3.0 Technical Data

KSF-4-1350 (DDDD) 92.445.91

Operating range			
Operating height	*constant*	900	mm
Operating width		1350	mm
Max. workpiece thickness		120	mm
Min. workpiece thickness		3,0	mm
Space requirement wide belt change		approx. 1800	mm
Machine dimensions	***see installation plan***		
Weight		approx. 6700	kg
Width		approx. 2100	mm
Length		approx. 3040	mm
Height		approx. 2200 - 2320	mm
Drives			
Contact drum head (head 1)		21,0	kW
Contact drum head (head 2)		15,0	kW
Contact drum head (head 3)		15,0	kW
Contact drum head (head 4)	*frequency controlled*	11,0	kW
Height adjustment		0,75	kW
Feed		3,9	kW
Cleaning brush (workpiece)		0,55	kW
Vacuum		5,5	kW
Sanding belt			
Speed (head 1,2 and 3)		approx. 20	m/s
Speed (head 4)	*frequency controlled*	approx. 4 - 20	m/s
Dimension		1370 x 2620	mm
Conveyor belt			
Speed		3 - 18	m/min
Dimension		1350 x 6100	mm
Supply / disposal			
Connected value		95	kW
Operating voltage		3 x 460	Volt
Control voltage		24	Volt DC
Frequency		60	Hz
Supply line fuse		160	Amp.
Supply line cross section		70	mm ²
Compressed air connection		5,5 - 7,0	bar
Extraction socket diameter		1x120, 1x160, 4x200	mm
vacuum air quantity		approx. 11400	m³/h
Noise values (DIN EN ISO 11202)			
workplace related emission value LpA	(KSF-4 + KSF-3)	approx. 87,36	dB(A)

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5.0 Construction of the machine

The machine contains the following main elements:

- frame
- drive
- workpiece conveyance
- height adjustment
- workpiece tracing unit (option)
- sanding head
- sanding pad (segmented platen / air sanding pad) (option)
- dust extraction brush (option)
- vacuum (option)
- auto thickness set-up device (option)
- belt running and oscillation controls
- sanding belt blow out (option)
- workpiece blow off (option)

5.1 Frame

The frame is comprised of a welded, torsion free steel construction. It accommodates all components. Once the protective cover has been removed, all parts are well accessible.

5.2 Drive

The standard sanding machine is equipped with alternating current motors. The power transmission from drive motor to the head takes place by means of V-belts. The main drive motors are mounted on rockers, and the V-belts do not require retensioning.

5.3 Workpiece conveyance

As a rule, the workpieces are conveyed by means of an endless conveyor belt mounted around the conveyor table. This belt is driven by the rear guide roller and is subject to a tension strain.
In addition, different pressure elements, such as a vacuum system, vacuum clamping the workpiece onto the conveyor belt, ensure a safe conveyance and prevent the parts from slipping.

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5.4 Height adjustment

5.4.1 Design: gear unit:

Vertical height adjustment is carried out by four height adjustment gear units that are mounted to the bottom part of the frame and accommodate the top part of the frame. These worm gearings are lubricated for the duration of the service life and are thus maintenance free.

5.4.2 Design: spindles:

Vertical height adjustment is carried out by adjusting spindles, which run on bearings positioned on the frame and on which the two table supports are fastened.

5.5 Workpiece tracing unit (option)

The workpiece tracing unit detects the contour of the workpiece to be sanded. Tracing is effected with plastic rolls running in ball bearings; these rolls ensure accurate tracing without scratching the surface of the workpiece.

5.6 Sanding head

5.6.1 Wide belt head (contact drum)

The contact drum head consists of a support beam, a contact drum and a tension roller. The support beam is permanently bolted to the frame on one side. Using the contact drum, the sanding process is effected by the driven roller. This sanding head serves to calibrate workpieces and is also used for surface sanding.

5.6.2 Wide belt head (combination)

The combi head consists of a support beam, a contact drum, a guide roller and a tension roller. The support beam is permanently bolted to the frame on one side. The sanding process is effected by the contact drum and / or the sanding pad.

5.6.3 Wide belt head (sanding pad)

The wide belt head consists of a support beam, two guide rollers, a tension roller and a sanding pad. The support beam is permanently bolted to the frame on one side. The sanding process is effected by the stationary, lowered sanding pad.

