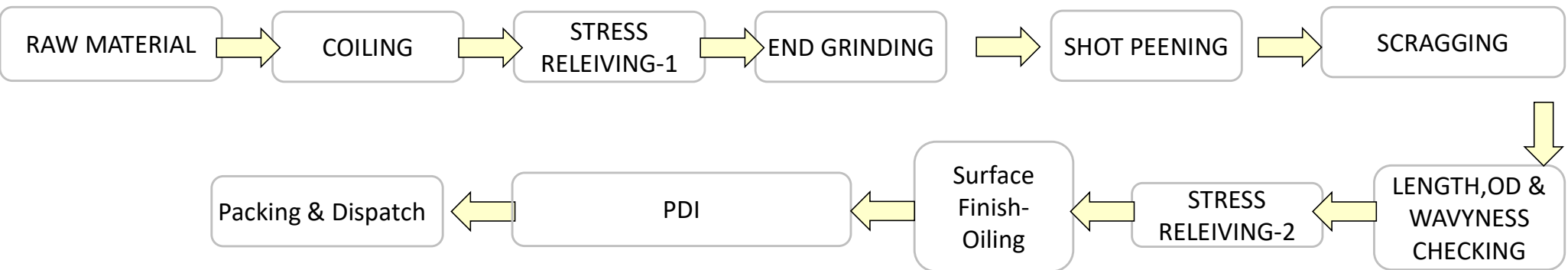


# Problem description

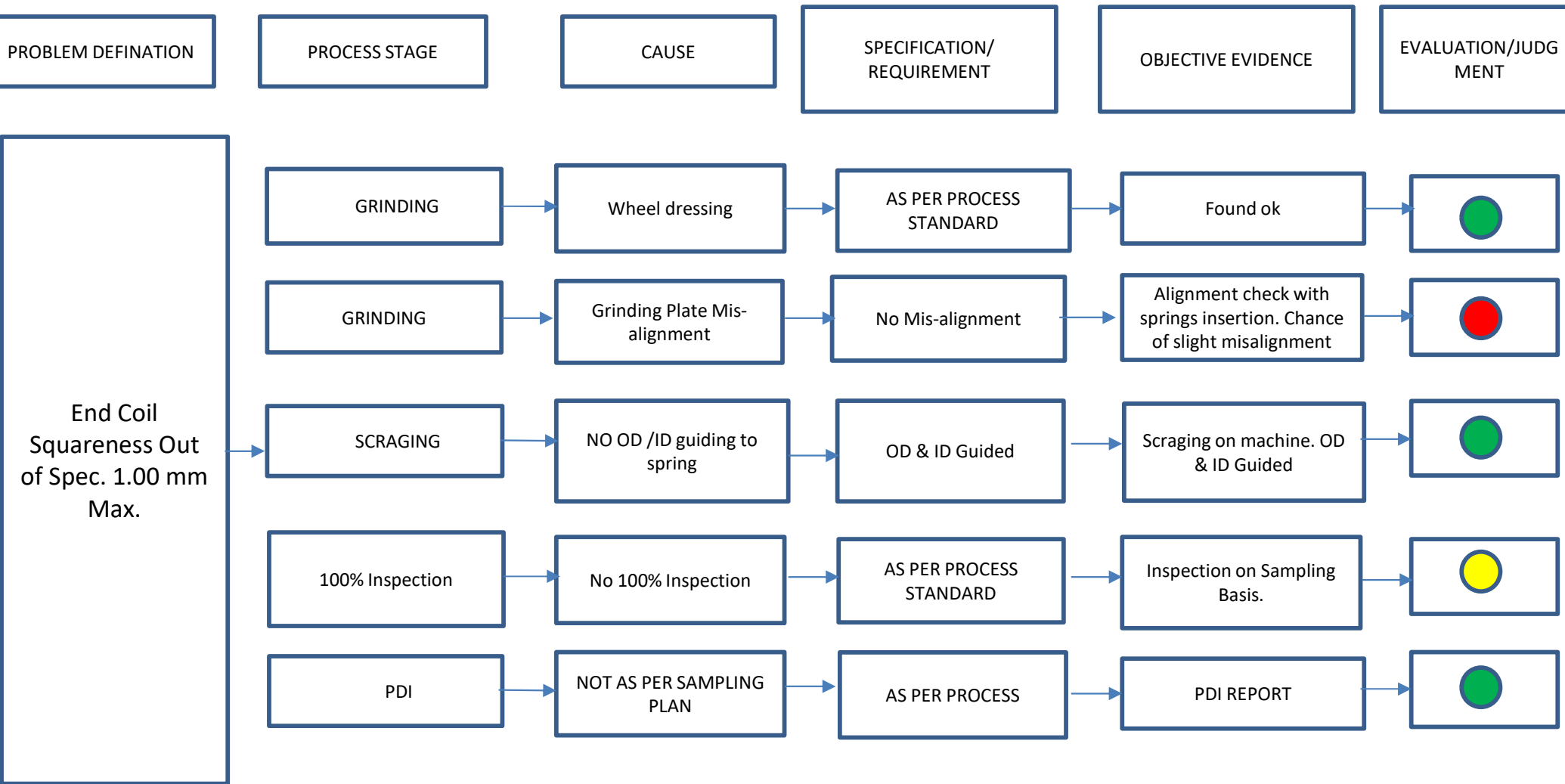
● **Phenomenon:** End Coil Squareness Out of Spec. 1.00 mm Max.

