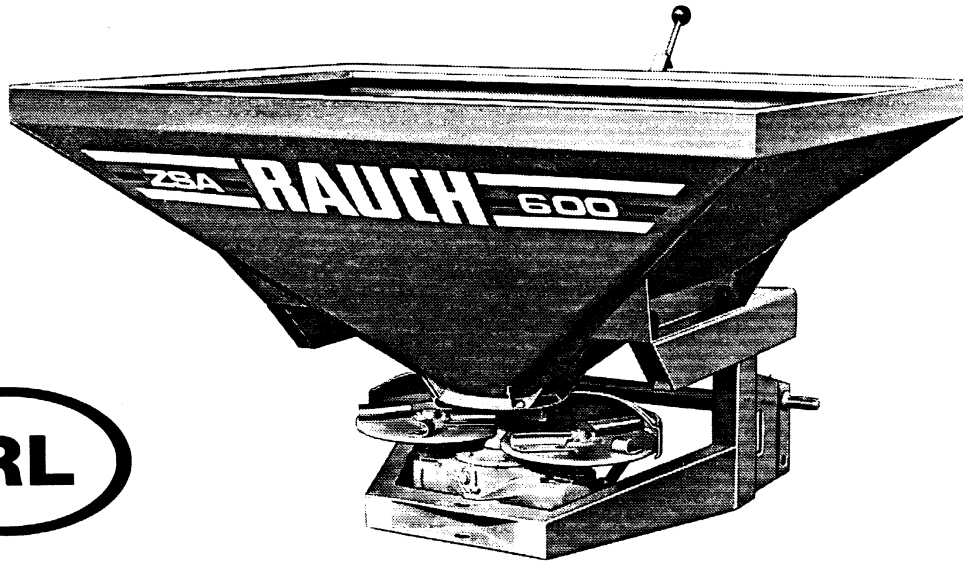


RAUCH

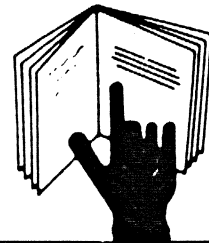
CALIBRATION CHART



FERTILISER SPREADER

ZSA

PLEASE READ CAREFULLY
BEFORE USING THE MACHINE



ZSA-B-0292-IE

CAUTION! THINK SAFETY!

Most accidents which occur during work, maintenance or transport are the result of not observing all elementary safety procedures. For this reason it is most important that all persons likely to work and maintain this machine, whether it is yourself, a member of your family or an employee, must respect very carefully all elementary procedures listed hereafter. In addition, the instructions in the operators manual, all safety advice given by decals on the machine as well as the general security and accident prevention directions must be given the same attention.

1. Each time before using the machine, verify that all fixing devices (nuts, bolts etc.) are sufficiently tightened.
2. If blades, discs or any of their fixing devices (nuts, bolts, etc.) are worn or damaged, replace immediately using original spare parts.
3. Before carrying out adjustments, greasing, cleaning or declogging the machine, turn off the tractor and disconnect P.T.O.-shaft.
4. Wait for all moving parts to completely stop before approaching the machine.
5. Always keep away from all moving parts. Beware of the materials thrown from the ejector disc.
6. Keep hands, feet and clothing away from moving parts.



7. The operator must make absolutely sure that no person or animal is in the projection zone of the machine before starting it and during its operation.
8. Never wear loose clothing which could become caught in moving parts.
9. Never allow the machine to run unattended.
10. Never ride on the machine.
11. Never carry other persons on the machine or tractor when working or in transport.
12. Never engage the P.T.O.-shaft while the machine is in its transport position.

APPLICATION RATE CALIBRATION TEST

The application rate can be checked using the calibration kit which is available as optional equipment. The test is carried out with the spreader mounted behind a parked tractor and a quantity of fertiliser is collected from one outlet in one minute.

To determine the amount of fertiliser that should be collected to correspond to your chosen forward speed, working width and application rate, the following calculation has to be made.

Calculation in metric

$$\frac{\text{application rate (kg/ha)} \times \text{spreading width (m)} \times \text{forward speed (km/h)}}{600 \text{ (Constant)}}$$

Example: Application rate: 125 kg/ha
Spreading width: 12 m
Forward speed: 8 km/h

$$\frac{125 \times 12 \times 8}{600} = 20 \text{ kg/min}$$

This quantity then has to be divided by 2 to give the quantity collected from one outlet. E.g. $\frac{20}{2}$ kg/min = 10 kg/min must be collected from one outlet in one minute.

Calculation in imperial

$$\frac{\text{application (lbs/acre)} \times \text{spreading width (ft)} \times \text{forward speed (m.p.h.)}}{495 \text{ (Constant)}}$$

Example: Application rate: 112 lbs/acre
Spreading width: 40 ft.
Forward speed: 5 m.p.h.

$$\frac{112 \times 40 \times 5}{495} = 45 \text{ lbs/min}$$

This quantity then has to be divided by 2 to give the quantity collected from one outlet. E.g. $\frac{45,25}{2} = 22 \frac{1}{2}$ lbs/min.

Should the quantity collected differ from the wanted quantity, make a second test after adjusting the outlets accordingly.

ADJUSTMENT OF QUANTITY APPLICATION



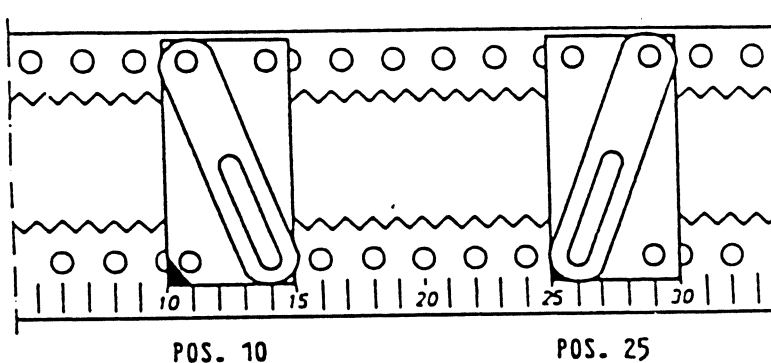
Before carrying out adjustments, greasing or declogging the machine, turn-off the tractor and disconnect the P.T.O.-shaft.

Wait for all moving parts to completely stop before approaching the machine.

Read on the calibration chart the adjustment and scale to be set according to the chosen speed and wanted quantity and adjust it on the shut-off-lever (grey edge on one of the 39 control positions).

If you want to spread quantities not indicated in the charts, please ask the manufacturer.

When adjusting the scale, the stop may be set in either of two positions. If you want only to adjust one position, turn the lever on the scale stop and engage it into the opposite holes (see fig.) and move one position.



