

GPS

300 / 500 KG
STAINLESS STEEL

**OPERATION AND
MAINTENANCE INSTRUCTIONS**



GPS 300 / 500KG STAINLESS STEEL

OPERATION MANUAL

1.0 ACKNOWLEDGEMENT

Congratulations on your choice of power spinner Spreader 300 / 500kg. Before operating your new power spinner Spreader, please take a little time to read through this manual carefully.

Should you require spare parts or detailed information on our products, please contact the dealer from whom you have purchased this machine or you may also contact the manufacturer at :

GEMKA SDN BHD

No.44, Lorong Sanggul 1E, Bandar Puteri Klang,
41200, Klang, Selangor, Malaysia.

Tel : +603-3134 1402, 3134 1159 Fax : +603-3134 1194

E-mail : sales@rbspraytech.com ; info@rbspraytech.com

“YOUR KEY TO SMART TECHNOLOGY”

2.0 STATEMENT OF WARRANTY

The manufacturer will undertake to supply free of charge, new parts in place of those damage through established faulty material within six (6) months from the date of purchase.

We are not liable for labour, or any loss or damage direct or consequential, nor responsible for any accident, or in any way for the effect of any accident, whether due to defective material or otherwise, and our guarantee does not apply to defects which in our opinion are caused by accident, wear and tear, operator misuse or neglect/lack of routine maintenance, including the use of unsuitable or dirty lubricant, incorrect mounting specifications, etc. Such damages include those resulting from knocking against obstacles, reversing into obstructions, raising the spinner to high or too low during work or during loading attributed to operator negligence or wrong application.

Please refer to the operating instructions for proper mounting start-up, operation, setting of the equipment and its care, maintenance and lubrication.

3.0 WARRANTY OF INFRINGEMENT OF COPY RIGHTS

This product is a result of our own design and manufacture has been patented. No part of the machine of our own design shall be copied or modified without manufacturer's consent.



The company reserve the right to seek legal compensations should our rights be found to be infringed.

4.0 SAFETY PRECAUTIONS

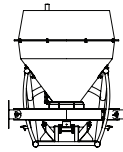
The following safety precautions must be observed :

1. Do not permit anyone to sit or ride on the Power Spinner Spreader at all times.
2. Never leave the tractor unattended when the engine is still running.
3. Always switch off the tractor engine and disengage the tractor power take off before attempting to clean, adjust or lubricate the tractor or the Spinner.
4. Before operations, always check that all bolts and nuts are properly tightened. It is important that all bolts and nuts are re-tightened after about 4 - 5 hours of initial work from first usage of the Spinner.
5. Hands must be away from the Spinner spreading mechanism at all times during operation.

5.0 MOUNTING POWER SPINNER SPREADER TO THE TRACTOR

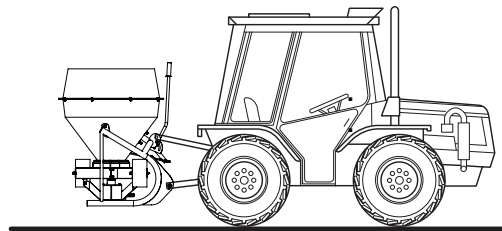
The Spinner is to be designed for use only with tractors having 540 RPM PTO shaft 6 spline 1.3/8" diameter shaft. Excessive wear and tear may result for tractors of more than 540 RPM PTO.

1. The Power Spinner is to be mounted onto the three point linkage. Attach the spinner onto the lower links and the top links and the top link of the tractor. As the spinner is on off ground implement, use POSITIONS CONTROL on the hydraulics. Ensure that the top link you have is of the right length to enable the spinner to work in a level position.
2. Once the top link and the lower link are fitted, ensure that the check chains or stabilisers bar are tightened such that there is only a slight movement allowed when pushed from left to right.
3. Ensure that the Spinner is mounted horizontally such that the two spinner disc shute outlets are parallel to the flat ground. Adjustment may be made by raising or lowering the right hand lower link lift rod box lever. First, ascertain the length of the left hand lift rod as recommended by your tractor manufacturer. Having the lift rods too long will limit the height the Spinner to be raised when operation and may be the major source of frequent PTO joint and gearbox damage. If mounted too low you will not get the desired height to give maximum spreading width. APPLY LIGHT OIL AT THE MALE & FEMALE SHAFTS TO ENSURE SMOOTH SLIDE DURING WORK.



