



Simplex

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INSTRUCTIONS

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CRANE DRIVE

MG SET - STATIC FIELD WARD-LEONARD

INSTALLATION - OPERATION - MAINTENANCE

Manufactured by
ALLENWEST
BRIGHTON
ENGLAND

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to Simplex - Allenwest Systems Products Brighton England.

A Member of the Simplex Electrical Group Ltd.

ALLENWEST - POWERCENTRE - SIMPLEX - WALLACETOWN

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TABLE I
Relationship Between Air Temperature,
Relative Humidity and Dew Point

AIR TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	DEW POINT (°C)
10	100	10
15	100	15
20	100	20
25	100	25
30	100	30
35	100	35
40	100	40
45	100	45
50	100	50
55	100	55
60	100	60
65	100	65
70	100	70
75	100	75
80	100	80
85	100	85
90	100	90
95	100	95
100	100	100
10	90	7.5
15	90	11.5
20	90	15.5
25	90	19.5
30	90	23.5
35	90	27.5
40	90	31.5
45	90	35.5
50	90	39.5
55	90	43.5
60	90	47.5
65	90	51.5
70	90	55.5
75	90	59.5
80	90	63.5
85	90	67.5
90	90	71.5
95	90	75.5
100	90	79.5
10	80	5.5
15	80	9.5
20	80	13.5
25	80	17.5
30	80	21.5
35	80	25.5
40	80	29.5
45	80	33.5
50	80	37.5
55	80	41.5
60	80	45.5
65	80	49.5
70	80	53.5
75	80	57.5
80	80	61.5
85	80	65.5
90	80	69.5
95	80	73.5
100	80	77.5
10	70	3.5
15	70	7.5
20	70	11.5
25	70	15.5
30	70	19.5
35	70	23.5
40	70	27.5
45	70	31.5
50	70	35.5
55	70	39.5
60	70	43.5
65	70	47.5
70	70	51.5
75	70	55.5
80	70	59.5
85	70	63.5
90	70	67.5
95	70	71.5
100	70	75.5
10	60	1.5
15	60	5.5
20	60	9.5
25	60	13.5
30	60	17.5
35	60	21.5
40	60	25.5
45	60	29.5
50	60	33.5
55	60	37.5
60	60	41.5
65	60	45.5
70	60	49.5
75	60	53.5
80	60	57.5
85	60	61.5
90	60	65.5
95	60	69.5
100	60	73.5

RECEIVING, HANDLING AND STORAGE

The equipment should be stored in a dry, clean, unobstructed area. It should be protected from moisture, dust, and other contaminants. The equipment should be stored in its original packaging, if available, to protect it from damage. The equipment should be stored in a location where it will not be subjected to excessive heat or cold. The equipment should be stored in a location where it will not be subjected to vibration or shock. The equipment should be stored in a location where it will not be subjected to electromagnetic interference. The equipment should be stored in a location where it will not be subjected to any other conditions that could damage it.

All equipment should be stored in a dry, clean, unobstructed area. It should be protected from moisture, dust, and other contaminants. The equipment should be stored in its original packaging, if available, to protect it from damage. The equipment should be stored in a location where it will not be subjected to excessive heat or cold. The equipment should be stored in a location where it will not be subjected to vibration or shock. The equipment should be stored in a location where it will not be subjected to electromagnetic interference. The equipment should be stored in a location where it will not be subjected to any other conditions that could damage it.

RECALIBRATION

If the equipment is not to be installed immediately, it should be stored in a dry, clean, unobstructed area. It should be protected from moisture, dust, and other contaminants. The equipment should be stored in its original packaging, if available, to protect it from damage. The equipment should be stored in a location where it will not be subjected to excessive heat or cold. The equipment should be stored in a location where it will not be subjected to vibration or shock. The equipment should be stored in a location where it will not be subjected to electromagnetic interference. The equipment should be stored in a location where it will not be subjected to any other conditions that could damage it.

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INTRODUCTION

This instruction book contains helpful suggestions for placing the Maxspeed Crane Drive equipment in service. It contains general information about drive operation and maintenance.

The operator and maintenance man should have access to a copy of this instruction book.

Additional instructions are included in the supplementary instruction publications and diagrams included in the instruction folder with the equipment.

RECEIVING, HANDLING AND STORAGE

RECEIVING

The equipment should be placed under adequate cover immediately upon receipt as packing cases are not suitable for out-door or unprotected storage. Each shipment should be carefully examined upon arrival and checked with the packing list. Any shortage or damage should be reported promptly to the carrier. If required, assistance may be requested from General Electric Company Speed Variator Products Operation, Erie, PA. When seeking assistance, please use requisition number and model number to identify the equipment. Telephone 814-455-3219.

HANDLING

Wall mounted power units can be transported by lift trucks with the forks completely under the base using care that the unit does not tip.

Floor mounted power units have lifting lugs, or holes for lifting bars, so that crane hooks may be used to pick up the unit. Spreader bars should be used as required.

STORAGE

If the equipment is not to be installed immediately, it should be stored in a clean, dry location at ambient temperatures from -20°C (-4°F) to $+55^{\circ}\text{C}$ (131°F). The surrounding air must be free of chemical and electrically conductive or corrosive contaminants.

Precautions should be taken to prevent condensation from forming within the equipment enclosure. If the storage environment exceeds a 15°C (27°F) drop in temperature at 50% humidity over a 4-hour period, a space heater should be installed inside each enclosure to prevent condensation.

(A 100 watt lamp can sometimes serve as a substitute source of heat). Higher humidities with smaller temperature changes will also cause condensation.