IMPORTANT:



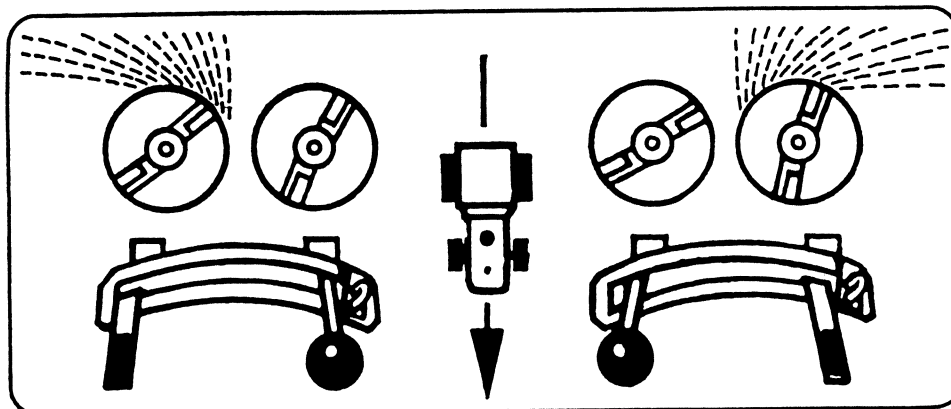
Adjustment of quantity with hydraulic remote control with

a) 1 cylinder: Set the stop in 1 position lower

To begin spreading, both control levers have to be pushed against the scale stop. When spreading on one side only, use the corresponding lever (see indication on hopper).

ONE SIDE SPREADING

For single lever operation: uncouple by lifting connection lever.



With the optional equipment "boundary spread limiter" it is possible to spread along the edge of the field without spreading fertiliser into the hedge.

13. Take special care that all P.T.O.-guards are always in place and are prevented from rotating using the safety chains provided for this purpose. Replace guards immediately if they become damaged.
14. Before driving in a public area, the driver must ensure that the machine is equipped with guards and safety indicators conforming to the highway code.
15. It is most important to have your machine checked by your dealer after each season, especially the discs and blades as well as their fixing devices (nuts, bolts, etc.).
16. Do not load the machine beyond the capacity of the tractor or its tyre equipment.
17. **C A U T I O N !**

Agricultural chemicals can be dangerous. Improper selection or use can seriously injure persons, animals, plants, soil or other property. Be safe: Select the right chemical for the job. Handle it with care. Follow the instructions on the container label and of the equipment manufacturer.

IMPORTANT

The settings given in the spreading charts are the result of exhaustive tests carried out in our own test hall using fertiliser and other materials in perfect condition.



ATTENTION

Fertiliser density varies with type, and even different batches of the same material. It is therefore absolutely essential that the machine to spread the fertiliser is checked, to ensure that the correct setting is chosen to deliver the precise weight of fertiliser in a given time.

The charts in this book are only intended to provide a guide to the setting required. The figures were calculated at by testing a machine with the aid of a computer using representative samples for fertilisers etc. This is no guarantee that your material is of the same type or density or has the same handling characteristics.

Spreading of urea



Due to urea's inconsistency of prill size and low density, accurate spreading may be difficult. Different settings may be necessary for different makes/types of urea. For these reasons using urea it at the operator's own responsibility.

IMPORTANT RECOMMENDATIONS FOR ACCURATE SPREADING

Through modern design techniques, care to detail at all stages of manufacture and constant testing in our test hall, we have produced a machine that will give an accurate and uniform spread pattern providing the following recommendations are followed:

1. Use of the same type of fertiliser as indicated in our calibration charts.
2. Spread when wind is at a minimum (preferably when still).
3. Spreader should be horizontal from side to side when on level ground and lower link arms adjusted to prevent sideways movement.
4. Inclination of spreader from back to front has to be set according to calibration chart, measured from the ground or the top of the crop (whichever is the highest).
5. Check the application rate by using calibration kit.
6. With the outlet shutter closed there should be no loss of fertiliser.
7. Open or shut outlet shutters with P.T.O. operating at 540 r.p.m.
8. Maintain constant tractor forward speed when spreading.
9. Maintain constant P.T.O. speed when spreading.
10. Wash spreader down at the end of each day's use (agitator and hopper can be detached).
11. Keep outlet openings always clean.
12. Change discs, blades and stirrer-head when worn or damaged.
13. Discs should be replaced if they become bent.
14. This machine is designed to spread on slopes of up to 20 % inclination. If the spreader is used on slopes exceeding 20 % it is no longer considered as proper use. The manufacturer does not accept any responsibility for damages resulting from this the operator himself carries full risk.

LATE TOP DRESSING

For late top dressing we offer special discs (optional equipment) especially designed for this kind of work.



Make sure not to mix up the left and right disc.

The identification letters "R" (right) and "L" (left) are stamped in the middle of the disc (see also decal).

Changing of discs:

Loosen stainless steel nuts, take off discs.

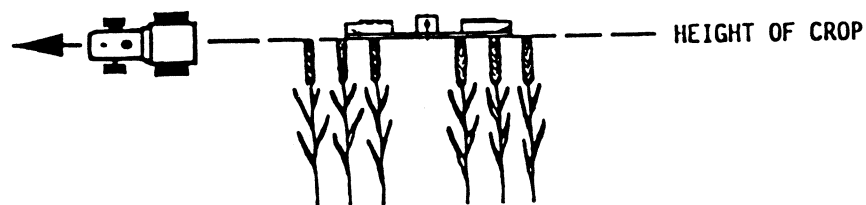
Note: To ensure correct fitting discs can only be fitted in one position.



Make sure that the steel nuts are sufficiently tightened.

After the first working hour check tightness of nuts and bolts.

The discs must be adjusted in horizontal position (same height as crop) - see calibration chart.



If the spreader cannot be adjusted in this height, it is possible to mount the spreader 140 mm (5.5") higher.

Spreading quantities: See normal calibration chart!



IMPORTANT:

If the angle of the P.T.O.-shaft is more than 25°, please use a wide-angle drive shaft.

PAYLOAD

The max. payload of the **ZSA 450** is **600 kgs** and of the **ZSA 600 + 800** **1200 kgs**. (Note: This is payload, not capacity) Do not load the machine beyond this load as we cannot accept any claims due to overloading.

When using bulk fertiliser the load can be calculated by the density of fertiliser.

Weigh exactly one liter to find the density in kg/l.



Check the density before filling hopper.

As approximate values the following densities are valid:

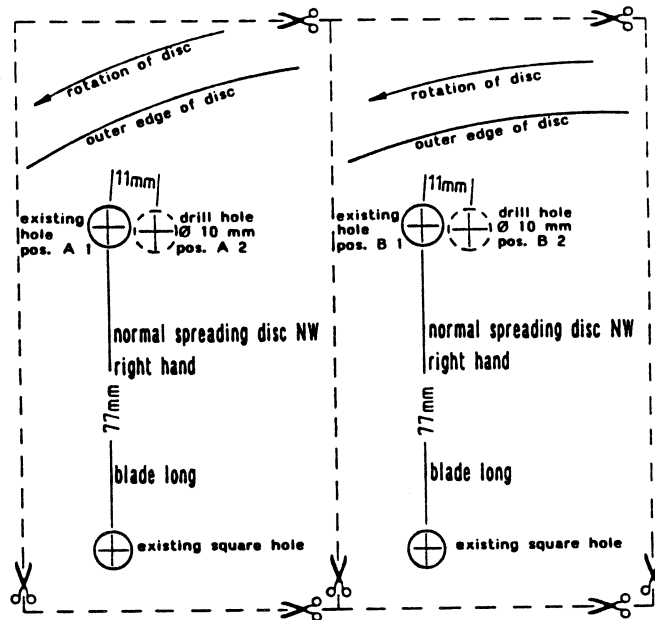
appr. 0,8 kg/l	Urea
appr. 1,0 kg/l	Prilled Nitrates
appr. 1,2 kg/l	NPK, Potash
appr. 1,4 kg/l	Phosphate, Kieserit

In the calibration chart the densities are indicated for each fertiliser.

