GRAMMER

DIMENSIONAL PART REPORT

LABORATORY

Report Number:	2024-0005_s		
Customer:	BMW		**Issue date:** October 7, 2024
Customer part number:			
Part name: SUPPORT ROD LS CPL VCR		**Evaluation reason:**	**Evaluated by:** MIREYA HERNANDEZ
Part number: 1372107		Anual validation:	**Evaluation date:** October 7, 2024
Number of pieces: 5		New part. / Engineering change. / New tooling. / Corrected tooling. / Prototype piece.	**Autorized by:** OSCAR GOMEZ
Plane No.: 1372107		Others (Specify): X	**Evaluation machine:** CMM (EM-005) / Vision System / Caliper
Dated: 02.10.18		FULL LAY OUT _supplier _Nigbo	**Calibration date:** FEB.-24 / JUN-24 / SEP-24
Change: c			
Date of production and/or Batch Number			

Observations:

Item	Measuring equipment used	Characteristics	Especial Features	Spec.: NOMINAL	TOL. MIN -	TOL. MAX +	Limits MIN. -	Limits MAX. +	Draw: 1372107 Obtained Value: Piece 1	Piece 2	Piece 3	Change: c Piece 4	Piece 5	Result
1	CMM	WIDENING ALLOWED MAX.				14.300	0.000	14.300	14.240	14.260	14.240	14.150	14.25	OK
2	Caliper	WIDENING ALLOWED MAX.				16.000	0.000	16.000	14.400	14.430	14.460	14.440	14.47	OK
3	CMM	Radius		850.000	50.000	50.000	800.000	900.000	892.000	895.120	894.770	896.430	896.264	OK
4	CMM	Position			⌖ 3 A B C		0.000	3.000	2.708	2.531	2.612	1.811	1.978	OK
5	Caliper	Distance		12.000	0.100	0.100	11.900	12.100	12.070	12.080	12.080	12.070	12.07	OK
6	Vernier	WIDENING ALLOWED MAX.				12.300	0.000	12.300	12.110	12.120	12.110	12.110	12.12	OK
7	CMM	Diameter	⬭	14.000	0.050	0.110	13.950	14.110	13.962	13.987	13.964	13.975	13.966	OK
	CMM	Position			⌖ Φ2 A B C		0.000	2.000	0.201	0.069	0.365	0.705	0.562	OK
8	V. System	Radius		0.300	0.000	0.200	0.300	0.500	0.302	0.304	0.305	0.303	0.303	OK
9	CMM	Diameter	⬭	12.000	0.100	0.100	11.900	12.100	11.910	11.900	11.910	11.950	11.92	OK
	CMM	Position			⌖ Φ2 A B C		0.000	2.000	1.302	1.100	1.201	1.915	1.558	OK
10	CMM	Diameter	⬭	9.000	0.100	0.100	8.900	9.100	8.968	8.992	9.005	8.982	8.972	OK
11	CMM	Diameter		13.600	0.200	0.200	13.400	13.800	13.570	13.600	13.520	13.550	13.61	OK
13	V. System	Distance		2.500	0.000	1.500	2.500	4.000	3.910	3.880	3.920	3.890	3.88	OK
14	V. System	Draw a. max		0.000	0.000	0.500	0.000	0.500	0.135	0.132	0.128	0.137	0.13	OK
15	CMM	Angle		90.000	2.000	2.000	88.000	92.000	88.205	88.658	88.308	89.402	89.704	OK
16	CMM	Angle		58.000	REF.				56.483	56.697	56.249	56.403	56.713	
17	CMM	Distance		7.700	MIN.				8.000	8.003	8.005	8.012	8.008	OK
18	CMM	Distance		10.000	0.200	0.200	9.800	10.200	10.128	10.190	10.124	10.165	10.15	OK
19	Caliper	Distance	⬭	3.000	0.000	0.500	3.000	3.500	3.650	3.630	3.740	3.670	3.63	X
20	V. System	Distance		13.300	MAX.				13.240	13.220	13.260	13.220	13.26	OK
21	CMM	Distance		7.600	0.000	0.300	7.600	7.900	7.55	7.55	7.560	7.560	7.55	X
22	CMM	Distance		8.800	0.200	0.200	8.600	9.000	8.926	8.895	8.925	8.928	8.92	OK
23	CMM	Perpendicularity				⊥ 0,4 A	0.000	0.400	0.896	0.934	0.949	0.968	0.914	X

