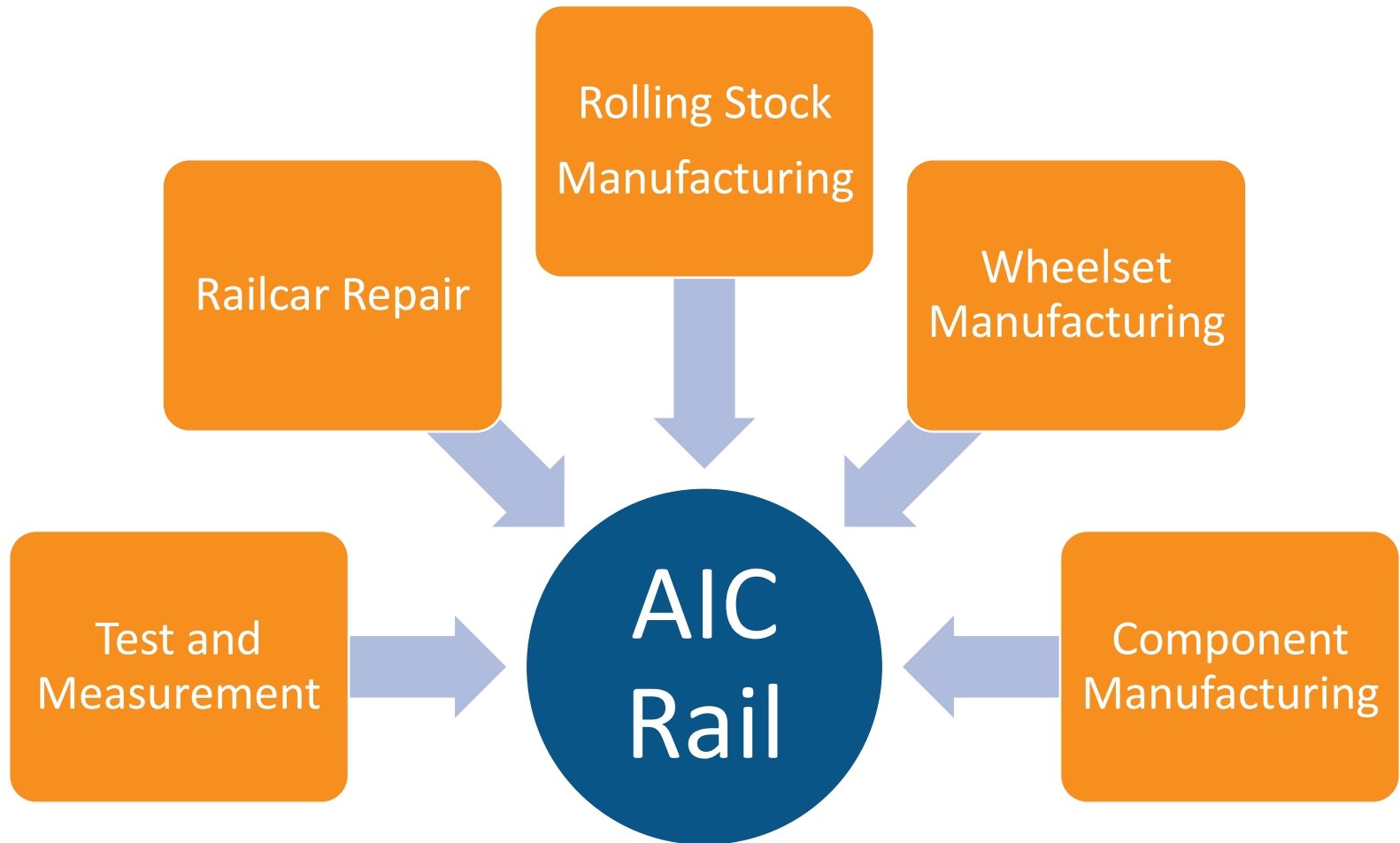


About AIC Rail

- Automation Systems Integrator
- Established in 1993 – 29 years
- Two core businesses
 - Wheelset and rolling stock manufacturing and repair (70%)
 - Manufacturing automation for non-railcar related industries (30%)

Our Rail Business



AIC Rail

- First wheel shop project in 1993
- First Wheel Press Recorder installed in 1996
- Approximately 80 customers in eight countries
 - US
 - Mexico
 - Canada
 - Australia
 - China
 - India
 - Indonesia
 - Brazil



North American Customers



Locomotive Customers

- Norfolk Southern
- Progress Rail Locomotive (EMD)
- Wabtec (GE) Locomotive
- Progress Rail Locomotive Repair

Railroad Customers

- Union Pacific
- BNSF
- Norfolk Southern – Locomotive
- Canadian Pacific
- Canadian National Railroad
- Alaskan Railroad
- Indirect Class I's
 - Union Pacific Railcar
 - Norfolk Southern (Cars)
 - Kansas City Southern
 - CSX

Freight Shop Customers

All major Wheel Shops in North America use AIC Products

- Greenbrier Rail Services (8 shops)
- Progress Rail Services (10 shops)
- Ronsco
- Wheel Worx
- NRE
- American Industries (A Stucki)
- ORX
- DLG / SFNA (Mexico)
- Alliance Wheel Services

Railcar Manufacturers

- American Railcar Industries
- Trinity Industries
- Greenbrier
- National Steel Car
- Freightcar America
- Union Tank Car

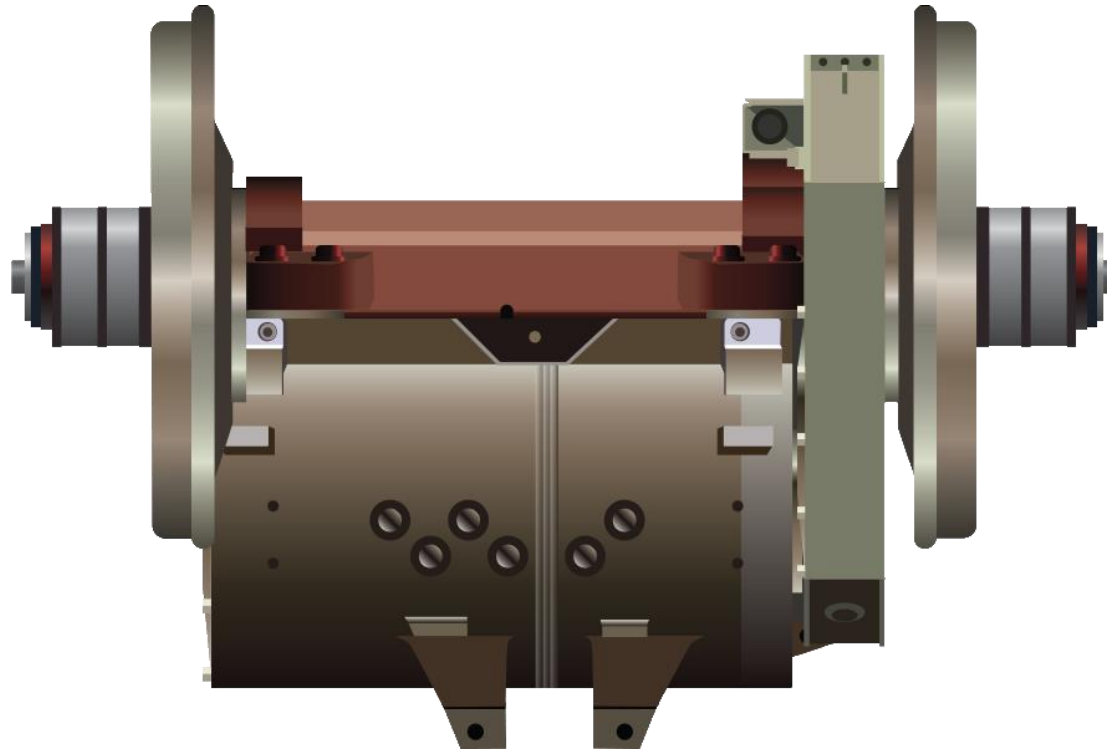
Passenger Rail Customers

- Most major passenger rail organizations in North America use AIC Products
 - New York City Transit (MTA)
 - Port Authority Trans Hudson (NYC)
 - Metro-North Railroad (NYC)
 - New Jersey Transit
 - Chicago Transit
 - Los Angeles Metro
 - Bay Area Rapid Transit (San Francisco)
 - MBTA (Boston)

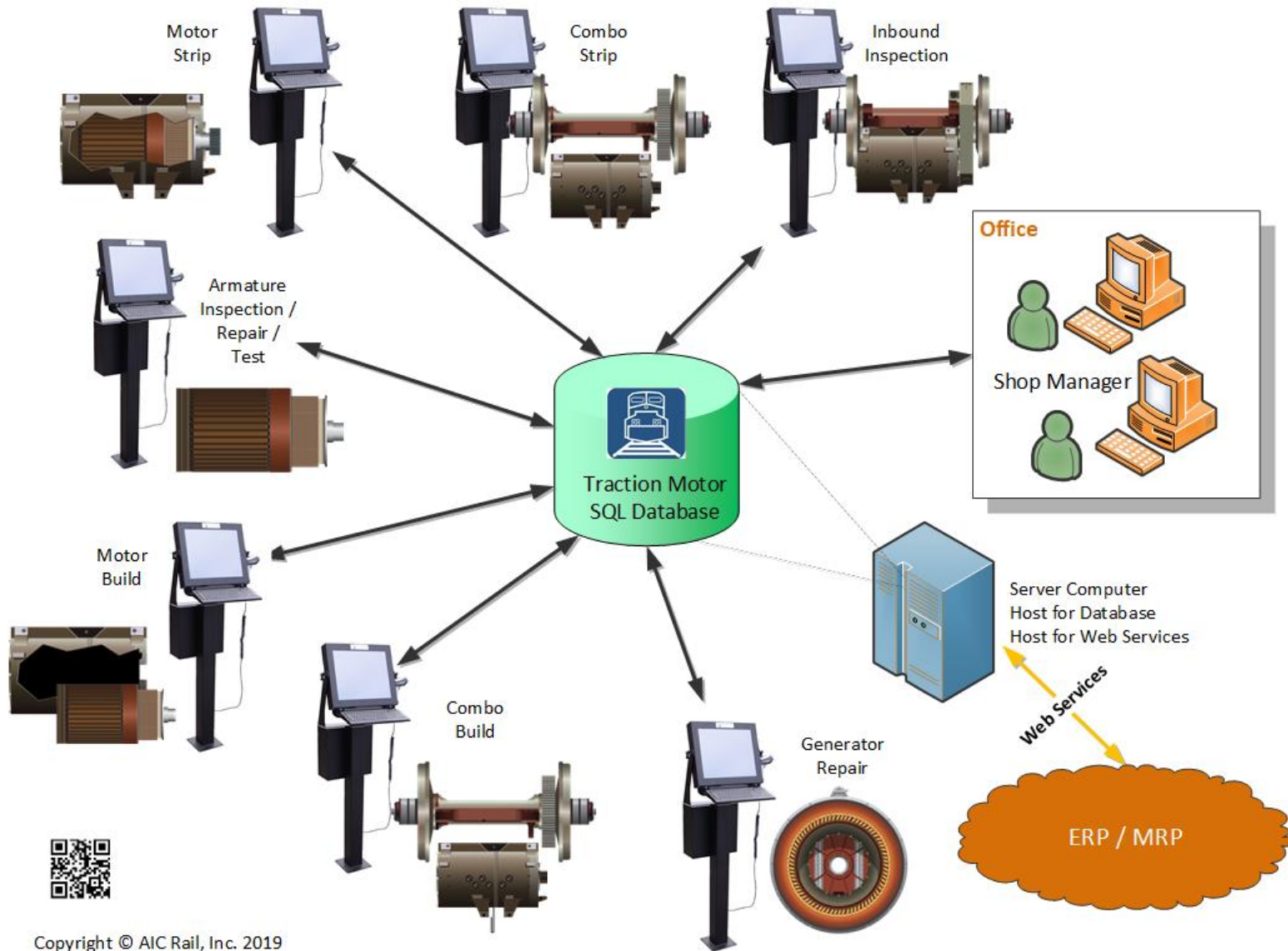
Light Rail Customers

- MetroLink St. Louis
- Go Transit – Toronto
- Tri-Met – Portland
- Los Angeles County Metro
- Utah Transit – Salt Lake City
- Denver Regional Transit Authority
- UTC / RAS

Traction Motor Shop



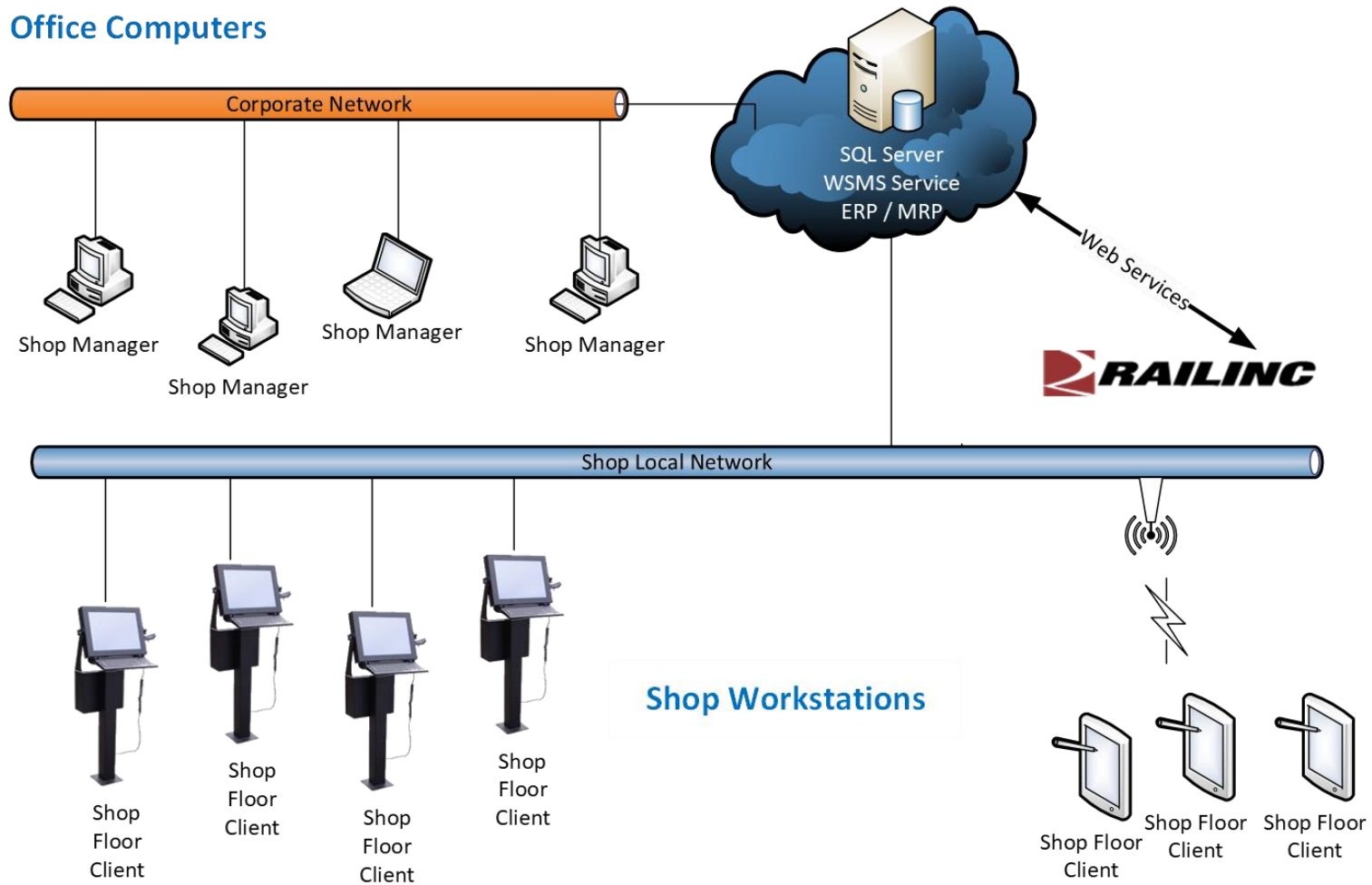
Motor Shop Sample Stations



WSMS Network Diagram



Office Computers



The Technology - Hardware





The Technology - Software

- Microsoft SQL Server database
- AIC Rail API for 3rd party integration
 - UT, Automated axle inspection, wheel lathes
- Wireless networking capability for all stations, tablets, and handhelds
- Integration with ERP/MRP systems via web services (SAP, Microsoft DAX, IBM MASSIMO)
- Real-time data across the enterprise

Features

- Real-time dashboard monitoring
- Component level tracking
 - Motor Housing
 - Armature
 - Alternator / Generator
 - Wheelset (all components)
- Time-in-station alerts
- Downtime Tracking
- Reports
 - Production by shift / station / employee
 - Downtime by shift / station
 - More...