Respect the following loads for ZSA-models:

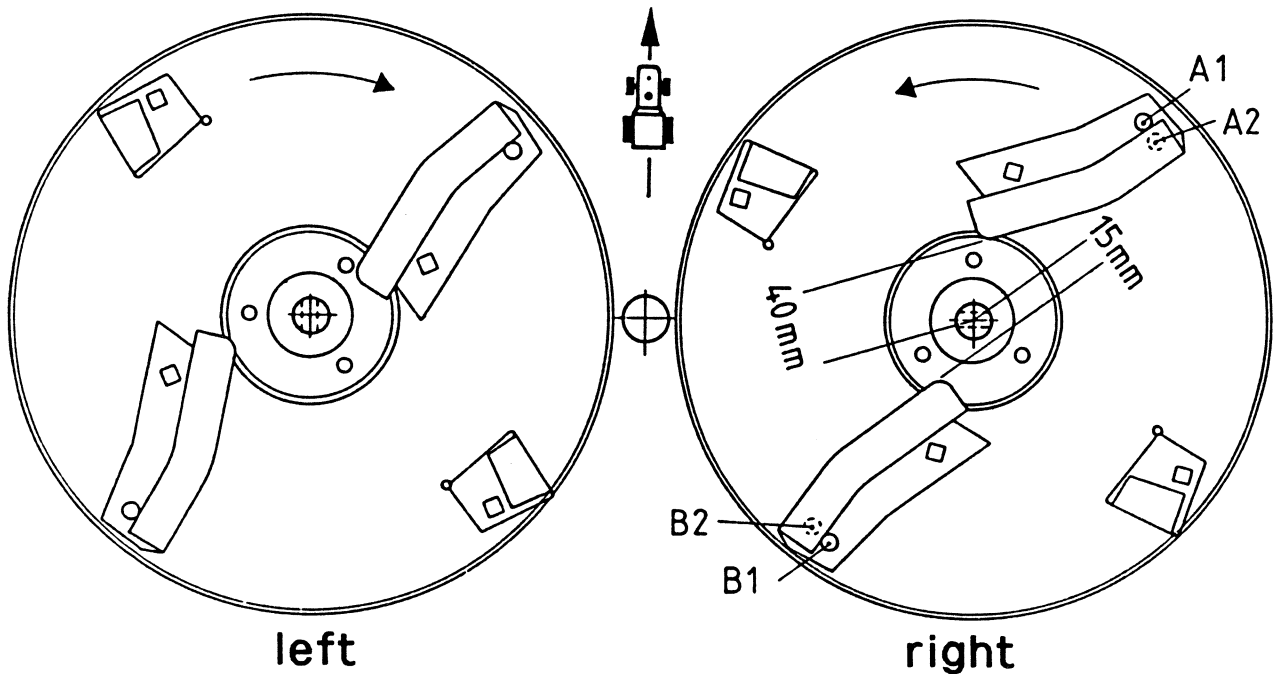
ZSA 450:	450 ltr. - 600 kg	
	0,8 kg/l - 1,3 l	Hopper can be filled normally.
	1,6 kg/l	Fill hopper until 5 cm below the hopper's top.
ZSA 600:	600 l - 1200 kg	Hopper can be filled normally with all fertilisers.
ZSA 800:	800 l - 1200 kg	
	0,8 kg/l - 1,5 kg/l	Hopper can be filled normally.
	1,6 kg/l	Fill hopper until 5 cm below the hopper's top.
ZSA 800 with extension 1000:	1000 l - 1200 kg	
	0,8 kg/l - 1,2 kg/l	Hopper can be filled normally.
	1,6 kg/l	Fill hopper until 12 cm below the hopper's top.

**INSTRUCTIONS FOR DRILLING OF HOLES FOR R.H. NORMAL SPREADING DISC
(BLADE POSITION A2 and B2)**



Original template:
see last page

1. Remove both long blades from right disc.
2. Cut out the template and fix about the corresponding holes using tape.
3. Centre punch hole positions A 2 and B 2
4. Drill the holes Dia 10 mm in right disc (eventually pre-drill)
5. Refit the long blades to the disc making reference to the attached calibration chart.



left

right

ATTENTION: The blade fixed on the hole A 1 or A 2 stands more backwards than the blade fixed on the hole B 1 or B 2, i.e.



- The distance of the angle of blade A to the centre = 40 mm
- The distance of the angle of blade B to the centre = 15 mm

IMPORTANT! Before spreading ensure that the blades are adjusted and fixed correctly.
Do not mix up the blades.

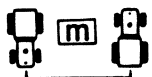
ATTENTION!!!

FERTILISER DENSITY VARIES WITH TYPE, AND EVEN DIFFERENT BATCHES OF THE SAME MATERIAL. IT IS THEREFORE ABSOLUTELY ESSENTIAL THAT THE MACHINE TO SPREAD THE FERTILISER IS CHECKED, TO ENSURE THAT THE CORRECT SETTING IS CHOSEN TO DELIVER THE PRECISE WEIGHT OF FERTILISER IN A GIVEN TIME.



THE CHARTS IN THIS BOOK ARE ONLY INTENDED TO PROVIDE A GUIDE TO THE SETTING REQUIRED. THE FIGURES WERE CALCULATED BY TESTING A MACHINE WITH THE AID OF A COMPUTER USING REPRESENTATIVE SAMPLES OF FERTILISERS ETC. THIS IS NO GUARANTEE THAT YOUR MATERIAL IS OF THE SAME TYPE OR DENSITY OR HAS THE SAME HANDLING CHARACTERISTICS.

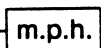
EXPLANATION OF SYMBOLS IN THE CALIBRATION CHART



Working width (m)
Distance of tramlines



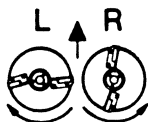
R.p.m. of P.T.O.-shaft



Driving speed (m.p.h.)



Scale position for setting the required spreading quantity lbs/acre



Required disc

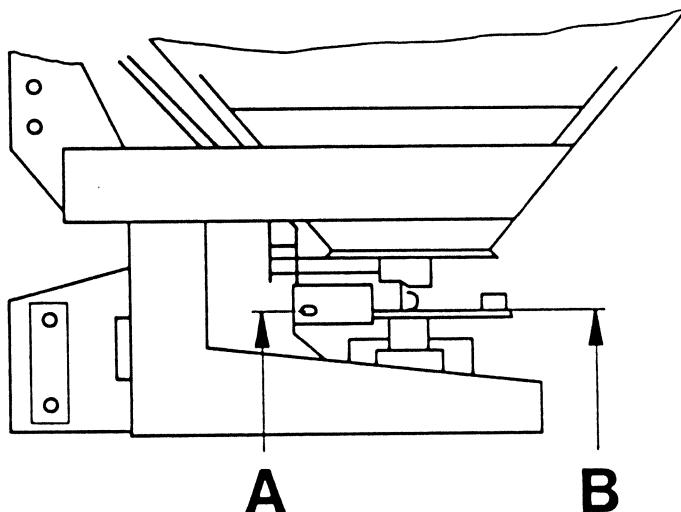
- NW = Normal spreading disc
- A 1 = Long blade position A 1
- A 2 = Long blade position A 2
- B 1 = Long blade position B 1
- B 2 = Long blade position B 2



Quantity lbs/min with corresponding scale no.
(calibration test)

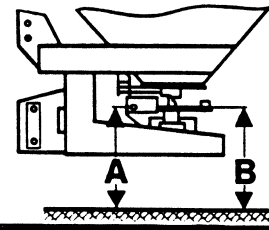
lbs/min.

