735,736,737

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND-LANTDIV 4-4355/3 (Rev. 6/76) SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	# 742	11-8-79

FROM CONTRACTOR: CARDINAL CONT. CO. INC

TO: LOCKWOOD GREENE ENGRS.

PROJECT TITLE AND LOCATION: N.R.M.C. CAMP LEJEUNE, N.C.

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted **1925**

☐ Contractor Approved ☐ OICC Approval ☒ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
735	3.1	AMERICAN DARLING FLANGED GATE VALVES. CAT. DATA	7	R	05ZA 12/26
"	3.1	AMERICAN DARLING CHECK VALVES CAT. DATA	7	R	
736	3.1	*PACO - NON CLOG SEWAGE PUMP *EMPO CORNELL SUMP PUMP CAT. DATA	7	A D	
737	3.1	CONTROLL. SYSTEM : CONSOLIDATED ELECTRIC CO. CAT. DATA	7	AN	
742	3.2	*PACO NON-CLOG SEWAGE PUMP CERT. OF *EMPO-CORNELL SUMP PUMP CERT.	7	A D	
		PRESSURE GAUGES		R	

CONTRACTOR'S COMMENTS

*PLEASE NOTE DEVIATIONS LISTED ON PACO NON CLOG SEWAGE PUMP LETTER OF CERTIFICATION.

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 11-9-79

CONTRACTOR REPRESENTATIVE (Signature): Wm J. Haymaker

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

1. Resubmit Valves
2. Sump Pump & Certification do not match - Resubmit
3. Sewage Pumps & Deviation Approved
4. Pressure Gauges — Not listed - No Cert. - Resubmit

COPIES TO: ✓ ROICC (2) LANTDIV (1) A-E (1)

DATE: 12/26

SIGNATURE:

PACO®

July 30, 1979

East Coast Construction Company, Inc.
Post Office Box 5004
Jacksonville, North Carolina 28540

Re: N62470-77-C-7526
205 Bed Hospital
Naval Regional Medical Center
Marine Corps
Camp Lejeune, North Carolina

Gentlemen:

In regards to the above referenced project, we hereby certify that the equipment we propose to furnish, two PACO Model 52-41212- Type NCP Vertical Dry Pit Non Clog Centrifugals along with flexible shafting and drives, as shown in the accompanying submittal data conforms with section 15350, paragraph 4.1 through 4.1.12 of NAVFAC Specification No. 05-77-7526 with the following exceptions:

Paragraph 4.1.3 - No separate suction cover is required with PACO pump construction.
Paragraph 4.1.6 – Stuffing box wearing rings are the butt type.
Paragraph 4.1.10 - The suction elbow is cast separately.

We have certified separately that our pumps meet the duty conditions as specified.

PACIFIC PUMPING COMPANY
Division of Baltimore Aircoil Company

Certification of Conformity

David R. Everhart 7/30/79
David R. Everhart Date
Vice President PACO

1925

June E. Morris 7/30/79
Notary Public Date

OFFICIAL SEAL
JUNE E. MORRIS
NOTARY PUBLIC - CALIFORNIA
COUNTY OF ALAMEDA
My Commission Expires July 20, 1982

PACO®

GENE HEWITT COMPANY, INC.
Manufacturers Representative
P. O. BOX 10513 -:- PHONE 833-6779
RALEIGH, NORTH CAROLINA

SUBMITTAL DATA:

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

205 BED HOSPITAL
CAMP LEJEUNE, NO. CAROLINA
LOCKWOOD GREEN
EAST COAST CONSTRUCTION CO.
Spec Section 15350
Paragraph 4.1

Gentlemen:

We are pleased to offer for your consideration the following pumping equipment.

Sewage Pumping Station — 500 GPM @40 Ft. Hd.

2 - PACO model 52-41212 type NCP, vertical dry pit non clog centrifugals. Pump casing, bearing housing, pump and motor pedestals are class 30 cast iron in conformance with ASTM A48. The impeller is the enclosed type class 30 cast iron designed to pass 3" solids. The pump shaft is high grade carbon steel with a replaceable 303 stainless steel shaft sleeve. The seal chamber is provided with a double mechanical seal along with a water seal line from the pump discharge. Mounted in the water seal line is a 50 micron filter. Greaseable bearings have a minimum life of two years and are mounted in a moisture proof and dust proof housing. The pump has axial external impeller adjustment along with 303 stainless steel case/impeller wear plates to compensate for wear and decreased pump efficiency. The pump and motor shall be connected by intermediate line shafting (two column sections per pump with steady bearing). Also, provided for the intermediate line shafting is an OSHA accepted guard. Motors provided are standard vertical, solid shaft, normal thrust NEMA B, open drip proof type, each with 10HP, 3 phase, 460 volts, 1150 RPM. Also included is pump start up.

Very truly yours,

Hugh Kelly

PACIFIC PUMPING COMPANY
Division of Baltimore Aircoil Co.
Gene Hewitt Company

We certify the units will be manufactured as described above and will deliver 500 GPM @40 ft. hd @1150 RPM in accordance with the Hydraulic Institute Standards

David R. Everhart

David R. Everhart
Vice President

BMB/jm

1925

(a) Pumps:

Manufacture PACIFIC PUMPING COMPANY

Capacity 500 GPM @ 40 TDH

Operating Speed 1150 RPM

Shaft Size 2 1/8"

Shaft Material CARBON STEEL

Shaft Sleeve Material 303 STAINLESS STEEL

Impeller Material (Class) 30 CAST IRON

Casing Material (Class) 30 CAST IRON

Bearing Type REGREASEABLE BALL BEARING Number 212

Type Seal DOUBLE MECHANICAL - CARBON / CERAMIC - 50 MICRON FILTER

Suction and Discharge Size 4 x 4 inches

Weight 605 pounds

Horsepower required at Design Point 7.6 BHP

Maximum HP required at any Point 9.4 BHP

Shut-off Head 60 FEET

Pump Efficiency @ Design Point 66.5 %

Guaranteed Field Efficiency @ Design Point 63 %

Maximum Size Solids Passed 3"

Delivery Time 147 Calendar Days After Award of Contract

(b) Motors:

Manufacturer U.S. MOTORS

Housing Type WEATHER PROTECTED TYPE 1 AV4 Weight 310 Lbs

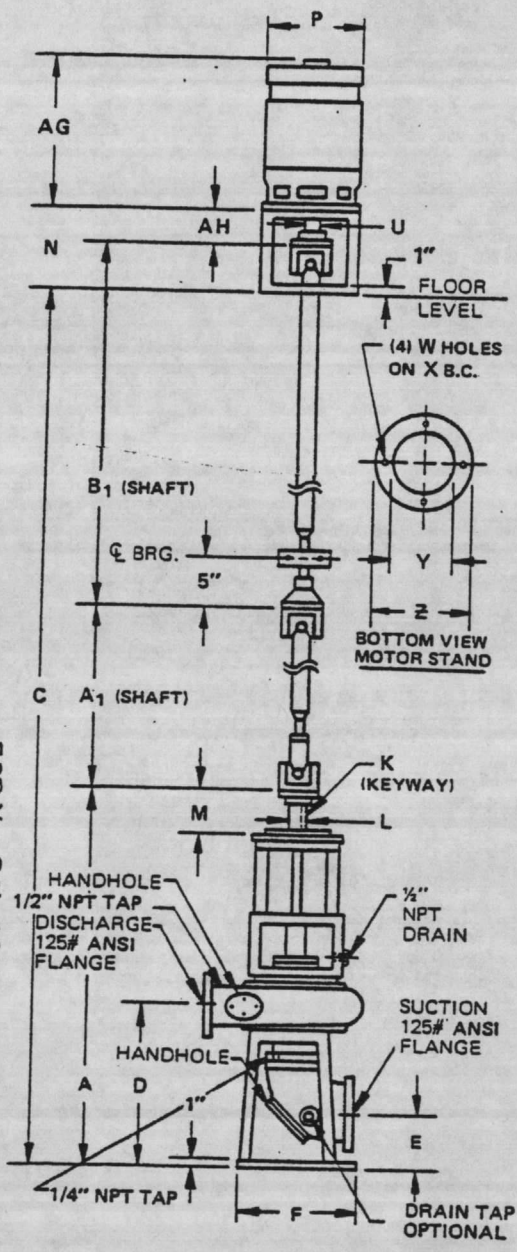
B.H.P. 10 Full Load Efficiency 86 %

1925

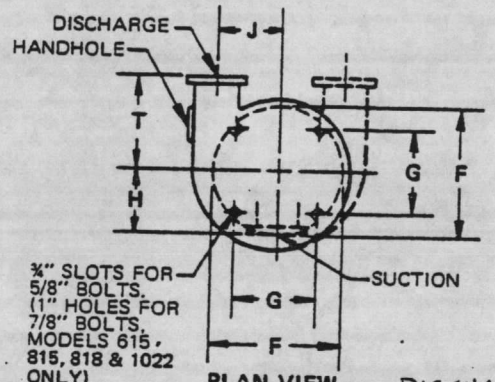
PACO

DIMENSIONS
PACO® NON-CLOG PUMPS, DRY PIT
TYPE NCP

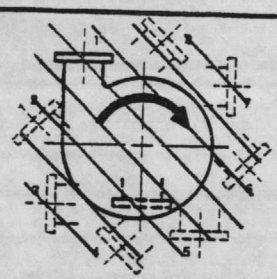
MODELS 412, 415, 612, 615, 815, 818 & 1022



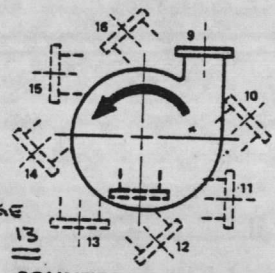
Flexible Shafting & Concrete Pump Base Dimensions are sized per the wet well suction elbow. An 8" long radius flanged by flared elbow - centerline to face of flare is 18" - per American Cast Iron, ANSI Class 125 A625



PLAN VIEW
(MOTOR NOT SHOWN)



~~CLOCKWISE ROTATION~~



DISCHARGE POSITION 13

COUNTER-CLOCKWISE ROTATION ✓

FOR MOTOR HP SELECTION CHART SEE PAGE 10 OF D2c.1

MOTOR FRAME	182 TP	184 TP	213 TP	215 TP	254 TP	256 TP	284 TP	286 TP	324 TP	326 TP	364 TP	365 TP	404 TP	405 TP	444 TP	445 TP
AG	13-1/8	14-7/8	16	16	20-1/4	20-1/4	20-1/4	20-1/4	22-5/8	22-5/8	24-5/8	24-5/8	34-3/8	34-3/8	39-3/4	39-3/4
AH	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	2-3/4	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2
N	8-1/2	8-1/2	8-1/2	8-1/2	8-1/2	8-1/2	8-1/2	8-1/2	14-1/2	14-1/2	14-1/2	14-1/2	14-1/2	14-1/2	14-1/2	14-1/2
P(MAX)	11	11	13	13	17	17	18	18	20	20	22	22	23	23	24	24
U	1-1/8	1-1/8	1-1/8	1-1/8	1-1/8	1-1/8	1-5/8	1-5/8	1-5/8	1-5/8	2-1/8	2-1/8	2-1/8	2-1/8	2-1/8	2-1/8
W	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	11/16	11/16	11/16	11/16	11/16	11/16	11/16	11/16
X	6-1/2	6-1/2	6-1/2	6-1/2	6-1/2	6-1/2	6-1/2	6-1/2	11-3/4	11-3/4	11-3/4	11-3/4	11-3/4	11-3/4	11-3/4	11-3/4
Y	5 1/8	5-1/8	5 1/8	5 1/8	5-1/8	5 1/8	5-1/8	5 1/8	9	9	9	9	9	9	9	9
Z	10	10	10	10	10	10	10	10	18	18	18	18	18	18	18	18

CERTIFIED JOB NO.

CUSTOMER: EAST COAST CONSTRUCTION CO. INC.

CUSTOMER ORDER NO.: 1025 ITEM:

PACO MODEL NO.: SZ-41212-35BD10

DUTY: RAW SEWAGE GPM: 500 TDH: 40

HP: 10 PH: 3 RPM: 1150 VOLTS: 460 Hz: 60

ROTATION: CW ☐ CCW ☒ BY: HEK DATE: 5-29-79

THIS PRINT IS NOT FOR CONSTRUCTION PURPOSES UNLESS CERTIFIED

* Motor Base 6" (Concrete)

* Pump Base 16 3/4" (Concrete)

PUMP MODEL NO.	DISCH. & SUCTION SIZE	BEARING FRAME NO.	A	SHAFT DIMENSIONS A1	B1	B2	C	D	E	F	G	H	J	K	L	M	T	SUCTION HANDHOLE	DISCHARGE HANDHOLE
412	4 x 4	160	43-1/8					21-3/4	9-1/4	20	13	6	9	5/16 x 5/32	1-3/8	3 5/8	10-1/2	4" x 6" oval	3-1/2" dia.
	4 x 6		43-1/8					21-3/4	7-1/2	20	13	8-3/8	9	5/16 x 5/32	1-3/8	3-5/8	10-1/2		
412	4 x 4	80	46-1/2	78	16 3/4		195 1/2	21-3/4	8-1/4	20	13	6	9	1/2 x 1/4	2-1/8	3	10-1/2	4" x 6" oval	3-1/2" dia.
	4 x 6		46-1/2					21-3/4	7-1/2	20	13	8-3/8	9	1/2 x 1/4	2-1/8	3	10-1/2		
415	4 x 6	80	46-1/2					22-3/8	7-1/2	20	13	8-3/8	10-1/4	1/2 x 1/4	2-1/8	3	10-1/2	4" x 6" oval	3-1/2" dia.
	4 x 6	90	48-3/8					22-3/8	7-1/2	20	13	8-3/8	10-1/4	5/8 x 5/16	2-3/8	4	10-1/2		
612	6 x 6	80	48-3/8					23	7-1/2	20	13	8-3/8	9-1/2	1/2 x 1/4	2-1/8	3	12-7/8	4" x 6" oval	6-1/8" x 6-1/8" oval
	6 x 6	90	57					30-6/8	14-1/2	22	12-3/4	9	9-1/2	1/2 x 1/4	2-1/8	3	12-7/8	4" x 6" oval	6-1/8" x 6-1/8" oval
615	6 x 6	80	55-1/2					31	12-3/4	22	12-3/4	8-3/8	10-1/2	1/2 x 1/4	2-1/8	3	13-1/2	4" x 6" oval	6-1/8" x 6-1/8" oval
	6 x 6	90	58					31	12-3/4	22	12-3/4	8-3/8	10-1/2	5/8 x 5/16	2-3/8	3-7/8	13-1/2		
	6 x 8	90	55-1/2					29-6/8	11-3/4	22	12-3/4	9	10-1/2	1/2 x 1/4	2-1/8	3	13-1/2	4" x 6" oval	6-1/8" x 6-1/8" oval
	6 x 8	90	58					29-6/8	11-3/4	22	12-3/4	9	10-1/2	5/8 x 5/16	2-3/8	3-7/8	13-1/2		
815	8 x 8	90/84	48-1/2					21-1/4	12	22	12-3/4	9-7/8	10-1/2	5/8 x 5/16	2-3/8	3-7/8	13-1/2	8" x 12" oval	6-1/8" x 6-1/8" oval
	8 x 10	90/84	60-1/2					21-1/4	10	22	12-3/4	11-7/8	10-1/2	5/8 x 5/16	2-3/8	3-7/8	13-1/2	8" x 12" oval	6-1/8" x 6-1/8" oval
818	8 x 10	94	57					28	10-1/4	20	23-1/2	11	13	5/8 x 5/16	2-3/8	3-7/8	13	4" x 6" oval	6-1/8" x 6-1/8" oval
	8 x 10	9K	CONTACT PRODUCT MARKETING DEPARTMENT															4" x 6" oval	6-1/8" x 6-1/8" oval
1022	10 x 12	9K	70-5/8					36-1/2	14-1/4	27	20	12	15-1/2	3/4 x 3/8	2-7/8	5	16	4" x 6" oval	8-3/16" dia.

1925

PACO

PACIFIC PUMPING COMPANY
DIVISION OF BALTIMORE AIRCOIL COMPANY, INC. A MERCK & CO., INC. SUBSIDIARY
P.O. Box 12924 • 845-92nd Ave. • Oakland, CA 94604

PACIFIC PUMPING COMPANY OF CANADA
DIVISION OF BALTIMORE AIRCOIL INTERAMERICAN CORPORATION
35 Sinclair Ave. • Georgetown, Ontario, Canada

Plant Locations: Oakland, CA • Dallas, TX • Los Angeles, CA • Portland, OR • Milford, DE • Georgetown, Canada

6/77 Supersedes 10/76

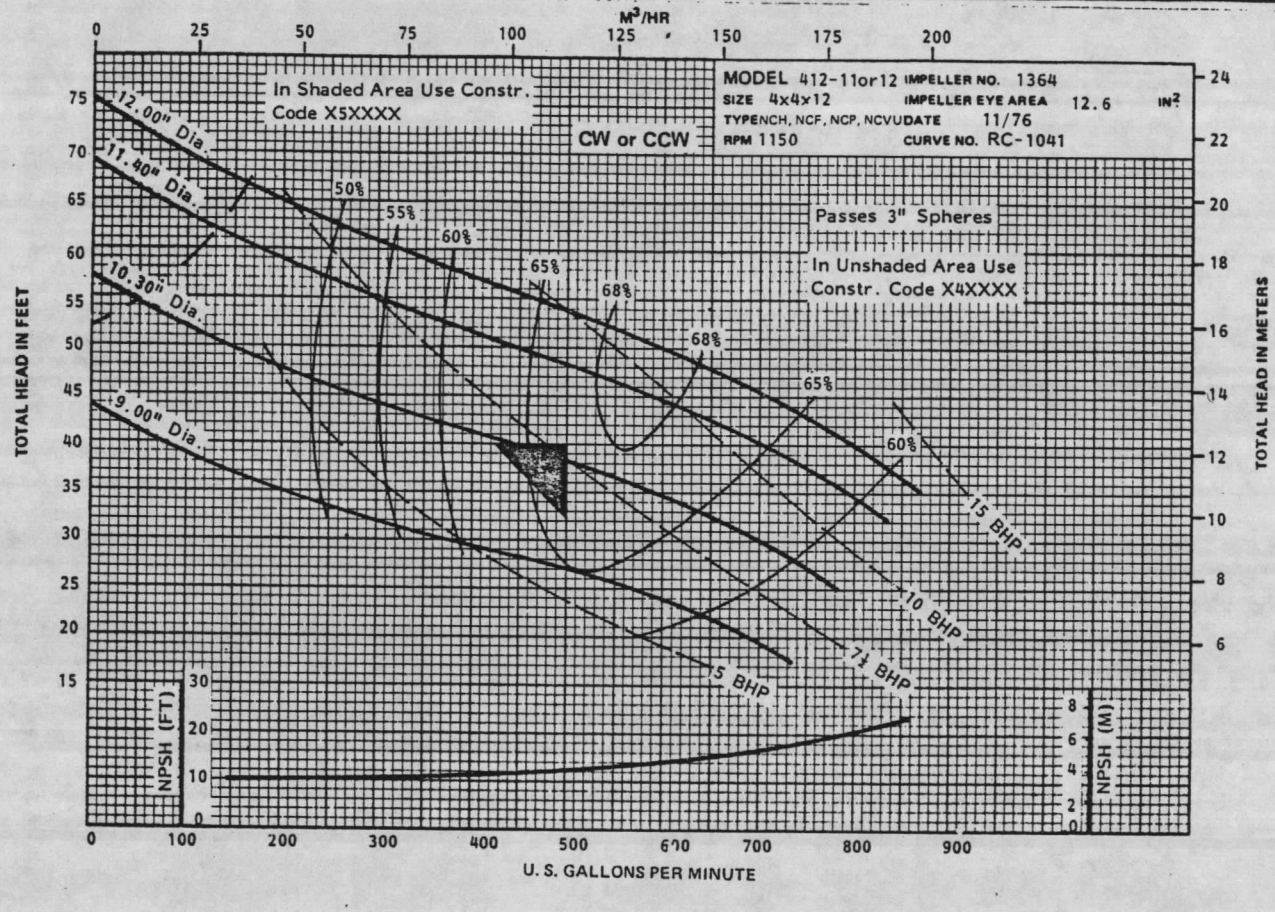
Printed in U.S.A.

PACO

PERFORMANCE CURVES PACO® NON-CLOG PUMPS, DRY PIT

D2b.

1150 RPM



1925

MOTOR DATA SUBMITTAL REQUIREMENTS

REQUIRED MOTOR DATA

Manufacturer U.S.	Motor Style (Model)
Rated Horsepower 10	Insulation Class B
Enclosure Type ODP	Maximum Ambient 40°C.
Frame 256 TP	Type Bearing Upper Ball bearing
Volts 460	Type Bearing Lower Ball bearing
Cycles 60 Hertz	KVA Code H
Phase 3	Full Load RPM 1165
Full Load Amps 13.6	Service Factor 1.15
NEMA Design B	AC or DC AC

1925

pressure gauges

Spec. Section 15350 Paragraph 4.8

- White dial, black graduations and numerals, 270 arc
- ¼" NPT male connection; ½ NPT optional — no charge over 1,000 psi

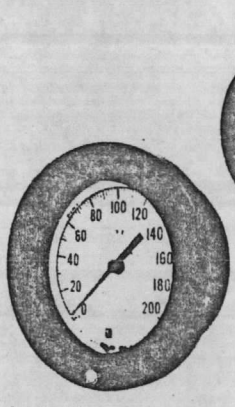
CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CAT. NO.	SERVICE	DIAL SIZES	RANGE LIMIT	BOURDON TUBE
THE ROYAL LINE-1/2% ACCURACY				
AA0	Vacuum, Pressure, Compound	3½", 4½", 6" 8½", 12"	10,000 psi	316 stainless steel
AA1	Vacuum, Pressure, Compound	3½", 4½", 6", 8½", 12"	1,000 psi	Phosphor bronze
AA2	Vacuum, Pressure, Compound	3½", 4½", 6", 8½", 12"	10,000 psi	Monel
AA3	Vacuum, Pressure, Compound	3½", 4½", 6", 8½", 12"	20,000 psi	Alloy steel 4130
AA4	Vacuum, Pressure, Compound	3½", 4½", 6", 8½", 12"	10,000 psi	316 stainless steel
AA5	Vacuum, Pressure, Compound	3½", 4½", 6", 8½", 12"	10,000 psi	Beryllium copper
THE REGAL LINE-1% ACCURACY				
BA1	Vacuum, Pressure, Compound	3½" 4½" 6", 8½", 12"	1,000 psi	Phosphor bronze
BA3	Vacuum, Pressure, Compound	3½", 4½", 6", 8½", 12"	20,000 psi	Alloy steel 4130
BB1	Vacuum, Pressure, Compound - Duplex gauge; two related pressures on same dial: top pointer orange, bottom black.	4½", 6", 8½", 12"	1,000 psi	Phosphor bronze; alloy steel, beryllium copper; stainless steel or monel optional, except 8½" and 12" size.
BC1	Pressure - Differential gauge. Indicates difference between two independent pressure sources, zero at top center; right pointer indicates right conn. that much higher than left conn. vice versa.	4½", 6", 8½", 12"	500 psi	Phosphor bronze; alloy steel, beryllium copper; stainless steel or monel optional.
BD1	Pressure - Differential gauge. Regular dial and range configuration; pressure must be applied to high pressure conn. before low pressure is applied; remaining reading is the difference.	4½", 6"	1,000 psi	Phosphor bronze; alloy steel, beryllium copper; stainless steel or monel optional.
BE1	Pressure - Retard gauge. Expanded scale, advantageous for accurate measurement of small variations over a part of the range.	4½", 6", 12"	30 psi	Phosphor bronze
BF1	Pressure, Compound - Retard gauge. Expanded scale, advantageous for accurate measurement of small variations in pressure over a part of the range.	4½", 6", 12"	100 psi	Phosphor bronze
BK1	Vacuum, Pressure, Compound - Low pressure gauge	4½", 6", 8½"	10 psi	Phosphor bronze
BL1	Vacuum, Pressure, Compound - Bellows actuated for very low pressures.	4½", 6", 8½"	15 psi	(BELLOWS) Phosphor bronze; Overrange stop.
BL4	Vacuum, Pressure, Compound - Bellows actuated gauge for very low pressures.	4½", 6", 8½"	15 psi	(BELLOWS) 316 stainless steel. Overrange stop.
BM1	Pressure - Altitude gauge. Indicates height of water in reservoirs, etc. Red set hand.	3½", 4½", 6", 8½"	1,000 ft. of water	Phosphor bronze
BN1	Pressure - combination pressure and altitude gauge. Indicates both height of water and corresponding pressure in reservoirs, etc. Red set hand.	3½", 4½", 6", 8½"	300 psi & 690 ft. of water	Phosphor bronze
BP3	Compound - Ammonia gauge. Indicates corresponding temperatures.	3½", 4½", 6", 8½"	300 psi	Alloy steel 4130
BQ1	Compound - Refrigerant gauge. Refrig. 12 & 22 std.; others available. Indicates corresponding temperatures.	3½", 4½", 6" 8½"	300 psi	Phosphor bronze

All above gauges except Bellows, Duplex and Differential are available with liquid filling to dampen vibration. Change second digit catalog number to "Y"

1925

WEKSLER INSTRUMENTS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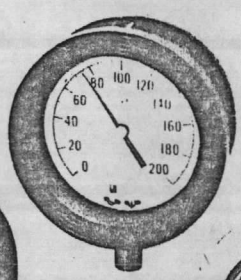
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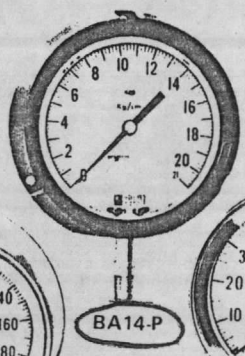
AA 44-X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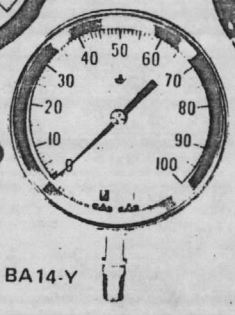
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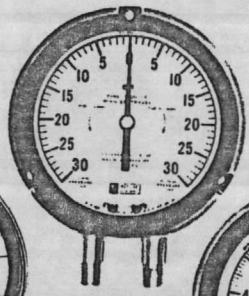
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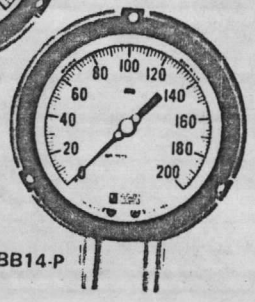

BB14-P

Standard Ranges

GENERAL		
DIAL RANGES	**FIGURE INTERVALS**	**SMALLEST GRADUATION**
0– 15 p.s.i.	1 p.s.i.	¼ p.s.i.*
0– 30 p.s.i.	5 p.s.i.	½ p.s.i.*
0– 60 p.s.i.	10 p.s.i.	1 p.s.i.*
0– 100 p.s.i.	10 p.s.i.	1 p.s.i.
0– 160 p.s.i.	20 p.s.i.	2 p.s.i.
0– 200 p.s.i.	20 p.s.i.	2 p.s.i.
0– 250 p.s.i.	25 p.s.i.	5 p.s.i.
0– 300 p.s.i.	50 p.s.i.	5 p.s.i.
0– 400 p.s.i.	50 p.s.i.	5 p.s.i.
0– 500 p.s.i.	50 p.s.i.	5 p.s.i.
0– 600 p.s.i.	100 p.s.i.	10 p.s.i.
0– 700 p.s.i.	100 p.s.i.	10 p.s.i.
0– 800 p.s.i.	100 p.s.i.	10 p.s.i.
0– 1,000 p.s.i.	100 p.s.i.	10 p.s.i.
0– 1,500 p.s.i.	300 p.s.i.	20 p.s.i.
0– 2,000 p.s.i.	200 p.s.i.	20 p.s.i.
0– 3,000 p.s.i.	500 p.s.i.	20 p.s.i.
0– 5,000 p.s.i.	500 p.s.i.	50 p.s.i.
0–10,000 p.s.i.	1,000 p.s.i.	100 p.s.i.
0–20,000 p.s.i.	2,000 p.s.i.	200 p.s.i.
0–30" Hg. Vac.	5"	½"
30"–0– 15 p.s.i.	5" & 3 p.s.i.	1" & 1 p.s.i.
30"–0– 30 p.s.i.	10" & 5 p.s.i.	1" & 1 p.s.i.
30"–0– 60 p.s.i.	10" & 10 p.s.i.	1" & 1 p.s.i.
30"–0–100 p.s.i.	30" & 10 p.s.i.	2" & 1 p.s.i.
30"–0–150 p.s.i.	30" & 25 p.s.i.	5" & 5 p.s.i.
30"–0–200 p.s.i.	30" & 20 p.s.i.	5" & 5 p.s.i.
30"–0–300 p.s.i.	30" & 50 p.s.i.	5" & 5 p.s.i.
30"–0–400 p.s.i.	30" & 50 p.s.i.	10" & 5 p.s.i.
30"–0–600 p.s.i.	30" & 100 p.s.i.	10" & 5 p.s.i.

*On Royal Line Gauges only the smallest graduation is .1 psi for 0 to 15 psi range, .2 psi for 0 to 30 psi range and .5 psi for 0 to 60 psi.

