NATIONAL MACHINERY

INSTRUCTIONS FOR:

FOLDING CRANES

MODELS: NC10.V3 & NC20

Thank you for purchasing this product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

⚠ ***IMPORTANT:*** **PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE OR PERSONAL INJURY, AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

1. CONTENTS

Page No.

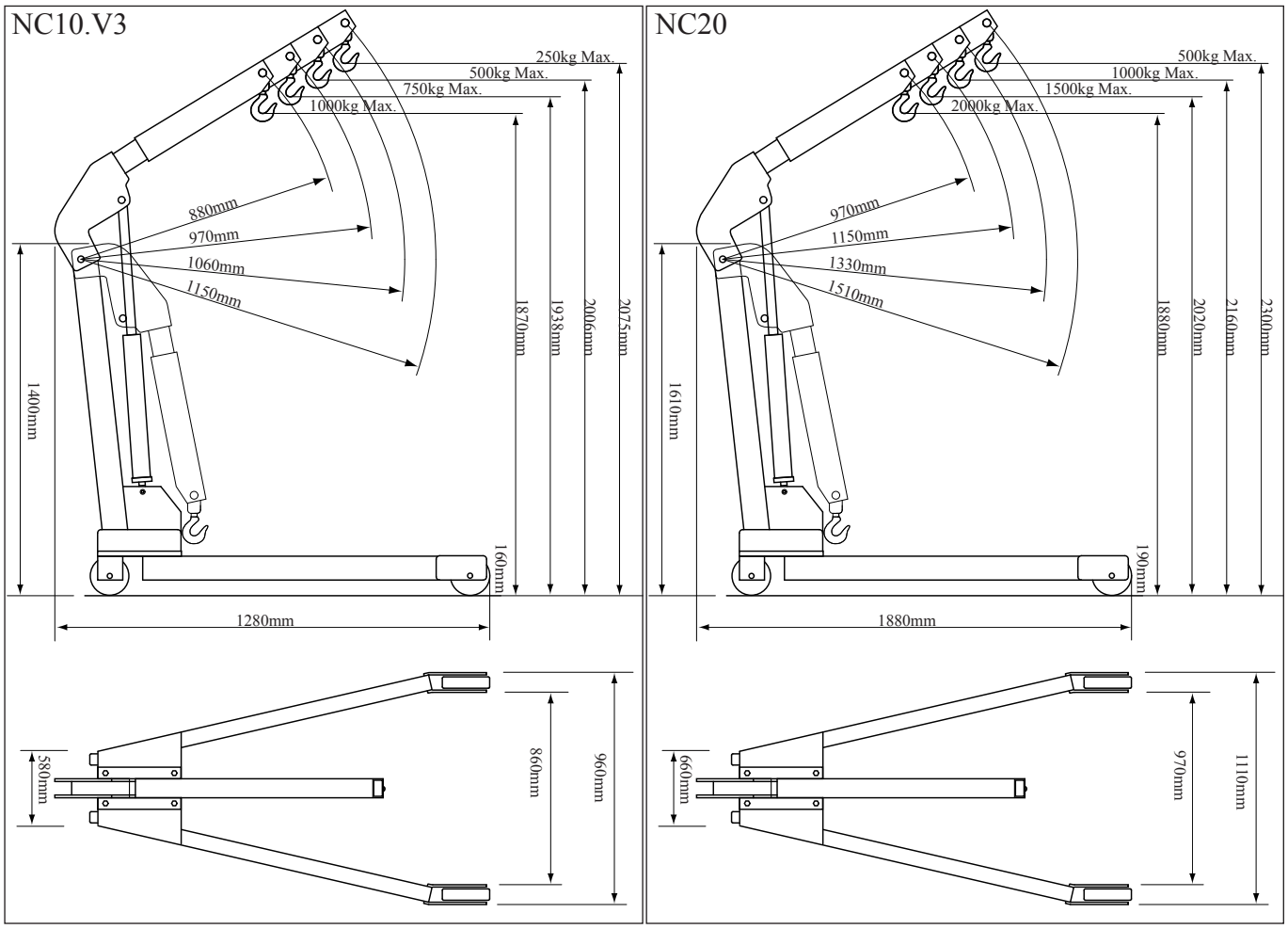
2. GENERAL

2.1 Identification

Supplier: National Automotive Machinery Ltd.
Kempson Way
Suffolk Business Park
Bury St Edmunds
Suffolk
IP32 7AR

Model No: NC10.V3

Model No: NC20



2.2 Technical Data

Rated Capacity

NC10.V3

Safe Working Load (SWL) 1t (tested to 50% overload).
Working Load Limit (WLL) 1t (tested to 50% overload).

NC20

Safe Working Load (SWL) 2t (tested to 50% overload).
Working Load Limit (WLL) 2t (tested to 50% overload).

