REFERENCE SHEET

ITEM	BASIC PARTS	SERIES A MODEL S3	SERIES A MODEL X3	SERIES A MODEL D3	SERIES B MODEL S3	SERIES B MODEL X3	SERIES B MODEL D3
8704 - 8706	Frame & Components	1-1			1-1		
8706 - 8710	Frame & Components	1-2			1-2		
8710 - 8737	Frame & Components	1-3			1-3		
8738	Rope Drum	1-4			1-4		
8741 - 8754	Gear Case Parts	2-1	2-1	2-1	2-1	2-1	2-1
8755 - 8770	Gear Case Parts	2-2	2-2	2-2	2-2	2-2	2-2
8808 - 8818	2-Part Double Bottom Blk.			3-5			3-5
8820 - 8829	4-Part Bottom Block	3-3			3-3		
8830 - 8838	2-Part Bottom Block	3-1			3-1		
8856 - 8869	8-Part Bottom Block			3-7			3-7
8888 - 8905	6-Part Bottom Block		3-9			3-9	
8906 - 8919	Frame & Components			1-7			1-7
8920 - 8939	Frame & Components			1-9			1-9
8940 - 8943	Frame & Components			1-10			1-10
8976 - 9001	Hoist Motor Brake	4-1	4-1	4-1	4-1	4-1	4-1
9007 - 9024	Hoist Controls	5-1	5-1	5-1	5-3	5-3	5-3
9025 - 9027	Hoist Controls	5-2	5-2	5-2	5-4	5-4	5-4
9041 - 9044	Frame & Components		1-5			1-5	
9045 - 9074	Frame & Components		1-6			1-6	
	Load Brake Info	2-3	2-3	2-3	2-3	2-3	2-3
	2-Part Single Reeving	3-2			3-2		
	4-Part Single Reeving	3-4			3-4		
	2-Part Double Reeving		3-6			3-6	
	4-Part Double Reeving (8-Part Bottom Block)		3-8			3-8	
	6-Part Reeving			3-10			3-10

S3

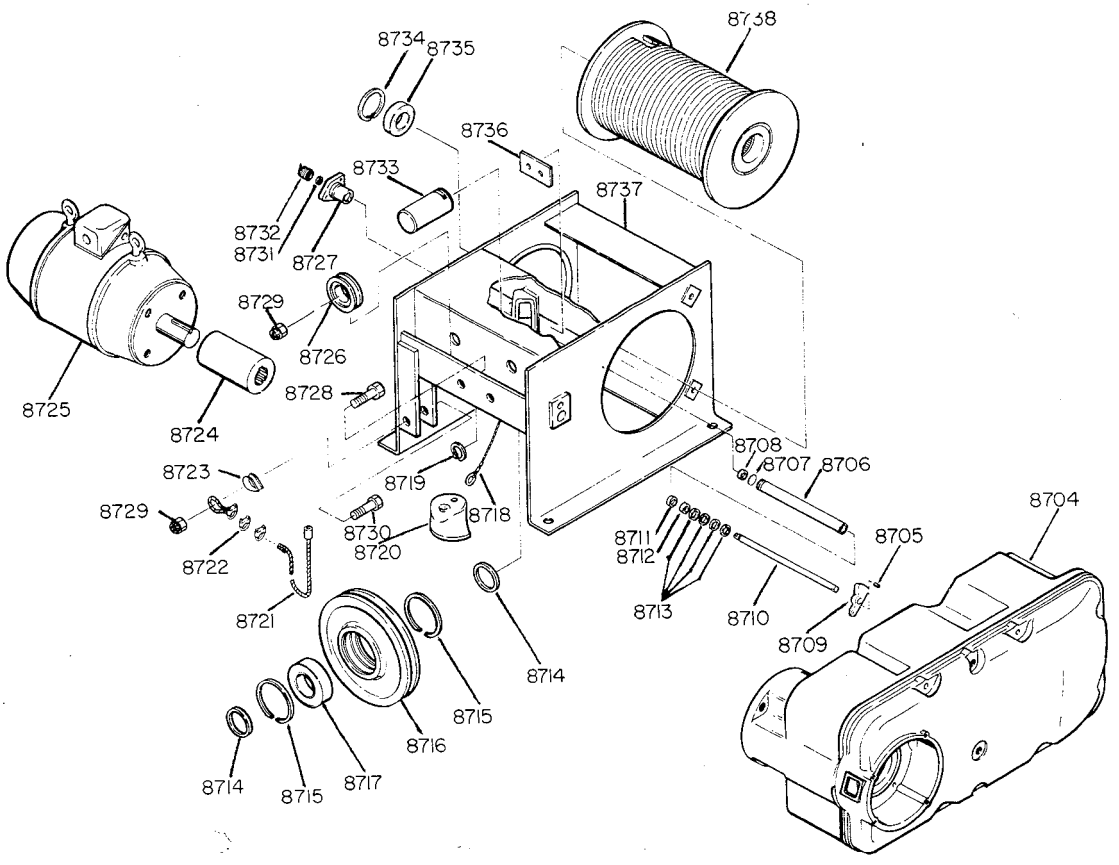
2, 3, & 5 TON

HOIST FRAME AND COMPONENTS

FRAME 3

1-1

Nov. 1981



ITEM	DESCRIPTION	PART NUMBER	QTY.
8704	Gear Case	25-03071-001	1
8705	Key	6-11-002-008-0	1
8706	Limit Tube		
	1st length - 2 & 3 ton	22-08538-033	1
	1st length - 5 ton	22-08538-033	1
	Limit Tube Assembly		
	1st length - 2 & 3 ton	23-07725-001	1
	1st length - 5 ton	23-07725-001	1
	Limit Tube		
	2nd length - 2 & 3 ton	22-08538-010	1
	2nd length - 5 ton	22-08538-010	1
	3rd length - 2 & 3 ton	22-08538-038	1
	3rd length - 5 ton	22-08538-038	1

FRAME 3

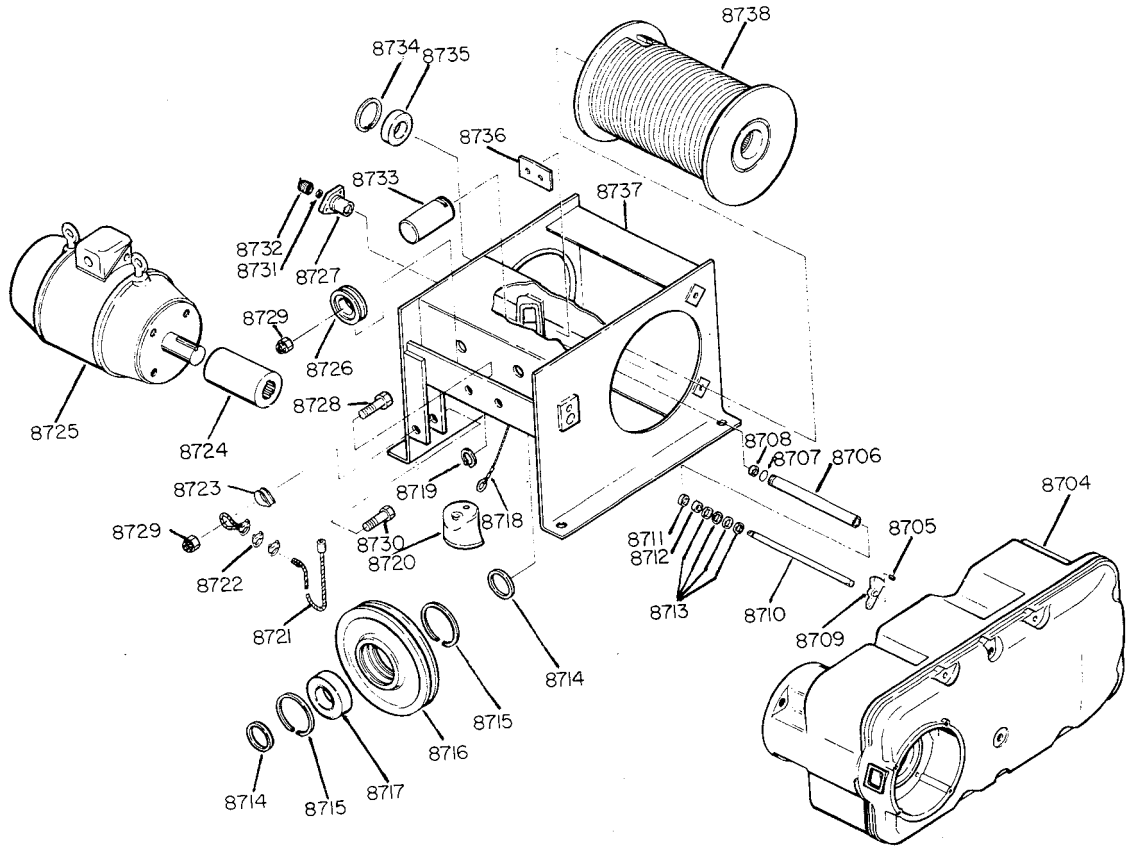
1-2

Nov. 1981

S3

2, 3, & 5 TON

HOIST FRAME AND COMPONENTS



ITEM	DESCRIPTION	PART NUMBER	QTY.
8706 (cont)	Limit Tube		
	4th length - 2 & 3 ton	22-08538-012	1
	4th length - 5 ton	22-08538-012	1
	5th length - 5 ton	22-08538-039	1
8707	"O" Ring	22-08171-002	1
8708	Ball Bearing	6-30-050-207-1	1
8709	Level	23-06635-001	1
8710	Limit Switch Shaft		
	1st length - 2 & 3 ton	22-09447-032	1
	1st length - 5 ton	22-09447-032	1
	2nd length - 2 & 3 ton	22-09447-001	1
	2nd length - 5 ton	22-09447-001	1

ITEM	DESCRIPTION	PART NUMBER	QTY.
8710 (cont)	Limit Switch Shaft		
	3rd length - 2 & 3 ton	22-09447-038	1
	3rd length - 5 ton	22-09447-038	1
	4th length - 2 & 3 ton	22-09447-003	1
	4th length - 5 ton	22-09447-003	1
	5th length - 5 ton	22-09447-039	1
8711	Ball Bearing	6-30-102-007-0	1
8712	Felt Washer	6-23-060-204-1	1
8713	Shim Washer	6-23-030-169-0	8
8714	Bearing Spacer	22-08546-001	1
8715	Snap Ring	22-02244-007	2
8716	Rope Sheave	24-04332-001	1
8717	Ball Bearing	6-30-050-208-1	1
8718	Limit Cable Assy.		
	2 ton 2 pt.	22-09092-	1
	3 ton 2 pt.	22-09092-	1
	5 ton 4 pt.	22-09092-002	1
8719	Retainer Ring	NOT REQUIRED	
8720	Limit Weight	23-02305-701	1
8721	Wire Rope Assembly	SEE BASIC SECTION	1
8722	Rope Clip	22-00545-001	1
8723	Rope Thimble	22-00547-001	1
8724	Motor Coupling	23-07918-001	1
8725	Motor Assembly	SEE MOTOR SECTION	1
8726	Spool	23-07919-001	1
8727	Mounting Bracket	22-08533-002	1
8728	Bolt	22-09413-130	1
8729	Lock Nut	22-11481-002	1
8730	Bolt	22-09413-140	1
8731	Snap Ring	22-06597-007	1
8732	Spring	22-09449-002	1
8733	Sheave Pin	22-07224-020	1
8734	Snap Ring	22-06498-015	2
8735	Ball Bearing	6-30-050-207-1	1
8736	Keeper Plate	22-01801-001	1
8737	Hoist Frame		
	1st length - 2 & 3 ton	25-03074-001	1
	1st length - 5 ton	25-03074-001	1
	2nd length - 2 & 3 ton	25-03074-002	1
	2nd length - 5 ton	25-03074-002	1
	3rd length - 2 & 3 ton	25-03074-003	1
	3rd length - 5 ton	25-03074-003	1
	4th length - 2 & 3 ton	25-03074-004	1
	4th length - 5 ton	25-03074-004	1
	5th length - 5 ton	25-03074-005	1

FRAME 3

1-4

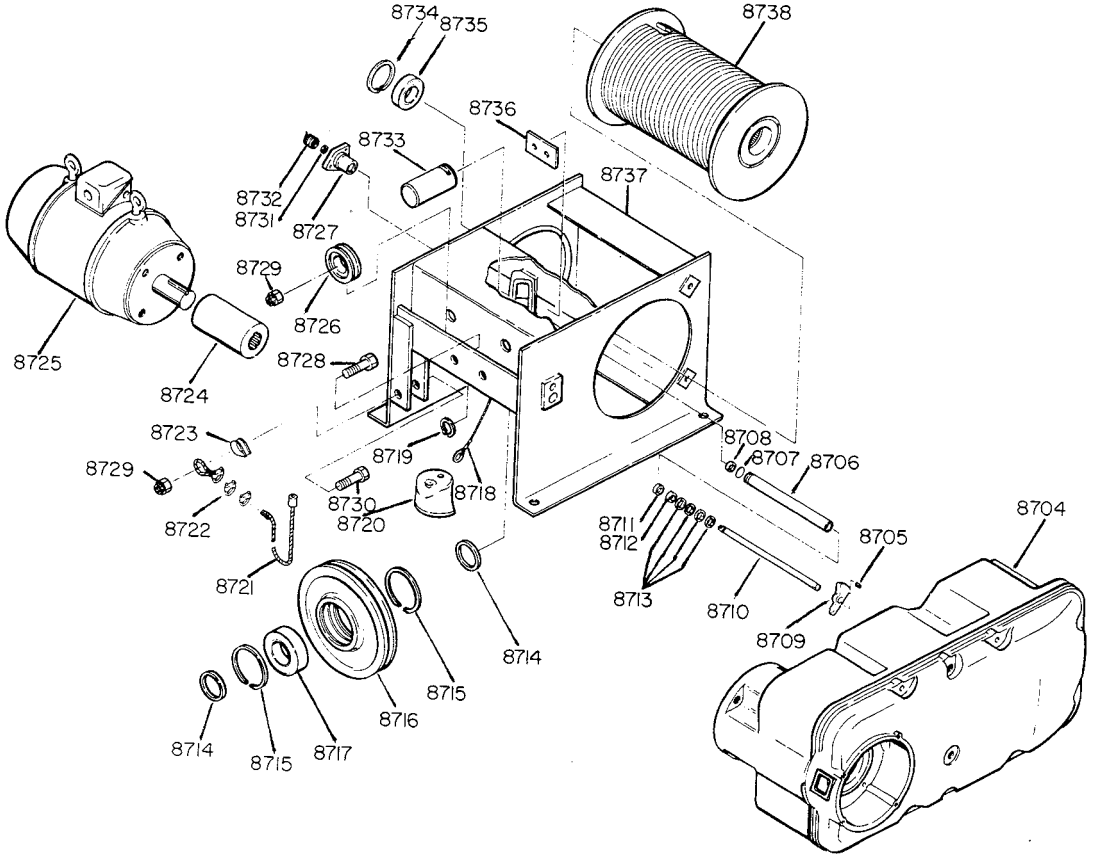
Nov. 1981

S3

2, 3, and 5 TON

HOIST FRAME AND COMPONENTS

ITEM	DESCRIPTION	PART NUMBER	QTY.
8738	Rope Drum		
	1st length - 2 & 3 ton	25-03076-013	1
	1st length - 5 ton	25-03076-001	1
	2nd length - 2 & 3 ton	25-03076-014	1
	2nd length - 5 ton	25-03076-002	1
	3rd length - 2 & 3 ton	25-03076-007	1
	3rd length - 5 ton	25-03076-003	1
	4th length - 2 & 3 ton	25-03076-008	1
	4th length - 5 ton	25-03076-004	1
	5th length - 5 ton	25-03076-005	1



X3

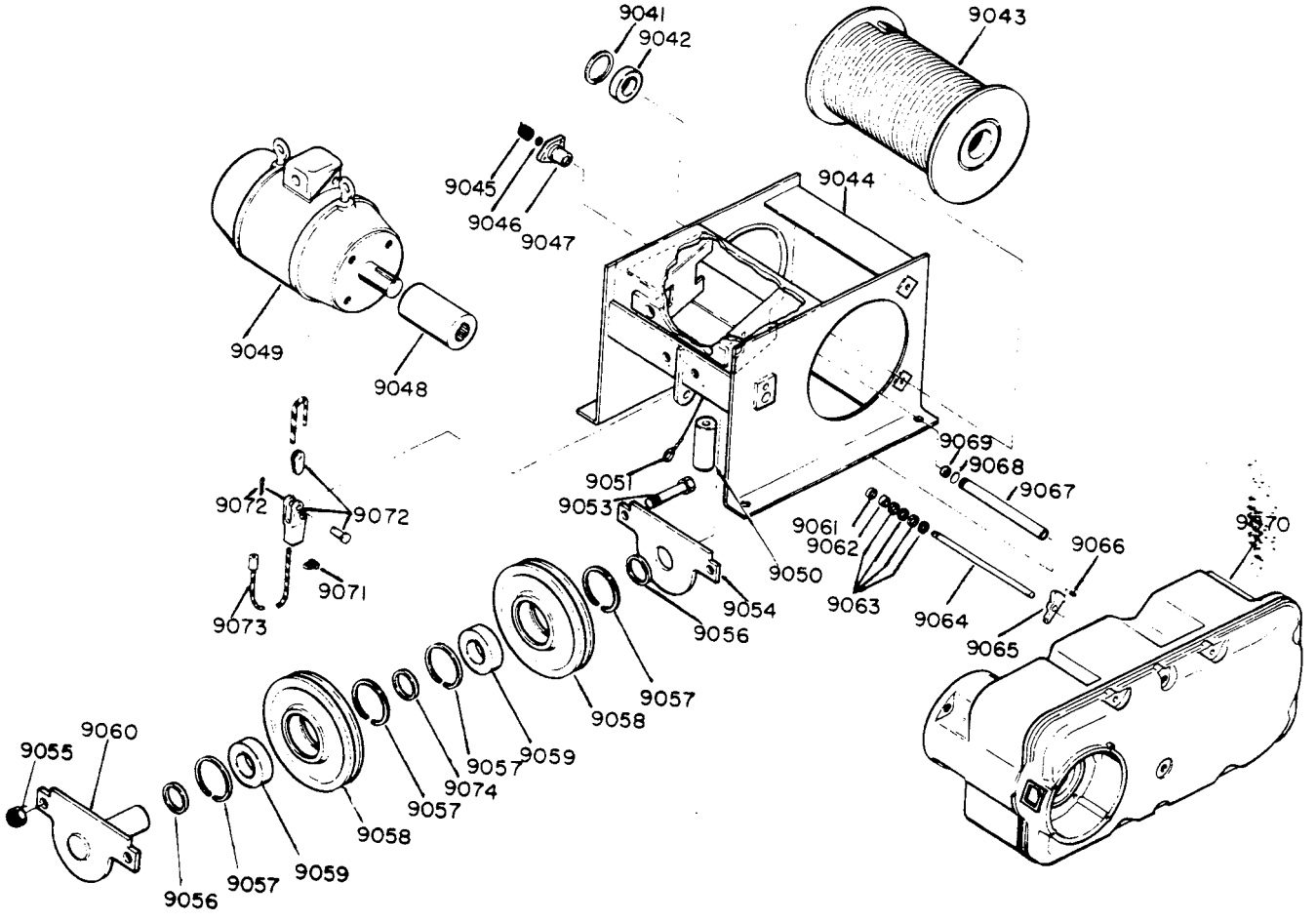
7½ and 10 TON

HOIST FRAME AND COMPONENTS

FRAME 3

1-5

Nov. 1981



ITEM	DESCRIPTION	PART NUMBER	QTY.
9041	Snap Ring	22-06498-015	1
9042	Ball Bearing	6-30-050-207-1	1
9043	Rope Drum		
	30 inch 7½ ton	25-03076-006	1
	30 inch 10 ton	25-03076-006	1
	36 inch 7½ ton	25-03076-003	1
	36 inch 10 ton	25-03076-007	1
	45 inch 7½ ton	25-03076-004	1
	45 inch 10 ton	25-03076-008	1
9044	Main Frame		
	30 inch 7½ ton	25-03093-001	1
	30 inch 10 ton	25-03093-001	1
	36 inch 7½ ton	25-03093-002	1
	36 inch 10 ton	25-03093-002	1
	45 inch 7½ ton	25-03093-003	1
	45 inch 10 ton	25-03093-003	1