ALTITUDE GAUGE RANGES		
TOTAL GRADUATIONS	**FIGURE INTERVALS**	**SMALLEST GRADUATION**
0– 30 ft.	5 ft.	½ ft.
0– 70 ft.	10 ft.	1 ft.
0– 100 ft.	10 ft.	1 ft.
0– 160 ft.	20 ft.	2 ft.
0– 200 ft.	20 ft.	2 ft.
0– 250 ft.	25 ft.	5 ft.
0– 300 ft.	50 ft.	5 ft.
0– 400 ft.	50 ft.	5 ft.
0– 500 ft.	50 ft.	5 ft.
0– 600 ft.	100 ft.	10 ft.
0– 700 ft.	100 ft.	10 ft.
0– 800 ft.	100 ft.	10 ft.
0–1,000 ft.	100 ft.	10 ft.
15 p.s.i. & 35 ft.	3 p.s.i. & 5 ft.	¼ p.s.i. & ½ ft.
30 p.s.i. & 70 ft.	5 p.s.i. & 10 ft.	1 p.s.i. & 1 ft.
50 p.s.i. & 116 ft.	10 p.s.i. & 10 ft.	1 p.s.i. & 2 ft.
60 p.s.i. & 140 ft.	10 p.s.i. & 20 ft.	1 p.s.i. & 2 ft.
100 p.s.i. & 231 ft.	10 p.s.i. & 25 ft.	2 p.s.i. & 5 ft.
150 p.s.i. & 345 ft.	20 p.s.i. & 20 ft.	2 p.s.i. & 5 ft.
200 p.s.i. & 460 ft.	20 p.s.i. & 50 ft.	2 p.s.i. & 5 ft.
300 p.s.i. & 690 ft.	50 p.s.i. & 50 ft.	5 p.s.i. & 10 ft.
RANGES FOR AMMONIA		
30"–0–150 p.s.i.	30" & 25 p.s.i.	5" & 5 p.s.i.
30"–0–300 p.s.i.	30" & 25 p.s.i.	5" & 5 p.s.i.
RANGES FOR REFRIGERANT 12 OR 22		
30"–0–150 p.s.i.	30" & 25 p.s.i.	5" & 5 p.s.i.
30"–0–300 p.s.i.	30" & 25 p.s.i.	5" & 5 p.s.i.
0–300 p.s.i.	25 p.s.i.	5 p.s.i.

Note: The Ranges for BC-1 are: 30 0-30 to 500 0-500 psi. For BD-1 they are 0 30 to 0-1000 psi. On BL1 and BL-4 the ranges are 0-10" water to 0-100" water and vacuum and compound. See Catalog 525 for complete list of ranges.

STANDARD CASE STYLES for Pressure Gauges

Case Identifying Suffix Letters	DESCRIPTION	Case Identifying Suffix Letters	DESCRIPTION
A	Aluminum, Back Flange, Aluminum Screw Ring	K	Brass, Front Flange, Brass Screw Ring
AF	Aluminum, Screw Type Aluminum Flush Ring	O	Steel, Chrome Plated Brass Press-Fit Ring (3½" only)
B	Aluminum, Front Flange, Aluminum Screw Ring	OF	Same as O, except with "U" clamp for Flush Mtg. (3½" only)
C	Aluminum, Flangeless, Aluminum Screw Ring	P	Phenol, Turret (except 6")
G	Aluminum, Back Flange, Chrome-like Slip Ring	PF	Phenol, Turret, Black Steel Flush Ring (except 6")
H	Aluminum, Front Flange, Chrome-like Slip Ring	W	Aluminum, Hinged-Front Steel Ring (except 3½" & 8½")
I	Aluminum, Flangeless, Chrome-like Slip Ring	X	Stainless Steel, Back Flange, Stainless Screw Ring (4½" only)
J	Brass, Back Flange, Brass Screw Ring	Y	Stainless Steel, Flangeless, Stainless Screw Ring (4½ only)
JF	Brass, Screw Type Brass Flush Ring		
L	Brass, Flangeless, Brass Screw Ring		

See page 7 for case illustrations.

ORDERING INFORMATION

1925

For ordering by part number, specify (1) gauge type, i.e., AA1, BA1, etc.; (2) dial size (by computer symbol: 3 = 3½", 4 = 4½", 6 = 6", 8 = 8½". To the resultant 4-digit number, refer to and add appropriate case type symbol; example: AA14-P denotes a 4½" dial size, ½% accuracy gauge in phenol case. In addition to the part number, specify the pressure range and connection (bottom or back).

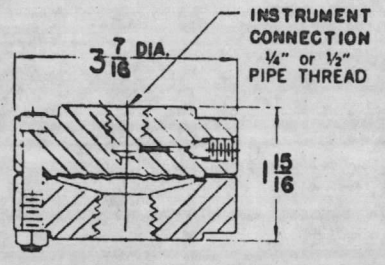
WELDED-DIAPHRAGM TYPE SEALS
FOR UNIVERSAL CONTINUOUS SERVICE

WEKSLER INSTRUMENTS

STEEL

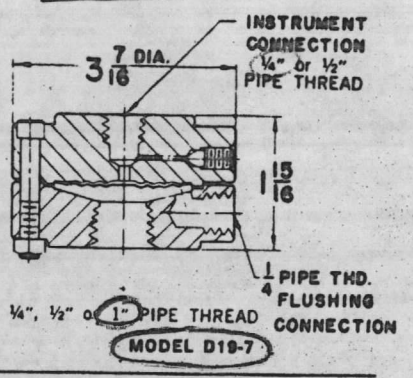
Universal use Welded-Diaphragm Type seals have all of the safety features offered by the Continuous Duty Type. In addition, in the construction of "welded in the top" diaphragm seals special equipment and procedures are used to weld an improved shape diaphragm in the top section. The possibility of leakage problems and the need for gasket clamping (middle) rings are completely eliminated.

All seals listed on this page are Welded-Diaphragm Type and all are classed as Cleanout Type. They are designed for continuous service and can be used universally i.e. on either corrosive gas, corrosive liquids or clogging service. Inventory can be reduced accordingly.



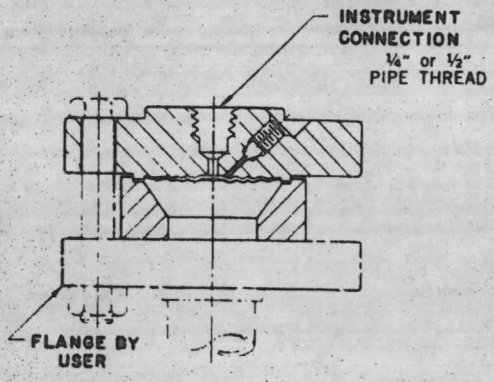
¼", ½" or 1" PIPE THREAD

MODEL D19-2

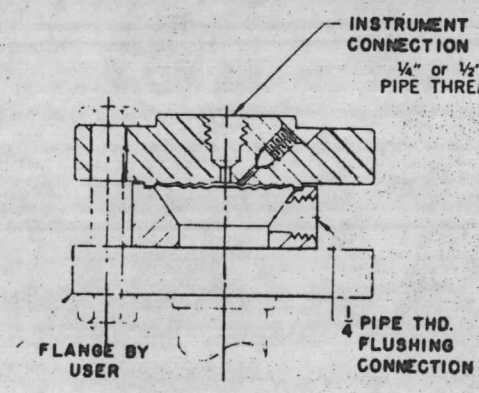


¼", ½" or 1" PIPE THREAD

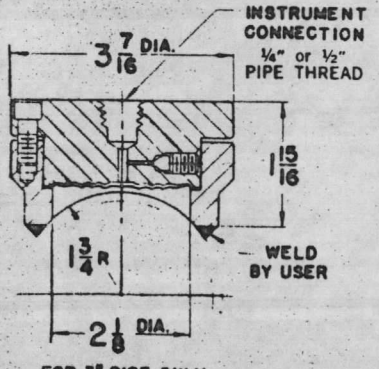
MODEL D19-7



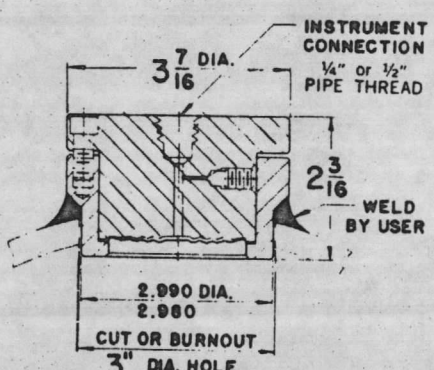
MODEL D19-3
1", 1½", 2" or 3" ASA RF SIZES
150#, 300#, 600# and 1500# RATINGS



MODEL D19-4
1", 1½", 2" or 3" ASA RF SIZES
150#, 300#, 600# and 1500# RATINGS

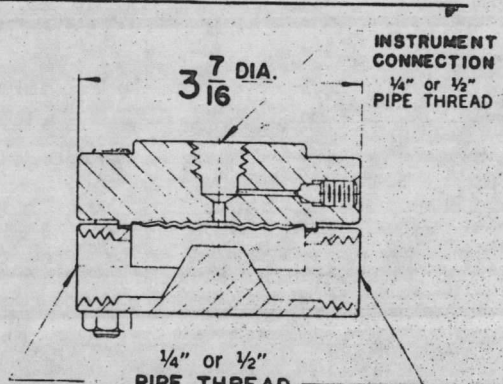


FOR 3" PIPE ONLY

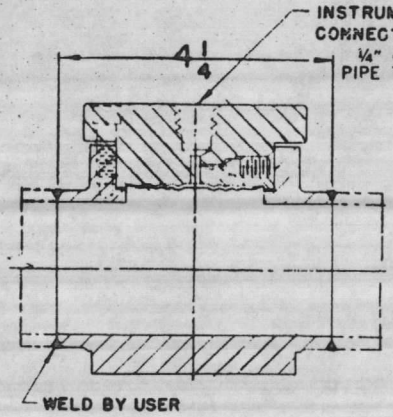


FOR 4" PIPE AND LARGER

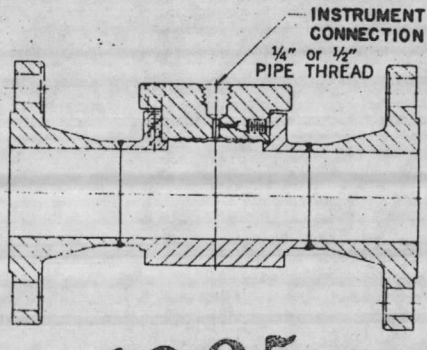
MODEL D19-10
SPECIFY PIPE SIZE



MODEL D19-11



MODEL D19-13
FOR 1", 2" or 3" PIPE, SPECIFY



1925

MODEL D19-14
1", 2" and 3" x 150# FLANGE SIZES, SPECIFY

Printed in U.S.A.

CONSOLIDATED ELECTRIC CO.
RIVERVIEW INDUSTRIAL PARK
141 SOUTH LAFAYETTE FREEWAY (HWY. 56)
ST. PAUL, MINNESOTA 55107
Automation and supervisory control systems for municipal and industrial water supply, waste treatment and process applications
612/224-9474

SUBMITTAL

Spec. Section 15350
Paragraph 4.7

DATE ENTERED 22515-CPA7 T-7/9/79 6/4

CUSTOMER ORDER NO. 1023 / CECO 22515

Camp Lejeune, N.C.

JOB NO 22515

Page 1

CONTRACT N62470-77-C-7526

SOLD TO
East Coast Construction Co., Inc.
P.O. Box 5004
Jacksonville, N.C. 28540

I205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

REQUESTED MARK: PPD X COLLECT

SHIP TO
East Coast Construction Co., Inc.
229 Center St.
Jacksonville, N.C. 28540

Marine Corps Base Camp
Lejeune, N.C.

FOB ST. PAUL DEST.
X Trans. allowed
TERMS NET 30 DAYS QG;rs

REQUESTED DATE After approval VIA Spector

ITEM	QUANTITY	BULLETIN MODEL VOLTS PHASE NEMA TYPE
		Serial # 22515
A	1	Bull. A700 Bubbler Control, Model APB , NEMA 1A Powerpack Control Panel - Service available is 480 Volts/ 3 Phase/ 3 Wire, to control two pumps in Pump-Down operation
		INCLUDE:
		a) Power/Phase failure relay to terminals ~~fused~~ fuse sw.
		b) 2 - NEMA Size 1 ~~MS/CB X-line MS/CB~~ for 10 H.P. std. motors FLA 13.8 incl. Ind. CPT and H-O-A switch.
		c) 2 Pole ~~C.B.~~ for transformer ~~fused~~ fuse sw.
		d) Accessory transformer 1.5 Kva
		e) 4 Ckt. Lighting Panel
		1) Control Power
		2) Duplex Receptacle
		3) Air Compressor
		4) Spare
		f) A700 Bubbler Control, Independent ON-independent OFF (4 switches) incl. air pressure reducing valve, with downstream pressure gauge and air filter, adjustable flow rate needle valve, and flow rate indicator. DOOR MOUNTED
		g) 4½" Pressure Gauge, 0-100 psi, door mtd.
		h) Set shut-off & bleed valves. Purge valve
		i) Hi alarm pressure switch to terminals

cont. on Page 2

SETS DATA SENT	DATE	TO
8	7/11/79	Wilson & Assoc.
1		CECO

HELD FROM PRODUCTION YES NO	FOR INFORMATION	APPROVAL RECEIVED	
	FOR APPROVAL	DATE	

CONSOLIDATED ELECTRIC CO.
RIVERVIEW INDUSTRIAL PARK
141 SOUTH LAFAYETTE FREEWAY (HWY. 56)
ST. PAUL, MINNESOTA 55107
Automation and supervisory control systems for municipal and industrial water supply, waste treatment and process applications
612/224-9474

SUBMITTAL

DATE ENTERED T-7/9/79 — 22515-Page 2 — CUSTOMER ORDER NO. 1023 / CECO 22515

Camp Lejeune, N.C.
JOB 22515 - Page 2

SOLD TO
East Coast Construction Co., Inc.
P.O. Box 5004
Jacksonville, N.C. 28540

SHIP TO See Page 1

REQUESTED MARK See Page 1

PPD X — COLLECT
FOB ST. PAUL — DEST. X Tr. Allowed
TERMS NET 30 DAYS DG:rs

REQUESTED DATE See Page 1 — VIA See Page 1

ITEM	QUANTITY	BULLETIN	MODEL	VOLTS	PHASE	NEMA TYPE
A	subitem cont.					

j) Duplex Receptacle on door
k) Built in air compressor with 2 gallon tank
l) 2 pump alternator, solid state, Ind. ON-Ind. OFF with over-ride switch, Model CB2A
m) 2 - Bull. C200 Pump protectors with failed lights and manual reset buttons, input from check valve switches.
n) Alarm/Monitor contacts to terms. per Specs.
o) Barrier between high voltage and low voltage pneumatic section.

B 1 Compression Bell 12"

2 - Model 54G Check Valve Switches, Model 54G-3A NO
5 foot cable , NEMA I

D 3 sets Drawings - 1 to East Coast Construction
1 with shipment
1 to Wilson Assoc.

Trans.

SETS DATA SENT — DATE — TO
See Page 1

HELD FROM PRODUCTION YES	NO	FOR INFORMATION	APPROVAL RECEIVED
	XX	FOR APPROVAL XX	DATE

SUB-VARIATION 01								PL	PAGE 1 OF 1	DWG. NO. B204205-01
ITEM NO.	CECO PART NUMBER	QUANTITY						DESCRIPTION	SPECS. OR MFGS. P/N	COMPONENT DESIGNATION
1	DL02532	REF						Drawing List		
2	C904130-01	REF						Wiring Diagram		
3		1						Enclosure-NEMA 1A Hoffman	A544208LP	
4	800415-	1						Panel Hoffman	A54P42	
5	800183-01	3						Terminal Section		TB 1
6	800184-01	1						End Section		TB 1
7	800165-03	2						~~30A., 120V.~~ C.B., ~~3~~ Pole, TED fused sw.		CB 1,2
8	700905-03	1						C.B. Mtg. Brkt.		CB 1,2
9	800205-03	2						Transformer, 75VA.		VT 1,2
10	800208-01	2						Fuse Clip		F 1,2
11	800518-09	2						Fuse, 1½A., Slo-Blo		F 1,2
12	800156-01	2						Sel. Sw., 3-Pos.		SS 1,2
13	800248-01	2						Motor Starter, Size 1		MS 1,2
14		6						O.L. Heater G.E.	CR123C15.1B	MS 1,2
15	800252-01	2						Resetter		MS 1,2
16	800195-01	2						Light Base		LT 1,2
17	800196-01	2						Light Lens, Red		LT 1,2
18	800197-02	2						Bulb, 6W., 120V.		LT 1,2
19	800214-06	1						Phase Failure Relay		PFR
20	800117-01	3						Fuse Holder		F 3-5
21	800351-03	3						Fuse, 1 Amp.		F 3-5
22	600533-21	2						Pump Protector		CMP04
23	800190-01	2						Pushbutton, N.C.		PB 1,2
24	800165-01	1						L.P. C.B., 15A.		CB 3
25	700902-02	1						C.B. Mtg. Brkt.		CB 3
26	800585-03	1						Ltg. Transformer, 1½KVA		VT 3
27	800257-01	1						Lighting Panel, 4 Ckt.		LP
28	800260-01	4						LP C.B., 15A., 1P		LP 1-4
29	701008-03	1						L.P. Mtg. Brkt.		LP
30	700991-02	1						LP Card Holder		LP
31	800215-01	1						Duplex Receptacle		DUP
32	800216-01	1						Cover Plate		
33	800176-01	1						Toggle Switch		TS 1
34	600879-01	1						Controller/Alternator		
35	800057-02	2						Relay, 120 VAC		CR 1,2
36	800080-01	2						Socket, 11 Pin		CR 1,2
37	800181-01	19						Terminal Section		TB 2
38	800182-01	1						End Section		TB 2
39	800100-02	5						Pressure Switch, N.O.		PS 1-5
40	800102-01	1						Pressure Reg. Filter		PRF
41	800100-01	1						Pressure Switch, N.C.		PS 6
42	800386-01	1						Meter, Air Flow		AFM
43	800671-01	3						Valve		
44	700867-02	1						Valve Brkt.		
45	800087-01	1						Air Compressor		AC 1
46										

1925

B204205-01

PAGE	OF	REV
1	1	A

DRAWING NO. B204205-01

TITLE: BULLETIN A700 POWERPACK S.O. 22515

CONSOLIDATED ELECTRIC CO.

141 SO. LAFAYETTE FREEWAY • ST. PAUL, MINN. 55107

DFT		VH
CHK		
ENG		
APP		

DESCRIPTION OF OPERATION

CMP04

PUMP "NO-FLOW" PROTECTOR

Some of the features of the CMP04 are * snap-track mounting, * built-in dim-glow for (optional) indicating lights, * outputs for "required", "flow" and "failed" indicating lights, * solid state timing, * adjustable time delay from 3 to 300 seconds, * flow contacts to terminals for use with chemical feeder air-locks, * board-mounted AUTO-RESET/OFF-TEST switch.

GENERAL

The CMP04 Pump Protector is designed to protect a pump no-flow condition and inhibit the pump's operation until the failure has been acknowledged. Assume that the AUTO-RESET/OFF-TEST switch on the Controller is in the AUTO position. When the primary control device (a N.O. contact wired between terminals 3 and 11) closes, relay CR1 will energize. When relay CR1 closes, power will be supplied to a N.O. contact of CR1 through a N.C. contact of CR2, and timing circuit "T" will be energized. Another N.O. contact of CR1 is wired in series with a N.C. contact of CR3, between terminals 14 and 15 of the Controller. These contacts are to be wired to the pump motor starter pilot circuit*. If the flow switch closes before the timer times out, relay CR2 will energize and its N.C. contact (which supplies power to the timing circuit) will open and remove power from the timer. If during the pumping cycle flow should stop, relay CR2 will de-energize and the timer will again start timing out. If the timer reaches the end of its timing cycle before flow is detected relay CR3 will energize and hold itself in through a N.O. contact wired to the on board selector switch. CR3 will also disable the pump pilot circuit by opening a N.C. contact wired between terminals 14 and 15 thus turning off the pump. The Protector can be reset by pressing the (optional) external reset button or sliding the board-mounted AUTO-RESET/OFF-TEST switch to the RESET/OFF position.

* contact rated 10 Amp. @ 250 VAC, .8 P.F. Max.

TITLE	DESCRIPTION OF OPERATION PUMP "NO-FLOW" PROTECTOR CMP04	DESIGNED	DRAWN	CHECKED	REVISION
		SHAD			A
	Consolidated Electric Company 141 SOUTH LAFAYETTE FREEWAY SAINT PAUL, MINNESOTA 55107	PAGE 1 OF 2	DRAWING NO IM00791		

INDICATING LIGHTS

Circuitry is provided for the connection of "required", "flow", and "failed" lights. The "required" light is powered through a contact of CR1, the "flow" light through a contact of CR2 and the "failed" light through a CR3 contact. Under normal conditions the lights should glow dimly. If the lights are not on, check for power failure or burnt out bulbs. After testing the Protector be sure to return the board-mounted selector switch to the AUTO position.

OPTIONAL ALARM INDICATORS

Additional alarm outputs can be obtained by wiring a CMK01 (relay module), CMA09 (alarm module w/silence) or CMX02 (alarm transmitter) into the failed circuitry of the CMP04. When these additional indicators are used, the "failed" light dim-glow resistor, mounted on the CMP04, must be removed.

For further information:

REF: IM00944, CMK02
IM00792, CMA09
IM00787, CMX02

TITLE	DESCRIPTION OF OPERATION PUMP "NO-FLOW" PROTECTOR CMP04	DESIGNED	DRAWN	CHECKED	REVISION
		SHAD		4/25/75	A
	Consolidated Electric Company 141 SOUTH LAFAYETTE FREEWAY SAINT PAUL, MINNESOTA 55107	PAGE 2 OF 2	DRAWING NO IM00791		

DL02532

DESCRIPTIONS					
CMP04	IM00791	1		1	
CB2A	MB00312	1		1	
Air Compressor	800087-01	1		1	
Electrical Symbols	MB00015	1		1	
Pneumatic Symbols	MB00016	1		1	
PARTS LIST	B204205-01	1	1	1	
WIRING DIAGRAM	C904130-01	1	1	1	
ENCLOSURE, NEMA 1A 54x42x8	Pg. 27,28,30	1		1	

9-25-96

DRAWING DESCRIPTION	DRAWING NO.	APPR.	SHOP	SHIP	

TITLE: BULLETIN A700 POWERPACK CONTROL PANEL

DRAWN	DESIGNED	
VH	VH	S.O. 22515 CAMP LeJEUNE, N.C.

CONSOLIDATED ELECTRIC COMPANY
141 SOUTH LAFAYETTE ROAD • ST. PAUL, MINN. 55107

CHECKED	PAGE	DRAWING NO.	REV.
	1 OF 1	DL02532	A

REFERENCE DATA

ELECTRICAL SYMBOLS

- Adjustable Timer
- TM Motor Driven Timer
- TT Thermal Timer
- TE Electronic Timer
- TP Pneumatic Timer
- SR Sensitive Relay
- LR Load Relay
- CR Control Relay
- MS Motor Starter Coil
- C Contactor Coil

Digital or Switching Ground
Signal or Analog Ground
Chassis or Earth Ground
Fixed Resistor
Adjustable Resistor
Circuit Breaker
Electrical Connection
Interlocked Components
N.O. N.C. Relay Contacts
Female Male Plug and Receptacle
No Connection
Customers Wiring
Running Time Meter
Motor
Fuse
Probe Tip
Light-Letter Designates Color
R - Red
G - Green
A - Amber
W - White
Y - Yellow
B - Blue
Capacitor
Heater
Check Valve Switch
Potentiometer
Diode
Heavy Duty Selector Center-Off Three Position
Heavy Duty Selector Two Position
Solenoid Valve
Bell
SPDT Toggle Switch Center-Off
Flow Switch
Heating Type
Cooling Type
Thermostat
Spring Return
Maintained Position
Snap Action Cam, Limit, Etc. Switches
Motor Starter
HEATERS
Full Wave Rectifier
Duplex Receptacle
Spring Return Pushbutton
Maintained Contact Pushbutton
Transformer

TYPES OF TIME DELAY CONTACTS & OPERATION

- Closes after delay on Energization
- Closes on Energization Re-opens after delay on De-energization
- Opens after delay on Energization
- Opens on Energization Re-closes after delay on De-energization

ESSURE ERATED ITCHES — 9G FLOAT SWITCHES

- Normally Open Closes on Rising
- Normally Closed Opens on Rising

WIRE COLOR ABBREVIATION

BK - Black — Line 1, 2, 3
W - White — Neutral
OR - Orange — Pilot Circuits
Y - Yellow — Unpowered
R - Red — Control Circuits
GN - Green — Ground
BR - Brown
BU - Blue

ABBREVIATIONS

H-O-A - Hand-Off-Auto.
C-O-A - Closed-Open-Auto.
MS - Motor Starter
N.C. - Normally Closed
N.O. - Normally Open
O.L. - Motor Starter Overload

HYDRAULIC SYMBOLS

Pressure Gauge
motor
tank
Compressor
Elevated Tank
Pressure Sensing Device
Well Pump
Booster Pump
Ground Reservoir
Stand Pipe
Pressure Reducing Valve-Increase Pressure Valve Closes
air
water
Float or Probe Chamber
Hydropneumatic Tank
Distribution Network
Flow Meter with Needle Valve
Flow Meter
Pressure Reducing Valve-Increase Pressure Valve Opens
Pilot Operated Valve
Valve Stem for limit Switches
Swing Check Valve
Needle Valve
9G Floats
Manual Valve
Air Filter/Reg.
Compression Bell
Solenoid Valve
Liquid Reservoir
Bubble Tube
Bubble Tube Guard
Tape or Cable Operated Float Control
Float Operated Valve
M
Motor Operated Valve
Wet Well
Connection
No Connection

Consolidated Electric Co.
RIVERVIEW INDUSTRIAL PARK
141 SOUTH LAFAYETTE FREEWAY
ST. PAUL, MINN. 55107 612/224-9474

MB 00015 4/72 Litho in U.S.A.

Consolidated Electric Co.
RIVERVIEW INDUSTRIAL PARK
141 SOUTH LAFAYETTE FREEWAY
ST. PAUL, MINN. 55107 612/224-9474

MB 00015 4/72 Litho in U.S.A.

800087-01

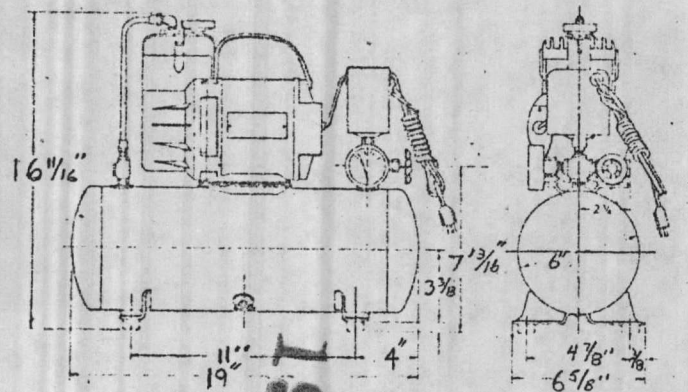
Model LC motor compressor is designed for and capable of continuous operation at pressures up to 65 PSIG. Unique clearance factor between piston and cylinder head eliminates necessity for safety valve. Overloading of compressor or motor is impossible due to excess pressure. Built-in automatic overload protection in the motor prevents failure in the event of abnormal electrical conditions.

No unloading devices are required for starting against back pressure.

These unique tank mounted outfits incorporate two gallon air receivers. They are completely portable, cool and smooth in operation.

Applications requiring very low noise level, as well as those situations where air storage is necessary, will find these units most acceptable. LCT outfits are equipped with automatic pressure switch, check valve between compressor and tank, tank pressure gauge, shut off valve at tank outlet, and manual tank drain providing an efficient and self contained unit.

Model LCT does not require unloading device because of the special clearance factor. This feature also eliminates the necessity for compressor or tank safety valve.



1925

SPECIFICATIONS

Actual wt. 35 lbs.

Motor—1/12 HP, 1725 RPM, split phase, induction type with built-in automatic overload protection.

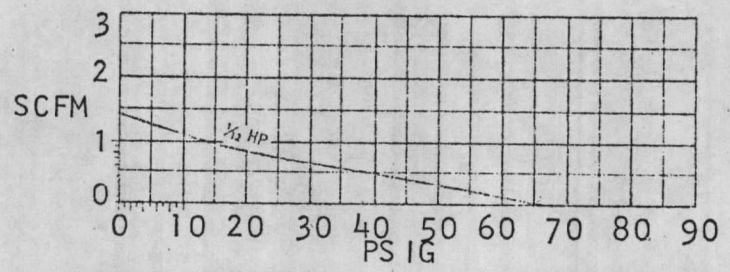
120 VAC 60 HZ *

* single phase motors are equipped with automatic overload protection. They are UL listed and complete with cord and plug.

Compressor—Model LC—1.43 CFM displacement, single stage, single cylinder.

Tank—6" OD not subject to ASME requirements. .28 cubic feet capacity, tested to 150 PSIG.

Automatic Pressure Switch—Factory set to cut in at 25 PSI, cut out at 40 PSI.



*WHEN POWERED BY A CONTROL POWER TRANSFORMER, 200 VA CAPACITY MUST BE ALLOWED WHEN SIZING THE TRANSFORMER

MANUFACTURER IS BELL & GOSSETT, DIVISION OF ITT PNEUMOTIVE, MODEL NO. LCT

TITLE: COMPACT MOTOR-COMPRESSOR-TANK OUTFIT	DRAWN	DESIGNED DGL	19" WAS 17"
CONSOLIDATED ELECTRIC COMPANY 141 SOUTH LAFAYETTE ROAD • ST. PAUL, MINN. 55107	CHECKED DGL	PAGE 1 OF 1	DRAWING NO. 800087-01 REV. B

Model CB2A Duplex Pump Controller/ Alternator with Alarm Load Relay

Consolidated Electric Co.

RIVERVIEW INDUSTRIAL PARK 141 SOUTH LAFAYETTE FREEWAY ST. PAUL, MINNESOTA 55107 612/224-9474

Basic Description

The Model CB2A Duplex Controller/Alternator works with level-sensing float switches or pressure-sensing devices to provide differential level/pressure-responsive automatic pump and alarm control. Its automatic alternator transposes the operating sequence of two pumps on successive starts and has an override switch to allow manual or automatic sequencing. The alarm load relay can be momentary upon an alarm input, it can latch and require manual resetting, or it can control a third pump when it is jumpered to give differential operation between the fourth and first float inputs.

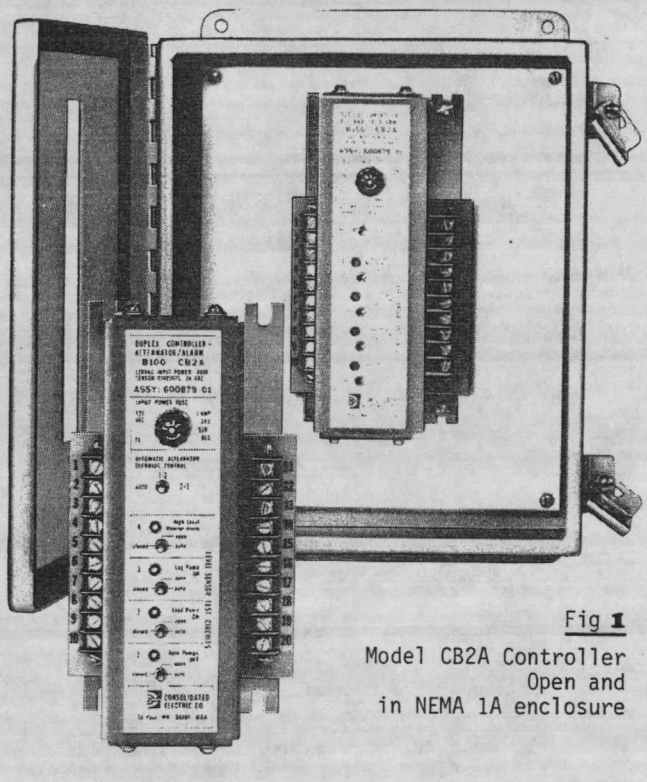


Fig 1
Model CB2A Controller Open and in NEMA 1A enclosure

The CB2A is used in ...