	NC10.V3	NC20
Max. height @ min. boom extension: mm	1870	1880
Max. height @ max. boom extension: mm	2075	2300
Height (max) of frame: mm	160	190
Length (max) of frame: mm	1280	1880
Width (max) of frame: mm	960	1110
Overall height (stowed): mm	1400	1610
Width inside frame (max): mm	860	970
Distance between rear wheel centres: mm	580	660

	NC10.V3	NC20
Lifting capacity, position 1: kg	1000	2000
Lifting capacity, position 2: kg	750	1500
Lifting capacity, position 3: kg	500	1000
Lifting capacity, position 4: kg	250	500
Length of boom, position 1: mm	880	970
Length of boom, position 2: mm	970	1150
Length of boom, position 3: mm	1060	1330
Length of boom, position 4: mm	1150	1510

a) Design Capability: Test Load 50% overload.
b) For a description of in-service and out-of-service conditions see section 3 Safety, Section 4 Maintenance and Section 6.
c) **DO NOT** operate the hydraulic power unit beyond its maximum stroke.
d) For applications see Section 3 Safety.
e) For control system, see Fig.1 page 3 for release valve and pump handle assy. Usage is explained in Section 3.2 Operation.
f) For ground condition requirements, see Section 3 Safety.
g) For information on parts and materials requiring specialised repair techniques see Section 4 Maintenance.

3. SAFETY / OPERATING

3.1 SAFETY

3 **Keep** crane, lifting slings, support and beams in good working order and condition. Follow the inspection requirements as described in Section 4 page 4 Maintenance. *Take immediate action to repair or replace damaged parts by contacting your supplier. Ensure that all accessory lifting devices are suitably certified. If crane is damaged, remove from service immediately.*

3 ***Ensure the surface on which the crane is used is level, firm and capable of supporting the weight of the crane with maximum load - we recommend concrete. Never use the crane on tarmacadam or other soft surfaces.***

3 **Ensure** the crane legs and arms are locked before use.

3 **Keep** children and unauthorised persons away from the working area.

✓ Ensure the jib extension always lies flat on the arm with the head of the alignment bolt showing through one of the three holes provided.

3 **Keep** working area clean and tidy, free from unrelated materials and ensure that there is adequate lighting.

3 **Ensure** that load does not exceed the maximum lifting capacity of the crane. Overloading the crane is dangerous. Where appropriate, use only the lifting points recommended by the manufacturer of the item to be lifted, e.g. vehicle engine.

3 **Before** lifting the load ensure that the crane jib is in the lowest practical position, that there are no obstacles which may snag the load whilst it is being lifted and that the area above the jib is clear.

3 **To** avoid injury, be fully aware of your own and other persons locations in relation to the lifting, and lowering, of the load.

3 **Keep** a sound footing and balance, and ensure the floor is not slippery.

3 **Ensure** jib extension locking bolt and nut are in position before lifting.

3 **Ensure** the centre of gravity always remains inside the crane base.

x **DO NOT** operate the hydraulic power unit beyond its maximum stroke as indicated on the label.

7 **DO NOT** harness the load at an angle or use any attachments not verified as fit for purpose.

7 **DO NOT** allow the load to swing during lifting.

7 **DO NOT** allow the load to drop suddenly. Lower load with care, ensuring that you are fully aware of the condition of the surface onto which the load is to be placed.

7 **DO NOT** load crane beyond its rated capacity for each specified jib extension position as indicated in Section 2 page 1.
The capacity of the crane reduces as the jib is extended.

7 **DO NOT** position any part of your body beneath the load.

7 **DO NOT** use the crane to move or transport a load other than for repositioning (see 3.2.f). The crane is a lifting device only.

7 **DO NOT** apply any sideways pressure to any part of the crane during lifting or when a load is suspended.

7 **DO NOT** attempt to adjust the safety valve, which has been set and sealed by the manufacturer.

7 **DO NOT** use this product to perform a task for which it is not designed.

7 **DO NOT** use whilst under the influence of drugs, alcohol or intoxicating medication.

7 **DO NOT** climb on the crane.

3 **When** not in use fold the crane down and store in a safe, dry, childproof area.

3 ***This crane is designed for lifting within a garage or workshop environment.***

❒ **WARNING! Failure to heed safety and warning instructions may result in damage and/or personal injury and will invalidate the warranty.**