REAR VIEW OF SPREADER

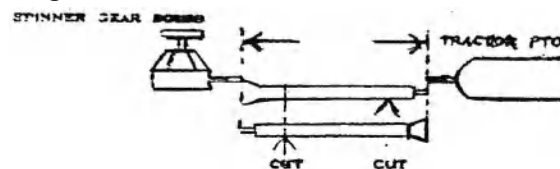
4. Adjust the top link such that the Spinner is raised to the ideal working position. The machine must be horizontally parallel to the ground and that the PTO drive shaft is as straight as possible to avoid damage or excessive wear and tear.



SIDE VIEW OF SPREADER

5. Depending on the tractor used, you may find sometimes that when fully loaded with fertilizer, the tractor end may lift off the ground. This may not necessary mean that the tractor has insufficient power to drive the spinner, but all it needs are some weight mounted at the front end of the tractor to counter-balance the rear.
6. The PTO shaft is supplied standard with a shear bolt torque limiter clutch. Mount the clutch end of the shaft onto the Spinner gearbox and the journal end to the tractor PTO. This is done by pressing the lock pin on the journal, insert it into the shaft, then release the pin and move the journal until the pin is clicked-locked into the shaft groove.

After attaching the shaft, check if the shaft length is suitable for the make and model of the tractor you are using. Under normal circumstances, the shaft is always supplied a little longer than the actual requirement to overcome the problem of different tractor 3 point linkage dimensions. If the shaft is found to be too long, it must be cut to suit, see diagram below on cutting the shaft.

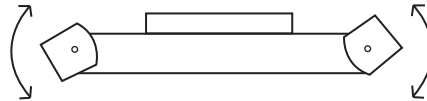


6.0 OPERATION

1. When operating the Spinner, engage the tractor hydraulics control to the POSITION CONTROL position. Do not operate the Spinner under Draft Control. Which is meant for soil engaging implements.



2. By adjusting the fertilizer flow control lever to the desired position, the rate of application can be controlled.
3. To avoid premature to the PTO clutch, engage the tractor PTO slowly at the engine idling RPM. Once the PTO is engaged, slowly rev the engine RPM to a speed suitable for work. **DO NOT ENGAGE THE TRACTOR PTO WHEN THE ENGINE IS RUNNING AT HIGH RPM. ALWAYS USE HIGH TENSILE SHEARBOLTS THAT HAS GENUINE 8.8 MARKING ON THE BOLT HEAD.**
4. Always operate the Spinner against the direction of the wind to avoid fertiliser being blown directly to the operator.
5. Never dent or modify the spreading chute and disc mechanism.
6. The spreader should be raised to a height such that the PTO shaft can turn in a straight line. The shaft may still be operated safely without exceeding a parallel angle of not more than 10 - 15 degree. However, excessive turning angle will cause the shaft universal joints to wear prematurely.
7. **DEFLECTOR ADJUSTMENT TO CONTROL FERTILIZER THROW DISTANCE AND DIRECTION.**



8. The deflectors are built to enable fertilisers to be distributed in a variety of widths and spreading distances depending on the type of fertilisers. It can be moved to deflect fertilisers to throw fertilisers in an upward or downward position depending on how the deflectors are positioned. The throw direction and distance can be determined by doing several deflect angle tests.

7.0 LOADING OF FERTILISER

When loading fertilise into the Spinner Hopper, ensure that the following steps are taken :

1. Lower the Spinner onto the ground.
2. Ensure that the flow control plate is fully closed so that fertiliser is not flowing out prematurely.
3. Ensure that the fertiliser screen is present and fertiliser should flow through the screen. If filling fertilisers from bags, make sure the fertilisers are not solidified into hard clumps, they must be free flowing. Solid blocks of fertilisers not only will not flow through the screen, it will also cause damage to the spinner disc, hopper gearbox, agitator drive shaft. Break up the clumps before putting into the hopper.
4. Do not stand on or rest your foot on the Spinner spreading chute at any time to avoid damage to the spreading mechanism.



8.0 FLOW RATES SETTING & CALIBRATION

There is no calibration chart supplied with the Spinner due to the different densities and sizes of fertilisers used, furthermore, the operator can drive the tractor at different forward speeds depending on the terrain and at different engine RPM given different field conditions.

