



# OPERATION MANUAL

(800) 878-7305   Rentals@RentLGH.com   RentLGH.com

## INGERSOLL-RAND

Power Tool Division  
28 Kennedy Blvd.  
East Brunswick, N. J. 08816

Atlanta, Ga.  
111 Ingersoll-Rand Drive  
Chamblee, Georgia 30341

Chicago, Ill.  
888 Industrial Drive  
Elmhurst, Illinois 60126

Baton Rouge, La. 70816  
4252 Rhoda Drive

Dallas, Texas 75247  
8901 Directors Row

Boston, Mass.  
2 Kuniholm Dr.  
Holliston, Mass. 01746

Denver, Colo. 80207  
5805 E. 39th Ave.

Charlotte, N. C. 28208  
4840 Wilmont Rd.

Detroit, Mich.  
22122 Telegraph Road  
Southfield, Mich. 48075

Chattanooga, Tenn. 37408  
1936 Central Ave.

Houston, Texas 77001  
6800 Sands Point, P.O. 1455

Los Angeles, Calif. 90022  
5533 East Olympic Blvd.

Milwaukee, Wis.  
N84 W13540 Leon Rd.  
Menomonee Falls, Wis.  
53051

Minneapolis, Minn. 55404  
Corner Franklin & Cedar

Newark, N. J.  
28 Kennedy Blvd.  
East Brunswick, N. J. 08816

New Orleans, La. 70005  
939 Lake Ave. Metairie

Norfolk, Va.  
1431C Air Rail Ave.  
Virginia Beach, Va. 23455

Philadelphia, Pa.  
651 Park Ave.  
King of Prussia, Pa. 19406

Pittsburgh, Pa. 15220  
6 Parkway Ctr.

Portland, Oregon 97214  
240 S. E. Clay St.

Salt Lake City, Utah 84115  
3007 South West Temple  
Suite G

San Francisco, Calif.  
14299 Wicks Blvd.  
San Leandro, Calif. 94577

Seattle, Wash. 98188  
345 Andover Park East

Shreveport, La. 71106  
454 W. 61st St.

Syracuse, N. Y. 13208  
505 Factory Ave.

St. Louis, Mo. 63132  
1515 Page Industrial Blvd.

Washington, D. C. 20006  
1666 K. St., N. W.

Regional Sales Office and All-Star Servicenter.  
All-Star Servicenter only.

### CANADA

Calgary, Alberta, T2R 0E1  
611 11th Ave., S. W.

Shorebrook, Quebec  
375 Courcelette St., J1H 3X4  
Box 1500, J1H 5M3

Ingersoll-Rand Canada Inc.  
Montreal, Quebec, H3B 1S6  
630 Dorchester Blvd. West

Toronto  
Don Mills, Ontario M3B 2V1  
255 Lesmill Road

Vancouver  
British Columbia, V6A 2W7  
1695 Main St.

Montreal, Quebec  
620 Cathcart St., H3B 1M2  
P.O. Box 1148, H3B 3K9

Sudbury, Ontario, P3A 3T3  
P.O. Box 2220

Winnipeg, Manitoba, R3H 0M6  
1234 Border St.

All-Star Servicenter.

### AUTONOMOUS COMPANIES

Argentina, Buenos Aires  
Ingersoll-Rand Argentina  
S.A. I y C.  
Casilla Correo 2412, Correo Central

Egypt, Cairo  
Ingersoll-Rand North East Africa  
P.O. Box 820  
23A Ismail Mohamed St.  
Zamalek

Ireland, Dublin  
Ingersoll-Rand Company (Ireland) Ltd.  
John F. Kennedy Drive  
Bluebell

Peru, Lima  
Ingersoll-Rand Co. of Peru, S.A.  
Casilla 2261

Australia, South Melbourne  
Ingersoll-Rand (Australia) Ltd.  
P.O. Box 219  
42 Moray Street, 3205 Victoria

England, London, SW1X, 7LU  
Ingersoll-Rand Co., Ltd.  
Bowater House, Knightsbridge

Italy, 20100 Milano  
Ingersoll-Rand Italiana, S.p.A.  
Strada Provinciale Cassanese  
Caselle Postale 1232  
Vignate, Italy

Philippines, Makati, Rizal 3117  
Ingersoll-Rand Philippines, Inc.  
P.O. Box 445 MCC

Austria A 1120, Vienna  
Ingersoll-Rand Ges M.B.H.  
Schoenbrunnerstrasse 213-215/2/5