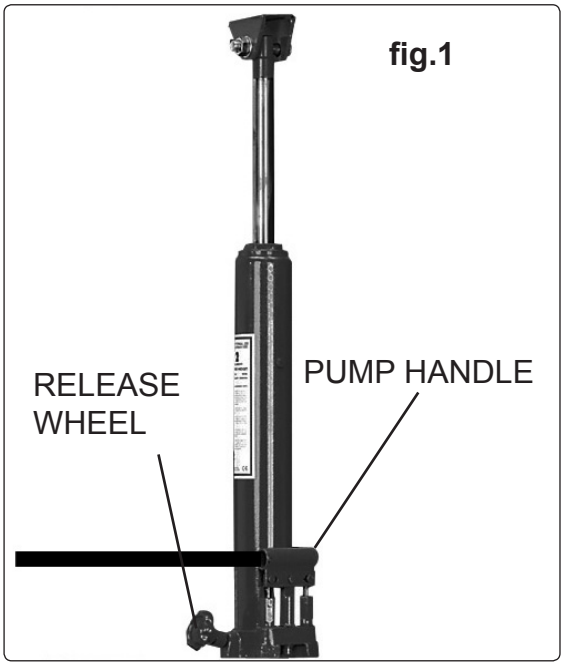


fig.1

NOTE: ENSURE YOU HAVE READ AND UNDERSTOOD THE SAFETY INSTRUCTIONS AT THE BEGINNING OF THIS SECTION BEFORE YOU OPERATE THE CRANE.

3.2 OPERATION. (Refer to Section 4.2 (a) regarding inspection before each and every use).

a) Refer to the lifting capacity chart in Section 2.2. If necessary adjust the position of the jib extension to cater for the weight that is to be lifted. To adjust the jib extension lift the hook end and slide the jib in or out as required to the next position. NEVER leave the jib between positions. The jib extension should always lie flat on the arm with the pin (9) engaged and locked with safety clip (10) through one of the four holes provided.

b) Attach the pump handle and commence pumping to raise the jib to the height at which load may be secured.

c) Connect the crane hook to the load using a suitable **certified** sling or support beam. Ensure you are aware of the load weight, and check that it is within the capacity of the crane (at the jib extension you are using) and the sling or support beam. When removing engines ensure you know the weight to be lifted. Use only the lifting points recommended by the vehicle manufacturer.

d) Lift only from directly above the load. ***WARNING! DO NOT LIFT THE LOAD AT AN ANGLE!***

e) To lower the load, operate the release wheel (Fig.1) *VERY SLOWLY anti-clockwise* avoiding any sudden movement.
WARNING! Do not allow the load to drop suddenly. Release wheel to stop the descent.

f) The crane is not a transportation device but may be used to reposition the load being worked on. To do so, lower load and jib with care, to the lowest possible point before attempting to move. Do not try to move crane in a sideways direction. The crane is not designed to support the load indefinitely. When you have repositioned the load, lower the load onto a secure and appropriate working base, being fully aware of your own and other persons locations in relation to the lowering load.

g) When load has been secured, remove lifting sling, support beam etc. and place crane in a safe location with lifting beam fully lowered.

4. MAINTAINANCE / EXAMINATION / INSPECTION

NOTE: The crane MUST be kept clean and dry and must be maintained in accordance with these instructions.

4.1. Lubrication.

a) Oil all working parts monthly.

b) The ram is filled with oil and should only require occasional topping up. DO NOT use brake fluid, as this will damage the hydraulic seals. Proceed as follows:
   a) Use only good quality hydraulic jack oil available from your supplier.
   b) Fully lower the jib extension arm and remove the filler plug on the ram.
   c) Fill until oil overflows from the hole and wait until the level settles before replacing the plug.

4.2. Inspection and Examination of Crane Before Use.

a) Before each use of the crane you must perform an inspection for leaks, damage, loose or missing parts.

b) The workshop crane must be examined immediately if it has been subject to an abnormal load or shock. It is recommended that such an examination is made by an authorised service agent.

c) The owner and/or operator must be aware that repair of this equipment will require specialised knowledge and facilities. It is recommended that an annual examination of the workshop crane is made by an authorised service agent.

d) Unauthorised parts may be dangerous and will invalidate the warranty.

NOTE! Please see the Definition of 'inspection' and 'examination' below.

Inspection:

Looking at the crane for defects and checking the operation of the controls, limiting and indicating devices without loading the crane. This is much more than a check but does not normally require any part of the crane to be dismantled other than removal or opening of covers or housings.

Examination:

Verification that the crane can safely continue in service including a functional test of all safety devices i.e. limiting, indicating equipment, brakes, clutches, safety valves etc to verify that they operate within the required tolerances. An examination is more thorough than an inspection.

5. ASSEMBLY / STORAGE INSTRUCTIONS

5.1 ASSEMBLY.

❒ **WARNING!** Due to their weight please ensure that there is adequate help available when assembling these cranes.

NOTE! **To identify item numbers refer to the parts diagram.**

Model NC10.V3

a) Fit the two legs (2 & 3) to the base (1) and retain with lock pins (4) and split pins (5).

b) Attach the post (8) to the base (1) with bolts (9) and washers and nuts (10).

c) Attach the boom (11) to the post (8) using bolt (12), washer (13) and nut (14).

d) Fit the ram (15) to the post (8) using bolt (16) and washer and nut (17) and attach the boom (11) to the top of the ram (15) using bolt (18) and washer and nut (17).

e) Slide the boom extension (22) into the boom (11) and locate with pin (9) retained with safety clip (10), at one of the four positions.

f) Fit the hook and chain (24) to the boom extension (22) using bolt (23) and washer and nut (26).

g) Use bolts (21) and washers (20) to attach the handle (19) to the post (8).

