Instruction Manual

NVAM

Leveling Disc Harrow Remote Control - Spring

NVAP

Leveling Disc Harrow Remote Control - Piston

BALDAN

Presentation

We thank you for your preference and congratulate you on the excellent choice you have just made, as you have purchased a product manufactured with **BALDAN IMPLEMENTOS AGRÍCOLAS S/A technology.**

This manual will guide you through the necessary procedures from its acquisition to the operational procedures for use, safety and maintenance.

BALDAN guarantees that it has delivered this implement to the dealer in its entirety and in perfect condition.

The dealer undertook the responsibility for its safekeeping and conservation during the period it was in their possession, and also for the assembly, retightening, lubrication, and general overhaul.

During technical delivery, the dealer must advise the user customer on maintenance, safety, their obligations in the event of technical assistance, strict observance of the technical assistance, strict observance of the warranty and reading of the instruction manual.

Any request for technical assistance under warranty should be made to the dealer from whom it was purchased.

We reiterate the necessity of carefully reading the warranty certificate and the observance of all items in this manual, because by doing so you will be increasing the lifespan of your implemen.

Instruction Manual

NVAM

Leveling Disc Harrow Remote Control - Spring

NVAP

Leveling Disc Harrow Remote Control - Piston

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.
CNPJ: 52.311.347/0009-06
Insc. Est.: 441.016.953.110

Scan the QR Code on the nameplate of your equipment and access this Instruction Manual online.

BALDAN

Index

▪ Index

▪ Baldan Warranty

BALDAN IMPLEMENTOS AGRÍCOLAS S/A, guarantees the normal operation of the implement to the reseller for a period of 6 (six) months from the date of delivery on the resale invoice to the first end consumer.

During this period **BALDAN** undertakes to repair defects in material and or workmanship of its responsibility, with labor, freight and other expenses being the responsibility of the dealer.

During the warranty period, the request and replacement of any defective parts should be made to the dealer in the region, who will send the defective part for analysis at **BALDAN.**

When such a procedure is not possible and the dealer's capacity for resolution has been exhausted, the dealer will request support from **BALDAN's** Technical Assistance, through a specific form distributed to the dealers.

After **BALDAN's** Technical Assistance has analyzed the replaced items and concluded that they are not under warranty, then the dealer will be responsible for the costs related to the replacement, as well as the costs of material, travel including lodging and meals, accessories, lubricants used, and other expenses arising from the call to Technical Assistance, and **BALDAN** is authorized to make the respective billing on behalf of the dealer.

Any repairs made to the product that is within the warranty period by the dealer will only be authorized by **BALDAN** upon prior presentation of a budget describing the parts and labor to be executed.

It is excluded from this term the product that undergoes repairs or modifications in officials that do not belong to the **BALDAN** dealer network, as well as the application of non-genuine parts or components to the user's product.

This warranty will become void when it is found that the defect or damage is the result of improper use of the product, failure to follow instructions, or inexperience of the operator.

It is agreed that this warranty does not cover tires, polyethylene tanks, cardans, hydraulic components, etc., which are equipment guaranteed by their manufacturers.

The manufacturing and or material defects, object of this warranty term, will not constitute, under any hypothesis, reason for rescission of the purchase and sale contract, or for indemnity of any nature.

BALDAN reserves the right to alter and/or improve the technical characteristics of its products, without prior notice, and without obligation to do so with products previously manufactured.

▪ General Information

• To the owner

BALDAN IMPLEMENTOS AGRÍCOLAS S/A, is not responsible for any damage caused by accident resulting from the use, transport or improper or incorrect storage of your implement, either by negligence and/or inexperience of any person.

Only people who have full knowledge of the tractor and the implement should transport and operate them.

BALDAN is not responsible for any damage caused in unforeseeable situations or outside the normal use of the implement.

Improper handling of this equipment can result in serious or fatal accidents. Before putting the equipment into operation, carefully read the instructions contained in this manual. Make sure that the person responsible for the operation is instructed in the correct and safe handling. Also make sure that the operator has read and understood the product's instruction manual.

⚠ ATTENTION

NR-31 - SAFETY AND HEALTH AT WORK IN AGRICULTURE, LIVESTOCK FARMING, FORESTRY AND AQUACULTURE.

This Regulating Norm has the objective of establishing the precepts to be observed in the organization and in the work environment, in a way that is compatible with the planning and development of the activities of agriculture, livestock, forestry, forest exploration, and aquiculture with the safety and health and environment of the work.

MR. OWNER OR OPERATOR OF THE EQUIPMENT.
Read and comply carefully with the contents of NR-31.

For more information, visit the website and read NR-31 in full.
http://portal.mte.gov.br/legislacao/normas-regulamentadoras-1.htm

▪ Safety standards

• To the operator

THIS SYMBOL INDICATES AN IMPORTANT SAFETY WARNING. IN THIS MANUAL, WHENEVER YOU FIND IT, PLEASE READ THE FOLLOWING MESSAGE CAREFULLY AND BE AWARE OF THE POSSIBILITY OF PERSONAL ACCIDENTS.

⚠ ATTENTION

Read the instruction manual carefully to learn the recommended safety practices.

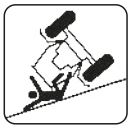
⚠ ATTENTION

Only start operating the tractor when you are properly seated and with your seat belt fastened.

⚠ ATTENTION

Do not transport people on the tractorr in or on the equipment.

⚠ ATTENTION



There is a risk of serious injury from tipping over when working on sloping ground.
Do not use excessive speed.

⚠ ATTENTION

Do not work with the tractor if the front is without enough ballast for the rear equipment. If there is a tendency for lifting, add weights or ballasts to the front or front wheels.

⚠ ATTENTION

Before doing any maintenance on your equipment, make sure it is properly stopped. Avoid being run over.

▪ Safety standards

⚠ ATTENTION FOLLOW ALL THE RECOMMENDATIONS, WARNINGS AND SAFE PRACTICES RECOMMENDED IN THIS MANUAL, UNDERSTAND THE IMPORTANCE OF YOUR SAFETY. ACCIDENTS CAN LEAD TO DISABILITY OR EVEN DEATH. REMEMBER, ACCIDENTS CAN BE AVOIDED!

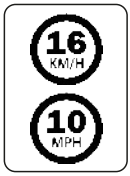
⚠ ATTENTION

Do not make adjustments while the NVAM/NVAP is running. When carrying out any work on the NVAM/NVAP, switch off the tractor first.
Use suitable tools.

⚠ ATTENTION

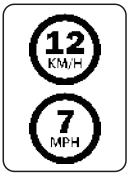
When looking for a possible leak in the hoses, use a piece of cardboard or wood, never use your hands. Avoid incising fluid into the skin.

⚠ ATTENTION



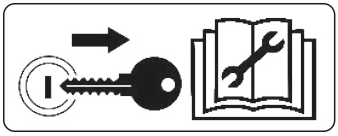
When transporting the NVAM/NVAP, do not exceed a speed of 16 Km/h or 10 MPH, to avoid the risk of damage and accidents.

⚠ ATTENTION



When working with the NVAM/NVAP, do not exceed a speed of 12 Km/h or 7 MPH, to avoid the risk of damage and accidents.

⚠ ATTENTION



Remove the ignition key before carrying out any maintenance on the NVAM/NVAP. Protect yourself from possible injury or death, caused by an unforeseen departure of the NVAM/NVAP. If the NVAM/NVAP is not properly hitched, do not start the tractor.

⚠ ATTENTION

Hydraulic oil under pressure can cause serious injury if it leaks.
Periodically check the condition of the hoses. If there are signs of leaks, replace it immediately. Before connecting or disconnecting the hydraulic hoses, relieve the pressure in the system by operating the control with the tractor switched off.

▪ Safety standards

⚠ ATTENTION

Always keep access and work areas clean of residue such as oil or grease, as this can cause accidents.

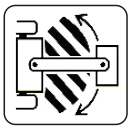
⚠ ATTENTION

Before starting work or transporting the NVAM/ NVAP, check whether there are any people or obstructions near it.

⚠ ATTENTION

Avoid heating parts near fluid lines.
Heating can cause the material to become brittle, break and the pressurized fluid to escape, which can cause burns and injuries.

⚠ ATTENTION



Keep the hinge area free while the NVAM/ NVAP is in operation. On sharp bends avoid the tractor wheels touching the header.

⚠ ATTENTION

Never weld the assembled wheel to the tire, as the heat can cause the air pressure to rise and the tire to explode.
When inflating the tire, stand next to the tire, never in front of it.
When inflating the tire, always use a containment device (inflation jaw).

⚠ ATTENTION

Always keep away from the NVAM/ NVAP active elements (discs), as they are sharp and can cause accidents.
When carrying out any work on the discs, wear safety gloves on your hands.

⚠ ATTENTION

Disposing of waste improperly affects the environment and ecology, as it pollutes rivers, canals and the soil.
Find out the correct way to recycle or dispose of waste.

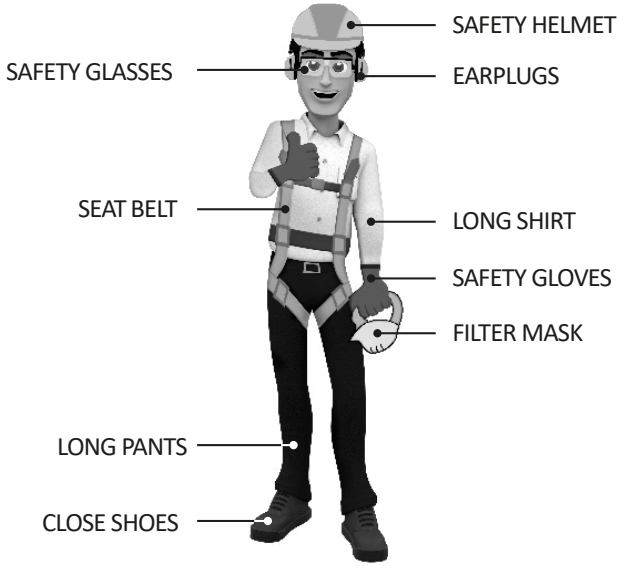
PROTECT THE ENVIRONMENT!

▪ Safety standards

• PPE equipment

ATTENTION | **DO NOT WORK WITH THE NVAM/NVAP WITHOUT FIRST PUTTING ON THE EPIS (SAFETY EQUIPMENT). IGNORING THIS WARNING COULD CAUSE DAMAGE TO YOUR HEALTH, SERIOUS ACCIDENTS OR DEATH.**

When carrying out certain procedures with the **NVAM/NVAP**, wear the following PPE (Safety Equipment):



IMPORTANT

Safety practices must be carried out at all stages of working with the NVAM/NVAP, thus avoiding accidents such as the impact of objects, falls, noise, cuts and ergonomics, i.e. the person responsible for operating the NVAM/NVAP is subject to internal and external damage to their body.

NOTE | **All PPE (Safety Equipment) must have a certificate of authenticity.**

▪ Warnings

⚠ When operating the NVAM/NVAP, do not allow people to stand too close to or on it.

⚠ Never stand near a NVAM/NVAP in operation; there is an imminent risk of trampling and lacerations.

⚠ Wear PPE when carrying out any maintenance work.

⚠ Before connecting or disconnecting the hydraulic hoses, relieve the system pressure by operating the control with the tractor switched off.

⚠ Periodically check the condition of the hydraulic hoses. If there are signs of an oil leak, replace the hose immediately, as oil works under high pressure and can cause serious accidents.

⚠ Don't wear clothes that are too loose, as they may get tangled in the NVAM/NVAP.

⚠ When starting the tractor engine, be properly seated in the operator's seat and fully aware of the correct and safe handling of both the tractor and NVAM/NVAP. Always put the gearshift lever in the neutral position, disconnect the PTO control gear and put the hydraulic controls in the neutral position.

⚠ Do not start the tractor engine in a closed space without adequate ventilation, as the exhaust gases are harmful to health.

⚠ When maneuvering the tractor to hitch the NVAM/NVAP, make sure you have the necessary space and that no one is too close, always maneuver at low speed and be prepared to brake in an emergency.

⚠ Do not make adjustments with the NVAM/NVAP in operation.

⚠ When working on slopes, proceed with caution and always try to maintain the necessary stability. If you start to feel unbalanced, reduce acceleration, turn the wheels to the side of the slope and never lift the NVAM/NVAP.

⚠ Always drive the tractor at speeds compatible with safety, especially when working on rough soil or slopes, always keep the tractor hitched.

⚠ When driving the tractor on roads, keep the brake pedals connected.

⚠ Do not operate the tractor with a light rear end. If the rear has a tendency to lift, add more weight to the rear wheels.

⚠ When leaving the tractor, put the gearshift lever in neutral and apply the parking brake. Never leave the NVAM/NVAP hitched to the tractor in the raised position of the hydraulic system.

⚠ Any maintenance on the NVAM/NVAP must be carried out when it is stationary and the tractor is switched off.

⚠ Do not transport or work with the NVAM/NVAP near obstacles, rivers or streams.

▪ Warnings

⚠ Do not drive on highways, especially at night. Use warning signs all along the route.

⚠ If you need to travel with the GSPCR on the roads, check with the traffic authorities.

⚠ Do not allow people to use the NVAM/NVAP who have not been trained, i.e. who do not know how to operate it correctly.

⚠ People may not be transported in self-propelled machines and implements.

⚠ Changes to the original characteristics of the NVAM/NVAP are not permitted, as they may alter the safety, operation and affect service life.

⚠ Read all the safety information in this manual and on the NVAM/NVAP carefully.

⚠ Read or explain all the procedures in this manual to an operator who cannot read.

⚠ Always check that the NVAM/NVAP is in perfect working order. In the event of any irregularity that may interfere with the operation of the NVAM/NVAP, have it serviced before any work or transportation is carried out.

⚠ Maintenance and especially inspection in NVAM/NVAP risk zones should only be carried out by a trained or qualified worker, observing all the safety guidelines. Before starting maintenance, disconnect all drive systems from the NVAM/NVAP.

⚠ Periodically check all the components of NVAM/NVAP before using it.

⚠ Depending on the equipment used and the working conditions in the field or in maintenance areas, precautions are necessary. Baldan has no direct control over precautions, so it is the owner's responsibility to put safety procedures into practice while working with the NVAM/NVAP.

⚠ Check the minimum tractor power recommended for each NVAM/NVAP model. Only use a tractor with power and ballast compatible with the load and topography of the soil.

⚠ When transporting the NVAM/NVAP, travel at speeds compatible with the soil and never more than 16 km/h. This reduces maintenance and consequently increases the NVAM/NVAP lifespan.

⚠ Alcoholic beverages or certain medications can cause a loss of reflexes and alter the operator's physical condition. Therefore, never operate this NVAM/NVAP while using these substances.

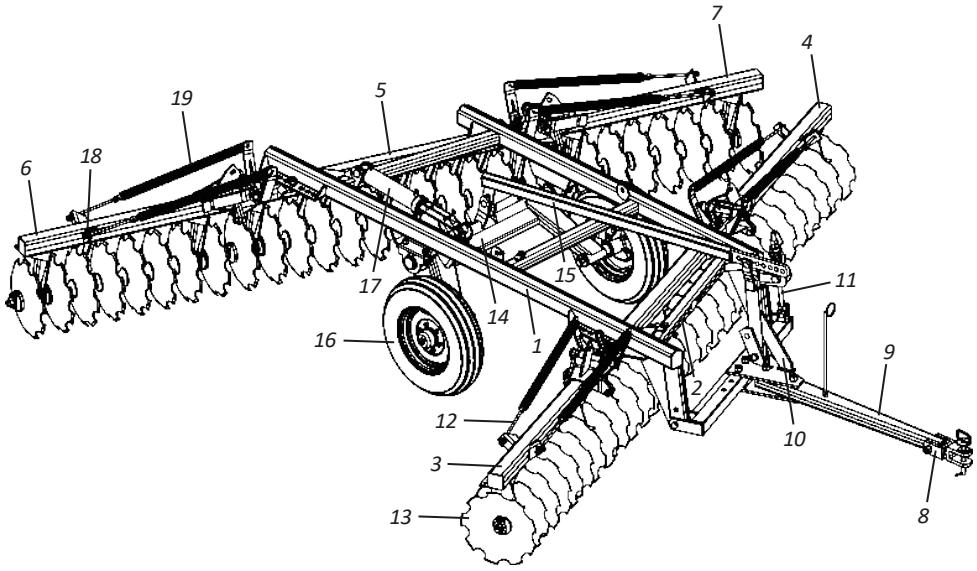
⚠ Read or explain all the procedures in this manual to the user who cannot read.

If you have any questions, please contact After Sales.
Telefone: 0800-152577 / E-mail: posvenda@baldan.com.br

▪ Components

• NVAM - Leveling Disc Harrow Remote Control - Spring

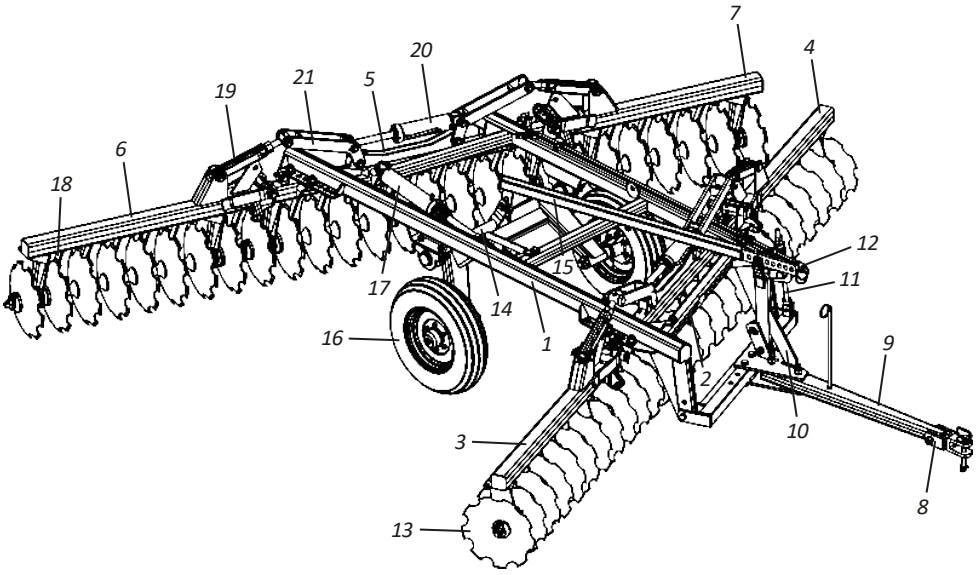
1. Stiener
2. Center front frame
3. Right side front frame
4. Left side front frame
5. Center rear frame
6. Right side rear frame
7. Left side rear frame
8. Shackle
9. Coupling header
10. Stabilizer bar support
11. Stabilizer rod
12. Spring tie rod
13. Discs
14. Wheel articulation shaft
15. Lifter stabilizer bar
16. Tires
17. Wheel articulation piston
18. Cleaners
19. Spring



▪ Components

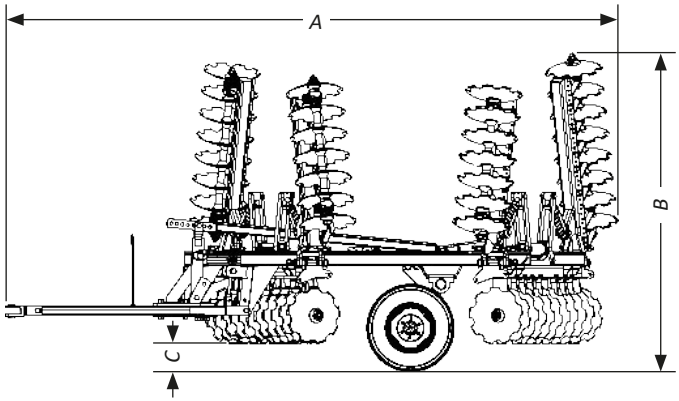
• NVAP - Leveling Disc Harrow Remote Control - Piston

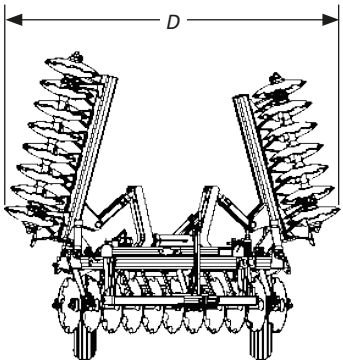
1. Stiener
2. Center front frame
3. Right side front frame
4. Left side front frame
5. Center rear frame
6. Right side rear frame
7. Left side rear frame
8. Shackle
9. Coupling header
10. Stabilizer bar support
11. Stabilizer rod
12. Hydraulic hoses
13. Discs
14. Wheel articulation shaft
15. Lifter stabilizer bar
16. Tires
17. Wheel articulation piston
18. Cleaners
19. Articulation bar
20. Articulation piston
21. Articulation lever bar

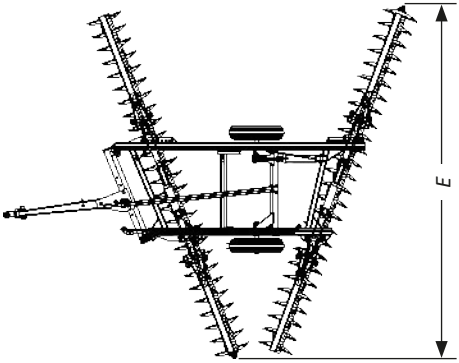


▪ Dimensions

• NVAM/NVAP







Model	Nr of Discs	Spacing: 175 and 200 mm				Spacing:	
						175 mm	200 mm
		Measure A (mm)	Measure B (mm)	Measure C (mm)	Measure D (mm)	Measure E (mm)	Measure E (mm)
NVAM	36	5450	1825	120	3150	3050	-
NVAM	40	5450	2035	120	3150	3415	-
NVAM/NVAP	42	5450	2245	120	3150	3580	3985
NVAM/NVAP	44	5450	2455	120	3150	3750	4362
NVAM/NVAP	48	5450	2665	120	3150	4100	4740
NVAM/NVAP	52	5450	2875	120	3150	4450	5116
NVAM/NVAP	56	5450	3085	120	3150	4800	-

▪ Specifications

• NVAM - Leveling Disc Harrow Remote Control - Spring

Model	Disc Spacing (mm)	Nr of Discs	Working width (mm)	Working Depth (mm)	Approx. Weight (Kg)		Tractor Power (HP)
					20"	22"	
NVAM	175	36	3000	50 - 150	1557	1688	90 à 95
		40	3425		1600	1741	95 à 110
		42	3600		1687	1828	110 à 118
		44	3760		1714	1859	115 à 123
		48	4100		1885	2047	125 à 135
		52	4450		1953	2124	135 à 145
		56	4810		1951	2136	145 à 150

Model	Disc Spacing (mm)	Nr of Discs	Working width (mm)	Working Depth (mm)	Approx. Weight (Kg)		Tractor Power (HP)
					20"	22"	
NVAM	200	42	4100	50 - 150	1820	1988	118 à 126
		44	4300		1809	1947	123 à 132
		48	4700		1919	2081	135 à 145
		52	5100		1958	2129	145 à 156

Axle diameter (ø) ..... 1.1/4"
Disc diameter (ø) ..... 20" - 22"

Baldan reserves the right to change and/or improve the technical characteristics of its products, without prior notice, and without obligation to do so with previously manufactured products. The technical specifications are approximate and are given under normal working conditions.

INTENDED USE OF NVAM

- The **NVAM** was developed with high-strength tubular beams and high quality standards that allow this harrow to speed up operations and guarantee ideal control of the working depth through its tires interconnected to the pistons.
- The **NVAM** must only be driven and operated by a properly trained operator.

UNAUTHORIZED USE OF NVAM

- To avoid damage, serious accidents or death, DO NOT carry people on any part of the **NVAM**.
- You may NOT use the **NVAM** to attach, tow or push other implements or accessories.
- The **NVAM** must NOT be used by an inexperienced operator who does not know all the driving, control and operating techniques.

▪ Specifications

• NVAP - Leveling Disc Harrow Remote Control - Piston

Model	Disc Spacing (mm)	Nr of Discs	Working width (mm)	Working Depth (mm)	Approx. Weight (Kg)		Tractor Power (HP)
					20"	22"	
NVAP	175	44	3760	50 - 150	2006	2082	115 à 123
		48	4100		2018	2180	125 à 135
		52	4450		2096	2267	135 à 145
		56	4810		2200	2386	145 à 150

Model	Disc Spacing (mm)	Nr of Discs	Working width (mm)	Working Depth (mm)	Approx. Weight (Kg)		Tractor Power (HP)
					20"	22"	
NVAP	200	42	4100	50 - 150	1956	2097	118 à 126
		44	4300		1991	2136	123 à 132
		48	4700		2070	2232	135 à 145
		52	5100		2183	2354	145 à 156

Axle diameter (ø) ..... 1.1/4"
Disc diameter (ø) ..... 20" - 22"

Baldan reserves the right to change and/or improve the technical characteristics of its products, without prior notice, and without obligation to do so with previously manufactured products. The technical specifications are approximate and are given under normal working conditions.

INTENDED USE OF NVAP

- The **NVAP** was developed with high-strength tubular beams and high quality standards that allow this harrow to speed up operations and guarantee ideal control of the working depth through its tires interconnected to the pistons.
- The **NVAP** must only be driven and operated by a properly trained operator.

UNAUTHORIZED USE OF NVAP

- To avoid damage, serious accidents or death, DO NOT carry people on any part of the **NVAP**.
- You may NOT use the **NVAP** to attach, tow or push other implements or accessories.
- The **NVAP** must NOT be used by an inexperienced operator who does not know all the driving, control and operating techniques.

▪ Assembly

The **NVAM/NVAP** leaves the factory disassembled. To assemble it, follow the instructions below:

⚠ The assembly of the **NVAM/NVAP** must be installed by the resale, using people who are trained, enabled and qualified for this job.

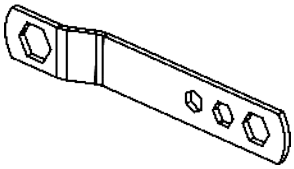
⚠ Before starting to assemble the **NVAM/NVAP**, look for an ideal location, where it is easy to identify the parts and assemble them.

⚠ Do not wear loose clothing, as these may become entangled in the **NVAM/NVAP**.

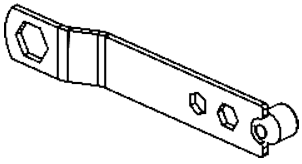
⚠ Use PPE (Safety Equipment).

• Wrench set

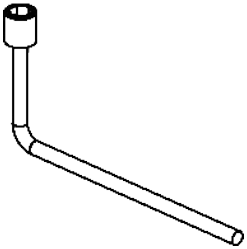
When assembling, disassembling or servicing the **NVAM/NVAP**, use the wrench set supplied with the grid. The wrench set consists of:



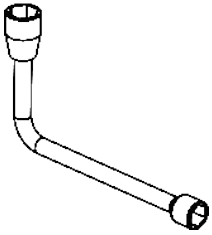
WRENCH FOR HEX NUT OF 1.1/4", 1", 3/4" AND 5/8"



WRENCH FOR HEX NUT OF 5/8", 3/4" AND 1.1/4"



"L" WRENCH FOR HEX NUT OF 5/8"



"L" WRENCH FOR HEX NUT 3/4" AND 1"

WRENCH FOR HEX NUT 3/8" AND 1/2"

⚠ ATTENTION | **If any wrench is lost or broken, get another one immediately. Always use original Baldan wrenches.**

▪ Assembly

• Assembling the disc section

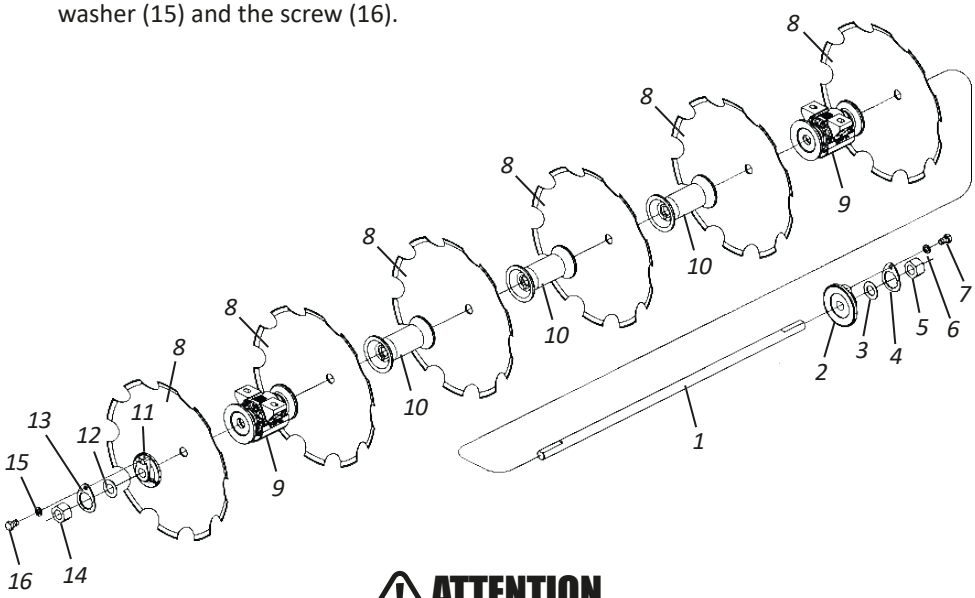
When starting to assemble the **NVAM/NVAP**, always start with the disk set, proceed as follows:

01 - Place the concave thrust washer (2), flat washer (3), lock (4), nut (5) on the shaft (1), securing it with the pressure washer (6) and screw (7).

02 - Then, place the disc (8), bearing (9), another disc (8), separator spool (10) on the shaft (1) and so on.

03 - When the set is complete with all discs, bearings, separator spools, place the convex thrust washer (11), flat washer (12), lock (13), nut (14), tightening with the wrench until the entire the set.

04 - Once this is done, fit the disc assembly and tighten the nut (14) using impacts. When you are almost achieving maximum tightness, adjust the lock (13) with the convex washer (11), always tightening the nut until the hole matches, fix it with the pressure washer (15) and the screw (16).



⚠ ATTENTION

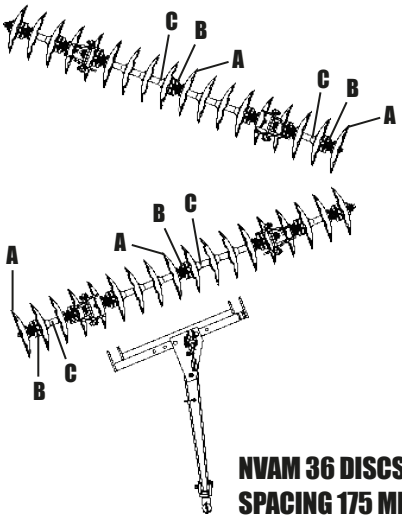
During the first week of using the NVAM/NVAP, retighten all disc section bolts and nuts daily, then retighten them periodically.

IMPORTANT | **Check the correct side of the separator spools and bearings, according to the concavity of the discs.**

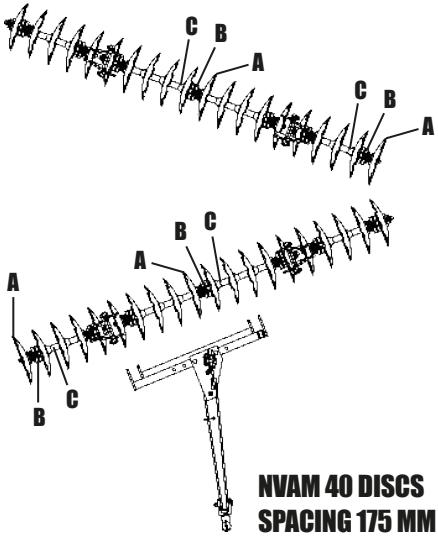
▪ Assembly

• Assembling the disc sections - Part I

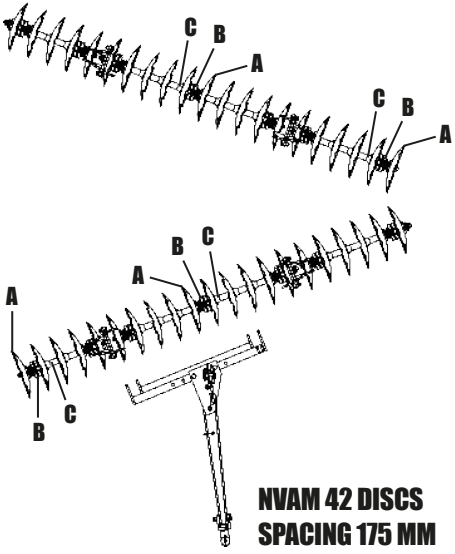
Check out the assemblies of the **NVAM/NVAP** 36, 40 and 42 disc sections below.



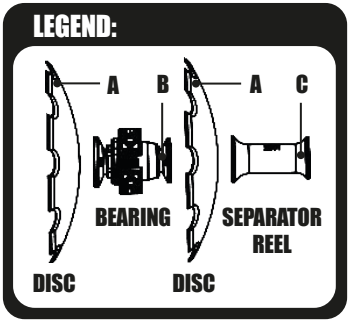
NVAM 36 DISCS
SPACING 175 MM



NVAM 40 DISCS
SPACING 175 MM



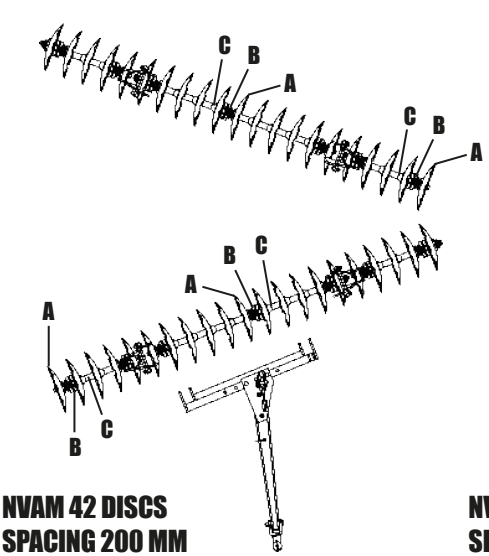
NVAM 42 DISCS
SPACING 175 MM



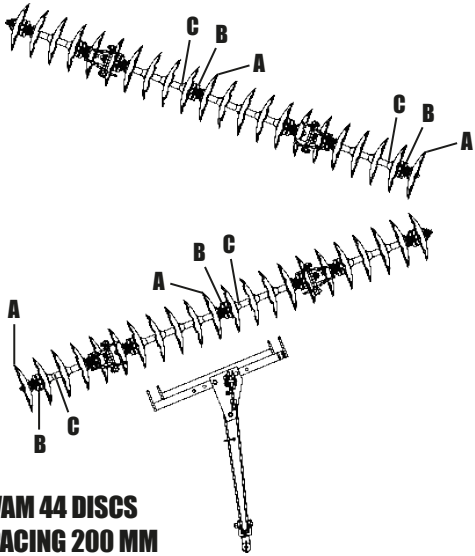
▪ Assembly

• Assembling the disc sections - Part II

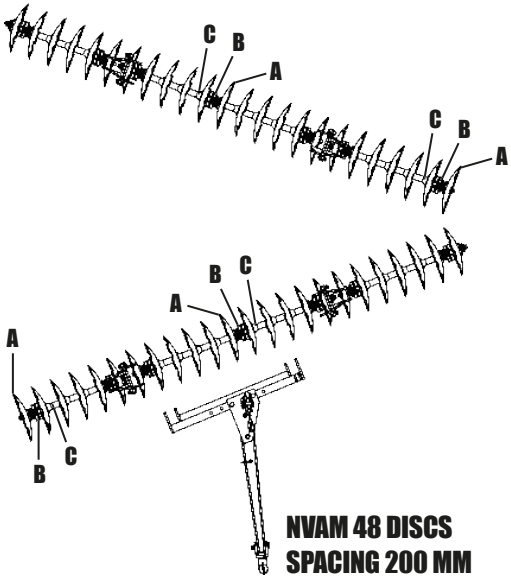
Check out the assemblies of the **NVAM/NVAP** 42, 44 and 48 disc sections below.



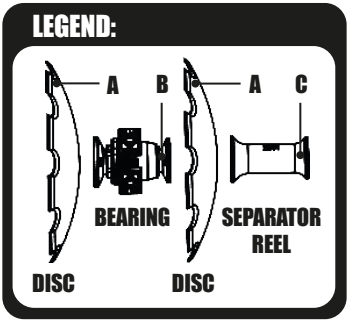
NVAM 42 DISCS
SPACING 200 MM



NVAM 44 DISCS
SPACING 200 MM



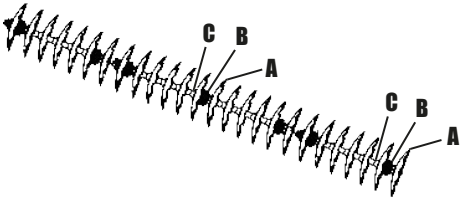
NVAM 48 DISCS
SPACING 200 MM

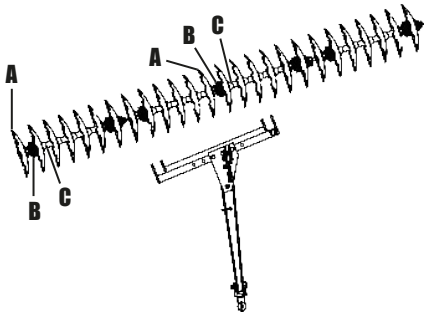


▪ Assembly

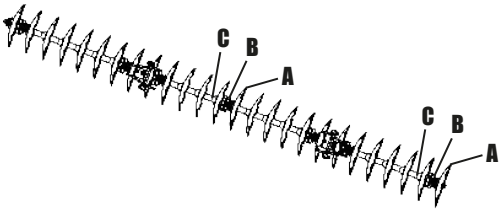
• Assembling the disc sections - Part III

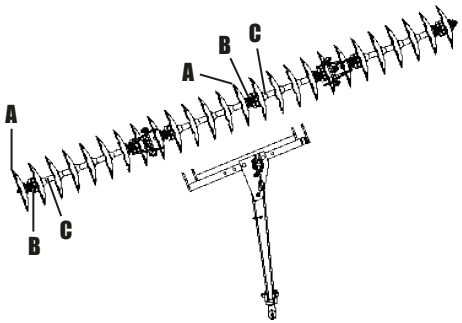
Check out the assemblies of the **NVAM/NVAP** 52 and 56 disc sections below.



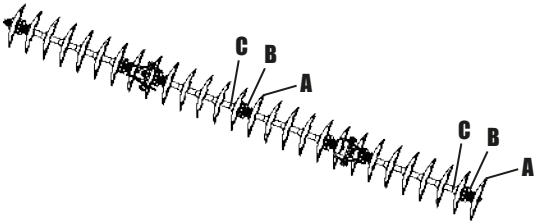


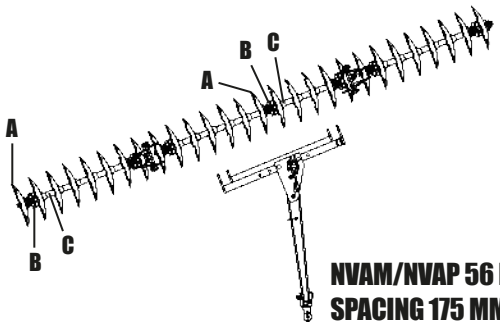
NVAM/NVAP 52 DISCS
SPACING 175 MM



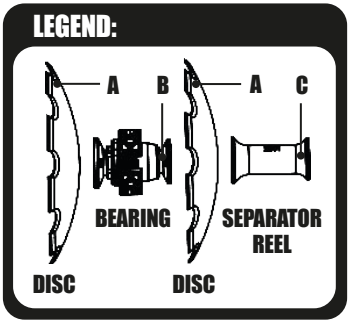


NVAM/NVAP 52 DISCS
SPACING 200 MM





NVAM/NVAP 56 DISCS
SPACING 175 MM

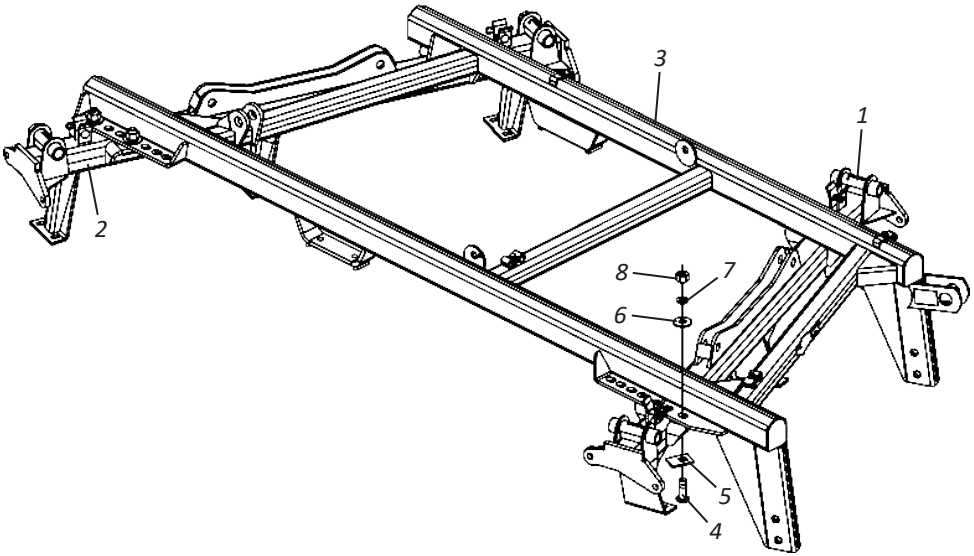


▪ Assembly

• Assembling the central frames on the upright (NVAM/NVAP)

Start assembling the **NVAM/NVAP** from the central frames, to do this, proceed as follows:

01 - Place the front center frame (1) and the rear center frame (2) on a flat, clean place.
02 - Then, place the mount (3) over the front central (1) and rear central (2) frames, fixing them using the screw (4), lock (5), flat washer (6), pressure washer (7) and nut (8).



▪ Assembly

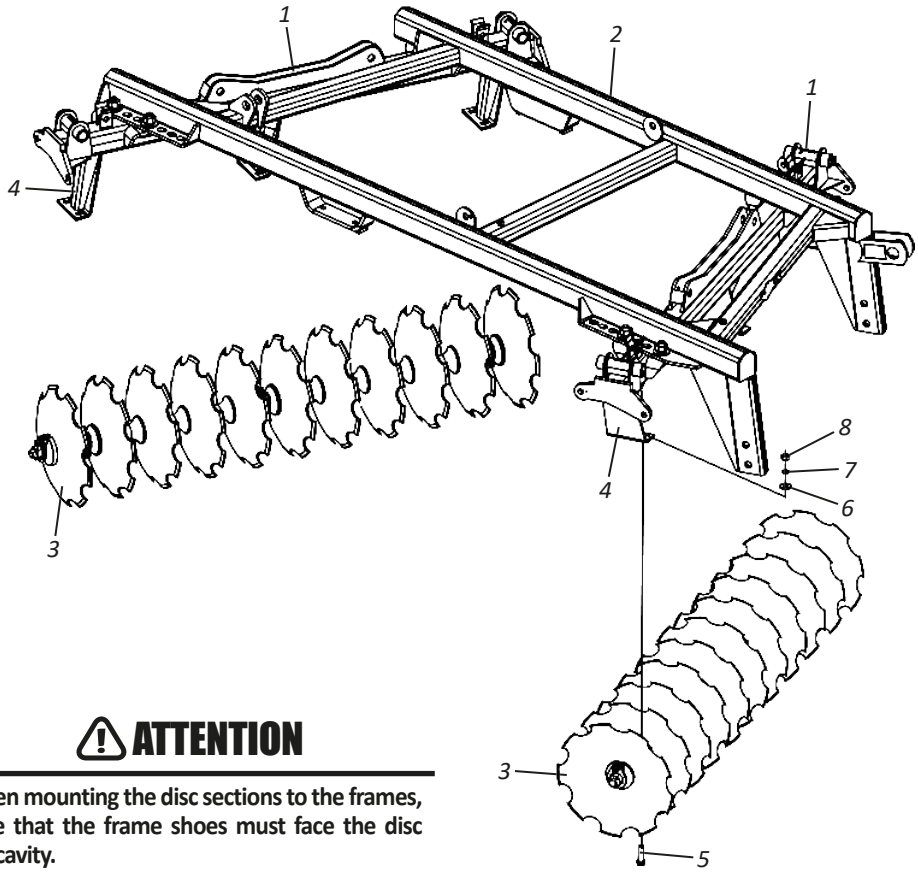
• Mounting the disc sections on the central frames (NVAM/NVAP)

After fixing the central frames (1) on the upright (2), fix the disc sections (3), to do this, proceed as follows:

01 - Lift the front or rear part of the harrow and place the disc section (3) in line and match the holes in the shoes (4) with those in the bearings and fix them using the screws (5), flat washer (6), spring washer (7) and nut (8).

02 - Then, lift the other part of the grid and repeat the operation, checking the concavity of the discs from one section to the other, which must be opposite.

03 - When completing assembly, check that the shoes (4) are facing the disc concavity.



⚠ ATTENTION

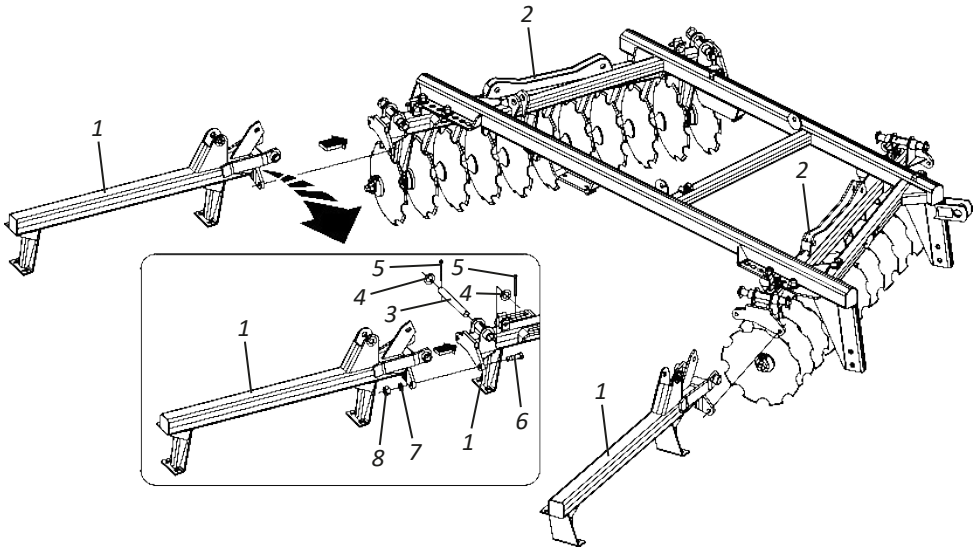
When mounting the disc sections to the frames, note that the frame shoes must face the disc concavity.

▪ Assembly

• Assembling the side frames (NVAM/NVAP)

To assemble the **NVAM/NVAP** side frames, proceed as follows:

01 - Attach the side frames (1) to the central frames (2).
02 - Then, place the pins (3), fixing them using the flat washers (4) and cotter pin (5).
03 - Then lock the frames with screws (6), lock washers (7) and nuts (8).



⚠ ATTENTION

For NVAP, do not attach the screws (6), lock washers (7) and nuts (8). Ignoring this warning could cause serious accidents and damage to the grille.

❗ IMPORTANT

Repeat this procedure to assemble the left side frames.

▪ Assembly

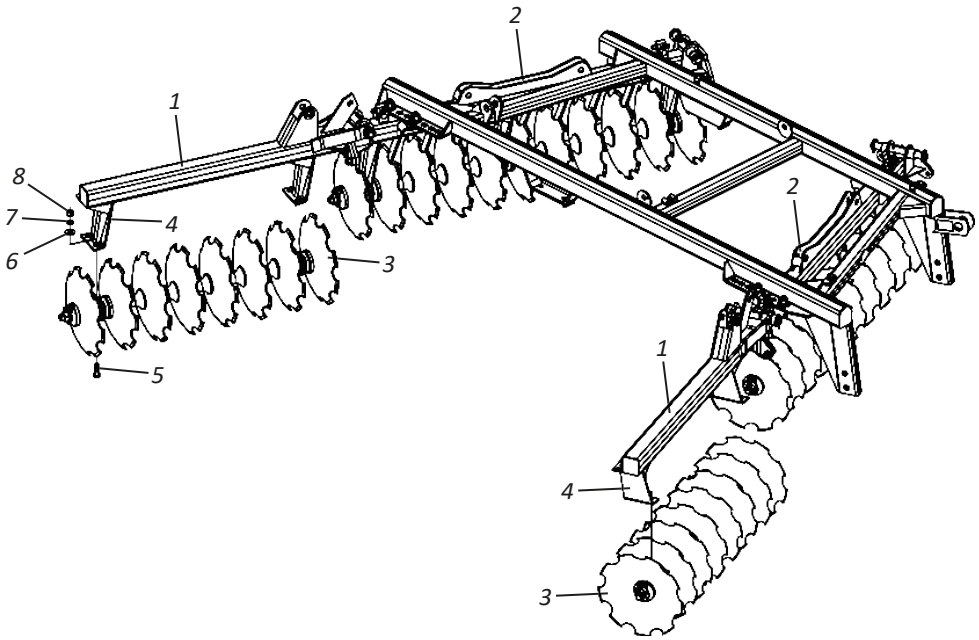
• Mounting the disc sections on the side frames (NVAM/NVAP)

After fixing the side frames (1) to the central frames (2), fix the disc sections (3), to do this, proceed as follows:

01 - Lift the front or rear part of the harrow and place the disc section (3) in line and match the hole in the shoes (4) with those in the bearings and fix it using the screws (5), flat washer (6), spring washer (7) and nut (8).

02 - Then, lift the other part of the grid and repeat the operation, checking the concavity of the discs from one section to the other, which must be opposite.

03 - When completing assembly, check that the shoes (4) are facing the disc concavity.



⚠ ATTENTION

When mounting the disc sections to the side frames, note that the shoes must face the disc concavity.

❗ IMPORTANT

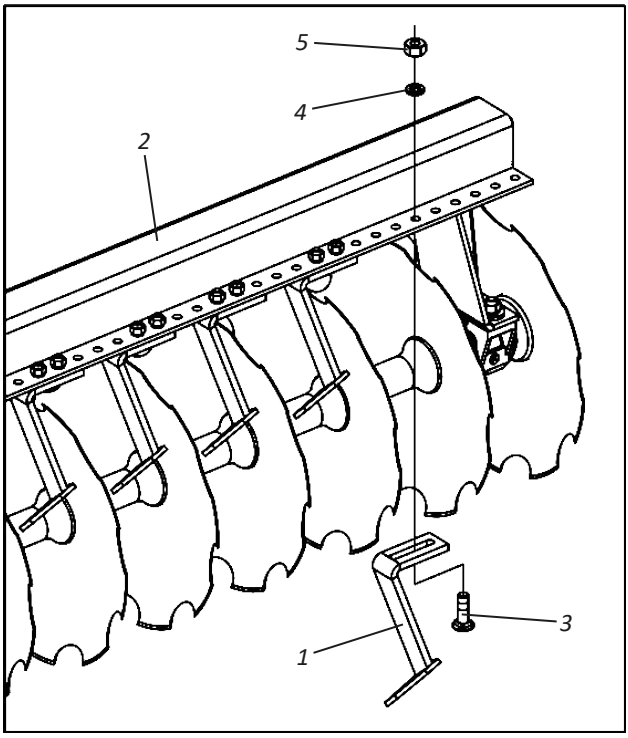
Repeat this procedure to assemble the disc sections to the left side frames.

▪ Assembly

• Wiper assembling (NVAM/NVAP) - Part I

After assembling the disc sections on the side frames, attach the wipers for this, proceed as follows:

01 - Place the cleaners (1) on the frames (2), securing them using screws (3), pressure washers (4) and nuts (5).

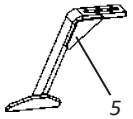


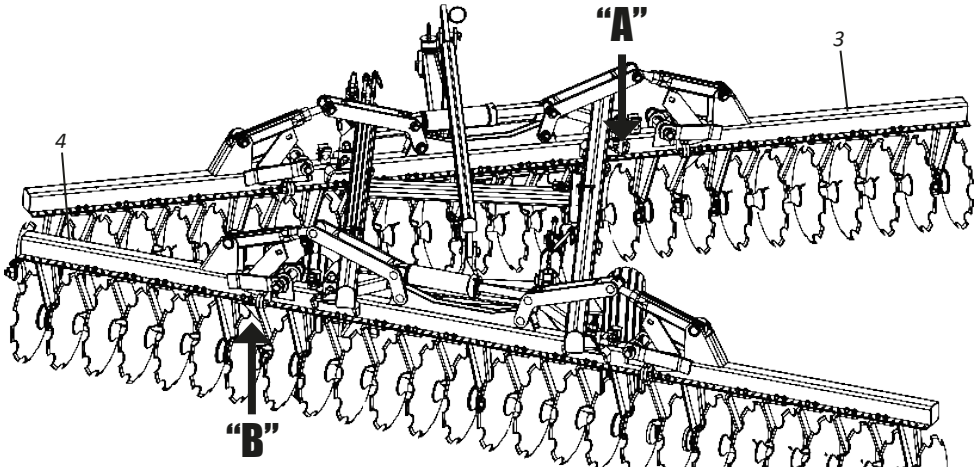
⚠ ATTENTION | **When assembling the wipers, they must be 0.5 to 1.0 cm away from the discs.**

▪ Assembly

• Wiper assembly (NVAM/NVAP) - Part II

The **NVAM/NVAP** has 2 special wipers that must be mounted in the position and points indicated below.

POINT "A"	
Special wiper installation position	



POINT "B"	
Special wiper installation position	

ATTENTION

At point "A" on the right front side frame (3) and at point "B" on the left rear side frame (4), mount the special wipers (5).

NOTE

Right and left naming is done by looking at the NVAM/NVAP from behind.

▪ Assembly

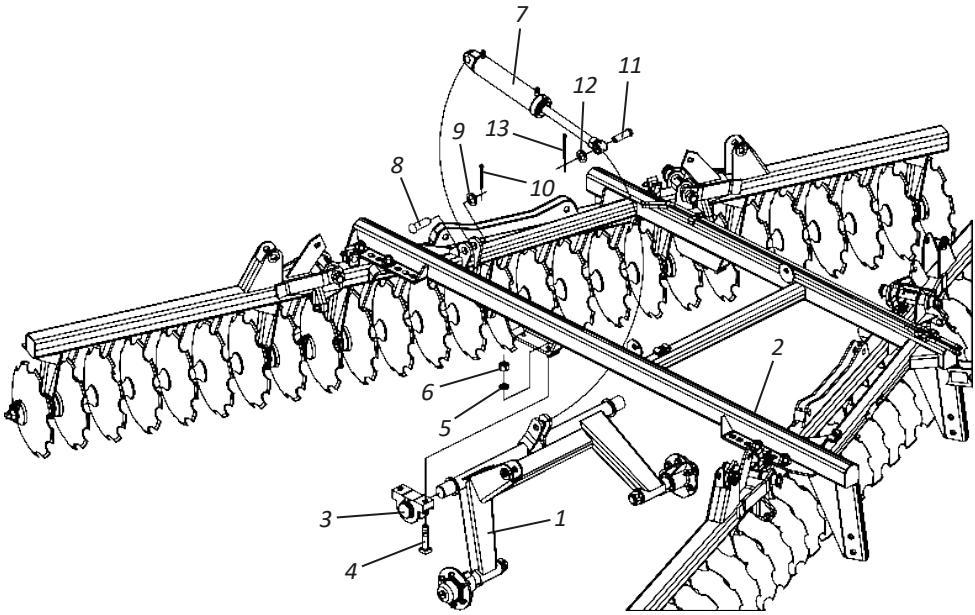
• Wheel axle support assembly (NVAM/NVAP)

After assembling the wipers, attach the wheel axle support to this, proceed as follows:

01 - Attach the hub (3) to the wheel support (1) and fix the hub (3) to the upright (2) using screws (4), pressure washers (5) and nuts (6).

02 - Then, attach the rear part of the hydraulic cylinder (7) to the upright (2), securing it using the pin (8), flat washer (9) and cotter pin (10).

03 - Then, attach the front part of the hydraulic cylinder (7) to the wheel support (1), using the pin (11), flat washer (12) and cotter pin (13).

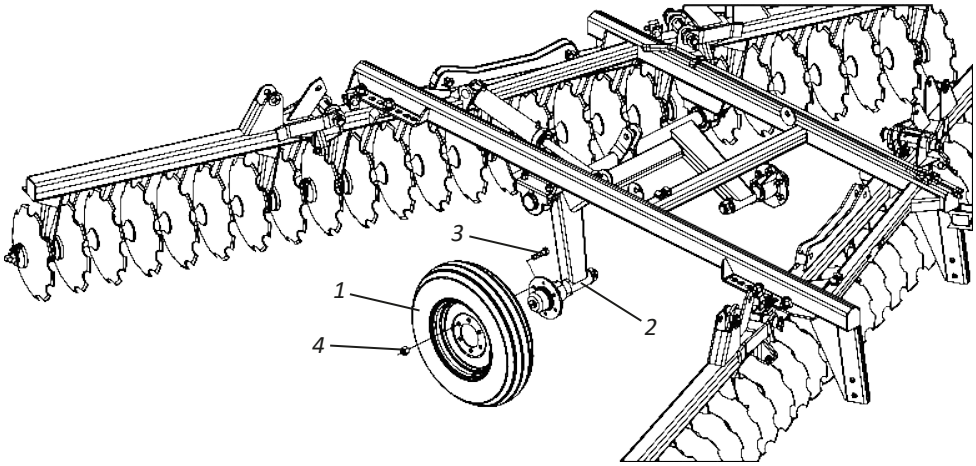


▪ Assembly

• Tire assembling (NVAM/NVAP)

After assembling the wheel axle support, attach the tires for this, proceed as follows:

01 - Attach the tires (1) to the wheel axle (2) using screws (3) and nuts (4).



⚠ ATTENTION | **Check on page 58 for correct tire inflation.**

▪ Assembly

• Hitch header assembly (NVAM/NVAP)

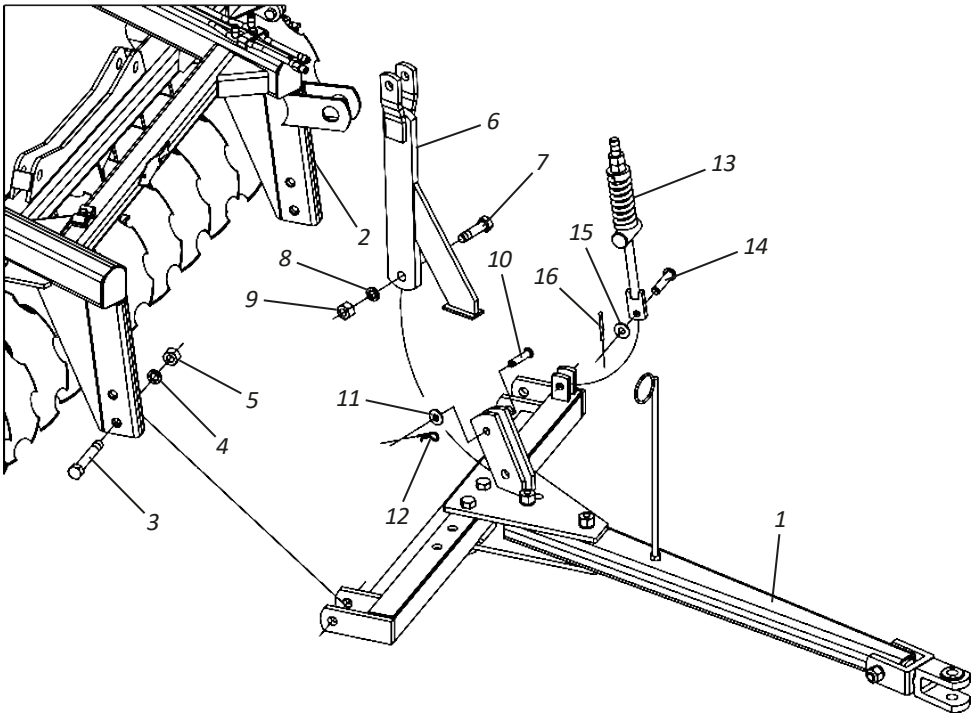
After mounting the tires, attach the hitch header to this, proceed as follows:

01 - Attach the coupling header (1) to the upright (2) using screws (3), pressure washers (4) and nuts (5).

02 - Then, attach the stabilizer bar support (6) to the header (1) using the screw (7), pressure washer (8) and nut (9).

03 - Then, fix the pin (10) in the header (1), locking the stabilizer bar support (6) using the flat washer (11) and lock (12).

04 - Finally, attach the spring rod (13) to the header (1) and the upright (2) using the pin (14), flat washer (15) and cotter pin (16).



▪ Assembly

• Articulation system assembly (NVAP)

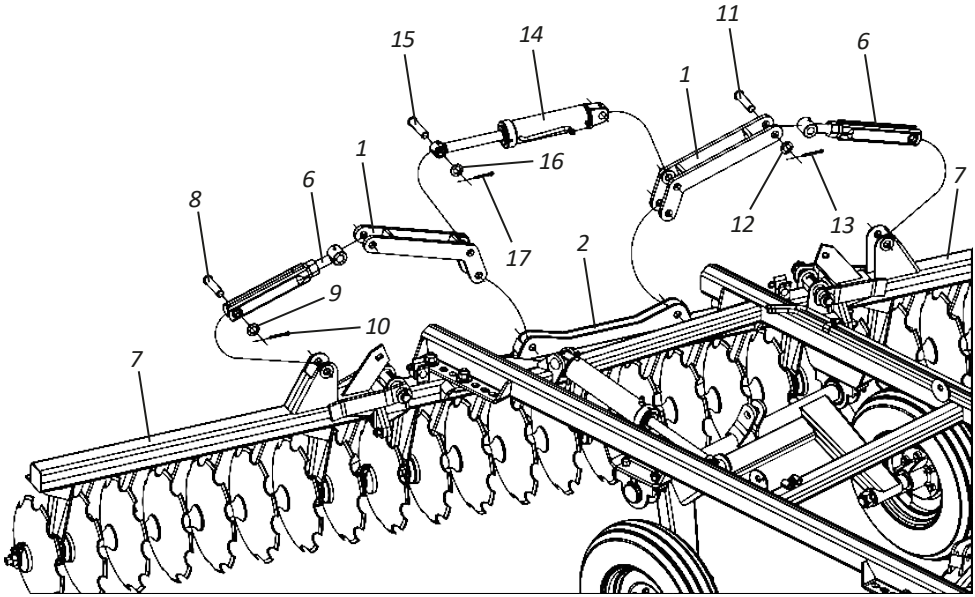
After assembling the coupling header, assemble the **NVAP** articulation system, proceed as follows:

01 - Attach the articulation bars (1) to the upright (2) using pins (3), flat washers (4) and cotter pins (5).

02 - Then, attach the regulators (6) to the side frames (7) using pins (8), flat washers (9) and cotter pins (10).

03 - Then, attach the regulators (6) to the articulation bars (1) using pins (11), flat washers (12) and cotter pins (13).

04 - Finally, attach the hydraulic cylinder (14) to the articulation bars (1) using pins (15), flat washers (16) and cotter pins (17).

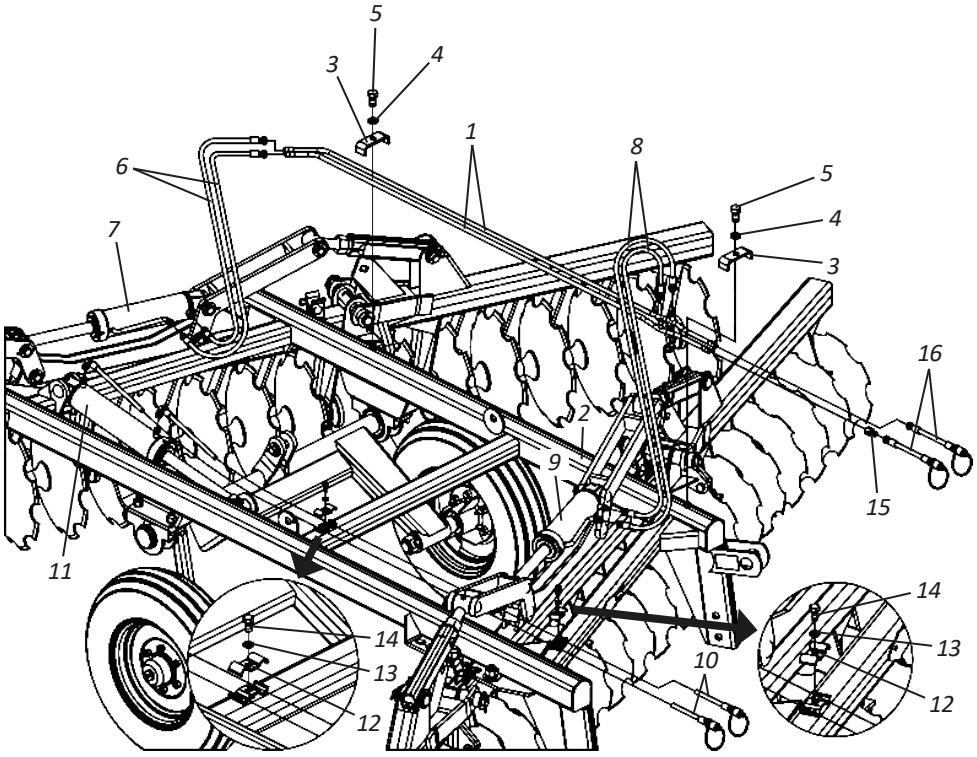


▪ Assembly

• Hydraulic system assembly (NVAP)

After assembling the articulation system, assemble the **NVAP** hydraulic system, proceed as follows:

01 - Fix the pipes (1) on the upright (2) using the clips (3), pressure washers (4) and screws (5).
02 - Then, attach the hoses (6) to the hydraulic cylinder (7) and pipes (1).
03 - Then, attach the hoses (8) to the hydraulic cylinder (9) and pipes (1).
04 - Then, attach the hoses (10) to the hydraulic cylinder (11), locking them using the clips (12), pressure washers (13) and screws (14).
05 - Finally, attach the safety valve (15) and the hoses (16) to the pipe (1).

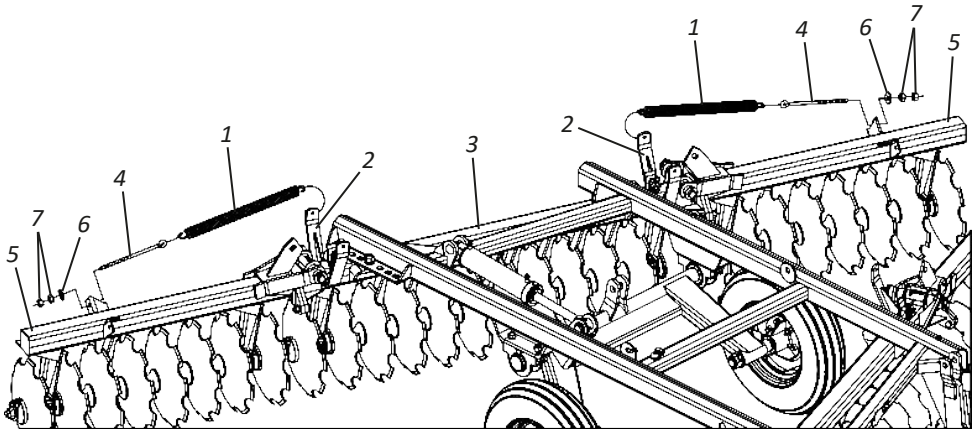


▪ Assembly

• Spring system assembly (NVAM)

After assembling the header, assemble the NVAM spring system, to do this, proceed as follows:

01 - Attach the springs (1) to the supports (2) of the central frame (3).
02 - Then, attach the springs (1) to the tie rods (4).
03 - Finally, fix the tie rods (4) to the side frames (5) using the flat washers (6), nut and lock nut (7).



ATTENTION **To adjust the pressure of the springs (1), you must articulate the grid and tighten the nut and locknut (7) on the tie rod (4) until the springs (1) are firm.**

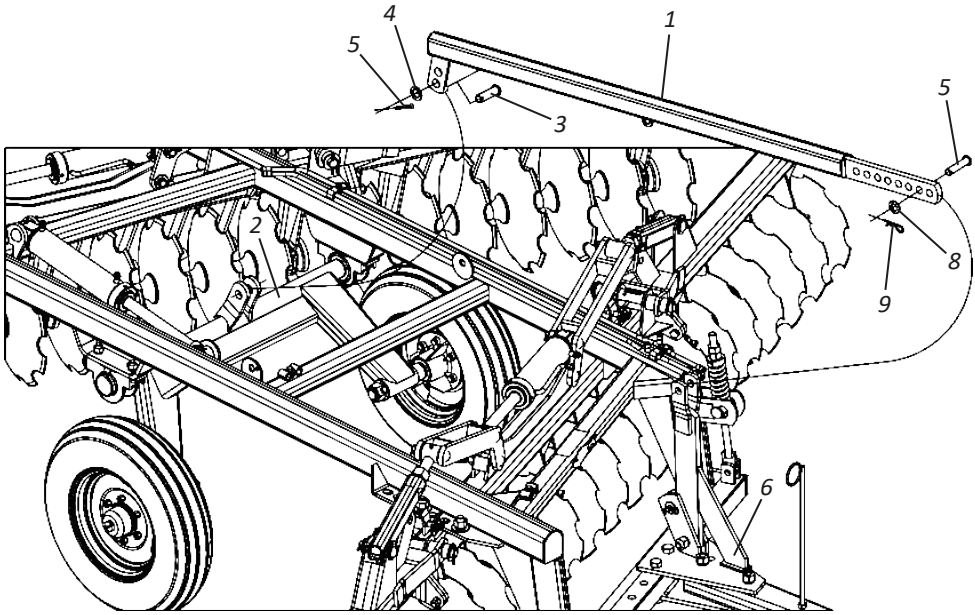
▪ Assembly

• Stabilizer bar assembly (NVAM/NVAP)

To assemble the stabilizer bar (1), proceed as follows:

01 - Attach the rear part of the stabilizer bar (1) to the wheel support (2), using the pin (3), flat washer (4) and cotter pin (5).

02 - Then, attach the front part of the stabilizer bar (1) to the support (6) using the pin (7), flat washer (8) and lock (9).



▪ Hitch

• Harrow hitch to tractor drawbar

To attach the **NVAM/NVAP** to the tractor's drawbar, proceed as follows:

⚠ Before engaging the NVAM/NVAP, look for a safe and easily accessible place.

⚠ Always use low gear with low acceleration.

⚠ Before connecting and disconnecting the hydraulic hoses, stop the engine and relieve the pressure in the circuit by fully activating the control levers.

⚠ Make sure that when relieving system pressure, no one is injured by moving the equipment.

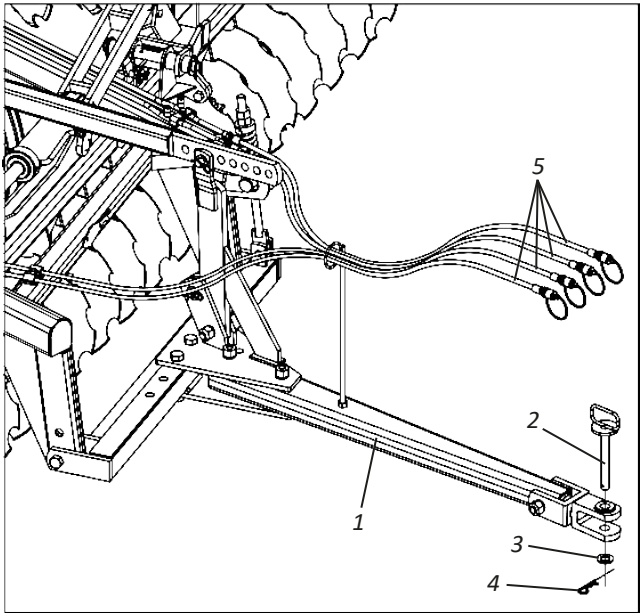
Following the instructions, proceed as follows:

01 - Level the **NVAM/NVAP** hitch header (1) in relation to the tractor hitch.

02 - Then, slowly approach the tractor to the harrow in reverse gear, paying attention to applying the brakes.

03 - Hook the **NVAM/NVAP** to the tractor by securing it using the coupling pin (2), flat washer (3) and lock (4).

04 - Finish by attaching the hoses (5) to the tractor's quick coupler.



▪ Transport

• Transport - Part I

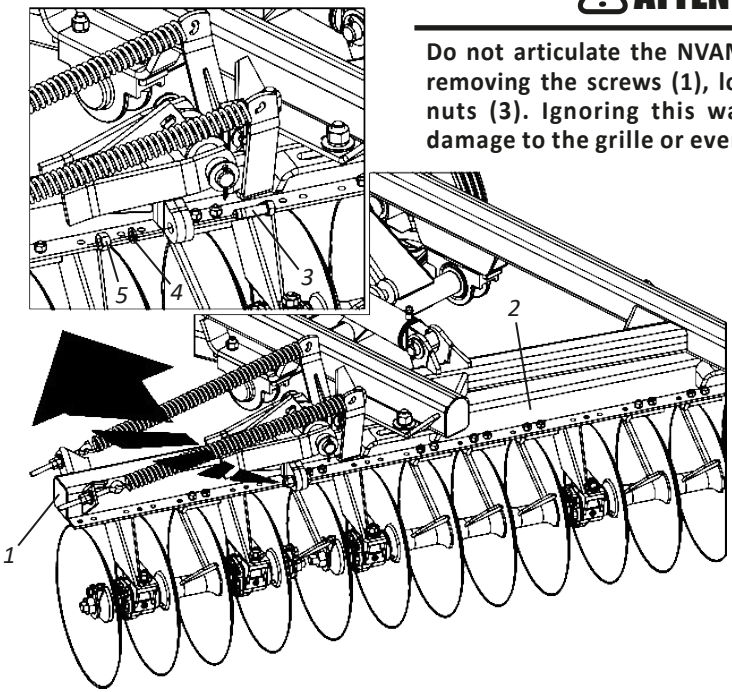
Before transporting the **NVAM/NVAP**, follow the instructions below.

NVAM
The **NVAM** leaves the factory with its side frames (1) locked into the central frames (2). Before articulating the **NVAM**, remove the screws (3), lock washers (4) and nuts (5).

NVAP
For logistics purposes, the **NVAP** also leaves the factory with its side frames (1) locked onto the central frames (2), however, the screws (3), pressure washers (4) and nuts (5) should not be used under any circumstances. for this model of grille, therefore, remove them from the grille, leaving the frames unlocked for transport.

⚠ ATTENTION

Do not articulate the NVAM/NVAP grid before removing the screws (1), lock washers (2) and nuts (3). Ignoring this warning could cause damage to the grille or even serious accidents.



NVAM

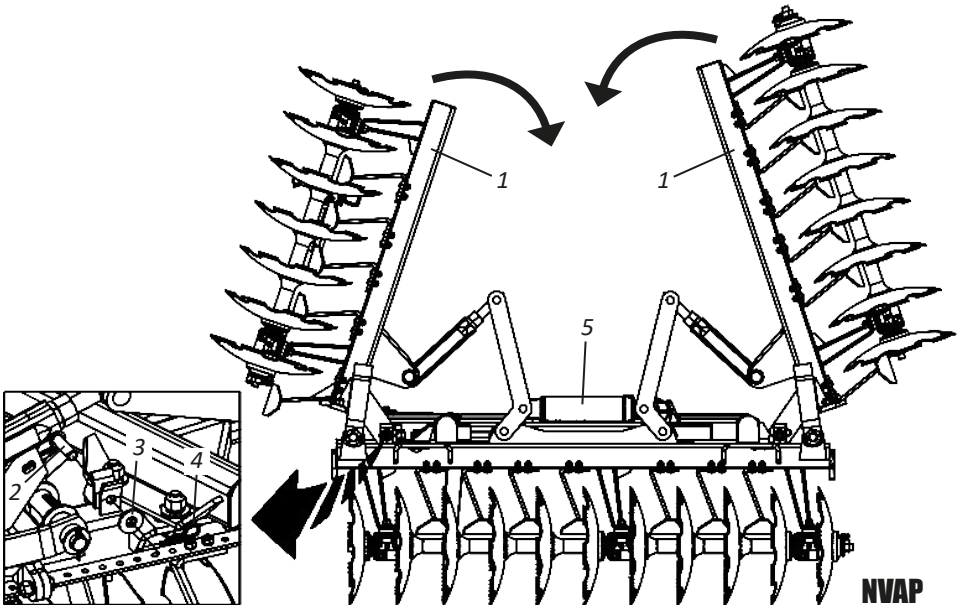
▪ Transport

• Transport - Part II

Following the previous instructions, connect the NVAM/NVAP according to the instructions below.

NVAM
Articulate the side frames (1) by locking them using screws (2), flat washers (3) and locks (4).

NVAP
Articulate the side frames (1) by activating the hydraulic cylinders (5), locking them using screws (2), flat washers (3) and locks (4).



ATTENTION

When articulating the NVAM/NVAP, avoid people getting close as there is a risk of accidents, caused by possible mechanical or hydraulic failures causing the frame to lower quickly.

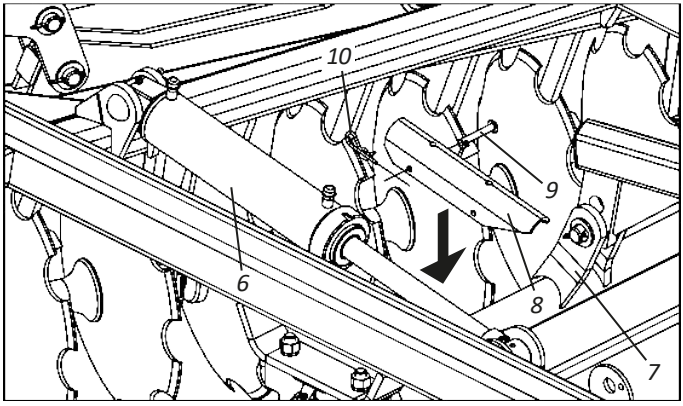
IMPORTANT

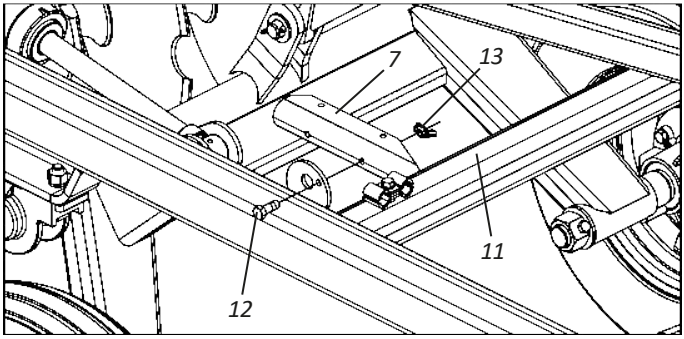
Do not transport the NVAM/NVAP without first locking the side frames.

▪ Transport

• Transport - Part III

NVAM/NVAP
After articulating the NVAM/NVAP, fully activate the hydraulic cylinder (6) of the wheelset (7). Then, place the lock (8) on the hydraulic cylinder rod (6) securing it through the pin (9) and lock (10). When completing the transport of the **NVAM/NVAP**, remove the lock (8) from the hydraulic cylinder (6) and fix it to the upright (11) using the screw (12) and wing nut (13).





⚠ ATTENTION

Do not transport the NVAM/NVAP without the lock (8) on the hydraulic cylinder (6) of the wheelset (7). Ignoring this warning may cause damage to the hydraulic cylinder (6).

▪ Work

• Work - Part I

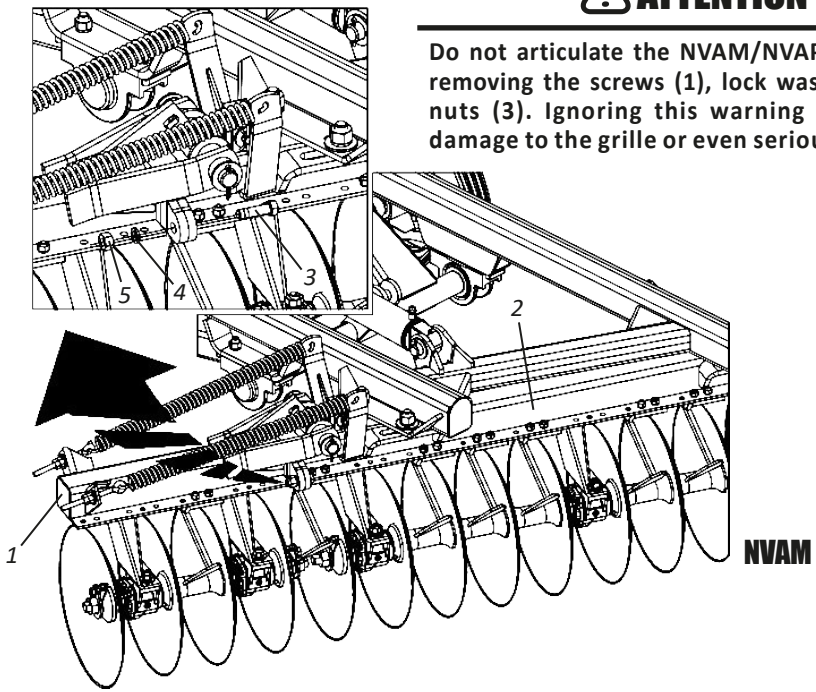
Before starting work with **NVAM/NVAP**, follow the instructions below.

NVAM
The **NVAM** leaves the factory with its side frames (1) locked into the central frames (2). Before articulating the **NVAM**, remove the screws (3), lock washers (4) and nuts (5).

NVAP
For logistics purposes, the **NVAP** also leaves the factory with its side frames (1) locked onto the central frames (2), however, the screws (3), pressure washers (4) and nuts (5) should not be used under any circumstances. for this grid model, therefore, remove them from the grid, leaving the frames unlocked for work.

⚠ ATTENTION

Do not articulate the NVAM/NVAP grid before removing the screws (1), lock washers (2) and nuts (3). Ignoring this warning could cause damage to the grille or even serious accidents.



NVAM

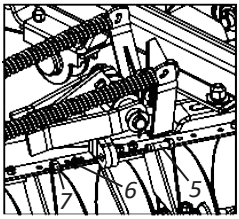
▪ Work

• Work - Part II

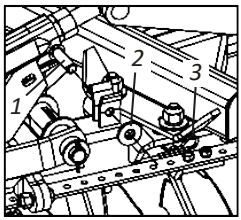
Following the previous instructions, dismantle the **NVAM/NVAP** according to the instructions below.

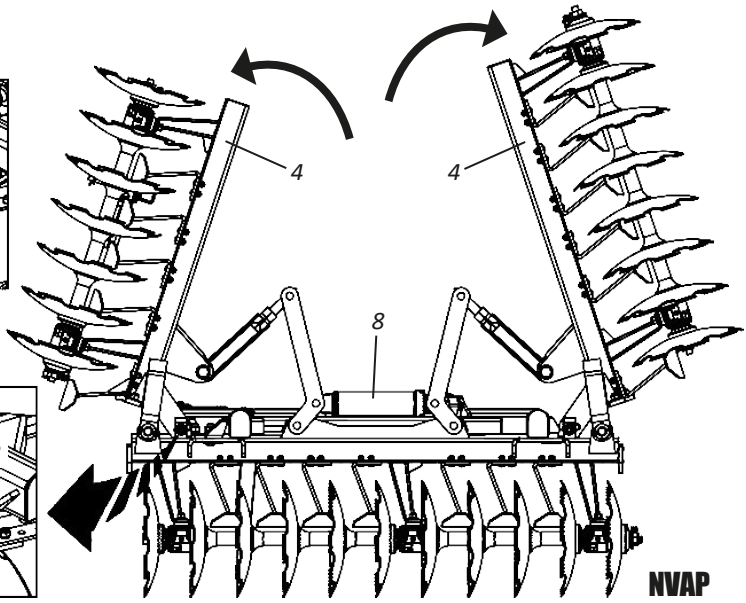
NVAM
Remove the screws (1), flat washers (2) and locks (3) and remove the side frames (4). Then, place the screws (5), pressure washers (6) and nuts (7) locking the side frames (4) to the central frames (5).

NVAP
Remove the screws (1), flat washers (2) and locks (3) and dismantle the side frames (4) by activating the hydraulic cylinders (8).



NVAM





NVAP

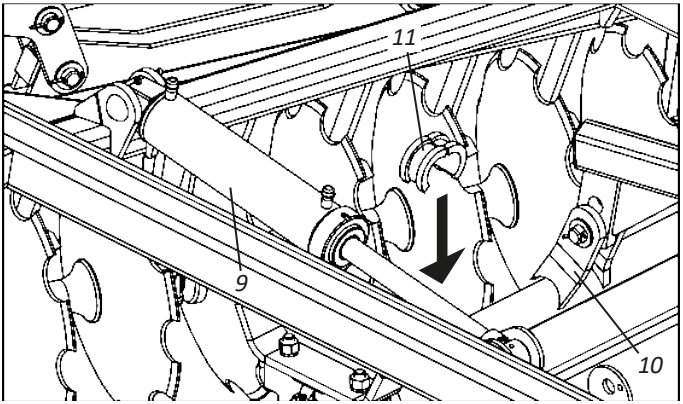
⚠ ATTENTION

When disarticulating the NVAM/NVAP, avoid people being close to it as there is a risk of accidents, caused by possible mechanical or hydraulic failures causing the frame to lower quickly.

▪ Work

• Work - Part III

NVAM/NVAP
After disarticulating the **NVAM/NVAP**, to limit the depth of the grid, activate the hydraulic cylinder (9) of the wheelset (10). Then, place the limit rings (11) on the hydraulic cylinder rod (9) as needed. When finishing work with the **NVAM/NVAP**, remove the limit rings (11) from the hydraulic cylinder (9).



⚠ ATTENTION

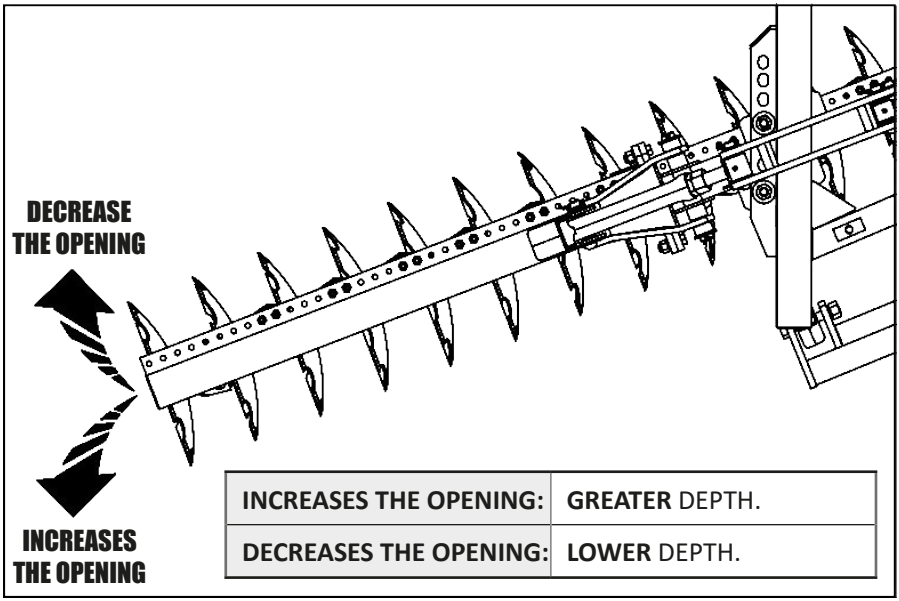
After adjustment, the NVAM/NVAP will always operate at the same depth whether on hard or loose ground because the limiting rings (10) are limiting the travel of the hydraulic cylinder (8), that is, preventing wheel oscillation.

▪ Adjustments

• Harrow opening adjustment - Part I

To obtain ideal penetration of the discs into the soil, the opening of the **NVAM/NVAP** must be adjusted, which varies according to the type of soil:

TYPES OF SOIL:	**SOIL WITH GREATER DIFFICULTY TO PENETRATE:**	THE NVAM/NVAP OPENING MUST BE **INCREASED**.
	LIGHT AND LOOSE SOIL:	THE OPENING MUST BE **DECREASED** FROM NVAM/NVAP.



INCREASES THE OPENING:	**GREATER** DEPTH.
DECREASES THE OPENING:	**LOWER** DEPTH.

IMPORTANT

To start the work, we recommend using a medium opening in the disc sections. If you need greater penetration, increase the opening angle of the rear section.
The front section generally does not operate with a larger opening than the rear section.
The wheels also help control the depth of the discs.

NOTE **To INCREASE or DECREASE the NVAM/NVAP opening, proceed as instructed on the following page.**

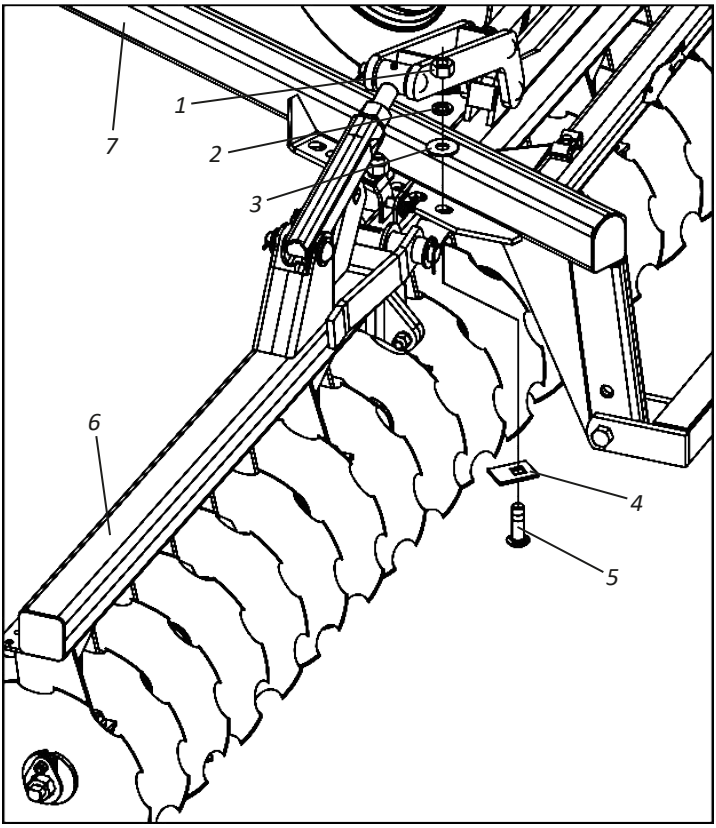
▪ Adjustments

• Harrow opening adjustment - Part II

01 - Loosen the nuts (1), spring washers (2), flat washers (3), remove the locks (4) and screws (5).

02 - Then, adjust the frames (6) by decreasing or increasing their opening.

03 - Then, secure the frame (6) to the upright (7) again using screws (5), locks (4), flat washers (3), spring washers (2) and nuts (1).



⚠ ATTENTION

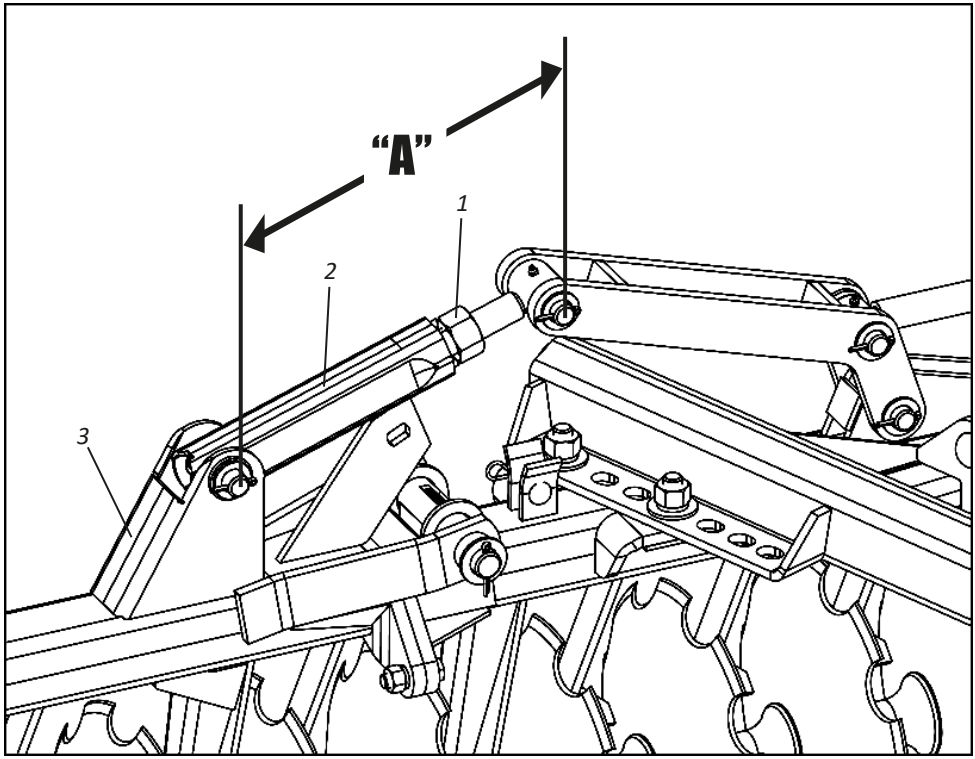
We recommend controlling the working depth of the NVAM/NVAP by opening the disc sections and using the tires only in places where the NVAM/NVAP penetrates too much.

▪ Adjustments

• Articulation bar adjustment

To level the **NVAP** side frames, proceed as follows:

01 **-** Loosen the nut (1) and adjust the articulation bar (2) until the side frame (3) is level.



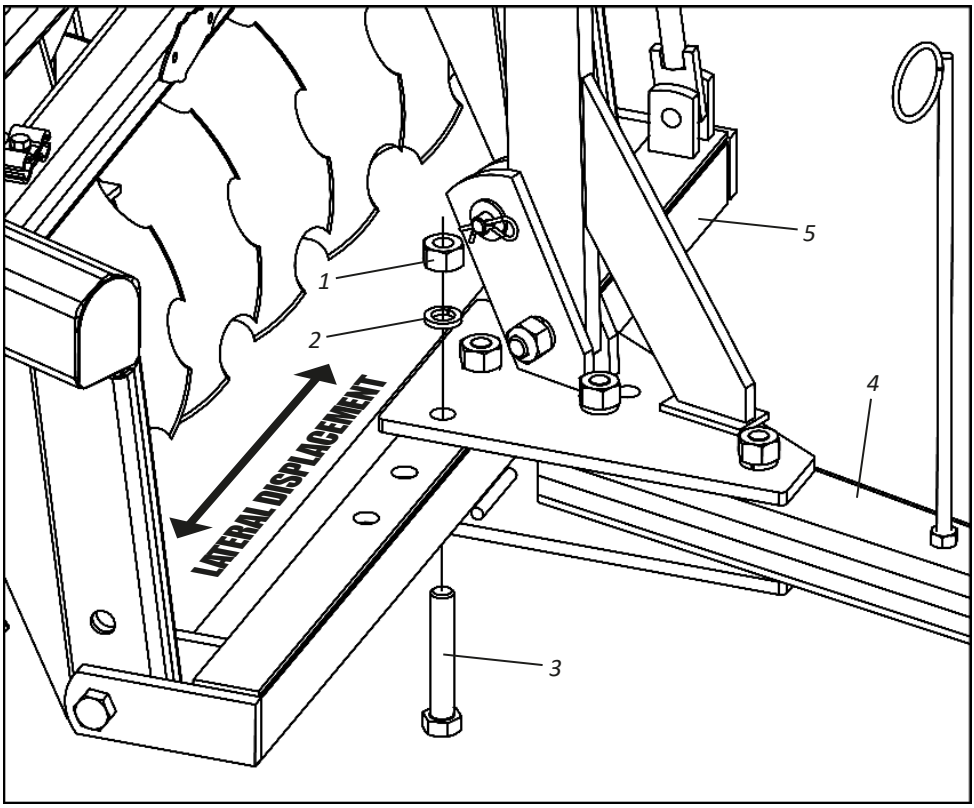
NOTE **Measurement "A" must be ± 520 mm.**

▪ Adjustments

• Harrow displacement adjustment - Part I

The **NVAM/NVAP** must be moved when the harrow is not providing a perfect finish, that is, leaving a tractor trail. For the harrow to work centered with the tractor's traction line, proceed as follows:

01 - Loosen the nuts (1), lock washers (2) and remove the screws (3).
02 - Then, move the coupling header (4) on the crossbar (5), making the ideal adjustment.
03 - Finish by re-attaching the screws (3), pressure washers (2) and nuts (1).

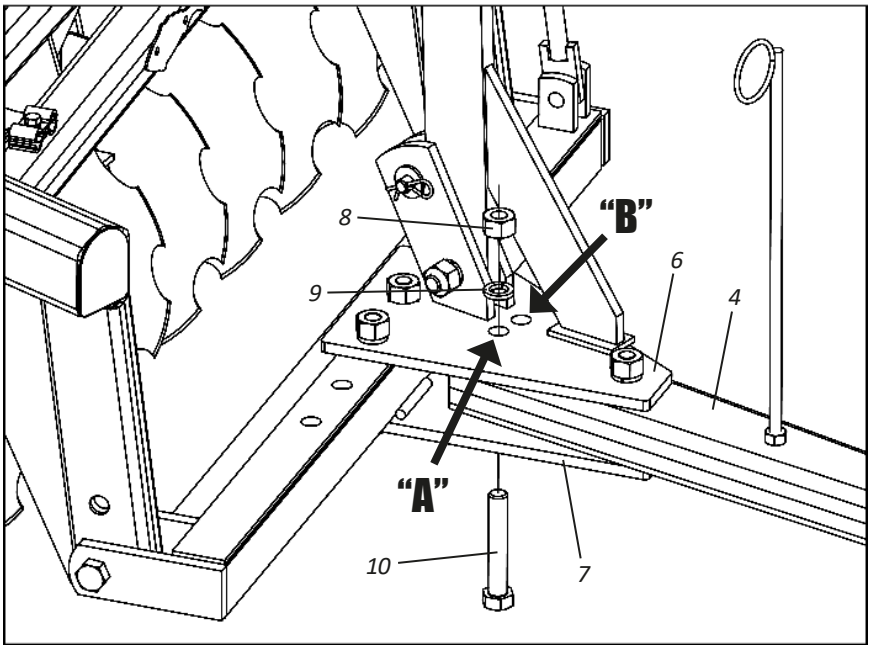


▪ Adjustments

• Harrow displacement adjustment - Part II

Under normal working conditions and during transport, the coupling header (4) must remain in hole **"A"** in the upper (6) and lower (7) plates. By moving the coupling header (4) to hole **"B"**, a small lateral displacement of the **NVAM/NVAP** is achieved. To change the coupling header (4) from hole **"A"** to hole **"B"**, proceed as follows:

01 - Loosen the nut (8), spring washer (9) and remove the screw (10).
02 - Then, move the coupling header (4) to hole **"B"** on the upper (6) and lower (7) plates.
03 - Finish by re-attaching the screw (10), pressure washer (9) and nut (8).



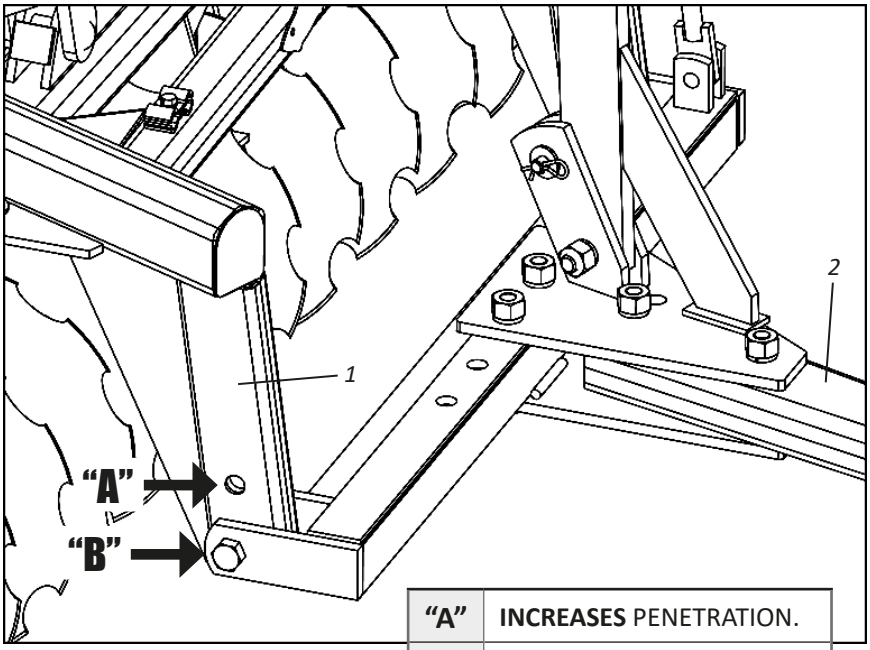
IMPORTANT

The NVAM/NVAP header and tractor drawbar must be as aligned as possible with the working direction.
The tractor's drawbar must remain loose during work and secured during transportation.

▪ Adjustments

• Crossbar adjustment

The **NVAM/NVAP** upright (1) has 2 (two) holes **“A”** and **“B”** on each side whose main purpose is to level the header (2) of the harrow in relation to the tractor’s drawbar.



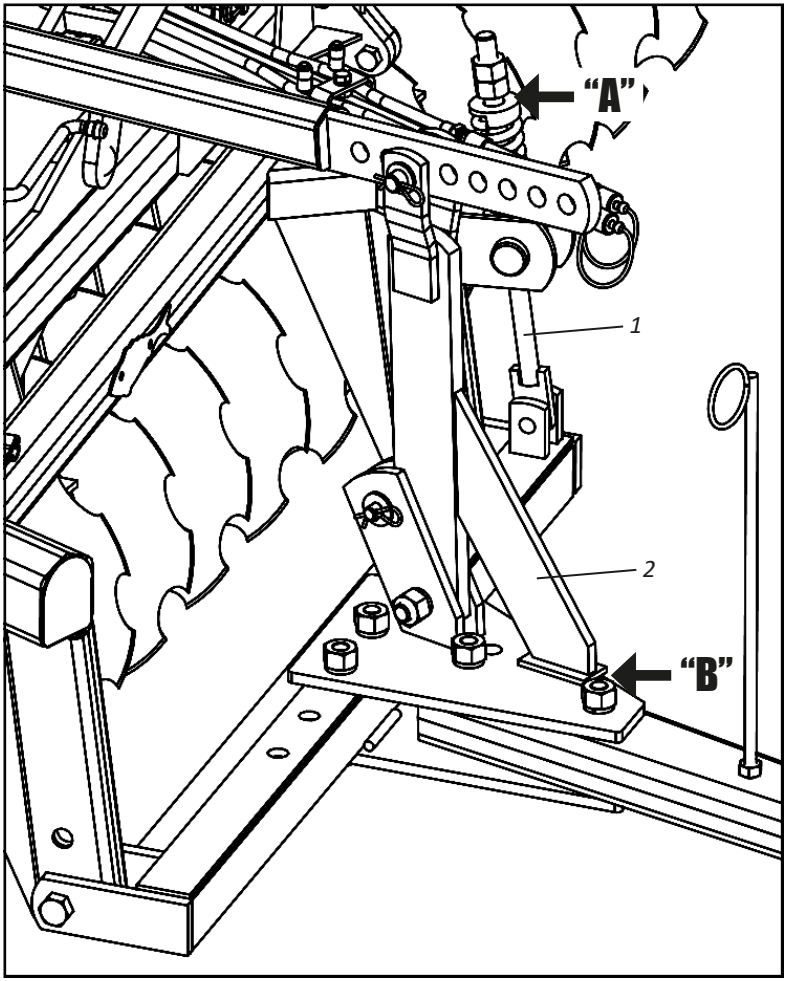
“A”	**INCREASES** PENETRATION.
“B”	**DECREASES** PENETRATION.

▪ Adjustments

• Adjusting the stabilizer bar and stabilizer bar support

POINT "A"
On the stabilizer rod (1), leave a gap of **10 to 20mm** between the nut and the spring stop.

POINT "B"
On the stabilizer bar support (2), leave a gap of **10 to 20mm** between the stabilizer bar support and the abutment of the upper header plate.



▪ Operations

• Recommendations for operation - Part I

Preparing the **NVAM/NVAP** and the tractor will save you time as well as a better result when working in the field. The following suggestions may be useful to you.

GRID STRUCTURE

After the first day of work with **NVAM/NVAP**, retighten all screws, nuts and check the condition of the pins and locks of the grid structure. Then carry out a general retightening of all screws and nuts on the grid structure every 24 hours of work.

DISC SECTIONS

Pay special attention to the **NVAM/NVAP** disc sections. During the first week of using the **NVAM/NVAP**, retighten all disc section bolts and nuts daily, then retighten them periodically.

GENERAL RECOMMENDATIONS

01 - Adjust the tractor according to the contents of the instruction manual, always using the front and rear weights to stabilize the equipment.

02 - Always couple it to the tractor at low speed and be very careful.

03 - When using **NVAM/NVAP** it is important to check the coupling and transverse leveling system to make sure that the discs will have the same depth of penetration into the soil.

04 - After coupling and leveling, the next adjustments will be made directly in the work field, analyzing the terrain in its texture, humidity and the types of operations to be carried out with the **NVAM/NVAP**.

05 - On the tractor, choose a gear that allows you to maintain a certain power reserve, protecting yourself against unforeseen efforts.

06 - Respect the working and transport speeds specified on page 10. We do not recommend exceeding the speeds to maintain service efficiency and avoid possible damage to the **NVAM/NVAP.**

07 - When performing maneuvers on the headlands, first activate the hydraulic cylinders gradually, lifting the disc sections.

08 - Do not uncouple any hose without first relieving the pressure in the circuit; to do this, operate the control levers a few times with the engine off.

▪ Operations

• Recommendations for operation - Part II

09 - Remove sticks or any other object that could get stuck in the discs.

10 - In compacted terrain where it is difficult for the discs to penetrate, the depth may be minimal, making the work unsatisfactory. In these cases, it is recommended to apply other, more suitable products.

11 - During work or transport, the tractor drawbar must remain fixed.

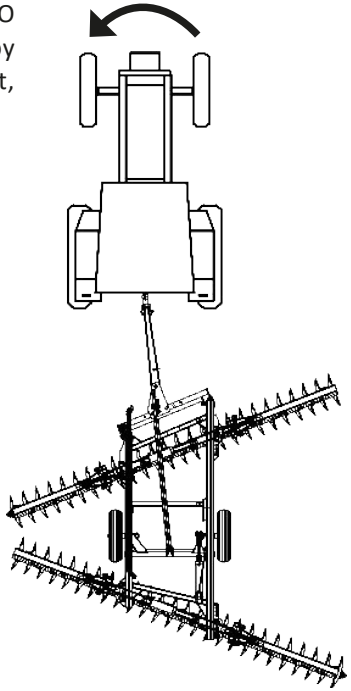
12 - When carrying out any maintenance on the **NVAM/NVAP**, it must be lowered to the ground and the engine turned off.

13 - **NVAM/NVAP** has several regulations, however, only local conditions can determine the best regulation.

If in doubt, never operate or handle the NVAM/NVAP, consult After Sales.
Telephone: 0800-152577 / E-mail: posvenda@baldan.com.br

• Direction of maneuvers

During harrowing (with the discs on the ground), DO NOT maneuver to the right, as the angles formed by the disc sections place great effort on the equipment, especially the traction components.



IMPORTANT

With the disc sections on the ground, it is necessary to maneuver on the left (closed side of the NVAM/NVAP) avoiding overloads and the formation of large undesirable ruts at the maneuver locations.

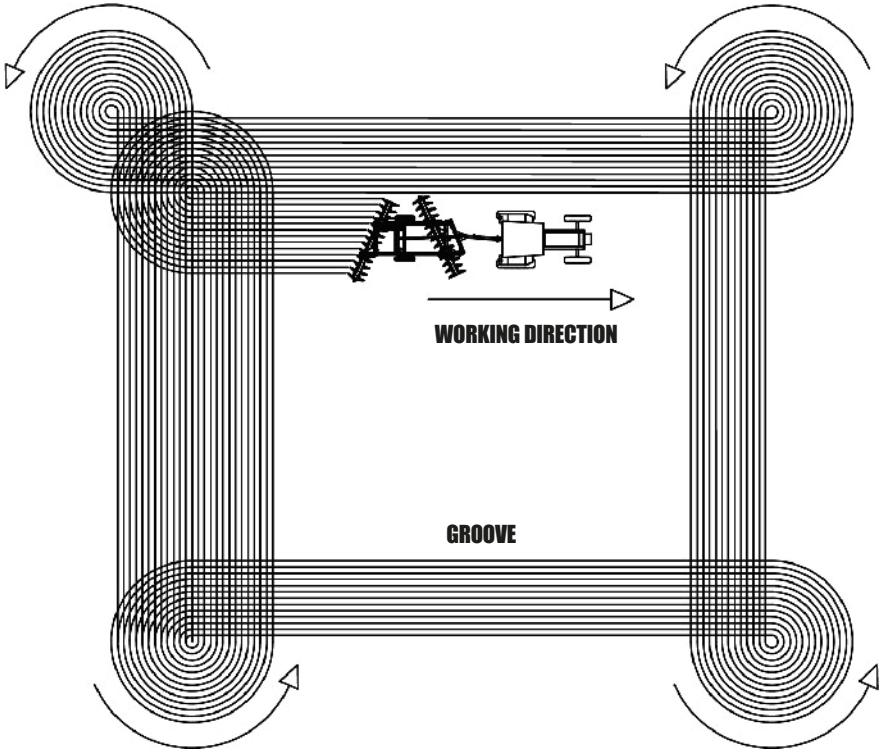
▪ Operations

• How to start harrowing

When starting harrowing, you must always follow the terraces or contour line, starting the operation so that the terrace is always on the tractor driver's left side.

NOTE **Before starting operations with the NVAM/NVAP, check it completely, retightening all screws, nuts, hose terminals, shafts and especially the disc sections.**

• Grid from outside to inside

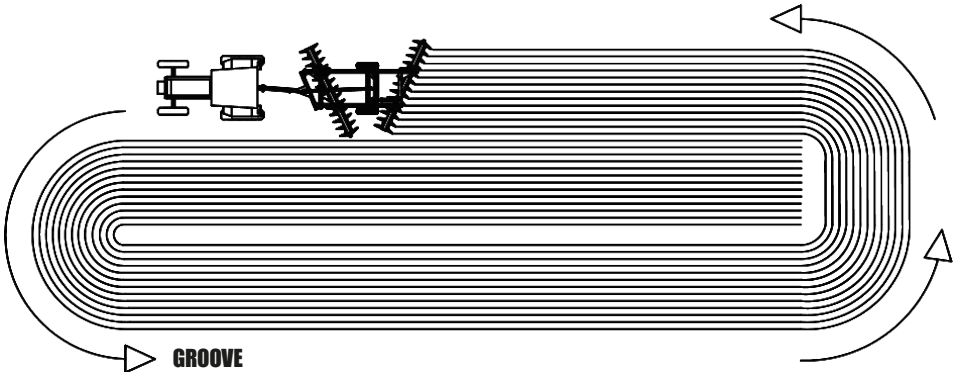


IMPORTANT **Try to drive the tractor in such a way as to obtain good performance between NVAM/NVAP passes. Avoid the formation of windrows or strips without fences.**

▪ Operations

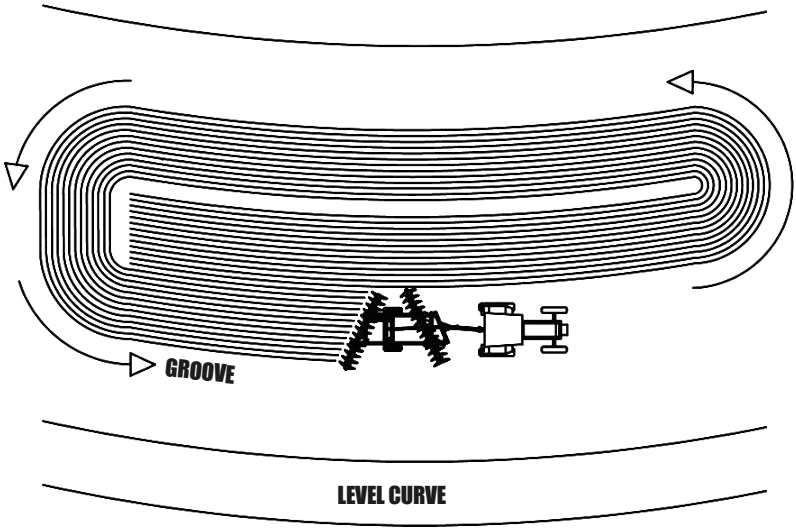
• Grid from inside to outside

In this sense, greater perfection is achieved. When you're walking a lot in the headwaters, it's a good idea to start another block.



• Fields with contour lines

On land with a contour line, it is usual to start two plots at a time, taking care to start work with the contour line on the tractor driver's left side. When you reach the middle of the contour line, it is best to start another field to reduce fuel consumption.



▪ Calculations

• Approximate hourly production - Part I

To calculate the approximate hourly production of **NVAM/NVAP**, use the following formula:

$$A = \frac{L \times V \times F}{X}$$

WHERE:

A = Area to be worked
L = Grid working width (in meters)
V = Average tractor speed (in meters/hour)
F = Production factor: 0.90
X = Value of the hectare: 10,000 m²

Example: An **NVAP 56 discs**, how much Ha will it produce in one hour of work at an average speed of 7 km/h.

A = ?
L = 4,81 m
V = 7.000 m/h
F = 0,90
X = 10.000 m² (Calculated in hectare)

$$A = \frac{4{,}81 \times 7.000 \times 0{,}90}{10.000} = 3{,}03 \text{ Ha/h}$$

Model	Spacing Discs (mm)	Number of discs	Working Width (mm)	Average speed (m/h)	Production Factor	Approximate Production in Hectares Hour
NVAM	175	36	3000	7.000	0,90	1,89
		40	3425	7.000	0,90	2,15
		42	3600	7.000	0,90	2,26
		44	3760	7.000	0,90	2,36
		48	4100	7.000	0,90	2,58
		52	4450	7.000	0,90	2,80
		56	4810	7.000	0,90	3,03

Model	Spacing Discs (mm)	Number of discs	Working Width (mm)	Average speed (m/h)	Production Factor	Approximate Production in Hectares Hour
NVAM	200	42	4100	7.000	0,90	2,58
		44	4300	7.000	0,90	2,70
		48	4700	7.000	0,90	2,96
		52	5100	7.000	0,90	3,21

▪ Calculations

• Approximate hourly production - Part II

Model	Spacing Discs (mm)	Number of discs	Working Width (mm)	Average speed (m/h)	Production Factor	Approximate Production in Hectares Hour
NVAP	175	44	3760	7.000	0,90	2,36
		48	4100	7.000	0,90	2,58
		52	4450	7.000	0,90	2,80
		56	4810	7.000	0,90	3,03

Model	Spacing Discs (mm)	Number of discs	Working Width (mm)	Average speed (m/h)	Production Factor	Approximate Production in Hectares Hour
NVAP	200	42	4100	7.000	0,90	2,58
		44	4300	7.000	0,90	2,70
		48	4700	7.000	0,90	2,96
		52	5100	7.000	0,90	3,21

The formula to calculate approximate production refers to the calculation of areas to be worked or worked by **NVAM/NVAP**. If you want to know the time it will take to work an area of known value, simply divide the value of this area by the hourly production of **NVAM/NVAP**.

Example: How much time "X" will it take for an **NVAP** grid of **56 discs** to produce 35 hectares, at an average speed of 7km/h?

$$X = \frac{35\ Ha}{3{,}03\ Ha/h} = 11{,}55$$ approximately hours to work 35 hectares.

ATTENTION **NVAM/NVAP's hourly production may vary due to factors that alter the work rhythm such as (soil humidity and hardness, terrain slope, inadequate adjustments and work speed).**

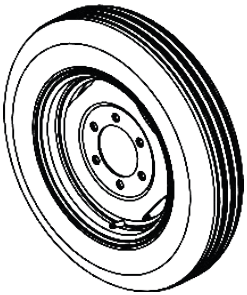
▪ Maintenance

NVAM/NVAP was developed to provide you with maximum performance under terrain conditions. Experience has shown that periodic maintenance of certain parts of the **NVAM/NVAP** is the best way to help you avoid problems, so we suggest checking them.

• Tire pressure

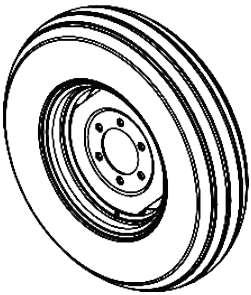
Tires must always be properly inflated to avoid premature wear due to excess or lack of inflation.

NVAM/NVAP 36 TO 44 DISCS STANDARD



TIRES 600 X 16 6 CANVAS
USE 44 LBS/POL²

NVAM/NVAP 48 TO 56 DISCS STANDARD



TIRES 750 X 16 10 CANVAS
USE 60 LBS/POL²

⚠ ATTENTION

Never weld the mounted wheel to the tire, as the heat can cause the air pressure to rise and the tire to explode.

When inflating the tire, stand next to the tire, never in front of it.

When inflating the tire, always use a containment device (inflation cage).

Assemble the tires with suitable equipment. The work should only be carried out by people trained for the job.

❗ IMPORTANT

When inflating your tires, do not exceed the recommended inflation.

NOTE

The tractor tires should be inflated according to the manufacturer's recommendations.

▪ Maintenance

The **NVAM/NVAP** was developed to provide you with maximum performance over terrain conditions. Experience has shown that periodic maintenance of certain parts of the **NVAM/NVAP** is the best way to help you get out of trouble, so we suggest checking it out.

• Lubrication

Lubrication is essential for a good performance and greater durability of the moving parts of the **NVAM/NVAP**, contributing to saving maintenance costs.

Before starting the operation, carefully lubricate all grease fittings, always observing the lubrication intervals on the next page. Ensure the quality of the lubricant, regarding its efficiency and purity, avoiding using products contaminated by water, earth and other agents.

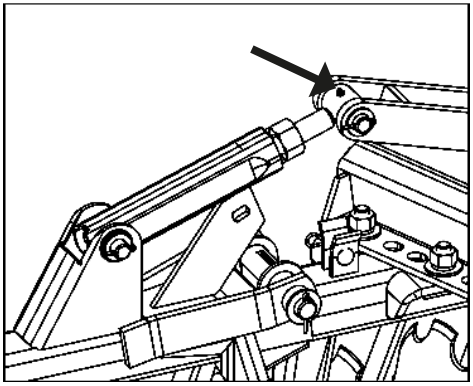
• Table of greases and equivalents

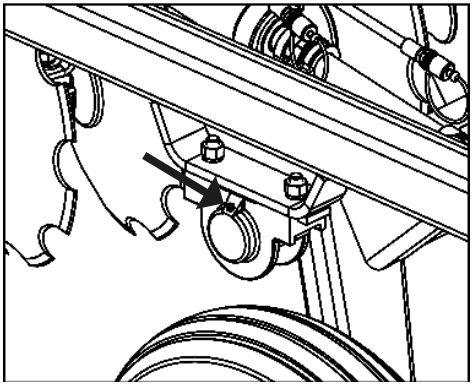
Manufacturer	Type of recommended grease
Petrobrás	Lubrax GMA-2
Atlantic	Litholine MP 2
Ipiranga	Ipiflex 2
Castrol	LM 2
Mobil	Grease MP
Texaco	Marfak 2
Shell	Alvania EP 2
Esso	Multi H
Bardahl	Maxlub APG-2EP
Valvoline	Palladium MP-2
Petronas	Tutela Jota MP 2 EP
	Tutela Alfa 2K
	Tutela KP 2K

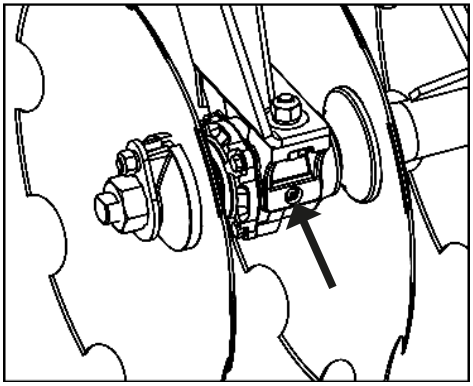
⚠ ATTENTION **If there are manufacturers and/or equivalent brands that are not listed in the table, consult the manufacturer's technical manual.**

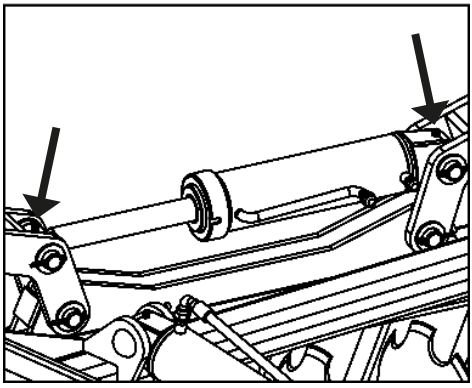
▪ Maintenance

• Lubricate every 24 hours of work







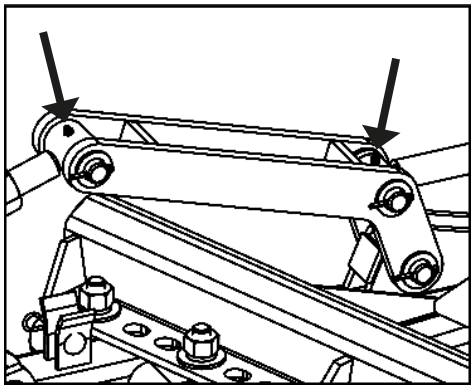


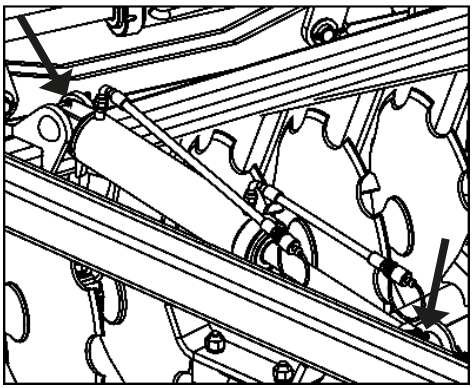
⚠ ATTENTION

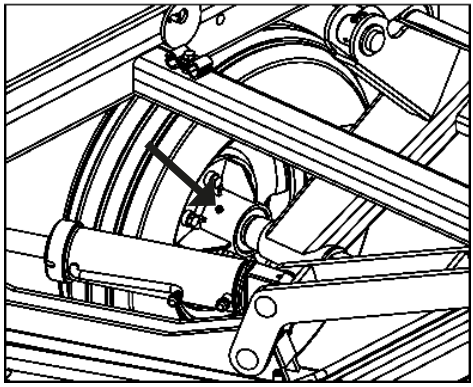
When lubricating the NVAM/NVAP, do not exceed the amount of new grease. Insert a sufficient amount.

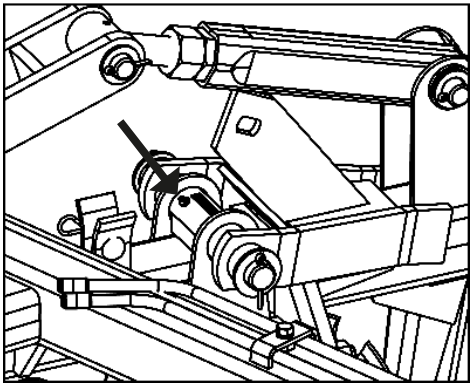
▪ Maintenance

- Lubricate every 24 hours of work









⚠ ATTENTION

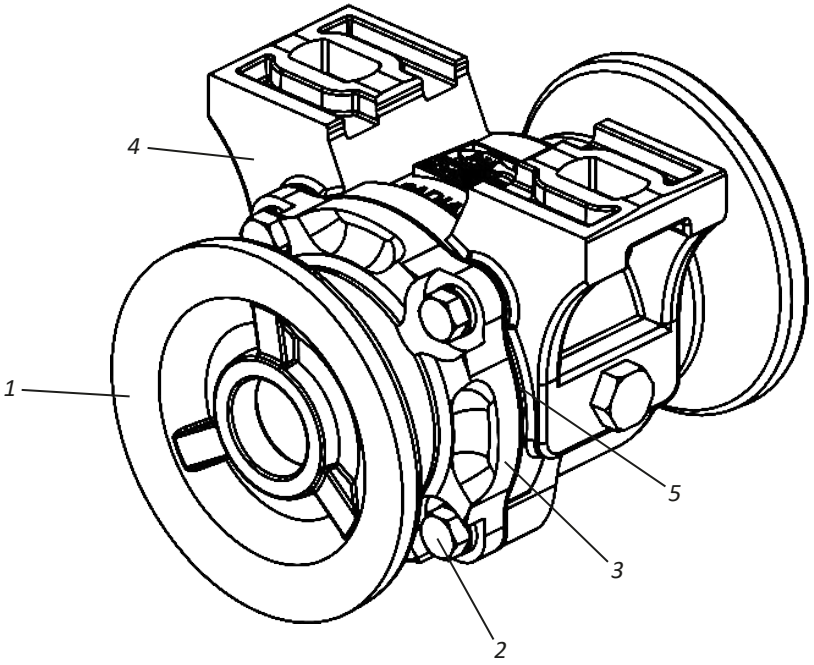
When lubricating the NVAM/NVAP, do not exceed the amount of new grease. Insert a sufficient amount.

▪ Maintenance

• Disc section bearing adjustments

When the disc section bearings show play, proceed as follows to adjust them:

01 - Remove the washer (1).
02 - Then, loosen the screws (2) and remove the cover (3) from the bearing (4).
03 - Then, remove one or two gaskets (5) from the bearing cover (3) (4). Replace the cap (3) and tighten it again.
04 - If the play persists, you can face the cover (3) to increase the adjustment, then mount it on the bearing with as many joints as necessary.
05 - The bearing must rotate freely, that is, without play.



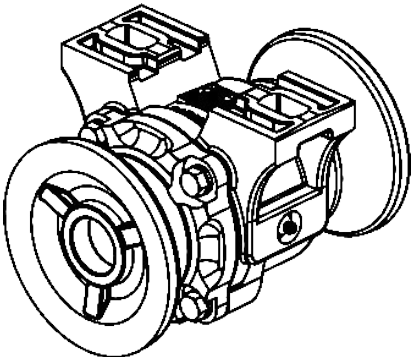
⚠ ATTENTION

Do not assemble the bearing without the gaskets (5).

▪ Maintenance

• Grease bearing

Grease bearings must be lubricated every 12 hours of work, using the grease specified below.



NOTE

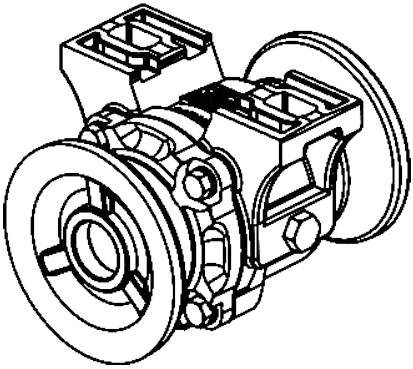
Before lubricating the bearing, clean the grease fitting with a clean, lint-free cloth. Replace damaged grease fittings.

ATENTION

The amount of grease in each bearing is 120 grams.
Use only grease: EP (Specification DIN51825 KP00K Consistency NLGI 2/3).

• Oil bearing

In the first days of **NVAM/NVAP** work, check the bearing oil level daily, then check it every 120 hours of work.



NOTE

The ideal oil level is when it reaches the plug hole.
To check the bearing oil level, look for a flat place.

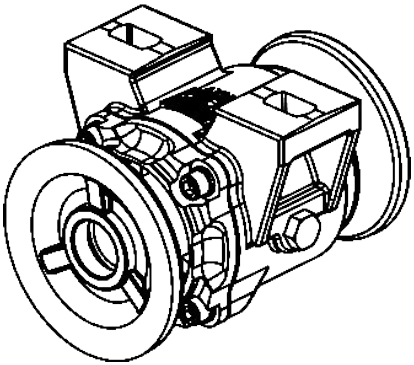
ATTENTION

Replace the oil every 1200 hours of work using 0.090 liters.
Use transmission oil: 90 API GL4, MIL-L-2105; SAEJ306, May/81: SAE 80W,90 and 140.

▪ Maintenance

• Axial bearing

In the first days of **NVAM/NVAP** work, check the bearing oil level daily, then check it every 120 hours of work.



NOTE

The ideal oil level is when it reaches the plug hole.
To check the bearing oil level, look for a flat place.

ATTENTION

Replace the oil every 1200 hours of work using 0.100 liters.
Use transmission oil: 90 API GL4, MIL-L-2105; SAEJ306, May/81: SAE 80W,90 and 140.

▪ Maintenance

• Periodic maintenance

Description of parts	Number of grease fittings							Oil change	Lubricate with grease	Re-tighten	Replace	Check	Maintenance interval
	NVAM 36	NVAM 40	NVAM/NVAP 42	NVAM/NVAP 44	NVAM/NVAP 48	NVAM/NVAP 52	NVAM/NVAP 56						
Shackle	1	1	1	1					X				24 hours
Lift cylinder base	2	2	2	2					X				
Lifting cylinder rod	2	2	2	2					X				
Header cylinder rod	1	1	1	1					X				
Wheel support bearing	3	3	3	3					X				
Mechanical jack	2	2	2	2					X				60 hours
Bearings	-	-	-	-				X					1200 hours
Hydraulic system	-	-	-	-								X	40 hours
Bearings	-	-	-	-								X	120 hours
Axle bolts and nuts	-	-	-	-						X			50 hours
Bolts and nuts	-	-	-	-						X			100 hours
Retainers	-	-	-	-							X		1500 hours
Bearings	-	-	-	-							X		
Discs	-	-	-	-							X		When necessary
Tires	-	-	-	-							X		

▪ Maintenance

• Operational maintenance - Part I

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
The tires are damaged.	Work area with stones, stumps or crop residues with stems that cause the tires to crunch.	Eliminate the elements that cause damage to the tires before the **NVAM/NVAP** is used.
	The tires are not inflated properly, causing deformation.	Maintain proper tire pressure.
Strange noise in the wheels.	Loose wheels or wheel hub with exhaust.	Retighten the wheel nuts and adjust the wheel hub bearings hub bearings.
	Bearings break.	Identify the incident and replace the damaged parts.
Quick coupling does not adapt.	Different types of couplings.	Replace them with males and females of the same type.
Leaking hydraulic hoses.	The thread is missing sealing material.	Use thread seal tape and carefully retighten.
	Insufficient tightening.	Re-tighten carefully.
	Damaged terminals.	Replace terminals.
Leaking quick couplings.	The thread is missing sealing material.	Use thread seal tape and carefully retighten.
	Insufficient tightening.	Retighten carefully without excess.
	Damaged repairs.	Replace repairs.
Leakage in the hydraulic cylinder.	Damaged repairs.	Replace the repairs.
	Damaged stem.	Replace the stem.
	Oil with impurities.	Replace oil, repairs and filter elements.
	Working pressure higher than recommended.	Adjust the control via the relief valve using a pressure gauge. Normal pressure 180 Bar.

▪ Maintenance

• Operational maintenance - Part II

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Quick couplings do not engage.	Different brand couplings.	Use quick couplings of the same brand.
	A mixture of needle-type and ball type couplings.	Always use the same type of quick coupler.
	Pressure in the system.	Ease the pressure to engage.
Tractor pulling to the right.	Angle too large in the front section or too small in the rear section.	Reduce the angle of the front section or increase that of the rear section.
	Oscillating drawbar leaning against the stop to the left.	Move the drawbar to the left.
Furrow being left open on the left.	Very low speed for soil conditions.	Increase the speed.
	Tractor being positioned too far to the right.	Position the tractor so that the left front disc is at the edge of the furrow.
	Incorrect adjustment of the disc sections laterally.	Move the rear section to the left or the front section to the right.
Formation of beds on the left.	Insufficient overlap. Incorrect rear section adjustment.	In the event of track formation, move the front section to the left or the rear section to the right.
Sections are not at harrowing level.	Front and rear sections are not operating at the same depth.	Adjust the angle of the disc sections.
Locked sections.	Very wet field.	Let the field dry or penetrate the disc superficially to help it dry.
	Adjustment of the sections with maximum angle.	Reduce the angle.
	Very deep harrowing in damp soil.	Use toppers to reduce the depth. Lift the disc to reduce penetration.
	Wipers worn or incorrectly adjusted.	Adjust or change the wipers when necessary.

▪ Maintenance

• Care

01 - Before each job, check the condition of all hoses, pins, screws, bearings, discs and sections. When necessary, retighten them.
02 - Travel speed must be carefully controlled according to terrain conditions.
03 - **NVAM/NVAP** is used in various applications, requiring knowledge and attention when handling it.
04 - Only local conditions can determine the best way to operate **NVAM/NVAP**.
05 - When assembling or disassembling any part of the **NVAM/NVAP**, use appropriate methods and tools.
06 - Carefully observe the lubrication intervals at the various **NVAM/NVAP** lubrication points. Respect the lubrication intervals.
07 - Always check the parts for wear. If replacement is necessary, always demand original Baldan parts.
08 - Keep **NVAM/NVAP** discs sharp at all times.

IMPORTANT | **Proper and periodic maintenance is necessary to ensure the long life of the NVAM/NVAP.**

• General cleaning - Part I

01 - When storing **NVAM/NVAP**, clean it thoroughly and rinse it only with water. Check that the paint hasn't worn off, if it has, give it a general coat, apply the protective oil and lubricate the **NVAM/NVAP** thoroughly. Do not use burnt oil or any other type of abrasive.
02 - Fully lubricate the **NVAM/NVAP**. Check all the moving parts of the **NVAM/NVAP**, and if they show any wear or looseness, make the necessary adjustments or replace the parts, leaving the harrow ready for the next job.
03 - After all maintenance work, store the harrow in a covered, dry place, properly supported.

Avoid: - Discs coming into direct contact with the ground.
- The compression of the springs.
- Hydraulic hoses must be properly capped.

▪ Maintenance

• General cleaning - Part II

04 - When connecting or disconnecting hydraulic hoses, do not let the ends touch the ground. Before connecting the hydraulic hoses, clean the connections with a clean, lint-free cloth. **Do not use towels!**

05 - Replace all stickers, especially warning stickers that are damaged or missing. Make everyone aware of their importance and about the dangers of accidents when instructions are not followed.

06 - After all maintenance care, store your **NVAM/NVAP** on a flat surface that is covered and dry, away from animals and children.

07 - We recommend rinsing the **NVAM/NVAP** only with water when starting work.

⚠ ATTENTION | **Do not use chemical or abrasive products to wash the NVAM/NVAP, as this could damage its paintwork and adhesives.**

• Harrow conservation - Part I

To prolong the life and appearance of **NVAM/NVAP** for longer, follow the instructions below:

01 - Wash and clean all the grill components during and at the end of the working season.

02 - Use neutral products to clean the grill, following the safety and handling guidelines provided by the manufacturer.

03 - Always carry out maintenance at the times indicated in this manual.

• Harrow conservation - Part II

The following practices and precautions, if adopted by the owner or operator, make a difference to the conservation of **NVAM/NVAP.**

01 - Take care when pressure washing; do not direct the water jet directly at connectors and electrical components. Isolate all electrical components;

02 - Use only NEUTRAL water and detergent (pH equal to 7);

03 - Apply the product, strictly following the manufacturer's instructions, on the wet surface and in the correct sequence, respecting the application and washing times;

04 - Stains and dirt that cannot be removed with the products should be removed with a sponge.

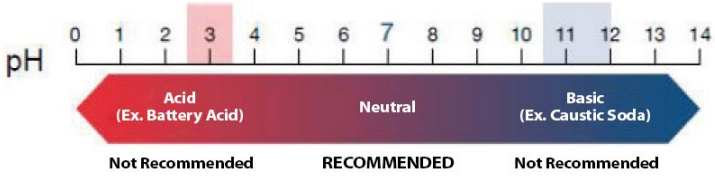
05 - Rinse the machine with clean water to remove all chemical residues.

▪ Maintenance

• Harrow conservation - Part III

06 - Do not use: - Detergents with a basic active ingredient (pH greater than 7), may damage/stain the harrow paintwork.

- Detergents with an acidic active ingredient (pH less than 7) act as a paint stripper (the protection of parts against oxidation).



07 - Let the machine dry in the shade so that no water accumulates in its components. Drying too quickly can cause stains on your paintwork.

08 - After drying, lubricate all chains and grease fittings according to the recommendations in the operator's manual.

09 - Spray the entire machine, especially galvanized parts, with protective oil, following the manufacturer's application guidelines. The protectant also prevents dirt from sticking to the machine, making it easier to wash later.

10 - Observe the curing time (absorption) and application intervals as recommended by the manufacturer.

ATTENTION | **Do not use any other type of oil to protect the harrow (used hydraulic oil, "burnt" oil, diesel oil, castor oil, kerosene, etc).**

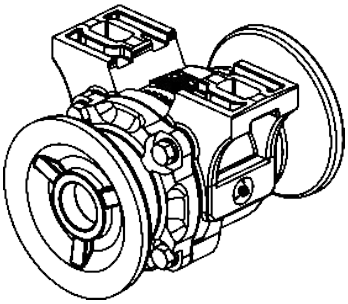
IMPORTANT | **We recommend the following protective oils:**
- Bardahl: Agro protetivo 200 or 300
- ITWChemical: Zoxol DW - Série 4000

NOTE | **Failure to comply with the above maintenance measures may result in the loss of warranty on painted or galvanized components that may show oxidation (rust).**

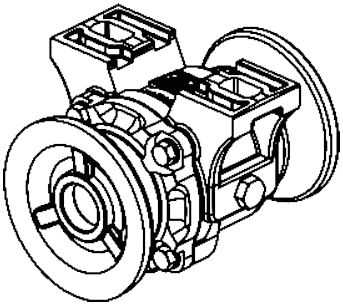
▪ Optional

• Optional Accessories

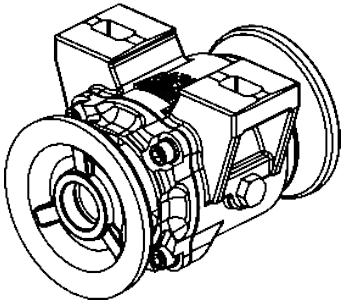
NVAM/NVAP has options that can be purchased according to your work requirements.



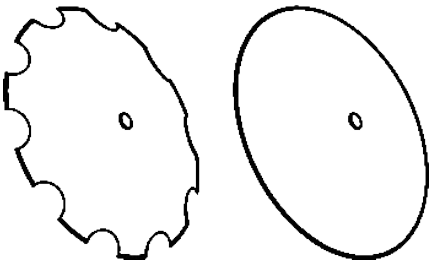
GREASE BEARING
WITHOUT PROTECTION



OIL BEARING
WITHOUT PROTECTION



THRUST BEARING
WITHOUT PROTECTION

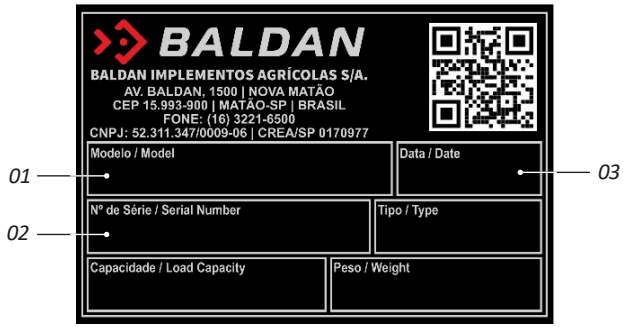


DISC CUT OR SMOOTH
20" OR 22"

▪ Identification

• Identification plate

To consult the parts catalog or request technical assistance from Baldan, always indicate the model (01), serial number (02) and date of manufacture (03) found on the nameplate of your **NVAM/NVAP**.



⚠ ATTENTION

The drawings contained in this instruction manual are for illustrative purposes.

CONTACT

If in doubt, never operate or handle your equipment without consulting After Sales.
Phone:0800-152577
e-mail: posvenda@baldan.com.br

PUBLICATIONS

Código: 60550201391 | CPT: NVA04622A

PEÇAS ORIGINAIS BALDAN
ORIGINAL PARTS · PIEZAS ORIGINALES

▪ Identification

• Product Identification

Identify the data below correctly so that you always have information about the life of your equipment.

Owner: _____

Resale: _____

Farm: _____

City: _____

State: _____

Warranty certificate no: _____

Implement: _____

Serial No: _____

Date of purchase: _____

Invoice: _____

▪ Notes

▪ Notes

Warranty Certificate

BALDAN IMPLEMENTOS AGRÍCOLAS S/A guarantees the normal operation of the implement to the dealer for a period of 6 (six) months from the date of delivery on the resale invoice to the first end consumer. During this period, **BALDAN** undertakes to repair material and/or manufacturing defects for which it is responsible, with labor, freight and other expenses being the responsibility of the dealer. .

During the warranty period, any defective parts must be requested and replaced by the local dealer, who will send the defective part to **BALDAN** for analysis**.**

When this procedure is not possible and the dealer's ability to resolve the issue has been exhausted, the dealer will request support from **BALDAN Technical Assistance**, using the specific form distributed to dealers. Once Baldan Technical Assistance has analyzed the replaced items and concluded that they are not under warranty, the dealer will be responsible for the costs related to the replacement, as well as the costs of materials, travel including accommodation and meals, accessories, lubricant used and other expenses arising from the call to Technical Assistance, and Baldan is authorized to invoice the dealer. **BALDAN** will only authorize any repairs made to a product within the dealer's warranty period upon presentation of a quotation describing the parts and labor to be carried out.

This term does not apply to products that have been repaired or modified by officials who do not belong to the **BALDAN** dealer network, or to the application of non-genuine parts or components to the user's product. This warranty shall become null and void when it is established that the defect or damage is the result of improper use of the product, failure to follow the instructions or the inexperience of the operator.

It is agreed that this warranty does not cover tires, polyethylene tanks, cardans, hydraulic components, etc., which are equipment guaranteed by their manufacturers. Manufacturing and/or material defects, the subject of this warranty term, will not, under any circumstances, constitute a reason for termination of the purchase and sale contract, or for compensation of any nature.

BALDAN reserves the right to amend and/or improve the technical characteristics of its products, without prior notice, and without obligation to do so with previously manufactured products. .

▪ Inspection and delivery certificate

SERVICE BEFORE DELIVERY: This implement has been carefully prepared by the sales organization, inspected in all its parts according to the manufacturer's instructions.

DELIVERY SERVICE: The user has been informed of the warranty terms in force and has been instructed in the use and maintenance of the product.

I confirm that I have been informed of the warranty terms in force and instructed on the correct use and maintenance of the implement.

Implement: _____ Serial No: _____

Date: _____ Tax No: _____

Resale: _____

Phone: _____ Zip Code: _____

City: _____ State: _____

Owner: _____

Phone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____

Date of sale: _____

Reseller's signature / stamp _____

1st copy - Owner

▪ Inspection and delivery certificate

SERVICE BEFORE DELIVERY: This implement has been carefully prepared by the sales organization, inspected in all its parts according to the manufacturer's instructions.

DELIVERY SERVICE: The user has been informed of the warranty terms in force and has been instructed in the use and maintenance of the product.

I confirm that I have been informed of the warranty terms in force and instructed on the correct use and maintenance of the implement.

Implement: _____ Serial No: _____

Date: _____ Tax No: _____

Resale: _____

Phone: _____ Zip Code: _____

City: _____ State: _____

Owner: _____

Phone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____

Date of sale: _____

Reseller's signature / stamp _____

2nd copy - Resale

▪ Inspection and delivery certificate

SERVICE BEFORE DELIVERY: This implement has been carefully prepared by the sales organization, inspected in all its parts according to the manufacturer's instructions.

DELIVERY SERVICE: The user has been informed of the warranty terms in force and has been instructed in the use and maintenance of the product.

I confirm that I have been informed of the warranty terms in force and instructed on the correct use and maintenance of the implement.

Implement: _____ Serial No: _____

Date: _____ Tax No: _____

Resale: _____

Phone: _____ Zip Code: _____

City: _____ State: _____

Owner: _____

Phone: _____

Address: _____ Number: _____

City: _____ State: _____

E-mail: _____

Date of sale: _____

Reseller's signature / stamp _____

3rd copy - Manufacturer (Please send completed form within 15 days)

1.74.05.0059-5

AC MATÃO
ECT/DR/SP

RESPONSE CARD

NOT REQUIRED SEAL

SEAL WILL BE PAID BY:

BALDAN IMPLEMENTOS AGRÍCOLAS S/A.
Av. Baldan, 1500 | Nova Matão | CEP: 15993-900 | Matão-SP. | Brasil
Phone: (16) 3221-6500 | Fax: (16) 3382-6500
www.baldan.com.br | email: sac@baldan.com.br
Export: Phone: +55 (16) 3221-6500 | Fax: +55 (16) 3382-4212 | 3382-2480
email: export@baldan.com.br

BALDAN

Avenida Baldan, 1500
Nova Matão
15.993-900
Matão/SP - Brasil
sac@baldan.com.br
export@baldan.com.br

+55 16 3221 6500
baldan.com.br