

INTER-OFFICE MEMORANDUM

PLAINTIFF'S
EXHIBIT

ARO-213

TO File
AT Middletown

COPIES TO See Distribution

DATE July 23, 1968

FROM P. J. Weaver

AT Middletown

7156
JOB NO. 7159.283

SUBJECT No. 4 and No. 5 Continuous Strip Pickle Lines Inq. No. 7156 & 7159-787
Certified Vendor Prints P.O. No. 7156.1553
P.O. No. 7159.1554

Distribution of the following listed Certified Vendor Information from
PANGBORN, dated July 17, 1968 is as noted:

DUST COLLECTING EQUIPMENT

Drawings listed on attached Vendor Letter

PJW/ih

<u>To</u>	<u>Sepias</u>	<u>Prints</u>	<u>Vendor Letter</u>	<u>Letters of Transmittal</u>
P. E. Armco (R. M. Gregory)		1	1	1
P. E. Kaiser (L. Feller)		1	1	1
W. J. Steinhauser		2	1	1
Field (R. Geyer)		4	1	1
M. D. Wilson			1	1
Project File (P. J. Weaver)	1	1	1	1
Field (J. M. Foster)			1	1
A. R. Miller		1	1	1
D. E. Brunswick		1	1	1
L. K. Lukens		1	1	1
Central File			1	1

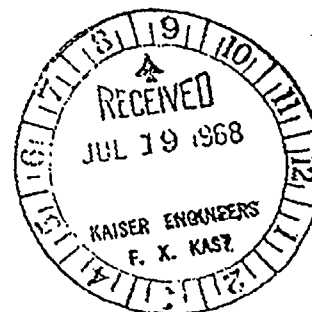
PANGBORN

The Pangborn Corporation • a Carborundum company • Hagerstown, Maryland 21740

July 17, 1968

Mr. L. Feller, Project Engr.,
Kaiser Engineers, Inc.
P. O. Box "F"
Middletown, Ohio 45042

Re: Your Orders 7159-1554 & 7156-1553
Our Orders 380105 & 380106
Dust Collecting equipment for -
Armco Steel, Middletown, Ohio



Dear Mr. Feller:

In accordance with your request for additional data covering the equipment furnished on above referenced orders, we enclose the following: (one copy each)

Westinghouse Dimension sheet 2928T, Page 21T for 10HP Fr 25 $\frac{1}{4}$ T Motor
Westinghouse Dimension sheet 2928-T, Page 22T for 50 HP Fr 36 $\frac{1}{4}$ T Motor
Westinghouse Dimension sheet 2928T, Page 21T for 1-1/2, 1, and 3/4
HP Fr 182T Motors
Westinghouse Dimension Sheet 2928T, Page 21T for 25 HP Fr 286T Motor
Westinghouse Electric Motor Data Sheet for 3/4HP Fr 182T Motor
Westinghouse Electric Motor Data Sheet for 50HP Fr 36 $\frac{1}{4}$ T Motor
Airline Products Co. Drg. #68-59 for Louver Detail (Type "C")
Chicago Blower Corp. Dwg. #51270-1 for Collector "A"
Chicago Blower Corp. Dwg. #51269-1 for Collector "C"
Chicago Blower Corp. Dwg. #10-0-105 - flanged outlet
Chicago Blower Corp. Dwg. #51143-1 for Collector "B"
Chicago Blower Corp. Dwg. #51271-1 for Collectors "D" & "E"

In addition to the above data, we enclose one print each of the following general assembly drawings, all "REVISION "A"":

Supers - M-673958, M-673707, M-673705, M-674004 and M-673706

We trust the above data will convey the information desired and if we can be of further service, kindly contact us.

GMA/GMA
Cincinnati
Encls.
cc: F E Dunk

Sincerely,

G. M. Angle,
Customer Service Dept.



CARBORUNDUM

INTER-OFFICE MEMORANDUM

TO File
AT Middletown

DATE July 31, 1968

FROM P. J. Weaver
P. J. Weaver

COPIES TO See Distribution

AT Middletown

JOB NO. 7156.283

SUBJECT No. 4 and No. 5 Continuous Strip Pickle Lines
Certified Vendor Prints

P.O. No. 7156-787
Inq. No. 7156-1553

Distribution of the following listed Certified Vendor Information
from PANGBORN CORP., dated July 30, 1968 is as noted:

Revised Drawing

The following drawings have been revised. Replace prints now in your
files with these revised drawings.

Drawing No. H-672672 Assembly Side Sheets
Drawing No. M-673704 Erection Diagram of Support
Drawing No. M-673706 General Assembly Drawing

PJW/ih

<u>To</u>	<u>Sepias</u>	<u>Prints</u>	<u>Letters of Transmittal</u>
P. E. Armco (R. M. Gregory)			1
P. E. Kaiser (L. Feller)		1	1
W. J. Steinhauser		2	1
Field (R. Geyer)		4	1
Project File (P. J. Weaver)	1		1
Field (J. M. Foster)			1
McGraw Const. (A. Newman)	1		1
Central File			1

FILE No.	<u>4177EP</u>
CHARGE No.	<u>7156-7159-283</u>
DATE	<u>AUG 3 1968</u>
BY	<u>P. J. W.</u>

INTER-OFFICE MEMORANDUM

TO File
AT Middletown

COPIES TO See Distribution

DATE August 2, 1968

FROM P. J. Weaver

P.J. Weaver

AT Middletown

JOB NO. 7156-283

SUBJECT No. 4 and No. 5 Continuous Strip Pickle Lines P.O. No. 7156-787
Certified Vendor Prints Inq. No. 7156-1553

Distribution of the following listed Certified Vendor Information from PANGBORN CORP., dated July 30, 1968 is as noted:

Revised Drawings

The following drawings have been revised. Replace prints now in your files with these revised drawings.

