OPERATION AND MAINTENANCE MANUAL

for

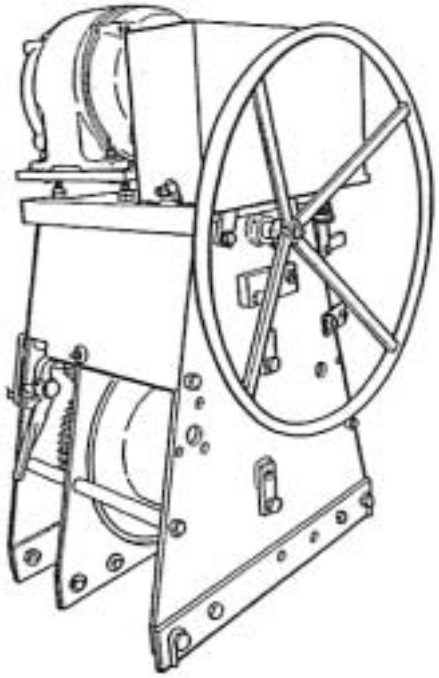
STANDARD UPRIGHT ELECTRIC BARGE WINCHES

25 TON MODELS

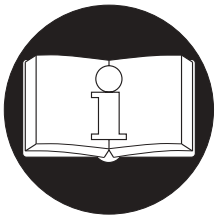
301 311 321
331 341 351

50 TON MODELS

601 611 621
631 641



25 ton Barge Winch



READ THIS MANUAL BEFORE USING THESE PRODUCTS. This manual contains important safety, installation, operation and maintenance information. Make this manual available to all persons responsible for the operation, installation and maintenance of these products.

⚠WARNING

Do not use this winch for lifting, supporting, or transporting people or lifting or supporting loads over people.

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

Refer all communications to Wintech International Inc. or your nearest Distributor.

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SAFETY INFORMATION

Inspection and safety information contained in this manual is based, in part, on the American National Standards Institute Safety Code (ANSI B30.7). However, it should be noted that ANSI B30.7 covers "Base Mounted Hoists" and does not specifically apply to winches used as barge pullers or in horizontal pulling applications.

This manual provides important information for all personnel involved with the safe installation, operation and proper maintenance of this product. Even if you feel you are familiar with this or similar equipment, you must read and understand this manual before operating the product.

Danger, Warning, Caution and Notice

Throughout this manual there are steps and procedures which, if not followed, may result in a hazard. The following signal words are used to identify the level of potential hazard.

⚠ DANGER

Danger is used to indicate the presence of a hazard which ***will*** cause ***severe*** personal injury, death, or substantial property damage if the warning is ignored.

⚠ WARNING

Warning is used to indicate the presence of a hazard which ***can*** cause ***severe*** personal injury, death, or substantial property damage if the warning is ignored.

⚠ CAUTION

Caution is used to indicate the presence of a hazard which ***will*** or ***can*** cause ***minor*** personal injury or property damage if the warning is ignored.

NOTICE

Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard-related.

Safety Summary

⚠ WARNING

• Do not use this winch for lifting or lowering loads or for supporting, or transporting people.

• The supporting structures and load-attaching devices used in conjunction with this winch must provide an adequate safety factor to handle the rated load, plus the weight of the winch and attached equipment. This is the customer's responsibility. If in doubt, consult a qualified structural engineer.

⚠ WARNING

• Electrical installation should be performed by licensed electricians in accordance with the latest edition of the National Electrical Code (ANSI/NFPA 70) and any applicable local, state and national electrical codes and ordinances.

The National Safety Council, Accident Prevention Manual for Industrial Operations, Eighth Edition and other recognized safety sources make a common point: Employees who work near material handling equipment or assist in hooking on or arranging a load should be instructed in safe rigging procedures. From a safety standpoint, one factor is paramount: conduct all pulling operations in such a manner that if there were an equipment failure, no personnel would be injured. This means keep out of the line of force of any load.

To the best of our knowledge, **Wintech International** Material Handling winches are manufactured in accordance with the latest standards in effect at time of manufacture.

However, contrary to common belief, the Occupational Safety and Health Act of 1970, as we understand it, generally places the burden of compliance with the user, not the manufacturer. Many OSHA requirements are not concerned or connected with the manufactured product but are, rather, connected with the final installation: "It is the owner's responsibility and user's responsibility to determine the suitability of a product for any particular use. Check all applicable industry, trade association, federal, state and local regulations. Read all operating instructions and warnings before operation."

Rigging: It is the responsibility of the operator to exercise caution, use common sense and be familiar with proper rigging techniques. See ANSI/ASME B30.9 for rigging information, American National Standards Institute, 1430 Broadway, New York, NY 10018.

NOTICE

• Using other than genuine Wintech International parts will result in the void of warranty.

SAFE OPERATING INSTRUCTIONS

The following warnings and operating instructions have been adapted in part from American National (Safety) Standard ANSI B30.7 and are intended to avoid unsafe operating practices which might lead to personal injury or property damage.

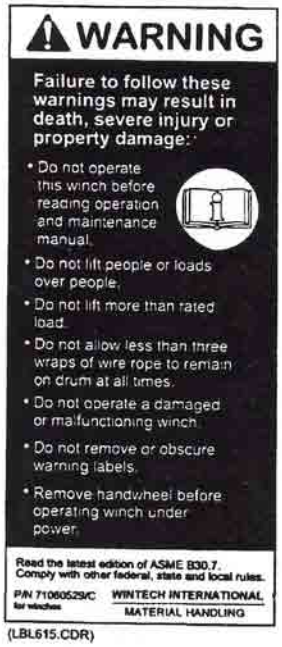
Wintech International recognizes that most companies who use winches have a safety program in force at their facility. In the event that some conflict exists between a rule set forth in this publication and a similar rule already set by an individual company, the more stringent of the two should take precedence.

Safe Operating Instructions are provided to make an operator aware of dangerous practices to avoid and are not necessarily limited to the following list. Refer to specific sections in the manual for additional safety information.

1. Only allow qualified personnel (trained in safety and operation) to operate and maintain the winch.
2. Only operate a winch if you are physically fit to do so.
3. When a "DO NOT OPERATE" sign is placed on the winch, do not operate the winch until the sign has been removed by designated personnel.
4. Before each shift, the operator should inspect the winch for wear or damage.
5. Never use a winch which inspection indicates is defective.
6. Do not use winch if hook latch on a hook has been sprung or is broken.
7. Only pull loads less than or equal to the rated capacity of the winch. See warning labels attached to the winch.
8. Check that the hook latches are engaged before using.
9. When using two winches on one load ensure that each winch has a rated capacity equal to or more than the load. This provides adequate safety in the event of a sudden load shift or failure of one winch.
10. Never place your hand in the throat area of a hook or in the vicinity of the wire rope as it spools onto the drum.
11. Position load correctly. Do not attach load on hook except in a straight pulling line. Do not "side pull" or "yard".
12. Keep hands, clothing, etc., clear of moving parts.
13. Do not force a hook into place by hammering.
14. Be certain the load is properly seated in the saddle of the hook.
15. Do not pull the load on the tip of the hook.
16. Never run the wire rope over a sharp edge. Use a sheave.
17. Pay attention to the load at all times when operating the winch.
18. Make sure all people are clear of the loadpath.
19. Never use the winch for lifting or lowering loads and never allow anyone to stand on a moving load.
20. Ease the slack out of the wire rope when starting a pull.
21. Never weld or cut on a load held by the winch.
22. Do not operate winch if jamming, overloading, or binding occurs.
23. After use, properly secure winch and all loads.
24. Always rig loads properly and carefully.

WARNING TAG

Each winch is supplied from the factory with the warning tag shown. If the tag is not attached to your winch, order a new tag and install it. See the parts list for the part number. Read and obey all warnings and other safety information attached to this winch. Tag may not be shown actual size.



(LBL615.CDR)

SPECIFICATIONS

Model No.	Capacities (lbs)			Holding (lbs)			Line Speed (fpm)			Phase Cycle, Volts	Weight Net (lbs)
	Rated Pull	Stall* Pull	Hand Pull	Electric Brake	Dog	Tested to (US tons)	No Load	Rated Pull	HP		
301	3,200	9,000	20,000	55,000	50,000	40	50	42	5	230/460-3-60	728
311	4,200	11,500	20,000	55,000	50,000	40	35	31	5	230/460-3-60	728
321	4,800	13,000	20,000	55,000	50,000	40	50	42	7.5	230/460-3-60	859
331	6,400	17,500	20,000	55,000	50,000	40	23	21	5	230/460-3-60	728
341	6,400	17,500	20,000	55,000	50,000	40	35	31	7.5	230/460-3-60	859
351	8,500	23,500	20,000	55,000	50,000	40	17	15	5	230/460-3-60	728
601	4,500	15,500	40,000	70,000	100,000	65	34	30	5	230/460-3-60	1,290
611	6,500	22,000	40,000	70,000	100,000	65	34	30	7.5	230/460-3-60	1,331
621	8,500	28,000	40,000	70,000	100,000	65	17	15	5	230/460-3-60	1,331
631	12,000	40,000	40,000	70,000	100,000	65	17	15	7.5	230/460-3-60	1,361
641	12,000	40,000	40,000	70,000	100,000	65	23	20	10	230/460-3-60	1,361

Metric

Model No.	Capacities (kgs)			Holding (kgs)			Line Speed (m/m)			Phase Cycle, Volts	Weight Net (kgs)
	Rated Pull	Stall* Pull	Hand Pull	Electric Brake	Dog	Tested to (US tons)	No Load	Rated Pull	HP		
301	1,452	4,082	9,072	24,948	22,680	40	15	13	5	230/460-3-60	330
311	1,905	5,216	9,072	24,948	22,680	40	10.7	9.5	5	230/460-3-60	330
321	2,177	5,897	9,072	24,948	22,680	40	15	13	7.5	230/460-3-60	390
331	2,903	7,938	9,072	24,948	22,680	40	7	6.4	5	230/460-3-60	330
341	2,903	7,938	9,072	24,948	22,680	40	10.7	9.5	7.5	230/460-3-60	390
351	3,856	10,660	9,072	24,948	22,680	40	5.2	4.6	5	230/460-3-60	330
601	2,041	7,031	18,144	31,752	45,360	65	10.4	9.1	5	230/460-3-60	585
611	2,948	9,979	18,144	31,752	45,360	65	10.4	9.1	7.5	230/460-3-60	604
621	3,856	12,700	18,144	31,752	45,360	65	5.2	4.6	5	230/460-3-60	604
631	5,443	18,144	18,144	31,752	45,360	65	5.2	4.6	7.5	230/460-3-60	617
641	5,443	18,144	18,144	31,752	45,360	65	7	6.1	10	230/460-3-60	617

Note: Capacities are rated on first layer.

* Stall pull rated at specific voltage with holding dog engaged.

(TBL.SPECCHRT)

Drum Length (in.)	Wire Rope Capacity ft. (m)											
	5/8	16 mm	3/4	18 mm	7/8	22 mm	1	26 mm	1-1/8	28 mm	1-1/4	32 mm
Series 300												
9	286	86	196	62	130	40	116	24	---	---	---	---
17	559	169	386	123	258	80	232	48	---	---	---	---
35	1174	356	813	259	546	168	493	103	---	---	---	---
52	1755	532	1216	387	818	251	740	155	---	---	---	---
69	2336	708	1620	515	1090	335	986	206	---	---	---	---
Series 600												
11	---	---	---	---	210	65	133	40	119	37	67	20
21	---	---	---	---	418	129	265	79	240	74	136	41
41	---	---	---	---	834	256	531	158	481	149	274	83
62	---	---	---	---	1271	390	810	242	734	227	418	126
82	---	---	---	---	1686	518	1075	321	975	302	556	168

(TBL.CAPACITY)

Wire rope capacities are calculated for full drum storage and do not comply with ANSI or any other standards which may require that the top layer not exceed a specified distance below the drum flange diameter. Figures may vary from those published elsewhere.

Model Code Explanation

Model Code **341 L - RC - B17 - 12 - D**

Series

25 Ton Standard Upright Winch (301, 311, 321, 331, **341** and 351)
50 Ton Standard Upright Winch (601, 611, 621, 631 and 641)

Configuration

L = Left Hand*
R = Right Hand*
RC = Remote Control Ready

Voltage

A = 230-3-60
B = 460-3-60
C = Other Voltage

Drum Length

Distance Between Drum Flanges (in.).
Available lengths 25 Ton 9, **17**, 35, 52 and 69.
Available lengths 50 Ton 11, 21, 41, 62 and 82.

Wire Rope Size

Number equals wire rope size in sixteenths, e.g. 3/4 in. (12/16 in. enter **12**)

Options

DB = Angle Deck Bracket.
C = Disengaging Clutch.**
G = Drum Grooving.**
D = Drum Divider Flange and additional wire rope anchor.**
F = Flange Mounted Ball Bearings.**
T = Torque Limiter Clutch.**

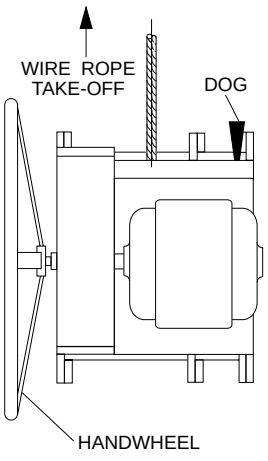
Control Systems require the following:

- Magnetic Reversing Starter
- Push Button Control
- Control Cord

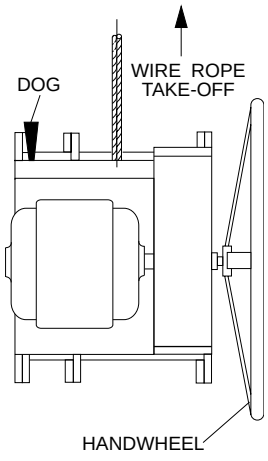
Refer to Winch Controls on page 25 for additional information.

* Left and right hand models are determined by which side of the winch the handwheel is mounted on. As illustrated, standing behind the winch, facing the wire rope take-off direction is the proper orientation for determining right or left hand requirements.

** Options are not covered in this manual. For additional information contact **Wintech International** or your distributor.

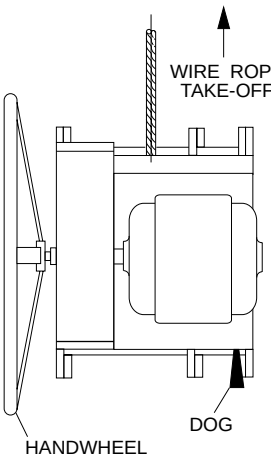


25T LEFT HAND MODEL

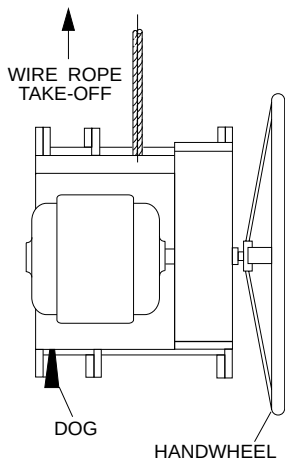


25T RIGHT HAND MODEL

(Dwg. MHTPA0261)



50T LEFT HAND MODEL



50T RIGHT HAND MODEL

(Dwg. MHTPA0253)

INSTALLATION

Prior to installing the winch, carefully inspect it for possible shipping damage.
Winches are supplied fully lubricated from the factory.

⚠ CAUTION

• Owners and users are advised to examine specific, local or other regulations, including American National Standards Institute and/or OSHA Regulations which may apply to a particular type of use of this product before installing or putting winch to use.

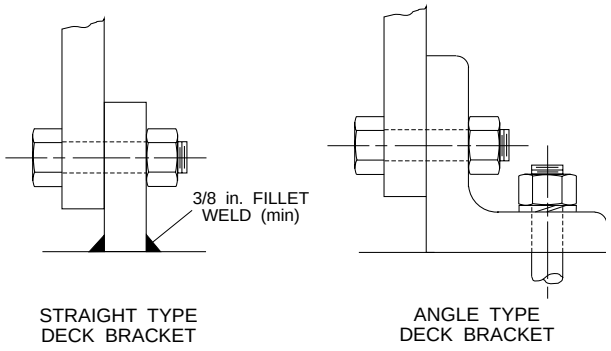
Mounting

1. Mount the winch on a rigid surface which is capable of supporting the winch and will prevent deflecting or distortion of the winch under maximum load.
2. Choose a site that uses as short a wire rope as practical.

⚠ WARNING

• The winch is not a balanced load. Use extreme care when lifting winch into position.

3. When a lead sheave is used, it should be aligned with the center of the drum. The diameter of the lead sheave must be at least 18 times the diameter of the wire rope.
4. Maintain a fleet angle between the sheave and winch of no more than 1-1/2 degrees. For every inch of drum length, the lead sheave must be at least 1.6 feet (0.5 m) from the drum.
5. Make sure the mounting surface is flat to within 1/16 in. (1.6 mm). Shim winch if necessary.
6. Position the winch so there is adequate room for the operator and service personnel to access the winch. The handwheel rotation must be a full 360 degrees unobstructed. Reposition winch if necessary.



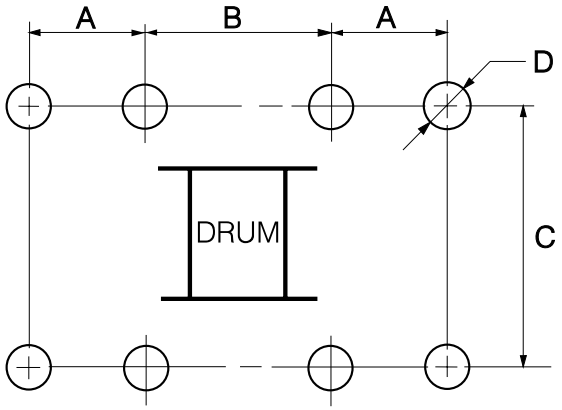
(Dwg. MHTPA0217)

7. The winch can be mounted using the straight type deck bracket when welding to a steel deck or the angle type deck bracket when bolting the winch to the mounting surface.
8. Mounting bolts or screws must be 3/4 in. diameter (19 mm) Grade 8 or better. Use self-locking nuts or nuts with lockwashers.
9. Tighten mounting bolts evenly and torque to 380 lb. ft. (52 kg.m) dry. If the fasteners are plated, lubricated or a thread locking compound is used torque to 280 lb.ft. (39 kg.m).

Bolt Pattern Dimensions

Series	"A"		"B"		"D"	
	in.	(mm)	in.	(mm)	in.	(mm)
300	4	102	14	356	23/32	18
600	4	102	13	330	23/32	18

300 Series			600 Series		
Drum	"C"		Drum	"C"	
Length (in.)	in.	(cm)	Length (in.)	in.	(cm)
9	20-1/4	51	11	25	63.5
17	28-1/4	72	21	35	89
35	46-1/4	118	41	55	140
52	63-1/4	161	62	76	193
69	80-1/4	204	82	96	244



(Dwg. MHTPA0206)

Safe Installation Procedures

1. Do not use wire rope as a ground (earth) for welding.
2. Do not attach a welding electrode to winch or wire rope.
3. Never run the wire rope over a sharp edge. Use a correctly sized sheave. See instruction 4 under "MOUNTING".
4. Do not weld to any part of the winch.
5. Always maintain at least three full wraps of wire rope on the drum.
6. Check gears are lubricated before using winch. See "LUBRICATION" section.

Wire Rope

⚠ CAUTION

• Maintain at least 3 wraps of wire rope on the drum at all times.
• Install the wire rope to come off the drum in an underwind position.

Wire Rope Selection
Consult a reputable wire rope manufacturer or distributor for assistance in selecting the appropriate type and size of wire rope and, where necessary, a protective coating. Use a wire rope which provides an adequate safety factor to handle the actual working load and meets all applicable industry, trade association, federal, state and local regulations.
When considering wire rope requirements the actual working load must include not only the static or dead load but also loads resulting from acceleration, retardation and shock load. Consideration must also be given to the size of the winch wire rope drum, sheaves and method of reeving.

⚠ WARNING

• Check wire rope diameter provides adequate safety factor.

Model	Min. Wire Rope Dia.		Max. Wire Rope Dia.	
	in.	(mm)	in.	(mm)
25 ton	5/8	16	1	26
50 ton	7/8	22	1-1/4	32

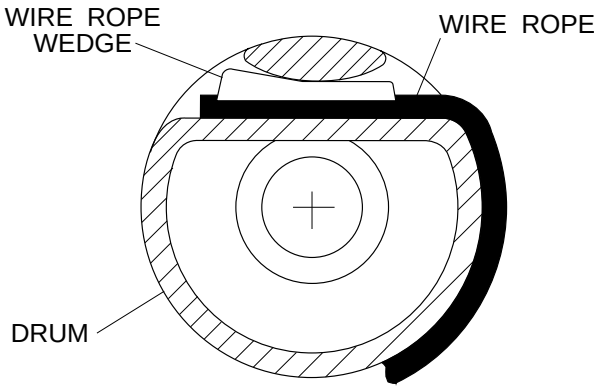
The maximum wire rope diameter is limited by the size of the wire rope anchor hole.

Installing Wire Rope

⚠ CAUTION

• Position the wire rope so that it comes off the bottom of the drum (underwind).

1. Cut wire rope to length and fuse end to prevent fraying of strands in accordance with the wire rope manufacturer's instructions.
2. Feed the fused end of the wire rope into the wire rope anchor hole. Position the end of the wire rope just beneath the drum surface. (See Dwg. MHTPA0218)
3. Make sure the wire rope wedge is the correct size for the wire rope.
4. Install the wire rope wedge into anchor hole. Install the wedge from the side of the hole with the wire rope end. Position the wedge so the serrated surface is on the wire rope. Insert the narrow end of the wedge first. The wedge must be positioned so it is nearer the surface of the drum.



(Dwg. MHTPA0218)

5. Hammer the wedge into the wire rope anchor hole to secure the wire rope.
6. While keeping the wire rope under tension, wind the wire rope onto the drum.

⚠ CAUTION

• Make sure the first wrap of wire rope is flush against the drum flange.

Wire Rope Spooling
To allow for uneven spooling and decrease in line pull capacity as the drum fills up, use as short a wire rope as practical. To rewind wire rope apply tension to eliminate slack. This helps achieve level winding and tight spooling

Rigging
Make sure all wire rope blocks, tackle and fasteners have sufficient safety margin to handle the required load. Do not allow wire rope to contact sharp edges or make sharp bends which will cause damage to wire rope, use a sheave. Refer to wire rope manufacturer's handbook for proper sizing, use and care of wire rope.

Safe Wire Rope Handling Procedures
1. Always use gloves when handling wire rope.
2. Never use wire rope which is twisted, frayed or kinked.
3. Never use wire rope as a sling.
4. Always ensure wire rope is correctly spooled and first layer is tight.

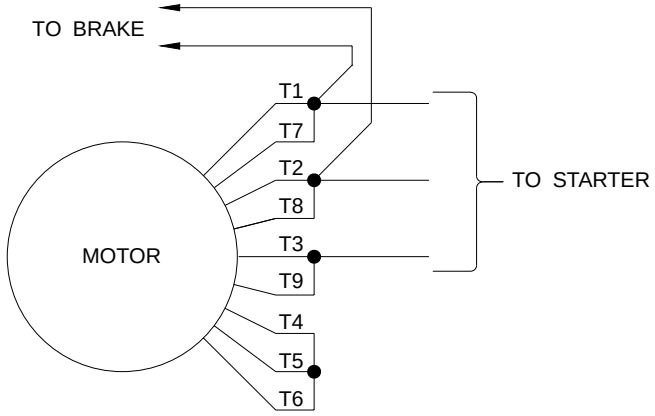
Wiring
Be sure phase, cycle and voltage of motor, magnetic reversing starter and controls all match the electrical service being used. Check power supply is correctly grounded. All electrical connections must be properly insulated and enclosed.

