

INDEX FOR HEVI-LIFT HOIST

	Illustration Number
MECHANICAL SECTION	
Hoist Frame - Drum - Motor Support	HHL-70A-26
Gear Case and Gearing	HHL-71E-4
Gear Case Cover and Brake	HHL-72B-10
Reeving Assembly	HHL-100-32
Limit Switch Lever	----
Limit Switch Drive	HHL-74-3
Bottom Block and Hoist Cable	HHL-84-4
Dead End Application	3100F2037-2
Yoke Assembly	----
Plain Trolley	----
Geared Trolley	----
ELECTRICAL SECTION	
Hoist Motor	HCM-19
Trolley Motor	----
Bridge Motor	----
Limit Switch	HHL-38B-2
Limit Switch Application	----
Rectifier Assembly	HFC-3-12
Hoist Control	HFC-3-12
Trolley Control	----
Bridge Control	----
Additional Control	HFC-3-12
Hoist Resistor	DWG 75048-1
Brake Resistor	DWG 75244-1
Bridge Resistor	----
Push Button Station	----
Collectors	----
Wiring Diagram	3101E2297
CARE AND OPERATION SECTION	
Lubrication and Maintenance Instructions	T-100



HOIST FRAME - DRUM - MOTOR BRACKET

REF.	PART NO.	DESCRIPTION	AMT.
		T-62379-80	
1	329E2573D94	HOIST FRAME - DRUM	1-
2	0626V117	CAPSCREW 5/8 X 2-1/2 IN	4
3	3615V013	LOCKWASHER 5/8 IN	6
4	2045V007	NUT 5/8 IN	6
5		NOT USED	
6	0626V114	MACHINE BOLT 5/8 X 1-3/4 IN	2
7	2045V009	HEX NUT 7/8 IN	4
8	3615V016	LOCKWASHER 7/8 IN	4
9	0626V150	MACHINE BOLT 7/8 X 2-3/4 IN	4
10	18Z2D126	SNAP RING	1
11 *	25Z246D12	BALL BEARING	1
12	3100F793-4	MOTOR SUPPORT ASSEMBLY	1-
		CAPSCREW W/ LOCKWASHER -FOR MOTOR	
	0626V042	3/8 X 1-1/4 IN	7
13		NOT FURNISHED SEPARATELY	
14 *	18Z1598D5	GREASE SEAL	1
15 *	25Z531D10	ROLLER BEARING	1
16 *	18Z1598D8	GREASE SEAL	1
17	318H1909C1	COUPLING	1
18	9323E33-3	DRUM ASSEMBLY	1-
		CONSISTS OF REF 19 THRU 22	
19	323E580	DRUM ONLY	1-
20	318H204C	DRUM SLEEVE	2
21	19F79D208	DOWEL	4
22	301F869D2C1	DRUM GEAR	1
23	310F941	DRUM SHAFT	1-
		REF 24-25-26 NOT USED	
27	329F1656	BASE MOUNTING SUPPORTS - NOT SHOWN	2-
28	32Z1932	C.S.A. NAMEPLATE - NOT SHOWN	1-
		31COE1874	

* - RECOMMENDED SPARE

Harnischfeger

P&H

milwaukee, wisconsin 53201

WHEN ORDERING PARTS ALWAYS GIVE MODEL AND MACHINE SERIAL NUMBER

GEAR CASE & GEARING-INTERMEDIATE SHAFT

REF.	PART NO.	DESCRIPTION	AMT.
1	3100E1476-2	T-62379-80 GEAR CASE ASSEMBLY	1
2		CONSISTS OF REF 1 THRU 14	
3 *	18Z1598D8	NOT FURNISHED SEPARATELY	
4	25Z531D10	OIL SEAL	1
5	320H467	ROLLER BEARING	1
6	46Z31	PLUG	1
7 *	18Z1598D5	BREATHER	1
8	25Z246D12	OIL SEAL	1
9	318H1913C1F1	BALL BEARING	1
	45Z91-D122	COUPLING	1
10 *	18F682D115	W/ O RING	1
11	25Z113D8	OIL SEAL	2
12	20Z931D1	ROLLER BEARING - DRUM PINION SHAFT	2
13	20Z931D1	SET SCREW, NYLOK, 3/8-24 X 1/2 IN	1
14 *	25Z102D4	SET SCREW, NYLOK, 3/8-24 X 1/2 IN	1
15	9310F122-3	ROLLER BEARING	1
16	9310F122-4	R.H. DRUM PINION SHAFT ASSEMBLY	1
17 *	320F85	L.H. DRUM PINION SHAFT ASSEMBLY	1
18	301F866-F2	GASKET	1
19	318H2787	MOTOR PINION SHAFT	1
20	18Z2D128	COLLAR	1
21		RETAINER RING	3
22	24Z3V001	NOT USED	
23	9310F150-4	PLUG-1/8 IN PIPE	1
		INTERMEDIATE SHAFT ASSEMBLY	1
24	301H588	CONSISTS OF REF 24 THRU 26	
25	310F1242F1	INTERMEDIATE PINION	1
	25Z528D4	INTERMEDIATE SHAFT - CONSISTS OF	1
	20H1393D4	SHOULDERED INNER RACE	2
	20H1393D6	S F KEY 7/16 IN X 5/16 IN X 1-1/4 IN	1
26	301F868	S F KEY 7/16 IN X 5/16 IN X 1-3/4 IN	1
		MOTOR GEAR	1
		3100E1297	

* - RECOMMENDED SPARE

Harnischfeger

P&H

milwaukee, wisconsin 53201

GEAR CASE COVER & BRAKE

REF.	PART NO.	DESCRIPTION	AMT.
1	9314E86F1	T-62379-80 GEAR CASE COVER ASSEMBLY CONSISTS OF REF. 2 THRU 11 & 13	1
2		NOT FURNISHED SEPARATELY	
3	25Z102D4	ROLLER BEARING	3
4		NOT USED	
5		NOT USED	
6	325H189	BEARING CAP	1
* 7	45Z91D53	W/ O RING	1
8	18Z2D128	SNAP RING	3
9	319F5	PIN	3
10	44Z193D8	PLUG, 1/4 IN MAGNETIC PIPE	1
11	2045V005	NUT 1/2 IN - 13	3
12	2045V005	NUT 1/2 IN - 13	3
13	25T816D7	BALL BEARING	1
* 14	18F682D64	OIL SEAL	1
15	3615V009	LOCKWASHER 3/8 IN	10
16	0626V042	CAPSCREW 3/8 X 1-1/4 IN	10
17	19Z138D58	PIN	1
18	306H617	LATCH - BRAKE COVER	4
19	315F137	BACK PLATE	1
* 20	315F117	FRICTION DISC	2
21	315F138	DISC PLATE	1
22	313F596	DISC HUB	1
23	81E44	ARMATURE - CD-5 BRAKE	1
24	18H5789	SPRING GUIDE	1
25	17Z166	SPRING	1-
26	18H5724D31	SPRING SPACER	1-
27	981A5-10	SOLENOID PCT - INCLUDES COIL	1-
		GASKET - SC42 W/ DRY BACK ADHESIVE 1/8 X 1/4 X 48-1/2 IN LG	1
28	314F348	BRAKE COVER	1
29	3616V007	LOCKWASHER - 1/4 IN	4
30	0746V117	SLOTTED HEX HD SCREW - 1/4 X 1-1/2 IN 310CE1297	4