We suggest that the customers calibrate their own rate of use. This is done using the following procedure :

1. Put a known quantity (e.g. 5 bags of 50kg = 250kg.) of a specific type of fertiliser into the hopper (parameter X).
2. Set the flow control lever in a fixed open position (e.g. at setting no.3 on the control lever quadrant of the Spinner).
3. Set the tractor forward speed (e.g. 3rd gear - low).
4. Set the tractor engine rev counter (e.g. to run at 1.800 RPM).
5. Then spread the fertiliser until the complete hopper is empty.
6. Count the number of palms covered until all the fertiliser is used up (parameter Y).
7. The rate is then measured by dividing the amount of fertiliser used against the number of palms covered, (parameter Z).

$$\text{RATE (kg) OF FERTILISER PER PALM (Z) = } \frac{\text{(X) kg used}}{\text{(Y) palms covered}}$$

By doing this procedure a few at different lever settings and at different tractor engine RPM, the rate of fertiliser per palm can be ascertained accurately.

In order to ensure all future application rates are accurate, the operator must be instructed to drive at the given forward speed, given engine RPM and at the given fertiliser flow setting as determined to give a specific rate of spread.

9.0 MAINTENANCE AND STORAGE AFTER USE

1. Always wash the machine with plenty of water after use. Fertiliser are all highly corrosive to most metals. Being mostly hygroscopic, they will also jam up moving parts. The easiest way to wash the Spinner disc and chute is to place a continuous run of water through the hopper, start the tractor engine when they are spinning. Note point 2 below after washing with water.
2. Where metal parts are subject to rust, apply a little oil onto the surface of the components to prevent corrosion before putting into storage. Where bolts and nuts and metal parts (frame) spray a little diesel on them before storage.



3. Grease all moving parts, PTO joints and shafts regularly, preferably daily during spreading season.
4. Since the gearbox is lubricated with oil, very little maintenance is necessary. However, frequent inspection is necessary to ensure that oil is not leaking out of the gearbox. Change the oil inside the gearbox after approximately 500-600 hours of use. (As a guide To normal estate use, an annual change is sufficient). If gearbox bearings are worn, change them according to size & spec numbers.
5. Grease the universal crosses on the PTO drive shaft regularly.
6. Grease the nipple on the gearbox output shaft regularly to avoid premature damage to the output shaft bearings.
7. After washing the machine, lubricate the male and female PTO drive shaft with engine oil to avoid seizure. **DO NOT GREASE ON SHAFTS.** Failure to lubricate the male and female sections prior to storage will cause rust to form and may result in the male and female shafts jamming up. Damage to gearbox, disc etc, is not recoverd under manufacturer's warranty.
8. Tighten ALL nuts and bolts both on the tractor and the Spinner. Loose bolts and nuts accelerate wear and tear.
9. Replace any damaged parts immediately with original spare parts.

10.0 WEAR AND TEAR PARTS ARE NOT UNDER OUR SIX MONTH WARRANTY

Wear & tear of the Spinner vanes, agitator and side wearing plates are normal. The rate of wear of these items are dependant on the type of fertilisers used. Some fertilisers are more coarse and thus wear out the vanes, agitator and wearing plates faster than some other types of fertilisers. Some examples are GML, Keserite and ground rock phosphate stc.

Worn items should immediately be changed with spare parts purchased from the manufacturer.

11.0 GEARBOX LUBRICATION LEVEL

When the machine is lifted or lowered, the male and female sections of the PTO shaft must be allowed to slide in and out to adjust for the distance between the tractor PTO and implement gearbox. When the shafts seized due to either non-lubrication or rust, the shaft cannot adjust for variable length and this will cause the shaft to push against the gearbox when lifted resulting in damages.

The gearbox is packed with Heavy Duty Grease. Pump oil at the jam-nut opening to ensure that oil level is up to the required mark.

Check and change the grease inside the gearbox every 4 to 6 months depending on the frequency of use.



12.0 POWER SPINNER SPREADER

Specifications	GPS300 SS	GPS500 SS
Tractor H.P Recommendations	45 and ABOVE	
Linkage CAT	1 - 2	
Loading Capacity (kg)	300	500
Hopper	Stainless Steel	
Spreading width - Approx (Granulates)	20 - 24meters	
Spreading width - Approx (Powder)	8 - 10meters	
Drive Shaft	Standard 6 splines PTO tractor	
PTO RPM	540	
Spreading Mechanism	Upward and convex slipped blasting vanes. Higher velocity	
	rano gearbox. 2 mm thick stainless steel casting and	
	protective shield to prevent wastage and spillage.	

13.0 MODIFICATIONS

In the interest of continuing technical development, we reserve the right to modify designs, equipments and accessories.

