

# John King Group



Winners of the  
Queens Award for Enterprise  
INTERNATIONAL TRADE 2020



Winners of the 2022  
MHEA Supplier of The Year Award



Winners of the 2023  
MHEA Exporter of The Year Award

## JOHN KING MILLMASTER ELEVATORS MAINTENANCE CHECK LIST

### Preventive Maintenance Check List.

1. The buckets should be checked periodically for loose bolts and build-up of material. All damaged buckets should either be repaired or replaced to eliminate material falling into the boot.
2. Check the rubber lip on the inside of the discharge spout of elevator after approximately three months of operation. Replace if worn.
3. Traction wheels and sprockets.
  - ☞ Check for unusual or excessive wear such as hooking of the sprocket teeth.
  - ☞ Check and re-torque bolts on replacement segmental rims on both head and foot shafts.
4. Check take-up for bucket clearance with bottom of boot. Remove a two-link section when required.
5. For safety to personnel and equipment, keep areas around loading and discharge points, drive, controls, and safety devices clean and free from obstructions.
6. Inspect the chain Quarterly / during scheduled shutdown.
  - ☞ Inner faces of the bush hole sidebar should be checked for wear. This is an indication of misalignment.
  - ☞ Loose or unseated pins are danger signals and could lead to a sudden and unexpected chain separation (shutdown).
  - ☞ Excess material buildup in the chain and attachments could cause improper seating on sprockets and rough elevator operation. Result – accelerated wear.
  - ☞ Round parts in chain, that is, the pins and bushings should be inspected for wear. Refer to "Chain Component Wear Chart".
  - ☞ Sprockets should be inspected for alignment and excessive tooth wear. Worn sprocket teeth (hooking) will cause chain to hang-up and/or back flex, resulting in damage to the chain and buckets.

#### 100 Hour (Preliminary) Inspection.

Inspect chain for signs of premature wear. Pay particular attention to signs of "scrubbing" on inner sidebars. This is a sign of machinery misalignment which must be corrected before further operation.

#### 2,000 Hour (Minor) Inspection.

1. Chain inspection.
  - ☞ Check inside block links for unequal wear from traction wheel (or sprocket).
  - ☞ Check all sidebars and bushing ODs for uneven or deep wear patterns.
  - ☞ Visually inspect clearance between each set of inner and outer sidebars. Excessive clearance suggests pin fracture, inspect pin and replace if fractured. If more than five fractured pins are found, replace the entire chain at earliest convenience.
2. Traction wheels and sprockets.
  - ☞ Check for unusual or excessive wear such as hooking of sprocket teeth or crowning of wheels.
  - ☞ Check torque values for segmental rim bolts.
3. Buckets.
  - ☞ Check for loose or missing bucket bolts (retorque/replace as required).
  - ☞ Check for unusual wear patterns of damaged buckets.
4. Inspect and adjust rubber peeler lip on the inside of the discharge spout. Replace if excessively worn.
5. Check stop-blocks; check for free operation of take-up guides; check for evidence of wear on guides.

#### 8,000 Hour (Major) Inspection.

1. Chain Inspection
  - ☞ Check all sidebars and bushing ODs for uneven or deep wear patterns.
  - ☞ Check inside block links for unequal wear from tractions wheel (or sprocket).
  - ☞ Check for chain elongation wear.

**Step 1.** Accurately measure the length of chain and if the chain has elongated more than shown in "Chain Elongation Limit Chart" below, proceed to Step 2.

**Step 2.** Remove about 5 pins at random and measure the pin O.D. and bushing I.D. Compare these measurements with the dimensions listed in the "Chain Component Wear Chart" below. Wear rate drastically accelerates when the pin or bushing passes this limit.

**Note:** Sound judgment must be exercised when projecting additional chain life based on current wear measurement (rate). More frequent inspections may be required if wear is approaching the limits listed in the "Chain Elongation Limit Chart."

**Caution:** Bushing O.D. should be inspected for signs of rapid wear due to sprocket scrubbing or traction wheel slippage. If wear exceeds 0.150" (3.81mm), exposure of the pin may be imminent and all bushings should be checked to see if any have worn through. If wear exceeds 0.150", the bushing outer hard case has been worn through, replace the chain at earliest convenience. If any pins are exposed, the chain should be replaced immediately.