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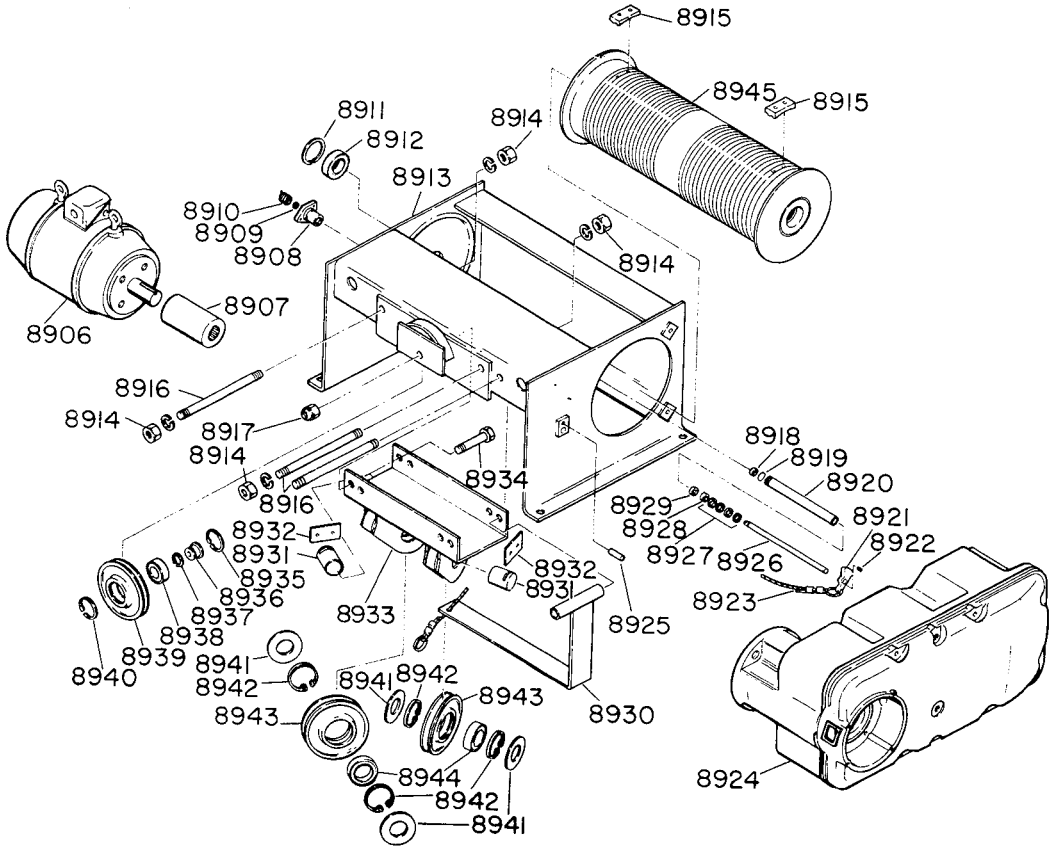
ITEM	DESCRIPTION	PART NUMBER	QTY.
9045	Spring	22-09449-001	1
9046	Snap Ring	22-06497-007	1
9047	Bracket	22-08533-002	1
9048	Motor Coupling	23-07918-001	1
9049	Motor Assembly	SEE MOTOR SECTION	1
9050	Limit Weight	23-02305-701	1
9051	Limit Cable Assembly	22-11320-001	1
9053	Bolt	22-09413-750	1
9054	Sheave Support	23-07942-002	1
9055	Nut	22-11481-003	1
9056	Bearing Spacer	22-00790-021	2
9057	Snap Ring	22-02244-007	4
9058	Sheave	24-04332-019	2
9059	Ball Bearing	6-30-050-208-1	2
9060	Sheave Support	23-07942-002	1
9061	Ball Bearing	6-30-102-007-0	1
9062	Felt Washer	6-23-060-204-0	1
9063	Shim Washer	6-23-030-169-0	8
9064	Limit Switch Shaft		
	30 inch 7½ & 10 ton	22-09447-040	1
	36 inch 7½ & 10 ton	22-09447-041	1
	45 inch 7½ & 10 ton	22-09447-007	1
9065	Lever	23-06635-001	1
9066	Key	6-11-022-008-1	1
9067	Limit Tube		
	30 inch 7½ & 10 ton	22-08538-040	1
	36 inch 7½ & 10 ton	22-08538-041	1
	45 inch 7½ & 10 ton	22-08538-003	1
9068	"O" Ring	22-08171-002	1
9069	Ball Bearing	6-30-102-009-0	1
9070	Gear Case	25-03071-001	1
9071	Rope Clip	22-00545-001	1
9072	Rope Anchor Assembly	22-11417-001	1
9073	Wire Rope Assembly	SEE BASIC SECTION	1
9074	Bearing Spacer	22-00790-017	2

FRAME 3 D3

1-7 3 and 5 TON

Nov. 1981 HOIST FRAME & COMPONENTS



ITEM	DESCRIPTION	PART NUMBER	QTY.
8906	Motor Assembly	SEE MOTOR SECTION	1
8907	Coupling	23-07918-001	1
8908	Mounting Bracket	22-08533-002	1
8909	Snap Ring	22-06497-007	1
8910	Spring	22-09449-001	1
8911	Snap Ring	22-06498-015	1
8912	Ball Bearing	6-30-050-207-1	1
8913	Hoist Frame		
	1st length	25-03078-001	1
	2nd length	25-03078-002	1
	3rd length	25-03078-003	1
8914	Lock Nut	6-14-007-009-0	4
8915	Rope Clip	22-00545-001	1
8916	Studs	22-03337-005	3
8917	Lock Nuts	6-14-007-009-0	6
8918	Ball Bearing	6-30-102-007-0	1
8919	"O" Ring	22-08171-002	1

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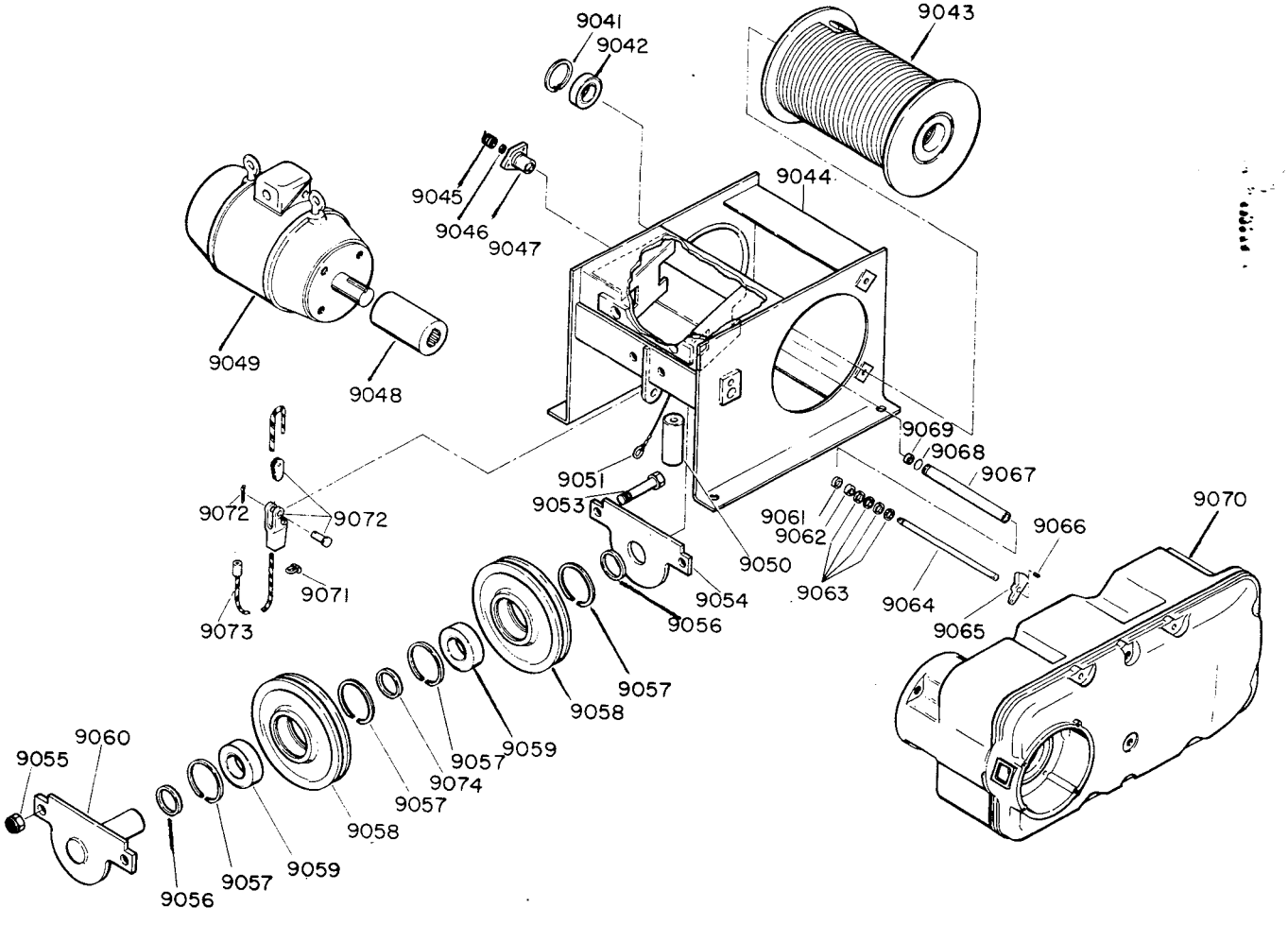
FRAME 3

X3

7 1/2 and 10 TON

Nov. 1981 HOIST FRAME AND COMPONENTS



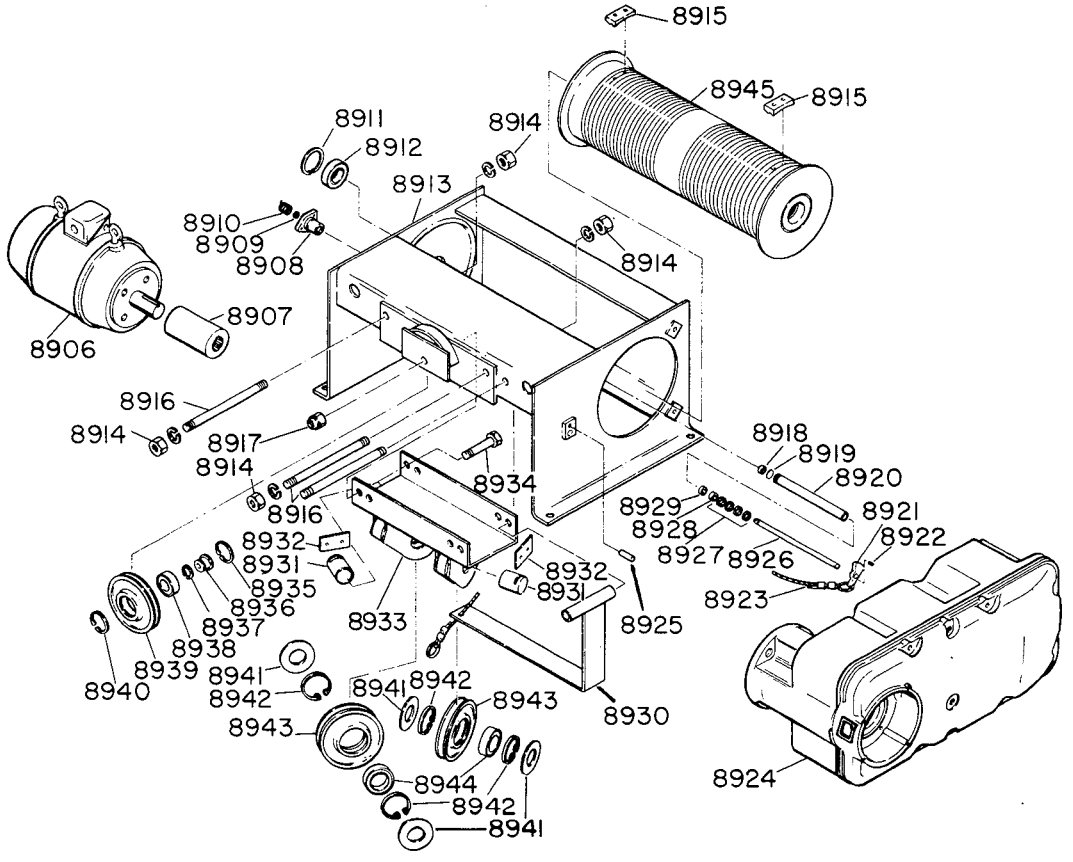
ITEM	DESCRIPTION	PART NUMBER	QTY.
8920	Limit Tube Assembly		
	1st length	23-07725-001	1
	Limit Tube Only		
	2nd length	22-08538-001	1
	3rd length	22-08538-037	1
8921	Lever	23-06635-001	1
8922	Key	6-11-002-008-0	1
8923	Limit Cable Assembly	22-09092-004	1
8924	Gear Case	25-03071-001	1
8925	Pin	6-16-018-065-0	4
8926	Limit Switch		
	1st length	22-09447-032	1
	2nd length	22-09447-005	1
	3rd length	22-09447-037	1
8927	Shim Washer	6-23-030-169-0	8
8928	Felt Washer	6-23-060-204-0	1
8929	Ball Bearings	6-30-102-007-0	1
8930	Limit Paddle	22-11508-001	1
8931	Pin		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	22-07224-020	2
8932	Keeper Plate		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	22-01801-001	2
8933	Sheave Support		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	24-06035-001	1
8934	Bolt		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	22-09413-632	1
8935	Snap Ring	22-06497-029	1
8936	Spool	22-11509-002	1
8937	Snap Ring	22-06498-015	1
8938	Ball Bearing	6-30-050-207-1	1
8938	Rope Sheave	23-05497-003	1

FRAME 3 D3

1-10 3 and 5 TON

Nov. 1981 HOIST FRAME & COMPONENTS

ITEM	DESCRIPTION	PART NUMBER	QTY.
8940	Snap Ring	22-06498-015	1
8941	Bearing Spacer		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	22-00790-020	4
8942	Snap Ring		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	22-02244-007	4
8943	Rope Sheave		
	D3 - 3 ton	NOT REQUIRED	
	D3 - 5 ton	24-04332-001	



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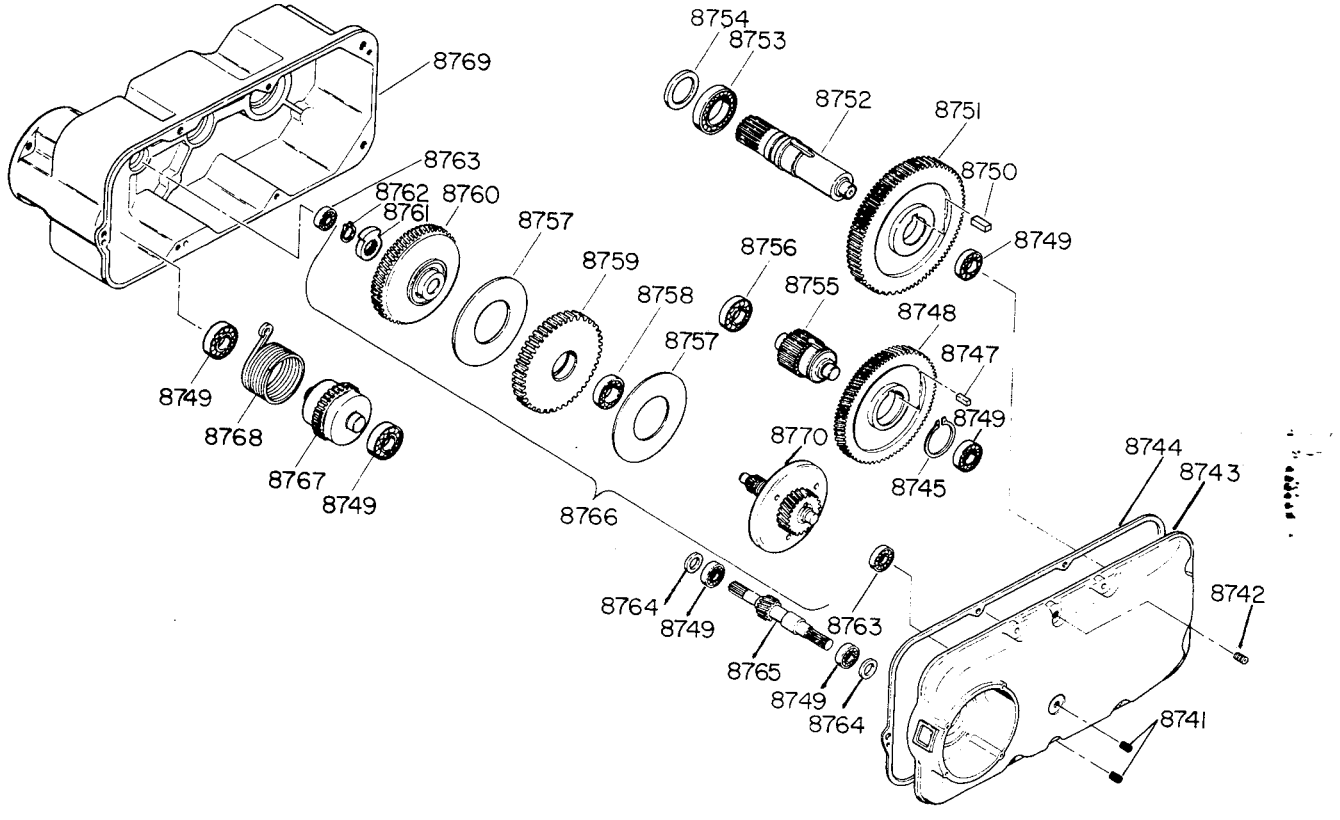
FRAME 3

2-1

JULY 1982

HOIST GEAR CASE

ALL MODELS



ITEM	DESCRIPTION	PART NUMBER	QUANTITY
8741	Pipe Plug	6-10-014-006-1	2
8742	Vent Plug	22-04312-003	1
8743	Gear Case Cover	25-03072-001	1
8744	Gasket	24-06027-001	1
8745	Snap Ring	22-06497-012	1
8747	Key	6-11-028-016-0	1
8748	Intermediate Gear		
	6 Pt. - 17.7, 11 FPM	24-06022-003	1
	4 Pt. - 15, 22 FPM	24-06022-002	1
	6 Pt. - 19 FPM 10 HP 20 FPM	24-06022-001	1
8749	Ball Bearing	6-30-041-206-0	4
8750	Key	22-01740-037	1
8751	Drum Gear	24-06025-001	1
8752	Drive Shaft	24-06026-001	1
8753	Bearing	6-30-020-118-0	1
8754	Oil Seal	22-11454-001	1

HOIST GEAR CASE

ALL MODELS

ITEM	DESCRIPTION	PART NUMBER	QTY.
8755	Drum Pinion	24-06024-001	1
8756	Bearing	6-30-041-207-0	1
8757	Friction Disc	22-00353-006	2
8758	Bearing	6-30-020-113-0	1
8759	Ratchet Gear	23-07909-001	1
8760	Spider Gear		
	6 pt. 7.7 FPM	24-06020-001	1
	4 pt. 15 FPM	24-06020-001	1
	6 pt. 11, 19 FPM, 20 FPM	24-06020-002	1
	4 pt. 22 FPM	24-06020-002	1
8761	Cam	23-07908-001	1
8762	Snap Ring	22-06497-021	1
8763	Bearing	6-30-041-205-0	2
8764	Oil Seal	22-02834-001	2
8765	Motor Extension Shaft		
	6 pt. 7.7 FPM	24-06018-001	1
	4 pt. 15 FPM	24-06018-001	1
	6 pt. 11, 19 FPM, 20 FPM	24-06018-002	1
	4 pt. 22 FPM	24-06018-002	1
8766	Load Brake Assembly		
	2/6 pt. @ 23/7.7 FPM	21-03770-001	1
	4/6 pt. @ 15/10 FPM	21-03770-002	1
	2/6 pt. @ 34/11 FPM	21-03770-003	1
	2/4/6 pt. @ 45/22/15 FPM	21-03770-004	1
	4/6 pt. @ 30/20 FPM	21-03770-005	1
8767	Clutch Shaft	24-06023-001	1
8768	Spring	23-07910-001	1
8769	Gear Case	25-03071-001	1
8770	Thrust Disc Assembly		
	6 pt. 7.7, 11 FPM	23-07912-003	1
	6 pt. 19 FPM 10 HP 20 FPM	23-07912-001	1
	4 pt. 15, 22 FPM	23-07912-002	1

FRAME 3

2-3 LOAD BRAKE

JULY 1982

All load brakes are self-adjusting and require a minimum of maintenance. Wear on friction disc should be checked during any gearcase maintenance. Replace discs when thickness reaches 1/32".

To adjust for disc wear, or reset after disc replacement, turn gear (left hand) down firmly against linings. Then assemble the reverse lever so the gap (see Figure 6-1a) is between 1/8" and 3/8" If adjustment arrows are provided, the reverse lever face should be between the arrows.

NOTE: The reverse lever may be "turned over" to provide finer adjustment.

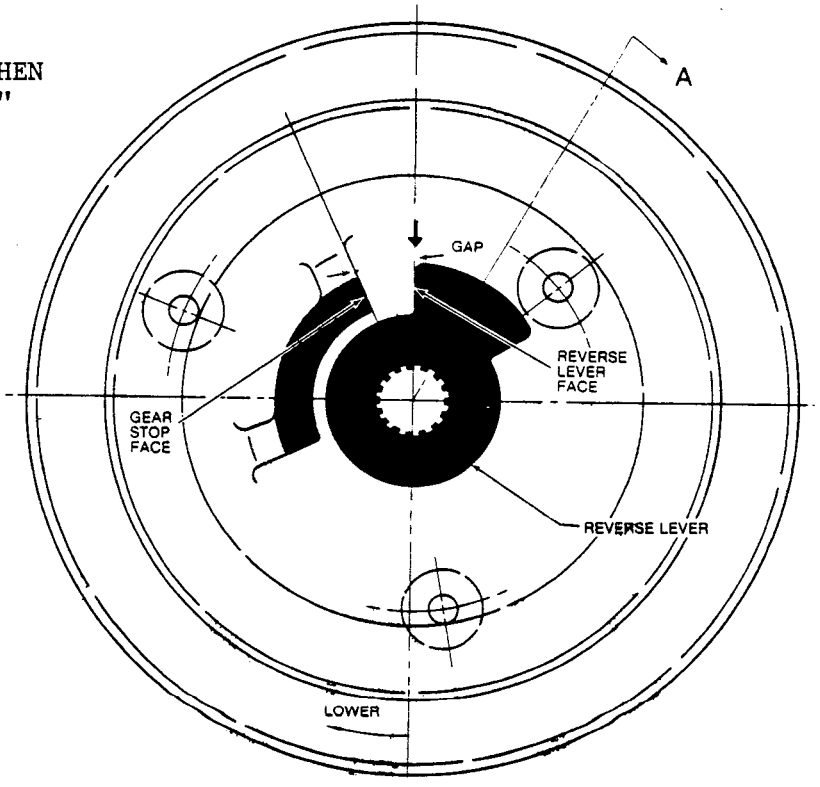
CAUTION: Measure the gap from the gear stop face shown. Do not assemble the reverse lever on the other side of the stop.

The load brake should be checked for proper holding action after any load brake maintenance is performed.

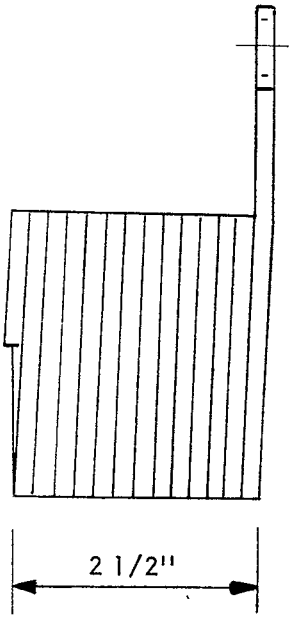
To check to see whether load brake is holding properly, attach approximately a 25% capacity load to hook and raise off floor 6". Release motor brake by backing off center adjusting screw approximately 2 turns. Load should remain suspended. If load drifts to floor, check for malfunctioning spring clutch assembly or worn friction discs. Repair/replace as necessary.

NOTE: Severe impact or shock loads on hook due to improper handling of loads may result in a locked load brake. Load can be raised, but motor torque is not sufficient to unlock brake to permit lowering, and motor stalls. If load brake does not release after several inchings of the down button, the load must be removed from the hook before manual efforts are made to unlock the brake. It is recommended that the unlocking and subsequent inspection of the load brake be performed by a serviceman experienced in these areas.

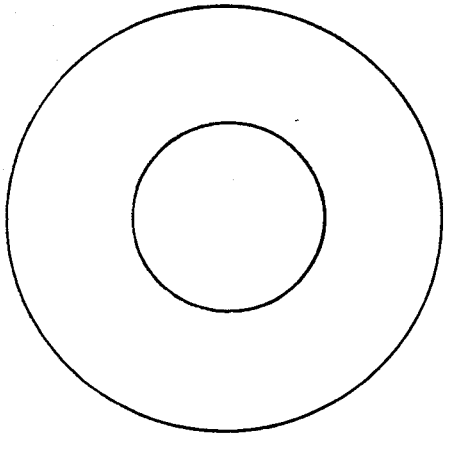
RE-ADJUST BRAKE WHEN GAP EXCEEDS 5/8" DUE TO FRICTION DISC WEAR.



LOAD BRAKE



When replacing clutch spring, always use replacement spring with 2 1/2" coil length and seal the spring anchor bolt in place with "loctite" or similar thread locking product. On units built prior to January 1982 it is recommended this replacement be made a part of any service routine involving load brake repair or disc replacement.



When replacing load brake friction discs, use only discs marked R-451 or S-451.

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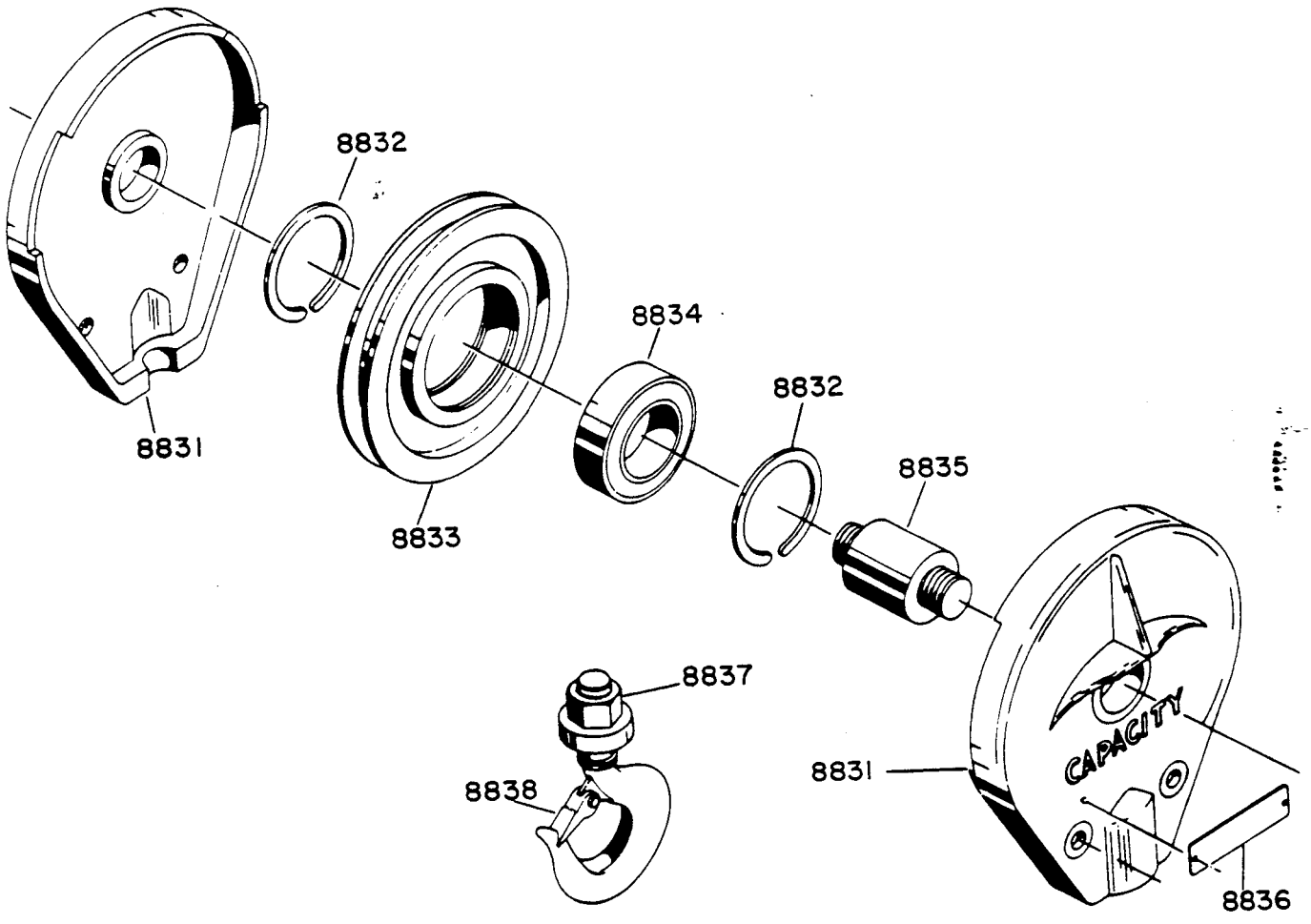


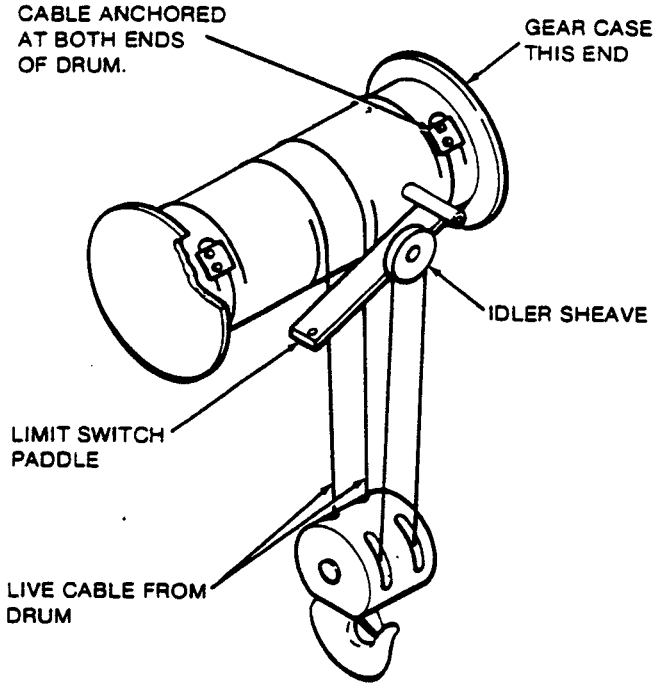
ITEM	DESCRIPTION	PART NUMBER	QTY.
8830	Bottom Block Assembly	25-01980-020	1
8831	Sheave Frame	25-01982-001	2
8832	Snap Ring	22-02244-007	2
8833	Sheave	24-04332-001	1
8834	Bearing	6-30-050-208-1	1
8835	Stud	22-07224-002	1
8836	Capacity Plate	23-06968-006	1
8837	Load Hook Assembly	23-06359-001	1
8838	Latch Kit	22-09929-003	1

FRAME 3

3-2

Nov. 1981

2-PART SINGLE REEVING DIAGRAM



When the need for cable replacement has been established, proceed as follows:

CAUTION

Always wear heavy gloves when handling cables to avoid hand injuries from possible broken wires.

1. Run block to the floor and lay on its side with axis of sheaves parallel to axis of hoist drum. Continue to run hoist in the down direction until only one half to one wrap of cable remains on the drum. Stop with drum in position where the rope clips anchoring the cable to the drum are most accessible.

2. Remove the rope clips which anchor the cable ends to the drum. Pull the free cable ends from the drum and through the sheaves, removing the cable from the hoist. Discard old cable.

3. Inspect rope sheaves, bearings, pins, etc. for wear or damage. Repair or replace as needed. *Note:* Placing a new cable in service in a sheave tracked or worn to a reduced groove radius will severely shorten cable life and can cause premature cable failure.

4. Unreel the replacement cable and inspect for any shipping damage, kinks, etc. Refer to Operation Maintenance Section — Wire Rope. If replacement cables are held in storage for extended periods of time, check for dried out lubricant or possible corrosion.

5. Pass one end of the new cable around the idler sheave in the hoist load bar, pulling through half of the cable length so the free ends hang parallel and equal distance from the hoist.

6. Pass the free cable ends through the block sheaves, one each side, entering the sheaves on the side nearest the hoist motor. Pull the cable ends up to the drum and anchor them securely under the rope clips, one at either end of the drum. Make certain the cables are not crossed with each other, or with the limit paddle mechanism. See reeving diagram.

CAUTION

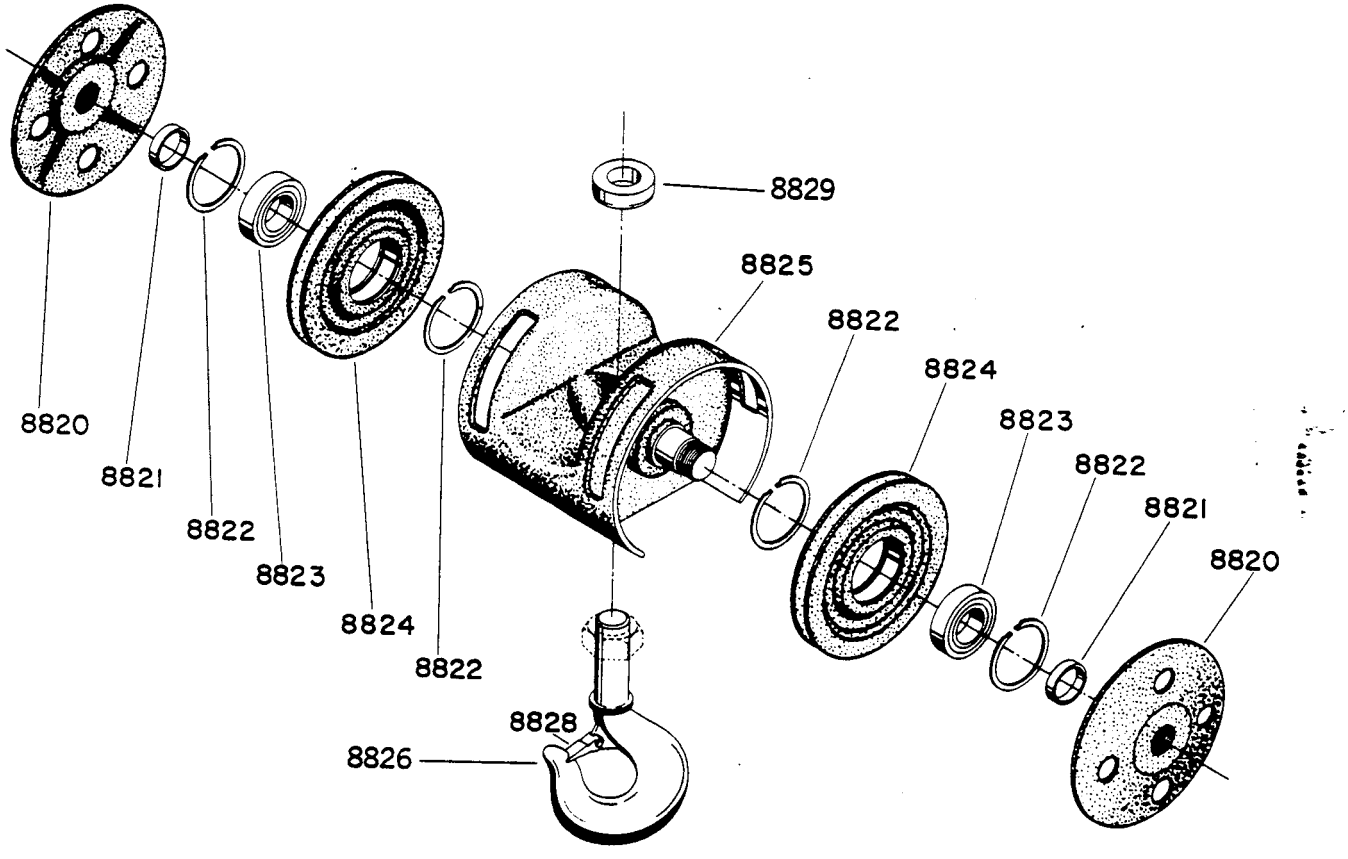
Make certain that limit switch paddle is operating freely. Safe operation of the hoist requires a properly operating limit switch mechanism.

