

KOVIS®				PLAN KONTROLE / CONTROL (INSPECTION) PLAN							IP 004/06						
Skupina/ Group:	DELU ZA ŽELEZNIŠKA VOZILA - DISK ZAVORNI TRAIN VEHICLE PART - BRAKE DISC				Št.načrta/ Drawing No.:	Specifikacije / Specification:	BN 918 273 MSK 014/15		Št. plana kontrole/ Number of Control Plan:	IP 004/06	Datum/ Date:	02.06.2006	Legenda/ Legend: H -> OBVEZNA PRISOTNOST / HOLD POINT W -> NEOBVEZNA PRISOTNOST / WITNESS POINT R -> POROČILO (+DODATKI) / REPORT (+ADDITIONAL) T -> TEST / TEST QD - KAKOVOST/QUALITY DEPARTMENT PD - NABAVA/PURCHASE DEPARTMENT				
Ime izdelka, opis/ Part name, description:	PLOŠČA ZAVORNA BRAKE PLATE						Revizija/ Revision:	rev.7	Datum revizije/ Date revision:	13.11.2025							
Številka izdelka/ Part number:	Različni Various						Št. Plana kakovosti/ No. of Quality Plan:	QP 002/06	Datum/ Date:	02.06.2006							
Pogodba, naročilo/ Agreement, order:	Različni Various						Revizija/ Revision:	rev.2	Datum revizije/ Date revision:	31.08.2021							
Koda dobavitelja/ Supplier code:	Različni Various						Drugi dokumenti/ Other documents:	The revisions of the standards are in accordance with the contract.									
Proces/ Process	Ime procesa, opis/ Process name, description	Stroj, predloga, orodje/ Machine, template, Tools	Št./ No.	Karakteristike proizvoda/ Product characteristics	Karakteristike procesa/ Process characteristics	Posebene karakteristike/ Special Characteristics	Metode, izdelek, proces/ Methods, Product, Process	Metode / Methods			Kontrolna metoda/ Inspection Method	Poročilo/ Report	Odgovornost Responsibility KOVIS	Faza Phase			Reakcijski plan/ Reaction Plan NON-CONFORMITY
								Merjenje in ocenjevalna tehnika/ Measuring and evaluating Technic	Vzorec / Sample Veličina / Size	Vzorec/Sample Pogostost/Frequency				KOVIS	KOVIS	ODJEMALEC/ CLIENT	
1,00	PREVZEM FAI VZORCA/ FIRST ARTICLE INSPECTION						SP 8.2										
1,01	Kontrola certifikatov materiala/ Check of material test certificates	Vizualno/ Visual	C.2	-	N/A	N/A	EN10204 3.1/3.2	Vizualna metoda/ Visual method	100%	Vsaka dobava/ Each delivery	-	R	QD	H	W	-	-
1,02	Kontrola mehanskih lastnosti/ Check of mechanical properties	Trgalni stroj/Charpy kladivo Tensile test machine/Charpy Impact Hammer	C.2	Natezna trdnost/Udarna žilavost/ Tensile Strength/Impact Value	N/A	N/A	EN 1561, EN1563	Odčitek na stroju/ Value reading on machine/device	3 vzorci/samples na saržo/per batch	FAI/Sprememba FAI/Production change	EN ISO 6892-1	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,03	Kontrola mehanskih lastnosti - trdota Check of mechanical properties - hardness test	Merilec trdote Hardness testing machine	C.1	Trdota/ Hardness	N/A	N/A	EN 1561, EN1563,	Odčitek na stroju/ Value reading on machine/device	5% vzorcev/samples na saržo/per batch	FAI/Sprememba FAI/Production change	Leeb method (acc. ISO 16859, optional Brinell ISO 6506-1)	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,04	Kontrola kemične analize/ Check of chemical composition	Spektrometer/ Spectrometer	C.2	Kemična sestava/ Chemical composition	N/A	N/A	EN 1561, EN1563	Odčitek na stroju/ Value reading on machine/device	1 vzorec/sample na saržo/per batch	FAI/Sprememba FAI/Production change		R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,05	Kontrola metalografije (odlitek)/ Check of metallographic structure (casting)	Svetlobni mikroskop/ Light Microscope	C.2	Velikost, razporeditev in oblika grafita/ Size, distribution and shape of garphite	N/A	N/A	ISO 945	ISO 945	1 vzorec/sample na saržo/per batch	Vsaka dobava/ Each delivery	ISO 945	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,06	Vizualna kontrola (VT)/ Visual Inspection (VT)	Vizualno/ Visual	C.2	Vizualni izgled površine/ Visual state of the surface	N/A	N/A	ISO 9712, EN 13018, ISO 3058, NA 082-12	Vizualna metoda/ Visual method	100%	FAI/Sprememba FAI/Production change	EN 1370	R	QD	H	W	-	Dodelava/ Rework required
1,07	Kontrola dimenzij (odlitek)/ Dimensional check (casting)	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	C.2	Dimenzije odlitka/ Dimensions of the castings	N/A	N/A	Načrt / Drawing / NA 082-07 ISO 8062/ISO 2768-1/ISO 2768-2	Odčitek na merilnem instrumentu/ Value reading on measuring device	1 vzorec/sample 100%	FAI/Sprememba FAI/Production change	ISO 8062-3 CT10	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,08	Preiskava z magnetnimi delci (MTI)/ Magnetic-particle inspection (MT)	Set K&D Flux Portaflux i&ii Set K&D Flux Portaflux i&ii	C.2	Površinske napake (AM-LM-SM)/ Surface defects (AM-LM-SM)	N/A	N/A	EN ISO 9934-1, EN 1369, NA082-09 Critical areas: SM1-LM1-AM1 Non-critical areas: SM2-LM2-AM2	Vizualna metoda/ Visual method	3 vzorci/samples 100%	FAI/Sprememba FAI/Production change	EN 1369	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,09	Preiskava z ultrazvokom (UTI)/ Ultrasonic examination (UT)	Ultrazvok Krautkrämer PHASER XS/ Ultrasonic Krautkrämer PHASER XS	C.2	Volumetriške napake/ Volumeter defects	N/A	N/A	EN 12680-3; NA 082-08 Quality level 2	Odčitek na stroju/ Value reading on machine/device	3 vzorci/samples 100% (Optional if is no RT)	FAI/Sprememba FAI/Production change	EN ISO 16810	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,10	Radiografska ali radioskopska preiskava (RTI)/ Radigraphic or radiocopy examination (RT)	Radiografija z izvorom Ir192/ Radiography Source Ir192	C.2	Notranje napake (Položaj/velikost)/ Inner defects (Position/Size)	N/A	N/A	EN ISO 5579; EN 12681 Critical areas: A3, B3, C2; D, E, F - not allowed Non-critical areas: A3, B3, C3; D, E, F - not allowed	Vizualna metoda/ Visual method	3 vzorci/samples 100%	FAI/Sprememba FAI/Production change	EN 12681	R+FILMS	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,11	Preiskava specifične toplotne kapacitete/ Specific heat capacity examination	Diferencialni kalorimeter/ Differential Scanning Calorimeter (e.g. NETZSCH DSC 204 F1)	C.2	Specifična toplotna kapaciteta/ Specific heat capacity	N/A	N/A	ASTM E 1269 DIN 51007 EN 1561, EN1563	Odčitek na stroju/ Value reading on machine/device	Optional	FAI/Sprememba FAI/Production change	ASTM E 1269	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,12	Preiskava toplotne prevodnosti/ Thermal conductivity examination	Analizator toplotnih konstant Thermal Constants Analyser (e.g. Hot Disk TPS 2500 S)	C.2	Toplotna prevodnost/ Thermal conductivity	N/A	N/A	ASTM E1225 EN 1561, EN1563	Odčitek na stroju/ Value reading on machine/device	Optional	FAI/Sprememba FAI/Production change	ASTM E1225	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,13	Preiskava toplotnega rasteznostnega koeficienta/ Thermal expansion coefficient examination	Dilatometer Dilatometer (e.g. NETZSCH DIL 402 CD)	C.2	Toplotni rasteznostni koeficient/ Thermal expansion coefficient	N/A	N/A	ASTM E 831 DIN 51045-1 EN 1561, EN1563	Odčitek na stroju/ Value reading on machine/device	Optional	FAI/Sprememba FAI/Production change	DIN 51045-1	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
1,14	Potrditev (Vzorca)/ First Article Inspection (FAI)	-	C.2	-	N/A	N/A		Ocenjevanje rezultatov/ Evaluation of test results	N/A	FAI/Sprememba FAI/Production change		R	QD	H	W	W	Ponovitev FAI/ Repeat of FAI
2,00	PREVZEM SERIJSKIH KOSOV/ ARTICLE INSPECTION OF SERIAL PARTS						SP 8.2										
2,01	Kontrola certifikatov materiala/ Check of material test certificates	Vizualno/ Visual	C.2	-	N/A	N/A	EN10204 3.1/3.2	N/A	100%	Vsaka dobava/ Each delivery	-	-	QD	H	-	-	-
