



## Fit R-300

Cable alley scraper

Operation Manual / Installation Instructions  
(Original operating instructions)

2005-9015-009  
01. August 2018

---

# Contents

<b>1</b>	<b>Preface</b> .....	<b>6</b>
1.1	About this manual .....	6
1.2	Manufacturer's address .....	7
1.3	Customer service .....	7
1.4	GEA Farm Technologies Canada Inc. / Division GEA Houle - General equipment warranty .....	8
1.4.1	Limited warranty .....	8
1.4.2	Condition of the limited warranty .....	8
1.4.3	Extent of limited warranty .....	9
1.4.4	Warranty limitations and exclusion .....	10
1.4.5	General statements .....	10
1.5	Specific Limited Warranty for Fit R-300 Cable Alley Scraper .....	11
1.5.1	Extent of Specific Limited Warranty .....	11
<b>2</b>	<b>Safety</b> .....	<b>12</b>
2.1	Owner's obligation of care .....	12
2.2	Explanation of safety symbols .....	13
2.3	Basic safety instructions .....	14
2.4	Personnel qualifications .....	15
2.5	Protective devices .....	16
2.6	Safety labels .....	16
<b>3</b>	<b>Description</b> .....	<b>17</b>
3.1	Intended use .....	17
3.2	Product changes .....	18
3.3	Functional description .....	18
<b>4</b>	<b>Technical data</b> .....	<b>19</b>
4.1	Acoustic emission .....	19
4.2	Operating temperature .....	19
4.3	Bolt torque chart .....	19
4.4	Lubricant specifications .....	19
4.5	Motor specifications .....	20
4.6	Technical specifications .....	21
4.6.1	2 Alleys with drop at one end - 2 scrapers (1 per alley) .....	21
4.6.2	2 Alleys with drop at one end - 3 scrapers (shuttle stroke in one alley) .....	22
4.6.3	3 Alleys with drop at one end - 3 scrapers (1 per alley) .....	23
4.6.4	3 Alleys with drop at one end - 4 Scrapers (shuttle stroke in one alley) .....	24
4.6.5	4 Alleys with drop at one end - 4 scrapers (1 per alley) .....	25
<b>5</b>	<b>Geometric data</b> .....	<b>26</b>
5.1	Drive unit - 90° configuration - A .....	26
5.2	Drive unit - 90° configuration - B .....	28
5.3	Drive unit - 180° configuration .....	30
5.4	Drive unit - 360° configuration .....	32
5.5	16" (406 mm) corner wheel .....	34
5.6	21" (533 mm) corner wheel .....	35
5.7	Straight scraper .....	36
5.8	16° scraper .....	38
5.9	V-shape scraper .....	42

<b>6</b>	<b>Handling and installation</b>	<b>48</b>
6.1	Special personnel qualification required for handling and installation	48
6.2	Safety instructions for handling and installation	48
6.3	Environment requirements	49
6.4	Installation requirements	50
6.4.1	Visual inspection	50
6.4.2	Necessary documents	50
6.4.3	Special tools	51
6.5	Packing material disposal	51
6.6	Anchor bolt installation procedure	52
6.7	Drive unit handling	53
6.8	Drive unit frame anchoring	54
6.9	Installation of air vents on gearboxes	57
6.10	Drive unit wheels installation	58
6.11	Corner wheels installation	60
6.12	Proximity switches installation	64
6.13	The cross gutter supports installation	65
6.14	Scraper handling	67
6.15	16° adjustable scraper with urethane blades assembly	68
6.16	16° adjustable scraper with steel blades assembly	70
6.17	16° scraper with urethane blades assembly	72
6.18	16° scraper with steel blades assembly	74
6.19	Straight scraper with urethane blades assembly	76
6.20	Straight scraper with steel blades assembly	78
6.21	V-shape scraper with urethane blades assembly	80
6.22	V-shape scraper with steel blades assembly	82
6.23	Urethane scraper blade adjustment	84
6.24	Control panel installation	85
6.25	Electric connections	86
6.25.1	Connecting the proximity switches	86
6.25.2	Connecting electric motors	86
6.26	Cable installation	87
6.26.1	Step 1: Positioning the scrapers	87
6.26.2	Step 2: Linking the scrapers with cable	91
6.26.3	Step 3: Link the scrapers to the drive unit with the combi-rope	93
6.26.4	Step 4: Tensioning the cables	95

