

MAHAVIR INDUSTRIES		PROCESS FLOW DIAGRAM						Rev.00	F/NPD/04	Dt:-
K-11,MDC,Waluj,A'bad		(Piston Rod Boxer Finish Ground)						PFD No. :-150		
Customer:- Endurance Technologies Ltd. E-92/93				Cross Functional Team:Mr. RDJ, SKK, ISS.PJB,MNY,DJG				Process Identification		
Part Name:- PISTON ROD Boxer				Process Responsibility :Mr.S.K.kapgate				↓	MOVEMENT	
DRG No :- S2JL014040		Part Name:S2JL01431B		Prepared By:Mr. Mahendra Yadav				▲	STORAGE	
Drg.Rev. :XC-26.05.2021		Approved By:Mr.Ramchandra Jawale				●		PROCESS		
PFD Originating Date & Rev.No: 27/06/2021				PFD Rev. Details:- New Realise				■	INSPECTION	
PROCESS NO.	SYMBOL	Process Name / Description	Incoming source of variation	Product Characteristics	Process Characteristics	Location/ Machine	Record Title	Record No.	Retention Period	
10		Raw material Inspection	Wrong Material , Grade , OD, Other RM Mix UP	EN8A	MI- k-11 Inward Inspection	R/M inward Register k-11	F/QA/09	One Year	
20		Material Storage	Bending of bars/ MIX	Material stored in a planned manner.	No material mixing chances at storage area	MI- k-11 store	Store	F/STR/11	One Year	
30		Parting	Length Variation	173.5±0.2	Band saw cutting blade setting	MI-K-11	FFPA	F/QA/02	One Year	
40		PIP REMOVAL	HEAVY BURR AT FACE	NO BURR ON FACE		MI-K-12	FFPA			
50		Straightening	Wrong Material selected for Straightening of bar	0.05/200mm(0.04)	Setting of rollers	At k-11,Raw Mate, Sec.	HIR	F/QA/03	One Year	
60		Rough Grinding- I	Bend Job , dia.U/S & O/S. variation	Φ11.10±0.02	Blade setting,dressing of grindwheel,speed, feed,height of Blade	At k-11,Grinding Sec.	FFPA/HIR	F/QA/04	One Year	
70		Rough Grinding-II	OD Dia.U/S & O/S. varies	Φ11.00 ~11.025 mm						
80		CNC Mouting side Machining	Length Variation , OD Variation,Chamfer Variation,Runout Variation	Total Length 172.5±0.2, Before Threading OD Ø9.12-0.03, Mounting Length19±0.2, Runout 0.08, OD Chamfer 1.0x45°, OD Chamfer 0.5x45°	Tool setting, Progaming, Tool Offset, Clamping Pressure,Cutting Speed , Cutting Feed	CNC Shop At K11	FFPA/HIR	F/QA/01	One Year	
90		CNC Piston side Machining	Length Variation, OD variation,Chamfer Variation,Runout Variation	Total Length 171.5±0.2 Piston side length 23, Dia Ø6.32-0.03, Dia Ø7-0.005/-0.035, Length 10 Max, Runout 0.04 , Chamfer 0.5x45° Chamfer 1X10°, Radius 0.04 Max	Tool setting, Progaming, Tool Offset, Clamping Pressure,Cutting Speed , Cutting Feed	CNC Shop At K11	FFPA/HIR	F/QAD/01		
100		Thread rolling piston side	Variation in Thread Length Size ,Thread Damage,Thread Overlapped,Heavy Burr On Thread	Tread Size M7X1-6g, Thread Length 9mm Min	Dwell Time, Rolling pressure, Thread Roll Life Etc	Thread Roll Machine	FFPA/HIR	F/QA/05	One Year	
110		Thread Rolling Mounting side	Variation in Thread Length Size ,Thread Damage,Thread Overlapped,Heavy Burr On Thread	Tread Size M10X1.25-6g, Thread Length 18 mm Min	Dwell Time, Rolling pressure, Thread Roll Life Etc	Thread Roll Machine	FFPA/HIR	F/QA/05	One Year	
120		Final Grinding- I	Burning mark , Dent Marks,dia.U/S & O/S.	Φ10.970~10.990mm	Blade setting,dressing of grindwheel,speed, feed,height of Blade	Grinding Sec.	FFPA/HIR	F/QA/04	One Year	
130		Final Grinding-II	Burning mark , Dent Marks,dia.U/S & O/S. varies	Dia Φ10.930~10.940 mm, Surface Finish Ra0.35Max						
140		Final Inspection	Diamensional parameters not ok part OD under size ,Rejected Material at Customer end	Accepted Material.	skill of inspector	Final Inspec.Line	PDIR	F/QA/07	One Year	
150		Apply Anti Rust Coat	Rusty Rods	Accepted Material.	Apply anti rust coat	Packing section	PDIR			
160		Packing & Dispatch	Excess or Short Qty./Pack.	Std.Packing	Qty, Packing	Dispatch	Sales Invoice	F/STR/04	
Remarks :										
Prepared By					Approved By			Page 1/1		