- **Supplier:** Helical Springs
- **Model:** REJ1A
- **Parts name:** Main Spring
- **Part No.:** F2GN125020
- **Date of Occurrence:** 23.03.2023
- **NG Qty:-** 67 nos

## □ **Process Flow :**



# Probable Cause Identification (FTA or Fish Bone Diagram)



 COMPLAINE	 EVIDENCE NOT FOUND BUT CHANCE OF ERROR EXISTS	 EVIDENCE FOUND FOR DEVIATION
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## Facts Verification for Identified Probable Causes with 4M

Sr. No.	4M	PROBABLE CAUSES	FACTS VERIFICATION	Judgement
1	Man	Unskilled operator	Skill Matrix checked found ok	O
2	Method	Grinding Plate Mis-alignment	Grinding Plate alignment not checked by robust method	Δ
		Wheel dressing not followed as per defined frequency	Wheel dressing done as per the defined frequency	O
		NO OD /ID guiding to spring	Scraging on machine. OD & ID Guided	O
		No 100% Inspection	Inspection On sampling Basis	Δ
3	Material	As per Drawing	RMTC checked found ok	O
4	Machine	Change of machine	Line and machine defined	O

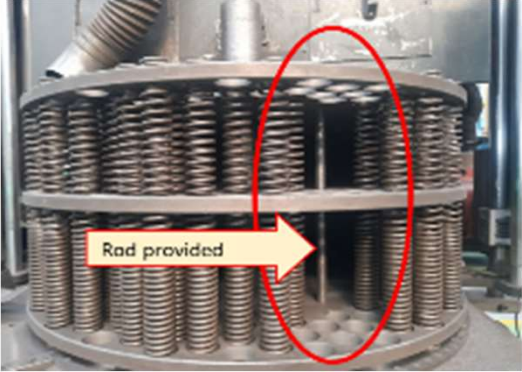
# ROOT CAUSE ESTABLISHMENT (WHY-WHY ANALYSIS)

## 1 ● Root cause establishment (Why-Why Analysis)



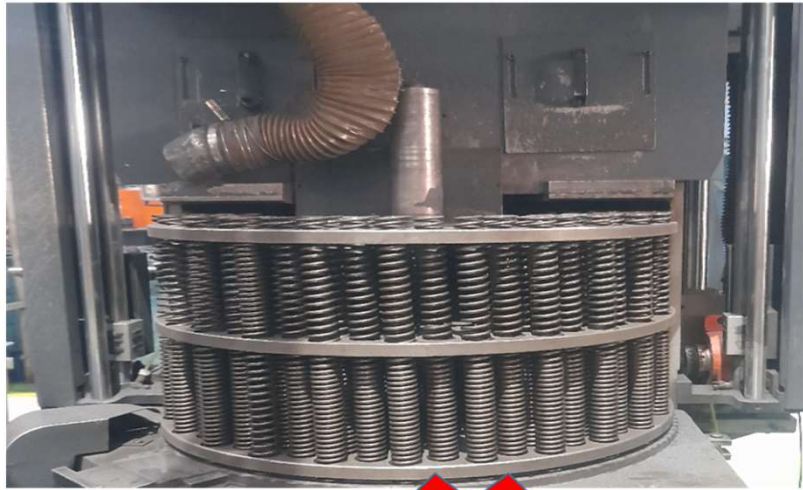
	WHY - 1	WHY- 2	WHY -3	WHY-4	WHY-5	WHY-6
Occurrence	End Coil Squareness Out of Spec.	Spring not loaded straight in Grinding plate	Grinding plate position not ok	Holes in layer wise Grinding plates not aligned with respect to each other	Alignment of holes of three plates checked with insertion of spring	No robust method to check the alignment of holes of three plates
Outflow	End Coil Squareness Out of Spec.	Not arrested in inspection	Inspection done on sampling basis	No 100% inspection defined	--	--