supplier: Nigbo

supplier: T&H

GRAMMER

DIMENSIONAL PART REPORT

LABORATORY

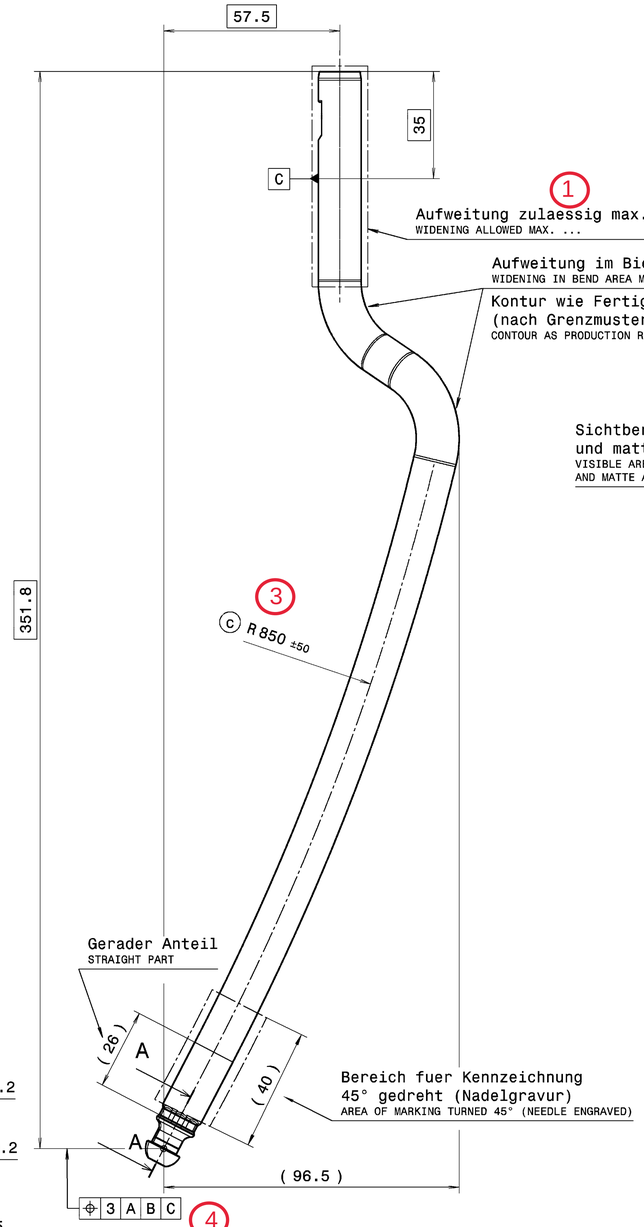
Report Number:	2024-0005_s		
Customer:	BMW		**Issue date:** October 7, 2024
Customer part number:			
Part name: SUPPORT ROD RS CPL VCR		**Evaluation reason:**	**Evaluated by:** MIREYA HERNANDEZ
Part number: 1372108		Anual validation:	**Evaluation date:** October 7, 2024
Number of pieces: 5		New part. / Engineering change. / New tooling. / Corrected tooling. / Prototype piece.	**Autorized by:** OSCAR GOMEZ
Plane No.: 1372107		Others (Specify): X	**Evaluation machine:** CMM (EM-005) /Vision System / Caliper
Dated: 02.10.18			
Change: c			
Date of production and/or Batch Number	FULL LAY OUT _supplier _Nigbo		**Calibration date:** FEB-24 / JUN-24 / SEP-24