⚠WARNING

• Never use a 230V motor with a 115V power supply. The motor can be permanently damaged.
• Switches and starter enclosures must be grounded to electrical supply system.

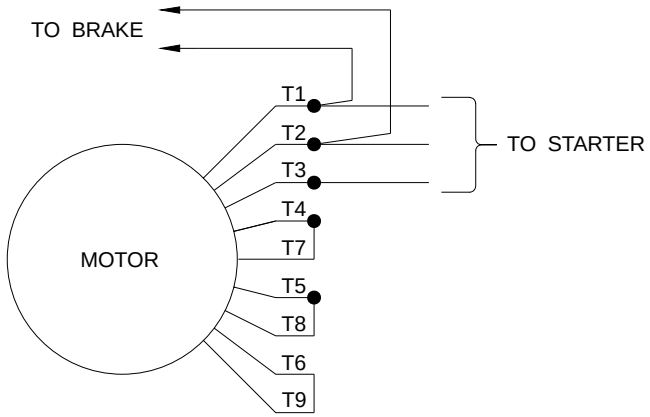
Power supply voltage must be within 4%. For 460V motor, the power supply should be greater than 442V and must not exceed 478V. For a 230V motor, the power supply should be greater than 221V and not exceed 239V.

Brake Connections
Brake power connections depend on winch power voltage and brake operating voltage. Drawings MHTPA0247 and MHTPA0249 show the three possible combinations for 230/460V motors. See drawing MHTPA0198 for location of brake power connection lines.



230V MOTOR & 230V
BRAKE CONNECTIONS

(Dwg. MHTPA0247)

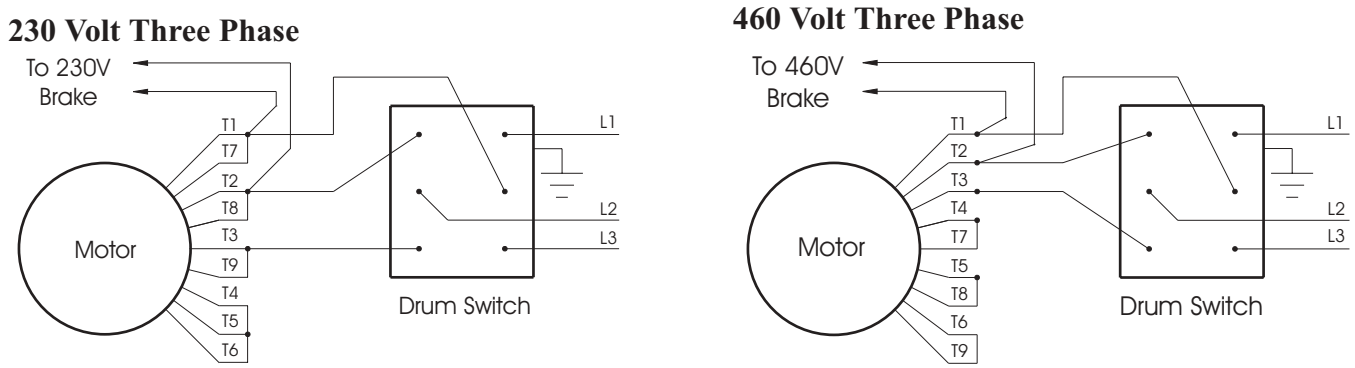


460V MOTOR & 460V
BRAKE CONNECTIONS

(Dwg. MHTPA0249)

Controls
A momentary contact reversing drum switch is recommended for the winch control unless remote or automatic control of the winch is required. Refer to parts section for recommended switches. See Wiring Diagram Dwg. MHTPA0201 for three phase motors.
If remote or automatic control is required, an electromagnetic reversing starter is recommended. The starter can be used with either a hand held pendant or with a wall mounted control station. Automatic control depends on application. Refer to wiring diagrams for winches using starters. For three phase motors see Dwg. MHTPA0198. Contact your nearest distributor or the factory for recommendations on specific applications.

DRUM SWITCH CONNECTION DIAGRAM

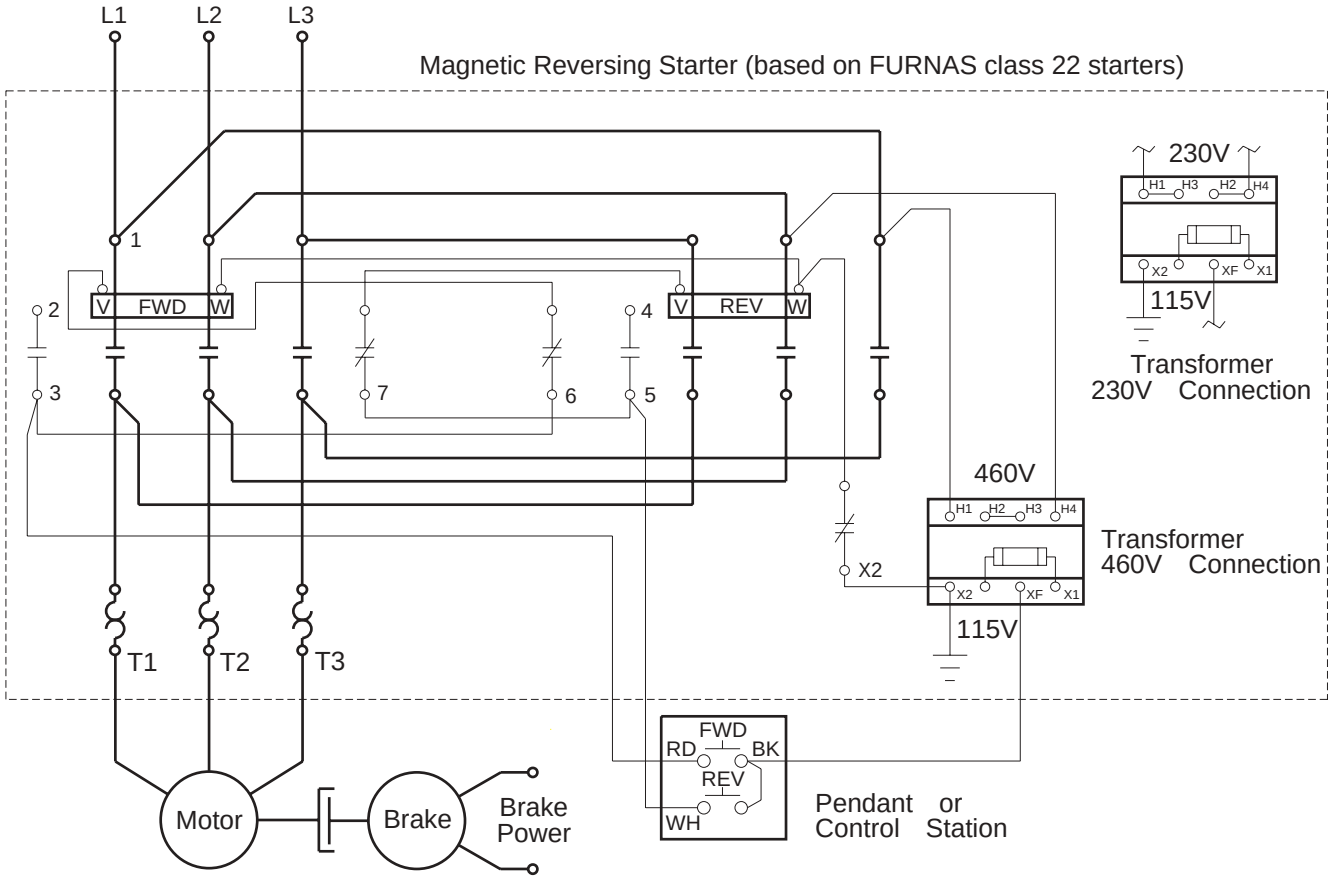


(Dwg. MHTPA0201)

Top of Drum Switch Diagram is Handle End, Knob Toward Viewer

WIRING DIAGRAM

230/460 Volt, 3 Phase:



(Dwg. MHTPA0198)

The four most important aspects of winch operation are:
1. Follow all safety instructions when operating the winch.
2. Allow only qualified people to operate the winch.
3. Subject each winch to a regular inspection and maintenance procedure.
4. Be aware of the winch capacity and weight of load at all times.

⚠WARNING

• Only allow qualified personnel (trained in safety and operation) to operate a winch.
• To avoid damage to the rigging, the structure supporting the rigging, and the winch, do not "two-block" the end of the wire rope.

Power Operation

⚠WARNING

• A creeping load can cause death or injury. Do not rely on the gear reduction or brake to hold a load.

⚠ CAUTION

• Operating winch for time periods longer than suggested may result in damage to the motor.

The motor on the winch has a intermittent duty rating of 15 minutes. This is the number of minutes the motor may be operated during a one hour period when the winch is carrying the full rated load.
When operating the winch avoid unnecessary jogging of the controls.

Free Spool

⚠WARNING

• Never disengage the dog with tension on the wire rope or if the drum is moving.

To disengage the dog (free spool) pull out spring loaded plunger pin and rotate until plunger pin tab is clear of dog lever. Dog lever will pivot to the lower position. Release plunger pin to engage over the dog lever.
To engage the dog pull out spring loaded plunger pin and rotate until plunger pin tab is clear of dog lever . Lift dog lever to engage dog. Release plunger pin to engage under the dog lever.

Hand Wheel Operation
A 28 in. (71 cm) diameter handwheel is available as an option with the winch. Install the handwheel on the square end of the power drive assembly and clamp into position with setscrews.

⚠WARNING

• To avoid injury to personnel and damage to equipment due to handle flying off while winch is operating, remove handwheel before operating winch with motor.

In the event of a power failure the hand wheel can be used to take-up wire rope after the wire rope has been connected to the load. Place holding dog release lever in the up position to engage the holding dog, take up the slack with the handwheel while making sure the wire rope is being uniformly spooled onto the drum. Tensioning may be accomplished with the handwheel by firmly grasping the rim of the handwheel with two hands and rotating.

INSPECTION

There are two types of inspection, the frequent inspection performed by the operator and more thorough periodic inspections performed by qualified personnel. Careful inspection on a regular basis will reveal potentially dangerous conditions while still in the early stages, allowing corrective action to be taken before the condition becomes dangerous.
Any deficiency revealed through inspection must be reported to an appointed person. A determination must be made as to whether a deficiency constitutes a safety hazard before resuming operation of the winch.

Records and Reports
Some form of inspection record should be maintained for each winch, listing all points requiring periodic inspection. A written report should be made monthly on the condition of the critical parts of each winch. These reports should be dated, signed by the person who performed the inspection, and kept on file where they are readily available to authorized personnel.

⚠WARNING

• Never use a winch that inspection indicates is defective.

Frequent Inspection

On winches in continuous service, frequent inspection should be made at the beginning of each shift. In addition, visual observations should be conducted during regular service for any damage or evidence of malfunction.

1. OPERATION. Check for visual signs or abnormal noises which could indicate a defect. Do not operate a winch unless the wire rope feeds onto the winch drum smoothly. If wire rope binds or jumps, clean and lubricate the wire rope. If problem persists, check wire rope fleet angle as described in the "INSTALLATION" section or replace the wire rope. Make sure the drive mechanism operates properly, check for sticking or other signs of malfunction. Repair if necessary. Do not operate the winch until all defects have been corrected. To test brake, apply a pull to the end of the wire rope and check that the brake does not slip.
2. LIMIT DEVICES. If used, check that they operate properly.
3. WIRE ROPE. Lubricate if necessary. Replace the wire rope if damaged or excessively worn. Consult the wire rope manufacturer's inspection information or a recognized safety source, such as the latest edition of National Safety Council, Accident Prevention Manual for Industrial Operations or ANSI/ASME B30.7. At a minimum, visually inspect for the following and replace if necessary:
    a. Damage, such as: bird cages, kinking, core protrusion, crushing, heat damage, and main strand displacement.
    b. Corrosion, nicking and wear of crown wires.
    c. Wear of crown wires. Replace at 1/3 wear of the original diameter of any crown wire.
    d. Broken wires or strands, particularly at connections. Replacement is necessary if one wire is broken at a connection; six broken wires within one lay; three broken wires in one strand within one lay.
4. WIRE ROPE REEVING. Check reeving and ensure wire rope is properly secured to the drum.
5. LUBRICATION. See "LUBRICATION" section for recommended procedures.