- Sewage Lift Stations
- Storm Water Pumping Stations
- Water Tank & Reservoir Pumping
- Waste Treatment Plants
- Process and Industrial Control

Electrical Schematic: Pump Down System

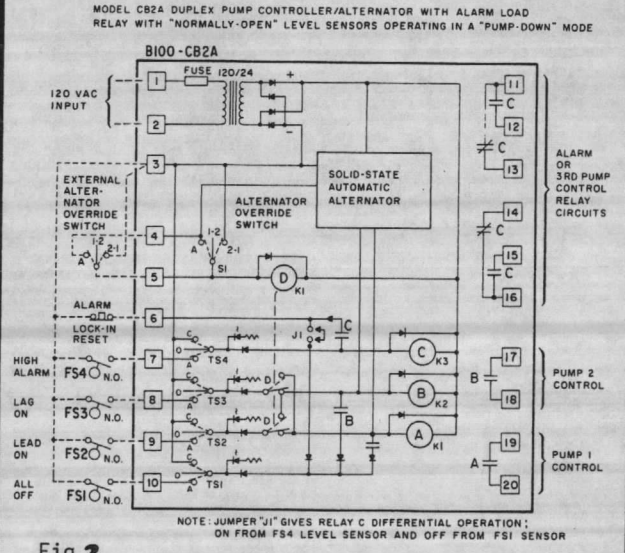


Fig 2

CB2A Features

- Reliable, Comprehensive, Compact
- Controls two pumps and an alarm load (DPDT)
- Pump-Up or Pump-Down control
- Independent ON, Common OFF operation
- Works with four floats (CECO Models 9G, LS, etc)
- Convenient float circuit test switches
- Solid-state lights show float operation
- Solid-state automatic 2-pump alternation
- Alternator override switch allows manual or automatic sequencing
- Optionally controls a 3rd pump in place of alarm
- 120 VAC input power; 40VA
- Low 24 VDC power on float circuits
- Barrier terminal blocks accept 12-18 AWG wires
- Heavy-duty 10-Amp/250 VAC-rated relays
- High monitor/alarm load relay included (DPDT)
- Built to U.L. standards/specs
- Selection of enclosure types
- 2-year guarantee

Bulletin B100-CB2A

Specifications

Input Power; 117 vac, +10/-15%; 40 va max draw

Level Sensor Volts; Control-supplied 23-28 vdc

Internal Step-Down Transformer; NEMA Type D, NEC Class 2, U.L. recognized

Sensor Ckt Test Sws; 3-position, "closed-open-auto"

Sensor Operation Indicators; Solid-state green LEDs

Terminals; Molded barrier type, polypropylene, wire clamp terminals, #18-12 AWG capacity, 300 vac, 15 Amp-rated, U.L. recognized

Pump Control; Differential level/pressure type with independent ON and common OFF operation;
(a) Pump-down; Use N.O. sensors (see Fig **2**)
(b) Pump-up; Use N.C. sensors (see Fig **4**)

Control Relay Ratings; 10 Amp @ 250 vac, non-ind, 0.8 P.F., 1/3 HP, 100 Watt tungsten loading maximum. U.L. recognized. Pump Control; SPST-NO/Alarm; SPDT

Alarm Relay Operation Options;
1. Non-Differential operation from 4th sensor
2. Latch-in with external reset (see Fig **2**)
3. Differential between sensors #1 and #4 (using Jumper J1). Used for 3rd pump control (non-alternating).

Construction; Steel frame, zinc plated/ dichromate dip, G10 glass-epoxy PC board is 0.062" thick, 3 oz. copper (power board), conformally coated.

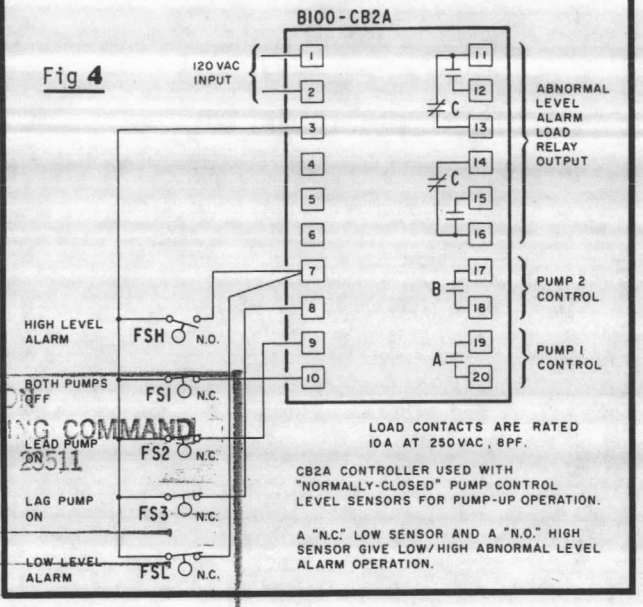
Automatic Alternator; Solid-state IC logic, sealed load relay. Alternates lead pump each operating cycle.

Alternator Override; 3-position switch; "Auto/1-2/2-1". Allows manual or automatic alternation of pump sequence.

Enclosures; Open, NEMA Types 1, 3R, 4, 7, 12. Also available as an integral part of a comprehensive CECO F110 Sewage Lift Station Panel.

External Connections: Pump-Up System

Fig **4**



LOAD CONTACTS ARE RATED 10A AT 250VAC, 8PF.

CB2A CONTROLLER USED WITH "NORMALLY-CLOSED" PUMP CONTROL LEVEL SENSORS FOR PUMP-UP OPERATION.

A "N.C." LOW SENSOR AND A "N.O." HIGH SENSOR GIVE LOW/HIGH ABNORMAL LEVEL ALARM OPERATION.

System Application Specification

A complete level-responsive automatic pump and alarm control system shall be supplied and placed in successful operation. It shall utilize four direct-acting float switches, mounting hardware and a Bulletin B100, Model CB2A Duplex Controller/Alternator all as manufactured by Consolidated Electric Co. of St. Paul, Minnesota.

LS-Select One 9G Level Sensors

The floats shall be 5½" diameter of Type 316 stainless steel construction with mercury switches inside, flexibly-mounted with synthetic rubber-jacketed cables and Type 316 stainless steel clamps on a vertical 1" pipe as shown on the plans or directed by the Engineer. They shall be Bulletin B100, Model 9G type.

The floats shall be of heavy-wall molded polyethelyne with internal foam plastic fill and sealed mercury switch construction. Each float shall mount by its synthetic rubber-jacketed cable and Type 316 stainless steel fittings on a heavy molded polyethelyne chain and plastisol-coated cast iron anchor. The assembly shall provide reliable level-sensing, drift-free performance, and ease of adjustment/removal. The sensors shall be Model LS float switches and the chain-weight assy a Model CHM.

The control system shall give independent ON and common OFF operation in a (pumpdown/pump-up) mode.

Pilot control of the pump motor starters shall be through "Hand-Off-Auto" 3-position selector switches by the Model CB2A Controller having the following features; * 120 VAC input power with integral extractor fuse * 24 VDC sensor circuit power with UL Class 2 transformer * Individual sensor test switches and LED indicators (4) * Solid-state automatic alternation * Alternator override switch with "1-2/Auto/2-1" operation * 10 Amp @ 250 VAC load contacts * DPDT alarm load relay contacts * Optional alarm latch/3rd pump control capability * G-10 glass epoxy PC board construction with conformal coat * Job connections at barriered clamp-type terminals

The Controller shall be furnisehd in a NEMA 12 welded steel, gasketed enclosure or incorporated as an integral part of the pumping station electrical panel as indicated on the job plans or otherwise directed by the Engineer.

The system shall be guaranteed for one year from date of Owners acceptance to the effect that any defective material or workmanship shall be repaired or replaced without cost or obligation to the Owner. The system shall be furnished with complete drawings and instructions and placed in operation. Owner's personnel shall be instructed in its use.

Dimensions

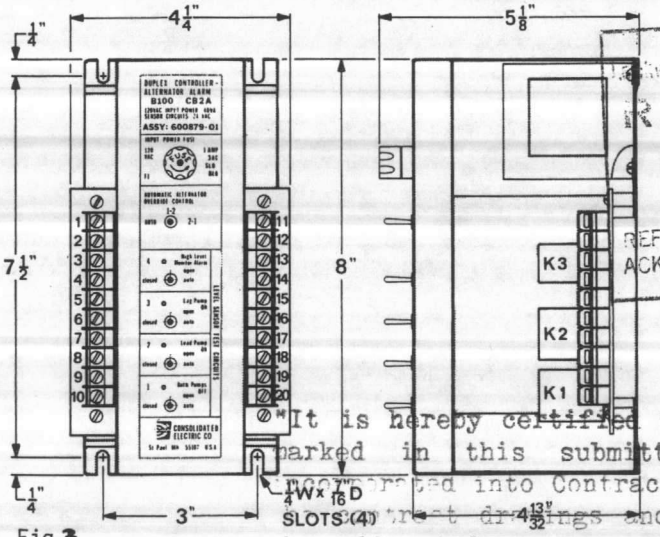
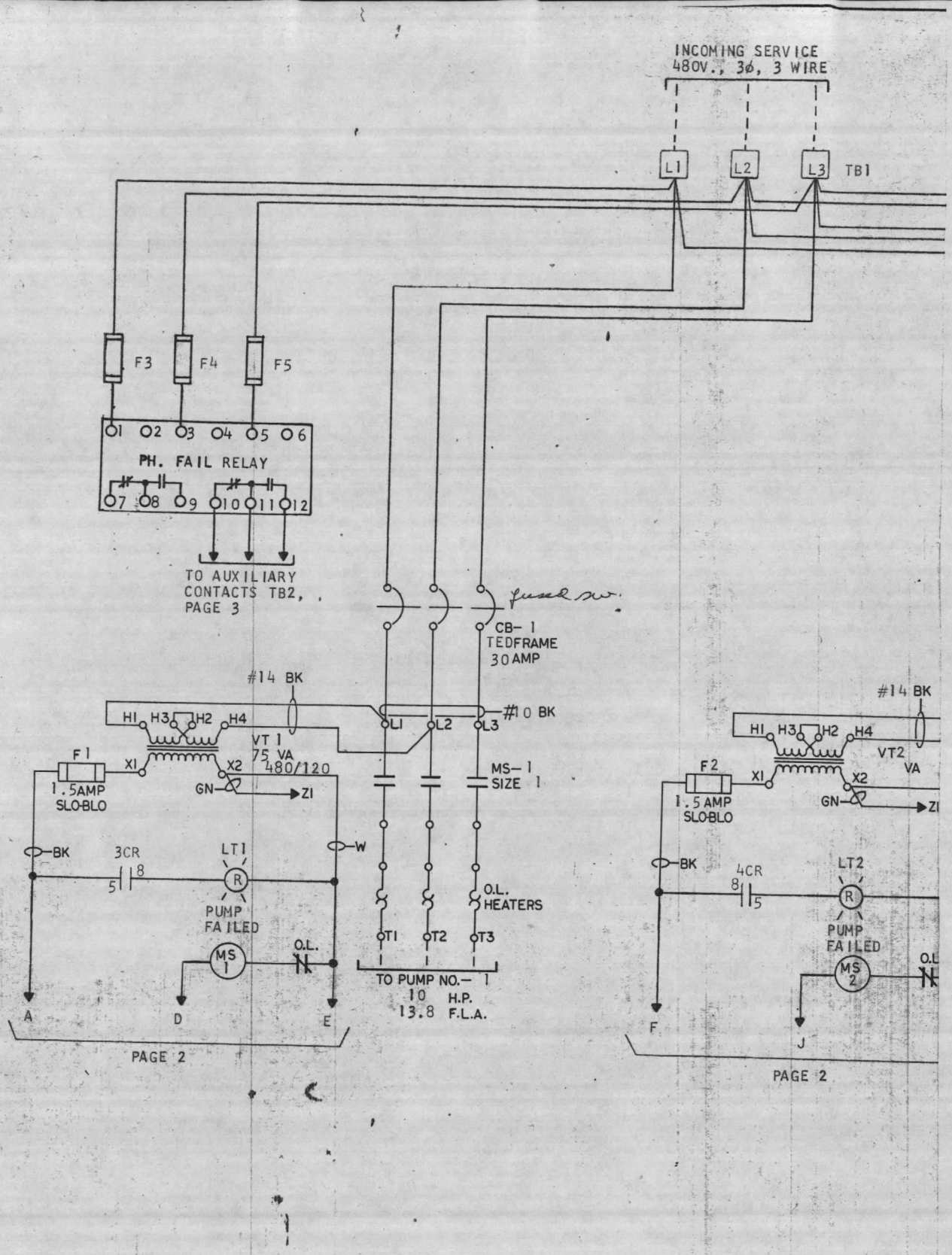


Fig **3**

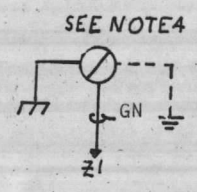
CONSOLIDATED ELECTRIC CO.
RIVERVIEW INDUSTRIAL PARK • 1475 SO. LAFAYETTE FREEWAY • ST. PAUL, MINN. 55107



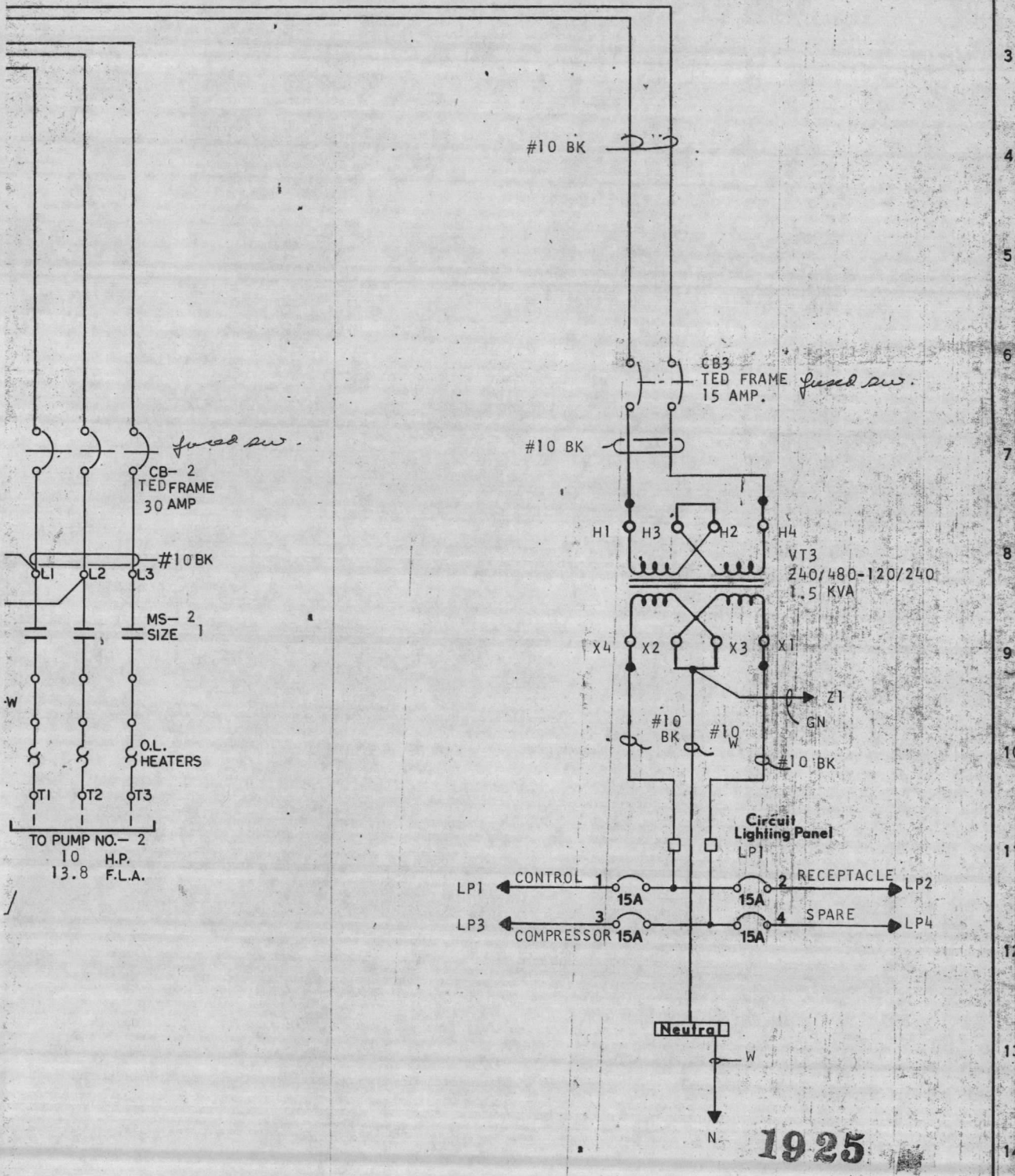
6 Similarly marked arrows → are interconnected.
5. For Parts List see B204205-01.
4. Grounding lug to be grounded by customer as per Nat'l Elec. Code.
3. Wire color abbreviations:

Black	-BK	White	-W
Red	-R	Yellow	-Y
Orange	-OR	Green	-GN
Blue	-BU	Gray	-GY
Brown	-BR	Violet	-V

2. All wiring is 16ga. red unless noted. All else is 16ga min.
1. All dashed wiring is done by others.



REV	C.O. NO.	DATE	DESCRIPTION	CHK	APR
A		7/10/79	RELEASED		



1925

TITLE: WIRING DIAGRAM
BULLETIN A700
POWERPACK CONTROL PANEL

SHOP ORDER 22515 | JOB NAME CAMP LEJEUNE, N.C. | MATERIAL

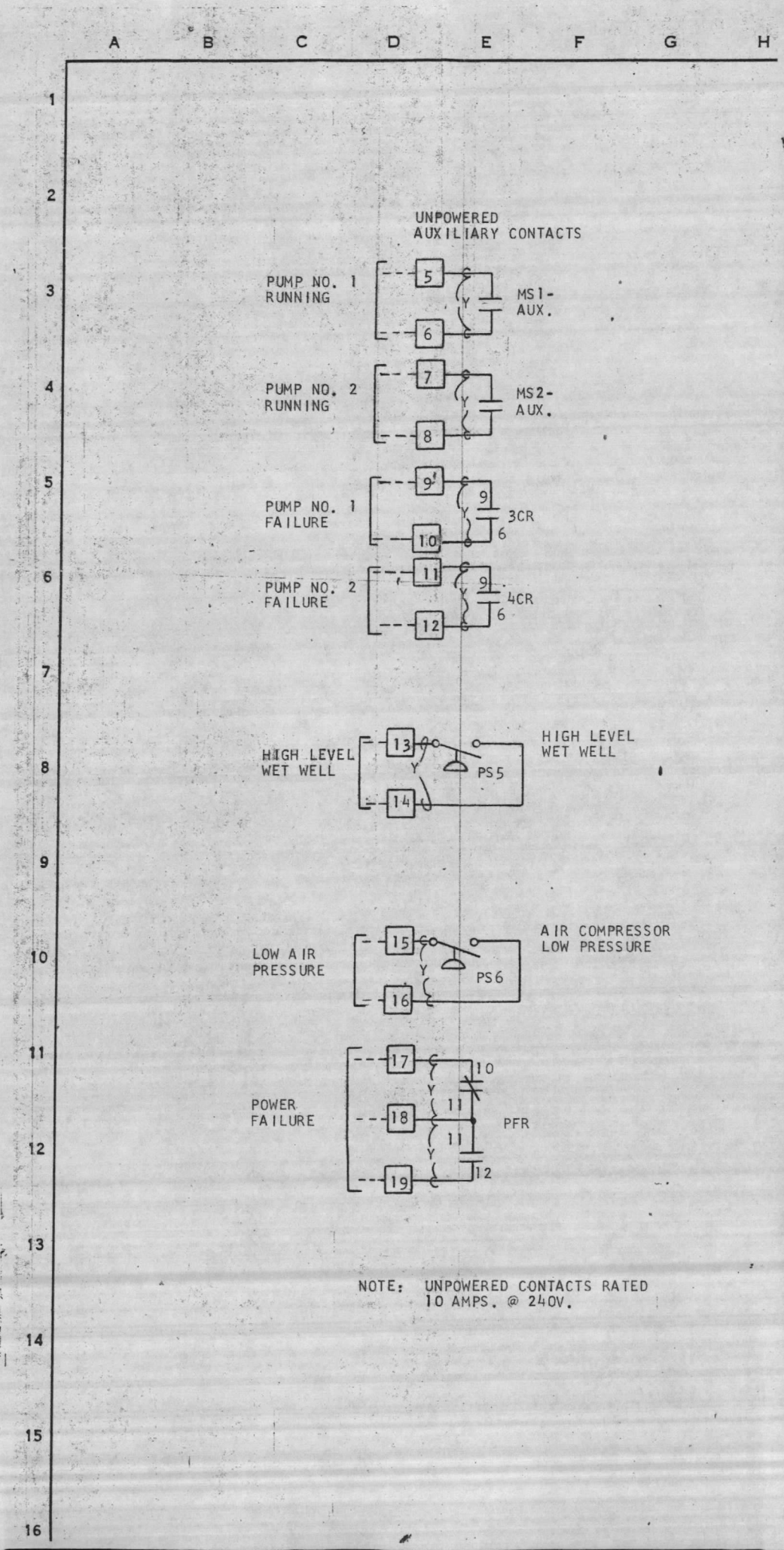
CONSOLIDATED ELECTRIC COMPANY
141 SOUTH LAFAYETTE ROAD • ST. PAUL, MINN. 55107

FINISH PAGE 1 OF 3

TOLERANCES UNLESS OTHERWISE SPECIFIED. TWO PLACE DEC. ± .010. THREE PLACE DEC. ± .005. FRACTIONS ± 1/64. ANGULAR.

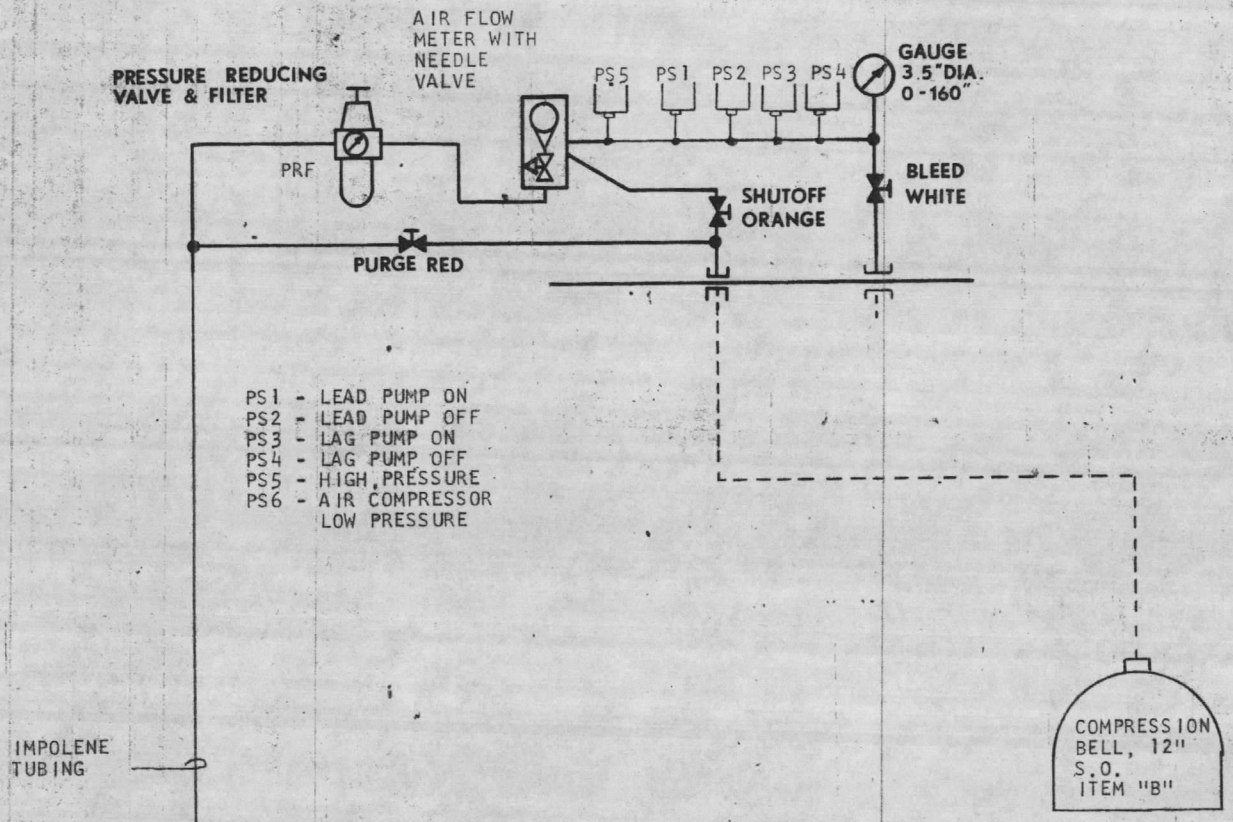
DO NOT SCALE | DRAWN VH | DATE | CHECKED DL

DRAWING NO. C904130-01 | A


A B C D E F G H
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
UNPOWERED
AUXILIARY CONTACTS
PUMP NO. 1
RUNNING
5
6
Y
MS1-
AUX.
PUMP NO. 2
RUNNING
7
8
Y
MS2-
AUX.
PUMP NO. 1
FAILURE
9'
10
9
Y
6
3CR
PUMP NO. 2
FAILURE
11
12
9
Y
6
4CR
HIGH LEVEL
WET WELL
13
14
Y
PS5
HIGH LEVEL
WET WELL
LOW AIR
PRESSURE
15
16
Y
PS6
AIR COMPRESSOR
LOW PRESSURE
POWER
FAILURE
17
18
19
Y
Y
Y
10
11
11
12
PFR
NOTE: UNPOWERED CONTACTS RATED
10 AMPS. @ 240V.