Observations:

Item	Measuring equipment used	Characteristics	Especial Features	Spec.: NOMINAL	TOL. MIN -	TOL. MAX +	Limits MIN. -	MAX. +	Draw: 1372107 Change: c — Obtained Value: Piece 1	Piece 2	Piece 3	Piece 4	Piece 5	Result
1	CMM	WIDENING ALLOWED MAX.				14.300	0.000	14.300	14.210	14.190	14.220	14.190	14.210	OK
2	Vernier	WIDENING ALLOWED MAX.				16.000	0.000	16.000	14.440	14.430	14.400	14.380	14.41	OK
3	CMM	Radius		850.000	50.000	50.000	800.000	900.000	893.440	897.120	892.440	893.150	892.1	OK
4	CMM	Position			⌖ 3 A B C		0.000	3.000	1.526	1.313	1.313	1.328	1.261	OK
5	V. System	Distance		12.000	0.100	0.100	11.900	12.100	12.000	12.020	12.030	12.040	12.04	OK
6	Vernier	WIDENING ALLOWED MAX.				12.300	0.000	12.300	12.060	12.070	12.070	12.060	12.07	OK
7	CMM	Diameter	⌀	14.000	0.050	0.110	13.950	14.110	13.983	13.950	13.950	13.985	13.971	OK
	CMM	Position			⌖ Ø2 A B C		0.000	2.000	1.238	0.933	0.933	1.053	0.858	OK
8	V. System	Radius		0.300	0.000	0.200	0.300	0.500	0.305	0.303	0.307	0.304	0.302	OK
9	CMM	Diameter	⌀	12.000	0.100	0.100	11.900	12.100	11.950	11.990	11.950	11.950	11.96	OK
	CMM	Position			⌖ Ø2 A B C		0.000	2.000	0.796	0.502	0.502	0.632	0.569	OK
10	CMM	Diameter	⌀	9.000	0.100	0.100	8.900	9.100	8.980	8.981	8.981	8.995	8.999	OK
11	CMM	Diameter		13.600	0.200	0.200	13.400	13.800	13.640	13.660	13.640	13.660	13.65	OK
13	V. System	Distance		2.500	0.000	1.500	2.500	4.000	3.912	3.945	3.967	3.987	3.981	OK
14	V. System	Draw a. max		0.000	0.000	0.500	0.000	0.500	0.133	0.142	0.128	0.129	0.131	OK
15	CMM	Angle		90.000	2.000	2.000	88.000	92.000	90.120	90.003	90.220	90.150	90.17	OK
16	CMM	Angle		58.000	REF.				60.120	60.230	60.220	60.120	60.06	
17	CMM	Distance		7.700	MIN.				7.723	7.608	7.605	7.684	7.724	OK
18	CMM	Distance		10.000	0.200	0.200	9.800	10.200	10.100	10.100	10.160	10.080	10.11	OK
19	Vernier	Distance	⌀	3.000	0.000	0.500	3.000	3.500	3.420	3.420	3.460	3.350	3.37	OK
20	V. System	Distance		13.300	MAX.				13.240	13.220	13.260	13.240	13.26	OK
21	CMM	Distance		7.600	0.000	0.300	7.600	7.900	7.560	7.550	7.550	7.560	7.58	X
22	CMM	Distance		8.800	0.200	0.200	8.600	9.000	8.910	8.940	8.900	8.880	8.840	OK
23	CMM	Perpendicularity			⊥ 0,4 A		0.000	0.400	0.432	0.414	0.433	0.422	0.433	X