Point A + B for measuring the necessary height over the bottom/cereals (measured as seen on sketch).



These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

C.A.N. GRASSLAND
27,5 % N, 1,08 kg/l

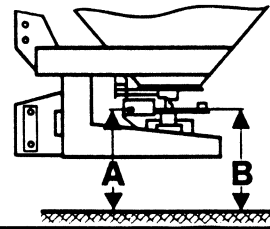


ZSA
lbs/acre

		9 m					12 m				
		NW A1 / B1					NW A1 / B1				
		540					600				
		A: 31 1/2" B: 31 1/2"					A: 39" B: 39"				
	lbs/min.	m.p.h. →					m.p.h. →				
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
9	8.7	39	29	23	19	17					
10	15.2	68	51	41	34	29	51	38	31	26	22
11	21.7	98	73	59	49	42	73	55	44	37	31
12	28.3	127	95	76	64	54	95	71	57	48	41
13	34.8	156	117	94	78	67	117	88	70	59	50
14	42.3	190	143	114	95	81	143	107	86	71	61
15	49.8	224	168	134	112	96	168	126	101	84	72
16	57.3	258	193	155	129	110	193	145	116	97	83
17	65.5	294	221	177	147	126	221	166	133	110	95
18	73.7	331	249	199	166	142	249	186	149	124	107
19	81.9	368	276	221	184	158	276	207	166	138	118
20	90.9	409	307	245	204	175	307	230	184	153	131
21	99.9	449	337	269	225	192	337	253	202	168	144
22	108.8	489	367	294	245	210	367	275	220	183	157
23	119.2	536	402	322	268	230	402	302	241	201	172
24	129.7	583	437	350	292	250	437	328	262	219	187
25	140.1	630	472	378	315	270	472	354	283	236	202
26	149.8	674	505	404	337	289	505	379	303	253	216
27	159.5	717	538	430	359	307	538	403	323	269	230
28	169.2	761	570	456	380	326	570	428	342	285	244
29	179.7	808	606	485	404	346	606	455	364	303	260
30	190.3	856	642	513	428	367	642	481	385	321	275
31	200.9	903	677	542	452	387	677	508	406	339	290
32	211.4	951	713	570	475	407	713	535	428	357	306
33	222.4	1000	750	600	500	429	750	562	450	375	321
34	233.3	1049	787	629	524	450	787	590	472	393	337
35	244.2						823	618	494	412	353

These charts should be used as a guide only.
Variations/differences can occur in the material being spread.

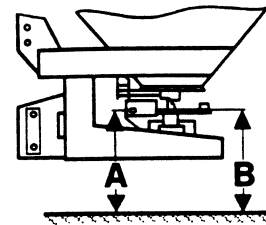
C.A.N. GOULDING
27,5 % N, 1,04 kg/l



ZSA
lbs/acre

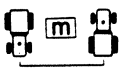
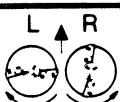

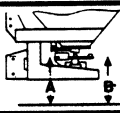




		9 m					12 m				
		NW A1 / B1					NW A2 / B1				
		540					600				
		A: 31 1/2" B: 31 1/2"					A: 39" B: 39 3/8"				
	lbs/min.										
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
9	4.6	20	15	12	10	9					
10	10.6	48	36	29	24	20	36	27	21	18	15
11	16.6	75	56	45	37	32	56	42	34	28	24
12	22.6	102	76	61	51	44	76	57	46	38	33
13	28.6	129	97	77	64	55	97	72	58	48	41
14	35.2	158	119	95	79	68	119	89	71	59	51
15	41.8	188	141	113	94	81	141	106	85	71	60
16	48.5	218	163	131	109	93	163	123	98	82	70
17	56.1	252	189	151	126	108	189	142	114	95	81
18	63.7	287	215	172	143	123	215	161	129	107	92
19	71.4	321	241	193	160	138	241	181	144	120	103
20	79.0	355	266	213	178	152	266	200	160	133	114
21	86.6	390	292	234	195	167	292	219	175	146	125
22	94.3	424	318	254	212	182	318	238	191	159	136
23	102.9	463	347	278	231	198	347	260	208	174	149
24	111.6	502	376	301	251	215	376	282	226	188	161
25	120.3	541	406	324	270	232	406	304	243	203	174
26	129.4	582	436	349	291	249	436	327	262	218	187
27	138.5	623	467	374	311	267	467	350	280	233	200
28	147.6	664	498	398	332	284	498	373	299	249	213
29	157.4	708	531	425	354	303	531	398	318	265	227
30	167.2	752	564	451	376	322	564	423	338	282	242
31	177.0	796	597	477	398	341	597	448	358	298	256
32	186.8	840	630	504	420	360	630	472	378	315	270
33	196.5	883	663	530	442	379	663	497	398	331	284
34	206.2	927	695	556	464	397	695	521	417	348	298
35	215.9						728	546	437	364	312

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.

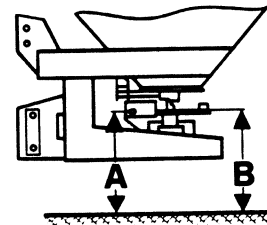


ZSA
 lbs/acre

TOPPER GRANULAR UREA IFI
 46 % N, 0,76 kg/l

		9 m					12 m				
		NW A1 / B1					NW A1 / B1				
 r.p.m.		540					500				
		A: 23 1/2" B: 23 1/2"					A: 22" B: 23 1/2"				
		 → m.p.h. →					 → m.p.h. →				
		lbs/min.	3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5
11	20.3	91	69	55	46	39					
12	25.3	114	85	68	57	49	85	64	51	43	37
13	30.2	136	102	81	68	58	102	76	61	51	44
14	36.0	162	122	97	81	69	122	91	73	61	52
15	41.9	189	141	113	94	81	141	106	85	71	61
16	47.8	215	161	129	107	92	161	121	97	81	69
17	54.4	245	183	147	122	105	183	138	110	92	79
18	61.0	274	206	165	137	118	206	154	123	103	88
19	67.6	304	228	182	152	130	228	171	137	114	98
20	74.4	335	251	201	167	143	251	188	151	126	108
21	81.3	365	274	219	183	157	274	206	164	137	117
22	88.1	396	297	238	198	170	297	223	178	149	127
23	96.5	434	325	260	217	186	325	244	195	163	139
24	104.8	471	354	283	236	202	354	265	212	177	152
25	113.2	509	382	305	255	218	382	286	229	191	164
26	121.3	545	409	327	273	234	409	307	245	205	175
27	129.4	582	436	349	291	249	436	327	262	218	187
28	137.4	618	464	371	309	265	464	348	278	232	199
29	146.0	657	492	394	328	281	492	369	295	246	211
30	154.6	695	521	417	348	298	521	391	313	261	223
31	163.2	734	550	440	367	315	550	413	330	275	236
32	171.8	773	579	464	386	331	579	435	348	290	248
33	180.4						608	456	365	304	261
34	189.0						637	478	382	319	273
35	197.6						666	500	400	333	286
36	206.2						695	521	417	348	298

These charts should be used as a guide only. Variations/differences can occur in the material being spread.

