



United States Department of Agriculture
Agricultural Research Service

STATEMENT OF WORK

Material Lift Inspections

**National Bio and Agro-Defense Facility (NBAF) USDA-ARS,
Manhattan, KS**

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Project

Material Lift Inspections

General Information

1.0 Scope of Work

The contractor is to provide non-personal services for annual inspections and reporting for chain and wire rope hoists, and a vehicle lift located on the NBAF campus in the main lab and transshipping building.

2.0 Background

The National Bio and Agro-Defense Facility (NBAF) is seeking a company with extensive knowledge and expertise servicing and inspecting material and vehicle hoists. NBAF is designed to contain BSL-2 through BSL-4 research studies. Contractors associated with providing services in the facility should fully understand the construction types and maintenance/service methods associated with these facilities. Equipment needing serviced/inspected include: three (3) Demag, KBK III Monorail Systems, each with two Demag, DC-Com 20, 4400 lb. capacity chain hoists. Serial numbers are 20269810, 20269820, and 20269821. One (1) Challenger Lifts, model 44018-AR, 18,000 lb. capacity, Medium Duty 4 Post Lift, serial number 180500000239796. And one (1) Shaw-Box 5-ton wire rope hoist, model WB3M that is being put in service 2023. The Shaw-Box does not need serviced the base year but will need serviced and inspected during the option years. The monorail systems are within the containment space of the building and the Shaw-Box is in a containable space of the main facility. The Challenger Lift is in the vehicle shop attached to the Transshipping building, which is not containable. Downtime during services shall be kept to a minimum. The facilities will be occupied during this work. The NBAF campus address is 1980 Denison Ave., Manhattan, KS.

3.0 Contractor Requirements

3.1 Work Restrictions & Conditions

- 3.1.1 Site Security Access: Access to the site is controlled by a security fence and visitor/contractor check-in/check-out system. A current government-issued identification with a picture ID is required for entry. All contractor/subcontractor employees shall sign-in and out at the main entrance gate and always wear a contractor/visitor identification badge while on the site. The ID badges will be turned in at the end of the workday. See 8.0 for additional security information.
- 3.1.2 The vehicle lift and wire rope hoist can be made available for inspection at the same time. Separate trips will likely be needed to inspect each of the three monorail systems, as they are in separate laboratory spaces.
- 3.1.3 All persons accessing the site must complete the approximate two hour, NBAF Site Security and Safety Orientation. Site specific bio agent training is currently being developed. When fully developed the training will be required for all persons accessing the site.
- 3.1.4 Limited contractor vehicles will be allowed access adjacent to the work; contractor employee's personal vehicles shall be parked in the facilities main parking lot.
- 3.1.5 Work shall be confined to the areas where the hoists are installed. Unless accompanied by a USDA employee, the Contractor, subcontractors, and their employees shall not enter buildings or facility spaces not specifically part of this project. Reasons included, but are not limited to, disease control and health requirements.

- 3.1.6 Failure to comply with access requirements shall be adequate grounds for removal of the Contractor/subcontractor employees from the site and barring further site access to individuals.
- 3.1.7 Work Hours: Regular work hours for the site are 6:00 am to 6:00 pm, Monday through Friday, excluding Government holidays.
- 3.1.8 Federal Holidays are listed below:

New Year's Day	Labor Day
Martin Luther King Jr.'s Birthday	Columbus Day
President's Day	Veteran's Day
Memorial Day	Thanksgiving Day
Independence Day	Christmas Day
Juneteenth	Independence Day
- 3.1.9 Work Outside Regular Work Hours: Work scheduled outside regular work hours including late hours, Saturdays, Sundays, and Government holidays requires Security approval in advance. Make application thru the COR at least 5 calendar days prior to such work to allow arrangements to be made by the Government for access to the work area and inspection & monitoring arrangements. Requests shall include the exact dates, hours, location, and purpose of the exception. If approved, the COR will coordinate access with the site security office.

3.2 General Requirements / Tasks

- 3.2.1 The Contractor shall furnish a detailed cost proposal, including all prime and sub pricing showing labor cost, material cost, OH and Profit and estimated service hours including crew size and number of visits to provide services as specified in the scope of work. Proposal must be in whole dollars, no cents. Otherwise, bids will be rounded to the nearest dollar.
- 3.2.2 The Contractor is responsible for visiting the site prior to submitting a bid to observe existing conditions. No compensation will be provided for conditions that would be visible during an on-site visit for persons performing this type of work. Contractors that have previously visited the facility for this work do not need to revisit the site prior to providing a bid unless they wish to.
- 3.2.3 Bid or performance bonds may be required per the Contracting Officer's bid package. Obtaining and the cost of these bonds is the responsibility of the Contractor. Proof of Insurance may also be required.
- 3.2.4 Where governing regulations and imposed codes and standards require notices, permits, licenses, inspections, tests, and similar items or actions to lawfully proceed with the required work, the Contractor shall obtain items and take those actions in accordance with the regulations of the governing authority. The costs of such permits, licenses, inspections, etc., are the obligation of the Contractor.
- 3.2.5 The Contractor's work shall adhere to all applicable federal, state, and local code requirements as well as current industry standards, (i.e.: UBC, NFPA, UL, ACI, ANSI, FCC,

ASTM, NEC, NEMA, etc.) and health and safety codes, in effect at the time of award, or as determined by the authority having jurisdiction.

- 3.2.6 Prevailing Wage Rates may apply. If applicable employee payroll logs for the project will be required to verify wage rates are being adhered to.
- 3.2.7 The Contractor shall work with Facility personnel to ensure project is accomplished in a timely manner.

3.3 Pre-Service/Repair Requirements / Tasks

3.3.1 Prior to services starting onsite the following submittals must be submitted to the contracting officer's representative (COR), unless otherwise determined by the CO that submittals may be provided after services start. Documents shall be submitted in PDF that can be easily read when printed on 8-1/2 x 11 or 11 x 17 sheets. Contractor is responsible for any costs incurred for equipment or materials ordered without prior approval:

- 3.3.1.1 Product Data, Shop Drawings, Installation instructions, for any replacement materials/parts differing from those already installed for approval. SDS for all chemicals that will be used shall be provided prior to being brought onsite for information only. Submittals shall be annotated/highlighted to show products' conformance with SOW requirements. If multiple items are listed on a submittal, the specific items being submitted for use shall be annotated/highlighted for clarity.
- 3.3.1.2 Service schedule indicating work hours, include the daily starting and stopping time, and days of the week the Contractor proposes to carry out the work. Schedule shall cover the anticipated duration of work to complete the project.
- 3.3.1.3 Accident Prevention Plan/Site Specific Safety Plan is NOT required on this project. Contractor shall submit personnel lift training documentation for their onsite technicians.
- 3.3.1.4 Quality Control Plan is NOT required on this project.
- 3.3.1.5 Individual Environmental Protection Plan is NOT required on this project.
- 3.3.1.6 The Contractor shall provide to the CO a list of Task order personnel of the general and subcontractors, who will be emergency contacts, including address, and telephone numbers for use in an emergency. The Contractor shall update and submit the list monthly with invoices.

3.4 Service/Repair Requirements / Tasks

- 3.4.1 Annually inspect three (3) Demag, KBK III Monorail Systems, each with two (2) Demag, DC-Com 20, 4400 lb. capacity chain hoists, in accordance with manufacturer and OSHA requirements. Provide annual certification reports identifying all points of inspection. The report shall also include a list of defective parts and components and parts close to failure. This list shall include labor and part costs for the defective parts and components and parts close to failure. A copy of the field inspection reports shall be provided the same day as the inspection. Any final reports shall be submitted NLT 14 days prior to payment request.
- 3.4.2 Annually inspect one 5-ton wire rope hoist, in accordance with manufacturer and OSHA requirements. Provide annual certification reports identifying all points of inspection.

The report shall also include a list of defective parts and components and parts close to failure. This list shall include labor and part costs for the defective parts and components and parts close to failure. A copy of the field inspection reports shall be provided the same day as the inspection. Any final reports shall be submitted NLT 14 days prior to payment request.