Therefore, no claims based on data, statements, illustrations or descriptions in this handbook will be entertained.

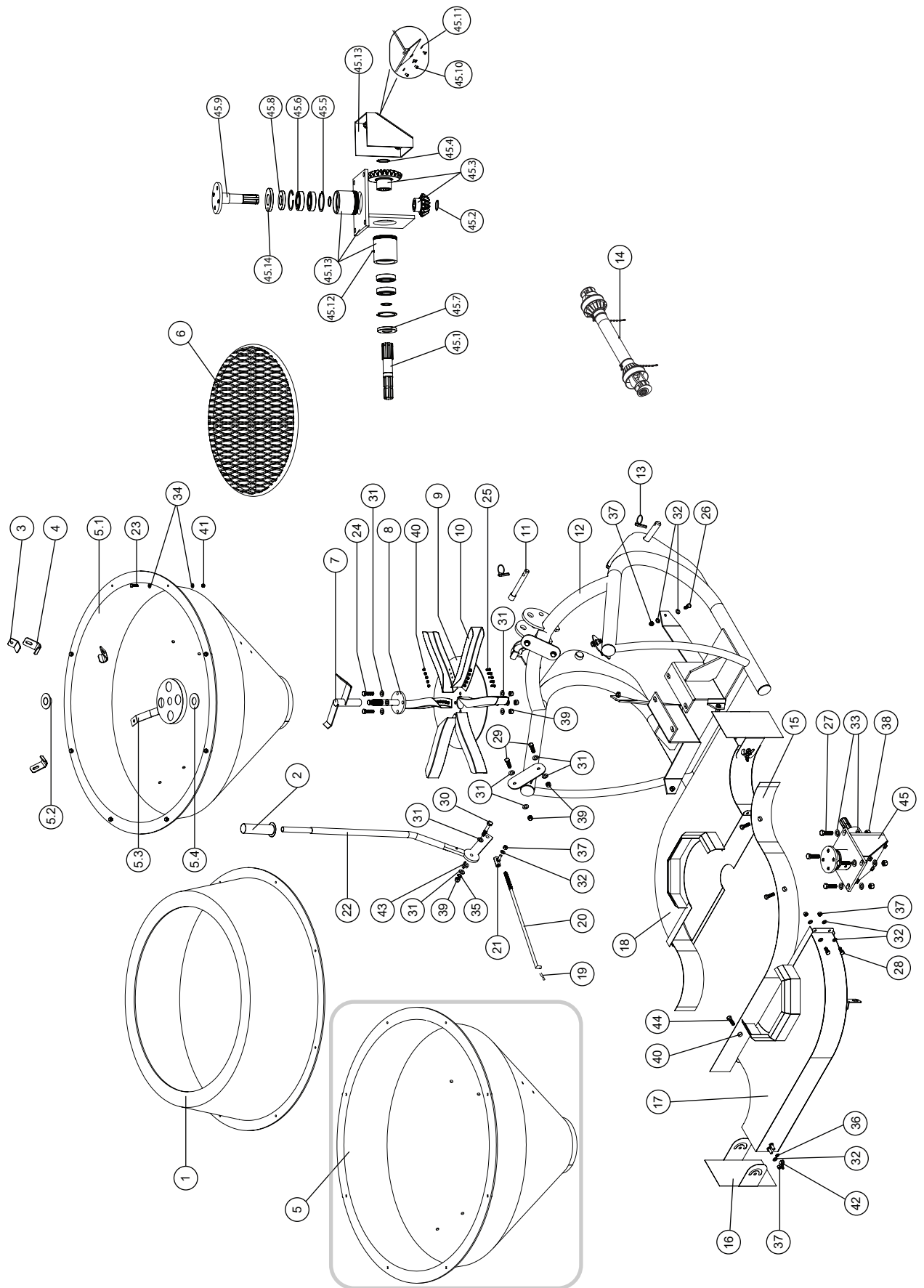


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- Tractor Mounted

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GPS 300/500kg STAINLESS STEEL ASSEMBLY