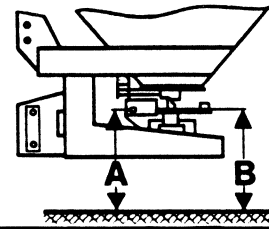


ZSA
lbs/acre

PRILLED NET UREA IFI
46 % N, 0,76 kg/l

		9 m					12 m				
		NW A1 / B1					NW A1 / B1				
		600					600				
		A: 31 1/2" B: 31 1/8"					A: 30" B: 31 1/2"				
		Tractor → m.p.h. →					Tractor → m.p.h. →				
lbs/min.		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
9	18.3	82	62	49	41	35					
10	23.6	106	79	64	53	45					
11	29.7	134	100	80	67	57	100	75	60	50	43
12	35.9	161	121	97	81	69	121	91	73	61	52
13	42.1	189	142	114	95	81	142	106	85	71	61
14	49.1	221	166	133	110	95	166	124	99	83	71
15	56.2	253	189	152	126	108	189	142	114	95	81
16	63.2	284	213	171	142	122	213	160	128	107	91
17	71.2	320	240	192	160	137	240	180	144	120	103
18	79.2	356	267	214	178	153	267	200	160	134	115
19	87.2	392	294	235	196	168	294	221	176	147	126
20	95.9	431	323	259	216	185	323	243	194	162	139
21	104.6	470	353	282	235	201	353	264	212	176	151
22	113.2	509	382	305	255	218	382	286	229	191	164
23	122.3	550	413	330	275	236	413	309	248	206	177
24	131.4	591	443	355	295	253	443	332	266	222	190
25	140.5	632	474	379	316	271	474	355	284	237	203
26	150.4	676	507	406	338	290	507	380	304	254	217
27	160.2	720	540	432	360	309	540	405	324	270	232
28	170.0	765	573	459	382	328	573	430	344	287	246
29	179.6	807	606	484	404	346	606	454	363	303	260
30	189.1	850	638	510	425	364	638	478	383	319	273
31	198.6						670	502	402	335	287
32	208.1						702	526	421	351	301
33	217.7						734	551	440	367	315
34	227.2						766	575	460	383	328

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.



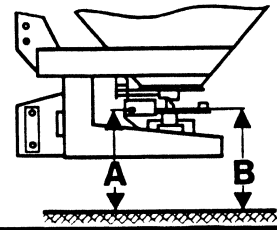
ZSA
 lbs/acre

NET NITRATE IFI
 27,5 % N, 1,0 kg/l

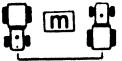
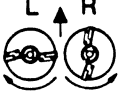

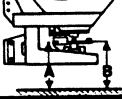


		9 m					12 m				
		NW A1 / B1					NW A1 / B1				
		540					540				
		A: 31 1/2" B: 30"					A: 23 1/2" B: 23 1/2"				
		lbs/min.	3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5
9	14.8	66	50	40	33	28					
10	19.8	89	67	53	45	38	67	50	40	33	29
11	26.6	120	90	72	60	51	90	67	54	45	38
12	33.3	150	112	90	75	64	112	84	67	56	48
13	40.1	180	135	108	90	77	135	101	81	68	58
14	47.3	213	159	128	106	91	159	120	96	80	68
15	54.5	245	184	147	122	105	184	138	110	92	79
16	61.7	277	208	166	139	119	208	156	125	104	89
17	70.8	318	239	191	159	136	239	179	143	119	102
18	79.9	359	269	216	180	154	269	202	162	135	115
19	89.0	400	300	240	200	171	300	225	180	150	129
20	97.8	440	330	264	220	188	330	247	198	165	141
21	106.6	479	360	288	240	205	360	270	216	180	154
22	115.4	519	389	311	259	222	389	292	234	195	167
23	125.8	566	424	340	283	243	424	318	255	212	182
24	136.3	613	460	368	306	263	460	345	276	230	197
25	146.7	660	495	396	330	283	495	371	297	247	212
26	156.8	705	529	423	353	302	529	397	317	264	227
27	167.0	751	563	450	375	322	563	422	338	282	241
28	177.1	796	597	478	398	341	597	448	358	299	256
29	188.0	845	634	507	423	362	634	476	380	317	272
30	198.9	894	671	537	447	383	671	503	402	335	287
31	209.8	943	708	566	472	404	708	531	425	354	303
32	220.7	992	744	595	496	425	744	558	447	372	319
33	231.6	1041	781	625	521	446	781	586	469	391	335
34	242.5	1090	818	654	545	467	818	613	491	409	351
35	253.4						855	641	513	427	366

These charts should be used as a guide only.
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being spread.

NPK GOULDING
18-6-12+5 % S, 0,96 kg/l

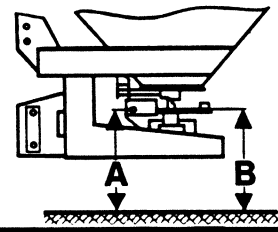


ZSA
lbs/acre

		9 m					12 m				
		NW A1 / B1					NW A1 / B2				
		540					540				
		A: 31 1/2" B: 30"					A: 22" B: 22 3/4"				
		m.p.h.					m.p.h.				
		lbs/min.	3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5
10	13.0	58	44	35	29	25					
11	18.9	85	64	51	43	37	64	48	38	32	27
12	24.9	112	84	67	56	48	84	63	50	42	36
13	30.8	139	104	83	69	59	104	78	62	52	45
14	37.4	168	126	101	84	72	126	95	76	63	54
15	43.9	197	148	118	99	85	148	111	89	74	63
16	50.4	227	170	136	113	97	170	128	102	85	73
17	57.9	260	195	156	130	112	195	147	117	98	84
18	65.4	294	221	176	147	126	221	165	132	110	95
19	72.9	328	246	197	164	141	246	184	148	123	105
20	80.3	361	271	217	181	155	271	203	163	135	116
21	87.7	395	296	237	197	169	296	222	178	148	127
22	95.2	428	321	257	214	183	321	241	193	160	138
23	103.8	467	350	280	233	200	350	263	210	175	150
24	112.5	506	379	303	253	217	379	285	228	190	163
25	121.1	545	409	327	272	233	409	306	245	204	175
26	130.5	587	440	352	294	252	440	330	264	220	189
27	139.9	629	472	378	315	270	472	354	283	236	202
28	149.3	672	504	403	336	288	504	378	302	252	216
29	159.1	716	537	429	358	307	537	403	322	268	230
30	168.9	760	570	456	380	326	570	427	342	285	244
31	178.7	804	603	482	402	344	603	452	362	301	258
32	188.5	848	636	509	424	363	636	477	382	318	273
33	198.1	891	668	534	445	382	668	501	401	334	286
34	207.6	933	700	560	467	400	700	525	420	350	300
35	217.1	976	732	586	488	418	732	549	439	366	314
36	226.6						764	573	459	382	328

These charts should be used as a guide only.
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 being spread.

