

Flail Chopper

Type KD

08-10 2013

- E Instruction manual, page 3 and following
 Part list, page 100 and following

- F Manuel d'instruction, page 50 et suivant
 Pièces de rechange, page 100 et suivant



INSTRUCTION MANUAL

Flail chopper

Model "KD"

Before you take the mower in service the first time, you must read this instruction manual attentive and take also care of the mentioned precautionary measures.



In this manual all items concerning your safety are marked with this symbol. Pass all these user and precaution instructions also to other users.

When ordering spare parts, please indicate model name and serial number, part number and description as given in this parts list. We advise you to write the model name and serial number (see number plate on machine) on the Declaration of Conformity (chapter 1.11 page 11)

We wish you every success with your 'PERFECT' flail chopper !

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1. Instruction manual

SAFETY INSTRUCTIONS



In this manual all subjects concerning the users and/or bystander safety are marked with the attention symbol as printed here above. Any person using this equipment should be notified of these instructions and precautions.

1.1 General information

1.1.1 Machine identification

This instruction manual and parts list relates to the "PERFECT" flail chopper series KD.

The KD flail chopper is developed and built to pulverize vineyard pruning (up to 35mm (1½") in diameter), cutting grass in orchards, vineyards, parks, on roadsides etc.

The KD model has holes at the rear side in the main body hood so it can take rake tines. The KD series is always supplied with a set of rake tines. These flail choppers are supported by a rear roller and the tractor 3-point linkage.

The KD-150 is always mid-mounted.

The KD-180 and KD-210 have 2 attaching possibilities; either mid-mounted or central to the gearbox in offset position..

So the KD-180 can be coupled to the tractor either in mid-mounted or in offset position 1100mm (43½") to the right hand side. For KD-210 either mid-mounted or in offset position 1240mm (49") to the right hand side. And the KD-240 can be coupled mid-mounted or in offset position 1520mm(60") to the right hand side.

1.1.2 The permitted application

- This flail chopper may only be used for the kind of work for which it has been developed;
 - to pulverize vineyard pruning up to 35mm (1½")
 - to cut grass in orchards, vineyards etc.
 - not to work on uneven and/or rocky territories.
- The manufacturer is safeguarded against all damage caused by working- / cutting-conditions not mentioned / permitted by the manufacturer. All damages / costs caused by this kind of usage are for the account of the user of the machine.
- To the right way to use the machine belongs also:
 - to take care of the permitted applications of the machine
 - to respect the safety- and precaution-instructions, see chapter 1.2
 - to respect the maintenance- and service-instructions, see chapter 1.2
 - to replace parts always by original **Perfect** spare parts or by spare parts which apply to the Perfect specifications.
- This machine may only be maintained and serviced by mechanics who have read this instruction manual attentive, who have experience to service this kind of machinery and who have been pointed out the danger of this kind of machinery.
- The user should take care of the following rules and prescriptions:
 - general safety measures
 - precaution
 - general traffic rules.
- Check the precaution decals on the machine and handle in accordance herewith.
- The manufacturer is safeguarded against all kind of damages/costs and/or injury caused by alteration(s) of the machine done without a written permission of the manufacturer. All consequences of this kind of alternations are for the account of the owner/user.
- It is strongly recommended not to work on rough and/or rocky terrain with this machine. Stones and/or other kind of massive object can damage the machine. Also this can create dangerous situations. Be careful no stones or other massive objects come(s) under this machine.



In spite of all precautions it is forbidden that except of the tractor driver nobody else (also animals) stays nearby (minimum distance 100 m) the machine whilst it is working / running.

MAIN PRECAUTION



Every time before you take the machine in service you must check the machine and the tractor on all safety precautions.

1.2 Precautions

1.2.1 General Precautions

1. The warning decals on the machine give you important assignments how to use the machine (see also chapter 1.10). Check presence of all decals, and replace them if necessary.
2. During night road-transport and also when weather conditions make it necessary the tractor and machine must be provided with correct illumination.
3. Take care of all precautions written in this manual and prescribe by the law.
4. Before taking the machine in service you must make yourself familiar with all functions and parts of the machine.
5. Because of spinning parts (P.T.O. shaft, pulleys and V-belts) it is recommended strongly that the tractor driver wear tight-fitting cloths.
6. To limit fire risk it is recommended strongly to clean the machine at regular times, also underneath the protection covers.
7. The machine must be coupled to the tractor as written in this manual
8. When the machine is coupled to the tractor, the tractor must be secured against rolling by the hand brake. During coupling it is anybody forbidden to stay in between tractor and the flail chopper.
9. During road transportation the machine must always be coupled central.
10. Tractor front-counter-weights must be placed at the prescribed places.
11. Pay attention to the maximum allowed axe-load, especial by front mounted machines.
12. It is forbidden to transport people and/or animals on the machine during cutting-work and/or road-transport.
13. Before you put the machine in service you must check if nobody, **also children and animals**, stays nearby the machine. Be aware you have an unobstructed view.
14. During road-transport and work it is forbidden to the tractor driver to leave the cabin.
15. Adapt the speed to the circumstances. Be careful when working at hill -sides and at sharp turns.
16. The drive- and brake-demeanour of the tractor will be influenced by the coupled machine and counter-weights. Be careful, keep sufficient brake-distance.
17. Take care of the outstanding machine in turns.
18. Do not take the machine in service before you have checked the condition of all protection elements. Replace them if necessary.
19. Before the tractor driver leaves the cabin he has **always** to disengage the tractor P.T.O. shaft, to pull the hand brake, to shut-off the motor and to pull the tractor key out.

1.2.2 P.T.O. driven machine

1. Only use the P.T.O. shaft that is supplied with the machine it-selves (see also 1.3.3).
2. Check the protection guards of tractor, machine and P.T.O. shaft.
3. Check the overlap of the protection guards, this should be at least 50 mm. Also if using a P.T.O. shaft with overrunning clutch.
4. Check the overlap of work- and protection-tubes, in all work- and transport-positions of the machine.
5. (Dis-)connecting of the P.T.O. shaft is only permitted when the tractor P.T.O. shaft is disengaged, the motor is shut-off and the tractor key is pulled out.
6. Be sure that the P.T.O. shaft is coupled correctly. The sliding pins should fit the corresponding slots and they should be returned in out-standing position.
7. Secure the protection guard against spinning by fixing the chains.
8. Before you engage the tractor P.T.O. you must check if the chosen tractor P.T.O. speed corresponds with the prescribed speed of the machine. The machine speed is indicated on a decal on the gearbox-cover.
9. Before you engage the tractor P.T.O. you must check if nobody, also children and animals, is nearby the machine.
10. Never engage the tractor P.T.O. when the tractor motor is shut-off.
11. Disengage the tractor P.T.O. when the angle of the P.T.O. shaft becomes to big.
12. Be aware that the machine will still run for a while after you have disengaged the tractor P.T.O. Do not come close to the machine while it is still running.
Only when the machine completely stands still, it is allowed to start adjustment-, cleaning-, service- and/or repair-work.
13. Adjustment, cleaning-, service- and / or repair-work are only allowed to be done when the tractor P.T.O. shaft is disengaged, the motor shut-off and the tractor key is pulled out.
14. The disconnected P.T.O. shaft must by 'stored" by the corresponding chain.
15. After you have disconnected the P.T.O. shaft you must replace the tractor P.T.O. shaft cover directly

1.2.3 Service

1. During adjustment-, cleaning- and service-work, but also when you have to remove an object out of the machine you must disengage the tractor P.T.O. shaft , shut-off the motor and pull the tractor key out.
 2. Check at regular times (at least every 8 hours) all bolts and nuts. Re-tight them if necessary.
 3. Use adequate supports when you have to work under a lifted machine.
 4. Use always correct tools and wear gloves when you replace flails.
 5. Collect used and excess oil and grease for environment friendly disposal.
 6. Check at regular times (at least every 8 hours) the condition of the protection elements and wear-off parts. replace them if necessary.
 7. Disconnect the dynamo and the battery during electric welding-work
 8. Re-placement parts must comply at least the manufacturer specifications.
- You do not have doubts when you use original Perfect parts !!!**

1.3 Putting in service



Nobody should stand in between the tractor and the machine when you change the machine from central mount- to offset-position.

1.3.1 Fitting to the tractor

The machine is suitable for every standard 3-point linkage Kat. I. The distance of the lower 3-point linkage arms connection points should be 720 mm (28½") centre to centre.

The machine is coupled to the tractor with stepped pins (Kat. I – II), Page 102 – Det. 5.

Do not forget to secure these pins with the also supplied spring locks.

Use the chain, page 102 – Det. 10, as "flexible" top-link. When the tractor and the mower are standing on a flat surface, adjusted at the wanted cutting height, the chain should "hang" slightly.

Doing so the mower can follow contours of an uneven field freely, this gives a nice equal cut and the machine will not be overloaded.

1.3.2 Cutting height

The cutting height can, if necessary, be adjusted as follows. By re-setting the upper fixing bolts, Page 107 – Det. 11, in one of the other adjusting holes of the frame (and / or adjusting plate) you can change cutting height.

The highest hole in the frame will give you the lowest cut ± 25 mm (1") and the lowest hole in the frame the highest cut ± 75 mm (3").

The machine front-side should always be carried by the tractor 3-point linkage.

1.3.3 P.T.O. shaft

The P.T.O. shaft supplied with the machine has a retracted length of 920 mm ($\pm 3'$).

This length is correct for most of the popular tractor sizes. However it is strongly recommended to check the proper length of the P.T.O. shaft before operating the machine, and if necessary to shorten it according to the instructions attached to the P.T.O. shaft. Check the proper length as well in transport- as in work positions!

Check the length of the overlap of the protection elements; this should be at least 50 mm (2").

The guard tube of the P.T.O. shaft must be secured against rotation by the little chains.

When the machine is disconnected from the tractor the P.T.O. shaft should rest in the corresponding chain of the 3-point bow.

1.3.4 Gearbox

To protect the oil to drain, the breather is replaced by plastic plug during transport from manufacturer to the farmer. Before taking the machine in service the plastic plug must be replaced by the breather. During transport the breather is fixed to the drive shaft of the gearbox.

1.3.5 Transport



During road-transport the machine is carried by the tractor 3-point linkage.

It is not allowed to carry the machine in offset position during road-transport!

1.3.6 Precautions

Every time before you take the machine in service the following items have to be checked:

- Oil level in gearbox (chapter 1.5)
- V-belt tension (chapter 1.6)

- Condition of cutting flails (chapter 1.7)
- Grease points (chapter 1.8)

1.4 Driving speed

Depending on quantity, size and character of pruning / vegetation and working conditions the recommended driving speed is 2 – 5 km./h. (3/4 – 3 M.P.H.)

