

In-Ex

OWNER'S MANUAL
FOR THE



Spreader 400

In-Ex™
P O Box 1010, 145 Harts Road
Palmerston North
Ph: 06 354 6060
Fax: 06 355 3199
E-Mail: sales@c-dax.co.nz

YOUR SAFETY IS IN-EX's PRIMARY CONCERN

- It is important that you understand that any loads or attachments whether fastened to or placed on a vehicle or ATV will alter the stability and handling characteristics of that vehicle or ATV.
- **FAILURE TO FOLLOW THESE RULES CAN RESULT TO SEVERE INJURY OR DEATH TO OPERATORS OR BYSTANDERS.**
- We take this opportunity to remind you about the simple, basic and common sense rules of safety when using spray tanks or other equipment.
- **NEVER EXCEED THE LOAD LIMIT CAPACITY OF THE ATV OR OTHER VEHICLE.**
- Spray tanks or other equipment must be filled to a level where the gross weight is within the load limit of the ATV or other vehicle.
- **ALWAYS EXERCISE EXTREME CAUTION WHEN OPERATING EQUIPMENT, ESPECIALLY ON UNDULATING TERRAIN.**
- Operators **MUST BE AWARE** that they have a responsibility to ensure that anyone using this equipment is familiar with the manufacturers safe operating instructions.
- **PLEASE BE CAREFUL!**

SAFETY PRECAUTIONS

Before attempting to install or operate the equipment, read and understand the manual thoroughly. Failure to comply with this instruction constitutes improper use and will invalidate the warranty.

Throughout this manual there are highlighted text boxes containing warnings, cautions and notes.

Warnings are mandatory instructions to prevent serious injury or permanent damage.

Cautions are advisory instructions to ensure reliable operation of the equipment.

Notes are for convenient operation

Do not overload your spreader. The maximum permissible payload is 320 Kg.

Never use dirty product or product with stones or lumps.

Ensure that your towing vehicle is adequate for the task. The maximum tare weight is 450 Kg.

If using the spreader over hilly terrain the payload should be reduced to ensure that the spreader stability is not compromised.

Never allow anyone to ride on or in the spreader.

Keep the spreader in good condition. Cleanliness and maintenance are essential for safe and trouble free operation.

Never leave product in the hopper or store the spreader without cleaning it.

IN-EX Spreader 400

OWNER'S MANUAL

(Pt.No.2400-6955 Issue 5, May 2021)

TABLE OF CONTENTS

2	Safety Precautions
3	Table of Contents
4	Description
	Specifications
	Order Information
	Warranty
6	Operation
	Calibration
7	Operating the Spreader
	Adjusting the Spread Pattern
8	Fitting the Rain Cover
	Maintenance
	Before Use
	After Each Use or Daily when in Use
	Hints
9	Notes
10	Parts Diagram
11	Parts List

DESCRIPTION

The IN-EX Spreader 400 is a ground-driven spreader designed for application of pelleted fertilisers. It can also be used for application of other products such as grass seed and magnesium oxide. The uniquely designed 400-litre translucent non-corrosive polyethylene hopper is specially profiled for good product flow and ease of filling. The convenient cover is easy to remove, install and store if not required. A high-quality stainless steel agitator and shutter ensures even flow of product to the spinner. A unique spinner design ensures wide, even spread of product over 180 degrees (Urea). The heavy-duty galvanised frame is fitted with chunky tyres as standard. The drive train uses high quality steel and a double sealed self-aligning bearing and heavy-duty gearbox for maximum durability. The drive can be disconnected using a convenient pin clutch. The control lever allows instant setting of product feed rate and product control.