* - RECOMMENDED SPARE

Harnischfeger

P&H

milwaukee, wisconsin 53201

WHEN ORDERING PARTS ALWAYS GIVE MODEL AND MACHINE SERIAL NUMBER

EQUALIZER ASSEMBLY

REF.	PART NO.	DESCRIPTION	AMT.
1	9307H147-2	T-62379-80 EQUALIZER ASSEMBLY INCL. REF. 2 THRU 6	1-
2	318H3145	LINK	1-
3	319H1338	SHEAVE PIN	1
	44Z1D12	W/ GREASE FITTING	1
4	2201V120	COTTER PIN - 3/8 IN X 3 IN LG	1
5	307H124	SHEAVE	1
6	25Z573D12	BEARING	2
7		NOT USED	
8	19F71D74	PIN FOR EQUALIZER	1-
9	2201V122	COTTER PIN	2-

Harnischfeger



milwaukee, wisconsin 53201

LIMIT SWITCH DRIVE

REF.	PART NO.	DESCRIPTION	AMT.
1	3100F661F2	T-62379-8C LIMIT SWITCH DRIVE ASSEMBLY CONSISTS OF REF. 2 THRU 16	1
2	301F117C	PINION SHAFT & WORM	1
3	318H423	COLLAR	1
4	18Z2D18	SNAP RING	2
5	25T816D2	BALL BEARING	2
6	316F1221	BRACKET	1
7	3616V007	LOCKWASHER - 1/4 IN	4
8	0626V009	SCREW-HEX HD. CAP-1/4 IN - 20 X 1-3/4 IN	2
9	25T816D4	BEARING	1
	18F682D339	OIL SEAL - NOT SHOWN	1
10	0626V006	CAP SCREW HEX HD. 1/4 IN. - 20 X 1 IN.	2
11	18Z2D56	SNAP RING	1
12	25T816D1	BALL BEARING	1
13	316H556	BRACKET	1
14	18H4148D9	LOCKWASHER - 5/16 IN CTSK. SHAKEPROOF	2
15	0644V119	SCREW-FL. HD. MACH. 5/16 IN - 18 X 1-1/2 IN	2
16	303H18	SPIRAL GEAR & SHAFT	1
17	2508V055	RIVET-FLAT HD-3/16 IN X 1-1/8 IN LG	2
18	310H214	LIMIT SWITCH SHAFT	1
19	45Z91D2	O-RING	1
20	479Q35D2	LIMIT SWITCH	1-
		SEE ILLUSTRATION HFE-1A-3 FOR DETAILS	
21	0636V069	SCREW - SLOTTED FILL HD. #10-24 X 1-3/4 IN	4
22	316F2961	LIMIT SWITCH SUPPORT	1
23	3616V008	LOCKWASHER - 5/16 IN	2
24	0626V020	SCREW - HEX HD. CAP - 5/16 IN - 18 X 5/8 IN	2
25	2036V005	NUT - HEX - #10-24	4
26	3616V005	LOCKWASHER - #10	4

Harnischfeger



milwaukee, wisconsin 53201

WHEN ORDERING PARTS ALWAYS GIVE MODEL AND MACHINE SERIAL NUMBER

GEARED LIMIT SWITCH

REF.	PART NO.	DESCRIPTION	AMT.
1 *	479Q35D2	T-62379-80 GEARED LIMIT SWITCH 2 NO - 2 NC NEMA 4 RIGHT HAND SHAFT INCLUDES REF 2 THRU 6	1-
2	4079Z37	SNAP SWITCH & DRIVE GEAR KIT EACH INCLUDES REF 3 THRU 5	2
3	4079Z36	SNAP SWITCH	1
4	4020Z1	MACHINE SCREW, 6-32 X 7/16 IN LG	2
5	4001Z1	CAM AND DRIVE GEAR ASSEMBLY	1
6	4079Z120	CAM ADJUSTING TOOL	1

* - RECOMMENDED SPARE

Harnischfeger

milwaukee, wisconsin 53201

WHEN ORDERING PARTS ALWAYS GIVE MODEL AND MACHINE SERIAL NUMBER

BOTTOM BLOCK ASSEMBLY

REF.	PART NO.	DESCRIPTION	AMT.
1	3100E1396-4S	T-62379-80 BOTTOM BLOCK ASSEMBLY - W/ SAFETY HOOK CONSISTS OF REF 2 THRU 21	1-
2	314E791	SHEAVE GUARD	1
3	0860V111	RD HD MACHINE SCREW - 1/4-20 X 5/8 IN	4
4	18H4146D9	SHAKEPROOF LOCKWASHER - 1/4 IN	4
5	0860V109	RD HD MACHINE SCREW - 1/4-20 X 1/2 IN	4
6	18H4146D9	SHAKEPROOF LOCKWASHER - 1/4 IN	4
7	18Z2D24C	SNAP RING	2
8	319F36-F1	SHEAVE PIN	1
9	316H926	END PLATE	2
10	307F235	SHEAVE	2
11	25Z489D8	ROLLER BEARING	4
12	18Z2D238	SNAP RING	4
13	308E294	SIDE PLATE ASSEMBLY	2
	322H32D4	COUNTERWEIGHT	2-
14	318H2394	SPACER	1
15	319H1263	PIN	2
16	2029V016	NUT - SLOTTED HEX - 1-3/4 IN - 5	1
17	25Z338D32	BEARING	1
18	308F572	CROSS HEAD	1
19	19Z8D164	ROLL PIN	1
20	308F567F1-S76	HOOK	1-
21	8Z64D23	SAFETY LATCH KIT	1
22 *	9308F115-29	CABLE ASSEMBLY - NOT SHOWN	1-

* - RECOMMENDED SPARE

Harnischfeger

milwaukee, wisconsin 53201

WHEN ORDERING PARTS ALWAYS GIVE MODEL AND MACHINE SERIAL NUMBER

3100F2037

BILL OF MATERIAL									
NO REQUIRED	FIG.	DESCRIPTION	PEN NO	MATERIAL	PART NO	SEMI-FIN	PART NO	UNIT WGT	ITEM NO
	2								
1		TRUNNION			1BQ204				1
2		ROPE CLAMP							3
1		SLEEVE			18Z2767				4
1		SNAP RING			18Z2-D137				5
2		S HOOK			8Z342				6
2		1/4"-20 UNC H.H.C. 1/2"			0626V002				7
2		1/4" PLAIN WASHER			3611V005				8

