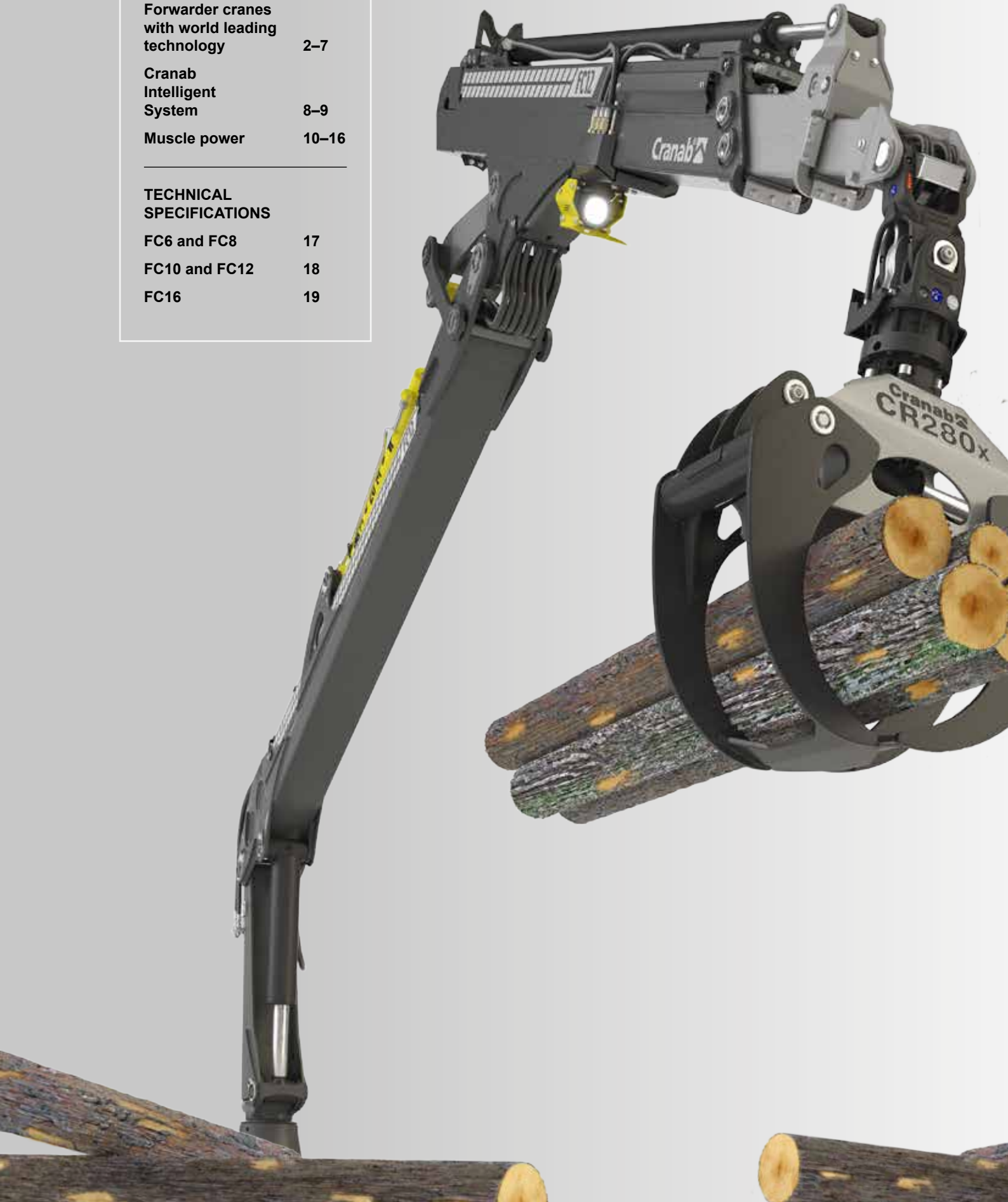
FORWARDER CRANES WITH WORLD LEADING TECHNOLOGY

CRANAB FC – FOR MODERN FORESTRY

Issue 4, April 2015

INDEX

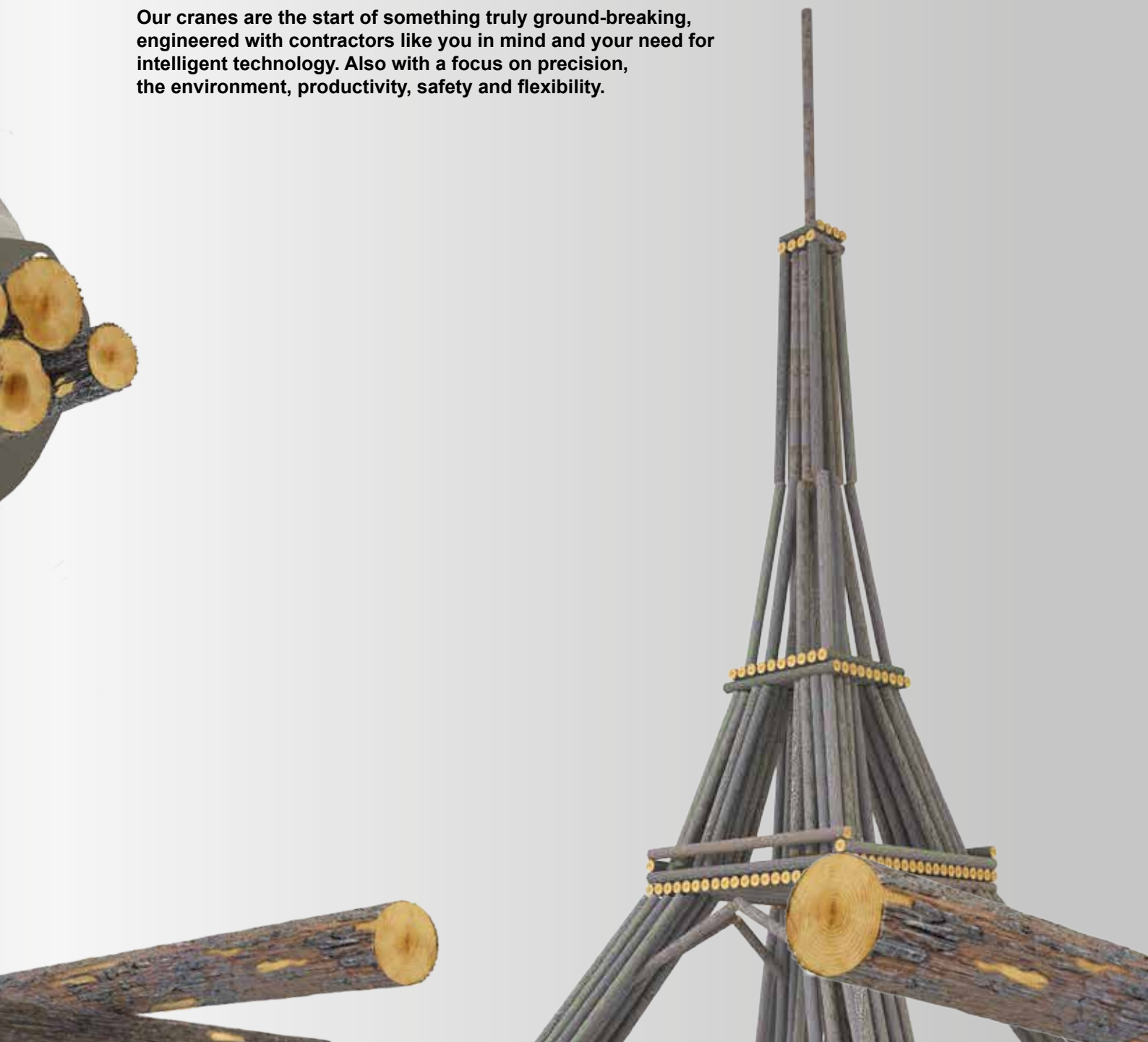


CIS CRANAB INTELLIGENT SYSTEM

INTELLIGENT TECHNOLOGY

So maybe your assignment is not exactly building the Eiffel Tower, but with Cranab FC the impossible is perfectly feasible!

Our cranes are the start of something truly ground-breaking, engineered with contractors like you in mind and your need for intelligent technology. Also with a focus on precision, the environment, productivity, safety and flexibility.



OUR PRODUCTS REFLECT YOUR REALITY IN THE FOREST

It takes only a matter of seconds for the FC6, FC8, FC10, FC12 and FC16 to leave a memorable impression. Almost immediately you'll see they're made with great care,with excellent running characteristics and a user-friendly operator's environment begging to be put to good use. The cranes lift heavier loads higher and faster and with greater precision than ever before.

World-leading technical development from people who live and breathe modern forestry. Sheer job satisfaction delivered by the company right in the middle of the great forest.


Cranab
CR280x


Cranab
CR280x

RELAX! OUR CRANES ARE SERVICE FRIENDLY AND CLIMATE SMART

Truly efficient, harmonious work calls for service-friendly cranes. This is something contractors can subscribe to, and it's a motto we live up to. So we made servicing the FC crane quick and simple.

Cranab works closely with forest owners and contractors – because we know the importance of conserving natural treasures. That's why we're always on the hunt for climate-smart improvements when we develop new products. The manufacturing process itself, for example, is resource and energy-saving. Another example is spray-painting, now with significantly less use of solvents.