France, 78 190 Trappes Yvelines  
Compagnie Ingersoll-Rand  
Avenue Albert Einstein  
Zone Industrielle

Japan, 106 Tokyo  
Ingersoll-Rand (Japan) Ltd.  
Kowa Bldg. No. 17  
2-7 Nishi-Azabu 1-Chome  
Minato-Ku

Portugal, Lisbon 5  
Ingersoll-Rand Lda.  
Apartado 2933

Belgium, Diegem (Brussels)  
Ingersoll-Rand Benelux S.A.  
Kouterveldstraat 10-12, 1920 Diegem

Germany, 403 Ratingen  
Ingersoll-Rand GmbH  
Robt. Zapp Str. 7  
Postfach 1380

Kenya, Nairobi  
Ingersoll-Rand Mid Africa  
P.O. Box 14240

Puerto Rico, San Juan 00936  
Ingersoll-Rand de Puerto Rico Inc.  
G.P.O. Box 1222

Brazil, Sao Bernardo  
Ingersoll-Rand S.A. Ind. e Com.  
Caixa Postal 911

Greece, Athens 610  
Ingersoll-Rand Central Middle East  
17th Floor Athens Tower  
Mesogion 2-4

Malaysia, Petaling Jaya  
Ingersoll-Rand Malaysia, Sdn. Bhd.  
P.O. Box No. 125

Singapore 22  
Ingersoll-Rand Southeast Asia (Pte.) Ltd.  
G.P.O. Box 2062, Singapore 1

Chile, Santiago  
Ingersoll-Rand Chile  
Morande 341  
Casilla 126-D

Hong Kong  
Ingersoll-Rand Far East  
19th Floor, Lap Heng House  
50, Gloucester Road

Mexico, 10 D.F. Mexico  
Ingersoll-Rand S.A. de C.V.  
Apartado 41-666

South Africa, Alberton  
Ingersoll-Rand Co. S.A. (Proprietary) Ltd.  
P.O. Box 3720  
Alrode, 1451

Colombia, Bogota  
Macquinarias Ingersoll-Rand  
de Colombia, S.A.  
Apartado Aero 7451

India, Bombay 400018  
Ingersoll-Rand (India) Private Ltd.  
44 Maulana Abdul Gaffar Rd.  
P.O. Box 16564, Worli

Netherlands, Zoeterwoude  
Ingersoll-Rand Benelux N.V.  
P.O. Box 33, Zoeterwoude

Spain, Madrid  
Cia. Ingersoll-Rand, S.A.  
Apartado 518

Denmark, Albertslund DK2620  
Ingersoll-Rand AB  
Herstedvang 11

Norway, Oslo 1  
Ingersoll-Rand AB  
P.O. Box 143-Sentrum

Sweden, Bromma  
Ingersoll-Rand A.B.  
Fack  
S-16125 Bromma 1

Venezuela, Caracas  
Ingersoll-Rand de Venezuela S.A.  
Apartado 70588, Los Ruices

Distributors in principal cities throughout the world. Contact the nearest Ingersoll-Rand office for the name and address of the distributor in your country or write to Ingersoll-Rand International, Woodcliff Lake, New Jersey.

3-10

## AUTHORIZED I-R SALES AND SERVICE

# INGERSOLL-RAND

## 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 tiplod 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 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 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.

## MAINTENANCE

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).