Specifications

(Specifications subject to change without notice)

Dry Weight	120 Kg
Dimensions	W1900mm, H1400mm, L1850mm
Capacity	400 litre (320Kg Urea)
Drive	Ground driven (single wheel)
Wheels	18x950x8 Chunky tyres
Tyre Pressure	12 PSI
Clutch	Removable Pin (use only pin supplied)
Control	Adjustable stainless steel slide with index handle
Agitator	Mechanical arm, stainless steel
Spinner	Galvanised steel with three-position adjustable vanes
Hopper	Non-corrosive polyethylene, ergonomically designed for ease of filling and inspection
Cover	Canvas cover
Frame	Galvanised steel
Gearbox	Heavy duty with double sealed bearings
Gearbox oil	400ml SAE30
Axle Bearings	Sealed ball races
Axle grease	General Purpose
Application Rate	140Kg per hectare @ 10 kph (nominal, Urea)
Spread width	18M (nominal, Urea @ 15 Kph)
Towing speed	15 Kph (Maximum recommended)

WARRANTY

1 WARRANTY AND LIABILITY

Use of the equipment

- 1.1 You must satisfy yourself as to the suitability of the equipment for your intended use(s) of the equipment.

Your relationship with the retailer

- 1.2 Where you consider you have a warranty claim (or any other claim) in relation to the equipment, you must contact the retailer who sold you the equipment, not C-Dax directly. The retailer is responsible for liaising with C-Dax in respect of your claim.

Warranty

- 1.3 C-Dax warrants to the original purchaser that the equipment is sold free from defects in materials and workmanship for a period of 12 months from date of first retail sale (6 months from date of first retail sale if the equipment is sold in the U.K.) subject to the terms set out below.
- 1.4 C-Dax will at its option repair or replace the defective equipment (or part of the equipment) or notify the retailer of the equipment to refund the purchase price for such defective equipment to you in the event of a breach of this warranty, subject to the terms set out below.

Liability

- 1.5 Except for the warranty set out in clause 1.2 above, all warranties and representations (including those expressed or implied by law) in respect of the equipment or advice relating to the equipment provided to you by C-Dax are excluded to the extent permitted by law.
- 1.6 Notwithstanding anything else in this manual, C-Dax's maximum liability to you (in the event that such liability exists) in respect of any breach of warranty, any matter set out in this manual, or for defective equipment or advice relating to the equipment provided is limited at C-Dax's option to:
- (a) repairing or replacing the equipment (or part of the equipment); or
 - (b) notifying the retailer of the equipment to refund the price for the equipment paid by you.
- 1.7 Notwithstanding anything else in this manual, in no event will C-Dax be liable, whether in contract, tort (including negligence) or otherwise:
- (a) where you have altered or modified the equipment, misused or misapplied the equipment, or the equipment has been subjected to any unusual, excessive or non-recommended use, service or handling (including as set out in this manual);
 - (b) where the equipment is not transported, stored, handled or used in accordance with any directions given by C-Dax (or the retailer) to you (including as set out in this manual);
 - (c) where the equipment:
 - (i) has been subject to neglect, accident or hireage, or the damage arises from fair wear and tear, battery damage or chemical attack;
 - (ii) has been built to a customer's specifications; or
 - (iii) has been dismantled, repaired or serviced other than by an authorised service agent of C-Dax;
 - (d) for loss or damage caused by any factors beyond C-Dax's control; or
 - (e) for any loss of profit or revenue, or for any special, indirect, incidental or consequential damage, loss or injury of any kind suffered by you.
- 1.8 Where C-Dax elects to repair or replace the equipment it will use reasonable endeavours to do so as soon as practicable but will not be liable for any delay in doing so.
- 1.9 You agree that the transactions entered into between you and the retailer (and C-Dax) are for the purposes of trade and that, having regard to all relevant circumstances of the transactions, it is fair and reasonable that the provisions of the Consumer Guarantees Act 1993 (NZ) do not apply to those transactions to the fullest extent permitted by law.

OPERATION

The product to be spread is placed in the hopper. When the spreader is towed forward, the right hand wheel drives through the pin clutch and gearbox to turn the spinner in a clockwise direction. When the shutter handle is pulled forward, the shutter at the bottom of the hopper rotates to an open position. The size of the opening is set by a shutter stop lever, which locates into one of nine pre-set positions.

An extension of the spinner boss is connected to a stainless steel agitator arm inside the bottom of the hopper. The agitator ensures that product flows continuously out of the hopper to the spinning disk.

A delivery chute on the bottom of the hopper ensures that product is delivered to the correct spot of the disk so that the deflectors distribute the product over a wide angle behind and to each side of the spreader.