Drawing No. M-673525 Erection Diagram of Support

Drawing No. M-673958 General Assembly Drawing

PJW/ih

<u>To</u>	<u>Sepias</u>	<u>Prints</u>	<u>Letters of Transmittal</u>
P. E. Armco (R. M. Gregory)			1
P. E. Kaiser (L. Feller)		1	1
W. J. Steinhauser		2	1
Field (R. Geyer)		4	1
Project File (P. J. Weaver)	1		1
Field (J. M. Foster)			1
Central File			1
McGraw Const. (A. Newman)	1		1

INTER-OFFICE MEMORANDUM

TO File
AT Middletown

COPIES TO See Distribution

DATE August 6, 1968

FROM P. J. Weaver
P. J. Weaver

AT Middletown

JOB NO. 7156.283

SUBJECT No. 4 and No. 5 Continuous Strip Pickle Lines P.O. No. 7156.1553
Certified Vendor Prints Inq. No. 7156.787

Distribution of the following listed Certified Vendor Information from PANGBORN CORP., dated August 5, 1968 is as noted:

Revised Drawings

The following drawings have been revised. Replace prints now in your files with these revised drawings.

Drawing No. H-672671	Assembly Side Sheets
Drawing No. H-672670	Assembly Side Sheets
Drawing No. M-673672	Erection Diagram of Support
Drawing No. M-673707	General Assembly Drawing

PJW/ih

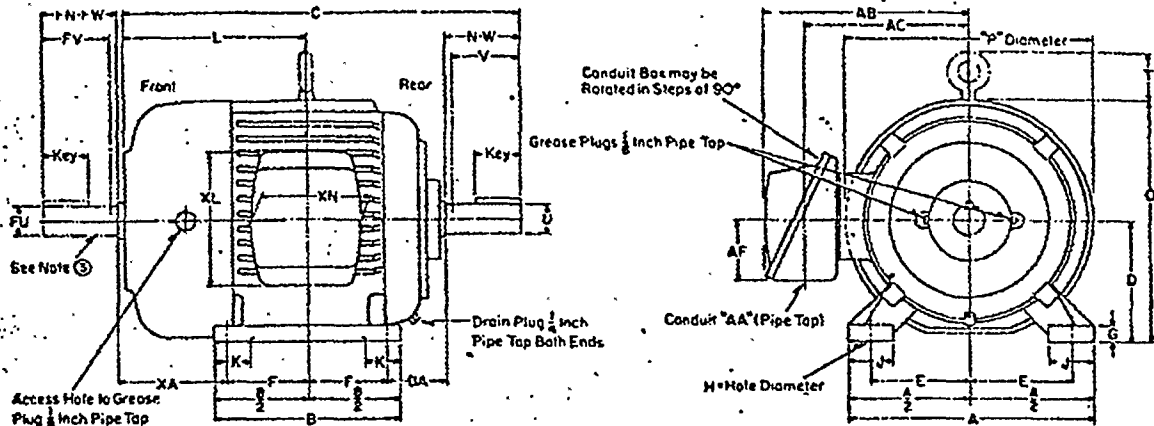
<u>To</u>	<u>Sepias</u>	<u>Prints</u>	<u>Letters of Transmittal</u>
P. E. Armco (R. M. Gregory)			1
P. E. Kaiser (L. Feller)		1	1
W. J. Steinhauser		2	1
Field (R. Geyer)		4	1
Project File (P. J. Weaver)	1		1
Field (J. M. Foster)			1
McGraw Const. (A. Newman)	1		1
Central File			1

Westinghouse



MANUAL
Medium Ac Motors
Life-Line™

TEFC, Explosion Proof
Frames 182T-326TS



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Applying to each frame number

Frame No.	U@	N-W	V	Key Size	FU@	FN-FW	FV	Key Size	A	B	C	D@	E	F	G	H	J	K	L
182Y	1.125	2.75	2.50	.250 x .250 x 1.750	.875	2.25	2.00	.187 x .187 x 1.375	8.88	5.76	14.42	4.50	3.75	2.25	.56	.406	1.84	....	6.67
184T	1.125	2.75	2.50	.250 x .250 x 1.750	.875	2.25	2.00	.187 x .187 x 1.375	8.88	6.76	15.42	4.50	3.76	2.75	.56	.406	1.84	....	7.17
213T	1.375	3.38	3.12	.312 x .312 x 2.375	1.125	2.75	2.50	.250 x .250 x 1.750	10.40	7.00	17.70	5.25	4.25	2.75	.62	.406	1.96	....	8.07
216T	1.375	3.38	3.12	.312 x .312 x 2.375	1.125	2.75	2.50	.250 x .250 x 1.750	10.40	8.50	19.20	5.25	4.25	3.50	.62	.406	1.96	....	8.82
254T	1.625	4.00	3.75	.375 x .375 x 2.875	1.375	3.38	3.12	.312 x .312 x 2.375	12.36	10.24	23.00	6.25	5.00	4.12	.74	.531	2.62	....	10.63
256T	1.625	4.00	3.75	.375 x .375 x 2.875	1.375	3.38	3.12	.312 x .312 x 2.375	12.36	12.00	24.75	6.25	5.00	5.00	.74	.531	2.62	....	11.50
284T	1.875	4.62	4.38	.500 x .500 x 3.250	1.625	4.00	3.75	.375 x .375 x 2.875	13.88	12.00	25.75	7.00	5.50	4.75	.88	.531	2.62	2.76	11.63
284TS	1.625	3.25	3.00	.375 x .375 x 1.875	1.625	3.25	3.00	.375 x .375 x 1.875	13.88	12.00	24.38	7.00	5.50	4.75	.88	.531	2.62	2.76	11.63
286T	1.875	4.62	4.38	.500 x .500 x 3.250	1.625	4.00	3.75	.375 x .375 x 2.875	13.88	13.50	27.25	7.00	5.50	5.50	.88	.531	2.62	2.76	12.38
286TS	1.625	3.25	3.00	.375 x .375 x 1.875	1.625	3.25	3.00	.375 x .375 x 1.875	13.88	13.50	25.88	7.00	5.50	5.50	.88	.531	2.62	2.76	12.38
324T	2.125	5.25	5.00	.500 x .500 x 3.875	1.875	4.62	4.38	.500 x .500 x 3.250	15.72	13.50	28.80	8.00	6.25	5.25	1.00	.656	2.88	3.26	13.05
324TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	15.72	13.50	27.30	8.00	6.25	5.25	1.00	.656	2.88	3.26	13.05
326T	2.125	5.25	5.00	.500 x .500 x 3.875	1.875	4.62	4.38	.500 x .500 x 3.250	15.72	15.00	30.30	8.00	6.25	6.00	1.00	.656	2.88	3.26	13.80
326TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	15.72	15.00	28.80	8.00	6.25	6.00	1.00	.656	2.88	3.26	13.80