J K L M N O P Q R S T U

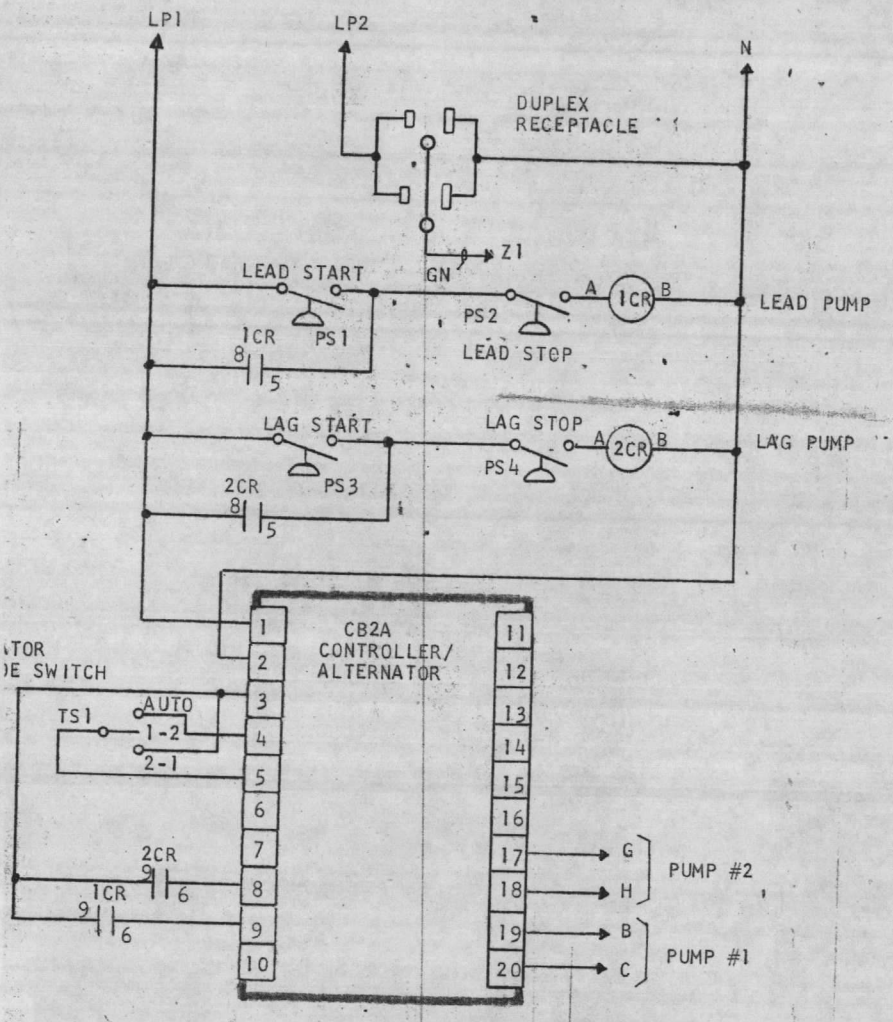
REV	C.O. NO.	DATE	DESCRIPTION	CHK	AP
A		7/10/79	RELEASED		



1925

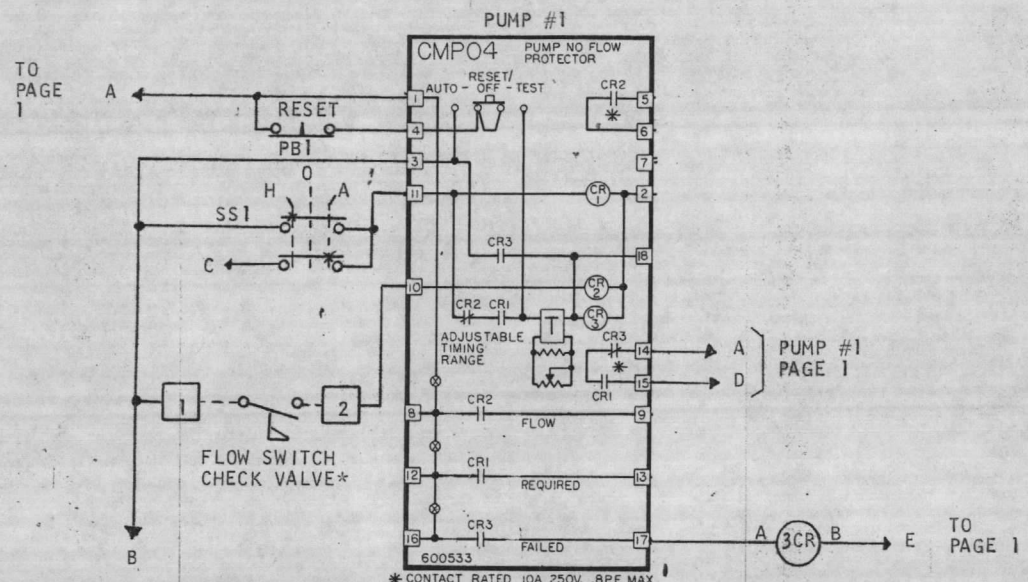
TITLE: WIRING DIAGRAM BULLETIN A700 POWERPACK CONTROL PANEL		
SHOP ORDER 22515	JOB NAME CAMP LEJEUNE, N.C.	MATERIAL
CONSOLIDATED ELECTRIC COMPANY 141 SOUTH LAFAYETTE ROAD • ST. PAUL, MINN. 55107		FINISH PAGE 3 OF 3
TOLERANCES UNLESS OTHERWISE SPECIFIED. TWO PLACE DEC. ± .010. THREE PLACE DEC. ± .005. FRACTIONS ± 1/64.	DO NOT SCALE	DRAWN VH DATE / CHECKED DL — DRAWING NO. C904130-01

REV	C.O. NO.	DATE	DESCRIPTION	CHK	APR
A		7/10/79	RELEASED		



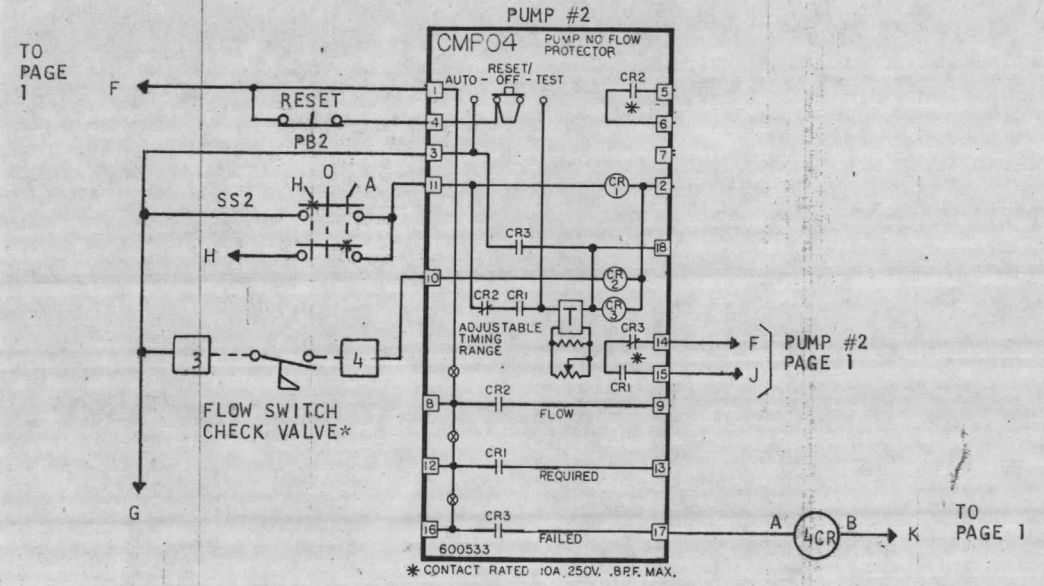
1925

TITLE: WIRING DIAGRAM BULLETIN A700 POWERPACK CONTROL PANEL			
SHOP ORDER 22515	JOB NAME CAMP LEJEUNE, N.C.		MATERIAL
CONSOLIDATED ELECTRIC COMPANY 141 SOUTH LAFAYETTE ROAD • ST. PAUL, MINN. 55107			FINISH PAGE 2 OF 3
TOLERANCES UNLESS OTHERWISE SPECIFIED. TWO PLACE DEC. ± .010. THREE PLACE DEC. ± .005. FRACTIONS ± 1/64. ANGULAR.	DO NOT SCALE	VH / DATE	DRAWN DL / CHECKED	DRAWING NO. C904130-01	A



* MODEL 54G CHECK VALVE
S.O. ITEM "C"

ALTEI
OVERI



Dept 15350

file

CONTRACTOR'S SUBMITTAL TRANSMITTAL

SND LANTDIV 4-4355/3 (Rev. 8/76)

CONTRACT NO	TRANSMITTAL NO	DATE
NM-7526	738/743	

FROM CONTRACTOR

TO

PROJECT TITLE AND LOCATION

1236A

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted

☐ Contractor Approved ☐ OICC Approval ☒ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS, CODE AND DATE
738	3.1	CAT DATA GET GRIND HOG COMMINUTORS	7	R	10/29/79
743	3.2	CERTIFICATION	1	R	10/29/79

CONTRACTOR'S COMMENTS

file / field 11-15-79 gw

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 10-17-79

CONTRACTOR REPRESENTATIVE (Signature):

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

Insufficient data submitted for evaluation. Resubmit with complete technical data on proposed substitution. Acknowledgement that all changes caused by the proposed substitution will be responsibility of the Contractor and at no additional cost to Govt, including any necessary changes to wet well, and proposed change in contract price and time.

Disapproved - Foreign Manufacturer, Poor Track Record

COPIES TO: ✓ OICC (2) LANTDIV (1) A-E (1)

DATE: 10/29/79, 11/6/79

SIGNATURE:

MANUFACTURER'S CERTIFICATION

September 27, 1979

East Coast Construction Co.,
P.O. Box 5004,
Jacksonville, N.C. 28540, U.S.A.

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

Attention: Mr. Bill Corbin, Jr.

Subject: N-62470-77-C-7526
205 Bed Hospital, Naval Regional Medical Center,
Marine Corps. Base, Camp Lejeune, North Carolina.

Gentlemen:

We hereby certify that the G.E.T. Model 10L Comminutor we propose to furnish for this project conforms with Paragraph 4.9 of NAVFAC Specification No. 05-77-7526 as follows:

(1) The Comminutor shall continuously screen and comminute solids in the raw sewage flow and shall be designed with a total screen area of 282 sq. in. exceeding the specified screen area required and thus allowing for the passage of the specified flow of 0.75 MGD and not allowing overflow of uncut solids at that flow rate.

The rotating shear bars and stationary combs shall be individually replaceable.

The comminutor shall be close coupled with the gear motor mounted directly on the comminutor.

The following exceptions are taken:

1. Slot width (12 mm) .470". This dimension is an integral part of the design and generally acceptable in the Wastewater Treatment industry as an acceptable solid size reduction.

2. Cutting Elements/Material of Construction - Hardened Swedish Tool steel. This material provides longer life and resistance to the abrasive material inherent in typical sewage streams.

3. Gear Motor 1 hp, 460/3/60 Explosion Proof. The mechanical capability of the gear box allows for the supply of a motor larger than that specified. The additional horsepower allows for continued operation under heavy loading conditions, reducing the possibility of shutdown due to overload.

4. Drum Screen - Ductile Iron Casting
Body - Gray Iron Casting

17 36 A

Cont'd.....2

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

From a review of the plans, it would appear that there is no requirement for a return bend structure. The proposed G.E.T. Comminutor is a bottom discharge design allowing for a free discharge into the wet well located directly below the Comminutor.

We trust that the above is acceptable and complete.

Yours very truly,

G.E.T. INDUSTRIES INC.

W. David Martin

/si

1736A

get

Emory L. Wilson and Associates, inc.

October 3, 1979

Mr. Bill Corbin, Jr.
East Coast Construction Co., Inc.
P. O. Box 5004
Jacksonville, NC 28540

RE: GET Comminutor
Camp LeJeune, North Carolina
Our Job No. 70-79

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

Dear Bill:

The purpose of this letter is to provide additional information on the GET Comminutor Manufacturer's Certification for this project. As the certification indicates, the comminutor does not require the return bend to function properly, because:

1. The primary function of a return bend is for an in-channel installation, to return the discharge flow from the bottom of the comminutor to the channel. In this particular installation it is not required, as the bottom discharge would fall directly into the wet well.

2. The GET comminutor does not require the return bend to function properly. This unit does not need any induced head, nor must it remain underwater, to work properly, as the certification indicates.

3. Return bends, as a general product, are not designed as a separate structural item because of their function outlined in paragraph (1) above.

In summary, the GET comminutor does not need a return bend to function properly in the installation shown for this project. Should you have any questions regarding this item, please do not hesitate to call.

Cordially,

C. Spencer Sullivan, Jr.

C. Spencer Sullivan, Jr.
Office Sales

CSSjr/dh

1736A
RECEIVED
OCT 5 1979
EAST COAST CONSTRUCTION CO., INC.

102 Dolley Madison Road • Greensboro, North Carolina 27410 • 919-294-1074

Grind Hog™ Comminutors

Spec. Sec. 15350
Para. 4.9

Specifications

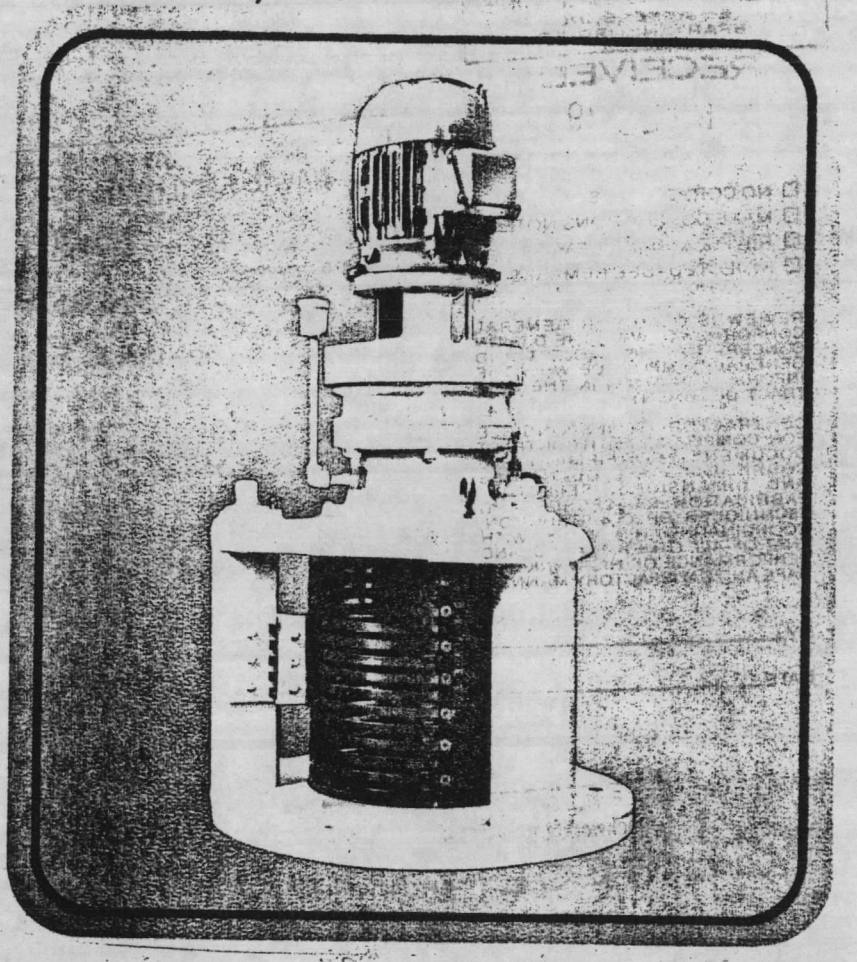
The Comminutor shall be a geared motor driven unit. The cutting bar and rotating shear bars shall continuously reduce entrained solids to an acceptable size, so as to allow for the passage of all influent under extreme conditions.

The Comminutor shall have a rotating drum speed of 50 rpm (nominal), and shall be supplied with a 1 horsepower motor. The cutting bars shall be of one piece construction. It shall be reversible and replaceable. Its teeth are to be of hardened tool steel. The rotating shear bars shall be of the same material, they shall be replaceable and their position on the heavy duty ductile iron rotating drum adjustable to allow for proper clearance. The inlet area shall be

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

The casing and curb ring shall be of heavy construction and of high quality cast iron. The curb ring shall be machined flat and be complete with three (3) holes for anchor bolts. The casing shall be of the open type allowing free access for complete cutting bar and shear bar mechanism maintenance and inspection, without dismantling the unit.

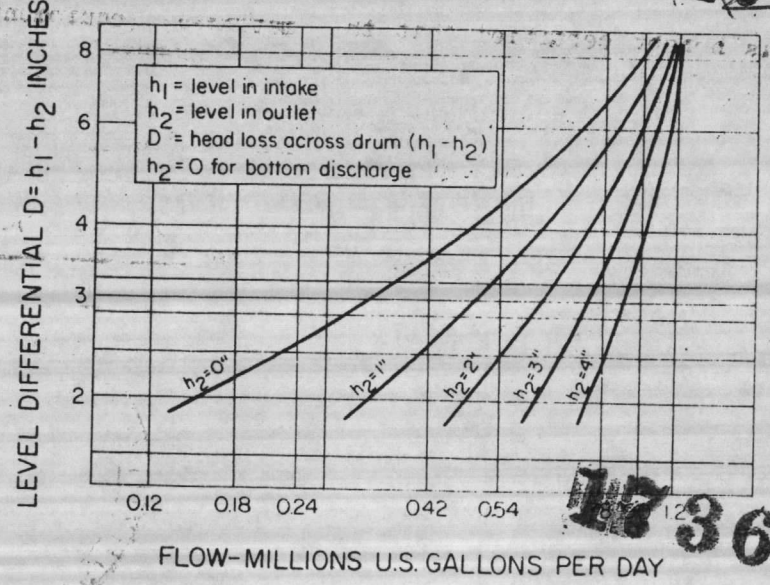
Speed reducer shall be by a heavy duty gear of the totally enclosed nonvented type, and suitable for total submergence during emergencies. The gear shall be of the sealed type, and shall require only routine greasing. The speed reducer shall have heavy duty S.K.F. or equal, bearings, selected for a minimum of 80,000 hours operation, and shall have double seals on the drive end to ensure flood proof operation. The speed reducer shall be equipped with heavy duty gears and splines, and shall be driven by a motor with impregnated windings suitable for operation in damp conditions.



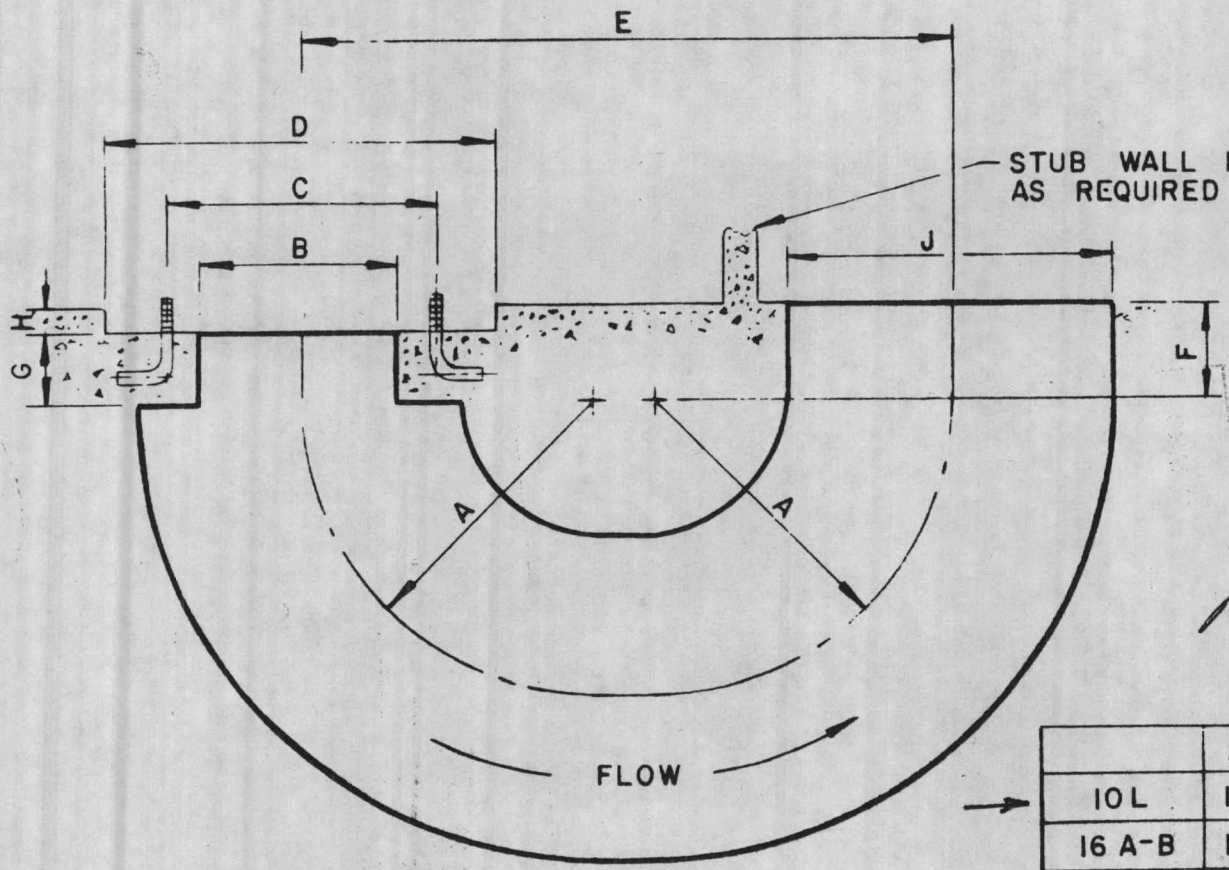
In-Channel Model 10 Comminutor

Performance Curve

1738



1736A



CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

Spec. Sec. 15350
Para. 4.9.2

	A	B	C	D	E	F	G	H	J
10 L	14	13	16 7/8	21	34	7 1/2	6	1 1/2	16
16 A-B	18	18	23	28	42	7 1/2	6	1 1/2	24
26	23	34	38	44	52	7 1/2	6	1 1/2	34

"E": CENTRE TO CENTRE DIMENSION VARIABLE - DETERMINED BY CHANNEL DESIGN AND ALLOWANCES REQUIRED FOR CUTTING BAR ADJUSTMENT AND/OR REPLACEMENT.

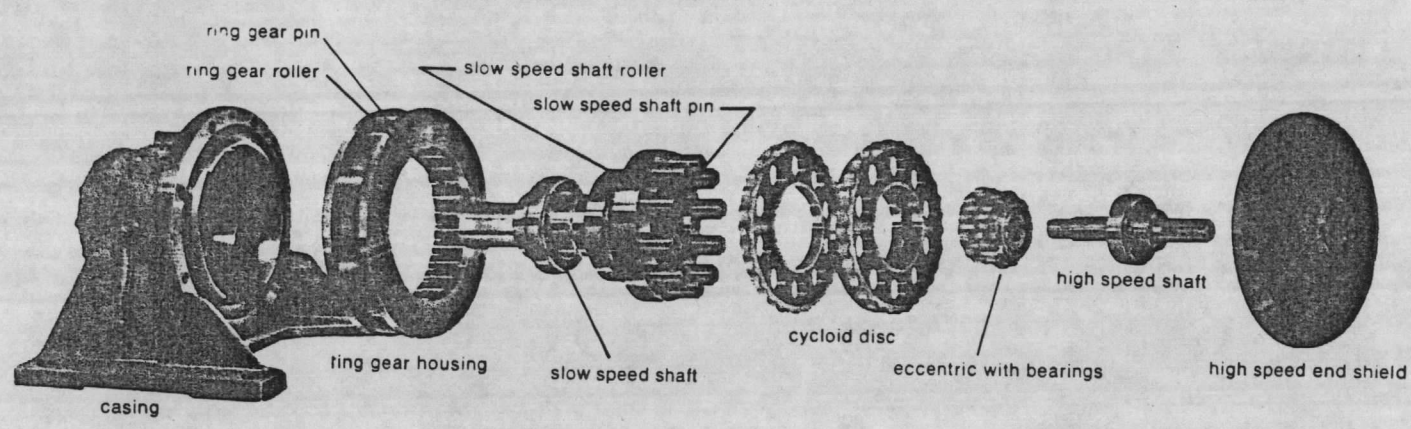
MATERIAL - 16" GAUGE HOT ROLLED STEEL

NOTE: THE IMMEDIATE OUTLET FROM THE COMMINUTOR SHOULD BE CIRCULAR, BUT IT CAN THEN BE MODIFIED AS REQUIRED, PROVIDING THE CROSS-SECTIONAL AREA IS NOT REDUCED.

PROJECT
CAMP LEJEUNE, N.C.
RETURN BEND, DETAIL

DATE	SCALE
AUG - 1 1979	N.T.S.
JOB NO. G79-126	DWG. NO.

G.E.T. INDUSTRIES INC.



Here is how it works
There are essentially three major moving parts:

1. The high speed input shaft with integrally mounted eccentric and bearing.
2. The cycloid discs.
3. The slow speed shaft assembly.

Operation:

As the eccentric (high speed shaft) rotates, it rolls the cycloid discs around the internal circumference of the stationary ring gear. The resulting action is similar to that of a wheel rolling along the inside of a ring. As the wheel (cycloid discs) travels in a clockwise path around the ring (ring gear), the wheel turns in a counter-clock wise direction around its own axis. In the SM-CYCLO DRIVE, the teeth of the cycloid discs engage successively with the pins of the fixed ring gear, thus providing a reverse rotation at a reduced speed. For each complete revolution of the high speed shaft, the cycloid discs are advanced a distance of one tooth in a reverse direction.

There is one less tooth per cycloid disc than there are pins in the fixed ring gear, which results in reduction ratios being equal to the number of teeth in each disc.

The movement of cycloid disc is transmitted to the slow speed shaft by the projection of pins through the bores of the discs.

A two disc system is used to increase torque capacities and reduce fly wheel or WR^2 effects, thereby offering an exceptionally smooth, vibration-less drive.

SM-CYCLO DRIVES and BEIER VARIATORS
SUMITOMO MACHINERY CORP. OF AMERICA
The people who reduce speed, not power
145 COMMERCE ROAD, CARLSTADT, N. J. 07072. (201) 933-9120.

PRINTED IN U.S.A.

BULLETIN 200
5/75

SM-Cyclo Drive. A simple but unique concept in

High Efficiency Even at High Ratios

Torque transmitting parts roll, don't grind. There is no sliding friction, so output torque/input horsepower ratio approaches 95% even at 87:1 reductions.

Exceptional Life

Test Cyclo Drives show negligible wear after 50,000 hour life tests, and indications are future wear would be negligible. No one knows how long a Cyclo Drive, used correctly, will last. Virtually no wear failures have occured in the one million Drives put into operation since 1939.

This remarkable record is due to Cyclo Drives unique rolling action and the use of high-carbon chromium bearing steels, through hardened and tempered to Rockwell C57-63, in all major torque transmitting parts.

Wide Range of Ratios, Input Power and Mountings

Single stage reductions from 11:1 to 87:1; double stage to 7,569:1; triple stage to 658,503:1; with practical ratios over 10 billion to 1.

Input horsepower can range from ¼ to 150 Hp.

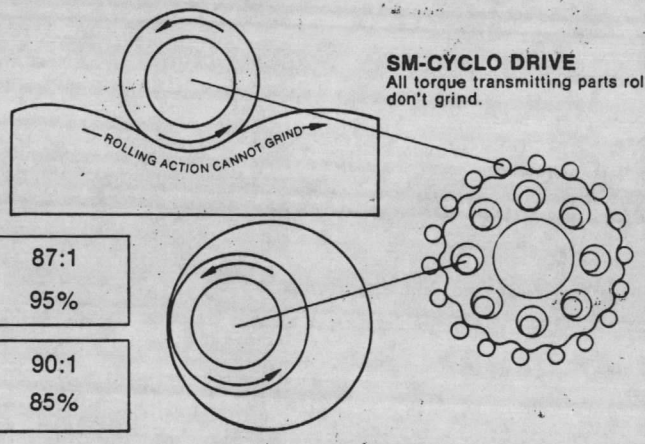
A wide variety of horizontal and vertical mounts, with various adaptors, are available.

Reliable, Maintenance-Free Service

Cyclo Drive's basic construction and simple principle of operation make it extremely reliable. Minimum maintenance assures a long, trouble-free life.

Concentric Shafts for Easy Mounting

Permits quick, easy, compact mounting, and direct, inline power transmission.



SM-CYCLO DRIVE
All torque transmitting parts roll, don't grind.

Cyclo Drive gives 87:1 reduction in a single stage, approximate efficiency 95%.

Conventional reducers need 3 stages, lose efficiency

CYCLO	Ratio	87:1					=	87:1
	Efficiency	95%						95%
CONVENTIONAL	Ratio	6:1	×	5:1	×	3:1	=	90:1
	Efficiency	95%		95%		95%		85%
		1st Stage		2nd Stage		3rd Stage		

Capacity for Frequent Stop-Start and Severe Reversing

Flywheel (WR^2) effect in the Cyclo Drive is reduced to a minimum, so that it responds quickly in these applications.

The shear-free cycloidal teeth also make Cyclo Drive ideal for these applications, which quickly wear out many reducers.

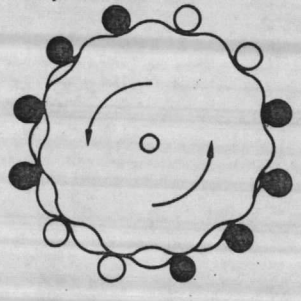
Highest Overload Capacity

The Cyclo Drive has the strength to withstand overloads that break the teeth of other reducers. Here's why.

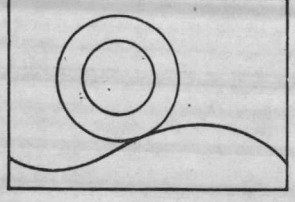
At least 2/3 of Cyclo Drive's teeth share the shock of overload, and each tooth is cycloidally shaped — can't be sheared off.

Compare that to conventional reducers, where one or two teeth absorb the entire shock — teeth which have a defined shear point.

Cyclo Drive:
many teeth share the shock of overload.



Teeth on Cyclo Disc have no shear point.



Smooth, Silent Operation

All parts of the Drive are completely symmetrized around the shafts, and the two cycloid discs which transmit the power are balanced in 180° opposition, for perfectly balanced centrifugal force. The result is smooth, vibrationless and quiet operation.

No Thermal Factor Limitations

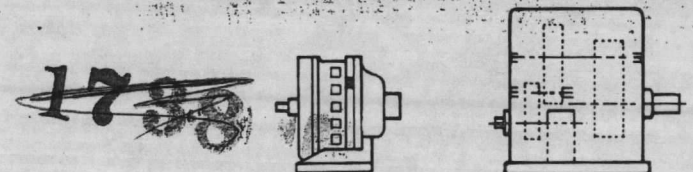
Cyclo Drive's smooth, almost frictionless operation all but eliminates the conventional limitations due to heat. In all sizes the Drive has thermal ratings that exceed mechanical capacities.

Compactness

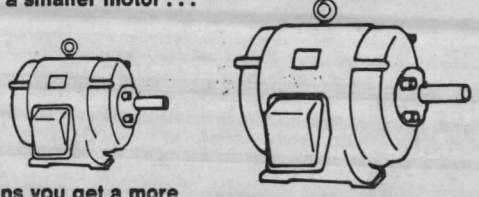
Cyclo Drive is considerably smaller than conventional reducers, but it doesn't sacrifice efficiency in the higher ratios as other compacts must. This means you can use not only a smaller reducer, but a smaller motor too, because the high efficiency lets you obtain the same output torque you once did from a larger motor.

1736

Smaller size reducer . . . (up to 60% smaller)



Plus a smaller motor . . .



Means you get a more compact and efficient product.

VERTICAL TYPE SM-CYCLO DRIVE

CONSTRUCTION

Vertical SM-CYCLO DRIVES have the same internal construction as horizontal type units, except that vertical models 56Y and larger are equipped with an oil pump, as illustrated.

(Small units 49Y--53Y are grease lubricated and the 54Y employs oil-bath lubrication). As the plunger of the oil pump (52) is pushed by the cam (19), which turns with the slow speed shaft (31), the oil in the casing (22) flows through the piping (54) to the speed reduction mechanism. Here the oil is atomized and the condensate returns to the oil tank at the bottom. The pump is actuated automatically with the rotation of the slow speed shaft. An oil signal (53) is provided at the midpoint of the piping (54) to allow visual checking of the oil being circulated.

Sizes 61Y and 62Y are equipped with two oil pumps.

