TUBE INVESTMENTS OF INDIA LIMITED
PLOT NO 45, PK8 SONAL ESTATE
KHODA, SANAND-382110, AHMADABAD

PPAP

DOCUMENT

CUSTOMER :

Endurance Technologies Limited.

SUSPENSION DIVISI, PLOT NO. E-4,E-21, SANAND PHASE - 2 INDUSTRIAL ESTATE SANAND GIDC AHMADABAD

SUPPLIER : -

TUBE INVESTMENTS OF INDIA LIMITED

PLOT NO 45 PK8 SONAL ESTATE
KHODA, SANAND-382110, AHMADABAD

COMPONENT: -

Sr. No.	Part Name	Drawing No.	Rev.
1	Fork Pipe Machined(K86)	F1FA01333O	XB

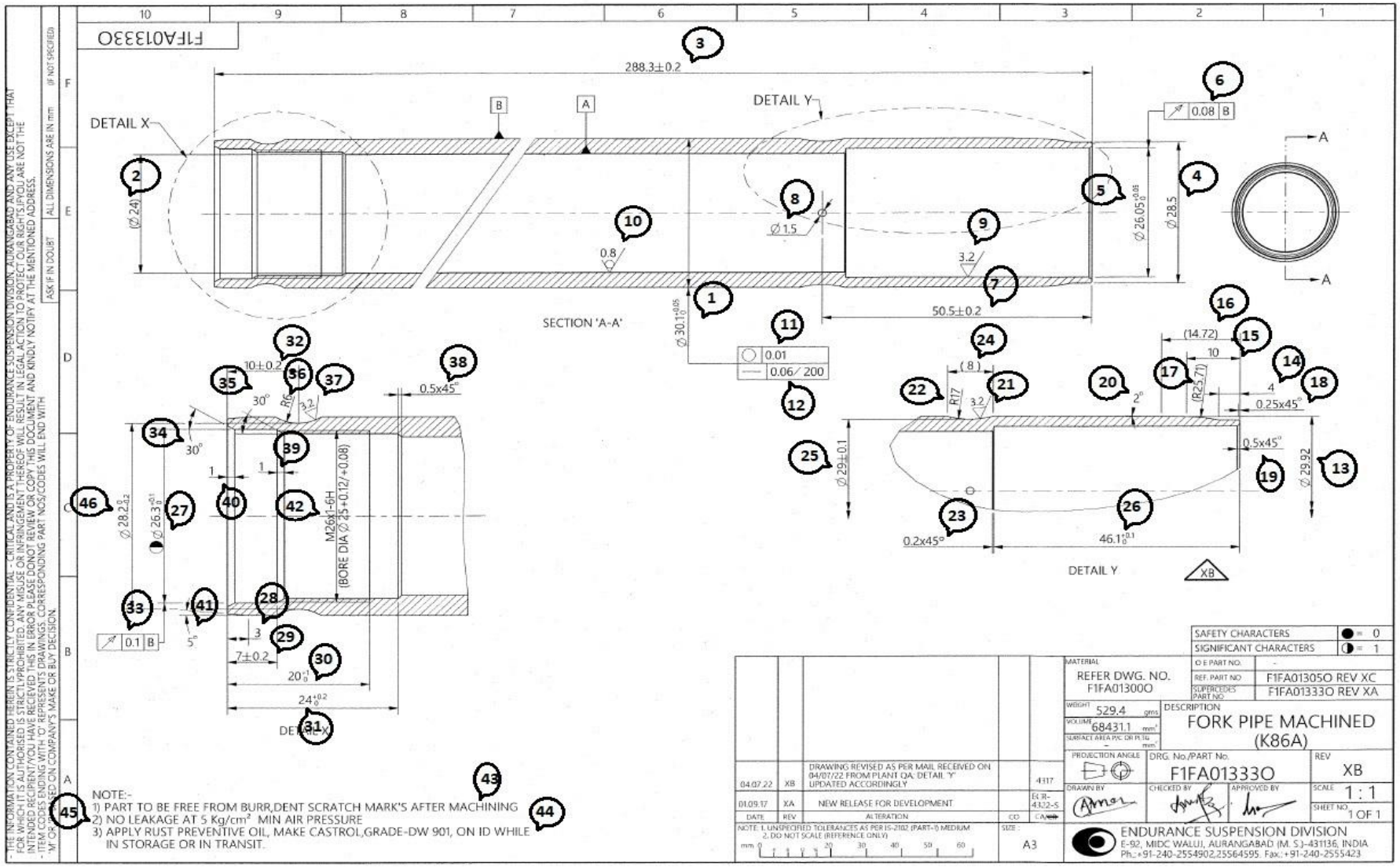
PPAP DOCUMENT VERIFICATION CHECK LIST

				Date	19-02-2024
Supplier Name :	TUBE INVESTMENTS OF INDIA LIMITED	Location	KHODA, SANAND	Supplier Code	101109
Part Description	Fork Pipe Machined(K86A)	Part No.:	F1FA01333O - XB	Model:	Honda

Sr. No.	Document Title	Requirements	Verification By Supplier	Verification By ETPL	Remarks
1	**Design Record**				
	A. Drawing with baloon Marking	Yes	YES		
	B. Bill of Material	-			
	C. Testing Standard	Yes	YES		
2	**Engineering Change Documents, If Any**	-			
3	**Customer Engg. Approval, If Required**	-			
4	**Design FMEA, If Applicable**	-			
5	**Process Flow Diagram**	Yes	YES		
6	**Process FMEA**	Yes	YES		
7	**Dimensional Report**				
	A. Layout Inspection Report	Yes	YES		
	B. PDI Report	Yes	YES		
8	**Material / Performance Test Report**				
	A. Mechanical Properties Test Report	Yes	YES		
	B. Chemical Properties Test Report	Yes	YES		
	C. Functional Test Report (SST, CASS, Validation Test)				
9	**Initial Process Study**				
	A. List of Significant Parameter	Yes	YES		
	B. Process capability Study for all significant parameter.	Yes	YES		
	C. Study of Fitment, Function & aesthetic Parameter	Yes	NA		
	D. List of Pokayoke	Yes	NA		
10	**Measurement System Analysis Studies**	Yes	YES		
11	**Qualified Laboratory Documentation**	Yes	YES		
12	**Control Plan**	Yes	YES		
13	**Part Submission Warrant**				
	A. Weight Details	Yes	YES		
	B. PSW with weight as per sheet A	Yes	YES		
14	**Appearance Approval Report**	Yes	YES		
15	**Bulk Material Requirement**	-			
16	**Sample Product**	Yes			
17	**Master Sample**	Yes	YES		
18	**Checking Aids**	Yes	YES		
19	**Other Document**				
	A. Packing standard	Yes	YES		
	B. Raw material source or outsource Supplier details	Yes	YES		
	C. Manufacturing Process details	Yes	NO		
	D. Supplier Contact Details	Yes	YES		

Observation:

Mr. Pakak Shah	Mr. Anand Nagare	
Prepared By (Supplier)	Checked By (Supplier)	Approved By (ETPL)



NOTE:-
1) PART TO BE FREE FROM BURR,DENT SCRATCH MARK'S AFTER MACHINING
2) NO LEAKAGE AT 5 Kg/cm² MIN AIR PRESSURE
3) APPLY RUST PREVENTIVE OIL, MAKE CASTROL,GRADE-DW 901, ON ID WHILE IN STORAGE OR IN TRANSIT.

DATE	REV	ALTERATION	CO	CA
04.07.22	XB	DRAWING REVISED AS PER MAIL RECEIVED ON 04/07/22 FROM PLANT QA; DETAIL 'Y' UPDATED ACCORDINGLY	4317	
01.09.17	XA	NEW RELEASE FOR DEVELOPMENT	EE'R-4302-S	

NOTE: 1. UNSPECIFIED TOLERANCES AS PER IS-2102 (PART-1) MEDIUM
2. DO NOT SCALE (REFERENCE ONLY)

SIZE : A3

SAFETY CHARACTERS	● = 0
SIGNIFICANT CHARACTERS	◑ = 1
MATERIAL	REFER DWG. NO. F1FA01300O
O E PART NO.	-
REF. PART NO	F1FA01305O REV XC
SUPERCEDES PART NO	F1FA01333O REV XA
WEIGHT	529.4 gms
VOLUME	68431.1 mm³
SURFACE AREA P/C OR PLTG	- mm²
DESCRIPTION	FORK PIPE MACHINED (K86A)
PROJECTION ANGLE	
DRG. No./PART No.	F1FA01333O
REV	XB
DRAWN BY	Aman
CHECKED BY	
APPROVED BY	
SCALE	1 : 1
SHEET NO.	1 OF 1

ENDURANCE SUSPENSION DIVISION
E-92, MIDC WALUJ, AURANGABAD (M. S.)-431136, INDIA
Ph.:+91-240-2554902,25564595. Fax.:+91-240-2555423

ALL DIMENSIONS ARE IN mm | IF NOT SPECIFIED | ASK IF IN DOUBT

Sr No.	TESTING STANDARDS
1	Material Specifications : SAE1541 (ASTM J403)
2	Mechanical Testing : JIS G3445 Z2201

PROCESS FLOW DIAGRAM

	Vendor Name :	Tube Product of India Ltd						Doc.No :	GE/PFD-02	
	Part No.:F1FA01333O	REV :XB						Doc.Ref :		
	Part Desc.:Front Fork	Fork pipe plated (K86A)						Date:	09.01.2024	
SEQ NO	Process & Description	Raw Material Source	Symbols					Machine(s) / Equipment(s) used	Desired Outcome/ Product characteristics	Process Characteristics
			OPERATION	INSPECTION	DECISION	TRANSPORT	STORAGE			
10	R/M FROM T.I.		******							
	R/M INSPECTION			******	******				AS PER QUALITY PLAN	
	R/M STORAGE						******			
20	CNC MACHINING CAULKING SIDE		******	******	******			CNC MACHINE	Ø 26.05 (+0.05/+0.0) & 46.1 +0.1/-0.0 MM	
30	CNC MACHINING		******	******				CNC MACHINE	BORE-46.10,TOTAL LENGTH - 288.30, THRED - M26	
40	DRILLING		******	******				DRILLING SPM	DRILLING-1.5MM	
50	DE-BURRING		******	******					I D CLEAN	
60	OILING		******							
70	FINAL INSPECTION			******	******				AS PER QUALITY PLAN	
80	DESPATCH					******				

Prepared By : Mr. Palak Shah

Approved By : Mr. Anand Nagare

LAYOUT INSPCETION REPORT

CUSTEMER NAME :-	**ENDURANCE TECHNOLOGIES LTD**	**INOVICE NO :**	**3027010044424**
MODEL NAME-	**Fork Pipe Machined**	**DATE :**	**23-Jan-24**
CUSTEMER PART NO :-	**F1FA01333O**	**LOT SIZE :**	**110 N0s**
MODEL:-	**(K86A)**	**SAMPLE SIZE :**	**05 NOS**
REV. :-	**XB**		

Sr.No	Parameters	Specification	Inspection Method	Observation					Remarks
				1	2	3	4	5	
1	RM OD	30.1 +0.05	Micrometer	30.15	30.14	30.14	30.16	30.14	OK
2	RM ID	24	Vernier Caliper	23.88	23.88	23.91	23.89	23.91	OK
3	Total Length	288.3 ± 0.2	Height Gauge	288.35	288.45	288.46	288.34	288.36	OK
4	Caulking Side OD	28.5	Snap Gauge/ Vernier	28.60	28.66	28.60	28.59	28.54	OK
5	Caulking ID	26.05+0.05	plug gauge/Vernier	26.07	26.08	26.07	26.07	26.07	OK
6	Caulking Side Run Out	0.08	Dial gauge with fixture	0.04	0.05	0.03	0.03	0.05	OK
7	Drilling length	50.50 ± 0.2	Vernier Caliper	50.50	50.60	50.57	50.55	50.58	OK
8	Drill Hole	1.5	STD Pin	1.48	1.52	1.54	1.50	1.48	OK
9	Caulking side surfaceRA	3.2	Roughness Tester	1.33	1.334	1.977	1.495	1.547	OK
10	RM ID RA	0.8	Roughness Tester	0.215	0.121	0.187	0.290	0.347	OK
11	Circularaty	0.01	Micrometer	0.008	0.006	0.007	0.009	0.004	OK
12	Straighness	0.06/200	Dial gauge with fixture	0.01	0.03	0.04	0.04	0.03	OK
13	OD after turning	29.92	PP	29.851	29.989	29.924	29.937	29.955	OK
14	OD turning length	4	Contracer/PP	4.084	4.097	4.094	4.098	4.073	OK
15	OD turning length	10	Contracer/PP	10.188	10.191	9.956	10.132	10.030	OK
16	OD turning length	14.72	Contracer	17.7281	15.8933	16.1135	16.1398	17.8638	OK
17	Radius	R25.71	Contracer/ Machine Program	25.8706	25.2722	25.1808	25.6244	25.0878	OK
18	chamfer	0.25X45˚	Contracer/PP	0.2245*4 5°11'47''	0.2038*4 4°41'47''	0.2125*4 4°47'50'	0.2027*4 4°56'17''	0.2157*4 4°45'36''	OK
19	chamfer	0.5X45˚	Contracer/PP	0.5861*4 5°12'44''	0.5421*4 5°11'38''	0.5011*4 5°18'37''	0.5523*4 4°37'39''	0.5567*4 5°28'54''	OK
20	Angle	2˚	Contracer/PP	1°10'30''	1°55'43''	1°15'22''	1°10'54''	1°28'39''	OK
21	Roughness	3.2 Ra	Roughness Tester	1.705	1.209	1.240	1.267	1.125	OK
22	Radius	R17	Contracer/PP	17.7097	17.8916	17.8746	17.3117	17.3056	OK
23	Chamfer	0.2X45˚	Contracer/PP	0.2155*4 5°17'40''	0.2052*4 4°41'44''	0.2027*4 4°45'47'	0.2249*4 5°14'48''	0.2368*4 5°21'26''	OK
24	Grove	8	PP/Vernier Caliper	8.08	7.76	8.03	7.80	7.79	OK
25	Drill Raduis OD	29 ± 0.1	Vernier Caliper	29.08	29.07	29.10	29.09	29.06	OK
26	Caulking Bore Depth	46.10 +0.10	plug gauge/Vernier	46.14	46.15	46.17	46.15	46.11	OK
27	Threading Side ID	26.3+0.1	Inside vernie Caliper / ID Gun	26.33	26.34	26.36	26.37	26.38	OK
28	OD turning length	3	Contracer/PP	3.057	3.078	3.012	3.014	3.011	OK
29	ID Depth	7±0.2	Contracer/PP/Vernier Caliper	6.98	7.10	6.95	7.09	6.82	OK
30	Threading length	20 + 0.1	Contracer/PP/plug gauge	20.15	20.11	20.16	20.14	20.55	OK
31	Total depth	24+0.2	Vernier Caliper	24.17	24.14	24.03	24.12	24.11	OK
32	Groove Width	10 .0±0.2	Contracer/PP/Vernier Caliper	10.19	10.19	9.96	10.13	10.03	OK
33	Run out	0.1	Dial gauge with fixture	0.097	0.081	0.091	0.069	0.083	OK
34	Angle	30˚	Contracer/ Machine Program	30°12'51''	30°26'50''	30°23'48''	30°30'57''	30°26'33''	OK
35	Angle	30˚	Contracer/ Machine Program	30°21'50''	29°40'50''	29°45'28''	29°55'51''	30°20'34''	OK
36	Radius	R6	Contracer/ Machine Program	5.31	5.37	5.33	5.27	5.32	OK
37	Roughness	3.2 Ra	Roughness Tester	1.705	1.209	1.240	1.267	1.125	OK
38	Thread side chamfer angle	0.5X45˚	Contracer/PP/ Machine Program	0.5861*4 5°12'44''	0.5244*4 5°17'40''	0.5111*4 5°14'25''	0.5030*4 5°11'34''	0.5734*4 5°11'34''	OK
39	Dimension	1	Contracer/PP/ Machine Program	1.024	1.058	1.058	1.055	1.044	OK
40	Dimension	1	Contracer/PP/ Machine Program	1.022	0. 9875	0. 9752	1.002	1.046	OK
41	Angle	5˚	Contracer/PP/ Machine Program	5°39'55''	5°34'52''	5°30'46''	5°37'04''	5°29'31''	OK
42	Threading	M26x1-6H	Threading Plug Gauge	OK	OK	OK	OK	OK	OK
46	Threading Side ID	28.2-0.2	Contracer/PP/Vernier Caliper	28.11	28.17	28.13	28.12	28.13	OK
43	Free From Burr, Dent & Scratch Mark after		Visual	OK	OK	OK	OK	OK	OK
44	Apply Rust Preventive Oil		Visual	OK	OK	OK	OK	OK	OK

Remark :-

INSPECTED BY :- Abishek Yadav

APPRODED BY :- Palak Shah

TPI Warehouse Work Test Certificate

TUBE INVESTMENTS OF INDIA
TUBE PRODUCTS OF INDIA - GUJARAT C & F
GAJANAN ENGINEERS, E497,HIRAPUR INDUSTRIAL ESTATE, NEAR BOL VILLAGE, SANAND - II, AHMADABAD - 382110

Customer	:ENDURANCE TECHNOLOGIES LIMITED	WTC NO: **PGCD2410352**
	:(SUSPENSION DIVISION)	Date:23-JAN-24
	:PLOT NO. E-4,E-21, SANAND PHASE -2	
	:INDUSTRIAL ESTATE SANAND - GIDC AHMEDABAD	
	:CITY-AHMEDABAD State-GUJARAT PinCode-382110	
Itemcode	:3D1799126268105T Plant STN No - PAH-STN-12003	
Description	:30.10 X 24.00 X .00 X 288.30 X C/L X CDWCOMP X 101187 X MANI	
Ex.Inv.NO & Dt	:PGC-GST-44613 & 23-JAN-24	
Ar.Inv.NO & Dt	:3027010044424 & 23-JAN-24	**Quantity**
Ind/Classf	:FRONT FORK - MANIPULATED	**No :110**
Specificaion	:SAE 1541- K86 DRUM/DISC	**Mtr :30**
Heat No	:A527597 **Job No:** AFF23AB03010028	**Ton :.062**

Tube Size (mm)	OD		ID		Thick		Length	
	30.10		24.00				288.3	
Tolerance (mm)	Min	Max	Min	Max	Min	Max	Min	Max
	-0.0	+0.08	-0.15	+0.0			-0.20	+0.20

Dimensions	UOM	Spec		Actual	
		Min	Max	Min	Max
OD	MM	30.10	30.18	30.1	30.18
ID	MM	23.85	24.00	23.85	24
Thick	MM			0	0
Length	MM	288.10	288.50	288.1	288.5

Chemical %	Spec		Actual
	Min	Max	
Carbon	0.360	0.440	0.411
Manganese	1.350	1.650	1.480
Sulphur		0.050	0.003
Phosphorous		0.040	0.018
Silicon	0.150	0.300	0.178
Aluminium			
Copper			
Chromium			
Nickel			
Vanadium			
Titanium			
Boron			
Niobium			

Dimensions	Spec	Actual
Straightness	0	
Fin Height		
Ovality OD		
Ovality ID		
Concentricity		

	Min	Max	Actual
OD Cham Dim MM			
Land Dim MM			
OD Cham Ang Deg			
ID Cham Ang_Deg			
Visual	Free from Burr, Rust and Dent		

Destructive Test	Spec	Actual
Flattening		
Rev., Flattening		
Flange		
Crushing		
Flare		
Impact Test		
NonDestruct Test	**Spec**	**Actual**
Eddy Current		NO FLAW
Pressure		
Ultrasonic		

Mechanical	UOM	Spec		Actual
		Min	Max	
UTS	MPA	863		1037.78
YST	MPA	715		960.23
%Elongation		15		18
Hardness	HRC	24	32	30
Sur Fin OD				
Sur Fin ID	RA MAX		.8	.7
Grain Size				

Marking :
Prepared By :

For Tube Products of India

Signature

Digital Test Report generated from ERP, therefore no signature is required

TUBE INVESTMENTS OF INDIA LIMITED

Mechanical Test Certificate

Sr No.	Parameters	Required	Observed
1	UTS (Mpa)	863 Min	1037.78
2	YS (Mpa)	715 Min	960.23
3	Elongation %	15% Min	1800%
4	Hardness HRC	24+/-4	30

Prepared By
Palak Shah

Approved By
Anand Nagare

TUBE INVESTMENTS OF INDIA LIMITED

Chemical Properties

Chemical	% C		%Mn		% Si	%S	%P
	Min	Max	Min	Max	Max	Max	Max
Required Dimension	0.36	0.44	1.35	1.65	0.3	0.05	0.04
Observed Dimension	0.411		1.48		0.178	0.003	0.018

Prepared By
Palak Shah

Approved By
Anand Nagare

SUMMARY OF INITIAL PROCESS STUDIES

Part Name: Fork Pipe Machined(K86) **Part No. & Rev:** F1FA01333OXB

Supplier Name: TUBE INVESTMENTS OF INDIA LIMITED ,PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND

Sr No.	Special Characteristics description	Class	Specs	Instrument / Gauge	Least Count	Variable / Attribute	Target (Pp, Ppk) or (Cp, Cpk)	Actual (Pp, Ppk) or (Cp, Cpk)	Justification / Remarks
1	**Thread Side Bore Dia.26.3 +0.1/0**		**26.3 +0.1/0**	Dial Bore Gauge	0.01 mm	Variable		CP : 2.31 CPK : 1.69	OK

Prepared by : Abishek Yadav Date :- 22.01.2024

Checked by :- Palak Shah Date :- 22.01.2024

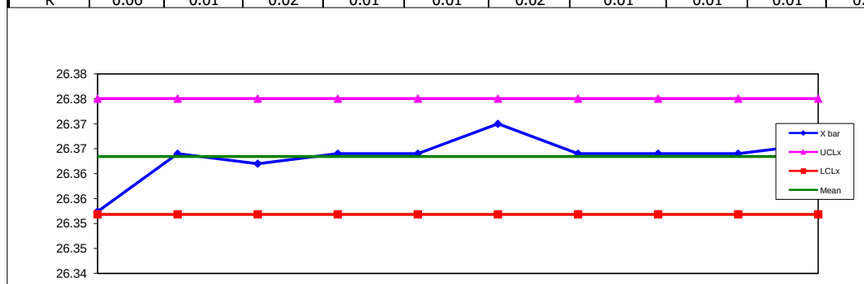
Approved by :- Anand Nagare Date :- 22.01.2024

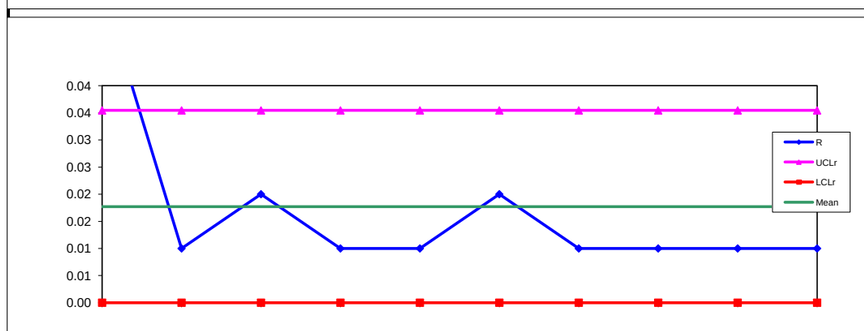
1. Significant Characteristics

2. Safety Significant Characteristics

Statistical Process Capability Analysis

PART NUMBER :				Description of Significant/Critical Char.			SPECIFICATION (MM)		Date of Production	
PART NAME:Inner tube fork pipe							Upper limit	Lower limit	22.01.2024	
Size :Dia. 30.10 x 24 x 288.3 mm (Honda - Model)				26.30+0.1			26.400	26.300	Inspector Name	
Machine :Marshal Machine									*Abishek*	
INSTRUMENT NO:				INSTRUMENT NAME: Bore guage						
Time	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30
Sample group / Sample no.	1	50	100	150	200	250	300	350	400	450
X1	26.38	26.37	26.37	26.37	26.37	26.38	26.36	26.37	26.37	26.37
X2	26.36	26.36	26.36	26.36	26.36	26.37	26.37	26.36	26.36	26.37
X3	26.34	26.36	26.37	26.36	26.36	26.37	26.36	26.36	26.36	26.36
X4	26.32	26.36	26.36	26.37	26.36	26.36	26.36	26.36	26.37	26.36
X5	26.36	26.37	26.35	26.36	26.37	26.37	26.37	26.37	26.36	26.37
X bar	26.35	26.36	26.36	26.36	26.36	26.37	26.36	26.36	26.36	26.37
R	0.06	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01





Process capability Results			
Grand X bar	=	***26.36***	Average of all sample readings
R bar	=	***0.02***	Average of indivisual ranges
Sigma	=	***0.01***	R bar/d2 = R bar/2.33
UCLx	=	***26.38***	Grand X bar + (A2xR bar)
LCLx	=	***26.35***	Grand X bar - (A2xR bar) (where A2 = 0.577 for 5 samples)
UCLr	=	***0.04***	R bar x D4 (where D4 = 2.11)
LCLr	=	***0.00***	R bar x D3 (where D3 = 0)
Cp	=	***2.31***	(USL-LSL) / (6xSigma)
Cpk-1		1.69	(USL-Xbar) / (3xSigma)
Cpk-2		2.933	(Xbar-LSL) / (3xSigma)
Cpk	=	***1.69***	(The lower one from Cpk-1 & Cpk-2)

OTHER REMARKS

Conducted By: Abishek Yadav

GAUGE REPEATABILITY & REPRODUCIBILITY STUDY

murugappa

Location: TPI Shirwal	Dt. of study	Work order no.				Size (mm)	30.1 x 24 x 290.50		Instrument Name		Micrometer
	09.01.2024	Specification		SAE 1541		Customer	ETPL		Instrument Type		Flat
Characteristics	OD	Tolerance (mm)		30.10 +0.08/-0.0		Tolrance range	0.08		Instrument Range & LC		25-50 mm
(r)No of Trials	3	Appraiser	3	No. of parts(n)	10	Instrument Code:			Instrument LC:		0.01 mm

Operator / Trial	Part										Average	
	1	2	3	4	5	6	7	8	9	10		
Operator 1	30.07	30.05	30.06	30.07	30.05	30.05	30.05	30.06	30.05	30.06		30.057
`A' 2	30.07	30.05	30.06	30.07	30.05	30.05	30.05	30.06	30.05	30.06		30.057
3	30.07	30.05	30.06	30.06	30.05	30.05	30.05	30.06	30.05	30.06		30.056
Average	30.0700	30.0500	30.0600	30.0667	30.0500	30.0500	30.0503	30.0600	30.0500	30.0600	Xa =	30.0567
Range	0.0000	0.0000	0.0000	0.0100	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000	Ra =	0.0011
Operator 1	30.07	30.05	30.06	30.06	30.05	30.05	30.05	30.06	30.05	30.05		30.055
`B' 2	30.07	30.06	30.06	30.06	30.05	30.05	30.05	30.06	30.05	30.06		30.057
3	30.07	30.05	30.06	30.06	30.05	30.05	30.05	30.06	30.05	30.06		30.056
Average	30.0700	30.0533	30.0600	30.0600	30.0500	30.0500	30.0510	30.0600	30.0500	30.0567	Xb =	30.0561
Range	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0100	Rb =	0.0020
Operator 1	30.07	30.05	30.06	30.06	30.05	30.05	30.05	30.06	30.05	30.06		30.056
`C' 2	30.07	30.05	30.06	30.06	30.05	30.05	30.06	30.06	30.05	30.06		30.057
3	30.07	30.05	30.06	30.06	30.05	30.05	30.05	30.06	30.05	30.06		30.056
Average	30.0700	30.0500	30.0600	30.0600	30.0500	30.0500	30.0533	30.0600	30.0500	30.0600	Xc =	30.0563
Range	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0100	0.0000	0.0000	0.0000	Rc =	0.0010
Part average(Xp)	30.0700	30.0511	30.0600	30.0622	30.0500	30.0500	30.0516	30.0600	30.0500	30.0589	X	30.0564

$\bar{\bar{R}} = (\bar{Ra} + \bar{Rb} + \bar{Rc}) / [\text{No. of appraisers}) =$	0.0014	CONSTANTS								Rp	0.0200
		Parts	2	3	4	5	6	7	8	9	10
$\bar{X}$ diff = $[\text{Max } \bar{X}] - [\text{Min } \bar{X}] =$	0.0006	K3	0.71	0.52	0.45	0.40	0.06	0.06	0.05	0.05	0.05
$UCL_{\bar{R}} = \bar{\bar{R}} * D_4 =$	0.0035	Appraisers	2	3	Trials	2	3	Trials	2	3	
If any Range Value is Greater than UCL_R (Highlighted) then identify the cause & correct.Recompute R		K2	0.71	0.52	K1	0.89	0.59	D_4	3.27	2.58	

Repeatability- Equipment Variation(EV)

$EV = \sqrt{\bar{\bar{R}} * K1}$

0.000807427

Reproducibility-Appraiser Variation (AV)

$AV = \sqrt{(X_{DIFF} * K_2)^2 - (EV^2/nr)}$

0.0002771

Repeatability & Reproducibility (GRR)

$GRR = \sqrt{EV^2 + AV^2}$

0.000853648

Part Variation (PV)

PV = Rp * K3

0.010462

Total Variation (TV)

$TV = GRR^2 + PV^2$

0.010496769

% of Total Variation (TV)

% of Equipment Variation (%EV)=(100*[EV/TV])

= 7.7%

% of Appraiser Variation (%AV)=(100*[AV/TV])

= 2.6%

% of Gauge R&R (%GRR)=(100*[GRR/TV])

= 8.1%

% of Part Variation (%PV)=(100*[PV/TV])

= 99.7%

No. of Distinct Charectristics (ndc) = 1.41(PV/GRR)

= 17.280451

Acceptance Criteria :

1) The No. of Distinct Charectristics (ndc) should be greater than 5

2) The % R&R should be

A) Under 10% Error - The Measurement system is acceptable

B) 10% ~ 40% of Error - The measurement System is Conditionally Acceptable based on

a)Cost of Instrument is high.

b)The Process Capability (Cpk) is More than 1.67

c)the Charectristic Studied is not a Special Charectristic

C) Over 40% Error - Measurement System is not acceptable.Identify the problem & take Coorective Action.

CONCLUSION : Measuring System is Acceptable

TI INDIA murugappa		**QUALIFIED LABORATORY FOR TESTING & CALIBRATION**		**Page: 01/01** **Date: 17.02.2024**
1	Swastik Gauges and Tools	Plug Gauge / Snap Gauge	Master Slip gauge	
2	TMTG	Thread Plug Gauge	Floating Carriage Dia. Measuring M/c	
3	Mitutoyo	Vernier Caliper	Caliper Checker	
4	Mitutoyo	Micrometer	Tungston carbide slip Gauge Set	
5				

REVIEWED BY - Palak Shah

APPROVED BY - Anand Nagare

PRODUCT WEIGHT DETAILS

Part Name: Fork Pipe Machined(K86) **Part No. & Rev: F1FA01333O**

Supplier Name:- TUBE INVESTMENTS OF INDIA LIMITED ,PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND

Sr No.	Weight in Kgs (upto 3 decimels)	Remarks
1	**0.546**	OK
2	**0.546**	OK
3	**0.546**	OK
4	**0.546**	OK
5	**0.546**	OK
6	**0.546**	OK
7	**0.546**	OK
8	**0.546**	OK
9	**0.546**	OK
10	**0.546**	OK
Average	**0.546**	OK

Prepared by: - Mr. Palak Shah **Date:** 22.01.2024

TUBE INVESTMENTS OF INDIA LIMITED ,
PLOT NO 45, PK8 SONAL ESTATE, KHODA, SANAND, AHMADABAD

Part Submission Warrant

Part Name **Fork Pipe Machining(K86A)** Cust. Part Number **F1FA01333O**

Shown on Drawing No :-- F1FA01333O Org. Part Number _____

Engineering Change level XB Dated 04.07.2022

Additional engineering changes:_____ Dated_____

Safety and/or government regulation ☐ Yes ☒ No. Purchase Order No. _____ . Weight (kg) **0.546**

Checking Aid No_____ Checking Aid Engineering Change Level _____ Dated_____

ORGANIZATION MANUFACTURING INFORMATION

TUBE INVESTMENTS OF INDIA LIMITED ,PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND

Organization Name & Supplier / Vendor Code 101109

TUBE INVESTMENTS OF INDIA LIMITED ,PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND

Street Address

Ahemdabad GJ 382110 INDIA

City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

Endurance Technologies Limited. SUSPENSION DIVISI PLOT NO. E-4,E-21, SANAND PHASE -2 INDUSTRIAL ESTATE SANAND GIDC AHMADABAD

Customer Name/Division

Mr,Diyesh Patel

Buyer/Buyer code

Automobile TFF

Application

MATERIALS REPORTING

Has customer required Substances of Concern information been Reported? Yes ☒ No ☐ n/a

Submitted by IMDS or other customer format: IMDS Submited

Are polymeric parts identified with appropriate ISO marking codes? Yes ☐ No ☐ ☒ n/a

REASON FOR SUBMISSION

- ☐ Initial Submission
- ☐ Engineering change(s)
- ☐ Tooling: Transfer,Replacement, Refurbishment or Additional.
- ☐ Correction of Discrepancy
- ☐ Tooling Inactive > than 1 year
- ☐ Change of Optional Construction or Material
- ☐ Supplier or Material Source Change
- ☐ Change in Part Processing
- ☒ Part produced at New / additional location
- ☐ Other - Change in the Equipment of Final Tempering

REQUESTED SUBMISSION LEVEL (Check one)

- ☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
- ☐ Level 2 - Warrant with product samples & limited supporting data submitted to customer.
- ■ Level 3 - Warrant with product samples & complete supporting data submitted to customer.
- ☐ Level 4 - Warrant & other requirements as defined by customer.
- ☐ Level 5 - Warrant with product samples & complete supporting data reviewed at organization's manufacturing location.

SUBMISSION RESULTS

The results for ☒ dimensional measurements ☐ material and functional tests ☒ appearance criteria ☐ statistical process package. The results meet all drawing and specification requirements Yes N☒ If "NO" - Explan

Mold / Cavity / Production Process _____

DECLARATION

I affirm that the sample represented by this warrant are representative of our parts, have been made to the applicable Production Part Approval Process Manual 4th Edition requirements. I further affirm that these samples were produced at the production rate of 56 nos-/-hours. I also certify that documented evidence of such compliance is on file & available for review. I have noted any deviation from this declaration below.

EXPLANATION/COMMENTS

Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☒ n/a

Organization Authorized Signature Anagore 19.02.2024

Print Name :- MR. Anand Nagare Phone no _ 9158558961 FAX No._____

Title _____ Sr. Exec. Quality & Cust. Support E-mail _____ anandms@tii.murugappa.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other _____

Customer Signature _____ Date _____

Print Name Customer Tracking Number (optional)

APPERANCE APPROVAL REPORT

Date : 23.01.2024

Part Name: Fork Pipe Machined(K86) **Model: Honda**

Part No.: F1FA01333O

Sr. No.	Components	Mode of Checking	Control Method	Finish Required / Specification	Observation	Remark
1	Fork Pipe Machined(K86)	Visual	Applicaion of antirust oil	No Rust	Ok	Ok
				Dent & Damage	Ok	Ok
				Heavy Scratch Mark	Ok	Ok

Prepared By - Mr. Palak Shah

Approved By - Mr. Anand Nagare

Master Sample Identification Card

Part Name	**Fork Pipe Machined(K86)**
Part Number	**F1FA01333O**
Rev No. & Date	**XB**
Date of PSW Approval	
Printing Identification Details	
Sample Identification Details	
Project Reference	
Storage Location	
Validity date	

Approved by

Supplier- Head Quality	**TPI QA**
Date 23.01.2024	**Date**

CHECKING AIDS

Model HONDA
Part Name :- Fork pipe Macined (K86 -A)
Part No. F1FA01333O
Customer Part No : F1FA01333O

Date 16.02.2024
Rev. No. XB

Sr. No.	Parameter	Specification	Gauge Type	Availability	Resp.	Target Date	Remark
1	RM OD	30.1 +0.05	Micrometer	Yes	---	---	OK
2	RM ID	24	Vernier Caliper	Yes	---	---	OK
3	Total Length	288.3 ± 0.2	Height Gauge	Yes	---	---	OK
4	Caulking Side OD	28.5	Snap Gauge/ Vernier	Yes	---	---	OK
5	Caulking ID	26.05+0.05	plug gauge/Vernier	Yes	---	---	OK
6	Caulking Side Run Out	0.08	Dial gauge with fixture	Yes	---	---	OK
7	Drilling length	50.50 ± 0.2	Vernier Caliper	Yes	---	---	OK
8	Drill Hole	1.5	plug gauge	Yes	---	---	OK
9	Caulking side surfaceRA	3.2	Roughness Tester	Out side	---	---	OK
10	RM ID RA	0.8	Roughness Tester	Out side	---	---	OK
11	Circularaty	0.01	Micrometer	Yes	---	---	OK
12	Straighness	0.06/200	Dial gauge with fixture	Yes	---	---	OK
13	OD after turning	29.92	Micrometer	Yes	---	---	OK
14	OD turning length	4	Vernier Caliper	Yes	---	---	OK
15	OD turning length	10	Vernier Caliper	Yes	---	---	OK
16	OD turning length	14.72	Vernier Caliper	Yes	---	---	OK
17	Radius	R25.71	Contracer/ Machine Program	Out side	---	---	OK
18	chamfer	0.25X45°	Contracer/ Machine Program	Out side	---	---	OK
19	chamfer	0.5X45°	Contracer/ Machine Program	Out side	---	---	OK
20	Angle	2°	Contracer/ Machine Program	Out side	---	---	OK
21	Roughness	3.2 Ra	Roughness Tester	Out side	---	---	OK
22	Radius	R17	Contracer/ Machine Program	Out side	---	---	OK
23	Chamfer	0.2X45°	Contracer/ Machine Program	Out side	---	---	OK
24	Grove	8	Vernier Caliper	Yes	---	---	OK
25	Drill Raduis OD	29 ± 0.1	Vernier Caliper	Yes	---	---	OK
26	Caulking Bore Depth	46.10 +0.10	plug gauge/Vernier	Yes	---	---	OK
27	Threading Side ID	26.3+0.1	plug gauge	Yes	---	---	OK
28	OD turning length	3	Vernier Caliper	Yes	---	---	OK
29	ID Depth	7±0.2	Depth Plug Gauge/Vernier	Yes	---	---	OK
30	Threading length	20 + 0.1	plug gauge	Yes	---	---	OK
31	Total depth	24+0.2	Vernier Caliper	Yes	---	---	OK
32	Groove Width	10 .0±0.2	Vernier Caliper	Yes	---	---	OK
33	Run out	0.1	Dial gauge with fixture	Yes	---	---	OK
34	Angle	30°	Contracer/ Machine Program	Out side	---	---	OK
35	Angle	30°	Contracer/ Machine Program	Out side	---	---	OK
36	Radius	R6	Contracer/ Machine Program	Out side	---	---	OK
37	Roughness	3.2 Ra	Roughness Tester	Out side	---	---	OK
38	Thread side chamfer angle	0.5X45°	Contracer/ Machine Program	Out side	---	---	OK
39	Dimension	1	Contracer/ Machine Program	Out side	---	---	OK
40	Dimension	1	Contracer/ Machine Program	Out side	---	---	OK
41	Angle	5°	Contracer/ Machine Program	Out side	---	---	OK
42	Threading	M26x1-6H	Threading Gauge	Yes	---	---	OK
46	Threading Side ID	28.2-0.2	Vernier Caliper	Yes	---	---	OK
43	Free From Burr, Dent & Scratch Mark after Machining		Visual	Yes	---	---	OK
44	Apply Rust Preventive Oil		Visual	Yes	---	---	OK

Remark-

Prepared By: Palak Shah

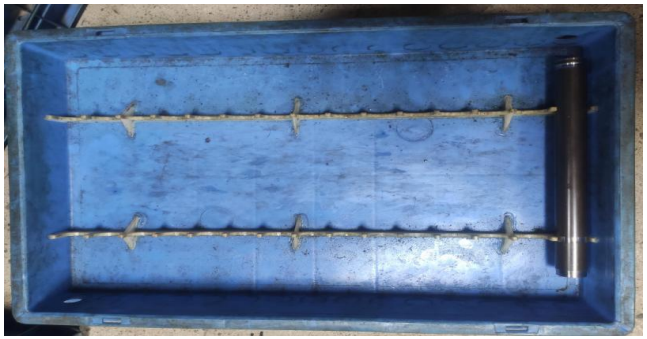
Approved By: Anand Nagare

PACKING STANDARD

Product Name	Fork pipe Macined (K86A)	**Product No**	F1FA01333O	**Model**	Honda	**Pallet Packing/Trollies Details**

Customer Name	**Endurance Technologies Limited. PLOT NO. E-4,E-21, SANAND PHASE -2 INDUSTRIAL ESTATE SANAND GIDC AHMADABAD**	**Supplier Name**	**TUBE INVESTMENTS OF INDIA LIMITED , PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND, AHMADABAD**	**Pallet/Box/Trollies Dim**

Photograph of Final Packing (One Unit)



Photograph of Final BIN from WH to ETL

L	W	H
590	390	70
Weight (Empty)	1.46 Kg	
Weight (Final)	9.65 Kg	
Qty/ Package	15 Nos	

Instruction for Transporter etc:

	1	2	3	4	Final Packaging
Photos of Different phases of parts paacking to be pasted here					

Special instructions and Remarks:

Supplier Approval			Customer (ETPL) Approval		
Mktg / Production	**Dispatch**	**Quality**	**Purchase / Sourcing**	**Stores**	**SQA/Quality**
Palak Shah	Bhupendra.	Anand Nagare			

LIST OF SUPPLIER

Part Name: Fork pipe Macined (K86A)

Part No. & Rev:F1FA01333O Rev XB

Supplier Name: **TUBE INVESTMENTS OF INDIA LIMITED**

Plant Location: PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND

Sr No.	Part / Raw Material Name (with reference to BOM)	Part / Material Number	Fully B/O or Partially Outsourced	Name of the outsourced process	Name of the TIER 3 Supplier	Name of Certification (ISO/TS 16949 / ISO 9001)	Certification Validity Date	Remarks
1	**TUBE PRODUCTS OF INDIA-Shirwal**	F1FA01333O	Fully B/O			IATF CERTIFIED	21-May-21	OK
2								
3								

SUPPLIER CONTACTS DETAILS

REASON FOR SUBMISSION INITIAL SUBMISSION ☐ CONTACT NAME CHANGE SUPPLIER NAME CHANGE
☐ ADDRESS CHANGE ☐ ADD NEW LOCATION

Supplier Name: **TUBE INVESTMENTS OF INDIA LIMITED** DATE: **19.02.2024**

Address: **PLOT NO 45, PK8 SONAL ESTATE,KHODA, SANAND, AHMADABAD** PIN: **382110**

	NAME	CONTACT NUMBERS	ADDRESS
New Project / Marketing Contact	NAME: Mr.Ankit Shrivastav	Phone: **9764949052** Fax:	Mailing Address: ankit_s@tii.murugappa.com E-mail Address:
Quality Incharge Contact	NAME: Mr.Anand Nagare	Phone: **9158558961** Fax:	Mailing Address: anandms@tii.murugappa.com E-mail Address:
WH Incharge Contact	NAME: Mr. Palak Shah	Phone: **9049690014** Fax:	Mailing Address: palak4025@gmail.com E-mail Address:
New Project / Marketing Contact	NAME:	Phone: Fax:	Mailing Address: E-mail Address:
2nd Shift Contact	NAME:	Phone: Fax:	Mailing Address: E-mail Address:
Product Return Contact	NAME:	Phone: Fax:	Shipping Address:
New Project Contact	NAME:	Phone: Fax:	Mailing Address: E-mail Address:

SUPPLIER REPRESENTATIVE SIGNATURE