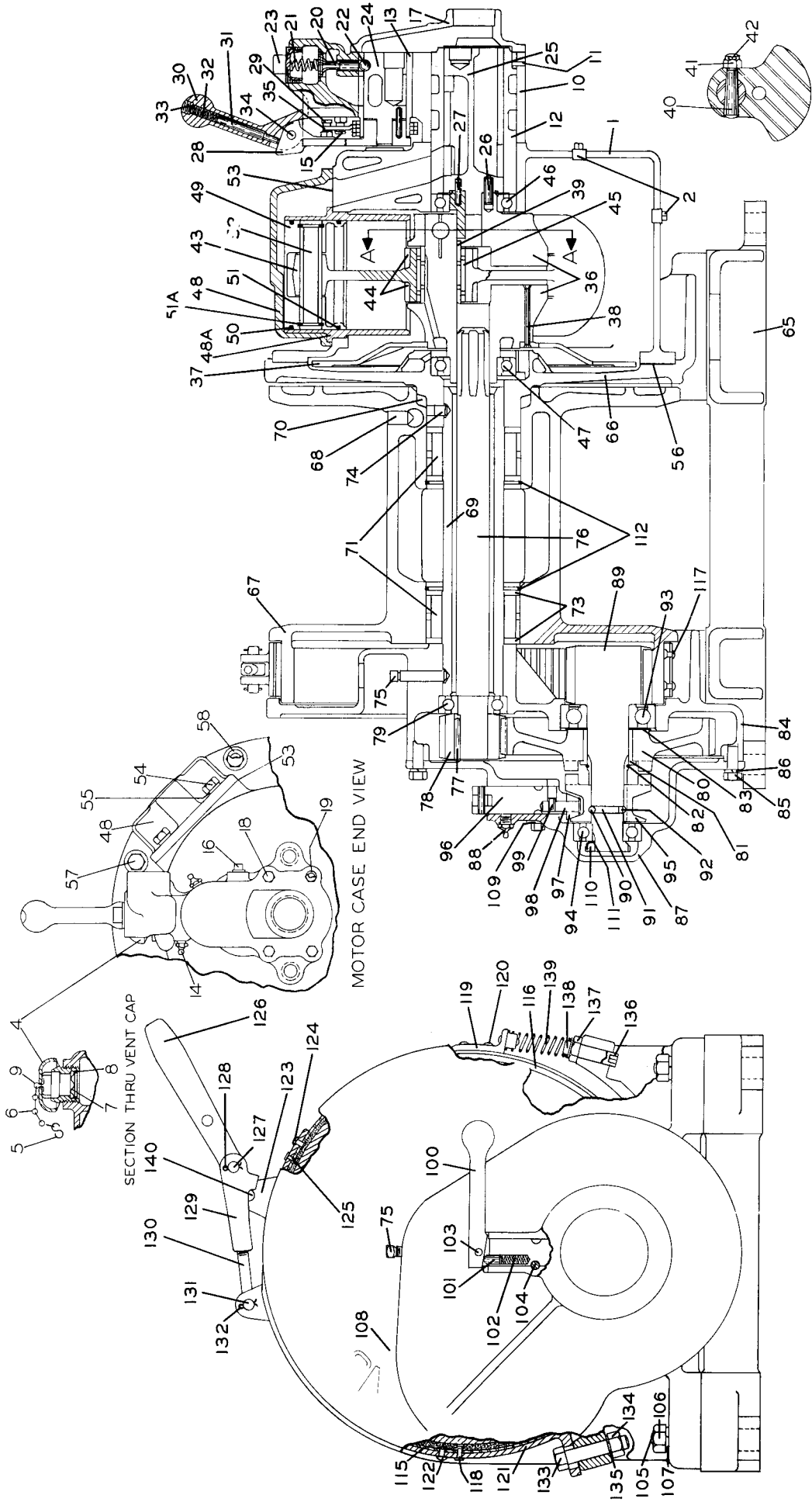
The following procedure is recommended when replacement of the Rotary Valve Bushing (12) or Reverse Valve Bushing (13) is necessary:

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).



SEC. AA

(Dwg. TPA254-2)

Model K4U Utility Winch  
(Typical of Model K5UL)

