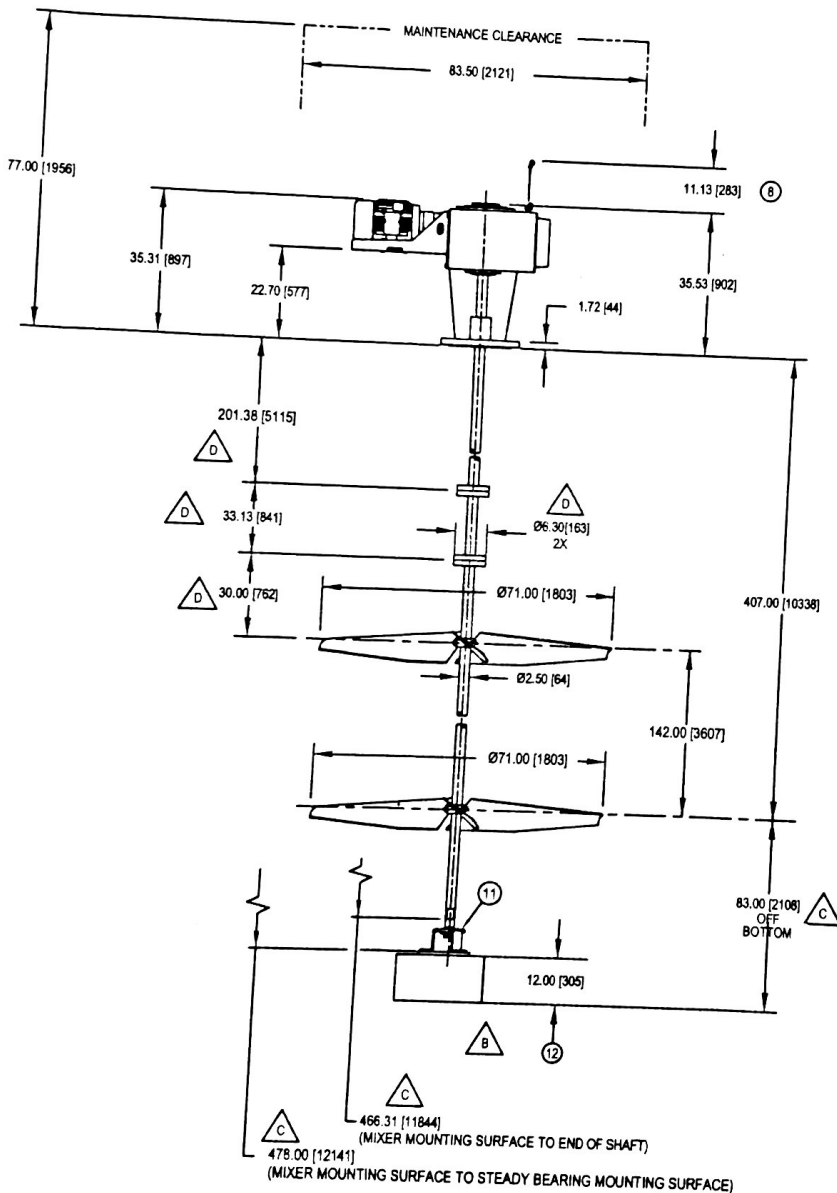
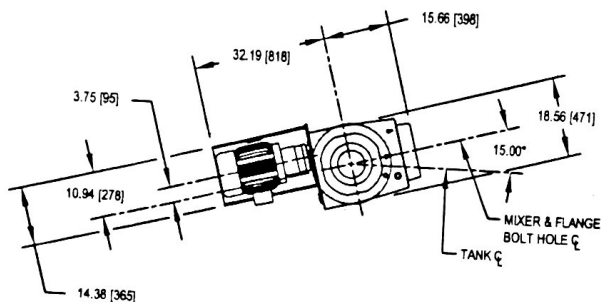