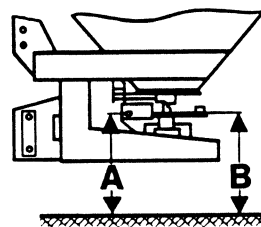
ZSA
 lbs/acre



NPK ALBATROS
 18-6-12+6 % S, 1,02 kg/l

		9 m					12 m				
		NW A1 / B1					NW A2 / B1				
		540					600				
		A: 31 1/2" B: 30 3/8"					A: 39 3/8" B: 39"				
	lbs/min.										
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
10	11.0	50	37	30	25	21					
11	17.4	78	59	47	39	34	59	44	35	29	25
12	23.8	107	80	64	53	46	80	60	48	40	34
13	30.2	136	102	81	68	58	102	76	61	51	44
14	37.0	166	125	100	83	71	125	94	75	62	53
15	43.8	197	148	118	99	84	148	111	89	74	63
16	50.7	228	171	137	114	98	171	128	103	85	73
17	57.9	260	195	156	130	112	195	147	117	98	84
18	65.2	293	220	176	147	126	220	165	132	110	94
19	72.5	326	244	196	163	140	244	183	147	122	105
20	80.6	363	272	218	181	155	272	204	163	136	117
21	88.8	399	299	239	200	171	299	225	180	150	128
22	96.9	436	327	261	218	187	327	245	196	163	140
23	105.4	474	356	284	237	203	356	267	213	178	152
24	113.9	512	384	307	256	220	384	288	231	192	165
25	122.5	551	413	330	275	236	413	310	248	207	177
26	132.0	594	445	356	297	254	445	334	267	223	191
27	141.6	637	477	382	318	273	477	358	286	239	205
28	151.1	679	510	408	340	291	510	382	306	255	218
29	160.9	724	543	434	362	310	543	407	326	271	233
30	170.7	768	576	461	384	329	576	432	345	288	247
31	180.5	812	609	487	406	348	609	457	365	304	261
32	190.3	856	642	513	428	367	642	481	385	321	275
33	200.0	899	674	540	450	385	674	506	405	337	289
34	209.7	943	707	566	471	404	707	530	424	354	303
35	219.4	986	740	592	493	423	740	555	444	370	317
36	229.1						773	579	464	386	331

These charts should be used as a guide only.
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being spread.

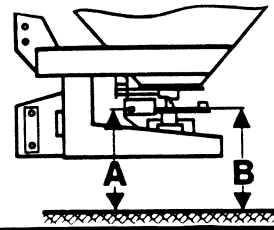


ZSA
lbs/acre

NPK PASTURE SWARD IFI
27-2,5-5, 0,97 kg/l

		9 m					12 m					
		NW A1 / B1					NW A2 / B1					
		540					600					
		A: 31 1/2" B: 30 3/4"					A: 39" B: 39"					
	lbs/min.											
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75	
10	12.3	55	42	33	28	24						
11	18.4	83	62	50	41	35	62	46	37	31	27	
12	24.4	110	82	66	55	47	82	62	49	41	35	
13	30.4	137	103	82	68	59	103	77	62	51	44	
14	36.9	166	124	99	83	71	124	93	75	62	53	
15	43.3	195	146	117	97	83	146	110	88	73	63	
16	49.8	224	168	134	112	96	168	126	101	84	72	
17	57.9	260	195	156	130	111	195	146	117	98	84	
18	65.9	296	222	178	148	127	222	167	133	111	95	
19	74.0	333	250	200	166	143	250	187	150	125	107	
20	81.3	366	274	219	183	157	274	206	165	137	118	
21	88.7	399	299	239	199	171	299	224	179	150	128	
22	96.0	432	324	259	216	185	324	243	194	162	139	
23	105.1	473	355	284	236	203	355	266	213	177	152	
24	114.2	514	385	308	257	220	385	289	231	193	165	
25	123.3	555	416	333	277	238	416	312	250	208	178	
26	132.0	594	445	356	297	254	445	334	267	223	191	
27	140.7	633	474	380	316	271	474	356	285	237	203	
28	149.3	672	504	403	336	288	504	378	302	252	216	
29	158.8	714	535	428	357	306	535	402	321	268	229	
30	168.2	756	567	454	378	324	567	425	340	284	243	
31	177.6	799	599	479	399	342	599	449	359	299	257	
32	187.0	841	631	505	420	360	631	473	378	315	270	
33	196.6	884	663	530	442	379	663	497	398	331	284	
34	206.2	927	695	556	464	397	695	521	417	348	298	
35	215.7	970	728	582	485	416	728	546	437	364	312	
36	225.3						760	570	456	380	326	

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.



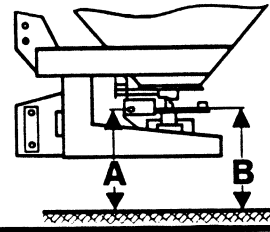
ZSA
 lbs/acre

NPK GRASSLAND
 10-10-20, 1,07 kg/l

		9 m					12 m				
		NW A1 / B1					NW A1 / B2				
		540					540				
		A: 17 1/4" B: 15 3/4"					A: 27 1/2" B: 27 1/2"				
	lbs/min.	m.p.h. →					m.p.h. →				
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
10	15.4	69	52	42	35	30					
11	22.6	102	76	61	51	44	76	57	46	38	33
12	29.8	134	101	80	67	57	101	75	60	50	43
13	37.0	166	125	100	83	71	125	94	75	62	53
14	43.4	195	146	117	98	84	146	110	88	73	63
15	49.8	224	168	134	112	96	168	126	101	84	72
16	56.2	253	189	152	126	108	189	142	114	95	81
17	64.6	291	218	174	145	125	218	163	131	109	93
18	73.1	328	246	197	164	141	246	185	148	123	106
19	81.5	366	275	220	183	157	275	206	165	137	118
20	88.7	399	299	239	199	171	299	224	179	150	128
21	95.9	431	323	259	216	185	323	243	194	162	139
22	103.1	464	348	278	232	199	348	261	209	174	149
23	112.2	504	378	303	252	216	378	284	227	189	162
24	121.3	545	409	327	273	234	409	307	245	205	175
25	130.4	586	440	352	293	251	440	330	264	220	188
26	140.2	631	473	378	315	270	473	355	284	236	203
27	150.1	675	506	405	337	289	506	380	304	253	217
28	159.9	719	539	431	360	308	539	404	324	270	231
29	171.0	769	577	461	385	330	577	433	346	288	247
30	182.2	819	614	491	410	351	614	461	369	307	263
31	193.3	869	652	521	435	372	652	489	391	326	279
32	204.4	919	689	551	460	394	689	517	414	345	295
33	214.8	966	724	579	483	414	724	543	435	362	310
34	225.1	1012	759	607	506	434	759	569	456	380	325
35	235.5	1059	794	635	529	454	794	596	476	397	340
36	245.8						829	622	497	415	355

These charts should be used as a guide only.
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being spread.