The diameter of the pruning should not be bigger than 35 mm (1½ ").

1.5 Gearbox

Before operating the machine and further at regular intervals, the following points should be checked:

- Oil level: this is correct when the oil just reaches the hole of the plug, Page 105 – Det. 9 for KD -150, -180 and -210 or Page 106 – Det. 14 for KD-240.
- Breather No. 3.10066: should be free of obstruction. The cap must be slightly compressible. Clean by blowing through from the inside (Page 105 – Det. 4 for KD -150, -180 and -210 or Page 106 – Det. 13 for KD-240).

Renew oil after the first 20 working hours and further after every 100 working hours, but at least once a season.

To renew the gearbox oil handle as follows:

Remove the breather and the drain plug and drain the oil (you can reach the drain plug from the in-side of the main body).

***** Collect the old oil, e.g. in a bucket, for environment friendly disposal. *****

Refit the oil drain-plug and pour 1 litre (± 1/2 gallon) diesel-oil through the breather hole in the housings. Clean the internal gearbox (by washing with the diesel oil) by turning the V-belt pulley a few times by hand.

Then **drain and collect** the dirty diesel-oil and refill the gearbox to the required oil-level and refit the breather.

Fill up only to the proper level and use always the same oil.

Recommended is gear-oil EP 320 or SEA-120 in extremely warm climates.

***** Note: Allow the oil enough time to sink through the bearings.**

Wipe off excess oil to prevent it reaching the V-belts as oil and grease cause unnecessary slipping and extra wear.

1.6 V-belts

A correct V-belt tension is very important and this should be checked after the first 2, 8 and 16 hours of service and further on at regular times (at least every 50 hours of service).

The V-belts have to be re-tighten with the adjusting bolt, Page 101 – Det. 14.

A general rule for the determination of the correct belt tension is: properly adjusted belts cannot be twisted more than a quarter of a longitudinally turn (by thumb and forefinger).

1.7 Flails

1.7.1 General

- Only the use of original Perfect parts will assure you of a safe service of the machine. So use by replacement only original "PERFECT" parts.
- Every time before the machine is taken in service the flails should be checked. Are no flails lost, are they still in good shape?
Replace the flails if necessary by original Perfect parts, see also chapter 1.7.4. The flails have to be replaced when there is no longer any overlap.
- When the fixing bolts have to be replaced (when the diameter has become less than 17 mm) you should always use original Perfect bolts. Bolts M20 x 90, quality 10.9.
- Tighten up the lock-nuts M20 until the bushing in the corresponding "ear" starts to shift.



NO risks, NO experiments with imitation parts, use only original Perfect parts!

1.7.2 In service

When the machine starts to vibrate the tractor P.T.O. shaft should be disengaged immediately. Check the condition of flails and flail -rotor.

Replace broken or damaged parts by original **Perfect** parts.

1.7.3 P.T.O. / rotor speed

Always speed up the P.T.O. shaft to the prescribed speed of 540 RPM before starting to cut.

In special occasion 1000 RPM is prescribed as P.T.O. speed.

The correct P.T.O. speed is indicated on the gearbox cover.

1.7.4 Replacement of flails

- See also page 107.
- Remove the lock-nuts, the lock washers and bolts
- Replace the flails by **original Perfect flails**.
- Replace also the lock nuts and lock washers and also the bolts when the diameter has become less than 17 mm.. Use always original **Perfect** bolts, lock washers and nuts (bolts M20 x 90, quality 10.9).
- Tighten up the lock nuts until the bushing in the mounting "ear" starts to shift.

1.8 Service

Before operating the machine you should check if all points, as stated below, have been greased properly. Lubricate as follows:

1.8.1 P.T.O. shaft

Profile tubes:

- to lubricate every 24 hours of operation. Wash them clean periodically in order to remove dirt and accumulated contaminated grease.

Yoke crosses:

to lubricate every 8 hours of operation.

Slide pins:

to oil at regular times the pin.

1.8.2 Bearing houses / rotor shaft

To be lubricated every 8 hours of operation.

1.8.3 Rear roller (optional)

All Y-bearings are supplied as standard filled with a rust-inhibiting lithium base grease of NLGI 3 consistency.

Under normal speed and operating conditions they do not need to be re-lubricated. However, if the bearings are to operate in very damp or dirty conditions or at high speeds for long periods, re-lubrication is recommended.

It is only possible to re-lubricate bearings having lubrication holes in the outer bearing ring and only if they are mounted in cast housings. The grease should be compatible with the original fill, i.e. lithium base grease (or possibly a calcium base grease).

On no account should sodium base grease be used. The grease nipple of the housing should be carefully cleaned before use and the grease should be introduced slowly whilst the bearing is rotating until fresh grease exudes from the bearing. Excessive pressure should not be applied as otherwise the bearing seals may be damaged. Re-lubrication intervals vary greatly according to operating conditions and it is difficult to give any general rules; experience is usually the best guide. However, where machines and equipment are only used seasonally, it is recommended that the bearings be re-lubricated at the end of each operating period, i.e. before the equipment is laid up. When the operating temperature of the bearing is approximately 100° C., the rotating speed high, the environment very dusty or damp, frequent re-lubrication, for example, every second week is recommended.

Always use a good quality ball bearing grease EP-2, or equivalent.

Wipe off excess grease to prevent it reaching the V-belts as oil and grease cause unnecessary slipping and extra wear.

1.9 Important advises

1.9.1 Winter services

It is important when taking the mower out of service for a longer period, to carry out the following:

- Release tension of V-belts
- Re-new the gearbox oil (see chapter 1.5)
- Replace the flails if necessary
- Check which parts have to be replaced or repaired
- Wash and clean the machine completely, lubricate the bearings and store it in a dry place.

1.9.2 Repair

Urgent repairs and parts supplies are expensive. Why not use the winter (quite) months to bring your machine in a "Perfect" condition for the next season.

1.9.3 Caution



No persons, other than the tractor driver, should be near the mower (minimum distance 100 m) whilst it is in operation. Never walk close to the rear of the machine.



The tractor driver should never leave the tractor seat before disengaging the tractor P.T.O. shaft, stopping the engine and pulling the tractor key out.



Never remove guards when the machine is operating.



Never touch the machine before being for 100 % sure that all parts (P.T.O. shaft, blades, belts and pulleys) have stopped rotating.



This machine is supplied for use in agriculture to pulverise orchard purnings, brush, corn-/ cotton-/tobacco-stalks cutting grass in orchards, vineyards, parks, on road sides, parking lots etc.
Not to work on uneven and/or rocky territories.

1.10 Safety decals

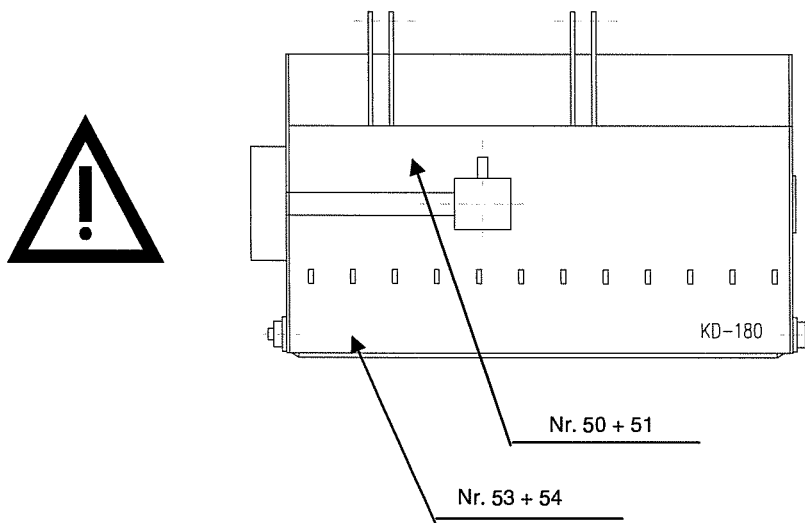
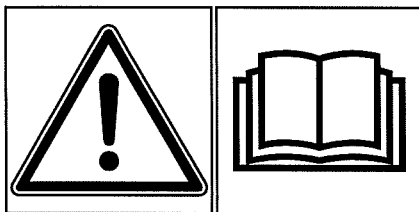
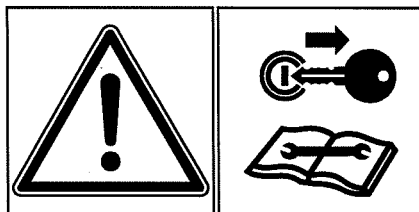


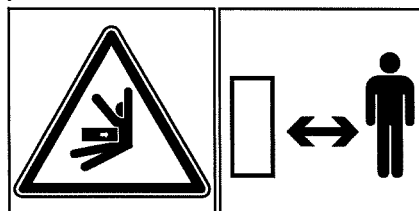
Figure 1, Position of the safety stickers.



Nr. 50, Carefully read instruction manual before handling the machine. Observe instructions and safety rules when operating.



Nr. 51, Shut off engine and remove key before performing maintenance or repair work.



Nr. 53, Stay clear of machine swinging area while tractor engine is running.



Nr. 54, Wait until all machine components have completely stopped before touching them. Stay clear of mower knife area as long as tractor engine is running with PTO connected.

1.11 Declaration of Conformity

See next page.