7. Operate the hoist up control and guide cables to insure they spool properly onto the drum until the block weight is supported. Check to be certain that sheaves turn freely and that block hangs properly as shown in the reev diagram.

8. Operate the block through the full range of lift for 2-3 cycles with empty hook. Check cables with block near the full up position to ensure they hang properly. Make 1-2 *short* lifts from the floor with a near capacity load. Follow this by retightening rope clips.

IMPORTANT

If equipped with optional geared limits, check and adjust limits as necessary to maintain original stop locations.



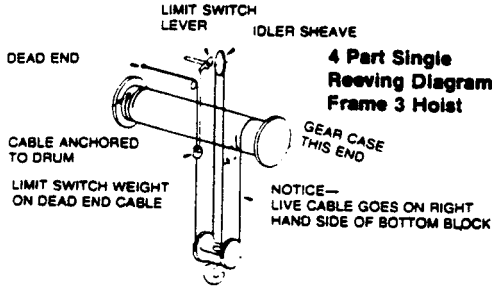
ITEM	DESCRIPTION	PART NUMBER	QTY.
8820	Sheave Cover	24-00117-003	2
8821	Spacer	22-00790-017	2
8822	Snap Ring	22-02244-007	4
8823	Bearing	6-30-050-208-1	2
8824	Rope Sheave	24-04332-001	2
8825	Sheave Frame	25-00057-010	1
8826	Load Hook & Nut	NOT STOCKED AS AN ASSY.	
8827	Bottom Block Assembly	25-00059-026	1
8828	Latch Kit	22-09929-004	1
8829	Thrust Bearing	6-30-160-022-0	1
	Nut	6-14-007-013-0	1

FRAME 3

3-4

Nov. 1981

4-PART SINGLE REEVING DIAGRAM



When the need for cable replacement has been established, proceed as follows:

CAUTION

Always wear heavy gloves when handling cables to avoid hand injuries from possible broken wires.

1. Run block to the floor and lay on its side with axis of sheaves parallel to axis of hoist drum. Continue to run hoist in the down direction until only one half to one wrap of cable remains on the drum. Stop with drum in position where the keyhole slot anchoring the cable socket is most accessible.

2. Remove the rope clips and thimble from the dead end attachment and pull free cable end through dead end spool, limit weight, sheaves, etc. Free the socketed end of the cable from the hoist drum by removing plug from the keyhole slot. Discard old cable.

3. Inspect rope sheaves, bearings, pins, etc. for wear or damage. Repair or replace as needed. *Note:* Placing a new cable in service in a sheave tracked or worn to a reduced groove radius will severely shorten cable life and can cause premature cable failure.

4. Unreel the replacement cable and inspect for any shipping damage, kinks, etc. Refer to Operation Maintenance Section — Wire Rope. If replacement cables are held in storage for extended periods of time, check for dried out lubricant or possible corrosion.

5. Place one half to one wrap of the socketed cable end around the drum, live cable leading off drum side nearest the motor. Place socket through the keyhole slot and replace plug, anchoring socket inside the drum.

6. Tighten plug securely, checking to make certain that surface of plug does not extend above bottom of rope groove in the drum.

7. Depending on the distance of the hoist to the floor, or surface where the block lies, it may be desirable to run the hoist (up direction) and wind part of the free cable onto the drum. Cable should be guided to ensure that it spools properly onto drum, and remaining free length of cable should be adequate to complete the reeving system with block lying on the floor.

8. If cable is to be threaded into the system without disassembly of the block or idler sheaves, it will be helpful to tape a section of stiff wire to the free end of the cable. This "lead wire" can be formed to the sheave contour and rolled through the sheaves, serving as a pilot to lead the cable into proper position.

9. Thus fitted, the free end, or live cable, from the drum is passed first into the block sheave at gearcase end, drum side, second, into the idler sheave, motor side, and third, into the block sheave at control end, drum side. Refer to reeving diagram.

10. Pass cable through the hole in limit switch weight, over the dead end spool, and anchor to the dead end pin. Make certain that rope clips are properly applied and tightened as outlined in the Operation Maintenance Section.

CAUTION

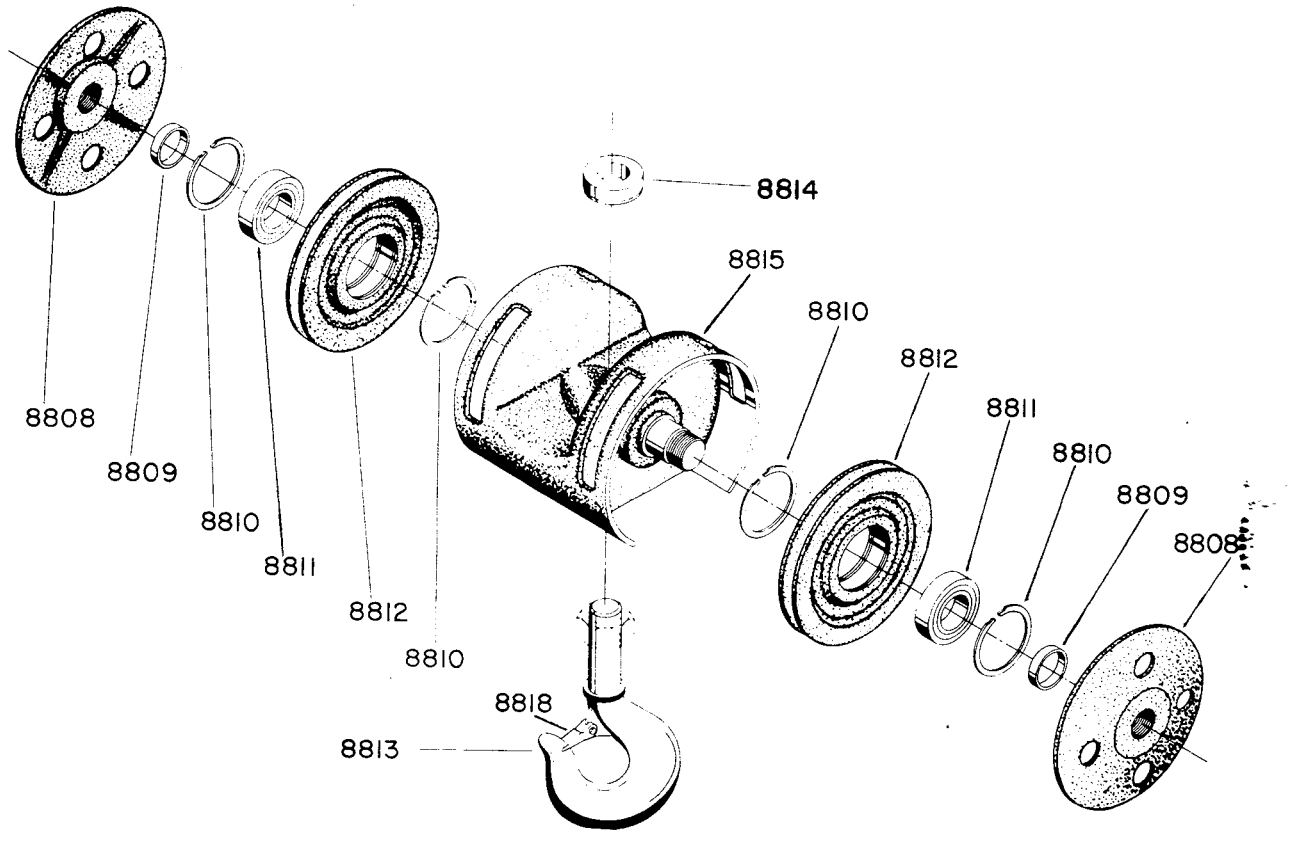
Make certain that limit switch weight is properly threaded onto dead end cable and operating freely. Safe operation of the hoist requires a properly operating limit switch mechanism.

11. Operate hoist up control to raise block from the floor. Check to be certain that all sheaves turn freely and that block hangs properly as shown in the reeving diagram.

12. Operate the block through the full range of lift for 2-3 cycles with empty hook. Check cables with block near the full up position to ensure they hang properly. Make 1-2 *short* lifts from the floor with a near capacity load. Follow this by retightening rope clips.

IMPORTANT

If equipped with optional geared limits, check and adjust limits as necessary to maintain original stop locations.



ITEM	DESCRIPTION	PART NUMBER	QTY.
8808	Sheave Cover	23-05069-001	2
8809	Spacer	22-08916-002	2
8810	Snap Ring	22-06498-015	4
8811	Bearing	6-30-050-207-1	2
8812	Sheave	23-05497-003	1
8813	Load Hook	23-00109-016	1
	Nut	6-14-007-010-0	1
8814	Bearing	6-30-161-016-0	1
8815	Sheave Frame	24-00522-020	1
8816	Hook, Nut, & Bearing Assy.	NO NUMBER	
8817	Bottom Block Assembly	24-04985-031	1
8818	Latch Kit	22-09929-003	1

FRAME 3

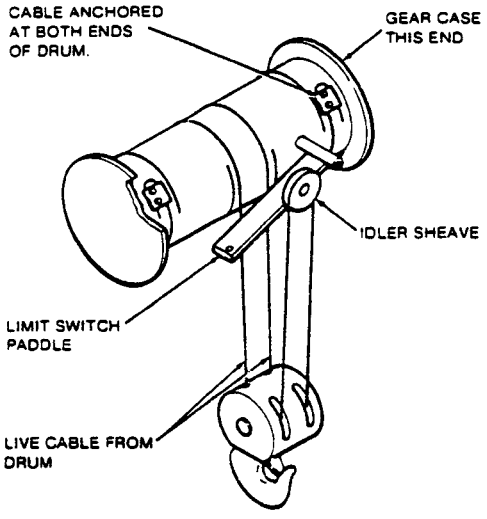
3-6

Nov. 1981

2-PART

DOUBLE REEVING DIAGRAM

2 Part Double Reeving Diagram Frame 3 Hoists



When the need for cable replacement has been established, proceed as follows:

CAUTION

Always wear heavy gloves when handling cables to avoid hand injuries from possible broken wires.

1. Run block to the floor and lay on its side with axis of sheaves parallel to axis of hoist drum. Continue to run hoist in the down direction until only one half to one wrap of cable remains on the drum. Stop with drum in position where the rope clips anchoring the cable to the drum are most accessible.

2. Remove the rope clips which anchor the cable ends to the drum. Pull the free cable ends from the drum and through the sheaves, removing the cable from the hoist. Discard old cable.

3. Inspect rope sheaves, bearings, pins, etc. for wear or damage. Repair or replace as needed. *Note:* Placing a new cable in service in a sheave tracked or worn to a reduced groove radius will severely shorten cable life and can cause premature cable failure.

4. Unreel the replacement cable and inspect for any shipping damage, kinks, etc. Refer to Operation Maintenance Section — Wire Rope. If replacement cables are held in storage for extended periods of time, check for dried out lubricant or possible corrosion.

5. Pass one end of the new cable around the idler sheave in the hoist load bar, pulling through half of the cable length so the free ends hang parallel and equal distance from the hoist.

6. Pass the free cable ends through the block sheaves, one each side, entering the sheaves on the side nearest the hoist motor. Pull the cable ends up to the drum and anchor them securely under the rope clips, one at either end of the drum. Make certain the cables are not crossed with each other, or with the limit paddle mechanism. See reeving diagram.

CAUTION

Make certain that limit switch paddle is operating freely. Safe operation of the hoist requires a properly operating limit switch mechanism.

7. Operate the hoist up control and guide cables to insure they spool properly onto the drum until the block weight is supported. Check to be certain that sheaves turn freely and that block hangs properly as shown in the reeving diagram.

8. Operate the block through the full range of lift for 2-3 cycles with empty hook. Check cables with block near the full up position to ensure they hang properly. Make 1-2 *short* lifts from the floor with a near capacity load. Follow this by retightening rope clips.

IMPORTANT

If equipped with optional geared limits, check and adjust limits as necessary to maintain original stop locations.

D3

5 TON

8-PART BOTTOM BLOCK
(4-PART DOUBLE)

FRAME 3

3-7

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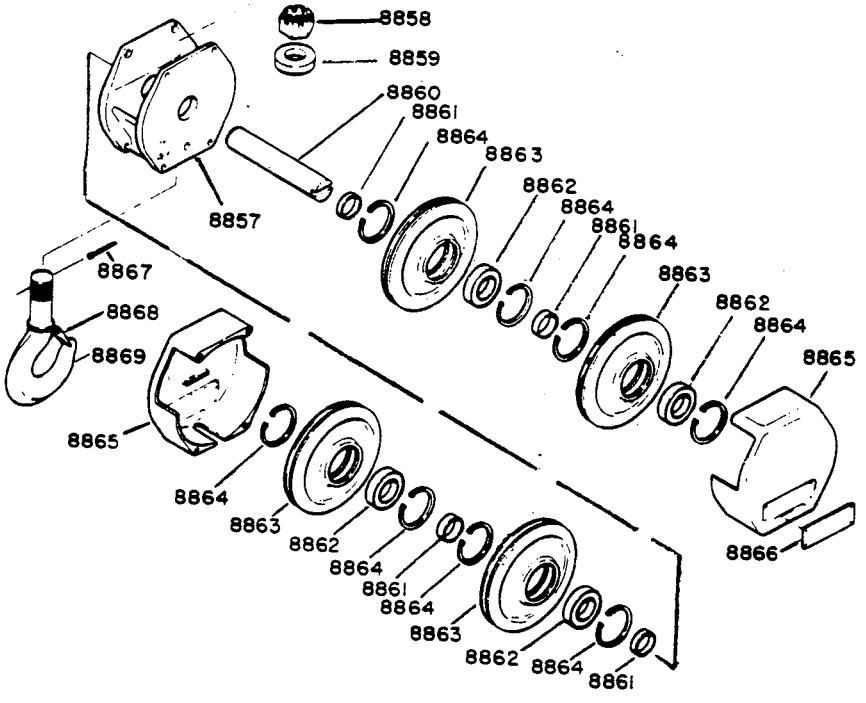


ITEM	DESCRIPTION	PART NUMBER	QTY.
8856	Bottom Block Assy.	25-03100-001	1
8857	Trunion	25-03101-001	1
8858	Slotted Nuts	23-07796-013	1
8859	Thrust Bearing	6-30-160-022-0	1
8860	Sheave Pin	23-07946-001	1
8861	Spacer (between sheave & frame)	22-00790-020	2
	Spacer (between sheaves)	22-00790-021	2
8862	Bearings	6-30-050-208-1	4
8863	Sheaves	24-04332-001	4
8864	Snap Ring	22-02244-007	8
8865	Side Cover	25-03102-701	2
8866	Capacity Plate	22-11464-004	2
8867	Cotter Pin	23-07932-014	1
8868	Latch Kit	22-09929-004	1
8869	Load Hook	24-00114-001	1

FRAME 3

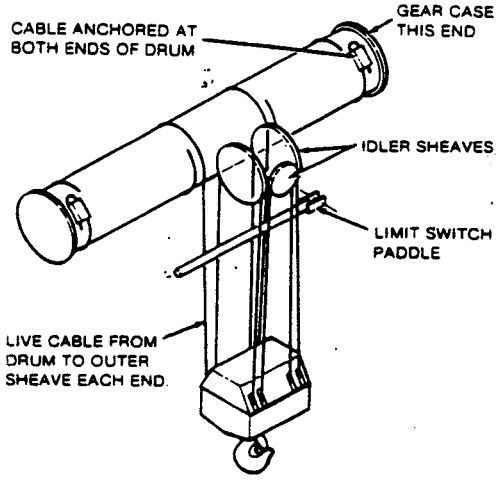
3-8

Nov. 1981

4-PART

DOUBLE REEVING DIAGRAM

4 Part Double Reeving Diagram Frame 3 Hoist



When the need for cable replacement has been established, proceed as follows:

CAUTION

Always wear heavy gloves when handling cables to avoid hand injuries from possible broken wires.

1. Run block to the floor and lay on its side with axis of sheaves parallel to axis of hoist drum. Continue to run hoist in the down direction until only one half to one wrap of cable remains on the drum. Stop with drum in position where the rope clips anchoring the cable to the drum are most accessible.

2. Remove the rope clips which anchor the cable ends to the drum. Pull the free cable ends from the drum and through the sheaves, removing the cable from the hoist. Discard old cable.

3. Inspect rope sheaves, bearings, pins, etc. for wear or damage. Repair or replace as needed. *Note:* Placing a new cable in service in a sheave tracked or worn to a reduced groove radius will severely shorten cable life and can cause premature cable failure.

4. Unreel the replacement cable and inspect for any shipping damage, kinks, etc. Refer to Operation Maintenance Section — Wire Rope. If replacement cables are held in storage for extended periods of time, check for dried out lubricant or possible corrosion.

5. Pass one end of the new cable around the stationary idler sheave (small sheave nearest the motor), pulling through half of the cable length so the free ends hang parallel and equal distance from the hoist.

6. Pass the free cable ends through the block sheaves, one each side, entering first the inner sheaves, from the motor side. Check to insure cables are not crossed. Pass the free cable ends through the hoist idler sheaves, one each side, entering the sheaves from the drum side. Check to insure cables are not crossed. Pass the free cable ends through the outer block sheaves, one each side, entering from the motor side. Check to insure cables are not crossed. Pull the cable ends up to the drum and anchor them securely under the rope clips, one at either end of the drum. See reeving diagram. Check to insure that cables hang straight and are free of the limit paddle mechanism.