Features

- Data collection is completely customizable
- Station screen layouts are completely customizable
- Reports
 - Production by shift / station / employee
 - Downtime by shift / station
- Microsoft Reporting Services
 - Custom reports
 - Automatic delivery by email
- ERP / MRP Interface (SAP, DAX, MAXIMO)
 - Each station has 2 points for ERP interaction
- Recall check built into all stations
- Custom business rules
 - Customer specific
 - Shop specific
 - Component specific
 - Calculated fields for use in rules

Locations

- Define allowed locations for each component
- “Send” a component to the next station
- Prevent skipping stations
- Configured in Shop Manager



Shop Manager

Manage the entire shop from your desk

- Custom dashboards to monitor all processes
- Run reports
- Manage Users
- Build dashboards
- Configure workflow





Shop Manager Dashboards

Shop Manager™ - 6.6.3.14

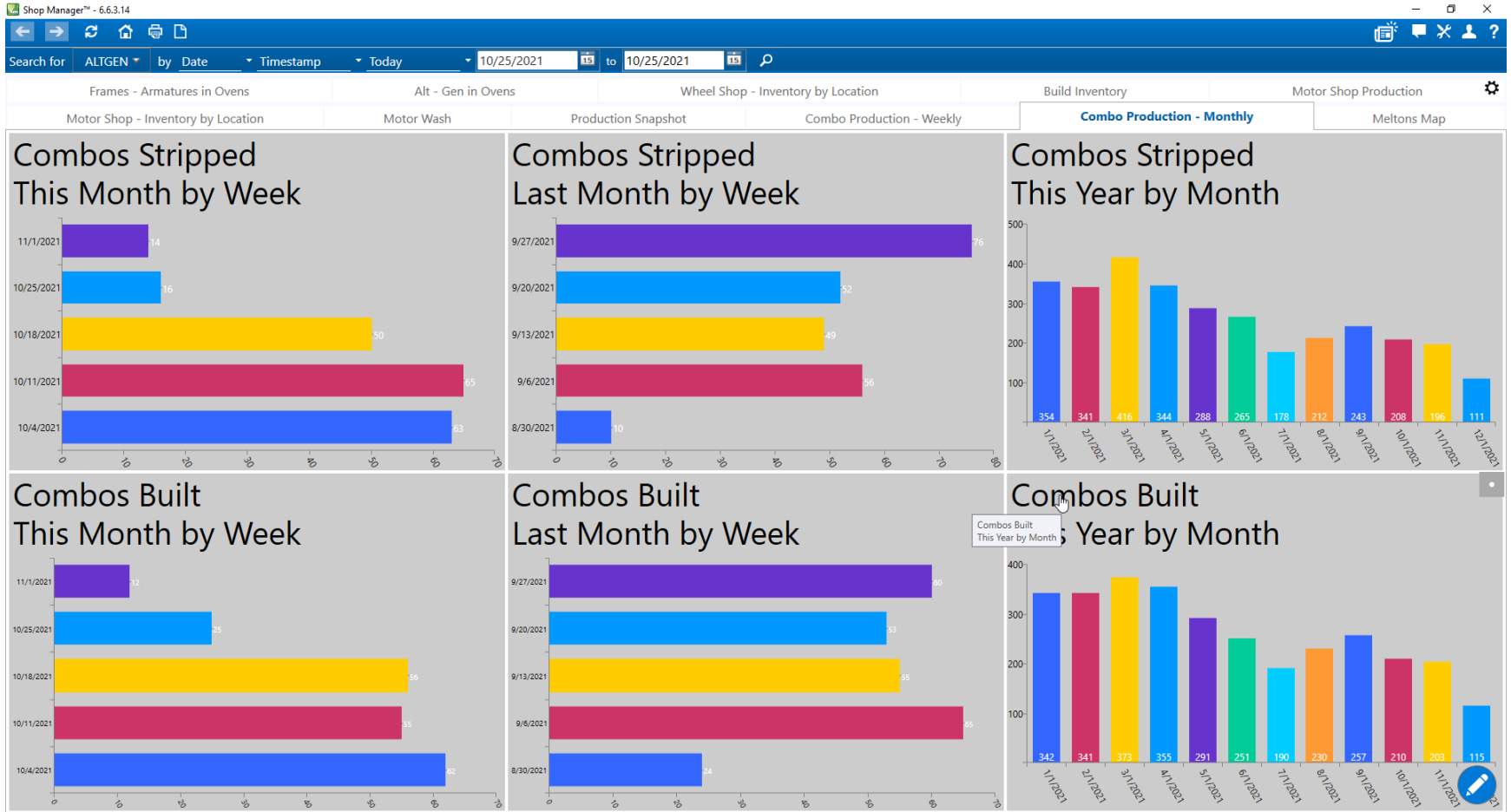
Search for ALTGEN by Date Timestamp Today 10/25/2021 to 10/25/2021

Frames - Armatures in Ovens Alt - Gen in Ovens Wheel Shop - Inventory by Location Build Inventory Motor Shop Production

Motor Shop - Inventory by Location		Motor Wash	Production Snapshot	Combo Production - Weekly	Combo Production - Monthly	Meltons Map		
Motor Wash	Mechanical Inspection	Heavy Weld	Restore Table	Ovens Armatures	Robotic Blast	AC Motors R&D	Baker	Motor Test
19	8	7	1	15	7	0	15	0
Inbound Inspection	Line Weld Frames	Okuma	Restore Wheels	Grease Removal	Davis Kennedy Motors - Gear Pulls	Armature Press	Balancer	Gear and Cover
25	4	2	0	8	1	13	2	6
R & R	Line Weld Armatures	Restore Inspection	Grease Application	Brush Install	Davis Kennedy Frames	Armature Lathe	Motor Buildup Frames	Ready Combo Build
3	0	9	3	1	0	29	20	
Motor Strip	Line Weld Motors - R&R Repairs	Restore Table AC Motor (Lead Change)	Ovens Frames	AC Pre-Build and Test	Davis Kennedy Armatures	Armature Undercutter	Motor Buildup Armatures	85
32	1	0	2	3	1	8	41	

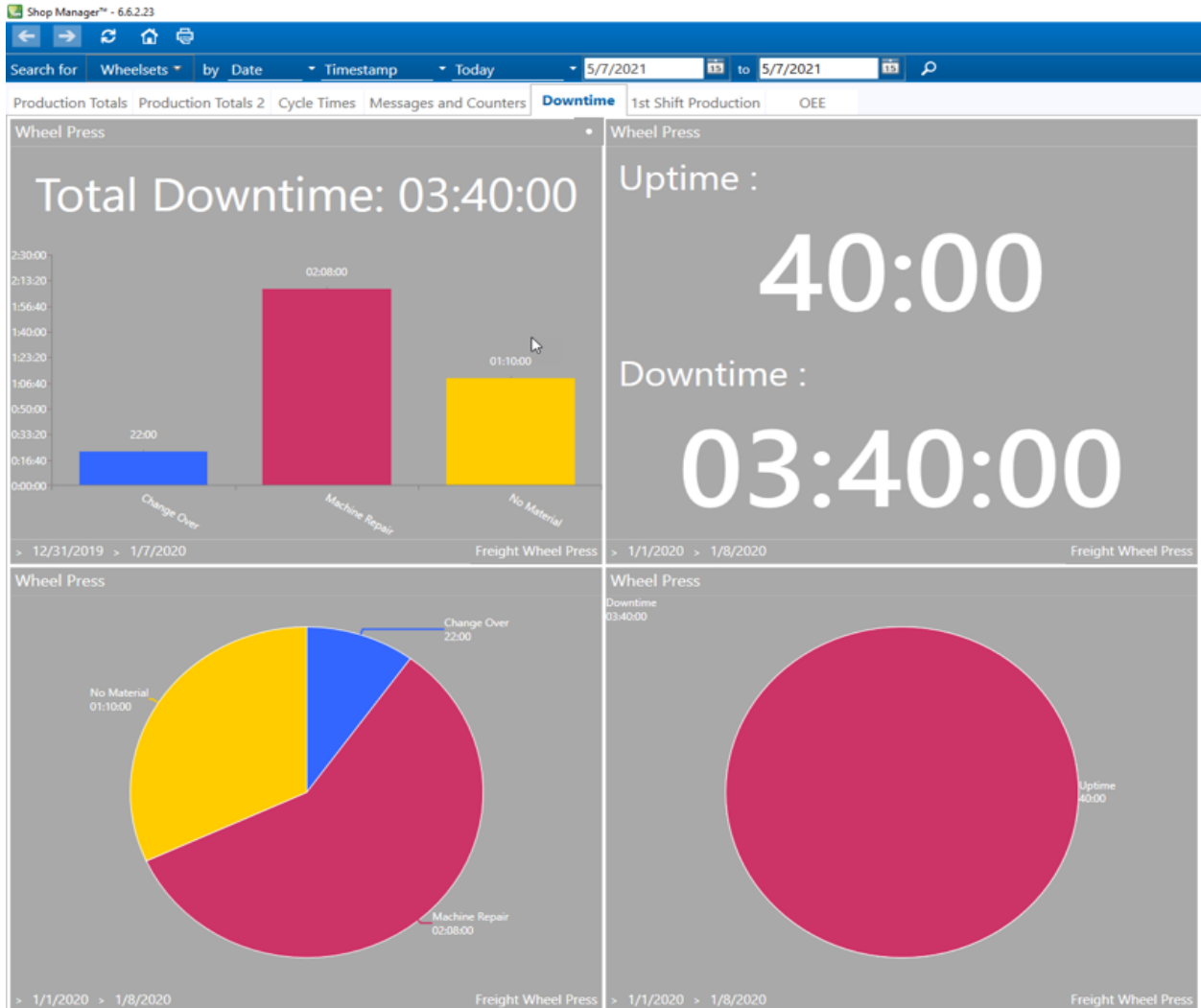


Shop Manager Dashboards





Shop Manager





Shop Manager

Today

Wheel Press
8K

42

Turns
8K

5

Bearing Mount
8K

54

This Week

Wheel Press
8K

61

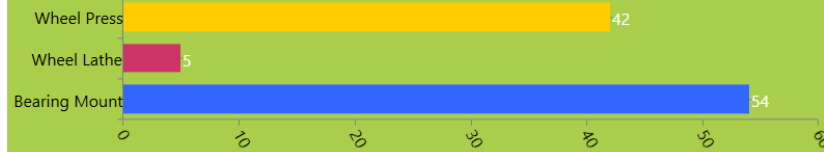
Turns
8K

15

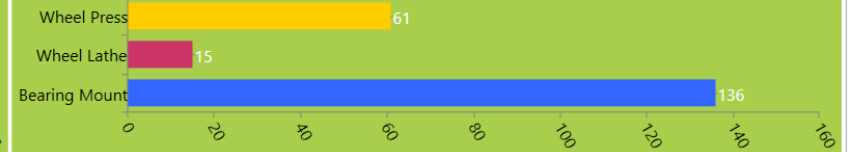
Bearing Mount
8K

136

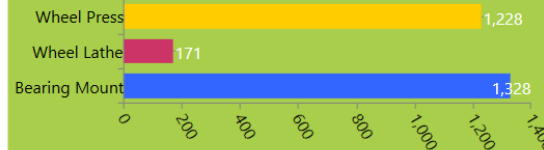
8K Shift



8K Shift

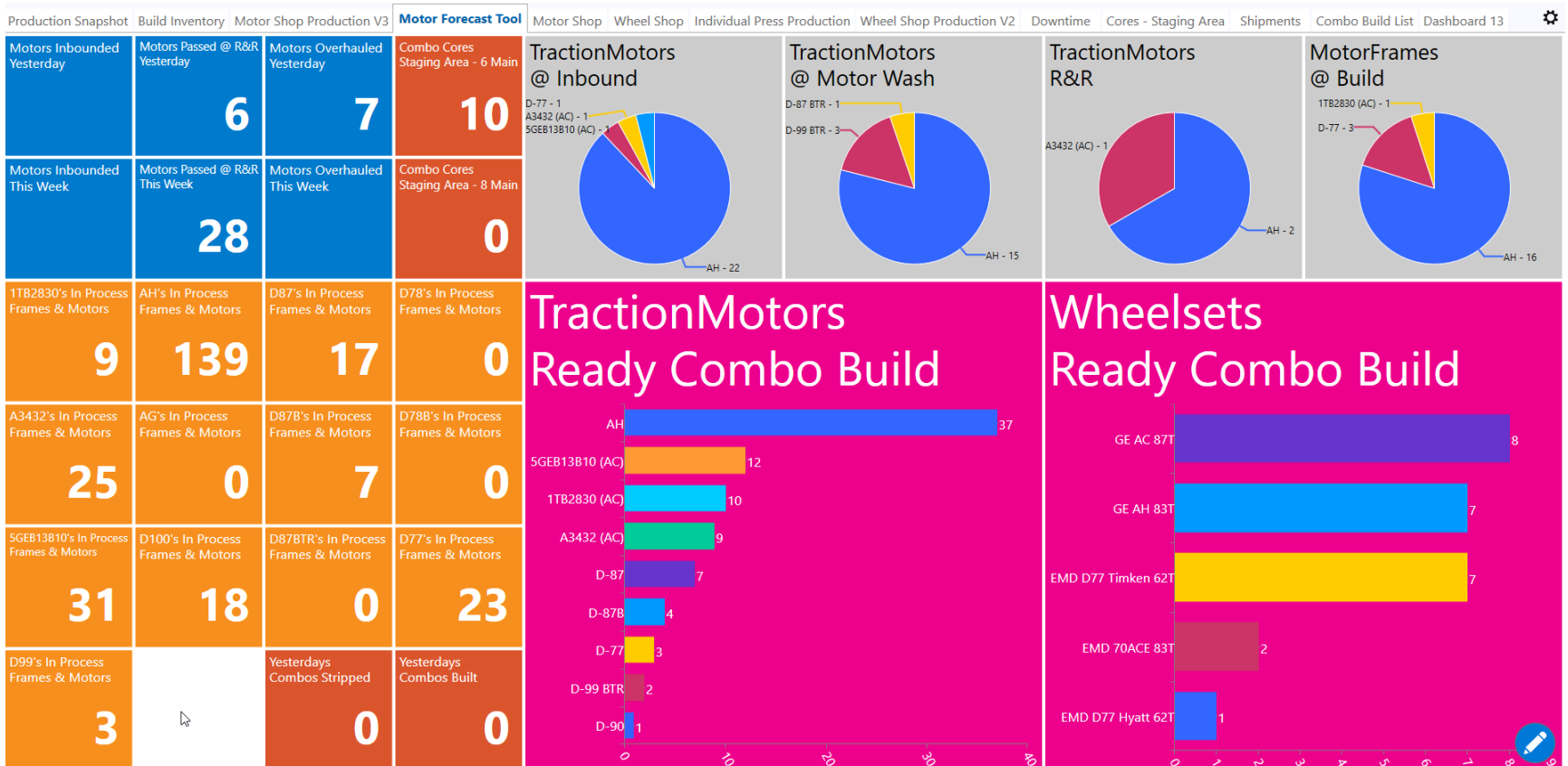


8K Month





Shop Manager



Shop Manager

Shop Manager™ - 6.6.0.15

← → ↻ 🏠 🖨️

Search for **TractionMotor** by **Date** **Timestamp** **All** Select a date **15** to Select a date **15** 🔍

