agrifac

PYTHON

Manual & Partsbook 2010

for growers

MANUAL & PARTS BOOK
FOR
PYTHON
DRAIN CLEANER

2010-en
Revision 0
April 22, 2010

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EC declaration of conformity
(directive 2006/42/EC, Annex IIA)

We,

AGRIFAC MACHINERY B.V.

P.O. Box 78, 8330 AB Steenwijk, the Netherlands,

declare entirely under own responsibility that the product:

DRAIN CLEANER, type “PYTHON”

complies with the directive 2006/42/EC on machinery.

Steenwijk, April 2010.

D. Blaauw

Technical director Agrifac Machinery B.V.

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1. Description

The drain cleaner consists of the following parts:

- Frame
- Reel
- Side arm with hose drive
- Guide arm
- Hydraulic system
- Water plumbing

Frame
A strong frame that can be attached to the three-point linkage of the tractor and that has place for:
- reel
- pump
- inserting mechanism
- hydraulic system
- lighting

The frame also has standard pick up points for the use of a fork-lift truck.

Reel
The reel has an extra large diameter. The advantage is that the hose will be less bended. Because of that the friction is as little as possible, so that the decrease of pressure is limited. Because of the narrow high construction of the reel it can coil a long hose (up to 500 m) without guidance.

Side arm with hose drive
The side arm can be moved up and down with a hydraulic cylinder so that the bottom side of the guide arm can be placed right in front of the drain. The hose drive consists of two hydraulic driven rubber rolls of Ø 200 mm. They are constructed in such a way that they have a maximum traction on the hose. The counter pressure rolls are suspended in a pivoting system so that a connecting coupling can also go through the drive. With the pivoting part and the adjusting bolt, the pressure of the counter pressure rolls on the hose can be adjusted. When the pressure is too low the drive on the hose can start to slip and the hose will damage too fast. When the pressure is too high the hose will also damage.

Metre counter: Behind the drive rolls you will find a metre counter. This counter will register how many metres of hose are in the drain and can indicate the location of the blockage.

Guide arm
The guide arm is constructed in such a way that it is possible to work over a fence. The inserting bend of the arm can be turned, so that it can also be inserted on the other side of the ditch. For transport on the road the guide arm can be taken off the side arm and can be put away on the back of the frame.

Hydraulic system
The hydraulic system can be connected with the double-acting valve of the tractor or with the single-acting valve with a free return. During your work with the drain cleaner the system must be under continuous pressure. The machine is operated with the triple valve block. This valve block can also be mounted on the rear side or in the cabin. Should the machine work in the opposite direction of rotation the pressure and the return pipe must be

exchanged or the hydraulic lever in the tractor must be put in the other position. The hydraulic motors on the reel and the side arm are connected in such a way, that the hose will stay tight on the reel during both coiling and uncoiling. The coiling and uncoiling speed can be adjusted with the speed control valve next to the valve block.

Water plumbing

Pump

The COMET APS 145 water pump has a capacity of 132 l/min and a maximum pressure of 50 bar. This is an ample reciprocating diaphragm pump driven by the drive shaft of the tractor. This pump is not sensitive for polluted water. The pump is constructed in such a manner that all the parts that are liable to wear can be easily replaced. The maximum number of revolutions of the pump is 550 rev/min., but may never be under 300 rev/min. When using a drive shaft with 1000 or 750 revolutions you can keep the engine speed of the tractor lower. This will save fuel and give less noise. Because the pump is ample, you will be able to work with a lower engine speed.

Pressure regulating

The water pressure can be regulated with the turning knob on top of the pressure regulator. With a lever on the pressure regulator the pump can be relieved, for example while you are placing the guide arm in front of the drainpipe.
The optimum working pressure is 30 to 35 bar. With a higher pressure the PE hose will be overloaded and will have a shorter life. Because of the friction in the hose a higher pressure will hardly bring more delivery.
A lower pressure will not bring enough water to the nozzle, which leads to bad cleaning.

Pump pressure	Nozzle pressure	L/min at 315 m	Nozzle pressure	L/min at 400 m
20 bar	6.0 bar	49,4	5 bar	47,4
25 bar	8.5 bar	56,1	7,4 bar	53,3
30 bar	10 bar	61,6	8,5 bar	58,8
35 bar	12.5 bar	67,4	11,3 bar	63,2
40 bar	14.5 bar	71,4	12,9 bar	68,6
45 bar	16.5 bar	75,7	14,8 bar	72,5

The return water of the pressure regulator will be connected to the upper side of the guide arm. The hose is lubricated with this water in the inserting arm. During withdrawal the hose is cleaned again.

Filters

The suction filter is 10 m long and has a ditch filter at the end. In front of the pump you find the main filter.

Hose
The hose is a PE polyethylene hose with an outer diameter of 27 mm and a thickness of 3,3 mm. This hose is flexible and strong. A bigger diameter has too much friction in the pipe. Because this pipe has a specific gravity lower than 1 it can float on the water. This hose is delivered in a standard size of 315 m. As an option there are the following lengths: 350, 400, 450 and 500 m. Longer lengths only on demand.

Pipe resistance hose 27 mm						
Litre per minute	50	60	70	80	90	100
Pipe resistance per 100 m	3,6	5	6.5	8.25	10,2	12,2

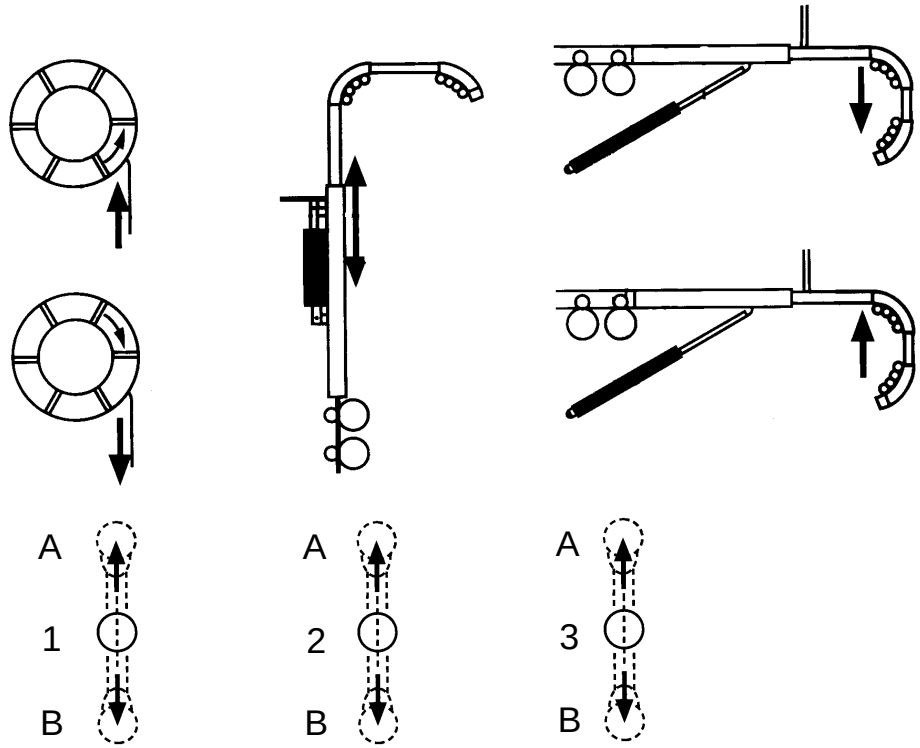
Hose connection
When the hose is damaged the damaged part can be replaced. The hose can be put together with a hose connection (number 8200361) and two clamping bushes (number 9820211.0). The hose connection and the two clamping bushes are delivered with the drain cleaner.

Flexible hose part
A flexible hose part is mounted between the spraying hose and the nozzle to facilitate the searching of the nozzle, and to keep the nozzle in the middle of the drainpipe as much as possible. At the end we find a thread 5/8" to which all types of nozzles can be mounted.

Nozzle
The standard nozzle on the machine has 13 holes of Ø 2 mm: 1 hole to the front and 12 holes to the back under an angle of 15º. This is the perfect angle to clean the drain shell and to rinse the dirt without damaging the drain shell or the protective sheathing. The hole to the front is for soaking the dirt or for boring out a very dirty drain. When the dirt sticks fast to the shell it is possible to use a nozzle with holes under an angle of 30° to the back. In rich clay it is possible to use a nozzle with 3 holes to the back and 1 hole to the front to be able to soak this clay. For larger pipe diameters you can use special nozzles with guidance. These nozzles can be delivered in the following sizes: 60, 75, 100 and 125 mm.

2. Operation

- Please pay attention that the drive shaft is not too long when you connect the drain cleaner to the tractor. Lift the drain cleaner high enough that the shaft is in a horizontal position.



- Put pressure on the hydraulic system when you are in the field. Detach the chain of the side arm that is pinned to the frame. Lower the arm by putting lever 3 in position A. With the speed control valve, the lowering speed of the cylinder can be adjusted.

- Put the guide arch on the side arm. Mount the suction hose and hang it over the brackets on the guide arm. Put the return hose of the pressure regulator on the overflow connection on top of the guide arm.

- Adjust the inserting speed of the hose on slow by turning the speed control valve to the left. Insert the hose through the guide arch by placing lever 1 in position B. Adjust the pressure of the drive rolls on the hose with the adjusting bolt on the pivoting part. The drive rolls may not slip on the hose.

- Put the meter counter on zero.

- Disengage the pressure regulator.

- Drive the machine in front of the drain. Place the guide arch right in front of the drain, with the end of the arch at a maximum of 20 cm from the drain. If the distance is too far, it is possible that during insertion, when there is more friction, the hose will bend and damage. As a safety measure the guide arch must always be secured with the pin.

- Engage the drive shaft with about 540 rev/min. Wait until the pump draws plenty of water and tighten the pressure regulator and adjust the pressure to a maximum of 35 bar. When a new machine is put into operation the polyethylene hose is still empty, it will need about 1 minute to fill up. Make sure that water runs through the overflow hose along the guide arch. This way the PE hose will be wet when it enters the drainpipe, which will give less friction. The hose is cleaned on withdrawal.

- Place lever 1 in position B, so that the hose enters the drainpipe. Set the correct speed with the speed control valve: about **25 to 30 metres per minute**. This depends on pollution, kind of soil, ground water level, drain type and operating pressure. If necessary increase the pressure of the drive rolls on the hose with the adjusting bolt on the pivoting part.

  WHEN THE HOSE IS INSERTED THE MACHINE MUST BE UNDER CONSTANT SURVEILLANCE! This way it is possible to reverse, withdraw or stop when the end of the drain has been reached or in case of malfunction. Slip may cause the hose to wear through. Remain alert!!

- On the metre counter you can see how far the nozzle is in the drainpipe.

- Withdraw the hose by putting lever 1 in position A. Adjust the speed slower at **maximum 20 metres per minute.**

  WITHDRAWAL MUST ALWAYS BE DONE AT SLOWER SPEED THAN INSERTION!

- If the nozzle gets stuck in the drain during insertion because of an obstruction, switch lever 1 from B to A. Withdraw the hose 5 to 10 metres and try again to penetrate the hose into the drain pipe. Repeat this procedure a few times until the obstruction is gone.

- If the nozzle gets stuck in the drainpipe after about 50 metres because of strong pollution, the hose has to be withdrawn completely so that the dirt is removed from the drainpipe. Clean the next part of the drainpipe in the same way, to avoid that the nozzle with the hose gets stuck in the drainpipe.

  NEVER STOP EITHER THE WATER PRESSURE OR THE PUMP WHILE THE NOZZLE WITH THE HOSE IS STILL IN THE DRAIN. The hose may get stuck because of the sand and it will be impossible to get it out again.

- When the drainpipe has been cleaned, totally withdraw the hose until the nozzle is out of the drain. Slowly disengage the pressure regulator with the lever. Because the pressure is taken from the hose it is possible that the reel starts to reverse. If this happens hold the reel with your hand. Disengage the drive shaft, lift the side arm and drive to the next drain.

- After use always reduce the pressure of the drive rolls on the hose by disengaging the pressure regulator with the adjusting bolt on the pivoting part.

3. Safety instructions

- The tractor and the machine are to be driven and operated only by qualified persons.
- Starting and running of the tractor, either with or without the machine, in a closed room is prohibited.
- Switch off the tractor engine during repairs on the tractor or the machine.
- During transport take the guide arch of the side arm and place it on the back of the frame on the appropriate brackets.
- During transport fully lift the side arm and lock it on the frame with the chain.
- Comply with the safety instructions when the machine is running.

4. Frost protection

If it is not possible to put the machine in a frost-free place, please follow the next instructions:

1. Drain off the suction filter on the machine, by loosening the swivel ring and emptying the filter.

2. Fasten the polyethylene hose and the nozzle on the reel.

3. Engage the pump and suck some air.

4. Engage the pressure regulator and turn the control button fully in.

5. Slowly coil the reel, by putting lever 1 in position A. Water will now spray from the nozzle. After about 4 or 5 minutes the hose will be empty and only air escapes from the nozzle, so than you can stop. Put lever 1 in position 0 switch off the pump.