supplier: Nigbo

supplier: T&H



1 Aufweitung zulaessig max. 14.3
WIDENING ALLOWED MAX. ...

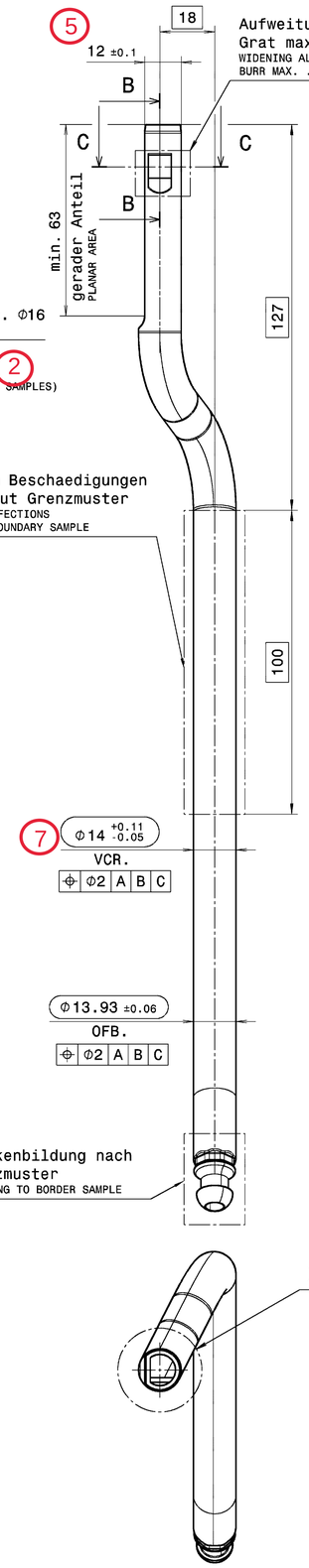
Aufweitung im Biegebereich max. Φ16
WIDENING IN BEND AREA MAX. ...

2 Kontur wie Fertigung ergibt (nach Grenzmuster)
CONTOUR AS PRODUCTION RESULTS (AFTER LIMIT SAMPLES)

3 C R 850 ±50

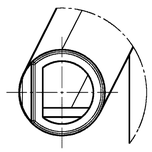
4 ISO 13715
(gilt nicht im Bereich der Kennzeichnung)

Sichtbereich frei von Beschaedigungen und matten Stellen laut Grenzmuster
VISIBLE AREAS FREE FROM IMPERFECTIONS AND MATTE AREA ACCORDING TO BOUNDARY SAMPLE

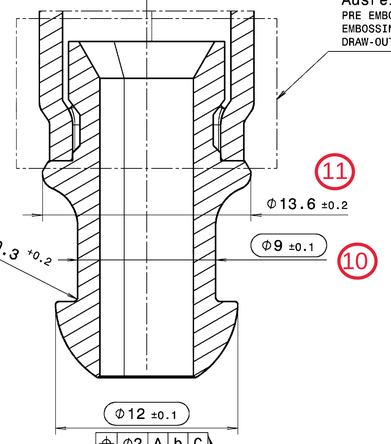


6 Aufweitung zulaessig max. 12.3
Grat max. 0.1
WIDENING ALLOWED MAX. ...
BURR MAX. ...

Fleckenbildung nach Grenzmuster
STAINING TO BORDER SAMPLE



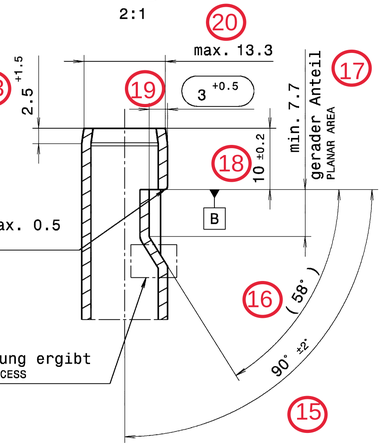
A-A
5:1



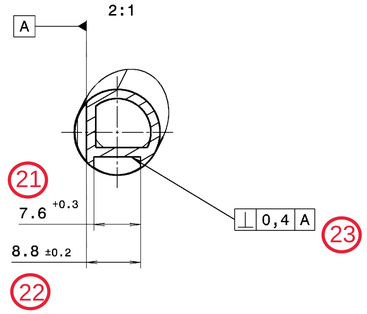
Verpraegung mit Drehteil, Aufweitung max. 0.2mm, (b)
Verpraegung gratfrei und spielfrei, Ausreisskraft > 2000N
PRE EMBOSSED WITH TURNING, WORKPIECE ENLARGEMENT MAX. ...
EMBOSSING FREE OF BURR AND WITH NO FREE PLAY, DRAW-OUT STRENGTH > ...

