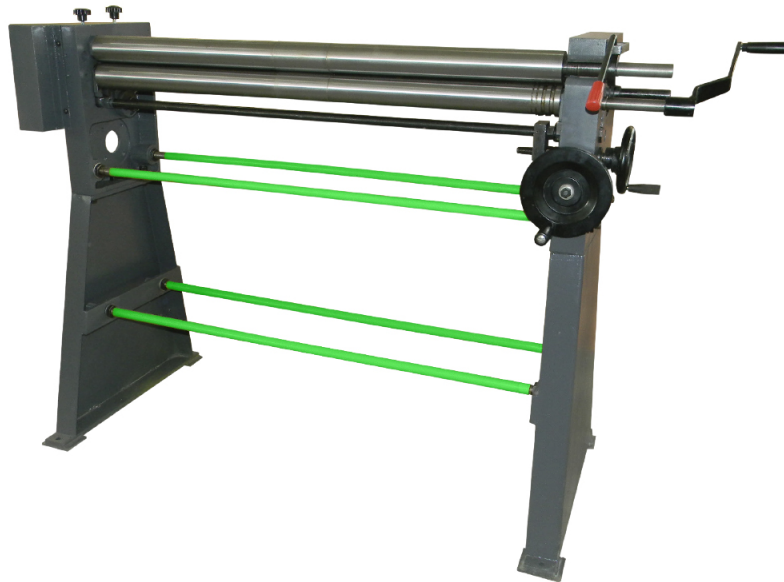




HM MACHINERY

Industrivej 3-9
DK-9460 Brovst
Denmark
Tel.: +45 98 23 60 88
Fax: +45 98 23 61 44

Manual Bending Rolls Type TTA



CE



EC declaration of conformity



HM MACHINERY A/S

Industrivej 3-9
9460 Brovst
Denmark
www.scantool-group.com
Tel: +45 98 23 60 88
Fax.: +45 98 23 61 44

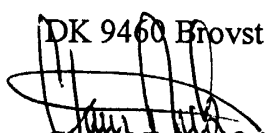
Hereby declares that

HM TTA Bending Rolls are manufactured in accordance with the provisions of the COUNCIL DIRECTIVE of 17. May 2006 (2006/42/EC) – The Machinery Directive (order no. 561 of 25 June 1994 with subsequent amendments)

2006/42/EC:	Directive on machinery-safety
2004/108/EC:	Directive on Electromagnetic Compatibility
2006/95/EC:	Low Voltage Equipment Safety directive

Also on accordance with:

- The council directive of 19 February 1973 (73/23/EEC) – The Low Voltage Directive – with later amendments (order no. 797 of 30 August 1994)
- The council directive of 3 May 1989 (89/336/EEC) – The EMC Directive – with later amendments (order no. 796 of 5 December 1991 with subsequent amendments)

DK 9460 Brovst

Claus Nielsen,
Producent



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Technical Data

TECHNICAL DATA	: TTA 6/6	TTA 6/10
Working length	: 675 mm	675 mm
Sheet thickness	: 0,60 mm (400 N/mm ²)	1,00 mm (400 N/mm ²)
Rolls Ø U&L/B	: 30/35 mm	42/48 mm
Weight	: 110 kg.	125 kg.
Stand	: Incl.	Incl.

TECHNICAL DATA	: TTA 6/15	TTA 6/20
Working length	: 675 mm	675 mm
Sheet thickness	: 1,50 mm (400 N/mm ²)	2,00 mm (400N/mm ²)
Rolls Ø U&L/B	: 50/55 mm	60/65 mm
Weight	: 135 kg.	175 kg.
Stand	: Incl.	Incl.

TECHNICAL DATA	: TTA 10/10	TTA 10/15
Working length	: 1020 mm	1020 mm
Sheet thickness	: 1,00 mm (400 N/mm ²)	1,50 mm (400 N/mm ²)
Rolls Ø U&L/B	: 50/55 mm	60/65 mm
Weight	: 170 kg.	185 kg.
Stand	: Incl.	Incl.

TECHNICAL DATA	: TTA 12/12
Working length	: 1285 mm
Sheet thickness	: 1,25 mm (400 N/mm ²)
Rolls Ø U&L/B	: 60/65 mm
Weight	: 205 kg.
Stand	: Incl.