# MOTOR PARTS

PART NUMBER FOR ORDERING

PART NUMBER FOR ORDERING

PART NUMBER FOR ORDERING	PART NUMBER FOR ORDERING	PART NUMBER FOR ORDERING	PART NUMBER FOR ORDERING
1	Motor Case for K4U or K4UL. for K5U or K5UL.	KU-501 K5M-501	35
2	Drain Plug (2)	D02-402	
*	Motor Eyebolt (2 for K5U or K5UL; 1 for others)	KU-888	36
*	1-1/4" Pipe Plug (for K5U or K5UL)	E5UD-947	
4	Vent Cap	D02-303A	37
5	S-Hook	D02-421	38
6	Vent Cap Chain	D02-891	*
7	Vent Cap Screen	D02-889	●
8	Vent Cap Screen Retainer	6CND-233-1/2	40
9	Vent Cap Cotter	D02-893	41
†	Valve Chest	KU-545A	42
	for K4U or K4UL. for K5U or K5UL.	KK5UM-545	43
†	Bushing Key (2)	HU-538	
†	Rotary Valve Bushing	KU-525S	44
	for K4U or K4UL. for K5U or K5UL.	K5M-525S	45
†	Reverse Valve Bushing	KU-945S	46
†	Grease Fitting (2)	23-188	47
†	Throttle Lever Spring Stop Pin	D02-553	
†	Brake Inlet Plug (2)	D02-402	48
†	Valve Chest Cover	KU-546A	48A
†	Valve Chest Screw (4)	KU-548	49
†	1/2" Lock Washer (4)	D10-322	
†	Poppet Throttle Valve	KU-940	50
●	Poppet Throttle Valve Spring	HU-942	51
†	Poppet Throttle Valve Ball	D10-280	51A
†	Poppet Throttle Valve Cap	KU-943	52
†	Reverse Valve for Winch with standard brake. for Winch with automatic brake.	KU-944	●
†	Rotary Valve for overwinding Winch. for underwinding Winch	KU-744	53
●	Large Valve Drive Pin	KU-526A	54
●	Small Valve Drive Pin (2)	KU-526RA	55
†	Throttle Control Arm	HU-527	56
†	Throttle Lever Spring Stop Pin	KU-555A	57
●	Throttle Lever	D02-553	58
●	Throttle Lever Latch	HU-556	*
●	Throttle Lever Latch Spring	HU-869	*
†	Throttle Lever Set Screw	HU-567	*
†	Throttle Lever Pin	HU-842	*
†	Throttle Lever Pin Cotter (2)	HU-870	*
*	Throttle Lever Pin Cotter (2)	D02-524	*

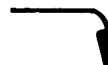
\* Not illustrated.

† 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.

● 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.

## 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.

- 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.

## 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.**

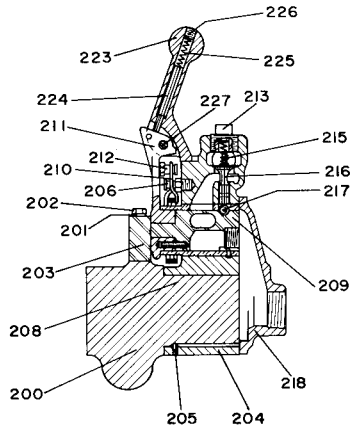
Because the combination of Automatic Brake and Disengaging Clutch is not sanctioned, the three parts marked “#” should be ordered and installed if conversion from manual to automatic brake is made on a Winch equipped with the engaging clutch.

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).

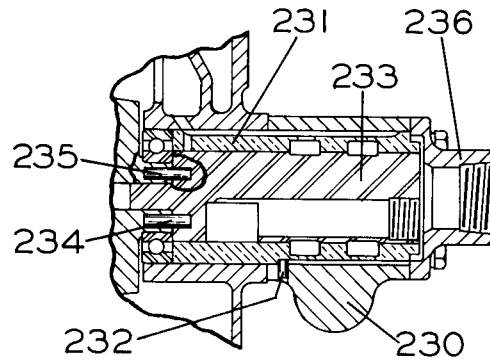
Remove the Clutch Eccentric Shaft (96) and included parts along with the Clutch Lever (100). Insert the Gear Cover Plug Seal (253) and Plug (252) into the hole in the Gear Cover (87) previously occupied by the Eccentric Shaft.

## REMOTE CONTROL PARTS



**Remote Control Block Assembly**

(Dwg. TPD201)



**Remote Control Valve Chest Assembly**

(Dwg. TPD206)