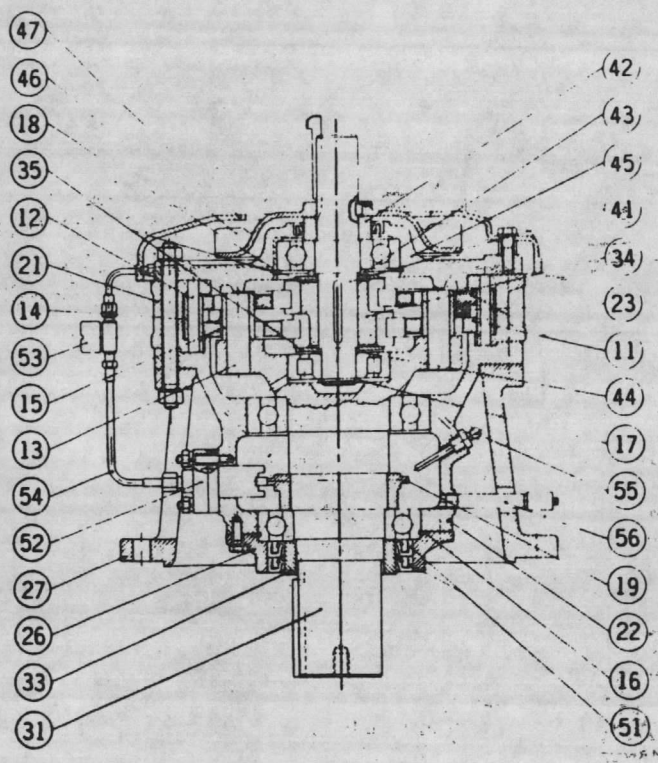
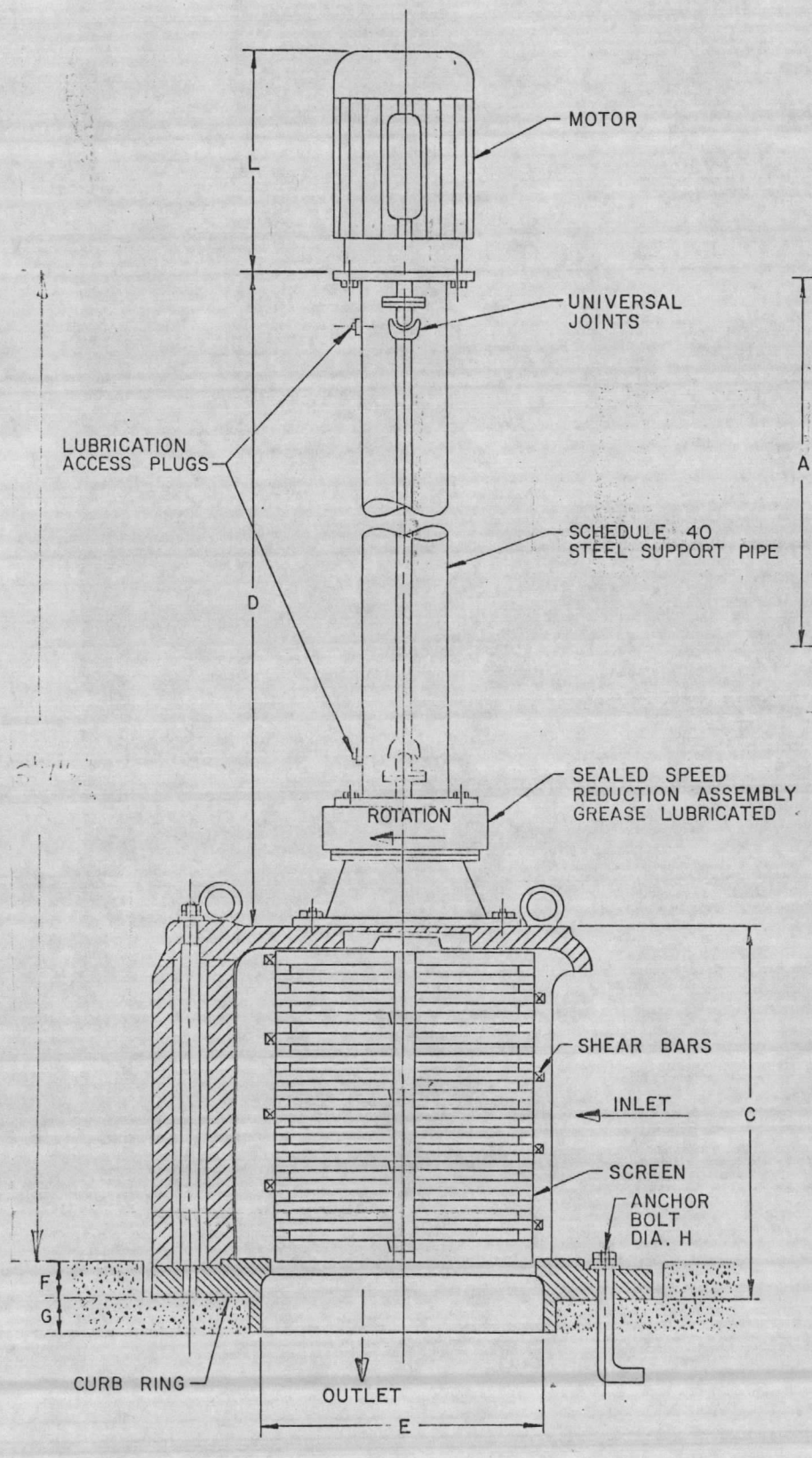
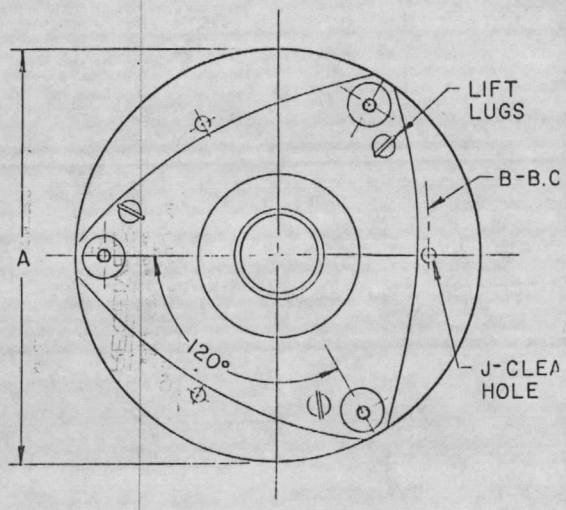


Table 8 MAIN PARTS LIST

11	Cycloid disc	23	Spacer ring	44	Spacer
12	Ring gear pin	26	Gland	45	High speed end shield
13	Slow speed shaft pin	27	Base	46	Cooling fan
14	Ring gear roller	31	Slow speed shaft	47	Fan cover
15	Slow speed shaft roller	32	Spacer	48	Adaptor
16	Retaining ring	33	Collar (slow speed)	51	Oil seal
17	Retaining ring	34	Eccentric	52	Oil pump
18	Retaining ring	35	End plate	53	Oil signal
19	Cam	41	High speed shaft	54	Piping
21	Ring gear housing	42	Collar (high speed)	55	Oil gauge
22	Casing	43	Spacer	56	Drain plug

1736





ENGINEERING DATA

MODEL	CAPACITY MGD	HP	CUTTER SPEED RPM	SLOT WIDTH INCH	NO. OF SLOTS	NO. OF TEETH	INLET AREA	OUTL ARI
101	6-12	1	30	.110	36	15	90	

DIMENSIONS

A	B	C	D	E	F	G	H	J			
30 3/4"	16 3/4	14 1/2	30 3/8	11				1			

STD. MATERIALS OF CONSTRUCTION

HOUSING - GRAY IRON
DRUM (SCREEN) - HIGH STRENGTH DUCTILE IRO
SHEAR BARS, CUTTING BARS (COMBS)] CARBON - SILICONE TOOL STEEL
MOTOR ..1.. HP, FRAME ..., STYLE ...
POWER 230 / ... / ..., WT. 84 lb.
SPEED REDUCER ..., WT. 60 lb.
OPTIONS INCLUDED:
MOTOR Extension

PROJECT
[illegible]
Durham, [illegible]

DATE AUG - 1 1979 | SCALE 1:1

JOB NO. | DWG. NO.

G.E.T. INDUSTRIES INC.

4936
1988

737.1

1535

DRAWING AND SPECIFICATION TRANSMITTAL

LOCKWOOD GREENE ENGINEERS, INC.

SPARTANBURG, SOUTH CAROLINA 29304
P.O. BOX 491 (803)582-2351

TO Naval Facilities Engineering Command
Atlantic Division
Norfolk, Va. 23511

DATE Nov. 30, 1979
JOB NO. 77239.16
JOB NAME Naval Regional Medical Center

TRANSMITTAL NO. 1800
SHEET 1 OF 1
ORDER NO.
Contract Number
N-62470-77-C-7526

ATTN. Mr. John Grubbs Code 05

WE ARE SENDING YOU THE FOLLOWING DATA xx HEREWITH ____ UNDER SEPARATE COVER

QUAN.	DOCUMENT NO.	REV. NO.	DESCRIPTION	VENDOR	CODE
1			Exhaust Fans	ILG Industries	D
1			Heaters	ILG Industries	A
1			Aluminum Louvers	Vent Prod. Inc.	A

Six Associates to re-transmit this submittal with approval/disapproved and notes.

Per Telcon J. Rowe/J. Words of Six Assoc. 12-4-79

CODE FOR

LOCKWOOD GREENE DOCUMENTS

A - INFORMATION
B - REVIEW
C - APPROVAL
D - REVISED DWG. (SEE REVISION)
E - BID
F - CONSTRUCTION
G - PURCHASING
H -

VENDOR DOCUMENTS

K - NO CORRECTIONS NOTED
L - MAKE CORRECTIONS NOTED
M - REVISE AND RESUBMIT
N - REJECTED (SEE REMARKS)

COPIES TO	QUAN	TRANS ONLY	CODE	COPIES TO	QUAN	TRANS ONLY	CODE
ROICC	2						
Cardinal Contracting	3						

REMARKS

PLEASE ACKNOWLEDGE RECEIPT BY IMMEDIATE RETURN OF SIGNED COPY OF THIS TRANSMITTAL

RECEIVED BY ____ DATE ____ TRANSMITTED BY Richard McKnight

SIX ASSOCIATES
INCORPORATED
ARCHITECTS ENGINEERS PLANNERS
704 274-1551
1095 HENDERSONVILLE ROAD
BOX 5594
ASHEVILLE, N. C.
28803

PRINCIPALS
WILLIAM B. McGEHEE, A. I. A.
JOHN D. ROGERS, JR., A. I. A.
ROBERT E. TURNER, P. E.

SENIOR ASSOCIATE
ROBERT J. SCHELL, P. E.

ASSOCIATES
THOMAS F. BRIDGES, A. I. A.
JOHN BROADBOOKS, A. S. L. A.
ROBERT M. CAIN, R. A.
HAROLD D. GARREN, P. E.
ALBERT B. JOHNSON, A. I. A.
JAMES M. LORICK, JR., P. E.
EDWARD W. McCANTS, P. E.
MARSHALL B. ROBERTS, R. A.

December 6, 1979

Sect 15350

Lockwood-Greene Engineers, Inc
P.O.Box 491
Spartanburg, S. C. 29304

Attention Mr. Richard McKnight

Naval Regional Medical Center
Transmittal No. 737-1

Dear Mr. McKnight,

In reference to the subject shop drawing relating to exhaust fans, unit heaters and control devices, these submittals were inadvertently signed on the front transmittal sheet only.

The ILG exhaust fan was not approved because of the style submitted. The drawings call for a low silhouette extruded aluminum louvered type fan enclosure. A fan of this type meeting the capacities scheduled should be submitted for approval.

When this shop drawing is submitted, we will process it properly at that time.

Please distribute this information to the appropriate parties as necessary.

Sincerely,

SIX ASSOCIATES, INC.

Lowell E. Adkins

Lowell E. Adkins

LEA/mm
cc: Mr. R. E. Turner
Mr. J. M. Lorick
Naval Facilities Engineering Command - Code 05
ROICC
Cardinal Contracting Corporation

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76)

SECTION 15350 — 2 — Dil

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	737-1	11-8-79

FROM CONTRACTOR: CARDINAL CONT. CO. INC.

TO: LOCKWOOD-GREENE ENGRS

PROJECT TITLE AND LOCATION: NRMC CAMP LEJEUNE

CONTRACTOR USE ONLY

*List only one specification division per form. 1800

List only one of the following categories on each transmittal form, and indicate which is being submitted

☐ Contractor Approved ☒ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
737-1	CV3-15	I.L.G. INDUSTRIES:	7@	D	JML 11-28-79
"	"	①EXAUST FANS > CAT. DATA ②HEATERS	7@	A	JML 11-28-79
"	"	VENT PROD. INC.: ALMN. LOUVERS	7	A	JML 11-28-79

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 11-9-79

CONTRACTOR REPRESENTATIVE (Signature): Wm J. Haymaker

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

COPIES TO:
ROICC (2)
LANTDIV (1)
A-E (1)

DATE: 11-28-79

SIGNATURE: James M. Lewis

(919) 353-4479

229 CENTER STREET

EAST COAST CONSTRUCTION COMPANY, INC.
GENERAL CONTRACTORS
Post Office Box 5004
JACKSONVILLE, NORTH CAROLINA 28540

October 18, 1979

Cardinal Contracting Company
P. O. Box 8408
Camp LeJeune, N.C. 28542

Re: Contract N62470-77-C-7526
205 Bed Hospital
Naval Regional Medical Center
Marine Corps Base, Camp LeJeune, N.C.

Subj: Submittal Data on Heating & Ventilation
for the Sewage Pump Station

Gentlemen:

Attached are catalog cuts for approval on the heating and ventilation equipment called for in the general notes on sheet CV3-15. Below is a listing by note number of items contained in this submittal:

General Note 3: Exhaust Fans - ILG Industries

2 - CRB-15 Belted Centrifugal Power Roof Ventilators 1000 CFM @ 1/4" S.P., 1/4 H.P., 115 Volt, single phase, 815 RPM with Birdscreen and Disconnect for use in Pump and Motor Room

1 - CRB-15 DITTO except Spark Proof Construction and Explosion Proof Motor for use in Wet Well

General Note 8: Unit Heater - ILG Industries

1 - 7½ KW Horizontal Electric Unit Heater with 480 Volt, 3 Phase, 11.9 Amp Element; 115 Volt, Single Phase, 1/40 H.P., fan motor; built-in thermostat; and ceiling mounting bracket

1800

General Note 9: Motor RM Exhaust Fan Switch, Interlock, and Thermostat

1 - Standard Duty, 50AA363, Hand-OFF-Automatic, push button switch, SPDT with Nema 1 Surface Mount Type Enclosure

1 - Penn Controls A19ABC-4 Series Thoermostat set for 75° for Fan Control in Automatic position in a Nema 1 Surface Mount Type Enclosure

General Note 9 (Continued):I

1 - Square "D" Class 8501, Type C, general purpose normally open relay for use in interlocking Exhaust Fan and Motorized Louver

1 - 48" x 48" Model #2000 Extruded Aluminum Fixed Louver with Integral Motor operated Aluminum damper, birdscreen and 115 Volt, 70 Watt, Single Phase Motor by Vent Products Co., Inc.

General Note 10: Pump Room Exhaust Fan Switch and Interlock

1 - Standard Duty, 50CA3DE, Hand-OFF, Push Button Switch, NC contacts, with Nema 1 Surface Mount Type Enclosure

1 - Square "D" Class 8501, Type C, general purpose normally-open relay for use in interlocking Exhaust Fan and Motorized Louver

General Note 11: Wet Well Exhaust Fan Switch

1 - Standard Duty 50CA3DE, Hand-OFF, Push Button Switch, NC contacts, with Nema 1 Surface Mount Type Enclosure

We hope this will complete all data necessary and aid in your understanding of our attached submittal package. Your kindness to review and submit to the owner's authorized representative for formal approval is greatly appreciated.

Yours truly,

EAST COAST CONSTRUCTION COMPANY

W. L. Corbin,Jr.

1800

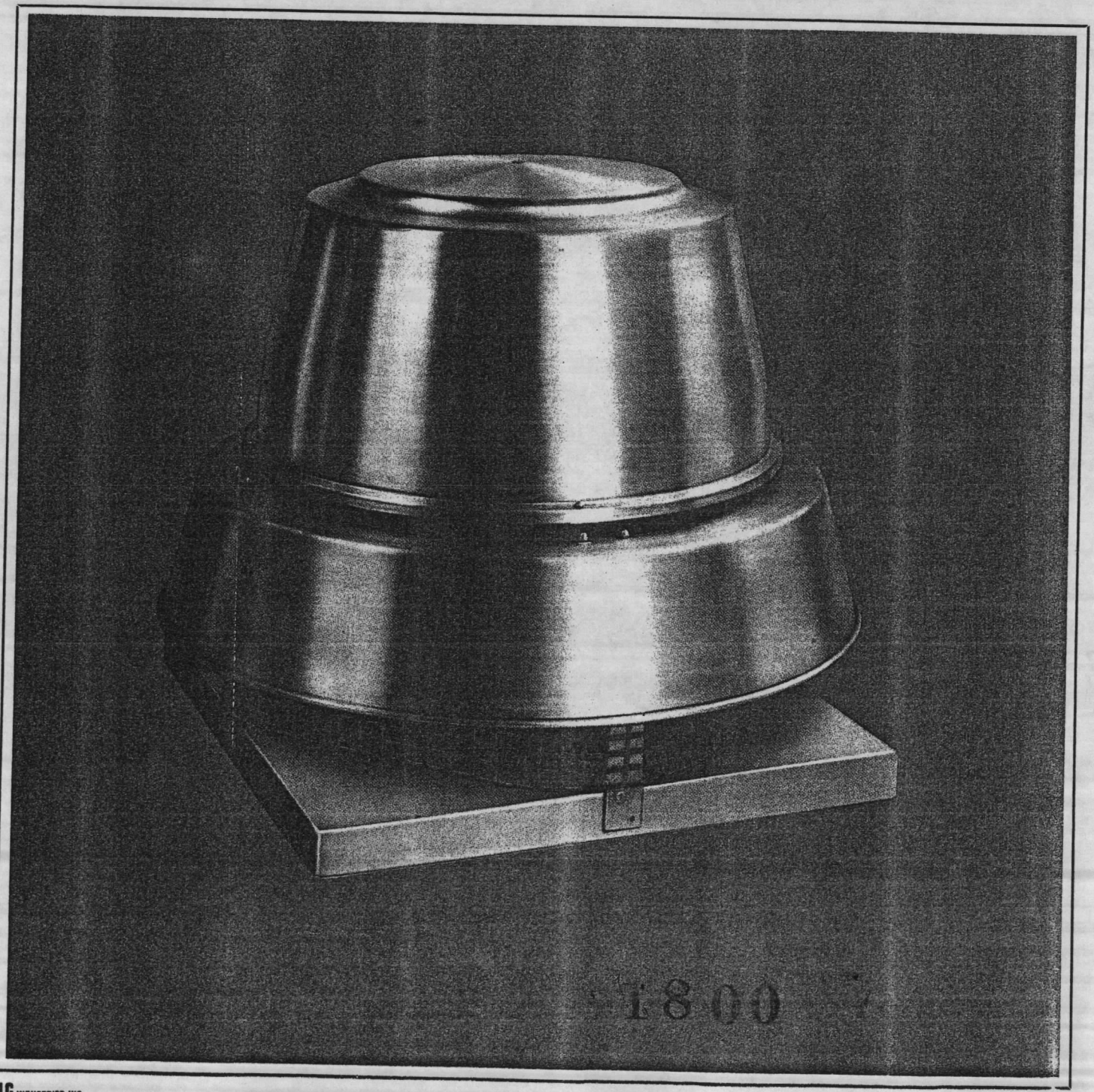
CRB
BELT DRIVE

ILG

Bulletin
DB3-510A
Supersedes
DB3—510
RE 12/78

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

Centrifugal Power Roof Ventilator



CRB FEATURES AND BENEFITS

CRB units are available in seven sizes and with motors from 1/4 to 7-1/2 HP to cover a wide range of capacities from 429 to 29,775 CFM. These low silhouette models have external housings of durable spun aluminum for optimum protection from the elements. All major parts including deep spun venturi, are designed as integral components for high efficiency and minimum air turbulance. The aluminum wheel has non-overloading characteristics. V-belt drives and disconnect switches are standard. Prefabricated roof curbs, shutters, and hinged bases available as optional accessories.

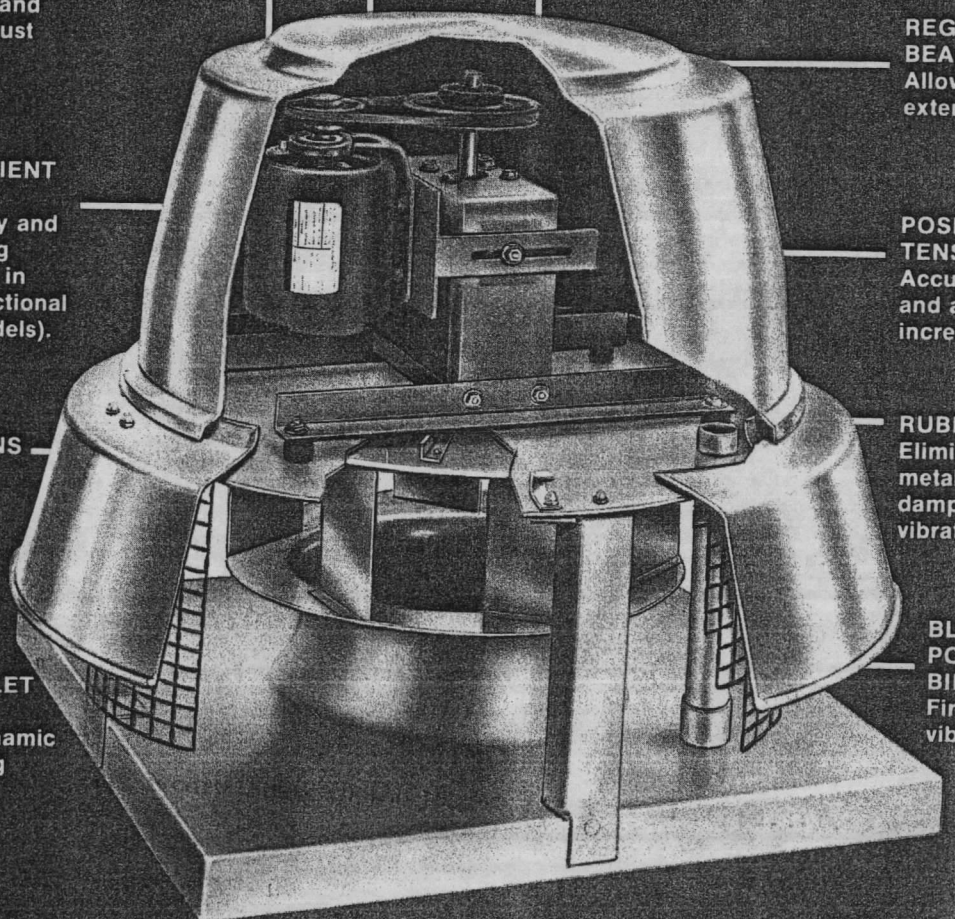
CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

VARIABLE SPEED DRIVE
Simplifies adjustments to match operating conditions.

STEEL DRIVE PACK
Assures rigid alignment of moving parts reducing noise and maintenance.

MOTOR OUT OF AIRSTREAM
Protects motor and drive from exhaust contaminants.

REGREASABLE BEARINGS
Allow relubrication for extended service life.



ENERGY EFFICIENT MOTORS
Conserve energy and reduce operating costs, (available in single phase fractional horsepower models).

POSITIVE BELT TENSION
Accurate alignment and adjustment increases belt life.

IMPELLER BACKPLATE FINS
Cool motor compartment, extending life of motor and drive.

RUBBER ISOLATORS
Eliminate metal to metal contact, dampening sound and vibration.

OVERLAPPING WHEEL AND INLET CONE
Reduces aerodynamic losses, increasing efficiency.

BLACK POLYPROPOLENE BIRDSCREEN
Fire retardant, vibration free mesh.

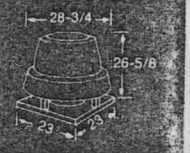
1803

DISCONNECT SWITCH
Cuts power to motor while servicing unit.

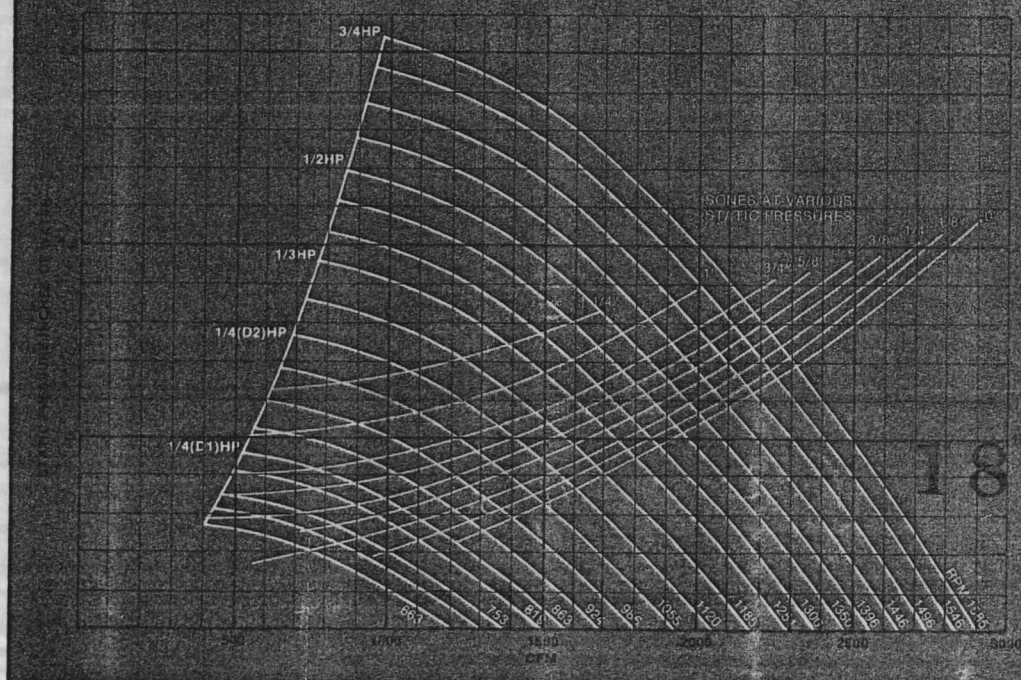
AMCA AIR AND SOUND SEAL
Production units will perform to published performances.

TAPER LOCK BUSHING
Provides convenient wheel puller, when service is required.

CRB 15 PERFORMANCE DATA



CFM and SONES at various STATIC PRESSURES, IN. WG									Tip Speed	RPM	RPM Range — Motor HP					Peak BHP
0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"			1/4 D1	1/4 D2	1/3	1/2	3/4	
1216 4.3	959 3.7	561 3.2							2604	663						0.06
1308 5.0	1073 4.4	765 3.9							2800	713						0.08
1381 5.5	1162 4.9	887 4.4							2957	753						0.09
1502 6.4	1304 5.8	1066 5.3	723 4.9						3216	819						0.12
1583 7.0	1396 6.4	1176 5.9	902 5.5						3389	863						0.14
1695 7.9	1522 7.3	1323 6.8	1091 6.3	712 5.9					3629	924						0.17
1809 8.9	1648 8.3	1467 7.7	1261 7.3	1004 6.8					3872	986						0.21
1935 10.0	1786 9.4	1621 8.8	1435 8.4	1225 7.9	922 7.5				4143	1055						0.26
2054 11.1	1914 10.5	1764 10.0	1593 9.5	1406 9.0	1186 8.6	793 8.2			4398	1120						0.31
2174 12.2	2040 11.6	1901 11.1	1745 10.6	1575 10.2	1386 9.8	1141 9.4			4653	1185						0.36
2295 13.5	2168 12.9	2038 12.4	1894 11.9	1737 11.4	1569 11.0	1375 10.6			4913	1251						0.43
2385 14.5	2262 13.9	2139 13.4	2003 12.9	1856 12.4	1698 12.0	1524 11.6	965 10.8		5105	1300						0.48
2476 15.6	2358 15.1	2241 14.5	2113 14.0	1973 13.5	1823 13.1	1663 12.7	1240 11.9		5301	1350						0.54
2561 16.7	2446 16.1	2334 15.6	2212 15.1	2078 14.6	1936 14.1	1788 13.7	1425 12.9		5482	1396						0.60
2653 17.9	2542 17.3	2435 16.8	2317 16.3	2190 15.8	2057 15.3	1915 14.9	1592 14.1	1024 13.3	5678	1446						0.66
2744 19.2	2637 18.6	2534 18.1	2421 17.6	2302 17.1	2175 16.6	2039 16.1	1745 15.3	1324 14.5	5875	1496						0.73
2836 20.5	2732 19.9	2632 19.4	2524 18.8	2412 18.3	2290 17.8	2161 17.4	1885 16.5	1539 15.8	6071	1546						0.81
2907 21.3	2805 20.7	2708 20.2	2604 19.6	2497 19.2	2378 18.7	2255 18.2	1992 17.3	1681 16.6	6224	1585						0.87



Above:

Performance data for CRB units with inlet ducts. Peak BHP's shown do not include drive losses. Where applicable, D1 designates lower speed drive, D2 designates higher speed drive.

Left:

Selection procedure:

1. Locate CFM and SP on chart and at point of intersection estimate RPM.
2. Continue vertically to determine sones.
3. Refer to example on page 4.

CRB OPTIONS & ACCESSORIES

ENERGY EFFICIENT OPERATION

Fractional HP units are available in single phase, open enclosure, energy efficient motors. These units include UL listing.

UL LISTING

Available also on integral horsepower models with open enclosure motors.

PREFABRICATED ROOF CURBS

Standard construction is galvanized steel with fiberglass insulation and wood nailer strips. Aluminum and other special construction also available. For complete information, refer to Bulletin DB3-950.

SHUTTERS

Gravity or motor operated backdraft dampers. Aluminum construction designed for mounting inside prefabricated curbs.

PROTECTIVE COATINGS

CRB roof ventilators are not recommended for exhausting air of a corrosive nature. However, Corrocote is available for light concentrations and Lenkote for more severe conditions. For further information and details, request Protective Coatings Bulletin.

WIRED DISCONNECT SWITCHES

Disconnects are standard but not wired, on units with open enclosure and TEFC motors. Optional factory wiring to motors is available.

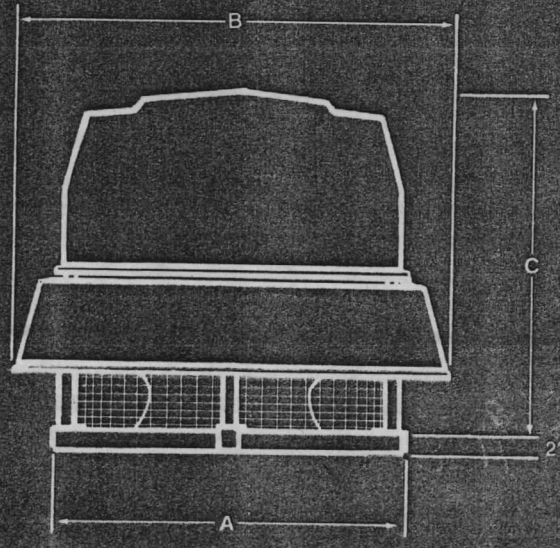
SPECIAL MOTORS

NEMA open drip proof enclosures are standard. Two speed, totally enclosed, and explosion proof motors are also available for most units.

HINGED BASES

Permit access to base of roof curbs for servicing dampers or shutters.