Model NC20

a) Fit the castor wheels (24) to the base (21) using bolts (25), washers (23) and nuts (22).

b) Fit the two legs (30) to the base (21) and retain with pins (26) and lock pins (27).

c) Attach the post (14) to the base (21) with bolts (5), washers (12) and nuts (13).

d) Fit the support straps (17) between post (14) and base (21) using bolts (5) at the base and bolt (16) at the post with washers (12) and nuts (13).

e) Attach the boom (8) to the post (14) using bolt (15), washer (12) and nut (13).

f) Fit the ram (19) to the post (14) using bolt (20), washer and nut and attach the boom (8) to the top of the ram (19) using bolt (11), washer (12) and nut (13).

g) Slide the boom extension (6) into the boom (8) and locate with pin (7) retained with safety clip (10), at one of the four positions.

h) Fit the hook and chain (1) to the boom extension (6) using bolt (2), washer (4) and nut (3).

PRIME unit Before first use as follows:

Open the return valve by turning anticlockwise and then operate the pump several times. This will purge any air that may have entered the hydraulic system during transit. Pull crane boom up slightly, close the return valve firmly, but do not over-tighten, and again pump the handle. The boom will now rise. Pump the boom all the way up and then lower it by opening the return valve (this will confirm that there is sufficient oil in the ram). The crane is now ready for use.

5.2 STORAGE.

Always store the crane fully closed so that the jib is in lowest position and the ram is closed.

6. OWNER'S & OPERATOR'S RESPONSIBILITIES

The owner and/or operator shall study these instructions and retain them for future use.

a) Understanding instructions and warnings.

The owner and/or operator shall understand the operating instructions and warnings before operating the crane. Warning information must be emphasised and understood.

If the operator is not fluent in English, the product instructions and warnings must be read to, and discussed with, the operator in the operator's native language by the owner, making sure the operator understands the contents.

b) Damaged Cranes.

Any crane which appears to be damaged, badly worn, or operates abnormally MUST BE REMOVED FROM SERVICE! It is recommended that necessary repairs be made by an authorised service agent.

c) End of service.

Through years of normal wear, the crane will eventually become unserviceable. When this happens ensure the hydraulic oil is drained off and disposed of in accordance with local authority regulations.

Your crane is guaranteed for one year from the date of purchase. The Guarantee does not cover faults caused by incorrect use, lack of maintenance, accidental damage or damage caused to third parties through misuse. You are recommended to inform your insurers and check that adequate cover is in place. Warranty claims must be supported by a copy of the dated purchase receipt.

7. DECLARATION OF CONFORMITY (NC10.V3)

EC DECLARATION OF CONFORMITY

We the sole importers into the UK, hereby declare that the equipment described below

Description and Function: 1 tonne National Folding Crane

Model/Type: NC10

Serial number (optional):

Manufacturer's authorised representative within the EC: **Jack Sealey Ltd. Kempson Way, Suffolk Business Park, Bury St. Edmunds, Suffolk, IP32 7AR**

Conforms to the requirements of the following Directives, as indicated.

- ☒ 2006/42/EC Machinery Directive
- ☐ 2006/95/EC Low Voltage Directive
- ☐ 2004/108/EC EMC Directive
- ☒ 93/68/EEC CE Marking Directive
- ☐ 2000/14/EC Outdoor Noise Emissions Directive
- ☐ 2002/96/EC WEEE Directive
- ☐ 2002/95/EC RoHS Directive

And the following harmonised standard(s): **BS EN 14238: 2004** **BS EN 12644 part 1: 2001**

BS EN 12644 part 2: 2000

National technical standards and specifications (if applicable):

Technical file compiled by: **Jack Sealey Ltd**.

Signed:

Date: 02-Nov-2009 **Place:** Bury St.Edmunds.

Name: Mark Sweetman

Position: Managing Director

Being the responsible person appointed by the manufacturer.

CE

Sealey Power Products, Kempson Way, Suffolk Business Park, Bury St. Edmunds, Suffolk, IP32 7AR
01284 757500 01284 703534 sales@sealey.co.uk www.sealey.co.uk

8. DECLARATION OF CONFORMITY (NC20

SEALEY POWER PRODUCTS

EC DECLARATION OF CONFORMITY

We the sole importers into the UK, hereby declare that the equipment described below

Description and Function: 2 tonne National Folding Crane

Model/Type: NC20

Serial number (optional):

Manufacturer's authorised representative within the EC: **Jack Sealey Ltd. Kempson Way, Suffolk Business Park, Bury St. Edmunds, Suffolk, IP32 7AR**

Conforms to the requirements of the following Directives, as indicated.

