Form P6263
Edition 3
February, 1980

MODEL ODR40A15 OFFSHORE DRILLING RIG WINCH

PARTS BULLETIN

WARNING

This Winch is not to be used for lifting or lowering people

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 three Plugs (2 and 3) 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° 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, inject 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 an ample amount 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 pint (237 mL) of the recommended grease. When reassembling a Winch, two pounds 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).

Air Line Lubricators are recommended for use with ODR Winches. Their use will improve the efficiency and prolong the life of the motor.

HOSE AND HOSE CONNECTIONS

Use 1-1/4" (32 mm) 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.

The Motor Case can be rotated to any one of five different positions. The Motor Case must be repositioned when 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 ten 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 in such a position that one of the Cylinders (48) is directly at the bottom.

(Continued on Page 8.)

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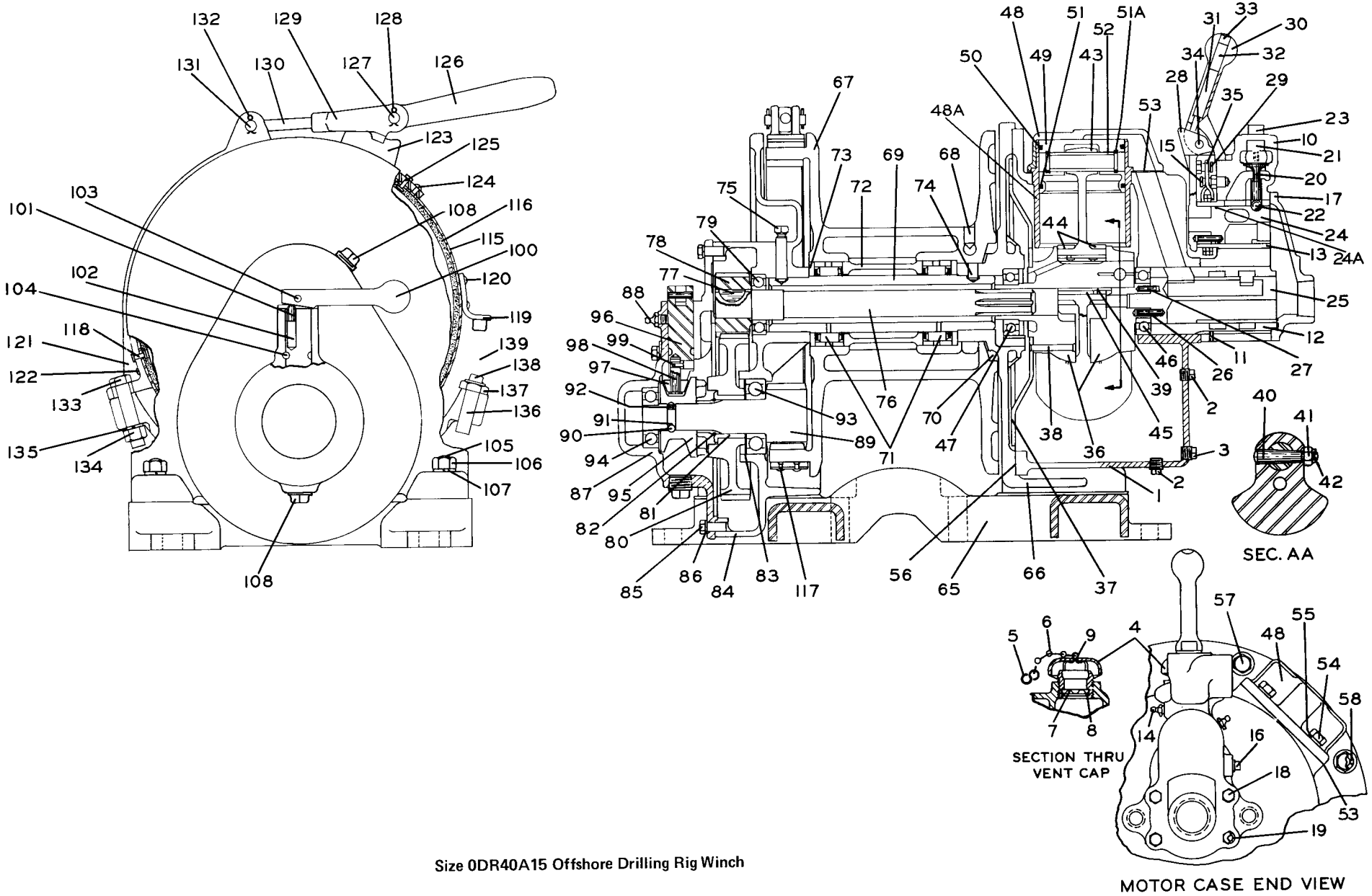