**Sidebars:** Visually inspect all sidebars at pin and bushing holes for fatigue cracks; replace all sidebars with fatigue cracks. If more than two cracked sidebars are found replace the entire chain at earliest convenience.
2. Attachments
  - ☞ Visually inspect the bend line of all attachments. Replace any pitches with cracks.
3. Segmental traction wheels and sprockets.
  - ☞ Check for loose or missing segmental rim bolts. Check torque values. If bolts are missing, replace with proper diameter high strength type.
  - ☞ Check for evidence of axial movement along shaft; check setscrew or retorque fasteners on shaft/hub locking device per service manual.
  - ☞ Check for evidence of unusual or excessive wear and replace sets of segments as required.
  - ☞ If the 1/8" wear indicator has worn away- replace segments.
4. Bearings
  - ☞ Check head shaft bearings for evidence of wear and regrease per service manual.
  - ☞ Check foot shaft bearings and sleeves for evidence of wear. If the inner 3/8" thick ring has worn through the top side – replace.
5. Gravity Take-up
  - ☞ Check stop-blocks; check for free operation of take-up guides; check for evidence of wear on guides. If guides have worn and cannot be adjusted to maintain 1/8" clearance – replace.
6. Buckets
  - ☞ Check for loose or missing bucket bolts (retorque/replace as required).
  - ☞ Check for unusual wear patterns or damaged buckets.

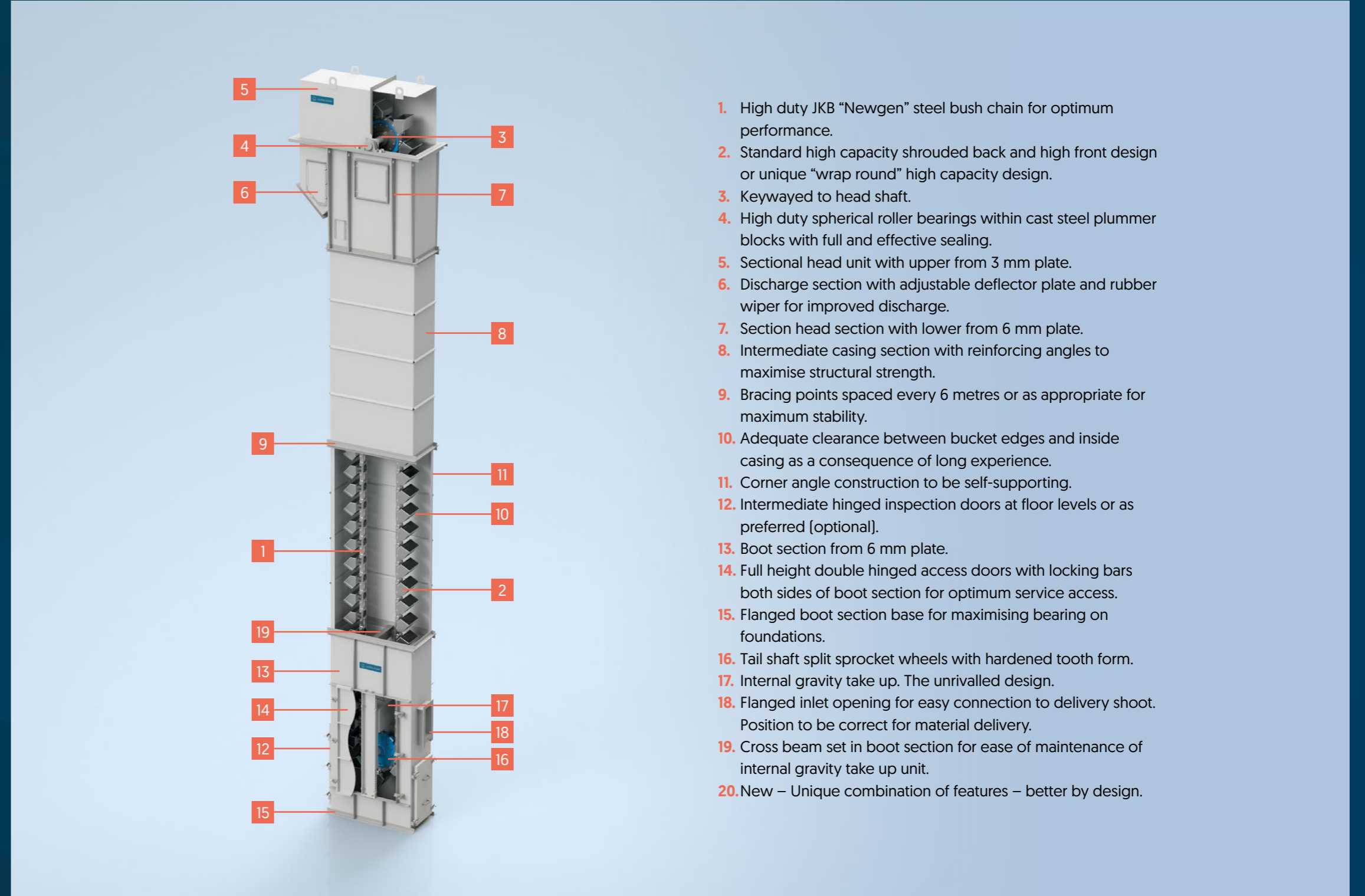
#### CORRECT ALL BEFORE CONTINUING OPERATION.