Assembly and installation

The machine is delivered in a wooden crate, with the rolls being fixed to the base of the crate. All machined surfaces are protected with rust inhibitor, which when the machine arrives must be cleaned off and parts lubricated with a good quality neutral oil (see suggested specifications enclosed). Next the stand is mounted, and the machine positioned on a flat and stable surface, where it can then be bolted down, using the holes in the stand.

Important: When the machine is mounted on the stand, and all bolts have been tightened, it must be checked that the rolls run freely. Should this not be the case, then the bolts should be slackened off slightly until they do.

Gearing

All TTA models are fitted with reduction gearing. When used, the handle is placed on the gearbox drive shaft, and the small cog on the opposite side of the machine checked to see that it is engaged, with the cogs of the gears on the upper and lower rolls. The locking set screw must then be fitted on the top of the gearbox casing.

When the gearing is not being used the setscrew must first be loosened, and the small cog pulled out again.

Top roll to slip

The top roll can be detached at the right hand side of the machine, by pulling out the black knurled handle. Now the upper roll can be swung out of the machine from this side, whilst remaining fixed at the other. This configuration means that the rolled workpiece can be removed easily without damage, and if required brazed or welded components can be inserted.

Operation

Whilst working the machine, the operator must always stand at the front, and ensure that there is nobody or anything behind the machine, or within the working area causing an obstruction.

Handwheel for lower roll

The handwheel for adjusting the lower roll is placed on the right hand gable. This is used for setting the clamping force between upper and lower rolls.

Handwheel for rear roll

The handwheel for adjusting the rear roll is also placed on the right hand gable. This is used for setting the height of the rear roll, for the initial pinching or prebending of the material and rolling from the front.

Roller grooves

The lower and rear roll is provided with 2, 4, 6 and 8 mm grooves at one end to allow the rolling of wire, bar or small diameter tube. Of course when using this facility care must be exercised.

Upper roll guide groove

To ensure that sheet presented to the machine is always at right angles to the rolls, a seating groove has been cut into the upper roll.

Setting of the rolls

The rolls are set parallel to one another at the factory. If it is needed to adjust the lower roll further, then this can be done by firstly removing the gearbox guard on the left-hand side of the machine. Next the two bolts on each side of the gable, immediately below the lower roll are adjusted, thereby setting the lower roll parallel to the upper one. **The rear roll** can be adjusted in the same way, by loosening the lever under the rear roll on the left side, and then the roll can be set parallel or at an angle for taper bending / cone rolling.

Pre-Bending

When rolling a sheet with standard pyramid form fells, a straight/flat piece will always be left at the beginning of the sheet. On all TTA models, with their initial pinch form of rolls, pre-bending of the material can be carried, and complete rounds can be produced in the following way:

1. The sheet is placed in the rear of the machine between the upper and lower rolls, using the upper grooves for guidance.
2. The rear roll is raised so that the inserted piece is bent upwards.
3. The sheet is then taken out of the back and the pre-bent end inserted into the front of the machine.
4. To reach the correct diameter of rolling, the rear roll is gradually raised, as the material is rolled backwards and forwards.

Maintenance

Normal cleaning and lubrication of all movable parts is required every 100 working hours or once a year.

Extra parts

Parts list

No.	Desc.	No.	Desc.
1	Cover	38-2	Handle Wheel
2	Washer 6	39	Worm shaft
3	Socket Screw M6x10	40	Washer 20
4	Screw M10	41	Pin 5x30
5	Spring Washer 24	42	Worm lever
6	Gear	43	Key 5x20
7	Bushing	44	Nut M12
8	Shaft	45	Washer 12
9	Star handle	46	Worm wheel
10	Gear	47	Adjusting block
11	Screw M5x8	48	Adjusting block
12	Gear	49	Fixing seat
13	Bushing	50	Spring washer
14	Screw M8x8	51	Screw M6x16
15	Key 6x30	52	Shaft
16	Driving shaft	53	Nut M20
17	Fixing block	54	Pull lever
18	Bushing	55	Adjusting lever
19	Shaft	56	Adjusting block
20	Key 5x30	57	Fixing plate
21	Screw M4x8	58	Nut M16
22	Screw M5x12	59	Pin 6x30
23	Location seat	60	Shaft
24	Crank	61	Lock disk
25	Handle	62	Adjusting block
26	Shaft	63	Handle knob M8x25
27	Bushing	64	Handle lever
28	Adjusting block	65	Location Screw
29	Right stand	66	Left stand
30	Locking block	67	Nut
31	Limit block	68	Gearwheel
32	Locking nut	69	Gear shaft
33	Lever	70	Bushing
34	Handle ball M10	71	Gearwheel
35	Socket screw M6x20	72	Screw M12x40
36	Nut M10	73	Stand
37	Washer 10	74	Lever
38-1	Handle wheel		

