# WOODCHIPPERS

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MAKES THE DIFFERENCE

ENG-2012

# Why a NHS Woodchipper?

# The most important part of the wood chipping

**process**, is without any doubt, an effective and secure in-feed of wood to the chipper. All models in the NHS range utilise an in-feed with aggressive vertical rollers, making them best in class, whether big or small, and will compete favourably at all times.

#### **Effectiveness and capacity**

The superior in-feed system together with the overall robust construction of NHS chippers, with extensive use of Hi-Tensile steel, secures effectiveness, large capacity and durability.

#### Efficiency

Efficiency is the number one priority for NHS products. Avoid unnecessary handling of the trees, chip them as whole trees with branches, directly in the forest, with our highly mobile wood chippers.

## User friendly and safe

Machines that operates effectively and easily handles everyday tasks, are perceived to be user friendly. At the same time, NHS has achieved a safe and good working environment, in order to avoid unforeseen forces and unintended movements for the operator.

## The optimal choice is important

The key to success is the right choice of machine. With our well trained staff, more than 25 years of experience and close contact to our clients, NHS is the right choice of partner.

## Well tested technical solutions and innovations

NHS has been developing and producing wood chippers since 1980. Our machines consists of well tested components and innovative solutions, which will benefit our clients.

#### Service and customer contact

Our well trained service staff are there to help if anything happens or if a problem occurs. We have a desire to be close to our clients, in order to provide them with answers and solutions as fast as possible.

#### Everything under one roof

Our high-tech production facility, which is operated by well trained and experienced personnel, ensures a quality production of parts and components that create reliable and efficient machines.





# Advantages

# Chip quality is top notch:

- The chip quality from our hand-fed machines is very fine and uniform, and can be used directly in most chip / stoker boilers without optionals
- The chip quality for the crane machines NHS 300f and 450F meets all requirements for industrial woodchips, and therefore can be sold directly to the heating and power plants

## In take

- There is no transmission parts in the intake
- Always one powerful hydraulic motor per in-feed roller, with
- direct traction on the roller
- The parallel guided movable in-feed roller increases the utilization of the squeezing pressure substantially
- The movable in-feed roller operates parrallel to the flywheel
  Each in-feed roller has 8 claws and 4
- Each in-feed roller has 8 claws and 4 knives. The claws maintain a firm grip of the trees and the branches. The knives cuts the branches in order for the branches to fold along the log easily during the intake process as well, while keeping the infeed rollers clean at the same time

## Low wear:

- Extremly low wear on the infeed rollsUnique design on infeed rollers insures
- Onique design on infeed rollers insures minimal to no slippage
- Heavy duty bearings and well balanced flywheel for long life

## **Easy maintenance:**

- Knives are changed easily.
- One person can adjust the knives and the anvils at the same time as he makes visual inspection.
- 6 lubrication points, 4 bearings at the in-feed rollers and the 2 parallel slides for the movable in-feed roller + PTO shaft
- All NHS chippers can be serviced with standard hand tools.

## Other advantages:

- Clamping pressure of the feedrollers can be adjusted during chipping
- The machines are Danish produced

# NHS 130 – Small, compact and efficient



NHS 130 is the smallest machine in the range, yet powerful and it perfectly suits a compact tractor.



2 powerful hydraulic motors secures a strong and aggressive in-feed.



NHS 130m is a small robust trailer machine which is approved for up to 80 km/h.



NHS 130 at work on the local golf course.

## Standard equipment:

- Hydraulic parallel in-feed system.
- Exhaust tube.
- High pressure oil filter.
- PTO shaft w/ shear bolt (not m-models).
- 2 hardened knives.
- Mechanical reversible speed-up gearbox, (not m models).
- PTO 540 rpm

## **Description:**

Small, compact and light, yet efficient – this is the precise description of this chipper. Despite its size, the aggressive vertical in-feed rollers secures a high capacity and very efficient chipping, even when mounted on a compact tractor.

The Exhaust tube is rotatable 360° - stepless.

The reversible speed-up gearbox on the tractor models, permits mounting of the chipper at the front as well as on the back of the tractor. The chipping length is fixed at 7 mm.

- A small package containing a big machine!