Parameters

@Location: **Inbound Inspection**

◀ 2 of 38 ▶



Details



Charts



Inspections



Attachments

Audit History

3	<input type="checkbox"/>	6/7/2019 08:26	Traction Motor	Good	Inbound In:
4	<input type="checkbox"/>	6/7/2019 08:24	Traction Motor	Good	Inbound In:
5	<input type="checkbox"/>	6/6/2019 21:30	Traction Motor	Good	Inbound In:
6	<input type="checkbox"/>	6/6/2019 21:30	Traction Motor	Good	Inbound In:
7	<input type="checkbox"/>	6/6/2019 20:15	Traction Motor	Good	Inbound In:
8	<input type="checkbox"/>	6/6/2019 20:15	Traction Motor	Good	Inbound In:
9	<input type="checkbox"/>	6/6/2019 18:22	Traction Motor	Good	Inbound In:
10	<input type="checkbox"/>	6/6/2019 18:21	Traction Motor	Good	Inbound In:
11	<input type="checkbox"/>	6/6/2019 17:41	Traction Motor	Good	Inbound In:
12	<input type="checkbox"/>	6/6/2019 17:40	Traction Motor	Good	Inbound In:
13	<input type="checkbox"/>	6/6/2019 15:41	Traction Motor	Good	Inbound In:
14	<input type="checkbox"/>	6/6/2019 15:41	Traction Motor	Good	Inbound In:
15	<input type="checkbox"/>	6/6/2019 13:10	Traction Motor	Good	Inbound In:
16	<input type="checkbox"/>	6/6/2019 13:08	Traction Motor	Good	Inbound In:
17	<input type="checkbox"/>	6/6/2019 11:36	Traction Motor	Good	Inbound In:

Demount Time: 6/7/2019 7:24:12 AM
Disposition: **REMOUNT**
Machine: [system]
Operator: m22jw
Undo Demount
Elements:

Frame **DEMOUNTED**

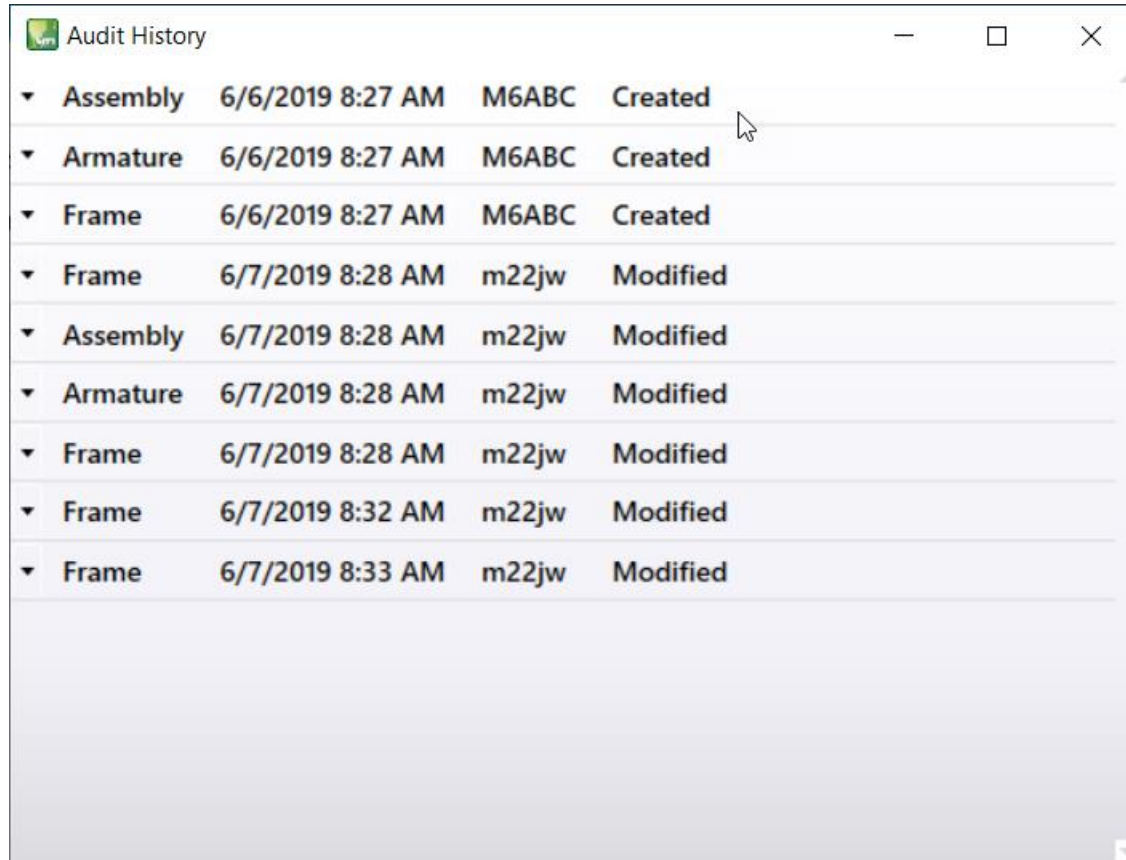
Cid: Wip Ids: NS00389

Notes:

Demount Time: 6/7/2019 7:27:32 AM
Disposition: **STOCK**
Machine: [system]
Operator: m22jw
Undo Demount
Elements:

Pinion

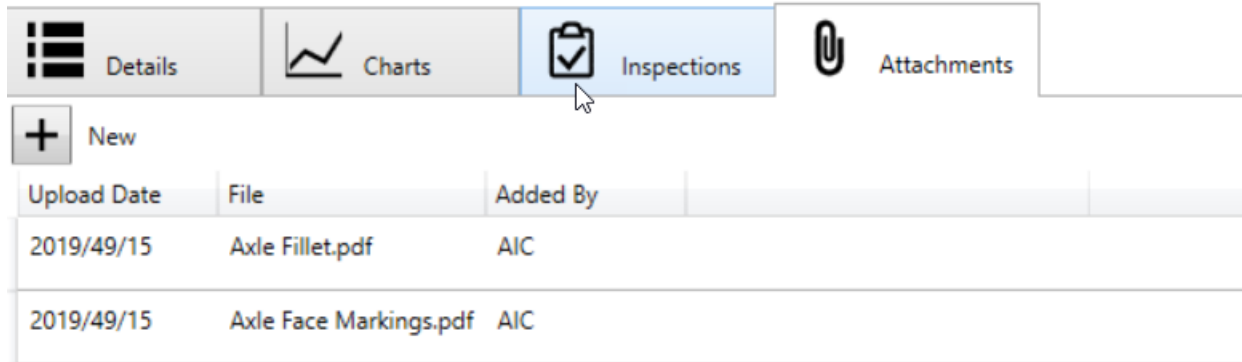
Shop Manager – Audit History



The screenshot shows a window titled "Audit History" with a list of audit entries. Each entry is a row with a dropdown arrow on the left, followed by the component name, timestamp, user ID, and action type. A mouse cursor is pointing at the first row.

	Component	Timestamp	User	Action
▼	Assembly	6/6/2019 8:27 AM	M6ABC	Created
▼	Armature	6/6/2019 8:27 AM	M6ABC	Created
▼	Frame	6/6/2019 8:27 AM	M6ABC	Created
▼	Frame	6/7/2019 8:28 AM	m22jw	Modified
▼	Assembly	6/7/2019 8:28 AM	m22jw	Modified
▼	Armature	6/7/2019 8:28 AM	m22jw	Modified
▼	Frame	6/7/2019 8:28 AM	m22jw	Modified
▼	Frame	6/7/2019 8:32 AM	m22jw	Modified
▼	Frame	6/7/2019 8:33 AM	m22jw	Modified

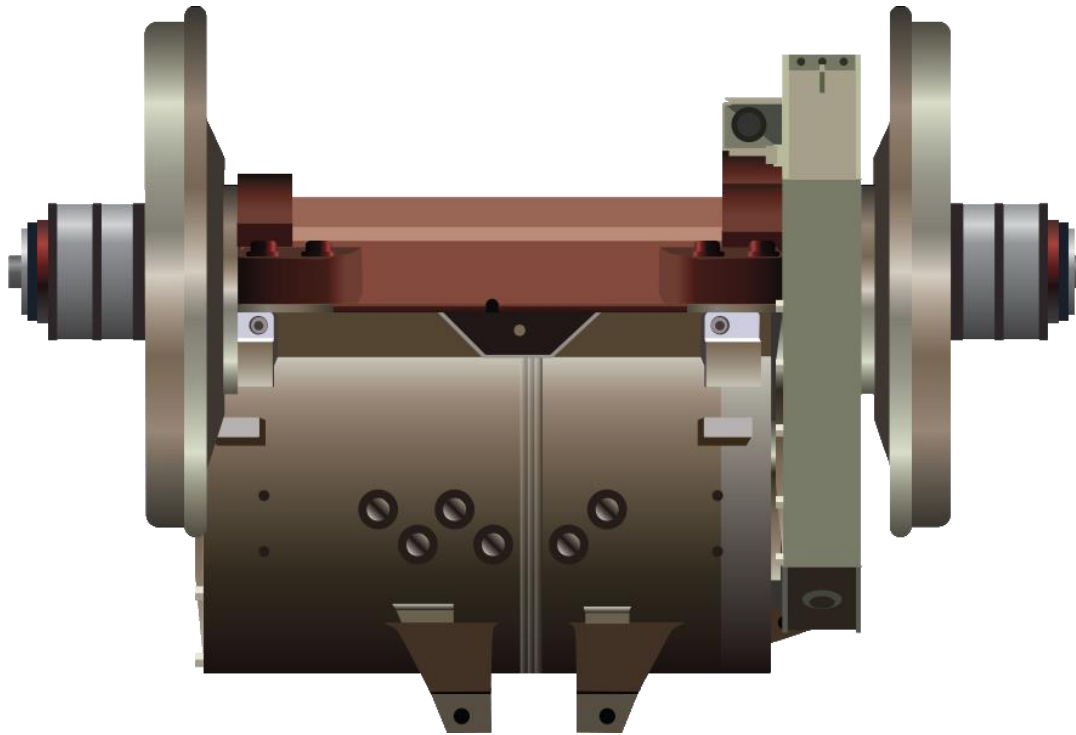
Shop Manager – Attachments



The screenshot shows the 'Attachments' section of the Shop Manager interface. The top navigation bar has four tabs: 'Details', 'Charts', 'Inspections', and 'Attachments'. The 'Inspections' tab is currently selected and highlighted in blue. Below the navigation bar is a '+ New' button. Underneath is a table with the following data:

Upload Date	File	Added By
2019/49/15	Axle Fillet.pdf	AIC
2019/49/15	Axle Face Markings.pdf	AIC

Combos



Combo Strip

Insourced?

Warranty?

Early Warning?

WHEELSET 1

WIP ID:

Configuration:

Idler?

Next Location:


TRACTIONMOTOR 1

WIP ID:

Motor Type:

Notes

Note	Added By	Added On
Check the flux capacitor on the armature	AIC	6/13/2019 5:14 PM -05:00

 Add/View Note

Combo Strip

Shop Manager™ - 6.6.0.0

Registration Server: Not Connected

Search for **COMBO** by Date All Select a date 15 to Select a date 15

Styles 1 - 16 of 16 Results per page 50

Strip Date	Axle WIP	Motor WIP
<input checked="" type="checkbox"/> 10/4/2018 5:22 PM		
<input type="checkbox"/> 10/4/2018 5:22 PM		
<input type="checkbox"/> 10/4/2018 5:23 PM		
<input type="checkbox"/> 10/8/2018 9:26 AM		
<input type="checkbox"/> 10/8/2018 9:27 AM		
<input checked="" type="checkbox"/> 10/8/2018 9:30 AM		
<input type="checkbox"/> 10/3/2018 1:49 PM		
<input type="checkbox"/> 10/3/2018 2:03 PM	AICW002	AICT001
<input type="checkbox"/> 10/3/2018 2:04 PM	AICW003	AICT003
<input type="checkbox"/> 10/3/2018 2:06 PM	AICW004	AICT004
<input type="checkbox"/> 10/3/2018 2:11 PM	AICW005	AICT005
<input type="checkbox"/> 10/3/2018 2:24 PM	AICW007	AICT008
<input type="checkbox"/> 10/3/2018 3:10 PM	AICW008	AICT009
<input type="checkbox"/> 10/3/2018 3:50 PM		AICT010
<input type="checkbox"/> 10/3/2018 4:28 PM		AICT012
<input checked="" type="checkbox"/> 10/4/2018 5:21 PM		

Details Charts Inspections Attachments

COMBO Good

Configuration Date/Time
 Combo
 Notes:
 Elements:

TRACTIONMOTOR 1 DEMOUNTED

Cid

Notes:

Demount Time	Disposition
10/8/2018 9:30 AM	STOCK
Machine	Operator
Combo Strip	AIC

Undo Demount

Elements:

WHEELSET 1 DEMOUNTED

Cid

Notes:

Demount Time	Disposition
10/8/2018 9:30 AM	STOCK
Machine	Operator
Combo Strip	AIC

Undo Demount

Elements:

Motors



Inbound Inspection

Traction Motor

Insourcing?

Warranty?

Early Failure?

Frame


WIP ID

Serial #

Model

New Location

Notes

Note	Added By	Added On
 Add/View Note		

LMIS Data

Date Removed:

Locomotive Removed From:

Reason for Removal:

Location Removed:

Position Removed From:

Visual Inspection and Test Data

Commutator Condition: Brush Holder Condition: Brush Condition: String Band Condition: String Band Type: Pinion Gear Condition:

Armature MCE: pF mH Mohms Manual Armature Megger Readings: Mohms

Main Coil MCE: pF mH Mohms Manual Mail Coil Megger Readings: Mohms

Leakage Test:

Type of Repair:

Gear Removal Only?

Reason for Dismantle:

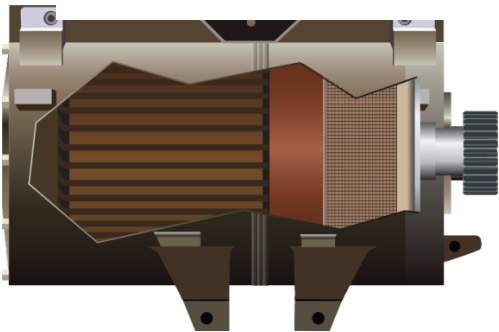
Primary:

Secondary:

(1)

(2)

(3)



Inbound Inspections

Shop Manager™ - 6.6.0.0

Search for **TractionMotor** by Wip Id **ARM0003**

Registration Server: Not Connected

Styles: 1 - 1 of 1 Results per page: 50

	Armature WIP ID	Frame WIP ID
1	<input checked="" type="checkbox"/> ARM0003	MF0003

TM Inbound Machine Operator

10/09/2018 at 4:56 PM Armature Press, Lathe, Undercutter AIC

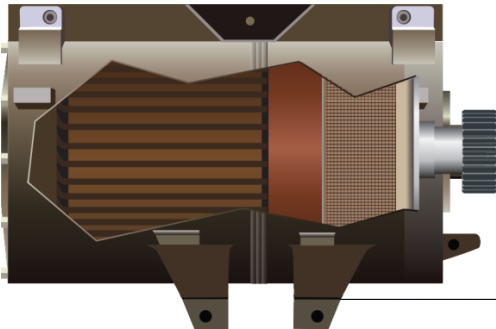
TRACTIONMOTOR 0 - TM Inbound - TM

Date Removed	10/1/2018 12:00:00 AM
Main Coil Megger Reading - mH1	8
Main Coil Megger Reading - pF	7
Interpole Megger Reading - mH2	6
Interpole Megger Reading - mH1	5
Interpole Megger Reading - pF	4
Armature Megger Reading - mH2	3
Armature Megger Reading - mH1	2
Armature Megger Reading - pF	1
Dismantle - Secondary3	NA
Dismantle - Secondary2	NA
Dismantle - Secondary1	NA
Dismantle - Primary	NA
of Repair	1
Reason Motor was Removed	NA
Position Removed From	1
Locomotive Removed From	NS12345
Location Removed	A
Main Coil Megger Reading - mH2	9
Leakage Test	Fail

MOTORFRAME 1 - TM Inbound - MF

Commutator Condition	1
Holder Condition	1
Brush Condition	1
Band Condition	1
Band Type	1
Gear Condition	1

Details | Charts | Inspections | Attachments



Mechanical Inspection

Motor Frame

Insourcing?

