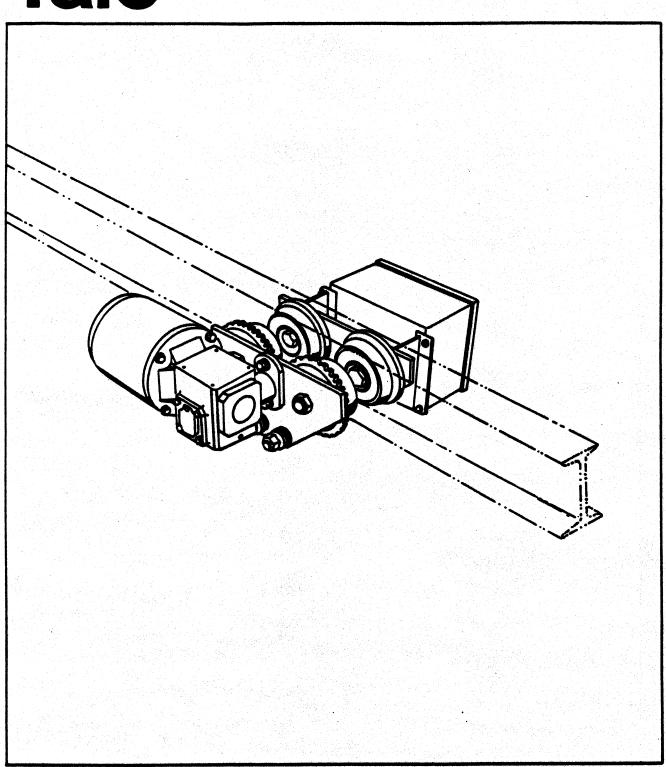
RT SERIES TROLLEYS

PARTS AND INSTRUCTION MANUAL

# Yale





#### MECHANICAL INSTALLATION

#### **Trolley To Beam**

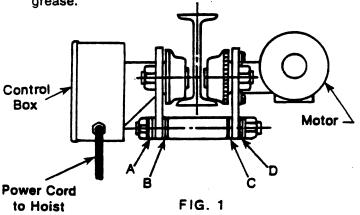
Place the nuts on one end of the suspension bolts. Arrange the sideplates, and spacers on the bolts according to Fig. 1 and Table 1 for the proper beam size. Assemble the Trolley on beam by sliding one sideplate out far enough to allow the wheel to clear the beam flange. Draw the side sideplates together, assemble the additional spacers and nuts. Tighten nuts to 175 ft/lbs. torque.

TABLE 1									
I-BE	EAM	NO. OF SPACERS							
SIZE	FLANGE	Α	В	O	D				
6" x 12.5	3 3/8	9	3	4	8				
6" x 17.2	3 5/8	8	4	4	8				
7'' x 15.3	3 5/8	8	4	4	8				
7" x 20.0	3 7/8	7	5	5	7				
8" x 18.4	4	7	5	6	6				
8" x 23.0	4 1/8	6	6	6	6				
10" x 25.4	4 5/8	5	7	8	4				
10" x 35.0	5	4	8	9	3				
12" x 31.8	5	4	8	9	3				
12" x 35.0	5 1/8	3	9	9	3				
12" x 40.8	5 1/4	3	9	10	2				
12" x 50.0	5 1/2	2	10	10	2				
15" x 42.9	5 1/2	2	10	10	2				
15" x 50.0	5 5/8	2	10	11	1				
18" x 54.7	6	0	12	12	0				

MARNING: Deviation from washer adjustment recommendations could cause the trolley to fall from the beam. The trolley should be inspected periodically to assure its continued safe operation. The number of spacers indicated is nominally correct. However, due to variations in structural steel, it may be necessary to vary the number used.

THE DISTANCE BETWEEN TRACK WHEEL FLANGES SHOULD BE 1/8" TO 3/16" GREATER THAN THE WIDTH OF THE BEAM FLANGE FOR STRAIGHT RUNWAYS, AND 3/16" TO 1/4" GREATER FOR RUNWAYS THAT INCLUDE SHARP CURVES.

When used on monorail with curves lightly lubricate edges of beam at curve section with grease.



#### **ELECTRICAL INSTALLATION**

Be sure all power is disconnected before starting any electrical work.

#### POWER CORD TO HOIST

A short lenght of power cord is installed in the trolley control box (Fig. 1). Remove 4 inches of the outer jacket and strip each wire 3/8 inches. Insert the cord into the power cord entrance on the hoist. Connect the green wire to the ground lug and the line wires to the "L" terminals.

### CAUTION:

Before connecting power to the trolley, be sure the power supply corresponds to the ratings of the trolley and of the hoist. If necessary, reconnect the trolley motor and transformer of dual voltage units according to the wiring diagram, using the terminals and jumpers provided in the field wiring kit.

A three phase motor can rotate in either direction depending on its connection to the power line. If the direction of hook travel of a three phase hoist does not match the push button markings, interchange any two of the line wires at the terminal strip. **DO NOT** rewire the push button.