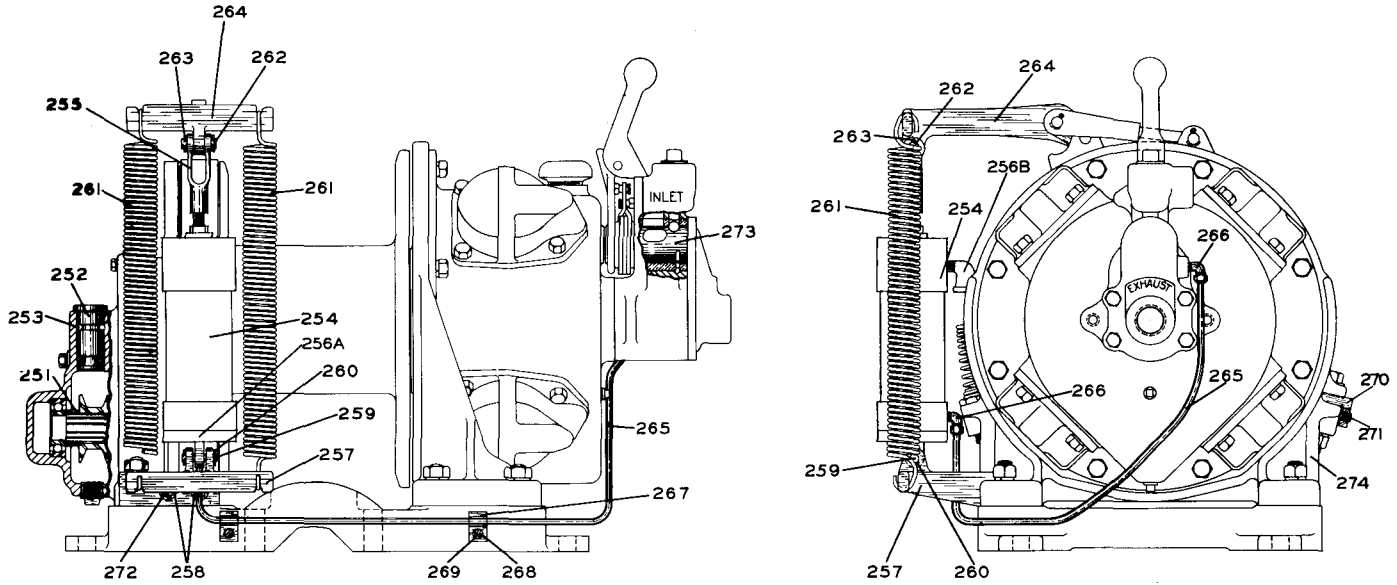
PART NUMBER FOR ORDERING



	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

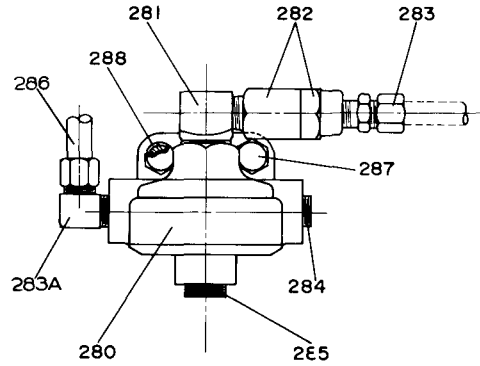
‡ 251	Clutch Jaw Spacer . . . . .	K4U-712
‡ 252	Gear Cover Plug . . . . .	HU-728
‡ 253	Gear Cover Plug Seal . . . . .	HU-730
● 254	Brake Cylinder Assembly . . . . .	HU-720A
255	Brake Cylinder Yoke . . . . .	HU-719
* 256A	Brake Cylinder Bushing . . . . .	HU-771
256B	Eye Bracket . . . . .	HU-717
257	Street Elbow . . . . .	HUS-912
258	Brake Cylinder Bracket . . . . .	K4U-721
259	Brake Cylinder Bracket Cap Screw (2) . . . . .	HU-723
260	Brake Cylinder Bracket Pin . . . . .	HU-870
261	Bracket Pin Cotter (2) . . . . .	D02-524
262	Brake Spring (2) . . . . .	K4U-726
263	Yoke Pin . . . . .	22-720
264	Yoke Pin Cotter . . . . .	D02-330
265	Automatic Brake Lever . . . . .	K4U-718
	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



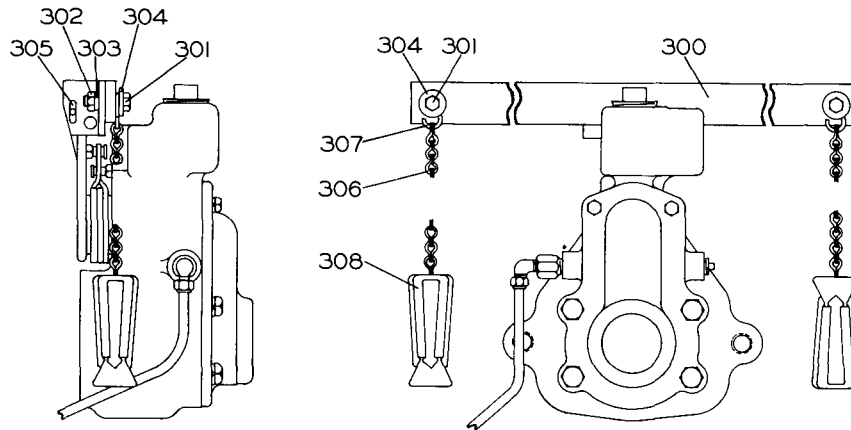
(Dwg. TPD214-1)

