

Kersten

SITE MAINTENANCE EQUIPMENT

Instruction Manual and Parts Manuals

HKM 40 series

HKM 12540 M - HKM 15040 M

HKM 12540 H - HKM 15040 H



Manufactured by Kersten
Arealmaschinen GmbH
Empeler Straße 95
D - 46459 Rees
www.kersten-maschinen.de



Distributed in UK by
Kersten (UK) Ltd Tel. 0118 986 9253
Progress House
39 Boulton Road Reading, RG2 0NH
www.kerstenuk.com - info@kerstenuk.com

1 About this manual

Dear Customer!

We thank you for purchasing this sweeping machine and having confidence in our equipment.

Before using this machine please read this instruction manual carefully.

Keep this manual to hand as it contains important information and instructions.

All points are indicated as follows:

- Text
- Text
- Text

Procedural instructions are indicated as follows:

1. Text
2. Text
3. Text

The sweeping machine is subject to technical progress. All information/pictures and technical data in this manual correspond to the latest specifications at the time of publication. The manufacturers reserve the right to make alterations at any time.



2 Safety information:

--- You must read this !!! ---

Provide these safety instructions to all other users!



2.1 Intended Use:

- This equipment is manufactured exclusively for use in land and forestry, landscape, site maintenance and snow clearance.
- The manufacturers may not be held responsible for any damage to the machine, property or any persons if it is not used as intended. The operator is fully responsible for his own actions.
- This machine must be maintained according to the manufacturers prescribed maintenance procedures.
- This equipment may only be used, maintained and repaired by qualified persons who have been trained in the machines operating procedure and are informed about the dangers.
- Follow the relevant rules for the prevention of accidents as well as the other generally recognized safe working procedures according to the Safety at Work Act.
- The manufacturer cannot be held responsible for any injury or damage resulting from changes or modifications made to the machine.



2.2 General safety and accident prevention instructions:

- Consider all additional valid general operating instructions and health and safety regulations.
- This equipment should not be operated by persons under the age of 18.
- This machine may be subject to regulation when used on the public highway.
- Before starting operating this machine you should be familiar with all controls and their functions. This should not be carried out during operation. It is too late!
- The user is responsible for operating the unit in the work area.
- Standing in the danger area of the machine is forbidden.
- Look out for any children or animals in the work area.
- The clothing of the user should be close fitting with stout footwear.
- Do not leave the engine running in an enclosed area.
- Whenever handling fuel there is an increased risk of fire. Never refill near a fire or sparks, do not smoke whilst refilling the fuel tank!
- Before refuelling, turn engine off and take ignition keys out (if available).
- Do not refill in enclosed areas and do not spill (use suitable filler assistance), if necessary. Clean up any spilled oil immediately!
- Keep the machine clean to decrease the risk of fire



2.3 Driving:

- When starting the engine all drives must be disengaged!
- During operation never leave the operator console at the handlebar!
- Do not adjust handles when operating - danger of accident!
- In the event of a malfunction stop immediately



2.4 Leaving the Machine:

- Always turn off the fuel tap when leaving the machine!
- Secure machine to stop it moving (Chock block) or being taken by an unauthorized person!
- Turn off the engine and remove the ignition keys (if available)
- Never leave the engine running unsupervised!



2.5 Repair work:

- Make sure that the machine is secure when working on any part of the machine!
- Repair work should only be done by a specialist with sufficient tools!
- With too high air pressure in the tyres there is a danger of explosion - max. 1 bar!
- Check the air pressure in the tires regularly!



2.6 Maintenance:

- Take care when using liquids under high pressure (e.g. Diesel fuel) which can penetrate the skin and if not treated immediately can cause infection and bad injuries!
Seek medical advice immediately.
- Dispose Oils, Fuels and filters separately and in accordance with legislation!
- Always remove the earth lead from the battery before working on the electrical system!
- Repair, maintenance and cleaning may only be carried out when the engine is switched off and the ignition key is taken out! then attach safety devices
- Tighten nuts and screws and other fixings regularly!
- Always have the machine on a raised platform when doing any maintenance work



2.7 Alterations:

- Repair work like welding, cutting, drilling etc may not be carried out on any basic safety parts such as framework, axles etc!



2.8 Basic Rules:

- Before every Start-up the machine must be checked before use!!!
- Cleaning, e.g. with a high pressure cleaner, should be done in such a way that the water jet is not directed on to bearings and turning parts (wheel hubs, shaft seals, lubrication fitting etc..). Otherwise smoothness of operation of the mobile parts may decrease. Check for this and re grease if necessary!
- Failure to comply with these directions will affect the entitlement of warranty!!!



2.8 Used Pictograms:

Explanation of the used Pictograms:

Read the safety manual carefully before start up

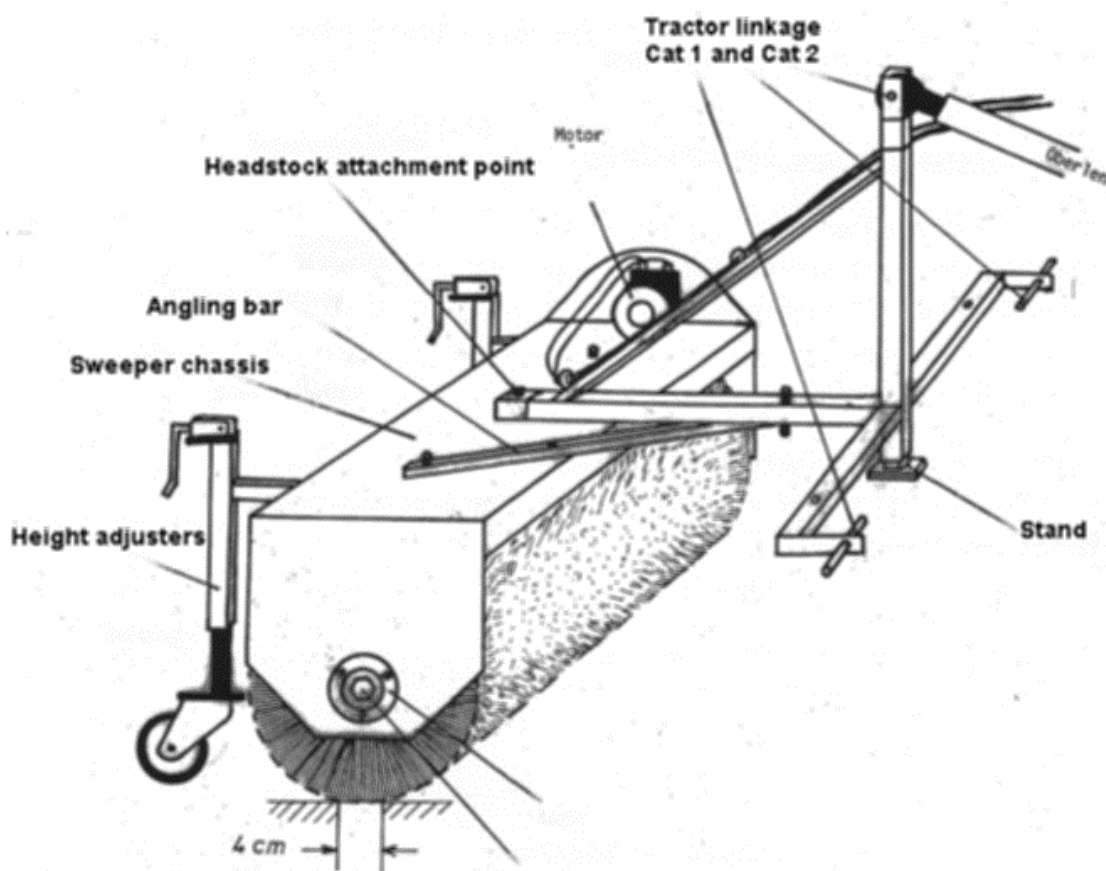


Before repair, maintenance and cleaning Turn engine off and pull out keys.



3.1 Assembly of the sweeping machine:

Connect headstock to sweeper attachment point as shown below. The headstock must be free to angle left and right. Feed hydraulic hose for drive motor through ring provided. Attach angling bar as shown or hydraulic ram if hydraulic angling has been selected. Ensure hydraulic hoses can not be fouled when sweeper is angled.



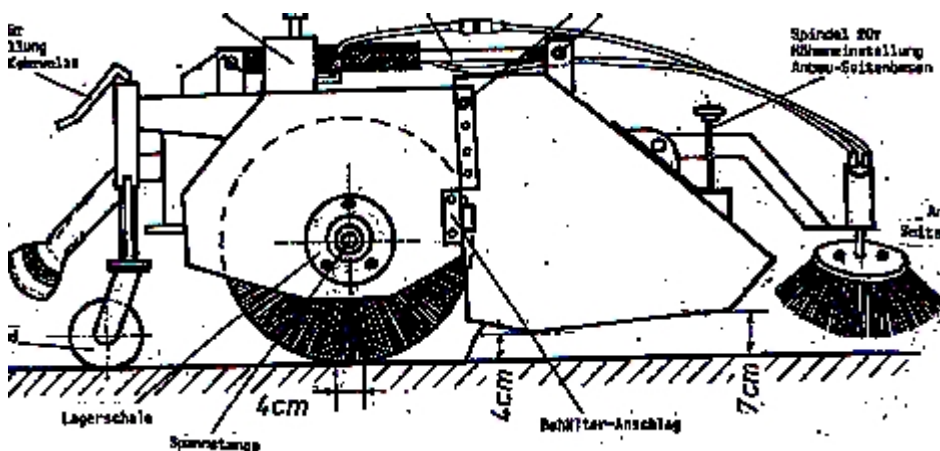
3.2 Attaching the Machine:

Always attach sweeper on level, hard ground.
Attach lower links first ensuring the sweeper is level. Use the tractor levelling link to adjust this. Raise the sweeper garage stand in to its home position.
The linkage height and height adjustment wheels should be set so that the brush is in contact with the ground over a 4cm area at both ends and the main sweeper chassis is parallel with the ground. Adjust tractor top link so that it lines up with the top link hole and finally fit top link pin.
Side movement of the tractor linkage should be limited by the tractor check chains.
Connect the two hydraulic hoses with quick release couplings to the tractor flow and return double acting spool valve.

3.3 Adjusting the sweeper

Height adjuster levers on the rear of the brush control the brush depth settings. Twisting them clockwise will lower the brush – anticlockwise will raise the brush. The base setting from which to work is when 40mm of the brush is in contact with the surface to be swept. Always adjust the brush evenly to achieve even wear.

The Sweeper may be angled to the left and right position.



3.4 Attaching the collector:

Attach machine to the tractor as described in 2.4 above.

The collector should be attached by the 2 pins provided on the left and right

The rubber deflector guard should be secured on the upper front edge the brush housing by means of the screws provided.

3.5 Adjusting the Collector:

The Collector should be set with the front edge of the container approx 4cm and the rear of the container approx 7cm from the ground.