CAUTION

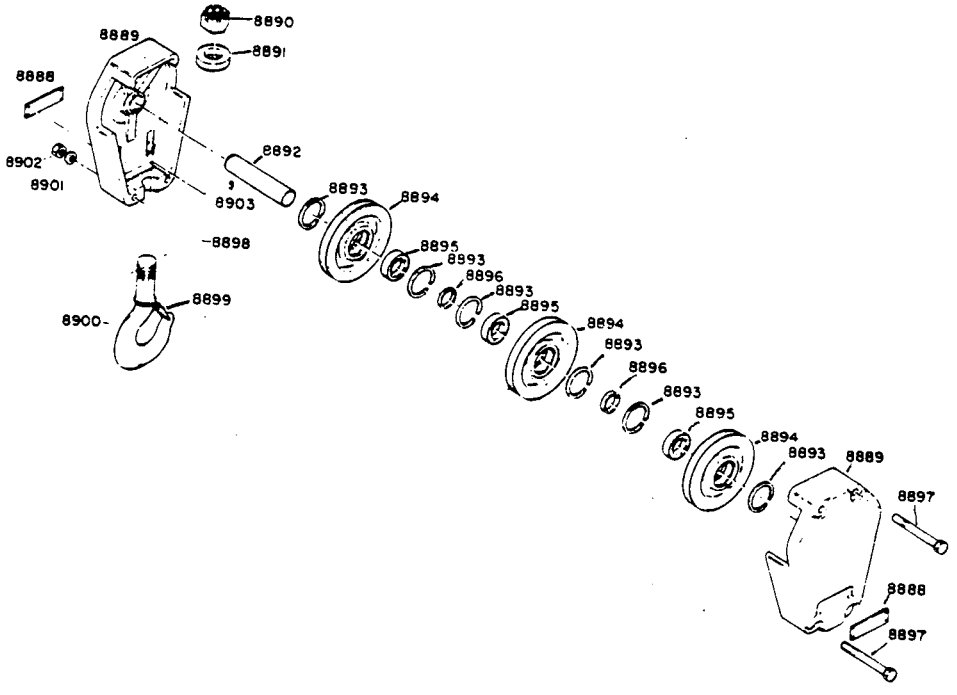
Make certain that limit switch paddle is operating freely. Safe operation of the hoist requires a properly operating limit switch mechanism.

7. Operate the hoist up control and guide cables to insure they spool properly onto the drum until the block weight is supported. Check to be certain that sheaves turn freely and that block hangs properly as shown in the reeving diagram.

8. Operate the block through the full range of lift for 2-3 cycles with empty hook. Check cables with block near the full up position to ensure they hang properly. Make 1-2 *short* lifts from the floor with a near capacity load. Follow this by retightening rope clips.

IMPORTANT

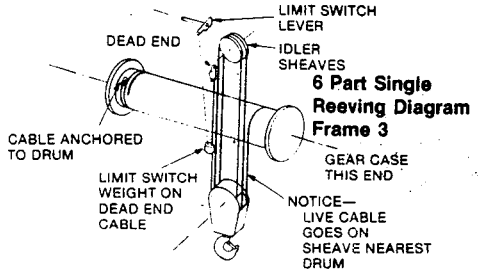
If equipped with optional geared limits, check and adjust limits as necessary to maintain original stop locations.



ITEM	DESCRIPTION	PART NUMBER	QTY.
8888	Capacity Plate	22-11456-006	2
8889	Block Frame	25-03095-001	2
8890	Slotted Nut	22-07796-016	1
8891	Thrust Bearing	6-30-160-028-0	1
8892	Sheave Pin	22-11546-001	1
8893	Snap Ring	22-02244-007	6
8894	Rope Sheave	24-04332-019	3
8895	Bearing	6-30-050-208-1	3
8896	Spacer	22-00790-021	2
8897	Bolt	22-09413-655	1
8898	Cotter Key	23-07932-022	1
8899	Latch Kit	22-09929-005	1
8900	Load Hook	24-05961-001	1
8901	Washer	NOT USED	
8902	Nut	22-11481-001	4
8903	Roller Pin	22-07653-001	1
8904	Load Hook Assembly	NO NUMBER	
8905	Bottom Block Assembly	25-03094-001	1

6-PART

SINGLE REEVING DIAGRAM

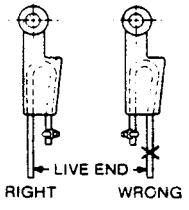


When the need for cable replacement has been established, proceed as follows:

CAUTION

Always wear heavy gloves when handling cables to avoid hand injuries from possible broken wires.

1. Run block to the floor and lay on it's side with axis of sheaves perpendicular to axis of hoist drum, hook towards gearcase end. Continue to run hoist in the down direction until only one half to one wrap of cable remains on the drum. Stop with drum in position where the keyhole slot anchoring the cable socket is most accessible.
2. Disassemble the dead end rope anchor attachment and pull the free cable end through the limit weight, sheaves, etc. Free the socketed end of the cable from the hoist drum by removing plug from the keyhole slot. Discard old cable.
3. Inspect rope sheaves, bearings, pins, etc. for wear or damage. Repair or replace as needed. *Note:* Placing a new cable in service in a sheave tracked or worn to a reduced groove radius will severely shorten cable life and can cause premature cable failure.
4. Unreel the replacement cable and inspect for any shipping damage, kinks, etc. Refer to Operation Maintenance Section — Wire Rope. If replacement cables are held in storage for extended periods of time, check for dried out lubricant or possible corrosion.
5. Place one half to one wrap of the socketed cable end around the drum, live cable leading off drum side nearest the motor. Place socket through the keyhole slot and replace plug, anchoring socket inside the drum.
6. Tighten plug securely, checking to make certain that surface of plug does not extend above bottom of rope groove in the drum.
7. Depending on the distance of the hoist to the floor, or surface where the block lies, it may be desirable to run the hoist (up direction) and wind part of the free cable onto the drum. Cable should be guided to ensure that it spools properly onto drum, and remaining free length of cable should be adequate to complete the reeving system with block lying on the floor.
8. If cable is to be threaded into the system without disassembly of the block or idler sheaves, it will be helpful to tape a section of stiff wire to the free end of the cable. This "lead wire" can be formed to the sheave contour and rolled through the sheaves, serving as a pilot to lead the cable into proper position.
9. Thus fitted, the free end, or live cable, from the drum is passed first into top of the block sheave nearest drum side, second, into the idler sheave nearest drum, control end, third, into top of the block center sheave, fourth, into the remaining idler sheave, control end, and fifth, into top of remaining block sheave. Refer to reeving diagram.
10. Pass cable through the hole in limit switch weight, reassemble the dead end rope anchor attachment, and replace the safety clip. Refer to sketch for correct orientation of rope anchor attachment.



CAUTION

Make certain that limit switch weight is properly threaded onto dead end cable and operating freely. Safe operation of the hoist requires a properly operating limit switch mechanism.

11. Operate hoist up control to raise block from the floor. Check to be certain that all sheaves turn freely and that block hangs properly as shown in the reeving diagram.*

IMPORTANT

*See Wire Rope Section under Operational Maintenance for additional data on installing new rope.

12. Operate the block through the full range of lift for 2-3 cycles with empty hook. Check cables with block near the full up position to ensure they hang properly. Make 1-2 *short* lifts from the floor with a near capacity load.

IMPORTANT

If equipped with optional geared limits, check and adjust limits as necessary to maintain original stop locations.

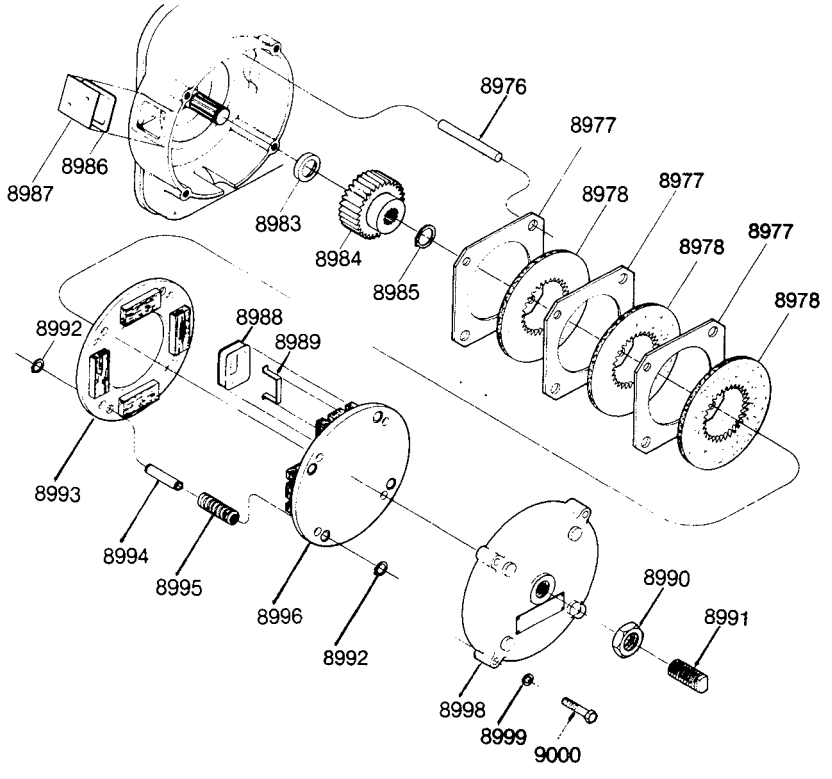
FRAME 3

MOTOR BRAKE

4-1

M7C 30.0#

Nov. 1981

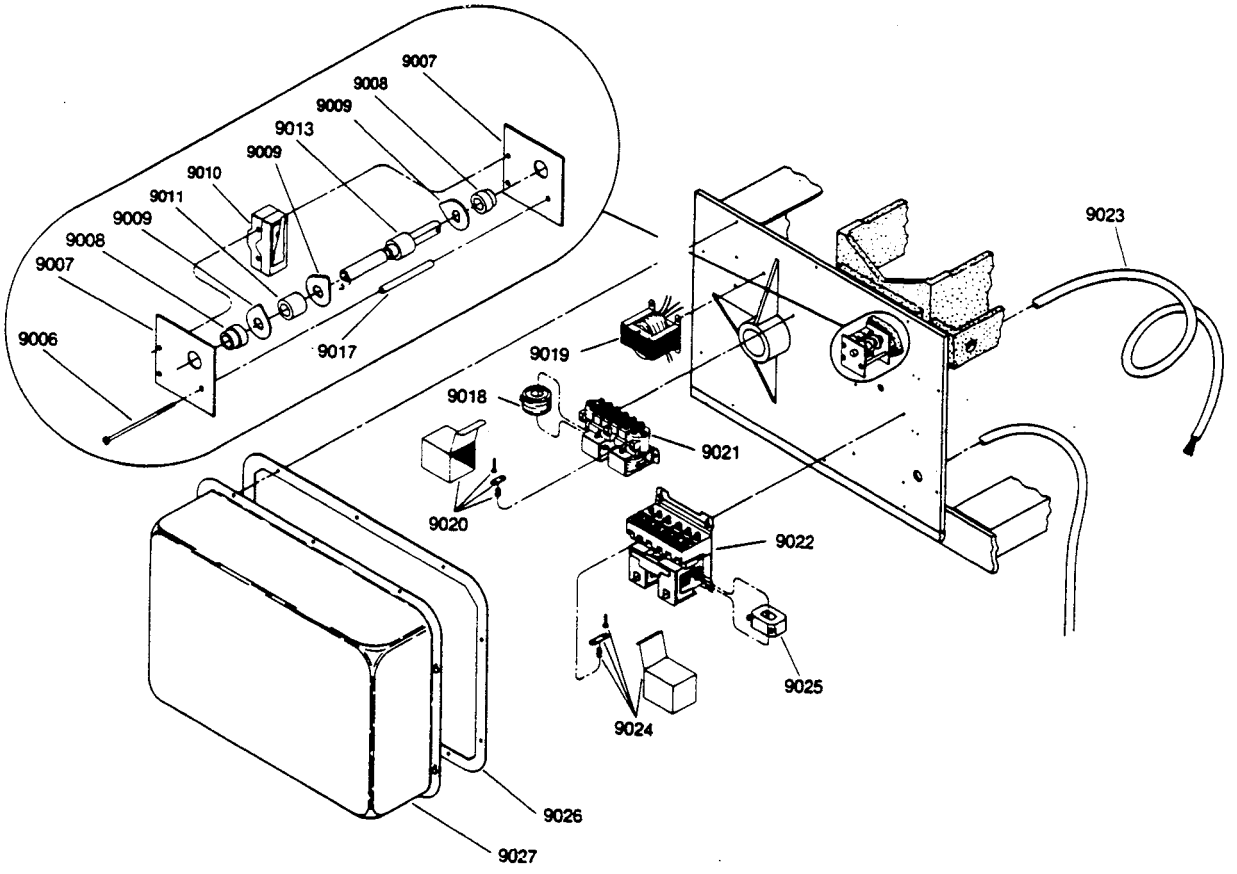


ITEM	DESCRIPTION	PART NUMBER	QTY.
8976	Brake Studs	22-11455-003	4
8977	Thrust Disc	23-03648-012	1
8978	Friction Disc	22-03607-013	2
8986	Gasket	22-10416-002	1
8987	Instruction Plate	23-07793-001	1
8988	Brake Coil		
	230V	22-08269-001	2
	115V	22-08269-002	2
	290V	22-08269-004	2
8989	Wedge	22-08471-001	4
8990	Hex Jam Nut	6-14-008-032-0	1
8991	Adj. Screw	22-03612-003	1
8992	Snap Ring	22-06497-032	4
8993	Armature Plate	23-06098-006	1
8994	Sleeve	22-09072-002	4
8995	Spring	22-03615-007	4
8996	Pole Plate Assembly	23-07791-002	1
8998	Brake Cover	25-03037-001	1
8999	Lock Washer	6-23-001-043-0	4
9000	Hex Head Cap Screws	22-09413-52-	4
9001	Brake Assembly	27-26043-001	1

FRAME 3

5-1 HOIST CONTROLS

Nov. 1981



ITEM	DESCRIPTION	PART NUMBER	QTY.
9007	Side Plate	22-08535-001	2
9008	Bushing	22-08536-001	2
9009	Cam	22-08534-001	3
9010	Micro Switch	23-05987-003	3
9011	Cam Spacer	22-08546-001	3
9013	Limit Shaft	22-08539-002	1
9018	Magnet Coils		
	TROLLEY CONTROLLER		
	24 volt	22-10755-003	2
	115 volt	22-10755-004	2
9019	Transformer		
	230/460V Pri. 115V Sec. 75 VA	23-07228-051	1
9020	Contact Kit Trolley	23-07623-010	6
9021	Trolley Controller	23-07623-001	1
9022	Hoist Controller	22-07861-001	1
9024	Contact Kit Hoist	22-07619-005	2

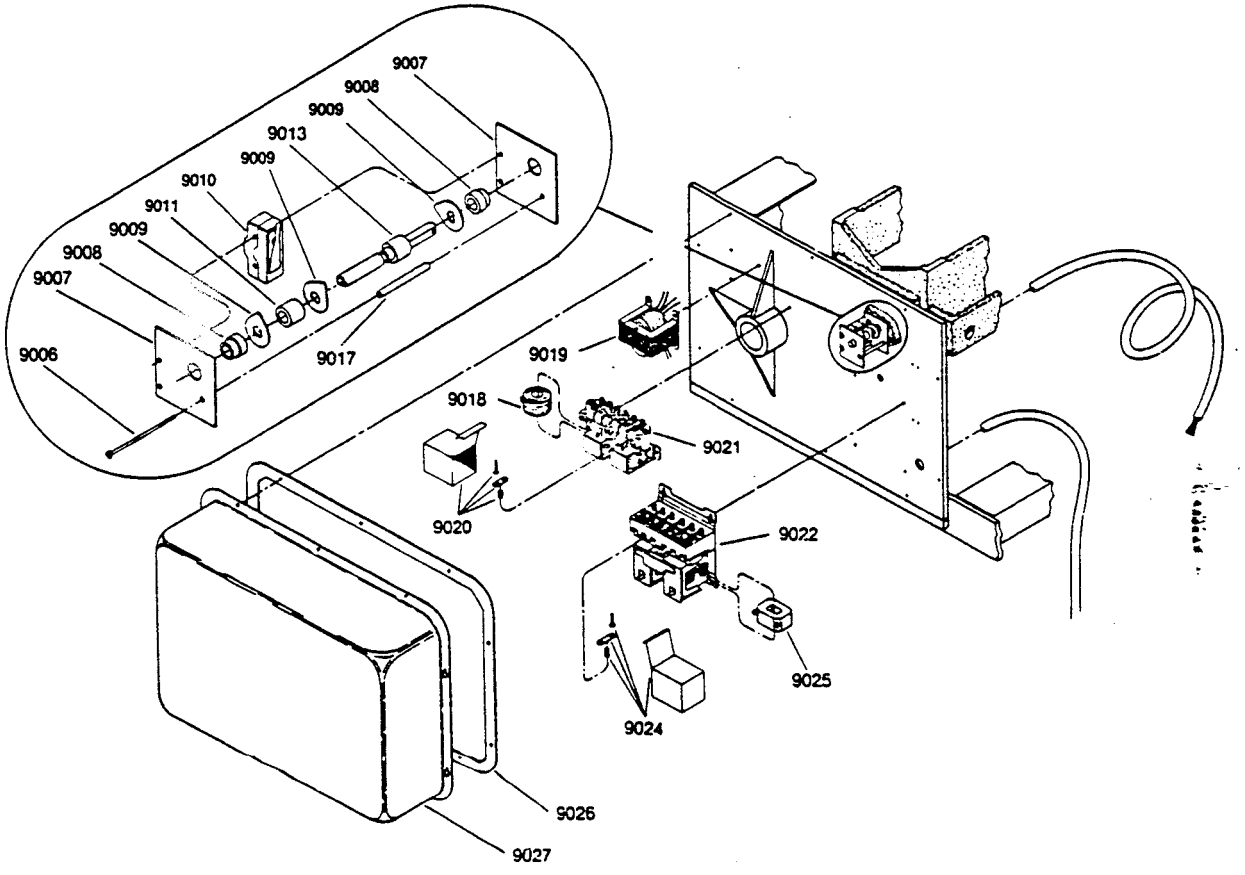
ITEM	DESCRIPTION	PART NUMBER	QTY.
9025	Magnet Coil		
	HOIST CONTACTOR		
	24 volt	22-07866-001	2
	115 volt	22-07866-002	2
9026	Gasket	22-08544-001	1
9027	Control Cover	22-08426-001	1

FRAME 3

5-3

APRIL 1982

HOIST CONTROLS
SERIES B



ITEM	DESCRIPTION	PART NUMBER	QUANTITY
9007	Side Plate	22-08535-001	2
9008	Bushing	22-08536-001	2
9009	Cam	22-08534-001	3
9010	Micro Switch	23-05987-003	3
9011	Cam Spacer	22-08546-001	3
9013	Limit Shaft	22-08539-002	1
9018	Magnet Coils		
	TROLLEY CONTROLLER		
	24 volt	22-10755-003	2
	115 volt	22-10755-004	2
9019	Transformer		
	230/460v Pri. 115v Sec. 75 VA	23-07228-051	1
9020	Contact Kit Trolley	23-07623-010	6
9021	Trolley Controller	23-07623-001	1
9022	Hoist Controller 5-7.5HP	23-08410-001	1
	10HP	23-08412-001	1
9024	Contact Kit Hoist 5-7.5HP	23-08410-003	6
	10HP	23-08412-002	6

ITEM	DESCRIPTION	PART NUMBER	QUANTITY
9025	Magnet Coil		
	HOIST CONTACTOR		
	24 volt	22-10755-003	2
	115 volt	22-10755-004	2
9026	Gasket	22-08544-001	1
9027	Control Cover	22-08426-001	1