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)

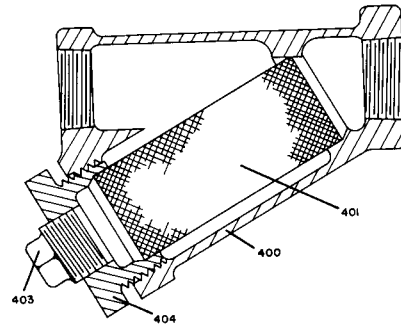
PART NUMBER FOR ORDERING

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

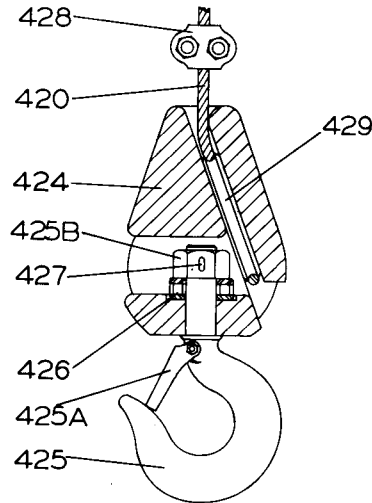
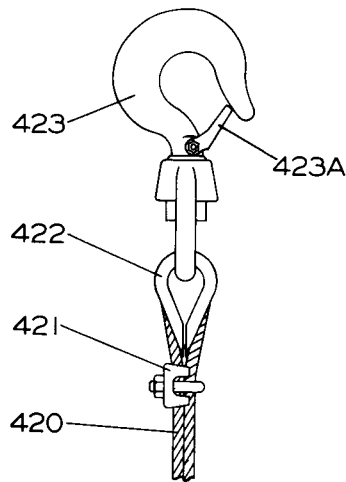
400	Air Strainer Assembly . . . . .	K4U-A267AT
401	Air Strainer Screen . . . . .	K4U-61AT
403	Air Strainer Plug . . . . .	22SR-165
404	Air Strainer Cap . . . . .	K4U-268AT
*	Air Strainer Nipple (1-1/4" x 2-1/2") . . . . .	KKM-286



\* Not illustrated.

(Dwg. TPD122-1)