9 CPK-Auswertung erfolgt OFB (Φ11,91+/-0,05)
CPK-ANALYSIS WITHOUT SURFACE TREATMENT ...

B-B
2:1

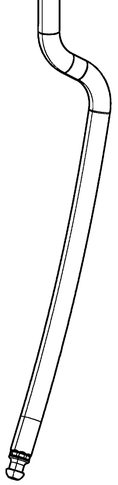


C-C
2:1



1372108
Haltestange re..kpl. VCR.
SUPPORT ROD RS. CPL. VCR.
1:2

1372107
Haltestange li..kpl. VCR.
SUPPORT ROD LS. CPL. VCR.
1:2



Teilekennzeichnung mit: WWW XX YYY Z
PARTS IDENTIFICATION: WWW XX YYY Z
Produktionsanlage/Zeit WWW
PRODUCTION FACILITY/TIME WWW
Produktionsjahr XX
YEAR OF PRODUCTION XX
Produktionstag YYY
DAY OF PRODUCTION YYY
Buegelkennzeichnung Z
PIPE BRACE MARKING Z
Nichtbemasste Radien: 20 (INNEN)
UNDIMENSIONED RADIUS: ... (INNER LINE)
Oberflaechenbehandlung nach BMW GS 90010 CR HGL (Ni >10µm<30µm)
SURFACE TREATMENT ACC. TO BMW ...
Galvanischer Ueberzug nach DIN EN ISO 1456-Fe/Ni 10d Crr
ELECTROPLATED COATING ACC. TO EN ...
Nach DIN EN ISO 9227 48 h Salzsprueh nebeltest, jedoch ohne Corrodcote Test
SALT SPRAY TEST ACC. TO DIN EN ISO ..., HOWEVER WITHOUT CORRODKODE TEST
Alle Masze gelten fuer das Fertigteil inclusive Oberflaechenbehandlung
ALL MEASUREMENTS INCLUDING SURFACE TREATMENT ARE BINDING FOR THE FINISHED PRODUCT
Rohr muss frei von Spaene und Abfallstuecken sein
PIPE MUST REMAIN FREE OF SHAVINGS AND RESIDUAL MATERIALS

Haltestange li. kpl. VCR. SUPPORT ROD LS. CPL. VCR.	Haltestange re. kpl. VCR. SUPPORT ROD RS.CPL. VCR.	Menge QTY	Pos. NO.	Zeichnungs-Nr. DRAWING NO	Benennung PART NAME	Gewicht WEIGHT	Werkstoff MATERIAL	Norm STANDARD	Bemerkung REMARK
1372107	1372108								
1	1	3		1250502	Kappe CAP	8.4 g	1.0715		
	1	2		1372105	Haltestange re. OFB. SUPPORT ROD RH WST.	193 g	HCT590X Rohr / TUBE 13.93 x 1.5	EN 10305-3	Gestreckte Laenge: 375 mm theoretisch STRETCHED LENGTH: THEORETICAL ...
1		1		1372104	Haltestange li. OFB. SUPPORT ROD LH WST.	193 g	HCT590X Rohr / TUBE 13.93 x 1.5	EN 10305-3	Gestreckte Laenge: 375 mm theoretisch STRETCHED LENGTH: THEORETICAL ...

1372107	links gezeichnet LS AS SHOWN
1372108	rechts spiegelbildlich RS MIRROR IMAGE

Soweit nicht anders angegeben, alle Masze VCR
UNLESS OTHERWISE SPECIFIED, ALL DIMENSION VCR

OFB (ohne Oberflaechenbehandlung)
WST (WITHOUT SURFACE TREATMENT)
VCR (verchromt)
VCR (CHROME PLATED)

CC Kritisches Merkmal Sicherheitsrelevanz: Festlegung durch gesetzliche Vorschrift, Kunde oder interner Risikobewertung
CRITICAL CHARACTERISTICS SAFETY: DEFINITION BY LEGAL REQUIREMENTS, CUSTOMER OR INTERNAL RISK EVALUATION

SC Signifikantes Merkmal (Passung oder Funktion): Festlegung durch Kunde oder interner Risikobewertung
SIGNIFICANT CHARACTERISTICS (FORM OR FUNCTION): DEFINITION BY CUSTOMER OR INTERNAL RISK EVALUATION

Massgebend ist der deutsche Text / ONLY THE GERMAN LANGUAGE VERSION OF THIS TEXT SHALL BE BINDING

INDEX ZO	Feld SEC.	Aenderungsbeschreibung REVISIONS DESCRIPTION	Aenderungsnummer REVISIONS NO.	Datum DATE	Bearbeiter EDITOR	geprueft CHECK	Datum DATE
c		Toleranz hinzu / TOLERANCE ADDED	L2-005-AE	02.10.18	EPE	WEG	02.10.18
b		Text bei Verpraegung hinzu (... spielfrei) / TEXT BY EMBOSSING ADDED (... WITH NO FREE PLAY)	L2-005-AE	10.07.17	MSZ	AWL	13.07.17
a		geprueft und freigegeben fuer Serienwerkzeugstart / CHECKED AND RELEASED FOR SERIES TOOL START	L2-005-AE	20.12.16	BU	AWL	12.01.17

Spezifikationen / SPECIFICATIONS

Freier Text / FREE TEXT

D-Kennz./D-SIGN	Freimasstoleranz / DIMENSIONAL VARIATION	Werkstoff / MATERIAL	Massstab / SCALE	Z.Art/DWG.TYPE
	ISO 2768 - mK	/	1:1	TZ
Fehlende Masse nach 3D-Modell / MISSING DIMENSIONS LIKE 3D-MODEL		/	Volumen / VOLUME	cm³
Modell Nr. MODEL NO.	1372107 INDEX a		Gewicht / WEIGHT	
MODEL PDM REVISION	a (Kein Freigabe-Index / NO RELEASE INDEX)	Massnorm / DIMENSION STANDARD	gerechnet / CALCUL.	181,1 g
Kunde / Lieferant CUSTOMER / SUPPLIER	Zeichnungsnummer DRAWING NUMBER	/	gewogen / WEIGHTED	g

	Datum / DATE	Name / NAME
Gez. / DRAWN	20.12.16	BU
Gepr. / CHECK	12.01.17	AWL
Norm / STANDARD	09.01.17	KA
TF / FG		

Benennung / DESCRIPTION
HALTESTANGE LI.KPL.VCR.
SUPPORT ROD LS.CPL.VCR.
G05KSB XVS VO.KPL.
G05HEADR.BAS.XVS FR.CPL.

Z.-Nr. / DWG. NO.
1372107

ISO 5456-2
erstellt/CREATED CATIA V5R28SP5
Blatt/SHEET 01
von/OF 01
Format/FORMAT A1

GRAMMER
Schwermetallverbot nach ELV EU Richtlinie 2000/53/EG BAN OF METAL ACCORDING TO ELV EU DIRECTION 2000/53/EG

Ursprung / SOURCE VI0008863 abgel. von / LIKE 1347748 Ersatz fuer / REPLACEMENT FOR 09.2017 Rev.10.5

NOTE PROTECTION MARK AS PER ISO 16016 *Schutzvermerk nach ISO 16016 beachten*