CALIBRATION

Shut the Shutter Control Handle to the closed position.

To calibrate your spreader, place a measured amount of product (10 Kg) in the hopper.

Set the Shutter Stop Lever to the position (1-9) indicated in the Calibration Guide below. Hole position 9 (shutter fully open) is denoted by two holes vertically one above the other.

Ensure the drive pin is correctly inserted into the hole in the drive axle.

Tow the spreader at the desired speed and pull the Shutter Control Handle forward.

When the product has been exhausted, measure the distance covered and band width in metres. It is recommended that this be done over an area where the product can be seen on the ground so that the spread width can be measured.

Check the application rate using the following formula:

$$\text{Rate (Kg/ha)} = \frac{\text{Product applied (Kg)} \times 10,000}{\text{Distance travelled (metres)} \times \text{spread width (metres)}}$$

Adjust either the Shutter Stop Lever or the speed of travel until the desired application rate is achieved.

NOTE

Because of variations in product characteristics, speedometer calibration and driving speed, the information in the calibration guide should be regarded as a starting point only. It is recommended that the spreader be calibrated before use.

Calibration Guide
(Average Speed 10 Kph)

Product	Rate (Kg/ha)	Shutter Setting (Lever Position)	Nominal Spread (Metres)
Urea or DAP	50	4	15
Urea or DAP	75	5	15
Urea or DAP	100	6	15
Super phosphate	100	7	12
30% Potassic Super	100	8	10
Rye Grass	30	3	4

Magnesium Oxide

Magnesium Oxide powder is applied at a rate determined by the number of cows to be treated. When spreading this product, calculate the weight of powder to be applied and apply this amount using shutter setting 4 or 5. **Because this product may set hard if left exposed to air, it must not be stored in the machine even for a short time. Load the spreader only with the amount required to be spread and clean ALL traces of product from the machine after use.**

WARNING
Failure to clean Magnesium Oxide sufficiently can result in damage not covered by warranty.

OPERATING THE SPREADER

When the spreader has been correctly calibrated, the hopper may be filled to the required level and spreading commenced.

To reduce agitator damage to product and to ensure that product is not forced past the agitator shaft when towing the spreader to the area to be treated, the drive to the gearbox should be disconnected by removing the pin from the drive axle until spreading is to be commenced. The pin can be stowed by inserting it through a receptacle provided on the right hand side of the hopper frame.

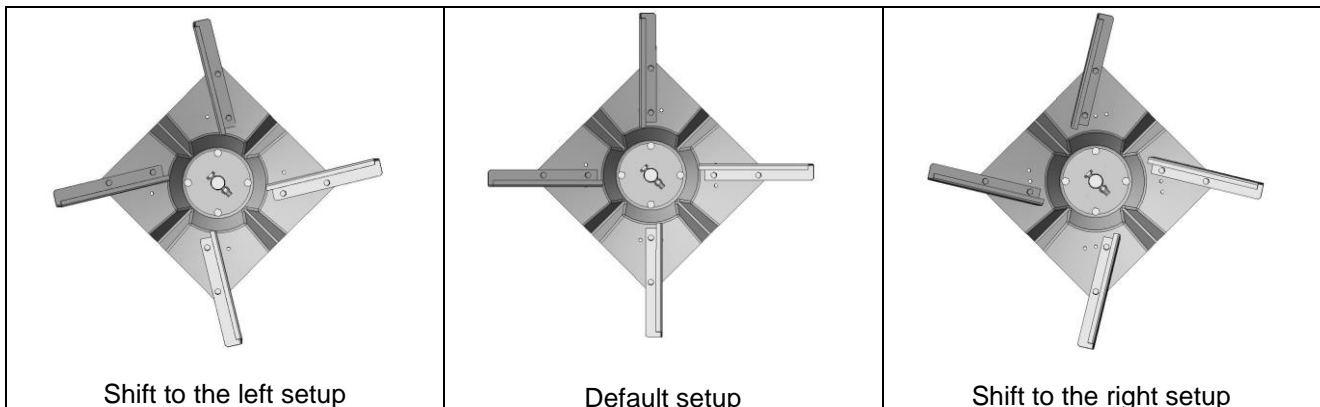
WARNING
To prevent damage to the spreader do not tow the spreader at speeds in excess of 15 Kph.