<b>7</b>	<b>Programming</b>	<b>96</b>
7.1	Special personnel qualification required for programming	96
7.2	Safety instructions for programming	96
7.3	General settings	96
7.3.1	Programmable module	96
7.3.2	Language	98
7.3.3	Clock / Date	98
7.3.4	Password	99
7.3.5	Alarm buzzer	100
7.4	Motor initial settings	101
7.4.1	Overload relay setting	101
7.4.2	Volts	101
7.4.3	Amps	102
7.4.4	Nema nominal efficiency (%)	103
7.4.5	Power factor (%)	104
7.4.6	Number of phases	105
7.4.7	Motor capacity (HP)	106
7.4.8	Minimum load (HP)	107
7.5	Motor capacity (HP) fine tuning	108
7.6	Minimum load (HP) fine tuning	109
7.7	Detection parameters	110
7.7.1	Maximum load fluctuation (HP)	111
7.7.2	Detection time	113
7.7.3	Number of restarts	115
7.8	Automatic cleaning mode using starting hours	116
7.9	Automatic cleaning mode using delay between cleanings	118
7.10	Scraper parking function	120
7.11	Scraper withdrawal function	120
7.12	Gradual discharge mode	121
7.13	Manure apron mode	121
7.14	External start signal mode	121
7.15	Cold weather function	121
7.16	Manual parking function	122
7.17	Instant start function	123
7.17.1	Number of strokes (Start Button)	123
7.18	Backup and recovery files	124
7.19	Diagnosis	125
7.20	Real time reading	126
7.21	Farm-access	127
7.21.1	Requirements	127
7.21.2	Electric connection	127
7.21.3	Wiring	128
7.21.4	Configuration	130
7.21.5	Mobile phone application	130
7.21.6	Mobile phone notifications	130
<b>8</b>	<b>Starting for the first time</b>	<b>131</b>
8.1	Special personnel qualification required for initial commissioning	131
8.2	Safety instructions for initial commissioning	131
8.3	Initial commissioning checklist	132
8.4	Checks after initial commissioning	134
8.5	Handing over to the owner	134
<b>9</b>	<b>Operating</b>	<b>135</b>
9.1	Special qualification required for operating	135
9.2	Safety instructions for operation	135
9.3	Requirements while operating	136
9.3.1	Maintenance work in the free stall alleys	136
9.3.2	Control panel alarms	136
9.3.3	Environment changes	136
9.4	Automatic mode operation	137
9.5	Manual mode operation	137

---

<b>10</b>	<b>Operating faults</b> .....	<b>138</b>
10.1	Special qualification required for troubleshooting .....	138
10.2	Safety instructions for troubleshooting .....	138
10.3	Troubleshooting possible faults .....	139
10.4	FIO452 indicator lights .....	143
<b>11</b>	<b>Maintenance</b> .....	<b>145</b>
11.1	Special qualification required for maintenance work .....	145
11.2	Safety instructions for maintenance .....	145
11.3	Scheduled maintenance responsibilities .....	146
11.4	Check the tension of the rope / cable .....	147
11.5	Adjust the tension of the rope / cable .....	148
11.6	Visual inspection .....	154
11.7	Check the bolts and anchor bolts torque .....	154
11.8	Grease the drive unit bearings .....	155
11.9	Grease the drive unit wheels and the corner wheels .....	156
11.10	Check and adjust the scraper blades .....	156
11.10.1	Steel blade .....	157
11.10.2	Urethane blade .....	157
11.11	Grease the scraper hinges .....	158
11.12	Lubricate the threaded rod .....	159
11.13	General cleaning .....	160
<b>12</b>	<b>Decommissioning</b> .....	<b>161</b>
12.1	Safety instructions for decommissioning .....	161
12.2	Decommissioning/disposal .....	161
<b>13</b>	<b>Appendix</b> .....	<b>162</b>
13.1	IVR PRO / IVR PRO Max@ccess wiring diagram .....	162
13.2	Electric motor wiring diagram .....	163
13.3	Safety labels and lubrication labels position .....	165
13.3.1	Drive unit .....	165
13.3.2	Control panel .....	166
13.4	Abbreviations .....	167

# 1 Preface

## 1.1 About this manual

The manufacturer reserves the right to make changes due to technical developments in the data and illustrations in this manual.

Reproductions, translations and copies of any kind, including extracts, require written authorization from the manufacturer.

This manual is supplied with the product.

- They should be kept close at hand and remain with the equipment even if the equipment is sold.
- This manual is not subject to an amendment service. The most recent version at any time can be obtained through the technical dealer or directly from the manufacturer.

### Pictograms used



This pictogram indicates information that will help towards better understanding of a procedure or operation.



This pictogram indicates a special tool required for installation.



A correction bar in the margin indicates changes to the previous edition. The character string "!!" in the search field of the PDF document locates the correction bar.



This pictogram refers to another document or another section of this manual.

If a manual number is given, the middle 4 figures indicate the language, as follows:

	Language		Language		Language
-9000-	German	-9013-	Dutch	-9032-	Serbian
-9001-	English (United Kingdom)	-9015-	English (North American)	-9034-	Slovak
-9002-	French (France)	-9016-	Polish	-9035-	Chinese
-9003-	Italian	-9018-	Japanese	-9036-	Lithuanian
-9004-	Romanian	-9021-	Danish	-9038-	Portuguese (Brazil)
-9005-	Spanish (Spain)	-9022-	Hungarian	-9039-	French (Canada)
-9007-	Swedish	-9023-	Czech	-9040-	Latvian
-9008-	Norwegian	-9024-	Finnish	-9041-	Estonian
-9009-	Russian	-9025-	Croatian	-9043-	Spanish (Central America)
-9010-	Greek	-9027-	Bulgarian		
-9012-	Turkish	-9029-	Slovene		
<b>All of the above languages may not be available.</b>					

## 1.2 Manufacturer's address

**GEA Farm Technologies Canada Inc. / Division GEA Houle**  
**4591 boul. St-Joseph**  
**Drummondville, Qc, J2A 0C6**

 +1 819 477 - 7444  
 +1 819 477 - 5565  
 geahoule@gea.com  
 [www.gea.com](http://www.gea.com)

## 1.3 Customer service

### Authorized Technical Dealer

If necessary, please contact your nearest dealer.

There is a comprehensive dealer Internet search function on our website at the following address:

[www.gea.com](http://www.gea.com)

### European Contact Information:

**GEA Farm Technologies GmbH**  
**Siemensstraße 25-27**  
**D-59199 Bönen**

 +49 (0) 2383 / 93-70  
 +49 (0) 2383 / 93-80  
 contact@gea.com  
 [www.gea.com](http://www.gea.com)

### US Contact Information:

**GEA Farm Technologies, Inc.**  
**1880 Country Farm Dr.**  
**Naperville, IL 60563**

 +1 630 369 - 8100  
 +1 630 369 - 9875  
 contact\_us@gea.com  
 [www.gea.com](http://www.gea.com)

---

**1.4 GEA Farm Technologies Canada Inc. / Division GEA Houle - General equipment warranty**

---



**Important notice!**

THIS GENERAL WARRANTY APPLIES TO ALL EQUIPMENT SOLD UNDER THE HOULE TRADEMARK.

---

**1.4.1 Limited warranty**

GEA Farm Technologies Canada Inc. / Division GEA Houle (hereinafter referred to as "the Company") warrants to the original buyer and end user (hereinafter referred to as the "Purchaser") that the parts of all equipment sold under the Company trademark are free from defects in material or workmanship for a period of twelve (12) months from the date of delivery of the equipment to the Purchaser. This written warranty takes precedence over any other written warranty included in previous versions of the Company's manuals. Any equipment used for commercial usage, commercial lease on one or more farms is warranted for a reduced period of thirty (30) days only.

Components from third-party manufacturers that are not built by the Company, and which are accessory to the equipment sold under the Company trademark (including, without limitation, the motors and tires), are subject to such third-party manufacturers' specific warranty coverage.

THIS WARRANTY EXTENDS ONLY TO THE PURCHASER AND DOES NOT APPLY IN THE EVENT THAT THE EQUIPMENT IS SOLD OR OTHERWISE TRANSFERRED.

**1.4.2 Condition of the limited warranty**

The Company, through its GEA authorized dealers only (hereinafter referred to as "Dealer", reserves the right to either repair or replace all parts deemed defective under the following conditions:

1. That the equipment is installed, operated and maintained in accordance with the Company directives;
2. That the Purchaser uses the equipment in accordance with specific instructions, under normal conditions, for the sole purpose for which the equipment was designed;
3. That the Purchaser notifies in writing his Authorized Dealer or the Company (whichever the case may be) of any defect of the equipment. In either case the notification must be made within the twelve (12) months following the date of the delivery to the Purchaser;
4. The Purchaser or the Authorized Dealer must keep the defective parts or equipment for inspection by the Company and return such defective parts or equipment prepaid to the Company, if requested;
5. That the Purchaser does not modify the equipment, nor attempts to repair any equipment or parts without proper authorization from the Company;
6. Depending on the nature of the equipment involved and whether it is fixed or transportable, the Company will repair or replace the defective parts of the equipment free of charge where installed, or at the business place of the Authorized Dealer or the Company, at its sole discretion.

### 1.4.3 Extent of limited warranty

This limited warranty DOES NOT cover:

- Defects caused by negligence of the Purchaser in the maintenance of the equipment, improper use resulting from failure to adhere strictly to the Company's manuals or non-compliance with prescribed maintenance instructions provided by the Company (including, without limitation, lack of lubrication of the equipment), as well as damages arising from non-conforming installation of the equipment, or ambient temperature or conditions of storage of the equipment that do not comply with the Company's recommendations (including, without limitation, any damages resulting from storage or operation of the equipment at a temperature equal or below (5°C/41°F));
- Damages to equipment due to normal wear and tear or to external causes, including issues of power or inadequate electrical conditions (including, without limitation, inadequate tension (neutral/ground), abnormal mechanical or environmental conditions (including, without limitation, damages caused by fire, lightning, flood or other natural disaster), damages caused by the use of sand litter or other abrasive or inadequate material (including, without limitation, damages caused by solids in the manure, such as stone, wood, iron, concrete, and strings), as well as damages caused by ice or frozen manure blocking the evacuation line of the equipment or the introduction of such solids in the equipment;
- Freight and shipping associated with repair or replacement of equipment under this limited warranty, as well as all costs relating to removal or replacement of any equipment that is welded or affixed permanently to the ground or a building (including, without limitation, labor costs, and costs related to concrete or excavation);
- Claims arising from repairs or replacements made by the Purchaser without the prior written consent of the Company. The Purchaser shall not remove or alter any safety device, guard, or warning sign.

If the Purchaser fails to comply with any of its obligations referred to in this paragraph, the Purchaser agrees to save the Company and the Authorized Dealer harmless in respect of any liability or obligation incurred by the Company or the Authorized Dealer resulting from such failure of the Purchaser.

#### **1.4.4 Warranty limitations and exclusion**

NO WARRANTY, ORAL OR WRITTEN, EXPRESS OR IMPLIED, OTHER THAN THE ABOVE WARRANTY IS PROVIDED IN RESPECT OF THE EQUIPMENT SOLD.

Some states (or jurisdictions) do not allow the exclusion of implied warranties so it is possible that this limitation may not apply.

THE COMPANY DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY, ADAPTABILITY OR OF PERFORMANCE, PROVIDED THAT SUCH EXCLUSION OF LIABILITY COMPLIES WITH THE LAWS HAVING APPLICABLE REGULATORY JURISDICTION.

THE LIABILITY OF THE COMPANY AND ITS AUTHORIZED DEALERS UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF DEFECTIVE PARTS UP TO THE CONTRACT VALUE FOR THE PURCHASED EQUIPMENT. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL, PUNITIVE OR EXEMPLARY DAMAGES IN ANY KIND OR CHARACTER, INCLUDING INDIRECT COSTS, LOSS OF PRODUCTION, LOSS OF REVENUES OR PROFITS, AND OTHER DISBURSEMENTS WHICH MAY OCCUR.

Some states (or jurisdictions) do not allow the exclusion or limitation of incidental or consequential damages and so it is possible that these limitations or exclusions may not apply.

#### **1.4.5 General statements**

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY BY JURISDICTION.

THE DEALER IS NOT AUTHORIZED TO MAKE ANY ADDITIONAL REPRESENTATIONS OR PROMISES THAT DIFFER IN ANY WAY FROM THE TERM OF THIS LIMITED WARRANTY, OR MODIFY THE PROVISIONS, DURATION AND CONDITIONS OF THIS LIMITED WARRANTY. NO WAIVER OR MODIFICATION OF THIS LIMITED WARRANTY IS VALID UNLESS AGREED TO IN WRITING AND SIGNED BY THE AUTHORIZED REPRESENTATIVES OF THE COMPANY.