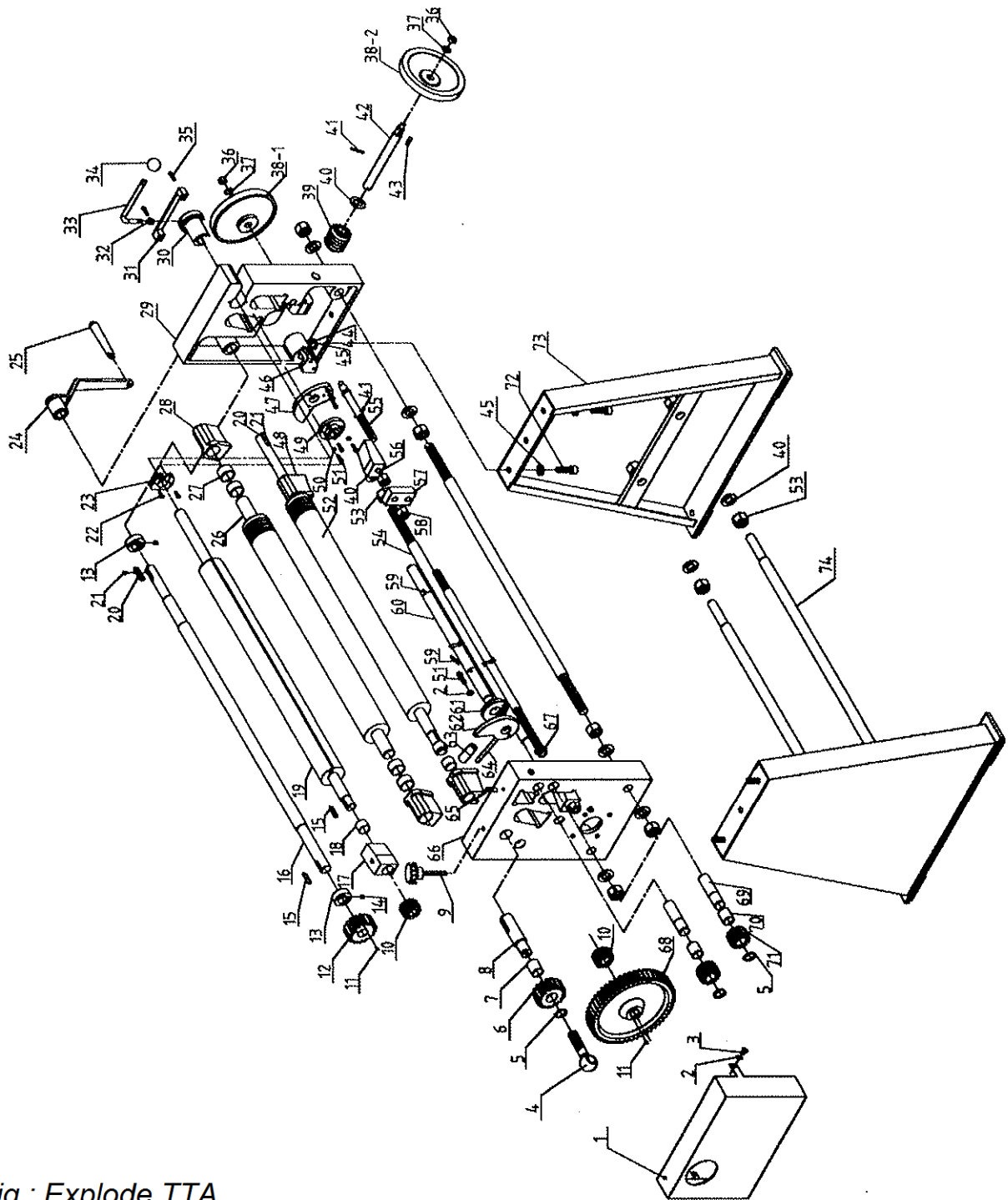


Fig.: Explode TTA