Depending upon degree of wear of the brush the collector may be set into the appropriate one of the 4 holes provided, thus the setting 4cm and 7cm are maintained.

If the collector is incorrectly adjusted the following effects will be experienced Excessive material passing under the collector - Collector too high.

Collector rubbing on the ground - Collector too low.

Operating with the collector too low for a period of time will ear out the bottom of the collector!

Note: With very uneven soil conditions adjust **carefully.**

4. Maintenance

4.1 General information

Note!

Injuries to people or Damages to the machine can occur. You should check before each use that the machine is safe and the relevant parts and hydraulic connections are properly connected.

4.2 Maintenance

- The sweeping machine must be submitted to regular maintenance.
- After use you must dismantle all the safety devices for reattachment when the machine is used again.
- check all fixings and pin connections after the first 5 hours of use and lubricate all mobile parts
- check the tightness of the hydraulic fittings before every use.
- check hydraulic fittings after 5 hours use for the first time and tighten if necessary (**Important note: Only tighten joint if it is leaking. Procedure: Loosen the screw connection then move hose left and right. Now the screw connection can be tightened again.**)

4.3 Daily maintenance

- check the safety and control parts for wear before every use.
- check the oil level and Air filter.
- check the Hydraulic fittings and linings
- check the air pressure in the wheels.
- do a test run before every use.
- clean the equipment after every use.
- regularly lubricate all adjustable and moving parts on the power unit and any attachments.

Storage settings

- Sweeping brush: adjust wheels so that the brush is off the floor making sure the sweeping brush is evenly relieved
- Side brush: only store off the ground.

4.4 Maintenance after 20 and 100 hours use or longer

All mobile parts must be greased and oiled regularly including at the beginning and the end of each season.

Oil change Honda motor:

Change For the first time after 20 hours use, then every 100 hours use after that for further information, see engine manual.

Hydraulic oil change:

The hydraulic oil and oil filter should be changed after the first 20 hours and then after every 100 hours

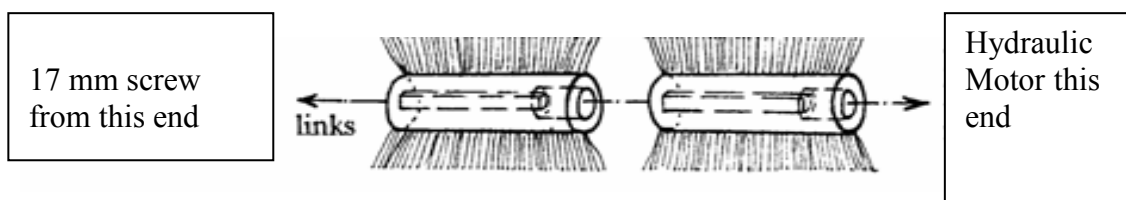
Type of oil used: BP Bio hyd SE-S46 (biologically degradable Ester based) or similar.

Check chain tension between hydraulic motor and differential.

4.5 Installing a replacement sweeping brush

Remove the 17mm long clamping bolt from the sweeping machine housing. Loosen the three screws on the bearing housing and remove clamp and bearing assembly. Take the square drive tube out of the two sectioned sweeping brush and remove brushes.

Install new brush - so that the round 145mm recess is on the right as shown and fits over the hydraulic motor - see sketch. Then reinstall the drive tube in reverse with the clamp and the square bar and install the left hand bearing and clamp.



Disposal and Warranty

5 **Disposal**

These devices must be disposed of according to the regulations of the municipality or the country. All possible parts should be recycled, and the remainder disposed of in a satisfactory manner.

The company Kersten Maschinenvertriebs GmbH does not take responsibility of disposal.

6 **Warranty**

Details of Warranty are included on the warranty registration form.

All conditions must be satisfied. Please complete the warranty registration and send it to:

Technical data:

Type: HFKM

Brush diameter
40cm

Suitable for the tractor front or rear three point linkage Category I
and II Suitable for tractor front loader Gr. II and Gr. III

Optional brush types:

- Dirt sweeping brush Full brush poly
- Dirt sweeping brush, Mixture Full Brush Poly(50%)/wire(50%)
- Combination Brush (Standard) 5-row Poly spiral brush
- Snow Brush 4-row Poly spiral
brush (all brushes have a diameter of 40cm)

Optional equipment:

- Dirt collector
- Protective cover as spraying protection in front of HFKM 1500
- 540rpm Power take off
- Hydraulic emptying collector
- Hydraulic angling

EC Declaration of conformity

In accordance with EC Directive 89/392/EWG

We the

Kersten Maschinen-Vertriebs GmbH

Empeler Straße

93-95 D - 46459 R e e s

Declare in sole responsibility that

Product is machine type: **HFKM 1500**

Designation: Sweeper Machine no.:

Kehrmaschine Maschinen-Nr.:

to which this declaration relates, complies with the relevant essential health and safety requirements of EC Directive 89/392 / EEC.