6. Disengage the pressure regulator.

7. Fill up the pump with antifreeze agent by dismounting the suction coupling from the pump.

8. Turn the pump shaft a few times so that the antifreeze agent will spread through the pump.

5. Maintenance

- Grease the lubricator nipple on the drive wheels and hinge points every week.
- Oil the nylon rolls after use to prevent rusting of the shafts.
- Oil the shaft of the metre counter every day to prevent rusting.
- After the first 5 working hours the bolts and nuts must be retightened.
- Clean the suction filter on the machine daily or more times a day if necessary.
- Flush the pump regularly with clean water (pumping). Especially when you have to pump from a dirty or shallow ditch.
- Check the oil-level of the pump regularly.
- Renew the pump oil (see chapter "Technical specifications") after every 200 working hours or once a year. While draining, turn the pump shaft a few times until the oil flow has stopped.
- Grease the reel bearings once a year.

In case of an independent hydraulic pack:

- Renew the oil (see chapter "Technical specifications") of the gearbox (between the water and hydraulic pump) once a year.

6. Failures

Failure	Cause	Instructions
No suction from the pump.	• Clogged filter or suction hose and/or leaking couplings.	• Clean filter. • Repair leaks.
Irregular pressure on the gauge.	• Insufficient water supply to pump. • Pressure in air receiver too low. • Dirt between valves.	• Make sure that the ditch filter is under water. • Pump up the air receiver 3,5 bar. • Clean the valves.
Pressure cannot be regulated.	• Valve and seat in the pressure regulator are worn. • Burr in regulator house.	• Replace. • File out.
Water pressure falls.	• Oil level too low. • Valve spring broken.	• Fill up oil. • Renew valves.
Pump knocks (taps).	• Suction filter clogged.	• Clean filter.
Hydraulic system does not work.	• Speed control valve is completely open.	• Close the valve a few turns (clockwise).
Reel does not uncoil.	• Dirt in valve on hydro motor reel.	• Clean.
Reel does not coil.	• Dirt in hydro motor valve on inserting mechanism.	• Clean.
Oil is overheated.	• Vent in hydro motor valve on inserting mechanism is too small or dirty.	• Clean or bore out the vent (Ø1.3 mm) by a few tenths of a mm.

7. Technical specifications

Length:	75 cm
Width:	240 cm
Height:	235 cm
Weight:	350 kg
Lifting bolts	Category 2
Hydro motors:	2x 157 cc
Oil capacity:	20 l/min
Water pump:	4 cylinders/diaphragm
Oil specification:	20W30 / 2,9 l
Max. number of revolutions:	540 rpm
Max. capacity:	132 l/min
Max. pump pressure:	50 bar
Max. system water pressure:	35 bar
Length suction hose:	10 m
Overflow hose:	6 m
Hose:	Polyethylene Ø27 x 3,3 mm
	Standard length 315 m
Nozzle:	1x Ø 2 mm. to the front
	12x Ø 2mm to the back

Independent hydraulic pack:

Oil specification:	HV68 / 50 l
Oil specification gearbox:	W90

8. Options

Shaft systems
For cleaning of drains that discharge into shafts, additional attachments are available. There are 2 models:

- Shaft system for 30 cm No. 9821007.0
- Shaft system for 40 to 60 cm No. 9821008.0

With this system the hose can be bend sharply to be inserted in the drain.

Arm extension
As an option an extension of 2 m can be supplied. This extension can be mounted between the side arm and the guide arch, so that in special cases you can stay further away from the ditch. When the ditch is very deep, the extension can also be placed between the two arches.

- Arm extension No. 9820217.0
- Locking bolt No. 9820134.0

Telescope system
With this option the guide arch can be telescoped out through a hydraulic cylinder with regard to the side arm. The telescope cylinder is operated with the middle lever of the standard triple control block. With this telescope cylinder it will be easier to place the guide arm in front of the drain.

- Telescope system No. 9821006.0

Electro-hydraulic remote control
The hydraulic functions can also be commanded electrically. The functions are then operated with 3 switches on a box with a 10-meter cable. This box can also be mounted in the cabin, so that the machine can be operated from the tractor. Because of this 10-meter cable it is also possible to operate the machine when you are standing on the side of a ditch near the drainpipe.

- Electro-hydraulic remote control No. 9821010.0

Independent hydraulic pack
The drain cleaner can be equipped with an independent hydraulic pack. In that case the machine does not use the tractor hydraulics. The hydraulic pump is placed directly behind the water pump and does not need a separate drive this way. De hydraulic tank is mounted on the back of the frame. The oil level of the tank must be checked regularly through the sight glass and the return filter must be replaced when it is dirty. The number of revolutions of the drive shaft may be **300 rev/min at the most**, or the hydraulic pump will be overloaded.

- Independent hydraulic pack No. 9821011.0

Longer hoses

- Polyethylene hose Ø27 x 3,3 mm L=315 metre No. 8200321
- Polyethylene hose Ø27 x 3,3 mm L=350 metre No. 8200325
- Polyethylene hose Ø27 x 3,3 mm L=400 metre No. 8200340
- Polyethylene hose Ø27 x 3,3 mm L=450 metre No. 8200345
- Polyethylene hose Ø27 x 3,3 mm L=500 metre No. 8200350

Other lengths on request.

Nozzles

Different nozzles adapted for use in special circumstances and for different drainpipe diameters can be supplied. All nozzles can be mounted on the flexible part at the end of the hose.

Electronic seeking system

When cleaning the drains it is possible that the nozzle gets stuck in the drain because of obstructions or subsidence of the pipe. When the pipe is straight you can measure with the metre counter where you have to dig up the pipe. But especially with systems that are a little older this is not always correct.
For these problems you can use an electronic seeking system. This is ultra-modern equipment where you use a transmitter and a receiver to locate the place of the problem. The used nozzle is replaced by a nozzle with a transmitter. Above the ground you can seek the place of the obstruction with the transmitter. The receiver will give a frequent sound that gets higher when you get closer with the transmitter.
There are 3 models available with different ranges and additional accessories.

Type	Range	Description	Part No.
TECTA	3 m	Compact model	7212700
FARMA	4 m	Headphone	7212750
ALTRA	10 m		7212760

9. Spare parts lists

About spare parts

Use genuine Agrifac spare parts. Other spare parts can have negative effects on the machine and cause unsafe situations.

Agrifac cannot be held responsible for:

- damage originated from the use of non-genuine parts;
- damage caused by machine modifications, not done by Agrifac.

When ordering spare parts always mention your machine number.

Your machine number is located the maker's plate.

Machine number: ……

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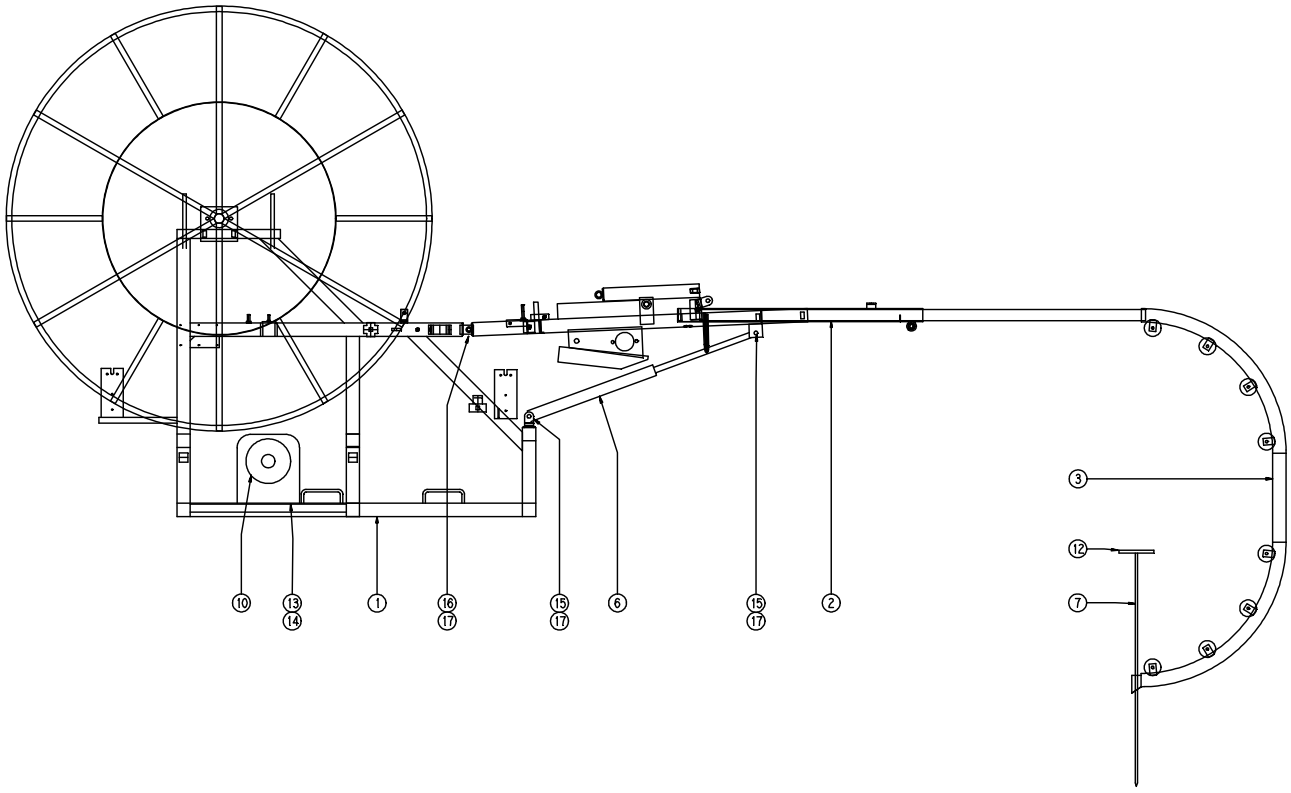
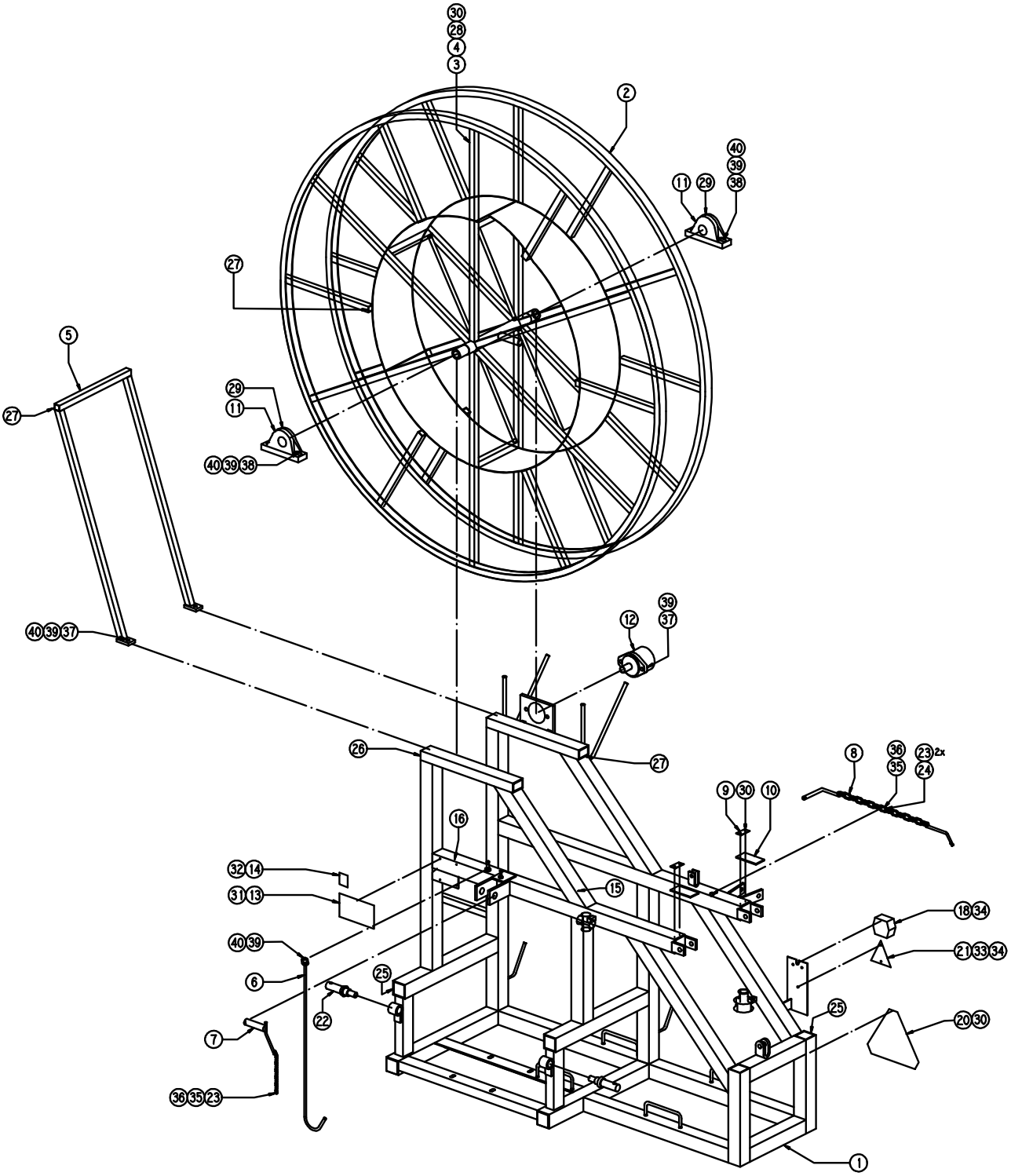
DRAIN CLEANER
No. 9821001.0