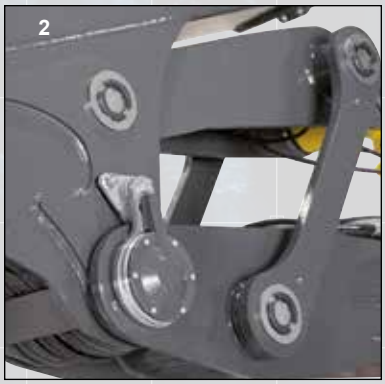
THE INTELLIGENT CRANE IS HERE

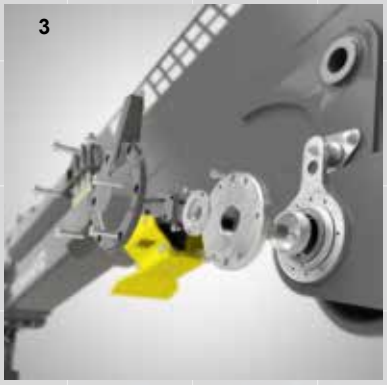
We are proud to present the *Cranab Intelligent System*, CIS. A system comprising built-in sensors in our cranes for slewing, lifting, boom and telescopic functions. This makes the cranes safer and more efficient and can also mean a shorter learning process for new operators. The system meets the higher requirements of environmental consideration, productivity, safety and flexibility.

The advantage of sensor technology is to constantly know where all the parts are, from the slewing engine out to the crane's nose. We call it the *Cranab Intelligent System.* The system consists of non-contacting analogue or digital sensors, and is protected by being fully integrated in the crane. It is available on all of the cranes in the FC series in both single and double-action telescopic versions.

Automating recurring movement patterns
In its most advanced form the sensor technology gives intelligent control of all the crane's functions, so-called crane-tip control. Certain recurring movement patterns can be fully or partly automated to make things easier for the operator, creating a good working environment.

A safer working environment
The sensor technology increases safety in your working environment. It can prevent collisions with e.g. the cab or stakes in the cargo space. It also allows active cylinder limit damping to reduce machine wear and contribute to a better working environment.





1. Protected, yet easy-to-get-at slew sensors. Thanks to its location, the slew sensor is well protected against external damage while still being easy to get at.

2. Sensor between pillar and main boom.
The sensor is installed in a stable location to withstand the tough environment.

3. Integrated sensor.
The sensor between the main and outer booms is built-in and well-protected.

4. Built-in sensor technology.
The telescopic cylinder has fully non-contacting built-in sensor technology.


CIS
CRANAB
INTELLIGENT
SYSTEM

MADE TO MAKE OPERATIONS A PLEASURE WITH THE RIGHT TEMPO AND A SMOOTH WORKFLOW

The FC series brings precision and dependability to forestry machines. Low weight and a compact construction were highly-prioritised factors during the development phase. All to create a complete and well-planned driving experience, with efficiency at every step, every day. Fingertip sensitivity right the way out to the log, giving you the right speed and fluidity of motion.

The contractors' expertise and requirements for precision have been decisive for Cranab's development since 1960. The FC series proudly carries this tradition onwards. Designed to suit many different types of needs and forestry machines. Equipped with two extra lines to the crane nose to meet the forestry needs of the future, and with a parking position that symbolises the concept of a Cranab crane. It has to be durable, efficient and well-planned. Precisely as modern forestry management has to be.

Stable parking position. As we constantly have user-friendliness in focus, we naturally keep in mind how the crane is to be parked and transported as carefully as possible. It is folded down to its maximum extent and is then properly parked.

1. The four-point linkage between the main boom and outer boom gives the outer boom even movement and speed over the full range, which also means excellent working characteristics close to the machine.

2. When you see this pillar – there's efficiency at work. The FC series design was developed help our customers gain time, reach and bigger loads with every move. The pillar solution makes the crane lighter, takes up less space and allows higher lifts. The slewing engine housing is generously dimensioned – to give the most power where it's needed.

3–4. Safe maintenance work.
The FC series has grease points for all dynamic bearings out to the outer boom bearing. Lowered lubrication points are available as an option on all models. Grease nipples and hoses are well protected and generously dimensioned. All to withstand the tough environments our cranes are made for.

5. Adapt range of lift according to machine. The FC-series has a range of pillar heights, allowing an optimal configuration for each machine. In other words – the possibility of creating the optimal geometry.

6. Top class cylinders. Tough testing at an advanced level enables you to lift both higher and safely. Cranab has invested in quality and service life through the design of connectors and welded joints.

USING A SLIGHT TILT WE HELP YOU TO AIM HIGHER AND GET A BETTER LIFT AT WORK

Raise your sights and enjoy trouble-free working. The FC series affords even better operating qualities. Sensors and intelligent applications make life easier for the driver, we have also thought about solutions closer to the ground. The crane post with its profile design and extended main boom provide excellent lifting characteristics. It's easy to avoid peak height – crane geometry makes for simpler loading close to the gate.

A lot of work lies behind our technically advanced forwarder crane. The FC series incorporates a wealth of minor decisions that add up to an efficient total solution. Qualities that help the driver concentrate better on the task at hand. For those of us working with forestry technology here in Vindeln, the FC series is the latest proof of what contractors already know - a passion for forestry can give purely magical results.