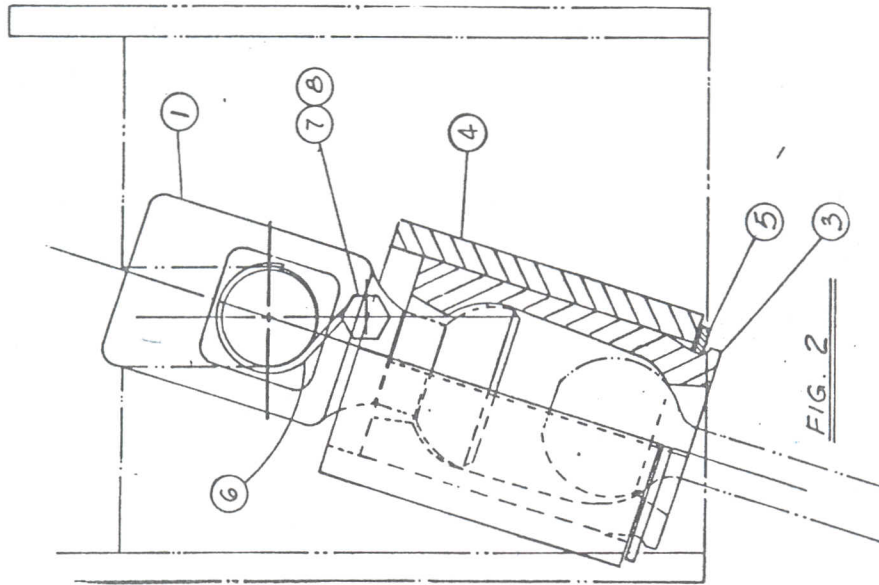


FIG. NO	PARTS	ROPE	ROPE	DIA
1	214 P.S.	1/4"	3/8"	
2	214 P.S.	1/4"	5/8"	

FULL SCALE

0 .02 GRAD. 1 .05 GRAD. 2 .10 GRAD. 3

GENERAL TOLERANCE NOTES			
DECIMAL PLACE	STRUCTURAL	MACHINING	
11 PLACE 0.0	± .240"	± .040"	
12 PLACE 0.00	± .120"	± .020"	
13 PLACE 0.000	± .060"	± .010"	
14 PLACE 0.0000	± .030"	± .005"	

EXCEPTIONS:
 ① TOL BELOW ± .005" TO BE SHOWN TO UPPER AND LOWER LIMIT
 ② V- INDICATES USE OF DECIMAL PLACE TOLERANCE OTHER THAN INDICATED BY ORIGINIAL DECIMAL DIMENSION

CHANGE	DATE	NAME	SUFFIX	NO.
A	11/1/63	A.V.		1
B	11/1/63	A.V.		2
C	11/1/63	A.V.		3
D	11/1/63	A.V.		4
E	11/1/63	A.V.		5
F	11/1/63	A.V.		6
G	11/1/63	A.V.		7
H	11/1/63	A.V.		8
I	11/1/63	A.V.		9
J	11/1/63	A.V.		10
K	11/1/63	A.V.		11
L	11/1/63	A.V.		12
M	11/1/63	A.V.		13
N	11/1/63	A.V.		14
O	11/1/63	A.V.		15
P	11/1/63	A.V.		16
Q	11/1/63	A.V.		17
R	11/1/63	A.V.		18
S	11/1/63	A.V.		19
T	11/1/63	A.V.		20
U	11/1/63	A.V.		21
V	11/1/63	A.V.		22
W	11/1/63	A.V.		23
X	11/1/63	A.V.		24
Y	11/1/63	A.V.		25
Z	11/1/63	A.V.		26

ALL DIMENSIONS ARE RESERVE PROPERTIES OF HARMISCHTEG. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM HARMISCHTEG.

PART NO	HEAT TREATMENT OR PROCESSING SPECIFICATIONS	ESTIMATED WEIGHTS
SURFACE	ROUGHNESS NOTE	RGH
SURFACE MARKED THUS "X" MUST BE WITHIN A ROUGHNESS VALUE OF 800 MICROINCHES UNLESS OTHERWISE SPECIFIED		
SCALE	DATE	HARMISCHTEG
1-1	5-15-79	P&H
BY	SIMILAR TO	DESIGN
BY	BASIC LIST NO	MODEL
BY		C-D-E HOISTS
BY		3100F2037
BY		DEAD-END APPLICATION
BY		PROD
BY		3100F2037
BY		12
BY		13

ILLUSTRATION HCM-19
306350 & 351

SHEET 1

REF.	PART NUMBER	DESCRIPTION	AMT.
1	324M 1243	HEW 324 MOTOR ASSEMBLY COMPLETE	1
		DESCRIPTION--	
		CLASS F 3 PHASE	
		575. VOLT 60 HZ 20.00 HP 1720 RPM	
		MOTOR INCLUDES 83 MAGNETORQUE	
		BRAKE. SPECIFY WITH OR WITHOUT	
		BRAKE WHEN ORDERING COMPLETE MOTOR	
		ASSY. CONSISTS OF THE FOLLOWING	
3	525H 17	BEARING RETAINER(FRONT INNER)	1
4	25Z 509D 8	BEARING(FRONT END)	1
5	18Z 2D 64	SNAP RING-FRONT END	1
6	9572A 1- 12	FRONT HEAD	1
8	520H 778	BRUSHHOLDER STUD	2
9	518F 134D 84	BRUSHHOLDER STUD INSULATOR	2
10	9573F 76- 1	BRUSHHOLDER ASSEMBLY	3
		INCLUDES THE FOLLOWING	
	17Z 548D 4	BRUSH HOLDER SPRING ASSEMBLY	AR
	19Z 223D 19	ROLL PIN .078 X 3/4	AR
11	73Q 10C 1	CARBON BRUSHES	3
18	525F 143	FRONT CUTTER BEARING CAP	1
23	514F 1045D 1	BRUSHHOLDER HEAD COVER(SLIP RINGEND)	1
28	514H 420	TERMINAL BOX COVER PLATE(MCIST MOTOR)	1
31	2161V 003	3/8-16 HEX JAM NUT(BRUSHHOLDER STUD)	2
33	520H 773	WING NUT(FRONT HEAD COVER)	1
34	520H 774	EYEBOLT(FRONT HEAD COVER)	1
35	20Q 1D 12	SHOULDER BOLT(FRONT HEAD COVER)	1
45	521F 6D 8	BASIC HARDWARE KIT	1
51	10G 2058-	CABLE ROTOR LEADS(TOTAL FEET)	6
53	79F 1376D 1	LUGS ROTOR TERM.LEADS(EXTERNAL CCM)	3
54	79F 1376D 2	LUGS ROTOR TERM.LEADS INT.E.H.CCM)	3
200	324M02204AF	STATOR ASSEMBLY	1
		ASSY. CONSISTS OF REF 201-299	
201	324M01204F	SET STATOR COILS	1
202	570F 81D 41	SLCT INSULATION FOR 1 SLCT	48
300	3244M00210AF53R	ROTOR ASSEMBLY	1
		ASSY. CONSISTS OF REF 301-399	
		AND ALL BEARINGS, INNER RETAINERS,	
		AND INTERNAL FANS FROM ITEMS 3-99	
301	324M02053F	SET ROTOR COILS	1
302	570F 80C 29	SLCT INSULATION FOR 1 SLCT	36
306	510E 444F 1	SHAFT ASSEMBLY	1
307	9577A 5- 1	SLIP RING ASSEMBLY	1