EG-Declaration of Conformity for machinery

in accordance with the Machine Directive II A

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Declare under our sole responsibility that the following product

'PERFECT' flail chopper model KD

Model name :

Serial number :

Date of manufacturing :

to which this declaration relates, is in compliance with the relevant harmonized standards:

NEN-EN-294, NEN-EN-349, NEN-EN-745,
NEN-811, NEN-EN-12100-1, NEN-EN-12100-2

as well to the basic safety and health requirements of

Machinery Directive 89/392/EEC, as amended,
91/386/EEC and 93/44/EEC and 93/68/EEC and 98/37 EEC

Beneden-Leeuwen, January 2005

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F.M.M. van Wamel
Managing Director

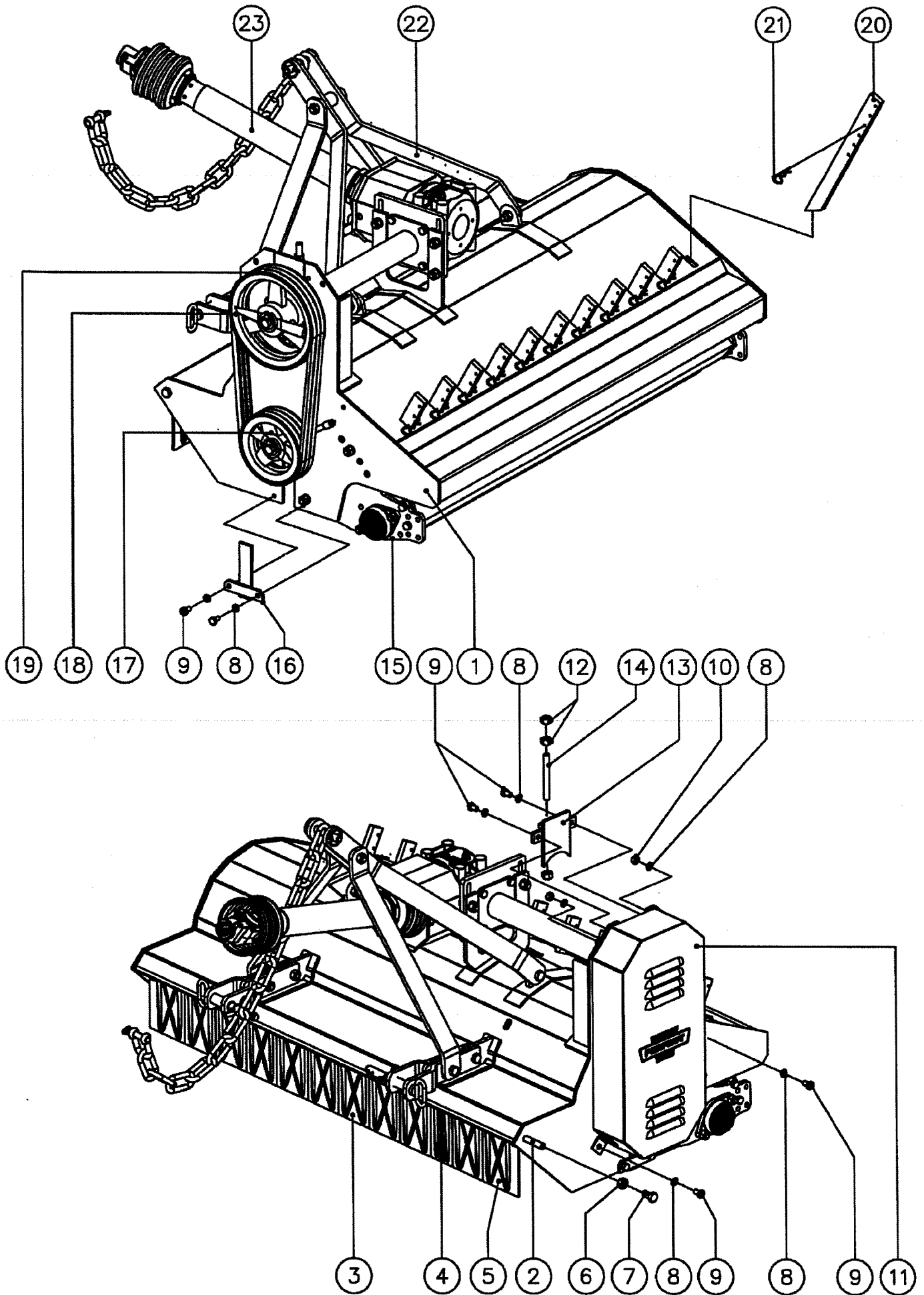
Spare Parts list / Pièces de Rechange

KD

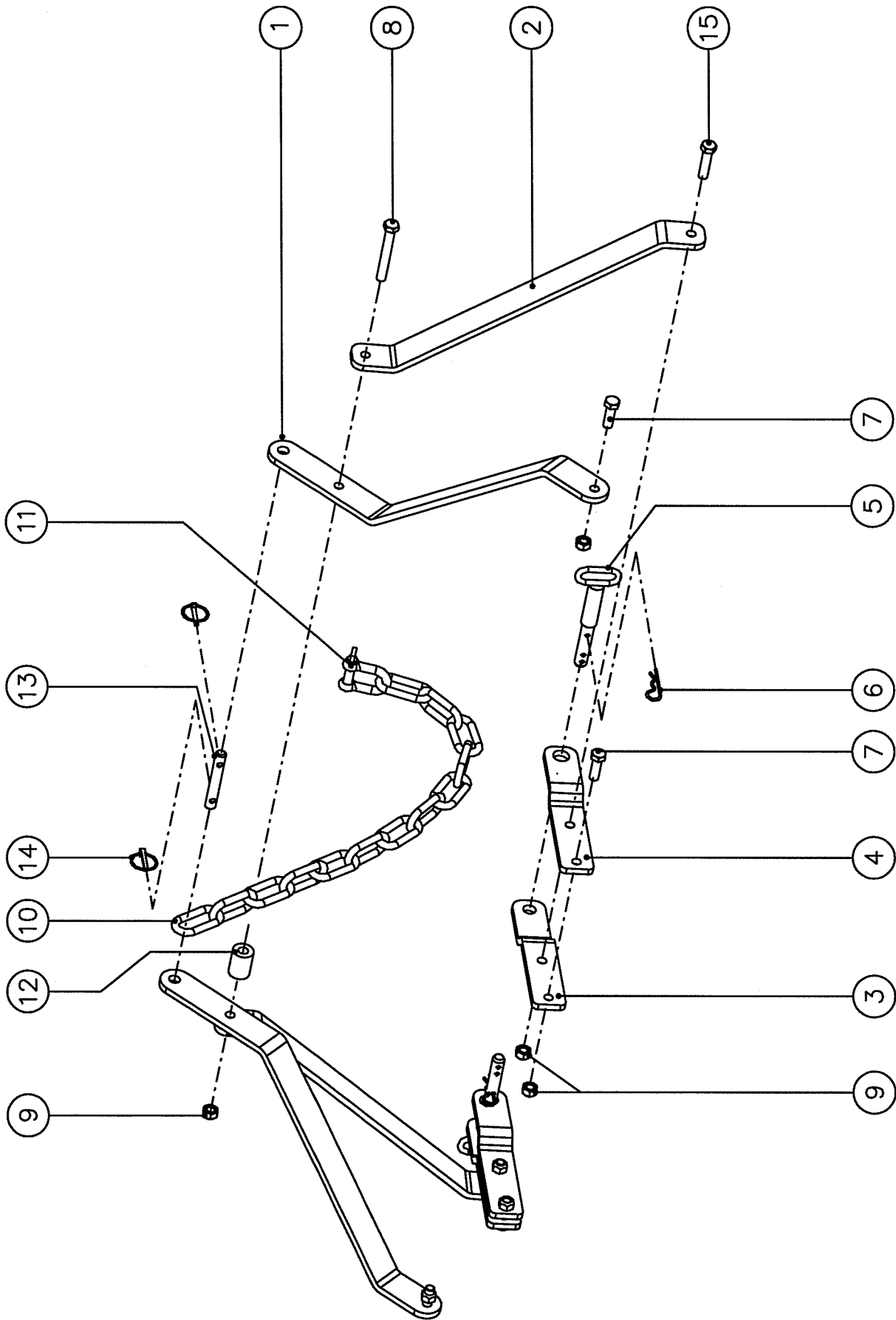
08-10 2013

- E** Schematic assembly drawings, part numbers and description
F Dessins schématiques avec numéros et désignation des pièces

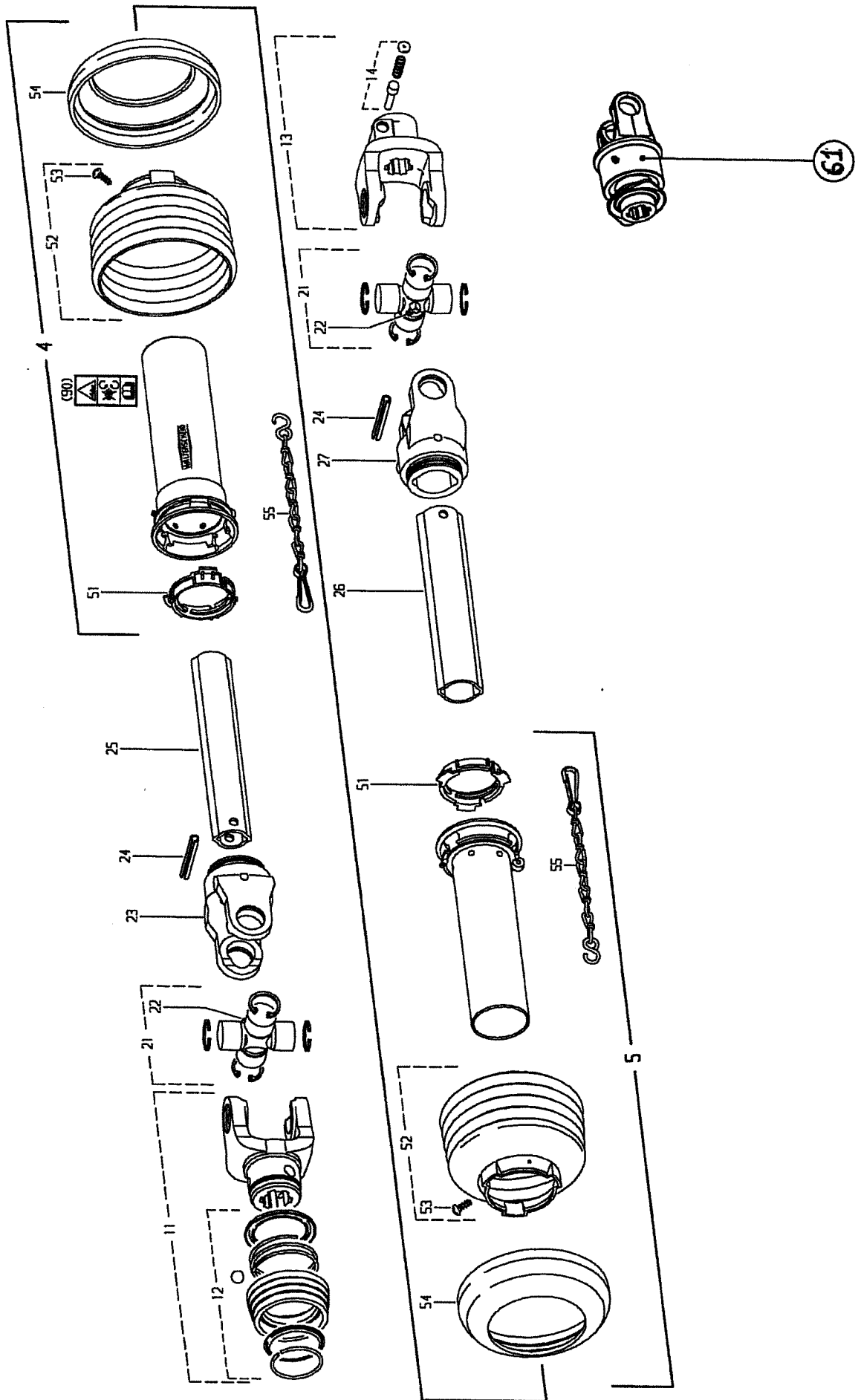
E	F	
• Assembly KD	Vue d'ensemble KD	101
• 3-Point attaching parts	Pièces d'Attelage	102
• P.T.O. shaft	Cardan de transmission	103
• Drive line, 3-point	Transmission, modèle 3-point	104
• Gearbox, 3-point KD-150, -180, 210	Boîtier, modèle 3-p. KD-150, -180, -210	105
• Gearbox, 3-point KD-240	Boîtier, modèle 3-p. KD-240	106
• Flail rotor KD-150, -180, -210	Rotor de marteaux KD-150, -180,-210	107
• Flail rotor KD-240	Rotor de marteaux KD-240	108
• Rear roller	Rouleau	109