Rees, den _____



Dipl.-Ing. Georg Kersten

- Executive Director -

Parts List

Tractor Mounted Sweeper HFKM 1000, 100 cm

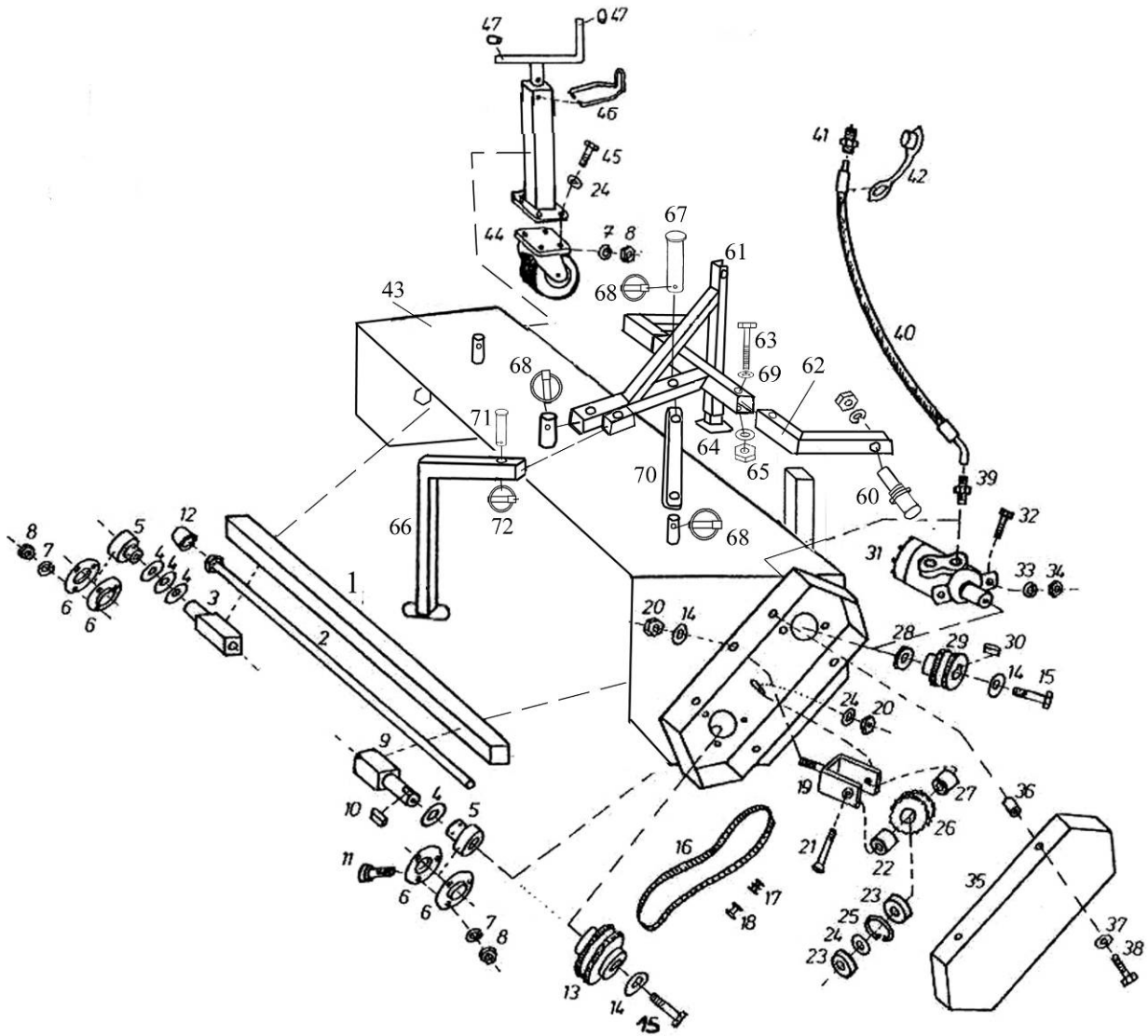
HFKM 1150, 115 cm

HFKM 1250, 125 cm

HFKM 1500, 150 cm

Brush Diameter 40 cm, Front or Rear
Mounting

- 1 Basic unit**
- 2 Splash guard, collecting container with mech. emptying**
- 3 Hydraulic container emptying**
- 4 Hydraulic swivelling, speed regulation**
- 5 Shaft drive**
- 6 Sweeping rollers**



1. Basic unit HKM 40 series -- HKM 12540, HKM 15040

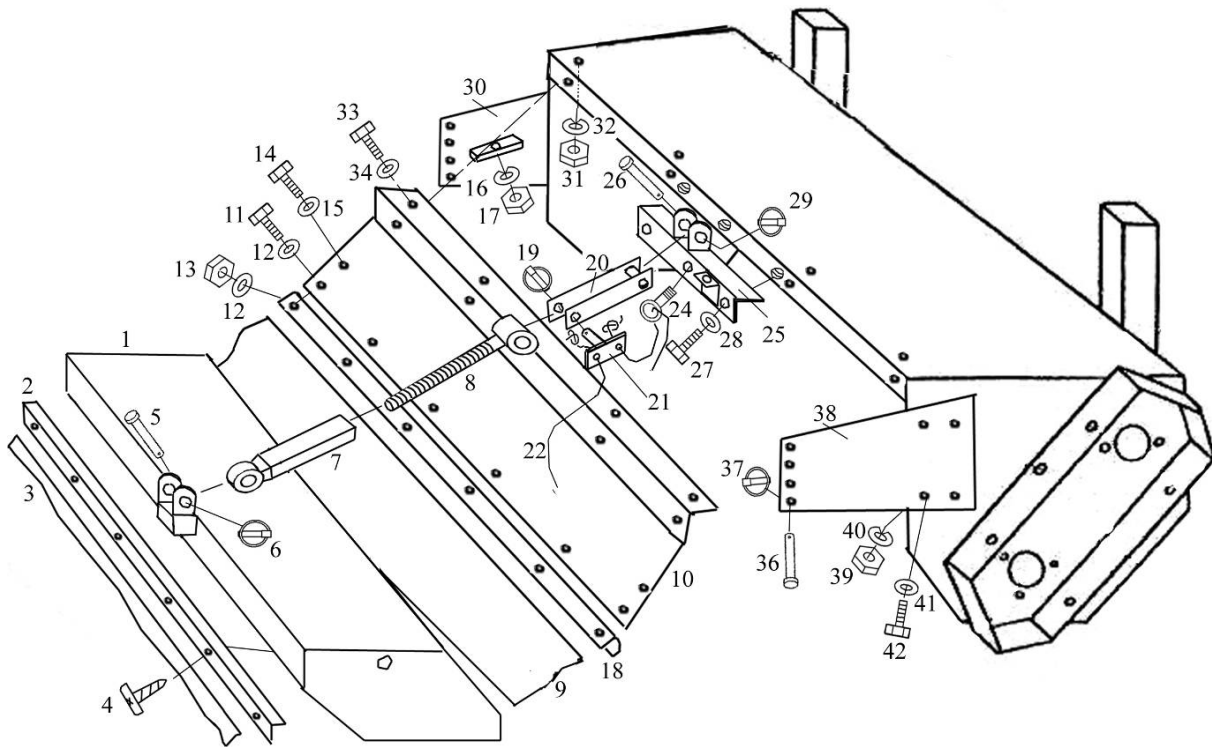
Stand: 30.06.07

No.	Order	to	Name
1a	100 000 004	1	Drive tube 940 mm,
1b	115 000 360		HFKM 1000
1c	125 000 004	1	Drive tube, HFKM 1150
1d	150 000 360	1	drive tube
2a	100 000 006	1	1190mm,
2b	115 000 355		HFKM 1250
2c	125 000 006	1	Drive tube HFKM 1500
2d	150 000 355	1	Tension rod 900 mm
3	130 000 351	1	HFKM 1000
4	705 631 305	4	Tension rod HFKM 1150
5	924 100 207	2	tension rod
6	924 200 207	4	1150mm
7	905 010 000	22	HFKM 1250
8	900 010 001	22	Tension rod HFKM 1500
9	130 000 346	1	Drive stub, right
10	908 181 030	1	disc
11	901 910 020	3	warehouse
12	943 559 016	1	bearing shell
13	920 402 326	1	spring washer
14	905 210 000	3	mother
15	901 110 025	10	Drive stub, left
16	920 101 930	1	Adjusting spring
17	920 201 000	1	carriage bolt
18	920 301 000	1	cap
19	130 001 270	1	Sprocket, below
20	900 010 002	2	diameter washer
21	901 210 070	1	screw
22	705 205 095	1	duplex chain
23	924 106 200	2	Half chain link
24	905 110 000	18	chain lock
25	906 000 390	1	headband
26	920 402 215	1	Stop mother
27	705 205 015	1	Lowering screw
28	705 407 508	1	Bushing, narrow
29	920 402 114	1	warehouse
30	908 008 732	1	washer

No.	Order	to	Name
31	935 102 100	1	hydraulic motor
32	901 112 030	2	screw
33	905 012 000	10	spring washer
34	900 012 001	10	mother
35	130 000 165	1	cover
36	900 006 004	4	rivet nut
37	905 206 000	4	diameter washer
38	901 106 016	4	screw
39	931 071 212	2	Hydraulic fitting
40	930 000 025	2	hydraulic hose
41	932 161 323	2	hydraulic connector
42	932 391 032	2	dust cap
43a	100 000 003	1	Basic housing HFKM 1000
43b	115 000 003	1	Headers
43c	125 000 003	1	HFKM 1150
43d	150 000 011	1	Basic housing HFKM 1250
44	926 304 200	2	Headers
45	901 110 020	8	HFKM 1500
46	942 003 002	2	Roller 200 mm Ø
47	942 003 003	4	screw
60	907 600 014	2	clamp
61a		1	rubber stopper
61b	050 440 002	1	Lower link step bolts,
62	150 000 013	2	3 parts
63	901 012 080	2	Mounting frame cat 1
64	155 000 011	1	Recording Hako City Master
65	900 012 002	2	sidearm
66	150 000 014	1	screw
67	907 400 073	1	parking support
68	907 111 000	3	Stop mother
69	905 112 000	4	Parking support, with and without container
70	150 000 012	1	Bolt 19 x 76
71	155 000 013	1	Folding plug 11 he
72	907 145 000	1	washer

2. Splash guard, collection container
HKM 40 series -- HKM 12540, HKM 15040

Stand: 31.06.07



No.	Order	to	Name
1a	100 000 007	1	Container H KM 1000
1b	115 000 007	1	Container HFKM 1150
1c	125 000 007	1	Container HFKM 1250
1d	150 000 010	1	Container HFKM 1500
2a	100 000 635	1	Angle rail HFKM 1000, 98 cm
2b	115 000 635		angle rail
2c	127 000 635	1	HFKM 1150
2d	150 000 635	1	Angle rail HFKM 1250
3a	100 000 631	1	angle rail
3b	115 000 630		HFKM 1500
3c	127 000 630	1	Rubber injection rags HFKM 1000, 98 cm
3d	150 000 630	1	Rubber splash flap

