



A.B.N. 59 009 098 382
28/03/20

CONSTRUCT ENGINEERING

A DRA Company

31 Cutler Road
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Humma Cranes Major Inspection Criteria

Humma cranes are to have a Major Inspection completed in line with AS 2550.5 2016 and AS 2550.1 2016. If no data logging of the cranes lifting history (load spectrum) is available then the inspection should be carried out at 15,000 hours or 15 years, whichever occurs first. Some construction and mine sites may require this completed at 10 years, but this is based on a Franna crane requirement.

12 Monthly inspections over the life of the crane are to be completed by a Competent Person who checks the cranes mechanical and structural (visually) condition. The recommended procedure is for a Cranesafe “green sticker” inspection to be completed as this covers these aspects. This provides the Competent Person overseeing the Major Inspection insight into the cranes history and any previous repairs. Please refer to your state for requirements of a Competent Person.

During the Major Inspection, it is important to keep as much photo evidence as possible of the work completed and parts used. This will be compiled into the final report which should be kept with the crane for future reference.

Once the Major Inspection is completed structural testing to 125% and winch static brake testing to 110% should be completed. We recommend a Cranesafe inspection as this will cover all aspects of the test and will log into the Cranesafe system that the crane has had a Major Inspection completed.

Inspection requirements are on the following page.



Major Inspection work required.

1	Ensure yearly maintenance schedule completed.
2	Ensure annual inspection completed as per attached checklist. Complete repairs as required.
3	Strip boom assembly and complete inspection below: Check all boom sections for straightness and damage. NDT all boom section and sheave head welds. Replace extension ropes and retract chains. Replace all wear pads. Inspect extension system for damage and/or wear. Replace parts as required.
4	Remove Winch assembly and replace with new gearbox motor assembly or strip and inspect as per below requirements: Strip down winch assembly. Strip gearbox, replace all seals, brake friction and steel discs. Crack test gears and pins. Leak test hydraulic motor. NDT Winch drum. Replace Bronze bush.
5	NDT critical areas of crane structure as per below: Front chassis (remove cabin or raise cabin to access) Rear chassis Rims (preferred method is for blast off paint and MPI)
6	Replace all hydraulic hoses in steering circuit.
7	Inspect and replace rubber flexible brake hoses from chassis to axle.
8	Complete Structural 125% load test and winch brake test 110%.
9	Document all results and photos into report with details of Competent Person and company performing major inspection.
10	Fit Inspection plate to crane with details of report, date and crane serial.

For further information please contact Humma Cranes.



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HUMMA CRANES INSPECTION LIST

A.B.N. 59 009 098 382

Crane Owner:	_____	Plant No.:	_____
Crane Serial No.:	_____	Job No.:	_____
Manufacture Date:	____/____/____	KM's:	_____
Crane Model:	_____	Hours:	_____
Owners Address:	_____		
Plant Address:	_____		
Representative:	_____		

Inspection Date: ____/____/____

Name of Competent Person: _____

Address of Competent Person: _____ **Phone No.:** _____

Qualification of Competent Person (tick one box)

<input type="checkbox"/>	Professional engineering qualification, membership of professional organisation and crane industry experience
<input type="checkbox"/>	Professional Engineering qualification and crane industry experience
<input type="checkbox"/>	Other tertiary qualification and crane industry experience
<input type="checkbox"/>	Trade qualification and crane experience
<input type="checkbox"/>	Other (state) _____

Competent Person Signature: _____ **Date** ____/____/____

Comments: _____



A. ENGINE					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Oil Level				
2	Oil Condition				
3	Oil Pressure (Gauge Reading)				
4	Exhaust Smoke at Idle				
5	Exhaust Smoke Under Load				
6	Oil Leakage				
7	Unusual Noise/s				
8	Exhaust System				
9	Exhaust Discharge away from Operator/AC				
10	Air Intake System				
11	Air Filter Condition				
12	Engine Mounts				
13	Radiator Condition				
14	Coolant Level and Condition				
15	Radiator Mounts and Guards				
16	Condition of all Hoses				
17	Condition of Belts and Guards				
18	Fuel Lines				
19	Fuel Filters / Sediment Traps				
20	Cooling Fan Condition				
21	Oil Filter				
22	Coolant Filter				
23	Check Exhaust Piping				
24	Check Muffler Condition and Mount				
25	Check Intercooler for Cracks				
26	Check Intercooler Piping				
27	Check Engine Fault Lights				
Additional Comments on Engine Section:					



B. TRANSMISSION & TRANSFER CASE

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Oil Level				Sample Taken -Yes/No
2	Oil Condition				
3	Dipstick and Tube Condition				
4	Converter Temperature Gauge				
5	Oil Leakage				
6	Oil Cooler Condition				
7	Oil Cooler Hoses				
8	Quality of Shift				
9	Muncie PTO disconnect operation				
10	Neutral Start Switch Operation				
11	Gear Shift (Manual Transmission)				
12	Operation / Gear Selection				
13	Control Mechanisms				
14	Mounts / Supports/ Bolts				
15	Unusual Noise/s				
16	Condition of Hoses				
17	2WD / 4WD Operation				
18	Hi / Low Range operation				

Additional Comments on Transmission & Transfer Case Section:

C. FRONT AXLE ASSEMBLY

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Alignment				
2	Suspension Bolts and Nuts				
3	Axle Radius Arms and Bushes				
4	Differential Centre and Bolts				
5	Axles (half shafts)				
6	Oil Level and Condition				
7	Shock Absorbers and Mounts				
8	Height Control Valve and Linkages				
9	Lock Out Pin Functioning and Greased				
10	Hub Seals and Bearings				
11	Drive Shafts and U/J				
12	Articulation Shaft, U/J and Jack Shaft				
13	Oil Leaks				
14	Airbag Operation and Condition				
15	Check Brake Linkages				
16	Check Brake Chambers				

Additional Comments on Front Axle Assembly



E. REAR AXLE ASSEMBLY

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Alignment				
2	Suspension Bolts and Nuts				
3	Axle Radius Arms and Bushes				
4	Differential Centre and Bolts				
5	Axles (half shafts)				
6	Oil Level and Condition				
7	Shock Absorbers and Mounts				
8	Height Control Valve and Linkages				
9	Diff Lock Operating and Oiled				
10	Hub Seals and Bearings				
11	Drive Shafts and U/J				
12	U/J and Driveshaft				
13	Oil Leaks				
14	Check Brake Linkages				
15	Check Brake Chambers				
16	Airbag Operation and Condition				

Additional Comments on Rear Axle Assembly

F. STEERING SYSTEM

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Steering Wheel				
2	Orbitrol Operation				
3	Oil Leaks				
4	Steering Cylinder Anchor Points				
5	Steering Anchor Pins and Bearings				
6	Steering Cylinders Condition				
7	Steering Cylinders Clevis and Keeper Plates				
8	Condition of all Hoses (inc. emergency steering)				
9	Emergency Steering Operation				

Additional Comments on Steering System:

G. ARTICULATION AREA

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Movement in Bearings				
2	Pins, Nuts and Keeper Plates				
3	Lubrication System				
4	Condition of Hoses in Centre Pivot Area				
5	Articulation Sensor and Plate				
6	Electrical Harness Condition				

Additional Comments on Articulation Area



H. AIR SYSTEM					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	All Reservoirs Condition				
2	Air Reservoirs Manual Drain Valves				
3	Air Leaks				
4	Air Pressure Gauges - System Pressure				
5	Condition of all Air Lines				
6	Air Compressor Condition				
7	Dump Valve Functioning (rear tank)				
8	Air Compressor Condition				
Additional Comments on Air System:					
I. WHEELS AND TYRES					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Tyre Condition: Spare				
	LHF RHF				
	LHR RHR				
2	Tyre Pressures (120psi front, 100psi rear)				
3	Wheel Cleats and Nuts (torque 650 NM)				
4	Wheel Rims Condition				
Additional Comments on Wheels and Tyres Section					
J. BRAKE SYSTEM					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Service Brake Operation				
2	Performance				
3	Lining Thickness				
4	Park Brake Operation				
5	Holding Brake Operation				
6	Condition of all Hoses				
7	Slack Adjusters Adjusted				
8	Pedal Foot Valve Condition				
9	Brake Valves Condition				
Additional Comments on Steering System:					



K. ELECTRICAL SYSTEM

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Operation of all Wiring and routing				
2	Operation of Head, Tail / Park Lights				
3	Operation of Clearance Lights				
4	Operation of Indicators and Hazard Lights				
5	Operation of all Work Lights				
6	Operation of all Switches				
7	Operation of Air Con.				
8	Operation of Heater/Demister				
9	Operation of Wipers / Washers				
10	Operation of all Gauges / Instrumentation				
11	Operation of Low Air Light / Buzzer				
12	Operation of Exhaust Brake				
13	Operation of Reverse Alarm				
14	Operation of Emergency Steering System				
15	Condition of Boom Conduit and Wiring				
16	Operation of Horn				
17	Operation of Override Switches				
18	Operation of Reversing Camera				
19	Operation of Radio (if fitted)				
20	Operation of Emergency Stop Switch (if fitted)				

Additional Comments on Electrical System:

L. HYDRAULIC GROUP

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Hydraulic Reservoir Condition				
2	Hydraulic Oil Level				
3	Hydraulic Oil Condition				
4	Condition off All Hoses				
5	Routing off All Hoses				
6	Pumps Coupling and Mounting				
7	Steering performance at idle engine speed				
8	Check for Oil Leaks at all Cylinders				
9	Check for Oil Leaks at all Valves				
10	Condition of Extension Cylinder Hoses				
11	Operation of all Valves				
12	Operation of all Valves				
13	Other Oil Leaks				
14	Reservoir Filler Cap and Breather				
15	Disconnect Operational				

Additional Comments on Hydraulic Group::



M. CHASSIS / BODY - FRONT

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Check For Cracks in Chassis				
2	Check for Chassis Damage				
3	Inspect Towing and Lifting Points				
4	Panel Damage				
5	Tackle box doors				
6	Bumper and spreader bar mounts (if fitted)				
7	Mudflaps and Brackets				
8	Doors, Hinges and Locks				
9	Door Seals				
10	Door Window Locks and Catches				
11	Cabin Fixed Window and Sealing				
12	Side Mirrors				
13	Seats and Adjusters				
14	Seat Belts				
15	Pedal Condition				
16	Levers Condition				
17	Load Chart Supplied in Cabin and Condition				
18	Floor Mats				
19	General Appearance Inside Cab				
20	Water Leakage				
21	Air seat operation				
Additional Comments on Chassis / Body Front					



N. CHASSIS / BODY - REAR

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Check For Cracks in Chassis				
2	Check for Chassis Damage				
3	Inspect Towing and Lifting Points				
4	Mudflaps and Brackets				
5	Panel Damage				
6	Toolbox doors				
7	Hydraulic Tank Breather				
8	Fuel tank and Cap				
9	Battery Box, Clamps and Terminals				
10	Counterweight box and lid				
11	Engine Covers				
12	Transmission Cover				
13	Fuel and Hydraulic Tank Inspection Covers				
14	Air Filter Mounts				
15	Exhaust Muffler Mounts				

Additional Comments on Chassis / Body - Rear

O. Boom1

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Structure / Visual Checks				
2	Wear Pads and Adjustment				
3	Rear Pivot Bearing and Pins				
4	Winch Sheave Assembly and Pin				
5	Hydraulic retract reel and hose condition.				
6	Extension Cylinder Keeper Plates				
7	Luff Cylinder Top Bearings and Pins				
8	Luff Cylinder Lower Bearings and Pins				
9	Check rope deflection roller				
10	Boom Lights and Conduits				