Customer

Warranty?

Early Failure?

WIP ID

Serial #

Model

New Location

Notes

Note	Added By
	Add/View Note

Line Weld Items (Light Repair)

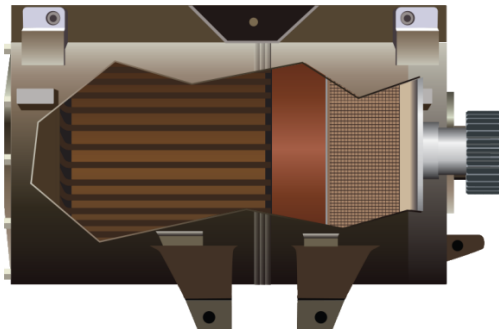
Screens/Bars	Needs Work	Ok
Remove Drain Plug(s)	Needs Work	Ok
Tie Downs	Needs Work	Ok
Nose Suspension	Needs Work	Ok
Keyway (Remove if full weld, apply, repair cracks)	Needs Work	Ok
Cover Latch or Hook/Buttons	Needs Work	Ok
Broken Bolts	Needs Work	Ok
Pin Hole	Needs Work	Ok
Tap Repair Holes	Needs Work	Ok
I.D. Plate	Needs Work	Ok
Air Duct Plate Tabs	Needs Work	Ok
Axle Tabs (Remove and Apply)	Needs Work	Ok
Cap Mounting Nut	Needs Work	Ok
Cover Crack (Top, Back, Small, Bottom)	Needs Work	Ok
Cap Crack < 1"	Needs Work	Ok
Gear Case Support Lug Crack < 1"	Needs Work	Ok
Wick Cover Cracked	Needs Work	Ok

Note: If cap only requires W/M Lug, Oil Fill, or Drain Plug Remove Caps in L/W and mark repairs needed on Caps

Warranty

Full Weld Booth (Heavy Repair)

Frame Damage	Needs Work	Ok
Nose Support Damage	Needs Work	Ok
Lifting Eyes	Needs Work	Ok
Full Weld	Needs Work	Ok
Axle Bore Face PE/CE	Needs Work	Ok
Gear Case Support Lug	Needs Work	Ok
Gear Case Support Lug Crack > 1"	Needs Work	Ok
Bearing House PE	Needs Work	Ok
Bearing House CE	Needs Work	Ok
Axle Bore PE/CE	Needs Work	Ok
U-Tube Mounting Surface PE/CE	Needs Work	Ok
Cap Radius PE/CE	Needs Work	Ok
Cap Mounting Base Crack	Needs Work	Ok
U-Tube Mounting Holes PE/CE	Needs Work	Ok
Cap Mount Holes PE/CE	Needs Work	Ok
Cap Oil Fill PE/CE	Needs Work	Ok
Cap Drain Hole PE/CE	Needs Work	Ok
Cap Crack > 1"	Needs Work	Ok



Registration Server: Not Connected

Styles 1 - 1 of 1 Results per page 50

<input type="checkbox"/>	Armature WIP ID	Frame WIP ID
<input checked="" type="checkbox"/>	ARM0003	MF0003

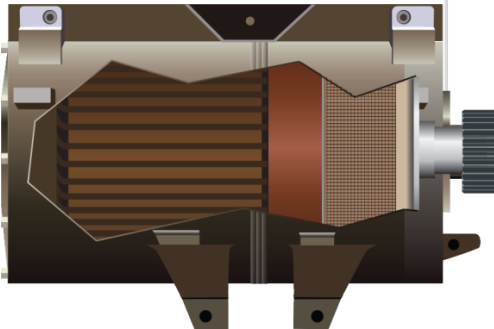
☰ Details 📈 Charts 📋 Inspections 📎 Attachments

Audit History

- TM Inbound** Machine Operator
10/09/2018 at 4:56 PM Armature Press, Lathe, Undercutter AIC
- TM Line Inspection** Machine Operator
10/09/2018 at 5:01 PM Armature Press, Lathe, Undercutter AIC

TRACTIONMOTOR 0 - TM Line Inspection

Bar Screens	True
Full Weld	false
Axle Bore Face PE-CE	false
Gear Case Support Lug	false
Gear Case Support Lug Cracks > 1 Inch	false
Bearing Housing PE	false
Bearing Housing CE	True
Lifting Eyes	false
Axle Bore PE-CE	false
Cap Radius PE-CE	false
Cap Mounting Base Crack	false
U-Tube Mounting Holes PE-CE	True
Cap Mount Holes PE-CE	false
Cap Oil Fill PE-CE	false
Cap Drain Hole PE-CE	false
U-Tube Mounting Surface PE-CE	false
Cap Crack > 1 Inch	True
Nose Support Damage	false
Wick Cover Cracked	True
Drain Plugs	True
Tie Downs	false
Nose Suspension	false
Keyway	false
Hook-Buttons	false
Broken Bolts	false
Frame Damage	True
Pin Hole	false



R and R

Insourced

Warranty

Early Failure

Traction Motor

ARMATURE 1

WIP ID

ARM000001

Serial #

11111

Inbound Stator SN

1234

Outbound Stator SN

5678

Model

NEED LOOKUPS

Vendor

IEC Holden - NE

MOTORFRAME 1

WIP ID

MFO00001

Serial #

1234

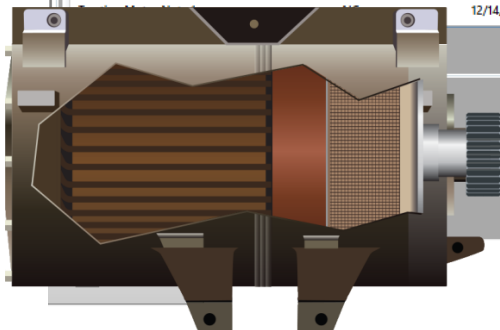
Model

NEED LOOKUPS

Location

Notes

Note	Added By	Added On
		12/14/2018 12:44 PM -06:00



STANDARD TEST

Test Stand Number 1

1) Forward Direction - 20 MIN R.P.M. 2 Difference in R.P.M. 1
 Reverse Direction - 20 MIN R.P.M. 3

2) Bearing Temperature After 40 Minutes Running CE 55 deg F / PE 70 deg ABOVE AMBIENT
 Pinion End 4 Commutator End 5

3) Test Stand Readings Amperage Reading (+/-10 AMP) Voltage Reading (+/-10 AMP)
 Forward 6 Forward 8
 Reverse 7 Reverse 9

4) Vibration 0.50 in/sec (+.03 in/sec) 0.10 in/sec (HIGHEST)
 EMD 2100 RPM GE752 2300RPM

5) Megohms To Ground
 Armature 11 Field 12

6) Torque All Brush Holders EMD and 752E's 150 ft-lbs Brushes Replaced
 AF's 1750-200 ft-lbs 13
 AG/AH's 240-250 ft-lbs

OK

7) All Brush Holder Hammers
Down **Proper Place**

8) Lateral Armature .14 (0.050 MAX) Pinion Teeth 15 Gear Serviceable?
Yes **No**

If No, needs gear pulled/replaced if pass electrically, if not overhaul

9) End Cap has speed probe hole
Yes **No**

10) Lead Length Checked
Yes **No**

Electrical Inspector JD1
 Date 12/1/2018

Mechanical Inspector JD2
 Date 12/2/2018

Accept Reject

Accept Reject

Save **Cancel**

Registration Server: Not Connected

Styles **1 - 1 of 1** Results per page **50**

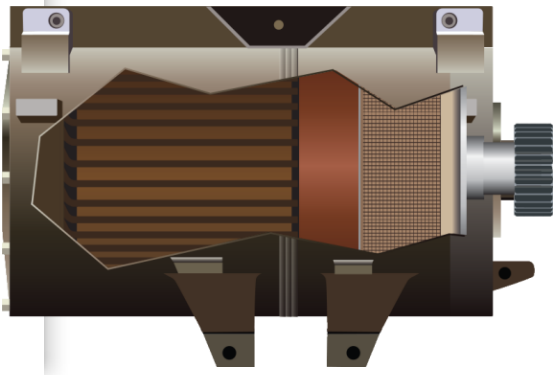
<input type="checkbox"/>	Armature WIP ID	Frame WIP ID
<input checked="" type="checkbox"/>	ARM0003	MF0003

Details
 Charts
 Inspections
 Attachments

- > **TM Inbound** Machine Operator
10/09/2018 at 4:56 PM Armature Press, Lathe, Undercutter AIC
- > **TM Line Inspection** Machine Operator
10/09/2018 at 5:01 PM Armature Press, Lathe, Undercutter AIC
- v **R and R TM Test Record** Machine Operator
10/09/2018 at 5:07 PM Armature Press, Lathe, Undercutter AIC

TRACTIONMOTOR 0 - R and R TM Test Record

Forward Direction RPM	1
Inspected Timestamp	2018-10-01T00:00:00
Electrical Inspector	JD1
Accept/Reject	True
Hypot	True
Pinion Teeth	14
Lateral Armature	.13
Brush Holders Hammers are in Proper Place	True
Brush Holder Hammers are Down	True
Brush Holders Torqued	True
Mechanical Inspector	JD2
Field Megohms to Ground	12
Vibration (in/sec)	.10
Core Loss Volt Reading Reverse	9
Core Loss Volt Reading Forward	8
Core Loss Amp Reading Reverse	7
Core Loss Amp Reading Forward	6
CE Bearing Temperature	5
PE Bearing Temperature	4
Difference in RMP	3
Reverse Direction RPM	2
Armature Megohms to Ground	11
Inspected Timestamp	2018-10-02T00:00:00



Motor Strip

Component Demount 6.6.0.1 A component of the Wheel Shop Management Suite™

Motor Strip **Insourced** **Warranty** **Early Failure**

ARMATURE 1

WIP ID

Serial #

Inbound Stator SN

Outbound Stator SN

Model

Vendor

MOTORFRAME 1

WIP ID

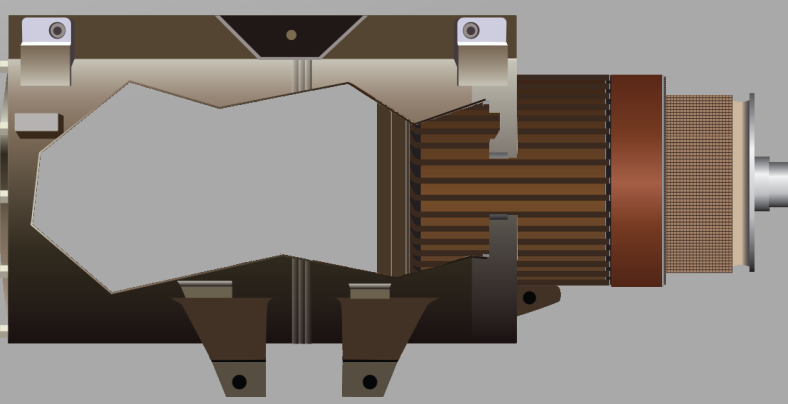
Serial #

Model

Ready for DK

Notes

Note	Added By	Added On
Traction Motor Note 1	AIC	12/14/2018 12:44 PM -06:00



Motor Strip

Shop Manager™ - 6.6.0.0

Search for **TractionMotor** by Date All Select a date 15 to Select a date 15

Registration Server: Not Connected

Styles 1 - 9 of 9 Results per page 50

	Armature WIP ID	Frame WIP ID
1	<input type="checkbox"/> ARM0003	MF0003
2	<input type="checkbox"/> ARM0001	MF0001
3	<input type="checkbox"/> ARM0002	MF0002
4	<input checked="" type="checkbox"/> ARM0005	MF0005
5	<input type="checkbox"/>	MF0006
6	<input type="checkbox"/>	MF0007
7	<input type="checkbox"/>	MF0008
8	<input type="checkbox"/>	
9	<input type="checkbox"/>	

Details | Charts | Inspections | Attachments

TractionMotor

Configuration Date/Time
Traction Motor

Notes:

Elements:

ARMATURE 1 DEMOUNTED

Cid Wip Ids
ARM0005

Notes:

Demount Time 10/10/2018 11:21 AM Disposition STOCK
Machine Operator
Combo Strip AIC
Undo Demount

Elements:
Armature Serial Number 123 Model NEED LOOKUPS
Inbound Stator Serial Number or New S12 Date Removed or Replaced
Vendor Altoona Outbound Stator Serial Number S23

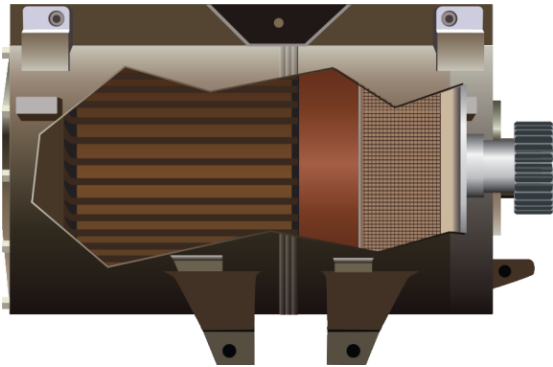
MOTORFRAME 1 DEMOUNTED

Cid Wip Ids
MF0005

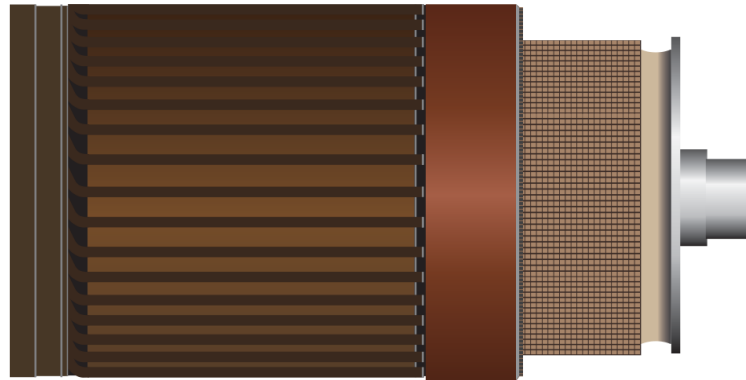
Notes:

Demount Time 10/10/2018 11:21 AM Disposition STOCK
Machine Operator
Combo Strip AIC
Undo Demount

Elements:
Serial Number 456 Model Type NEED LOOKUPS



Armatures



Armature Card

Armature

WIP ID:

ARM0001

Armature SN:

1234

Inbound Stator SN:

111

Outbound Stator SN:

222

Model:

NEED LOOKUPS

Vendor:

Altoona

Comments:

Location

Location 1

DC Leakage Reading:

1

Core Loss Power Factor:

4

Surge Test:

Pass

Surge Percent:

5

Core Loss Watts/Lbs:

3

AC Leakage Reading:

2

Ductor Test:

Pass

Type of Armature Repair

Basic

No Work Req

Shaft Renewal

No Work Req

Commutator "V" Ring Renewal

No Work Req

Reinsulate or Repair Back End Clips

No Work Req

Renew End Bell

No Work Req

Rewind

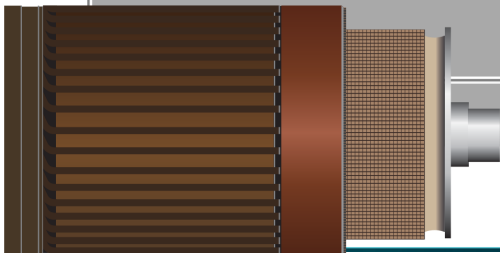
No Work Req

Cause for Rewind

None

Secondary Cause

NEED LOOKUPS



Save

Cancel

4:50 PM

📊 🚚

Styles **1 - 2 of 2**
⏪ ⏩

Results per page **50**

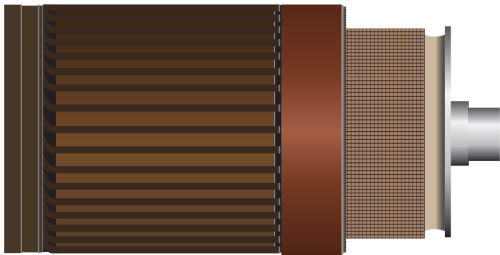
<input type="checkbox"/>	WIP ID	Last Modified	Last Inspected By
<input type="checkbox"/>	ARM0002	10/9/2018 2:09:34 PM -05:00	AIC
<input checked="" type="checkbox"/>	ARM0001	10/9/2018 4:50:17 PM -05:00	AIC

☰ Details
 📋 Inspections
 📎 Attachments

➤ **Armature Card**
Machine _____ Operator _____

10/09/2018 at 4:51 PM Armature Press, Lathe, Undercutter AIC

DC Leakage Reading	1
AC Leagage Reading	2
Core Loss Watt/lbs	3
Core Loss Power Factor	4
Surge Test	Fail
Surge Percent	5
Ductor Test	Fail
Basic	1
Shaft Renewal	1
Commutator V-Ring Renewal	1
Reinsulate or Repair Back End Clips	1
Renew End Bell	1
Rewind	1
Rewind Cause	0
Secondary Rewind Cause	NA



Styles 1 - 1 of 1

 Results per page

<input type="checkbox"/>	Armature WIP ID	Frame WIP ID
<input checked="" type="checkbox"/>	ARM0003	MF0003

Registration Server: Not Connected

Details
 Charts
 Inspections
 Attachments

TractionMotor

Configuration Date/Time
Traction Motor 10/9/2018 4:56 PM

Notes:

Elements:

ARMATURE 1 **Good**

Cid Wip Ids
ARM0003 ▾

Notes: ▾

Elements:

Armature Serial Number	Model
AR12345	NEED LOOKUPS
Inbound Stator Serial Number or New	Date Removed or Replaced
ST123	
Vendor	Outbound Stator Serial Number
Altoona	ST456

^

MOTORFRAME 1 **Good**

Cid Wip Ids
MF0003 ▾

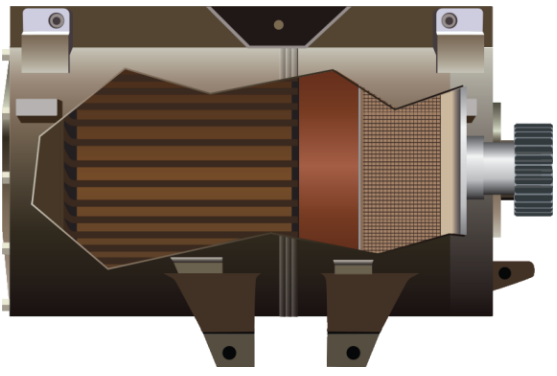
Notes: ▾

Elements:

Serial Number	Model Type
MF12345	NEED LOOKUPS

^

PINION 1



	Armature WIP ID	Frame WIP ID
1	<input checked="" type="checkbox"/> ARM0003	MF0003

Details
 Charts
 Inspections
 Attachments

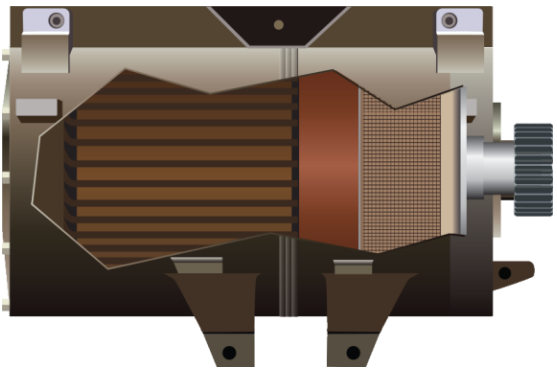
10/09/2018 at 5:07 PM Armature Press, Lathe, Undercutter AIC

TM Build and Test Machine Operator

10/09/2018 at 5:10 PM Armature Press, Lathe, Undercutter AIC

TRACTIONMOTOR 0 - TM Build and Test

Bearing Type	5
Test Comms Revision Number	21
Test Comms Manufacture	NA
Test Mains Revision Number	20
Test Mains Manufacture	NA
Electrical Inspector Signoff Timestamp	2018-10-03T00:00:00
Electrical Inspector Signoff	JD1
Accept	True
MCE Final Test	True
Brush Holder Hammers Down and in Proper Place	True
Brush Holders Torqued	True
Field MEGOhms	19
Armature MEGOhms	18
Vibration (in/sec)	.17
Maximum Voltage RPM	16
Core Loss Armature AMP	15
Bering Temperature Commutator End	14
Bearing Temperature Pinion End	13
"Difference in RMP *Calculated Field"	12
Reverse Direction - Half Hour RPM	11
Forward Direction - Half Hour RPM	10
Test Stand Number	1
Commutator Runout	2
Armature Lateral	1
Commutator End Serial Number Applied	1233
Pinion End Serial Number Applied	1234
Test Mains	True
Test Comms	True



Gear and Cover

Insourced

Warranty

Early Failure

Traction Motor

PINION 1

Serial #: Manufacturer:

Gear Teeth: Bore Size:

ARMATURE 1

WIP ID:

Serial #:

Inbound Stator SN:

Outbound Stator SN:

Model:

Vendor:

MOTORFRAME 1

WIP ID:

Serial #:

Model:

Location:

Notes

Note	Added By	Added On
Traction Motor Note 1	AIC	12/14/2018 12:44 PM -06:00

Cold Trial

Fit 1: Fit 2: Fit 3:

(1) MEASURE PINION TO SHAFT COLD (TRIAL FIT) (IN.)

(2) MEASURE PINION TO SHAFT -- AFTER HEATING AND COOLING (IN.)

(3) ADVANCE -- DIFF. BETWEEN (1) AND (2) (IN.)

Actual Temperature

Pinion: °F

Shaft Temperature: °F

Temperature Difference: °F

Type: EMD	Advance (IN.)	Temp. Difference (°F) Between Pinion and Shaft
15 T	.060 - .070	260
17T (D87, D87B, BTR)	.080 - .090	340
18T (D90)	.080 - .090	340
20T	.045 - .050	208
22T	.045 - .050	198
Type: GE	Advance (IN.)	Temp. Difference (°F) Between Pinion and Shaft
20T Small Bore	.090 - .100	355
20T Big Bore	.90 - .100	326

Home

Save Cancel

1:45 PM

Gear and Cover

Shop Manager™ - 6.6.0.0

Navigation icons: back, forward, refresh, home, print

Search for: TractionMotor by Wip Id ARM0003

Registration Server: Not Connected

Styles: 1 - 1 of 1

Results per page: 50

Armature WIP ID	Frame WIP ID
1 <input checked="" type="checkbox"/> ARM0003	MF0003

Navigation tabs: Details, Charts, Inspections, Attachments

- **TM Inbound** Machine Operator

10/09/2018 at 4:56 PM Armature Press, Lathe, Undercutter AIC
- **TM Line Inspection** Machine Operator

10/09/2018 at 5:01 PM Armature Press, Lathe, Undercutter AIC
- **R and R TM Test Record** Machine Operator

10/09/2018 at 5:07 PM Armature Press, Lathe, Undercutter AIC
- **TM Build and Test** Machine Operator

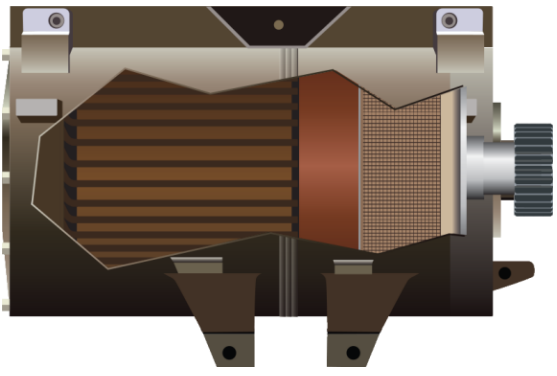
10/09/2018 at 5:10 PM Armature Press, Lathe, Undercutter AIC
- **Test and Repair Card** Machine Operator

10/09/2018 at 5:13 PM Armature Press, Lathe, Undercutter AIC
- ▼ **Gear And Cover** Machine Operator

10/09/2018 at 5:14 PM Armature Press, Lathe, Undercutter AIC

PINION 1 - Pinion Application

Pinion Temperature	7
Shaft Temperature	8
"Temperature Difference * Calculated Value"	9
Cold Trial Fit 1	1
Cold Trial Fit 2	2
Cold Trial Fit 3	3
Pinion to Shaft Distance - Cold	4
Pinion to Shaft Distance After Heating and Cooling	5
Advance - Difference Between Measurements Above * Calculated Value	6



Restore

Insourced

Warranty

Early Failure

Traction Motor

ARMATURE 1

WIP ID

ARM000001

Serial #

11111

Inbound Stator SN

1234

Outbound Stator SN

5678

Model

NEED LOOKUPS

Vendor

IEC Holden - NE

MOTORFRAME 1

WIP ID

MF000001

Serial #

1234

Model

NEED LOOKUPS

Location

Notes

Note	Added By	Added On
Traction Motor Note 1	AIC	12/14/2018 12:44 PM -06:00



Add/View Note

Home

Type of Frame Repair

Partial Re-field

Coils Replaced

Coil Kit	EMD	Top Axle Commutator	RPI
Top Main Coil	EMD	Bottom Axle Commutator Coil	EMD
Bottom Main Coil	Sherwood	Top Suspension Commutator Coil	GE
Axle Main Coil	Sherwood	Bottom Suspension Commutator Coil	Sherwood
Suspension Main Coil	GE		

Leads Replaced

A
 AA
 F
 FF
 Brush Ring
 Lead Kit
 Jumper

Final Meg Readings

Mains: 12
Comms: 3

Lead Length Checked

YES NO

Continuity Check

PASS FAIL

New Terminals

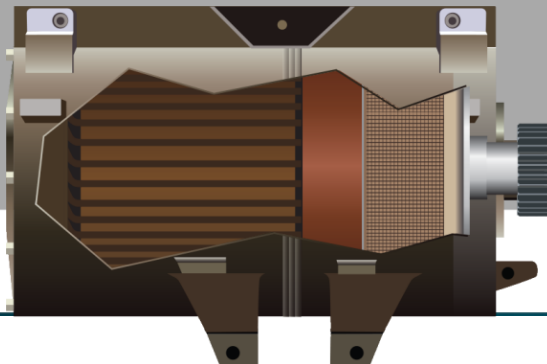
0 Gladhand

New Cleat Block?

YES NO

New Grommet

1



Save

Cancel

1:45 PM

Registration Server: Not Connected

Styles: 1 - 1 of 1. Results per page: 50

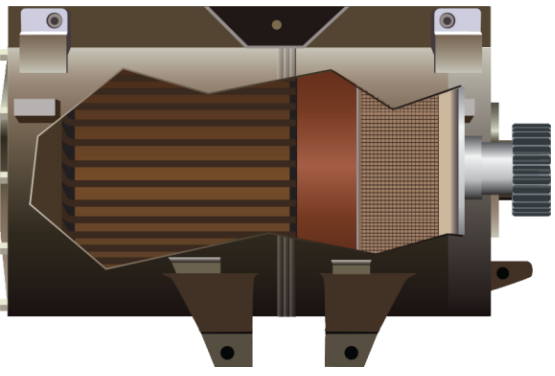
	Armature WIP ID	Frame WIP ID
1 <input checked="" type="checkbox"/>	ARM0003	MF0003

Details
 Charts
 Inspections
 Attachments

- > TM Inbound** Machine Operator
10/09/2018 at 4:56 PM Armature Press, Lathe, Undercutter AIC
- > TM Line Inspection** Machine Operator
10/09/2018 at 5:01 PM Armature Press, Lathe, Undercutter AIC
- > R and R TM Test Record** Machine Operator
10/09/2018 at 5:07 PM Armature Press, Lathe, Undercutter AIC
- > TM Build and Test** Machine Operator
10/09/2018 at 5:10 PM Armature Press, Lathe, Undercutter AIC
- ✓ Test and Repair Card** Machine Operator
10/09/2018 at 5:13 PM Armature Press, Lathe, Undercutter AIC

TRACTIONMOTOR 0 - Test and Repair Card

Continuity Check	True
New Terminal Num	3
Gear Case Support Lug Crack <1"	false
Final Comms MEG Reading	2
Final Mains MEG Reading	1
Replaced Lead FF	True
Replaced Lead AA	True
Bottom Suspension Commutator Coil Replaced	12
New Terminal Type	0
Top Suspension Commutator Coil Replaced	12
Top Axle Commutator Coil Replaced	2
Suspension Main Coil Replaced	2
Axle Main Coil Replaced	9
Bottom Main Coil Replaced	5
Top Main Coil Replaced	4
Coil Kit	4
Type of Frame Repair	1
Bottom Axle Commutator Coil Replaced	12
New Two Hole Grommet	1



Combo Build

Combo

Equipment Type:

Combo

Type of Bearing by Repair:

Number of Crater or Oil Bags:

Lateral:

Diametrical Clearance:

Pinion End Wick

Commutator End Wick

Manufacture

Manufacture

Condition

Condition

Torqued By

Torqued By

WHEELSET 1

WIP ID:

CID:

Axle

SN:

Wheel A

SN:

Wheel B

SN:

Traction Motor

ARMATURE 1

WIP ID:

SN:

Inbound Stator SN:

Outbound Stator SN:

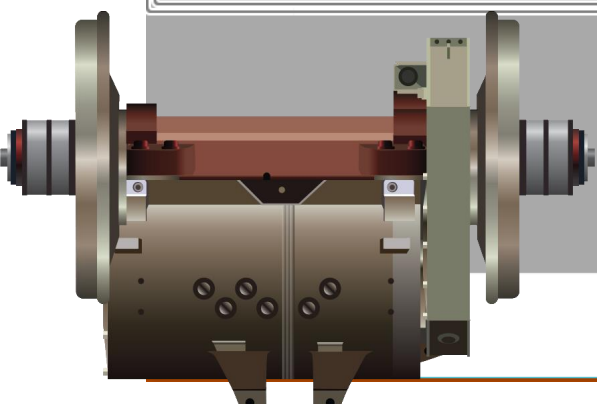
Model:

Vendor:

MOTORFRAME 1

WIP ID:

SN:



Save Cancel

9:20 AM

Combo Build

Shop Manager™ - 6.6.0.0

Navigation icons: back, forward, refresh, home, print

Search for **COMBO** by Date **All** Select a date **15** to Select a date **15**