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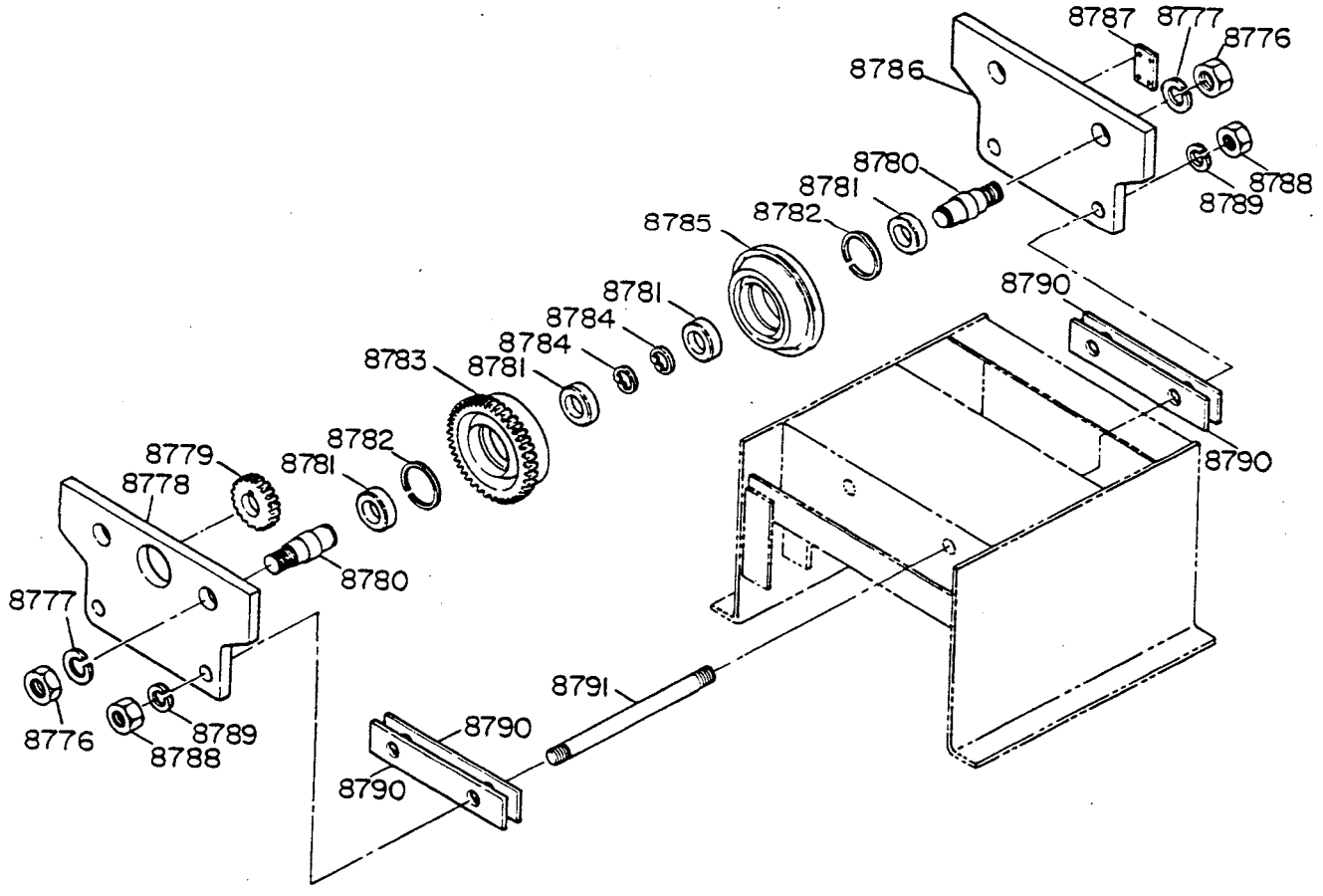


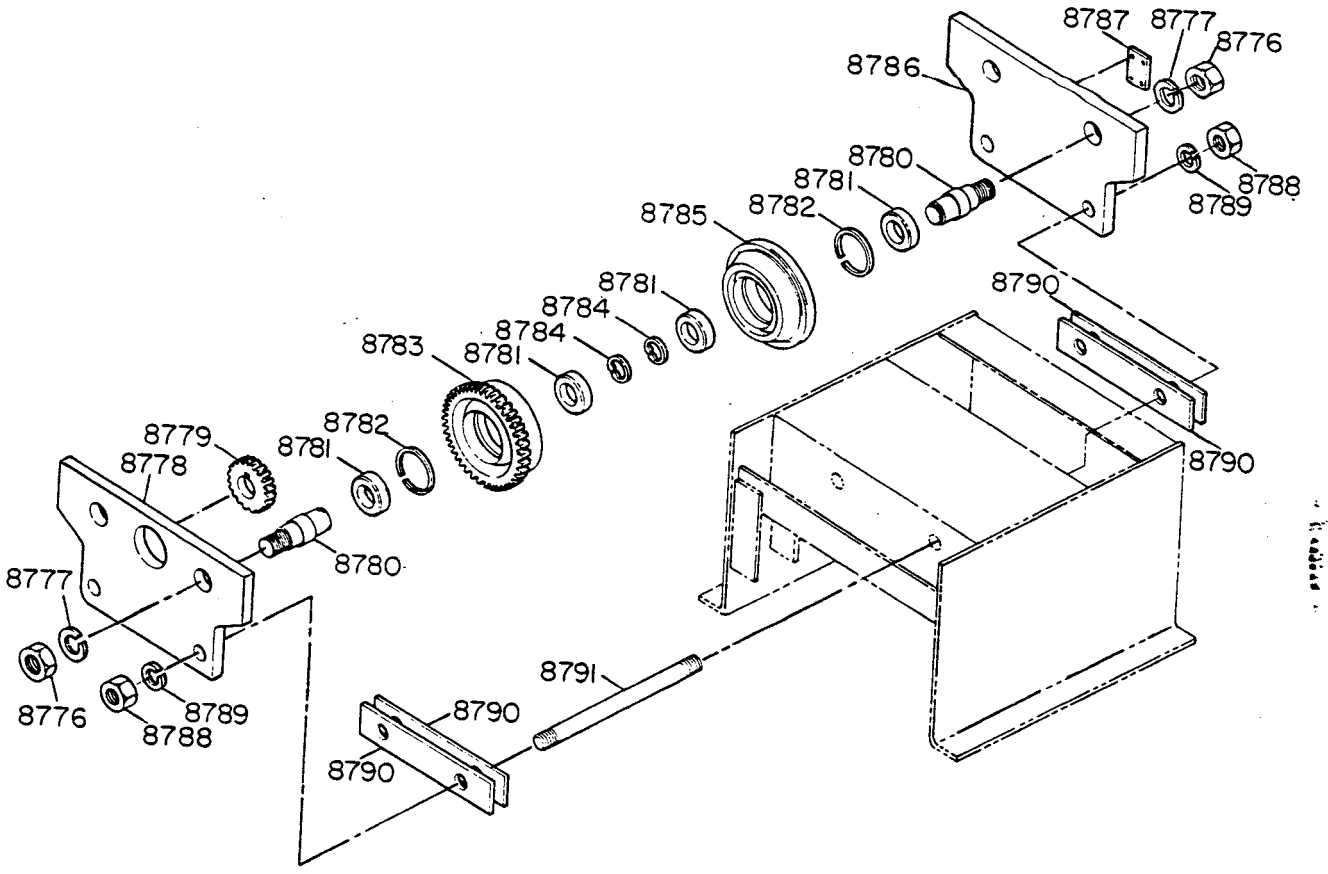
ITEM	DESCRIPTION	PART NUMBER	QTY
8776	Hex Nut	6-14-008-034-0	4
8777	Lockwasher	6-23-001-029-0	4
8778	Drive Side Plate	24-06032-001	1
8779	Drive Pinion	22-11628-001	1
	Pinion Key	6-11-024-034-0	1
	Pinion Set Screws	6-06-077-008-3	2
8780	Wheel Stud	23-07921-002	4
8781	Ball Bearing	6-30-042-207-0	8
8782	Retaining Ring	22-06498-015	4
8783	Drive Wheel	23-07920-001	2
8784	Retaining Ring	22-06497-029	4
8785	Idler Wheel	23-07542-001	2
8786	Idler Side Plate	24-06032-002	1
8787	Clamp Plate	Not Required	
8788	Hex Nut	6-14-007-012-0	4
8789	Lock Washer	6-23-001-055-0	4
8790	Spacer Plate	23-07922-001	20
8791	Mounting Stud	22-11529-002	2

FRAME 3

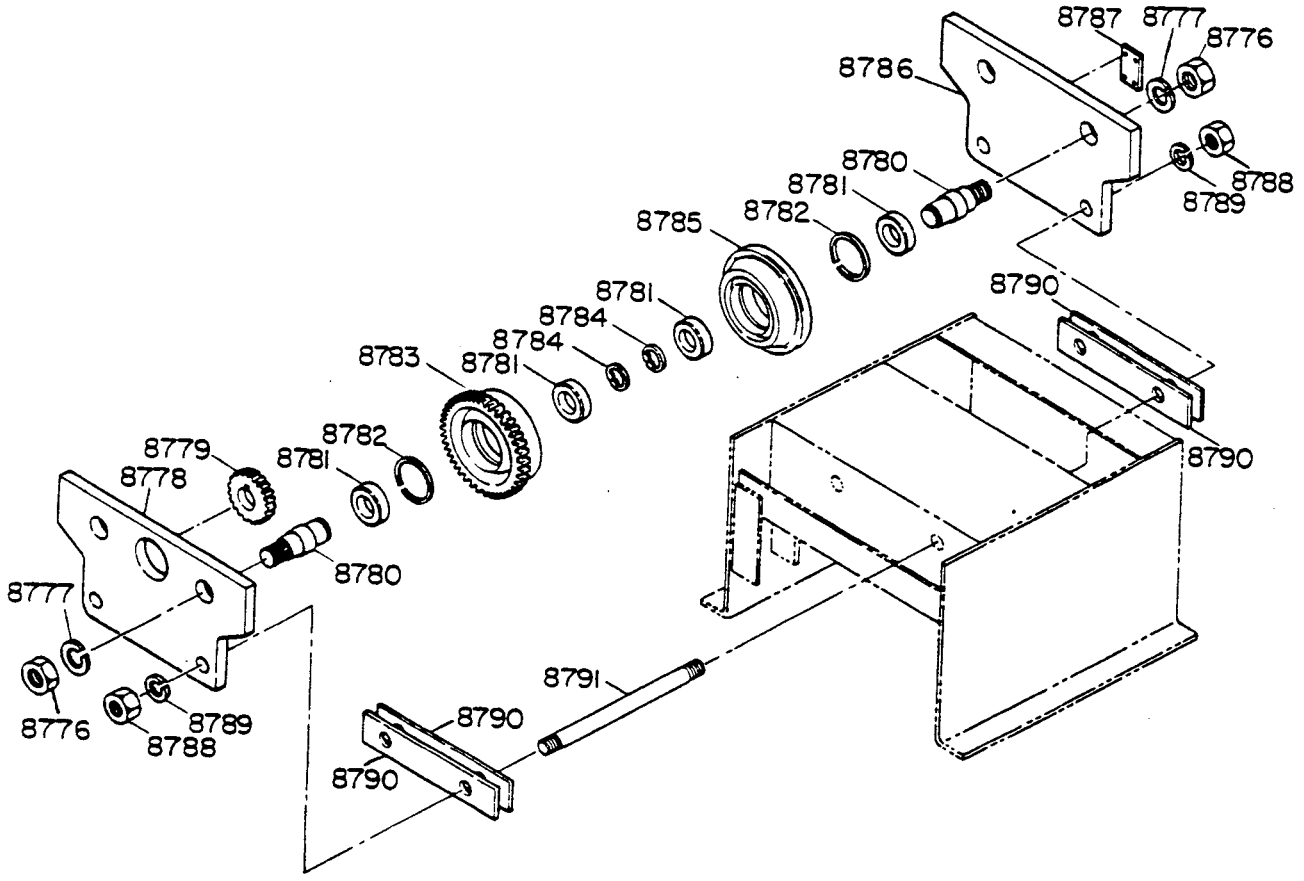
6-2

JAN 83

TYPE "M" TROLLEY
2, 3, 5 TON
WITH PAT'D TRACK
FLAT TREAD WHEELS



ITEM	DESCRIPTION	PART NUMBER	QTY
8776	Hex Nut	6-14-008-034-0	4
8777	Lockwasher	6-23-001-029-0	4
8778	Drive Side Plate	24-06032-001	1
8779	Drive Pinion	22-11628-001	1
	Pinion Key	6-11-024-034-0	1
	Pinion Set Screws	6-06-077-008-3	2
8780	Wheel Stud	23-07921-002	4
8781	Ball Bearing	6-30-042-207-0	8
8782	Retaining Ring	22-06498-015	4
8783	Drive Wheel	23-07920-003	2
8784	Retaining Ring	22-06497-029	4
8785	Idler Wheel	23-07542-003	2
8786	Idler Side Plate	24-06032-002	1
8787	Clamp Plate	Not Required	
8788	Hex Nut	6-14-007-012-0	4
8789	Lock Washer	6-23-001-055-0	4
8790	Spacer Plate	23-07922-001	20
8791	Mounting Stud	22-11529-002	2



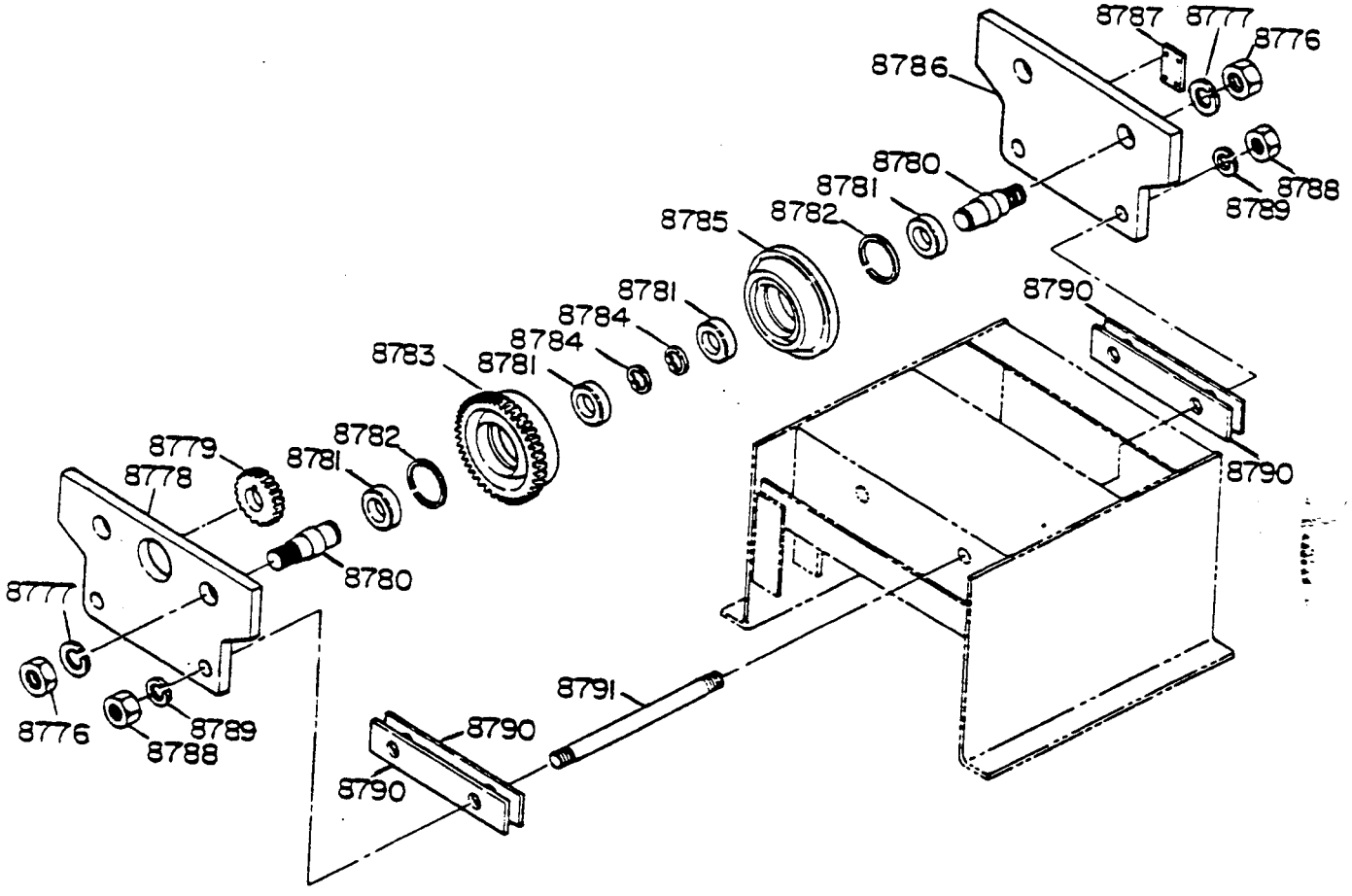
ITEM	DESCRIPTION	PART NUMBER	QTY
8776	Hex Nut	6-14-008-034-0	4
8777	Lockwasher	6-23-001-029-0	4
8778	Idler Side Plate	24-06032-002	1
8779	Drive Pinion Pinion Key Pinion Set Screws	Not Required	
8780	Wheel Stud	23-07921-002	4
8781	Ball Bearing	6-30-042-207-0	8
8782	Retaining Ring	22-06498-015	4
8783	Idler Wheel	23-07542-001	2
8784	Retaining Ring	22-06497-029	4
8785	Idler Wheel	23-07542-001	2
8786	Idler Side Plate	24-06032-002	1
8787	Clamp Plate	Not Required	
8788	Hex Nut	6-14-007-012-0	4
8789	Lock Washer	6-23-001-055-0	4
8790	Spacer Plate	23-07922-001	20
8791	Mounting Stud	22-11529-002	2