#### PENDANT LENGTH CHANGE

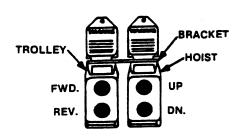
If it is necessary to lengthen the pendant, the cord and strain relief cable must be replaced. The necessary parts can be obtained from your Yale dealer or service center. Use the old cord as a guide for cutting and installing the new cord. Be sure to observe the correct color code of the wires. The pendant cord must be slightly longer than the strain relief cable to prevent strain on the electrical wires and connections.

The pendant can be shortened simply by loosening the clamp on the strain relief cable at the control box, and shortening the strain relief cable. The pendant cord need not be shortened unless the extra slack in the cord causes interference with moving parts. If it is necessary to shorten the cord, be sure to observe the correct color code when reconnecting the wires.



### **DUAL CONTROL STATION ASSEMBLY**

If desired, the two button control stations furnished with the Trolley and Hoist can be joined into a single rigid unit, as shown in Fig. 2, using the bracket furnished with the Trolley.

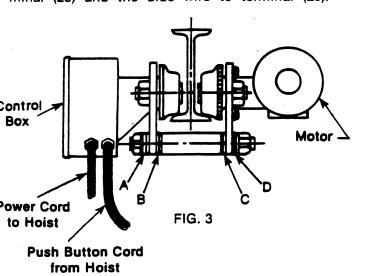


PUSH BUTTON FIGURE 2

To install the bracket, loosen the clamping nut on cord fitting on hoist push button station. Unscrew the fitting from the station and slide it up the cord a few inches. Locate the bracket so that it will be locked in place by the suspension bracket. Replace the fitting in the station and tighten it on the cord.

# FOR TROLLEYS FURNISHED WITH 4 BUTTON STATIONS:

Cut the hoist push button cord 42 inches from the bottom of the hoist. Remove and discard the strain relief rope. Remove 4 inches of the outer jacket and strip each wire 3/8 inches. Install the cord in the trolley control box as shown in Figure 3. Connect the green wire to the ground lug, the red wire to terminal (15), the blue wire to terminal (H6) and the black wire to terminal (L). For two speed hoist only, connect the orange wire to terminal (28) and the blue wire to terminal (29).



### OPERATING AND SAFETY PRO-CEDURES

Immediately after installation, operate trolley according to the operating and safety procedures as follows, with a capacity load over the entire length of runway or monorail system to be sure that all adjustments and operations are satisfactory.

Rail stops must be installed for all trolleys operating on open end beams. These stops must be positioned to exert impact force on the trolley side frames only.

When preparing to lift a load, be sure that the attachments to the hook are firmly seated in hook saddle. Avoid off center loading of any kind, especially loading on the point of hook.

When lifting, raise the load only enough to clear the floor or support and check to be sure that the attachments to hook and load are firmly seated. Continue lift only after you are assured the load is free of all obstructions.

When applying a load, it should be directly under the trolley. Avoid off center loading of any kind.

Take up a slack load chain carefully and start load easily to avoid shock and jerking of hoist load chain. If there is any evidence of overloading, immediately lower the load and remove the excess load.

Do not allow the load to swing or twist while hoisting.

Anticipate the stopping point and allow trolley to coast to a smooth stop. Reversing or "plugging" to stop trolley causes overheating of motor and swaying of load.

Do not load trolley beyond the rated capacity. Overload can cause immediate failure of some load carrying part or create a defect causing future failure at less than rated capacity.

Do not use this or any other overhead materials handling equipment for lifting or transporting persons.

Stand clear of all loads and avoid moving a load over the heads of other personnel. Warn personnel of your intention to move a load in their area.

Do not leave the load suspended in the air unattended.



Do not wrap the load-chain-around the load and hook onto itself as a choker chain.

Permit only qualified personnel to operate unit.

#### MAINTENANCE

To maintain continuous and satisfactory operation, a regular periodic inspection procedure must be initiated so that worn or damaged parts can be replaced before they become unsafe. The frequency of inspection must be determined by the individual application.

The following list gives an inspection procedure for normal usage under normal conditions. When the unit is subjected to heavy usage or dusty, gritty, moist or other adverse atmospheric conditions, shorter time periods must be assigned. Inspection must be made of all parts for unusual wear, corrosion or damage in addition to those specifically mentioned in the schedule below.

It is suggested that the unit be inspected monthly for wear damage and corrosion effects to all parts with particular attention to the following:

All fasteners including track wheel axle nuts, and suspension bolt nuts.

Contactor and control station for burnt or pitted contacts and loose or corroded terminals.

Cables and leads for broken wires, loose or corroded terminals, also damaged insulation.

Terminal board for loose or corroded connections.

Track wheels for wear of tread and flange and for bearing wear indicated by excessive looseness of wheel on axle.

Trackwheel gear and pinion for wear.

Collector or power supply system for damage, wear, corrosion and proper operation.

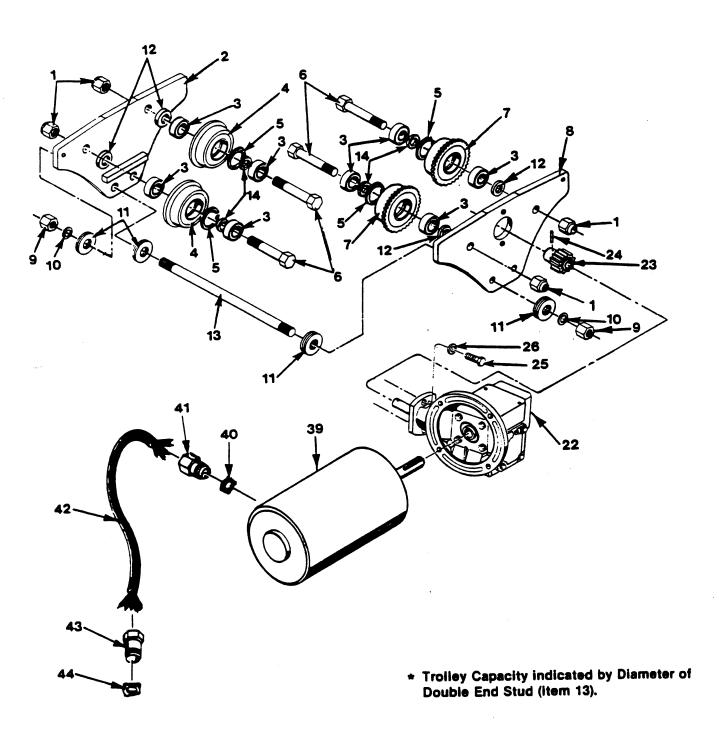
Once a month lubricate trackwheel gear and pinion with Texaco Novatex No. 2 or an equivalent heavy cup grease or graphite grease.

Motor gear box oil must be changed after first 100 hours of operation, then every six months or 2500 hours of normal service, whichever comes first. Use 1/2 pint of Omala Oil Grade 37 (product of Shell Oil Co.) for each oil change.

All other trolley parts are lubricated for life at the factory.



# REPAIR PARTS RT Series 1/2 Through 2 Ton . siley Assembly



When Replacement Parts Are Needed, Order Only Yale® Factory Engineered Parts

MARCH 1984

AT SERIES

# RT 1/2 Through 2 Ton (6 -15 INCH I BEAM) Trolley Assembly

ITEM NBR	AMERICAN STD. 6-15"I-BEAM	PATENTED TRACK	DESCRIPTION	QTY.
	6465932-00	6467752-00	TROLLEY ASSEMBLY (Incl.Items 1	
			thru 14)	1
1	0150158-00	0150158-00	NUT	4
	6461873-01	6461873-01	SIDE PLATE, PLAIN	1
2	5003539-07	5003539-07	BEARING	8
4	6412103-00	0650863-00	WHEEL, PLAIN	2
5	6400469-04	6400469-04	RETAINING RING	4
6	0250576-00	0650864-00	AXLE, WHEEL	4
7	6412113-00	5011583-00	WHEEL, GEARED	2
8	6461873-02	6461873-02	SIDE PLATE, GEARED	1
9	0149374-00	0149374-00	HEX NUT	4
10	0150268-00	0150268-00	LOCKWASHER	4
11	0114200-00	0114200-00	ADJUSTMENT WASHERS	48/20
12	6445021-05	0114207-00	WASHER	4
13	0101020-00	0101017-00	DOUBLE END STUD (5/8 IN.)	2
14	0161158-00	0161158-00	WASHER	16/24
22	SEE TABLE	SEE TABLE	GEAR CASE	1
	6467002-00		RT MTG KIT (Incl. Items 23, 24, 25 &	
	• •		26)	
23	6462883-00	6462883-00	PINION	1
24	6462973-01	6462973-01	GROOVE PIN	1
25	055 <b>4856-0</b> 0	0554856-00	BOLT	2
26	0150266-00	0150266-00	LOCK WASHER	2 2 1
39	•	•	MOTOR ASSEMBLY	1
40	0103739-00	0103739-00	LOCK NUT	1
41	6401 <del>569-</del> 10	6401569-10	WATER TIGHT CONNECTOR	1
42	6431261-81	6431261-81	POWER CORD	7 Ft.
43	6401569-18	6401569-18	WATER TIGHT CONNECTOR	1
44	0103740-00	0103740-00	LOCKNUT	1

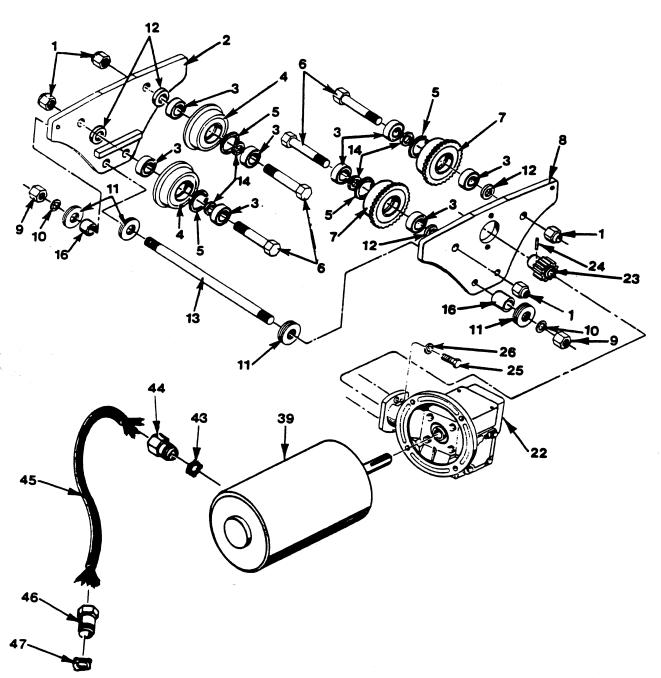
<sup>\*</sup>When Ordering Motors Give Complete Data On Motor Nameplate.