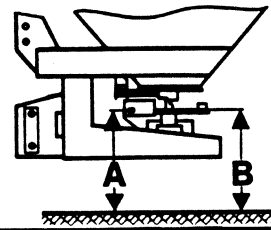
PK ALBATROS
0-7-30, 1,1 kg/l



ZSA
lbs/acre

		9 m					12 m				
		NW A1 / B1					NW A1 / B1				
		540					540				
		A: 31 1/2" B: 30 3/8"					A: 19 3/4" B: 20 1/2"				
	lbs/min.	m.p.h.					m.p.h.				
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
11	20.8	93	70	56	47	40					
12	26.8	121	90	72	60	52	90	68	54	45	39
13	32.8	148	111	89	74	63	111	83	66	55	47
14	39.7	179	134	107	89	77	134	100	80	67	57
15	46.6	210	157	126	105	90	157	118	94	79	67
16	53.5	241	181	144	120	103	181	135	108	90	77
17	61.4	276	207	166	138	118	207	155	124	104	89
18	69.2	311	233	187	156	133	233	175	140	117	100
19	77.1	347	260	208	173	149	260	195	156	130	111
20	85.6	385	289	231	192	165	289	217	173	144	124
21	94.1	423	317	254	212	181	317	238	190	159	136
22	102.6	462	346	277	231	198	346	260	208	173	148
23	111.2	500	375	300	250	214	375	281	225	187	161
24	119.7	538	404	323	269	231	404	303	242	202	173
25	128.2	576	432	346	288	247	432	324	259	216	185
26	138.6	623	467	374	312	267	467	351	280	234	200
27	149.0	670	503	402	335	287	503	377	302	251	215
28	159.5	717	538	430	359	307	538	403	323	269	230
29	169.6	763	572	458	381	327	572	429	343	286	245
30	179.7	808	606	485	404	346	606	455	364	303	260
31	189.9	854	640	512	427	366	640	480	384	320	274
32	200.0	899	674	540	450	385	674	506	405	337	289
33	210.5	946	710	568	473	406	710	532	426	355	304
34	220.9	993	745	596	497	426	745	559	447	373	319
35	231.4	1040	780	624	520	446	780	585	468	390	334
36	241.8	1088	816	653	544	466	816	612	489	408	350
37	252.3						851	638	511	425	365
38	262.8						886	665	532	443	380

These charts should be used as a guide only.
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 being spread.

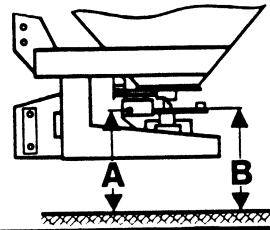


ZSA
 lbs/acre

WHEAT

		10 m					12 m				
		NW A1 / B1					NW A1 / B1				
		540					540				
		A: 31 1/2" B: 31 1/2"					A: 31 1/2" B: 32 3/4"				
	lbs/min.	m.p.h. →					m.p.h. →				
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
14	23.1	93	70	56	47		78	58	47		
15	29.0	117	88	70	59	50	98	73	59	49	
16	34.8	141	106	85	71	60	118	88	71	59	50
17	41.7	169	127	101	84	72	141	105	84	70	60
18	48.5	196	147	118	98	84	164	123	98	82	70
19	53.5	217	162	130	108	93	181	135	108	90	77
20	58.5	237	178	142	118	102	197	148	118	99	85
21	64.1	259	194	156	130	111	216	162	130	108	93
22	69.6	282	211	169	141	121	235	176	141	117	101
23	75.1	304	228	182	152	130	253	190	152	127	109
24	80.7	327	245	196	163	140	272	204	163	136	117

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.

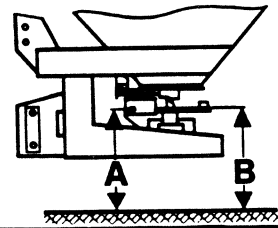


ZSA
 lbs/acre

BARLEY

		10 m					12 m				
		NW A1 / B1					NW A1 / B1				
		540					540				
		A: 31 1/2" B: 31 1/2"					A: 31 1/2" B: 32 3/4"				
	lbs/min.										
		3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
16	21.8	88	66	53			74	55			
17	26.0	105	79	63	53	45	88	66	53		
18	30.1	122	91	73	61	52	101	76	61	51	
19	33.4	135	101	81	68	58	113	84	68	56	48
20	36.7	148	111	89	74	64	124	93	74	62	53
21	42.7	173	130	104	86	74	144	108	86	72	62
22	48.7	197	148	118	99	85	164	123	99	82	70
23	52.7	213	160	128	107	91	178	133	107	89	76
24	56.7	229	172	138	115	98	191	143	115	96	82
25	60.6	245	184	147	123	105	204	153	123	102	88
26	64.6	261	196	157	131	112	218	163	131	109	93

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.

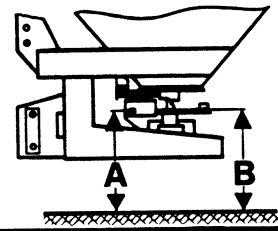


ZSA
 lbs/acre

RYE

		10 m					12 m				
		NW A1 / B1					NW A1 / B1				
		540					540				
		A: 31 1/2" B: 31 1/2"					A: 31 1/2" B: 32 3/4"				
	lbs/min.										
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
14	23.1	94	70	56	47	40	78	58	47		
15	27.2	110	83	66	55	47	92	69	55	46	39
16	31.3	127	95	76	63	54	105	79	63	53	45
17	36.3	147	110	88	73	63	122	92	73	61	52
18	41.2	167	125	100	83	72	139	104	83	70	60
19	48.1	195	146	117	97	84	162	122	97	81	70
20	55.1	223	167	134	111	96	186	139	111	93	80
21	60.9	246	185	148	123	106	205	154	123	103	88
22	66.7	270	202	162	135	116	225	169	135	112	96
23	72.5	293	220	176	147	126	245	183	147	122	105
24	78.3	317	238	190	158	136	264	198	158	132	113

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.