Applying to each frame number

Frame No.	O	P	T	BA	XA	Approx. Net Wt. Lbs.
182T	8.50	9.50	....	2.75	4.93	85
184T	8.50	9.50	....	2.75	4.93	100
213T	10.86	11.20	....	3.50	5.83	140
216T	10.86	11.20	....	3.50	5.83	175
254T	12.88	13.26	2.32	4.25	7.25	260
256T	12.88	13.26	2.32	4.25	7.25	320
284T	14.36	14.72	2.32	4.75	7.63	380
284TS	14.36	14.72	2.32	4.75	7.63	360
286T	14.36	14.72	2.32	4.75	7.63	450
286TS	14.36	14.72	2.32	4.75	7.63	450
324T	16.50	17.00	2.75	5.25	8.80	550
324TS	16.50	17.00	2.75	5.25	8.80	550
326T	16.50	17.00	2.75	5.25	8.80	610
326TS	16.50	17.00	2.75	5.25	8.80	610

Common to each frame series

Frame Series	Conduit Box Dimensions						Oversize Conduit Box					
	Standard Conduit Box											
	AA	AB	AC	AF	XL	XN	AA	AB	AC	AF	XL	XN
TEFC, Cast Iron Conduit Box												
182-4	%	8.30	6.62	2.88	5.62	4.76	%	8.30	6.62	2.88	5.62	4.76
213-5	%	9.12	7.44	2.88	5.62	4.76	%	9.12	7.44	2.88	5.62	4.76
254-6	1%	11.30	8.88	3.38	6.76	5.88	1%	11.30	8.88	3.38	6.76	5.88
284-6	1%	12.24	9.92	3.38	6.76	5.88	1%	12.24	9.92	3.38	6.76	5.88
324-6	1%	13.24	10.92	3.38	6.76	5.88	2%	15.62	12.80	6.62	10.26	7.76
Explosion Proof, Cast Iron Conduit Box												
182-4	%	9.00	6.68	2.68	6.12	5.38	%	9.00	6.68	2.68	6.12	5.38
213-5	%	9.82	7.50	2.68	6.12	5.38	%	9.82	7.50	2.68	6.12	5.38
254-6	1%	11.86	9.24	3.62	7.88	7.26	1%	11.86	9.24	3.62	7.88	7.26
284-6	1%	12.80	10.18	3.62	7.88	7.26	1%	12.80	10.18	3.62	7.88	7.26
324-6	1%	13.80	11.18	3.62	7.88	7.26	2%	17.24	12.68	7.00	12.28	11.00

① "D" dimension will not be exceeded. When exact dimension is required, shims up to .03 of an inch may be necessary for frames 182T to 326T.
② Manufacturer's allowance +.000, -.0005 for shaft dia. 1.500 and below; +.000, -.001 for shaft dia. above 1.500.
③ Double extended shaft furnished only when specially ordered. This front extension is not suitable for transmitting rated torque through belt drive.

Reproduced from Drawings 384-D-800, sub 4 and 384-D-900, sub 3.

Approval

Purchaser:

Name PANGBORN CORP.

Order No. 84032

Machine No. 70277-P-818

For Motor:

Frame 286-T

Hp. 2.5 Rpm 1800

Ph. 3 Cy. 60 Volts 220/460

Style No.

Westinghouse Electric Corporation:

Date 9/22/67

Approval [Signature]

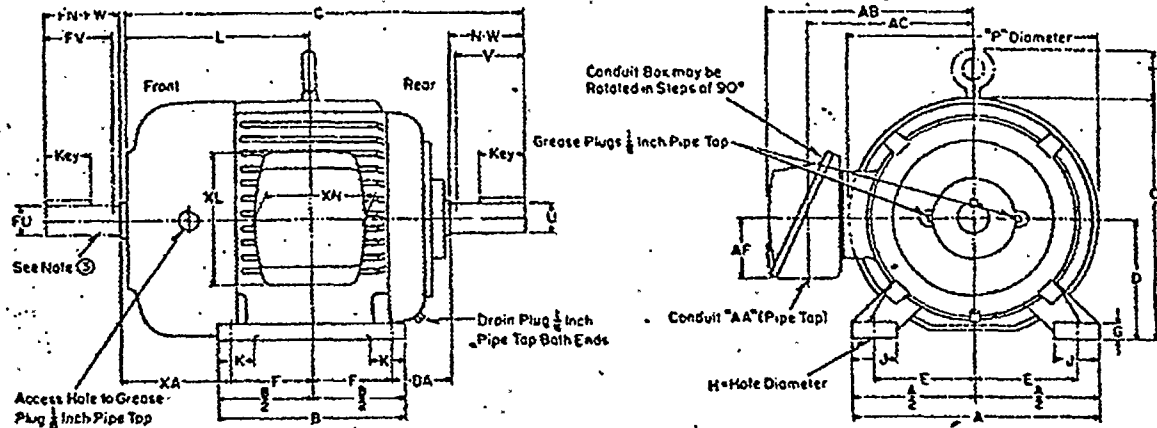
G.O. No. BA-81616

Item No. T.W.O.

