

TANGO

REPAIR TRACKER™

REPAIR MANAGEMENT WEB SERVICE

CREATE A RELIABILITY PARTNERSHIP WITH YOUR REPAIR SHOPS.



REPAIR STATUS



REPAIR HISTORY



FAILURE PROGRESSION



ASSET AND WARRANTY INFORMATION

MINIMIZE YOUR FRUSTRATIONS...



Why are these reports inconsistent?

Where is that report?

How many motors and pumps do we have?

Who repaired it?

What is the status on those repairs?

Did I receive an email about it?

What is the root cause?

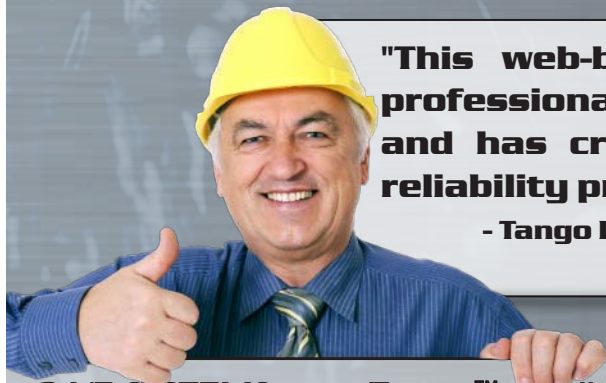
Is it still under warranty?

How much is it going to cost?

When was it repaired last?

Why can't I find that information?

Do we have the parts to fix it?



"This web-based motor management program is a professional way to be consistent with our repair shops, and has created higher expectations for our motor reliability program and greater value for our company,"

- Tango Repair Tracker User and Electrical/Reliability Supervisor.

Repair Tracker™ is a simple to use web based portal for use by equipment repair facilities to report failure and repair details on critical industrial equipment. Repair Tracker™ may be used as part of an equipment lifecycle management program or as a stand-alone repair documentation and analysis package. Repair Tracker™ is unique in that repair vendors do all of the data entry work and the information is then integrated into a single equipment reliability database. From this Tango™ data, plant reliability personnel can obtain:

- **Equipment History**
- **Root Causes of Failure**
- **Analysis of Shop Cost and Quality**
- **MTBF or MTBR**
- **Warranty Claims**
- **Cost of Failure**

REPAIR STATUS



Repair Shop Options

Vendor Name Rockridge Repair Service
User Name John Shop

Incoming Equipment Actions ?

[Find a Piece of Equipment](#)
[Add a Piece of Equipment](#)

Equipment Being Repaired ?

Company Name	Plant	Equipment Type	Plant Tag	Start Date	Plant PO Number	Shop Tracking Number	Status
View 24/7 Systems, Inc.	24/7 Demo	Motor - AC Induction	2142	Sep-22-2006	489080	060989	PO Received
View 24/7 Systems, Inc.	24/7 Demo	Motor - AC Induction	3442	Jan-16-2007	pending	070146	Tear down and Inspection
View 24/7 Systems, Inc.	24/7 Demo	Motor - AC Induction	3015	Mar-16-2007	578294	070332	Quoted, Waiting on Approval
View 24/7 Systems, Inc.	24/7 Demo	Motor - DC Series	3712	Apr-03-2007	370259	070407	Repaired, Not Shipped
View 24/7 Systems, Inc.	24/7 Demo	Motor - AC Induction	453	Apr-09-2007	482859	070421	Quoted Replacement (Non-Repairable)

Recently Repaired Equipment (Last 30 Days)
There have been no recent repairs

The "Start Page" summarizes all open repairs to all vendors. By clicking on any column heading, you may sort the report by equipment type, area of the plant, date, or repair status. This benefits both the plant and the repair shops by eliminating the amount of phone time required to check the status of a repair.

FAILURE PROGRESSION



Typically, the plant will see the equipment failure as why it stopped functioning, such as "winding failure" or "bearing failure." This level of information is not helpful for the plant in understanding how to make the equipment perform longer because these symptoms are usually the result of some other root cause. A shop can determine the root causes of failure and the plant may then take action to eliminate the root cause and obtain longer motor life.

As an example, a motor was removed from service with shortened windings and a costly replacement or rewind will be necessary. At the repair shop, the motor is inspected and the inspector finds that the motor windings are full of grease. The root cause of failure is excessive lubrication. The shop's cause of failure analysis, including photos of the failure and inspection summary document are stored for future reference.

