

In-Ex

OWNER'S MANUAL
FOR THE



In-Ex engine driven spreader 400

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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.

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DESCRIPTION

The In-Ex engine driven spreader 400 is an engine driven spreader designed for application of pelleted fertilisers. It can also be used for application of other products such as grass seed. 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 engine can be controlled via the handle mounted throttle. The control lever allows instant setting of product feed rate.

Specifications

(Specifications subject to change without notice)

Dry Weight	Approximately 160 Kg
Dimensions	W1900mm, H1400mm, L2000mm
Capacity	400 litre (320Kg Urea)
Drive	Engine Driven (4HP Honda) with 6:1 reduction
Wheels	18x950x8 Chunky tyres
Tyre Pressure	12 PSI
Control	Adjustable stainless steel slide with index handle
Agitator	Mechanical arm, stainless steel
Spinner	480RPM 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
Spinner Gearbox	Heavy duty with double sealed bearings
Spinner Gearbox oil	400ml SAE30
Engine oil	SAE30 (see Honda Manual for details)
Reduction Gearbox oil	SAE30 (see Honda Manual for details)
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 engine is running, drive is transmitted through the PTO shaft and gearbox to turn the spinner in a clockwise direction. To spread material the throttle should be in the fully open position. 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.

When not spreading for short periods of time, the throttle should be returned to the idle position to avoid excessive pulverising of material inside the hopper. When spreading is completed the engine should be switched off by turning off the engine switch.

For engine starting instructions refer to Honda manual.

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

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 removed by making sure that the engine is not running.

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.

NOTE

For engine maintenance please refer to Honda engine owner's manual

Before Use

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

Ensure that the spinner is free to turn without interference.

Check the hopper to ensure that no debris is inside.

If the spreader has not been used for some time, grease the bearings.

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.

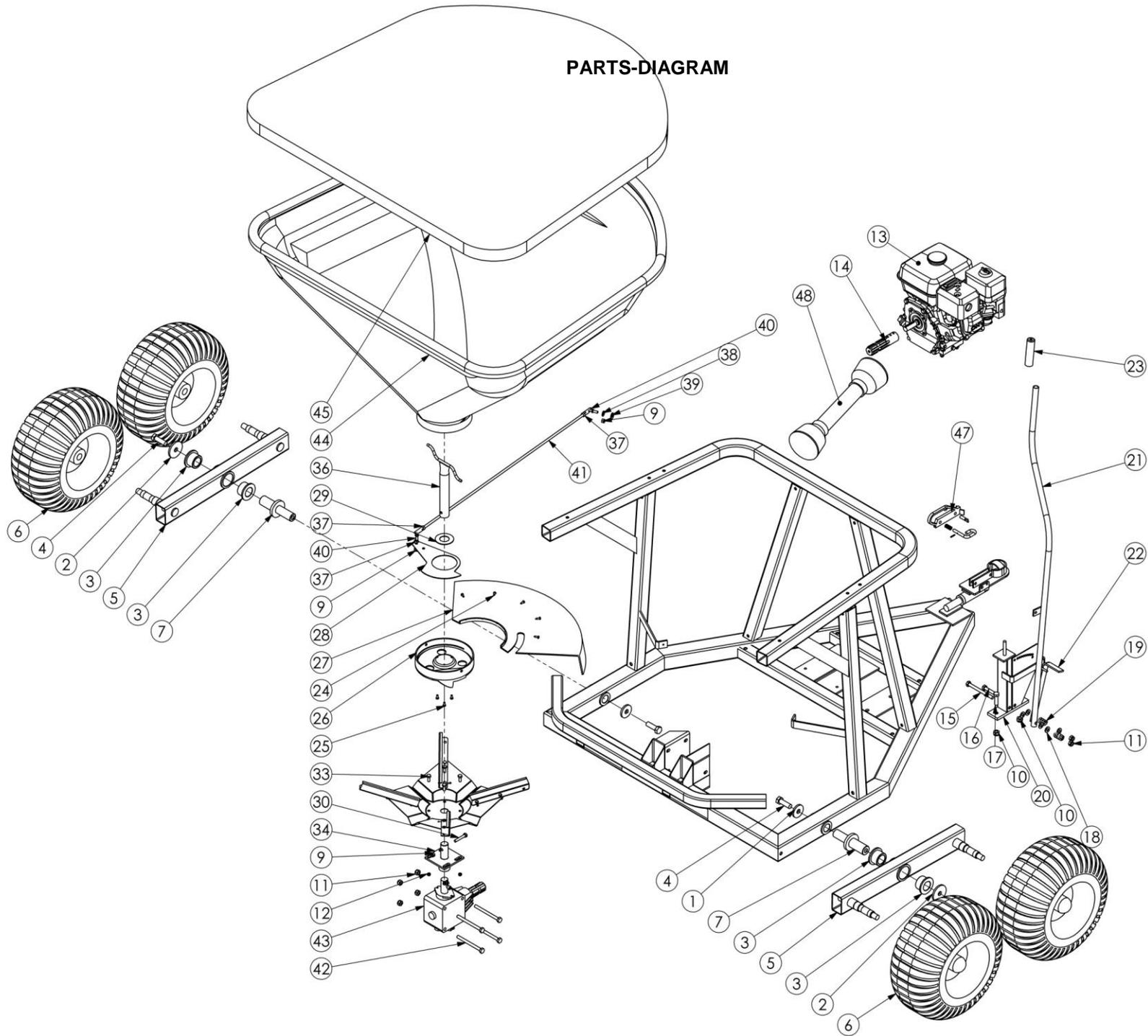
After washing, grease the bearings (three places) and apply water displacing fluid such as WD 40 or LPS3 to all metal parts.