- 3.4.3 Annually inspect one Challenger vehicle lift, model 44018-AR, in accordance with manufacturer and OSHA requirements. Provide annual certification reports identifying all points of inspection. The report shall also include a list of defective parts and components and parts close to failure. This list shall include labor and part costs for the defective parts and components and parts close to failure. A copy of the field inspection reports shall be provided the same day as the inspection. Any final reports shall be submitted NLT 14 days prior to payment request.
- 3.4.4 Schedule, administer, and provide agendas for coordination meetings. Provide meeting minutes for each meeting.
- 3.4.5 Update service schedule to reflect current and projected progress, frequent enough to be of timely use for project management and coordination. Submit updates with each invoice.
- 3.4.6 Existing Installations / Demolition
 - 3.4.6.1 All disturbances of existing systems shall be thoroughly coordinated with the Owner to prevent disconnecting equipment that might jeopardize on-going research.
 - 3.4.6.2 Owner reserves the right to retain any equipment / materials removed as part of the scope of work. Contractor shall coordinate any equipment / materials to be retained with Owner prior to starting demolition operations. Contractor shall legally dispose all equipment / materials removed that will not be retained.
 - 3.4.6.3 Contractor shall divert project waste to recycle where practical. The Contractor shall track and document the amount of waste diverted to recycle. The Contractor shall submit diversion documentation as part of closeout. If no waste is diverted to recycle, the Contractor shall submit a letter stating this and why diversion was not practical.
- 3.4.7 Building will be occupied while service is ongoing. Contractor shall schedule work with location to allow location to meet current research needs.
- 3.4.8 The Contractor is responsible for making and removing any temporary utility connections.
- 3.4.9 Shutoff of utilities, if required, shall be scheduled no less than five (5) working days in advance.
- 3.4.10 The Contractor shall protect the work, the site, and all existing property and structures within the limits of the serviced equipment or that may be affected thereby until acceptance of the work. Any damage to property shall be repaired at the Contractor's expense, to pre-damaged condition to the satisfaction of the COR.

- 3.4.11 The work performed under this contract shall be subject to continuous audit by the CO/COR/LM. Quality control is the exclusive responsibility of the Contractor.
- 3.4.12 Safety and health matters, as they relate to the work, are the exclusive responsibility of the Contractor. The Contractor shall furnish, erect, and maintain barricades, warning lights, signs, guards, or take other precautions as may be required by law or local authorities of the protection and security.
- 3.4.13 The contractor shall follow the site lock-out/Tag-out policy and coordinate implementation of LOTO with the facility as needed.
- 3.4.14 Contractor shall provide continuous monitoring for noise, dust, chemical vapor generation, volatile organic compounds, and vibration. At no time shall noise exposure to any ARS staff exceed 75 DB.
- 3.4.15 Contractor and sub-contractors shall notify in writing the Contracting Officer at least one week prior to executing high risk work (this may be included in the two week "look-ahead" update). High risk work includes, but is not limited to, tasks requiring live electrical work, hot work, work at heights, trenching/ shoring, crane operations, and confined space entry.
- 3.4.16 Hot work permits shall be submitted and approved before the applicable work is performed. Hot work permits are required when cutting torch, welding, soldering and/or any other spark or heat producing equipment is to be used. A Hot Work Permit will be requested at least ten (10) working day in advance of the proposed work and will be issued only for the period necessary to perform such work. Upon request, a Hot Work Permit request form will be supplied by Owner during the kick-off meeting for this contract.
- 3.4.17 The material and equipment to be furnished under project shall be the standard products of manufacturers regularly engaged in the production of such materials and equipment and shall be the manufacturer's latest standard design.
- 3.4.18 All materials and equipment to be incorporated in the work shall be handled and stored by the manufacturer, fabricator, supplies, and Contractor before during and after shipment in a manner to prevent warping, twisting, breaking, chipping, rusting and any injury, theft, or damage of any kind to the materials and equipment. All materials and equipment furnished by the Contractor shall be new and subject to inspection and approval by the CO/COR.
- 3.4.19 Submit to the CO/COR documentation of hazardous materials/waste disposed or recycled.
- 3.4.20 The work site shall always be kept clean and free of debris. The Contractor shall remove from the premises all unused material, trash, and debris resulting from the work to the satisfaction of the COR.

3.4.21 Contractor to provide standard warranty from deficiencies and defects. Warranty information shall include the warranty period (dates), and warranty contacts with names, addresses and telephone numbers.

3.4.22 Extended Equipment/Product Warranties: Obtain and furnish to the Contracting Officer all written warranties for equipment/products that have extended warranties (warranty periods exceeding the standard one-year warranty) furnished under the task order. The warranty period shall begin on the same date as project acceptance and shall continue for the full/product warranty period. The warranties shall be fully executed and delivered to the Contracting Officer prior to final acceptance of the facility.