October, 1966
Supersedes DS 2928-T, pages 103 and 104, dated February, 1966.
E. O. 1709/DS

7156+7159-283

Westinghouse

Medium Ac Motors
Life-Line TTEFC, Explosion Proof
Frames 182T-326TS

Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Applying to each frame number

Frame No.	Drive End (Rear End)				End Opposite Drive End (Front End)①				A	B	C	D②	E	F	G	H	J	K	L
	UQ	N-W	V	Key Size	FU	FN-FW	FV	Key Size											
182T	1.125	2.75	2.50	.250 x .250 x 1.750	.875	2.25	2.00	.187 x .187 x 1.375	8.88	5.76	14.42	4.50	3.75	2.25	.56	.406	1.84	.....	6.67
184T	1.125	2.75	2.50	.250 x .250 x 1.750	.875	2.25	2.00	.187 x .187 x 1.375	8.88	6.76	15.42	4.50	3.75	2.75	.56	.406	1.84	.....	7.17
213T	1.375	3.38	3.12	.312 x .312 x 2.375	1.125	2.75	2.50	.250 x .250 x 1.750	10.40	7.00	17.70	5.25	4.25	2.75	.62	.406	1.86	.....	8.07
215T	1.375	3.38	3.12	.312 x .312 x 2.375	1.125	2.75	2.50	.250 x .250 x 1.750	10.40	8.50	19.20	5.25	4.25	3.50	.62	.406	1.96	.....	8.82
254T	1.625	4.00	3.75	.375 x .375 x 2.875	1.375	3.38	3.12	.312 x .312 x 2.375	12.36	10.24	23.00	6.25	5.00	4.12	.74	.531	2.62	.....	10.63
256T	1.625	4.00	3.75	.375 x .375 x 2.875	1.375	3.38	3.12	.312 x .312 x 2.375	12.36	12.00	24.75	6.25	5.00	5.00	.74	.531	2.62	.....	11.50
284T	1.875	4.62	4.38	.500 x .500 x 3.250	1.625	4.00	3.75	.375 x .375 x 2.875	13.88	12.00	25.75	7.00	5.50	4.75	.88	.531	2.62	2.76	11.63
284TS	1.625	3.25	3.00	.375 x .375 x 1.875	1.625	3.25	3.00	.375 x .375 x 1.875	13.88	12.00	24.38	7.00	5.50	4.75	.88	.531	2.62	2.76	11.63
286T	1.875	4.62	4.38	.500 x .500 x 3.250	1.625	4.00	3.75	.375 x .375 x 2.875	13.88	13.50	27.25	7.00	5.50	5.50	.88	.531	2.62	2.76	12.38
286TS	1.625	3.25	3.00	.375 x .375 x 1.875	1.625	3.25	3.00	.375 x .375 x 1.875	13.88	13.50	25.88	7.00	5.50	5.50	.88	.531	2.62	2.76	12.38
324T	2.125	5.25	5.00	.500 x .500 x 3.875	1.875	4.62	4.38	.500 x .500 x 3.250	15.72	13.50	28.80	8.00	6.25	5.25	1.00	.656	2.88	3.26	13.05
324TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	15.72	13.50	27.30	8.00	6.25	5.25	1.00	.656	2.88	3.26	13.05
326T	2.125	5.25	5.00	.500 x .500 x 3.875	1.875	4.62	4.38	.500 x .500 x 3.250	15.72	15.00	30.30	8.00	6.25	6.00	1.00	.656	2.88	3.26	13.80
326TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	15.72	15.00	28.80	8.00	6.25	6.00	1.00	.656	2.88	3.26	13.80

Applying to each frame number

Frame No.	O	P	T	BA	XA	Approx. Net Wt., Lbs.
182T	9.50	9.60	.....	2.75	4.93	85
184T	9.50	9.60	.....	2.75	4.93	100
213T	10.86	11.20	.....	3.50	5.83	140
215T	10.86	11.20	.....	3.50	5.83	175
254T	12.88	13.26	2.32	4.25	7.25	260
256T	12.88	13.26	2.32	4.25	7.25	320
284T	14.36	14.72	2.32	4.75	7.63	360
284TS	14.36	14.72	2.32	4.75	7.63	360
286T	14.36	14.72	2.32	4.75	7.63	450
286TS	14.36	14.72	2.32	4.75	7.63	450
324T	16.50	17.00	2.75	5.25	8.80	550
324TS	16.50	17.00	2.75	5.25	8.80	550
326T	16.50	17.00	2.75	5.25	8.80	610
326TS	16.50	17.00	2.75	5.25	8.80	610

Common to each frame series

Frame Series	Conduit Box Dimensions						Oversize Conduit Box					
	Standard Conduit Box			TEFC, Cast Iron Conduit Box			Explosion Proof, Cast Iron Conduit Box			Explosion Proof, Cast Iron Conduit Box		
	AA	AB	AC	AF	XL	XN	AA	AB	AC	AF	XL	XN
182-4	%	8.30	6.62	2.88	5.62	4.76	%	8.30	6.62	2.88	5.62	4.76
213-5	%	9.12	7.44	2.88	5.62	4.76	%	9.12	7.44	2.88	5.62	4.76
254-6	1%	11.30	8.98	3.38	6.76	5.88	1%	11.30	8.98	3.38	6.76	5.88
284-6	1%	12.24	9.92	3.38	6.76	5.88	1%	12.24	9.92	3.38	6.76	5.88
324-6	1%	13.24	10.92	3.38	6.76	5.88	2%	16.62	12.80	6.62	10.26	7.76
182-4	%	9.00	6.68	2.68	6.12	5.38	%	9.00	6.68	2.68	6.12	5.38
213-5	%	9.82	7.50	2.68	6.12	5.38	%	9.82	7.50	2.68	6.12	5.38
254-6	1%	11.86	9.24	3.62	7.88	7.26	1%	11.86	9.24	3.62	7.88	7.26
284-6	1%	12.80	10.18	3.62	7.88	7.26	1%	12.80	10.18	3.62	7.88	7.26
324-6	1%	13.80	11.18	3.62	7.88	7.26	2%	17.24	12.68	7.00	12.26	11.00

① "D" dimension will not be exceeded. When exact dimension is required, shims up to .03 of an inch may be necessary for frames 182T to 326T.