FRAME 3

6-4

JAN 83

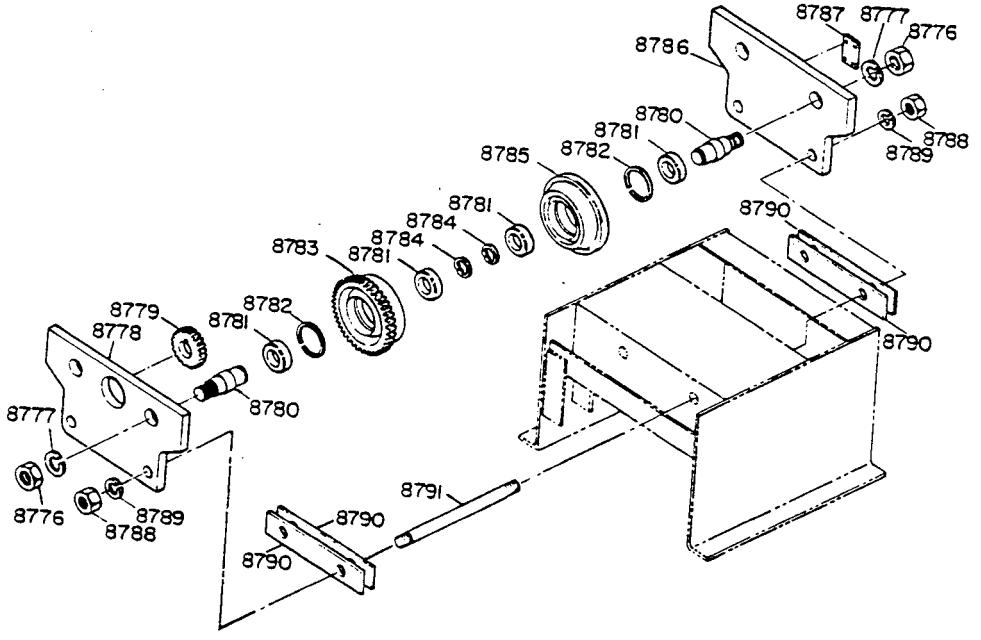
TYPE "B" TROLLEY
2, 3, 5 TON
WITH PAT'D TRACK
FLAT TREAD WHEELS



ITEM	DESCRIPTION	PART NUMBER	QTY
8776	Hex Nut	6-14-008-034-0	4
8777	Lockwasher	6-23-001-029-0	4
8778	Idler Side Plate	24-06032-002	1
8779	Drive Pinion Pinion Key Pinion Set Screws	Not Required	
8780	Wheel Stud	23-07921-002	4
8781	Ball Bearing	6-30-042-207-0	8
8782	Retaining Ring	22-06498-015	4
8783	Idler Wheel	23-07542-003	2
8784	Retaining Ring	22-06497-029	4
8785	Idler Wheel	23-07542-003	2
8786	Idler Side Plate	24-06032-002	1
8787	Clamp Plate	Not Required	
8788	Hex Nut	6-14-007-012-0	4
8789	Lock Washer	6-23-001-055-0	4
8790	Spacer Plate	23-07922-001	20
8791	Mounting Stud	22-11529-002	2

TYPE " G" TROLLEY
2, 3, 5 TON

FRAME 3
6-5
JAN 83



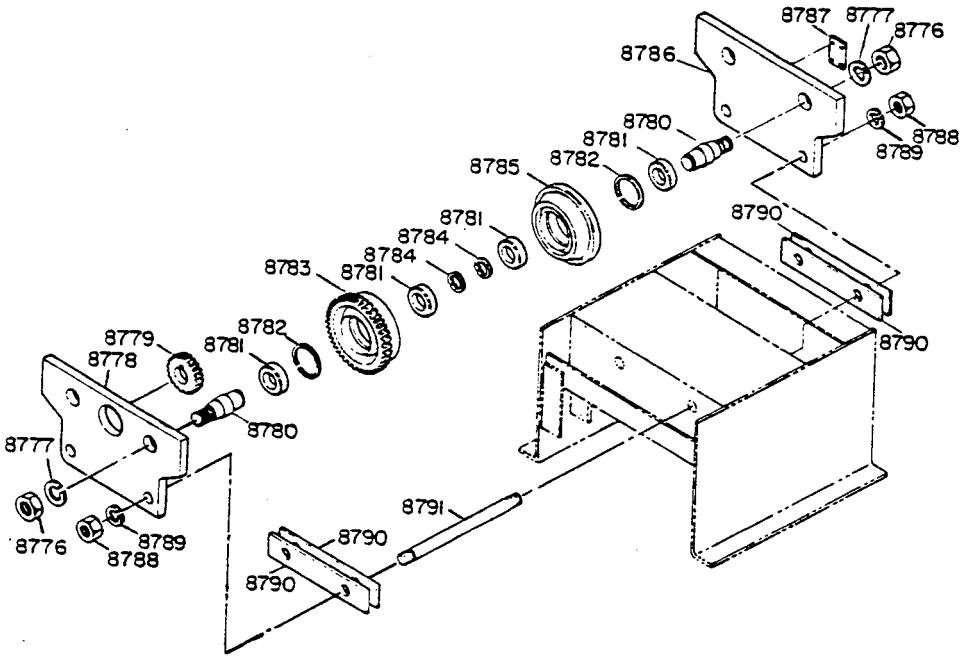
ITEM	DESCRIPTION	PART NUMBER	QTY
8776	Hex Nut	6-14-008-034-0	4
8777	Lockwasher	6-23-001-029-0	4
8778	Drive Side Plate	24-06032-001	1
8779	Drive Pinion	22-11628-001	1
	Pinion Key	6-11-024-034-0	1
	Pinion Set Screws	6-06-077-008-3	2
8780	Wheel Stud	23-07921-002	4
8781	Ball Bearing	6-30-042-207-0	8
8782	Retaining Ring	22-06498-015	4
8783	Drive Wheel	23-07920-001	2
8784	Retaining Ring	22-06497-029	4
8785	Idler Wheel	23-07542-001	2
8786	Idler Side Plate	24-06032-002	1
8787	Clamp Plate	Not Required	
8788	Hex Nut	6-14-007-012-0	4
8789	Lock Washer	6-23-001-055-0	4
8790	Spacer Plate	23-07922-001	20
8791	Mounting Stud	22-11529-002	2
Not Shown	Shaft Bracket	23-07484-007	1
Not Shown	Shaft	23-07485-008	1
Not Shown	Chain Guard	24-00109-007	1
Not Shown	Handwheel	24-00023-017	1
Not Shown	Chain	22-00005-001	1

FRAME 3

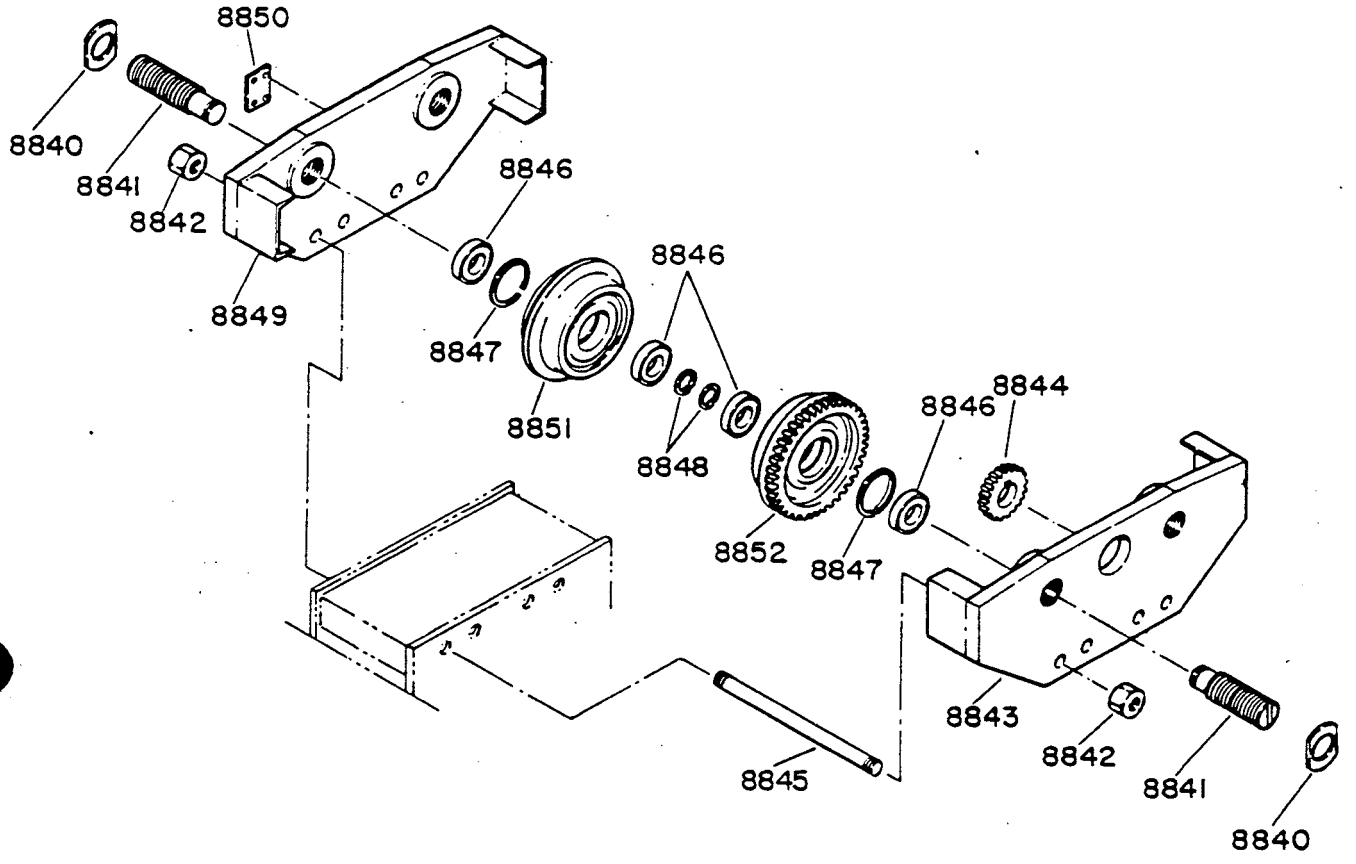
6-6

JAN 83

TYPE "G" TROLLEY
2, 3, 5 TON
WITH PAT'D TRACK
FLAT TREAD WHEELS



ITEM	DESCRIPTION	PART NUMBER	QTY
8776	Hex Nut	6-14-008-034-0	4
8777	Lockwasher	6-23-001-029-0	4
8778	Drive Side Plate	24-06032-001	1
8779	Drive Pinion	22-11628-001	1
	Pinion Key	6-11-024-034-0	1
	Pinion Set Screws	6-06-077-008-3	2
8780	Wheel Stud	23-07921-002	4
8781	Ball Bearing	6-30-042-207-0	8
8782	Retaining Ring	22-06498-015	4
8783	Drive Wheel	23-07920-003	2
8784	Retaining Ring	22-06497-029	4
8785	Idler Wheel	23-07542-003	2
8786	Idler Side Plate	24-06032-002	1
8787	Clamp Plate	Not Required	
8788	Hex Nut	6-14-007-012-0	4
8789	Lock Washer	6-23-001-055-0	4
8790	Spacer Plate	23-07922-001	20
8791	Mounting Stud	22-11529-002	2
Not Shown	Shaft Bracket	23-07484-007	1
Not Shown	Shaft	23-07485-008	1
Not Shown	Chain Guard	24-00109-007	1
Not Shown	Handwheel	24-00023-017	1
Not Shown	Chain	22-00005-001	1



ITEM	DESCRIPTION	PART NUMBER	QTY
8840	Lock Collar	22-00490-001	8
8841	Wheel Stud	23-05077-008	4
8842	Hex Nut	6-14-007-010-0	8
8843	Drive Side Plate	24-05784-001	1
8844	Drive Pinion	22-10985-024	1
	Pinion Key	6-11-024-034-0	1
	Pinion Set Screw	6-06-077-008-3	2
8845	Mounting Stud	22-03338-007	4
8846	Ball Bearing	6-30-042-209-0	8
8847	Retaining Ring	22-06498-022	4
8848	Retaining Ring	22-06497-034	4
8849	Idler Side Plate	24-05784-002	1
8850	Clamp Plate	Not Required	
8851	Idler Wheel	23-08414-002	2
8852	Drive Wheel	23-08414-001	2

FRAME 3

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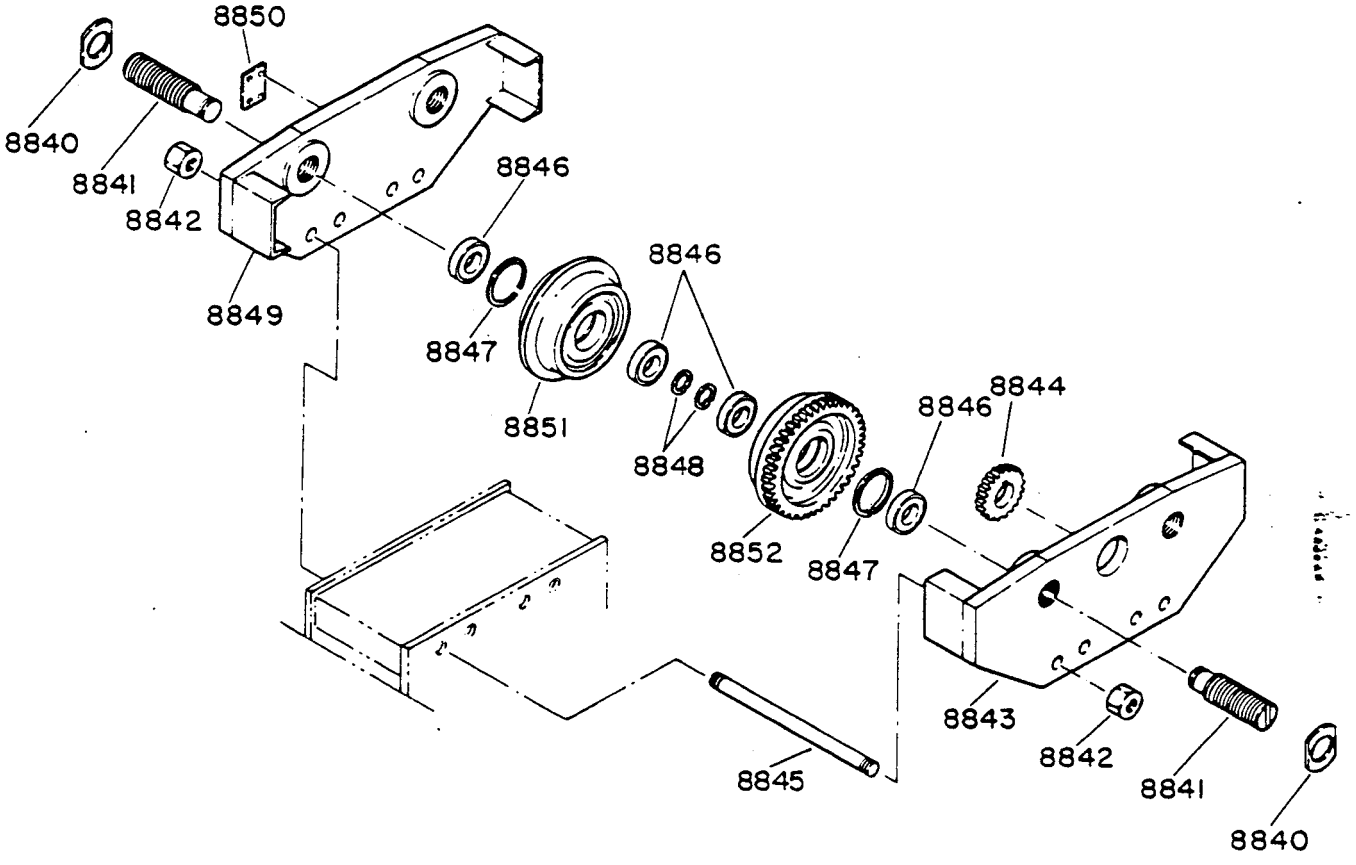
JAN 83

TYPE "B" TROLLEY

7.5, 10 TON



ITEM	DESCRIPTION	PART NUMBER	QTY
8840	Lock Collar	22-00490-001	8
8841	Wheel Stud	23-05077-008	4
8842	Hex Nut	6-14-007-010-0	8
8843	Idler Side Plate	24-05784-002	1
8844	Drive Pinion Pinion Key Pinion Set Screw	Not Required	
8845	Mounting Stud	22-03338-007	4
8846	Ball Bearing	6-30-042-209-0	8
8847	Retaining Ring	22-06498-022	4
8848	Retaining Ring	22-06497-034	4
8849	Idler Side Plate	24-05784-002	1
8850	Clamp Plate	Not Required	
8851	Idler Wheel	23-08414-002	2
8852	Idler Wheel	23-08414-002	2

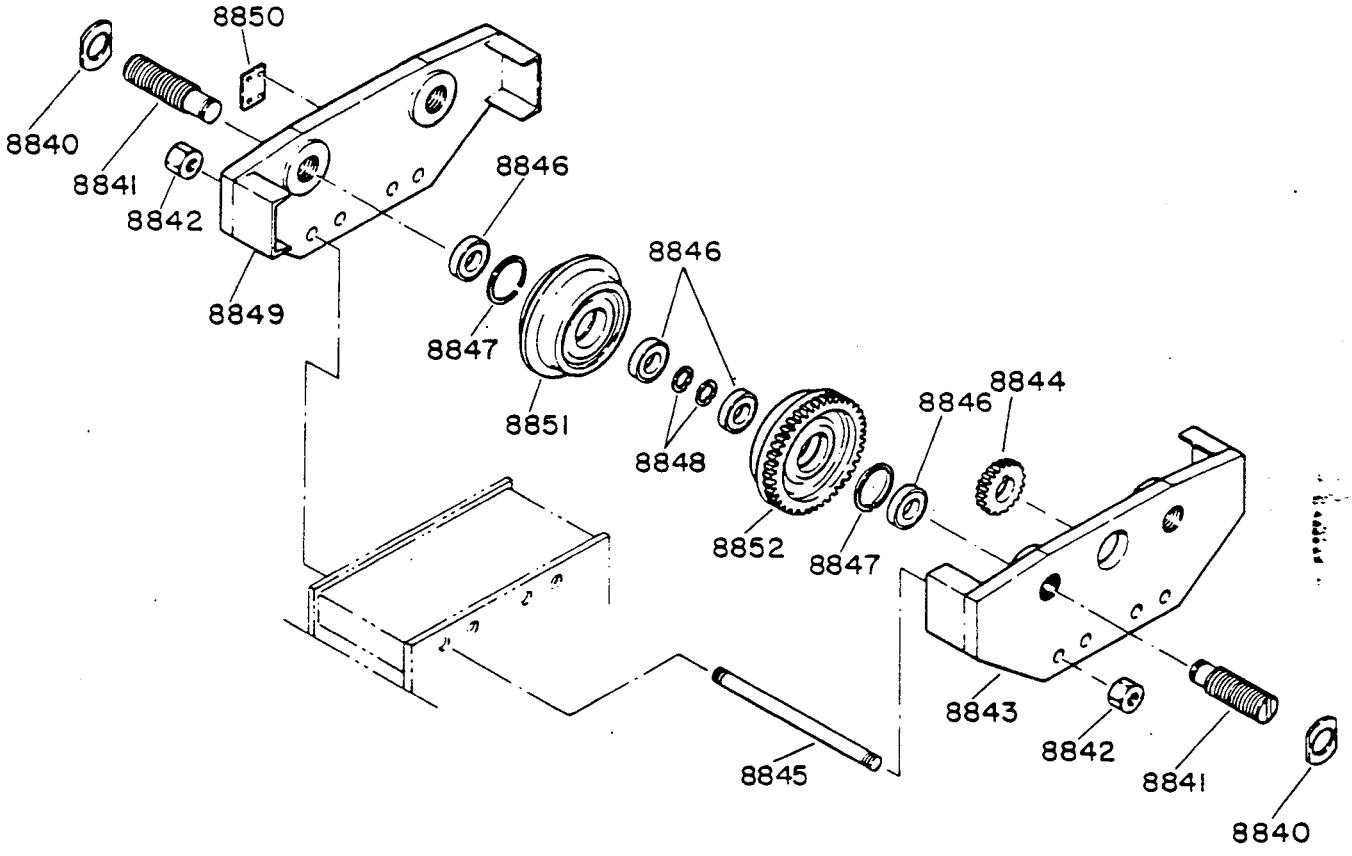
TYPE " G" TROLLEY

7.5, 10 TON

FRAME 3

6-9

JAN 83



ITEM	DESCRIPTION	PART NUMBER	QTY
8840	Lock Collar	22-00490-001	8
8841	Wheel Stud	23-05077-008	4
8842	Hex Nut	6-14-007-010-0	8
8843	Drive Side Plate	24-05784-001	1
8844	Drive Pinion	22-10985-024	1
	Pinion Key	6-11-024-034-0	1
	Pinion Set Screw	6-06-077-008-3	1
8845	Mounting Stud	22-03338-007	4
8846	Ball Bearing	6-30-042-209-0	8
8847	Retaining Ring	22-06498-022	4
8848	Retaining Ring	22-06497-034	4
8849	Idler Side Plate	24-05784-002	1
8850	Clamp Plate	Not Required	
8851	Idler Wheel	23-08414-002	2
8852	Drive Wheel	23-08414-001	2
Not Shown	Shaft Bracket	23-07484-007	1
Not Shown	Shaft	23-07485-008	1
Not Shown	Chain Guard	24-00217-004	1
Not Shown	Hand Wheel	24-00216-026	1
Not Shown	Chain	22-00005-001	1

TROLLEY WHEEL SETTING

Trolley Wheel Setting

Trolleys designed to run on I-beams or WF sections (see Figure 6-2) must have wheel clearance such that there is approximately 1/8" clearance between wheel flange and rail with hoist/trolley centered on beam.