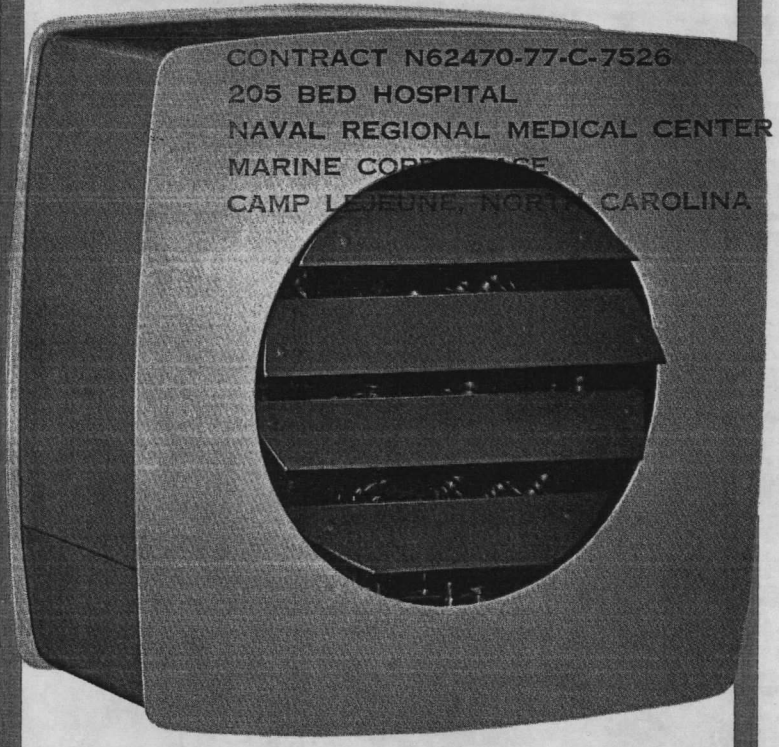
CRB DIMENSIONS & WEIGHTS



Size	A	B	C	Shutter Size	Roof Opening	Weight Max HP
12	23"	28-3/4"	24-1/8"	16"	15"	86#
15	23"	28-3/4"	26-5/8"	16"	15"	90#
18	28-1/2"	35-7/16"	26-3/4"	20"	19"	110#
24	34"	42-3/4"	33-9/16"	26"	25"	192#
30	39-1/2"	50-1/4"	38-1/8"	30"	29"	262#
36	45-1/2"	61-3/4"	45-1/2"	36"	35"	380#
44	56"	71-1/4"	52-7/16"	48"	47"	515#

Certified dimensions on request. Specifications subject to change without notice.

ELECTRIC UNIT HEATERS MODEL 300



Model 300 Electric Unit Heaters are economical, energy saving heating units designed for long dependable service. Available in a wide range of sizes and a range of capacities for continuous, intermittent or occasional heating. All units are complete with adjustable discharge louvers and attractively finished with a durable baked-on enamel.

Division of Carrier Corporation

ilg

Bulletin **DB5-102**

supplement to DB5-101 JUL/77

Horizontal Units 2kw—10kw

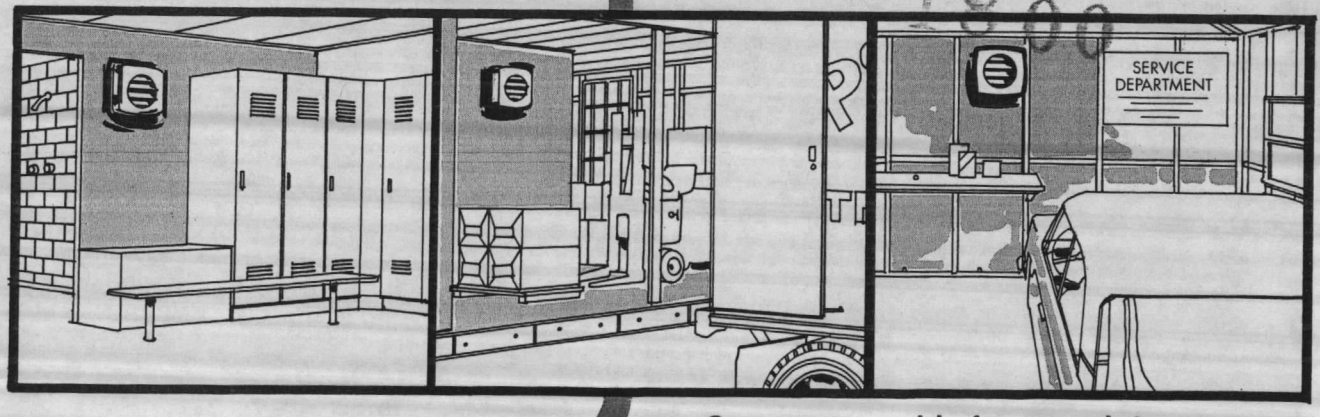
120-208-240-277-480 Volts
Single and Three Phase

Value Packed Features

- All steel welded construction with baked enamel finish, suitable for both commercial and industrial applications.
- Built-in contactors where required to reduce installation costs.
- Integral control transformers on all 277 and 480 volt units eliminate need for separate 120 volt supply line.
- Factory wiring for easy, economical installation.
- Automatic reset thermal limit switch, cuts off power if operating temperatures become excessively high.
- Large control compartment with full access provides maximum convenience for wiring and servicing.
- Aluminum bladed fan wheels designed for quiet operation and low horsepower consumption.
- Totally enclosed continuous duty motors assure long life and efficient operation.

Quality Accessories
for maximum versatility

- **Unit mounted thermostat.**
  Mounts on cabinet and wires to terminal block inside unit.
- **Line voltage wall thermostats.**
  For remote control of units. Convenient terminal block provides for easy field installation.
- **Low voltage control.**
  24-Volt control units and remote low voltage thermostats.
- **Ceiling mounting bracket.**
  Converts standard two point to one point pivotal suspension.
- **Combination wall-ceiling bracket.**
  Complete mounting assembly for wall or ceiling suspension.



See reverse side for complete specifications, details and dimensions.

SPECIFICATIONS MODEL 300 ELECTRIC UNIT HEATERS

CABINET SIZE 300-A 17¼" x 17¼" x 12¼" deep

HEATER RATING	Electrical Characteristics Volts	Phase	Amps	Motor 1 Phase Volts	Fan Data CFM	RPM	Max. Mounting Height	Hor. Air Throw	Outlet Temperature†	Ship Wt. Lbs.
2 KW 6824 BTU/Hr.	120*	1	17.4	115	280	1550	7½ ft.	15 ft.	85° F.	35
	208*	1	10.0	230						
	240*	1	8.7	230						
	277*	1	8.0	115						
3 KW 10236 BTU/Hr.	208*	1	14.8	230	280	1550	7½ ft.	15 ft.	95° F.	40
	240*	1	12.9	230						
	277*	1	11.5	115						
	208	3	12.9	230						
	240	3	11.2	230						
	480	3	6.0	115						
4 KW 13648 BTU/Hr.	120	1	34.0	115	365	1550	8 ft	20 ft.	95° F.	41
	208*	1	19.6	230						
	240*	1	17.1	230						
	277*	1	15.1	115						
	208	3	17.0	230						
	240	3	14.8	230						
	480	3	7.9	115						
5 KW 17060 BTU/Hr.	208	1	24.4	230	390	1550	8 ft.	20 ft.	100° F.	42
	240*	1	21.2	230						
	277*	1	18.8	115						
	208	3	14.8	230						
	240	3	12.5	230						
	480	3	6.9	115						
7½ KW 25590 BTU/Hr.	208	1	36.6	230	465	1550	9 ft.	25 ft.	110° F.	45
	240	1	31.8	230						
	277	1	28.2	115						
	208	3	25.6	230						
	240	3	22.1	230						
	480	3	11.9	115						
10 KW 34120 BTU/Hr.	240	1	42.3	230	525	1550	10 ft.	30 ft.	120° F.	47
	277	1	36.6	115						
	208	3	28.3	230						
	240	3	24.6	230						
	480	3	12.3	115						

Units designated (*) do not have contactors and are not required. All other units have built-in contactors. All units require only one electrical supply line for both heater and motor.

†Based on 60° F. ambient temperature.

Specifications subject to change without notice.

1/40 HP Motor

Optional Accessories

UNIT MOUNTED THERMOSTAT
Mounts on cabinet including knob setting adjustment with positive "Off" position. Shipped in kit form for field mounting.

WALL THERMOSTATS
Range: 40°–80°F. Line voltage. SPST for units with contactors. DPST for units without contactors.

LOW VOLTAGE CONTROL
Units available with factory mounted 24-volt control. Remote wall mounted 24-volt thermostat required.

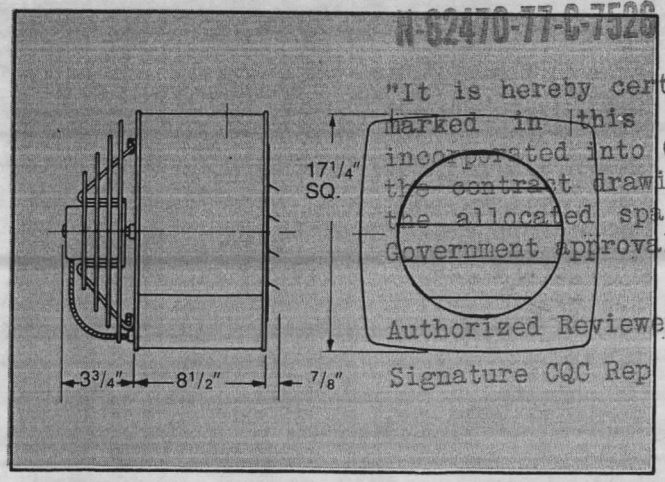
MOUNTING BRACKETS

Ceiling mounting bracket. Attaches to top of unit to provide positive, one point ceiling suspension.

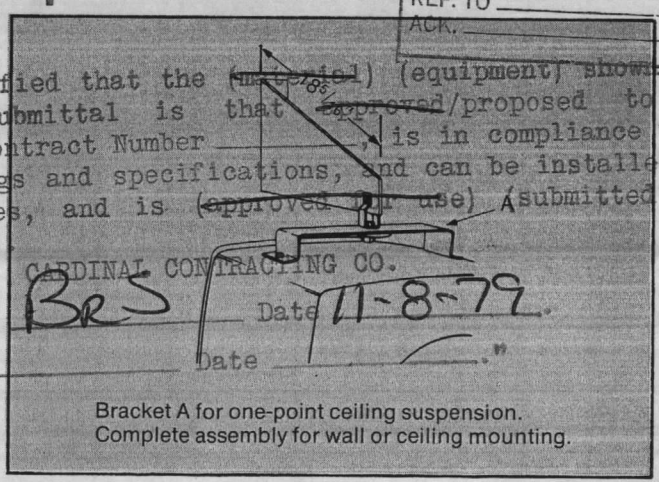
Combination wall or ceiling mounting bracket. Versatile combination bracket may be attached to wall or ceiling for a positive, permanent suspension.

Minimum mounting height should be 7 feet above floor level or working level.

Dimensions



Optional Bracket



Bracket A for one-point ceiling suspension.
Complete assembly for wall or ceiling mounting.

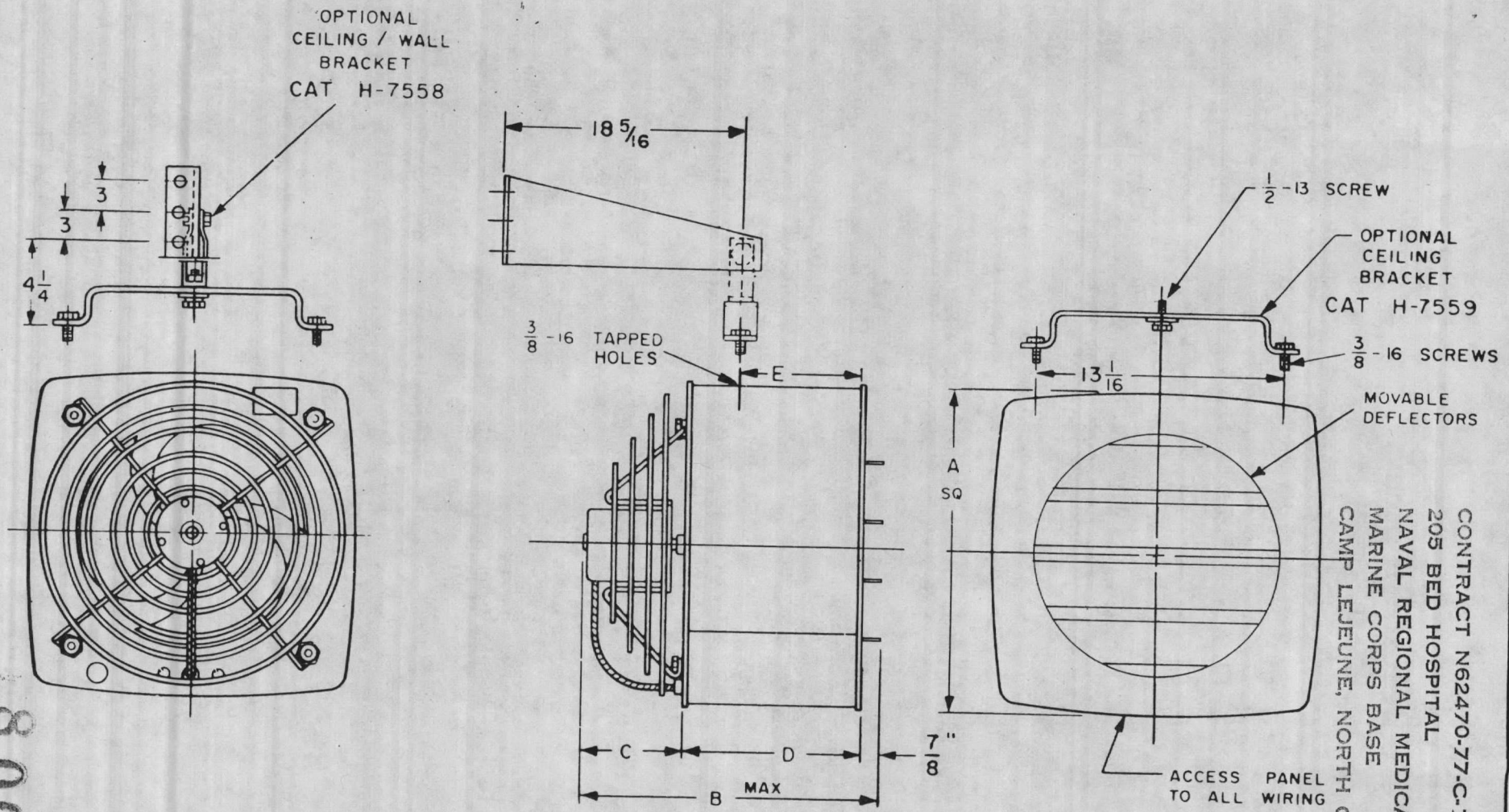
ilg Industries Division of Carrier Corporation 2850 North Pulaski Road, Chicago, Illinois 60641

Division of Carrier Corporation

ilg

2	SUPERSEDES ISSUE 1 , BMP 1/5/77 EC 7028			

MODEL 10" HORZ. E.U.H.— 2 THRU 10 KW.—DESIGN 4—DIMENSIONS AN-23413



MODEL	SIZE	KW	A	B	C	D	E
DESIGN 4	10"	2 THRU 10	17 1/4	13 5/8	4 3/16	8 9/16	5 1/8

ALL DIMENSIONS ± 1/8"

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

800

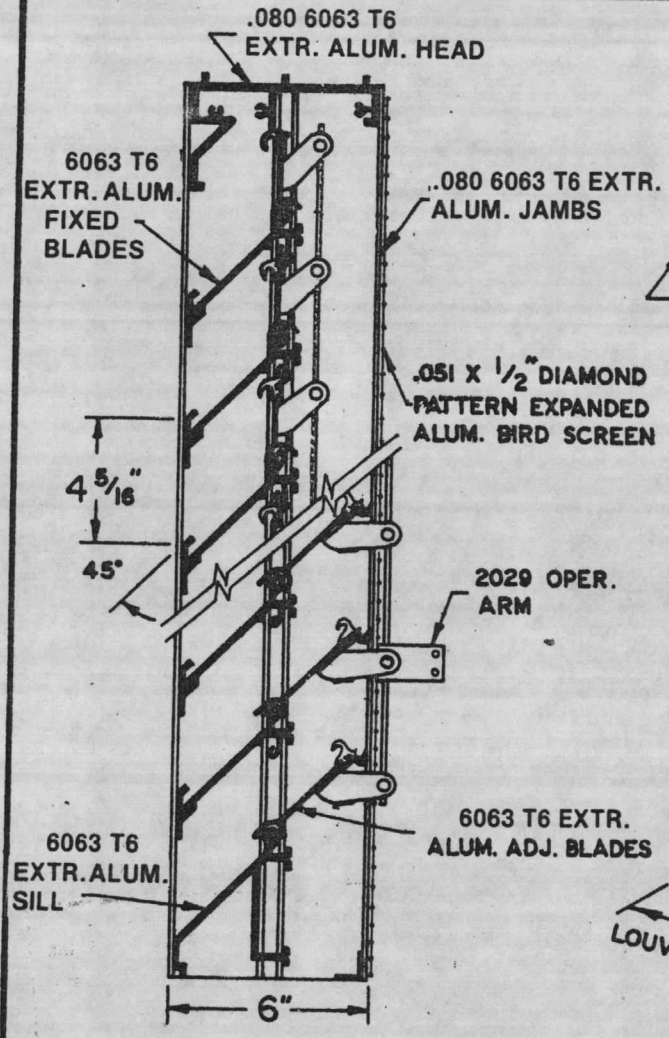
amca CERTIFIED RATINGS AIR PERFORMANCE

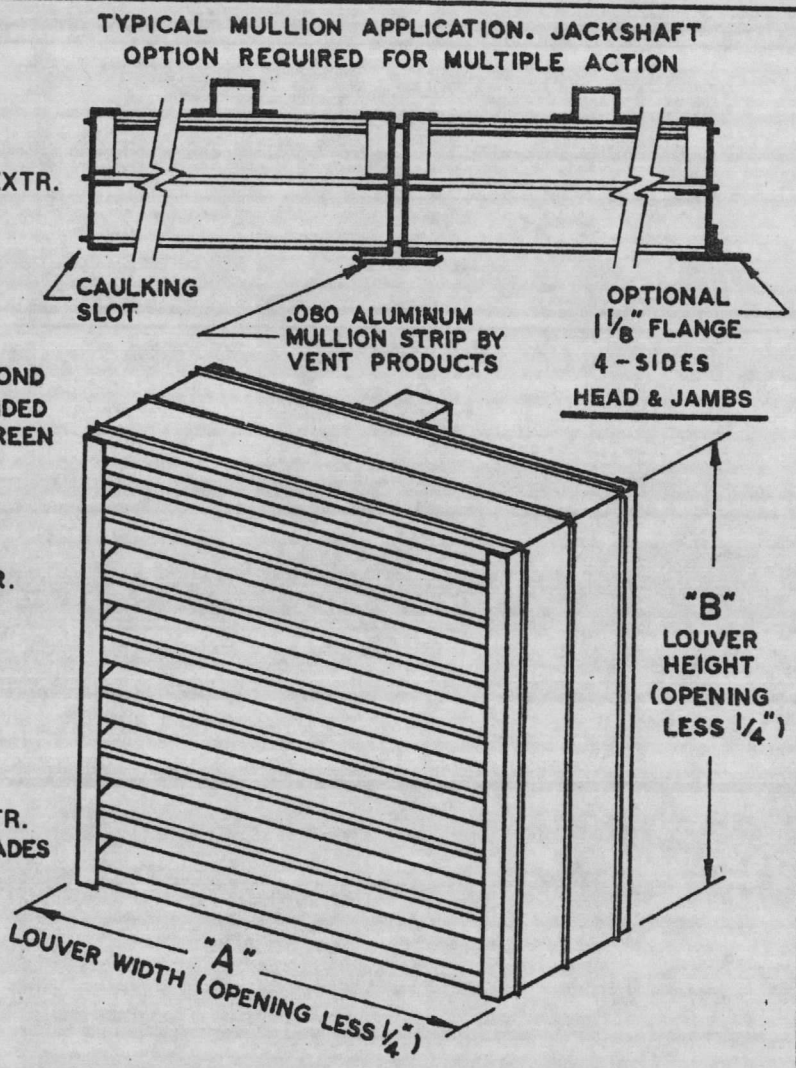
AJUST O VENT T.M. 2000

Extruded Aluminum Louvers
Adjustable Blade @ 45°

U.S. Patent No. 3,581,650
221,655

T.M.
VENT PRODUCTS





ENGINEERING NOTES

1. MAXIMUM SINGLE SECTION CONSTRUCTION: A = 60" x B = 120". MULTIPLE UNITS REQUIRE MULLIONS.
2. MINIMUM SIZE: A = 12" x B = 12".
3. CONSTRUCTION: FIXED BLADES DYNAMICALLY SEATED IN JAMBS WITH FULL LENGTH PIVOTING, ADJUSTABLE, GASKETED BLADES.
4. HARDWARE: BRASS PIVOTS, PLATED STEEL BRACKETS & LINKAGE ROD.
5. FINISH: STANDARD MILL.

PROJECT NAME: CONTRACT N62470-77-C-7526
ARCHITECT: 205 BED HOSPITAL
ENGINEER: NAVAL REGIONAL MEDICAL CENTER MARINE CORPS BASE
CONTRACTOR: MR LEJEUNE, NORTH CAROLINA
P.O. NUMBER: _____ DATE: _____

T.M.
VENT PRODUCTS CO., INC.
1901 S. Kilbourn Ave.
Chicago, Illinois 60623
Phone: 312-521-1900
Member of AMCA
Associate Member SMARTA and SMACNA

1800

amca CERTIFIED RATINGS — AIR PERFORMANCE — Air Movement and Control Association, Inc.

MODEL 2000

Ajust O Vent Series

Adjustable Blade @ 45°

U.S. Patent No.'s 3,581,650 & 221,655

VENT PRODUCTS

FREE AREA CHART

B — HEIGHT in Inches	A — WIDTH (in Inches)														
		12	16	20	24	28	32	36	40	44	48	52	56	60	
	12	.13	.19	.25	.31	.37	.43	.49	.55	.61	.67	.72	.78	.84	12
	16	.27	.39	.51	.62	.74	.86	.98	1.10	1.21	1.33	1.45	1.57	1.69	16
	20	.40	.58	.76	.94	1.11	1.29	1.47	1.64	1.82	2.00	2.17	2.35	2.53	20
	24	.54	.77	1.01	1.25	1.48	1.72	1.96	2.19	2.43	2.66	2.90	3.14	3.37	24
	28	.54	.77	1.01	1.25	1.48	1.72	1.96	2.19	2.43	2.66	2.90	3.14	3.37	28
	32	.67	.97	1.26	1.56	1.85	2.15	2.44	2.74	3.03	3.33	3.62	3.92	4.21	32
	36	.81	1.16	1.52	1.87	2.22	2.58	2.93	3.29	3.64	4.00	4.35	4.70	5.06	36
	40	.94	1.36	1.77	2.18	2.60	3.01	3.42	3.83	4.25	4.66	5.07	5.49	5.90	40
	44	1.08	1.55	2.02	2.49	2.97	3.44	3.91	4.38	4.86	5.33	5.80	6.27	6.74	44
	48	1.21	1.74	2.27	2.81	3.34	3.87	4.40	4.93	5.46	5.99	6.52	7.06	7.59	48
	52	1.35	1.94	2.53	3.12	3.71	4.30	4.89	5.48	6.07	6.66	7.25	7.84	8.43	52
	56	1.48	2.13	2.78	3.43	4.08	4.73	5.38	6.03	6.68	7.32	7.97	8.62	9.27	56
	60	1.62	2.32	3.03	3.74	4.45	5.16	5.87	6.57	7.28	7.99	8.70	9.41	10.12	60
	64	1.75	2.52	3.29	4.05	4.82	5.59	6.35	7.12	7.89	8.66	9.42	10.19	10.96	64
	68	1.89	2.71	3.54	4.36	5.19	6.02	6.84	7.67	8.50	9.32	10.15	10.98	11.80	68
	72	2.02	2.91	3.79	4.68	5.56	6.45	7.33	8.22	9.10	9.99	10.87	11.76	12.64	72
	76	2.15	3.10	4.04	4.99	5.93	6.88	7.82	8.77	9.71	10.65	11.60	12.54	13.49	76
	80	2.15	3.10	4.04	4.99	5.93	6.88	7.82	8.77	9.71	10.65	11.60	12.54	13.49	80
	84	2.29	3.29	4.30	5.30	6.30	7.31	8.31	9.31	10.32	11.32	12.32	13.33	14.33	84
	88	2.42	3.49	4.55	5.61	6.67	7.74	8.80	9.86	10.92	11.99	13.05	14.11	15.17	88
	92	2.56	3.68	4.80	5.92	7.04	8.17	9.29	10.41	11.53	12.65	13.77	14.90	16.02	92
	96	2.69	3.87	5.05	6.23	7.42	8.60	9.78	10.96	12.14	13.32	14.50	15.68	16.86	96
		12	16	20	24	28	32	36	40	44	48	52	56	60	

FREE AREA (sq. ft.)

Louver Design Notes:

1. Recommend Intake Design Free Area Velocity ≤ 800 f.p.m. when minimum water penetration is desired.
2. Intake or Exhaust Air Quantity (c.f.m.) = Free Area (sq. ft.) × Design Free Area Velocity (f.p.m.)
3. See Form No. 2915, "Performance Data Model 2000" for Pressure Drop vs. Free Area Velocity.

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

VENT PRODUCTS CO., INC.
1901 S. Kilbourn Ave.
Chicago, Illinois 60623
Phone: 312-521-1900
Member of AMCA
Associate Member SMARTA and SMACNA

300

AJUST-O-VENT ACTUATOR MOUNTING

BARBER COLMAN MA - 400 SERIES

ACTUATOR NUMBER: _____

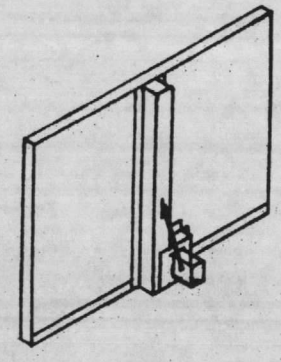
VENT PRODUCT

HARDWARE PACKAGE #9027

1. (1) 9032 BRACKET
2. (1) AM113 ARM
3. (2) DC1207FN SWIVELS
4. (1) 20" X 5/16"Ø LINKAGE ROD (trim excess)

NOTES:

1. Linkage MUST be adjusted to allow actuator to travel its full 180° stroke.
2. Vent Products reserves the right to substitute equivalent hardware.



CONTRACT N62470-77-C-7526
205 BED HOSPITAL
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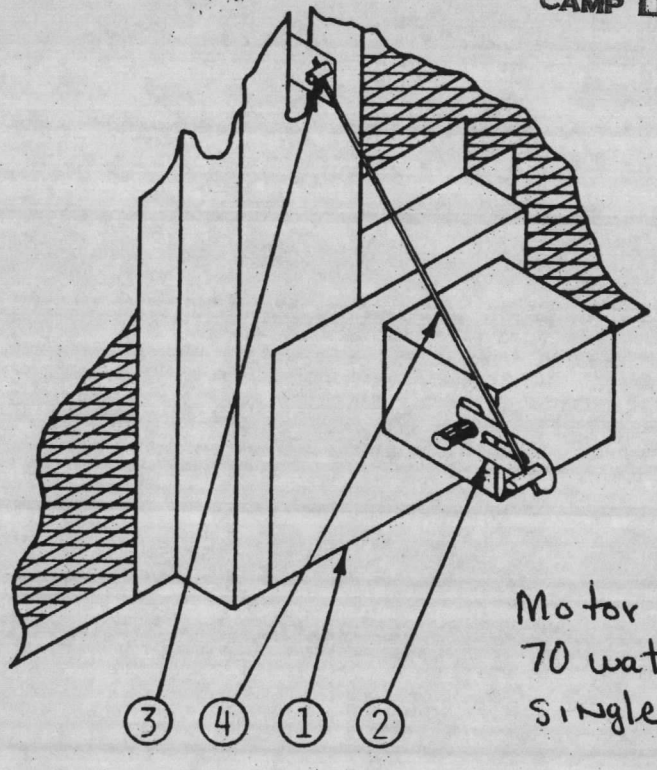
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLI



Motor Rated:
70 watts @ 115 Volts
Single Phase

1800

205 Bed Hospital
PROJECT NAME: Naval Regional Medical Center
ARCHITECT: Lockewood Greene
ENGINEER: SIX Assoc. / Robert Turner
CONTRACTOR: Cardinal / Sub East Coast
P.O. NUMBER: 1026 DATE: _____

T.M.