Small solids of revolution make the crane easy to position

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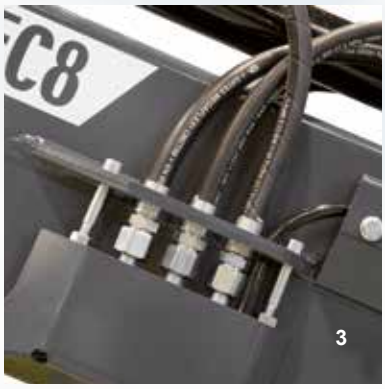

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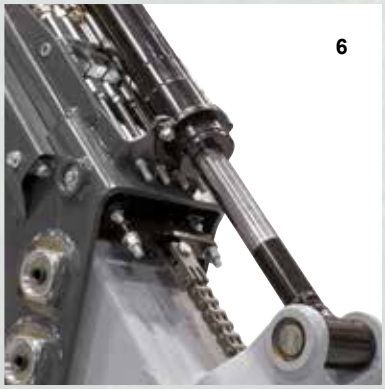

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1–2. Strong emphasis at work. How about a spotlight on the arm joint that is constantly directed towards the grapple? An optional extra with a well-protected and smart location that contributes to increased productivity. Automatic dimming in parking mode.

3–4. Greater diameter, faster work. In many respects, a Cranab crane is all about generous margins. Generally speaking, we have chosen larger-diameter hydraulic hoses as we know that greater flow and low loss of pressure are crucial to fast and energy-smart working.

5. Optimal hose tension. Individual tensioners for all the hoses in the outer boom enable optimal tensioning for each hose routing. A very important detail for the service life of the hose and the crane's efficiency.

6. Telescopes with external cylinders. The solution makes connecting the energy-saving, generously dimensioned hoses easy and results in the even speed and flows you need. The FC is more robust than ever thanks to such things as the use of larger chains and chain attachments machined from solid metal which are also jointed laterally.

7. MPB brake
Protected hose routing at the crane tip are a must for achieving efficiency in crane operations. Y links in various designs and price ranges are available for models from the FC6 to the FC16. The most sophisticated have MPB brakes, which are suitable for the most demanding users.

8. Many link possibilities
Simpler link solutions with or without brakes are also available. Well protected hose routing inside the crane tip are common to all Y links, all to reduce down-time and increase efficiency.

8

YOU'LL WANT TO OUTPERFORM YOURSELF EVERY SHIFT

Not one single detail has been too small for discussion and analysis. However, the results fly in the face of convention concerning most facets of what can be demanded of an outer boom crane. Our crane represents the highest industry specifications at all levels.

When you and your machine work hard on a contract, just think of all the trials and tribulations the crane has to withstand. Heart-breaking, painful lifting movements, twists, turns and max loads. All to outperform even tomorrow's dependability requirements. Cranab's goal remains firm – to lead the world forwards from Vindeln in the field of crane production for the forestry industry.

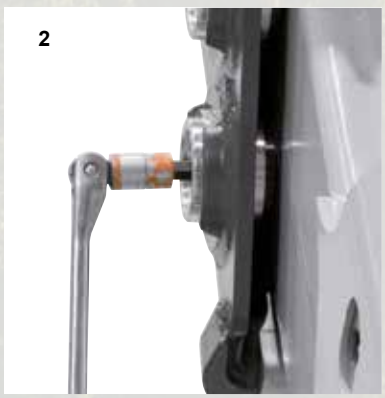
1

1. Internal hose routing. Cranab was the first with this obvious solution – well-designed internal hose routing that protects the lines. The development has given Cranab the opportunity to design products with hoses that can operate at higher pressures.

2. Individually adjustable slide blocks in the outer boom. Adjustment is easily accomplished from the outside using an Allen key – less awkward, it gets done more often resulting in a more steady crane and more efficient operation. Moreover you avoid having a crane that is subject to unnecessarily fast wear-and-tear due to play. In addition there are disc springs that maintain tension. The slide blocks themselves are made from synthetic material and are completely maintenance-free.

3. Harder pins. In order to avoid operating with your foot on the brake pedal completely unnecessarily we have reduced the friction through using pins with the highest degree of hardness. It also reduces the wear on cylinders, bushings and bearings.

4. Generously dimensioned bearings – something we consider a necessity here at Cranab. Just as important for the service life of the crane are our requirements for limited tolerances and good surface smoothness.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Another Cranab first – telescopic arms with internal hose routing.

(THE SOLUTION WAS PATENTED IN 1978).

5

6

7

5. Pin locking with rust-protection on all parts.

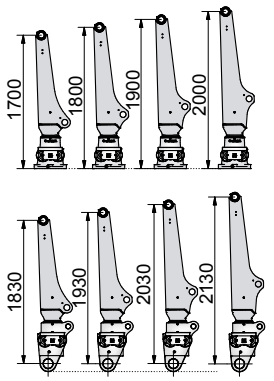
6. A sealing system for the entire crane. Our forwarder cranes have hydraulic hoses that seal tighter thanks to soft-sealing hydraulic connections (ORFS standard), which are commonplace in other demanding industries. The technology has a positive environmental effect, and the crane becomes cleaner and more eye-catching.

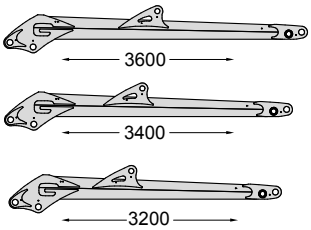
7. Strength you can depend on. All cranes and cylinders in the FC series are designed to meet the toughest challenges imaginable. We manufacture our cranes from high-quality steel with a high tensile yield limit and impact strength. The welding process is to all intents and purposes robotised, and we pay great attention to welds and weld finishes, which are paramount to the service life and give stronger structures.

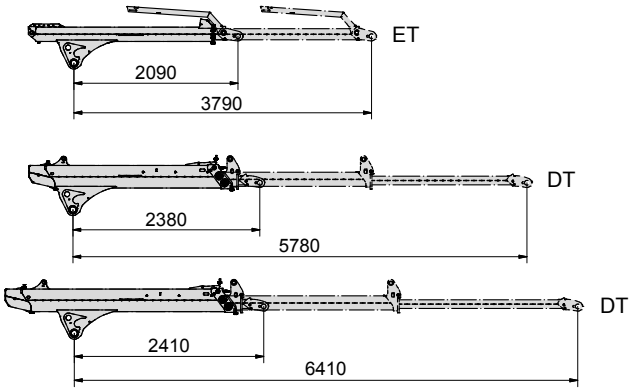
We reserve the right to make amendments.

CRANAB FC6 AND FC8

Rotator GV6 Y
GV12 Y
G101 Y

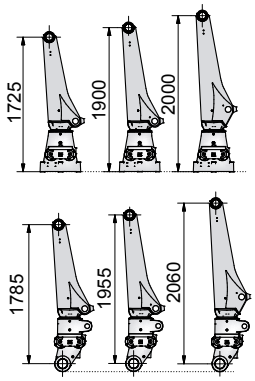


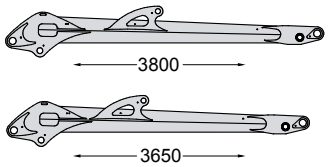


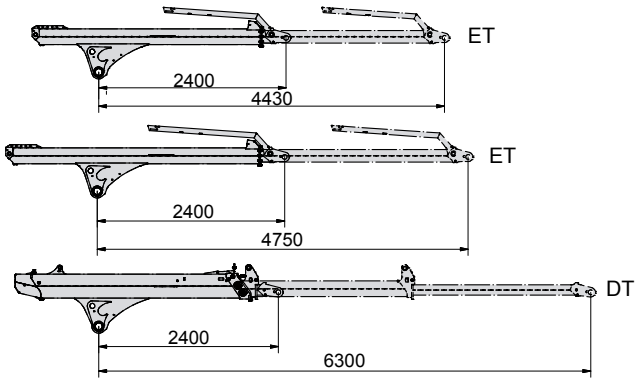


CRANAB FC10 AND FC12

Rotator GV12S Y
G121 Y

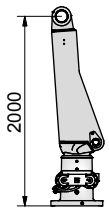


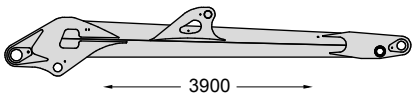


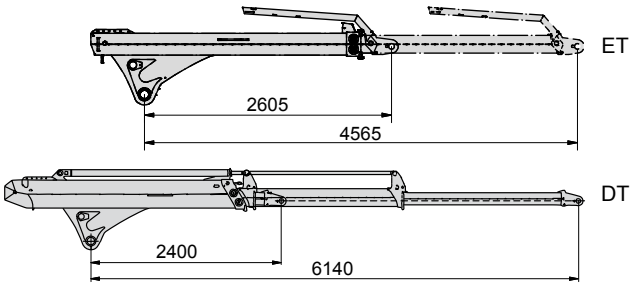


CRANAB FC16

Rotator GV14S Y
GV17SA Y HD
G141 Y
G171 Y





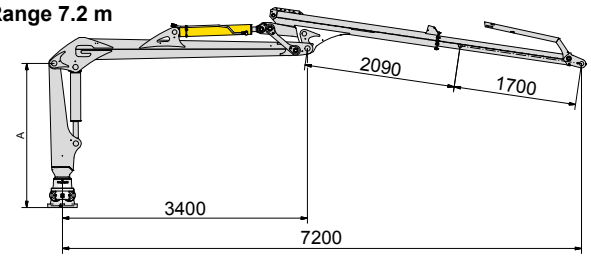


We reserve the right to make amendments.

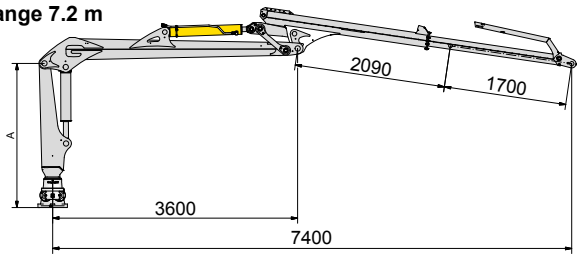
CRANAB FC6 AND FC8

	FC6 – SINGLE TELE		FC8 – SINGLE TELE	
MAX REACH		**7,2 m**		**7,4 m**
Lifting torque, gross		**67 kNm**		**87 kNm**
Lifting force at crane nose at reach	*7,2 m* *5,5 m* *3,0 m*	**5,5 kN** **7,3 kN** **14 kN**	*7,4 m* *5,7 m* *3,0 m*	**7,6 kN** **10 kN** **19,4 kN**
Boom extension		**1,7 m**		**1,7 m**
Torque, gross		**22 kNm**		**22 kNm**
Angle of rotation		**370°**		**370°**
Working pressure		**23,5 Mpa**		**23,5 Mpa**
Recommended flow		**90–150 l/min**		**90–150 l/min**
Weight with lowest pillar elevation *Excl. grapple and rotator*		**1235 kg**		**1255 kg**

Range 7.2 m

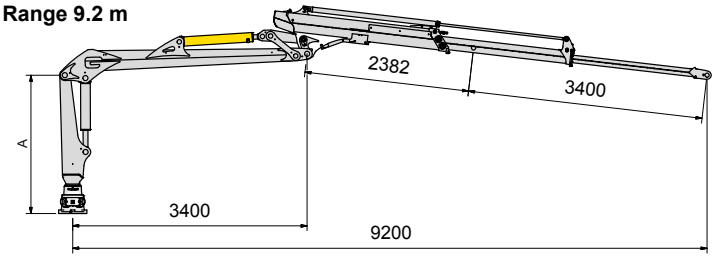


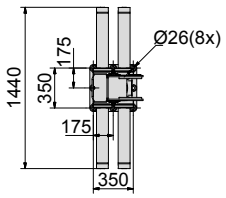
Range 7.2 m



	FC6 – DOUBLE TELE				FC8 – DOUBLE TELE			
MAX REACH		**9,2 m**		**10,0 m**		**9,2 m**		**10,0 m**
Lifting torque, gross		**67 kNm**		**67 kNm**		**87 kNm**		**87 kNm**
Lifting force at crane nose at reach	*9,2 m* *5,8 m* *3,0 m*	**3,4 kN** **6,1 kN** **12,4 kN**	*10,0 m* *6,0 m* *3,0 m*	**2,7 kN** **5,4 kN** **11,9 kN**	*9,2 m* *5,8 m* *3,0 m*	**5,4 kN** **9,2 kN** **17,7 kN**	*10,0 m* *6,0 m* *3,0 m*	**4,6 kN** **8,4 kN** **17,2 kN**
Boom extension		**3,4 m**		**4,0 m**		**3,4 m**		**4,0 m**
Torque, gross		**22 kNm**		**22 kNm**		**22 kNm**		**22 kNm**
Angle of rotation		**370°**		**370°**		**370°**		**370°**
Working pressure		**23,5 Mpa**		**23,5 Mpa**		**23,5 Mpa**		**23,5 Mpa**
Recommended flow		**90–150 l/min**		**90–150 l/min**		**90–150 l/min**		**90–150 l/min**
Weight with lowest pillar elevation *Excl. grapple and rotator*		**1350 kg**		**1400 kg**		**1350 kg**		**1400 kg**

Range 9.2 m

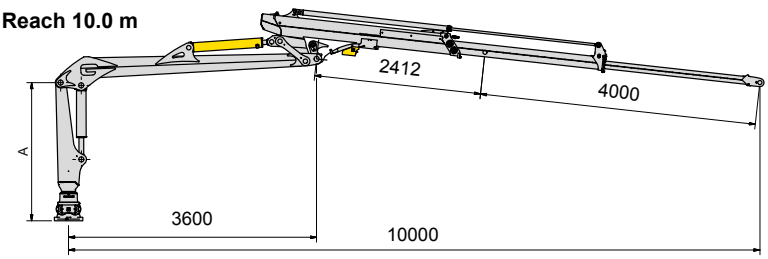


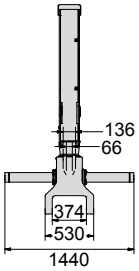


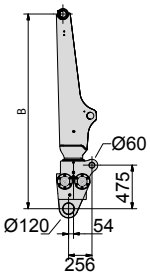
PILLAR ELEVATIONS (A)
Profile pillar:
1700 mm
1800 mm
1900 mm
2000 mm

PILLAR ELEVATIONS (B)
Profile pillar:
1830 mm
1930 mm
2030 mm
2130 mm

Reach 10.0 m





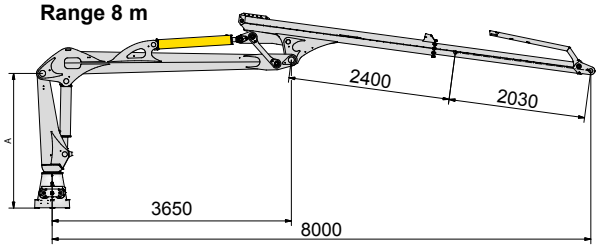


We reserve the right to make amendments.