SPARE PARTS LIST



GPS 300/500KG STAINLESS STEEL

- Tractor Mounted

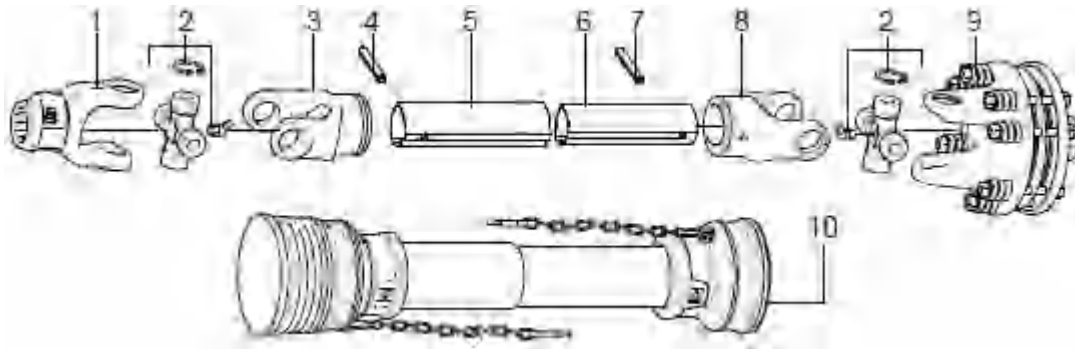
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GPS 300/500kg STAINLESS STEEL SPARE PART LIST

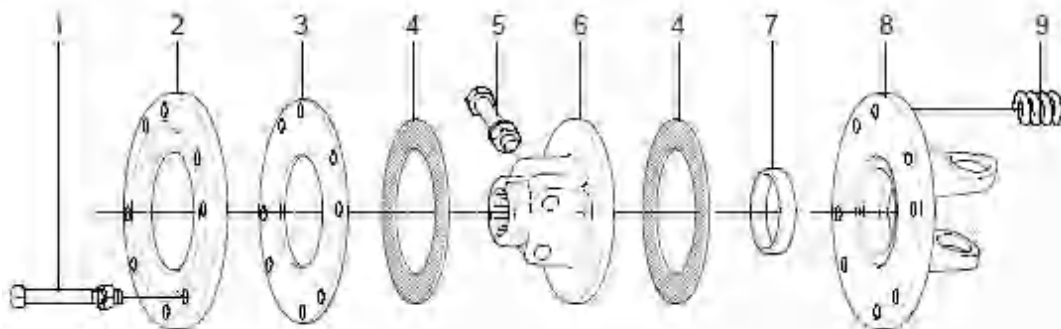
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	
			300KG	500KG
1	STST-417-10100	W.A HOPPER EXTENSION SS	0	1
2	STCH-001-10001	THROTTLE GRIP	1	1
3	STST-413-10019	BRACKET JARING 2	1	1
4	STST-413-10018	BRACKET JARING 1	3	3
5	STST-417-10035	W.A HOPPER SS 300KG	1	1
5.1	STST-417-10030	HOPPER SS 300KG_ROUND	1	1
5.2	STST-339-10070	W.A STIRER BUSH	1	1
5.3	STST-339-10066	W.A LIMITER PLATE	1	1
5.4	STST-339-10069	WASHER	1	1
6	STST-417-10050	W.A JARING SS	1	1
7	STST-395-10024	W.A TOP STIRER	1	1
8	STST-395-10028	W.A BASE STIRER GEMKA ORI	1	1
9	STST-339-10037	BASE STIRER FLAGE	1	1
10	STST-339-10036	PRESS BLADE	6	6
11	STAT-349-10002	CAT 1 TOP LINK PIN	1	1
12	STST-417-10001	W.A MAIN FRAME SPREADER SS 300 500	1	1
13	STAT-349-10005	LYNCH PIN (COTTER ASSY)	3	3
14	STEP-004-11429	AX4 650/898 WITH FD1 CLUTCH	1	1
15	STST-339-10056	LAPPING PLATE	2	2
16	STST-395-10023	COVER BAND CASING	2	2
17	STST-413-10034	W.A BAND CASING RIGHT	1	1
18	STST-413-10032	W.A BAND CASING LEFT	1	1
19	601.04.068	R-PIN	1	1
20	STST-417-10028	ADJUSTING LEVER SS	1	1
21	STST-417-10029	W.A COUPLING NUT SS	1	1
22	STST-417-10024	W.A HANDLE SS	1	1
23	111.08.030	M8 X 30 FT SCREW & NUT SS	8	8
24	111.12.045	M12 X 45 FT SCREW & NUT SS	4	4
25	111.06.016	M6 X 16 FT SCREW & NUT SS	30	30
26	111.10.030	M10 X 30 FT SCREW & NUT SS	4	4
27	111.14.050	M14 X 50 FT SCREW & NUT SS	4	4
28	111.10.025	M10 X 25 FT SCREW & NUT SS	8	8
29	111.12.040	M12 X 40 FT SCREW & NUT SS	6	6
30	104.12.070	M12 X 70 HT SCREW & NUT SS	1	1
31	117.12.000	M12 FLAT WASHER SS	22	22
32	117.10.000	M10 FLAT WASHER SS	25	25
33	117.14.000	M14 FLAT WASHER SS	8	8
34	117.08.000	M8 FLAT WASHER SS	16	16
35	118.12.000	M12 SPRING WASHER SS	1	1
36	118.10.000	M10 SPRING WASHER SS	4	4
37	116.10.000	M10 NYLOC NUT SS	13	13
38	116.14.000	M14 NYLOC NUT SS	4	4
39	116.12.000	M12 NYLOC NUT SS	11	11
40	116.06.000	M6 NYLOC NUT SS	36	36
41	116.08.000	M8 NYLOC NUT SS	8	8
42	119.10.000	M10 WING NUT SS	4	4
43	501.06.013.0041.05	COMPRESSION SPRING SS DIA:6MM,ID:13	1	1
44	111.06.020	M6 X 20 FT SCREW & NUT SS	6	6
45	STRB-341-10001	COMPLETE GEARBOX SS_1323	1	1
45.1	STAT-349-10006	INPUT SHAFT	1	1
45.2	CE-35	EXTERNAL RETAINING RING SHAFT SIZE 35	3	3
45.3	STAT-116	ROTARY HOE BAVEL GEAR & PINION 13,23	1	1
45.4	CE-40	EXTERNAL RETAINING RING SHAFT SIZE 40	1	1
45.5	CE-72	INTERNAL RETAINING RING I.D 72	3	3
45.6	SKF-6207	BEARING 6207-2Z	4	4
45.7	701.035.072.010	OIL SEAL 35MM X 72MM X 10MM	1	1
45.8	701.040.072.010	OIL SEAL 40MM X 72MM X 10MM	1	1
45.9	STAT-349-10007	OUTPUT SHAFT	1	1
45.10	101.10.025	M10 X 25 FT SCREW & NUT ZP	4	4
45.11	103.10.000	M10 FLAT WASHER	4	4
45.12	STJT-038-10006	GREASE NIPPLE 3/8"	2	2
45.13	STST-341-10100	ASM NEW GEARS with GB_SS	1	1
45.14	701.040.090.010	OIL SEAL 40MM X 90MM X 10MM	1	1