- ☒ 2006/42/EC Machinery Directive
- ☐ 2006/95/EC Low Voltage Directive
- ☐ 2004/108/EC EMC Directive
- ☒ 93/68/EEC CE Marking Directive
- ☐ 2000/14/EC Outdoor Noise Emissions Directive
- ☐ 2002/96/EC WEEE Directive
- ☐ 2002/95/EC RoHS Directive

And the following harmonised standard(s): **BS EN 14238: 2004** **BS EN 12644 part 1: 2001**

BS EN 12644: Part 2: 2000

National technical standards and specifications (if applicable):

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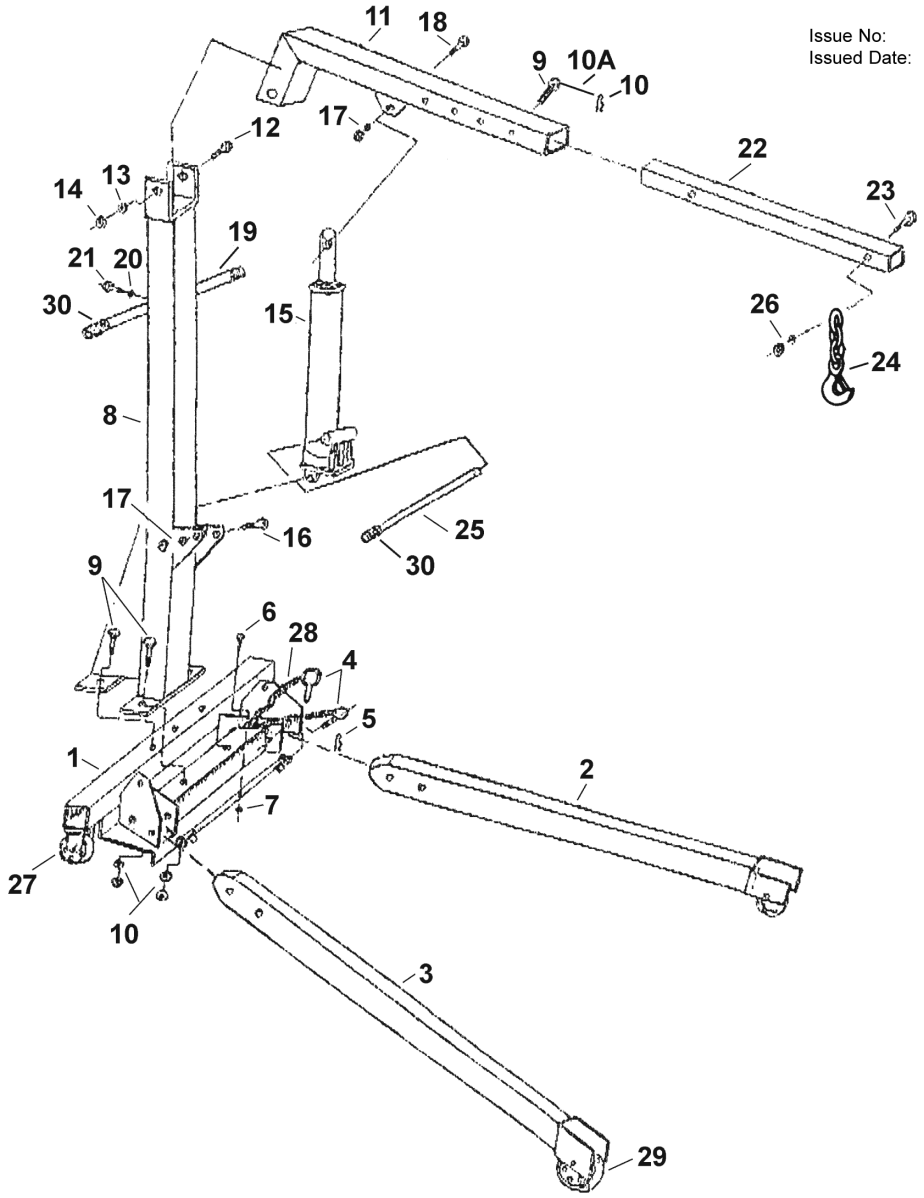
PARTS LIST & DIAGRAM FOR:

FOLDING CRANE

Model: NC10.V3 (ASSEMBLY)

Issue No: 01
Issued Date: 210906



Item	Part No.	Description
1	NC10.V2-01	Base
2	NC10.V2-02	Left Leg
3	NC10.V2-03	Right Leg
4	NC10.V2-04	Lock Pin
5	NC10.V2-05	Split Pin
6	NC10.V2-06	Bolt, M6 x 30
7	NC10.V2-07	Nut, M6
8	NC10.V2-08	Main Support Post
9	NC10.V2-09	Pin
10	NC10.V2-10	Safety Clip
11	NC10.V2-11	Boom