NOTE - REFERENCE ITEMS NOT LISTED DO NOT APPLY

MAGNETORQUE BRAKE

REF.	PART NO.	DESCRIPTION	AMT.
		T-62379-8C	
		MOTOR MOUNTED BRAKE PARTS INCLUDED	
		IN MOTOR ASSEMBLY	
		INCLUDES THE FOLLOWING	
402	SOLD AS A	BRACKET	1
403	COMPLETE UNIT	FIELD ASSEMBLY	1
404	WITH MOTOR	ROTOR	1
405	OR	GUARD	1
406	MOTOR AND	FAN	1
407	MAGNETORQUE	DRILLED CAP SCREW	4
426	CAN BE	TERMINAL BOX BASE	1
427	RETURNED TO	CONDUIT NIPPLE 1/2	1
431	FACTORY	TERMINAL BOX COVER	1
432	FOR SERVICE	TERMINAL BOX GASKET	1
		NOTE-	
		REFERENCE ITEMS NOT LISTED DO NOT APPLY	

Harnischfeger



milwaukee, wisconsin 53201

WHEN ORDERING PARTS ALWAYS GIVE MODEL AND MACHINE SERIAL NUMBER

LIMIT SWITCH ASSEMBLY

REF.	PART NO.	DESCRIPTION	AMT.
1	100E696F7	T-62379-80 LIMIT SWITCH ASSEMBLY WITH ENCLOSURE INCLUDES REF 2 THRU 23	1
2	100E695F7	LIMIT SWITCH ASSEMBLY WITHOUT ENCLOSURE INCLUDES REF 3 THRU 16	1
3	18H2853	SNAP LOCK	1
4	3631V005	WASHER, PLAIN 1/4 IN SAE	1
5	2201V017	PIN, COTTER 3/32 IN X 3/4 IN	2
6	79H657	WASHER, THRUST	2
7	17H160	SPRING	1
8	25Z151	BEARING	2
9	79R8D1	FRAME, CAM, SHEAVE & SHAFT ASSEMBLY	1
10 *	979H101	CONTACT	4
11 *	979H99	CONTACT FINGER	2
12		NOT USED	
13	20Z40D4	SCREW, PK TYPE Z RD HD #4 X 5/16 IN	8
14	79H652	PLATE, KEEPER	2
15		NOT USED	
16	0660V035	SCREW, LONG BINDING MACH HD #6-32 X 1/4	4
17	14E2780	ENCLOSURE, BOTTOM	1
18	20Z869D2	GROMMET	1
19	3616V005	LOCKWASHER, #10	4
20	0660V073	SCREW, RD HD MACH #10-24 X 3/8 IN	4
21	14E2781	ENCLOSURE, TOP	1
22	0636V060	SCREW, RD HD MACH #10-24 X 1/2 IN	4
23	3616V005	LOCKWASHER, #10	4
24	1030Z53	NYLON CORD, 1/8 IN DIA. ORDER BY LENGTH	1
25	9322F6-2	WEIGHT ASSEMBLY	1

* - RECOMMENDED SPARE

Harnischfeger



milwaukee, wisconsin 53201

MAGNETORQUE SPED CONTROL

REF.	PART NO.	DESCRIPTION	AMT.
		T-62379-80	
1	314E778D1	CONTROL COVER	1-
2	318F1006D8	CONTROL BACK PLATE	1
3	479U97D11	REVERSING SWITCH-SIZE 1-3/4, 4 POLE-HOIST SEE ILLUSTRATION HFE-5A FOR DETAILS	1
4		COIL - INCLUDED WITH REF 3	
5	480Z5D65	THERMAL ELEMENT - HOIST E-65	3
6		NOT USED	
7		NOT USED	
8 *	75Z578D1	RECTIFIER	1
9 *	75Z165D2	TRANSFORMER - BRAKE	1
10		LIMIT SWITCH SEE ILLUS. HHL-38B FOR DETAILS	
11 *	75Z196D2	TRANSFORMER - CONTROL	1
12	79Z792	TERMINAL BOARD	1
13	479U88D11	ACCELERATOR-SIZE 1-3/4, 2 POLE-HOIST	2
	479U88D81	ACCELERATOR-SIZE 1-3/4, 2 POLE-HST W/TIMERS SEE ILLUSTRATION HFE-5A FOR DETAILS	3
14		COIL - INCLUDED WITH REF 13 FOLLOWING ITEMS NOT SHOWN	
15	79Z2189	FUSE BLOCK	1
16	79Z95D5	FUSE	1
17	479U78D5	RELAY	1
		SEE ILLUSTRATION HFE-8 FOR DETAILS	
18	479U85D11	REVERSING SWITCH-SIZE 1, 2 POLE-MAGNETORQUE SEE ILLUSTRATION HFE-5A FOR DETAILS	2
19		COIL - INCLUDED WITH REF 18	
20	479Z23D1	AUXILLARY CONTACT - N.C.	2
21	479Z23D2	AUXILLARY CONTACT - N.C.	2
22	75Z328D2	TRANSFORMER	1
23	79Z1381D1	FUSE BLOCK	1
24	79Z96D8	FUSE	2
25	L# 61052-1	SERIES RELAY SEE ILLUSTRATION HCC-55 FOR DETAILS	1
26	75Z340	RECTIFIER	1
27	79Z927	SURGE SUPPRESSOR	1
28	32H198	NAMEPLATE	1
29	79Z1733D3	CIRCUIT BREAKER	1
30	314E1154D1	RESISTOR GUARD	1
31	318F161C	RESISTOR SUPPORT	1