Additional Comments on Boom1

P. Boom2

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Structure / Visual Checks				
2	Wear Pads and Adjustment				
3	Check rope deflection roller				
4	Check sliding hook mounts and pin condition				
5	Check that extension ropes have been tightened				
6	String Line and Check for Bend				

Additional Comments on Boom2



Q. BOOM3

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Structure / Visual Checks				
2	Wear Pads and Adjustment				
3	Check rope deflection roller				
5	String Line and Check for Bend				

Additional Comments on Boom3

R. BOOM4

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Structure / Visual Checks				
2	Wear Pads and Adjustment				
3	Check rope deflection roller				
4	Check extension rope sheaves are greased				
5	String Line and Check for Bend				

Additional Comments on Boom / Jib - Manual Section or Third Section

S. WINCH GROUP

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Visual checks on winch mounts and bolts				
2	Gearbox unit oil level				
3	Drum and Bronze Bush Condition				
4	Winch Rope Anchor				
5	Winch Brake Operation				
6	Winch Motor Operation and Abnormal Noise				
7	Winch Valves				
8	Condition of all Hydraulic Lines				
9	Winch Rope Lubrication				
10	Winch Rope Condition				
11	Winch Rope Size and Construction				
12	2 Speed Operation				

Additional Comments on Winch Group

T. HOOK BLOCK

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	SWL Stamped on Fall Block				
2	Fall Block Condition				
3	Sheave Assembly Bearings and Pins				
4	Check Sheave Condition				
5	Rope Retaining Pins Condition				
6	Rope Anchor and Pin				
7	Hook Pin and Pin Hole				

Additional Comments on Fall Block Group



U. HOOK GROUP					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Hook				
	Condition Of Hook and Swivel				
	Condition of Safety Latch				
2	Rhino Hook				
	Condition of pins				
	Condition of Safety Latch				
Additional Comments on Winch Group					
V. ADDITIONAL OPTIONS					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Fly Jib				
	Condition and Damage				
2	Spreader Bar				
	Condition and Damage				
3	Man Basket				
	Condition and Damage				
Additional Comments on Additional Options					
W. SAFETY GROUP					
ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	LMI Operation and Calibration				
2	Anti 2 Block Operation				
3	LMI - Electronic Boom Length Operation				
4	Boom Length Stickers				
5	Manual Boom Angle Indicator				
6	Inclometer Condition				
7	Articulation Lights Operation if Fitted				
8	Electric Hazard and Safety Decals				
9	Load Chart Fitted or Available in Cabin				
10	Operators Manual				
11	Log Book				
12	Suspension lock out system operational				
Additional Comments on Safety Group					



X. OPERATIONAL TESTING

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Holding Brake Operation				
2	Winch Raise and Lower				
3	Luff Raise and Lower				
4	Boom telescope In and Out				
5	Articulate Full Lock Left and Right				
6	Carry Out Performance Load Test				Complete Test Certificate
7	Carry Out Winch Brake Test				Complete Test Certificate
8	Carry Out Creep Test on Luff Cylinders				Less than 16mm Tolerance: per hour
9	Carry Our Creep Test on Extension Cylinders				Less than 12mm Tolerance: per hour
Additional Comments on Operational Testing					
Note Luff Cylinder Creep:	Test load on creep test to be 80-100% for SWL for Radius tested. Cylinder creep is based on temperature of the cylinder to remain constant throughout the testing period				
Note Extension Cylinder Creep:	Test Load on creep test to be 80-100% of SWL for Radius tested. Cylinder creep is based on temperature of the cylinder to remain constant throughout the testing period				

Y. ROAD TEST

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
1	Brake Performance Test				
2	Parking Brake Test				
3	Steering Operation				
4	Abnormal Noises				
5	Gear Selection and Changes				
6	General Driving Condition				
Additional Comments on Road Test					



Z. ADDITIONAL ITEMS (FOUND DURING INSPECTION)

ITEM	DESCRIPTION	OK	REP	DNU	COMMENTS/ACTION
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