Det.	Nomenclature	Qty.	KD-150 No.	KD-180 No.	KD-210 No.	KD-240 No.
1	Frame – Frame – Rahmen – Châssis.....	1	4.15385	4.15386	4.15387	4.16030
2	Stang – Bar – Stange – Barre	1	4.11746	4.11745	4.15220	4.15513
3	Klepje – Clack – Klappe – Volet 120 mm.	9	4.14822	-	-	-
	Klepje – Clack – Klappe – Volet 120 mm.	12	-	4.14822	-	-
	Klepje – Clack – Klappe – Volet 120 mm.	12	-	-	4.14822	-
	Klepje – Clack – Klappe – Volet 120 mm.	14	-	-	-	4.14822
4	Klepje – Clack – Klappe – Volet 85 mm.	1	4.14824	-	-	-
	Klepje – Clack – Klappe – Volet 85 mm.	4	-	-	4.14824	-
	Klepje – Clack – Klappe – Volet 85 mm.	3	-	-	-	4.14824
5	Klepje – Clack – Klappe – Volet 140 mm.	2	4.14825	-	-	-
	Klepje – Clack – Klappe – Volet 140 mm.	2	-	4.14825	-	-
	Klepje – Clack – Klappe – Volet 140 mm.	2	-	-	4.14825	-
	Klepje – Clack – Klappe – Volet 140 mm.	3	-	-	-	4.14825
6	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M16	2	3.00211	3.00211	3.00211	3.00211
7	Bout – Bolt – Schraube – Boulon M16x30	2	3.02962	3.02962	3.02962	3.02962
8	Veerring – Springwasher – Federring – Rondelle d'arrêt M12	8	3.02878	3.02878	3.02878	3.02878
9	Bout – Bolt – Schraube – Boulon M12x20	6	3.02939	3.02939	3.02939	3.02939
10	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M12	2	3.00210	3.00210	3.00210	3.00210
11	Beschermkap - Cover - Schutzhaube – Protection	1	4.15334	4.15334	4.15334	4.15334
12	Moer – Nut – Mutter – Ecrou M16	3	3.02885	3.02885	3.02885	3.02885
13	Spanner – Adjusting bar – Nachspanner – Oreille avec tendeur.....	1	4.15333	4.15333	4.15333	4.15333
14	Draadstang – Tread rod – Gewindestang – Tige filete M16x140	1	4.13468	4.13468	4.13468	4.13468
15	Looprol – Roller – Laufwalze – Rouleau	1	Page 109	Page 109	Page 109	Page 109
16	Strip – Bracket – Stütze – Support	1	4.15332	4.15332	4.15332	-
17	Klepelas – Flail rotor – Schlegelwelle – Rotor.....	1	Page 107	Page 107	Page 107	Page 108
18	Aandrijving – Drive Line – Antrieb – Transmission	1	Page 104	Page 104	Page 104	Page 104
19	V-snaar – V-belt – Keilriemen – Courroie SPB-1450	3	3.02999	3.02999	3.02999	-
	V-snaar – V-belt – Keilriemen – Courroie SPB-1500	3	-	-	-	3.03000
20	Borgveer - Springlock - Federstecker - Goupille - Cerrojo de muelle	11	3.01987	-	-	-
	Borgveer - Springlock - Federstecker - Goupille - Cerrojo de muelle	14	-	3.01987	-	-
	Borgveer - Springlock - Federstecker - Goupille - Cerrojo de muelle	16	-	-	3.01987	-
	Borgveer - Springlock - Federstecker - Goupille - Cerrojo de muelle	18	-	-	-	3.01987
21	Harktand - Rake tine - Holzaufnamezinke - Dent de herse - Púa de rastrillo	11	4.14993	-	-	-
	Harktand - Rake tine - Holzaufnamezinke - Dent de herse - Púa de rastrillo	14	-	4.14993	-	-
	Harktand - Rake tine - Holzaufnamezinke - Dent de herse - Púa de rastrillo	16	-	-	4.14993	-
	Harktand - Rake tine - Holzaufnamezinke - Dent de herse - Púa de rastrillo	18	-	-	-	4.14993
22	3-punt - 3-point - Anbauteilen - Attelage 3 pions.....	1	Page 102	Page 102	Page 102	Page 102
23	Aftakas – P.T.O. shaft – Gelenkwelle – Arbre de cardan	1	Page 103	Page 103	Page 103	Page 103



Det.	Nomenclature	Qty.	KD-150 No.	KD-180 No.	KD-210 No.	KD-240 No.
1	Topstrip – Bracket – Stütze – Support	2	4.15363	4.15389	4.15389	4.15389
2	Topstrip – Bracket – Stütze – Support	2	4.15335	4.15335	4.15335	4.15335
3	Steun – Bracket – Stütze – Support 23 mm.	2	4.15361	4.15361	4.15361	4.15361
4	Steun – Bracket – Stütze – Support 29 mm.	2	4.15362	4.15362	4.15362	4.15362
5	Pen – Pin – Bolzen – Cheville 22 / 28x190	2	4.12502	4.12502	4.12502	4.12502
6	Borgveer – Springlock – Federstecker – Coupille	2	3.01987	3.01987	3.01987	3.01987
7	Bout – Bolt – Schraube – Boulon M16x50	4	3.02966	3.02966	3.02966	3.02966
8	Bout – Bolt – Schraube – Boulon M16x100	1	3.02974	-	-	-
	- Bout – Bolt – Schraube – Boulon M16x120	1	-	3.03177	3.03177	3.03177
9	Borgmoer – Locknut – Sicherungsmutter – Erou freine M16	7	3.00211	3.00211	3.00211	3.00211
10	Ketting – Chain – Kette – Chaîne	1	3.11921	3.11921	3.11921	3.11921
11	D-sluiting – D-Shackle – D-Schäkel – Anneau-D 5/8	1	3.01588	-	-	-
12	Afstandbus – Spacer – Distanzbüchse – Entretoise	1	4.14304	4.14304	4.14304	4.14304
13	Pen – Pin – Bolzen – Cheville 19x130	1	4.11877	4.11877	4.11877	4.11877
14	Borgpen – Linch pin – Klappstecker – Aneau d'arrêt 8	2	3.01991	3.01991	3.01991	3.01991
15	Bout – Bolt – Schraube – Boulon M16x65	2	3.02969	3.02969	3.02969	3.02969



Det.	Nomenclature	Qty.	Std. No.	Front No.	Vrijl. R No.	Vrijl. L No.
♣	Aftakas – P.T.O. shaft - Gelenkwelle - Arbre de cardan - Cardán de transmisión.....	1	3.11864	3.12408	3.12853	3.14655
4	Bescherming buiten kpl. – Outer P.T.O. drive shaft guard cpl. - Ausserer Gelenkwelenschutz kpl. - Protecteur intérieur transmission cpl.- Protector exterior de la transmisión cpl.	1	3.13351	3.13355	3.13355	3.13355
5	Bescherming binnen kpl. - Inner P.T.O. drive shaft guard cpl.- Innerer Gelenkwelenschutz kpl - Protecteur intérieur transmission cpl.- Protector interior de la transmisión cpl.....	1	3.13352	3.13356	3.13356	3.13356
Walterscheid No.						
11	Gaffel ASGE kpl. - Quick release yoke ASGE cpl. - Aufsteckgabel ASGE kpl. - Mâchoire a fixation ASGE cpl. - Horquilla ASGE cpl.	1	133836	133836	133836	133836
12	ASE-Snelaansluiting type B kpl. – ASE- Lock size B cpl. - Veschluss Größe B kpl. - Verrouillage ASE type B cpl. - Cierre ASE tipo B cpl.	1	135048	135048	135048	135048
13	Gaffel kpl. - Quick release yoke cpl. - Aufsteckgabel kpl. - Mâchoire a fixation cpl. - Horquilla cpl.....	1 / 0	056699	056699	-	-
14	Schuifstift kpl. - Slide bolt cpl. - Schiebestift kpl. Axe. cpl. - Pasador deslizante cpl.	1	339107	339107	339107	339107
21	Kruisstuk - Spider - Kreuzgarnitur - Croisillon – Cruceta.....	2	312410	312410	312410	312410
22	Smeernippel - Grease nippel - Schmiernippel - Graisseur – Engrasador ..	2	084099	084099	084099	084099
23	Gaffel binnenpijp - Inboard yoke inner tube - Rillengabel Innenroher - Mâchoire à gorge tube intérieur - Horquilla del tubo interior.....	1	019518	019518	019518	019518
24	Spanhuls - Roll pin - Spannstift - Goupille - Pasador	2	020617	020617	020617	020617
25	Profielbuis binnen– Profil tube inner - Profilrohr innen - Tube profilé intérieur - Tubo perfilado interior.....	1	135887	135887	135887	135887
26	Profielbuis buiten– Profil tube outer - Profilrohr innen - Tube profilé extérieur - Tubo perfilado exterior.....	1	123599	123599	123599	123599
27	Gaffel buitenpijp - Inboard yoke outer tube - Rillengabel Aussenroher - Mâchoire à gorge tube extérieur - Horquilla del tubo exterior.....	1	019519	019519	019519	019519
51	Glijring - Slidring - Gleitring - Bague de glisseur - Anillo de deslizamiento	2	087276	087276	087276	087276
52	Beschermkap - Cover - Schutzhaube - Protection - Protección	2	365367	365367	365367	365367
53	Schroef - Screw - Schraube - Vis – Tornillo 3,5 x 9,5.....	2	365305	365305	365305	365305
54	Ring - Washer - Scheibe - Rondelle - Arandela	2	359471	359471	359471	359471
55	Borgketting - Safety chain – Halte lette - Chaînette - Cadena de seguridad	2	044321	044321	044321	044321
61	Vrijloopkoppeling kpl. - Overrunning clutch - Stift Freilauf kpl. - Roue libre à doights cpl. - Rueda libre cpl.	0 / 1	-	-	172748	365660
90	Instructieblad en waarschuwingssticker - Instruction manual and warning decal - Bedienungsanleitung und Gefahrenhinweis - Notice d'emploi et étiquette d'avertissement - Hoja de instrucciones y pegatina de seguridad	1	118745	118745	118745	118745

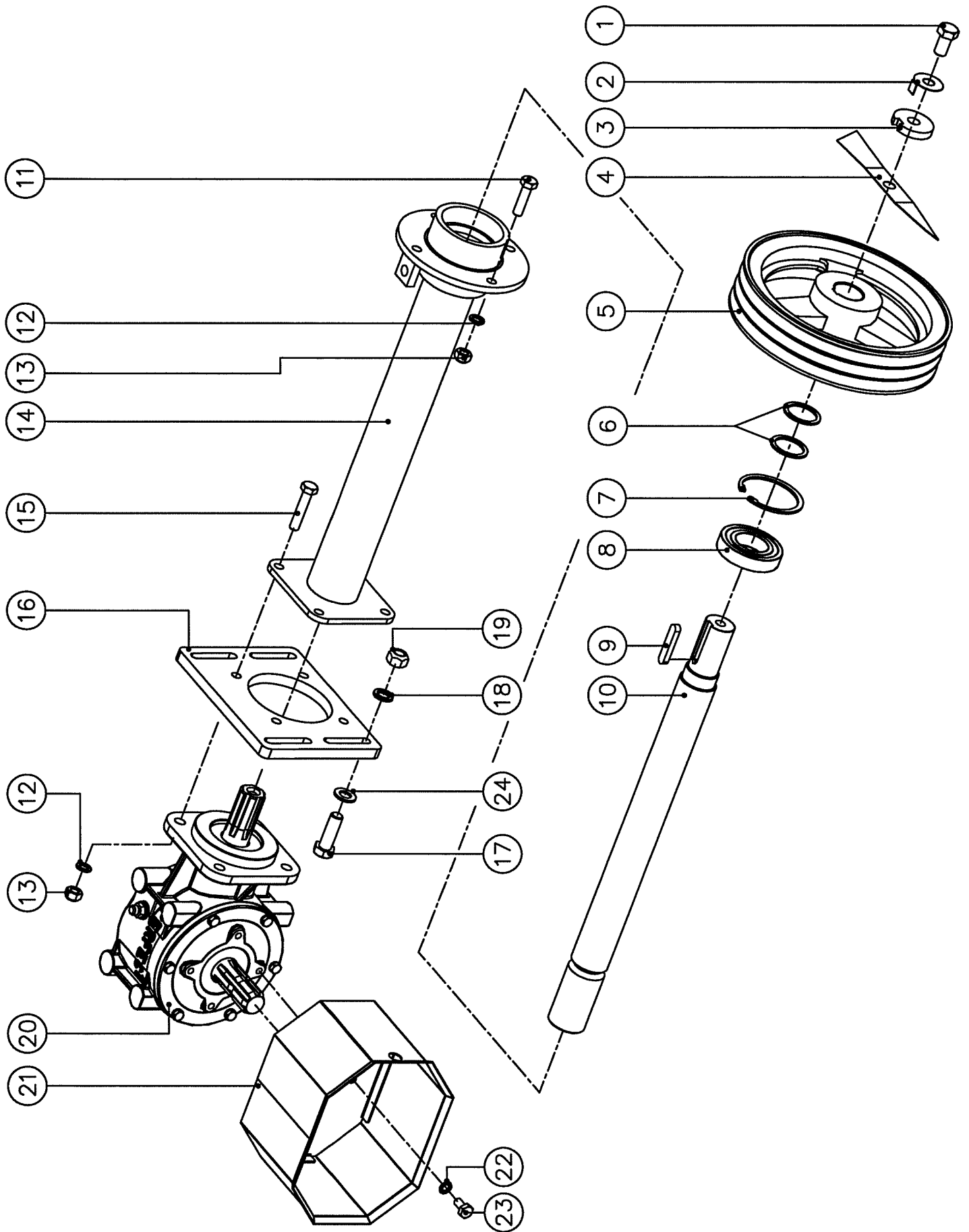
Verklaring – Explanation – Erklärung – Explication - Explicación

Std. Para. verstek – Para. Offset – Para. Seitenverstellung – Déport en parallélogramme – Desplazamiento en paralelogramo

Front Standaard – Standard – Standard – Par serie - Estándar

Vrijl. R Vrijlooptaftakas Rechts – P.T.O. shaft with overrunning clutch Right – Gelenkwelle mit Freilauf Rechts – Cardan à roue libre droite – Cardán con rueda libre derecha

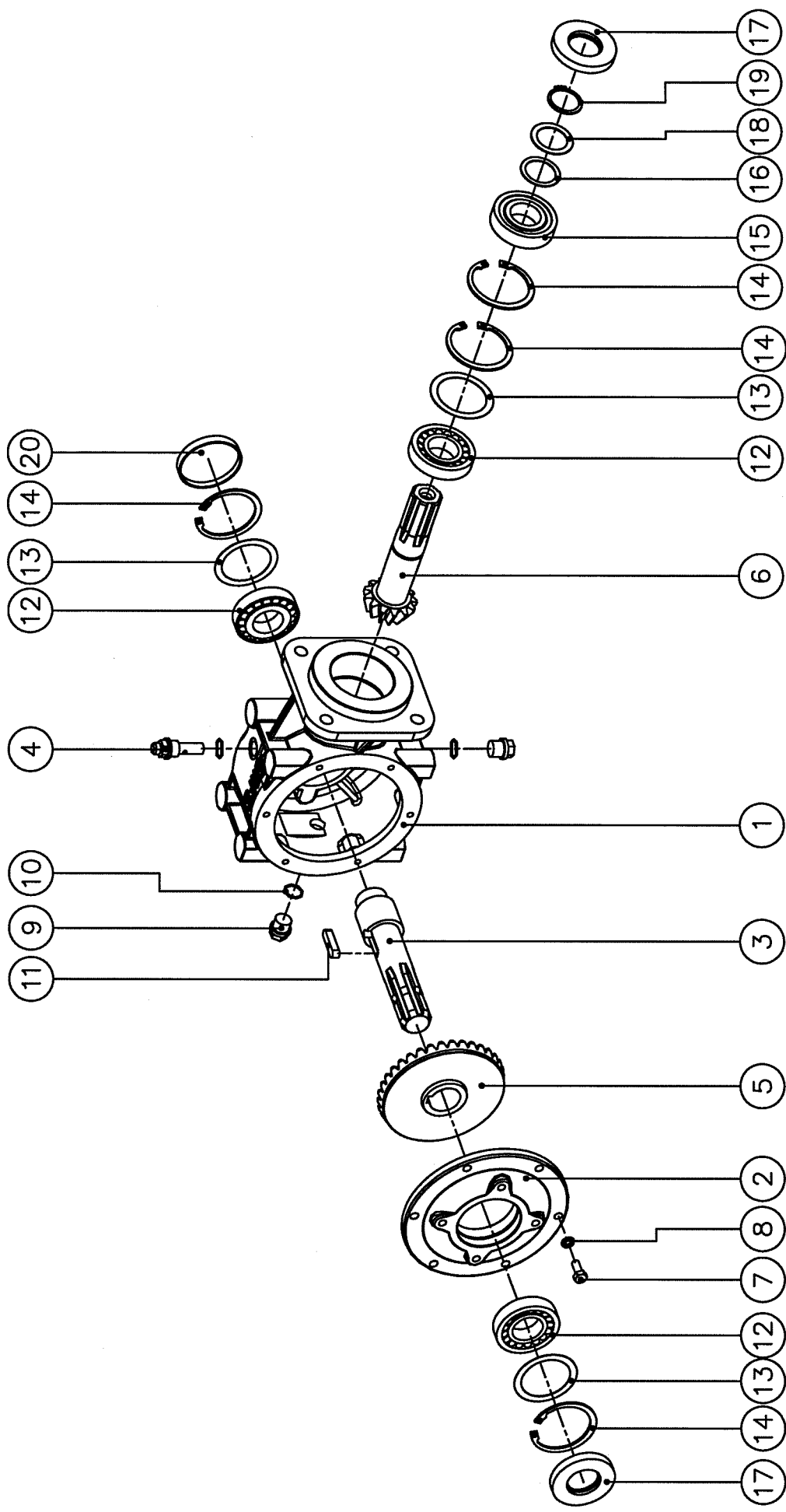
Vrijl. L Vrijlooptaftakas Links – P.T.O. shaft with overrunning clutch Left – Gelenkwelle mit Freilauf Links – Cardan à roue libre Gauche – Cardan con rueda libre izquierda



Det.	Nomenclature	Qty.	KD-150 No.	KD-180 No.	KD-210 No.	KD-240 No.
1	Bout – Bolt – Schraube – Boulon M16 x 30	1	3.02962	3.02962	3.02962	3.02962
2	Borgplaat – Lockplate – Sicherungsblech – Rondelle.....	1	4.12214	4.12214	4.12214	4.12214
3	Onderlegschiif – Washer – Scheibe – Rondelle.....	1	4.12213	4.12213	4.12213	4.12213
4	Ventilatorstrip - Strap - Streben – Barre	1	4.14589	4.14589	4.14589	4.14589
5	V-snaarschiif – Pulley – Riemenscheibe – Poulie.....	1	3.13653	3.13653	3.13653	3.13653
6	Vulring – Shim – Scheibe – Cale.....	2	3.03087	3.03087	3.03087	-
7	Seegerring – Snapping – Seegerring – Circlip.....	1	3.02073	3.02073	3.02073	3.02073
8	Kogellager – Bearing – Lager – Roulement.....	1	3.03026	3.03026	3.03026	3.03026
9	Inlegspie – Key – Keil - Clavette	1	3.01570	3.01570	3.01570	3.01570
10	Aandrijfias – Shaft – Antriebwelle – Arbre	1	4.11741	4.11741	4.15390	4.13686
11	Bout – Bolt – Schraube – Boulon.....	2	3.02944	3.02944	3.02944	3.02944
12	Veerring – Springwasher – Federring – Rondelle d'arrêt	6	3.02878	3.02878	3.02878	3.02878
13	Borgmoer – Locknut – Sicherungsmutter – Erou freine.....	6	3.00210	3.00210	3.00210	3.00210
14	Verbindingspijp – Flanged pipe – Flanschenrohr – Tuyau à brides.....	1	4.15331	4.15331	4.15388	4.13687
15	Bout – Bolt – Schraube – Boulon.....	4	3.02947	3.02947	3.02947	3.02947
16	Tandwielkastplaat - PLate - Platte – Plaque	1	4.15330	4.15330	4.15330	4.15330
17	Bout – Bolt – Schraube – Boulon M12x40	4	3.02943	3.02943	3.02943	3.02943
18	Veerring – Springwasher – Federring – Rondelle d'arrêt M12	4	3.02878	3.02878	3.02878	3.02878
19	Borgmoer – Locknut – Sicherungsmutter – Erou freine.....	4	3.00210	3.00210	3.00210	3.00210
20	Tandwielkast – Gearbox – Getriebe – Boitier d'engrenage.....	1	Page 105	Page 105	Page 105	Page 106
21	Beschermkap - Cover - Schutzhaube - Protection	1	4.14450	4.14450	4.14450	4.14450
22	Veerring – Springwasher – Federring – Rondelle d'arrêt	4	3.02877	3.02877	3.02877	3.02877
23	Bout – Bolt – Schraube – Boulon.....	4	3.02923	3.02923	3.02923	3.02923
24	Sluitring – Washer – Scheibe – Rondelle	4	3.02060	3.02060	3.02060	3.02060

Attentie – Attention – Achtung – Attention

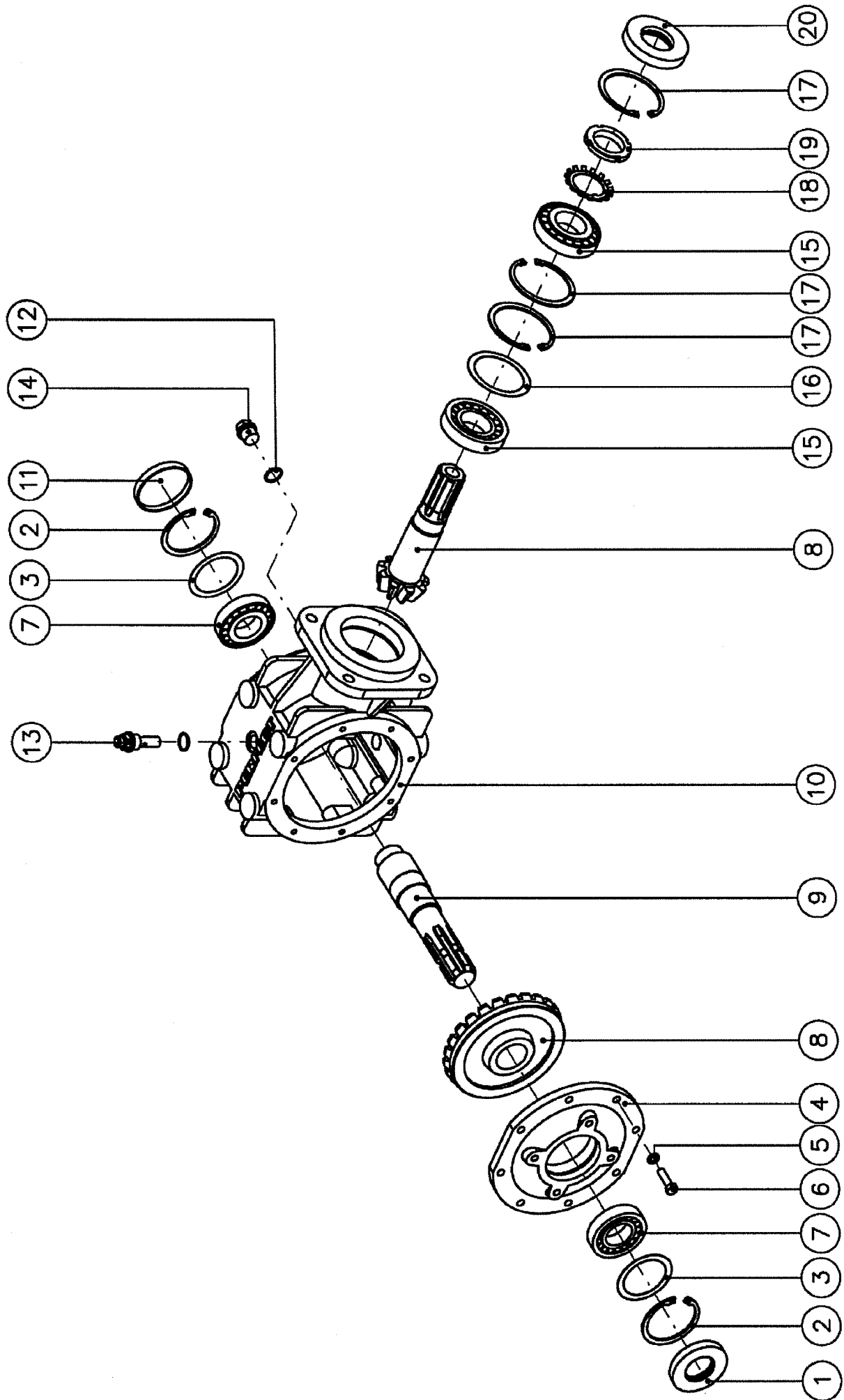
- Spline verbinding tussen aandrijfias en pion altijd verlijmen met Loctite No. 638
- Spline connection between shaft and pinion should always be glued with Loctite No. 638
- Keilverbindung zwischen Antriebswelle und Ritzelwelle immer verkleben mit Loctite No. 638
- Toujours coller arbre sur pignon avec Loctite No. 639



Det.	Nomenclature	Qty.	n = 540 No.
	KD-150, KD-180, KD-210 3-Point		
♣	Tandwielkast – Gearbox – Getriebe – Boîtier d'engrenage.....	1	3.13010
♣ 1	Huis – Housing – Gehäuse – Boîte	1	3.13052
♣ 2	Deksel – Cover – Deckel – Couvercle	1	3.13044
♣ 3	Aandrijfas – Shaft – Antriebwelle – Arbre	1	3.13505
♣ 4	Ontluchter – Breather – Entlüfter – Reniflard	1	3.10066
♣ 5	Kroonwiel – Drive gear – Kegelrad – Couronne.....	1	3.13046
♣ 6	Pion – Pinion – Kegelritzelwelle – Pignon.....	1	3.13053
♣ 7	Bout – Bolt – Schraube – Boulon M8x30	6	3.02904
♣ 8	Veerring – Springwasher – Federring – Rondelle d'arrêt M8	6	3.02876
♣ 9	Plug – Plug – Verschlusschraube – Bouchon	2	3.10281
♣ 10	Afdichtingsring – Seal ring - Dichtring – Rondelle.....	3	3.02015
♣ 11	Spie – Key – Keil – Clavette	1	3.01559
♣ 12	Lager – Bearing – Lager – Roulement 30207	3	3.01912
♣ 13	Vulplaatset – Shimset – Passscheiben – Eqaisseurs	3	3.12204
♣ 14	Seegerring – Snapring – Seegerring – Circlip.....	4	3.01930
♣ 15	Lager – Bearing – Lager – Roulement 6207	1	3.01773
♣ 16	Vulplaatset – Shimset – Passscheiben – Eqaisseurs	1	3.13049
♣ 17	Oliekeerring – Oil seal – Simmerring – Joint 35x72x10.....	2	3.03130
♣ 18	Ring – Washer – Scheibe – Rondelle.....	2	3.11770
♣ 19	Seegerring – Snapring – Seegerring – Circlip.....	3	3.01920
♣ 20	Deksel – Cover – Deckel – Couvercle	1	3.03055

Attentie – Attention – Achtung – Attention

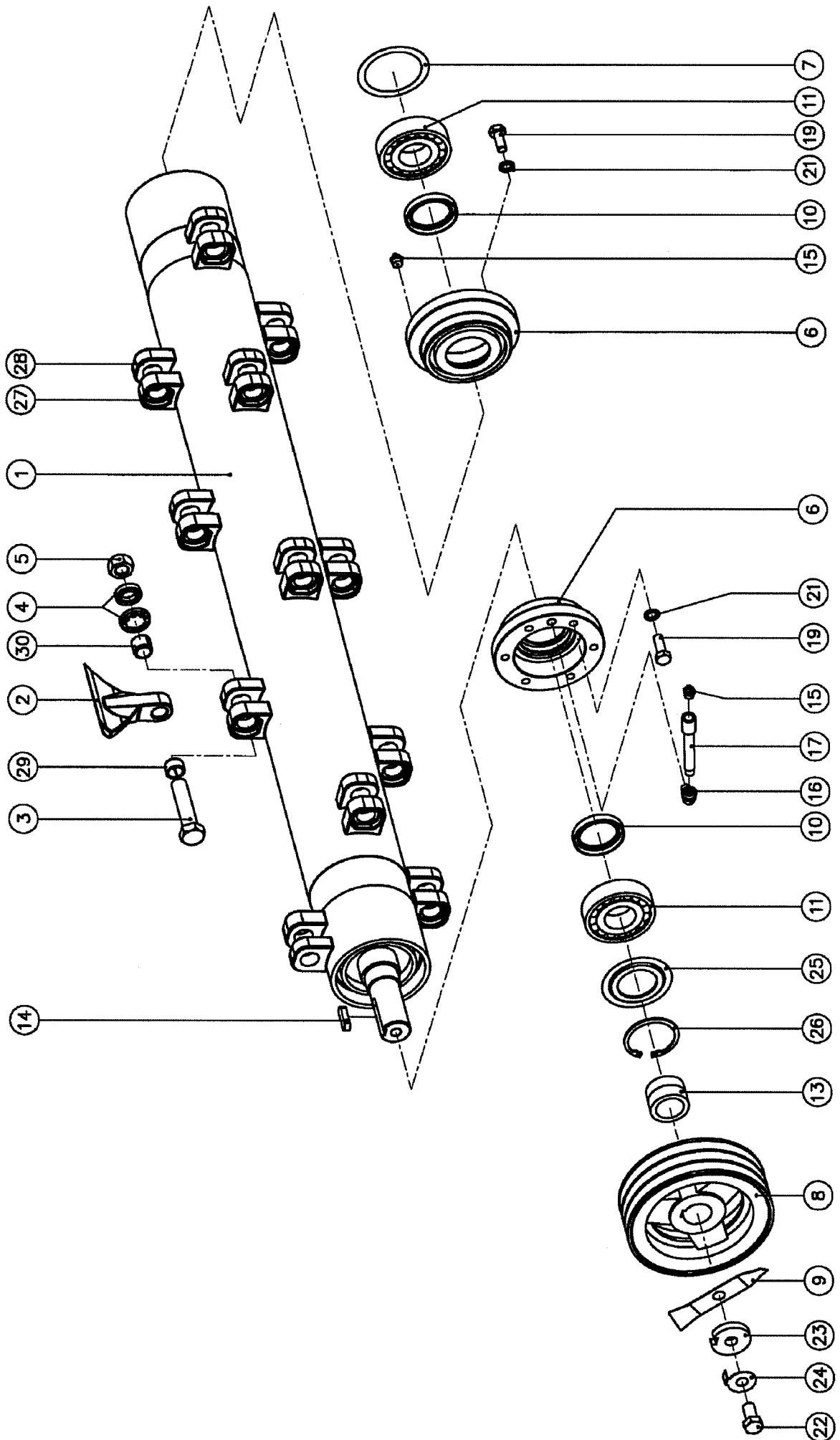
- Spline verbinding tussen aandrijfas en pion altijd verlijmen met Loctite No. 638
- Spline connection between shaft and pinion should always be glued with Loctite No. 638
- Keilverbinding zwischen Antriebswell und Ritzelwelle immer verkleben mit Loctite No. 638
- Toujours coller arbre sur pignon avec Loctite No. 639



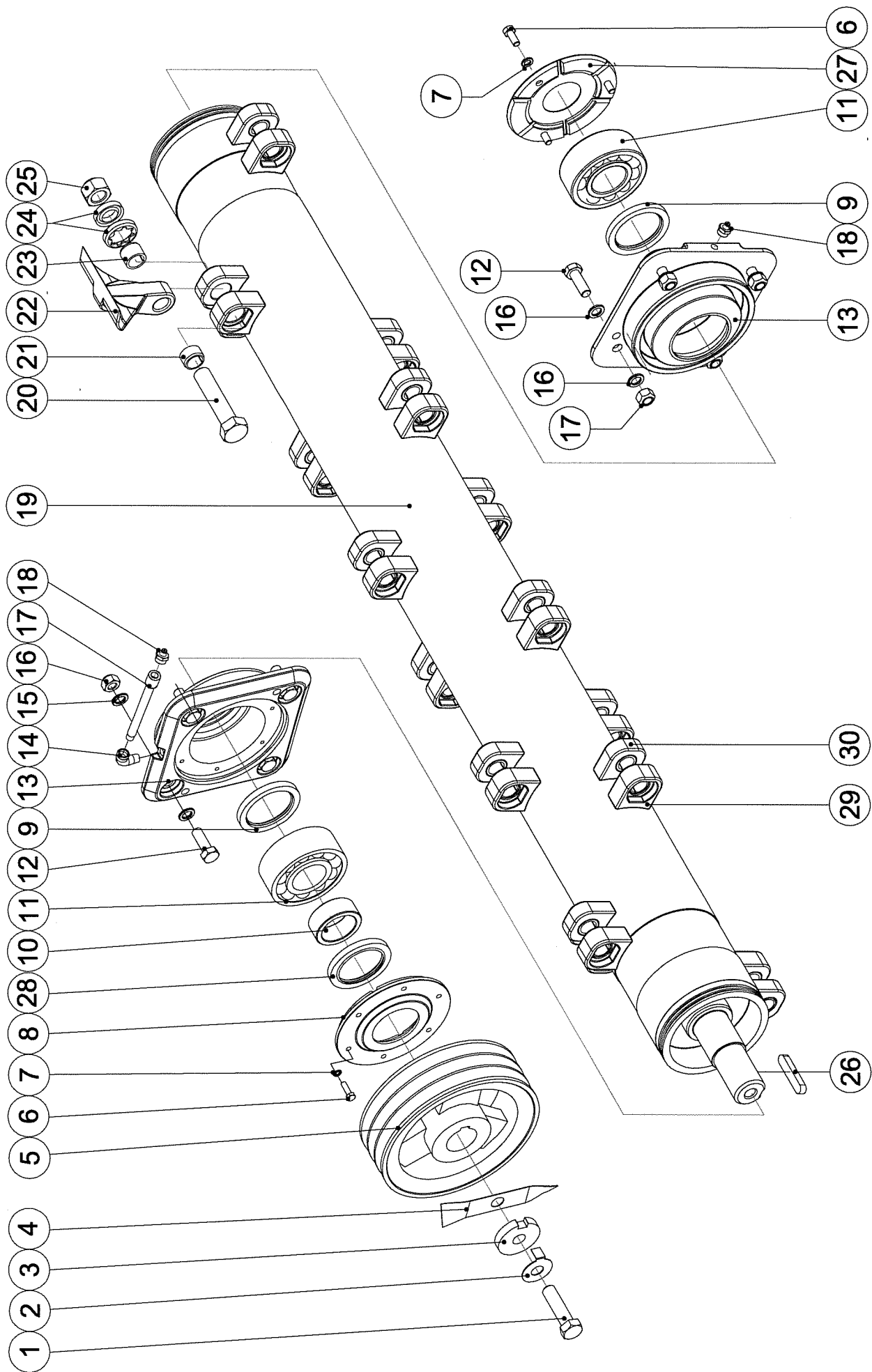
Det.	Nomenclature	Qty.	n = 540 No.
	KD-240 3-point		
♣	Tandwielkast – Gearbox – Getriebe – Boîtier d'engrenage.....	1	3.14635
♣ 1	Oliekeerring – Oil seal – Simmerring – Joint 35x72x10.....	1	3.03130
♣ 2	Seegerring – Snapping – Seegerring – Circlip.....	2	3.01930
♣ 3	Vulplaatset – Shimset – Passscheiben – Equisseurs	2	3.12204
♣ 4	Deksel – Cover – Deckel – Couvercle	1	3.14651
♣ 5	Veerring – Springwasher – Federring – Rondelle d'arrêt M8	8	3.02876
♣ 6	Bout – Bolt – Schraube – Boulon M8x30	8	3.02904
♣ 7	Lager – Bearing – Lager – Roulement 30207	2	3.01912
♣ 8	Tandwielset – Gearset – Radsatz – Jeu des Pignon et Couronne	1	3.15133
♣ 9	Aandrijfas – Shaft – Antriebwelle – Arbre	1	3.14654
♣ 10	Huis – Housing – Gehäuse – Boîte	1	3.14650
♣ 11	Deksel – Cover – Deckel – Couvercle	1	3.03055
♣ 12	Afdichtingsring – Sealingring – Dichtring – Rondelle	3	3.02015
♣ 13	Ontluchter – Breather – Entlüfter – Reniflard	1	3.10066
♣ 14	Plug – Plug – Verschlusschraube – Bouchon.....	2	3.10281
♣ 15	Lager – Bearing – Lager – Roulement 30208	2	3.01913
♣ 16	Vulplaatset – Shimset – Passscheiben – Equisseurs	1	3.11860
♣ 17	Seegerring – Snapping – Seegerring – Circlip.....	2	3.01931
♣ 18	Borgring – Lockwasher – Sicheringsring – Rondelle freine MB 8	1	3.01683
♣ 19	Asmoer – Locknut – Nutmutter – Ecrou freine KM 8.....	1	3.01682
♣ 20	Oliekeerring – Oil seal – Simmerring – Joint 37x80x13.....	1	3.02048

Attentie – Attention – Achtung – Attention

- Spline verbinding tussen aandrijfas en pion altijd verlijmen met Loctite No. 638
- Spline connection between shaft and pinion should always be glued with Loctite No. 638
- Keilverbinding zwischen Antriebswell und Ritzelwelle immer verkleben mit Loctite No. 638
- Toujours coller arbre sur pignon avec Loctite No. 639