2,02	Vizualna kontrola (VTI)/ Visual Inspection (VT)	Vizualno/ Visual	C.2	Vizualni izgled površine/ Visual state of the surface	N/A	N/A	ISO 9712, EN 13018, ISO 3058, NA 082-12 BN 918 278	Vizualna metoda/ Visual method	100%	Vsaka dobava/ Each delivery		-	QD	H	-	-	Dodelava/ Rework required
2,03	Prevzem dobave/ Acceptance of delivery	-	C.2	-	N/A	N/A	EN 10204 3.1	Ocenjevanje rezultatov/ Evaluation of test results	N/A	N/A		R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
3,00	PROIZVODNJA/ SERIAL PRODUCTION						SP 8.2										
3,01	Vizualna kontrola (VTI)/ Visual Inspection (VT)	Vizualno/ Visual	D.1	Vizualni izgled površine/ Visual state of the surface	N/A	N/A	ISO 9712, EN 13018, ISO 3058, NA 082-12 BN 918 278	Vizualna metoda/ Visual method	100%	Vsaka kos pred obdelavo/ Each part before machining	EN 1370	-	MD	H	-	-	Dodelava/ Rework required
3,02	Kontrola dimenzij (predobdelava)/ Dimensional control (pre-machining)	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	D.1	Dimenzije obdelanca/ Dimensions of machined part	N/A	N/A	Risba / Drawing, NA 082-07	Odčitek na merilnem instrumentu/ Value reading on measuring device	100%	Vsaka kos po obdelavi/ Each part after machining	Drawing/ Drawing	R	MD	H	-	-	Korekcija mer/ Correction of dimensions
3,03	Kontrola dimenzij (končna obdelava)/ Dimensional control (final machining)	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	D.5	Dimenzije obdelanca/ Dimensions of machined part	N/A	N/A	Načrt/Drawing, NA 082-07	Odčitek na merilnem instrumentu/ Value reading on measuring device	100%	Vsaka kos po obdelavi/ Each part after machining	Drawing/ Drawing	R	MD	H	-	-	Korekcija mer (če je mogoče)/ Correction of dimensions (if possible)
3,04	Kontrola dimenzij (disk - končna obdelava)/ Dimensional control (disc - final machining)	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	D.5	Dimenzije obdelanca/ Dimensions of machined part	N/A	N/A	Načrt/Drawing	Odčitek na merilnem instrumentu/ Value reading on measuring device	100%	Vsak kos po obdelavi/ Each part after machining	Drawing	R	MD	H	-	-	Korekcija mer (če je mogoče)/ Correction of dimensions (if possible)
3,05	Balansiranje/ Balancing	Merilna naprava/ Measurement equipment	D.6	Preostala neuravnotežitev/ Residual unbalance	N/A	N/A	ISO 1940-1, ISO 1940-2 Načrt/Drawing, NA 082-13	Odčitek na merilni napravi/ Value reading on measuring device	100%	Vsak kos po obdelavi/ Each part after machining	Drawing/ ISO 1940	R	MD	H	-	-	Dodelava - odvzem materiala/ Rework required - material removing
3,06	Kontrola krožnega teka in opletanja ter soosnosti/ Control of circular run-out and concentricity	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	D.6	Krožni tek, soosnost/ Circular run-out, concentricity	N/A	N/A	Načrt/Drawing, NA 082-07	Odčitek na merilnem instrumentu/ Value reading on measuring device	100%	Vsak kos po obdelavi/ Each part after machining	Drawing	R	MD	H	-	-	Dodelava - odvzem materiala/ Rework required - material removing
3,07	Prevzem serije/ Acceptance of serial batch	-	D.6	-	N/A	N/A	EN 10204 3.1	Ocenjevanje rezultatov/ Evaluation of test results	100%	Vsaka serija/ Each serial batch	-	-	MD	H	W	-	Dodelava/ Rework required

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Ime izdelka, opis/ Part name, description:	PLOŠČA ZAVORNA BRAKE PLATE			Revizija/ Revision:	rev.7	Datum revizije/ Date revision:	13.11.2025			
Številka izdelka/ Part number:	Različni Various			Št. Plana kakovosti/ No. of Quality Plan:	QP 002/06	Datum/ Date:	02.06.2006			
Pogodba, naročilo/ Agreement, order:	Različni Various			Revizija/ Revision:	rev.2	Datum revizije/ Date revision:	31.08.2021			
Koda dobavitelja/ Supplier code:	Različni Various			Drugi dokumenti/ Other documents:	The revisions of the standards are in accordance with the contract.					

Proces/ Process	Ime procesa, opis/ Process name, description	Stroj, predloga, orodje/ Machine, template, Tools	Št./ No.	Karakteristike proizvoda/ Product characteristics	Karakteristike procesa/ Process characteristics	Posebene karakteristike/ Special Characteristics	Metode, izdelek, proces/ Methods, Product, Process	Metode / Methods			Kontrolna metoda/ Inspection Method	Poročilo/ Report	Odgovornost Responsibility KOVIS	Faza Phase			Reakcijski plan/ Reaction Plan NON-CONFORMITY
								Merjenje in ocenjevalna tehnika/ Measuring and evaluating Technic	Vzorec / Sample Veličina / Size	Vzorec/Sample Pogostost/Frequency				KOVIS	ODJEMALEC/ CLIENT	UPORABNIK/ FINAL CUSTOMER	
4,00	KONČNA KONTROLA FINAL INSPECTION						SP 8.2										
4,01	Vizualna kontrola (VT)/ Visual Inspection (VT)	Vizualna/ Visual	E.1	Vizualni izgled površine/ Visual state of the surface	N/A	N/A	ISO 9712, EN 13018, ISO 3058, NA 082-12 BN 918 278	Vizualna metoda/ Visual method	100%	Vsaka serija/ Each serial batch	Drawing/ EN 1370	R	QD	H	W	-	Dodelava/ Rework required
4,02	Kontrola dimenzij (Vzorec)/ Dimensional check of casting/forging	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	E.1	Dimenzije odlitka/ Dimensions of the castings	N/A	N/A	Načrt/Drawing	Odčitek na merilnem instrumentu/ Value reading on measuring device	100%	Vsaka serija/ Each serial batch	Drawing/	R	QD	H	W	-	Dodelava/ Rework required
4,03	Meritev trdote/ Hardness testing	Merilec trdote Brinell hardness tester	E.1	Trdota površine/ Surface hardness	N/A	N/A	Načrt/Drawing , NA 082-05, NA 082-06 BN 918 278	Odčitek na merilnem instrumentu/ Value reading on measuring device	5% vzorcev/samples na saržo/per batch	Vsaka serija/ Each serial batch	Leeb method (acc. ISO 16859, optional Brinell ISO 6506-1)	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
4,04	Preiskava z magnetnimi delci (MTI)/ Magnetic-particle inspection (MTI)	Set K&D Flux Portaflux I&II Set K&D Flux Portaflux I&II	E.2	Površinske napake (AM-LM-SM)/ Surface defects (AM-LM-SM)	N/A	N/A	EN ISO 9934-1, NA082-09 Critical areas (hub+colling ribs): SM1-LM1-AM1 Non-critical areas (friction surface): SM2-LM2-AM2	Vizualna metoda/ Visual method	5%	Vsaka serija/ Each serial batch	EN 1369	R	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
4,05	Preiskava z ultrazvokom (UT)/ Ultrasonic examination (UT)	Ultrazvok Krautkrämer PHASER XS/ Ultrasound Krautkrämer PHASER XS	E.2	Volumetriške napake/ Volumeter defects	N/A	N/A	EN 12680-3, NA 082-08	Odčitek na stroju/ Value reading on machine/device	N/A	Vsaka serija/ Each serial batch	EN ISO 16810	R	QD	H	-	-	Zavrnitev sarže/ Rejection of batch
4,06	Radiografska ali radioskopska preiskava (RTI)/ Radigraphic or radioscopy examination (RT)	Radiografija z izvorom Ir192/ Radiography Source Ir192	E.2	Notranje napake (Položaj/velikost)/ Inner defects (Position/Size)	N/A	N/A	EN ISO 5579 EN 12681	Vizualna metoda/ Visual method	N/A	FAI/Sprememba FAI/Production change	EN 12681	R+FILMS	QD	H	W	-	Zavrnitev sarže/ Rejection of batch
4,07	Kontrola dimenzij (končna obdelava)/ Dimensional control (final machining)	Merilno orodje (pomična merila, urice)/ Measurement instruments (Gauges, calipers)	E.1	Dimenzije obdelanca/ Dimensions of machined part	N/A	N/A	Načrt/Drawing	Odčitek na merilnem instrumentu/ Value reading on measuring device	5% po DN/ 5% per Work Order	Vsaka serija/ Each serial batch	Drawing/	R	QD	H	-	-	Korekcija mer/ Correction of dimensions
4,08	Potrditev serije (Interno)/ Serial batch release (Internal)	-	E.4	-	N/A	N/A	Načrt/Drawing	Ocenjevanje rezultatov/ Evaluation of test results	5% po DN/ 5% per Work Order	Vsaka serija/ Each serial batch	Drawing/	R	QD	H	W	W	Dodelava/ Rework required
5,00	KONTROLA PRED ODPREMO/ FINAL INSPECTION BEFORE SHIPPING						SP 8.2										
5,01	Vizualna kontrola (VT)/ Visual Inspection (VT)	Vizualna/ Visual	F.1	Vizualni izgled površine in spoja/ Surface visual state and connection surfaces	N/A	N/A	ISO 9712, EN 13018, ISO 3058, NA 082-12 BN 918 278, EN 1370	Vizualna metoda/ Visual method	100%	Vsaka kos pred pakiranjem/ Each part before packaging	Vizualna metoda/ Visual method	-	QD	H	-	-	Dodelava/ Rework required
5,02	Korozijska zaščita (OBD površine)/ Anticorrosion protection (MACH surfaces)	Vizualna/ Visual	F.1	Stanje površine/ Surface Quality	N/A	N/A	Naročilo ali pogodba/ Order or agreement	Vizualna metoda/ Visual method	100%	Vsaka kos/ Each part	Vizualna metoda/ Visual method	-	MD	H	-	-	Dodelava/ Rework required
5,03	Pakiranje/ Packaging	Vizualna/ Visual	F.2	Primernost pošiljke za transport/ Shipment Suitability for transport	N/A	N/A	-	Vizualna metoda/ Visual method	100%	Vsaka kos po nanosu zaščite/ Each part after corrosion protection	Vizualna metoda/ Visual method	-	MD	H	-	-	Korekcija pakiranja/ Packaging correction
5,04	Identifikacija pošiljke/ Identification/Markings of shipment	Zaščitna komora/ Painting Chamber (Automatic line)	F.3	Sledljivost pošiljke/ Shipment traceability	N/A	N/A	Naročilo ali pogodba/ Order or agreement	Vizualna metoda/ Visual method	100%	Vsaka embalaža/ Every package	Vizualna metoda/ Visual method	-	MD	H	-	-	Dodelava/ Rework required
5,05	Prevzem serije (Odjemalec)/ Acceptance of serial batch (Client)	Vizualna/ Visual	F.4	N/A	N/A	N/A	-	Ocenjevanje rezultatov/ Evaluation of test results	100%	Vsaka serija/ Each shipment	Vizualna metoda/ Visual method	R	QD	H	W	-	Dodelava/ Rework required

Revizija / Revision	Opis spremembe / description of change	Datum / Date
5	Odstanjena vrednost trdote. / Hardness value removed.	18.10.2022
6	Uskladitev zahtev z MSK in BN. / Alignment of requirements with MSK and BN.	13.11.2023
7	Dodan standard za trdoto. / Hardness standard added.	13.11.2025