To prevent inadvertent operation of the shutter while the spreader is in transit it is recommended that the Shutter Stop Lever be moved to Position 1 to lock the shutter closed.

To prevent the shutter from vibrating closed when the spreader is operated over rough ground, the Shutter Control Handle friction may be increased by tightening the adjustment nut at the bottom of the Handle.

Adjusting the Spread Pattern

The spreader has been set up for spreading pelletised fertiliser. When spreading lighter products or products with a high powder content it may be necessary to adjust the deflectors on the spinner to centralise the spread pattern. To shift the pattern to the left (facing forward) the inside end of the vanes should be moved anti-clockwise. To shift the pattern to the right (facing forward) the inside end of the vanes should be adjusted clockwise. These positions are highlighted in the diagram on the following page.



Fitting the Cover

To fit the rain cover to the hopper, stretch the cover over the hopper, first locating the rear of the cover. Pull the cover forward until it wraps over front edge of the hopper.

MAINTENANCE

The following maintenance actions are mandatory for reliable use of the spreader.

Before Use

Check the tyre pressures and charge with air as required. The correct pressure is 12 psi. (80 Kpa)

Remove the gearbox drive pin and turn the spinner by hand to ensure that it is free to turn without interference.

Check the hopper to ensure that no debris is inside.

Check for any loose fasteners and tighten as required.

If the spreader has not been used for some time, grease the bearings (pay particular attention to the pin clutch bearing).

Check the gearbox for leaks. If leaks are detected it will be necessary to drain and replenish the gearbox with 400ml of SAE 30 oil.

CAUTION

To replenish the gearbox the spreader may be inverted to place the filler plug uppermost. However in doing so extreme care must be taken to prevent damage to the spinner and deflectors.

After Each Use or Daily when in Use

Remove all traces of product from the spreader by brushing or washing. Pay particular attention to areas where product has accumulated and built up. Remove by scraping if necessary taking care not to damage the surface finish of the spreader or its components.

If washing do not direct high-pressure water onto the gearbox, axle or wheel bearing seals.

After washing, grease the bearings (three places) and apply water displacing fluid such as WD 40 or LPS3 to all metal parts.

Check for damaged or worn components and replace as required.

HINTS

When greasing the pin clutch bearing in the axle assembly, leave the pin in place. This will assist the grease to fully enter the scroll in the axle and prevent the axle from being displaced if the bearing housing should be over pressurised with grease.