VENT PRODUCTS CO., INC.
1901 S. Kilbourn Ave.
Chicago, Illinois 60623
Phone: 312-521-1900
Member of AMCA
Associate Member SMARTA and SMACNA

STANDARD DUTY PUSH BUTTONS

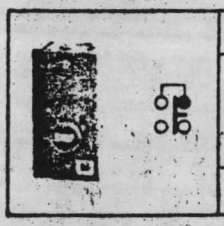
SWITCHES

GENERAL PURPOSE ENCLOSURES
NEMA 1 For Surface Mounting

FLUSH MOUNTED
For Outlet Box, Not Included

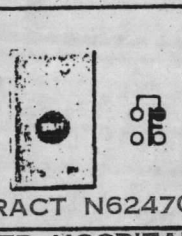
1 UNIT STATIONS

1 Push Button 1 NO 1 NC Contacts SPDT



Legend Insert	Cat. No.	Price
Start	50AA3D	$12.00
Stop	50AA3E	
Stop (Raised)	50AA3F	
See Note 1	50AA3A	11.50

1 Push Button 1 NO 1 NC Contacts SPDT



Legend Insert	Cat. No.	Price
Start	50AA2D	
Stop	50AA2E	$15.00
Stop (Raised)	50AA2F	
See Note 1	50AA2A	14.50
Chrome Plated		
See Note 1	50AA6A	16.00

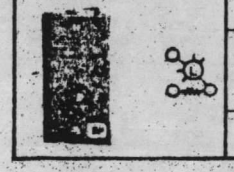
1 Selector Switch 2 NO Contacts SPDT

Selector Legend	Cat. No.	Price
Hand - Off - Auto.	50AA3C3	$12.00
Off - On	50AA3C6	
See Note 3	50AA3B9	

1 Selector Switch 2 NO Contacts SPDT

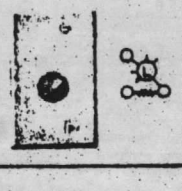
Selector Legend	Cat. No.	Price
Hand - Off - Auto.	50AA2C3	$15.00
Off - On	50AA2C6	
See Note 3	50AA2B9	
Chrome Plated		
See Note 3	50AA6B9	16.50

1 Pilot Light 120/240V Dual Voltage 120PSB Lamp



Lens Color	Cat. No.	Price
Red	50BA3Y	$28.00
Green	50BA3Z	
See Note 2	50BA32	26.50

1 Pilot Light 120/240V Dual Voltage 120PSB Lamp



Lens Color	Cat. No.	Price
Red	50BA2Y	$31.00
Green	50BA2Z	
See Note 2	50BA22	29.50
Chrome Plated		
See Note 2	50BA62	31.00

2 UNIT STATIONS

2 Push Buttons 1 NO 1 NC Contacts

Legend Insert	Cat. No.	Price
Start, Stop	50CA3DE	$12.00
Start, Stop (Raised)	50CA3DF	
See Note 1	50CA3AA	11.00

2 Push Buttons 1 NO 1 NC Contacts

Legend Insert	Cat. No.	Price
Start, Stop	50CA2DE	$15.00
Start, Stop (Raised)	50CA2DF	
See Note 1	50CA2AA	14.00
Chrome Plated		
See Note 1	50CA6AA	15.50

2 Push Buttons 2 NO Contacts

Legend Insert	Cat. No.	Price
Forward, Reverse	50DA3KL	$12.00
Open, Close	50DA3HJ	
Up, Down	50DA3NP	
See Note 1	50DA3AA	11.00

2 Push Buttons 2 NO Contacts

Legend Insert	Cat. No.	Price
Forward, Reverse	50DA2KL	$15.00
Open, Close	50DA2HJ	
Up, Down	50DA2NP	
See Note 1	50DA2AA	14.00
Chrome Plated		
See Note 1	50DA6AA	15.50

(Continued On Next Page)

NOTES:

1. Order Legend Insert Button D53493 from table.
2. Order Red (D21982-001) or Green (D21982-002) Lens from Kit and Modification Table.
3. Comes complete with all the following Selector Swi Legends.

OFF - ON	SUMMER - WINTER	SUMMER - OFF - WIN
FOR. - REV.	FOR. - OFF - REV.	LOW - OFF - HIG
HAND - AUTO.	HAND - OFF - AUTO.	UP - OFF - DOWN
OPEN - CLOSE	OPEN - OFF - CLOSE	

Chet [illegible] Co
Raleigh, [illegible] C.

SEP 7 1979

1800

Received

Replacement Lamps, Page 155 NEMA Ratings, Page 157

Discount Sche

[illegible] Supply Co.
[illegible] Box [illegible]
[illegible], N

Thermostat

A11 SERIES LOW TEMPERATURE LIMIT

TEMPERATURE — MAKE UP AIR HEATER COIL

A11B-1

Catalog Number	Switch Action	Range (° F.)	Diff. (° F.)	Bulb and Capillary	Bulb Well No. (not supplied)	Range Adjuster	Electrical Rating 120 V. A.C. (See page 10)	Shipping Wt. Lbs.
A11A-1	SPST Open Low	35 to 45	Manual Reset	20' of 1/8" O.D. Tubing 4' Cap.	—	Screwdriver Slot	16.0 A. Table 5	1.8
A11B-1	SPST Close High Open Low	35 to 45	8 (Fixed)	20' of 1/8" O.D. Tubing 4' Cap.	—	Screwdriver Slot	16.0 A. Table 5	1.8

Maximum bulb temperature of A11A-1 and A11B-1 is 250° F.

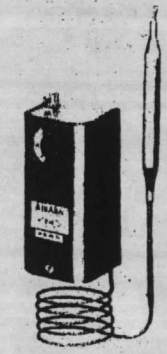
A19 SERIES REMOTE BULB

Packing nut available for closed tank application. Specify Part Number FTG13A-600.

TO ORDER: Specify:
1. Catalog No.
2. Packing nut No., if required.
3. Bulb well No., if required.

A19ABC-4

A19ABC-24



A19ADN-1

Catalog Number	Switch Action	Range (° F.)	Diff. (° F.)	Bulb and Capillary	Bulb Well No. (not supplied)	Range Adjuster	Electrical Rating 120 V. A.C. (See page 10)	Shipping Wt. Lbs.
WIDE RANGE — ADJUSTABLE DIFFERENTIAL								
A19ABC-4	SPDT	50 to 130	3½ to 14	3/8" x 5" 8' Cap.	WEL14A-603	Knob	16.0 A. Table 3	1.1
A19ABC-24	SPDT	−30 to +100	3 to 12	3/8" x 4" 6' Cap.	WEL14A-602	Screwdriver Slot	16.0 A. Table 3	1.0
A19ABC-36	SPDT	−30 to +100	3 to 12	3/8" x 4" 20' Cap.	WEL14A-602	Screwdriver Slot	16.0 A. Table 3	1.2
A19ABC-37	SPDT	−30 to +100	3 to 12	3/8" x 4" 10' Cap.	WEL14A-602	Screwdriver Slot	16.0 A. Table 3	1.1
A19ABC-40	SPDT	30 to 110	3½ to 14	3/8" x 5" 6' Cap.	WEL14A-603	Knob	16.0 A. Table 3	1.1
FIXED DIFFERENTIAL								
A19AAA-18	SPST Open Low	30 to 110	3½	12' Averaging 6' Cap.	—	Screwdriver Slot	16.0 A. Table 3	1.1
A19AAF-12	SPDT	25 to 225	3½	3/8" x 3" 10' Cap.	WEL14A-602	Screwdriver Slot	6.0 A. Table 4	1.1
CLOSE DIFFERENTIAL								
A19AAD-5 (1)	SPST Open Low	30 to 50 (Milk Cooler)	2	3/8" x 2 41/64" Tin Plated 6' Cap.	WEL16A-601	Screwdriver Slot	6.0 A. Table 4	1.4
A19AAF-20	SPDT	−30 to +100	2½	3/8" x 4" 6' Cap.	WEL14A-602	Screwdriver Slot	6.0 A. Table 4	1.0
A19AAF-21	SPDT	40 to 90	1½	3/8" x 5¾" 6' Cap.	WEL14A-603	Screwdriver Slot	6.0 A. Table 4	1.0
MANUAL RESET								
A19ACA-14	SPST Open Low	−30 to +100	Manual Reset	3/8" x 4" 6' Cap.	WEL14A-602	Screwdriver Slot	16.0 A. Table 5	1.0
A19ADB-1	SPST Open High	100 to 240	Manual Reset	3/8" x 3½" 6' Cap.	WEL14A-602	Knob	10.0 A. Table 7	1.0
FACTORY MUTUAL LISTED								
A19ADN-1	SPST Open High	100 to 240	Manual Reset	3/8" x 3" 6' Cap.	WEL14A-602	Concealed Screwdriver Slot	16.0 A. Table 3	1.0
A19ADP-1	SPDT	100 to 240	Man. Reset (Locks Out High)	3/8" x 3" 6' Cap.	WEL14A-602	Concealed Screwdriver Slot	16.0 A. Table 3	1.0

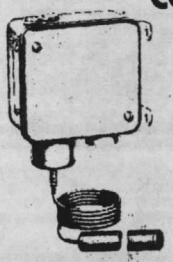
Maximum bulb temperature: A19AAF-12, 275° F.; A19ADB-1, A19ADN-1, A19ADP-1, 290° F.; all other A19's, 140° F.
(1) Case Compensated.

NOTE: NEMA 1 TYPE ENCLOSURE TO BE PROVIDED

CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

1800

COOLING TOWERS OR EVAPORATIVE CONDENSERS



A72AE-1, A72CE-1

SINGLE STAGE TEMPERATURE

Catalog Number	Switch Action	Range * (°F.)	Differential (°F.)	Bulb and Capillary	Range Adjuster	Electrical Rating 120V. A.C. (See below)	Shipping Wt. Lbs.
A72AE-1	DPST Close High	25 to 90	4 to 25	3/4" x 6 3/4" Neoprene Coated 6' Cap.	Internal Screwdriver Slot	24.0 A. Table 2	4.1
A72CE-1	DPST Open High	25 to 90	4 to 25	3/4" x 6 3/4" Neoprene Coated 6' Cap.	Internal Screwdriver Slot	24.0 A. Table 2	4.1

* Ambient temperature limits; —65°F. to +150°F. Maximum bulb temperature is 170°F.

ELECTRICAL RATING TABLES FOR TEMPERATURE CONTROLS

TABLE 1

CATALOG NO. A28AB-2

Motor Ratings	120 V.	240 V.
A.C. Full Load Amps.	10.0	6.0
A.C. Locked Rotor Amps.	60.0	36.0
Pilot Duty — 125 VA., 120 to 240 V. A.C.		

TABLE 2

SERIES A72

Motor Ratings	120 V. 1 Ph.	208 V.* 1 Ph.	240 V.* 1 Ph.	220 V.* 2 Ph.	208 V. 3 Ph.	220 V. 3 Ph.
Horsepower	2	3	3	5	5	5
A.C. Full Load Amps.	24.0	24.0	24.0	15.0	15.9	15.0
A.C. Locked Rotor Amps.	144.0	144.0	144.0	90.0	95.4	90.0
A.C. Non-Ind. Amps.	24.0	24.0	24.0	—	—	—
D.C. Non-Ind. Amps.	3.0	—	0.5	—	—	—
Pilot Duty — 125 VA. 120 to 600 V. A.C. 57.5 VA. 120 to 300 V. D.C.						

* These full load and locked rotor ampere (not horsepower) ratings apply to hermetic compressors only.

TABLE 3

TYPES A19AAA, A19AAC, A19ABC, A19ADN, A19ADP, A19ANC, A19B

Motor Ratings	120 V.	208 V.	240 V.
A.C. Full Load Amps.	16.0	9.2	8.0
A.C. Locked Rotor Amps.	96.0	55.2	48.0
Non-Inductive or Resistance Load Amps.* (Not Lamp Loads)	22 Amps. 120 to 277 V. A.C.		
Pilot Duty — 125 VA. 24 to 600 V. A.C.			

* SPST and only one side of SPDT control.

TABLE 4

CLOSE DIFFERENTIAL—A19AAD, A19AAF, A28AJ, A28AK

Motor Ratings	120 V.	208 V.	240 V.
A.C. Full Load Amps.	6.0	3.4	3.0
A.C. Locked Rotor Amps.	36.0	20.4	18.0
Non-Inductive or Resistance Load Amps. (Not Lamp Loads)	10 Amps. 24 to 277 V. A.C.		
Pilot Duty — 125 VA. 24 to 277 V. A.C.			

TABLE 5

TYPES A11, A19ACA, A28AA, A28AB-1, A28MA

Motor Ratings	120 V.	208 V.	240 V.
A.C. Full Load Amps.	16.0	9.2	8.0
A.C. Locked Rotor Amps.	96.0	55.2	48.0
Non-Inductive or Resistance Load Amps. (Not Lamp Loads)	16.0	9.2	8.0
A11, A19, A28	Pilot Duty — 125 VA. 24 to 277 V. A.C.		
Type A19ACA	Pilot Duty — 125 VA. 24 to 600 V. A.C		

NOTE: When used as a two circuit control the total connected load must not exceed 2000 VA.

TABLE 6

TYPE A19EAF

Motor Ratings	120 V.	208 V.	240 V.
A.C. Full Load Amps.	6.0	3.4	3.0
A.C. Locked Rotor Amps.	36.0	20.4	18.0
Non-Inductive 10 Amps. 120 to 277 V. A.C.			
Pilot Duty — 125 VA. 24 to 277 V. A.C.			

TABLE 7

CATALOG NO. A19ADB-1

Motor Ratings	120 V.	240 V.
A.C. Full Load Amps.	10.0	6.0
A.C. Locked Rotor Amps.	60.0	36.0
Pilot Duty — 125VA. 24 to 600 V. A.C.		

GENERAL PURPOSE RELAYS

TYPE C

8501

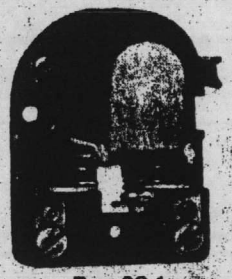
Class 8501, Type C relays are ideally suited for controlling small single phase motors and other light loads such as electric heaters, pilot lights, or audible signals. Features of this device are:

- HORSEPOWER RATED
- AMPERE RATED
- QUIET OPERATION
- VISIBLE CONTACTS
- LOW COST
- UL LISTED ▲

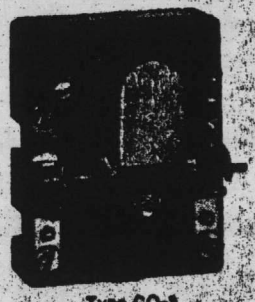
Number of Contacts		AC Max. Contact Volts	Ampere Rating 75% Power Factor	AC — VA Rating★ 35% Power Factor	Maximum AC Single Phase Horsepower		AC Operated Open Type		DC Operated Open Type	
Normally Open	Normally Closed				115 Volts	230 Volts	Type	Price	Type	Price*
1	0	277	15	690	1	1½	CO-1	$11.	CDO-1	$17.
2	0	277	10	345	½	½	CO-2	17.	CDO-2	22.
		600	5							
1	1	277	10	345	½	½	CO-3	20.	CDO-3	26.
		600	5							
0	2	277	10	345	½	½	CO-4	20.	CDO-4	26.
		600	5							
0	1	277	15	690	¾	1	CO-5	12.	CDO-5	18.
1	0	277	10	690	½	¾	CO-11	14.	CDO-11	20.
1	1	277	10	690	½	¾	CO-12	17.	CDO-12	22.
1	0	277	10	690	½	¾	CO-13	15.	CDO-13	21.
		600	5							
1	1	277	10	690	½	¾	CO-14	18.	CDO-14	24.
		600	5							

★Maximum current from 0 to 115 V AC for 690 VA rated devices is 6 amps. break and 60 amps. make and for 345 VA rated devices is 3 amps. break and 30 amps. make.

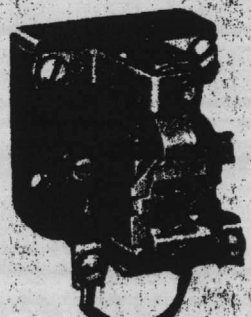
*For quantities of 25 or more identical devices, the price each is the same as the equivalent AC operated device.



Type CO-1



Type CO-3



Type CO-12

APPLICATION DATA

Standard Coil Voltage — 60 Hz AC = 6, 12, 24, 48, 120, 208, 230, 277, 480 volts

50 Hz AC = 6, 12, 24, 48, 110, 220, 440 volts

DC = 6, 12, 24, 120 volts

Coil Burden — 60 Hz AC = Inrush: 14 VA
Sealed: 8.6 VA

50 Hz AC = Inrush: 11 VA
Sealed: 6.6 VA

DC coils = 3.5 watts average

▲ UL Listing — Devices are listed under the UL re-examination service program.

Enclosure — Separately packed NEMA 1 sheet steel enclosure for Type C relays — Order Class 8501 Type UE-1 $7.25 List Each.

TO BE Furnished

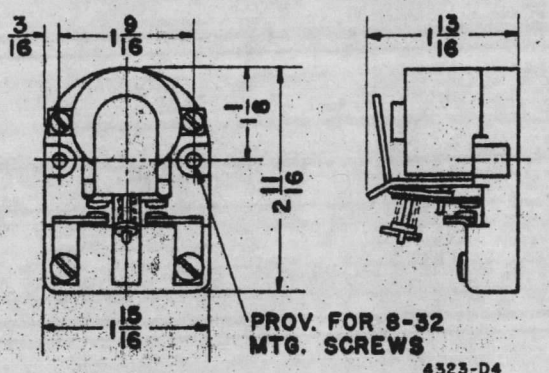
CONTRACT N62470-77-C-7526
205 BED HOSPITAL
NAVAL REGIONAL MEDICAL CENTER
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

ORDERING INFORMATION REQUIRED

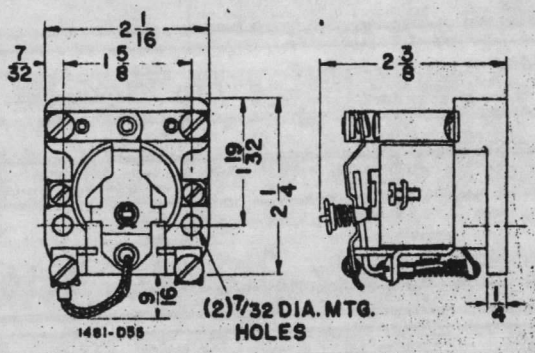
1. Class and type number
2. Voltage and frequency of operating coil

1800

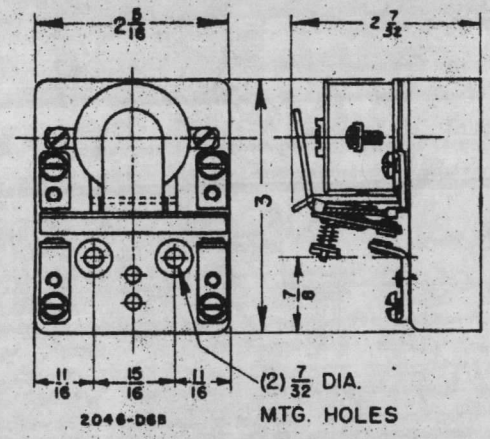
APPROXIMATE DIMENSIONS AND SHIPPING WEIGHTS



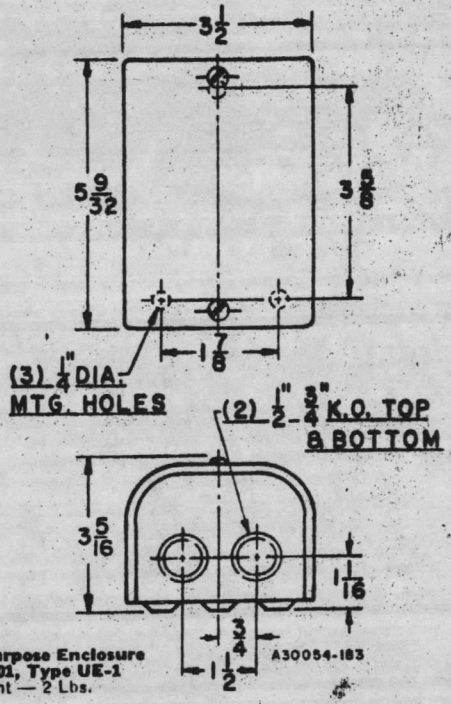
Class 8501, Types CO-1 and CO-5
CDO-1 and CDO-5



Class 8501, Types CO-11, CO-12, CO-13 and CO-14
CDO-11, CDO-12, CDO-13 and CDO-14

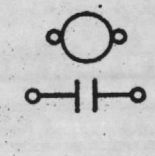


Class 8501, Types CO-2, 3 and 4
CDO-2, 3 and 4

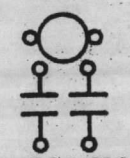


General Purpose Enclosure
Class 8501, Type UE-1
Weight — 2 Lbs.

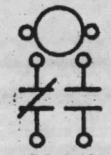
CONTACT ARRANGEMENTS



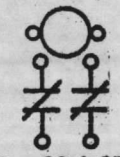
Type CO-1, CDO-1



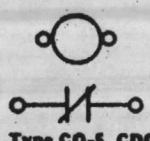
Type CO-2, CDO-2



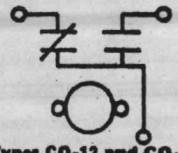
Type CO-3, CDO-3



Type CO-4, CDO-4



Type CO-5, CDO-5



Types CO-12 and CO-14
CDO-12 and CDO-14

Types CO-11 and CO-13
CDO-11 and CDO-13

1800

15350 742A

DRAWING AND SPECIFICATION TRANSMITTAL

LOCKWOOD GREENE ENGINEERS. INC.

SPARTANBURG. SOUTH CAROLINA 29304
P.O. BOX 491 (803)582-235

TO Naval Facilities Engineering Command
Atlantic Division
Norfolk, Va. 23511

DATE Feb. 22, 1980
JOB NO. 77239.16
JOB NAME Naval Regional Medical Center

TRANSMITTAL NO. 378
SHEET 1 OF 1
ORDER NO.
Contract Number
N-62470-77-C-7526

ATTN: Mr. John Grubbs Code 05

WE ARE SENDING YOU THE FOLLOWING DATA xx HEREWITH _____ UNDER SEPARATE COVER

QUAN.	DOCUMENT NO.	REV. NO.	DESCRIPTION	VENDOR	CODE
1			Pressure Gauges and Pulsation Dampners for Sewage Lift Station Pump	Gene Hewitt Co.	A

CODE FOR

LOCKWOOD GREENE DOCUMENTS		VENDOR DOCUMENTS
A - INFORMATION	E - BID	K - NO CORRECTIONS NOTED
B - REVIEW	F - CONSTRUCTION	L - MAKE CORRECTIONS NOTED
C - APPROVAL	G - PURCHASING	M - REVISE AND RESUBMIT
D - REVISED DWG. (SEE REVISION)	H -	N - REJECTED (SEE REMARKS)

COPIES TO	QUAN	TRANS ONLY	CODE	COPIES TO	QUAN	TRANS ONLY	CODE
ROICC	2						
Cardinal Contracting	3						

RECEIVED FEB 25 1980

REMARKS

NOTE: IMMEDIATE RETURN OF SIGNED COPY

RECEIVED BY _____ DATE _____ TRANSMITTED BY Richard McKnight

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76)

2 file

SECTION-15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7520	742-A	2-13-80

FROM CONTRACTOR: CARDINAL CONT. CO.

PROJECT TITLE AND LOCATION: NRMC CAMP LEJEUNE N.C.

TO: LOCKWOOD GREENE

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted

☐ Contractor Approved ☑ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
12-A	15350 3.2 + 4.8	PRESSURE GUAGES AND PULSATION DAMPNERS FOR SEWAGE LIFT STA. PUMPS CERT. + CAT DATA.	7	A	BT 2/19/80

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 2-13-80

CONTRACTOR REPRESENTATIVE (Signature): Wm. J. Haymaker

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

RECEIVED FEB 25 1980

file / field 2-26-80 lw

COPIES TO:
ROICC (2)
LANTDIV (1)
A-E (1)

DATE: 2/19/80

SIGNATURE: Robert L Turner

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76)

SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	742-A	2-13-80

FROM CONTRACTOR: CARDINAL CONT. CO.

TO: LOCKWOOD GREENE

PROJECT TITLE AND LOCATION: NRMC CAMP LEJEUNE N.C.

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted

☐ Contractor Approved ☑ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
742-A	15350 3.2-4.8	PRESSURE GUAGES AND PULSATION DAMPNERS FOR SEWAGE LIFT STA. PUMPS CERT. + CAT DATA.	7		

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 2-13-80

CONTRACTOR REPRESENTATIVE (Signature): Wm. J. Haymaker

DATE RECEIVED BY REVIEWER | FROM (Reviewer)

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

RECEIVED FEB 18 1980

COPIES TO: ROICC (2) LANTDIV (1) A-E (1)	DATE	SIGNATURE

GENE HEWITT COMPANY, INC.

Manufacturers' Representatives

February 7, 1980

East Coast Construction Company, Inc.
P.O. Box 5004
Jacksonville, NC 28540

Re: N62470-77-C-7526
205 Bed Hospital
Naval Regional Medical Center
Marine Corps
Camp LeJeune, North Carolina

Gentlemen:

In regards to the above referenced project, we hereby certify that the attached literature describing equipment that we propose to furnish - Pulsation Dampers along with pressure gauges of the Bourdon Tube Type - are in compliance with Section 15350, Paragraph 4.8 of NAVFAC Specification No. 05-77-7526.

Very truly yours,

GENE HEWITT COMPANY, INC.

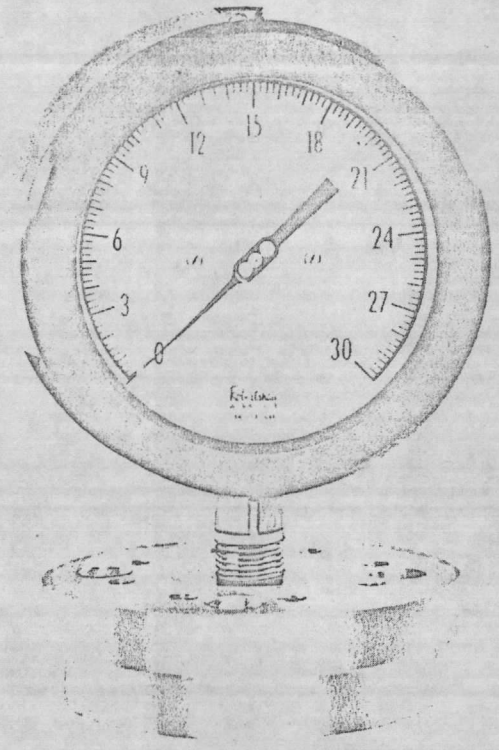
Hugh Ketchie
Raleigh Office

HK/st

378

P. O. BOX 10513
P. O. BOX 4134
RALEIGH, NORTH CAROLINA 27605
CHARLOTTE, NORTH CAROLINA 28204
(919) 833-6779 833-3018
(704) 377-6693 377-3116

CHEMICAL PROTECTORS



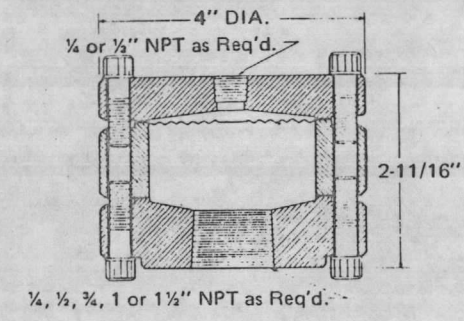
These specially designed protectors are used wherever it is necessary to protect the Bourdon tube from highly corrosive, viscous or high temperature media.

Protector and pressure element are completely filled above the diaphragm. The Bourdon tube is actuated by pressure transmitted by the diaphragm through the liquid fill. (Hydraulic oil is standard, but other fill liquids such as mineral oil, glycerine and silicone are also available.) A capillary bleeder is recommended to simplify evacuating and solid filling of the gage and protector.

Acragage Chemical Protectors are available in two types shown below for all Bourdon tube gages with pressure ranges from 30" Hg. vacuum to 2500 psi, and bellows gages with ranges down to 0-50" water for beryllium copper and 0-80" water for stainless steel. Pressure ratings to 5,000 psi are available on "cleanout" and "non-cleanout" types, except PVC, at additional cost.

Protectors supplied mounted directly on gage, or with armored flexible capillary tubing between gage and protector (completely filled). Armored tubing available in either brass or stainless steel. Seamless copper tubing used is No. 20 stubs gage (ASTM-B68) and is recommended for pressures to 3,000 psi. For higher pressures, up to 5,000 psi, type 304 stainless steel tubing is used.

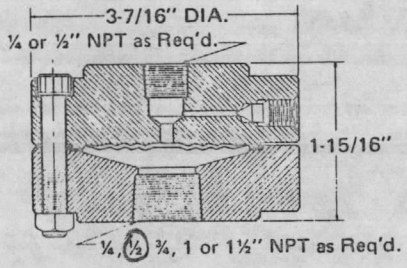
THREADED TYPE



CLEANOUT TYPE — REMOVABLE BOTTOM CHAMBER

Top Chamber Steel—Bottom Chamber and Diaphragm as listed below.

Catalog No.	Spacer Ring and Bottom Chamber Material	Standard Diaphragm Material
D-40	304 St. Steel	316 ELC St. St.
D-31	Steel	316 ELC St. St.
D-32	Monel 400	Monel 400
D-33	Hastelloy "B"	Tantalum
D-34	Hastelloy "C"	Tantalum
D-36	316 St. Steel	316 ELC St. St.
D-38	Nickel 200	Nickel 200
D-42	Titanium	Titanium



CLEANOUT TYPE — WELDED DIAPHRAGM

Top Chamber Steel—Bottom Chamber and Diaphragm as listed below

Catalog No.	Bottom Chamber Material	Standard Diaphragm Material
D-14	304 St. Steel	316 ELC St. St.
D-15	Titanium	Titanium
D-16*	PVC	Tantalum
D-17	Steel	316 ELC St. St.
D-18	Monel 400	Monel 400
D-19	Hastelloy "B"	Tantalum
D-20	Hastelloy "C"	Tantalum
D-25	316 St. Steel	316 ELC St. St.
D-27	Nickel 200	Titanium

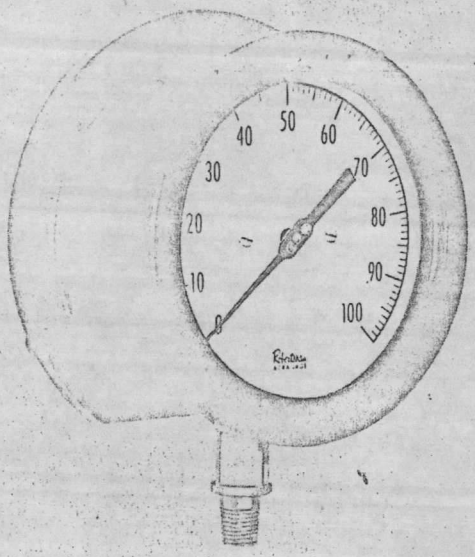
For diaphragms other than standard, see Price Sheet.

1/4" NPT flushing connection available on all types.

NET WEIGHTS: Page 38.

*Not recommended on pressures above 100 psi.

878



300 SERIES
PHOSPHOR BRONZE BOURDON TUBE / BERYLLIUM COPPER BOURDON TUBE

ACRAGAGE®
SOLID FRONT GAGES

MOVEMENTS: Add suffix letter to catalog number to designate movement. (B: stainless steel; D: Delrin.) Complete description of movements on page 6.

For ordering information, see page 39.

CATALOG NO.	CASE	RING	MOUNTING
313	Aluminum	Screwed	Wall, Flush or Stem
314	Aluminum	Screwed	Stem only
367	Aluminum	Hinged	Flush only
375	Phenol	Polypropylene	Wall or Stem

PRESSURE RANGES – PSI

TOTAL GRADUATIONS	FIGURE INTERVALS	MINOR SUBDIVISIONS
0-15	1	.1
0-30	3	.2
0-60	5	.5
0-100	10	1
0-160	20	2
0-200	20	2
0-250	50	2
0-300	30	2
0-400	50	5
0-600	50	5
0-800	100	10
0-1000	100	10
0-1500	200	20
0-2500	500	20
0-3000	500	20
0-5000	500	50

Also available in equivalent metric ranges.