Chipper									Flywheel					
Туре	Max. log diamter:	Min pwr. rating: kW (HP)	Max pwr. rating: kW (HP)	Weight: kg	L: mm	W: mm	H: mm	Diameter: mm	Weight kg	No of knives: pcs.	Chip lenght: mm			
130e		12 (16)	52 (70)	375	2400	1400	1400 2300	the second		2				
130i	Ø130 mm	12 (10)	52 (70)	450	2400	1400	2300	Ø480	50	2	7			
130m		20 (	27)	960	3000	1600	2500			2				

e=external hydraulics, i=internal hydraulics, m=trailer model with motor

# NHS 180 – the Versatile and robust



NHS 180 is the most versatile machine in the range. It makes fantastic chips in standard setup.



Several of the NHS chippers can be delivered with optional accessories for making stoker chips.



NHS 180 v. An angle machine. With a towbar for a small trailer at the back



NHS 180 ms, can be delivered with 360° turntable and height adjustable drawbar.

#### Standard equipment:

- Hydraulic parallel in-feed system
- Exhaust tube.
- High pressure oil filter.
- PTO shaft w/ friction and overrun clutch (not m-models).
- 4 pcs. of hardened knives.
- PTO 540 1000 rpm

#### **Description:**

With its aggressive vertical in-feed rollers, combined with a robust construction, the NHS 180-series is a reliable, versatile and almost unbreakable machine. With its efficient and precise in-feed, combined with perpendicular cutting of the material, this machine makes fantastic chips. The Exhaust tube is 360° rotatable - stepless.

- The chipping length is adjustable from 7 to 12 mm.
- The versatile chipper!

-			Flywheel								
Туре	Max. log diamter:	Min pwr. rating: kW (HP)	Max pwr. rating: kW (HP)	Weight: kg	L: mm	W: mm	H: mm	Diameter: mm	Weight kg	No of knives: pcs.	Chip lenght: mm
180e		State State	75 (100)	625	2500	1400		Ø720	140	2 or 4	
180i	NUMBER OF STREET, STRE	25 (24)		675	2500	1480					
180ev	Ø100 mm	25 (34)		675	2000	1800					7-12
180iv	Ø180 mm	1000		725	2000						(h=3)
180m		38 (52)		1500	2500	2100	100 2000			2 0 4	Lavia
180ms		38 (	52)	1700	3500	2100	3000			2 or 4	

e=external hydraulics, h=bedding material / micro chip, i=internal hydraulics, m=trailer model with motor - ms = has +  $360^{\circ}$  turntable, v= $90^{\circ}$  angle machine

# NHS 220 - for bigger and more demanding tasks



NHS 220, Compared to its size, it has an in-feed in a class of its own.



NHS 220m, standard delivered with 360° turntable and height adjustable drawbar. A flexible machine.



The intake with aggressive vertical rollers, are clearly world class worthy!



NHS 220, the perfect machine for fir and pine Christmas trees.

## **Standard equipment:**

- Standard equipment:
- Hydraulic parallel in-feed system.
- Exhaust tube.
- High pressure oil filter.
- PTO shaft w/ friction and overrun clutch (not m-models).
- 4 pcs. of hardened knives.
- PTO 540 -1000 rpm.
- C-model only 1000 rpm.

## **Description:**

A robust and flexible chipper with the well known NHS in-feed system, containing hydraulically driven, , aggressive vertical in-feed rollers. Despite its superior capacity, high-tensile steel reduces the overall weight of the machine.

- The Exhaust tube is 360° rotatable stepless.
- The chipping length is adjustable from 7 to 15 mm.

NHS 220 c - Litle crane machine with big power - Use the machine's capacity at peak performance with maximum comfort and safety.

-A truly all-rounder - even for heavier tasks.

			2 m	Flyw	heel	1					
Туре	Max. log diamter:	Min pwr. rating: kW (HP)	Max pwr. rating: kW (HP)	Weight: kg	L: mm	W: mm	H: mm	Diameter: mm	Weight kg	No of knives: pcs.	Chip lenght: mm
220e				900	2500	1500	Max.		200		
220i			(54) 05 (120)	950						11	
220ec	Ø215 mm	40 (54)	95 (130)	950	2500	1500	2800			2 or 4	7-15
220ic	-	2		1000				2010			(h=3)
220ms		50	(68)	2200	4500	2100	3500		ant Mino		

e=external hydraulics, h=bedding material / micro chip, i=internal hydraulics, c=crane feeding, s= 360° revolving platform, m=trailer model with motor

# NHS 300 - for big demanding tasks



NHS 300, the biggest NHS hand fed chipper.



Knives on most NHS standard machines can be adjusted stepless



NHS InfoCon is a combined Antistress, Hour Meter and service interval counter. Available for all models.



NHS 300: Use the saw as little as possible! Chip trees and shrubs with the branches, it saves lots of time. Thats where NHS wood chippers are best.