## WIRE ROPE AND FITTINGS

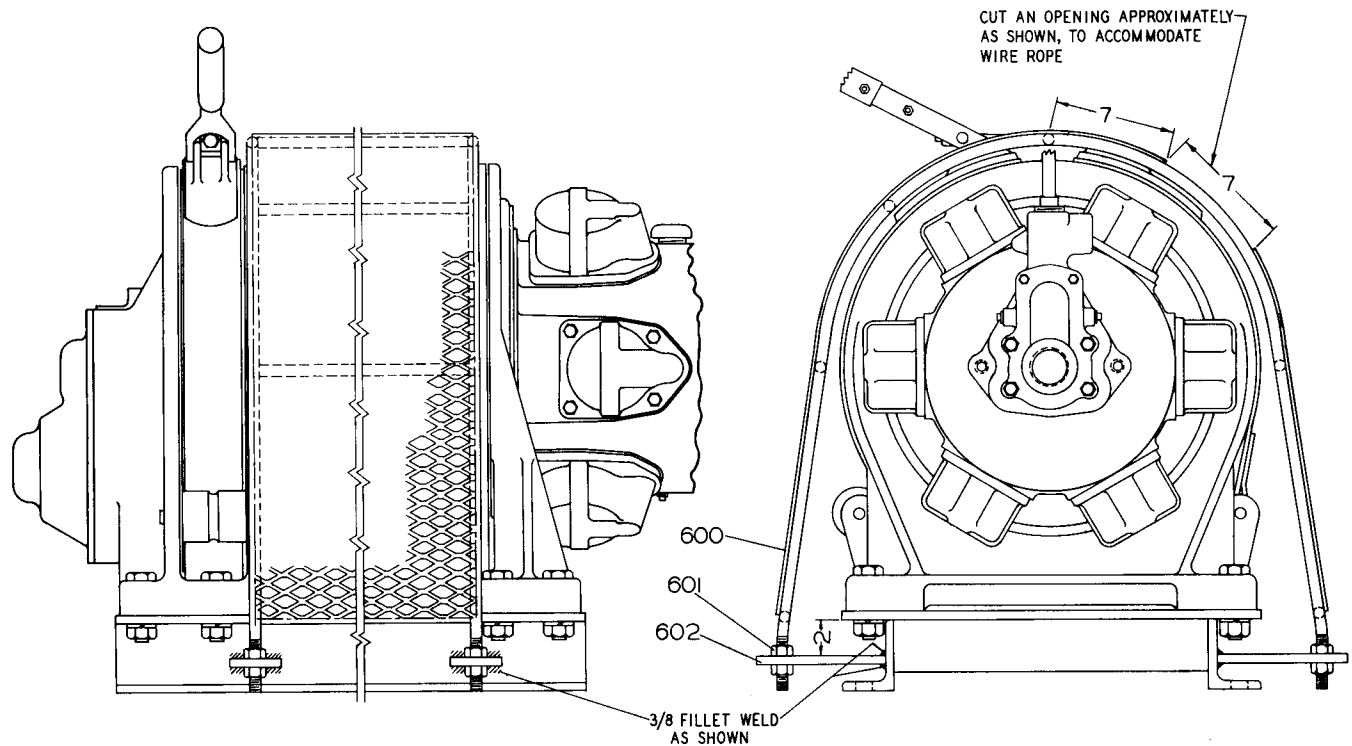


(Dwg. TPC146-2)

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.



# INGERSOLL-RAND

Power Tool Division  
28 Kennedy Blvd.  
East Brunswick, N. J. 08816

Atlanta, Ga.  
111 Ingersoll-Rand Drive  
Chamblee, Georgia 30341

Chicago, Ill.  
888 Industrial Drive  
Elmhurst, Illinois 60126

Philadelphia, Pa.  
651 Park Ave.  
King of Prussia, Pa. 19406

Seattle, Wash. 98188  
345 Andover Park East

Baton Rouge, La. 70816  
4252 Rhoda Drive

Dallas, Texas 75247  
8901 Directors Row

Pittsburgh, Pa. 15220  
6 Parkway Ctr.

Shreveport, La. 71106  
454 W. 61st St.

Boston, Mass.  
2 Kuniholm Dr.  
Holliston, Mass. 01746

Denver, Colo. 80207  
5805 E. 39th Ave.

Los Angeles, Calif. 90022  
5533 East Olympic Blvd.

Newark, N. J.  
28 Kennedy Blvd.  
East Brunswick, N. J. 08816

Portland, Oregon 97214  
240 S. E. Clay St.

Syracuse, N. Y. 13208  
505 Factory Ave.

Charlotte, N. C. 28208  
4840 Wilmont Rd.

Detroit, Mich.  
22122 Telegraph Road  
Southfield, Mich. 48075

Milwaukee, Wis.  
N84 W13540 Leon Rd.  
Menomonee Falls, Wis.  
53051

New Orleans, La. 70005  
939 Lake Ave. Metairie

Salt Lake City, Utah 84115  
3007 South West Temple  
Suite G

St. Louis, Mo. 63132  
1515 Page Industrial Blvd.

Chattanooga, Tenn. 37408  
1936 Central Ave.

Houston, Texas 77001  
6800 Sands Point, P.O. 1455

Minneapolis, Minn. 55404  
Corner Franklin & Cedar

Norfolk, Va.  
1431C Air Rail Ave.  
Virginia Beach, Va. 23455

San Francisco, Calif.  
14299 Wicks Blvd.  
San Leandro, Calif. 94577

Washington, D. C. 20006  
1666 K. St., N. W.

Regional Sales Office and All-Star Servicenter.  
All-Star Servicenter only.

## CANADA

Calgary, Alberta, T2R 0E1  
611 11th Ave., S. W.

Sharbrooke, Quebec  
375 Courcellette St., J1H 3X4  
Box 1500, J1H 5M3

Ingersoll-Rand Canada Inc  
Montreal, Quebec, H3B 1S6  
630 Dorchester Blvd. West

Toronto  
Don Mills, Ontario M3B 2V1  
255 Lesmill Road

Vancouver  
British Columbia, V6A 2W7  
1695 Main St.

Montreal, Quebec  
620 Cathcart St., H3B 1M2  
P.O. Box 1148, H3B 3K9

Sudbury, Ontario, P3A 3T3  
P.O. Box 2220

Winnipeg, Manitoba, R3H 0M6  
1234 Border St.

All-Star Servicenter.