IN THE EVENT OF ANY CONFLICT BETWEEN THE ENGLISH LANGUAGE VERSION AND ANY OTHER TRANSLATED VERSION OF THIS LIMITED WARRANTY (WITH THE EXCEPTION OF THE FRENCH LANGUAGE VERSION) THE ENGLISH VERSION SHALL PREVAIL.

**1.5 Specific Limited Warranty for Fit R-300 Cable Alley Scraper**

This specific limited warranty extends to the Purchaser of all free stall cleaners with cable (individually, the "Cleaner System") sold by the Company. All conditions stated in this specific limited warranty are in addition to the General Equipment Warranty that applies to all equipment sold by the Company (see section 1.4 above).

**1.5.1 Extent of Specific Limited Warranty**

This specific limited warranty DOES NOT cover:

- Cable wear and tear and cable breaking that may arise after the installation. Warranty on cable is limited to manufacturing defects detectable at the time of installation;
- Wear and tear of corner wheels;
- Wear and tear of scrapers and all their components.

**2 Safety**

**2.1 Owner's obligation of care**

This product is designed for agricultural purposes only. Make sure to follow the local rules and regulations in relation with the use of this product.

This product is designed and constructed while taking into account a risk assessment, a selection of harmonized standards and other technical specifications to be complied with in order to guarantee a maximum level of safety.

If component(s)/equipment not manufactured by GEA is/are added to this GEA product, consider that new risk(s) may arise from this addition. Make sure the equipment and the environment surrounding the equipment remain safe.

Since agitated manure produces heavy toxic gases, make sure to follow the safety procedures for confined spaces before operating or servicing this equipment in such environment. Look at the corresponding Web site below to make sure the local safety procedures for confined spaces are followed.

Location	Administrated by	Web site
Canada	Canadian Centre for Occupational Health and Safety	www.ccohs.ca
USA	Occupational Safety and Health Administration	www.osha.gov
European Union	European Agency for Safety and Health at Work	www.osha.europa.eu

Safety is achieved when the safety instructions are followed. It is part of the owner's obligation of care to implement these safety measures and make sure they are carried out at all times.

**The owner must ensure a safe environment by providing:**

- this instruction manual with this product. Everyone performing activities in connection with this product must read this instruction manual and follow those instructions;
- all required personal safety gear such as hearing, eye, feet protection, etc;
- adequate training for employee(s) working or performing activities in connection with this product;
- the tools listed in this manual to perform activities in connection with this product;
- locally purchased components and/or products that comply with the technical requirements mentioned in section Technical data, if applicable;
- new parts to replace any defective, worn or damaged parts on this product;
- adequate lighting in all areas where activities in connection with this product are performed.

## 2.2 Explanation of safety symbols

The safety symbols draw attention to the importance of the adjacent text.

The design of the notifications is based on ISO 3864-2 and ANSI535.6.

### Safety symbols and key words

**Danger!**

The signal word "Danger" indicates an immediate threat to the lives or health of personnel.

Death or serious injury may result if the danger is not avoided.

---

**Warning!**

The indication "Warning" signals danger to life or health of personnel.

Death or serious injury may result if the danger is not avoided.

---

**Caution!**

The indication "Caution" signals a hazardous situation.

Minor or moderate injury may result if the danger is not avoided.

---

**Attention!**

The word "Attention" indicates important information on risks for the product or the environment.

---

**2.3 Basic safety instructions**

- Only trained personnel can operate this product to ensure safe operating methods. Make sure the personnel performing activities in connection with this product have the skills when special qualifications are required. Read the section Safety - Personnel qualifications.
- Wear appropriate personal safety gear such as hearing, eye, feet protection, etc. when performing activities in connection with this product. Inspect the personal gear and replace if worn and/or defective.
- Familiarize yourself with the environment surrounding the working area. Locate the elements that can be dangerous in order to avoid them.
- No one stands near this product unless they are performing instructions included in this manual. When near this product, keep body parts such as hands, feet, hair as well as clothing away from dangerous parts such as rotating parts, articulated parts, sharp edges, etc.
- Use this product only when in perfect working condition. Do not use damaged, worn or defective parts on this product, replace immediately to avoid serious damages and injuries.
- The use of any tool or lubricant is subject to certain risks. Follow the manufacturer's recommendations and wear appropriate personal safety gear.
- Never remove the safety devices such as guards, covers, chains, labels, etc. from this product to ensure safety unless otherwise indicated in this instruction manual. Refer to section Safety - Protective devices. Read and follow the instructions of the safety labels affixed on this product and make sure the safety labels are legible at all times.