② Manufacturer's allowance +.000, -.0005 for shaft dia. 1.500 and below; +.000, -.001 for shaft dia. above 1.500.

③ Double extended shaft furnished only when specially ordered. This front extension is not suitable for transmitting rated torque through belt drive.

Reproduced from Drawings 384-D-800, sub 4 and 384-D-900, sub 3.

Approval

Purchaser:

Name: *YANBORN CORP.*Order No.: *89032*Machine No.: *70877-P-818*

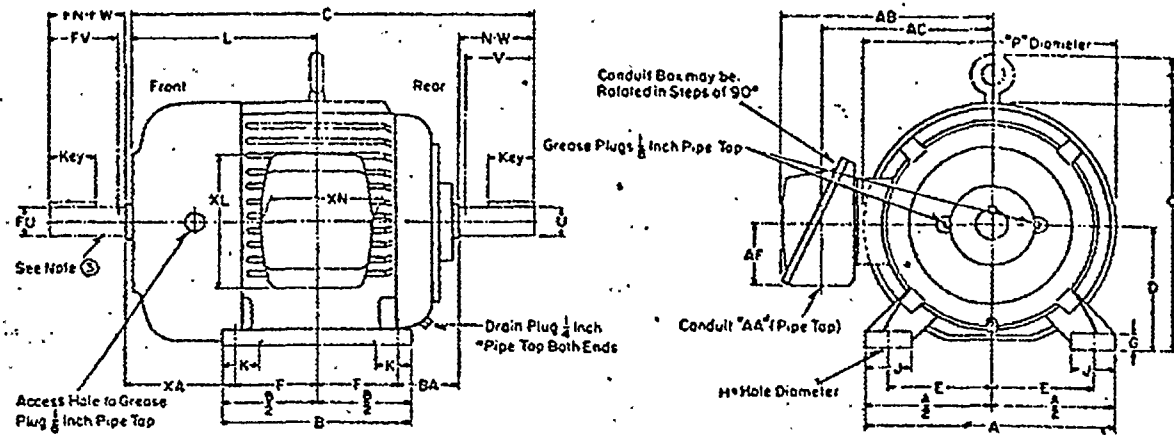
For Motor:

Frame: *254-T*Hp.: *10* Rpm: *1800*Ph.: *3* Cyba: *230/440* Volts: *115*Style No.: *Three*

Westinghouse Electric Corporation:

Date: *9/27/67*Approval: *BA-81616*G.O. No.: *Three*Item No.: *Three*October, 1966
Supersedes DS 2928-T, pages 103 and 104, dated
February, 1966.
E, D/1709/OS

Westinghouse

Medium Ac Motors
Life-Line TTEFC, Explosion Proof
Frames 182T-326TS

Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Applying to each frame number

Frame No.	UO	N-W	V	Key Size	End Opposite Drive End (Front End) ③	FN-FW	FV	Key Size	A	B	C	D	E	F	G	H	J	K	L
182T	1.125	2.75	2.50	.250 x .250 x 1.750	.875	2.25	2.00	.187 x .187 x 1.375	8.88	6.76	14.42	4.50	3.75	2.25	.56	.406	1.84	.....	6.67
184T	1.125	2.75	2.50	.250 x .250 x 1.750	.875	2.25	2.00	.187 x .187 x 1.375	8.88	6.76	15.42	4.50	3.75	2.75	.56	.406	1.84	.....	7.17
213T	1.375	3.38	3.12	.312 x .312 x 2.375	1.125	2.75	2.50	.250 x .250 x 1.750	10.40	7.00	17.70	5.25	4.25	2.75	.62	.406	1.95	.....	8.07
215T	1.375	3.38	3.12	.312 x .312 x 2.375	1.125	2.75	2.50	.250 x .250 x 1.750	10.40	8.50	19.20	6.25	4.25	3.50	.62	.406	1.95	.....	8.82
254T	1.625	4.00	3.75	.375 x .375 x 2.875	1.375	3.38	3.12	.312 x .312 x 2.375	12.36	10.24	23.00	6.25	5.00	4.12	.74	.531	2.62	.....	10.63
256T	1.625	4.00	3.75	.375 x .375 x 2.875	1.375	3.38	3.12	.312 x .312 x 2.375	12.36	12.00	24.75	6.25	5.00	5.00	.74	.531	2.62	.....	11.50
284T	1.875	4.62	4.38	.500 x .500 x 3.250	1.625	4.00	3.75	.375 x .375 x 1.875	13.88	12.00	25.75	7.00	5.50	4.75	.88	.531	2.62	2.76	11.63
284TS	1.625	3.25	3.00	.375 x .375 x 1.875	1.625	3.25	3.00	.375 x .375 x 1.875	13.88	12.00	24.38	7.00	5.50	4.75	.88	.531	2.62	2.76	11.63
286T	1.875	4.62	4.38	.500 x .500 x 3.250	1.625	4.00	3.75	.375 x .375 x 1.875	13.88	13.50	27.25	7.00	5.50	5.50	.88	.531	2.62	2.76	12.38
286TS	1.625	3.25	3.00	.375 x .375 x 1.875	1.625	3.25	3.00	.375 x .375 x 1.875	13.88	13.50	25.88	7.00	5.50	5.50	.88	.531	2.62	2.76	12.38
324T	2.125	5.25	5.00	.500 x .500 x 3.875	1.875	4.62	4.38	.500 x .500 x 3.250	15.72	13.50	28.80	8.00	6.25	5.25	1.00	.656	2.88	3.26	13.05
324TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	15.72	13.50	27.30	8.00	6.25	5.25	1.00	.656	2.88	3.26	13.05
326T	2.125	5.25	5.00	.500 x .500 x 3.875	1.875	4.62	4.38	.500 x .500 x 3.250	15.72	15.00	30.30	8.00	6.25	6.00	1.00	.656	2.88	3.26	13.80
326TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	15.72	15.00	28.80	8.00	6.25	6.00	1.00	.656	2.88	3.26	13.80

Applying to each frame number

Frame No.	O	P	T	BA	XA	Approx. Net Wt., Lbs.
182T	9.50	8.60	.....	2.75	4.93	85
184T	9.50	9.60	.....	2.75	4.93	100
213T	10.86	11.20	.....	3.50	5.83	140
215T	10.86	11.20	.....	3.50	5.83	175
254T	12.88	13.26	2.32	4.25	7.25	260
256T	12.88	13.26	2.32	4.25	7.25	320
284T	14.36	14.72	2.32	4.75	7.63	360
284TS	14.36	14.72	2.32	4.75	7.63	360
286T	14.36	14.72	2.32	4.75	7.63	450
286TS	14.36	14.72	2.32	4.75	7.63	450
324T	16.50	17.00	2.75	5.25	8.80	550
324TS	16.50	17.00	2.75	5.25	8.80	550
326T	16.50	17.00	2.75	5.25	8.80	610
326TS	16.50	17.00	2.75	5.25	8.80	610

Common to each frame series

Frame Series	Conduit Box Dimensions						Oversize Conduit Box					
	Standard Conduit Box						Oversize Conduit Box					
	AA	AB	AC	AF	XL	XN	AA	AB	AC	AF	XL	XN
TEFC, Cast Iron Conduit Box												
182-4	1/2	8.30	6.62	2.88	5.62	4.76	1/2	8.30	6.62	2.88	5.62	4.76
213-5	1/2	9.12	7.44	2.88	5.62	4.76	1/2	9.12	7.44	2.88	5.62	4.76
254-6	1 1/4	11.30	8.98	3.38	6.76	5.88	1 1/4	11.30	8.98	3.38	6.76	5.88
284-6	1 1/2	12.24	9.92	3.38	6.76	5.88	1 1/2	12.24	9.92	3.38	6.76	5.88
324-6	1 1/2	13.24	10.92	3.38	6.76	5.88	2 1/2	16.62	12.80	6.62	10.26	7.76
Explosion Proof, Cast Iron Conduit Box												
182-4	1/2	9.00	6.68	2.68	6.12	5.38	1/2	9.00	6.68	2.68	6.12	5.38
213-5	1/2	9.82	7.50	2.68	6.12	5.38	1/2	9.82	7.50	2.68	6.12	5.38
254-6	1 1/4	11.86	9.24	3.62	7.88	7.26	1 1/4	11.86	9.24	3.62	7.88	7.26
284-6	1 1/2	12.80	10.18	3.62	7.88	7.26	1 1/2	12.80	10.18	3.62	7.88	7.26
324-6	1 1/2	13.80	11.18	3.62	7.88	7.26	2 1/2	17.24	12.68	7.00	12.26	11.00

③ "D" dimension will not be exceeded. When exact dimension is required, shims up to .03 of an inch may be necessary for frames 182T to 326T.
 ④ Manufacturer's allowance +.000, -.0005 for shaft dia. 1.500 and below; +.000, -.001 for shaft dia. above 1.500.
 ⑤ Double extended shaft furnished only when specially ordered. This front extension is not suitable for transmitting rated torque through belt drive.

Reproduced from Drawings 384-D-800, sub 4 and 384-D-900, sub 3.

Approval

Purchaser:

Name *PAINE BORN CORP.*Order No. *84032*Machine No. *70877-P-818*

For Motor:

Frame *182-T*Hp *1-3/4* Rpm *1800*Ph *3* Cy *60* Volts *220/440*

Style No.

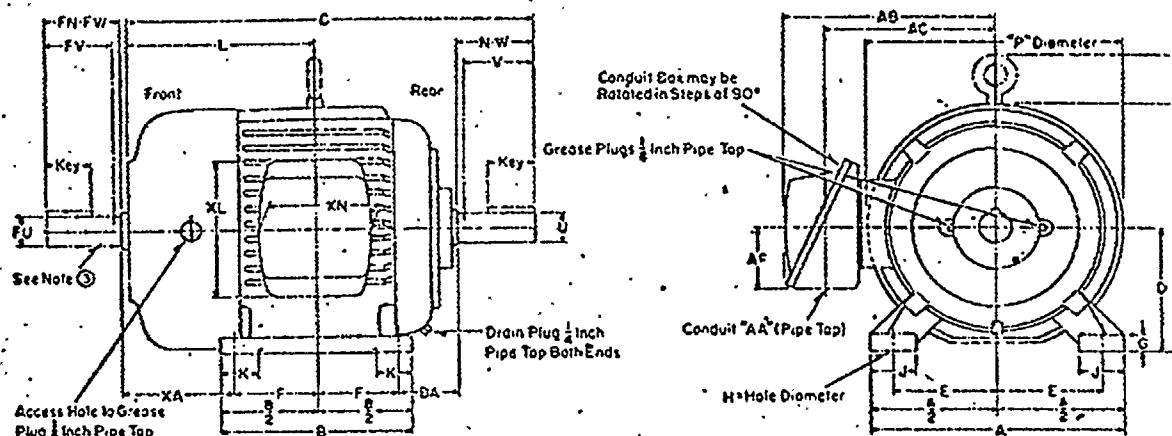
Westinghouse Electric Corporation:

Date *9/22/67*Approval *B. A. Brown*G.O. No. *B.A. 81616*Item No. *4-5-6*

October, 1966
 Supersedes DS 2928-T, pages 103 and 104, dated
 February, 1966.
 E. D/1709/DS

Medium Ac Motors Life-Line T

TEFC, Explosion Proof
Frames 364T-445TS



Dimensions, inches Not to be used for construction purposes unless dimensions are approved.