NOTE: If binding occurs while negotiating curves in track, trolley must be adjusted to provide 1/16" maximum additional clearance between wheel and WF or I-beam flanges.

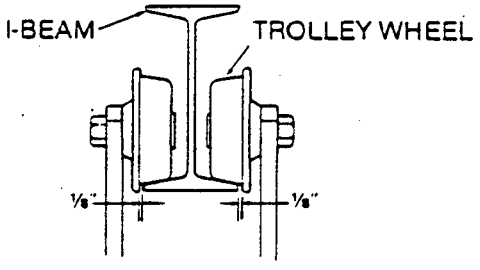


Figure 6-2

Trolley Adjustment Procedure

To adjust wheel setting, spacers are provided at the trolley mounting studs (ref. Figure 6-3a). Placing additional spacers to the inside, between the trolley side plate and hoist load bar, will accommodate wider rail flanges. Removing spacers from the inside and placing them to the outside of the trolley side plates reduces the wheel spacing for smaller rail flanges.

IMPORTANT

All spacers must be used, either inside or outside, to assure proper tightening of the trolley mounting studs. The same number of inside spacers must be used on each side to keep the hoist centered under the rail and maintain proper balance.

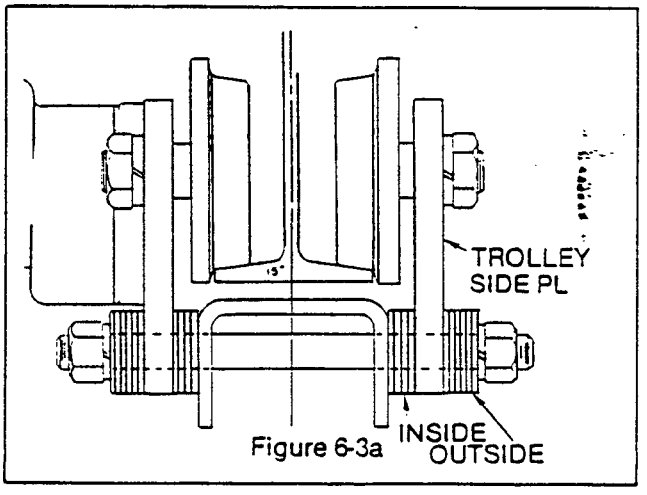


Figure 6-3a

Trolley Spacers

I-Beam Flange		Inside
4-5/8"		0 - Each Side
5"	(EXAMPLE SHOWN)	1 - Each Side
5-1/2"		4 - Each Side
6"		6 - Each Side
6-1/4"		7 - Each Side
7"		10 - Each Side

The above chart is a guide only. Due to mill tolerances on wide flange and I-Beams, the number of spacers inside may vary. Trolley wheels must be spaced according to "Trolley Wheel Setting" per Fig. 6-2.

Trolley Wheel Setting

Trolleys designed to run on I-beams or WF sections (see Figure 6-2) must have wheel clearance such that there is approximately ⅛" clearance between wheel flange and rail with hoist/trolley centered on beam.

Trolley designed to run on patented type rails (see Figure 6-3) should have 1/16" clearance between wheel flange and rail with hoist/trolley centered on rail.

Note: If binding occurs while negotiating curves in track, trolley may be adjusted to provide 1/16" maximum additional clearance between wheel and WF or I-beam flanges.

Trolley Adjustment Procedure

To adjust wheel setting, back off lock collars. Turn threaded wheel studs to adjust distance between wheel flanges. Retighten lock collar.

IMPORTANT

Each wheel must be positioned an equal distance from trolley side plate to maintain proper hoist balance.

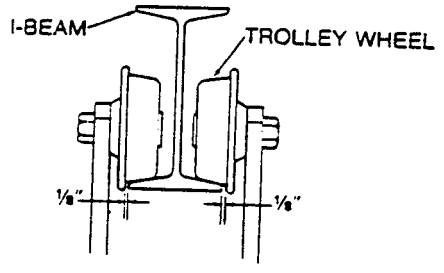


Figure 6-2

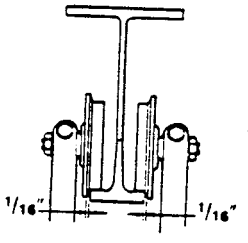


Figure 6-3

REFERENCE SHEET

See Frame-3 Section for Additional Reference Information.

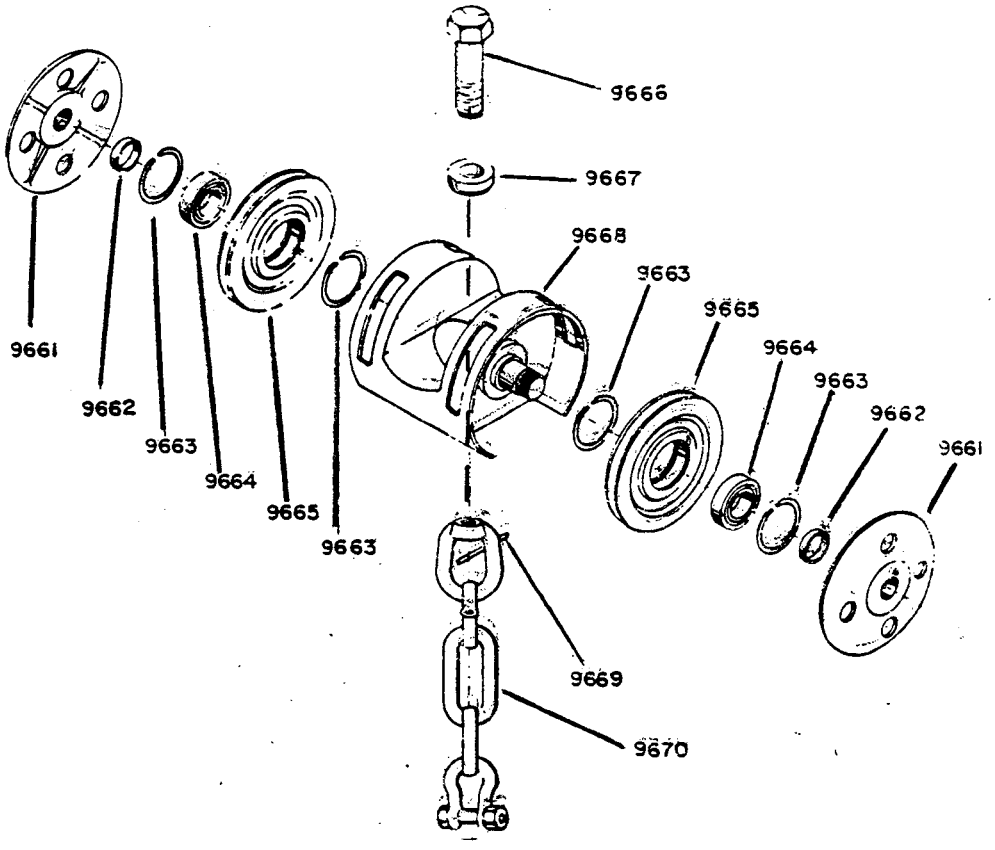
4-PART BOTTOM

BLOCK ASSEMBLY

FR-3 SHAKER

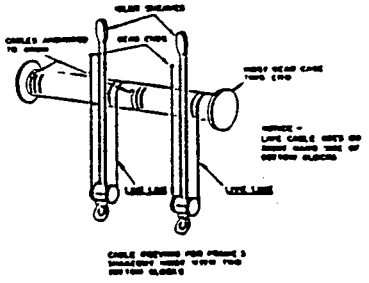
1-1

JAN 83



ITEM	DESCRIPTION	PART NUMBER	QTY
9661	Sheave Cover	24-00117-010	2
9662	Spacer	22-00790-017	2
9663	Snap Ring	22-02244-007	4
9664	Ball Bearing	6-30-050-208-1	2
9665	Rope Sheave	24-04332-002	2
9666	Load Bolt	22-11707-001	1
9667	Thrust Bearing	6-30-160-020-0	1
9668	Sheave Frame	25-00057-011	1
9669	Roll Pin	22-07653-009	1
9670	Chain Assembly	23-08376-001	1
9671	Bottom Block Assy	25-00059-120	1

4-PART SINGLE REEVING DIAGRAM FR-3 SHAKER HOIST



When the need for cable replacement has been established, proceed as follows:

CAUTION

Always wear heavy gloves when handling cables to avoid hand injuries from possible broken wires.

1. Run block to the floor and lay on its side with axis of sheaves parallel to axis of hoist drum. Continue to run hoist in the down direction until only one half to one wrap of cable remains on the drum. Stop with drum in position where the keyhole slot anchoring the cable socket is most accessible.

2. Remove the rope clips and thimble from the dead end attachment and pull free cable end through dead end spool, limit weight, sheaves, etc. Free the socketed end of the cable from the hoist drum by removing plug from the keyhole slot. Discard old cable.

3. Inspect rope sheaves, bearings, pins, etc. for wear or damage. Repair or replace as needed. *Note:* Placing a new cable in service in a sheave tracked or worn to a reduced groove radius will severely shorten cable life and can cause premature cable failure.

4. Unreel the replacement cable and inspect for any shipping damage, kinks, etc. Refer to Operation Maintenance Section — Wire Rope. If replacement cables are held in storage for extended periods of time, check for dried out lubricant or possible corrosion.

5. Place one half to one wrap of the socketed cable end around the drum, live cable leading off drum side nearest the motor. Place socket through the keyhole slot and replace plug, anchoring socket inside the drum.

6. Tighten plug securely, checking to make certain that surface of plug does not extend above bottom of rope groove in the drum.

7. Depending on the distance of the hoist to the floor, or surface where the block lies, it may be desirable to run the hoist (up direction) and wind part of the free cable onto the drum. Cable should be guided to ensure that it spools properly onto drum, and remaining free length of cable should be adequate to complete the reeving system with block lying on the floor.

8. If cable is to be threaded into the system without disassembly of the block or idler sheaves, it will be helpful to tape a section of stiff wire to the free end of the cable. This "lead wire" can be formed to the sheave contour and rolled through the sheaves, serving as a pilot to lead the cable into proper position.

9. Thus fitted, the free end, or live cable, from the drum is passed first into the block sheave at gearcase end, drum side, second, into the idler sheave, motor side, and third, into the block sheave at control end, drum side. Refer to reeving diagram.

10. Pass cable through the hole in limit switch weight, over the dead end spool, and anchor to the dead end pin. Make certain that rope clips are properly applied and tightened as outlined in the Operation Maintenance Section.

CAUTION

Make certain that limit switch weight is properly threaded onto dead end cable and operating freely. Safe operation of the hoist requires a properly operating limit switch mechanism.

11. Operate hoist up control to raise block from the floor. Check to be certain that all sheaves turn freely and that block hangs properly as shown in the reeving diagram.

12. Operate the block through the full range of lift for 2-3 cycles with empty hook. Check cables with block near the full up position to ensure they hang properly. Make 1-2 *short* lifts from the floor with a near capacity load. Follow this by retightening rope clips.

IMPORTANT

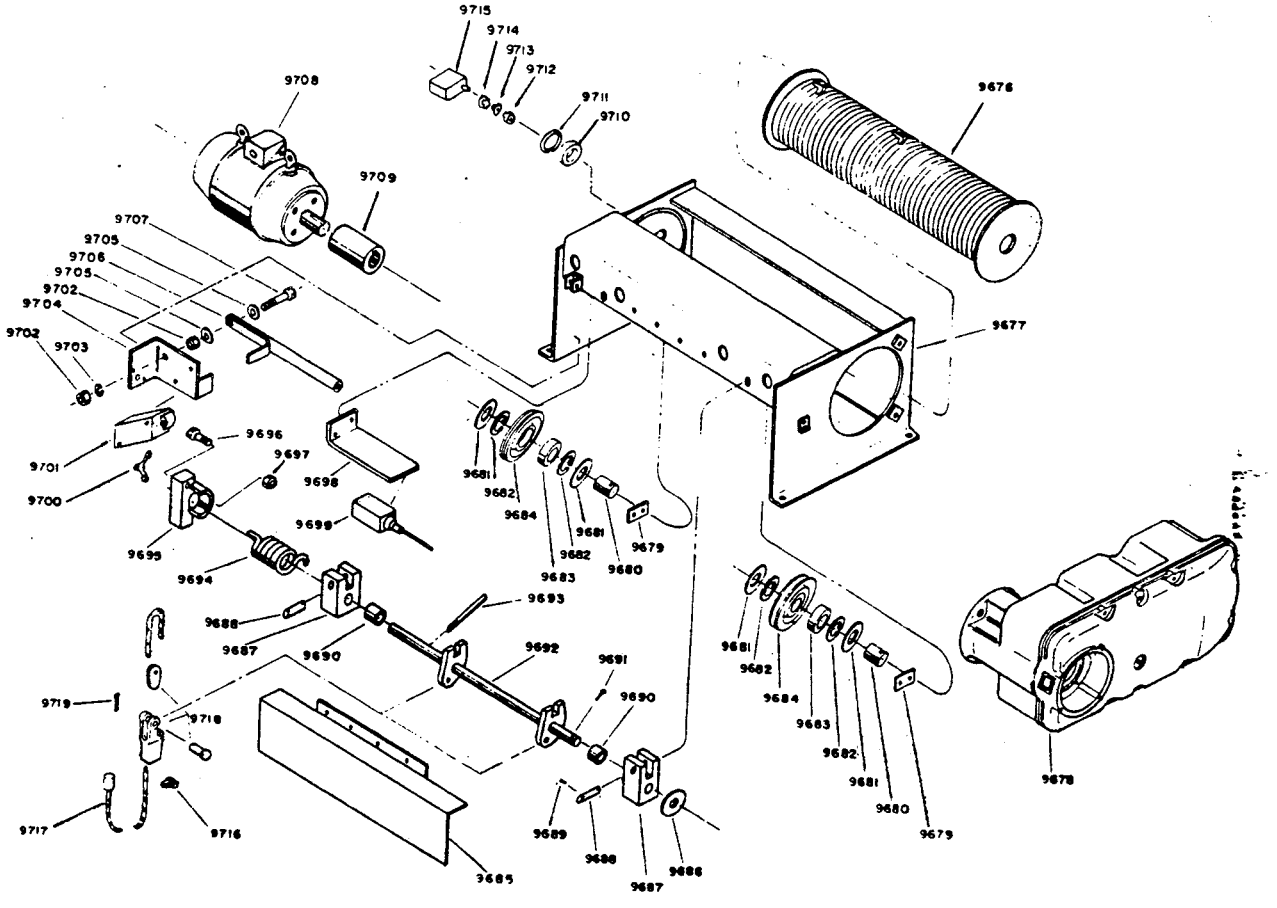
If equipped with optional geared limits, check and adjust limits as necessary to maintain original stop locations.

FR-3 SHAKER

2-1

JAN 83

HOIST COMPONENTS



ITEM	DESCRIPTION	PART NUMBER	QTY
9676	Rope Drum	25-02171-007	1
9677	Main Frame	25-03134-006	1
9678	Gearcase Assy	See Spec Sheet	
9679	Keeper Plate	22-01801-001	2
9680	Sheave Pin	22-07224-020	2
9681	Spacer	22-00790-020	4
9682	Snap Ring	22-02244-007	4
9683	Ball Bearing	6-30-050-208-1	2
9684	Rope Sheave	24-04332-002	2
9685	Limit Shroud	23-08369-001	1
9686	Washer	6-23-005-014-1	1
9687	Anchor	23-08375-001	2
9688	Load Pin	22-11671-001	2

HOIST COMPONENTS

ITEM	DESCRIPTION	PART NUMBER	QTY
9689	Cotter Pin	6-16-005-041-0	4
9690	Bronze Bushing	22-11669-001	2
9691	Cotter Pin	6-16-005-044-0	1
9692	Torque Shaft Assy	23-08375-001	1
9693	Actuator	22-11672-001	1
9694	Torsion Spring	23-08372-001	1
9695	Spring Preloader	23-08409-001	1
9696	Cap Screw	6-19-153-040-1	1
9697	Stop Nut	6-14-025-003-9	1
9698	Limit Bracket	23-08368-001	1
9699	Limit Switch	22-10239-028	1
9700	Limit Lever Arm	22-10239-031	1
9701	Limit Switch	22-10239-029	1
9702	Hex Nut	6-14-005-007-0	2
9703	Lockwasher	6-23-001-045-0	1
9704	Limit Bracket	23-08368-003	1
9705	Spacer Washer	6-23-003-009-1	2
9706	Limit Paddle	22-10792-014	1
9707	Cap Screw	22-09413-635	1
9708	Motor	See Spec Sheet	
9709	Motor Coupling	23-07918-001	1
9710	Ball Bearing	6-30-050-207-1	1
9711	Snap Ring	22-06498-015	1
9712	Coupling Half	22-11056-006	1
9713	Insert	22-11056-001	1
9714	Coupling Half	22-11056-005	1
9715	Limit Switch	22-11352-001	1
9716	Rope Clip	22-00545-001	2
9717	Wire Rope	See Basic Section	
9718	Rope Anchor	22-11417-001	2