## **GEAR TABLE**

TRAVEL SPEED (FT/MIN)	GEAR CASE	RATIO
15	6462923-30	30:1
30	6462923-15	15:1
45	6462923-10	10:1
90	6462923-05	5:1



# REPAIR PARTS RT Series 3 Ton ley Assembly



\* Trolley Capacity indicated by Diameter of Double End Stud (Item 13).



# RT 3 TON (8-24 INCH I-BEAM)

# **Trolley Assembly**

ITEM NBR	AMERICAN STD. 8-25"I-BEAM	PATENTED TRK. 3 1/4&4 1/16 FLG.	DESCRIPTION	QTY.
	6467762-00	6467772-00	TROLLEY ASSEMBLY (Incl. Items 2	_
			thru 16)	1
1	0213606-00	0149716-00	NUT	4
2	6465003-01	6465003-01	SIDE PLATE, PLAIN	1
1 2 3	0664037-00	0664037-00	BEARING ASSEMBLY	8
4	6412133-00	6465981-00	WHEEL, PLAIN	2
5	5024531-00	5024531-00	SHIM	4
5 6 7	0664038-00	0664038-00	AXLE, WHEEL	4 2
	6412143-00	6465991-00	WHEEL, GEARED	
8	6465003-02	6465003-02	SIDE PLATE, GEARED	1
9	0149716-00	0149716-00	HEX NUT	4
10	0150297-00	0150297-00	LOCKWASHER	4
11	0114197-00	0114197-00	ADJUSTMENT WASHERS	24/4
12	06 <b>6</b> 4039-00	5005201-00	WHEEL SPACER	4 2
13	6449073-00	0101053-00	DOUBLE END STUD (1 IN.)	1
14	6447913-06	6447913-06	BEARING SPACER	8/8
16	0629893-00	5000239-23	SPACER	4.
22	SEE TABLE	SEE TABLE	GEAR CASE	1
	646700200		RT MGT. KIT (Incl. Items 23, 24, 25 &	
			26)	
23	6462883-00	6462883-00	PINION	1
24	6462973-01	6462973-01	GROOVE PIN	1
25	0554856-00	0554856-00	BOLT	2 2 1
26	0150266-00	0150266-00	LOCK WASHER	2
39	•	•	MOTOR	1
43	0103739-00	0103739-00	LOCKNUT	1
44	6401569-10	6401569-10	WATERTIGHT CONNECTOR	1
45	6431261-81	6431261-81	POWER CORD	7 ft.
46	6401569-18	6401569-18	WATERTIGHT CONNECTOR	1
47	0103740-00	0103740-00	LOCKNUT	1

<sup>\*</sup>When Ordering Motors Give Complete Data On Motor Nameplate.

### **GEAR TABLE**

TRAVEL SPEED (FT/MIN)	GEAR CASE	RATIO
15	6462923-30	30:1
30	6462923-15	15:1
45	6462923-10	10:1
90	6462923-05	5:1



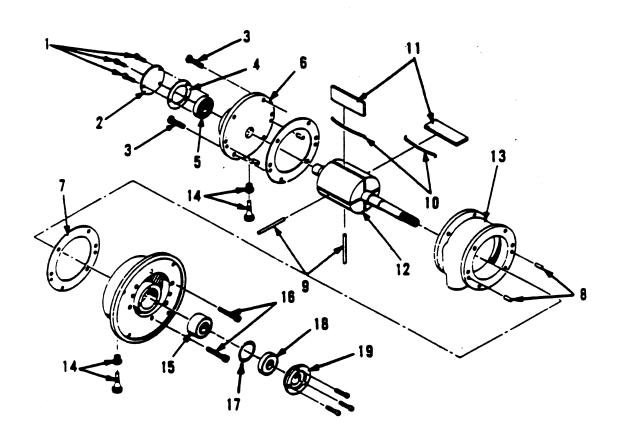
EPAIR PARTS

MOTORIZED TROLLEY DRIVE (RT)

TROLLEY MOTOR

648943100

(Splined Shaft for RT Trolley)



# Yale Hoisting Equipment

AIR MOTOR AND ADAPTER ASM.
TT Series (Air Powered)

IT	EM	PART NO. 1/2 PIPE	DESCRIPTION	QTY.
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 27	6453748-00 6421178-00 6453758-00 6421188-00 6421088-00 6421028-00 6421128-00 6421128-00 6421058-00 6421058-00 6421048-00 NOT AVAILABLE 6421008-00 6453768-00 6421078-00 6421178-00 6421118-00 6421118-00 6421118-00 6421228-00 6414140-00 6405083-00 0655796-00 0515197-00 0150290-00 0150298-00	SCREW END CAP SCREW GASKET BEARING END PLATE GASKET DOWEL PIN PUSH PIN VANE SPRING VANE ROTOR ASSEMBLY BODY OILER ASSEMBLY BEARING SCREW "O" RING SEAL END CAP REPAIR KIT (INCL. ITEMS 4, 5, 7, 9, 10, 11, 15, 17 & 18) MOTOR ADAPTER ASM. (INCL. ITEMS 22 through 27) MOTOR ADAPTER (NOT SHOWN) SCREW (NOT SHOWN) RETAINING RING (NOT SHOWN) BEARING (NOT SHOWN) UOCKWASHER (NOT SHOWN)	1 1 1 4 1 1 4



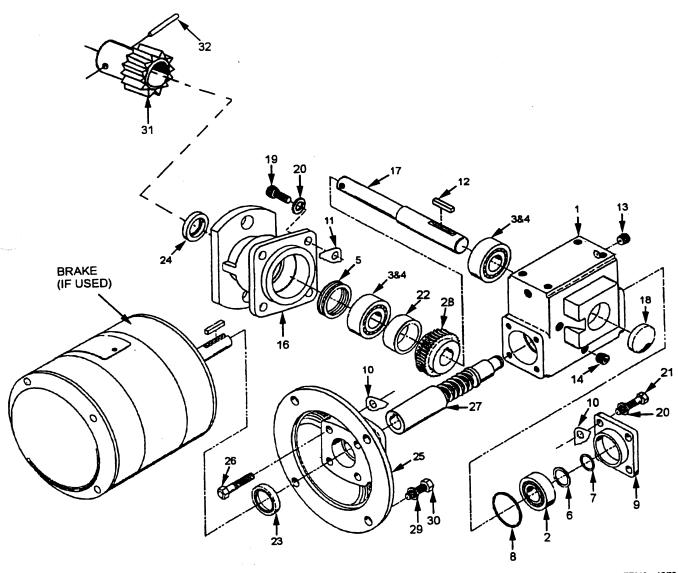
# ale Hoisting Equipment

### **REPAIR PARTS**

# MOTORIZED TROLLEY DRIVE (RT)

# **Trolley Assembly**

6: Tread Diameter



TD-RTE913 12/99



# Yale Hoisting Equipment

### **REPAIR PARTS**

# MOTORIZED TROLLEY DRIVE (RT)

# **Trolley Assembly**

6: Tread Diameter

ITEM	DESCRIPTION	PART NO.
1	HOUSING	. 649106601
2	BEARING BALL	649106602
3	CONE LM-11949 ROLLER BEARING	. 649106603
4	CUP LM-11910 ROLLER BEARING	. 649106604
5	TEMPER LOAD RING	. 649106605
6	TRUARC SPACER #5900-66	. 649106607
7	SPIROLOX RETAINING RINGS RST 66	. 649106608
8	RETAINING RING N5000-156	
9	HIGH SPEED CAP CLOSED	. 649106610
10	GASKET HIGH SPEED CAP	. 649106611
11	GASKET SLOW SPEED COVER	. 649106612
12	KEY 3/16 SQ. X 1	. 649106613
13	PLUG VENT 1/8 X .375	. 649106614
14	PLUG STL. 1/8 X .375	. 649106615
15	VENT SHIELD (NOT SHOWN)	649106616
16	SLOW SPEED COVER & FLANGE	. 649106617
17	SLOW SPEED SHAFT	. 649106618
18	SLOW SPEED PLUG, COVER & HOUSING	. 649106619
19	SOC. HD SCREW 5/16-18 X 7/8	. 649106620
20	LOCKWASHER HI COLLAR 5/16	. 649106621
21	HEX HD CAP SCREW 1/4-20 X 5/8	. 649106622
22	SLOW SPEED SPACER	. 649106606
23	OIL SEAL C/R 11124	649106623
24	OIL SEAL C/R 7443	. 649106624
25	MOTOR ADAPTER	. 649106625
26	HEX HD CAP SCREW 1/4-20 X 1 1/8	649106626
27	WORM SHAFT 56C	SEE TABLE
28	GEAR	SEE IABLE
29	LOCKWASHER	. 049100029
30	HEX HD CAP SCREW 3/8-16 X 7/8	64910630

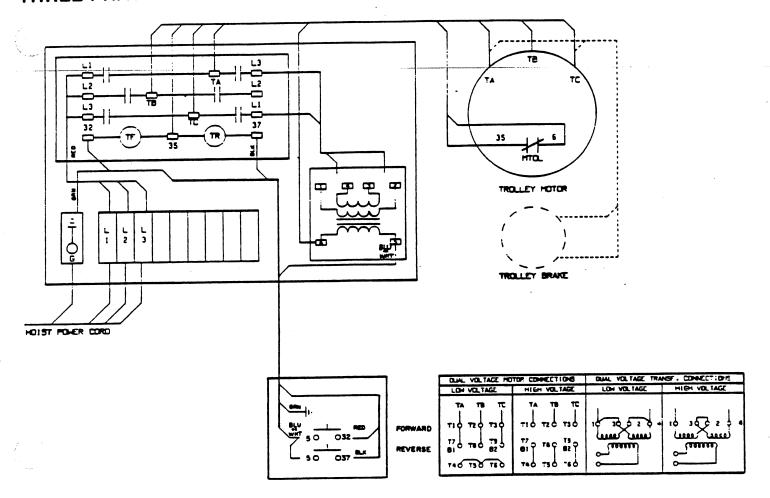
RATIO	ITEM 27, WORM SHAFT YALE NO.	ITEM 28, GEAR YALE NO.
5	649106650	649106660
10	649106651	.649106661
15	649106652	649106662
20	649106653	649106663
30	649106654	649106664
40	649106655	649106665
50	649106656	649106666
60	649106657	649106667

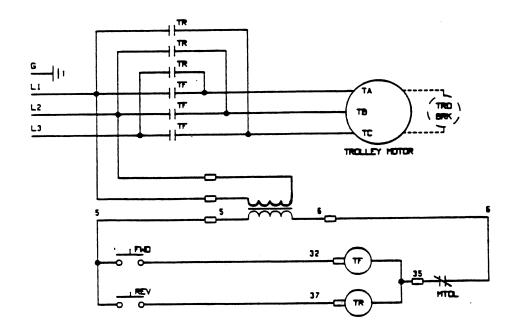
When replacement parts are needed, order only Yale® Factory Engineered Parts.

May 2000 TT Series



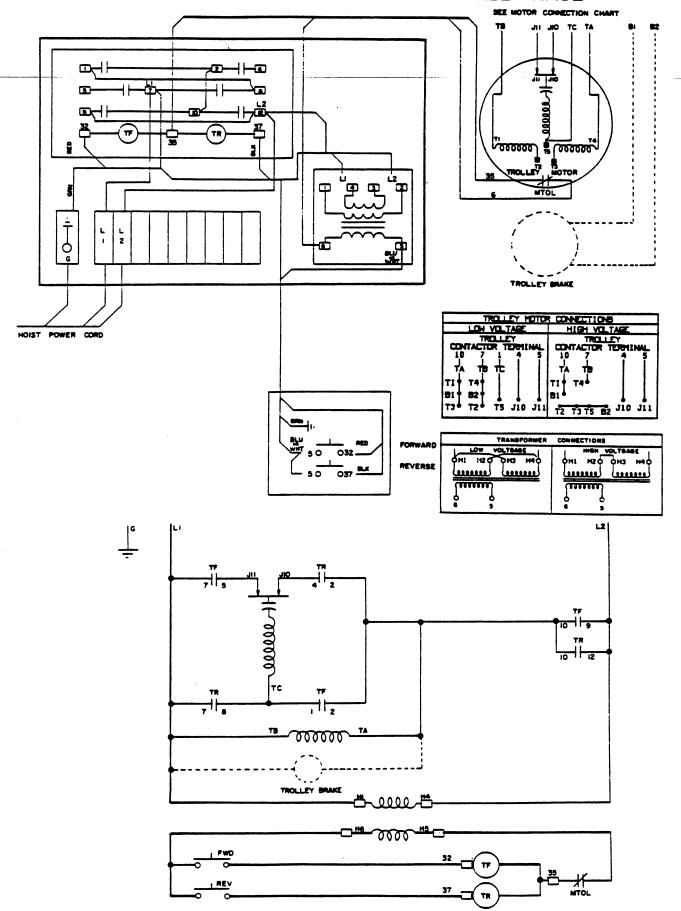
# WIRING DIAGRAMS THREE PHASE





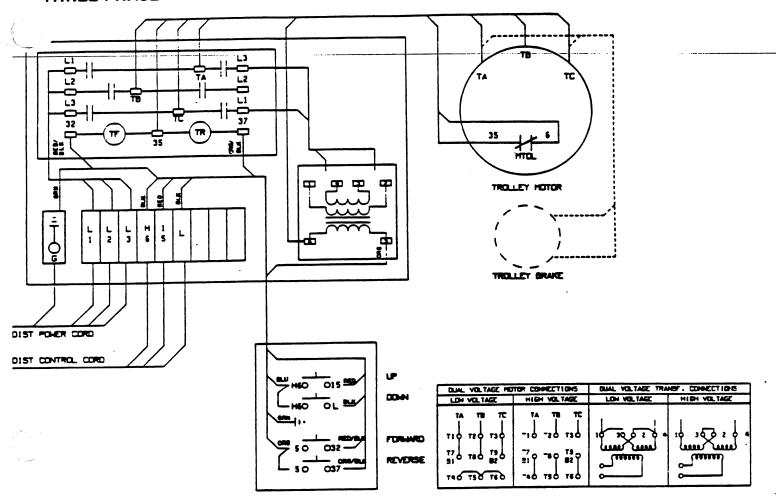


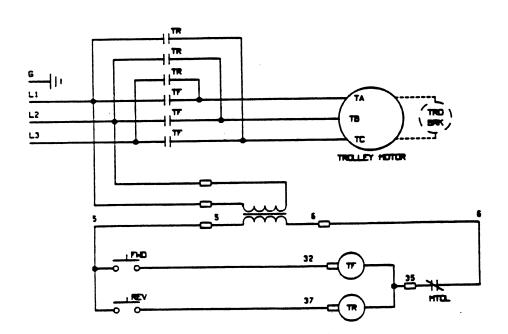
# WIRING DIAGRAMS SINGLE PHASE



# WIRING DIAGRAM

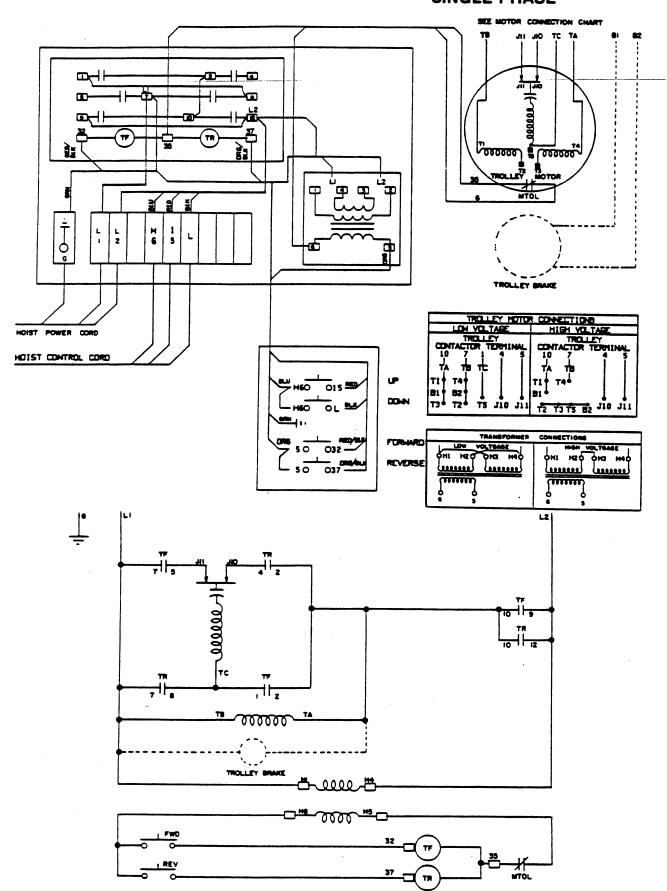
## THREE PHASE







# WIRING DIAGRAM SINGLE PHASE





# POWERED HOIST INSPECTION CHECK LIST

# SEE PREVENTIVE MAINTENANCE SECTION OF INSTRUCTION MANUAL FOR DETAILS.

CHECK ONLY COMPONENTS APPLICABLE FOR SPECIFIC EQUIPMENT AND INSPECTION TYPE.

HARDWARE LOOSE	/ MODEL						HOIST S/N		-
CRACKS CR	HOOKS	YES	NO	CABLE	YES	NO	CHAINS	YES	NO
MOTOR BRAKE WORN OR NOT DEFENTING DE	HARDWARE LOOSE CRACKS EXCESSIVE WEAR BENT SPREADING FREELY ROTATE LATCH DAMAGED	опппо	110000	BROKEN WIRES EXCESSIVE EXCESSIVE WEAR KINKED OR DISTORTED CORROSION	0000	0000	CRACKED TWISTED DISTORTED CORRODED EXCESSIVE WEAR WORN CHAIN GUIDES	០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០០	000000
DEPARTING COLLECTORS CONNECTIONS COLLECTORS CONDECTIONS CONDECTION	BRAKES	YES	NO	WIRING	YES	NO	DRUM & SHEAVES	YES	NO
DPERATING PROPERLY  O DEPARTING PROPERLY  O DAMAGED PUSH BUTTON  HOUSING  O DIL LEAKS  O DIL LEAKS  O DIL LEAKS  O DEPARTING PROPERLY  O DIL LEAKS  O DIL LEAKS  O DIL LEAKS  O DEPARTING PROPERLY  O DIL LEAKS  O DIL LEAKS  O DIL LEAKS  O DEPARTING PROPERLY  O DIL LEAKS	MOTOR BRAKE WORN OR NOT OPERATING EXECESSIVE LOADBRAKE DRIFT OR BLACKLASH EXCESSIVE DISC WEAR		0	FRAYED DAMAGED	00	0		<u> </u>	
ING YES NO OPERATION CONTROLS YES NO LUBRICATION YES NO DISTORTED   O CONTACTOR PITTING  O ALL POINTS LUBRICATED AS GIVEN IN LUB CHART  O GIVEN IN LUB CHART  O DAMAGED PUSH BUTTON  HOUSING  O OIL LEAKS  O OIL LEAK	LIMIT SWITCHES	YES	NO	LOAD LIMITING DEVICE	YES	NO	COLLECTORS	YES	NO
CONTACTOR PITTING  CRACKS  CRACKS  CRACKS  COOSE HARDWARE  COO	OPERATING PROPERLY	0	5	OPERATING PROPERLY	0	<u> </u>			
CRACKS COSE HARDWARE COSE COSE BUTTON COSE CONNECTIONS COSE COSE CONNECTIONS COSE CONNECTIONS COSE COSE COSE COSE COSE COSE COSE COSE	ING	YES	NO	OPERATION CONTROLS	YES	NO	LUBRICATION	YES	NO
CONTINUED ABILITY TO SUP- PORT IMPOSED LOADS O T LEAKING TO MISSING TO VORN OR DISTORTED TROLLEY PARTS O LOOSE CONNECTIONS TO BROKEN CONTROL PENDANT TO O  OTE IF ANY (T) IS CHECKED DO NOT OPERATE THE HOIST UNTIL REPAIRS HAVE BEEN MADE.	DISTORTED  CRACKS LOOSE HARDWARE  BEARING NOISE		0	OPERATING PROPERLY DAMAGED PUSH BUTTON	0	0	GIVEN IN LUB CHART OIL DARK OR LOW	=	0
PORT IMPOSED LOADS O T LEAKING TO MISSING TO VORN OR DISTORTED TROLLEY PARTS TO LOOSE CONNECTIONS TO DESCRIPTION TO DESCRIPTIONS TO DESCRIPTION TO DESCRIPTI	SUPPORTING STRUCTURE	YES	NO	AIR SYSTEM	YES	NO	WARNING LABELS	YES	NC
	CONTINUED ABILITY TO SUP- PORT IMPOSED LOADS WORN OR DISTORTED TROLLEY PARTS		= 0	LOOSE CONNECTIONS	ח	0	1	<u> </u>	
	,		_		VE BEE	N MAI	JE.		