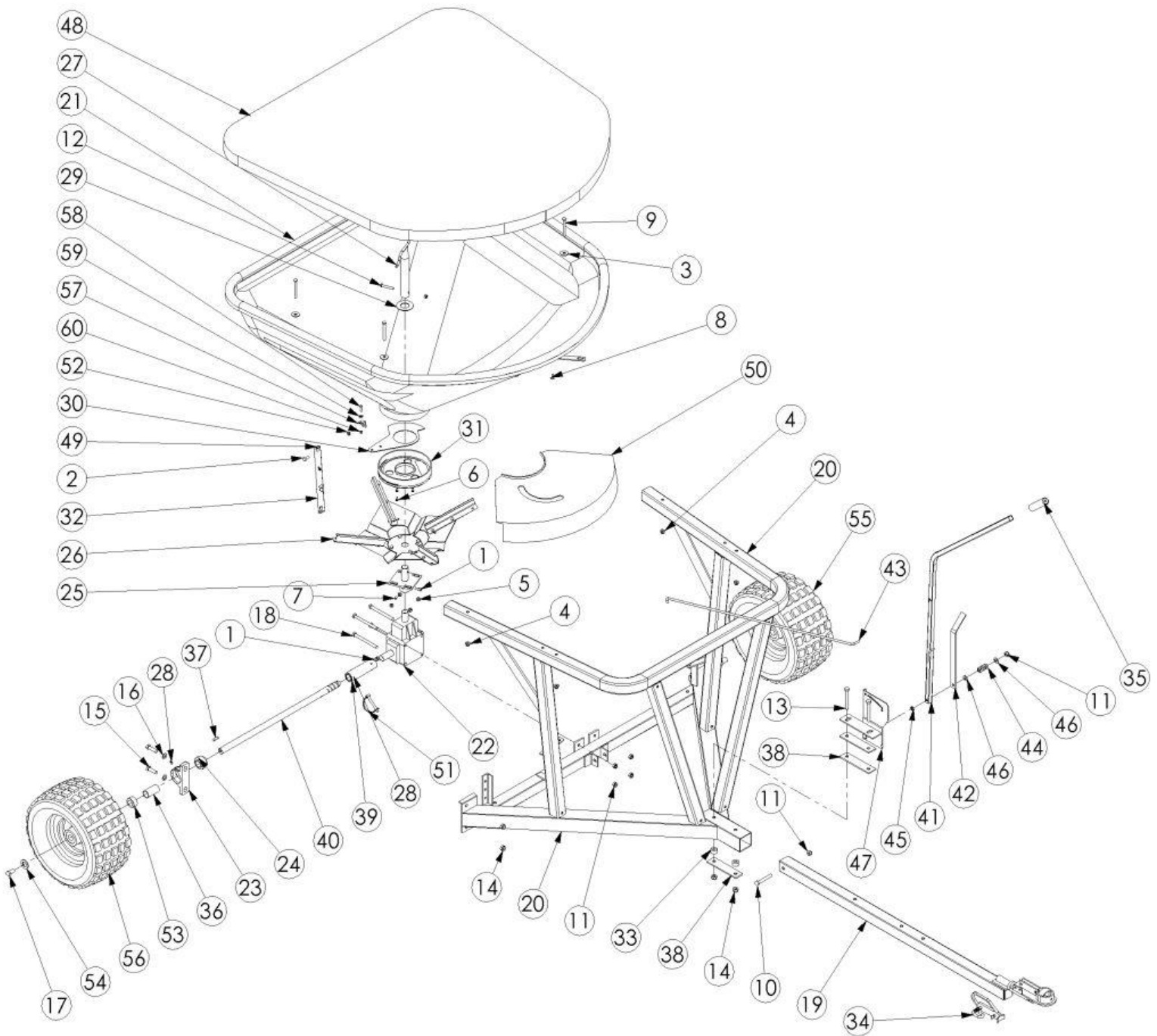
If the drive axle is removed from the axle housing for any reason care must be taken to ensure that both the axle scroll and bronze bush are clean and free of debris before reassembly.

To remove the agitator from the hopper knock out the roll pin or remove the bolt, which attaches the agitator shaft to the spinner flange assembly then withdraw the agitator from inside the hopper.

When ordering replacement parts always quote the spreader model and the Part Number of the required part.

NOTES:

PARTS DIAGRAM



Note: Item 38 (Transit Plate) is used to hold the lever in place during transit when the drawbar is not attached