#### 20,000 Hour (Special) Inspection.

1. Chain Inspection
  - ☞ Remove approximately 10'0" (3.04m) of chain and buckets. Disassemble buckets from chain. Completely check chain components for fatigue cracks by non-destructive methods such as magna flux, dye check, or sonic testing. If any fatigue failures are detected in this sample, the entire chain should be replaced at the earliest convenience.
  - ☞ If no evidence of fatigue; check the 10'0" (3.04m) sample for elongation wear per Step 1 of the 8,000 Hour (Major) Inspection.
2. Segmental traction wheels and sprockets: See Item 3 of 8,000 Hour (Major) Inspection.
3. Bearings: See Item 4 of 8,000 Hour (Major) Inspection.
4. Gravity Take-up: See Item 5 of 8,000 Hour (Major) Inspection.
5. Buckets: See Item 6 of 8,000 Hour (Major) Inspection.

Inspection Sequence			
Hours of Service	Type of Inspection	Hours of Service	Type of Inspection
100	Preliminary	20,000	Special
500	Preliminary	22,000	Minor
2,000	Minor	24,000	Major
4,000	Minor	26,000	Minor
6,000	Minor	28,000	Minor
8,000	Major	30,000	Minor
10,000	Minor	32,000	Major
12,000	Minor	34,000	Minor
14,000	Minor	36,000	Minor
16,000	Major	38,000	Minor
18,000	Minor	40,000	Special

**IMPORTANT NOTE:**  
If at any time a chain pin or sidebar breaks and the chain falls during operation, follow 8,000 Hour (Major) Inspection procedure, plus complete non-destructive test of 10'0" (3.04 M) of chain as explained in 20,000 Hour (Special) Inspection.



1. High duty JKB "Newgen" steel bush chain for optimum performance.
2. Standard high capacity shrouded back and high front design or unique "wrap round" high capacity design.
3. Keyway to head shaft.
4. High duty spherical roller bearings within cast steel plummer blocks with full and effective sealing.
5. Sectional head unit with upper from 3 mm plate.
6. Discharge section with adjustable deflector plate and rubber viper for improved discharge.
7. Section head section with lower from 6 mm plate.
8. Intermediate casing section with reinforcing angles to maximise structural strength.
9. Bracing points spaced every 6 metres or as appropriate for maximum stability.
10. Adequate clearance between bucket edges and inside casing as a consequence of long experience.
11. Corner angle construction to be self-supporting.
12. Intermediate hinged inspection doors at floor levels or as preferred (optional).
13. Boot section from 6 mm plate.
14. Full height double hinged access doors with locking bars both sides of boot section for optimum service access.
15. Flanged boot section base for maximising bearing on foundations.
16. Tail shaft split sprocket wheels with hardened tooth form.
17. Internal gravity take up. The unrivalled design.
18. Flanged inlet opening for easy connection to delivery shoot. Position to be correct for material delivery.
19. Cross beam set in boot section for ease of maintenance of internal gravity take up unit.
20. New – Unique combination of features – better by design.