Pos.	Code	Qty.	Description
1	9821002.0	1	FRAME
2	9821003.0	1	SIDE ARM
3	9821004.0	1	GUIDE ARM
4	9821012.0	1	HYDRAULIC SYSTEM
5	9821013.0	1	WATER PLUMBING
6	7020168	1	CYLINDER D=25/40 STROKE=750
7	9820038.0	1	PIN
8	8200361	1	HOSE COUPLING FOR HOSE (Ø27x3.3) (for repairs on the hose)
9	9820211.0	2	CLAMPING BUSH FOR HOSE (Ø27x3.3) (for repairs on the hose)
10	7860317	1	DRIVE SHAFT W 2102
11	-		
12	7934259	2	CAP Ø19 x 1.5
13	3027630	4	BOLT M12 x 25 DIN 933
14	3142120	4	SELF-LOCKING NUT M12 DIN 985
15	3027716	2	BOLT M16 x 55 DIN 933
16	3060764	2	BOLT M16 x 100 DIN 931
17	3142160	4	SELF-LOCKING NUT M16 DIN 985



FRAME
No. 9821002.0

Pos.	Code	Qty.	Description
1	9820065.0	1	FRAME
2	9820158.0	1	REEL
3	9820172.0	4	NETTING SEGMENT
4	9820058.0	4	STRIP NETTING ATTACHMENT
5	9820028.0	1	HOOP GUARD
6	9820045.0	1	HOOK DRIVE SHAFT
7	9820048.0	1	PIN TOP LINK
8	9820044.0	1	PINS ON CHAIN
9	9820033.0	2	STRIP HINGE PROTECTION
10	2670400	2	RUBBER 100 x 50 x 5
11	5033040	2	BEARING HOUSE + BEARING PASEY 40
12	7240755	1	HYDRAULIC MOTOR T-SERIES 157cc
13	8270452	1	TYPE PLATE
14	8270454	1	PATENT PLATE
15	7975140	1	STICKER “MAX. 35 BAR PRESSURE”
16	7975170	1	STICKER “GEPRUFTE SICHERHEIT”
17	-		
18	8255510	1	LIGHTING SET
19	7740073	50	CABLE BUNDEL TAPE 4.8 x 360
20	7961810	1	SLOW TRAFFIC SIGN
21	7961846	2	REFLECTOR
22	7978315	2	LIFTING BOLT 28mm CAT. 2
23	3280040	3	SPRING CLIP 4mm
24	0910104	1	CHAIN 4mm 15 LINKS
25	7934598	4	CAP 60 x 60 x 3
26	7934595	4	CAP 60 x 40 x 4
27	7934280	15	CAP 25 x 25 x 2
28	2292028	1	HOSE HDPE Ø32 x 2 L=12000
29	4110014	2	GREASE NIPPLE 1/8”
30	3250885	74	BLIND RIVET Ø5.0 x 20.0
31	3250852	8	BLIND RIVET Ø5.0 x 14.0
32	3250615	2	BLIND RIVET Ø4.0 x 12.0
33	3309555	4	FILLISTER HEAD SCREW M5 x 16 DIN 84
34	3142050	8	SELF-LOCKING NUT M5 DIN 985
35	3142080	2	SELF-LOCKING NUT M8 DIN 985
36	3765080	2	WASHER M8 DIN 125A
37	3027636	4	BOLT M12 x 40 DIN 933
38	3060678	4	BOLT M12 x 80 DIN 931
39	3142120	9	SELF-LOCKING NUT M12 DIN 985
40	3765120	7	WASHER M12 DIN 125A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SIDE ARM
No. 9821003.0

Pos.	Code	Qty.	Description
1	9820109.0	1	SIDE ARM
2	9820134.0	1	CLAMPING SCREW GUIDE ARM
3	9820145.0	1	PRESSURE ROLL LEVER
4	9820026.0	1	BOLT
5	9820139.0	1	PIVOTING PART PRESSURE ROLL
6	9820015.0	2	PRESSURE ROLL Ø100
7	9820142.0	1	ADJUSTING BOLT PRESSURE ROLL
8	9820150.0	1	COMPRESSION SPRING PRESSURE ROLL
9	9820014.0	1	DRIVE WHEEL MOTOR SIDE Ø200
10	9820011.0	1	SPROCKET MOTOR SIDE HOLE Ø35
11	9820013.0	1	DRIVE WHEEL Ø200 + BEARING
12	9820012.0	1	SPROCKET DRIVEN HOLE Ø22
13	9820157.0	1	SHAFT DRIVEN WHEEL
14	9820035.0	1	PROTECTING CAP CHAINE
15	9820152.0	1	SUPPORT METRE COUNTER
16	8200156	1	METRE COUNTER
17	8200152	1	WHEEL FOR METRE COUNTER
18	4830140	1	SPRING d=1 D=10 Lbo=60 SS
19	8257549	2	GUIDE ROLLER SMALL Ø50
20	8257550	1	GUIDE ROLLER BIG Ø75
21	7240755	1	HYDRAULIC MOTOR T-SERIE 157cc
22	6100195	1	ROLLER CHAIN ½" x 5/16" 64 rolls
23	6180080	1	MASTER LINK ½"
24	7934590	1	CAP 60 x 20 x 2
25	7934595	1	CAP 60 x 40 x 4
26	7934600	1	CAP 60 x 60 x 4
27	7934259	1	CAP Ø19 x 1,5
28	4110089	2	GREASE NIPPLE M8
29	3230390	1	SPLIT PIN Ø5 x 40 DIN 94
30	3027426	2	BOLT M4 x 16 DIN 933
31	3142040	2	SELF-LOCKING NUT M4 DIN 985
32	3027540	2	BOLT M8 x 20 DIN 933
33	3750282	1	RING M8 DIN 9021
34	3027582	1	BOLT M10 x 20 DIN 933
35	3027590	1	BOLT M10 x 35 DIN 933
36	3060638	1	BOLT M10 x 80 DIN 931
37	3142100	3	SELF-LOCKING NUT M10 DIN 985
38	3765100	2	WASHER M10 DIN 125A
39	3027636	2	BOLT M12 x 40 DIN 933
40	3060676	2	BOLT M12 x 75 DIN 931
41	3142120	9	SELF-LOCKING NUT M12 DIN 985
42	3750340	5	RING M12 DIN 9021
43	3142200	2	SELF-LOCKING NUT M20 DIN 985
44	3765200	1	WASHER M20 DIN 125A
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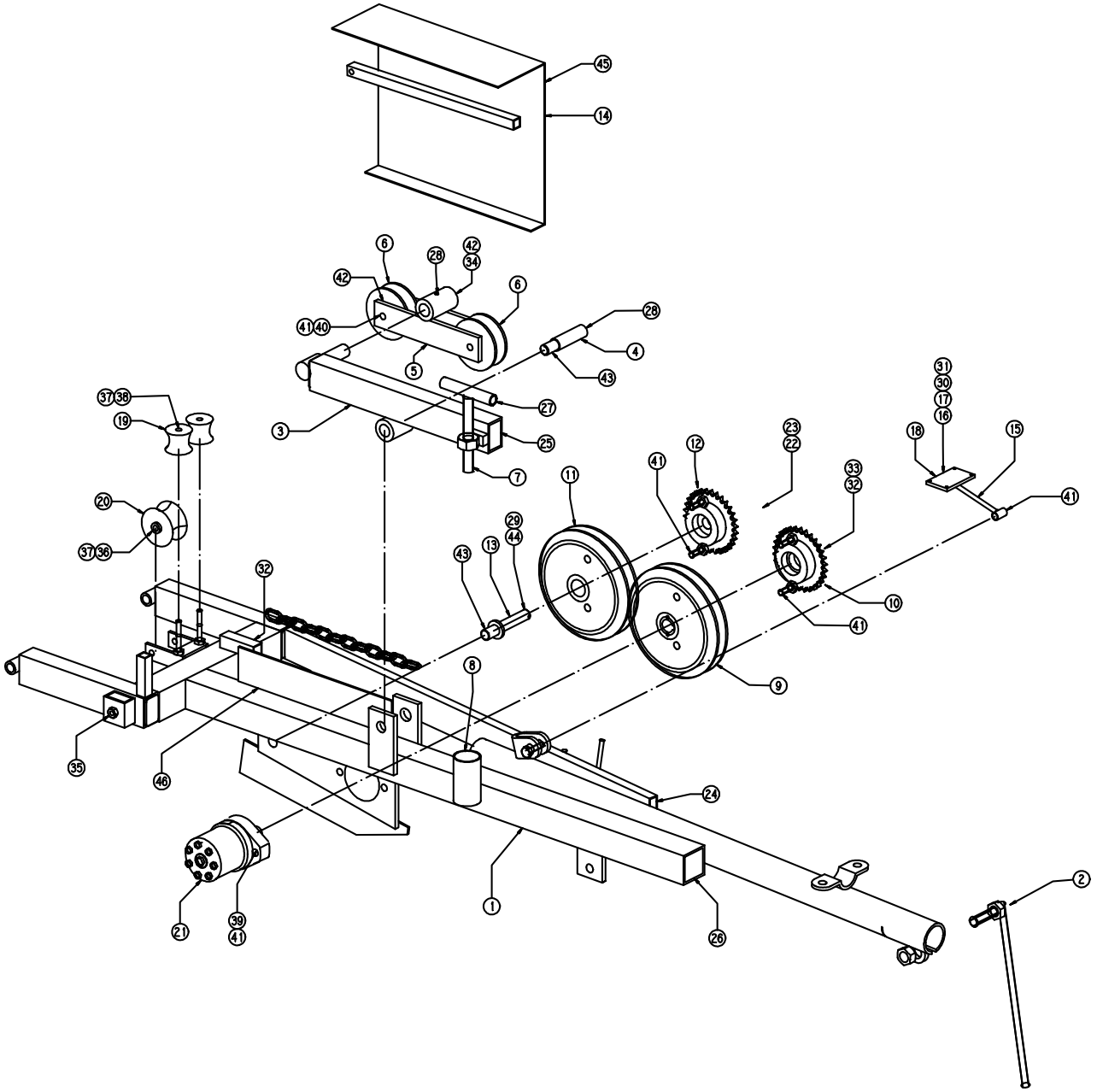
46	7975135	1	STICKER "QUETSCHGEFAHR"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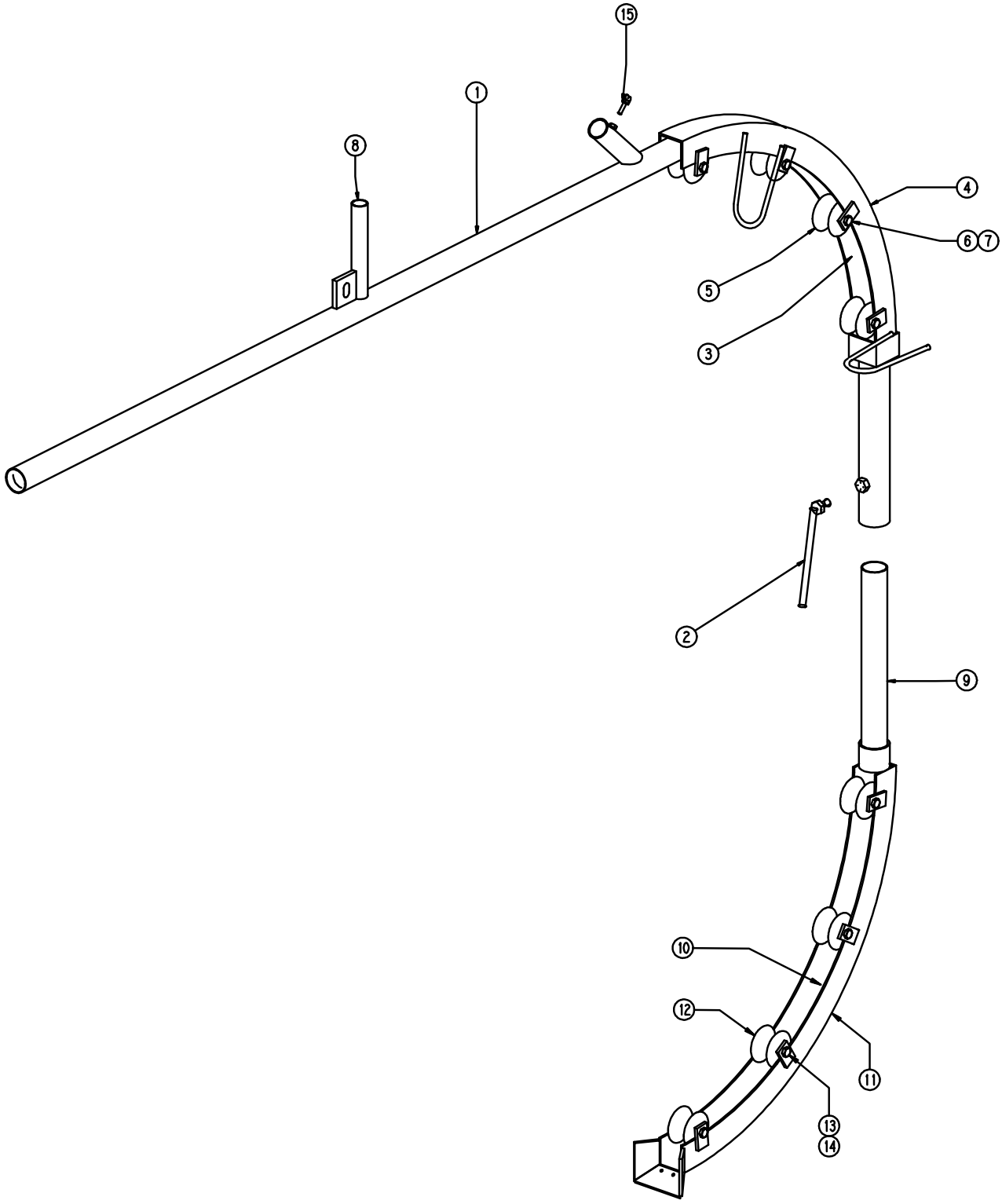
GUIDE ARCH
No. 9821004.0

Pos.	Code	Qty.	Description
1	9820174.0	1	GUIDE ARCH
2	9820183.0	1	CLAMPING SCREW GUIDE ARCH
3	9820230.0	1	STRIP PE 50 x 5 L=1000
4	3250852	6	BLIND RIVET Ø5.0 x 14.0
5	8257550	4	GUIDE ROLLER BIG Ø75
6	3060638	4	BOLT M10 x 80 DIN 931
7	3142100	4	SELF-LOCKING NUT M10 DIN 985
8	7934265	1	CAP Ø32
9	9820185.0	1	SHAFT ARCH STANDARD
10	9820231.0	1	STRIP PE 50 x 5 L=1040
11	3250852	8	BLIND RIVET Ø5.0 x 14.0
12	8257550	4	GUIDE ROLLER BIG Ø75
13	3060638	4	BOLT M10 x 80 DIN 931
14	3142100	4	SELF-LOCKING NUT M10 DIN 985
15	3025100	1	WING BOLT M8 x 25 DIN 316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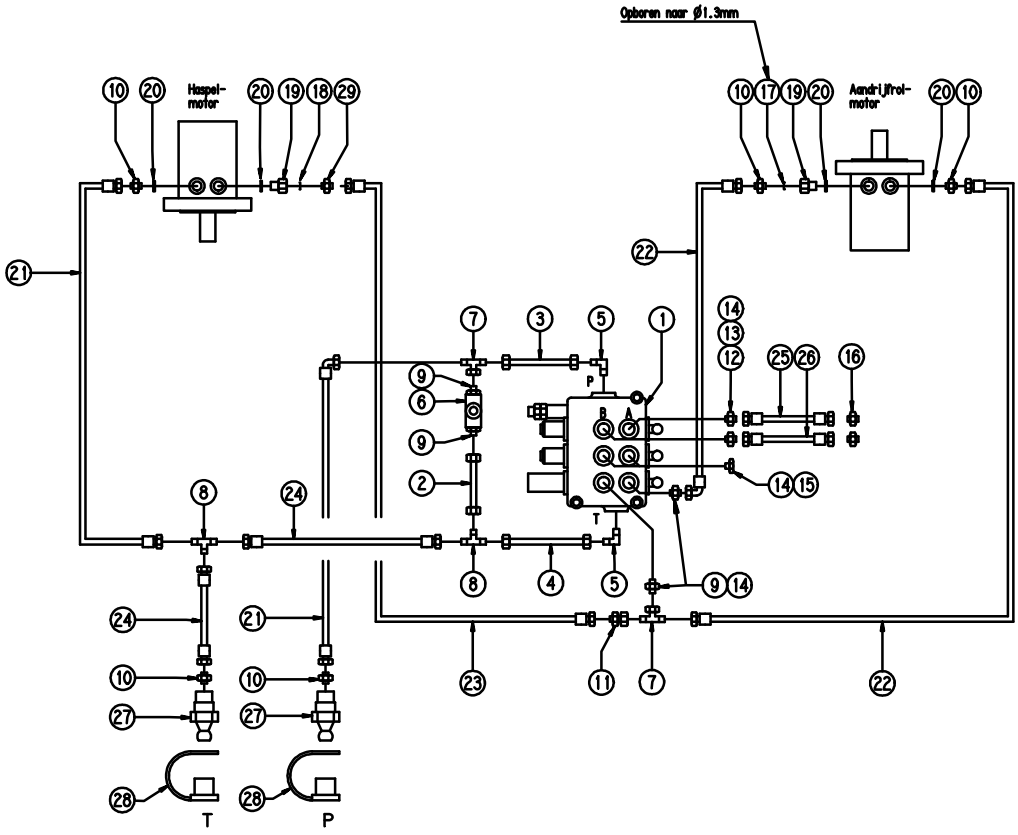
HYDRAULIC SYSTEM
No. 9821012.0

Pos.	Code	Qty.	Description
1	7242667	1	CONTROL BLOCK TRIPLE
2	9820227.0	1	HYDR. PIPE Ø12 x 1 L=70
3	9820228.0	1	HYDR. PIPE Ø12 x 1 L=110
4	9820229.0	1	HYDR. PIPE Ø12 x 1 L=130
5	7321777	2	COUPLING AT RIGHT ANGLES WE 12 LR ½”
6	7390696	1	SPEED CONTROL VALVE DV-10-07-1.0-P
7	7320267	2	ADJUSTABLE COUPLING ERT 12 L
8	7321561	2	T-COUPLING T 12 L
9	7320554	2	SCREW COUPLING GE 12 LR
10	7320556	7	SCREW COUPLING GE 12 LR ½”
11	7320748	1	REDUCTION COUPLING GRV-A 12/8 L
12	9987302.0	2	SCREW COUPLING GE LR 3/8” TREATED
13	3360757	2	SETSCREW M8 x 8 0,7 mm BORE
14	5301035	6	MULTISEAL 3/8” 17.3x23.9x2.1
15	7320110	2	PLUG DP 3/8”
16	7320524	2	SCREW COUPLING GE 8 LR
17	7220005	1	RESTRICTOR PLATE Ø1 mm
18	7220006	1	RESTRICTOR PLATE Ø0.5 mm
19	9820063.0	2	NON-RETURN VALVE
20	5301040	4	MULTISEAL ½” 21.5x28.7x2.5
21	7218601	2	HYDR. HOSE 2STC 10 A05 A05 L=2000
22	7218603	2	HYDR. HOSE 2STC 10 A35 A35 L=3300
23	7128479	1	HYDR. HOSE 2STC 6 A05 A35 L=3700
24	7128602	2	HYDR. HOSE 2STC 10 A05 A05 L=1500
25	7128508	1	HYDR. HOSE 2STC 6 A35 A35 L=3000
26	7128509	1	HYDR. HOSE 2STC 6 A05 A35 L=3800
27	7322920	2	PLUG ½” DN 10
28	7322930	2	DUST CAP DN 10
29	-		
30	9820054.0	1	SUPPORT HYDRAULIC BLOCK
31	9820053.0	1	SPACER PIPE Ø15x1.5 L=130
32	9820052.0	1	STICKER PLATE
33	7975130	1	STICKER HYDRAULIC CONTROL
34	3060590	3	BOLT M8 x 55 DIN 931
35	3142080	3	SELF-LOCKING NUT M8 DIN 985
36	3060554	1	BOLT M10 x 150 DIN 931
37	3142100	1	SELF-LOCKING NUT M10 DIN 985


Opboren naar ø1.3mm
Haspel-motor
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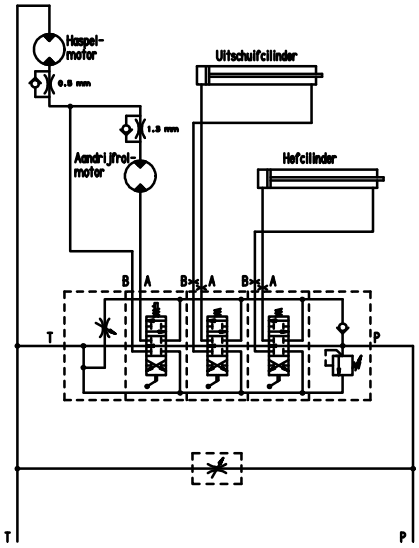
Haspel-motor
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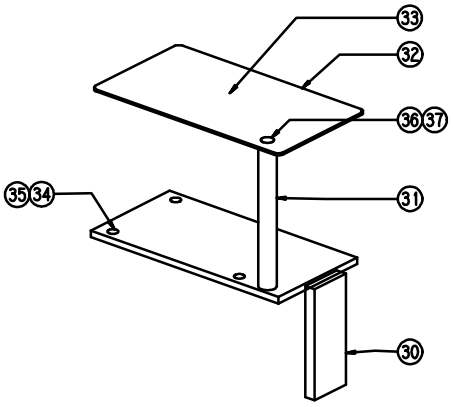
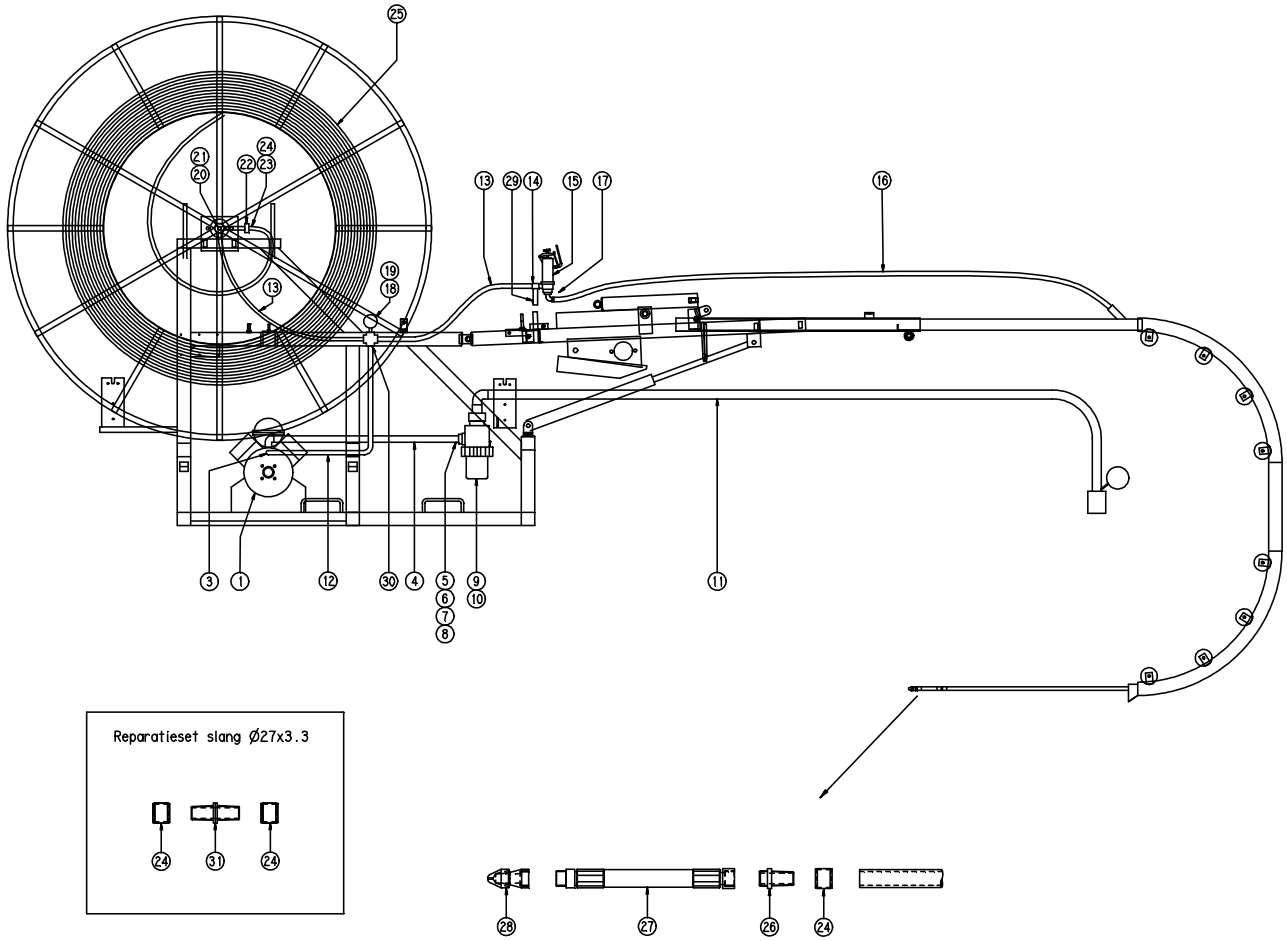


WATER PLUMBING
No. 9821013.0

Pos.	Code	Qty.	Description
1	8200455	1	PUMP COMET APS 145
2	7320110	2	PLUG DP 3/8”
3	4005135	1	KNEE AT RIGHT ANGLES ¾” BiBu
4	2212850	1	SUCTION HOSE PVC Ø40 x 54 L=1000
5	4550950	4	HOSE CLIP 38-50 SS
6	7315044	1	TULLE STRAIGHT 2” x 40
7	7315230	1	SWIVEL 2”
8	7315880	3	O-RING 39.3 x 2.62
9	7315469	1	SUCTION FILTER 2”
10	5222176	1	RUBBER RING 76 x 60 x 6 NBR
11	9821005.0	1	SUCTIONHOSE
12	7128604	1	HYDR. HOSE 2STC 20 A05 G79 L=750
13	7128605	2	HYDR. HOSE 2STC 20 G79 G79 L=850
14	9820050.0	1	HOLDER PRESSURE REGULATOR
15	8200490	1	PRESSURE REGULATOR
16	2212930	1	SUCTION HOSE 1” L=6000
17	4550930	2	HOSE CLIP 22-32 OS0030 SS
18	7320715	1	SCREW COUPLING GRS ¾” x ¼” R
19	7270240	1	PRESSURE GAUGE 0-60
20	4005530	1	DOUBLE NIPPLE ¾” no. 280
21	8200469	1	SWIVEL COUPLING ¾”
22	4005686	1	COUPLING ¾” BiBu
23	8200499	1	COUPLING PIECE ON REEL
24	9820211.0	2	CLAMPING BUSH FOR HOSE Ø27x3.3
25	8200321	1	HOSE Ø27x3.3 L=315 000 (standard)
25	8200325	1	HOSE Ø27x3.3 L=350 000 (option)
25	8200340	1	HOSE Ø27x3.3 L=400 000 (option)
25	8200345	1	HOSE Ø27x3.3 L=450 000 (option)
25	8200350	1	HOSE Ø27x3.3 L=500 000 (option)
26	8200363	1	HOSE PILLAR 5/8”
27	8200360	1	FLEXIBLE HOSE
28	8200420	1	NOZZLE 1x to the front + 12x 15º to the back
29	3027540	1	BOLT M8 x 20 DIN 933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Reparatieset slang Ø27x3.3
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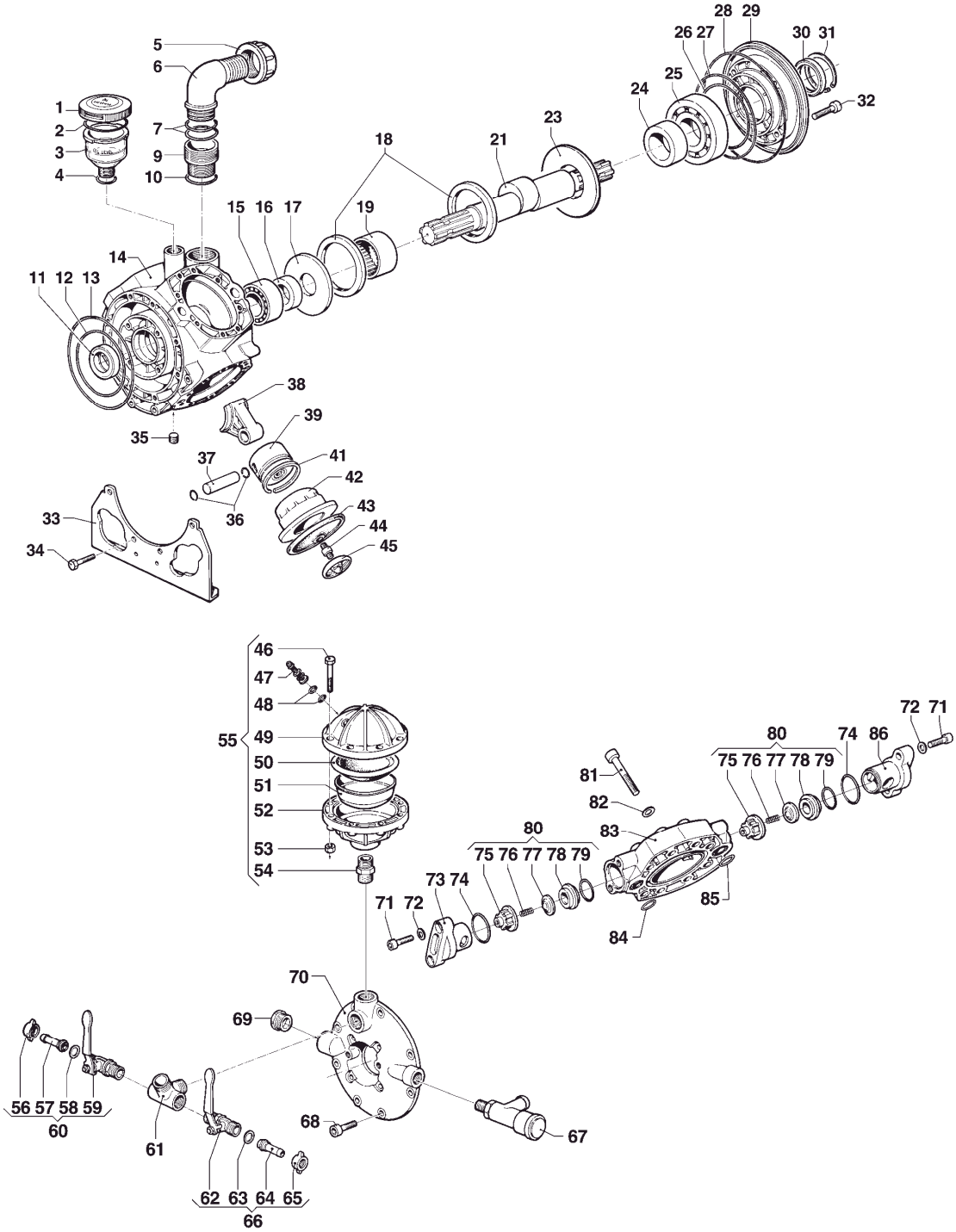
COMET APS 145

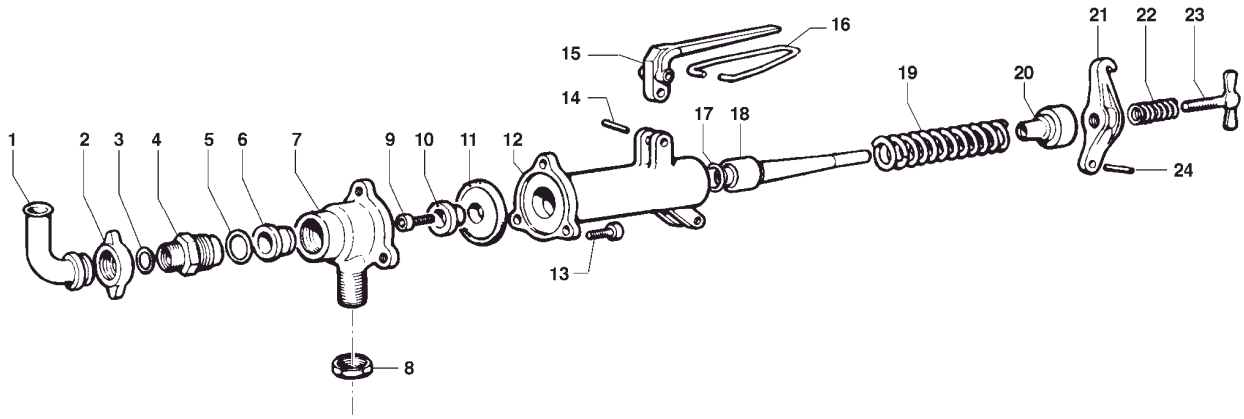
Pos.	Code	Qty.	Code ARAG	Description
1	-	1	0402 0143	VOLUM. COMPEN. COVER
2	-	1	1210 0373	O-RING Ø3,53x73,03
3	-	1	0421 0012	VOLUMATRIC COMPEN.
4	-	1	1210 0002	O-RING Ø2,62x20,7
5	-	1	1200 0052	WINGNUT 2”
6	-	1	2801 0057	ELBOW COUPLING Ø45
7	-	2	1210 0197	O-RING Ø2,62x39,34
9	-	1	2000 0096	NIPPLE 1¾”-2”
10	-	1	1210 0113	O-RING Ø2,62x47,3
11	-	1	0019 0068	OIL SEAL Ø40x60x10
12	-	1	1210 0351	O-RING Ø2,62x120,32
13	-	1	1210 0355	O-RING Ø2,62x164,77
14	-	1	0403 0140	PUMP CRANKCASE
15	-	1	0438 0078	BALL BEARING Ø40
16	-	1	0601 0264	SPACER Ø40,5
17	-	1	2813 0030	WASHER Ø40
18	-	2	0010 0003	RING Ø109,5
19	-	1	0437 0076	ROLLER
21	-	1	0001 0409	SHAFT
23	-	1	2813 0070	WASHER Ø55
24	-	1	0601 0279	SPACER Ø55,3
25	-	1	0438 0009	BALL BEARING Ø55
26	-	1	1210 0369	O-RING Ø3,53x117,1
27	-	1	1210 0365	O-RING Ø2,62x158,42
28	-	1	1210 0359	O-RING Ø3,53x196,4
29	-	1	1009 0168	FLANGE
30	-	1	0019 0089	OIL SEAL Ø72
31	-	1	3020 0007	INNER CIRCLIP
32	-	8	3609 0009	SCREW M10x35
33	-	2	2400 0084	PUMP MOUNTING BRACKET
34	-	8	3607 0220	BOLT M10
35	-	1	3200 0019	PLUG
36	-	8	3020 0006	INNER CIRCLIP Ø18
37	-	4	3011 0003	PIN Ø18X75
38	-	1	0205 0064	CONNECTING ROD
39	-	4	2409 0068	PISTON Ø70
41	-	4	0020 0001	PISTON COMPRESSION RING Ø70
42	-	4	0400 0071	PISTON SLEEVE
43	-	4	1800 0012	DIAPHRAGM Ø125
44	-	4	2419 0042	STUD BOLT
45	-	4	0602 0011	DISC
46	-	8	3607 0025	BOLT M8
47	-	1	3610 0003	AIR VALVE
48	-	2	1209 0033	GASKET Ø14
49	-	1	0003 0027	PRESSURE ACCUMULATOR
50	-	1	1800 0034	DIAPHRAGM
51	-	1	0460 0005	DIAPHRAGM SUPPORT CAP
52	-	1	0002 0031	PRESSURE ACCUMULATOR
53	-	8	0604 0015	NUT M8
54	-	1	2000 0024	NIPPLE ¾”
55	-	1	1225 0014	ACCUMULATOR COMPLETE
56	-	1	1200 0038	WINGNUT ½” GAS
57	-	1	2802 0020	CONNECTOR Ø10
58	-	1	1209 0013	GASKET Ø12
59	-	1	2826 0006	RIGHT TAP ½”
60	-	1	1214 0017	COMPLETE RIGHT TAP
61	-	1	2803 0434	COUPLING
62	-	1	2826 0005	LEFT TAP ½”
63	-	1	1209 0013	GASKET Ø12
64	-	1	2802 0020	CONNECTOR Ø10
65	-	1	1200 0038	WINGNUT ½” GAS
66	-	1	1214 0016	COMPLETE LEFT TAP
67	-	1	1219 0035	SAFETY VALVE
68	-	8	3609 0009	BOLT M10X35
69	-	1	3200 0064	PLUG
70	-	1	1009 0167	FLANGE
71	-	16	3609 0009	BOLT M10X35
72	-	16	2811 0098	WASHER Ø10,5
73	-	4	3202 0218	HOUSING
74	-	8	1210 0385	O-RING Ø2,62x45,69
75	-	8	1205 0030	DELIVERY VALVE CAGE
76	-	8	1802 0015	SPRING Ø11X17

77	-	8	3604 0009	DELIVERY VALVE
78	-	8	3009 0014	DELIVERY VALVE SEAT
79	-	8	1210 0114	O-RING Ø3,53x36,1
80	-	8	1220 0034	DELIVERY VALVE COMPLETE
81	-	32	3609 0057	BOLT M12X65
82	-	32	2811 0025	WASHER Ø13
83	-	4	3218 0099	PUMP MANIFOLD
84	-	4	1210 0047	O-RING Ø2,62x22,22
85	-	4	1210 0145	O-RING Ø2,62x28,25
86	-	4	3202 0219	HOUSING
87	-	1	2416 0276	SHAFT COVER



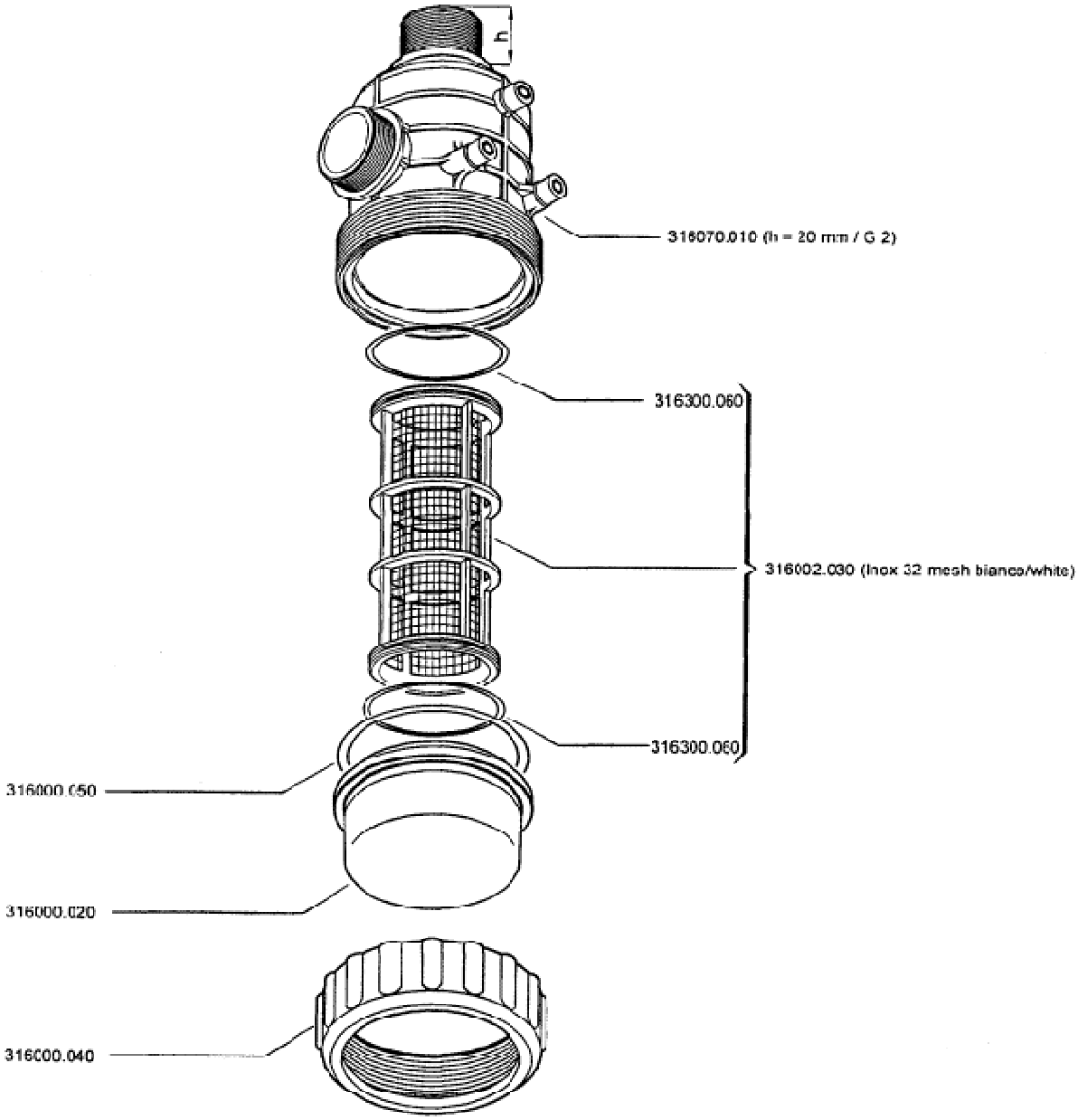
COMET VRS PRESSURE REDUCER
No. 8200085

Pos.	Code	Qty.	Code ARAG	Description
1	-	1	2800 0004	ELBOW TAIL
2	-	1	1200 0005	WINGNUT 30MB
3	-	1	1210 0002	O-RING Ø2,62x20,7
4	-	1	2000 0012	NIPPLE M36X2 M30X2
5	-	1	1210 0033	O-RING Ø3,0x28
6	-	1	3009 0042	VALVE SEAT
7	-	1	0424 0072	VALVE BODY
8	-	1	0604 0050	NUT G ¾" X 7
9	-	1	3609 0047	SCREW M6X14
10	-	1	3600 0020	PRESSURE VALVE
11	-	1	1800 0039	VALVE DIAPHRAGM
12	-	1	0424 0077	VALVE BODY
13	-	3	3609 0157	SCREW M8X18
14	-	1	3021 0011	PIN Ø4x26
15	-	1	1600 0014	LEVER
16	-	1	1202 0002	HOOK
17	-	1	1210 0033	O-RING Ø3,0x28
18	-	1	0015 0068	VALVE ROD
19	-	1	1802 0085	SPRING Ø34X18
20	-	1	0432 0022	SPRING GUIDE
21	-	1	0208 0002	LEVER
22	-	1	1802 0010	SPRING Ø15X28
23	-	1	3605 0003	ADJUSTING SCREW
24	-	1	3021 0011	PIN Ø4x26



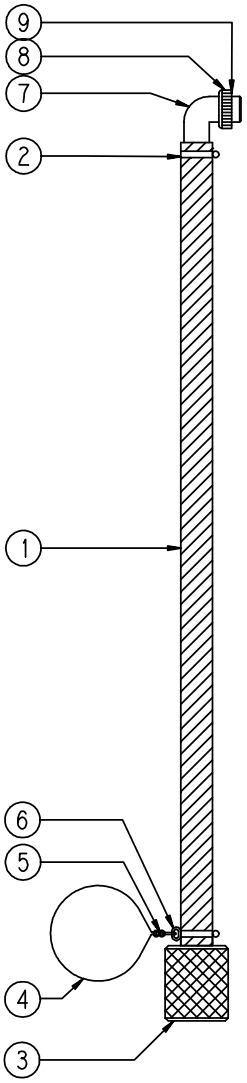
SUCTION FILTER
No. 7315469

Pos.	Code	Qty.	Code ARAG	Description
1	7315451	1	316070.010	FILTER HOUSING
2	7315480	2	316300.060	O-RING Ø101,3 x 2,6
3	7315442	1	316002.030	FILTER ELEMENT WHITE “32 MESH”
4	7315441	1	316000.050	O-RING Ø126,4 x 6,99
5	7315439	1	316000.020	COVER
6	7315440	1	316000.040	NUT



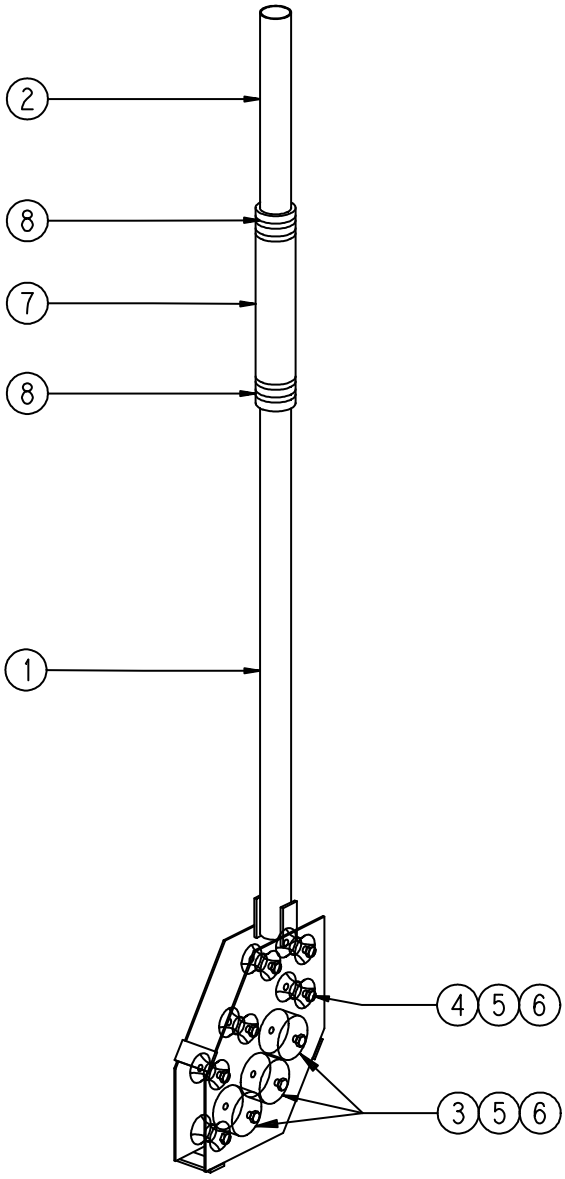
SUCTION HOSE
No. 9821005.0

Pos.	Code	Qty.	Description
1	2212935	1	SUCTION HOSE PVC 1¼" L= 10000
2	4550935	2	HOSE CLIP 26-38 OS0035 SS
3	7315415	1	STRAINER 25/30mm SS
4	7914725	1	FLOAT
5	3290050	1	S-HOOK no.50
6	0910104	1	CHAINE 4mm L=2 links
7	7315094	1	TULLE AT RIGHT ANGLES 1¼" x 30
8	7315226	1	SWIVEL 1¼"
9	7315874	2	O-RING Ø26,65x2,62



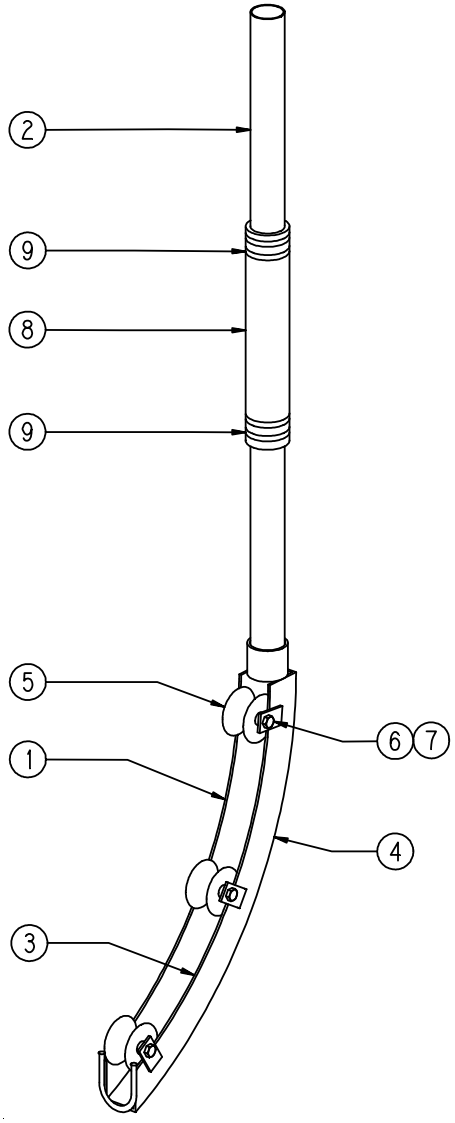
OPTION: SHAFT ARCH 30 CM
No. 9821007.0

Pos.	Code	Qty.	Description
1	9820199.0	1	SHAFT ARCH 30 CM
2	9820196.0	1	EXTENSION
3	9820023.0	3	GUIDE ROLLER FOR SHAFT ARCH 30CM
4	8257550	6	GUIDE ROLLER Ø75
5	3060638	9	BOLT M10 x 80 DIN 931
6	3142100	9	SELF-LOCKING NUT M10 DIN 985
7	2212860	1	SUCTION HOSE PVC Ø50 x 65 L=350
8	4550965	4	HOSE CLIP 50 - 65 OS0065 SS



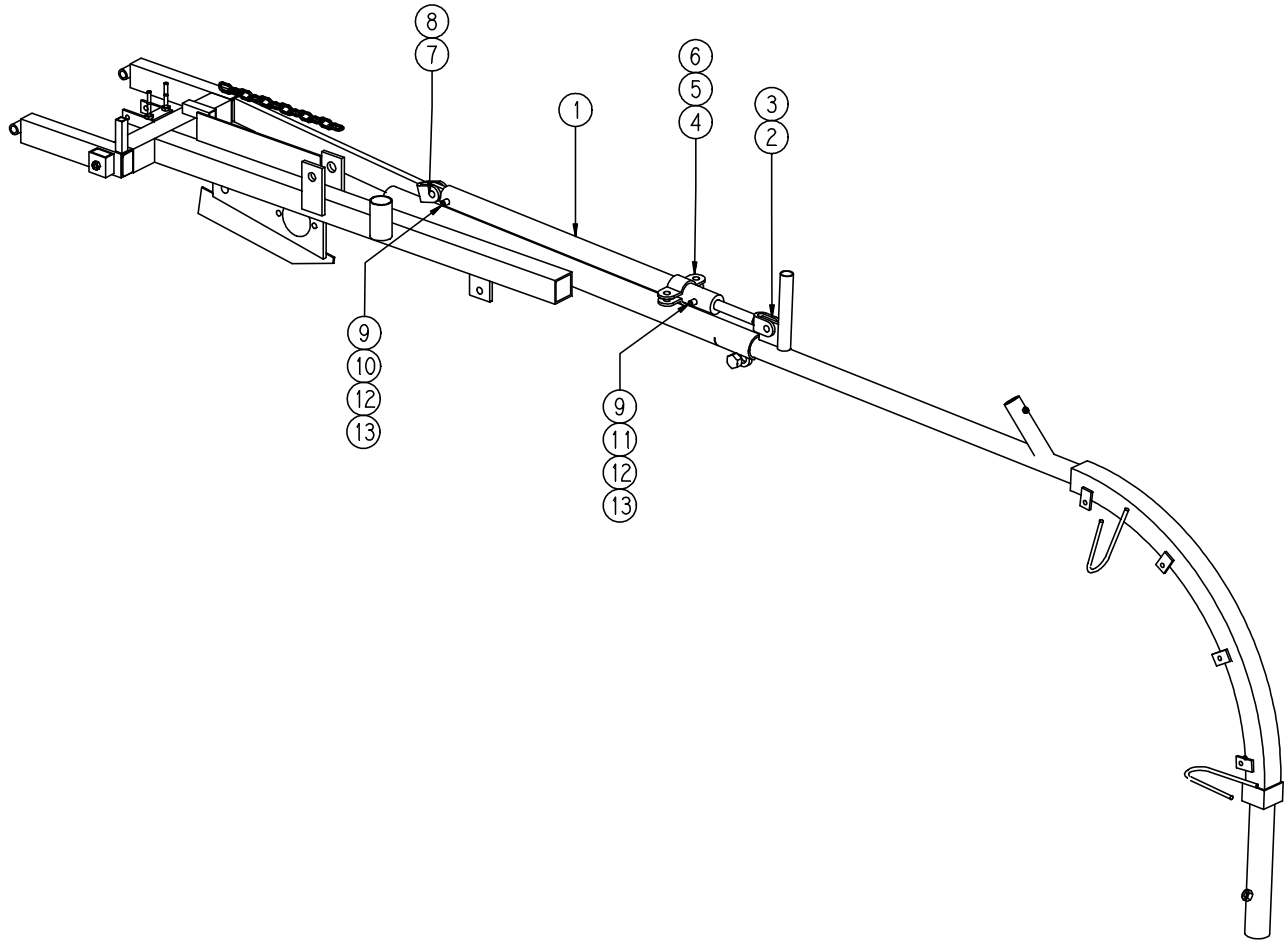
OPTION: SHAFT ARCH 40 - 60 CM
No. 9821008.0

Pos.	Code	Qty.	Description
1	9820190.0	1	SHAFT ARCH 40 - 60 CM
2	9820196.0	1	EXTENSION
3	9820195	1	STRIP PE 50 x 5 L=760
4	3250740	6	RIVET Ø5.0 x 20.0
5	8257550	3	GUIDE ROLLER Ø75
6	3060638	3	BOLT M10 x 80 DIN 931
7	3142100	3	SELF-LOCKING NUT M10 DIN 985
8	2212860	1	SUCTION HOSE PVC Ø50 x 65 L=350
9	4550965	4	HOSE CLIP 50 - 65 OS0065 SS



OPTION: TELESCOPE SYSTEM
No. 9821006.0

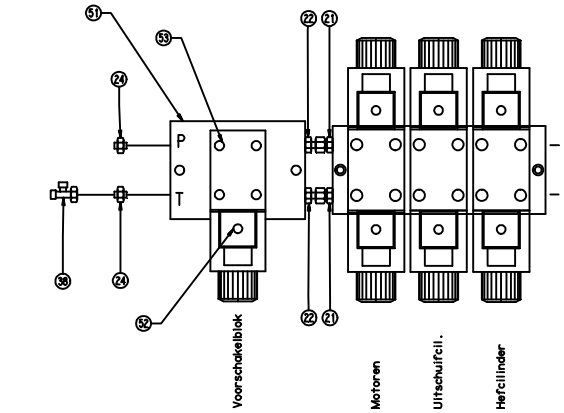
Pos.	Code	Qty.	Description
1	7020168	1	CYLINDER D=25/40 STROKE=750
2	9821024.0	1	PIN TELESCOPE CYLINDER
3	3280030	1	SPRING CLIP 3mm
4	8250581	1	HALF BRACKET 42mm
5	3027636	2	BOLT M12 x 40 DIN 933
6	3142120	2	SELF-LOCKING NUT M12 DIN 985
7	3027716	2	BOLT M16 x 55 DIN 933
8	3142160	4	SELF-LOCKING NUT M16 DIN 985
9	9987308.0	2	SCREW COUPLING GE 8 LR
10	7128509	1	HYDR. HOSE 2STC 6 A35 A35 L=3800
11	7128510	1	HYDR. HOSE 2STC 6 A35 A35 L=4500
12	7320525	2	SCREW COUPLING GE 8 LR 3/8”
13	3360757	2	SETSCREW M8 x 8 Ø0,7mm BORE



OPTION: ELECTRIC-HYDRAULIC REMOTE CONTROL

No. 9821010.0

Pos.	Code	Qty.	Description
1	7784550	1	JUNCTION BOX 256
2	7784600	1	JUNCTION BOX 318
3	7779390	2	SWITCH 6-POLE (mono)
4	-	1	SWITCH 3-POLE (one fixed, one spring-mounted)
5	7714370	7	DIODE
6	7742670	1	CROWN STRIP 6qmm 12P
7	7740220	40	CORE END COVER 1 ½
8	7774180	1	PLUG 7-POLE
9	1960042	1	CABLE 2x2.5qmm L=3500
10	1960036	1	CABLE 12x1.5qmm L=10000
11	1960012	1	CABLE 3x1qmm L=1680
12	1960010	1	CABLE 2x1qmm L=1400
13	7788302	4	ROPE SWIVEL PG 7
14	7788402	4	NUT PG 7
15	7788305	2	ROPE SWIVEL PG9
16	7788405	2	NUT PG9
17	7788311	2	ROPE SWIVEL PG13.5
18	7788411	2	NUT PG13.5
19	7229005	1	SELECTOR BLOCK
19a	7229416	1	BLOCK SINGLE NG6
19b	7229216	1	4/2 VALVE 12V
19c	7229800	4	CAPSCREW M5 x 30
19d	7229110	1	PRESSURE-RELIEF VALVE
19e	7229389	1	PLUG GREY
20	7229008	1	BLOCK TRIPLE
20a	7229406	1	BLOCK TRIPLE
20b	7229305	3	NON-RETURN VALVE
20c	7229205	3	4/3 VALVE 12V
20d	7229820	12	CAPSCREW M5 x 70
20e	7229388	3	PLUG BLACK
20f	7229389	3	PLUG GREY
21	7320578	2	SCREW NIPPLE GE 15 LR
22	7321449	2	SCREW PIECE ROS-A-15 LR
23	9820232.0	1	MOUNTING PLATE
24	7320556	4	NIPPLE GE 12 LR ½”
25	9987302.0	4	NIPPLE GE 8 LR 3/8” TREATED
26	3360757	4	SETSCREW M8x8 0,7 mm BORE
27	7320267	4	COUPLING AT RIGHT ANGLES ERW 12 L
28	7320554	2	NIPPLE GE 12 LR
29	7321443	2	NIPPLE ROS 12 LR 3/8”
30	7390696	1	FLOW CONTROL VALVE DV 10-07-1.0-P
31	3309560	2	SCREW M5 x 20 DIN 84
32	3142050	2	SELF-LOCKING NUT M5 DIN 985
33	3027536	4	BOLT M8 x 16 DIN 933
34	3726080	4	LOCKWASHER M8
35	0340138	1	HYDR. TUBE Ø12x1,5 L=150
36	7320062	2	CUTTING RING D 12
37	7321361	2	NUT M12
38	7320246	1	NIPPLE ERL 12 L
39	7320267	1	NIPPLE ERT 12 L
40	7321442	1	NIPPLE ROS-A-12 L
41	7321438	1	NIPPLE ROS-A-10 L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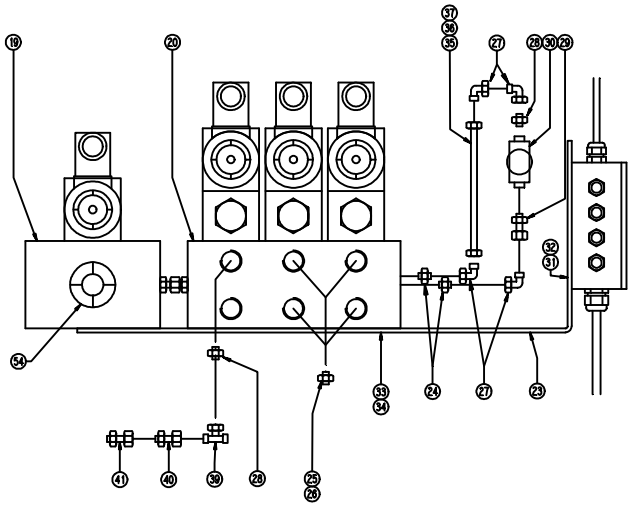
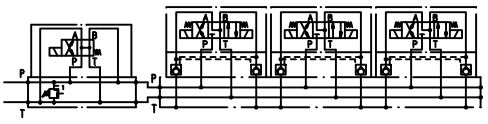
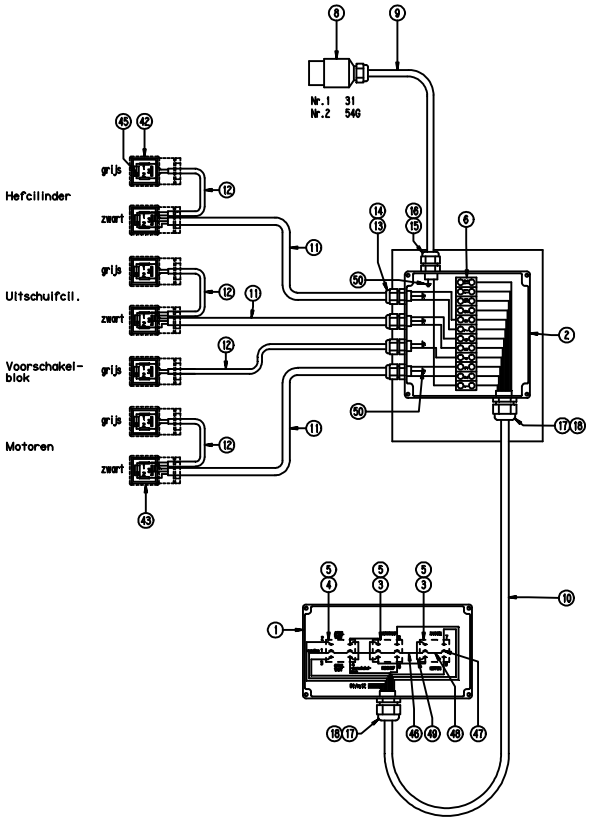
Voorschakelblok
Motoren
Uitschuifcil.
Hefcilinder

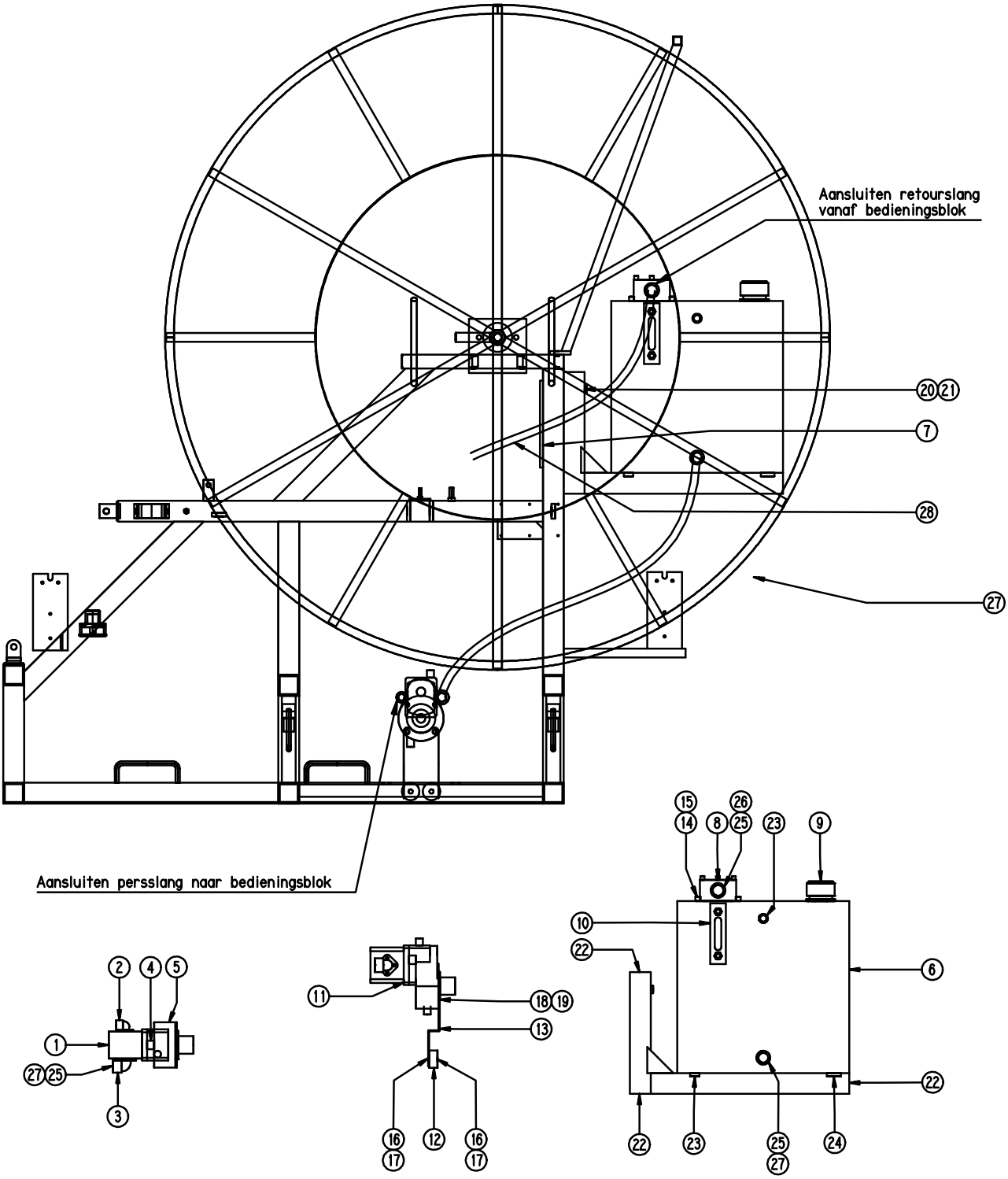





Nr.1 31
Nr.2 54G
Hefcilinder
Uitschuifcil.
Voorschakel-
blok
Motoren
grijs
zwart

OPTION: INDEPENDENT HYDRAULIC PACK
No. 9821011.0

Pos.	Code	Qty.	Description
1	7250620	1	PUMP PLP 20-20 D 082 E2
2	7210240	1	PUMP FLANGE AT RIGHT ANGLES 1GA12
3	7210244	1	PUMP FLANGE AT RIGHT ANGLES 2GA34
4	6540235	1	COUPLING BOX BF2 14T
5	6540620	1	GEARBOX ML32-2-1/3
6	9820235.0	1	HYDRAULIC TANK + SUPPORT
7	9820236.0	1	CLAMPING PLATE
8	7210852	1	RETURN FILTER MPF 1001 P25 (complete)
	7210140		FILTER ELEMENT CR 50/3
9	7210851	1	FILLER CAP TA80FL10B00C80
10	7210853	1	GAUGE GLAS
11	3310670	4	BOLT M8x25 DIN912
12	7907358	2	BUFFER Ø50 x 24
13	9820234.0	1	GEARBOX MOUNTING PLATE
14	3027544	2	BOLT M8 x 25 DIN 933
15	3765080	2	WASHER M8 DIN 125A
16	3142100	4	SELF-LOCKING NUT M10 DIN 985
17	3765100	4	WASHER M10 DIN 125A
18	3027580	2	BOLT M10 x 16 DIN 933
19	3726100	2	LOCKWASHER M10 DIN 127B
20	3060694	2	BOLT M12 x 160 DIN 931
21	3142120	2	SELF-LOCKING NUT M12 DIN 985
22	7934600	3	CAP 60 x 60 x 4
23	7320115	2	PLUG DP ½”
24	7320120	1	PLUG DP ¾”
25	7320600	3	SCREW COUPLING GE 22 LR
26	7320780	1	REDUCING COUPLING GRV-A-22/12 L
27	7128528	1	HYDR. HOSE 2SN 20 A05 A35 L=1900


Aansluiten retourslang
vanaf bedieningsblok
Aansluiten persslang naar bedieningsblok
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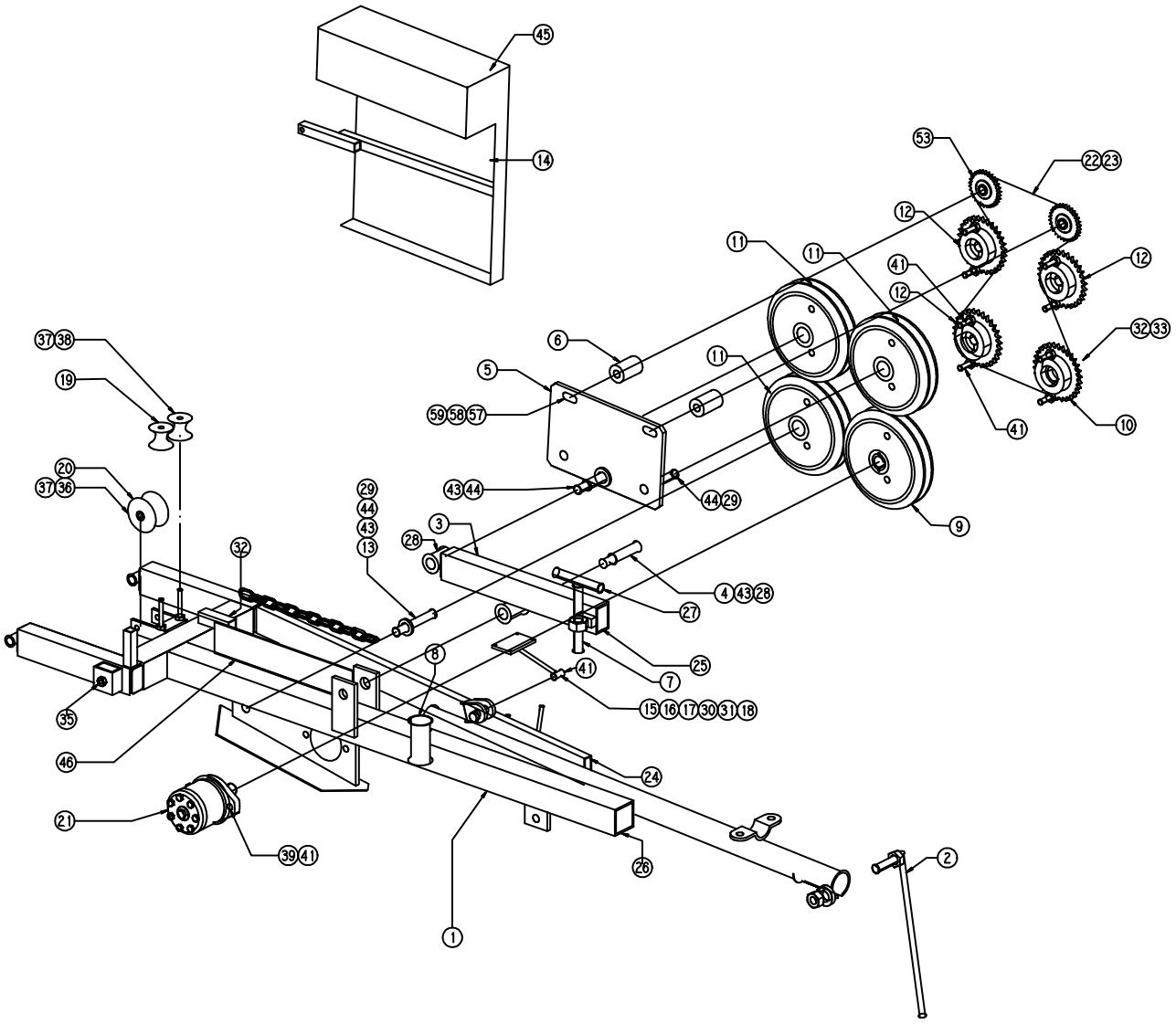
OPTION: SIDEARM WITH 4 DRIVEN WHEELS

No. 9821014.0

Pos.	Code	Qty.	Description
1	9820109.0	1	SIDEARM
2	9820134.0	1	CLAMPING SCREW GUIDE ARM
3	9820238.0	1	PRESSURE ROLL LEVER
4	9015028.0	1	BOLT
5	9820239.0	1	PIVOTING PART PRESSURE ROLL
6	9820241.0	2	ROLL
7	9820142.0	1	ADJUSTING BOLT PRESSURE ROLL
8	9820150.0	1	COMPRESSION SPRING PRESSURE ROLL
9	9820014.0	1	DRIVE WHEEL MOTORSIDE Ø200
10	9820011.0	1	SPROCKET MOTORSIDE HOLE Ø35
11	9820013.0	3	DRIVE WHEEL Ø200 + BEARING
12	9820012.0	3	SPROCKET DRIVEN
13	9820157.0	1	SHAFT DRIVEN WHEEL
14	9820240.0	1	CHAIN COVER
15	9820152.0	1	SUPPORT METRE COUNTER
16	8200156	1	METRE COUNTER
17	8200152	1	WHEEL FOR METRE COUNTER
18	4830140	1	SPRING d=1 D=10 Lbo=60 RVS
19	8257549	2	GUIDE ROLLER SMALL Ø50
20	8257550	1	GUIDE ROLLER BIG Ø75
21	7240755	1	HYDRAULIC MOTOR T-SERIE 157cc
22	6100280	1	ROLLER CHAIN ½” x 5/16” 64 ROLLS
23	6180080	1	MASTER LINK ½”
24	7934590	1	CAP 60 x 20 x 2
25	7934595	1	CAP 60 x 40 x 4
26	7934600	1	CAP 60 x 60 x 4
27	7934259	2	CAP Ø19 x 1,5
28	4110089	2	GREASE NIPPLE M8
29	3230390	3	SPLIT PIN Ø5 x 40 DIN 94
30	3309480	2	BOLT M4 x 16 DIN 933
31	3142040	2	SELF-LOCKING NUT M4 DIN 985
32	3027540	2	BOLT M8 x 20 DIN 933
33	3750282	1	WASHER M8 DIN 9021
34	3027590	1	BOLT M10 x 35 DIN 933
35	3060638	1	BOLT M10 x 80 DIN 931
36	3142100	3	SELF-LOCKING NUT M10 DIN 985
37	3765100	2	WASHER M10 DIN 125A
38	3027636	2	BOLT M12 x 40 DIN 933
39	3142120	9	SELF-LOCKING NUT M12 DIN 985
40	3142200	3	SELF-LOCKING NUT M20 DIN 985
41	3765200	4	WASHER M20 DIN 125A
42	-		
43	7975135	1	STICKER “QUETSCHGEFAHR”
44	6240404	2	SPROCKET ½” z=18
45	3060768	2	BOLT M16 x 120 DIN 931
46	3142160	2	SELF-LOCKING NUT M16 DIN 985
47	3765160	8	WASHER M16 DIN 125A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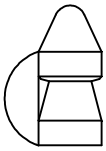
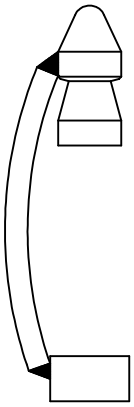
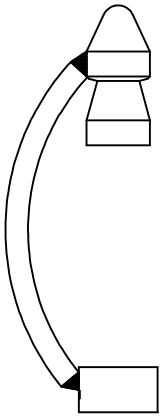
OPTION: NOZZLES (SURVEY)



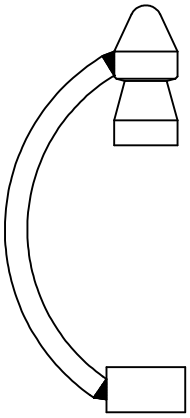
9820223.0
ø 60



9820224
ø 75



9820225.0
ø 100

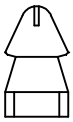


9820226.0
ø 125

1+12

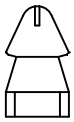
(040354)
8200420
15°

1+12



(040355)
8200421
30°

1+3 gaten / Löcher / holes / trous



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30°

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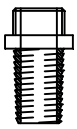

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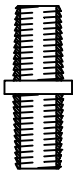
8200361



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