For every wide belt head, the support beam on the belt change side is supported by a locking device.

5.6.4 Brush- / Scotch Brite – head (option)

The brush and the Scotch Brite head will be used by different tasks.
e.g. Dralon brush: for surface structuring etc.
Scotch Brite roller: for finishing lacquered workpieces

5.7 Sanding pad (option)

5.7.1 Segmented platen

The patented segmented platen features flexible pressure elements that can be moved to all sides and compensate tolerances of up to 2 mm. This element ensures the exact adaptation of the sanding width (or length) to the specified workpiece dimensions. This guarantees consistent sanding while avoiding excess sanding intensity at the edges.

5.7.2 Controlled air sanding pad

In order to avoid a reinforced sanding of front and back edges of the workpiece the air sanding pad must start resp. stop in its operation exactly when the workpiece edges are in a medium position below the pad. The control of the air sanding pad takes place by means of a drum controller that is positioned directly in front of the head. After the drum controller has been actuated the sanding pad starts operating time- resp. tact-delayed.

5.8 Dust extraction brush (option)

5.8.1 Dust extraction brush for workpieces

The workpiece dust extraction brush consists of individual segments 100 mm in length that are mounted on a shaft and secured by an axial toothing. This ensures simple installation and cost efficiency with spare and wear parts.

5.8.2 Dust extraction brush for conveyor belt

The conveyor belt dust extraction brush prevents dust from settling and accumulating on the belt surface. A clean conveyor belt is prerequisite for skid-proof workpiece feed.

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5.9 Vacuum (option)

The vacuum system sucks the workpieces onto the conveyor belt and ensures skid-proof workpiece conveyance. In addition, the dust falling on the conveyor belt is extracted by the vacuum system and led to extraction unit.

5.10 Auto thickness set-up device (option)

The auto thickness set-up device measures the workpiece thickness with a precision of $^{1}/_{10}$ mm and moves the sanding heads into the proper position. After this process, the thickness set-up display automatically shows the workpiece thickness setting; the sanding process can begin.

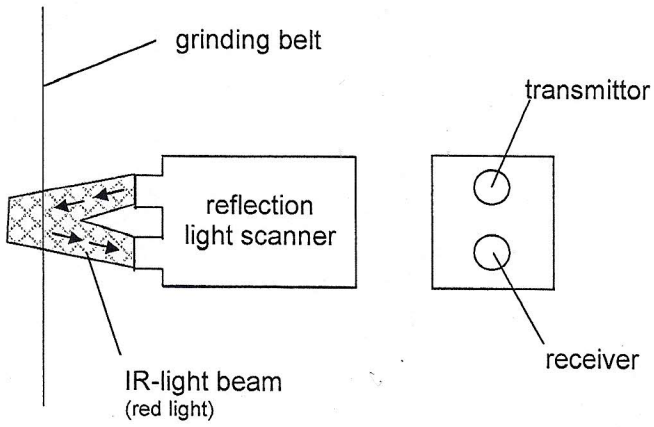
5.11 Belt running and oscillation controls

Each wide belt must be controlled by means of a swivelling tension roller in order to prevent belt run down.

The sanding belt oscillation is maintained by an automatic control circuit, how the signal is generated by the opto-electronic sanding belt sensor (caused by the movement of the belt).

In the sanding belt controls the outgoing pneumatic signal provokes the corresponding setting of the top belt tension roller. This results in a lateral movement of the belt in a way that counteracts the cause.

5.11.1 Opto-electronic sanding belt sensor



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5.11.2 sanding belt run down protection (option)

A disturbance of the oscillation controls may cause the sanding belt to run down towards one side. Therefore, two limit switches secure the operating range of the belt. If they are activated the drive of the sanding belt will be braked and put to a standstill.

The angle and clamping length of the starting rod can be adjusted via the articulated head of the switch. It should be made sure that the sanding belt definitely actuates the starting rods in case of an emergency.

5.12 Sanding belt blow out (option)

The sanding belt blow out serves to clean (blow out) the sanding belt when using fine grain belts, i.e. for lacquer and filler.

5.13 workpiece blow off (option)

By means of air nozzles, the workpiece blow off removes sanding dust which might accumulate at the workpiece edge zones due to electrostatic charge.