Registration Server: Not Connected

Styles: 1 - 17 of 17 Results per page: 50

<input type="checkbox"/>	Last Modified	Axle WIP	Motor WIP
<input type="checkbox"/>	10/9/2018 10:29 AM		
<input type="checkbox"/>	10/4/2018 5:22 PM		
<input type="checkbox"/>	10/4/2018 5:22 PM		
<input type="checkbox"/>	10/4/2018 5:23 PM		
<input type="checkbox"/>	10/8/2018 9:26 AM		
<input type="checkbox"/>	10/8/2018 9:27 AM		
<input type="checkbox"/>	10/8/2018 9:30 AM		
<input type="checkbox"/>	10/3/2018 1:49 PM		
<input checked="" type="checkbox"/>	10/3/2018 2:03 PM	AICW0002	AICT0001
<input type="checkbox"/>	10/3/2018 2:04 PM	AICW0003	AICT0003
<input type="checkbox"/>	10/3/2018 2:06 PM	AICW0004	AICT0004
<input type="checkbox"/>	10/3/2018 2:11 PM	AICW0005	AICT0005
<input type="checkbox"/>	10/3/2018 2:24 PM	AICW0007	AICT0008
<input type="checkbox"/>	10/3/2018 3:10 PM	AICW0008	AICT0009
<input type="checkbox"/>	10/3/2018 3:50 PM		AICT0010
<input type="checkbox"/>	10/3/2018 4:28 PM		AICT0012
<input type="checkbox"/>	10/4/2018 5:21 PM		

Details | Charts | Inspections | Attachments

COMBO Good

Configuration Date/Time

Combo

Notes:

Elements:

Type of Bearing By Repair	Number Crater or Oil Bags
Lateral	Diametrical Clearance
Pinion End Wick Manufacture	Pinion End Wick Condition
Pinion End Wick Torqued By	Commutator End Wick Manufacture
Commutator End Wick Condition	Commutator End Wick Torqued By

TRACTIONMOTOR 1 Good

Cid Wip Ids

AICT0001

Notes:

Demount

Elements:

WHEELSET 1 Good

Cid Wip Ids

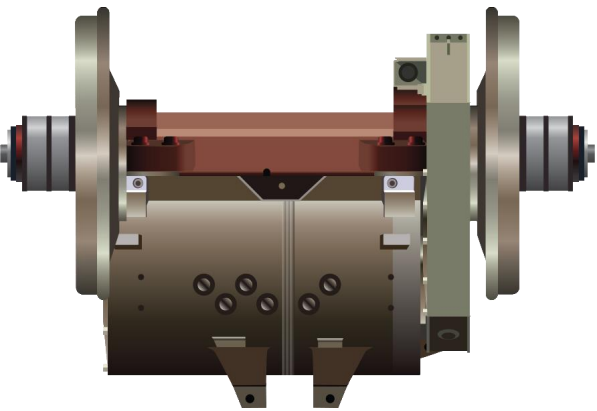
AICW0002

Notes:

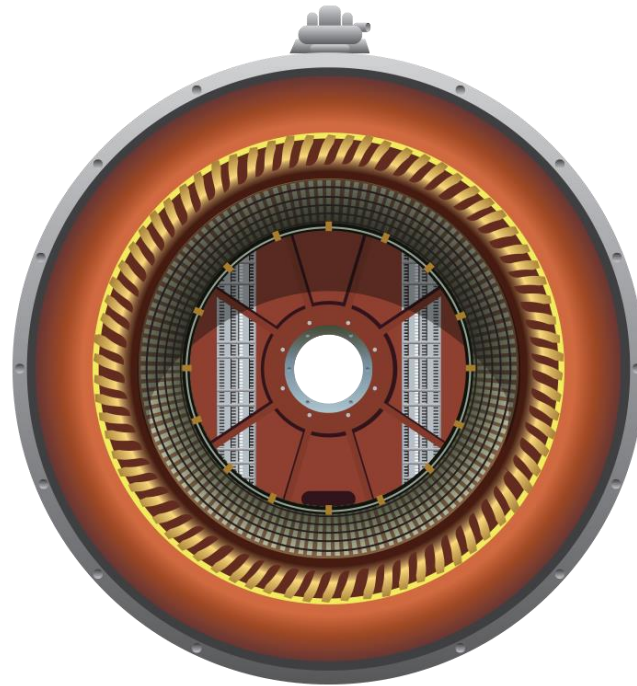
Demount

Elements:

Back to Back 1	Back to Back 2
Back to Back 3	Mount Shop
Mount Month	Mount Year
Caps and Drain Plugs Torqued by	Jet Lube Applied by
Pinion End Wick Manufacture	Pinion End Wick Condition
Pinion End Wick Torqued By	Commutator End Wick Manufacture
Commutator End Wick Condition	Commutator End Wick Torqued By



Alternator / Generator



Component Inspection 6.5.2.10 A component of the Wheel Shop Management Suite™

Alt/Gen Inspection

Name

WIP ID: **AGEN0003**

Job Number: **1** Initials: **XY** Alternator/Generator SN: **12345** Model/Type: ▼

Alternator Type/Model

Main: **TEST** Companion: **TEST**

Removal Date: **10/1/2018** Location Removed: **A**

Reason Removed: ▼ Locomotive Removed From: **NS12345**

Build-up Start Date: **Select a date** Build-up Finished Date: **Select a date**

Location: **Location 1**

Commutator Condition: **OK** String Band Condition: **Missing**

String Band Type: **Failed** Brush Holder Condition: **Destroyed**

Megger Reading

Stator:	100	101	M
Armature/Rotor #:	102	103	M
AC Rotor #:	104	105	M
Type:	106	107	M

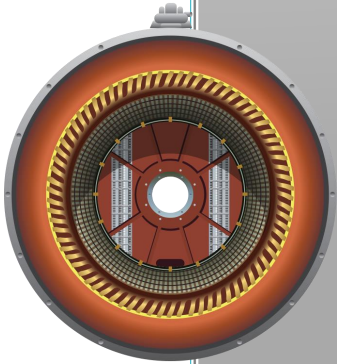
Reason for Dismantle

Primary: **because**

Secondary: **I said so**

Home Search
Save Cancel

4:45 PM

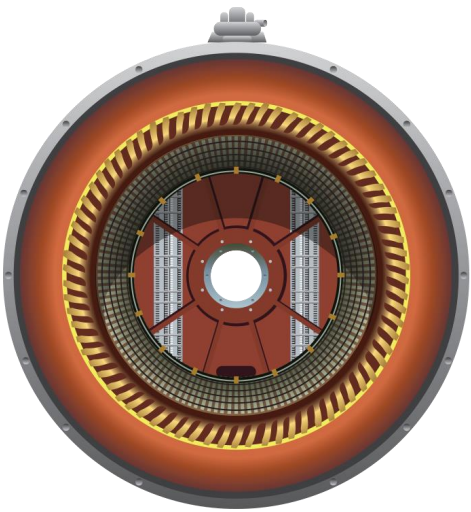


<input type="checkbox"/>	WIP ID	Last Modified	Last Inspected By
<input checked="" type="checkbox"/>	AGEN0003	10/9/2018 4:45:39 PM -05:00	AIC
<input type="checkbox"/>	AGEN0002	10/9/2018 1:49:02 PM -05:00	AIC
<input type="checkbox"/>	AGEN0001	10/9/2018 12:09:39 PM -05:00	AIC

Alt / Gen Inspection
Machine Operator

10/09/2018 at 4:45 PM
Armature Press, Lathe, Undercutter AIC

Commutato Condition	1
Brushholder Condition	2
String Band Condition	2
Bearing Condition	2
Inbound Stator Serial Number	100
Inbound Stator Megger Reading	101
Inbound Armature/Rotor Number	103
Inbound Armature/Rotor Megger Reading	102
Inbound AC Rotor Number	104
Inbound AC Rotor Megger Reading	105
Inbound AC Roter Type	106
Primary Reason for Dismantle	because
Secondary Reason for Dismantle	I said so
Type Megger Readings	107



Alt/Gen Buildup

Name

WIP ID:

Job Number: Initials: Alternator/Generator SN: Model/Type:

Alternator Type/Model

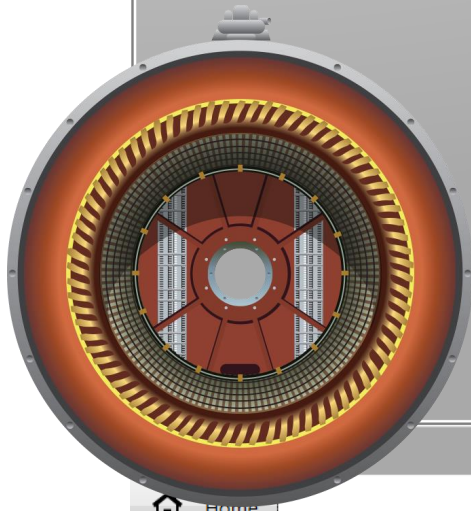
Main: Companion:

Removal Date: Location Removed:

Reason Removed: Locomotive Removed From:

Build-up Start Date: Build-up Finished Date:

Location:



	Resistance to Ground	Serial Number	Megger Reading
Main Stator	<input type="text" value="1"/> M	<input type="text" value="2"/>	<input type="text" value="3"/> M
Main Rotor	<input type="text" value="4"/> M	<input type="text" value="5"/>	<input type="text" value="6"/> M
Aux Rotor	<input type="text" value="7"/> M	<input type="text" value="8"/>	<input type="text" value="9"/> M
Aux Stator	<input type="text" value="10"/> M	<input type="text" value="11"/>	<input type="text" value="12"/> M

	Beginning	Total
Thrust Measurement	<input type="text" value="14"/>	<input type="text" value="13"/>

Balanced	<input checked="" type="button" value="Yes"/> <input type="button" value="No"/>	Engine End	<input type="text" value="15"/>	Slip Ring End	<input type="text" value="17"/>
Weight Added		Final Reading	<input type="text" value="16"/>		<input type="text" value="18"/>

Check Continuity

	Readings (in Ohms)
Main Stator	<input type="text" value="19"/> Ω
Main Rotor	<input type="text" value="20"/> Ω
Aux Rotor	<input type="text" value="21"/> Ω
Aux Stator	<input type="text" value="22"/> Ω

Diode Test:

Info Added to Build-Up Book:

Comments



Styles 1 - 3 of 3 Results per page 50

<input type="checkbox"/>	WIP ID	Last Modified	Last Inspected By
<input checked="" type="checkbox"/>	AGEN0003	10/9/2018 4:45:39 PM -05:00	AIC
<input type="checkbox"/>	AGEN0002	10/9/2018 1:49:02 PM -05:00	AIC
<input type="checkbox"/>	AGEN0001	10/9/2018 12:09:39 PM -05:00	AIC

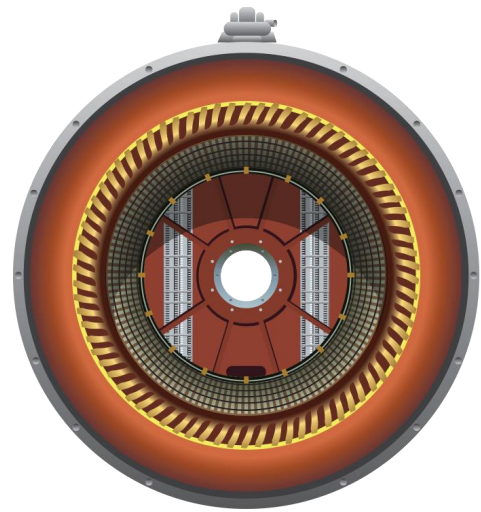
Details
 Inspections
 Attachments

INDUCTION AC ROTOR type	100
Primary Reason for Dismantle	because
Secondary Reason for Dismantle	I said so
Type Megger Readings	107

> **Alt / Gen Build Up** Machine Operator

10/09/2018 at 4:49 PM Armature Press, Lathe, Undercutter AIC

Build-up Stator Serial Number	2
Main Rotor Resistance to Ground	4
Main Stator Resistance to Ground	1
Build-up Comments	Test comment
Info Added to Build-up Book	True
Diode Test	G
Build-up Auciliary Stator Ohm Reading	22
Build-up Auxiliary Rotor Ohm Reading	21
Build-up Rotor Ohm Reading	20
Build-up Stator Ohm Reading	19
Checked Continuity	True
Final Reading Slip Ring End	18
Aux Rotor Resistance to Ground	7
Final Reading Engine End	16
Weight Added at Engine End	15
Balanced	True
Total Thrust Measurement	14
Beginning Thrust Measuremet	13
Build-up Auxiliary Stator Megger Reading	12
Build-up Auxiliary Stator Serial Number	11
Build-up Auxiliary Rotor Megger Reading	9
Build-up Auxiliary Rotor Serial Number	8
Build-up Rotor Megger Reading	6
Build-up Rotor Serial Number	5
Build-up Stator Megger Reading	3
Weight Added at Slip Ring End	17
Aux Stator Resistance to Ground	10





Outbound Tracking

Enter Outbound Shipment Information

Load #

B.O.L.

P.O. #

Customer

Location

Method Truck Rail

Carrier

Trailer #

Weight

Comment

Cancel

Load #:1002 4 Wheelsets

#	Type	Axle Size	Wheel
1	Turned	6.0x11	CH36
2	Turned	6.0x11	CH36
3	Turned	6.0x11	CH36
4	New Mount	6.5x12	CH36

This wheelset has a misfit. It must be marked as a 'Good Press' before shipping.

Done Menu

Outbound Tracking

Select an Outbound Shipment to continue. If it is not in the list use 'Menu -> Find' to search for it.

Load #	Customer
1002	All Aboard
1003	Acme Rail 2

Scan a barcode or click Search

Load #:1002

4 Wheelsets

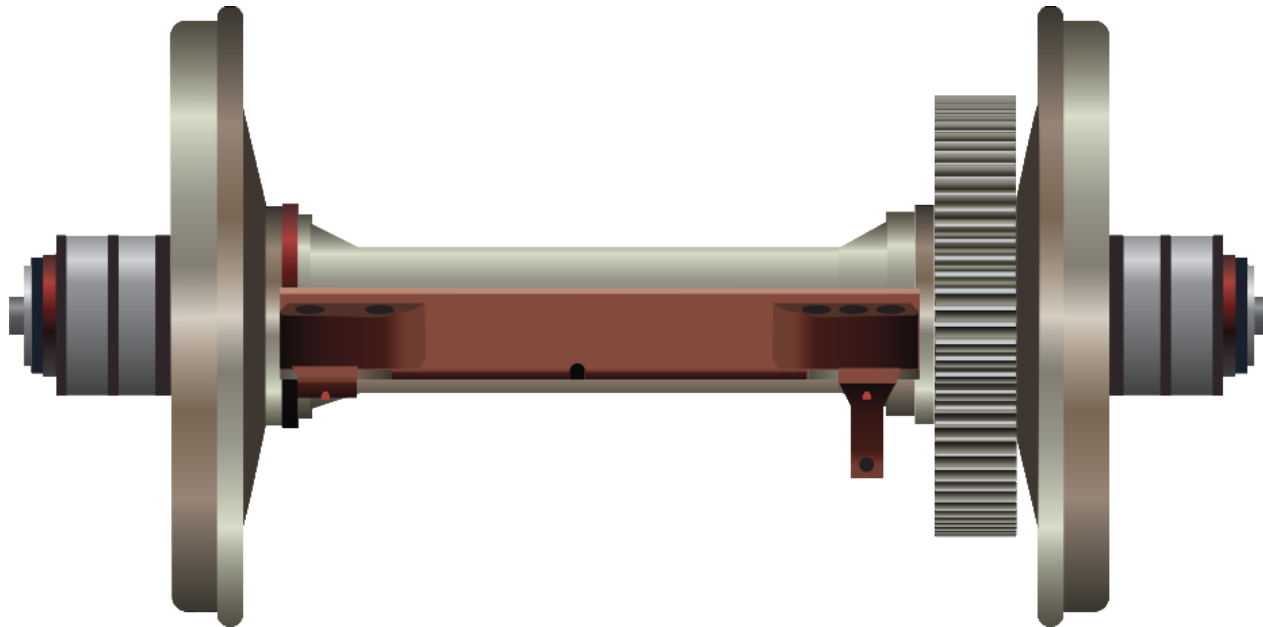
Automatical

#	Type	Axle Size	Wheel
1	Turned	6.0x11	CH36
2	Turned	6.0x11	CH36
3	Turned	6.0x11	CH36
4	New Mount	6.5x12	CH36

Done Menu



Wheel Shop





Wheel Press Recorder



Wheel A - 11133

Mount Time
4/21/2017 2:11:53 AM

Operator
AIC

Wheel B - 11134

Peak Force: 99.3 Remount

Wheel A

Mfg.	Serial #	MM	YY
GK	11133	3	13
Condition	Diameter	Design Cod	Class
New	36	CH	C
Tape Size	Rim Thickness	Flange Thick	
244	24	0	
Facility Code	Manufacture Timestamp	Heat #	
GWC	3/1/2013	H1	
CID	WIP ID		