Item	Part No.	Description
12	NC10.V2-12	Bolt, M16 x 100
13	NC10.V2-13	Washer, M16
14	NC10.V2-14	Nut, M16
15	NC10.V2-15	Ram Unit, 3 Tonne
16	NC10.V2-16	Bolt, M16 x 90
17	NC10.V2-17	Nut & Washer, M16
18	NC10.V2-18	Bolt, M16 x 80
19	NC10.V2-19	Handle
20	NC10.V2-20	Washer, M6
21	NC10.V2-21	Bolt, M8 x 20
22	NC10.V2-22	Boom Extension

Item	Part No.	Description
23	NC10.V2-23	Bolt, M12 x 90
24	NC10.V2-24	Hook & Chain
25	NC10.V2-25	Jack Handle
26	NC10.V2-26	Nut & Washer, M12
27	PH20/07	3.5” Swivel Castor
28	NC10.V2-28	Chain
29	NC10.V2-29	5” Rigid Wheel
30	NC10.V2-30	Handle Grip

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*

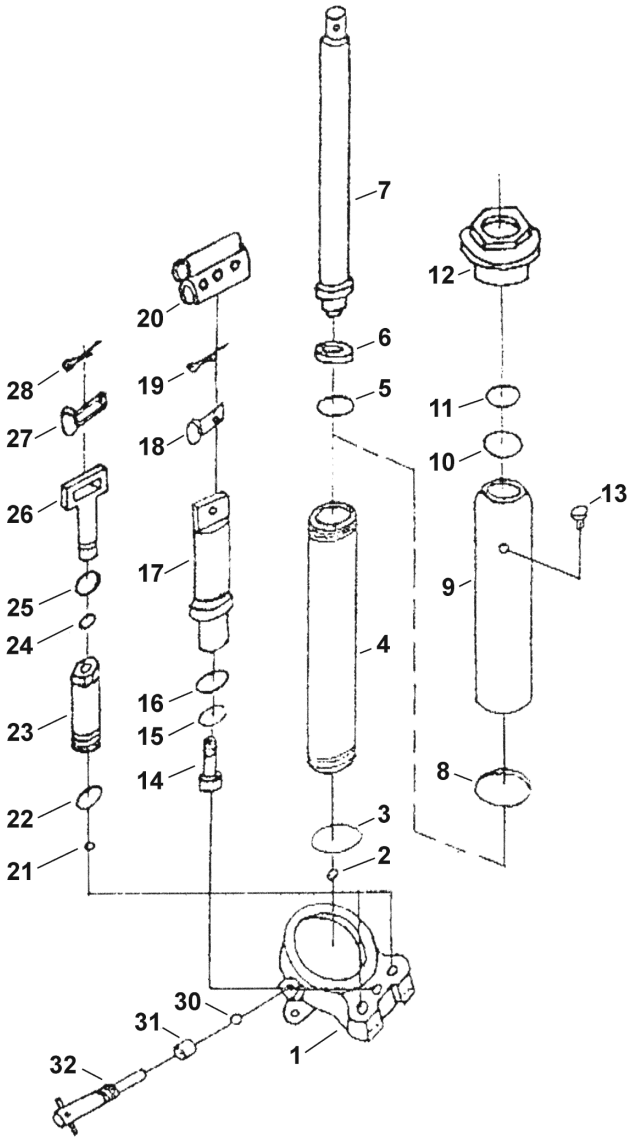
IMPORTANT: No liability is accepted for incorrect use of this product.

PARTS LIST & DIAGRAM FOR:

FOLDING CRANE

Model: NC10.V3 (RAM)

Issue No: 1
Issue Date: 210906



Item	Part No.	Description
1	NC10.V2-15-01	Ram Base
2	NC10.V2-15-02	Copper Ball
3	NC10.V2-15-03	Washer
4	NC10.V2-15-04	Cylinder
5 *	NC10.V2-15-05	O-ring
6 *	NC10.V2-15-06	Ram Seal Washer
7	NC10.V2-15-07	Ram
8 *	NC10.V2-15-08	Seal Ring
9	NC10.V2-15-09	Oil Tank
10 *	NC10.V2-15-10	Sealing Gasket
11 *	NC10.V2-15-11	O-ring

Item	Part No.	Description
12	NC10.V2-15-12	Tank Nut
13 *	NC10.V2-15-13	Oil Plug
14	NC10.V2-15-14	Screw
15	NC10.V2-15-15	Spring Washer
16	NC10.V2-15-16	Washer
17	NC10.V2-15-17	Stand
18	NC10.V2-15-18	Pin
19	NC10.V2-15-19	Cotter Pin
20	NC10.V2-15-20	Handle Socket
21	NC10.V2-15-21	Steel Ball
22	NC10.V2-15-22	Washer