# : Countermeasure


## ● Countermeasures:

	Cause	Countermeasure	Tgt. Dt.	Tgt. Dt.	Status
Occurrence	End Coil Squareness Out of Spec.	<p><b>1. Alignment of grinding plates holes ensured with the help of rod positioned between grinding plates.</b> [OPL ADDED]</p> <p>2. Check point of alignment of grinding plates added in grinding setup approval.</p> <p>3. OPL displayed at Grinding</p> <p>4. Training provided to the operator and recorded the same</p>		25.03.23	Closed
Outflow	End Coil Squareness Out of Spec.	100% inspection of springs by making the springs stand on surface	-	25.03.23	Closed

# ONE POINT LESSON

	<h2>ONE POINT LESSON (OPL)</h2>	
<h3>Spring Loading pattern ( Front Fork )</h3>		
		Date : 24.03.2023
<h3>Section : Grinding</h3>		
<h4>OK</h4>	<h4>NOT OK</h4>	
		
<p>स्प्रिंग प्लेट मे स्ट्रेट बैठा है ये सही है</p>	<p>स्प्रिंग प्लेट मे तेढा हुआ है। ये गलत है</p>	
<p>Prepared by : Nilesh Kapure</p>	<p>Approved by : Mr. Arun Kumar</p>	

# ONE POINT LESSON



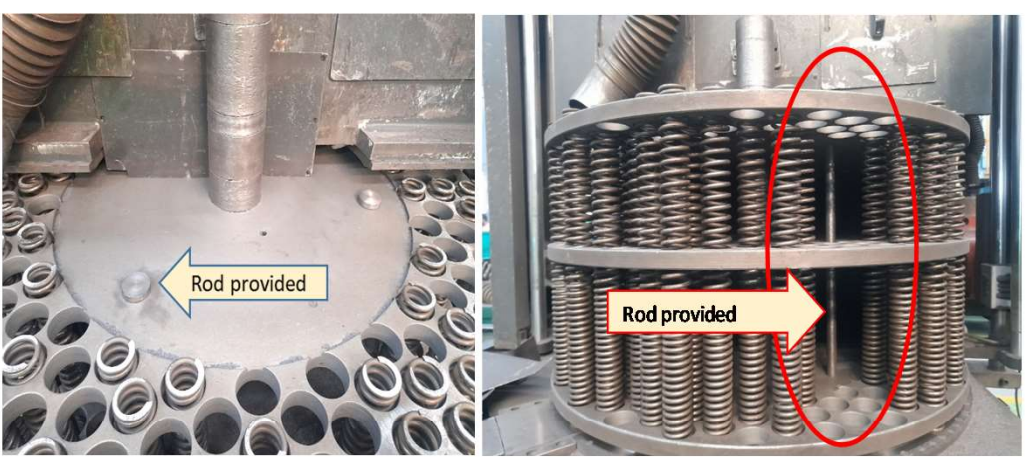
## ONE POINT LESSON (OPL) Front Fork Spring

Date : 25.03.2023

### Section : Grinding

**BEFORE**

**AFTER**



**NO ROD PROVIDED FOR ALLIGNMENT OF GRINDING PLATES**

**ROD PROVIDED FOR ALLIGNMENT OF GRINDING PLATES**

Prepared by : Nilesh Kapure

Approved by : Mr. Arun Kumar