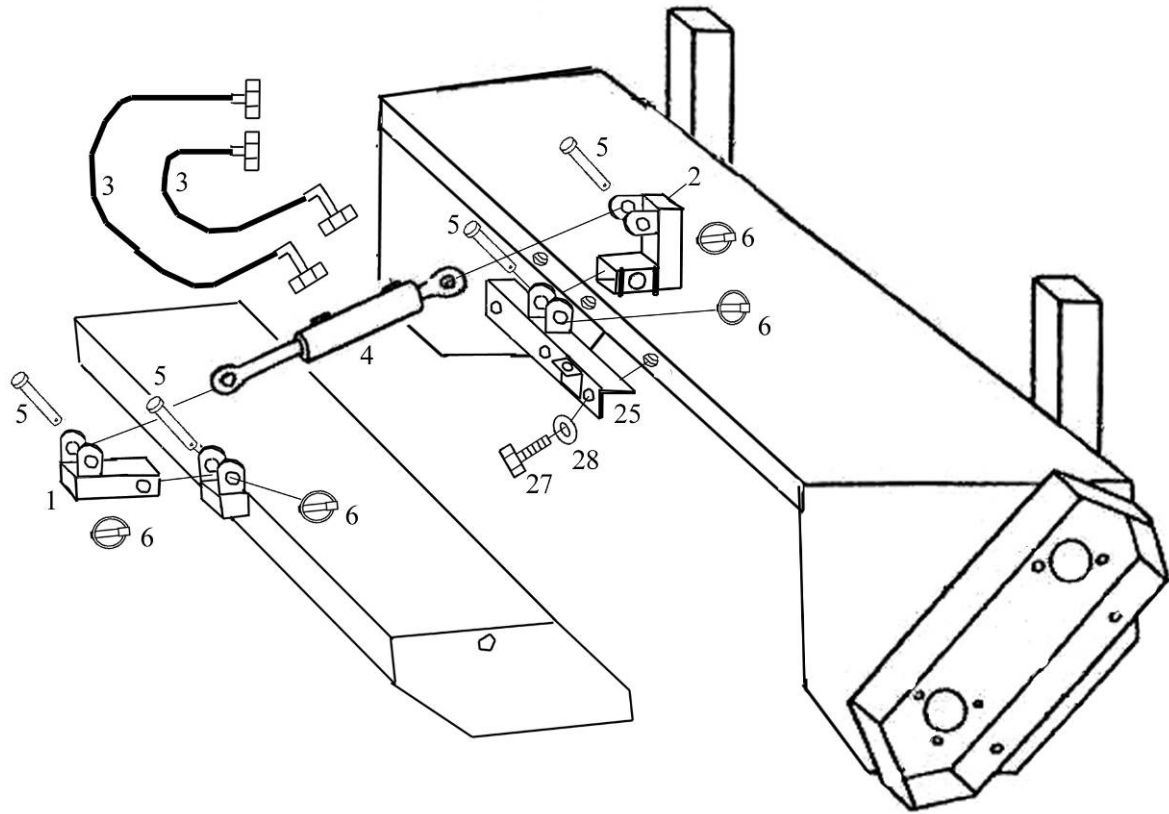
4	902 642 013	5	tapping screw
5	907 400 073	1	Bolt 19x76 mm
6	907 111 000	1	linch pin
7	150 000 009	1	spindle sleeve
8	150 000 008	1	spindle
9a	100 000 586	1	Rubber injection rags HFKM 1000, 100 cm
9b	115 000 585		Rubber splash flap
9c	127 000 585	1	HFKM
9d	150 000 585	1	Rubber injection rags HKM 40
10a	100 000 020	1	Rubber splash flap
10b	115 000 020		HFKM
10c	125 000 020	1	splashboard

**2. Splash protection, collection container
HKM 40 series -- HKM 12540, HKM 15040**

No.	Order	to	Name
10d	150 000 020	1	Splash plate HFKM 1500
11	901 006 020	3	screw
12	905 106 000	6	washer
13	900 006 002	3	Stop mother
14	901 008 025	2	screw
15	905 108 000	2	washer
16	905 008 000	2	spring washer
17	900 008 001	2	mother
18a	100 000 591	1	retaining rail
18b	115 000 590		HFKM 1000, 100 cm
18c	127 000 590	1	Retaining rail HFKM 1150
18d	150 000 590	1	retaining rail
19	907 111 000	1	HFKM 1250
20	150 000 006	1	Retaining rail HFKM 1500
21	150 000 005	1	linch pin
22		4m	holder
24	903 110 035	1	cable holder
25	150 000 004	1	Rope (sold by the meter)
26	907 400 073	1	eyebolt
27	901 010 025	2	Holder for emptying on HFKM
28	905 110 000	2	Bolt 19x76 mm
29	907 111 000	1	screw
30	150 000 002	1	washer
31	900 008 001	8	linch pin
32	905 008 000	8	Side part right with front attachment
33	901 008 20	8	mother
34	905 108 000	8	spring washer
36	800 000 036	2	screw
37	907 106 000	2	washer
38	150 000 001	1	round pins
39	900 012 001	8	linch pin
40	905 012 000	8	Side panel left with front attachment
41	905 112 000	8	mother
42	901 012 025	8	spring washer