STEP-004-11429 AX4 650/898 WITH FD1 CLUTCH



No	Part Number	Description	Qty
1	1024010	External Yoke	1
2	1004021	Complete Cross	2
3	1704027	Yoke for External Tube	1
4	6330860	Elastic Pin (External Tube)	1
5	1528800.0800	External Tube	1
6	1526800.0800	Internal Tube	1
7	6330855	Elastic Pin (Internal Tube)	1
8	1704029	Yoke for Internal Tube	1
9	1344018	Limiting Device FD1	1
10	96SC4099	Protection PM14	1



No	Part Number	Description	Qty
1	6691085	Special Bolt	8
2	1135007	Pressure Plate	1
3	1135008	Internal Disc	1
4	1805010	Friction Disc	1
5	6761270	Special Bolt	2
6	1705005	Hub with Flange	1
7	1705009	Bearing	1
8	1704006	FD Bride	1
9	1215012	Spring	8



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CERTIFICATE OF WARRANTY

The warranty will not be considered valid if this coupon, with every part of it filled in, is not mailed to the following address: GEMKA SDN BHD, No.44, Lorong Sanggul 1E, Bandar Puteri Klang, 41200 Klang, Selangor Darul Ehsan, Malaysia., or sent by fax to the following number: +603 31341194.

Last name, Name or
NAME OF THE FIRM

ADDRESS

Place PROVINCE ZIP

e.mail (*) telephone (*)

Date of purchase INVOICE N.

MACHINE MOD. MATRICULATION N.

SPRAYHEAD MOD.

Dealer's stamp (compulsory)

(*) NOT COMPULSORY DATA

PRIVACY

Consent for the personal data processing– **PROTECTION OF THE PRIVACY .**

I authorize you to do the processing of my personal data in observance of the law above mentioned, for the indicated purposes, and so that they can be communication to the subjects for the declared purposes.

Date Signature

CUT ALONG THE DOTTED LINE