Size 0DR40A15 Offshore Drilling Rig Winch

(Dwg. TPA253-2)

		PART NUMBER FOR ORDERING
	Motor Assembly	H5U-A501
1	Motor Case	HH5D-501
2	Drain Plug (2)	D02-402
3	3/8" Pipe Plug	T1SE-368
*	1-1/4" Pipe Plug	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
	Valve Chest Assembly	
	for Winch with Standard Brake	H5U-A545
	for Winch with Automatic Brake	H5U-B545
10	Valve Chest	H5U-545
11	Bushing Key (2)	HU-538
12	Rotary Valve Bushing	HH5D-525S
13	Reverse Valve Bushing	H5U-945S
14	Grease Fitting (2)	23-188
15	Throttle Lever Spring Stop Pin	D02-553
16	Brake Inlet Plug	D02-402
17	Valve Chest Cover	H5U-546
18	Valve Chest Screw (4)	HU-548
19	3/8" Lock Washer (4)	D02-321
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 Assembly	
	for Winch with Standard Brake	H5U-A944
	for Winch with Automatic Brake	H5U-A744
24A	Reverse Valve O-ring	R0B2J73-359
25	Rotary Valve	
	for Overwinding Winch (Standard)	H5U-526
	for Underwinding Winch (Special)	H5U-526R
• 26	Large Valve Drive Pin	HU-527
• 27	Small Valve Drive Pin (2)	HU-627
28	Throttle Control Arm	HU-555A
29	Throttle Lever Spring Stop Pin	D02-553

		PART NUMBER FOR ORDERING
• 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
• 35	Throttle Lever Spring	HU-412
	Crank Assembly	H5U-A516
36	Crank Bare (consists of 2 matched parts which are not sold separately)	HU-516
37	Oil Splasher	HU-540
38	Oil Splasher Long Rivet (2)	HU-541
*	Oil Splasher Short Rivet (2)	HU-542
• 39	Crank Pin Sleeve	HU-519
40	Crank Lock Pin	HU-520
41	Crank Lock Pin Nut	D02-394
42	Crank Lock Pin Cotter	D02-524
• 43	Connecting Rod (1 for each Cylinder)	HH5D-509
44	Connecting Rod Ring (2)	HU-510
• 45	Connecting Rod Bushing	HU-511
• 46	Crank Valve End Bearing	HU-518
• 47	Crank Pin End Bearing	HUD-895
	Cylinder Assembly (5)	HH5D-A505A
48	Cylinder Head	HH5D-H505A
48A	Cylinder Sleeve	HH5D-L505A
49	Piston Assembly (1 for each Cylinder)	HU-A513B
• 50	Piston Ring (1 for each Piston)	HU-337
51	Oil Regulating Piston Ring (1 for each Piston)	HU-338
51A	Wrist Pin Retaining Ring (2 for each Piston)	902A45-632
52	Piston Wrist Pin (1 for each Piston)	HU-514A
• 53	Cylinder Gasket (1 for each Cylinder)	HU-507
54	Cylinder Cap Screw (4 for each Cylinder)	D10-354
55	Cylinder Cap Screw Washer (copper) (4 for each Cylinder)	HU-504
• 56	Motor Case Gasket	HH5D-592
57	Motor Case Screw (10)	215-148
58	1/2" Lock Washer	D10-322
*	Motor Nameplate	K5W-99
*	Nameplate Screw (4)	R4K-302

* 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.