Check for damaged or worn components and replace as required.

Periodically

Grease PTO shaft and swivel tow coupling grease points

PARTS-DIAGRAM



PARTS LIST

Item No.	QTY.	e9 part no	Description
1	2	9200-2700	Profiled-Washer-17IDx50ODx6
2	2	9200-2720	Profiled-Washer-17IDx65ODx6
3	4	5200-4071	Machined-Bush-Round-6OD-35ID-34LG-Vesconite-HL
4	4	2840-1660	Fastener-Bolt&Nut-Hex-8.8 Grade-M16x50-ZP
5	2	1082-1014	Axle-Walking Beam-In-Ex-400-Tandem-ZS
6	4	9200-8700	Wheel-Turf-Bearing-18x950x8-4 Ply
7	2	5200-1800	Machined-Axle-InEx-400-Tandem-155LG-MSBK
8	4	2840-0840	Fastener-Bolt&Nut-Hex-8.8 Grade-M8x40-ZP
9	7	3170-0008	Fastener-Nut-Nyloc-M8-ZP
10	2	3170-0012	Fastener-Nut-Nyloc-M12-ZP
11	6	3170-0010	Fastener-Nut-Nyloc-M10-ZP
12	4	3170-0006	Fastener-Nut-Nyloc-M6-ZP
13	1	2670-0046	Engine-Honda-4.6HP-Horizontal Shaft-GX160UT2HX2
14	1	6600-1000	PTO Adaptor-InEx 400-Tandem
15	1	2840-1120	Fastener-Bolt&Nut-Hex-8.8 Grade-M10x120-ZP
16	1	2840-1065	Fastener-Bolt&Nut-Hex-8.8 Grade-M10x65-ZP
17	2	2820-1240	Fastener-Set Screw-Hex-8.8 Grade-M12x40-ZP
18	5	3310-6010	Fastenr-Washer-Flat-M10-ZP
19	2	8250-1800	Spring-Compression-Crinkle Plate-ZP
20	1	5245-3900	Mount-Handle-CDIT300/400GT-ZP
21	1	4050-1615	Handle-InEx 400-Tandem-ZP
22	1	4050-4250	Handle-Indicator-CDIT400GT-ZP
23	1	3865-3800	Grip-Handle-7/8"-PVC-Black-Plastic
24	5	3280-1058	Fastener-Self Tap-Screw-Pan-10Gx5/8"-Pozi-ZP
25	3	3110-0512	Fastener-Machine-Screw-Pan-M5x12-Pozi-ZP
26	1	7500-2833	Rota-Spout-Counter-Clockwise-Natural-MDPE
27	1	7500-2697	Rota-Shroud-3PL Spreader 400 InEx-Natural-MDPE
28	1	6500-7770	Profiled-Shutter-CDIT300/400,165L-Spreader-Stainless
29	1	6500-9000	Profiled-Washer-Spinner Shaft-34.9x67x2mm-Stainless 304
30	1	2870-0850	Fastener-Button Head-Allen-Screw-8.8 Grade-M8x50-ZP
31	1	3010-0810	Fastener-Grub Screw-Socket Head-M8x10-Stainless
32	1	2890-0816	Fastener-Cap Head-Allen-Screw-12.9 Grade-M8x16-Black
33	4	3290-0820	Fastener-Set Screw-Hex-8.8 Grade-M8x20-ZP
34	1	8200-5200	Spinner-Mount-CDIT300/400/INEX300-ZP
35	1	8200-1000	Spinner Assembly-Spreader-CDIT300/400-GALV
36	1	1036-8240	Agitator-Spreader-CDIT300/400-In-Ex300/400-SS
37	3	3190-0008	Fastener-Nut-Plain-M8-Black
38	1	3310-6008	Fastener-Washer-Flat-M8-ZP
39	1	3310-5008	Fastener-Washer-Flat-Heavy-M8x22x3-Black
40	2	1110-2308	Ball-End-Internal Thread-M8-Zinc Plated
41	1	3250-0008	Fastener-Rod-Threaded-4.6 Grade-M8-ZP
42	4	2840-1120	Fastener-Bolt&Nut-Hex-8.8 Grade-M10x120-ZP
43	1	3800-1210	Gearbox-Ferroni-RV010-L-Ratio 1:1-1-3/8 PTO input-25mm Output
44	1	7500-2162	Rota-Hopper-Spreader-400 -Natural-MDPE
45	1	2250-4104	Cover-Hopper-Silver Fabric-Spreader 400/CDIT400
46	1	3500-6700	Frame-Trailed-In-Ex 400/Tandem
47	1	8800-3800	Tow-Coupling-Handle-Double Ended-1 78 x 50mm-ZP
48	1	2600-1000	Drive Shaft-16HP-1000mm Long-Shielded