Axle

Facility Co	Serial/Heat #	Manufacture Timestamp
		1/1/2011
Condition	Size	Grade
S/H	6.5 X 12	F
Defect Free	Premium	
Yes No	Yes No	
Customer Owned		
Stock		
CID	Wip Id	
	17-003-7	

Peak Force: 99.3 Remount

Wheel B

Mfg.	Serial #	MM	YY
GK	11134	3	13
Condition	Diameter	Design Cod	Class
New	36	CH	C
Tape Size	Rim Thickness	Flange Thick	
244	24	0	
Facility Code	Manufacture Timestamp	Heat #	
GWC	3/1/2013	h1	
CID	WIP ID		

Wheelset

<p>Customer</p> <p>AICX9000000002</p>	<p>Customer</p> <p>Stock</p>
<p>Sequence #</p> <p>0</p>	<p>Boring Mill Operator</p> <p></p>

5:39 PM



Shop Manager Wheel Mount

Shop Manager™ - 6.5.1.1

Wheelsets > All | Select a date [15] to Select a date [15]

Registration Server: Connection Failed

14 of 186620 >

Recalled	On Hold	New Mounts	Misfits	Not Reviewed	Turns	Completed	Registration Errors	Registered	Registered Today	Registered Yesterday	Not Registered
11	11	12	13	14	15	16	17	18	19	20	21
5/8/2017 1:09 PM	5/8/2017 12:58 PM	5/8/2017 12:45 PM	5/8/2017 11:56 AM	5/8/2017 11:43 AM	5/8/2017 11:05 AM	5/8/2017 11:00 AM	5/8/2017 10:55 AM	5/8/2017 10:49 AM	5/8/2017 10:44 AM	5/8/2017 10:38 AM	5/8/2017 10:32 AM
7 X 12	7 X 12	7 X 12	7 X 12	7 X 12	7 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12
5/8/2017 1:22 PM	5/8/2017 1:07 PM	5/8/2017 12:45 PM	5/8/2017 12:45 PM	5/8/2017 12:36 PM	5/8/2017 11:17 AM	5/8/2017 11:12 AM	5/8/2017 11:11 AM	5/8/2017 11:02 AM	5/8/2017 10:53 AM	5/8/2017 11:03 AM	5/8/2017 10:46 AM
Good	Good	Rework	Rework	Good	Good	Good	Good	Good	Good	Good	Good
MWST068011	MWST068012	MWST068013	MWST068013	MWST068007	MWST068008	MWST068215	MWST068213	MWST068212	MWST068211	MWST068205	MWST068208
0321	0324	0320	0320	1168	1487	0066	0129	7696	0064	4574	0063
23	24	25	26	27	28	29	30	31	32	33	34
5/8/2017 10:27 AM	5/8/2017 10:21 AM	5/8/2017 10:14 AM	5/8/2017 10:08 AM	5/8/2017 10:03 AM	5/8/2017 9:58 AM	5/8/2017 9:53 AM	5/8/2017 9:48 AM	5/8/2017 9:42 AM	5/8/2017 9:36 AM	5/8/2017 9:30 AM	5/8/2017 9:24 AM
6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12	6.5 X 12
5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM	5/8/2017 10:46 AM
Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
MWST068207	MWST068200	MWST068203	MWST068206	MWST068202	MWST068201	MWST068198	MWST068197	MWST068195	MWST068194	MWST068199	MWST068198
0024	8036	8017	7903	7903	7766	8006	4077	8012	8036	8016	8016

Cid: GBRX1200280168

Reviewed By: adamsj Unreview

Wheel 1 Wheel 1-11684 (136)

Demount

Mount Time: 5/8/2017 11:55 AM
Operator: wesleyv
Machine: Wheel Press 1
Mounting Force: 136.1
Sequence #: 1

Wheel 2 Wheel 2-11673 (143)

Demount

Mount Time: 5/8/2017 11:56 AM
Operator: wesleyv
Machine: Wheel Press 1
Mounting Force: 143.1
Sequence #: 1

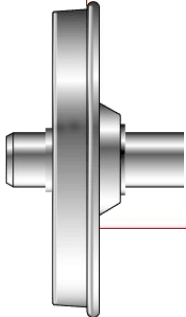
Mount History

Component	Serial #	Mount Date/Time	Operator	Machine	Status	Mount Force	Demount Date/Time	Operator	Machine
Bearing A	00355981	5/8/2017 12:45 PM	joell	Bearing1 NM	Good Press				
Bearing B	00902203	5/8/2017 12:45 PM	joell	Bearing1 NM	Good Press				
Wheel 1	11684	5/8/2017 11:55 AM	wesleyv	Wheel Press 1	Good Press	136.1			
Wheel 2	11673	5/8/2017 11:56 AM	wesleyv	Wheel Press 1	Good Press	143.1			

Audit History

Review All Unreview All

Advance to next assembly after Review All





Shop Manager Gear Mount

Shop Manager™ - 6.5.4.5

Search for All Assembly by Date Wheelset Timestamp Select a date 15 to Select a date 15

Styles 1 - 50 of 53 Results per page 50

Timestamp	Traveler #	Axle S#	Wheel 1
7/2/2018 15:05		063/C64776	
7/2/2018 14:49		138/A5999	
7/2/2018 14:30		22142/181594	
7/2/2018 13:52		091-44277	
7/2/2018 13:33		51/NA	
7/2/2018 13:17		026/44277	
7/2/2018 12:35	21268	7966/71433	51160
7/2/2018 11:15	21268	T59500-4/A9257-003	50035
7/2/2018 10:17	21268	019/BLARF	50033
7/2/2018 08:58	21268	T55271-3/B8476	52277
6/29/2018 14:28	22066	R040/B9780	18105
6/29/2018 12:47	21963	R002/B9405	00013
6/29/2018 10:50	21963	94377/1188207	00030
6/29/2018 09:24	21471	36/NV	00310
6/29/2018 07:37	21965	113/30185	52015
6/28/2018 16:53	20620	4148	
6/28/2018 16:34	20620	4200/T5698	
6/28/2018 16:10	20620	T3560-3	
6/28/2018 15:38	20620	039/8193	
6/28/2018 14:51	22069	7100/N/A	N/A
6/28/2018 14:30	22069	5051/N/V	N/A
6/28/2018 14:15	22069	4808/NV	N/V
6/28/2018 14:00	22069	5957/N/V	N/A
6/28/2018 13:45	21964	045/39401	00002
6/28/2018 13:30	21964	017/39401	00030
6/28/2018 13:15	21962	317140A/H1985	00016
6/28/2018 13:00		XXXX	
6/28/2018 12:45		XXXX	

Details Charts Inspections Attachments Audit History

Cid Advance to next assembly after Review All

GEAR 1 Review

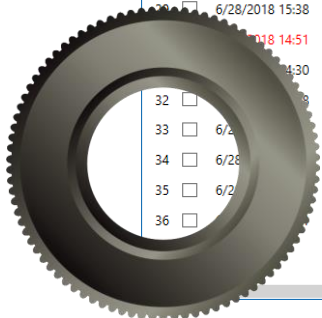
GEAR 1-L48568/15 (92)

Demount

Mount Time: 6/29/2018 9:55 AM
 Mounting Force: 91.6
 Sequence #: 0
 Status: Good Press
 Comment:

Operator: bill
 Machine: Press Recorder 1
 Shift: 0

Component	Serial #	Mount Date/Time	Operator	Machine	Status	Mount Force	Demount Date/Time	Operator	Machine
Bearing A	50054	6/29/2018 10:50 AM	bill	Press Recorder 1	Good Press	61.6			
Bearing B	001570	6/29/2018 10:44 AM	bill	Press Recorder 1	Good Press	61.9			
GEAR 1	L48568/15	6/29/2018 9:55 AM	bill	Press Recorder 1	Good Press	91.6			
Wheel A	000308	6/29/2018 10:30 AM	bill	Press Recorder 1	Good Press	126.5			
Wheel B	000328	6/29/2018 10:13 AM	bill	Press Recorder 1	Good Press	118.9			

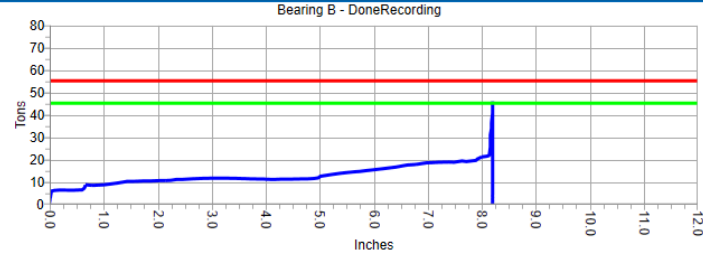
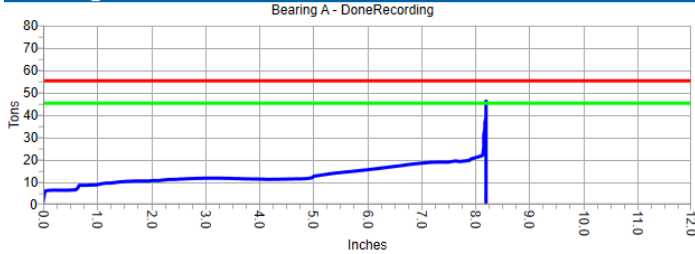




Bearing Press Recorder

Bearing Press Recorder 6.5.0.24 - A component of the Wheel Shop Management Suite™

2:11 PM



Done recording

0.0

Left Dist - Inches

Done recording

0

Left Force - Tons

0.0

Left Dist - Inches

Bearing A

Condition	Facility Code	Manufacture Timestamp
Reconditioned	PRBK	7/5/2017
Diameter	Length	Serial #
6.5	12.0	17417
Cage Type	Seal	B. Ring
Steel	BRENCO ST-21;	Fitted
Cert. #	Specification	CID
05A	Premium	C4801861710605
Lateral	Bolt Torques	Peak Force

Bearing B

Condition	Facility Code	Manufacture Timestamp
Reconditioned	PRBK	7/5/2017
Diameter	Length	Serial #
6.5	12.0	33606
Cage Type	Seal	B. Ring
Steel	BRENCO ST-21;	Fitted
Cert. #	Specification	CID
05A	Premium	C4801861710602
Lateral	Bolt Torques	Peak Force

Wheel A

Mfg.	Serial #	MM	YY
GI	20196	4	17
Condition	Diameter	Design Code	Class
New	36	CH	C
Tape Size	Rim Thickness	Flange Thickness	Profile
235	24	0	
Facility Code	Manufacture Timestamp	Heat #	
GWKC	4/18/2017	KSD0268	
CID	WIP ID		
8AMS6130808391			

Wheelset

CID	Disposition	Configuration
GBRX2600131339	Good	6.5 X 12
Customer		
STOCK		
Facility Code	Serial/Heat #	Manufacture Timestamp
JA	9600	2/1/2000
Condition	Grade	Defect Free
S/H	F	Yes No
Customer Owned	CID	Wip Id
Stock		GRSN10774

Wheel B

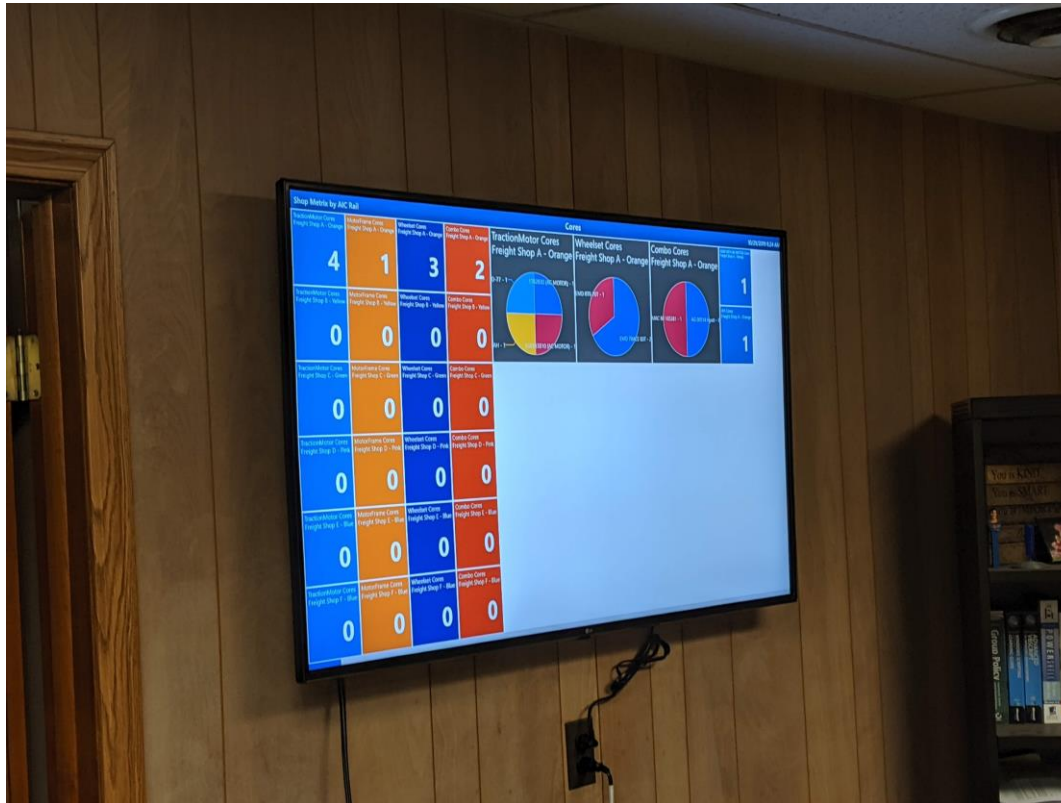
Mfg.	Serial #	MM	YY
GI	14317	3	
Condition	Diameter	Design Code	Class
New	36	CH	C
Tape Size	Rim Thickness	Flange Thickness	Profile
235	24	0	
Facility Code	Manufacture Timestamp	Heat #	
GWKC	4/8/2017		
CID	WIP ID		
8AMS6130794808			

Home

Save

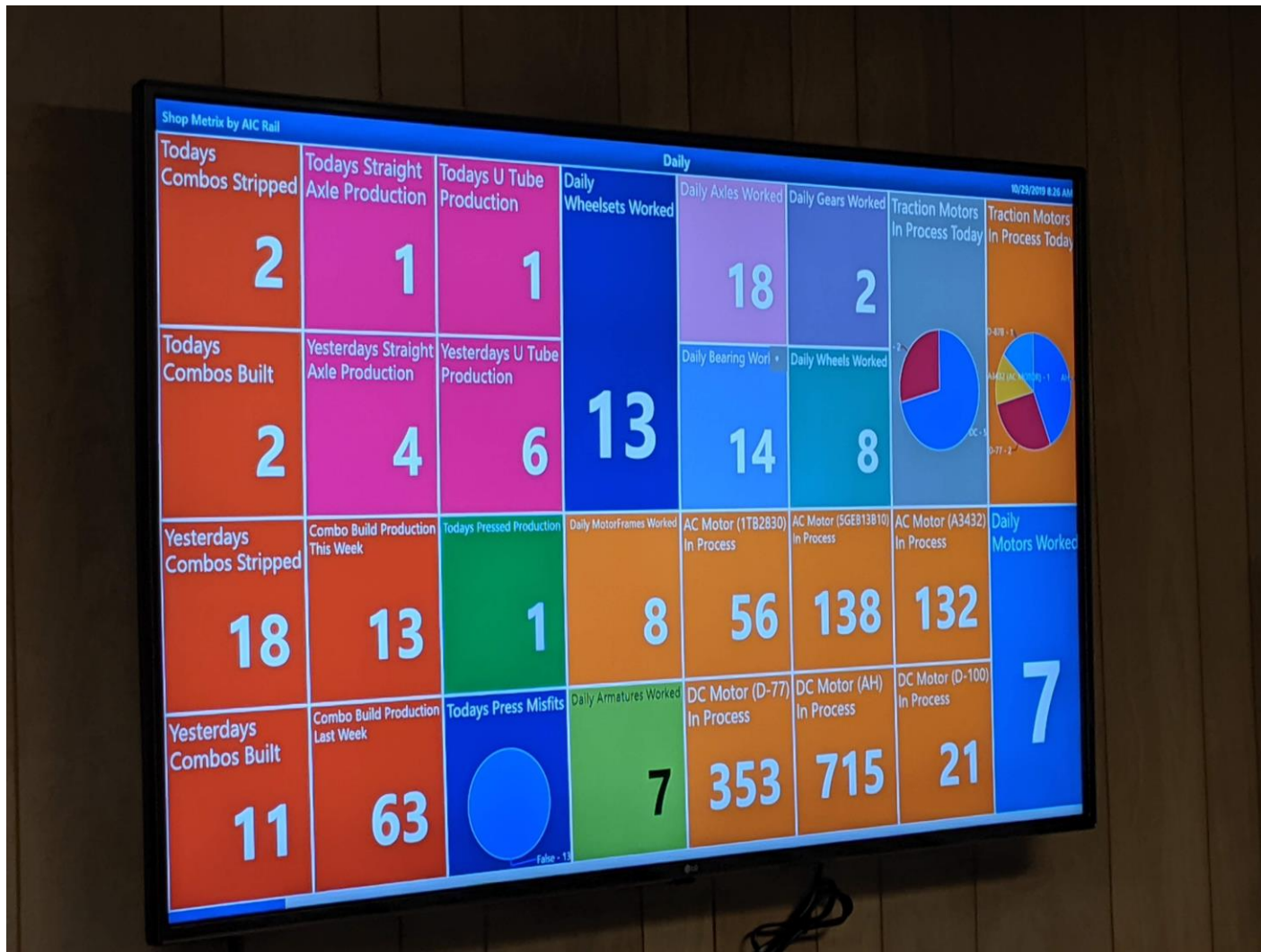
Cancel

Shop Metrix – Metrix on the Shop Floor



- Move dashboards to the shop floor
- Configure in Shop Manager
- Rotates through multiple dashboards
- Can be used stand alone or with a station

Shop Metrix – Metrix on the Shop Floor



Shop Matrix



Document Viewer

Put important documents at the workstation

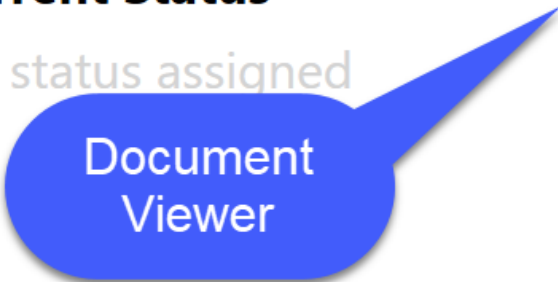
- Safety information
- AAR Required Documentation
- Work Instructions
- Vacation Request Form
- MSDS
- Any file type Widows recognizes
 - Microsoft Office (Word, Excel, PowerPoint)
 - PDF
 - Image (JPEG, PNG, BITMAP)
 - Video (AVI, MP4)

Warranty



Current Status

No status assigned



Oven 1
Oven 2
Oven 4
Oven 6
Oven 8
Ovens
VPI 2

Document Viewer

Component

Loose A

Search

WIP ID

Axle (s):

WIP ID Disp

+

🏠

el Shop Management Suite™

Standards

Association of American Railroads

SAFETY AND OPERATIONS

MANUAL OF STANDARDS

AND

RECOMMENDED PRACTICES

SECTION G-II

WHEEL AND AXLE MANUAL

ISSUE OF 2019
Effective February 2019

5:09 PM

Document Viewer

Component Inspection 6.6.0.19

A component of the Rail Shop Management Suite™

The screenshot displays the Document Viewer interface. At the top, a blue header bar contains the version information 'Component Inspection 6.6.0.19' on the left and 'A component of the Rail Shop Management Suite™' on the right. Below the header, the interface is divided into several sections. On the left, there is a search bar with a magnifying glass icon and the text 'Search'. Below the search bar, there is a small input field containing the letter 'n'. To the right of the search bar, there is a tab labeled 'Details' with a list icon. On the far right, there is a vertical sidebar labeled 'Documents' with a document icon. The main content area is currently empty, displaying the text 'No item selected' in the center. In the bottom right corner of the interface, the time '4:24 PM' is displayed.

Document Viewer - Configuration

Document Manager

Documents	Stations
MSRP G II \\DESKTOP-FBRA6VK\Document Viewer Demo\AAR Standards\G2\msrp-g2_2019.pdf 4/17/2019 3:51 PM -0	▷ [system] DataExchange Wheel Press
Metal Lathe \\DESKTOP-FBRA6VK\Document Viewer Demo\Safe Work Procedures\Metal_Lathe_Safety_Procedures32313.pdf 4/17/2019 3:26 PM -0	▷ Turns 1 Misfit 1 Bearing 1 Bearing 2 Wheel Demount Bearing Demount 1
Safe Work Template \\DESKTOP-FBRA6VK\Document Viewer Demo\Safe Work Procedures\safe_work_procedure template.pdf 4/17/2019 3:28 PM -0	▷ Bearing Demount 2 Outbound 1 Outbound 2 Outbound 3 Outbound 4 Loose Axle BATS - West Loose Axle BATS - East
MSRP H II \\DESKTOP-FBRA6VK\Document Viewer Demo\AAR Standards\H2\MSRP_H2 2011.pdf 4/17/2019 3:32 PM -0	▷ Loose Axle Mag/UT Mounted Axle BATS
Wheel Profile Update \\DESKTOP-FBRA6VK\Document Viewer Demo\AAR Standards\Field Manual\c119.jpg 4/17/2019 3:33 PM -0	
Osha 3071 \\DESKTOP-FBRA6VK\Document Viewer Demo\Job Hazard Analysis\osha3071.pdf 4/17/2019 3:34 PM -0	
Dog Training https://www.bing.com/videos/search?q=training+video&&view=detail&mid=54A0FAB292B80903ABC154A0FAB292B80903ABC1&&FORM=VRDGAR 4/17/2019 3:35 PM -0	
PLC Wiring https://aicomputing-my.sharepoint.com/:i/g/personal/jeremy_detters_aicomputing_us/EYHpHK_oQL5AgyvRWE1vfWvB1G_cTU01rVRbcYI0Q1b0kw?e=RWKOLv 4/17/2019 3:42 PM -0	
Axle Cap Screws \\DESKTOP-FBRA6VK\Document Viewer Demo\AAR Standards\G2\Axle Cap Screws.pdf 4/17/2019 3:52 PM -0	
Lock Plates \\DESKTOP-FBRA6VK\Document Viewer Demo\AAR Standards\G2\Locking Plate Fig 4.67.pdf 4/17/2019 3:52 PM -0	
S-659 \\DESKTOP-FBRA6VK\Document Viewer Demo\AAR Standards\G2\S-659.20180315.pdf 4/17/2019 3:52 PM -0	
Master Gage Video https://1drv.ms/v/s!Aqo4V9cNn60Vr814Yw3xjEFJSTN1_A 4/17/2019 3:59 PM -0	
Calibration \\DESKTOP-FBRA6VK\Document Viewer Demo\Training Videos\WP_20160831_004.mp4 4/17/2019 4:00 PM -0	
Sample Word Doc \\DESKTOP-FBRA6VK\Document Viewer Demo\Safe Work Procedures\SWP_Metal_Lathe_AS526.doc 4/17/2019 4:31 PM -0	

Add
>
<
Remove

- Configure document locations in Shop Manager
- One document, multiple stations

Workstation Machine Inspections

Mandatory Inspection of Magnetic Particle Testing Equipment Rule 1.7.2

Magna-Glo 1027-SJ

1. Date of preparation of bath solution, bath container cleaned, agitation, and circulation system flushed and filtering screens cleaned:

Select a date

2. Amount of Suspensoid: oz

Powder in bath solution: oz

3. Concentration and contamination of bath solution,

Amount of magnetic powder: mL

Amount of contamination-dirt, chips or other foreign matter and magnetic powder:

mL

4. Test for ultraviolet light, minimum acceptable intensity is 1000 uW/cm² at the surface being examined.

Ultraviolet light reading: uW/cm²

5. Test Ambient Visible Light in the darkened area. The maximum ambient visible light level is 2 foot candles(fc).

Ambient Visible Light Reading: fc

Inspector:

Machine Inspections

Loose Axle BATS - East Component Inspection 6.5.2.21 Management Suite™

User - AIC

Log Off

Change Password

Help

Get Support

About

System

Downtime

Scanners

Machine Setup

Connection Setting

Exit

Production

Axle	Today: Axles: 0 Rework: 0 Total: 0
------	---

Testing

MachineInspections

Machine	Today:
MPI Rule 1.7.2	0
Machine	Today:
Torque Wrenches	0
Machine	Today:
Gauge Centering Wheels	0
Machine	Today:
Back-to-Back Mounting Gauge	0

Component Inspections

Machine Inspections

Documents 10:31 AM

Machine Inspections

Loose Axle BATS - East 2.21 A component of the Rail Shop Management Suite™


MPI Rule 1.7.2

History

Date: 6/26/2019 Operator: All Users Shift: All Get History

Result(s): 2 Result(s) From: 6/25/2019 11:00 PM To: 6/26/2019 11:00 PM

#	Timestamp	Shift	Inspected By	Inspected At	Inspection	Expiration Date	Gauge No.	St
1	6/26/2019 11:54 AM	1	AIC	Loose Axle BATS - East	Magnetic Particle Testing Equipment	2019-06-12T00:00:00	3.5	8
2	6/26/2019 9:06 AM	1	AIC	Loose Axle BATS - East	Magnetic Particle Testing Equipment	2019-06-12T00:00:00	2	8.5



List of Inspections performed

Magnetic Particle Testing Equipment

Inspected by: AIC Shift 1
Inspection date: 6/26/2019 11:54 AM Status: Good

Inspection Elements

Preparation Date	2019-06-06T00:00:00
Suspensoid	8
Bath solution powder	5
Magnetic Powder	5
Contamination	8
Footcandle	6
Direct reading meter	66
Inspector	monica luevano
Gauge No.	3.5
Expiration Date	2019-06-12T00:00:00

Currently selected inspection results

+ Start New Inspection ✎ Edit Most Recent

🏠 Home

1:42 PM

Machine Inspections Report

5

Machine Inspection Details

Report Filters: From 6/21/2019 To 7/6/2019

Station: Loose Axle BATS - East

Magnetic Particle Testing Equipment

Inspection Date Shift: Inspected By
06/26/2019 11:54 AM 1 AIC

Suspensoid	8
Magnetic Powder	5
Footcandle	6
Inspector	monica luevano
Expiration Date	2019-06-12

Preparation Date	2019-06-06
Bath solution powder	5
Contamination	8
Direct reading meter	66
Gauge No.	3.5

Station: Loose Axle BATS - East

Magnetic Particle Testing Equipment

Inspection Date Shift: Inspected By
06/27/2019 01:43 PM 1 AIC

Suspensoid	2
Magnetic Powder	4
Footcandle	6
Inspector	Monica Luevano
Expiration Date	2019-11-15

Preparation Date	2019-06-27
Bath solution powder	3
Contamination	5
Direct reading meter	7
Gauge No.	8

Machine Inspections – with Approval

The screenshot shows the Shop Manager interface with a search filter for 'All MachineInspection' by 'Date' and 'Inspection Timestamp'. A table lists two inspection entries. The first entry is selected, and its details are shown in a right-hand pane. A red arrow points to the 'Approve' button in the details pane.

Name	Timestamp	Definition	Operator
Loose Axle MAG\UT	10/7/2020 1:20 PM	Magnetic Particle Testing Equipment	AIC
Loose Axle MAG\UT	10/7/2020 1:23 PM	Magnetic Particle Testing Equipment	AIC

Machines	
Preparation Date (M_MPI001)	2020-09-28T00:00:00
Suspensoid (M_MPI002)	999
Bath solution powder (M_MPI003)	88
Magnetic Powder (M_MPI004)	77
Contamination (M_MPI005)	66
Footcandle (M_MPI006)	5
Direct reading meter (M_MPI007)	77
Inspector (M_MPI008)	Bob
Gauge No. (M_MPI021)	7
Expiration Date (M_MPI022)	2020-10-02T00:00:00

Inspection requires approval of the entries by supervisor or QA

Cost Tracking by Component or Assembly

Manage Materials

Part Number: PartNumberAic03

Description: PartNumberAic02_Description15

Price: 15.00

Quantity: 150

Discontinue

Component(s):

- ALTGEN
- ARMATURE
- AXLE
- BEARING
- BEARINGCORE
- COMBO
- GEAR
- MOTORFRAME
- PINION
- ROTOR
- STATOR
- TRACTIONMOTOR
- U-TUBE
- WHEEL
- WHEELSET

Save Cancel

Material cost and description

Stations where this material is uses

Cost Tracking Configuration

Materials

Search Show Discontinue

Part Number	Description	Price	Quantity	Component(s):	Discontinue
PartNumberAic02	PartNumberAic02	8.00	80	AXLE COMBO	<input type="checkbox"/>
PartNumberAic03	PartNumberAic03	15.00	150	AXLE WHEEL WHEELSET	<input type="checkbox"/>
PartNumberAic10	PartNumberAic10	0	0	ALTGEN COMBO TRACTIONMOTOR	<input type="checkbox"/>

Context Menu:
Edit
Duplicate
Remove
Export

Stations where the part is used

Import and Export to an ERP System
(SAP, DAX, MAXIMO, WS Barcode)

+ Add Edit Duplicate Remove Excel

Connected to localhost - WSMS6_NS_6_6 Copyright © 2020 AIC, Inc. 6.6.2.10

Transaction Times

Details
 Charts
 History
 Inspections

Attachments
 Audit History
 Transactions

9/8/2020 8:28 AM: Mount - 00:10:00 WS Bearing Press AIC

Duration	Start	End	Operator
00:10:00	9/8/2020 8:20 AM	9/8/2020 8:28 AM	AIC

This is a comment

4 Mounted Axle 9/8/2020 8:28 AM WS Bearing Press AIC

4 AXLE

4 Ungrouped

Bent axle detection (I301)	0
NGS (I302)	0
Overheating (I303)	0
Weld Splatter (I304)	1
Length (I307)	0
Manufacturing Code (I309)	0
Diameter (I312)	0

Mount History

Component	Serial #	Mount Date/Time	Operator	Machine	Status	Mount Force	Demount Date/Time	Operator	Machine
Bearing A		9/8/2020 8:28 AM	MDQ57	WS Bearing Press	Good Press	60.2			
Bearing B		9/8/2020 8:28 AM	MDQ57	WS Bearing Press	Good Press	60.2			