		PART NUMBER FOR ORDERING			PART NUMBER FOR ORDERING
65	Base	HUL-564A	103	Clutch Lever Pin	HU-861
66	Motor Mounting Bracket	H5U-502	104	Eccentric Shaft Lock Screw	HU-865
67	Rope Drum	H5UL-324	105	Base Bolt (8)	HU-775
68	Wire Rope Set Screw (2)	HU-381	106	Base Bolt Nut (8)	HU-776
69	Drum Shaft	HUL-459	107	Base Bolt Lock Washer (8)	A-67
70	Drum Packing	HU-866	108	Grease Plug (2)	22SR-165
• 71	Drum Bearing (2)	HU-466	*	Winch Nameplate	DU-301
72	Drum Bearing Spacer	HUL-467	*	Nameplate Screw (4)	R4K-302
73	Drum Bearing Plate (2)	HU-469		Brake Band Assembly	H5U-A152
74	Drum Shaft Short Set Screw	HU-867	• 115	Brake Band	H5U-152
75	Drum Shaft Long Set Screw	HU-868	116	Brake Lining	HU-155
76	Motor Shaft	HUL-316A	117	Brake Lining Short Rivet (12)	K4U-156
77	Motor Pinion Key	D04-320	118	Brake Lining Long Rivet (16)	HU-157
78	Motor Shaft Pinion	H5U-319B	119	Brake Support Spring Bracket	K4U-161A
• 79	Motor Shaft Bearing	D10-518	120	Spring Bracket Rivet (2)	23-712
80	Intermediate Gear	H5U-364A	120	Brake Shoe Rivet (11)	23-712
81	Intermediate Gear Bushing	HU-363	• 121	Brake Shoe	HU-145
82	Intermediate Gear Bushing Retainer	HU-362	122	Brake Shoe Rivet (9)	23-712
83	Fiber Washer	HU-871	118	Brake Lining Long Rivet (12)	HU-157
84	Gear Case	HU-353A	123	Brake Lever Bracket	HU-193
85	Gear Case Screw (12)	D02-354	124	Brake Lever Bracket Rivet (4)	23-712
86	3/8" Lock Washer (13)	D02-321	125	Brake Lining Long Rivet (4)	HU-157
87	Gear Cover	HU-352	• 126	Brake Handle	107-151
88	Grease Fitting	23-188	127	Brake Handle Pin	107-149
89	Drive Shaft	HU-358	128	Brake Handle Pin Cotter (2)	D02-330
90	Clutch Jaw Lock Ball	G601-65	129	Brake Yoke	107-159
91	Clutch Jaw Lock Spring	HU-863	130	Brake Adjusting Screw	107-158
92	Clutch Jaw Lock Plug	HU-864	131	Brake Shoe Long Pin	107-147
• 93	Drive Shaft Inner Bearing	HU-359	*	Brake Lever Bracket Pin	107-148
• 94	Drive Shaft Outer Bearing	215-55	132	Brake Shoe Pin Cotter (2)	D02-330
95	Clutch Jaw	HU-568	133	Brake Anchor	HU-103
96	Clutch Eccentric Shaft	HU-857	134	Brake Anchor Nut	HU-776
97	Clutch Eccentric Roller	HU-858	135	Brake Anchor Lock Washer	A-67
98	Clutch Eccentric Pin	HU-859	136	Brake Support Screw	K4U-162
99	Eccentric Pin Lock Screw	HU-860	137	Brake Support Screw Jam Nut	G7-18
100	Clutch Lever	HU-565	138	Brake Support Screw Washer	K4U-343
101	Clutch Latch	HU-566	139	Brake Support Spring	T03-119
102	Latch Spring	HU-567	*	Brake Spring Cotter	107-146

* Not illustrated.