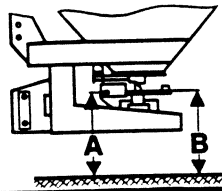


ZSA
 lbs/acre

OATS

		8 m					9 m				
		NW A1 / B1					NW A1 / B1				
		540					540				
		A: 31 1/2" B: 32 3/4"					A: 31 1/2" B: 32 3/4"				
	lbs/min.										
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
18	14.1	72	54	43			64	48			
19	16.3	83	62	50	41		73	55	44		
20	18.5	94	70	56	47	40	83	62	50	42	
21	21.0	106	80	64	53	45	94	71	57	47	40
22	23.4	118	89	71	59	51	105	79	63	53	45
23	26.9	136	102	82	68	58	121	91	73	61	52
24	30.4	154	115	92	77	66	137	103	82	68	59
25	33.7	171	128	102	85	73	152	114	91	76	65
26	37.0	187	140	112	94	80	166	125	100	83	71
27	40.3	204	153	122	102	87	181	136	109	91	78
28	43.6	220	165	132	110	94	196	147	118	98	84

These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

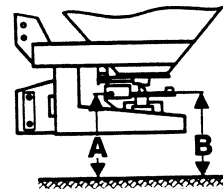


ZSA
lbs/acre

CLOVER

	6 m					8 m					
	NW A1 / B1					NW A1 / B1					
	540					540					
	A: 31 1/2" B: 32 3/4"					A: 31 1/2" B: 32 3/4"					
	→ m.p.h. →					→ m.p.h. →					
	lbs/min.	3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
6	3.9	26	20	16	13	11	20	15	12	10	8
7	7.3	49	37	29	24	21	37	28	22	18	16
8	10.6	72	54	43	36	31	54	40	32	27	23
9	15.7		80	64	53	45	80	60	48	40	34
10	20.8			84	70	60		79	63	53	45
11	26.6					77			81	67	58
12	32.3									82	70

These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

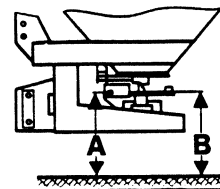


ZSA
lbs/acre

RAPE

	6 m					8 m					
	NW A1 / B1					NW A1 / B1					
	540					540					
	A: 31 1/2" B: 32 3/4"					A: 31 1/2" B: 32 3/4"					
	→ m.p.h. →					→ m.p.h. →					
	lbs/min.	3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
6	2.9	19	15	12	10	8	15	11	9	7	6
7	6.0	40	30	24	20	17	30	23	18	15	13
8	9.1	62	46	37	31	26	46	35	28	23	20
9	13.3		68	54	45	39	68	51	41	34	29
10	17.6				59	51		67	53	44	38

These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

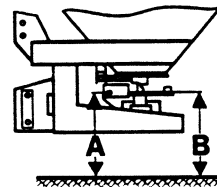


ZSA
lbs/acre

MUSTARD

	9 m									
	NW A1 / B1									
	540									
	A: 31 1/2" B, 31 1/2"									
	→ m.p.h. →					→ m.p.h. →				
lbs/min	3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
6	1.9	9	7	5						
7	4.1	18	14	11	9	8				
8	6.2	28	21	17	14	12				
9	8.3	37	28	22	19	16				
10	10.4	47	35	28	23	20				
11	16.7	75	56	45	38	32				
12	23.0		77	62	52	44				
13	28.3		95	76	64	55				
14	33.7			91	76	65				

These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

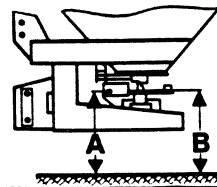


ZSA
lbs/acre

FIELD BEANS

	10 m									
	NW A1 / B1									
	540									
	A: 31 1/2" B: 32 3/4"									
	→ m.p.h. →					→ m.p.h. →				
lbs/min	3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
16	25.2	102	76	61	51	44				
17	31.0	126	94	75	63	54				
18	36.9	149	112	90	75	64				
19	43.4	176	132	105	88	75				
20	49.9	202	151	121	101	87				
21	55.8	226	169	136	113	97				
22	61.7	250	187	150	125	107				
23	67.6	274	205	164	137	117				
24	73.5	298	223	179	149	128				

These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

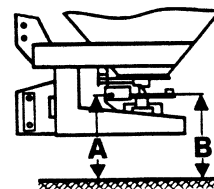


ZSA
lbs/acre

PEAS FOR FORAGE

	10 m										
	NW A1 / B1										
	540										
	A: 31 1/2" B: 32 3/4"										
	m.p.h.					m.p.h.					
	lbs/min	3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
13	12.4	50									
14	16.0	65	49								
15	20.1	81	61	49	41						
16	24.1	98	73	59	49	42					
17	28.6	116	87	69	58	50					
18	33.0	134	100	80	67	57					
19	39.0	158	118	95	79	68					
20	44.9	182	136	109	91	78					
21	50.9	206	154	124	103	88					
22	56.8	230	172	138	115	99					

These charts should be used as a guide only.
Variations/differences can occur in the material
being spread.

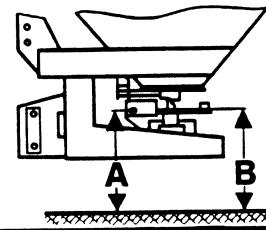


ZSA
lbs/acre

RAY GRASS

	6 m										
	NW A1 / B1										
	540										
	A: 31 1/2" B: 31 1/2"										
	m.p.h.					m.p.h.					
	lbs/min	3.75	5.0	6.25	7.5	8.75	3.75	5.0	6.25	7.5	8.75
10	2.4	16	12	10							
11	3.4	23	17	14	12	10					
12	4.5	30	23	18	15	13					
13	5.9	40	30	24	20	17					
14	7.3	49	37	29	25	21					
15	9.5	64	48	38	32	27					
16	11.7	79	59	47	39	34					
17	13.9	94	70	56	47	40					
18	16.1	108	81	65	54	46					
19	18.3	123	92	74	62	53					

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.

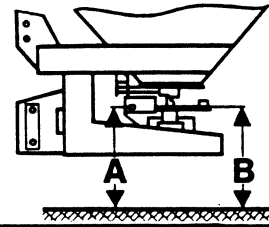


ZSA
 lbs/acre

VETCH

	9 m					10 m					
	NW A1 / B1					NW A1 / B1					
	540					540					
	A: 31 1/2" B: 31 1/2"					A: 31 1/2" B: 31 1/2"					
	lbs/min	→ <input type="text" value="m.p.h."/> →					→ <input type="text" value="m.p.h."/> →				
		3,75	5,0	6,25	7,5	8,75	3,75	5,0	6,25	7,5	8,75
10	7.9	36									
11	11.7	53	39				47	35			
12	15.5	70	52	42			63	47	38		
13	20.0	90	67	54	45	38	81	61	48	40	
14	24.4	110	82	66	55	47	99	74	59	49	42
15	29.3	132	99	79	66	56	118	89	71	59	51
16	34.1	153	115	92	77	66	138	103	83	69	59
17	38.9	175	131	105	87	75	157	118	94	79	67
18	43.7	196	147	118	98	84	177	133	106	88	76

These charts should be used as a guide only.
 Variations/differences can occur in the material
 being spread.



ZSA
 lbs/acre

DRAZA SLUG KILLER

	6 m					
	NW A1 / B1					
	540					
	A: 30 3/4" B: 31 1/2"					
	lbs/min.	3,75	5,0	6,25	7,5	8,75
6	0,4	3	2	2	2	
7	1	7	6	4	4	3
8	2	14	11	9	7	6
9	3,1	21	16	13	11	9
10	4,2	28	21	17	14	12
11	5,2		26	21	17	15
12	6,2		31	25	21	18
13	7,2			29	24	21
14	8,2			33	28	24

Re.: Spreading of microgranules

As only small quantities of microgranules are spread, we recommend to check the exact adjustment of the shut-off slides and to correct it, if necessary.

The examination is made as follows:

At position 6, the opening must be 5 mm at the largest position. This can be checked with a round metal ϕ 5 mm.

When corrections are necessary, detach the nut at the shut-off lever. By screwing in/out one half of the universal joints, the distance between shut-off lever and adjusting lever can be changed and the opening position of slide can be adjusted.