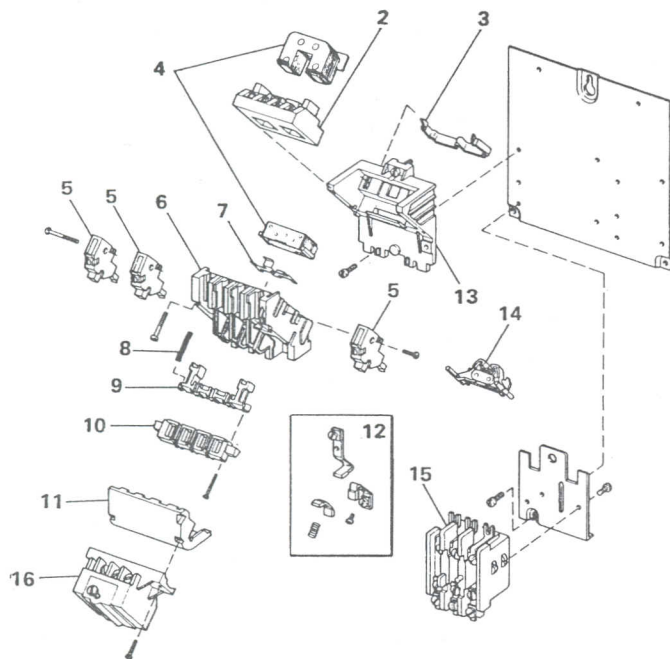
* - RECOMMENDED SPARE

Harnischfeger



milwaukee, wisconsin 53201

ILLUSTRATION HFE-5A-1 CONTACTOR/REVERSING SWITCH



CONTACT REPLACEMENT

1. Open and tag main disconnect switch.
2. Remove overload block (15) and mounting plate.
3. Unclip and remove cover (11).
4. Remove two screws attaching cross arm (10) to base (9).
5. Remove movable contacts and springs from cross arm (10).
6. Disconnect leads from stationary contacts and remove stationary contacts from contact board (6).
7. Install new contacts and springs from contact kit (12).
8. Reconnect leads and install cover (11) and overload block (15).
9. Close main disconnect switch.

COIL REPLACEMENT

1. Open and tag main disconnect switch.
2. Push ears of spring clip (3) outward. Coil (2) and armature will release for easy removal.
3. Insert armature in new coil and reinstall. Push in against release spring until clip (3) engages coil.
4. Close main disconnect switch.

				Part Number				Quantity	
Ref. No.	Description			Size 0	Size 1	Size 1-3/4	Size 2	C	R
* 2	Coil	Volts	Hertz						
		24	60	475Q1D6	475Q1D6	475Q1D6	475Q1D6	1	2
		120/240	60	475Q1D1	475Q1D1	475Q1D1	475Q1D1	1	2
		208	60	475Q1D2	475Q1D2	475Q1D2	475Q1D2	1	2
		240/480	60	475Q1D2	475Q1D2	475Q1D2	475Q1D2	1	2
		380	60	475Q1D5	475Q1D5	475Q1D5	475Q1D5	1	2
		575	60	475Q1D3	475Q1D3	475Q1D3	475Q1D3	1	2
3	Coil Spring Clip			4079Z153	4079Z153	4079Z153	4079Z153	1	2
4	Magnet & Armature Assembly			4079Z154	4079Z154	4079Z154	4079Z154	1	2
5	Auxiliary Contact, N.O.			479Z23D1	479Z23D1	479Z23D1	479Z23D1	AR	AR
	Auxiliary Contact, N.C.			479Z23D2	479Z23D2	479Z23D2	479Z23D2	AR	AR
6	Contact Board Only			4079Z157	4079Z157	4079Z157	4079Z168	1	2
7	Armature Spring Clip			4079Z158	4079Z158	4079Z158	4079Z158	1	2
8	Cross Arm Spring			4079Z159	4079Z159	4079Z159	4079Z159	2	4
9	Cross Arm Base			4079Z160	4079Z160	4079Z160	4079Z169	1	2
10	Cross Arm Only			4079Z161	4079Z161	4079Z161	4079Z170	1	2
11	Cover			4079Z162	4079Z162	4079Z162	4079Z176	1	2
*12	Contact Kit			4079Z149	4079Z150	4079Z151	4079Z152	AR	AR
13	Base			4079Z163	4079Z163	4079Z163	4079Z172	1	2
14	Mechanical Interlock Assembly			4079Z164	4079Z164	4079Z164	4079Z164	—	AR
15	Overload Block, Bimetal, 3 Pole			4079Z165	4079Z165	4079Z166	4079Z175	AR	AR
16	Timer, On-Delay			479U114	479U114	479U114	479U114	AR	AR

C — Contactor
R — Reversing Switch
AR — As Required
* — Recommended Spare

Harnischfeger
P&H
milwaukee, wisconsin. 53201

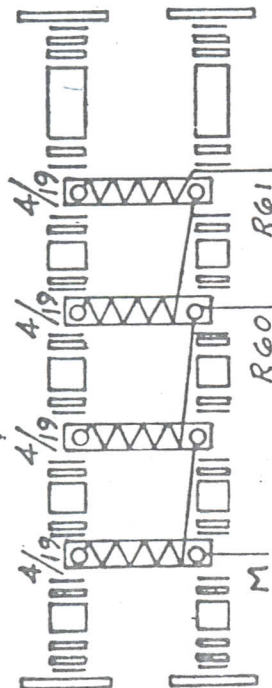


FIG 2	FIG 1	DESCRIPTION	QHS	IRT #
	1	FRAME (SMALL)		L# 42994-1
	4	RESISTOR UNIT	.87	L# 42233
	16	MICA WASHER		18H4152-D1
	20	STEEL WASHER		18H4198
	3	T & B SOLDERLESS LUG		79Z280
	8	PIPE SPACER		18H3602
	4	TERMINAL BAR (LONG)		80H753