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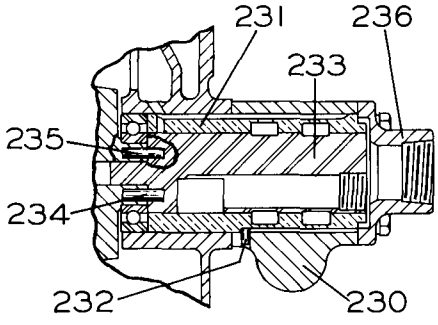
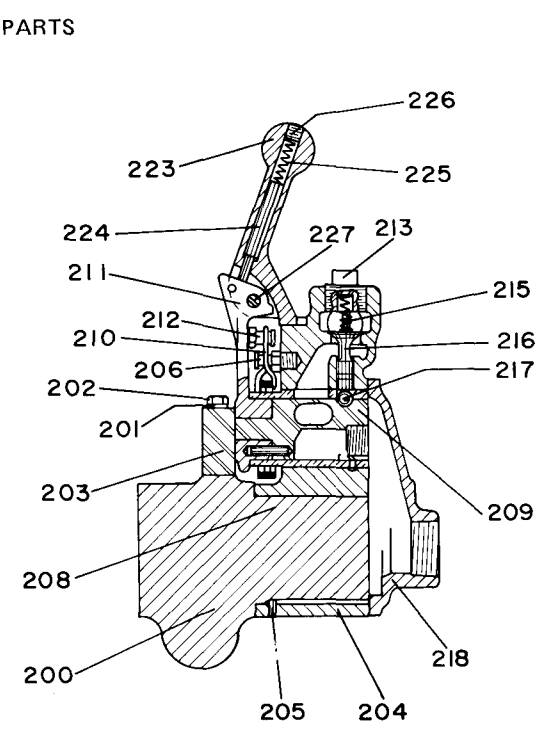


(Dwg. TPD206)

Remote Control Valve Chest



(Dwg. TPD201)

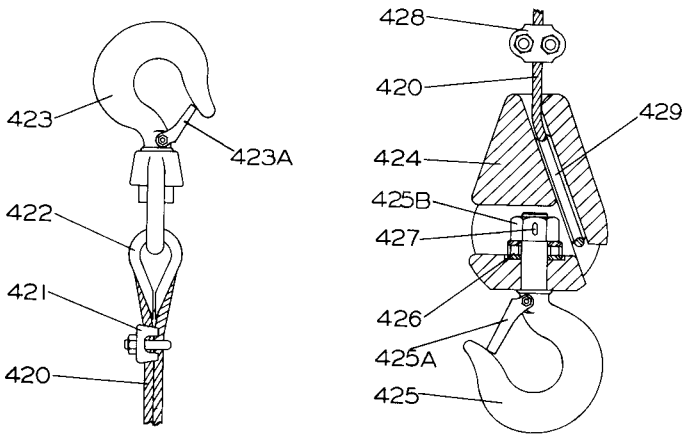
Remote Control Block Assembly

		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

		PART NUMBER FOR ORDERING
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
	Remote Control Valve Chest Assembly	H5U-A686
230	Remote Control Valve Chest	H5M-545
231	Rotary Valve Bushing	HH5D-525S
232	Bushing Key	HU-538
233	Rotary Valve	
	for Overwinding Winch (Standard)	H5U-526
	for Underwinding Winch (Special)	H5U-526R
234	Large Valve Drive Pin	HU-527
235	Small Valve Drive Pin (2)	HU-627
236	Remote Control Valve Chest Cover	HX-546
*	Valve Chest Screw (4)	HU-548
*	3/8" Lock Washer (4)	D02-321
*	Grease Gun	P25-228
*	Valve Chest Jack Bolt (2 required)	HU-932
*	Piston Ring Compressor	HU-933
*	Throttle Valve Stem Reamer	23470
*	Throttle Valve Seat Reamer	25670

* Not illustrated.