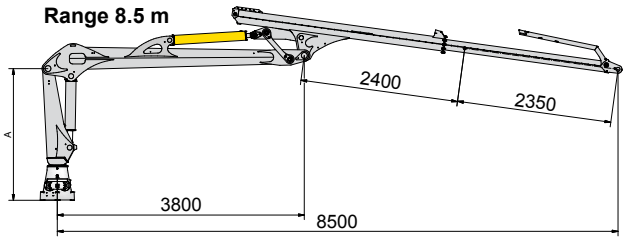
CRANAB FC10 AND FC12

	FC10 – SINGLE TELE				FC12 – SINGLE TELE			
MAX REACH	**8 m**		**8,5 m**		**8 m**		**8,5 m**	
Lifting torque, gross		**100 kNm**		**100 kNm**		**120 kNm**		**120 kNm**
Lifting force at crane nose at reach	*8,0 m* *6,0 m* *3,0 m*	**7,2 kN** **9,8 kN** **21,3 kN**	*8,5 m* *6,2 m* *3,0 m*	**6,5 kN** **9,2 kN** **21 kN**	*8,0 m* *6,0 m* *3,0 m*	**9,7 kN** **13 kN** **27,5 kN**	*8,5 m* *6,2 m* *3,0 m*	**8,8 kN** **12,3 kN** **27,3 kN**
Boom extension		**2,0 m**		**2,4 m**		**2,0 m**		**2,4 m**
Torque, gross		**28,7 kNm**		**28,7 kNm**		**28,7 kNm**		**28,7 kNm**
Angle of rotation		**370°**		**370°**		**370°**		**370°**
Working pressure		**23,5 Mpa**		**23,5 Mpa**		**24,5 Mpa**		**24,5 Mpa**
Recommended flow		**120–200 l/min**		**120–200 l/min**		**130–220 l/min**		**130–220 l/min**
Weight with lowest pillar elevation *Excl. grapple and rotator*		**1610 kg**		**1630 kg**		**1630 kg**		**1650 kg**

Range 8 m

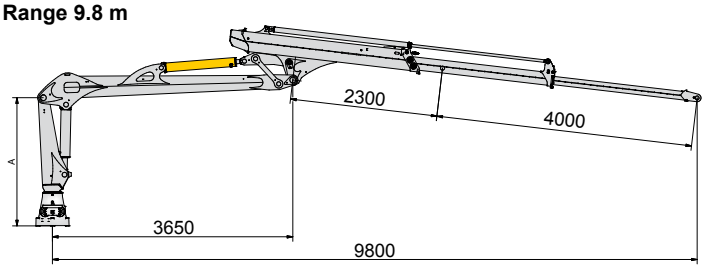


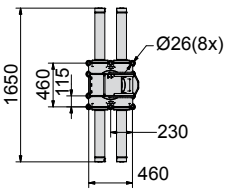
Range 8.5 m



	FC10 – DOUBLE TELE				FC12 – DOUBLE TELE			
MAX REACH	**9,8 m**		**10,0 m**		**9,8 m**		**10,0 m**	
Lifting torque, gross		**100 kNm**		**100 kNm**		**120 kNm**		**120 kNm**
Lifting force at crane nose at reach	*9,8 m* *5,9 m* *3,0 m*	**5,1 kN** **8,9 kN** **20,2 kN**	*10,0 m* *6,0 m* *3,0 m*	**4,8 kN** **8,3 kN** **19,8 kN**	*9,8 m* *5,9 m* *3,0 m*	**7,1 kN** **12,2 kN** **26,5 kN**	*10,0 m* *6,1 m* *3,0 m*	**6,7 kN** **11,5 kN** **26,2 kN**
Boom extension		**4,0 m**		**4,0 m**		**4,0 m**		**4,0 m**
Torque, gross		**28,7 kNm**		**28,7 kNm**		**28,7 kNm**		**28,7 kNm**
Angle of rotation		**370°**		**370°**		**370°**		**370°**
Working pressure		**23,5 Mpa**		**23,5 Mpa**		**24,5 Mpa**		**24,5 Mpa**
Recommended flow		**120–200 l/min**		**120–200 l/min**		**130–220 l/min**		**130–220 l/min**
Weight with lowest pillar elevation *Excl. grapple and rotator*		**1735 kg**		**1745 kg**		**1755 kg**		**1765 kg**