DATE: 10/10/2006

IMPELLER ROTATION



- NOTES:
- 1 MATERIAL OF IN-TANK MIXER PARTS IS STAINLESS STEEL 304 WITH 316SS HARDWARE AND 316ELC IMPELLER HUBS.
  - 2 ALL DIMENSIONS ARE IN INCHES [mm]. DIMENSIONS ARE FOR REFERENCE ONLY.
  - 3 MOTOR DATA:  
H.P.: 5.0 R.P.M.: 1200 DUTY: SEVERE  
VOLTS: 480 PHASE 3 HZ 60  
ENCLOSURE: TEFC FRAME 215T
  - 4 IMPELLER DATA:  
TYPE: A510E / A510E QUANTITY OF BLADES: 3 / 3  
R.P.M.: 37  
IMPELLER HUBS NOT ADJUSTABLE OR REMOVABLE FROM POSITION SHOWN. BLADES/FINS ARE REMOVABLE.
  - 5 TOTAL MIXER WEIGHT IS 1,740 lbs [789 kg]
  - 6 MIXER MOUNTING DESIGN DATA:  
VERTICAL DOWNWARD LOAD: 4200 LBS [18682 N]  
TORQUE: 13000 IN.-LBS. [1469 N\*m]  
BENDING MOMENT: 30000 IN.-LBS. [3389 N\*m]  
DESIGN LOADS ARE GREATER THAN ACTUAL LOADS BY A SUITABLE FACTOR, CONSISTENT WITH CONSTRUCTION CODES AND LIGHTNIN EXPERIENCE. LIGHTNIN WARRANTIES AND GUARANTEES EXTEND FOR THOSE ITEMS FURNISHED BY IT. ALL OTHER EQUIPMENT AND DESIGNS ARE THE RESPONSIBILITY OF OTHERS.
  - 7 MINIMUM OPENING REQUIRED TO PASS DISASSEMBLED MIXER PARTS IS 13" [330.2 mm]. STEADY BEARING TRIPOD MINIMUM OPENING IS 16.5" [419mm].
  - 8 CLEARANCE REQUIRED FOR REMOVAL OF OIL LEVEL GAUGE.
  - 9 UNIT IS FURNISHED WITH A LOW PRESSURE STUFFING BOX PACKING MATERIAL: COMBINATION 50
  - 10 MIXER MOUNTING FLANGE DATA:  
150 LB. ANSI SERIES DRILLING  
SIZE: 12" O.D.: 19.00 BOLT CIRCLE: 17.00  
NO. OF HOLES: 12 BOLT DIA: .88  
AS COMMON PRACTICE, FLANGE BOLT HOLES ARE SHOWN STRADDLING MIXER CENTERLINE
  - 11 UNIT IS FURNISHED WITH A TRIPOD TYPE STEADY BEARING. BUSHING MATERIAL IS GLASS FILLED TEFLON. STEADY BEARING SLEEVE IS STAINLESS STEEL 316. THE LATERAL DESIGN LOAD ACTING AT THE CENTERLINE OF THE BUSHING IS 170 LBS. [756 N]. MIXER MOUNTING SURFACE AND STEADY BEARING MOUNTING SURFACE MUST BE PARALLEL WITHIN ±.25°. IF THEY ARE NOT A TAPERED GASKET, DUTCHMAN OR SHIMS SHOULD BE ADDED TO OBTAIN THE REQUIRED PARALLELISM.
  - 12 STEADY BEARING MOUNTING PAD IS FURNISHED BY CUSTOMER.

06018  
CIE: ETHANOL  
Canton, Illinois  
06.01.07  
File: 17.1 AT5101  
018 0014 006

FIELD FILE

ALL EQUIPMENT DESIGN AND APPLICATION DATA SHOWN HEREIN AND RELATED KNOW-HOW IS CONFIDENTIAL AND THE PROPERTY OF THE LIGHTNIN GROUP OF COMPANIES. NO USE OR DISCLOSURE THEREOF MAY BE MADE WITHOUT OUR WRITTEN PERMISSION.