3.4.23 Prior to submitting final payment, the following documents shall be submitted:

- a. General contractor's warranty on work.
- b. All subcontractor and manufacturer warranties.
- c. Release of liens.
- d. Employee payroll\time sheets
- e. Invoice

4.0 Government Furnished

4.1 The Government shall be afforded 14 calendar days review periods for submittals requiring approval and 7 calendar days for information only submittals.

4.2 The Government will provide either a Skyjack SJIII 3219 or Ballymore BMVL-30 lift to access/service the hoists. The Government will furnish a reasonable amount of electricity and water if requested. Access to a restroom facility will be provided by the Government.

5.0 Deliverables / Schedule

The contract duration for this project is 365 calendar days from Notice to Proceed issued by Contracting Officer. There will be four option years on the contract.

Key Deliverables

Item No.	Deliverable / Item Title	Description	Frequency	Reference	Delivery Format	Due By
1	Payrolls	Certified payrolls	Once per invoice request	Ref. SOW, Page 4, Section 3.2.6	PDF to CO/COR	Each invoice submission
2	Submittals	Product data sheets, shop drawings, installation instructions, SDS	Once per product	Ref. SOW, Page 5, Section 3.3.1.1	PDF to COR	Prior to Service/Repair or chemicals being brought onsite
3	Service Schedule	Anticipated days and hours of work	Once per invoice request	Ref. SOW, Page 5, Section 3.3.1.2	PDF to CO/COR	Prior to Service/Repair starting & with each invoice
4	Personnel lift training	Certification technician is trained on personnel lifts	Once	Ref. SOW, Page 5, Section 3.3.1.3	PDF to COR	Prior to Service/Repair starting
5	Emergency Contact List	Emergency contact info for persons working onsite	Pre-Service and monthly	Ref. SOW, Page 5, Section 3.3.1.6	PDF to COR	Prior to Service/Repair starting & with each invoice

6	Annual Inspection Reports	Report of inspection efforts and findings	Once per service	Ref. SOW, Page 5, Sections 3.4.1, 3.4.2 & 3.4.3	Hard copy & PDF to COR	Copy of field reports the day of inspection and final reports within 14 days of inspection
8	Coordination Meeting Minutes	Notes captured during coordination meetings	Bi-weekly	Ref. SOW, Page 6, Section 3.4.4	PDF to COR	Within 24 hrs. after each meeting
9	Closeout Documents	Warranty, Release of lien(s)	Once	Ref. SOW, Page 7, Section 3.4.23	PDF to CO/COR	Prior to final payment

6.0 Travel

There are no anticipated travel requirements. If travel costs, flights and per diem, are needed to get technicians to the facility for services they shall be reflected on a separate cost line.

7.0 Contractor's Key Personnel

The contractor's key personnel shall be certified to inspect/service cranes and/or hoists. The individual that will inspect the vehicle lift shall certify that they meet the requirements of ANSI/ALI ALOIM:2008 (R2013) paragraph 5.2 for qualified lift inspector and that they have successfully completed the training for qualified lift inspector as described in ANSI/ALI ALOIM:2008 (R2013) paragraph 5.3.

8.0 Security Requirements

8.1 Personnel employed by the Contractor or any representative of, or agent of the Contractor, entering this facility shall conform to the facility security regulations. The Contractor shall provide all information required for background checks to meet facility access requirements as performed by the facility security office. Contractor personnel shall comply with all personal identity verification requirements as directed by USDA-ARS Security office. Each person accessing the site will be required to provide personal details, (full name, DOB, SSN, DL#) and will undergo a routine background check, such as a National Agency Check with additional inquiries, which may include a criminal and credit check. Details required for the check should be submitted the security office NLT 5 days prior to the visit. Results of this check may return earlier. However, it should not be planned to have results earlier than 5 days. If, while on site the contractor/vendor will have access to sensitive information, they must complete a National Disclosure Agreement (NDA), along with the required training. This training will most likely be completed by reviewing a series of slides covering the topics of the definition of controlled unclassified information (CUI), access, handling, distribution, storage, and destruction of CUI. Each person will acknowledge receiving and understanding the training on the NDA. The process should not exceed two hours. Acknowledgement and completion of the NDA will be turned in with the form required for the background check. Results will be returned through the Contracting Officer or Contracting Officer Representative. Contractors needs to follow Title 41, Code of Federal Regulations, Part 102-74, Subpart C Rules and Regulation Governing Conduct on Federal Property.

8.2 Security Ingress/Egress for Contract Activities: Contractor Personnel, Contract Vehicles, Tools, Equipment, Material Deliveries & Shipments. The Service Entry Control Point (ECP)/Guard Post serves as the initial screening point for vehicles and visitors.

8.2.1 All Vehicles, equipment, and personnel will be confirmed for NBAF access. Upon confirmation, all vehicles and equipment will be thoroughly searched at the Service ECP.

Once cleared, visitors may be thoroughly screened by Security at the Service ECP or will be directed to park in the North Transshipping (TSSG) Parking Lot to undergo Security Screening within the Transshipping Building.

- 8.2.2 Following screening, visitors without a Long-Term Visitor Badge (LTVB) will be issued a short-term visitor's badge.
- 8.2.3 Escorted by either Contractor staff with a Local Badge/PIV or an authorized USDA Escort, visitors, vehicles, tools, equipment, and materials will enter NBAF through Gate 2, and travel to the designated delivery entry point(s).
- 8.2.4 Escort coordinates to meet an authorized USDA member at the designated delivery entry point(s). This coordination will need to be done through the contract COR.
- 8.2.5 Escort will enter PIN at the access control reader and escort visitors through the designated delivery entry point(s) into the work area. Additional instruction pertaining to containment access is as follows:
 - 8.2.5.1 Access/Egress of containment loading areas and activities within containment are subject to additional limitations, requirements and restrictions that will be determined, evaluated, and approved on a case-by-case basis.
 - 8.2.5.2 All personnel, tools, equipment, and materials are subject to additional Security Screening and ingress/egress procedures pending campus status.
 - 8.2.5.3 At no time can a direct path from outside the facility into containment occur.
 - 8.2.5.4 Within containment, the containment cafeteria is the only authorized place to eat and drink. Food and Drink are only allowed to enter containment through the cafeteria pass through box via the warming kitchen.
 - 8.2.5.5 All Contractor Staff and Visitors will be required to check their phones into a locker outside of containment prior to entering containment.
 - 8.2.5.6 Radios can be signed out for communication within containment. The radios must stay within containment.
- 8.2.6 Escorts must always maintain line of sight of visitors and a 5:1 escort ratio.
- 8.2.7 Leaving the designated delivery entry points, escorted visitors will drive out of Gate 2. Vehicles, equipment, and personnel are subject to additional Security Screening and egress procedures pending campus status.
- 8.2.8 Visitors without LTVBs will either be directed to park in the North TSSG parking lot to return their badge within Transshipping or will be directed to turn in their badge at the Service ECP. Once the Visitor Badge is returned, the visitor will then exit the respective area and leave the NBAF premises. Those with LTVB's will leave the premises upon exiting Gate 2.
- 8.2.9 Visitors that are part of the delivery crew, but whom are not in the delivery vehicle will be subject to standard site access requirements utilizing the main Entry Control Point off Denison Avenue and screening by Security at the Visitors Center. Visitors will then be escorted from the Visitors Center, by a Contractor staff with a Local Badge/PIV or an authorized USDA Escort, to join the rest of the crew.

8.3 Crews with minimal tools, equipment, & materials – Containment Access through Shower Block and Security Checkpoint:

- 8.3.1 All Contractor Staff and Visitors will follow the NBAF Facility SOP for access into the Main Lab.
- 8.3.2 Access/Egress of containment areas and activities within containment are subject to additional limitations, requirements and restrictions that will be determined, evaluated, and approved on a case-by-case basis.

- 8.3.3 All Contractor Staff and Visitors will be required to check their phones into a locker outside of containment.
- 8.3.4 All Contractor Staff and Visitors will be screened and confirmed by Security for access into containment.
- 8.3.5 All personnel, tools, equipment, and materials are subject to additional Security Screening and ingress/egress procedures pending campus status.
- 8.3.6 Security will have all Contractor Staff and Visitors sign the visitor log once cleared for access.
- 8.3.7 All Contractor Staff and Visitors will be escorted into containment and throughout by an authorized USDA employee with containment access.
- 8.3.8 Upon Leaving containment, All Contractor Staff and Visitors will sign out on the visitor log.

8.4 Additional security requirements may be imposed when the Federal Government raises the Homeland Security Alert Level. Additional directions will be provided if the situation occurs.

8.5 The Contractor shall safeguard all USDA-ARS equipment, information and property provided for Contractor use. At the close of each work period, USDA-ARS facilities, equipment, and materials shall be secured.