Repair Data Entry Form

Repair Shop: *Rockridge Repair Service*

Equipment Info

Equipment Type Motor - AC Induction
Plant Tag 2142
Company Name 24/7 Systems, Inc.
Plant Name 24/7 Demo

Starting Repair Facts

Shop Tracking Number
Plant Purchase Order
Plant Requisition Number
Start Date
Due to Finish Date
Sent By

Incoming Comments

provide detailed quote after teardown & inspection

Any comments about the state of the equipment when it came in

Repair Status History

Date	Status Type	Comments
Apr-12-2007	Quote Approved	finish date expected by Nov 22
Apr-12-2007	PO Received	

Repair Findings

	Finding Desc	Status	Comment	Problem Level
<input checked="" type="checkbox"/>	Armature Grounded	Found, Not Fixed		Secondary Cause
<input type="checkbox"/>	Armature Open			
<input type="checkbox"/>	Bad Seal			
<input type="checkbox"/>	Balance Rotor			
<input checked="" type="checkbox"/>	Bearings Damaged	Unacknowledged		<Undefined>
<input type="checkbox"/>	Bent Shaft			
<input type="checkbox"/>	Broken Rotor Bar			
<input type="checkbox"/>	Wrong Voltage			

Repair Actions

	Repair Action	Comment
<input type="checkbox"/>	Armature Rewind	
<input type="checkbox"/>	Bake Windings	
<input type="checkbox"/>	Turn Commutator	
<input type="checkbox"/>	Varnish	

Supporting Linked Documents



Motor in receiving

Motor in receiving

Motor in receiving

Procedure Templates

[AC Repair Specification](#)
[DC Repair Specification](#)

Ending Repair Facts

Repair Cost
Repair Warranty End Date

Outgoing Comments

REPAIR SHOP INFO

EQUIPMENT ASSET INFORMATION

INCOMING DATA & START/FINISH DATES

REPAIR STATUS & HISTORY

FAILURE FINDINGS & PROGRESSION
(LIST SHORTENED FOR SPACE)

ACTIONS TAKEN
(LIST SHORTENED FOR SPACE)

LINKED DOCUMENTS & IMAGES FOR REPAIR

REPAIR RESULTS

REPAIR HISTORY



A history of repairs are kept in an online database, providing detailed information so that a plant can review past issues and failures. By reviewing repair history, a plant can determine failure trends, cost of repairs, average lifecycles, and downtime of repairs.

Having the ability to review this information, a plant can eliminate unexpected equipment failures, extend the lifecycle of equipment, make educated repair decisions that may decrease costs, track warranty information, and determine downtime projections. Since the repair history information is standardized and obtainable from one database, it eliminates file shuffling, lost files, and missing data, while simplifying reporting and analysis.

Equipment Repair History						
Equipment Type Motor - DC Shunt						
Plant Tag 1444						
Company 24/7 Systems, Inc.						
Plant 24/7 Demo						
Equipment Actions						
<input type="button" value="Find a Piece of Equipment"/> <input type="button" value="Add Repair"/> <input type="button" value="Add Purchase Info"/>						
Repair History						
	Start Date	End Date	Purchase Order	Requisition Number	Shop Tracking Number	Repair Vendor
View	Dec-18-1995	Feb-03-1996	731102	70824735	468959-1	NATIONAL REPAIR, KNOXVILLE
View	Jun-12-1996	Jun-23-1996	731102	14676514	456985-6	NATIONAL REPAIR, KNOXVILLE
View	Nov-05-1996	Dec-10-1996	96120	12479254	785961-9	NATIONAL REPAIR, KNOXVILLE
View	Apr-01-1998	May-08-1998	96120	62767567	459479-2	NATIONAL REPAIR, KNOXVILLE
View	Oct-29-1998	Feb-23-1999	474993	56726825	379165-3	INDUSTRIAL MECHANICS, LOUISVILLE
View	Mar-16-2002	Mar-20-2002	497353	32626225	225569-7	INDUSTRIAL MECHANICS, LOUISVILLE
View	Dec-06-2005	Jan-24-2006	354332	12479254	468959-1	INDUSTRIAL MECHANICS, LOUISVILLE
View	Nov-21-2006	Feb-10-2007	372930	70824735	456985-6	INDUSTRIAL MECHANICS, LOUISVILLE
View	Nov-06-2009		1185			

ASSET & WARRANTY INFORMATION



Equipment Definition

Plant Tag 2142
 Equipment Type Motor - AC Induction
 Equipment Class Motors

Property	New Value
Frame Size*	364TZ
Model Number*	????
Motor Mfg*	General Electric
Plant Tag*	2142
Power*	60 HP
Serial Number*	ES223007
Speed*	1800 RPM
Voltage - Stator*	460 V
Bars - Rotor (cnt)	0
Comments	NEW FURNACE COMBUSTION BLOWER, REMELTER
Connection Config (Stator)	Unknown
Current - Full Load (Stator)	75 A
Duty	CONTINUOUS
Formed Coil	No
Insulation Class	B
Motor Enclosure	TEFC
Nema Design Code	B
Nema Power Code (AC)	G
Power Factor	0
Service Factor	1
Slots - Stator	0
Temp - Max Rated Ambient	40 °C

* = Required Value

Actions	Reports
View Equipment History	Equipment Traveler
Edit Equipment Definition	

Asset: The "Equipment Definition" page allows a plant to track every piece of equipment which provides better analysis of equipment lifecycle and repair history for the piece of equipment.

Warranty: Overhauled equipment often has a 1 or 2 year warranty and new equipment may have a 1 to 5 year warranty. Many plants miss warranty coverage simple because no one knows to file a claim. Often the savings obtained from warranty tracking will more than pay for the complete Repair Tracker™ package.



A COMPONENT OF:
Tango™