---

## 2.4 Personnel qualifications

The manufacturer intends to determine the difference between trained personnel and qualified personnel.

### **Trained personnel**

The operator was trained by the manufacturer or its legal representative to follow all safety rules, cleaning method, general maintenance as well as the operating methods.

It is the operator's responsibility to inform the farm workers of those rules, maintenance and methods.

### **Qualified personnel**

Qualified personnel refers to those having obtained the academic knowledge of a specific field of work.

This personnel has followed a training and subsequently obtained a certification, diploma or any other official document provided by a recognized academic facility in the country of study.

An equivalence may be required when operating in other countries.

The special qualifications required will be specified in each section.

Everyone who performs work or activities in connection with the product must carefully read and understand the manual and then act accordingly.

---

## 2.5 Protective devices

This product is equipped with safety parts protecting the user against dangerous elements.

Those parts must be in perfect working condition and remain in place at all times.

Replace if damaged, worn and/or defective. Refer to the part number.



Safety guard for corner wheel

16" (406 mm) model (part no. 2005-7508-090)

21" (533 mm) model (part no. 2005-7508-100)



Safety guard for scraper cable tensioner

Single tensioner (part no. 2005-2005-180)

Double tensioner (part no. 2005-2005-170)



Transformer finger safe device



Control panel emergency stop button

---

## 2.6 Safety labels

The labels affixed on this product inform the user of the potential dangers, the prohibited manoeuvres, the proper procedures and applications when performing activities in connection with this product.

The labels must remain in place and legible at all times.

Replace when damaged. Refer to the part number for the appropriate label.



Refer to section Appendix - Label position.

---

### 3 Description

#### 3.1 Intended use

The Fit R-300 system is exclusively designed to:

- Scrape manure in a free stall barn alleys;
- Scrape manure having limited quantity of bedding;



**Note!**

This product and its equipment are designed for agricultural purposes only. Any applications not listed above are considered as improper use.

Please note that the following is prohibited:

- Scraping other material than manure and/or waste water;
- Running over the cable with machinery;
- Repairing the cable using sharp or clinging fastener;
- Operating the cleaning system while the load fluctuation parameters are deactivated;
- Operating the cleaning system while the load fluctuation parameters are improperly set;
- Operating the cleaning system although the control panel continuously triggers alarms.

The manufacturer is not liable for any resulting damages due to improper use of this product. The user carries the risk. Proper use also includes reading and following the instructions of this instruction manual.

- Original GEA Houle parts and accessories are specially designed for GEA Houle products and equipment.
- The manufacturer expressly points out that only original parts and original accessories supplied by GEA Houle are adapted, tested and authorized to be used with this product or equipment. Do not use other supplier's parts or equipment with GEA Houle product unless otherwise approved in writing by GEA Houle.
- The manufacturer does not accept any liability toward injured people or animals or damaged products and equipment caused by the use of other manufacturers products.

**3.2 Product changes**

Unauthorized product modifications can have a negative impact on the safety, service life and functionality of the product.

Any modifications not described in the product documentation are deemed to be prohibited.

For safety reasons, do not carry out any unauthorized changes!