Range 9.8 m

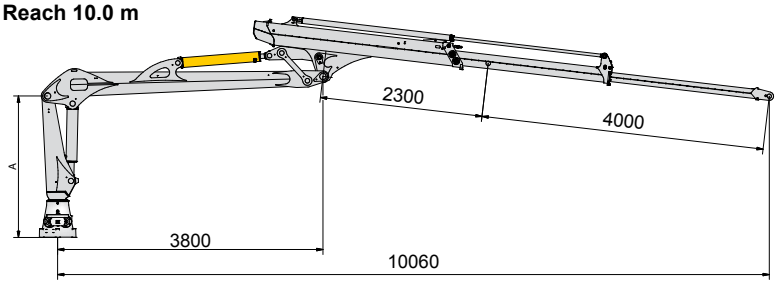


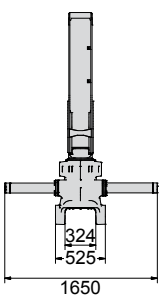


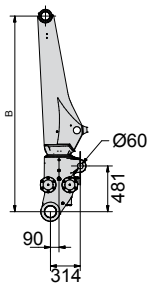
PILLAR ELEVATIONS (A)
Profile pillar:
1725 mm
1900 mm
2000 mm

PILLAR ELEVATIONS (B)
Profile pillar:
1785 mm
1955 mm
2060 mm

Reach 10.0 m





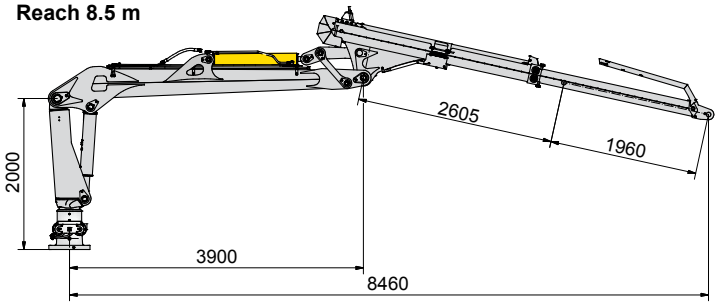


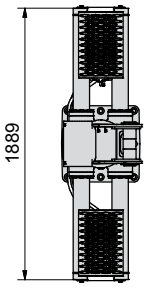
We reserve the right to make amendments.

CRANAB FC16

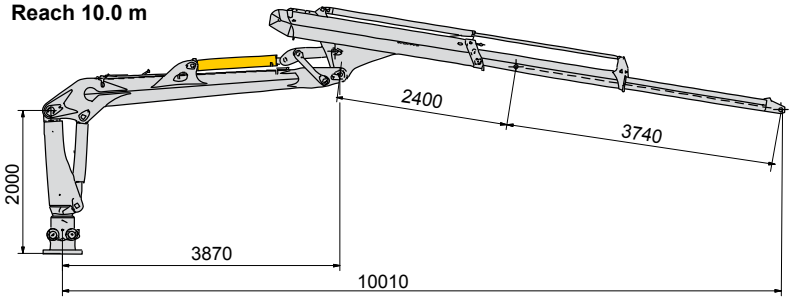
	FC16 – SINGLE TELE		FC16 – DOUBLE TELE	
MAX REACH		**8,5 m**		**10,0 m**
Lifting torque, gross		**165 kNm**		**165 kNm**
Lifting force at crane nose at reach	*8,5 m* *6,5 m* *3,0 m*	**12,8 kN** **16,7 kN** **36 kN**	*10.0 m* *6,3 m* *3,0 m*	**9,8 kN** **16,1 kN** **34,7 kN**
Boom extension		**2,0 m**		**3,7 m**
Torque, gross		**42,5 kNm**		**42,5 kNm**
Angle of rotation		**370°**		**370°**
Working pressure		**23,5 Mpa**		**23,5 Mpa**
Recommended flow		**180–300 l/min**		**180–300 l/min**
Weight with lowest pillar elevation *Excl. grapple and rotator*		**2200 kg**		**2385 kg**

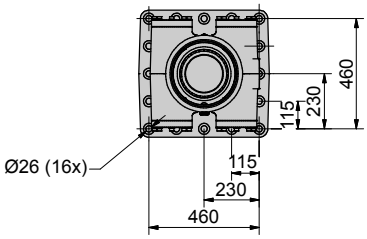
Reach 8.5 m





Reach 10.0 m





CIS CRANAB INTELLIGENT SYSTEM

EXPERIENCE. TECHNOLOGY. INNOVATION.

Cranab's factories are located in Vindeln,deep in the forests of West Bothnia. Here we develop and manufacture world-class cranes, grapples and land clearing machines. We are driven by a genuine passion for forestry and road clearance technology. We are also driven by our unyielding goal to constantly push technology development forwards. Although we are based in northern Sweden we reach out to the whole world to be close to the customer we develop products for. We listen carefully to their requirements and draw on more than 50 years of experience and solid technological expertise to develop innovative products.

Experience, technological expertise and an unswerving determination to improve. This is a somewhat ingenious combination if you ask us.

Cranab Slagkraft is part of the CRANAB GROUP, which also includes Vimek and Bracke Forest. Today, the companies are world-leaders in their respective fields. Our common success factors are the development, manufacture and marketing of the best technical solutions for forestry and road clearance work.

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