Applying to each frame number

Frame No.	Drive End (Rear End)				End Opposite Drive End (Front End) D				A	B	C	D	E	F	G	H	J	K	L
	U	N-W	V	Key Size	FU	FN-FW	FV	Key Size											
364T	2.375	5.88	5.62	.625 x .625 x 4.250	1.875	4.62	4.38	.500 x .500 x 3.250	17.00	13.50	32.62	9.00	7.00	5.62	1.00	.656	3.12	3.50	15.24
364TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	17.00	13.50	30.49	9.00	7.00	5.62	1.00	.656	3.12	3.50	15.24
365T	2.375	5.88	5.62	.625 x .625 x 4.250	1.875	4.62	4.38	.500 x .500 x 3.250	17.00	14.50	33.62	9.00	7.00	6.12	1.00	.656	3.12	3.50	15.74
365TS	1.875	3.75	3.50	.500 x .500 x 2.000	1.875	3.75	3.50	.500 x .500 x 2.000	17.00	14.50	31.49	9.00	7.00	6.12	1.00	.656	3.12	3.50	15.74
404T	2.875	7.25	7.00	.750 x .750 x 5.625	2.125	5.25	5.00	.500 x .500 x 3.875	19.12	14.50	36.62	10.00	8.00	6.12	1.06	.812	3.38	3.76	16.62
404TS	2.125	4.25	4.00	.500 x .500 x 2.750	2.125	4.25	4.00	.500 x .500 x 2.750	19.12	14.50	33.62	10.00	8.00	6.12	1.06	.812	3.38	3.76	16.62
405T	2.875	7.25	7.00	.750 x .750 x 5.625	2.125	5.25	5.00	.500 x .500 x 3.875	19.12	16.00	38.12	10.00	8.00	6.88	1.06	.812	3.38	3.76	17.37
405TS	2.125	4.25	4.00	.500 x .500 x 2.750	2.125	4.25	4.00	.500 x .500 x 2.750	19.12	16.00	35.12	10.00	8.00	6.88	1.06	.812	3.38	3.76	17.37
444T	3.375	8.50	8.25	.875 x .875 x 6.875	2.375	5.88	5.62	.625 x .625 x 4.250	21.50	16.50	42.12	11.00	9.00	7.25	1.26	.812	3.50	4.00	18.88
444TS	2.375	4.75	4.50	.625 x .625 x 3.000	2.375	4.75	4.50	.625 x .625 x 3.000	21.50	16.50	39.38	11.00	9.00	7.25	1.26	.812	3.50	4.00	18.88
445T	3.375	8.50	8.25	.875 x .875 x 6.875	2.375	5.88	5.62	.625 x .625 x 4.250	21.50	18.50	44.12	11.00	9.00	8.25	1.26	.812	3.50	4.00	19.63
445TS	2.375	4.75	4.50	.625 x .625 x 3.000	2.375	4.75	4.50	.625 x .625 x 3.000	21.50	18.50	40.38	11.00	9.00	8.25	1.26	.812	3.50	4.00	19.63

Applying to each frame number

Frame No.	O	P	T	BA	XA	Approx. Net Wt. Lbs.
364T	18.56	19.12	3.12	5.875	10.62	835
364TS	18.56	19.12	3.12	5.875	10.62	835
365T	18.56	19.12	3.12	5.875	10.62	920
365TS	18.56	19.12	3.12	5.875	10.62	920
404T	20.72	21.50	3.12	6.625	11.74	1145
404TS	20.72	21.50	3.12	6.625	11.74	1145
405T	20.72	21.50	3.12	6.625	11.74	1260
405TS	20.72	21.50	3.12	6.625	11.74	1260
444T	23.06	24.16	3.12	7.500	12.83	1650
444TS	23.06	24.16	3.12	7.500	12.83	1650
445T	23.06	24.16	3.12	7.500	12.83	1950
445TS	23.06	24.16	3.12	7.500	12.83	1950

Common to each frame series

Frame Series	Conduit Box Dimensions						Oversize Conduit Box					
	Standard Conduit Box						Oversize Conduit Box					
	AA	AB	AC	AF	XL	XN	AA	AB	AC	AF	XL	XN
TEFC, Cast Iron Conduit Box												
364-5	2%	17.64	13.82	6.62	10.26	7.76	2%	17.64	13.82	6.62	10.26	7.76
404-5	2%	18.78	14.94	6.62	10.26	7.76	4	19.20	14.94	8.50	13.62	10.00
444-5	2%	20.32	16.50	6.62	10.26	7.76	4	20.76	16.50	8.50	13.62	10.00
Explosion Proof, Cast Iron Conduit Box												
364-5	2%	18.32	13.76	7.00	12.26	11.00	2%	18.32	13.76	7.00	12.26	11.00
404-5	2%	19.44	14.88	7.00	12.26	11.00	4	22.38	16.50	10.88	16.50	13.00
444-5	2%	21.00	16.44	7.00	12.26	11.00	4	23.94	18.08	10.88	16.50	13.00

- ① "D" dimension will not be exceeded. When exact dimension is required, shims up to .06 of an inch may be necessary for frames 364T to 445T.
- ② Manufacturer's allowance +.000, -.0005 for shaft dia. 1.500 and below; +.000, -.001 for shaft dia. above 1.500.
- ③ Double extended shaft furnished only when specially ordered. This front extension is not suitable for transmitting rated torque through belt drive.

Reproduced from Drawings 384-D-800, sub 4 and 384-D-900, sub 3.

Approval

Purchaser:

Name PANG BORN CORP.

Order No. 84032

Machine No. 70877-P-818

For Motor:

Frame 364-T

Hp. 50 Rpm 1800

Ph. 3 Cy. 60 Volts 230/460

Style No.