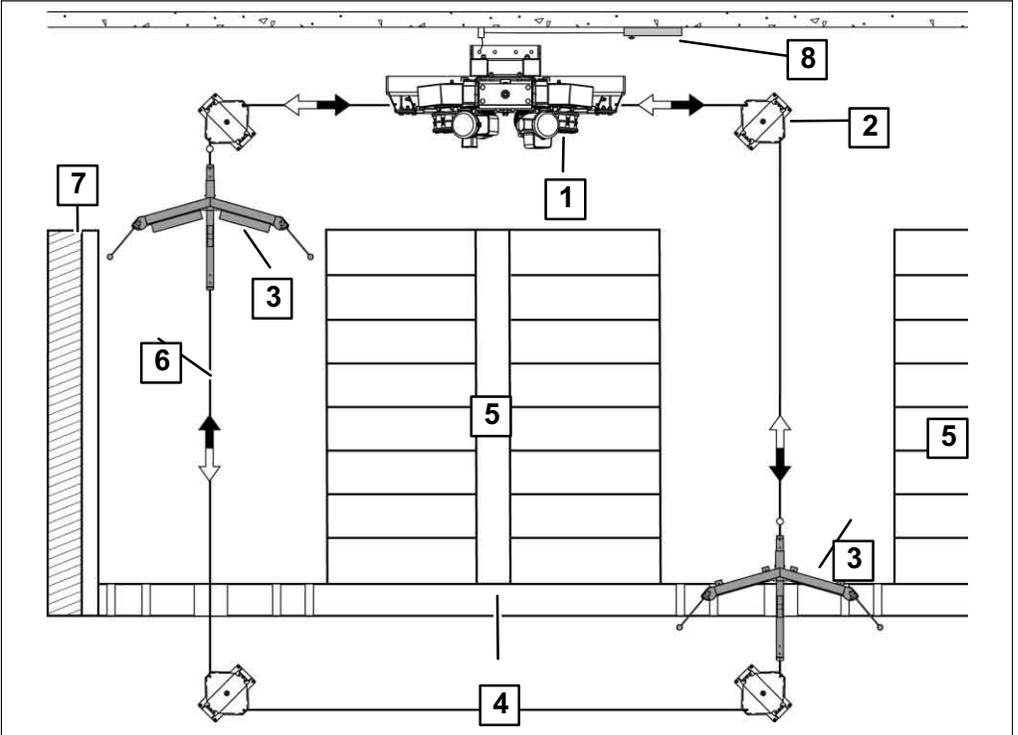
Planned changes must be approved by the manufacturer in writing.

Any unauthorized modifications to the product will invalidate the warranty and may invalidate the manufacturer's declaration or installation declaration provided.

**3.3 Functional description**

The Fit R-300 system consists of a drive unit, corner wheels, scrapers, a cable and a control panel.

The system operates by means of a control panel which powers the drive unit motor(s) upon command. Subsequently, the scrapers move in the alleys as they are linked together by a cable which ties to the drive unit drum. As the drive unit operates, one scraper moves forward while the other moves backwards. When a scraper reaches the cross gutter, the system operates in opposite motion.



**Legend:**

1	Drive unit	5	Stalls
2	Corner wheel	6	Cable (nylon or steel)
3	Scraper	7	Feeding alley
4	Cross gutter	8	Control panel

## 4 Technical data

### 4.1 Acoustic emission

Noise level	Less than 65 dBA
-------------	------------------

### 4.2 Operating temperature

Operating temperature	Over 5°C (41°F)
-----------------------	-----------------

### 4.3 Bolt torque chart



#### Note!

Refer to the bolt torque chart below unless otherwise specified in this manual.

Bolt	Mat.	Bolt diameter									
		1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"
<b>SAE 2</b> 	LCS	6 ft-lb 8Nm	12ft-lb 16Nm	20ft-lb 27Nm	32ft-lb 44Nm	47ft-lb 64Nm	69ft-lb 94Nm	96ft-lb 130Nm	155ft-lb 210Nm	206ft-lb 279Nm	310ft-lb 420Nm
<b>SAE 5</b> 	MCS HT	10ft-lb 14Nm	19ft-lb 26Nm	33ft-lb 45Nm	54ft-lb 73Nm	78ft-lb 106Nm	114ft-lb 155Nm	154ft-lb 209Nm	257ft-lb 349Nm	382ft-lb 518Nm	587ft-lb 796Nm
<b>SAE 8</b> 	MCAS	14ft-lb 19Nm	29ft-lb 39Nm	47ft-lb 64Nm	78ft-lb 106Nm	119ft-lb 161Nm	169ft-lb 229Nm	230ft-lb 312Nm	380ft-lb 515Nm	600ft-lb 814Nm	700ft-lb 949Nm
Socket Head Cap Screw	AS HT	16ft-lb 22Nm	33ft-lb 45Nm	54ft-lb 73Nm	84ft-lb 114Nm	125ft-lb 170Nm	180ft-lb 244Nm	250ft-lb 339Nm	400ft-lb 542Nm	640ft-lb 868Nm	970ft-lb 1315Nm

### 4.4 Lubricant specifications

Lubricant type	Product name	Grade	Purpose
Grease*	PRECISION™ general purpose EP2	NLGI 2 NLGI 3	<ul style="list-style-type: none"> <li>General lubrication of the equipment</li> <li>To grease corner wheels</li> <li>To grease the bearings of the drive unit</li> <li>Stroke limit threaded rod</li> <li>Threaded rod</li> <li>Scraper hinges</li> </ul>
Gearbox oil	Shell Omala S4 WE	ISO VG-320	<ul style="list-style-type: none"> <li>To fill the gearbox.</li> </ul>

\* Must not contain Molybdenum disulfide.