COMPOUND RANGES (Inches HG. VAC. and PSI)

TOTAL GRADUATIONS	FIGURE INTERVALS	MINOR SUBDIVISIONS
30"–0– 15	5" & 3	.5" & .2
30"–0– 30	10" & 5	1" & .5
30"–0– 60	10" & 10	1" & 1
30"–0–100	30" & 10	2" & 1
30"–0–150	30" & 30	5" & 2
30"–0–200	30" & 20	5" & 2
30"–0–300	30" & 50	5" & 2

VACUUM RANGE

0–30" Vac.	3"	.2"

Also available in equivalent metric ranges.

RECOMMENDED APPLICATIONS:

For air, oil, water and other pressure media not corrosive to bronze. (See pages 12-13.) Install siphon when used on steam.

SPECIFICATIONS

BOURDON TUBE: Drawn phosphor bronze, silver-brazed joints; ranges through 1000 psi. Beryllium copper for ranges above 1000 psi.

CASE AND RING: *4½" and 6":* Available with Aluminum case, styles 13, 14 and 67; and Phenol case, style 75. See Catalog No. tabulation, this page, and case descriptions, page 11.

DIAL: *Standard:* White with black figures. *Optional:* Black with white figures.

SOCKET: Brass forging

CONNECTION: *Pressures up to 1000 psi:* 1/4" and 1/2" NPT male. *Pressures over 1000 psi:* 1/2" NPT male.

NOTE: Custom connections available.

POINTER: Acrapointer, balanced adjustable design.

LENS: *Standard:* Double-strength glass. *Optional:* Safety glass or plastic.

MOVEMENTS:

Suffix B: Geared stainless steel. Stainless pinion, gear and bushings.

Suffix D: Delrin bushed and geared. Delrin sector and bushings; stainless pinion.

ACCURACY: Within 1/2 of 1% of full range.

DIMENSIONS: See pages 36-37.

NET WEIGHTS: See page 38.

ACCESSORIES: See pages 32-35.

NOTES:

Gages on this page available with special features shown on pages 7 and 8.

Model 375 also available with fluid fill. See Page 19.

378

15350 739-1-A

DRAWING AND SPECIFICATION TRANSMITTAL

LOCKWOOD GREENE ENGINEERS, INC.
SPARTANBURG, SOUTH CAROLINA 29304
P.O. BOX 491 (803)582-235

TO Naval Facilities Engineering Command
Atlantic Division
Norfolk, Va. 23511

DATE Feb. 22, 1980
JOB NO. 77239.16
JOB NAME Naval Regional Medical Center

TRANSMITTAL NO. 379
SHEET 1 OF 1
ORDER NO.
Contract Number
N-62470-77-C-7526

ATTN: Mr. John Grubbs Code 05

WE ARE SENDING YOU THE FOLLOWING DATA xx HEREWITH ____ UNDER SEPARATE COVER

QUAN.	DOCUMENT NO.	REV. NO.	DESCRIPTION	VENDOR	CODE
1			Fittings Certificate for Flaged Fittings	Tyler	AN

CODE FOR

LOCKWOOD GREENE DOCUMENTS		VENDOR DOCUMENTS
A - INFORMATION	E - BID	K - NO CORRECTIONS NOTED
B - REVIEW	F - CONSTRUCTION	L - MAKE CORRECTIONS NOTED
C - APPROVAL	G - PURCHASING	M - REVISE AND RESUBMIT
D - REVISED DWG. (SEE REVISION)	H -	N - REJECTED (SEE REMARKS)

COPIES TO	QUAN	TRANS ONLY	CODE	COPIES TO	QUAN	TRANS ONLY	CODE
ROICC	1						
Cardinal Contracting	1						

RECEIVED (NAVFACENGCOM) FEB 25 1980

REMARKS

PLEASE ACKNOWLEDGE RECEIPT BY IMMEDIATE RETURN OF SIGNED COPY OF THIS TRANSMITTAL

RECEIVED BY _____ DATE _____ TRANSMITTED BY Richard McKnight

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76)

739-1-A file

SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	[redacted]	2-13-80

FROM CONTRACTOR: CARDINAL CONT. CO. INC.

TO: LOCKWOOD GREENE ENGR

PROJECT TITLE AND LOCATION: NRMC CAMP LEJEUNE N.C.

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted

☒ Contractor Approved ☐ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
739-1-A	15350 3.2	FITTINGS : TYLER PIPE	4	AN	BT 2/19/80
		CERT FOR FLGED. FITTINGS			

CONTRACTOR'S COMMENTS

C.Q.C.R. ACTION : A

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 2-13-80

CONTRACTOR REPRESENTATIVE (Signature): [signature]

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

RECEIVED FEB 25 1980

file
Fwd
2-26-80
JW

COPIES TO:
ROICC (2)
LANTDIV (1)
A-E (1)

DATE: 2/19/80

SIGNATURE: [signature]

739-1-A

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76)

SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	[redacted]	2-13-80

FROM CONTRACTOR: CARDINAL CONT. CO. INC.

TO: LOCKWOOD GREENE ENGR

PROJECT TITLE AND LOCATION: NRMC CAMP LEJEUNE N.C.

CONTRACTOR USE ONLY

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R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
739-1-A	15350 3.2	FITTINGS : TYLER PIPE	4		
		CERT FOR FLGED. FITTINGS			

CONTRACTOR'S COMMENTS

C.Q.C.R. ACTION : A

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 2-13-80

CONTRACTOR REPRESENTATIVE (Signature): Wm. J. Haymaker

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

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REVIEWER'S COMMENTS

RECEIVED FEB 18 1980

COPIES TO:	DATE	SIGNATURE
ROICC (2) LANTDIV (1) A-E (1)		

P. O. Box 2027
Tyler, Texas 75710, Tel: 214/882-5511

Tyler Pipe
Subsidiary of
Tyler Corporation

TO WHOM IT MAY CONCERN:

THIS IS TO CERTIFY THAT THE CAST IRON FLANGED FITTINGS FURNISHED BY TYLER PIPE INDUSTRIES, INC., TYLER, TEXAS ARE PRODUCED IN ACCORDANCE WITH AND MEET ALL APPLICABLE TERMS AND PROVISIONS OF ANSI A21.10 (AWWA C110-77), CLASS 250 WATER WORKING PRESSURE, AND ANSI A21.4 (AWWA C104-74), AS CALLED FOR IN SECTION 15350, PARAGRAPH 4.4, "FITTINGS", OF THE SUBJECT CONTRACT JOB SHOWN BELOW: Bituminous seal coat only

TYLER PIPE INDUSTRIES, INC.
UTILITIES DIVISION

BY: Dale Meador
Dale Meador, Vice President

SUBSCRIBED AND SWORN TO BEFORE ME THIS THE 5th DAY OF February, 1980

Gordon L Burgess
Notary Public
Smith County, Texas

JOB: U. S. NAVY
Contract N62470-77-C-7526
205 Bed Hospital
Camp Lejuene, North Carolina

CC: East Coast Const.
P. O. Box 5004
Jacksonville, North Carolina 28540
Attn: Bill Corbin

379

15350 736-A

DRAWING AND SPECIFICATION TRANSMITTAL

LOCKWOOD GREENE ENGINEERS. INC.

SPARTANBURG. SOUTH CAROLINA 29304

P.O. BOX 491 (803)582-235

TO Naval Facilities Engineering Command
Atlantic Division
Norfolk, Va. 23511

DATE Feb. 28, 1980
JOB NO. 77239.16
JOB NAME Naval Regional Medical Center

TRANSMITTAL NO. 343
SHEET 1 OF 1
ORDER NO.

ATTN. Mr. John Grubbs Code 05

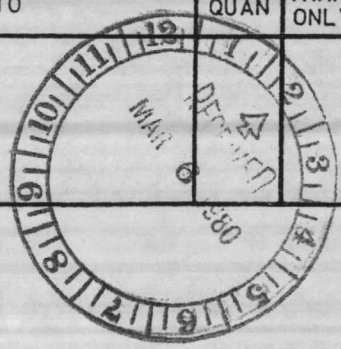
WE ARE SENDING YOU THE FOLLOWING DATA xx HEREWITH _____ UNDER SEPARATE COVER

QUAN.	DOCUMENT NO.	REV. NO.	DESCRIPTION	VENDOR	CODE
1	Set		Sump Pump	EMPO-Cornell	A

CODE FOR

LOCKWOOD GREENE DOCUMENTS		VENDOR DOCUMENTS
A - INFORMATION	E - BID	K - NO CORRECTIONS NOTED
B - REVIEW	F - CONSTRUCTION	L - MAKE CORRECTIONS NOTED
C - APPROVAL	G - PURCHASING	M - REVISE AND RESUBMIT
D - REVISED DWG. (SEE REVISION)	H -	N - REJECTED (SEE REMARKS)

COPIES TO	QUAN	TRANS ONLY	CODE	COPIES TO	QUAN	TRANS ONLY	CODE
ROICC	2						
Cardinal Contracting Co.	3						



REMARKS

PLEASE ACKNOWLEDGE RECEIPT BY IMMEDIATE RETURN OF SIGNED COPY OF THIS TRANSMITTAL

RECEIVED BY _____ DATE _____ TRANSMITTED BY Richard McKnight

2

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76) SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	736-A	2-8-80

FROM CONTRACTOR: Cardinal Contr. Co.

TO: Lockwood Greene Engrs.

PROJECT TITLE AND LOCATION: NAVAL REGIONAL MED. CTR. Camp Lejeune, N.C.

CONTRACTOR USE ONLY

*List only one specification division per form. 343

List only one of the following categories on each transmittal form, and indicate which is being submitted

☐ Contractor Approved ☒ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
736-A	3.1	Empo-Cornell Sump Pump	7	A	BS 3/27/80

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 2-8-80

CONTRACTOR REPRESENTATIVE (Signature): Wm. D. Haywaker

DATE RECEIVED BY REVIEWER	FROM (Reviewer)	TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

RECEIVED MAR 6 1980

COPIES TO:	DATE	SIGNATURE
ROICC (2) LANTDIV (1) A-E (1)	2/27/80	Robert E. Stancil

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev 6/76) SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	736-A	2-8-80

FROM CONTRACTOR: Cardinal Contr. Co.

TO: Lockwood Green, Engrs.

PROJECT TITLE AND LOCATION: NAVAL REGIONAL MED. CTR, Camp Lejeune, N.C.

CONTRACTOR USE ONLY

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REVIEWER USE ONLY

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ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
736-A	3.1	Empo-Cornell Sump Pump	7		

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 2-8-80

CONTRACTOR REPRESENTATIVE (Signature): Wm J. Haymaker

DATE RECEIVED BY REVIEWER

FROM (Reviewer)

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REVIEWER'S COMMENTS

COPIES TO:	DATE	SIGNATURE
ROICC (2) LANTDIV (1) A-E (1)		

MANUFACTURER'S CERTIFICATION - [redacted]

East Coast Construction Co.
P. O. Box 5004
Jacksonville, NC 28540

ATTN: Mr. Bill Corbin, Jr.

REF: N-62470-77-C-7526
205 Bed Hospital
Naval Regional Medical Center
MarineCorps Base
Camp Lejeune, North Carolina

Gentlemen:

We hereby certify that the 150-M-474 Submersible Sump Pumps-

we propose to furnish for this project conforms with Paragraph

4.2.1, 4.2.2, & 4.2.3 of NAVFAC Specification No. 05-77-7526, with the following exceptions:

NONE

(list exceptions)

(Data must be provided to indicate conformance to every detail of the project specifications, excluding the exceptions noted. This letter may contain statements regarding details omitted from submittal data).

(Letter must be signed by a Corporate Officer and notarized).

John Cornell
John Cornell
Director of Sales
Eastern Region

343

Michael Koon

MICHAEL KOON, Notary Public
In and for Miami County, Ohio
My Commission Expires [illegible]

JC/ss

Spec. Section 15350, 4.2

Enpo-Cornell Pump Company
A DIVISION OF
Roper Industries, Inc. (Ohio)
420 EAST THIRD STREET, PIQUA, OHIO 45356

Models 150-A, 150-M, and 150-M-RSC Sump Pumps

DESCRIPTION

A 1½" discharge high-capacity pump designed for heavy-duty pumping applications such as effluent control, construction jobs, manholes, and general maintenance. It performs equally well as a submersible pump for permanent installation, or for temporary applications that require portability. Will operate in liquids up to 100°F; high temperature models are available for operation in liquids up to 200°F.

SPECIFICATIONS

MOTOR

½ hp, 1725 RPM, 115V, 208V, or 230V/60 cy/1 ph. (NOTE: Use MODEL 150-M-RSC for 3-phase, automatic operation). Built-in thermal overload protection on single phase only.

MATERIAL

Motor housing is cast iron or aluminum and volute is cast iron. Impeller is bronze. Motor shaft is stainless steel. Units with all bronze castings are available; when ordering add -BR to model designation.

OTHER

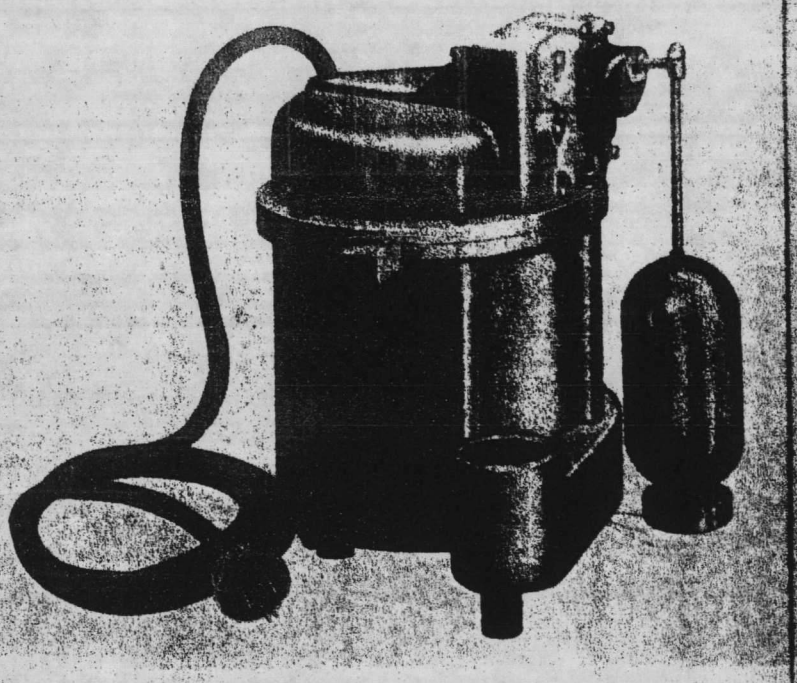
Power cord length is 8 feet. Turn-on level is approximately 9½". Turn-off level is approximately 3½". Pump is armored, completely submersible, and contains a quick-change switch.

WARRANTY

Guaranteed for one year against defective workmanship and/or materials in ordinary applications.

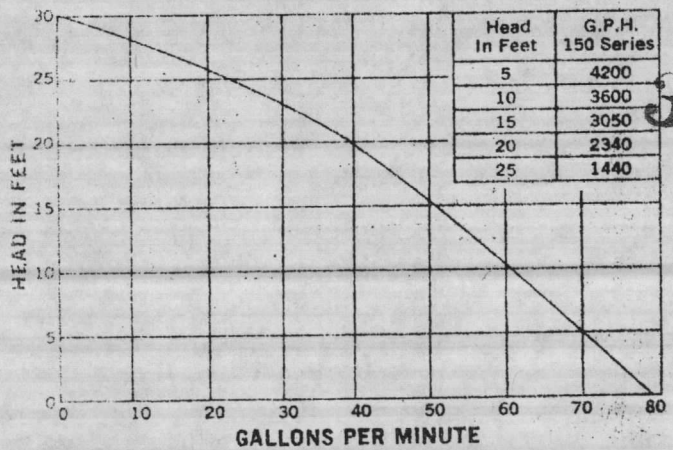
WEIGHT

Standard unit is 52 lbs.; Bronze unit is 63 lbs.

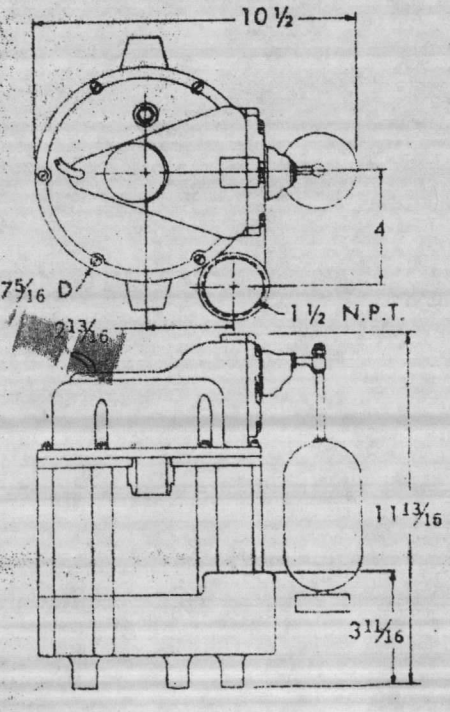


Model 150-A—Submersible Sump Pump

Model 150-A Pump Capacity Curve

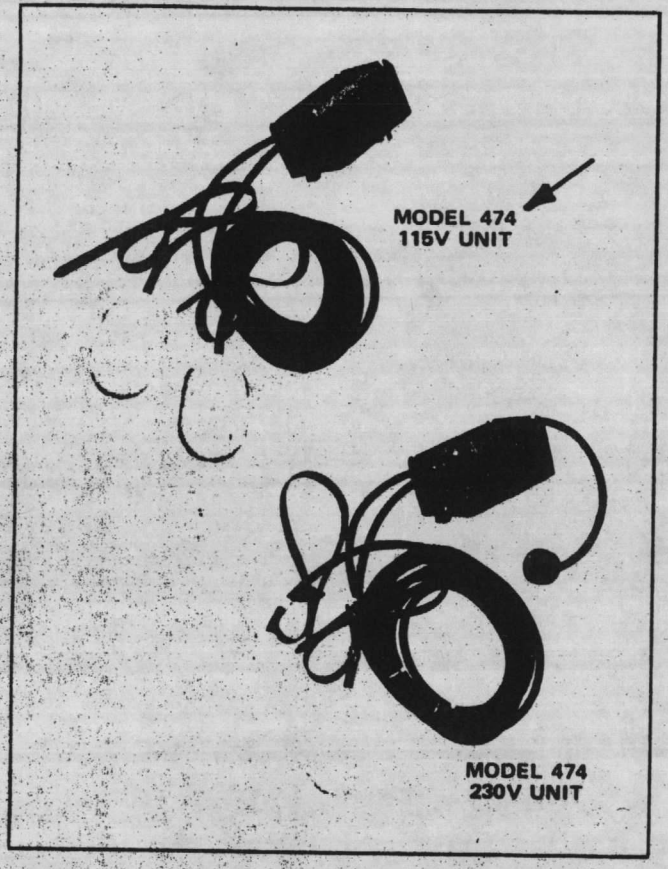


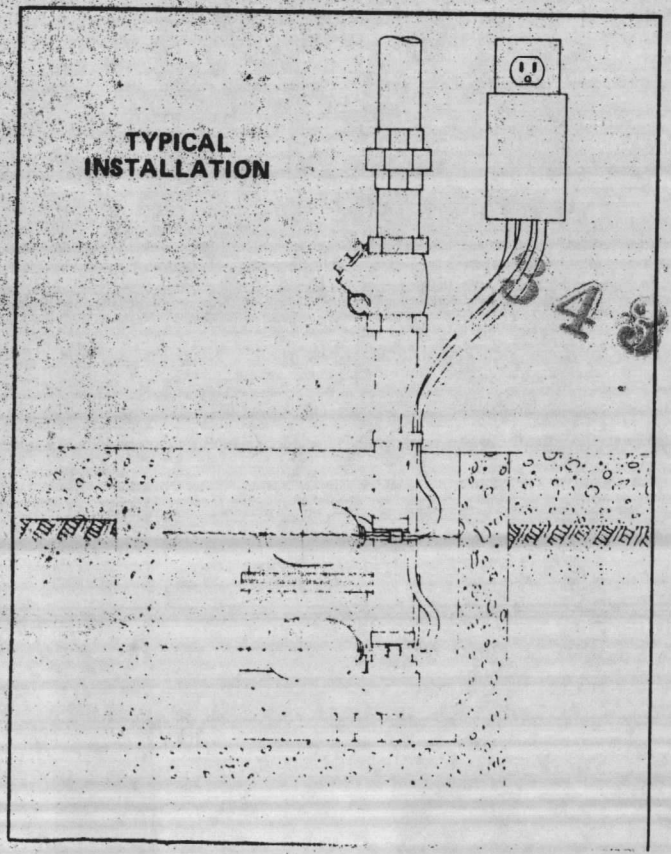
Head In Feet	G.P.H. 150 Series
5	4200
10	3600
15	3050
20	2340
25	1440



Enpo-Cornell Pump Company
A DIVISION OF
Roper Industries, Inc. (Ohio)
420 EAST THIRD STREET, PIQUA, OHIO 45356

Liquid Level Controls for Submersible Sump Pumps





DESCRIPTION:

Models 474 ~~and 474E~~ are completely independent liquid level controls for direct switching of single phase pumps up to ½ HP. The units consist of a separate mercury float switch for the on level and off level. These floats strap to the pump discharge pipe at the desired on and off water levels. They are connected to a control box that has a male plug for plugging into a standard three wire grounded outlet. A manual pump is plugged into the female socket in the control box for complete automatic on and off operation.

MODELS:

Model 474 is for 1¼" and 1½" discharge sump pumps. It has short floats so that they will operate in the small diameter sumps normally used with this size pump.

~~Model 474E is for 2" and 3" discharge pumps. It has longer floats for added buoyancy when used in the larger sumps and packages required for this size pump. Units are available for 115, 208 and 230 volt, 60 Hz, 1 phase. Specify voltage when ordering.~~

RATINGS:

½ HP max., 115 volt, 60 Hz, 1 phase, 15 amps max.
½ HP max., 230 volt, 60 Hz, 1 phase, 15 amps max.

CONSTRUCTION:

Both the floats and the control box are made of a tough, hard, rigid plastic that is virtually completely resistant to attack by inorganic salt solutions, alkalis and mineral acids. A mercury switch with molybdenum contacts is sealed in each double walled float enclosure. The electrical cable connecting the floats is extra flexible two conductor with neoprene jacket (Model 474 has 8 ft. cords; ~~Model 474E has 10 ft. cords~~). The control box has a three prong male plug for attaching to the power supply and a grounded female socket into which the manual pump is plugged. A heavy duty contactor with 90 amp lock rotor rating is mounted in the control box for switching pump motor load. A releasable plastic strap that will accommodate pipe sizes from ¾" to 4" is used to secure each float in position.

Sect 1535 C
738-C

DRAWING AND SPECIFICATION TRANSMITTAL

LOCKWOOD GREENE ENGINEERS, INC.
SPARTANBURG, SOUTH CAROLINA 29304
P.O. BOX 491 (803)582-2351

file 12/2

TO Naval Facilities
Engineering Command-Bldg. N26
Atlantic Division
Norfolk, Va. 23511

DATE October 30, 1980
JOB NO. 77239.16
JOB NAME N.R.M.C.

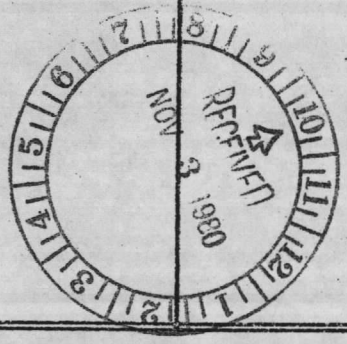
TRANSMITTAL NO. 2557
SHEET 1 OF 1
ORDER NO.

Cont. # N-62470-77-C-7526

ATTN. Mr. John Grubbs - Code 5

WE ARE SENDING YOU THE FOLLOWING DATA xx HEREWITH _____ UNDER SEPARATE COVER

QUAN.	DOCUMENT NO.	REV. NO.	DESCRIPTION	VENDOR	CODE
1			Stop Gates - Comminutor	East Coast Construction Co.	A
1	Letter		Dated Oct. 6, 1980		A



CODE FOR

LOCKWOOD GREENE DOCUMENTS		VENDOR DOCUMENTS
A - INFORMATION	E - BID	K - NO CORRECTIONS NOTED
B - REVIEW	F - CONSTRUCTION	L - MAKE CORRECTIONS NOTED
C - APPROVAL	G - PURCHASING	M - REVISE AND RESUBMIT
D - REVISED DWG. (SEE REVISION)	H -	N - REJECTED (SEE REMARKS)

COPIES TO	QUAN	TRANS ONLY	CODE	COPIES TO	QUAN	TRANS ONLY	CODE
ROICC	2						
Cardinal Contracting	3						

REMARKS

PLEASE ACKNOWLEDGE RECEIPT BY IMMEDIATE RETURN OF SIGNED COPY OF THIS TRANSMITTAL

RECEIVED BY DATE TRANSMITTED BY Richard McKnight

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev. 6/76)

SECTION 15350

CONTRACT NO.	TRANSMITTAL NO.	DATE
N-62470-77-C-7526	738-C	10-17-80

FROM CONTRACTOR: Cardinal Contr. Co.

TO: Lockwood Greene Engrs.

PROJECT TITLE AND LOCATION: NAVAL REGIONAL MED. CTR. Camp Lejeune, N.C.

CONTRACTOR USE ONLY

*List only one specification division per form.

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☐ Contractor Approved ☒ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
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AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
		Stop Gates - Comminutor			
738-C	3.1	East Coast Const. Co.	7	A	PT 10/28/80
		Letter dated 10-6-80			

CONTRACTOR S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 10-17-80

CONTRACTOR REPRESENTATIVE (Signature): Wm. J. Haynsworth

DATE RECEIVED BY REVIEWER | FROM (Reviewer) | TO

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REVIEWER'S COMMENTS

RECEIVED NOV 3 1980

COPIES TO:
ROICC (2)
LANTDIV (1)
A-E (1)

DATE: 10/28/80

SIGNATURE: Robert E. Turner

2557

ROC
RDC

CONTRACTOR'S SUBMITTAL TRANSMITTAL

5ND LANTDIV 4-4355/3 (Rev 6/76) SECTION 15350

CONTRACT NO	TRANSMITTAL NO	DATE
N-62470-77-C-7526	738-C	10-17-80

FROM CONTRACTOR: Cardinal Contr. Co.

TO: LocKwood Greene, Engrs.

PROJECT TITLE AND LOCATION: NAVAL REGIONAL MED. CTR. Camp Lejeune, N.C.

REC

CONTRACTOR USE ONLY

*List only one specification division per form.

List only one of the following categories on each transmittal form, and indicate which is being submitted

☐ Contractor Approved ☒ OICC Approval ☐ Deviation/Substitution For OICC Approval

REVIEWER USE ONLY

**ACTION CODES
A-Approved
D-Disapproved
AN-Approved as noted
RA-Receipt acknowledged.
C-Comments
R-Resubmit

ITEM NO.	PROJ. SPEC. SECT. & PARA. and/or PROJ. DWG. NO. *	ITEM IDENTIFICATION (Type, size, model no., Mfg. name, dwg. or brochure number)	NO. OF COPIES	ACTION CODES **	REVIEWER'S INITIALS CODE AND DATE
		Stop Gates - Comminutor			
738-C	3.1	East Coast Const. Co.	7		
		Letter dated 10-6-80			

CONTRACTOR'S COMMENTS

COPY OF TRANSMITTAL AND SUBMITTALS TO ROICC: 10-17-80

CONTRACTOR REPRESENTATIVE (Signature): Wm. J. Haymaker

DATE RECEIVED BY REVIEWER	FROM (Reviewer)	TO

☐ Submittals are returned with action indicated. Approval of an item does not include approval of any deviation from the contract requirements unless the contractor calls attention to and supports the deviation.

☐ Submittals are forwarded to LANTDIV with A-E recommendations indicated in REVIEWER USE ONLY Section and in comments below on **ONE COPY** of the transmittal form.

REVIEWER'S COMMENTS

RECEIVED OCT 17 1980

COPIES TO	DATE	SIGNATURE
ROICC (2) LANTDIV (1) A-E (1)		

(919) 353-4479

229 CENTER STREET

N-62470-77-C-7526

EAST COAST CONSTRUCTION COMPANY, INC.

GENERAL CONTRACTORS

Post Office Box 5004

JACKSONVILLE, NORTH CAROLINA 28540

"It is hereby certified that the (~~material~~) (equipment) shown and marked in this submittal is that ~~approved~~/proposed to be incorporated into Contract Number _____, is in compliance with the contract drawings and specifications, and can be installed in the allocated spaces, and is (~~approved for use~~) (submitted for Government approval).

CARDINAL CONTRACTING CO.

October 6, 1980 Authorized Reviewer _____ Date _____.

Signature CQC Rep WH Date 10-17-80."

Cardinal Contracting Company, Inc.
P. O. Box 8408
Camp LeJeune, N.C. 28542

Re: 205-bed Hospital
Navy Regional Medical Center
Contract N62470-77-C-7526

Subj: Transmittal #738B - Comminutor

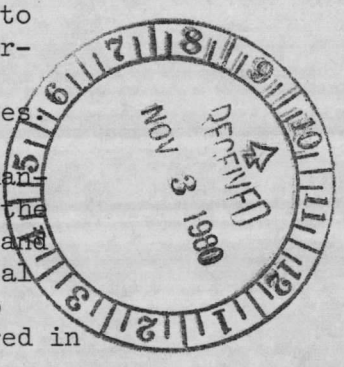
Gentlemen:

As requested, we furnish the following information on the stop gate modification:

A) The stop gate to be used in the bypass channel is to be of the same exact manufacture and model as was previously approved on transmittal #735-2. The only difference being that it is 9" high in lieu of 40". This will allow the wastewater flow to be automatically diverted to the bypass bar screen channel and prevent overflow of unscreened solids in the event of a power failure or other unforeseen circumstances.

B) The stop gate to be used in the comminutor channel during routine maintenance or repairs to the comminutor will again be the exact same make and model as was previously approved on transmittal #735-2. There will be no change in this stop gate because total flow cut off will be desired in this case.

C) Both stop gates will fit the same frame so total flow cutoff may be obtained at either channel.



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We hope the foregoing information will satisfy your needs for resubmittal per transmittal #738B. If we may be of any further assistance please call.

Yours very truly,

EAST COAST CONSTRUCTION CO., INC.

W. L. Corbin, Jr.

WLC/ck

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