Item	Part No.	Description
23	NC10.V2-15-23	Pump Cylinder
24 *	NC10.V2-15-24	O-ring
25 *	NC10.V2-15-25	Back-up Ring
26	NC10.V2-15-26	Plunger
27	NC10.V2-15-27	Plunger Pin
28	NC10.V2-15-28	Cotter PIn
30	NC10.V2-15-30	Steel Ball
31 *	NC10.V2-15-31	Seal Ring
32	NC10.V2-15-32	Release Screw
-	NC10.V2-RK	Repair Kit (consists of items marked *)

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*

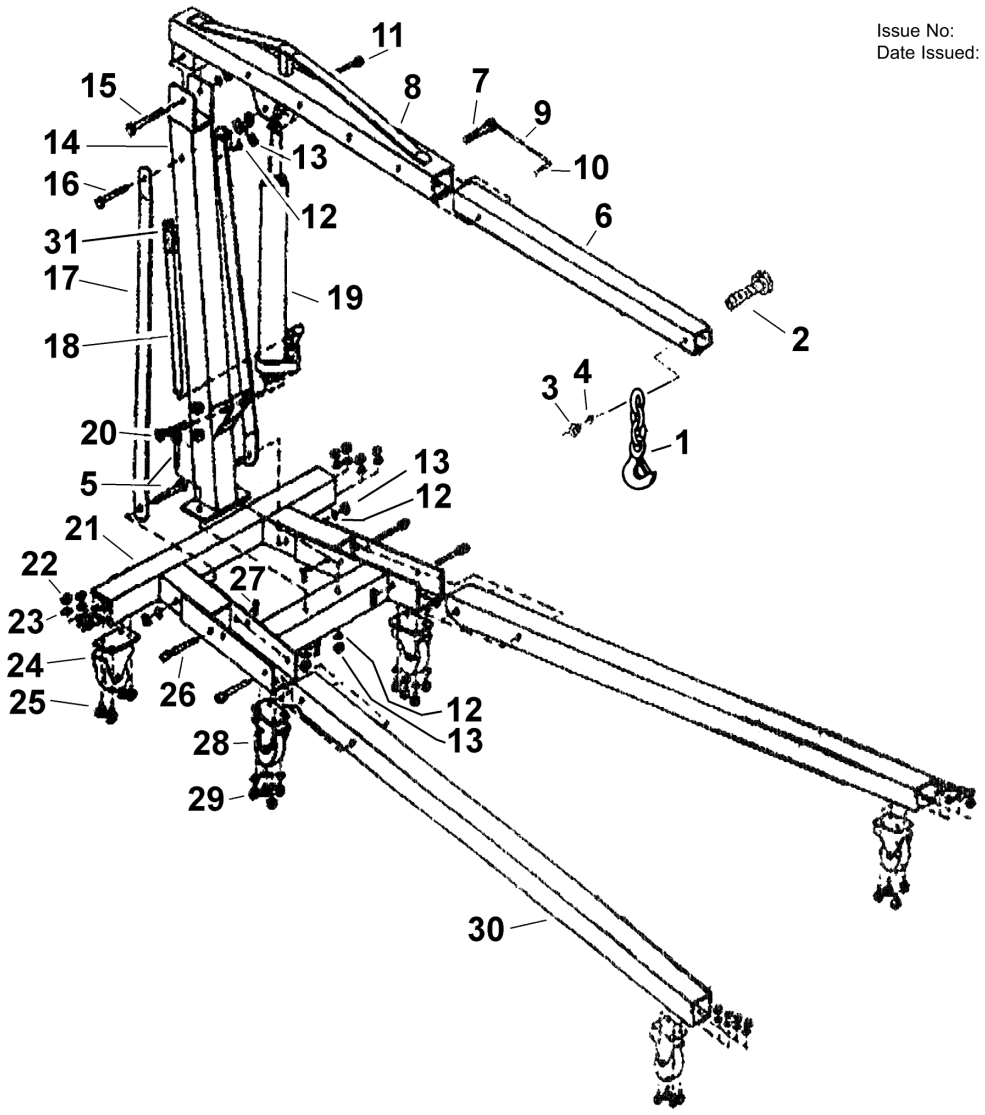
IMPORTANT: No liability is accepted for incorrect use of this product.

PARTS LIST & DIAGRAM FOR:

FOLDING CRANE

Model: NC20 (ASSEMBLY)

Issue No: 1
Date Issued: 040402



Item	Part No.	Description
1	NC20-01	Hook & Chain
2	NC20-02	Bolt, M12 x 95
3	NC20-03	Nut, M12
4	NC20-04	Flat Washer, 12mm
5	NC20-05	Bolt, M16 x 100
6	NC20-06	Boom Extension
7	NC20-07	Bolt, M14 x 100
8	NC20-08	Boom
9	NC20-09	Chain
10	NC20-10	R-clip
11	NC20-11	Bolt, M16 x 80