## AUTONOMOUS COMPANIES

Argentina, Buenos Aires  
Ingersoll-Rand Argentina  
S.A.I.y C.  
Casilla Correo 2412, Correo Central

Australia, South Melbourne  
Ingersoll-Rand (Australia) Ltd.  
P.O. Box 219  
42 Moray Street, 3205 Victoria

Austria A 1120, Vienna  
Ingersoll-Rand Ges M.B.H.  
Schoenbrunnerstrasse 213-215/2/5

Belgium, Diegem (Brussels)  
Ingersoll-Rand Benelux S.A.  
Kouterveldstraat 10-12, 1920 Diegem

Brazil, Sao Bernardo  
Ingersoll-Rand S.A. Ind. e Com.  
Caixa Postal 911

Chile, Santiago  
Ingersoll-Rand Chile  
Morande 341  
Casilla 126-D

Colombia, Bogota  
Macquinarias Ingersoll-Rand  
de Colombia, S.A.  
Apartado Aero 7451

Denmark, Albertslund DK2620  
Ingersoll-Rand AB  
Herstedvang 11

Egypt, Cairo  
Ingersoll-Rand North East Africa  
P.O. Box 820  
23A Ismail Mohamed St.  
Zamalek

England, London, SW1X, 7LU  
Ingersoll-Rand Co., Ltd.  
Bowater House, Knightsbridge

France, 78 190 Trappes Yvelines  
Compagnie Ingersoll-Rand  
Avenue Albert Einstein  
Zone Industrielle

Germany, 403 Ratingen  
Ingersoll-Rand GmbH  
Robt. Zapp Str. 7  
Postfach 1380

Greece, Athens 610  
Ingersoll-Rand Central Middle East  
17th Floor Athens Tower  
Mesogion 2-4

Hong Kong  
Ingersoll-Rand Far East  
19th Floor, Lap Heng House  
50, Gloucester Road

India, Bombay 400018  
Ingersoll-Rand (India) Private Ltd.  
44 Maulana Abdul Gaffar Rd.  
P.O. Box 16564, Worli

Ireland, Dublin  
Ingersoll-Rand Company (Ireland) Ltd.  
John F. Kennedy Drive  
Bluebell

Italy, 20100 Milano  
Ingersoll-Rand Italiana, S.p.A.  
Strada Provinciale Cassanese  
Caselle Postale 1232  
Vignate, Italy

Japan, 106 Tokyo  
Ingersoll-Rand (Japan) Ltd.  
Kowa Bldg. No. 17  
2-7 Nishi-Azabu 1-Chome  
Minato-Ku

Kenya, Nairobi  
Ingersoll-Rand Mid Africa  
P.O. Box 14240

Malaysia, Petaling Jaya  
Ingersoll-Rand Malaysia, Sdn. Bhd.  
P.O. Box No. 125

Mexico, 10 D.F. Mexico  
Ingersoll-Rand S.A. de C.V.  
Apartado 41-666

Netherlands, Zoeterwoude  
Ingersoll-Rand Benelux N.V.  
P.O. Box 33, Zoeterwoude

Norway, Oslo 1  
Ingersoll-Rand AB  
P.O. Box 143-Sentrum

Peru, Lima  
Ingersoll-Rand Co. of Peru, S.A.  
Casilla 2261

Philippines, Makati, Rizal 3117  
Ingersoll-Rand Philippines, Inc.  
P.O. Box 445 MCC

Portugal, Lisbon 5  
Ingersoll-Rand Lda.  
Apartado 2933

Puerto Rico, San Juan 00936  
Ingersoll-Rand de Puerto Rico Inc.  
G.P.O. Box 1222

Singapore 22  
Ingersoll-Rand Southeast Asia (Pte.) Ltd.  
G.P.O. Box 2062, Singapore 1

South Africa, Alberton  
Ingersoll-Rand Co. S.A. (Proprietary) Ltd.  
P.O. Box 3720  
Alrode, 1451

Spain, Madrid  
Cia. Ingersoll-Rand, S.A.  
Apartado 518

Sweden, Bromma  
Ingersoll-Rand A.B.  
Fack  
S-16125 Bromma 1

Venezuela, Caracas  
Ingersoll-Rand de Venezuela S.A.  
Apartado 70588, Los Ruices

Distributors in principal cities throughout the world. Contact the nearest Ingersoll-Rand office for the name and address of the distributor in your country or write to Ingersoll-Rand International, Woodcliff Lake, New Jersey.

## AUTHORIZED I-R SALES AND SERVICE

# INGERSOLL-RAND