9.0 Data Rights

Not Applicable

10.0 Section 508 – Electronic and Information Technology Standards

Not Applicable

Attachment

Attachment A – Demag Maintenance Schedule

Maintenance schedule

The inspection intervals specified below apply for KBK equipment used in normal single-shift operation. If routine maintenance reveals that the intervals are too long, they should be shortened according to the specific operating instructions. Shorter inspection intervals are necessary for cranes used in continuous extreme operation or in multi-shift operation and under special operating conditions such as casting shops and hot applications.

8.5



KBK equipment is normally classified in loading group B3 to DIN 15018 and DIN 4132. This means that the stress cycle range is from 2×10^5 load cycles for heavy duty to 2×10^6 load cycles for very light duty.

The table below is intended to assist in identifying faults liable to affect regular operation of the equipment. It may be used as a basis for preventive maintenance and to compile an overall maintenance schedule. This table does not contain regular inspections and checks, some of which must be carried out daily.

Additional information can be found in the chain hoist and friction-wheel travel drive instructions.

Within one to two months of the equipment being put into operation and during regular inspections, all bolted connections of the following components must be checked and, if necessary, tightened or secured to compensate for the settling which always occurs in bolted connections and any reduction in initial tension:

- suspension fittings,
- track joint bolt sets and end caps,
- spring clip fasteners on suspension fittings,
- pin connections between hoist and trolley,
- pin connections between crane girder and track trolley,
- track trolley.

See ⇒ "Tightening torques", Page 25 for bolted connection tightening torques.

Check and/or ensure that the sliding shells are present for each ball-head suspension rod, ball-head bolt, short suspension fitting and crane suspension fitting.

Item no.	Component	Details to be checked	Inspection intervals in months		
			3	6	12
1	Complete equipment	Overall impression, general condition, talk with operating personnel Information plates		■	■
2	Track system				
2.1	Suspension components	Mounting, damage, wear			■
	Track suspensions Crane suspensions	Bolted connections on support structure (e.g. clamps)			■
		Bolted connections between (KBK Ergo): - Trolley and end carriage, - End carriage and stiffener plate			■
		Fit of spring clips (see items 2.5 and 5.1)			■
		Depth to which suspension rods are screwed in (check holes) and correct fit of spring clips			■
		Fit and wear of sliding shells, possibly loosen suspension clamps for inspection			■
		Short suspension arrangement without height adjustment: replace the complete suspension fitting if sliding shells are worn			■
		Bolted connections on track clamping fixtures and hinge sockets			■
		Load on suspension rods (vertical play)			■
		Crane suspension with sliding shell: fit, wear, lubrication of sliding shell, for high load cycles or special conditions, e.g. casting shop, high-temperature installations, replace the complete crane suspension fitting if sliding shells are worn	■		■
Crane suspension with pivot bearing				■	
Retaining pins on stiffeners and V-type suspensions, wear			■		
Lubrication of articulated joints (resin-free grease)			■		
2.2	Straight and curved sections	Dirt accumulation			■
		Wear on the track			■
		Track when steel travel wheels are used Minimum remaining material thickness KBK I: 2,2 mm, KBK II-L: 2,2 mm, KBK II, II-H: 2,7 mm			■
		Wear of edges in rail section gap			■
		Rail gap width with no load KBK 100: 16 to 18 mm, max. 20 mm KBK I: 16 to 19 mm, max. 20 mm KBK II-L, II straight section: 20 to 23 mm, max. 26 mm KBK II curved section: 22 to 24 mm, max. 26 mm Wear groove in the rail section gap, remaining material thickness KBK II-L 2,0 mm, KBK II, II-H 2,7 mm Must be replaced when specified dimensions are exceeded			■
2.3	Track bolted joint	Bolted connections (retighten, as required)			■
		Alignment of rail joints			■
	End caps, internal buffer stops, buffers on trolleys and cranes	Secure attachment, wear, replace if worn			■
	Shock absorbers	Secure attachment, wear, replace if worn			■
2.4	Track switch, turntable	Limit positions (adjust outer setting screws on frame, as required)			■
		Limit switch adjustment			■
		Operation of limit switch striker			■
		Limit switch actuating rods			■
		End stop arrester (adjust, as required)			■
		Smooth operation (dirt accumulation, lubrication)			■
		Track switch operation, pull cords, electrical equipment			■
		Track alignment, rail joint gaps, track levels			■
		Busbars and supply cable (see item 3)		■	
		Bolted connections on and within the track switch			■
For track switch suspension see item 2.1, particularly load on suspension rods			■		
Wear			■		
2.5	Drop section	See separate operating instructions	■		
3	KBK II-R, KBK II-H-R conductor rail system				