WIRE ROPE AND FITTINGS



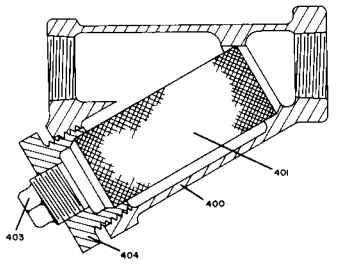
(Dwg. TPC146-2)

		PART NUMBER FOR ORDERING For Use With 3/8" Dia. Wire Rope	For Use With 1/2" Dia. Wire Rope
420	Wire Rope (specify length)	EU-372	215-372
	Wire Rope Fitting Assembly	EU-AS601	K4U-AS601-1/2
421	Wire Rope Clamp (3)	D04-464	D20-375
422	Rope Thimble	D10-721	215-602
423	Swivel Hook	D01C-S377	K4U-S601
	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 Assembly	D02-AS377	D04-AS377
425A	Hook Latch Kit (individual parts not sold separately)	D02-S123	D04-S123
425B	Nut	D02-305B	HRA60A-305
426	Bearing	D02-379A	D04-379A
427	Roll Pin	20QDM-330	D02-374
428	Rope Clamp	D04-464	D20-375
429	Rope Wedge	D02-373	D02-373

AIR STRAINER

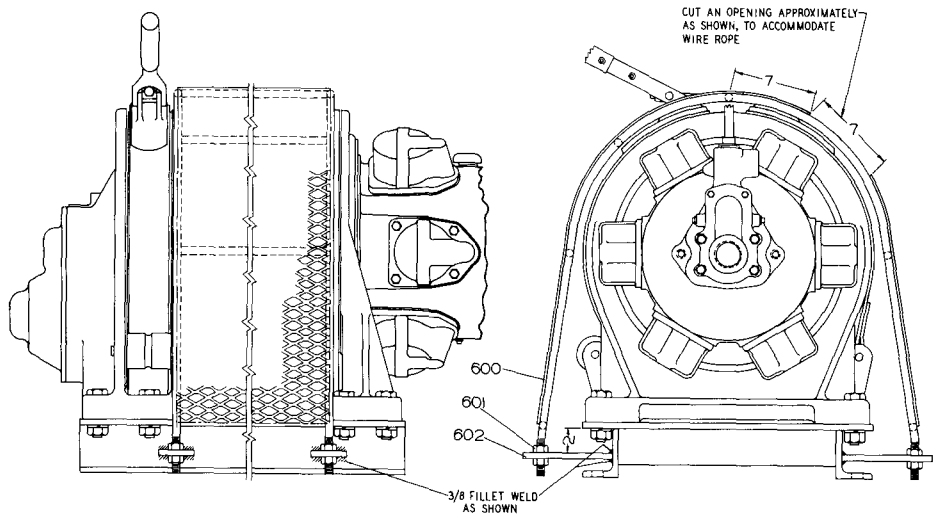
		PART NUMBER FOR ORDERING
400	Air Strainer Assembly	K4U-A267AT
401	Air Strainer Screen	K4U-61AT
403	Air Strainer Plug	22SR-165
404	Air Strainer Cap	K4U-268AT
*	Air Strainer Nipple	KKM-286

* Not illustrated.



(Dwg. TPD122-1)

DRUM GUARD



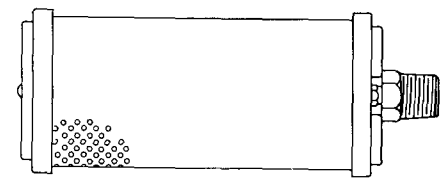
(Dwg. TPB565)

		PART NUMBER FOR ORDERING
600	Drum Guard	HUL40-298
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.



(Dwg. TPD546)

MAINTENANCE INSTRUCTIONS

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), 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 with kerosene 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 chrome 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 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 markings 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).

PARTS WITH PROTECTIVE COATING

All exposed parts originally furnished on your 0DR Winch were given a special protective coating to help prevent rust and corrosion. If you are replacing a part that originally had this protective coating, and want the new part to be specially coated, **it must be so specified on the order. Unless so specified on the order, parts furnished as repair items will not have the special protective coating.**

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