Item	Part No.	Description
12	NC20-12	Flat Washer, 16mm
13	NC20-13	Nut, M16
14	NC20-14	Main Support Post
15	NC20-15	Bolt, M16 x 120
16	NC20-16	Bolt, M16 x 110
17	NC20-17	Support Strap
18	NC10.V2-25	Pump Handle
19	NC20-19	Ram Assembly
20	NC20-20	Bolt, M16 x 90
21	NC20-21	Frame Base
22	NC20-22	Nut, M8

Item	Part No.	Description
23	NC20-23	Lock Washer, 8mm
24	NC20-24	3.5” Swivel Castor
25	NC20-25	Bolt, M8 x 20
26	NC20-26	Frame Pin
27	NC20-27	Hair Pin
28	NC20-28	3” Swivel Castor
29	NC20-29	Bolt, M8 x 12
30	NC20-30	Leg
31	NC10.V2-30	Handle Grip

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*

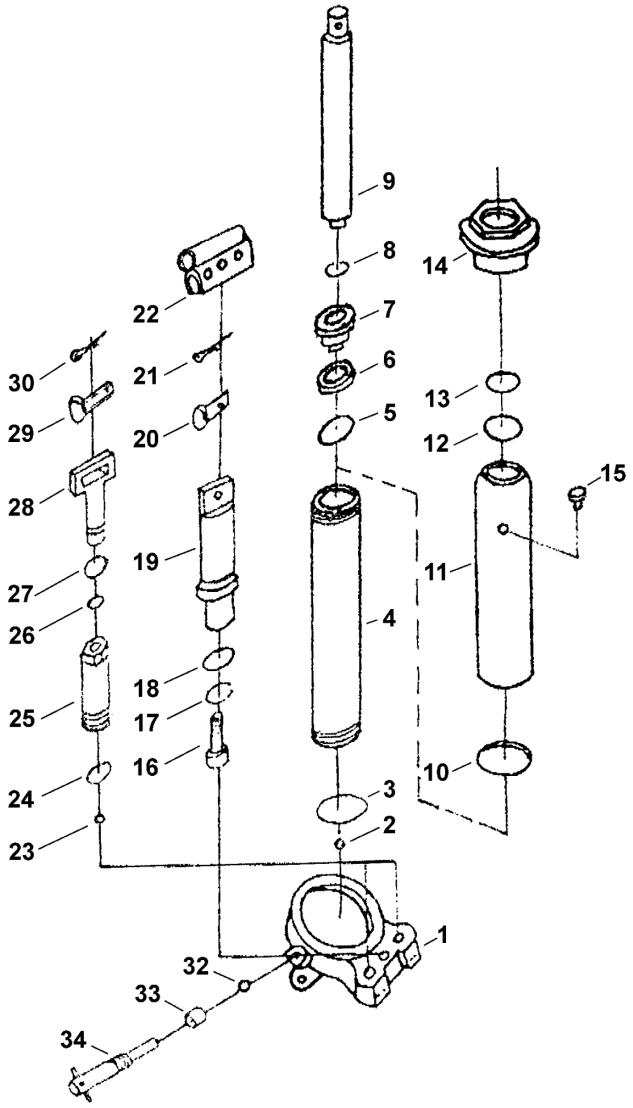
IMPORTANT: No liability is accepted for incorrect use of this product.

PARTS LIST & DIAGRAM FOR:

FOLDING CRANE

Model: NC20 (RAM)

Issue No: 1
Date Issued: 040402



Item	Part No.	Description
1	NC20-19-01	Ram Base
2	NC20-19-02	Copper Ball
3	NC20-19-03	Washer
4	NC20-19-04	Cylinder
5 *	NC20-19-05	O-ring
6 *	NC20-19-06	Ram Seal Washer
7	NC20-19-07	Piston Head
8	NC20-19-08	Spring Washer
9	NC20-19-09	Ram
10 *	NC20-19-10	Seal Ring
11	NC20-19-11	Oil Tank
12 *	NC20-19-12	Sealing Gasket

Item	Part No.	Description
13 *	NC20-19-13	O-ring
14	NC20-19-14	Tank Nut
15 *	NC20-19-15	Oil Plug
16	NC20-19-16	Screw
17	NC20-19-17	Spring Washer
18	NC20-19-18	Washer
19	NC20-19-19	Stand
20	NC20-19-20	Pin
21	NC20-19-21	Cotter Pin
22	NC20-19-22	Handle Socket
23	NC20-19-23	Steel Ball
24	NC20-19-24	Washer

Item	Part No.	Description
25	NC20-19-25	Pump Cylinder
26 *	NC20-19-26	O-ring
27 *	NC20-19-27	Back-up Ring
28	NC20-19-28	Plunger
29	NC20-19-29	Plunger Pin
30	NC20-19-30	Cotter PIn
32	NC20-19-32	Steel Ball
33 *	NC20-19-33	Seal Ring
34	NC20-19-34	Release Screw
-	NC20-RK	Repair Kit (consists of items marked *)

NOTE: *It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.*

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