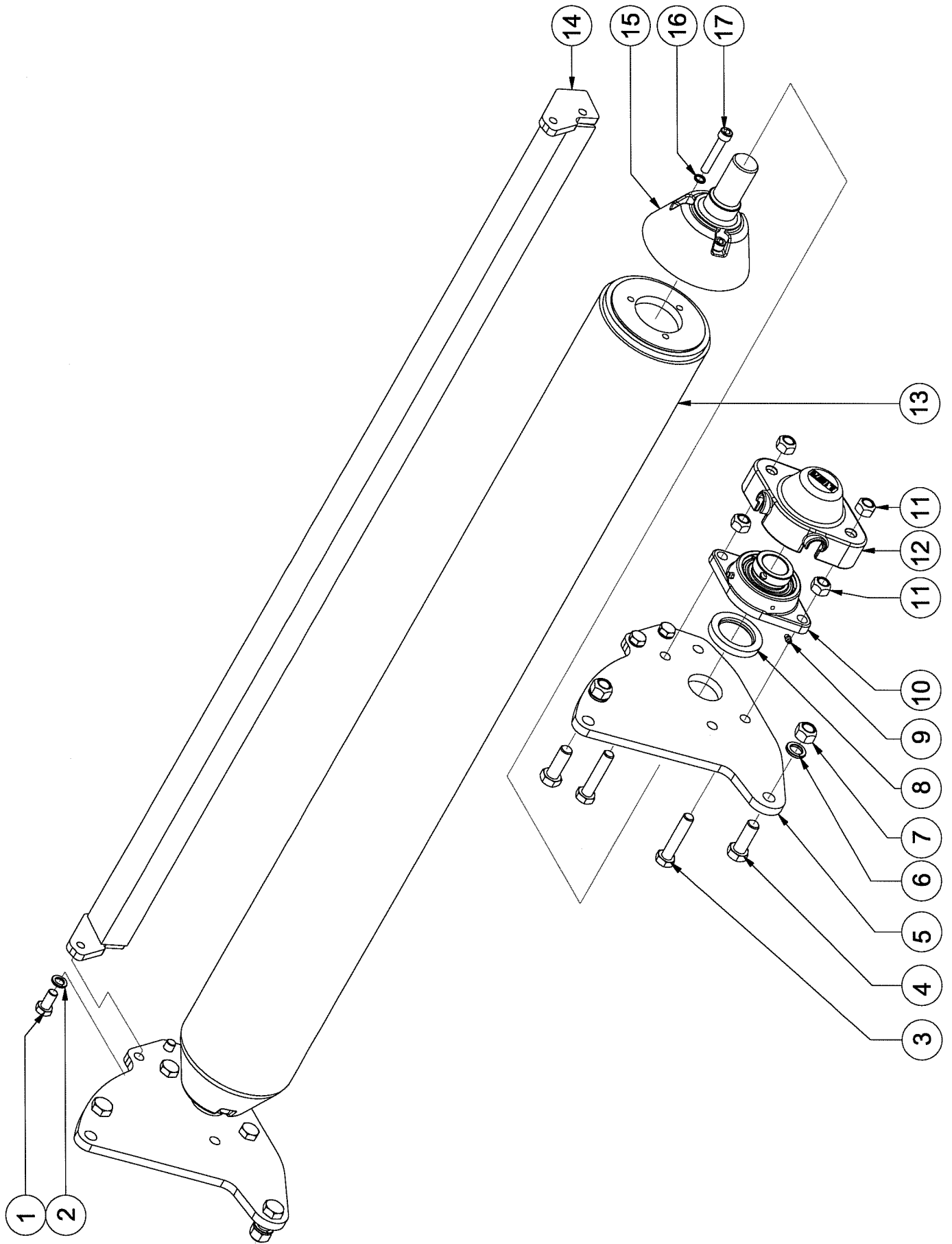
Det.	Nomenclature	Qty.	KD-150 No.	KD-180 No.	KD-210 No.
1	Klepelas – Flail rotor – Schlegelwelle – Rotor, incl. 29 + 30	1	4.15208	4.15194	4.15209
2	Klepel – Flail – Schlegel – Marteau	16	3.13665	-	-
	Klepel – Flail – Schlegel – Marteau	18	-	3.13665	-
	Klepel – Flail – Schlegel – Marteau	22	-	-	3.13665
3	Voorspanbout - Bolt - Schraube – Boulon M20x90	16	3.03581	-	-
	Voorspanbout - Bolt - Schraube – Boulon M20x90	18	-	3.03581	-
	Voorspanbout - Bolt - Schraube – Boulon M20x90	22	-	-	3.03581
4	Borgring – Lockwasher – Sicherungsring – Rondelle freine M20.....	16	3.03025	-	-
	Borgring – Lockwasher – Sicherungsring – Rondelle freine M20.....	18	-	3.03025	-
	Borgring – Lockwasher – Sicherungsring – Rondelle freine M20.....	22	-	-	3.03025
5	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M20	16	3.00212	-	-
	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M20	18	-	3.00212	-
	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M20	22	-	-	3.00212
6	Lagerhuis – Housing – Gehäuse – Boite	2	4.12313	4.12313	4.12313
7	Vulplaat – Plate – Platte – Plaque 80x100x0.5	1	3.03069	3.03069	3.03069
8	V-snaarschijf – Pulley – Riemscheibe – Poulie	1	3.11738	3.11738	3.11738
9	Ventilatievleugel – Air Wing – Luftflügel – Aile	1	4.14590	4.14590	4.14590
10	Oliekeerring – Oil seal – Simmerring – Joint 54x72x10.....	2	3.03067	3.03067	3.03067
11	Kogellager – Bearing – Lager – Roulement 1309	2	3.01879	3.01879	3.01879
13	Afstandbus – Spacer – Distanzbüchse – Entretoise	1	3.13059	3.13059	3.13059
14	Inlegspie - Key - Keil – Clavette 12x8x40	1	3.03071	3.03071	3.03071
15	Smeernippel – Grease nipple – Schmiernippel – Graisseur ¼	2	3.01537	3.01537	3.01537
16	Knie – Elbow – Winkelverschraubung – Coudé ¼	1	3.03119	3.03119	3.03119
17	Verlengpijpe – Extension tube – Distanzrohr – Rallonge ¼.....	1	3.01532	3.01532	3.01532
19	Bout – Bolt – Schraube – Boulon M12x35	12	3.02942	3.02942	3.02942
21	Veerring – Springwasher – Federring – Rondelle d'arrêt M12	12	3.02878	3.02878	3.02878
22	Bout – Bolt – Schraube – Boulon M16x40	1	3.02964	3.02964	3.02964
23	Sluitring – Washer – Scheibe – Rondelle	1	4.12213	4.12213	4.12213
24	Borgplaat – Lockplate – Sicherungsblech – Rondelle.....	1	4.12214	4.12214	4.12214
25	Nilosring – Washer – Schiebe – Rondelle 1309-6309.....	1	3.03050	3.03050	3.03050
26	Seegerring – Snapring – Seegerring – Circlip 98mm	1	3.03049	3.03049	3.03049
27	Oor – Ear – Lasche – Douille 20 mm.....	16	3.11718	-	-
	Oor – Ear – Lasche – Douille 20 mm.....	18	-	3.11718	-
	Oor – Ear – Lasche – Douille 20 mm.....	22	-	-	3.11718
28	Oor – Ear – Lasche – Douille 25 mm.....	16	3.11719	-	-
	Oor – Ear – Lasche – Douille 25 mm.....	18	-	3.11719	-
	Oor – Ear – Lasche – Douille 25 mm.....	22	-	-	3.11719
29	Spanbus – Bushing – Büchse – Bague 26/10x15	16	3.02991	-	-
	Spanbus – Bushing – Büchse – Bague 26/10x15	18	-	3.02991	-
	Spanbus – Bushing – Büchse – Bague 26/10x15	22	-	-	3.02991
30	Spanbus – Bushing – Büchse – Bague 26/20x20	16	3.03030	-	-
	Spanbus – Bushing – Büchse – Bague 26/20x20	18	-	3.03030	-
	Spanbus – Bushing – Büchse – Bague 26/20x20	22	-	-	3.03030



Det.	Nomenclature	Qty.	KD-240 No.
1	Bout – Bolt – Schraube – Boulon M16x30	1	3.02962
2	Borgplaat – Lockplate – Sicherungsblech – Rondelle.....	1	4.12214
3	Sluitring – Washer – Scheibe – Rondelle	1	4.12213
4	Ventilator - Fan - Lüfter - Ventilateur	1	4.14590
5	V-snaarschijf – Pulley – Riemenscheibe – Poulie 3-SPB –200	1	3.11738
6	Bout – Bolt – Schraube – Boulon M8x20	8	3.02902
7	Veerring – Springwasher – Federring – Rondelle d'arrêt M8	8	3.02876
8	Deksel – Cover – Deckel – Couvercle incl. pos 9	1	4.15401
9	Oliekeerring – Oil seal – Simmerring – Joint 80 x 60 x 8, WA	2	3.03673
10	Afstandsring – Spacer – Distanzring – Entretoise.....	1	4.15458
11	Lager – Bearing – Lager – Roulement 2309	2	3.03671
12	Bout – Bolt – Schraube – Boulon M12 x 35	8	3.02942
13	Lagerhuis – Housing – Gehäuse – Boîte incl. pos 9	2	4.15400
14	Knie – Elbow – Winkelverschraubung – Coudé	1	3.03684
15	Veerring – Springwasher – Federring – Rondelle d'arrêt	8	3.02878
16	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M12.....	8	3.00210
17	Verlengpijpe – Extension tube – Distanzrohr – Rallonge	1	3.03152
18	Smeernippel – Grease nipple – Schmiernippel – Graisseur.....	2	3.01528
19	Klepelas – Flail rotor – Schlegelwelle – Rotor incl. pos 20, 22	1	4.15453
20	Bout – Bolt – Schraube – Boulon M20x137	24	3.03581
21	Spanbus – Bushing – Büchse – Bague 26x20x15	24	3.02991
22	Klepel – Flail – Schlegel – Marteau	24	3.13665
23	Spanbus – Bushing – Büchse – Bague 26x20x20	24	3.03030
24	Borgring – Lockwasher – Sicherungsring – Rondelle freine M20.....	24	3.03025
25	Borgmoer – Locknut – Sicherungsmutter – Ecrou freine M20.....	24	3.00212
26	Spie – Key – Keil – Clavette	1	3.01570
27	Deksel – Cover – Deckel – Couvercle	1	4.15402
28	Oliekeerring – Oil seal – Simmerring – Joint 80 x 60 x 8, WAS	1	3.03674
29	Oor – Ear – Lasche – Douille 20mm.....	24	3.11718
30	Oor – Ear – Lasche – Douille 25mm.....	24	3.11719

Attentie – Attention – Achtung – Attention

- V-snaarschijf Det. 5 monteren met Locktite No. 641
- V-belt Pulley Det. 5 has to be fitted with Locktite No. 641
- Bei der Montage der Riemenscheibe Det. 5 Locktite No. 641 benützen
- Avec la montage du poulie Det. 5 il faut se servir de Locktite No. 641



Det.	Nomenclature	Qty.	KD-150 No.	KD-180 No.	KD-210 No.	KD-240 No.
♣	Looprol – Roller – Laufwalze – Rouleau	1	-	-	-	-
1	Bout – Bolt – Schraube – Boulon M12x25	4	3.02940	3.02940	3.02940	3.02940
2	Veerring – Springwasher – Federring – Rondelle d'arrêt M12	4	3.02878	3.02878	3.02878	3.02878
3	Bout – Bolt – Schraube – Boulon M14x70	4	3.03853	3.03853	3.03853	3.03853
4	Bout – Bolt – Schraube – Boulon M16x45	4	3.02965	3.02965	3.02965	3.02965
5	Stelplaat – Plate – Platte – Porte rouleau	2	4.14790	4.14790	4.14790	4.14790
6	Veerring – Springwasher – Federring – Rondelle d'arrêt M16	4	3.02879	3.02879	3.02879	3.02879
7	Borgmoer – Locknut – Sicherungsmutter – Erou freine M16.....	4	3.00211	3.00211	3.00211	3.00211
8	Oliekeerring – Oil seal – Simmerring – Joint 47x70x10.....	2	3.03478	3.03478	3.03478	3.03478
9	Smeernippel - Grease nippel - Schmiernippel - Graisseur - Engrasador...	4	3.01537	3.01537	3.01537	3.01537
10	Lagerblok kpl – Bearingblock cpl – Lagerblok kpl – Bloc-palier cpl 35	2	3.13666	3.13666	3.13666	3.13666
11	Borgmoer – Locknut – Sicherungsmutter – Erou freine M14.....	4	3.03162	3.03162	3.03162	3.03162
12	Bescherm dop – Protection Cover – Schutzdeckel – Protection – Protección	2	3.15915	3.15915	3.15915	3.15915
13	Looprolpijp – Roller Tube – Walze Rohr – Tube de Rouleau	1	4.12264	4.12263	4.15235	4.15499
14	Schraper – Scraper – Abstreifer – Raclatte	1	4.15221	4.15222	4.15223	4.15512
15	Conus – Taper – Konus – Cône *35	2	4.13663	4.13663	4.13663	4.13663
16	Vierkante Veerring – Springwasher – Federring – Rondelle d'arrêt M10...	6	3.03104	3.03104	3.03104	3.03104
17	Inbusbout – Bolt – Schraube – Boulon M10x60.....	6	3.03135	3.03135	3.03135	3.03135