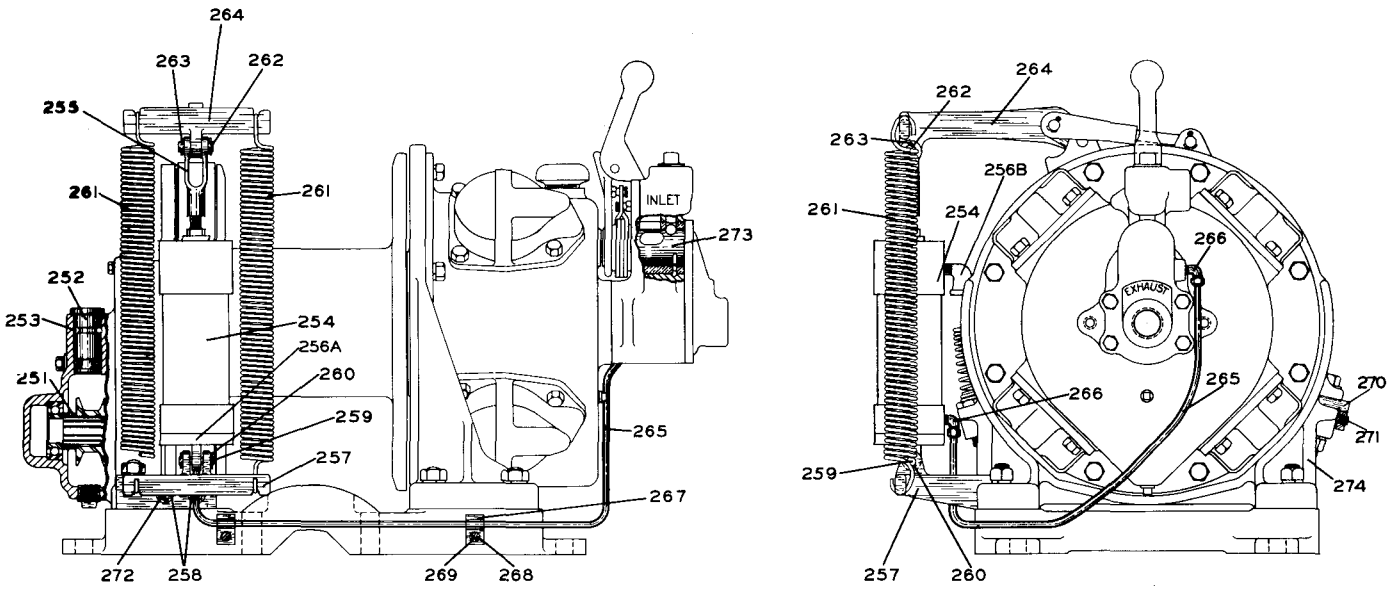
(Dwg. TPD206)

PART NUMBER FOR ORDERING

	Remote Control Block Assembly	
	for Winch with Standard Brake	KU-A685
	for Winch with Automatic Brake	KU-B685
200	Remote Control Block	KU-685
201	3/8" Lock Washer (2)	D02-321
202	Control Arm Retainer Screw (2)	HU-865
203	Control Arm Retainer	HU-687
204	Control Block Valve Chest	KU-876A
205	Bushing Key	HU-538
*	Brake Inlet Plug	D02-402
206	Throttle Lever Spring Stop Pin	D02-553
208	Control Block Reverse Valve Bushing	KU-945
*	Grease Fitting (2)	23-188
209	Control Block Reverse Valve	
	for Winch with Standard Brake	KU-944
	for Winch with Automatic Brake	KU-744
210	Control Block Throttle Lever Spring	KU-412
211	Control Block Throttle Arm	KU-555A
212	Throttle Lever Spring Stop Pin	D02-553
213	Control Block Throttle Valve Cap	KU-943
215	Control Block Throttle Valve Spring	HU-942
216	Control Block Poppet Throttle Valve	KU-940
217	Control Block Throttle Valve Ball	D10-280
218	Control Block Valve Chest Cover	KU-546A
223	Control Block Throttle Lever	HU-556
224	Throttle Lever Latch	HU-869
225	Latch Spring	HU-567
226	Throttle Lever Set Screw	HU-842
227	Throttle Lever Pin	HU-870
*	Throttle Lever Pin Cotter (2)	D02-524
230	Remote Control Valve Chest	
	for K4U or K4UL	KX-545
	for K5U or K5UL	K5M-545
231	Rotary Valve Bushing	
	for K4U or K4UL	KU-525S
	for K5U or K5UL	K5M-525S
232	Bushing Key	HU-538
233	Rotary Valve	
	for overwinding Winch	KU-526A
	for underwinding Winch	KU-526RA
234	Large Valve Drive Pin	KU-527
235	Small Valve Drive Pin (2)	HU-527
236	Remote Control Valve Chest Cover	KX-546
*	Valve Chest Screw (4)	KU-548
*	1/2" Lock Washer (4)	D10-322

* Not illustrated.

AUTOMATIC BRAKE PARTS



(Dwg. TPA742-1)

PART NUMBER FOR ORDERING

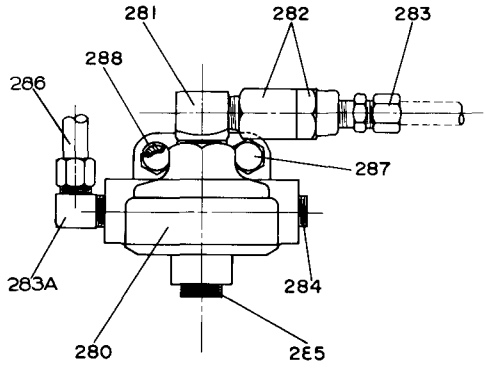
‡	251	Clutch Jaw Spacer	K4U-712
‡	252	Gear Cover Plug	HU-728
‡	253	Gear Cover Plug Seal	HU-730
•	254	Brake Cylinder Assembly	HU-720A
	255	Brake Cylinder Yoke	HU-719
	*	Brake Cylinder Bushing	HU-771
	256A	Eye Bracket	HU-717
	256B	Street Elbow	HUS-912
	257	Brake Cylinder Bracket	K4U-721
	258	Brake Cylinder Bracket Cap Screw (2)	HU-723
	259	Brake Cylinder Bracket Pin	HU-870
	260	Bracket Pin Cotter (2)	D02-524
	261	Brake Spring (2)	K4U-726
	262	Yoke Pin	22-720
	263	Yoke Pin Cotter	D02-330
	264	Automatic Brake Lever	K4U-718
	265	Brake Pipe	
		for K4U or K5U	K4U-401
		for K4UL or K5UL	K4UL-401
	266	Brake Pipe Elbow (2)	K4U-400
	267	Brake Pipe Strap (2)	HU-727
	268	Strap Screw (2)	J-376
	269	1/4" Lock Washer (2)	L01-67
	272	1/2" Lock Washer	D10-322
	273	Automatic Brake Reverse Valve	KU-744
	*	Reverse Valve O-ring	R18-311
	274	Motor Mounting Bracket	K4U-502
	*	Brake Cylinder Bracket Bolt (3/4"-10 thd. x 4" long)	K6U-775

* Not illustrated.

• To keep downtime to a minimum, it is desirable to have on hand certain repair parts. We recommend that you stock one (pair or set) of each part indicated by a bullet (•) for every four tools in service.

‡ Refer paragraph 2 of DISENGAGING CLUTCH PARTS on Page 9.

BRAKE EXHAUST VALVE PARTS



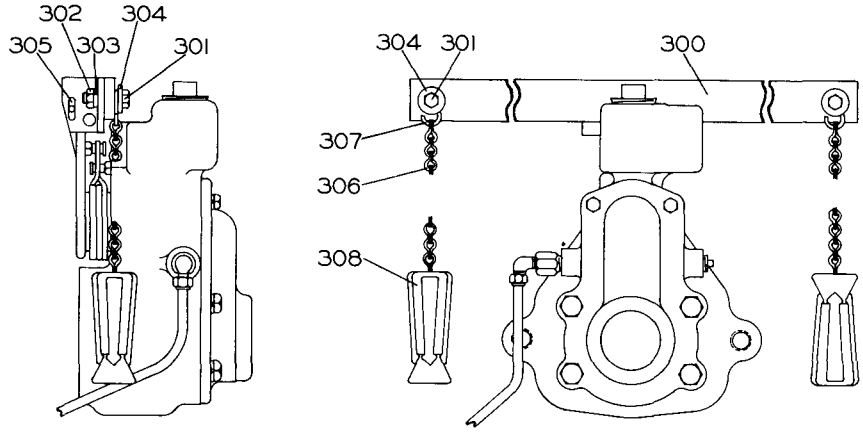
(Dwg. TPD214-1)

PART NUMBER FOR ORDERING

	Brake Exhaust Valve Assembly	K4U-A733
280	Brake Exhaust Valve	HU-733
281	Exhaust Valve Elbow	HU-745
282	Brake Air Strainer Assembly	R0B2-A565
283	Brake Connection	K4U-711
284	1/4" Pipe Plug	D02-402
285	Orifice Plug	HU-732
286	Exhaust Valve Pipe	K4U-731
287	Exhaust Valve Cap Screw (2)	R55H-473
288	5/16" Lock Washer (2)	T11-58
† 266	Brake Pipe Elbow	K4U-400

† Illustrated on Page 11.

PULL CHAIN THROTTLE PARTS



(Dwg. TPC112)

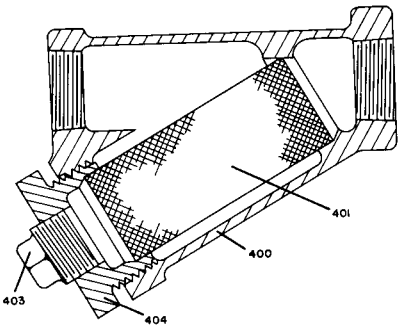
PART NUMBER FOR ORDERING

300	Pull Chain Throttle Lever	HU-559
301	Throttle Chain Bolt (2)	D02-312
302	Throttle Chain Bolt Nut (2)	D02-418
303	3/8" Lock Washer (2)	D02-321
304	3/8" Plain Washer (2)	D02-419
305	Throttle Lever Cotter	215-124
306	Throttle Lever Chain (2) (length as specified)	DU-413
307	S-Hook (4)	D01-221
308	Throttle Handle (2)	MR-415

AIR STRAINER

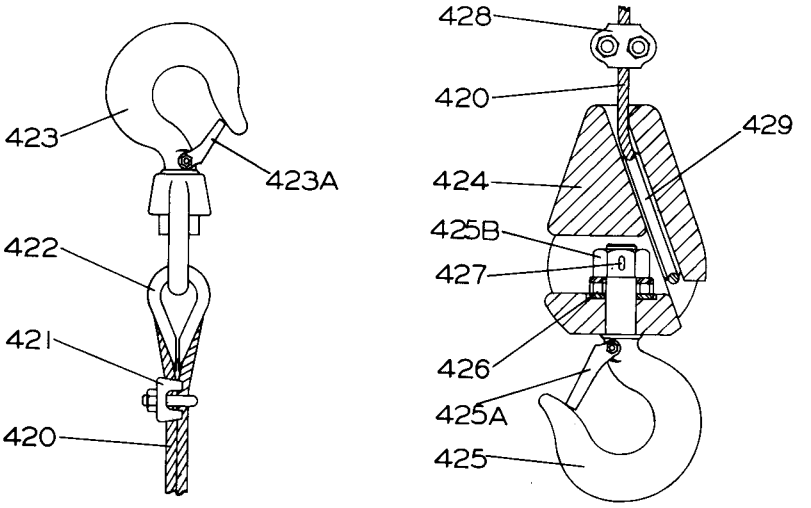
		PART NUMBER FOR ORDERING
400	Air Strainer Assembly	K4U-A267AT
401	Air Strainer Screen	K4U-61AT
403	Air Strainer Plug	22SR-165
404	Air Strainer Cap.	K4U-268AT
*	Air Strainer Nipple (1-1/4" x 2-1/2").	KKM-286

* Not illustrated.



(Dwg. TPD122-1)

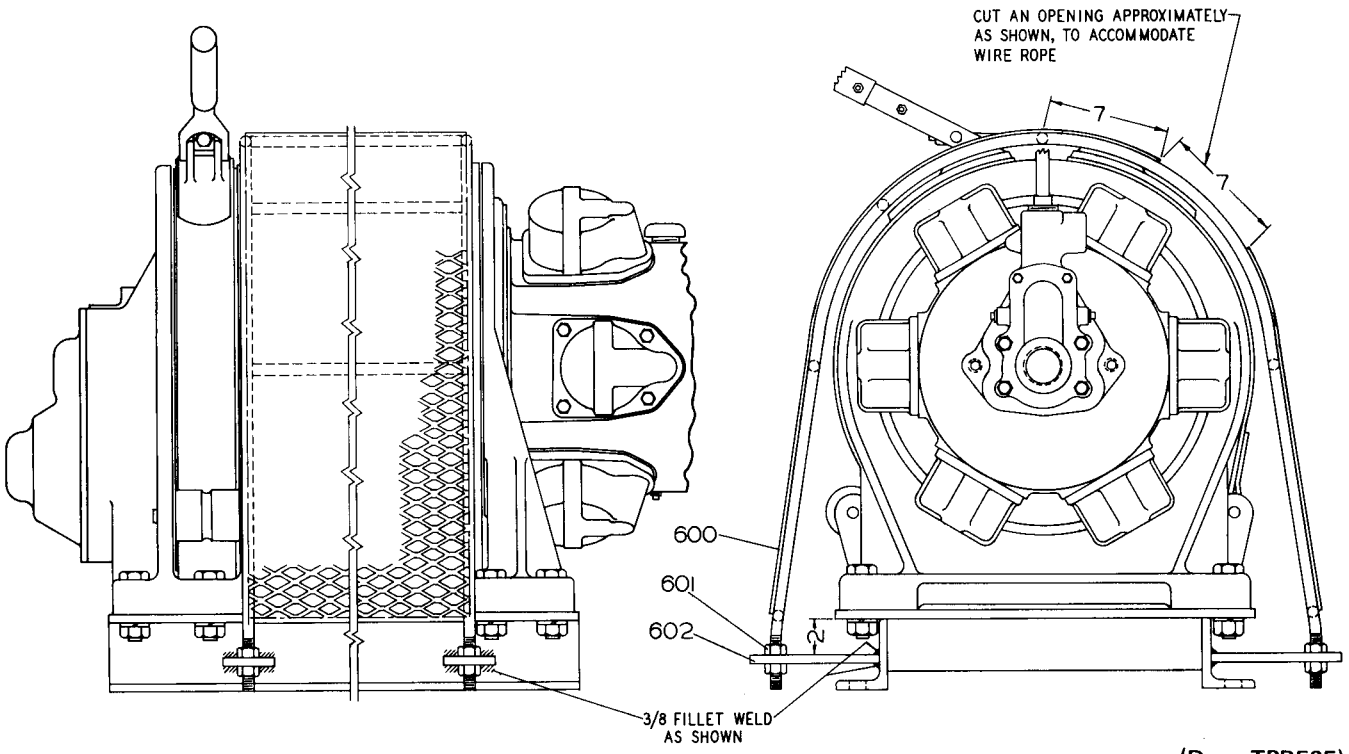
WIRE ROPE AND FITTINGS



(Dwg. TPC146-2)

		PART NUMBER FOR ORDERING			
		For Use With 3/8" Dia. Wire Rope	For Use With 1/2" Dia. Wire Rope	For Use With 9/16" Dia. Wire Rope	For Use With 5/8" Dia. Wire Rope
420	Wire Rope (specify length)	EU-372	215-372	K4U-372	235-372
	Wire Rope Fitting Assembly	EU-AS601	K4U-AS601-1/2	K4U-AS601-9/16	K4U-AS601-5/8
421	Wire Rope Clamp (3).	D04-464	D20-375	D20-375	235-375
422	Rope Thimble.	D10-721	215-602	K4U-602	K4U-602
423	Swivel Hook.	D01C-S377	K4U-S601	K4U-S601	K4U-S601
423A	Hook Latch Kit (individual parts not sold separately)	D01-S4055	D02-S4055	– – –	– – –
	Hook Block Assembly.	D02-AS463A	D04-AS463A	– – –	– – –
424	Hook Block	D02-463A	D04-463A	– – –	– – –
425	Hook	D02-S377	D04-S377	– – –	– – –
425A	Hook Latch Kit	D02-S123	D04-S123	– – –	– – –
425B	Hook Nut	D02-305B	HRA60A-305	– – –	– – –
426	Hook Bearing	D02-379A	D04-379A	– – –	– – –
427	Roll Pin	20QDM-330	D02-374	– – –	– – –
428	Wire Rope Clamp	D04-464	D20-375	– – –	– – –
429	Wire Rope Wedge	D02-373	D02-373	– – –	– – –

DRUM GUARDS



(Dwg. TPB565)

		PART NUMBER FOR ORDERING
600	Drum Guard	
	for K4U or K5U	K4U-298
	for K4UL or K5UL	K4UL-298
601	5/8"-11 thd. Nut (8)	K6U-8
602	Plate (4)	K6U-299

MUFFLER

		PART NUMBER FOR ORDERING
	Muffler	KU-674
†	Muffler Nipple	KKM-286
†	Reducing Coupling	HU-677

† Not required except when Winch is equipped for Remote Control.

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