



DIS

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LV MOTOR OVERHAUL



A. Preparation file

- Quality check sheet
- *Organization and Manpower*
- *Risk assessment*
- *Method Statement*
- *Report*
- *Check Sheet*
- *Equipment testing , list tool and Certificate*
- *PPE*



B. Motor Overhaul

1. Motor brake



2. Motor Fan



3. Motor AC



4. Motor DC



Motor Overhauls Processing

- Check “Permit to Work“ and list of Motor overhauls carefully make sure Tag Name. is correct before start the job.
- Familiarization with Equipment Data, Latest Drawings.
- Record Data from name plate.
- Disconnect the power cable and uncouple.
- Remove the motor from the foundation.
- Pick up motor and transport to workshop.
- Inspection (Static test) -Milliohm check (Winding resistance) – Megger check (Winding insulation resistance measurement). Resistance Measure of space heater, temperature sensor.
- Bearing housing / shaft tolerance both "DE And NDE.
- Motor dismantling and separate rotor from stator.
- Clean the rotor & stator winding by motor cleaning liquid.
- Varnish clear -On stator core & outside frame.
- Clean all of the motor component and , parts.
- Anti corrosion treatment the motor frame - Red varnish spray.
- Replace new bearings.
- Replace new brushes.
- Assembly completes set.
- Perform static check after reassembling -Winding resistance -Winding inductance - Winding insulation resistance.
- No load test run in workshop — operating current record
- Final check, QC check.
- Install the motor at foundation.
- Connect power cable and tighten terminal connector with torque screw Driver or torque wrench
- *Rotation test (To be confirmed Operation, Electrical and Contractor)*
- Coupling Alignment with the pump/ fan.
- Load test

Record Data from name plate

* First : Read Data from name plate



* After Record Data from name plate to report motor overhaul

TEST REPORT NO.

LV MOTOR OVERHAULS TEST REPORT

Customer:	Incoming Date:
Add:	Final Date:
Tag Name.:	Report Date:

MOTOR DATA

Equipment name	Feeder No
Manufacturer	Serial No
Type	Tag Name
Rated voltage [V]	Rated current [A]
Rated power	Speed [rpm]
Frame size	Power Factor [%]
IP	Insulation Class
SF	Connection
Bearing DE	Bearing NDE
Lubrication type	Frequency
	Heater

Rotation from NDE: cw **Page 1** cww

Disconnect the power cable and uncouple



Note: When disconnect the power cable we must marking colored wire : Red, yellow, blue or used making by methods other and photography

Remove the motor from the foundation

Before remove the motor from the foundation we must making ensure that when mounting the motor will guarantee as the initial position

Marking must recognizable and number one

Pick up motor and transport to workshop.

And Then:

Inspection (Static test): visual inspection and photography

Milliohm check (Winding resistance) : $\geq 100\text{M}\Omega$ - Good

Megger check (Winding insulation resistance measurement): $\geq 100\text{M}\Omega$ - Good

Resistance Measure of space heater, temperature sensor: $\geq 100\text{M}\Omega$ - Good

Note: If equipment measure have normal values we record at report motor but If equipment measure have " 0 " and "OL" we notify for supervision

- Methods mesure : As picture

<u>STATIC TEST</u>							
RESISTANCE TEST				HEATER			
Marking	Incoming	Final			Incoming	Final	
U1-U2				Heater Resistance			
V1-V2				Insulation Heater-E			
W1-W2				Recommend RI	>= 100MΩ		
<u>INSULATION TEST</u>							
VOLT(DC)	Marking	Incoming			Final		
500V		1 minute	10 minute	PI	1 minute	10 minute	PI
	U-V			N/A			N/A
	U-W						
	V-W						
	U-Earth						
	V-Earth						
	W-Earth						
Recommend Insulation Resistance		>=100MΩ					

Motor dismantling

Marking all the part dismantled of motor and photography all the part dismantled

Dismantling coupling and cool fan from motor

Dismantling housing 'DE' and 'NDE'

Motor dismantling and separate rotor from stator.

Dismantling bearing 'DE' and 'NDE' from rotor



Motor overhaul

Mesure Housing diameter and Shaft diameter. Then record in report motor

<u>MECHANICAL REPAIRING</u>									
Housing diameter (mm)					Shaft diameter(mm)				
Incoming		Final			Incoming		Final		
DE	NDE	DE	NDE		DE	NDE	DE	NDE	

Mesure Housing diameter and Shaft diameter If:

Mesure Housing diameter ' $<$ 'Or ' $=$ ' value outer diameter bearing (± 0.02 mm)

Mesure Shaft diameter ' $>$ 'Or ' $=$ ' value in diameter bearing (± 0.02 mm)

Clean all of the motor component and , parts

Clean the rotor & stator winding by motor cleaning liquid.

Red varnish spray for stator

Stator taked away the dryer (Have processes dryer)



Replace new bearings and fill grease for bearing

Assembly completes set and Perform static check after reassembling

And then mesure Winding resistance -Winding inductance - Winding insulation resistance befor No load

Remark

1. Motor Brake
 - Remove brake from motor
 - Separate shaft of brake from motor



2. Motor Fan
 - Remove cooling Fan from motor