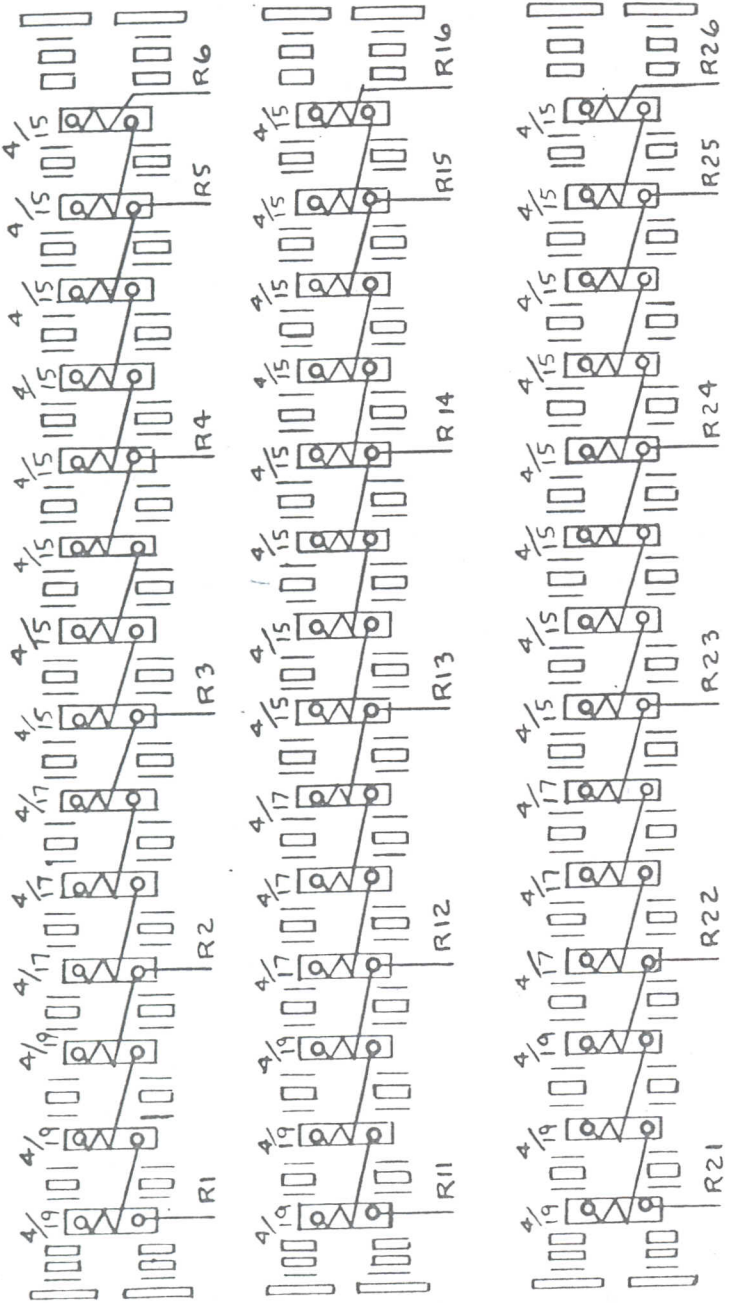
MAGNETORQUE RESISTOR ASSEM. 83H BRAKE, 20H.P. 1740 RPM MOTOR

DR. BY RFP	HARNISCHFEGGER CORPORATION ELECTRICAL DEPARTMENT	
CH. BY EAB	6-23-67	75244 RES.
APP. BY HED	DATE	

BILL OF MATERIAL

NO. REQ.	DESCRIPTION	PART NO.	IT N
3	FRAME (SMALL)	L#429941	1
9	UNIT 4/19 *	980F16-5	2
9	UNIT 4/17 *	980F16-3	3
24	UNIT 4/15 *	980F16-1	4
18	SOLDERLESS LUG #3530IT&B	79Z280	5
90	STEEL WASHER	18H4198	6
156	MICA WASHER	18H4152D	7

* See Drugs. Following
for details



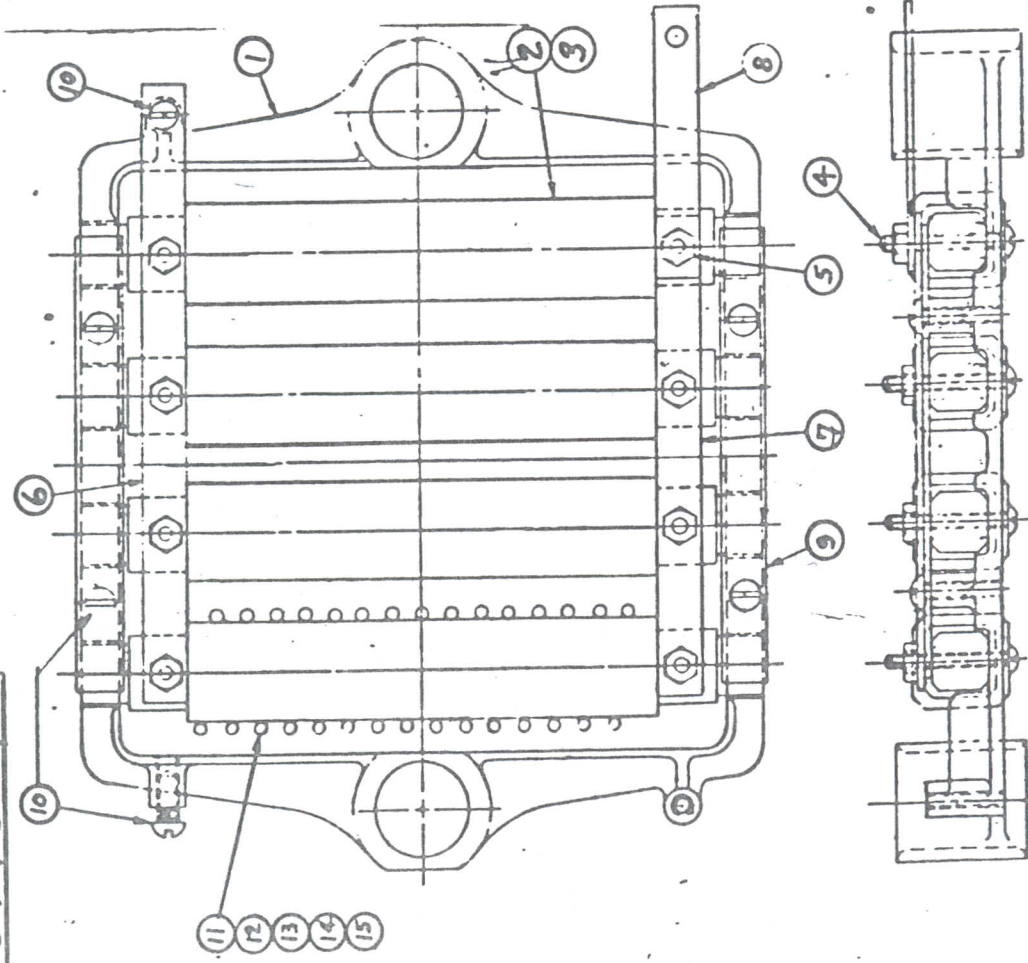
1015

75048 W3 RESISTOR

HARNISCHFEGGER CORPORATION
ELECTRICAL DEPARTMENT

DATE 5-23-62 75048 RES.

80F16-182



BILL OF MATERIAL				UNIT WEIGHT		ITEM NO.
DESCRIPTION	PART NO.	PART NO.	PART NO.	BOB	FIN	
1 1 FRAME	80F277-C1					1
1 1 SPOOLS	80H937					2
- SPOOLS	80H884					3
8 8 SCREW #8-1" LG.	0860Y060					4
8 8 NUT #8-32	2136Y004					5
1 1 CONNECTOR	80H43					6
1 1 CONNECTOR	80H44					7
1 1 CONNECTOR	80H47					8
2 2 CLAMP	32H303					9
6 6 SCREW #10 x 1/2" LG.	0860Y073					10
- 1 ADVANCE RES. WIRE	47-8" LG.					11
1 - #10 "	(.05002")					12
- #11 "	(.04926")					13
- #12 "	(.0403")					14
- #13 "	(.03509")					15
	TOTAL					

FULL SCALE

0.25 GRAD 1 .25 GRAD 2 .10 GRAD 3

GENERAL TOLERANCE NOTES

DECIMAL PLACE	STRUCTURAL	MACHINING
111 PLACE .00	± .040"	± .040"
111 PLACE .000	± .010"	± .010"
111 PLACE .0000	± .005"	± .005"
111 PLACE .00000	± .002"	± .002"

EXCEPTIONS:

1 TOL. BELOW ± .005" TO BE SHOWN TO UPPER AND LOWER LIMIT.

2 V ± INDICATES USE OF DECIMAL PLACE TOLERANCE OTHER THAN INDICATED BY ORIGINAL DECIMAL DIMENSION.

3 AS .010" - USE ONE DECIMAL PLACE TOL.

PROCESSING SPECIFICATIONS

PART NO.	HEAT TREATMENT OR PROCESSING SPECIFICATIONS	ESTIMATED WEIGHTS
80F277-C1	SURFACE ROUGHNESS NOTE	ROUGH
80H937	SURFACE MARKED THIS V MUST BE WITHIN A TOLERANCE VALUE OF 100 MICROINCHES	FIN

SCALE

12" = 1'-0"

DATE

10-14-55

BY

K.T.