PARTS LIST

Item No.	QTY	Part NO	Description
1	2	2880-0816	Fastener-Cap Head-Allen Screw-M8x16-316-Stainless
2	8	3290-0820	Fastener-Set Screw-Hex-8.8 Grade-M8x20-ZP
3	4	3310-2810	Fastener-Washer-Flat-M10x32x2.5-Grade 316-Stainless
4	4	3310-6008	Fastener-Washer-Flat-M8-ZP
5	11	3170-0008	Fastener-Nut-Nyloc-M8-ZP
6	3	3110-0512	Fastener-Machine-Screw-Pan-M5x12-Pozi-ZP
7	2	3010-0810	Fastener-Grub Screw-Socket Head-M8x10-Stainless
8	4	3240-0018	Fastener-Rivet-Blind-Truss Head-3/16x18mm-Aluminium
9	4	2810-0880	Fastener-Bolt&Nut-Hex-304 Grade-M8x80-Stainless
10	1	2840-1075	Fastener-Bolt-Hex-8.8 Grade-M10x75-ZP
11	6	3170-0010	Fastener-Nut-Nyloc-M10-ZP
12	1	3290-0850	Fastener-Set Screw-Hex-8.8 Grade-M8x50-ZP
13	2	2840-1290	Fastener-Bolt&Nut-Hex-8.8 Grade-M12x90-ZP
14	4	3170-0012	Fastener-Nut-Nyloc-M12-ZP
15	2	3290-1240	Fastener-Set Screw-Hex-8.8 Grade-M12x40-ZP
16	2	3310-6012	Fastener-Washer-Flat-M12-ZP
17	1	3290-1225	Fastener-Set Screw-Hex-8.8 Grade-M12x25-ZP
18	4	2840-1120	Fastener-Bolt&Nut-Hex-8.8 Grade-M10x120-ZP
19	1	2550-1400	Drawbar-CDIT400GT-GL
20	1	3500-5705	Frame-Spreader-CDIT400/Spreader 400-GL
21	1	7500-2162	Rota-Hopper-Spreader-400 -Natural-MDPE
22	1	3800-1000	Gearbox-Ferroni-RV10-Ratio 1 to 2.78
23	1	1140-4000	Bearing-Housing-Pillow Block-Drive Axle-Spreaders
24	1	1140-1200	Bearing-Ball-Pillow Block-Drive Axle-Spreaders
25	1	8200-5200	Spinner-Mount-CDIT300/400/INEX300-ZP
26	1	8200-1000	Spinner Assembly-Spreader-CDIT300/400-GALV
27	1	1036-8240	Agitator-Spreader-CDIT300/400-In-Ex300/400-SS
28	2	5270-0003	Nipple-Grease-Straight-Short-M6-ZP
29	1	6500-9000	Profiled-Washer-Spinner Shaft-34.9x67x2mm-Stainless 304
30	1	6500-7770	Profiled-Shutter-CDIT300/400
31	1	7500-2795	Rota-Spout-Spreader-165/300/400-Natural-MDPE
32	2	5245-8015	Mount-Shroud-CDIT400/Spreader 400-ZP
33	2	5200-9200	Machined-Bush-Round-25 ODx14 Longx12 ID-ZP
34	1	8800-3800	Tow-Coupling-Handle-Double Ended-1 7/8" x 50mm-ZP
35	1	3865-3800	Grip-Handle-7/8"-PVC-Black-Plastic
36	1	2250-7900	Cover-Shaft-Drive Axle-60mm Long-CDIT400GT-PVC
37	1	5200-6300	Machined-Key-8x8-Ground Drive Spreaders
38	3	1300-8550	Bracket-Transit Plate-CDIT400-ZP
39	1	5200-5200	Machined-Housing-Drive Axle-INEX300/INEX130-ZP
40	1	5200-6600	Machined-Shaft-Axle-CDIT400GT-ZP
41	1	4050-1600	Handle-In-Ex Spreader 300-ZP
42	1	4050-4200	Handle-Indicator-In-Ex 300-ZP
43	1	5050-7940	Linkage-Shutter-In-Ex Spreader 300
44	1	8250-1800	Spring-Compression-Crinkle Plate-ZP

45	1	3320-7010	Fastener-Washer-Shakeproof-External Star-M10-ZP
46	2	3310-6010	Fastener-Washer-Flat-M10-ZP
47	1	5245-3905	Mount-Handle-Spreader 300-ZP
48	1	2250-4104	Cover-Hopper-Silver Fabric-Spreader 400/CDIT400
49	4	3310-6005	Fastener-Washer-Flat-M5-ZP
50	1	7500-2692	Rota-Shroud-Spreader 400-Natural-MDPE-180 Degrees
51	1	6100-4860	PIN-LOCK-8x57mm-ZP
52	2	3330-8008	Fastener-Washer-Spring-M8-ZP
53	1	2150-0025	Collar-Shaft-ID25-ZP
54	1	3310-5021	Fastener-Washer-Flat-M20x39x3-Axle-ZP
55	1	9200-4500	Wheel-Knobbly-Bearing-18x950x8
56	1	9200-4600	Wheel-Knobbly-Keyed-18x950x8
57	2	1300-5200	Bracket-Lock-Hose Reel-ZP
58	2	3290-0620	Fastener-Set Screw-Hex-8.8 Grade-M6x20-ZP
59	2	3310-6006	Fastener-Washer-Flat-M6-ZP
60	2	3170-0006	Fastener-Nut-Nyloc-M6-ZP