3. Hydraulic container unloading
HKM 40 series -- HKM 12540, HKM 15040

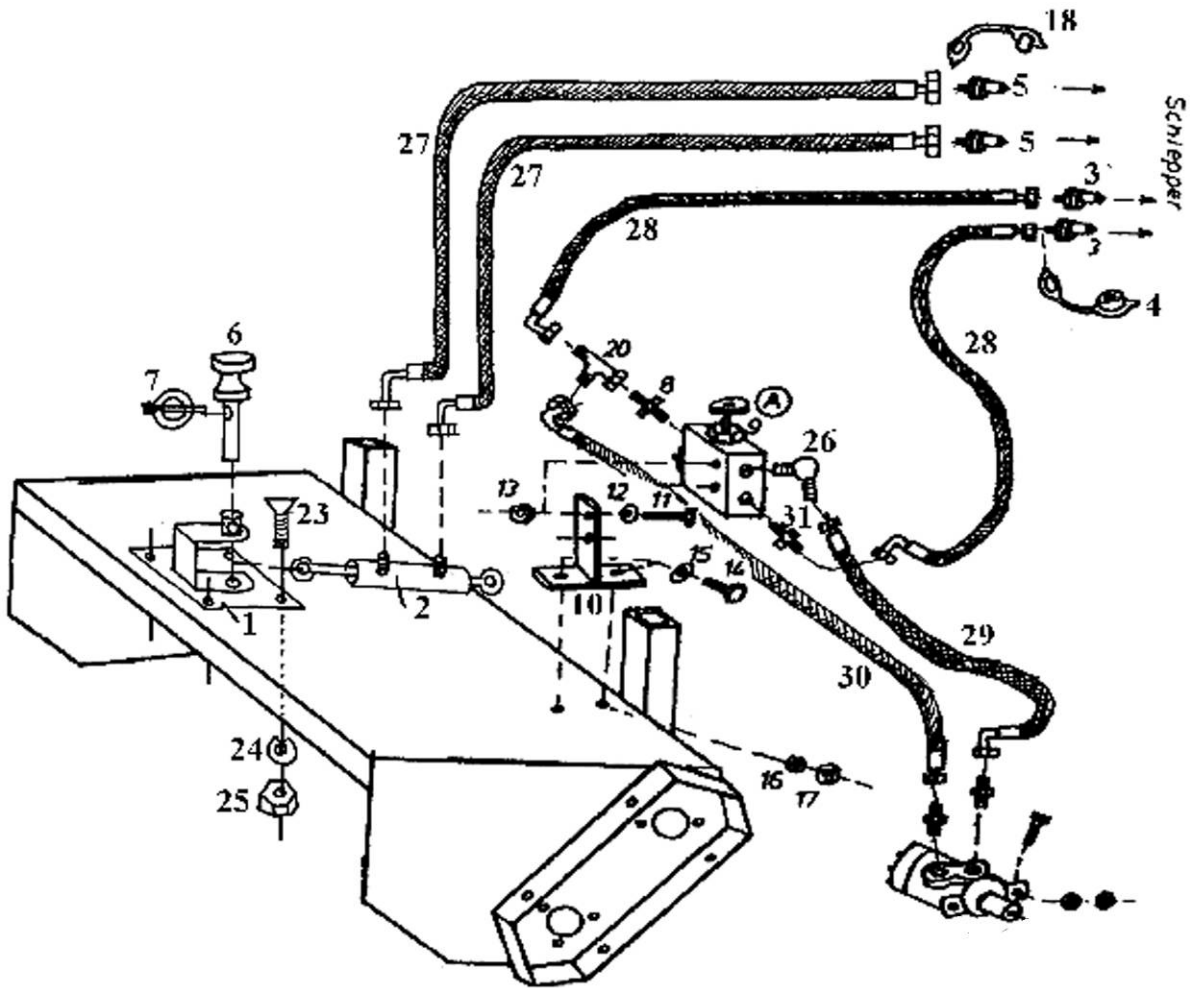
Stand: 06.07



No.	Order	to	Name
1	150 000 021	1	Holder cylinder at the collecting container
2	150 000 022	1	Bracket cylinder on
3	930 000 025	2	Headers
4	933 101 180	1	hydraulic hose
5	907 400 073	1	cylinder
6	907 111 000	1	Bolt 19x76 mm
25	150 000 023	1	linch pin
26	907 400 073	1	Holder for emptying on HFKM
27	901 010 025	3	Bolt 19x76 mm
28	905 110 000	3	screw
29	907 111 000	1	washer