DATE LISTED

10-16-74

BY

J.A.Y.

PROD.

B.B.

MODEL

A.T.

UNIT

4 PARALLEL TYPE 'B' ASSISTANCE

CONTROL LERS

980F16 F 182

80F16-182

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

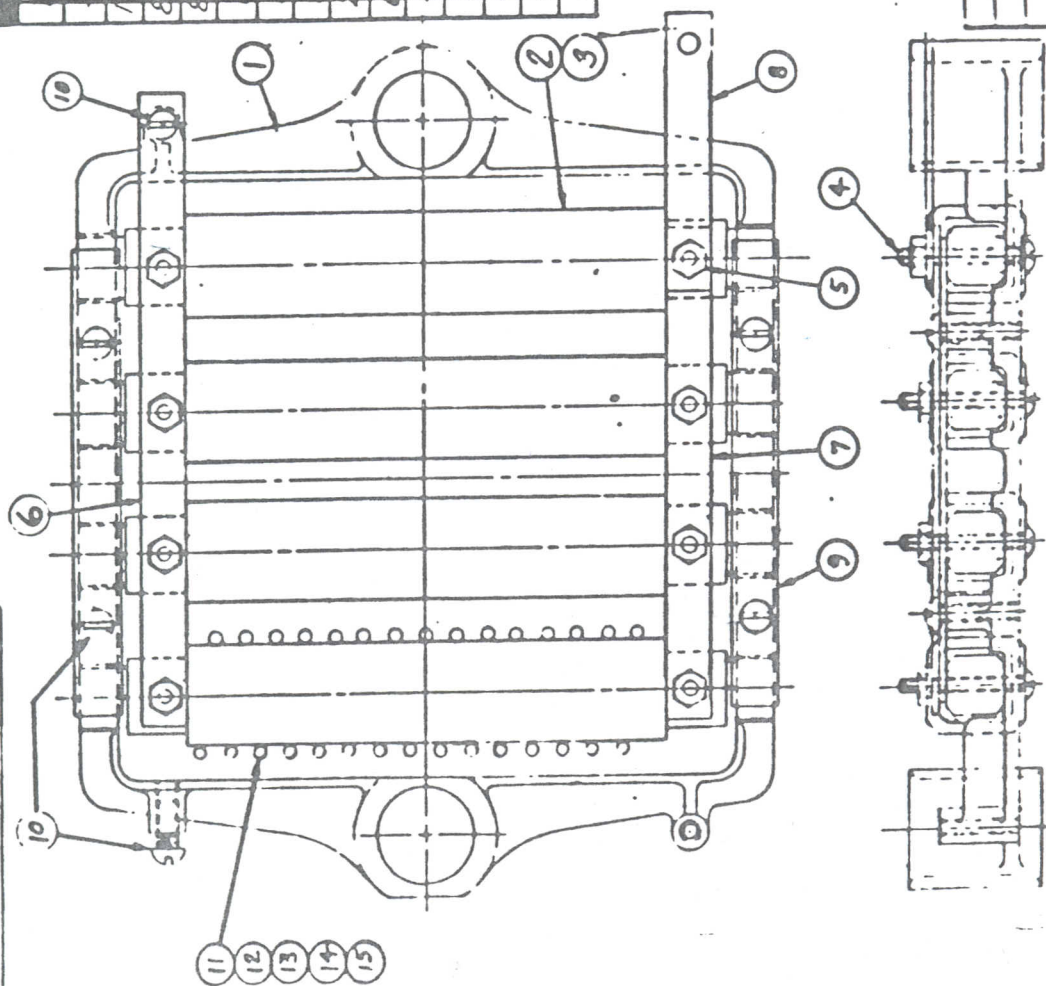
272

273

274

275

980 F16-F213



BILL OF MATERIAL			
QTY REQUIRED		DESCRIPTION	
F10	F16	PART NO	UNIT WEIGHT
3	2	80F277C1	80H937
1	1	80H937	80H884
1	1	80H884	0860Y060
8	8	0860Y060	2136Y004
8	8	2136Y004	80H43
1	1	80H43	80H44
1	1	80H44	80H47
1	1	80H47	32H303
2	2	32H303	0860Y073
6	6	0860Y073	47'-4" LG.
1	1	47'-4" LG.	TOTAL
1	1	47'-4" LG.	47'-0" LG.
1	1	47'-0" LG.	TOTAL
1	1	46'-4" LG.	TOTAL
1	1	46'-4" LG.	TOTAL
1	1	46'-0" LG.	TOTAL
1	1	46'-0" LG.	TOTAL
1	1	47'-0" LG.	TOTAL

NOTE: FOR INDIVIDUAL SPOOL ASSEMBLIES SEE 980H24

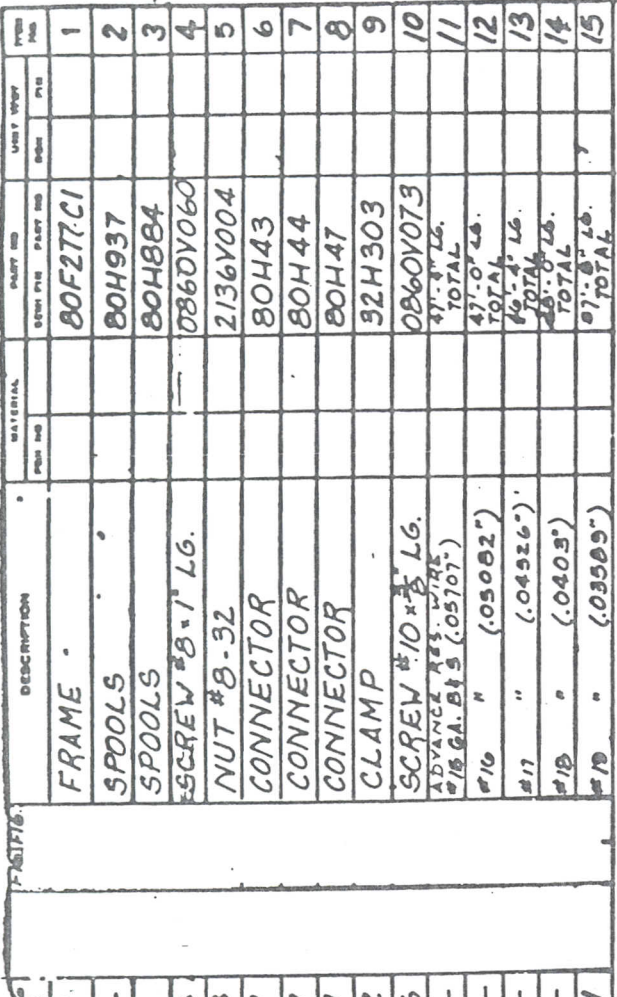
PART NO	10-14-55	DATE	10-14-55
SURFACE FINISH	K.T.	SCALE	12" = 1'-0"
ESTIMATED WEIGHTS	80H	UNIT	PARALLEL TYPE 'B'
REMARKS	4 PARALLEL TYPE 'B' RESISTOR		
MODEL	980 F16-F213		
CONTROL	980 F16-F213		
UNIT	980 F16-F213		