# POWERED HOIST INSPECTION CHECK LIST

# SEE PREVENTIVE MAINTENANCE SECTION OF INSTRUCTION MANUAL FOR DETAILS.

CHECK ONLY COMPONENTS APPLICABLE FOR SPECIFIC EQUIPMENT AND INSPECTION TYPE.

HOIST MODEL						HOIST S/N		
HOOKS	YES	NO	CABLE	YES	NO	CHAINS	YES	NC
HARDWARE LOOSE CRACKS EXCESSIVE WEAR BENT SPREADING FREELY ROTATE LATCH DAMAGED	0000000	01100000	BROKEN WIRES AT ENDS BROKEN WIRES EXCESSIVE EXCESSIVE WEAR KINKED OR DISTORTED CORROSION HEAT DAMAGED	000000	00000	BINDING CRACKED TWISTED DISTORTED CORRODED EXCESSIVE WEAR WORN CHAIN GUIDES POCKET WHEELS WORN		00000000
BRAKES	YES	NO	WIRING	YES	NO	DRUM & SHEAVES	YES	NC
MOTOR BRAKE WORN OR NOT OPERATING EXECESSIVE LOADBRAKE DRIFT OR BLACKLASH EXCESSIVE DISC WEAR	0 00	0 0 0	LOOSE CONNECTIONS FRAYED DAMAGED PROPER GROUNDING	0 000	0 000	WORN EXCESSIVELY CRACKED OR SCORED	= =	0
LIMIT SWITCHES	YES	NO	LOAD LIMITING DEVICE	YES	NO	COLLECTORS	YES	NC
OPERATING PROPERLY	0	5	OPERATING PROPERLY	0	٥	BINDING EXCESSIVE WEAR	00	0 0
HOUSING	YES	NO	OPERATION CONTROLS	YES	NO	LUBRICATION	YES	NO
DISTORTED  CRACKS LOOSE HARDWARE		0 0 0	CONTACTOR PITTING  OPERATING PROPERLY DAMAGED PUSH BUTTON	0	0 0	ALL POINTS LUBRICATED AS GIVEN IN LUB CHART OIL DARK OR LOW	0 []	0 []
BEARING NOISE	Ξ	0	HOUSING		0	OIL LEAKS		0
SUPPORTING STRUCTURE	YES	NO	AIR SYSTEM	YES	NO	WARNING LABELS	YES	NC
CONTINUED ABILITY TO SUP- PORT IMPOSED LOADS WORN OR DISTORTED TROLLEY PARTS	0	= 0	LEAKING LOOSE CONNECTIONS BROKEN CONTROL PENDANT	000	0 00	MISSING	= <sup>1</sup>	0
OTE IF ANY (3) IS CHECKED DO	NOT C	PERA	L	VE BEE	N MAI	DE.		
GNATURE			DATE		CLOC	K NUMBER		

HI-SPEED INDUSTRIAL SERVICE





# Warranty

Every hoist is thoroughly inspected and tested prior to shipment from the factory. Should any problems develop, return the complete hoist prepaid to your nearest Yale Authorized Warranty Repair Station.

This warranty does not apply where: (1) deterioration is caused by normal wear, abuse, improper or inadequate power supply, eccentric or side loading, overloading, chemical or abrasive actions, improper maintenance or excessive heat; (2) problems resulted from repairs, modifications or alterations made by persons other than factory or Duff-Norton personnel;

(3) the hoist has been abused or damaged as a result of an accident; (4) repair parts or accessories other than those supplied by Duff-Norton are used on the hoist. Equipment and accessories not of the seller's manufacture are warranted only to the extent that they are warranted by the manufacturer. EXCEPT AS STATED HEREIN, DUFF-NORTON MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

#### **Improvements:**

Yale is constantly striving to improve its product. Changes in design and improvements will be made whenever the manufacturer believes the efficiency of the product will be improved without incurring any obligation to incorporate such improvements in any products which have been shipped or are in service.

#### Important Notice:

Use of chain, wire rope or replacement parts other than as supplied as original equipment on Yale hoists may lead to dangerous operation. Accordingly, Yale cannot be responsible in such cases and our warranty should be voided.

For more information write Yale Hoists, Forrest City, Arkansas 72335.



Yele\* Hoists
Highway 1 North
P.O. Box 1000
Forrest City, Arkansas 72335
Customer Service Phone (800) 999-6318
Fax (800) 766-0223

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