## Standard equipment:

- Hydraulic parallel in-feed system.
- Exhaust tube.
- High pressure oil filter.
- PTO shaft w/ friction and overrun clutch
- 4 pcs. of hardened knives.
- PTO 540 -1000 rpm

## **Description:**

NHS 300 is perhaps the strongest hand fed machine on the market. It's, hydraulically driven, aggressive vertical in-feed rollers and it's compact design, makes this a user-friendly and very efficient chipper.

Despite its superior capacity and strength, high-tensile steel reduces the overall weight of the machine.

TheExhaust tube is 360° - stepless.

- The chipping length is adjustable from 10 to 15 mm.
- Probably the strongest hand fed chipper on the marked!

	17		Flywheel								
Туре	Max. log diamter:	Min pwr. rating: kW (HP)	Max pwr. rating: kW (HP)	Weight: kg	L: mm	W: mm	H: mm	Diameter: mm	Weight kg	No of knives: pcs.	Chip lenght: mm
300e	1.11			1100	2750	1800					
300i	Ø300 mm	50 (68)	95 (130)	1150			Max.	Ø960	250	2 or 4	10-15
300ev	- Ø300 mm	93 (130)		1250	2200	1000	3200	0900	250	2014	(h=3)
300iv				1300	2300	1900					

e=external hydraulics, h=bedding material / micro chip, i=internal hydraulics,

# NHS 300 c and f - Crane feeding in a class of its own



Example of NHS 300f set-up, Here shown with the XL exhaust tube. Chipper in back - trailer in front



Forestline control box. Split knives for optimal operating cost. Aggressive vertical in-feed rollers.



NHS 300icv is a 90° machine. Crane feded 90° in the direction of driving.



NHS 300f, a compact and highly manoeuvrable chipper, ideal for forest professionals and contractors.

#### **Standard equipment:**

- NHS 300f hydraulic, parallel, auto-close in-feed system.
- NHS 300f Internal hydraulic system.
- NHS 300 c hydraulic, Auto Open in-feed-system.
- Oil filter.
- PTO shaft w/ friction and overrun clutch
- Knives of hardened steel.
- NHS Info-Con w/ antistress.
- PTO 1000 rpm
- (Option is discharge tube)

#### **Description:**

NHS 300f is compact, and with it's reinforced flywheel and in-feed system, this chipper has a capacity and efficiency second to none, in its class. Hydraulic AutoClose in-feed system is standard (can force the rollers to open 300 mm.) The machine is prepared for crane mounting. The wood chips are documentet for use in the Heating and Power plants. Save on your logistic cost, chip the trees where they have been felled.

- The professional chipper for forest professionals and contractors!

NHS 300 c-serie is now to find in the Forestline program. This means that, all modells are equiped with heavy duty ball bearing package and flywheeel. With the AutoOpen in-feed system wich you can force the rollers to open 150 mm.

- This is a great choice for a semi professional.

			Flywheel											
Туре	Max. log diamter:	Min pwr. rating: kW (HP)	Max pwr. rating: kW (HP)	Weight: kg	L: mm	W: mm	H: mm	Diameter: mm	Weight kg	No of knives: pcs.	Chip lenght: mm			
300ec		60(80) 95(130)					1150	1000	1370					
300ic			(00) 05(100)	1250	1800	1570	Max.		250	А	10 15 (1- 2)			
300ecv	(200 man		95(130)	1300	1050	1540				4	10-15 (h=3)			
300icv	Ø300 mm			1400	1850	1540	3600				-			
300f		00(110)	00(110) 100(250)	1250	1000	1650			215	2	20			
300f		80(110)	180(250)	1350	1800	1650			315	4	10			

f= forestline e= eksternal hydraulik, i= internal hydraulik, h = Mocro chips \*H depends on the choice of exhaust tube.

# NHS 450f – Crane feeding in a class of its own



Tailor made NHS 450f, set-up to client requirements. (previous corn harwester)



The NHS 450f in-feed handles whole trees, even trees with big crowns.



NHS 450f produces 35 mm chips. The chips are documented for use in CHP and heating plants.



Claas Xerion with standard NHS 450f – 6m crane – NHS grip – 16 m<sup>3</sup> collector box.

#### **Standard equipment:**

- NHS hydraulic, parallel, Auto-Close in-feed system.
- Internal hydraulic system (LS).
- One variable pump per infeed roller
- Belt transmission system.
- Exhaust tube
- Oil filter.
- PTO shaft
- Split knives of hardened steel.
- NHS Info-Con w/ antistress.
- Crane bracket.