FULL SCALE

GENERAL TOLERANCE NOTES	STRUCTURAL	MECHANICAL
1. PLACE 0.00	1. 0.00"	1. 0.00"
2. PLACE 0.00	2. 0.00"	2. 0.00"
3. PLACE 0.00	3. 0.00"	3. 0.00"
4. PLACE 0.00	4. 0.00"	4. 0.00"

EXCEPTIONS:
 1. TOL BELOW 2.00" TO BE GIVEN TO WORK
 2. TOL ABOVE 2.00" TO BE GIVEN TO WORK
 3. TOL ABOVE 2.00" TO BE GIVEN TO WORK
 4. TOL ABOVE 2.00" TO BE GIVEN TO WORK

WARRANTY: THE MANUFACTURER ASSURES THAT THE PRODUCT IS FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF 12 MONTHS FROM THE DATE OF DELIVERY. THE WARRANTY DOES NOT COVER DEFECTS CAUSED BY MISUSE OR NEGLIGENCE.



PULL SCALE.		0 25 GRAD 1 25 GRAD 2 10 GRAD 3													
<table border="1"> <tr> <th colspan="2">GENERAL STRUCTURAL NOTES</th> </tr> <tr> <th>BASICAL PLACE</th> <th>STRUCTURAL</th> </tr> <tr> <td>111 PLACE 0 0</td> <td>1 000' 2 000'</td> </tr> <tr> <td>111 PLACE 0 0</td> <td>2 100' 2 000'</td> </tr> <tr> <td>111 PLACE 0 000</td> <td>2 000' 2 000'</td> </tr> <tr> <td>111 PLACE 0 0000</td> <td>2 000' 2 000'</td> </tr> </table>				GENERAL STRUCTURAL NOTES		BASICAL PLACE	STRUCTURAL	111 PLACE 0 0	1 000' 2 000'	111 PLACE 0 0	2 100' 2 000'	111 PLACE 0 000	2 000' 2 000'	111 PLACE 0 0000	2 000' 2 000'
GENERAL STRUCTURAL NOTES															
BASICAL PLACE	STRUCTURAL														
111 PLACE 0 0	1 000' 2 000'														
111 PLACE 0 0	2 100' 2 000'														
111 PLACE 0 000	2 000' 2 000'														
111 PLACE 0 0000	2 000' 2 000'														
<p>EXCEPTIONS:</p> <p>① VEL. DELAY 2 000' TO BE CARRIED TO WINDS AND LOWER LIMIT.</p> <p>② V IS INDICATIVE USE OF INDICATED PLACE</p> <p>V-LENGTH OTHER THAN INDICATED BY 0' - CARRIED TO MAX. DIMENSION.</p> <p>AS 0 10 0' - 1 USE ONE DECIMAL PLACE VEL.</p>															
PART NO.		WEAT TREATMENT OR PROCESSING SPECIFICATIONS													
SURFACE SOURCEMENT NOTE		ESTIMATED WEIGHTS													
SURFACE MARKED THIS V MUST BE WITHIN A REQUIREMENT VALUE OF 500 MICRO-INCHES		TCH 2 1/2 IN													
SCALE DATE		HARDHANGER													
12 1/2 10 10-14-55		P&H													
NO. K T. K25X02		P&H													
NO. 8-10-74		GRADE LIST NO.													
JAY.		TYPE PARALLEL TYPE 'B' UNIT													
BY B.B.		PROV. 8000													
NO. 1		NO. 980 F16-F5													
DATE		DATE													
BY A.T.		DATE													
SUPPLY		DATE													
NO.		DATE													

THE NEW YORK PUBLIC LIBRARY
ASTOR LENOX TILDEN FOUNDATION
300 FIFTH AVENUE
NEW YORK 10017

CONTACTOR

REF.	PART NO.	DESCRIPTION	AMT.
1	479U78D5	T-62379-80 CONTACTOR, 2 POLE, 30 AMP; INCLUDES REF. 2 THRU 7	1-
2 *	475Z10D5	COIL	1
3	4079Z41	CONTACT BOARD, LESS HARDWARE	1
4	4079Z39	CROSS ARM, LESS HARDWARE	1
5 *	4079Z35 ✓	CONTACT KIT, INCLUDING SPRING	2
6	4079Z47	MAGNET AND ARMATURE KIT	1
7		NOT USED	

OAK CREEK.

- 671-4400

Linden-Mack.

600V

414

764

7505

SOAN

~~TAKALA~~

414-764-8414

FAX

414-764-8442

* - RECOMMENDED SPARE

Harnischfeger

P&H

milwaukee, wisconsin 53201

CV-3 RELAY

REF.	PART NO.	DESCRIPTION	AMT.
1	61052-1	T-62379-80 CV-3 RELAY ASSEMBLY COMPLETE	1
2 *	79H1125	INCL REF #2 THRU 20 W/O COIL STATIONARY CONTACT	1
3	0658V079	ROUND HEAD MACHINE SCREW	4
4	2038V005	HEX NUT	8
5	18H4146D7	LOCK WASHER	1
6	79H1124	MOVABLE CONTACT SUPPORT	1
7	17H341	SPRING	1
8 *	80H765	MOVABLE CONTACT	1
9	79F1551	STATIONARY CONTACT SUPPORT	1
10	79F1550	BASE	1
11	0861V032	ROUND HEAD MACHINE	3
12	18H7	WASHER	1
13	0827V036	HEX HEAD CAP SCREW 1/2 IN	1
	18H4146D11	W/ INTERNAL W/ER 3/8 IN	1
14	79H1123F1	ARMATURE ASSEMBLY INCLUI	1
15	20H2166	SPECIAL HEX HEAD 3/8 IN - 24	1
16	2165V003	HEX JAM NUT	1
17	17Z222	SPRING	1
18	18H4346	CUP WASHER	1
19	20H1617D1	FLEXIBLE NUT	1
20	0860V077	ROUND HEAD MACHINE SCREW	3
21 *	975F234-4	RELAY COIL	1
		DRAWING 100F299-1	

* - RECOMMENDED SPARE

Harnischfeger

P&H

milwaukee, wisconsin 53201

69