Item no.	Component	Details to be checked	Inspection intervals in months		
			3	6	12
3.1	PVC supporting channel	Deposits		■	
		Fixed point		■	
		Maximum vertical and horizontal misalignment of 1 mm		■	
3.2	Conductor rails	Wear		■	
		Burnt spots		■	
		Corrosion		■	
		Tight fit in PVC supporting channel		■	
3.3	Joint connection	Correct and tight fit of conductor rail, connector and PVC supporting channel		■	
3.4	Suspension	Attachment		■	
3.5	Transfer section	Misalignment		■	
		Air gap between sliding or rotating part, min. 2 mm; max. 4 mm, attachment		■	
3.6	Power pick-up guides	Maximum horizontal misalignment 1 mm		■	
		Attachment		■	
3.7	Powerfeed	Cable connection		■	
		Fit of plug connectors		■	
3.8	Maintenance section	Position and fit of joint connectors and clamps		■	
		Attachment		■	
3.9	Flexible supply cable in track switch and turntable	Position and attachment		■	
		Insulation		■	
		Broken strands and cable cover		■	
3.10	End cap	Attachment		■	
3.11	Isolating section	Wear		■	
		Dirt deposits		■	
4	Current collector trolley				
4.1	Sliding contacts and pantograph arms	Wear (max. 7 mm, up to the insulation)		■	
		Contact pressure		■	
		Centring		■	
		Mobility		■	
		Attachment		■	
4.2	Terminal strip	Cable connection		■	
4.3	Connection cable	Broken strands		■	
		Insulation		■	
		Strain relief		■	
4.4	Travel wheels and side guide rollers	Wear, tightness, mobility		■	
4.5	Coupling	Attachment		■	
5	Trolleys, crabs and cranes				
5.1	Trolley and trolley for DRF 200, RF 125	Smooth operation, wear and damage to the wheels			■
		Retaining pins			■
		Suspension bolt wear (max. 1 mm); Wear of side plate (max. 0,5 mm) Must be replaced when specified dimensions are exceeded			■
		Smooth running and wear of support rollers		■	
		Sealing cover of side guide rollers, load bars, crane trolleys, crab frames		■	
		Wear of link bars, coupling elements, spacer bars			■
		Free movement			■
		Secure fit of the spring sleeves			■
		Bolted connections between (KBK Ergo): trolley and end carriage, end carriage and L-shaped steel crossbar for fitting the mast, mast bolted connection to L-shaped steel crossbars			■
		5.2	DRF 200, RF 125 friction-wheel travel drives	See friction-wheel travel drive operating instructions	
Friction wheel contact pressure				■	■
5.3	Hoist unit	See hoist unit operating instructions			■
5.4	Current collector trolley	See item 4		■	

Item no.	Component	Details to be checked	Inspection intervals in months		
			3	6	12
5.5	Stacker crab	Check the track surface for dirt accumulation, clean and lightly grease as required Re-grease the travel rollers at the lubricating nipples Check any sliding elements (cable ties) for wear, replace as required			■
6	Electric equipment on trolleys/crabs				
6.1	Contact control	Burnt contactor contacts	■		
6.2	Run-up limit switch	Switching distance (approx. 25 mm for proximity switches)	■		
6.3	Lead connections on terminal strip	Tight fit		■	
6.4	Fittings	Tight fit of bolted connections		■	
7	Electric equipment on tracks				
7.1	Contact control	Burnt contactor contacts	■		
7.2	Proximity switches	Switching distance approx. 15 to 25 mm	■		
7.3	Emergency stop buttons	By actuation	Daily		
7.4	Hoist/crab spacing on runway	2 travelling hoists		■	
7.5	Lead connections on terminal strip	Tight fit		■	
8	Trailing cable power supply, compressed air hose	Condition of cable (kinks)			■
		Cable trolley or cable slider wear			■
		Cable trolley or cable slider spacing			■
		Cable damage			■
		Wear of the compressed air hose Attachment and tension of the guide rope			■
9	Steel superstructure	Bolts and bolt-retaining arrangements, corrosion	As specified by the manufacturer		
10	Latching device	See separate operating instructions		■	

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