**LIGHTNIN**  
MIXERS AND AERATORS

GENERAL ARRANGEMENT  
FOR: **LURGI (CENTRAL ILLINOIS ENERGY)**  
S.O. NO.: 872534 PROJ. NO.: 215633  
CUST. P.O. NO.: 6018-70717 QUANTITY: 1  
TAG NO.: WHOLE STILLAGE AT 5101  
MIXER MODEL: 74C5 RATIO: 31.4:1  
SERIAL NO.: R0621563301

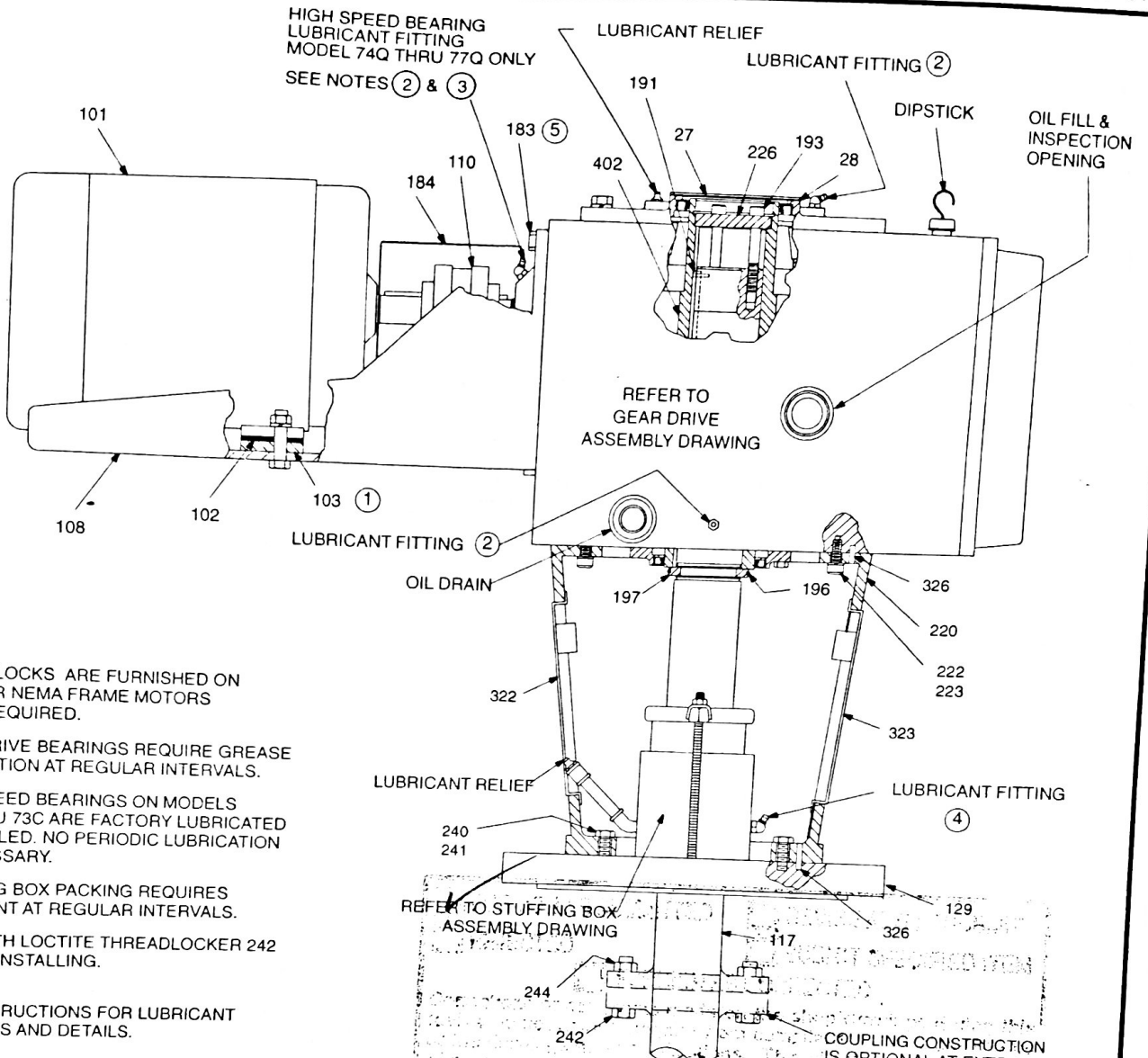


CERTIFIED BY:

DATE:

© LIGHTNIN 2006

DRAWING NO. R215633-A REVISION



NOTES:

1. RISER BLOCKS ARE FURNISHED ON SMALLER NEMA FRAME MOTORS WHEN REQUIRED.
2. GEAR DRIVE BEARINGS REQUIRE GREASE LUBRICATION AT REGULAR INTERVALS.
3. HIGH SPEED BEARINGS ON MODELS 71C THRU 73C ARE FACTORY LUBRICATED AND SEALED. NO PERIODIC LUBRICATION IS NECESSARY.
4. STUFFING BOX PACKING REQUIRES LUBRICANT AT REGULAR INTERVALS.
5. COAT WITH LOCTITE THREADLOCKER 242 BEFORE INSTALLING.

REFER TO INSTRUCTIONS FOR LUBRICANT SPECIFICATIONS AND DETAILS.

ITEM	PART NAME
402	GEAR DRIVE LOW SPEED SHAFT
326	LOCATING PIN (4)
323	COVER PLATE - FRONT
322	COVER PLATE - REAR
244	HEX NUT
242	HEX HEAD CAP SCREW
241	WASHER
240	HEX HEAD CAP SCREW
226	THRUST PLATE
223	WASHER
222	SOCKET HEAD CAP SCREW - NYLOK
220	PEDESTAL
197	THRUST RING - SPLIT
196	RETAINING RING
193	SOCKET HEAD CAP SCREW (3)
191	HOOK KEY
184	COUPLING GUARD
183	HEX HEAD CAP SCREW - SEE NOTE 5
129	HUB & FLANGE ASSEMBLY
117	UNIT SHAFT
110	MOTOR FLEXIBLE COUPLING
108	MOTOR BRACKET
105	LOWER SHAFT (OPTIONAL)
103	RISER BLOCKS (4) - SEE NOTE 1
102	SHIM SET - MOTOR
101	MOTOR
28	GASKET - COVER PLATE
27	COVER PLATE

WHEN ORDERING PARTS, SPECIFY MODEL & SERIAL NUMBER, ITEM NUMBER AND DRAWING NO.

08018  
 CIE: ETHANOL  
 Canton, Illinois  
**RECEIVED NOV 01 2006**

File: AT5101  
 018 0014007



LIGHTNIN 2001

ALL EQUIPMENT DESIGN AND APPLICATION DATA SHOWN HEREIN AND RELATED KNOW-HOW IS CONFIDENTIAL AND THE PROPERTY OF THE LIGHTNIN GROUP OF COMPANIES. NO USE OR DISCLOSURE THEREOF MAY BE MADE WITHOUT OUR WRITTEN PERMISSION.

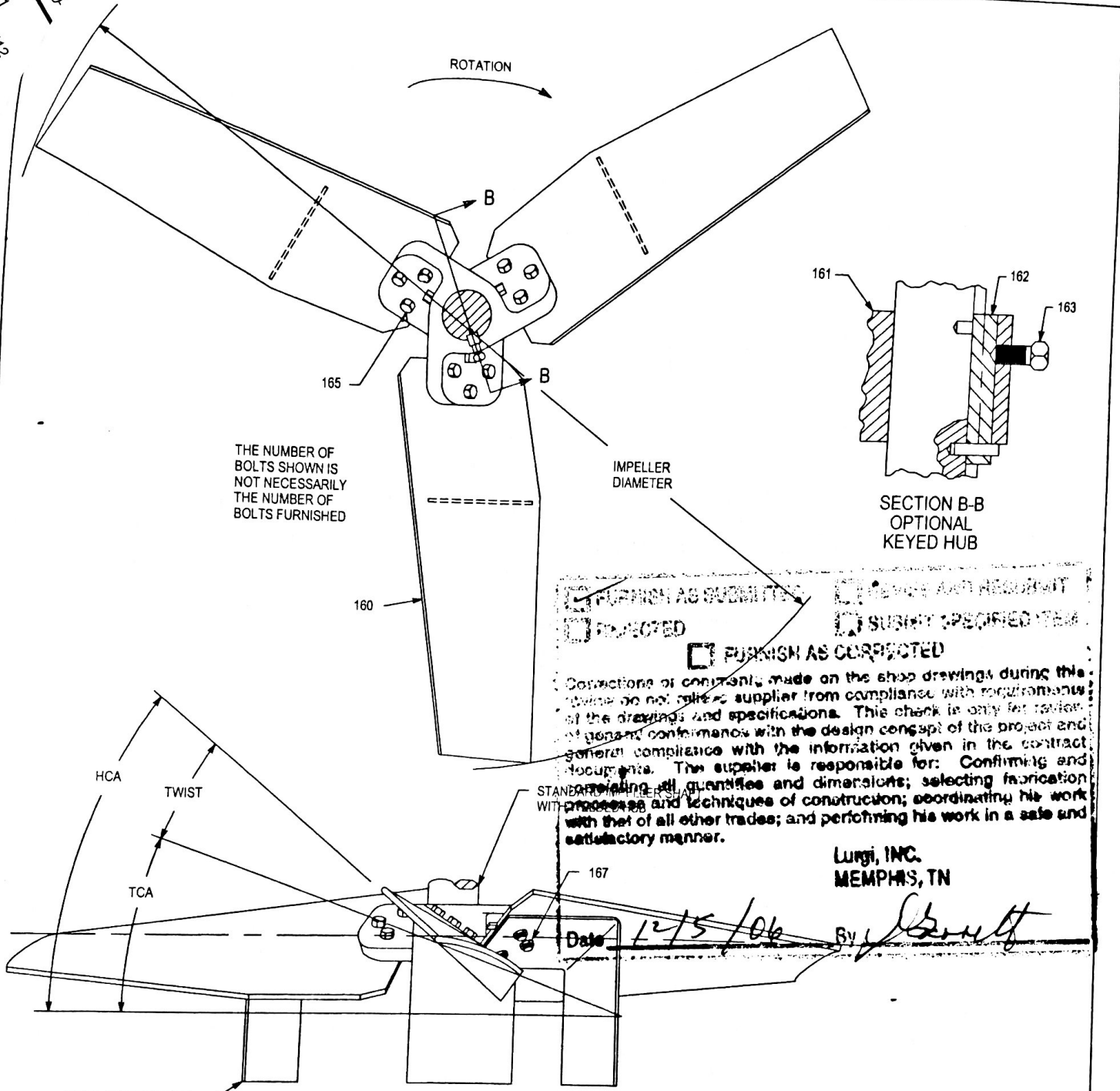
**LIGHTNIN**<sup>®</sup>  
 MIXERS AND AERATORS

ASSEMBLY DRAWING  
**MODELS 71C THRU 77C**  
**CLOSED TANK MIXER**  
**WITH STUFFING BOX**

DRAWING NO. L-16807D

DATE 10

DATE: 6/14/05



THE NUMBER OF BOLTS SHOWN IS NOT NECESSARILY THE NUMBER OF BOLTS FURNISHED

SECTION B-B  
OPTIONAL  
KEYED HUB

FURNISH AS SUBMITTED  REVISE AND RESUBMIT  
 REJECTED  SUBMIT SPECIFIED ITEM  
 FURNISH AS CORRECTED

Corrections or comments made on the shop drawings during this review do not relieve supplier from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The supplier is responsible for: Confirming and obtaining all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

Lurgi, INC.  
MEMPHIS, TN

Date: 12/5/06 By: [Signature]

STABILIZER FINS (168)  
FURNISHED ONLY  
WHEN SPECIFIED

06013  
 CIE: ETHANOL  
 Canton, Illinois  
 RECEIVED NOV 01 2006

ALL EQUIPMENT DESIGN AND APPLICATION DATA SHOWN HEREIN AND RELATED KNOW-HOW IS CONFIDENTIAL AND THE PROPERTY OF THE LIGHTNIN GROUP OF COMPANIES.  
 NO USE OR DISCLOSURE THEREOF MAY BE MADE WITHOUT OUR WRITTEN PERMISSION.

WHEN ORDERING PARTS, SPECIFY:  
 IMPELLER DIAMETER, ITEM NO., PART NAME,  
 DRAWING NO. AND MIXER SERIAL NO.

File: AT5101  
 018 0014 009

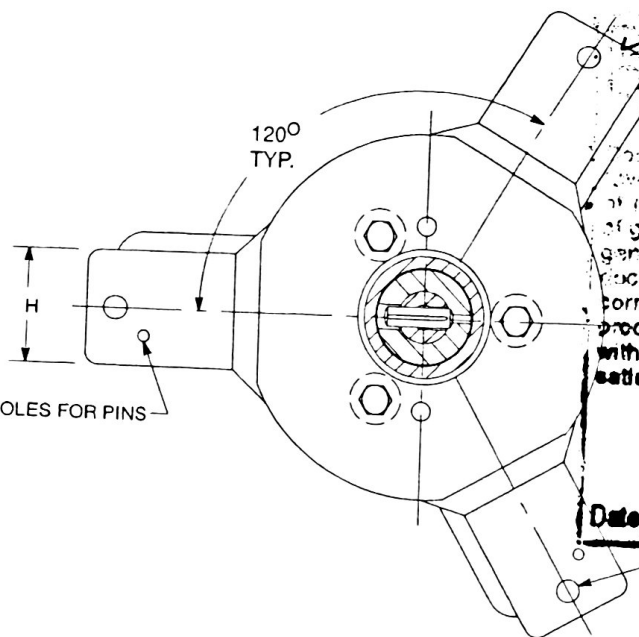
168	STABILIZER FIN	
167	HEX NUT	
165	HEX HEAD CAP SCREW	
163	SET SCREW	
162	HOOK KEY	OPTIONAL KEYED HUB
161	HUB	
160	BLADE	
ITEM	PART NAME	



**LIGHTNIN**<sup>®</sup>  
 MIXERS AND AERATORS

ASSEMBLY DRAWING  
**A510 AND A510E**  
**AXIAL FLOW IMPELLER**  
**ONE PIECE HUB w/**  
**BOLTED BLADES**

DRAWING NO. L-17738



...PROCESSED

...SUBJECT OF THE DRAWING

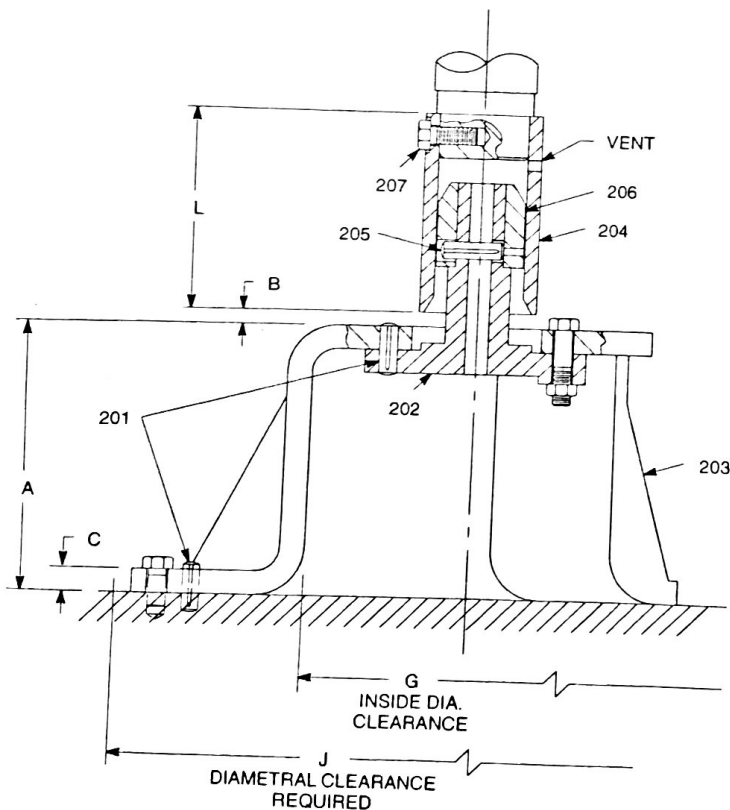
...FURNISHED BY OTHERS

...instructions of contractor made on the shop drawings during the construction of the supplier from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The supplier is responsible for: Confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating the work with that of all other trades; and performing his work in a safe and satisfactory manner.

Lurgi, INC.  
MEMPHIS, TN

Date 12/5/06 By [Signature]

(3) "D" DIA. HOLES ON "E" DIA. BOLT  
CIRCLE (MOUNTING PAD(S) AND  
HARDWARE FURNISHED BY OTHERS)



WHEN ORDERING PARTS, SPECIFY:  
MACHINE SERIAL NO., ITEM NO. AND  
DRAWING NO.

207	RETAINING SCREW
206	BUSHING
205	BUSHING PIN
204	SLEEVE
203	TRIPOD
202	BUSHING HOLDER
201	LOCATING PIN
ITEM	PART NAME

FILED  
CIE: ETHANOL  
Canton, Illinois  
RECEIVED NOV 01 2006

File: AT 5101  
018 0014 011



LIGHTNIN  
2001

ALL EQUIPMENT DESIGN AND APPLICATION DATA SHOWN  
HEREIN AND RELATED KNOW-HOW IS CONFIDENTIAL AND  
THE PROPERTY OF THE LIGHTNIN GROUP OF COMPANIES.  
NO USE OR DISCLOSURE THEREOF MAY BE MADE WITHOUT  
OUR WRITTEN PERMISSION.

**LIGHTNIN**<sup>®</sup>  
MIXERS AND AERATORS

ASSEMBLY DRAWING  
**TRIPOD MOUNTED  
STEADY BEARING  
ASSEMBLY**

SHAFT DIA.	A	B		C	D	E	F	G	H	J	L
		MIN.	MAX.								
1-1/2 & 2	5-1/2	1/8	1	1/2	3/4	12	3/8	7	2-1/2	14	4-3/8
2-1/2 & 3	7-5/16	1/8	5/8	5/8	7/8	14-1/4	1/2	8-1/2	3	16-1/2	5-7/8
3-1/2 & 4	9	-1/8	5/8	5/8	1"	17	1/2	10-1/4	3	19-1/2	7-5/8
4-1/2	11	-1/8	1-1/4	3/4	1-1/4	18-3/4	1/2	11-1/4	4	22	9-1/2
5, 5-1/2 & 6	13-5/16	0	1-3/8	3/4	1-3/8	21-1/4	1/2	13-1/4	4-1/2	25	12

Certified By \_\_\_\_\_ Date \_\_\_\_\_

DRAWING NO. L-16515C