Condensation occurs when air containing some moisture is cooled below its dew point. The dew point represents saturation of the air, and is the temperature at which the moisture starts to condense into water. It is not a fixed temperature but rather is related to the initial temperature of the air and its relative humidity at that temperature. The amount of moisture that can be held in the air is related to the air temperature. The following examples illustrate some of these relationships.

TABLE I
Relationship Between Air Temperature,
Relative Humidity and Dew Point

AIR TEMP		RELATIVE HUMIDITY	WGT. OF MOISTURE IN 1 LB OF DRY AIR. GRAINS	DEW POINT	
$^{\circ}\text{F}$	$^{\circ}\text{C}$	%		$^{\circ}\text{F}$	$^{\circ}\text{C}$
104	40	100	345	104	40
104	40	80	270	97	36
104	40	40	130	75	24
104	40	10	32	37	3
50	10	100	54	50	10
50	10	80	42	43	6
50	10	40	21	25	4

In industrial drives, condensation is a possibility in applications where air temperature changes are large and rapid and/or the air is moist. For example, an outdoor crane operating in sunshine on a winter day, which then is shut down and parked in the shade will experience a rapid drop in temperature. This can result in condensation inside the equipment. Adding heat to keep the air temperature above its dew point can prevent condensation.

If storage temperatures below -20°C (-4°F) are likely to be present then auxiliary heat should be added in each enclosure to maintain temperature at or above -20°C . For assistance in heater size selection contact General Electric Company.

When a drive that has been in operation is shut down for either a short or extended period of time, it is recommended the environmental conditions be maintained the same as when in operation. Power, ventilation or heating and air-conditioning (if used) should be left on during the downtime to prevent large changes in temperature and possible moisture condensation.

SAFETY FOR PERSONNEL AND EQUIPMENT

The following paragraphs list some general safety reminders and safety recommendations to be followed when operating or installing this equipment.

WARNING

DENOTES OPERATING PROCEDURES AND PRACTICES THAT MAY RESULT IN PERSONAL INJURY OR LOSS OF LIFE IF NOT CORRECTLY FOLLOWED.

COLOR — BLACK OR WHITE LETTERING ON RED FIELD.

CAUTION

DENOTES OPERATING PROCEDURES AND PRACTICES THAT, IF NOT STRICTLY OBSERVED MAY RESULT IN DAMAGE TO, OR DESTRUCTION OF, THE EQUIPMENT.

COLOR — BLACK LETTERING ON AMBER FIELD.

NOTE

DENOTES AN OPERATING PROCEDURE OR CONDITION WHICH SHOULD BE HIGHLIGHTED.

COLOR — BLACK LETTERING ON A WHITE FIELD.

WARNING

IMPROPER LIFTING PRACTICES CAN CAUSE SERIOUS OR FATAL INJURY.

LIFT ONLY WITH ADEQUATE EQUIPMENT AND TRAINED PERSONNEL.

WARNING: HIGH VOLTAGE

ELECTRIC SHOCK CAN CAUSE PERSONAL INJURY OR LOSS OF LIFE. CIRCUIT BREAKERS, IF SUPPLIED AS PART OF THE TOTAL SYSTEM, MAY NOT DISCONNECT ALL POWER TO THE EQUIPMENT. SEE SYSTEM ELEMENTARY DIAGRAMS. WHETHER THE AC VOLTAGE SUPPLY IS GROUNDED OR NOT, HIGH VOLTAGE TO GROUND WILL BE PRESENT AT MANY POINTS. WHEN INSTRUMENTS SUCH AS OSCILLOSCOPES ARE USED TO WORK ON LIVE EQUIPMENT, GREAT CAUTION MUST BE USED.

WHEN ONE OF THE INSTRUMENT LEADS[®] IS CONNECTED TO THE CASE OR OTHER METAL PARTS OF THE INSTRUMENT, THIS LEAD SHOULD NOT BE CONNECTED TO AN UNGROUNDED PART OF THE SYSTEM UNLESS THE INSTRUMENT IS ISOLATED FROM GROUND AND ITS METAL PARTS TREATED AS LIVE EQUIPMENT. USE OF AN INSTRUMENT HAVING BOTH LEADS ISOLATED FROM THE CASE PERMITS GROUNDING OF THE CASE EVEN WHEN MEASUREMENTS MUST BE MADE BETWEEN TWO LIVE PARTS.

CAUTION

DO NOT REMOVE PRINTED CIRCUIT CARDS FROM THE EQUIPMENT WHILE POWER IS APPLIED. THIS CAN DAMAGE THE EQUIPMENT.

NOTE

ALWAYS READ THE COMPLETE INSTRUCTIONS PRIOR TO APPLYING POWER OR TROUBLE SHOOTING THE EQUIPMENT. FOLLOW THE START UP PROCEDURE STEP BY STEP.

READ AND HEED ALL WARNINGS, CAUTION AND NOTE LABELS POSTED ON THE EQUIPMENT.

CAUTION

DO NOT REMOVE INPUT POWER FROM THE DRIVE UNTIL IT HAS FULLY EXECUTED A STOP SEQUENCE, AS THIS CAN DAMAGE THE DRIVE SYSTEM.

INSTALLATION

LOCATION

DC drive power units are suitable for most factory areas where other industrial equipment is installed. They should be installed in well-ventilated areas with ambient temperatures ranging from 0°C (32°F) to 40°C (104°F) and relative humidities up to 90 percent. It should be recognized; however, that since the life expectancy of any electronic component decreases with increased ambient temperature, reduction of the ambient temperature will bring about extended component life. For example, longer component life should be expected if the ambient temperature is held between 20°C (68°F) and 30°C (87°F).

Proper performance and normal operational life can be expected by maintaining a proper environment for the drive system.