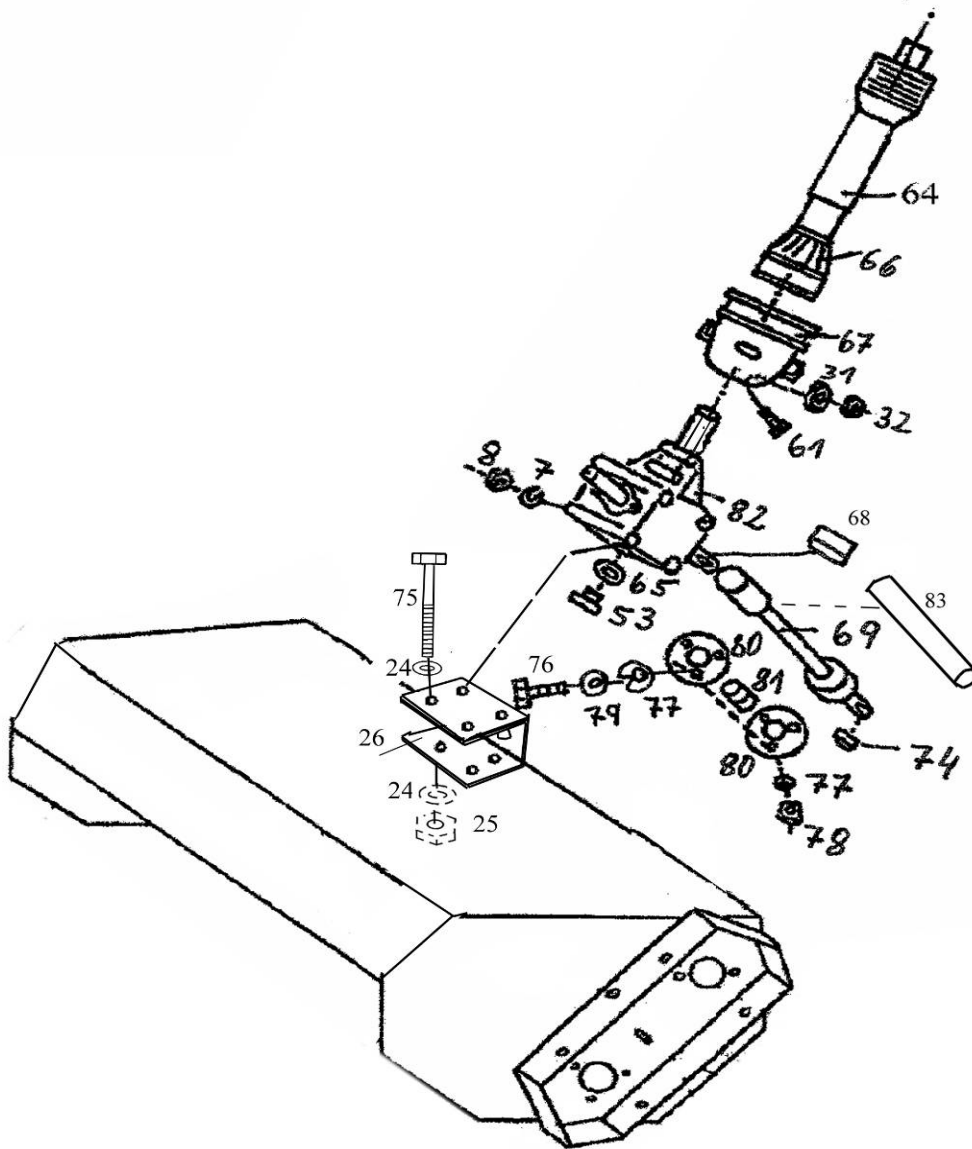
4. Hydraulic swinging, speed regulation

Stand: 05.07



No.	Order	to	Name
1	050 440 001	1	U-bracket cylinder
2	933 101 180	1	cylinder
3	932 161 323	2	hydraulic connector
4	932 391 032	4	dust cap
5	932 106 014	2	hydraulic connector
6	750 000 028	1	bolt
7	907 108 000	1	linch pin
8	931 071 238		Hydraulic fitting
9	936 201 000	1	control valve
10	155 000 020	1	Holder for control valve
11	901 106 045	2	screw
12	905 106 000	4	washer
13	900 006 002	2	mother
14	901 008 020	2	screw
15	905 108 000	2	washer
16	905 008 000	2	spring washer

No.	Order	to	Name
17	900 008 001	2	mother
18	932 225 001	2	dust cap
20	931 041 200	1	Hydraulic fitting
23	901 010 030	4	screw
24	905 010000	4	spring washer
25	900 010 001	4	mother
26	931 101 238	1	Swivel fitting
27	930 000 018	2	hydraulic hose
28		2	Hydraulic hose, depending on tractor
29	930 000 092	1	hydraulic hose
30	930 000 093	1	Snhow idl. 240
31	931 071 238		Hydraulic hose cutting 280



No.	Order	to	Name
7	905 010 000	4	spring washer
8	900 010 001	4	mother
24	905 110 000	8	washer
25	900 010 002	4	Stop mother
26	150 000 016	1	transmission holder
31	905 006 000	4	washer
32	900 006 002	4	Stop mother
53	931 000 031	1	Oil filler plug
61	901 006 020	4	screw
64	923 000 101	1	PTO shaft with protection
65	937 120 025	1	sealing ring
66	923 3-- --1	1	Protection completely
67	923 003 001	1	Protective pot on the gearbox

No.	Order	to	Name
68	908 008 725	1	Adjusting spring
69	150 000 011	1	Drive shaft HFKM 1500
74	908 008 720	1	Adjusting spring
75	901 010 150	4	screw
76	901 008 025	3	screw
77	905 008 000	6	washer
78	900 008 001	3	mother
79	905 008 000	3	spring washer
80	924 200 205	2	bearing shell
81	924 100 205	1	warehouse
82	922 101 001	1	bevel gear
83	150 000 105	1	Protection tube 485 mm

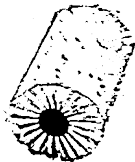
Sweeping rollers diameter: 40 cm Ø

HKM 40 series -- HKM 12540, HKM 15040

<u>Picture</u>	<u>Description</u>	<u>Order no.</u>
----------------	--------------------	------------------

Dirt broom

With poly full trimming



HFKM 1500	1500 160-L
HFKM 1900	1900 160-L
HFKM 2250	2250 160-L

Dirt roller - mixed

With poly / corrugated wire trimming (50% each)



HFKM 1500	1500 165-L
HFKM 1900	1900 165-L
HFKM 2250	2250 165-L

Combination broom

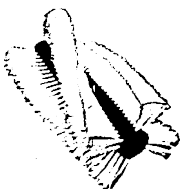
With 5-row polly twist trim



HFKM 1500	1500 100-L
HFKM 1900	1900 100-L
HFKM 2250	2250 100-L

Snow broom

with 4-row poly-twist trim



HFKM 1500	1500 080-L
HFKM 1900	1900 080-L
HFKM 2250	2250 080-L

Kersten

SITE MAINTENANCE EQUIPMENT

Distributed in UK by
Kersten (UK) Ltd Tel. 0118 986 9253

Progress House
39 Boulton Road Reading, RG2 0NH
www.kerstenuk.com - info@kerstenuk.com