Westinghouse Electric Corporation:

Date 9/27/47

Approval B. Brown

G.O. No. BA-81616

Item No. One

Westinghouse Electric Corporation
Motor and Gearing Division, Buffalo, N. Y. 14240
Printed in USA

3/4 HP FR 182T MOTOR

DATE	APPROVALS	MATL	SUPV	CHK	OR	ENG	DESCRIPTION	ALL MOTORS	A-C MOTORS	D-C	SYNCH.	SPECIAL FEATURES	REV.	
							MOTOR NUMBER							
							SERVICE							
							MANUFACTURER	WESTINGHOUSE						
							TYPE	LIFE LINE T						
							FRAME DESIGNATION	182T						
							HORSEPOWER OUTPUT	3/4						
							TIME RATING/TEMP. RISE °C	1						
							RPM AT FULL LOAD	1730						
							VOLTAGE	230/460						
							FULL LOAD AMPS @ 460V	1.30						
							*ENCLOSURE	TEFC						
							VERTICAL OR HORIZONTAL	HORIZ.						
							BEARINGS (SLEEVE OR BALL)	BALL						
							TYPE OF LUBRICATION	GREASE						
							INSULATION CLASS	B						
							ROTATION (VIEWED FROM END OPP. SHFT)	NEITHER						
							FULL LOAD TORQUE	2.27 LB-FT						
							STARTING TORQUE % OF FULL LOAD	4.15						
							EFFICIENCY - 100% LOAD	78.0						
							75% LOAD	76.0						
							50% LOAD	76.5						
							SERVICE FACTOR	1.2						
							IS THERMAL PROTECTION PROVIDED	NO						
							WEIGHT	8.2						
							PHASE	3						
							FREQUENCY	60						
							LOCKED ROTOR CURRENT @ 460 Volts	15						
							POWERFACTOR - 100% LOAD	70.0						
							75% LOAD	60.0						
							50% LOAD	48.0						
							NEMA DESIGN LETTER	B						
							SECONDARY AMPS @ FULL LOAD							
							SECONDARY VOLTAGE							
							SECONDARY OHMS							
							BREAKDOWN OR PULLOUT TORQUE %							
							RATED FIELD CURRENT							
							RATED EXCITER VOLTAGE							
							RATED POWER FACTOR							
							PULL IN TORQUE - % OF FULL LOAD							
							TYPE OF WINDING							
							SHUNT FIELD CURRENT							
							ALLOWABLE WK ² OF LOAD							
							SPACE HEATERS - WATTS/VOLTS							
							TWO SPEED MOTORS - NO OF WINDINGS							
							TORQUE							
							THRUST BEARING CAPACITY-UP (LBS)							
							CAPACITY-DOWN (LBS)							
							ENCLOSURE; DRIPPROOF (DP), SPLASHPROOF (SP), WEATHER PROTECTED (WP), TOTALLY ENCLOSED NON-VENTILATED (TENV), TOTALLY ENCLOSED FAN COOLED (TEFC), TOTALLY ENCLOSED PIPE VENTILATED (TEPV) ETC., EXPLOSIONPROOF XP, TO INDICATE GUARDED ADD "G".							
							ELECTRIC MOTOR DATA SHEET						JOB No	REV.
							TEST COLLECTORS							

50 HP FR 364T MOTOR

DATE	APPROVALS	MATL	SUPV	CHK	DR	ENG	DESCRIPTION	REV.
MOTOR NUMBER								
SERVICE								
MANUFACTURER WESTINGHOUSE ELECTRIC CORP.								
TYPE LIFE LINE T								
FRAME DESIGNATION 364T 284T 254T 182T 182T								
HORSEPOWER OUTPUT 50 25 10 1 1								
TIME RATING/TEMP. RISE °C 1 1 1 1 1								
RPM AT FULL LOAD 1770 1770 1745 1725 1730								
VOLTAGE 230/460								
FULL LOAD AMPS @ 460 VOLTS 60 31.5 12.7 2.2 1.6								
ENCLOSURE TEFC TEFC TEFC TEFC TEFC								
VERTICAL OR HORIZONTAL HORIZONTAL								
BEARINGS (SLEEVE OR BALL) BALL								
TYPE OF LUBRICATION GREASE								
INSULATION CLASS B								
ROTATION (VIEWED FROM END OPP. SHFT) EITHER								
FULL LOAD TORQUE 148.0 LBFT 74.2 LBFT 30.1 LBFT 4.5 LBFT 3.0 LBFT								
STARTING TORQUE % OF FULL LOAD 145 150 165 250 275								
EFFICIENCY - 100% LOAD 90.5 87.5 87.0 82.0 78.5								
75% LOAD 90.0 87.0 86.0 79.5 77.0								
50% LOAD 88.5 85.5 84.5 75.5 72.0								
SERVICE FACTOR 1.0 1.0 1.0 1.0 1.0								
IS THERMAL PROTECTION PROVIDED NO								
WEIGHT 835# 390# 230# 82# 82#								
PHASE 3 3 3 3 3								
FREQUENCY 60 60 60 60 60								
LOCKED ROTOR CURRENT @ 460 VOLT 363 173 81 20 20								
POWERFACTOR - 100% LOAD 86.0 83.5 85.0 77.0 73.0								
75% LOAD 79.0 79.5 80.5 68.5 64.0								
50% LOAD 70.0 70.5 71.5 55.5 51.0								
NEMA DESIGN LETTER B B B B B								
SECONDARY AMPS @ FULL LOAD								
SECONDARY VOLTAGE								
SECONDARY OHMS								
BREAKDOWN OR PULLOUT TORQUE %								
RATED FIELD CURRENT								
RATED EXCITER VOLTAGE								
RATED POWER FACTOR								
PULL IN TORQUE - % OF FULL LOAD								
TYPE OF WINDING								
SHUNT FIELD CURRENT								
ALLOWABLE WK ² OF LOAD								
SPACE HEATERS - WATTS/VOLTS								
TWO SPEED MOTORS-NO OF WINDINGS								
TORQUE								
THRUST BEARING CAPACITY-UP (LBS)								
CAPACITY-DOWN (LBS)								
ENCLOSURE: DRIPPROOF (DP), SPLASHPROOF (SP), WEATHER PROTECTED (WP), TOTALLY ENCLOSED, NON-VENTILATED (TENV), TOTALLY ENCLOSED FAN COOLED (TEFC), TOTALLY ENCLOSED PIPE VENTILATED (TEPV) ETC., EXPLOSIONPROOF XP, TO INDICATE GUARDED ADD "G".								
ELECTRIC MOTOR DATA SHEET							JOB No	REV.
DUST COLLECTORS								