• PTO 1000 rpm

#### **Description:**

NHS 450f is probably the strongest mobile chipper on the marked. It's superior in-feed system with Anti Spin control, shows it's strength and efficiency in all kinds of wood. The 30° cutting angle to the flywheel ensures a smooth cut and reduces the need for power. The standard build up of the chipper includes almost every whish you can think off.

The Belt Transmission system, which pulls the flywheel are hydraulically switch in, and ensure a soft start for the flywheel. This ensured a steady and stable start of the chipper.

The chipping length is 35 mm (Industrial chips). The chips is in wery high quality

Save on your logistic cost, chip the trees where they have been felled. This is a chipper for heavy duty forest professionals and contractors! For those who expect a lot.

	121000			Flywhe	el						
Туре	Max log diameter:	Min pwr rating: kW (HK)	Max pwr rating: kW (HP)	Weight: kg	L: mm	W: mm	H: mm	Diameter: mm	Weight: kg	No of knives: pcs.	Chip lenght: mm
450f	Ø450 mm	220 (300)	380 (410)	4500	2750	2350	3600	Ø1400	1100	2	35
6 6											

# Options and accessories for tractor and trailer machines



NHS Info-Con controller NHS Info-Con controller has the following functions: ABS anti-stress surveillance (auto start/stop of infeed), hour counter and service indicator.



**Exhaust tube** NHS offers different solutions: higher, longer or foldable.



**Rigid axle** All tractor machines can be delivered with a rigid axle, approved for 25km/h. Mudguards delivered as option.



**Fed roller adjusting** Machines can optionally be delivered with external stepless fedroller adjustment, and RPM outread on display



**Extra reset button** All machines are delivered with approved safety system according to applicable EN-norms. Extra reset switches can be mounted on all types of machines.



**Cyclone discharge system** In order to safely fill bags, pallets, trailers and smaller containers directly.



**Shortcut system** The shortcut system ensures a uniform microchip production. Normally used when the chips are produced for wood pellet heating devices (for 180-, 220- and 300 tractor series), or when microchips are to be produced for instance for animal bedding material.



**Environment** All NHS machines can be delivered with biodegradable hydraulic oil.



**Lights and safety** All tractor models can be delivered with certified, demountable, lights, that is to be connected to the 7-pole plug on the tractor.



**Cover plates for flywheel** When only 2 knives are needed instead of the standard 4 knives, cover plates are installed. This will reduce the power need, for instance when smaller tractors are used.



**Hydraulic winch** For pulling logs and whole trees out of the forest and directly into the chipper. The system is mounted directly on the chipper.



Centralized lubrication Automatic or Manual lubrication system.

# Options for 300ic, 300icv, ForestLine 300f & 450f



Auto-Turn of Exhaust tube NHS delivers hydraulically activated Exhaust tube, turning - up/ down – side control, for easy operation of the machine.



**Exhaust tube + extension** XL Exhaust tube goes over the roof off the trctor +1 meter extension of discharge pipe.



**Crane-supports** NHS crane supports for our c- and f- series, can be mounted with a big range of different cranes from leading suppliers.



**Foot pedal for Auto-closure** All NHS ForestLine chippers are equipped with NHS Auto-closure, (Fully hydraulically activated opening and closure of the in feed system) which can optionally be activated with an electrical foot pedal.



**Camera-solutions** Where it is needed to optimize the view for higher security and elimination of dead angles, NHS offers professional camera solutions.



**Crane controls** NHS offers different types of controls, from manual systems to professional fully electro-hydraulic joystick solutions.



**Crane solutions** NHS offers several different solutions, models and sizes.



**Environment** All NHS machines can be delivered with biodegradable hydraulic oil.



**Hydraulic driven** NHS 300c/f and 450f can be driven full hydraulik



**Grapple for wood chipping** Our finger grapples are especially developed for woodchipper systems, and ensures a quick, easy, secure and smooth grip of the logs and branches.

The above is a collection of all the options that we offer. Some of the options must be factory mounted, but the majority can be retrofitted at any time.

NHS has gathered a vast competence with tailor made systems, and can assist our clients with innovative solutions. We continuously seek the optimum solution, in order to make the right system for every client. Please contact us with any questions you might have, or in order to discuss specific solutions.







NHS is a 100% family-owned company established in 1941.

Since 1980, we have been making chippers for the professional user, and continuous development has meant that we now have a complete range of chippers for every need.



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Dealer: