minos agri

READ ALL WARNINGS AND INSTRUCTIONS IN THIS MANUAL BEFORE INSTALLING OR OPERATING THE MINOS TWIN DISC FERTILIZER SPREADER!
Failure to heed this may result in personal injury or death!

TWIN DISC FERTILIZER SPREADER

Introducing & Operating Manuel

CE

minos agri

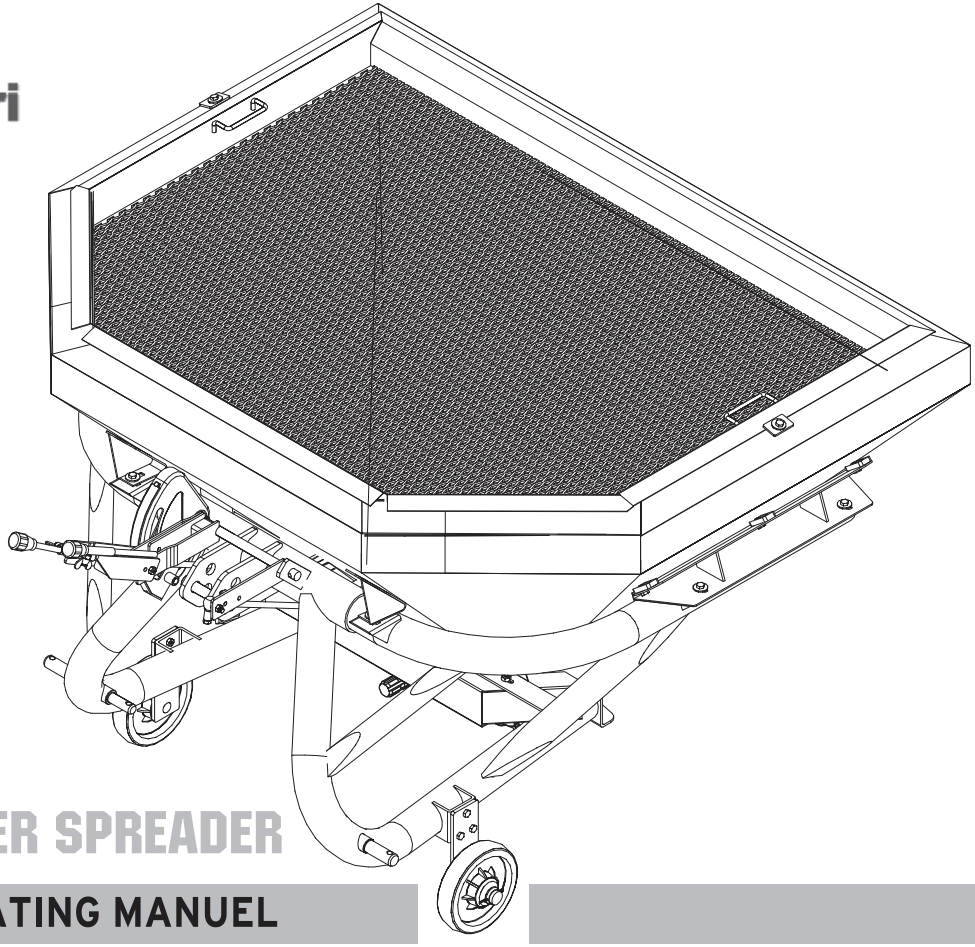
Our company, activating in agricultural mechanization field which has great importance for improvement of agriculture in our country since 1959, manufactures Rotary Tillers, Seed Drills, Inter Row Rotary Cultivator, Fertilizer Spreaders, Mulchers, ReaperBinder Machine, Maize Chopper, Rotary Mowers, Rotary Windrowers, Tedder, Mixed Machines, Subsoilers, Cultivators, Chisel, Disc Tiller used in agricultural works such as handling, fertilizing and harvesting starting from preparation of soil at the pre-sowing period until plantation, in compliance with stage of the art technology.

Considering the agricultural needs of our country, Minos Agricultural Machinery has put the baler into service with the quality, privilege, guarantee and assurance of Minos, which are designed to have strong and reliable structures, be easy to use and eco-friendly machines.

Our company following the global technological advancements is always beside farmers and at the service of state agriculture with quality machinery conforming to standards and on-site applications.

Follow Us

minos agri



(TCDGS)
TWIN DISC FERTILIZER SPREADER

INTRODUCING & OPERATING MANUEL

EC DECLARATION OF CONFORMITY

TURKAY TARIM MAKINALARI SAN. VE TIC. LTD. STI.
Fatih Mah. 1191 Sok. No: 17/A 35414 Gaziemir / IZMIR / TURKIYE

Declare under our own responsibility that the product(s) specified below satisfies the requirements of the Machinery Safety Directive 2006/42/EC.
The product(s) identified below has been produced according to basic safety and health measures.

BRAND: minos agri
PRODUCT TYPE: TWIN DISC FERTILIZER SPREADER
PRODUCT CODE: T-CDGS 800, T-CDGS 1000

Harmonized standards:

TS EN ISO 4254-1 (18.04.2016) / Agricultural machinery - Safety - Part 1: General requirements
TS EN ISO 12100:2010 (12.04.2011) / Safety of machinery - General principles for design - Risk assessment and risk reduction
TS EN ISO 13857 (29.04.2014) / Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
TS EN 349+A1:2009 (19.02.2009) / Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
TS EN ISO 14120 (18.04.2016) / Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards
TS ISO 11684 (02.02.1999) / Tractors, machinery for agriculture and forestry, powered lawn and gurden equipment- safety signs and hazard pictorials- general principles
TS 2541 (17.01.1996) / Agricultural machinery – Centrifugel Fertilizer Distributors – Test Codes
TS ISO 6720 (26.12.2008) / Agricultural machinery; equipment for sowing, planting, distributing fertilizer and spraying; recommended working widths

Issued at IZMIR-TURKEY, December 18.2017

Authorized Signatory

Ahmet KOÇ
Production Manager

Ahmet Koç (Production Manager)

MINOS AGRICULTURAL MACHINERY
Fatih Mah. 1191 Sok. No: 17/A 35414 Gaziemir/ İZMİR-TÜRKİYE
Ph: +90 232 281 54 04 - 281 63 30/ 31 Fax: +90 232 281 57 10
Web: www.minosagri.com E-mail: info@minosagri.com

WARRANTY CERTIFICATE

MINOS warrants, for the period of 1 year.

Machine details

BRAND	
PRODUCT NAME	
MODEL	
PRODUCT CODE	
MANUFACTURE YEAR	

Machine details

Title:
Address:
Tel:
Fax:
Date and Number of invoice:

Signature&Seal

WARRANTY CONDITIONS

• Warranty period is one (1) year commencing from the delivery date of the product.
• The product and all parts thereof are under the warranty of our company.
• If the product breaks down during the warranty period, the period of repair is added to the warranty period. The maximum period of repair of the product is 20 working days. This period starts when the product is delivered to a service centre, or in absence of a service centre, to the seller, dealer, agency, representative, importer or manufacturer in order.
• In the event that the product breaks down due to material or workmanship faults or installation faults, it will be repaired free of charge, without charging any fees due to labour, replaced part or anything else.
• In the following events, the product shall be replaced free of charge:
I-The product repeats the same defect more than twice or different faults more than four in one year, however, in any case within the warranty period, and as a result, periods during which meter is out of service become continuous.
II-Maximum period necessary for its repair is exceeded.
III-With a report issued by a service centre, or in absence of a service centre, by the seller, dealer, agency, representative, importer or manufacturer in order, the repair of the meter is determined as impossible.
• Breakdowns due to improper operation of the product not observing the instructions in the operating manual are not covered by warranty
• For problems with the warranty certificate, consumers may apply to the Republic of Turkey Ministry of Science, Industry and Technology, General Directorate of Protection of Consumers and Competition.
• Failures arising from the use of product against the consideration specified in the user's guide are unguaranteed.

MANUFACTURER INFORMATION

Agricultural Machinery

Fatih Mah. 1191 Sk. No: 17/A P.K.35414 Gaziemir - İZMİR - TÜRKİYE

Ph : +90.232 281 54 04 - 281 63 30 - 281 63 31 Fax: +90.232 281 57 10

www.minosagri.com - e-mail: info@minosagri.com - www.facebook.com/minosagri - www.twitter.com/turkaygrup

• Fertilizing is one of the most important agrotechnical method for increasing the efficiency of cultural plants. The purpose of fertilizing is for to provide the nutriment material which are decreased in the soil by the time. The most important nutriment materials are nitrogen, phosphorus and potassium.
• Twin disc fertilizer spreader machines are classifed by the kinds of the fertilizer and dispersion of the fertilizer.
T-CDGS Minos is classified as a mineral fertilizer broadcaster .
• T-CDGSY This machine distributes the mineral fertilizer by a rotation of a disk by a centrifugal force, The main parts of this machine are: fertilizer tank, mixer, fertilizer norm adjustment unit, dispersing discs, gear box and main holder.
• The most important thing that you must take care is the fact of the wind while working with this machine.The wind prevents the movement of the sprinkled fertilizer in the air and this blocks the regular dispersing of the fertilizer on the field. To reduce the fact of the wind and for to prevent the fertilizer blown away you must use wind guards on the machine.
• The sheet curtain prevents the sprinkled fertilizer to come over the tractor which takes place between the dispersing dics and tractor,
• This machine produced with two dispersing discs.So this provides a regular dispersing and increases the working width of the machine.
• The amount per unit of the fertilizer which will sprinkle on the field is adjusted by the openings of fertilizer exit holes in the tank and also it is adjusted by changing the speed of the tractor. If you increase the speed of the tractor without changing the adjustment of the machine, the amount per unit of the fertilizer which will sprinkle on the field will be reduced.

• The active parts of the machine are two dispersing discs which take their movement from tractor pto spindle for turning.These discs are put in a place by a horizantal position on the machine.There are different shapes and amounts of dispersing wings located on the discs which are produced by bending some stainless sheet material.By opening the fertilizer exit holes which takes place in the bottom of the tank,the fertilizer can be poured out on to the discs.The dispersing discs catch the fertilizer which was poured on while turning by the help of the dispersing wings and they throw the fertilizer back in a specific speed and sprinkle to field surface.
•Here we can say that,twin disc fertilizer broadcaster produced suitable for the agricultural Requires.

These requires are written as follows,:
1. Regular dispersing on field.
2. Using(working) with the adjustment unit of the fertilizer norm on the machine should be very simple and it must be suitable for to adjust by different degrees.
3. There should be a small effect of working tendency on fertilizer norm and working speed
4. Flowing of the fertilizer from the machine should be continuous.
5.This machine should be suitable for different structures of fertilizer.Ex. (powder, crystal and granule.
6. The mixing and dispersing parts of the machine must not destroy the structure of the fertilizer by squeezing.
7. Filling the fertilizer and in the tank and making it empty can be simply made.
8. Cleaning the machine must be easy.
9. Because of the corrosion effect of the fertilizer,the machine must be produced from strong material.
10.This machine must be simple,safe and usable.

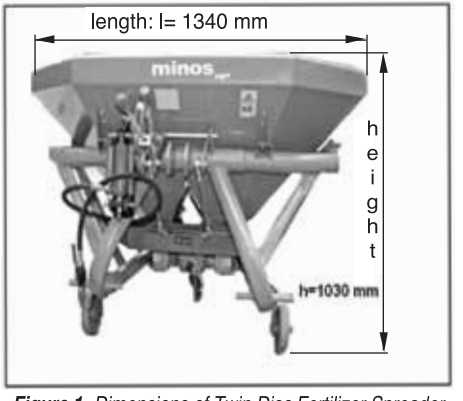


Figure 1- *Dimensions of Twin Disc Fertilizer Spreader*

l(length)	w(width)	h(height)
1680 mm	1340 mm	1030 mm

⚠ ATTENTION!

WHILE THE MACHINE IS CONNECTED TO THE TRACTOR AND IF THE TRACTOR IS IN WORKING POSITION,

TRANSPORTING :

• Never carry anyone or any animal on the machine.
• Pay attention on the traffic rules on public roads.
• Check out the lightening, warnıng decals,and protection guards before starting to work.
• Pay attention to work with the machine in the daylight. Especially at nights in public roads take care to have safety decal (light decal apparatus) on the machine
• Take care of the transporting the machine to the field, the machine must be empty. Do not fill it with fertilizer.

Transporting the machine :

1. Transporting with forklift : You must choose a forklift according to the weight of the machine. Hold the machine from its weight center. Connect the forklift hook on the machine from the weight center. Start transporting the machine.

2. Transporting with crane: This method is same as transporting with forklift. Hold the machine from its weight center by crane. Pay attention if the security lock of the crane's hook is workng safely.

3. Transporting with palette: Choose palette according to the machine dimensions. Transport the machine by forklift while it is on palette.

• Never be under the machine or near the machine while transporting it by forklift, crane or palette.
• Take care of the security of the hook and iron ropes. Be sure that they are full of security.
• Twin disc fertilizer spreader is connected to the tractor by it is three point hitch system.

The main holder is made of pipe material.It carries all parts of the machine on, as gear box, dispersing discs and fertilizer tank.

•The dispersing discs are produced from 3 mm iron sheet and bended. There are two same shaped dispersing wings are located on each dispersing disc.The deflector (sheet material) on the machine prevents the fertilizer to come on the tractor. While working with the machine.

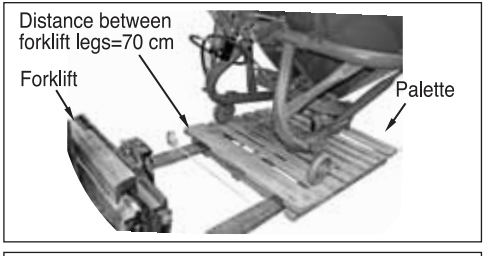
•The fertilizer in the fertilizer tank flows on to the dispersing discs from the openings which is located inside and under the tank. The lids that fertilizer goes out and flows can be closed and opened by 2 adjustment arms manually. By connecting the adjustment handles to each other you can control both of the lids that fertilizer goes out. The arms can also work alone by disconnecting them from each other."

• The mixers inside the tank mixes the fertilizer and gives homogen structure to the fertilizer. The fertilizer that comes out from the tank to the dispersing discs sprinkles by a centrifugal force. The dispersing of the fertilizer shows reduction from the center of the machine to the sides of the field. Because of this effect going and returning dispersing areas must cover each other. It must be like this for to make a regular fertilizing. Like this period of working, the distance between the machine centers (go and return) gives the working width of the machine. In this machines, dispersing widths are different from the working widths. Working widths are always less then the dispersing widths. The dimension of the working width can be at least half of the dispersing width. In this machines there are many facts that effects fertilizer norm adjustment. It is difficult to have sensitive fertilizer norm and regular dispersing.The quality of fertilizing depends on feed amount, tractors working speed and regular dispersing. Feed amount depends on the density and the physical conditions of the fertilizer. Feed amount generally adjusted by changing the area of the openings in the tank.

• T-CDGS Twin disc fertilizer broadcaster takes its movement from the tractors pto spindle.

⚠ ATTENTION!

PAY ATTENTION TO BE NOT UNDER THE MACHINE WHILE TRANSPORTING



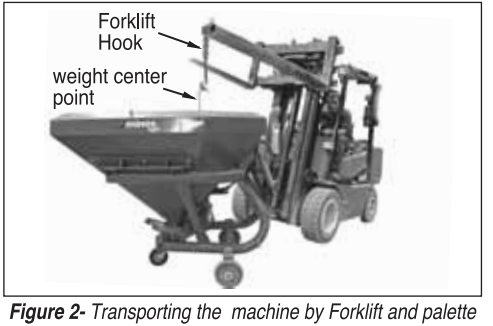


Figure 2- *Transporting the machine by Forklift and palette*

⚠ ATTENTION!

TAKE CARE OF THE HOOKS AND IRON ROPES OF THE CRANE AND FORKLIFT TO BE SAFETY ENOUGH

The main parts of the machine:

1 – Sieve
2 – Fertilizer tank
3 – Main holder
4 – Dispersing wings
5 – Dispersing discs
6 – Gear box
7- Adjustment arms
8 – Mixer

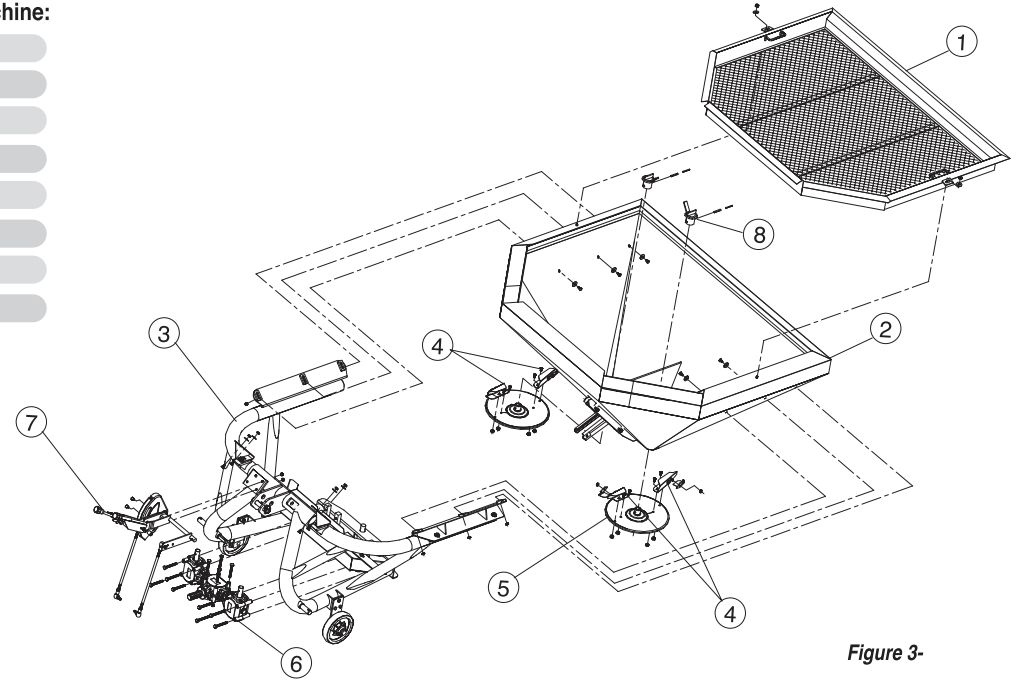


Figure 3-

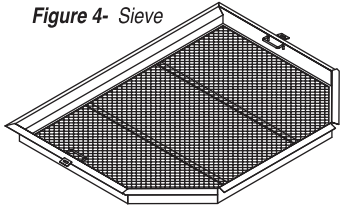


Figure 4- Sieve

1 - Sieve :
The problem of the fertilizer which becomes roundish by moisture in meantime, can be solved by oscillation movement of the sieve which is connected to the two sides of the fertilizer tank with two bolts.It prevents to occur flowing problems in fertilizer and prevents the machine to be stopped up.

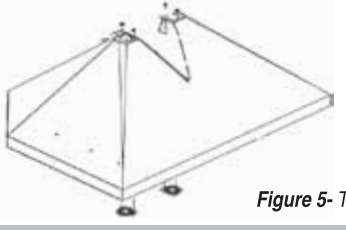


Figure 5- Tank

2 – Fertilizer tank :
This tank is produced like a cone shape for an easy flowing of fertilizer.
The fertilizer fills this tank for fertilizing.

3–Main Holder :
This main holder carries all parts on the machine on and produced from bended pipes.

4–Dispersing wings :
The most important function of the wings that are located on the discs are to throw the fertilizer to a far distance or a near distance. Dispersing distance can be adjusted by changing the places of the wings on the discs. The wings are connected on to the discs in at least 3 different position angles for working with the machine. The dimension of the angles between the dispersing wings must not be bigger than 0.5° . The lengths of the dispersing wings and the dimension between the end points of the wings should be 2mm. The difference between the dimension of the height of the wings to the disc surface should be 1mm.

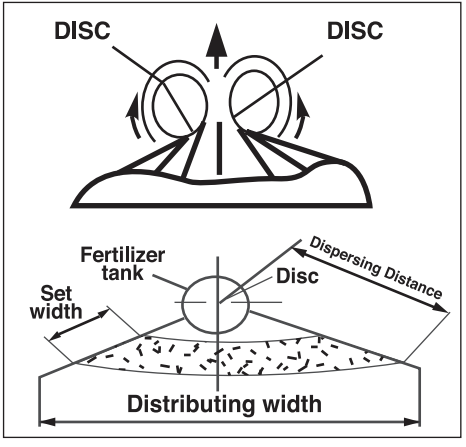


Figure 7- *Dispersing width, dispersing shape, dispersing distance of the machine*

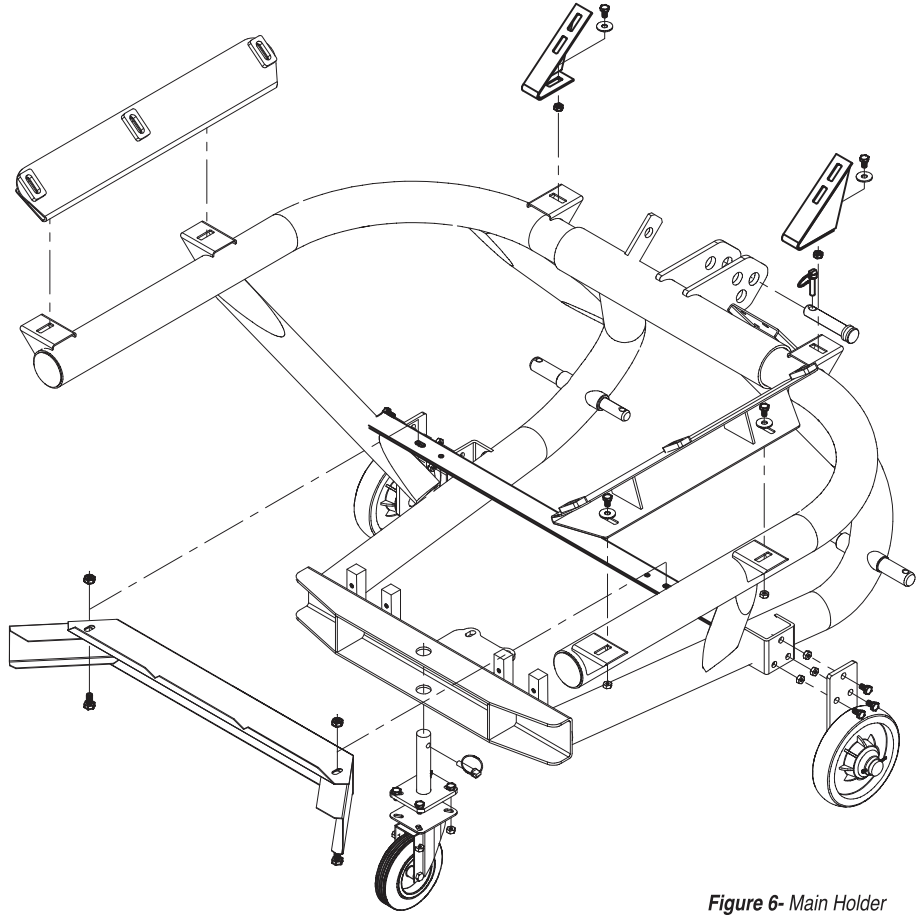


Figure 6- *Main Holder*

5–Dispersing Discs :

This machine have 2 dispercing discs .

Figure 8- *Dispersing Discs*

Figure 9- *Dispercing wings*

⚠ ATTENTION!

NEVER MIX FERTILIZER WITH HAND IF THE TANK IS STOPPED UP.

6–Gear Box :

Gear box gives the movement from tractor pto shaft by changing the rotation of the movement and number of rpm to the discs and mixer.

⚠ ATTENTION!

NEVER TOUCH THE MACHINE WITH HAND, FOOTWHILE IT IS WORKING.

7–Adjustment Arm :

It adjusts the flow hole openings, in working position in different adjustment levels. In transport position this arms close this openings completely. This mechanism, must be produced for to fix the flow hole opening in each adjustment level.This adjustment mechanism should close and open both openings or only one opening at the same time. Also the tractor driver must control this mechanism easily while he is in tractor seat. Figure 10

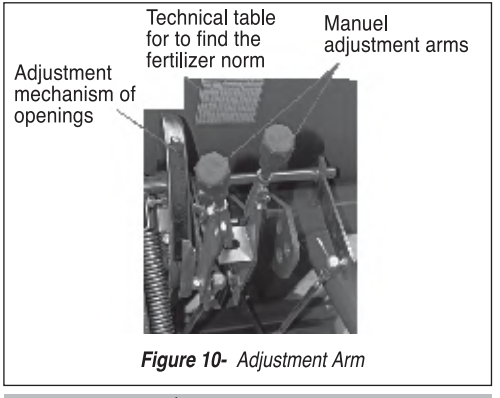


Figure 10- *Adjustment Arm*

⚠ ATTENTION!

NEVER CARRY ANYONE IN FERTILIZER TANK.

8-Mixer:

By this mixer, the fertilizer in the fertilizer tank can flow out from the openings homogenly. Also if the fertilizer become roundish by moisture in meantime, this mixer mixes the fertilizer and gives regular flow to it. Figure 11

10-Hydraulic Piston :

If the customer prefers to buy this mechanism he can adjust the fertilizer norm by hydraulic system it is more easy to adjust it with this instead of adjusting it manuel. (Figure 12)

Figure 12- *Hydraulic Piston*

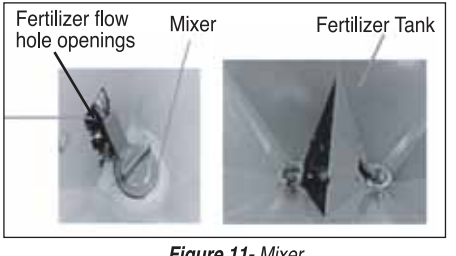


Figure 11- *Mixer*

• Connect T-CDGS Twin Disc Fertilizer
Spreader to the tractor by its three point hitch system. Dimensions comprising the standard specifications are divided into 4 categories.Fix the upper and bottom security pins by the standarts of category **II**.Note: (Category **I** includes the tractor max.drawbar power 40 HP. Category **II** includes the tractor max.drawbar power 40-100 HP. This machine produced in the standart specifications of Category **II**.Table-1 Adjust the upper and lower arm for to make the tractor parallel to the ground. While adjusting this the tractor should be in a flat surface.

Working with Twin Disc Fertilizer Spreader:
• Max. İnput rotation speed of T-CDGS 'is 540 rpm

Category	Max. drawbar power (HP)	Lower hitch pin hole diameter Ø (mm) (max.)-(min)	Upper hitch pin hole diameter Ø (mm) (max)-(min)
I	...40	22,10-21,84	19,56 - 19,3
II	40-100	28,45-28,19	25,91 - 25,7
III	80-225	36,85-36,32	32,26 - 32
IV	180-400	50,8-49,7	45,5 - 45,2

Table-1. *(Special hitch categories-dimensions associated with implement)*

⚠ ATTENTION!

STOP THE ENGINE!
THEN ADJUST AND PREPARE THE MACHINE FOR WORK

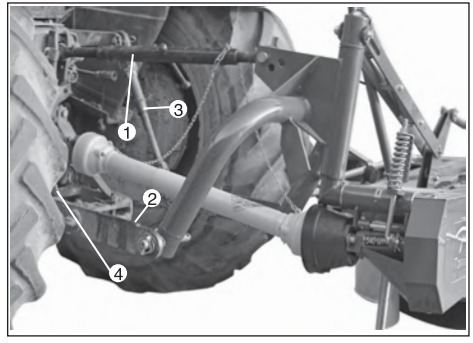


Figure 13- *Connecting the machine to the tractor*

1-Upper hitch arm **3- Stretchning chains**
2-Left hanger arm **4-Right hanger arm**

Connecting the machine to the tractor:
Firstly connect the lower non adjustable arm then adjustable arm at the end connect upper connection arm.While disconnecting the machine do the opposite.
Connecting the pto shaft:
ES 200X900 Pto shaft is used in Twin Disc Fertilizer Broadcaster
•Before connecting the pto,clean the surfaces of spindle and lubricate them wtih grease. Later shift the shaft on the pto spindle until the pin fits into safely. The shifting distance must be at least 15 cm. Take pto shaft guard in a safety position by hanger.This safety position is for the tractor and for the rotation of fixed parts.
•P.T.O shaft can only be connected when the P.T.O connection and engine are switched off and the ignition key is pulled down.

•Connect the prescribed P.T.O. shaft and secure the P.T.O shaft connection by a chain Make sure that the P.T.O shaft is in proper position on both ends.the adjustment of the P.T.O shaft is necessary for different tractors.To find out the right length.Shorten both shafts and proteciton tubes for exactly the same length.

To find the right length:
Connect the machine to the tractor.
Pull out the P.T.O shaft entirely and connect each separate half of the shaft to the tractor and compare them wih each other.
If the covering of the P.T.O shaft and P.T.O shaft does not run into the block at horizontal position.
In case you need to shorten the P.T.O shaft.Shorten the shaft in exactly the same length.

Figure 14- *Cutting the shaft spindle for a suitable length for the tractor*

• Pay your best attention to proper mounting and securing of the P.T.O shaft..
• Make sure that nobody is in the area of danger of the implement before switching on the P.T.O shaft connection.
• When working with the P.T.O shaft connection nobody is allowed to be in the area of rotating connection on the P.T.O shaft.
• After switching off the P.T.O shaft conneciton the danger of rotating heavier parts remains. Do not get close to the implement during this period. You can start to work only when the rotation is completely stopped.
• P.T.O shaft protection must be fitted on. And must be in perfect condition.
• Use only original P.T.O shafts prescribed by your manufacturar. Because the manufacturer will not take any responsibility if another shaft is used.

Transporting the machine to the field to prepare for work:
Start the engine of the tractor for a minute.Hold the machine with main hydraulic arm. Attach the security lock for not to damage to the hydraulic system while driving. Stretch the stretching chains to prevent swinging. Transport the machine empty (without fertilizer) to the field. Fill the fertilizer to the tank in the field.
• In transporting position, raise the machine up and lock the security pin to prevent the machine fall down.
• In turnings, take into consideration the load which is outside the centre of gravity and/or constant weight of the implement.
• Working with tractor in the tendency fields can give damage to the machine. But if you have to work in these tendency fields take care of working, do not turn the road bend fastly and sharply. For working in tendency fields you must be careful about if the tractoris decked out with the additional weights.

Before starting to work with the machine in the field:
Start the height adjustment of the machine from the ground by theTractor's hydraulic arm in the position control level. In the position control level, if you move the hydraulic arm slowly the machine rises up, than it stops in a fixed level, then if you give movement to the arm the machine will go up again and then will stop.

But the machine does not rises up to the max. upper level as in the drawbar control level.

Note:
If the machine or the implement rises completely up, the front arm is in draw position. If the machine or the implement does not rise up completely it is in position control level. This position control level provides the machine to work on the soil by holding the machine in a specific height. While working with Twin Disc Fertilizer Spreader the position control level must be chosen.

• **The height adjustment level of the machine from the ground :**
If the height distance of the discs from the ground increases the dispersing width also will increase. So the fertilizer will be sprinkled to more wider area. The height distance of the discs from the ground depends on the characteristics of fertilizer shall be 55-75 cm.

• **The fertilizer norm:**
For adjusting the fertilizer norm in 540 rpm of rotation of the tractor pto shaft, you must know the tractor speed, the position of the openings.The technical specifications about the norm is given in the sticker which is glued on the machine. So you must increase the motor rotation speed to 540 rpm by tractor hand gas then you can find your speed according to the fertilizer amount per /decar from looking to the table-2.

After you find tractor speed look at the tractormetre and choose your gear level. Then you can start to work in the field.

How to use the table-2

If 25 kg üre fertilizer supposed to sprinkle per decar, look to the table and find the value 25 and look to the left side of the column, the adjustment arm position value is shown as 20 in the table,go up in the column that the value 25 is found, find the working width value as 15m from the table. Also for this value the tractor speed is given 8 km/h in the table. (Table- 2)

note:

In 8 km/h (tractor working speed), the rotation speed of motor is choosen as 1970 rpm. Look at the tractormetre and choose your gear speed of tractor.

Tractor speed (KM/H)	Position of adjusting arm	Fertilizer %46 ÜRE(KG/Da) Working width (M)			FERTİLİZER %26 NITRATE (KG/DA) Working width(M)		
		12	**15**	18	12	15	18
6	15	6	4,7	4	16,5	13	11
6	20	41,5	33	28	66	53	45
6	25	83	66	55	111	89	74
6	30	111	89	74	140	112	96
8	15	4,5	3,5	3	12	10	8
8	**20**	31	**25**	21	50	40	30
8	25	62	50	42	83	66	55
8	30	83	67	55	105	84	70
12	15	3	2,5	2	8	7	5,5
12	20	21	17	14	33	27	22
12	25	41	33	27	55	45	37
12	30	55	44	36	63	56	46

Table -2- *Fertilizer norm*

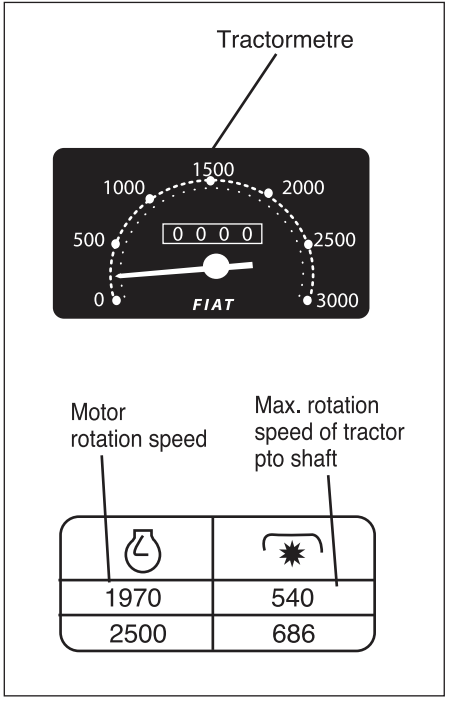


Figure 15- *Tractormetre*

T-CDGS Twin Disc Fertilizer Spreader is produced by full of quality. So this machine will not need so much maintenance and repair after working with the machine. Take care about the items that is written below for maintenance and repair :

• Cleaning, lubrication or adjusting of the implement, driven by the P.T.O shaft can be done when the connection and the engine are switched off and the ignition key is pulled out.
• Maintenance and repair must be done after the shaft and machine is disconnected from the tractor.
• It is easy to repair and make maintenance to the Twin Disc Fertilizer Broadcaster. After the work never leave fertilizer in the tank.Clean the tank completely.
• Put the machine in a closed area after work, lubricate the parts and take care against rust.
• Control the nuts and screws every day to see if they are tightened enough. If not tighten them.
• Change the broken and weared parts.
• Choose the suitable parts while making maintenance. The parts must be safety.
• Use adequate tools and gloves during repairs, mainteance and cleaning.
• Lubricate the grease nipples everyday periodically.
• Use original spare parts.
• Control the dispersing wings and discs in each 100 hour period of work.Change weared ones.
• Control the gear box oil level in each 30 hours of work.Change the oil of the gear box after controlling the oil level in the period of 400 hours work. Use SAE 140 oil in the gear box.Fill out the oil from the oil plug in the gear box and wash the gear box with diesel oil before changing it's oil.
• If you perform any maintenance on the lifted implement, always secure the implement by a suitable holder.
• Call Minos technical service for the maintenance of the machine. (Table.3)

⚠ ATTENTION!

MAINTENANCE, REPAIRS, CLEANING MAY ONLY BE EXECUTED WHEN THE DRIVE AND THE ENGINE ARE SWITCHED OFF AND THE IGNITION KEY IS PULLED OUT.

CONTROL(A)	MAINTENANCE(B)		VARIATION(C)		
Maintenance Period ==>	Daily	Weekly	30 hours	100 hours	400 hours
Lubrication (Level control of gear box oil) Variation of oil(SAE140)			A		
Oil leakage control	A				
Dispersing disc/wing wearness control				A	
Lub.grease nipples		B			
Tightness control (bolt-nut)	A		C		
Cleaning	B				

Table-3- *Maintenance Periods*

Safety decals:
There are 3 types of main safety decals. These are shown as,

Danger :
When you see this alert symbol and heading be alert to the danger of injury of death of men and animals.

Alert :
When you see this heading, be alert to the possibility of serious injuries because of using the machine out of the using rules.

Attention :
When you see this heading, be alert to the possibility of damage to equipment, crop, building, etc. but to financial and/or juridical problems as well.

1-The serial num, manu.adress and name, produc. date

2- Technical specificati for fer.norm

3- Manufa.com name adres

4- Trac. max rotation speed 540 rpm

5- Alert Symbol

⚠ ATTENTION!
READ OPERATORS MANUEL BEFORE STARTING TO WORK WITH THE MACNINE.

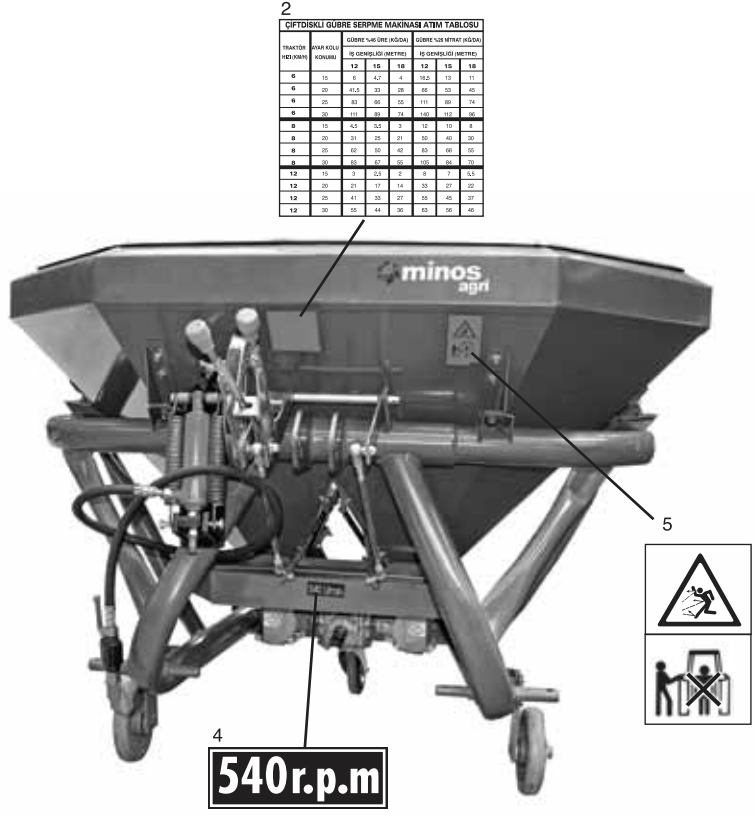


Figure 16- *Alert Decals*

•All machines have stickers glued on.In this stickers
machine type, adress of manufacturer, machine serial number, model of the machine is prescribed.
• Stop fertilizing if it is windy or use wind guard against wind.
•Safety and warning decals,placed on the machine, give important instructions for safe work. Take them into consideration for your safety.
• Make sure you get familiar with all devices and elements for handling and with the functions before starting with the work.
• Avoid wearing loose-fitting clothes. Clothes should fit tight to the operator's body.
• Implements should be connected according to the instructions, fastened to the prescribed devices and secured.
• Never left the driving seat during driving.
• Strating devices for remote control should be secured in a way that, they can not be unintentionally released during transport or work.
• When disconnecting the machine from the tractor, place it on the flat ground.

• Never jump, sit or climb on the machine while it is connected to the tractor.
• Stopping or operating the machine must be done by the driver. No one may drive the tractor except the driver.
• Use protection for hearing and glasses while working with the machine if the tractor does not l closed cabin.

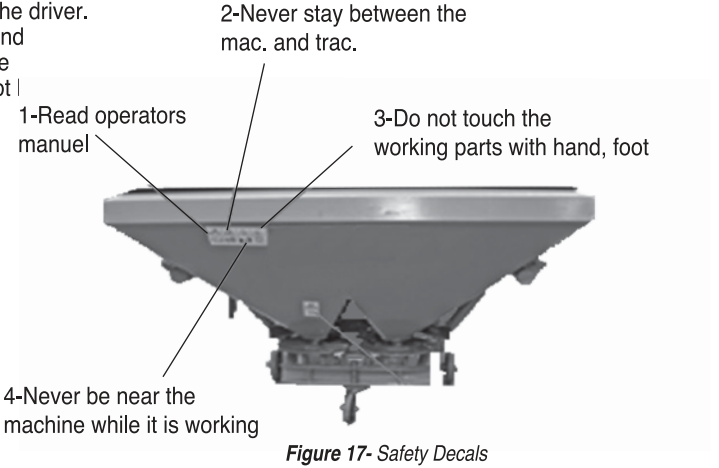
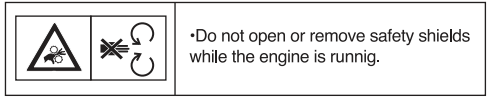
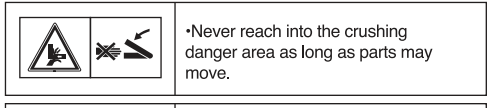
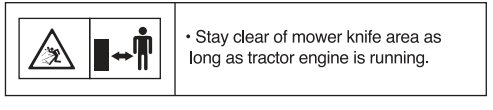
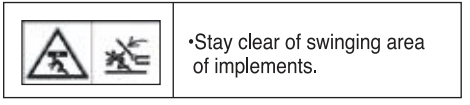


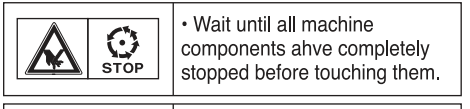
Figure 17- *Safety Decals*


•Do not open or remove safety shields while the engine is runnig.

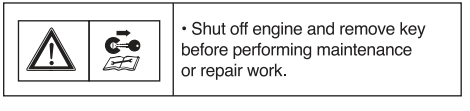

•Never reach into the crushing danger area as long as parts may move.

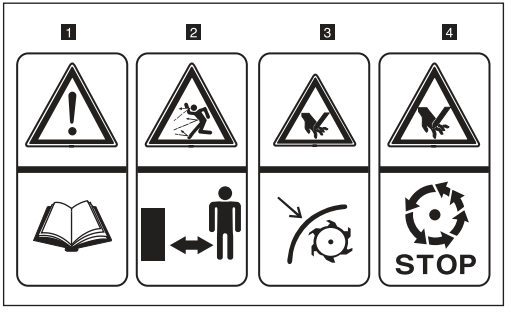

• Stay clear of mower knife area as long as tractor engine is running.


•Stay clear of swinging area of implements.



• Wait until all machine components ahve completely stopped before touching them.

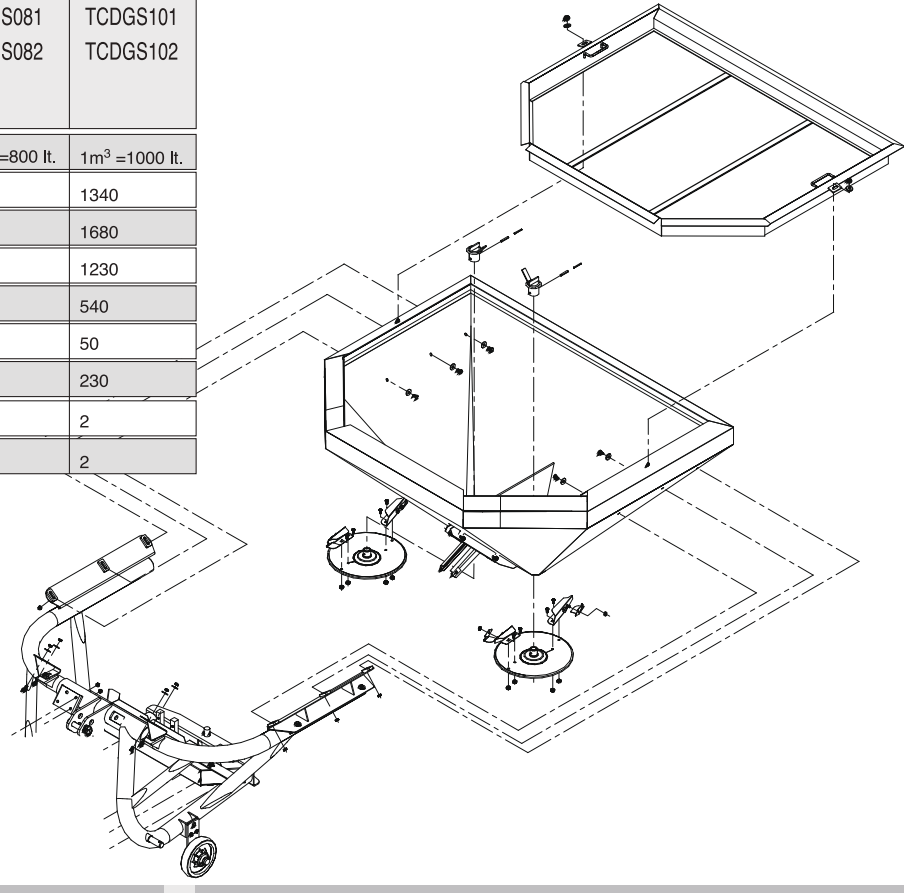

• Shut off engine and remove key before performing maintenance or repair work.



Twin Disc Fertilizer Spreader TECHNICAL VALUES

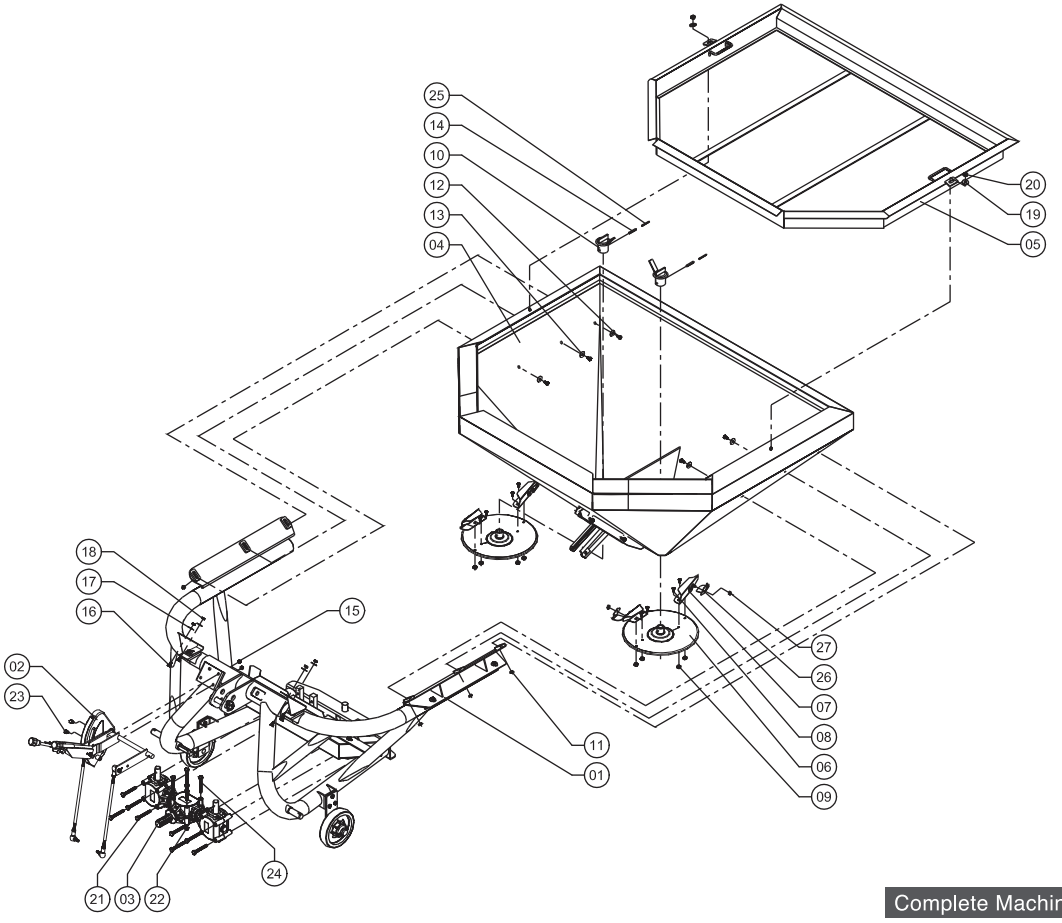
Makina Kod Tarifleri Not: TCDGS081=(800 lt. Kazanlı Pistonlu)- (800 lt. tank-piston) TCDGS082 = (800 lt. Kazanlı-Pistonsuz) TCDGS101 = (1000 lt. Kazanlı-Pistonlu) TCDGS102 = (1000lt. Kazanlı-Pistonsuz)	TCDGS081 TCDGS082	TCDGS101 TCDGS102
Volume of fertilizer tank m3	0.8m^3 =800 lt.	1m^3 =1000 lt.
Rotation speed of dispersing disc (rpm)	1340	1340
Angel of dispersing wing(=)	1680	1680
No.of wings on dispersing discs	1030	1230
No.of openings fertilizer flows	540	540
Transmission rate of gear box	50	50
Weigth of the machine(empty)	215	230
Her Diskteki Kanat Sayısı (adet)	2	2
Gübre Deposu Çıkış Deliği Sayısı (adet)	2	2

Table-4- *Technical values*



minos agri

(TCDGS) TWIN DISC FERTILIZER SPREADER
SPARE PARTS LIST

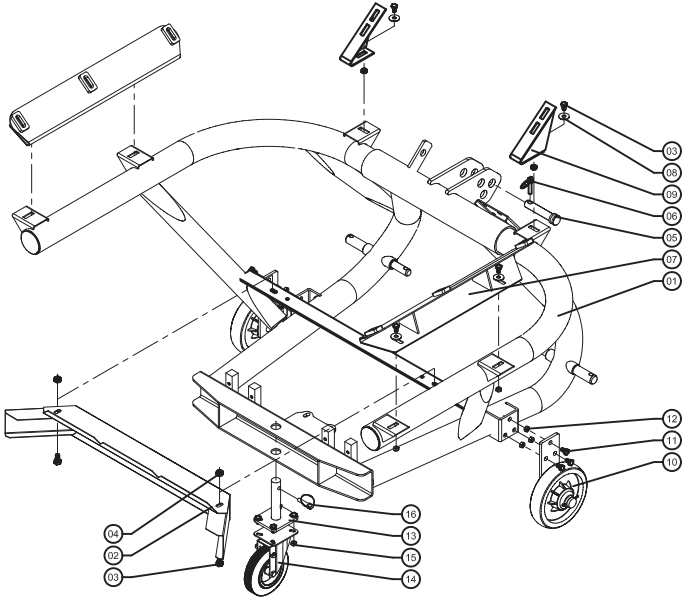


Complete Machine TCDGSY082-1

SPARE PARTS LIST
Complete Machine TCDGSY082-1

Pos Num	Quantity	Order Number	Explanation	Norm (DIN)
01	1	TCDGSY082-1.1	Three Point Hitch group	
02	1	TCDGSY082-1.2	Adjustment unit	
03	1	TCDGSY082-1.3	Gear box Group	
04	1	TCDGSY082-1.4	Fertilizer tank group	
05	1	TCDGSY082-1.5	Sieve	
06	2	TCDGSY082-1.6	Disc	
07	2	TCDGSY082-1.7	Fertilizer dispersing wings	
08	4	VİDA-TOR-UNC-5/16"x15	Product grade a slotted cheese head screws	DIN 84
09	4	SOM-AKS-UNC-5/16"-8,8	All metal pravieling torque type nuts	DIN 980
10	2	TCDGSY082-1.10	Mixer	
11	6	SOMFIB-AKS-M10x1,5	Prevaling torque type hexagon nutswith nonmetalic insert	DIN 934
12	6	CIV-M10x1,5x30-8.8	Hexagon screw	DIN 933
13	6	RON-DUZ-M10-6.8	Washer for hexagon bolt	DIN 125
14	2	SIKMA-KOV-Ø8x45	Type straight pins(roll pins)	DIN 1481

Pos Num	Quantity	Order Number	Explanation	Norm (DIN)
15	2	SOMFIB-AKS-M10x1,5	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 934
16	4	CIV-M10x1,5x30-8.8	Hexagon screw	DIN 933
17	4	RON-DUZ-M10-6.8	Washer for hexagon screw	DIN 125
18	4	SOMFIB-AKS-M10x1,5	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 934
19	2	RON-DUZ-M10-6.8	Washer for hexagon screw	DIN 125
20	2	SOMFIB-AKS-M10x1,5-6.8	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 934
21	8	CIV-M10x1,5x110x25-8.8	Hexagon screw	DIN 933
22	4	SOMFIB-AKS-M10x1,5-6.8	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 934
23	2	CIV-M10x1,5x20-8.8	Hexagon screw	DIN 933
24	4	CIV-M10x1,5x120x25-8.8	Hexagon screw	DIN 933
25	2	SIKMA-KOV-Ø5x45	Type straight pins(roll pins)	DIN 1481
26	4	TCDGSY082-1.26	Fertilizer adjusting sheet	
27	4	SOMFIB-AKS-M8x1,25-6.8	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 934

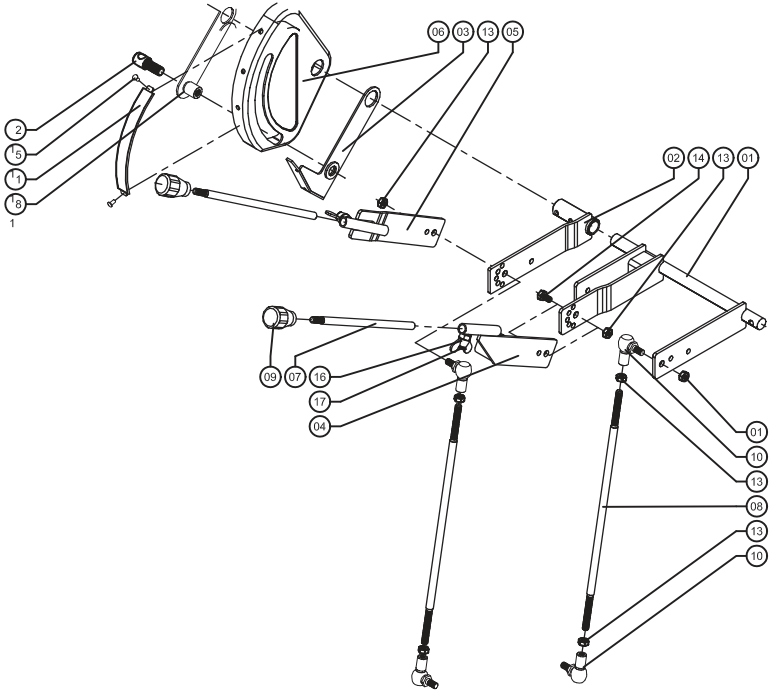


SPARE PARTS LIST

Three Point Hitch Group TCDGSY082-1.1

Pos Number	Quantity	Order Number	Explanation	Norm (DIN)
01	1	TCDGSY082-1.1.1	Three point hitch draw bar	
02	1	TCDGSY082-1.1.2	Safety sheet	
03	8	CIV-M10x1,5x20-8.8	Hexagon screw	DIN 933
04	8	SOMFIB-AKS-M10x1,5	Hexagon nuts wtih metric coarse and fine pitch thread	DIN 934
05	1	TCDGSY082-1.1.5	Upper drawbar pin	
06	1	PIM-MAŞ-ARM Ø10	Splitted pin	
07	1	TCDGSY082-1.1.7	Support arm	
08	6	RON-DUZ-M10-6.8	Washer for hexagon bolt	DIN 125
09	2	TCDGSY082-1.1.9	Support sheet	
10	2	TCDGSY082-1.1.10	Fixed front wheel	
11	6	CIV-M12x1,75x30-8.8	Hexagon screw	DIN 933
12	6	SOMFIB-AKS-M12x1,75-6.8	Hexagon nuts wtih metric coarse and fine pitch thread	DIN 934
13	1	TCDGSY082-1.1.13	Wheel connection	
14	1	TCDGSY082-1.1.14	Rubber wheel	
15	4	SOM-AKS-M8x1,25-8,8	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 985
16	1	PIM-MAŞ-ARM Ø8	Splitted Pin	

Three Point Hitch Group TCDGSY082-1.1

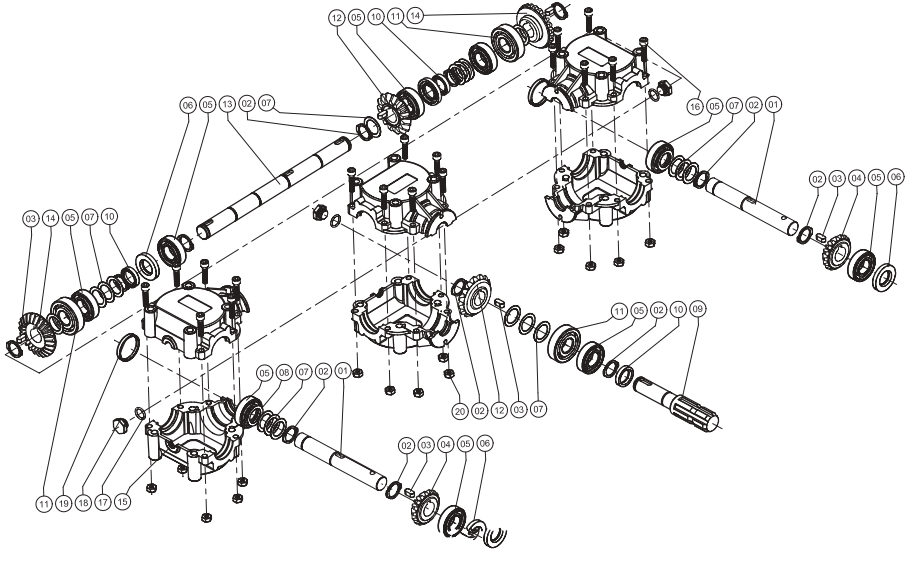


Adjustment Unit / TCDGSY082-1.2

SPARE PARTS LIST

Adjustment Unit / TCDGSY082-1.2

Pos Number	Amount	Order Number	Explanation	Standart (DIN)
01	1	TCDGSY082-1.2.1	Adj.arm	
02	1	TCDGSY082-1.2.2	Fixing part	
03	1	TCDGSY082-1.2.3	Adj .screw arm	
04	1	TCDGSY082-1.2.4	Right main adj.arm	
05	1	TCDGSY082-1.2.5	Left main adj.arm	
06	1	TCDGSY082-1.2.6	Adjust.piece	
07	2	TCDGSY082-1.2.7	Adj.bar(small)	
08	2	TCDGSY082-1.2.8	Adj.bar (Big)	
09	2	TCDGSY082-1.2.9	Handle	
10	4	TCDGSY082-1.2.10	Joint	
11	1	TCDGSY082-1.2.11	Ayar Göstergesi	
12	1	TCDGSY082-1.2.12	Fix.arm	
13	7	SOMFIB-AKS-10x1,5-6.8		DIN 934
14	1	CIV-M8x1,25x20-8.8	Hexagon Screw	DIN 933
15	2	PER-DEM-3x20	Break mandrel blind rivets	DIN 7337
16	2	SOM-SAC-KEL M10	Wing nut	DIN 315
17	2	VIDA-TOR-UNC-5/16"x15	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 84
18	1	TCDGSY082-1.2.20	Adj.screw arm sheet	

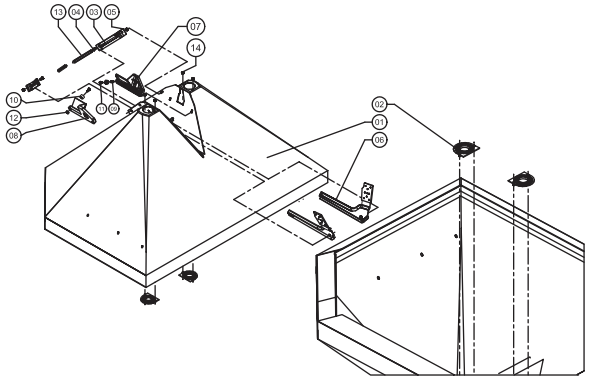


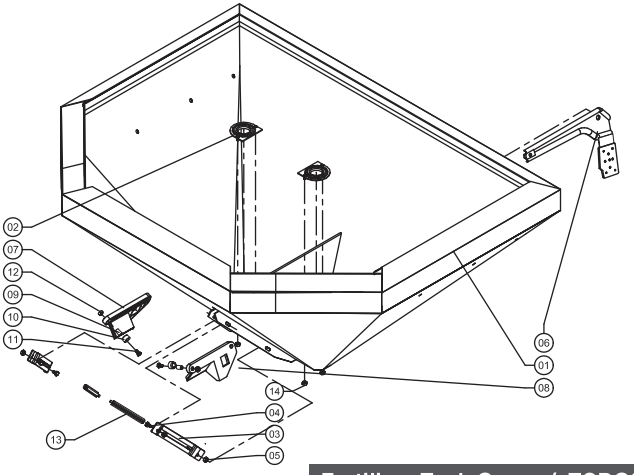
Gear Box Group / TCDGSY082-1.3

SPARE PARTS LIST

Gear Box Group / TCDGSY082-1.3

Pos Number	Quantity	Order Number	Explanation	Norm (DIN)
01	2	TCDGSY082-1.3.01	Spindle	
02	12	SEG-DIN471Ø25x2-CK75	Circlip	DIN 471
03	6	KAMA-A18x8x7	Standart key	DIN 6885
04	2	TCDGSY082-1.3.04	Gear	
05	9	RUL-6205 C3 ORS	Bearing	DIN 711
06	4	KEÇE-YAG-25x47x7 AS	Lip type seal	DIN 3760
07	18	SIM-37x26x0.5	Shim rings	DIN 988
08	2	SIM-37x26x0.3	Shim rings	DIN 988
09	1	TCDGSY082-1.3.09	Spindle	
10	3	KEÇE-YAG-25x35x7-AS	Lip type seal	DIN 3760
11	3	RUL- 6305-C3	Bearing	DIN 711
12	2	TCDGSY082-1.3.12	Gear	
13	1	TCDGSY082-1.3.13	Gear box middle spindle	
14	2	TCDGSY082-1.3.14	Gear	
15	6	TCDGSY082-1.3.15	Gear box	
16	18	CIV-IMB-M8x1,25x35-8.8	Hexagon socket head cap screw	DIN 912
17	3	O-RING 17,15x2,62	O-Ring	
18	3	TCDGSY082-1.3.18	Oil plug	
19	2	TAPA-PLS-Ø 47x6,5	Plastic plug	
20	18	SOMFIB-AKS-M8x1,25	Prevaling torque type hexagonnuts with nonmetalic insert	DIN 934





SPARE PARTS LIST

Fertilizer Tank Group / TCDGSY082-1.4

Fertilizer Tank Group / TCDGSY082-1.4

Pos Number	Quantity	Order Number	Explanation	Norm (DIN)
01	1	TCDGSY082-1.4.1	Fertilizer tank	
02	2	TCDGSY082-1.4.2	Mixing lid	
03	2	TCDGSY082-1.4.3	Opening Support	
04	4	CIV-M10x1,5x30 8.8	Hexagon screw	DIN 933
05	4	SOMFIB-AKS-M10x1,5-6.8	Prevaling torque type hexagon nuts with nonmetalic insert	DIN 934
06	2	TCDGSY082-1.4.6	Opening arm	
07	1	TCDGSY082-1.4.7	Left fixing support	

Pos Number	Quantity	Order Number	Explanation	Norm (DIN)
08	1	TCDGSY082-1.4.8	Right fixing support	
09	4	TCDGSY082-1.4.9	Lid	
10	4	TCDGSY082-1.4.10	Plastic part	
11	4	CIV-M8x1,25x40-8.8	Hexagon screw	
12	4	SOMFIB-AKS-M8x1,25-6.8	Prevaling torque type hexagon nuts with nonmetalic insert	
13	2	TCDGSY082-1.4.13	Support	
14	4	SOM-AKS-M8x1,25-8,8	Prevaling torque type hexagon nuts with nonmetalic insert	

HANDOVER DOCUMENT

The handover document is the part of the documentation of the machine in which the manufacturer or representative informs the buyer of:
1. The correct usage and major components of the machine;
2. The operation and handling of the machine.

For all machines, the manufacturer or manufacturer's representative guarantees that the commissioning of the machine will be performed within 8 days from the acquisition of the machine:

Machine details

PRODUCT NAME	
MODEL	
PRODUCT CODE	
SERIAL NUMBER	
MANUFACTURE YEAR	

Buyer's

Name Surname:

Address:

Tel :

Basic rules for using, maintenance and points to take into account for the machine purchased are duly explained to me and I am advised to read and understand the introductory and user guide provided with machine carefully.

Signature

Seller'st

Date of Invoice:

Signature & Seal

Authorised service provider'st

Date of sevice:

Signature & Seal

The machine is correctly assembled and handed over to use – the commissioning has been performed.

The buyer has been acquainted with the usage, operation and handling of the machine.

The handover document is filled out by the seller or authorised service technician, who sends a copy directly to MINOS or at the **email address: info@minosagri.com.** With their signature, they guarantee the accuracy of the information. The warranty is validated simultaneously with the validation of the service sheet.

minos agri

Minos Agricultural Machinery

Fatih Mah. 1191 Sk. No: 17/A 35414
Gaziemir - İZMİR - TÜRKİYE
Ph : +90.232 281 54 04 - 281 63 30
281 63 31 Fax: +90.232 281 57 10

E-mail: info@minosagri.com
www.facebook.com/minosagri
www.twitter.com/turkaygrup

12.17
Grafika 0.232.243 22 35

www.minosagri.com