Chain Number	Chain Component Wear Chart												
	Pin Outside Diameter				Bushing Inside Diameter				Number of Pitches Required for Measurement	Unworn		Max. Wear	
	Unworn	Max. Wear	Unworn	Max. Wear	Unworn	Max. Wear	inches	mm		inches	mm		
JKB856	1.000	0.865	1.025	0.865	1.111	0.900	28.22	20	120	3048	123	3124.2	
JKB956	1.000	0.865	1.025	0.865	1.111	0.900	28.22	20	120	3048	123	3124.2	
JKB857	1.000	0.865	1.025	0.865	1.111	0.900	28.22	20	120	3048	123	3124.2	
JKB958	1.125	0.985	1.150	0.985	1.236	1.025	31.39	20	120	3048	123	3124.2	
JKB859	1.250	1.095	1.275	1.095	1.400	1.175	35.56	20	120	3048	123	3124.2	
JKB864	1.250	1.095	1.275	1.095	1.400	1.175	35.56	18	126	3200.4	128.75	3270.2	
JKB984	1.375	1.215	1.400	1.215	1.525	1.375	38.74	18	126	3200.4	128.75	3270.2	
JKB1251	0.875	0.831	0.900	0.831	0.930	0.825	23.62	10	120	3048	120.6	3063.2	
JKB3251	0.875	0.770	0.900	0.770	0.962	0.825	24.43	10	120	3048	121.2	3078.5	
JKB4004	1.000	0.865	1.025	0.865	1.069	0.930	27.15	14	126	3200.4	127.9	3248.7	
JKB4010	1.500	1.315	1.530	1.315	1.692	1.525	40.44	14	126	3200.4	127.9	3248.7	
JKB4035	1.125	0.980	1.150	0.980	1.275	1.125	30.33	14	126	3200.4	127.9	3248.7	
JKB4037	1.500	1.315	1.530	1.315	1.692	1.525	40.44	14	126	3200.4	127.9	3248.7	
JKB4065	1.250	1.095	1.275	1.095	1.337	1.175	33.96	14	126	3200.4	127.9	3248.7	

Lubrication Chart				
Item	Lubrication	Frequency	Method	Remarks
Drive Chain	SAE 30 Oil	Continually	Dip Bath in oil tight chain guard	Oil in guard should be changed every 2 or 3 months
Bucket Chain	None	Never		Lubricant when combined with the materials being handled is rendered ineffective due to lack of flowability into chain joint
Anti-Friction Bearings	High Quality NLGI #1 or #2 multi-purpose bearing grease	See Manufacturer's Bulletin in Service Manual	Lubrication fitting	Purge Seals when adding grease
Motor		See manufacturer's Bulletin in Service Manual		Motor is oiled before leaving factory
Reducer		See manufacturer's Bulletin in Service Manual		Reducer is shipped without oil – Fill to proper level with correct oil before placing in operation

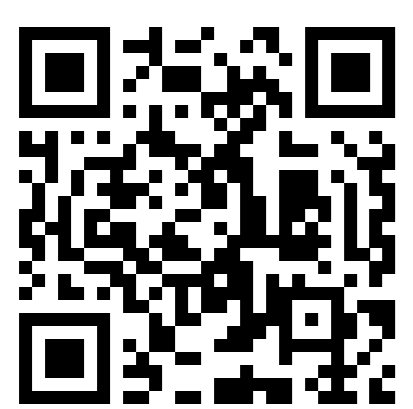
Description	Quantity Required*	
	One or Two Elevators	Three or More Elevators
Drive Sprocket	1	1 of each size
Driven Sprocket	1	1 of each size
Drive Chain - P & C Chain	1	1 of each size
Elevator Bucket with Necessary Bolts, Nuts, and Washers	1/10	1/10 of each size
Carrying Chain with Required Number of Attachments	1/10	1/10 of each size
Chain Pins	Per Pitch of 1/10 chain	Per Pitch of 1/10 chain
Chain Pinlocks or Cotters	Per Pitch of 1/10 chain	Per Pitch of 1/10 chain
Head-shaft Sprockets or Segmental Rims (Sprocket or Traction) with Bolts, Nuts, & Washers	1 on single strand 1 matched pair	Max. 2 each no. Max. 10 of each no.
Head-shaft Bearings	2	(Min 2/size) 1/10 of each size
Internal Gravity Take-up Bearing	2	(Min 2/size) 1/10 of each size
Internal Gravity Take-up Sleeves	2	(Min 2/size) 1/10 of each size

**\* Request spare parts by referencing the complete John King order number found on the John King nameplate on the elevator.**

\* Assumptions: All elevators are the same. If different, apply above figures to each elevator.



JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
1	5	9	14	18	22
2	6	10	15	19	23
3	7	11	16	20	24
4	8	12	17	21	25
5	9	13	18	22	26
6	10	14	19	23	27
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9	13	17	22	26	30
10	14	18	23	27	
11	15	19	24	28	
12	16	20	25	29	
13	17	21	26	30	
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