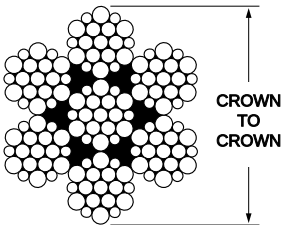
Periodic Inspection

According to ANSI/ASME B30.7, frequency of periodic inspection depends on the severity of usage: **NORMAL**, yearly; **HEAVY**, semi-annually; **SEVERE**, quarterly. Disassembly may be required for **HEAVY** or **SEVERE** usage. Keep accumulative records of periodic inspections to provide a basis for continuing evaluation. Inspect all items in "Frequent Inspection" also inspect the following:

1. MEMBERS. Check for deformed, cracked or corroded main components. Replace damaged parts if necessary.
2. FASTENERS. Check rivets, cotter pins, capscrews and nuts on winch, including mounting bolts. Replace if missing and tighten if loose.
3. DRUM. Check for cracks, wear or damage. Replace if necessary.
4. ALL COMPONENTS. Inspect for wear, damage, distortion and cleanliness. If external evidence indicates the need, for example poor performance or excessive noise, disassemble and inspect. Check pins, gears, shafts, bearings, sheaves, covers, etc. Replace worn or damaged parts.
5. MOTOR. Make sure it operates properly and conforms to applicable specifications. Check wiring connections are clean, dry and secure.
6. BRAKE. Inspect the brake lining after every 50 hours of use. When any part of the lining on either brake shoe measures 1/16 in. (2 mm) or less, the brake shoes should be replaced.
7. SUPPORTING STRUCTURE. Check for distortion, wear and continued ability to support the winch and load.
8. LABELS AND TAGS. Check for presence and legibility. Replace if necessary.
9. ELECTRICAL COMPONENTS. Check for loose wires, corrosion or other signs of deterioration.
10. DRIVE CHAIN. Check for excessive wear of chain drive sprockets and for chain stretch. Check chain for elongation. Lay the used chain on a flat surface and using a caliper-type gage, check the dimension from the edge of one chain pin to the corresponding edge of another pin for the number of pitches per foot. If elongation exceeds 1/4 in. (6.3 mm) in 12 in.

(305 mm) the chain shall be replaced. For example, a 3/4 in. (19 mm) pitch chain should measure 12 in. (305 mm) over 16 pitches. Chain shall be rejected if measurement over 16 pitches exceeds 12-1/4 in. (311 mm).

11. WIRE ROPE.
    Besides the items in a frequent inspection, inspect for the following:
    a. Build-up of dirt and corrosion. Clean if necessary.
    b. Loose or damaged end connection. Replace if loose or damaged.
    c. Check wire rope anchor is secure.
    d. Changes in the size of the wire rope diameter. Periodically measure the diameter of the wire rope from crown-to-crown throughout the life of the wire rope. The actual diameter should be recorded when the wire rope is under equivalent loading and in the same operating section. If the actual diameter of the wire rope has decreased more than 1/64 in. (0.4 mm) a through examination of the wire rope should be conducted by an experienced inspector to determine the suitability of the wire rope to remain in service. (see Dwg. MHTPA0056).



(MHTPA0056)

Winches Not in Regular Use

A winch which has been idle for a period of one month or more, but less than six months, shall be given an inspection conforming with the requirements of "Frequent Inspection" before being placed into service.

A winch which has been idle for a period of over six months shall be given a complete inspection conforming with the requirements of "Periodic Inspection". Standby winches shall be inspected at least semi-annually in accordance with the requirements of "Frequent Inspection". If abnormal operating conditions apply winches may require a more frequent inspection.

Testing

Operational Tests

Prior to initial use, all new, altered or repaired winches shall be tested to ensure proper operation.

a) Operate winch in both directions with no load.
b) Check operation of brake, and holding dog.
c) Check operation of limit switches, and locking or safety devices when provided.
d) Check all tie-downs are secure.

Load Test

Prior to initial use, all new, extensively repaired, or altered winches shall be load tested by or under the direction of a qualified person, and a written report furnished confirming the rating of the winch. Test loads shall not be more than 110% of the rated line pull.

LUBRICATION

Lubricate grease fittings, chain and wire rope monthly. The lubrication intervals are based on intermittent operation of the winch eight hours each day, five days per week. If the winch is operated almost continuously or more than the eight hours each day, more frequent lubrication will be required. Also, the lubrication types are based on operation in an environment relatively free of dust, moisture, and corrosive fumes. Use only those lubricants recommended. Other lubricants may affect the performance of the winch. Approval for the use of other lubricants must be obtained from **Wintech International** or your nearest distributor. Failure to observe this precaution may result in damage to the winch and/or its associated components.

Bushings and Pivot Points

Lubricate all grease fittings monthly with 2 or 3 pumps from a grease gun, or more frequently, depending on severity of service. Rotate components slowly as grease is applied. If the winch is disassembled, clean all parts thoroughly and coat bushings and shafts with clean grease. Use sufficient grease to provide a good protective coat. For temperatures -20° to 50° F (-29° to 10° C) use a multipurpose lithium-based EP 1 grease. For temperatures 30° to 120° F (0° to 49° C) use a multipurpose lithium-based EP 2 grease.

Gears

Lubricate working surfaces of all gear teeth. Brush with grease as often as necessary to keep teeth liberally covered. If grease becomes contaminated with sand, dirt or other abrasive materials clean off old grease and relubricate. Use the same grease that is recommended for the bushings and pivot points.

Drive Chain

Roller chains must be kept clean and free from rust. Excessively dirty chains should be soaked in a clean acid-free solvent. Chains must be agitated in the solvent to ensure that all joints are free from grit and foreign matter. Lubricate roller chain with a good quality automotive motor oil SAE grade 20 or 30. **DO NOT USE GREASE.** Oil should be applied liberally with a brush or oil can at least once every eight hours of operation.

⚠ CAUTION

• Do not lubricate chain while winch is running. Shut off power to the winch during all maintenance operations.

Motor

No lubrication required.

Wire Rope

Follow the wire rope manufacturer's instructions. At a minimum, observe the following guidelines.

1. Clean with a brush or steam if there is dirt, rock dust or other foreign material on the surface of the rope.

⚠ CAUTION

• Do not use an acid-based solvent. Only use cleaning fluids specified by the wire rope manufacturer.

2. Apply a wire rope lubricant or SAE 30W oil.
3. Brush, drip or spray lubricant weekly, or more frequently, depending on severity of service.

⚠ WARNING

• Before performing maintenance, disconnect the load from the winch. A falling load could cause death, injury or property damage.
• Disconnect electrical power source before performing any maintenance. Accidental operation or contact with exposed power supply could cause death, injury or property damage.
• Before starting maintenance, tag winch: DANGER - DO NOT OPERATE - EQUIPMENT BEING REPAIRED.
• Only allow qualified service personnel to perform maintenance.
• After performing maintenance on load bearing parts, test unit to 110% of its rated capacity before returning to service.

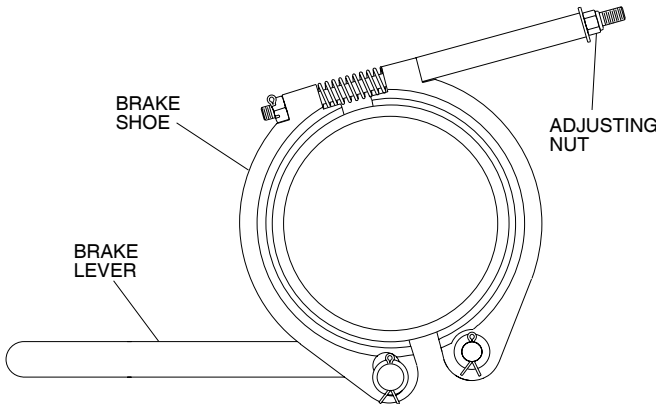
Brake Adjustment

⚠ CAUTION

• Allow brake to cool before adjusting.

If the brake lining and brake solenoid are satisfactory, then check brake adjustment as follows:

1. Raise brake lever (53) to the top of its stroke and hold.
2. Adjust nut (40) on adjustment stud (39) until top of nut is flush with the end of the adjustment stud (39). Brake shoes (44) and (45) must be free of the brake drum diameter. Brake lever (53) should be located in the upper part of the adjustment range.



(Dwg. MHTPA0259)

3. Operate winch with no load while gradually tightening nut (40) to make adjustment.
4. Brake should be correctly adjusted when brake lever (53) is parallel to the ground and plunger (29) is 1/2 in. (13 mm) clear of the motor base (7).
5. Check brake for ability to stop drum rotation by pushing down on the brake lever.

Adjustment Label (25 ton winch)

If brake lever falls out of adjustment range (see adjustment label) or fails to stop drum rotation recheck adjustment and position of anchor eccentric (47). If brake does not stop drum rotation brake shoes may be worn or distorted and require replacement.

⚠ CAUTION

• Do not allow plunger (29) to contact the motor base.

Chain Adjustment
Check the condition of the chain per instructions in the "INSPECTION" section. Check the chain adjustment as follows:

1. Place a straight edge on top of the chain (62) bridging the two chain sprockets.
2. Place a measuring rule on the top of the chain midpoint between the two chain sprockets. Apply an inward force perpendicular to the chain. Proper chain tension is 3/8 in. (10 mm) on the rule.
3. To increase chain tension, loosen motor adapter plate nuts (12), adjust nuts (12) to increase height of motor adapter plate (3) and re-tighten nuts (12). Repeat if necessary until proper chain tension is attained.

General Disassembly

The following instructions provide the necessary information to disassemble, inspect, repair, and assemble the winch. An exploded drawing of the winch is provided in the Parts Section to assist part indentification. If a winch is being completely disassembled for any reason, follow the order of the topics as they are presented. It is recommended that all maintenance work on the winch be performed in a clean dust free work area.
In the process of disassembling the winch, observe the following:

1. Never disassemble the winch any further than is necessary to accomplish the needed repair. A good part can be damaged during the course of disassembly.

2. Never use excessive force when removing parts. Tapping gently around the perimeter of a part with a soft hammer should be sufficient to loosen the part.
3. Do not heat a part with a flame to free it for removal, unless the part being heated is already worn or damaged beyond repair and no additional damage will occur to other parts.

In general, the winch is designed to permit easy disassembly and assembly. The use of heat or excessive force should not be required.

4. Keep the work area as clean as practical, to prevent dirt and other foreign matter from getting into bearings or other moving parts.

Disassembly

Disconnect all power to the winch. Remove wire rope and limit switches if equipped.

1. Remove screws (4) and lift off brake and solenoid cover (2).
2. Disconnect and remove connector cord (21) between solenoid (24) and motor (1).
3. Remove gear guard nuts (37) and lift off gear guards (38) and (65).
4. Remove master chain link (129) and roller chain (62). Loosen setscrews (60) and remove motor sprocket (59).
5. Remove screws (4) and lift off motor base cover (5).
6. Remove motor base locknuts (11) and with the aid of a sling and overhead hoist lift the motor and motor adapter plate from the motor base (7).
7. Remove nuts (15), lockwashers (14) and capscrews (13) to separate motor (1) from motor adapter plate (3).
8. Remove solenoid link pin (54) and nut (48) to disconnect solenoid connector link (33) and brake lever (53).
9. Remove solenoid link pin (31) and nut (48). Remove solenoid connector link (33) and compression spring (30). Carefully remove bellows boot (32) from recessed boss in the underside of motor base (7).
10. Remove solenoid spacer capscrews (16) and lockwashers (17). Remove solenoid spacers (28) and lift off solenoid assembly. Remove solenoid studs (6), nuts (15) and lockwashers (14) from motor base (7).
11. Remove adjustment nut (40), washer (41) and adjustment spacer (42) from adjustment stud (39). Remove adjustment stud (39) and adjustment spring (49).
12. Remove capscrews (9) and lockwashers (8) from motor base (7) and lift motor base (7) from side frames (76) and (101).

25 ton winches (instructions 13 and 14 only)

13. Remove lever retainer ring (95) from dog lever (97). Pull dog lever assembly from side frame (101). Tap pin (104) from plunger pin (103).
14. Remove spacer nut (82), nut (90) and capscrew (96). Lift off dog bracket (92), bracket spacers (91) and (94) and plunger spring (93).

50 ton winches (instructions 15 through 17 only)

15. Remove "C" clip (119) from groove in plunger pin (103) and pull out plunger pin (103), washer (120) and spring (122)
16. Remove complete dog assembly from side frame by removing capscrews (13) and lockwashers (125).
17. Loosen setscrew (131) in collar (130). Remove capscrew (36) and slide out D-E shaft (111) while providing support for D-E gear (113). Remove D-E gear (113) and collar (130).

All winches

18. Make sure cluster gear (106) 25 ton or B-C gear (106) 50 ton is adequately supported then remove capscrew (36) and slide cluster shaft (70) 25 ton or B-C shaft (70) 50 ton out off side frames (76) and (101). Remove cluster or B-C gear (106).
19. Remove capscrew (69) from anchor eccentric (47). Remove brake shoe and anchor eccentric assembly from side frame (76). Remove brake shoe retainer ring (46) to separate the anchor eccentric (47) from brake shoe (44).
20. With the aid of a hoist, support the weight of the drum assembly (110). Remove capscrew (36) and slide out drum shaft (72). Carefully lower drum assembly to the ground after drum shaft (72) has been removed.
21. Remove spacer nuts (82) from spacer shafts (85) and (64) on side frame (101) side. Remove side frame (101).
22. Remove brake lever retainer ring (56) and brake lever washer (55). Remove power drive assembly (51). Lift out the brake lever and brake shoe assembly.
23. Remove brake lever retainer ring (56) and separate brake lever (53), brake shoe (45) and brake lever washer (55).
24. With the aid of a hoist support the weight of the drum assembly (110) and lift drum assembly (110) through the wire rope guard (63).
25. Remove screw (81) and nut (71). Tap out brake lever bushing (57) and remove brake doubler plate (67).
26. Wire rope guard (63) is welded to spacer shafts (64) and (85) at assembly. Wire rope guard (63) and spacer shafts (64) and (85) should not be separated unless absolutely necessary. Remove nuts (82). Remove spacer shafts (64) and (85) with wire rope guide (63) from side frame (76).

Cleaning, Inspection and Repair

Use the following procedures to clean, inspect, and repair the components of the winch.

Cleaning

Clean all winch component parts in solvent (except for the brake shoe). The use of a stiff bristle brush will facilitate the removal of accumulated dirt and sediments on the gears, frames and drum. If bushings have been removed it maybe necessary to carefully scrape old Loctite from the bushing bores. Dry each part using low pressure, filtered

compressed air. Clean the brake shoe using a wire brush or emery cloth. Do not wash the brake shoe in liquid. If the brake shoe lining is oil soaked, it must be replaced.

Inspection

⚠ CAUTION

• Bushings that are loose, worn or rotate in the frame, gears or drum must be replaced. Failure to observe this precaution will result in additional component damage. (See Bushing Chart).

All disassembled parts should be inspected to determine their fitness for continued use. Pay particular attention to the following:

1. Inspect all gears for worn, cracked, or broken teeth.
2. Inspect all bushings for wear, scoring, or galling.

Bushing Chart

25 ton winch

Bushing Location	Bushing Item No.	Original bore size in. (mm)	Discard bore size in. (mm)
Frame (76)	66	1.133 28.8	1.195 30.4
Gear (106)	105	2.199 55.9	2.261 57.4
Drum (110)	107	3.016 76.6	3.078 78.2

50 ton winches

Bushing Location	Bushing Item No.	Original bore size in. (mm)	Discard bore size in. (mm)
Frame (76)	66	1.508 39	1.570 40
Gear (106)	105	2.765 70	2.827 72
Drum (110)	107	4.018 102	4.080 104
Gear (113)	114	1.760 45	1.822 46

3. Inspect shafts for ridges caused by wear. If ridges caused by wear are apparent on shafts, replace the shaft.
4. Inspect all threaded items and replace those having damaged threads.
5. Inspect the brake shoe lining for oil. If the brake shoe lining is oil-soaked, replace the brake shoe. If the brake shoe is glazed, sand it lightly using fine emery cloth.
6. Measure the thickness of the brake shoe lining. If the brake shoe lining is less than .062 in. (2 mm) at any point along its edge replace the brake shoe (45).

Repair

Actual repairs are limited to the removal of small burrs and other minor surface imperfections from gears and shafts. Use a fine stone or emery cloth for this work.

1. Worn or damaged parts must be replaced. Refer to the applicable Parts Listing for specific replacement parts information.
2. Inspect all remaining parts for evidence of damage. Replace or repair any part which is in questionable condition. The cost of the part is often minor in comparison with the cost of redoing the job.
3. Smooth out all nicks, burrs, or galled spots on shafts, bores, pins, or bushings.
4. Examine all gear teeth carefully, and remove nicks or burrs.
5. Polish the edges of all shaft shoulders to remove small nicks which may have been caused during handling.
6. Remove all nicks and burrs caused by lockwashers.

Winch Assembly

1. Position side frames (76) and (101) in a vertical position with a temporary brace.
2. Install spacer shafts (64) and (85) on side frame (76) with nuts (82).
3. Slide wire rope guard (63) onto spacer shafts (64) and (85). Wire rope guard (63) is welded to spacer shafts (64) and (85) during initial assembly at the factory. If weld was broken during disassembly wire rope guard will require to be repositioned and welded after all gears and shafts have been installed.
4. Position brake doubler plate (67) on the outside of side frame (76) and tap brake lever bushing (57) into position through the brake doubler plate (67) and side frame (76) until bushing is flush with inside surface of the side frame.
5. Install plate locator bushing (68) in side frame (76) with screw (81) and nut (71). Countersunk bore side of the plate locator bushing (68) must face away from the doubler plate (67).
6. If new power drive bushings (66) are being installed in the side frames (76) and (101) it will be necessary to drill new 1/8 in. (3 mm) diameter lubrication holes to provide a grease passage. Use the existing grease fitting hole as a guide. Install grease fittings (52).
7. If drum bushings (107) are being replaced press new drum bushings (107) into the drum assembly (110). Drum bushings (107) must be flush with the outer surface of the drum. With the aid of a hoist (1/2 ton capacity or more) install drum assembly (110) through the large hole in the drum guard (63) so the flange without the gear teeth enters first.
8. Attach brake lever (53) to brake shoe (45) with brake lever washer (55) and brake lever retainer ring (56). Install grease fitting (52) in the brake lever (53).
9. Position brake lever and brake shoe assembly on power drive assembly (51) brake diameter and install power drive assembly (51) in side frame (76) so square end of power drive assembly is on the handle side. Ensure brake lever (53) locates in the hole in the

side frame (76) and brake lever bushing (57). Install brake lever washer (55) and brake lever retainer ring (56). Check brake lever (53) rotates freely.

10. Install second side frame (101) to accept the power drive assembly (51). Push side frame (101) into position so it lines up with spacer shafts (85) and (64). On 50 ton models it may be necessary to install D-E gear (113), D-E shaft (111) and collar (130) before pushing side frame (101) into position.
11. Install spacer nuts (82) on spacer shafts (85) and (64) to secure side frame (101). Torque nuts to 270 lb. ft (37 kg.m). Ensure correct nuts (82) are used they are NF (National Fine Thread).
12. Liberally coat drum bushings (107) and drum shaft (72) with grease. Suspend the drum assembly with the hoist used earlier and install the drum shaft (72) through side frame (76) and drum assembly (110) from the handle side. Secure drum shaft to side frame (76) with capscrew (36) and torque to 18 lb. ft. (2.5 kg.m).
13. Install anchor eccentric (47) in second brake shoe (44) and secure in position with brake shoe retainer ring (46). Install brake shoe assembly on power drive assembly (51) so anchor eccentric (47) passes through side frame (76) and loosely fasten with capscrew (69). Adjust anchor eccentric (47) so brake shoe (44) has good contact all around the brake drum diameter. When correct adjustment has been established torque capscrew (69) to 225 lb. ft (31 kg.m).
14 If cluster or B-C gear bushings (105) are being replaced press new gear bushings (105) into the cluster or B-C gear (106) bore so they are flush with the outer surface of the gear. On 25 ton models only a third gear bushing (105) must be pressed into the bore from the small gear side. Lubricate and slide cluster shaft (70) through side frame (76) and cluster gear (106) until it locates in the second side plate (101).
15. Secure cluster or B-C shaft (70) at handle side with capscrew (36) and torque to 18 lb. ft (2.5 kg.m).
16. Install motor base (7) so it rest on the side frames (76) and (101) and secure in position with capscrews (9) and lockwashers (8).
17. Install slotted nut (50) and pin (43) on adjustment stud (39). Feed brake screw assembly through first brake shoe (45) from the solenoid side. Slide screw through adjustment spring (49) and second brake shoe (44). Install adjustment spacer (42) and loosely install washer (41) and adjustment nut (40).

NOTICE

• Do not tighten adjustment nut (40) at this time. Brake adjustment must be completed with winch running.

18. Install three solenoid studs (6) in motor base (7) and secure with nuts (15) and lockwashers (14). Screw fourth solenoid stud (6) directly into motor base (7). Position solenoid assembly on top of the solenoid studs (6). Install solenoid spacers (28) and solenoid spacer capscrews (16) with lockwashers (17) so solenoid spacer capscrews (16) screw into solenoid studs (6).
19. Install bellows boot (32) over the recessed boss in the underside of the motor base (7). Care must be taken not to damage the bellows boot during this operation. Bellows boot may be heated in warm water to make installation easier.
20. Slide compression spring (30) over the bellows boot (32). Insert solenoid connector link (33) through the bellows boot (32) and compression spring (30) into the solenoid plunger (29). Secure with solenoid link pin (31) and nut (48).
21. Attach solenoid connector link (33) to brake lever (53) with solenoid link pin (54) and nut (48). Select the hole in the brake lever which allows the solenoid connector link (33) to be in a vertical position.

25 ton models (instructions 22 through 25 only)

22. Partially install dog (98) on dog lever (97) with dog spring (99). Locate the ends of the dog spring (99) in the holes provided in the dog lever (97) and dog (98). The long end of the spring must fit in the dog. Depress dog (98) and dog spring (99) all the way onto the dog lever (97) and install dog retainer ring (100).
23. Install dog lever assembly on the inside of side frame (101). Position bracket spacers (91) and (94) with dog bracket (92) on the outside of side frame (101). Notched spacer (91) must be located at the top. Loosely install capscrew (96).
24. Install plunger pin (103) through side frame (101). Install plunger spring (93) so slot locates in groove on plunger pin (103) top edge of spring is positioned under the notch in bracket spacer (91).
25. Install nuts (82) and (90). Install lever retainer ring (95) in the groove on dog lever (97). Tap pin (104) into plunger pin (103). Check plunger pin (103) freely springs back into position after being pulled out.

50 ton models (instructions 26 through 29 only)

26. Partially install dog (98) in dog lever (116) with dog spring (99). Locate the ends of the dog spring (99) in the holes provided in the dog lever (116) and dog (98). The long end of the spring must fit in the dog. Install dog (98) and press dog shaft (117) all the way into the dog lever (116).
27. Line up hole in dog shaft (117) with pin (118) hole in dog lever (116). Install pin (118). Drive pin in until flush. Install dog lever assembly in dog bracket (124) and secure with retainer screw (123).
28. Install assembled dog assembly on side frame (101) and secure with capscrews (126) and lockwashers (125).
29. Install plunger pin (103) through dog bracket (124), washer (120) and spring (122). Press plunger pin (103) all the way into the dog bracket (124) until groove is visible. Install "C" clip (119) in groove so it is between the washer (120) and dog bracket (124).

Install pin (104) in the end of plunger pin (103) so it is centered.

All models

30. Attach motor (1) to motor adapter plate (3) with capscrews (13), lockwashers (14) and nuts (15).
31. Install two nuts (12) on each stud in the bottom of the motor adapter plate (3). Using an overhead hoist and the lifting eyes provided in the top of the motor lower the motor and motor adapter plate onto the motor base (7). Secure with motor base locknuts (11).
32. Tap pin (80) into lock out bar bracket (79). Install lock out bar (83) on the inside of side frame (76) and lock out bar bracket (79) on the outside with capscrew (84) and nut (78).
33. Install grease fitting (52) in dog (98). On 50 ton winches install grease fitting (52) in dog bracket (124).
34. Install motor base cover (5) on top of the motor base (7) and secure with screws (4).
35. Install key (58) in motor shaft and slide motor sprocket (59) into position. Cut roller chain (62) to length and install around motor sprocket (59) and power drive assembly (51). Install master chain link (129).
36. Using a straight edge position motor sprocket (59) so it aligns with the roller chain sprocket on the power drive assembly (51). Tighten capscrews (60).
37. Adjust the height of the motor (1) to achieve the correct chain tension.

50 ton models (instruction 38 only)

38. Slide D-E gear (113) against side frame (101). Position collar (130) 1/16 in. (1.6 mm) from the D-E gear (113) and secure on D-E shaft (111) with setscrew (131).
39. Install capscrews (36) with gear guard nuts (37) in holes provided in the top spacer shafts (64). Install gear guards (38) and (65) so they locate on capscrews (36) and secure with nuts (37).
40. Run connector cord (21) from junction box on motor (1) to solenoid (24). Connector cord (21) should pass underneath the motor adapter plate (3) then up through grommet (10) located in the motor base (7) to the solenoid (24).
41. Install brake and solenoid cover (2) over chain and solenoid and secure in position with screws (4).
42. Adjust brake as described under Brake Adjustment in the "MAINTENANCE" section.

Solenoid Disassembly

1. Remove plunger (29) and capscrews (27). Remove base plate (20) and pole piece (23).
2. Gently pry up guides (22) and remove. Tap out brass guides (25).
3. If new coil (24) is being installed remove coil (24).

Solenoid Assembly

1. Install coil (24) in frame (26). Install brass guides (25). Install guides (22) so notch in guide is against stop tab in frame (26).
2. The brass guides are bent to apply pressure on the edges of guides (22). If after installing guides (22) looseness in evident, remove guide (22) and guide (25) and rebend to increase pressure.
3. Install pole piece (23) and base plate (20). Secure base plate (20) to frame (26) with capscrews (27), lockwashers (19) and nuts (18).
4. Install plunger (29).

Testing

Operational Test

Prior to initial use, all new, altered or repaired winches shall be tested to ensure proper operation.

a. Operate winch for several minutes in both directions with no load.
b. Check operation of brake.
c. Check operation of limit switches, and locking or safety devices when provided.
d. Check winch is firmly secured before beginning operation. (See "INSTALLATION" section)
e. Install guards and warning labels when provided.

PARTS ORDERING INFORMATION

The use of replacement parts other than **Wintech International** products will invalidate the Company's warranty. For prompt service and genuine **Wintech International** parts, provide your nearest Distributor with the following:

1. Complete model number as it appears on the nameplate and the winch capacity.

2. Part number and part description as shown in manual.

3. Quantity required.

The winch nameplate is located on the side frame next to the square end of the power drive assembly on the handwheel side.

For your convenience and future reference it is recommended that the following information be recorded.

Winch Model Number.....

Winch Serial Number.....

Date Purchased.....

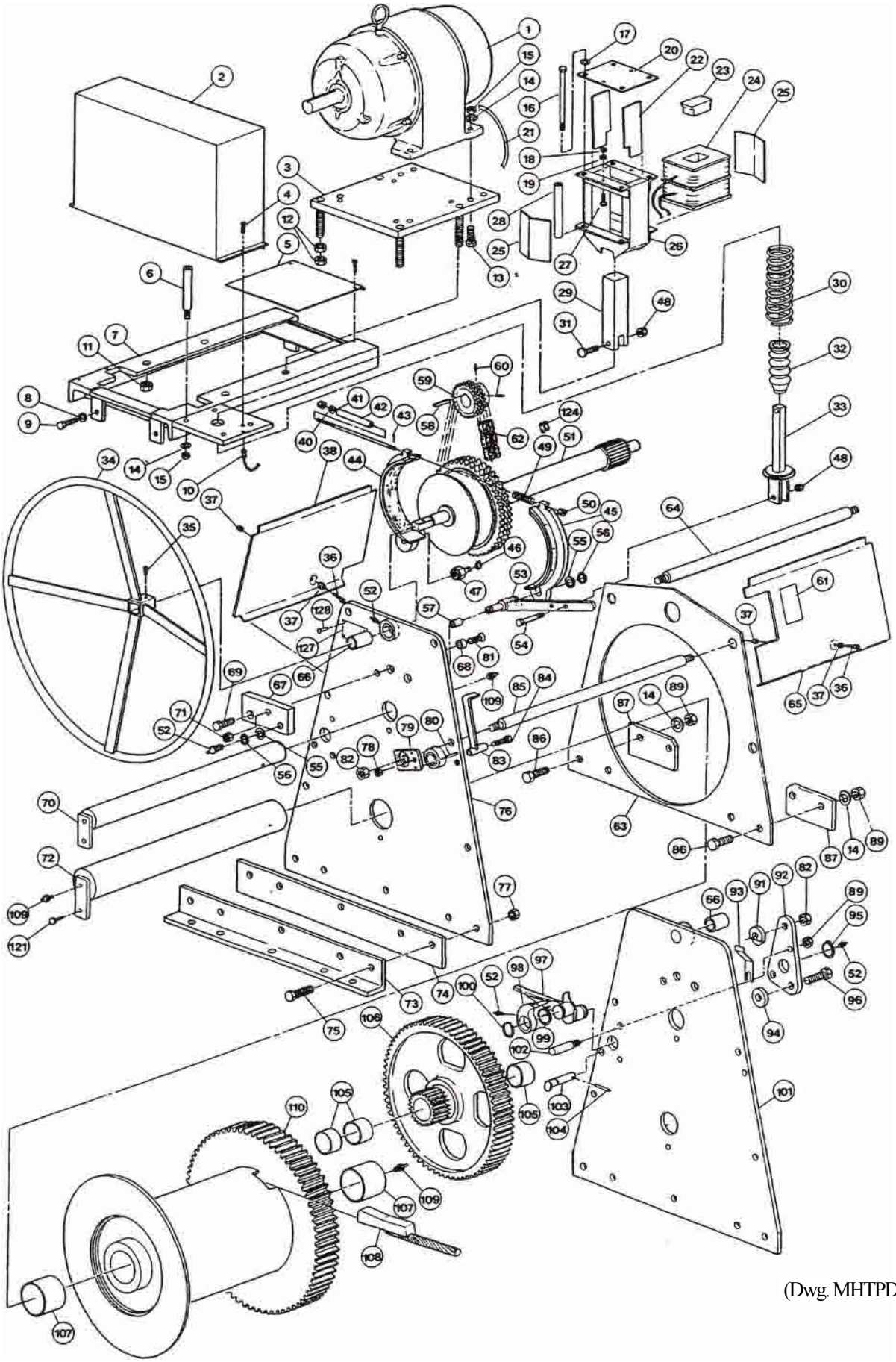
Return Goods Policy

Wintech International will not accept any returned goods for warranty or service work unless prior arrangements have been made and written authorization has been provided from the location where the goods were purchased.

NOTICE

• Continuing improvement and advancement of design may cause changes to this winch which are not included in this manual. Manuals are periodically revised to incorporate changes. Always check the manual edition number on the front cover for the latest issue.

300 SERIES BARGE WINCH ASSEMBLY DRAWING



(Dwg. MHTPD0262)

300 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.					
			301	311	321	331	341	351
1	Motor 5 HP, 1080 rpm	1	50217		---			
	Motor 7.5 HP, 1080 rpm		---		50351	---	50351	---
	Motor 5 HP, 810 rpm		---			51371	---	51371
2	Brake and Solenoid Cover	1	8622 (Left Hand) or 8621 (Right Hand)					
3	Motor Adapter Plate	1	8384-1					
4	Screw	5	71007009					
5	Motor Base Cover (9in.Drum)	1	Not Required					
	Motor Base Cover (17in.Drum)		2959-17					
	Motor Base Cover (34in.Drum)		2959-34					
	Motor Base Cover (51in.Drum)		2959-51					
	Motor Base Cover (69in.Drum)		2959-69					
6	Solenoid Stud	4	435					
7	Motor Base (9 in. Drum)	1	8626-9 (Left Hand) or 8625-9 (Right Hand)					
	Motor Base (17 in. Drum)		8626-17 (Left Hand) or 8625-17 (Right Hand)					
	Motor Base (34 in. Drum)		8626-34 (Left Hand) or 8625-34 (Right Hand)					
	Motor Base (51 in. Drum)		8626-51 (Left Hand) or 8625-51 (Right Hand)					
	Motor Base (69 in. Drum)		8626-69 (Left Hand) or 8625-69 (Right Hand)					
8	Lockwasher	4	50203					
9	Capscrew	4	51837					
10	Grommet	1	50193					
11	Motor Base Locknut	4	50209					
12	Nut	8	50159					
13	Capscrew	4	50197					
14	Lockwasher	8	50181					
15	Nut	8	50171					
16	Solenoid Spacer Capscrew	4	50204					
17	Lockwasher	4	50200					
18	Nut	2	53390					
19	Lockwasher	2	53836					
20	Base Plate	1	7007-G					
21	Connecter Cord	1	51816					
22	Guide	2	7007-E					
23	Pole Piece	1	7007-F					
24	Solenoid 220V	1	7007-220					
	Solenoid 440V		7007-440					
	Coil Only 220 V		R4318 WP					
	Coil Only 440 V		R4317 WP					
25	Guide (Brass)	2	7007-D					
26	Frame	1	7007-C					
27	Capscrew	2	51939					
28	Solenoid Spacer	4	613					
29	Plunger	1	7007-A					
30	Compression Spring	1	615					
31	Solenoid Link Pin (Upper)	1	4969					
32	Bellows Boot	1	3802					
33	Solenoid Connector Link	1	8116					
34	Handwheel	1	1048					
35	Setscrew	1	54691					
36	Screw	2	50156					

(TBL.300PL1)

300 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.					
			301	311	321	331	341	351
37	Gear Guard Nut	4	50161					
38	Gear Guard (9 in. Drum)	1	1051-1L (Left Hand) or 1051-1R (Right Hand)					
	Gear Guard (17 in. Drum)		1051-2L (Left Hand) or 1051-2R (Right Hand)					
	Gear Guard (34 in. Drum)		1051-4L (Left Hand) or 1051-4R (Right Hand)					
	Gear Guard (51 in. Drum)		1051-5L (Left Hand) or 1051-5R (Right Hand)					
	Gear Guard (69 in. Drum)		1051-6L (Left Hand) or 1051-6R (Right Hand)					
39	Adjustment Stud	1	1645					
40	Adjustment Nut	1	50170					
41	Washer	1	50177					
42	Adjustment Spacer	1	1646					
43	Cotter Pin	1	51937					
44	Brake Shoe	1	8123					
45	Brake Shoe	1	8122					
46	Brake Shoe Retainer Ring	2	53918					
47	Anchor Eccentric	1	8126					
48	Nut	2	51750					
49	Adjustment Spring	1	1647					
50	Slotted Nut	1	50169					
51	Power Drive Assy. (9in.Drum)	1	8629-9	8628-9	8629-9		8628-9	
	Power Drive Assy. (17in.Drum)		8629-17	8628-17	8629-17		8628-17	
	Power Drive Assy. (34in.Drum)		8629-34	8628-34	8629-34		8628-34	
	Power Drive Assy. (51in.Drum)		8629-51	8628-51	8629-51		8628-51	
	Power Drive Assy. (69in.Drum)		8629-69	8628-69	8629-69		8628-69	
52	Grease Fitting	6	51006					
53	Brake Lever	1	8120-1 (Left Hand) or 8120-2 (Right Hand)					
54	Solenoid Link Pin (Lower)	1	4969-1					
55	Brake Lever Washer	2	50166					
56	Brake Lever Retainer Ring	2	50191					
57	Brake Lever Bushing	1	51406					
58	Key	1	Not sold separately					
59	Motor Sprocket	1	3185			3179	3185	3179
60	Setscrew	2	53154					
61	Label	1	T25					
62	Roller Chain	1	50220-70	50220-80	50220-70		50220-80	
63	Wire Rope Guard	1	1677					
64	Spacer Shaft (9 in. Drum)	3	678-1					
	Spacer Shaft (17 in.Drum)		678-2					
	Spacer Shaft (34 in. Drum)		678-4					
	Spacer Shaft (51 in. Drum)		678-5					
	Spacer Shaft (69 in. Drum)		678-6					
65	Gear Guard (9 in. Drum)	1	2171-1L (Left Hand) or 2171-1R (Right Hand)					
	Gear Guard (17 in. Drum)		2171-2L (Left Hand) or 2171-2R (Right Hand)					
	Gear Guard (34 in. Drum)		2171-4L (Left Hand) or 2171-4R (Right Hand)					
	Gear Guard (51 in. Drum)		2171-5L (Left Hand) or 2171-5R (Right Hand)					
	Gear Guard (69 in. Drum)		2171-6L (Left Hand) or 2171-6R (Right Hand)					
66	Power Drive Bushing	2	1293-3					
67	Brake Doubler Plate	1	8623					
68	Plate Locator Bushing	1	8624					
69	Capscrew	1	50208					

(TBL.300PL2)

300 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.					
			301	311	321	331	341	351
70	Cluster Shaft (9 in Drum)	1	511-1					
	Cluster Shaft (17 in. Drum)		511-2					
	Cluster Shaft (34 in. Drum)		511-4					
	Cluster Shaft (51 in. Drum)		511-5					
	Cluster Shaft (69 in. Drum)		511-6					
71	Nut	1	50211					
72	Drum Shaft (9 in. Drum)	1	512-1					
	Drum Shaft (17 in. Drum)		512-2					
	Drum Shaft (34 in. Drum)		512-4					
	Drum Shaft (51 in. Drum)		512-5					
	Drum Shaft (69 in. Drum)		512-6					
73	Angle Deck Bracket (Optional)	2	513					
74	Deck Bracket (Std)	2	589					
75	Capscrew	8	52829					
76	Side Frame	1	8619-2					
77	Deck Bracket Nut	8	50826					
78	Nut	1	50207					
79	Lock Out Bar Bracket	1	1124					
80	Pin	1	53909					
81	Screw	1	50210					
82	Spacer Nut	10	50154					
83	Lock Out Bar	1	1053					
84	Capscrew	1	50206					
85	Spacer Shaft (9 in. Drum)	1	691-1					
	Spacer Shaft (17 in. Drum)		691-2					
	Spacer Shaft (34 in. Drum)		691-4					
	Spacer Shaft (51 in. Drum)		691-5					
	Spacer Shaft (69 in. Drum)		691-6					
86	Capscrew	4	50183					
87	Cable Guard Deck Bracket	2	1733					
89	Nut	5	50205					
90	Nut	1	50171					
91	Bracket Spacer	1	602-2					
92	Dog Bracket	1	601					
93	Plunger Spring	1	507					
94	Bracket Spacer	1	602-1					
95	Lever Retainer Ring	2	51192					
96	Capscrew	1	52829					
97	Dog Lever	1	532 (Left Hand) or 453 (Right Hand)					
98	Dog (Incl's item 52)	1	1019A					
99	Dog Spring	1	1011 (Left Hand) or 1010 (Right Hand)					
100	Dog Retainer Ring	2	53336					
101	Side Frame	1	8619-1					
102	Lever Stop	1	522					
103	Plunger Pin	1	506					
104	Pin	1	52727					
105	Cluster Gear Bushing	3	1293-2					
106	Cluster gear	1	504					

(TBL.300PL3)

300 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.					
			301	311	321	331	341	351
107	Drum Bushing	2	1293-1					
108	Wire Rope Wedge 5/8 in.	1	530					
	Wire Rope Wedge 3/4 in.		529					
	Wire Rope Wedge 7/8 in.		528					
	Wire Rope Wedge 1 in.		527					
109	Grease Fitting	3	53095					
110	Drum Assembly (9 in. Long)	1	7902-A-9					
	Drum Assembly (17 in. Long)		7902-A-17					
	Drum Assembly (34 in. Long)		7902-A-34					
	Drum Assembly (51 in. Long)		7902-A-51					
	Drum Assembly (69 in. Long)		7902-A-69					
121	Capscrew	2	50160					
127	Nameplate	1	T53					
128	Drive Screw	4	50915					
129	Master Link	1	50329					

Recommended Spare

(TBL.300PL4)

Note: The use of motors with non-standard frames (bolt hole sizes) may require that the following optional parts be used to mount the motor.

ITEM NO.	DESCRIPTION OF PART	QTY. REQ'D	PART NO.
13	Capscrew	4	50196
14	Lockwasher	4	50200
15	Nut	4	50198

ASSEMBLIES

ITEM NO.	DESCRIPTION OF PART	PART NO.					
		301	311	321	331	341	351
150	Dog Assembly (Incl's items 90 thru 95, 97 thru 100, 102, 103 and 104)	521 (Left Hand) 538 (Right Hand)					
151	Brake Assembly (Incl's items 39 thru 50 and 53 thru 56)	8119 (Left Hand) 8118 (Right Hand)					

(TBL.300PL9)

Winch Controls

See "INSTALLATION" Section for additional information

Magnetic Reversing Starter

Description	Motor HP	Voltage	Part Number
Three Phase NEMA 1 (General Purpose)	5	230	51356
		460	51683
	7.5	230	51356
		460	51356
	10	230	52592
		460	51356
Three Phase NEMA 4 (Watertight)	5	230	52426
		460	51360
	7.5	230	52426
		460	52426
	10	230	51558
		460	52426

Controls

Description	Part Number
Wall Mount Control Station NEMA 1	50235
Wall Mount Control Station NEMA 4	50248
Hand Held Pendant NEMA 3R (Waterproof)	70555
Hand Held Pendant NEMA 4 (Watertight)	52761
Control Cord (Specify Length)	71032312

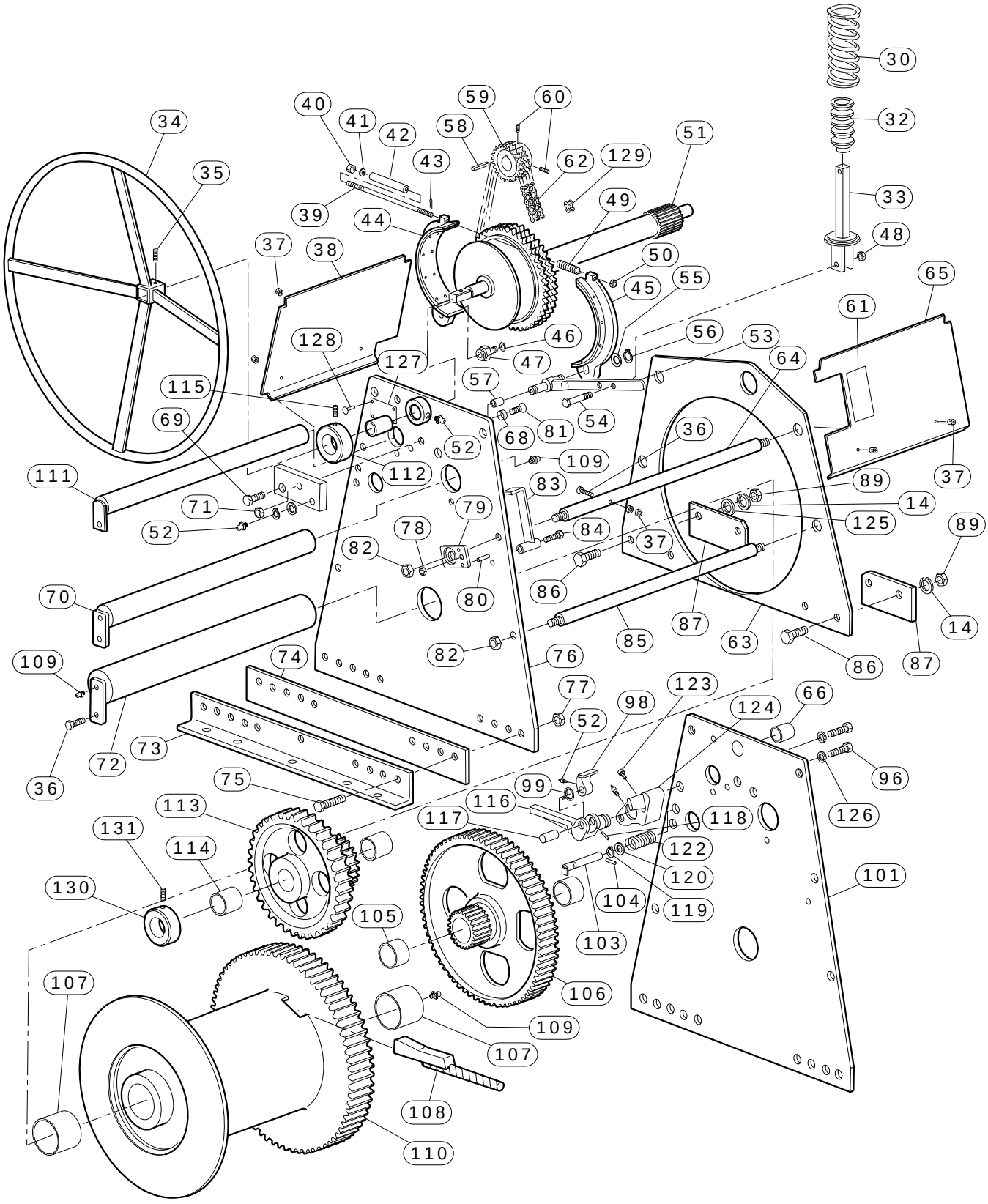
Accessories

Description	Part Number
Touch-Up Paint	MHD-OR

(TBL.CONTROLS)

600 SERIES BARGE WINCH ASSEMBLY DRAWING

See 300 Series Barge Winch Assembly Drawing MHTPD0262 for details on motor and solenoid components.



(Dwg. MHTPD0265)

600 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.				
			601	611	621	631	641
1	Motor 5 HP, 1080 rpm	1	50217	---	50217	---	
	Motor 7.5 HP, 1080 rpm		---	50351	---		
	Motor 7.5 HP, 810 rpm		---			50354	---
	Motor 10 HP, 1080 rpm		---				50357
2	Brake and Solenoid Cover	1	2537 (Left Hand) or 2538 (Right Hand)				
3	Motor Adapter Plate	1	8384-1				
4	Screw	5	71007009				
5	Motor Base Cover (11 in. Drum)	1	Not Required				
	Motor Base Cover (21 in. Drum)		3603-21				
	Motor Base Cover (41 in. Drum)		3603-41				
	Motor Base Cover (62 in. Drum)		3603-62				
	Motor Base Cover (82 in. Drum)		3603-82				
6	Solenoid Stud	4	435				
7	Motor Base (11 in. Drum)	1	8387-11 (Left Hand) or 8386-11 (Right Hand)				
	Motor Base (21 in. Drum)		8387-20 (Left Hand) or 8386-20 (Right Hand)				
	Motor Base (41 in. Drum)		8387-41 (Left Hand) or 8386-41 (Right Hand)				
	Motor Base (62 in. Drum)		8387-61 (Left Hand) or 8386-61 (Right Hand)				
	Motor Base (82 in. Drum)		8381-82 (Left Hand) or 8386-82 (Right Hand)				
8	Lockwasher	4	52837				
9	Capscrew	4	52836				
10	Grommet	1	50193				
11	Motor Base Lockout	4	50209				
12	Nut	8	50159				
13	Capscrew	4	50197				
14	Lockwasher	8	50181				
15	Nut	8	50171				
16	Solenoid Spacer Capscrew	4	50204				
17	Lockwasher	4	50200				
18	Nut	2	53390				
19	Lockwasher	2	53836				
20	Base Plate	1	7007-G				
21	Connecter Cord	1	51816				
22	Guide	2	7007-E				
23	Pole Piece	1	7007-F				
24	Solenoid 220V	1	7007-220				
	Solenoid 440V		7007-440				
	• Coil Only 220 V		R43!8WP				
	• foil Only 440 V		R43I7 WP				
25	Guide (Brass)	2	7007-D				
26	Frame	1	7007-C				
27	Capscrew	2	51939				
28	Solenoid Spacer	4	613				
29	Plunger	1	7007-A				
30	Compression Spring	1	615				
•31	Solenoid Link Pin (Upper)	1	4969				
32	Bellows Boot	1	3802				
33	Solenoid Connector Link	1	8116				
34	Handwheel	1	1048				
35	Setscrew	1	54691				
36	Capscrew	2	52831				

600 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.				
			601	611	621	631	641
37	Gear Guard Nut	8	50161				
38	Gear Guard (11 in. Drum)	1	1346-1A (Left Hand) or 1365-1A (Right Hand)				
	Gear Guard (21 in. Drum)		1346-2A (Left Hand) or 1365-2A (Right Hand)				
	Gear Guard (41 in. Drum)		1346-4A (Left Hand) or1365-4A (Right Hand)				
	Gear Guard (62 in. Drum)		1346-5A (Left Hand) or 1365-5A (Right Hand)				
	Gear Guard (82 in. Drum)		1346-7A (Left Hand) or 1365-7A (Right Hand)				
39	Adjustment Stud	1	1645				
40	Adjustment Nut	1	50170				
41	Washer	1	50177				
42	Adjustment Spacer	1	1646				
43	Cotter Pin	1	51937				
44	Brake Shoe	1	8123				
45	Brake Shoe	1	8122				
46	Brake Shoe Retainer Ring	2	53918				
47	Anchor Eccentric	1	8126				
48	Nut	2	51750				
49	Adjustment Spring	1	1647				
50	Slotted Nut	1	50169				
51	Power Drive Assy. (11 in. Drum)	1	8113-1				
	Power Drive Assy. (21 in. Drum)		8113-2				
	Power Drive Assy. (41 in. Drum)		8113-4				
	Power Drive Assy. (62 in. Drum)		8113-5				
	Power Drive Assy. (82 in. Drum)		8113-7				
52	Grease Fitting	6	51006				
53	Brake Lever	1	8120-2 (Left Hand) or 8120-1 (Right Hand)				
54	Solenoid Link Pin (Lower)	1	4969-1				
55	Brake Lever Washer	2	50166				
56	Brake Lever Retainer Ring	2	50191				
57	Brake Lever Bushing	1	51406				
58	Key	1	Not sold separately				
59	Motor Sprocket	1	3185		3179		
60	Setscrew	2	53154				
61	Label	1	T26				
62	Roller Chain	1	50220-70		50220-66		
63	Wire Rope Guard	1	1678				
64	Spacer Shaft (11 in. Drum)	2	2883-1				
	Spacer Shaft (21 in. Drum)		2883-2				
	Spacer Shaft (41 in. Drum)		2883-4				
	Spacer Shaft (62 in. Drum)		2883-5				
	Spacer Shaft (82 in. Drum)		2883-7				
65	Gear Guard (11 in. Drum)	1	1346-1B (Left Hand) or 1365-1B (Right Hand)				
	Gear Guard (21 in. Drum)		1346-2B (Left Hand) or 1365-2B (Right Hand				
	Gear Guard (41 in. Drum)		1346-4B (Left Hand) or 1365-4B (Right Hand)				
	Gear Guard (62 in. Drum)		1346-5B (Left Hand) or 1365-5B (Right Hand)				
	Gear Guard (82 in. Drum)		1346-7B (Left Hand) or 1365-7B (Right Hand)				
66	Power Drive Bushing	2	1293-7				
67	Brake Doubler Plate	1	8112-1				
68	Plate Locator Bushing	1	8117				
69	Capscrew	1	50208				

(TBL.600PL6)

600 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.				
			601	611	621	631	641
70	B-C Shaft (11 in. Drum)	1	326-1				
	B-C Shaft (21 in. Drum)		326-2				
	B-C Shaft (41 in. Drum)		326-4				
	B-C Shaft (62 in. Drum)		326-5				
	B-C Shaft (82 in. Drum)		326-7				
71	Nut	1	50211				
72	Drum Shaft (11 in. Drum)	1	325-1				
	Drum Shaft (21 in. Drum)		325-2				
	Drum Shaft (41 in. Drum)		325-4				
	Drum Shaft (62 in. Drum)		325-5				
	Drum Shaft (82 in. Drum)		325-7				
73	Angle Deck Bracket (Optional)	2	1111				
74	Deck Bracket (Std)	2	324				
75	Capscrew	8	54221				
76	Side Frame	1	8112-L				
77	Deck Bracket Nut	18	50826				
78	Nut	1	50207				
79	Lock Out Bar Bracket	1	1124				
80	Pin	1	53909				
81	Screw	1	50210				
82	Spacer Nut	10	50154				
83	Lock Out Bar	1	1125-1				
84	Capscrew	1	50206				
85	Spacer Shaft (11 in. Drum)	2	330-1				
	Spacer Shaft (21 in. Drum)		330-2				
	Spacer Shaft (41 in. Drum)		330-4				
	Spacer Shaft (62 in. Drum)		330-5				
	Spacer Shaft (82 in. Drum)		330-7				
86	Capscrew	4	50183				
87	Cable Guard Deck Bracket	2	1732				
89	Nut	4	50205				
96	Capscrew	2	52829				
98	Dog (Incl's item 52)	1	1020A				
99	Dog Spring	1	1011 (Left Hand) or 1010 (Right Hand)				
101	Side Frame	1	8112-R				
103	Plunger Pin	1	361				
104	Pin	1	52727				
105	B-C Gear Bushing	2	1293-5				
106	B-C Gear	1	338				
107	Drum Bushing	2	1293-4				
108	Wire Rope Wedge 3/4 in.	1	336				
	Wire Rope Wedge 7/8 in.		334				
	Wire Rope Wedge 1 in.		333				
	Wire Rope Wedge 1-1/8 in.		332				
	Wire Rope Wedge 1-1/4 in.		331				
109	Grease Fitting	4	53095				

(TBL.600PL7)

600 SERIES BARGE WINCH PARTS LIST

ITEM NO.	DESCRIPTION OF PART	TOTAL QTY.	PART NO.				
			601	611	621	631	641
110	Drum Assembly (11 in. long)	1	7962-A-11				
	Drum Assembly (21 in. long)		7962-A-20				
	Drum Assembly (41 in. long)		7962-A-41				
	Drum Assembly (62 in. long)		7962-A-61				
	Drum Assembly (82 in. long)		7962-A-82				
111	D-E Shaft (11 in. long Drum)	1	328-1				
	D-E Shaft (21 in. long Drum)		328-2				
	D-E Shaft (41 in. long Drum)		328-4				
	D-E Shaft (62 in. long Drum)		328-5				
	D-E Shaft (82 in. long Drum)		328-7				
112	Collar	1	4046-2				
113	D-E Gear	1	337				
114	Gear Bushing	2	1293-6				
115	Setscrew	1	50855				
116	Dog Lever	1	313 (Left Hand) 365 (Right Hand)				
117	Dog Shaft	1	312				
118	Pin	1	553-13				
119	'C' Clip	1	553-11				
120	Washer	1	553-12				
122	Spring	1	348				
123	Retainer Screw	1	733				
124	Dog Bracket	1	314 (Left Hand) 364 (Right Hand)				
125	Flat Washer	2	50182				
126	Lockwasher	2	51012				
127	Nameplate	1	T53				
128	Drive Screw	4	50915				
129	Master Link	1	50329				
130	Collar	1	4046-3				
131	Setscrew	1	52528				

Recommended Spare

(TBL.600PL8)

Note: The use of motors with non-standard frames (bolt hole sizes) may require that the following optional parts be used to mount the motor.

ITEM NO.	DESCRIPTION OF PART	QTY. REQ'D	PART NO.
13	Capscrew	4	50196
14	Lockwasher	4	50200
15	Nut	4	50198

ASSEMBLIES

ITEM NO.	DESCRIPTION OF PART	PART NO.				
		601	611	621	631	641
152	Dog Assembly (Incl's items 52, 98, 99, 103, 104 and 116 thru 126)	553 (Left Hand) 555 (Right Hand)				
153	Brake Assembly (Incl's items 39 thru 50 and 53 thru 56)	8118 (Left Hand) 8119 (Right Hand)				

(TBL.600PL10)

HOIST AND WINCH LIMITED WARRANTY

Wintech International warrants to the original user its Hoists and Winches (Products) to be free of defects in material and workmanship for a period of one year from the date of purchase. **Wintech** will repair, without cost, any Product found to be defective, including parts and labor charges, or at its option, will replace such Products or refund the purchase price less a reasonable allowance for depreciation, in exchange for the Product. Repairs or replacements are warranted for the remainder of the original warranty period.

If any Product proves defective within its original one year warranty period, it should be returned to any Authorized Hoist and Winch Service Distributor, transportation prepaid with proof of purchase or warranty card.

This warranty does not apply to Products which **Wintech** has determined to have been misused or abused, improperly maintained by the user, or where the malfunction or defect can be attributed to the use of non-genuine **Wintech** parts.

Wintech makes no other warranty, and all implied warranties including any warranty of merchantability or fitness for a particular purpose are limited to the duration of the expressed warranty period as set forth above.

Wintech's maximum liability is limited to the purchase price of the Product and in no event shall Wintech be liable for any consequential, indirect, incidental, or special damages of any nature rising from the sale or use of the Product, whether based on contract, tort, or otherwise.

Note: Some states do not allow limitations on incidental or consequential damages or how long an implied warranty lasts so that the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

IMPORTANT NOTICE

It is our policy to promote safe delivery of all orders.
This shipment has been thoroughly checked, packed and inspected before leaving our plant and receipt for it in good condition has been received from the carrier. Any loss or damage which occurs to this shipment while enroute is not due to any action or conduct of the manufacturer.

VISIBLE LOSS OR DAMAGE
If any of the goods called for on the bill of lading or express receipt are damaged or the quantity is short, do not accept them until the freight or express agent makes an appropriate notation on your freight bill or express receipt.

CONCEALED LOSS OR DAMAGE
When a shipment has been delivered to you in apparent good condition, but upon opening the crate or container, loss or damage has taken place while in transit, notify the carrier's agent immediately.

DAMAGE CLAIMS
You must file claims for damage with the carrier. It is the transportation company's responsibility to reimburse you for repair or replacement of goods damaged in shipment. Claims for loss or damage in shipment must not be deducted from the **Wintech International** invoice, nor should payment of **Wintech International** invoice be withheld awaiting adjustment of such claims as the carrier guarantees safe delivery.
You may return products damaged in shipment to us for repair, which services will be for your account and form your basis for claim against the carrier.

United States Office Location

For Order Entry, Order Status, and Technical Support:

Wintech International, L.L.C.
5319 Shreveport/Blanchard Hwy.
Shreveport, LA. 71107

Phone: (318) 929-1242
1-888-946-8325
Fax: (318) 929-1245
www.wintech-winches.com

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