## 4.5 Motor specifications



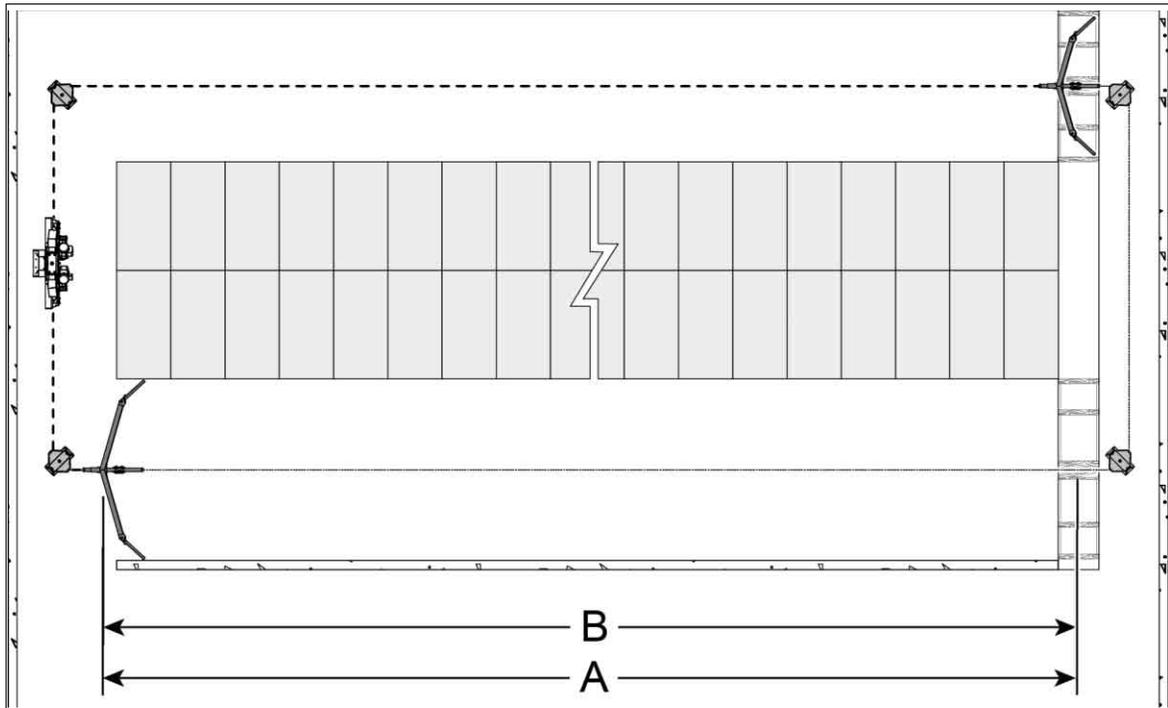
**Note!**

GEA provides specifications and electric motor wiring diagram related to Baldor motor(s). For any other motor brand, contact the manufacturer.

Motor type	General motor	
Standard specifications	NEMA	IEC
Frame sizes required	56C	-
Type of construction	B3	
Weight	No special requirements	
Frame material	No special requirements	
Degree of protection	IP 55	
Method of cooling	TEFC, IC 411 (Totally Enclosed, Fan Cooled)	
Vibration class	No special requirements	
Insulation	155(F) to 130(B)	
Duty type	S1(continuous operation)	
Direction or rotation	Bi-directional	
Rated motor voltage	As per local requirements	
Frequency	60Hz	
Rated motor power	0.75 HP (0.5kW)	
Rated motor speed	60Hz@1725rpm	
Rated motor torque	No special requirements	
Rated motor current		
Power factor		
Efficiency	min. 80%	

**4.6 Technical specifications**

**4.6.1 2 Alleys with drop at one end - 2 scrapers (1 per alley)**

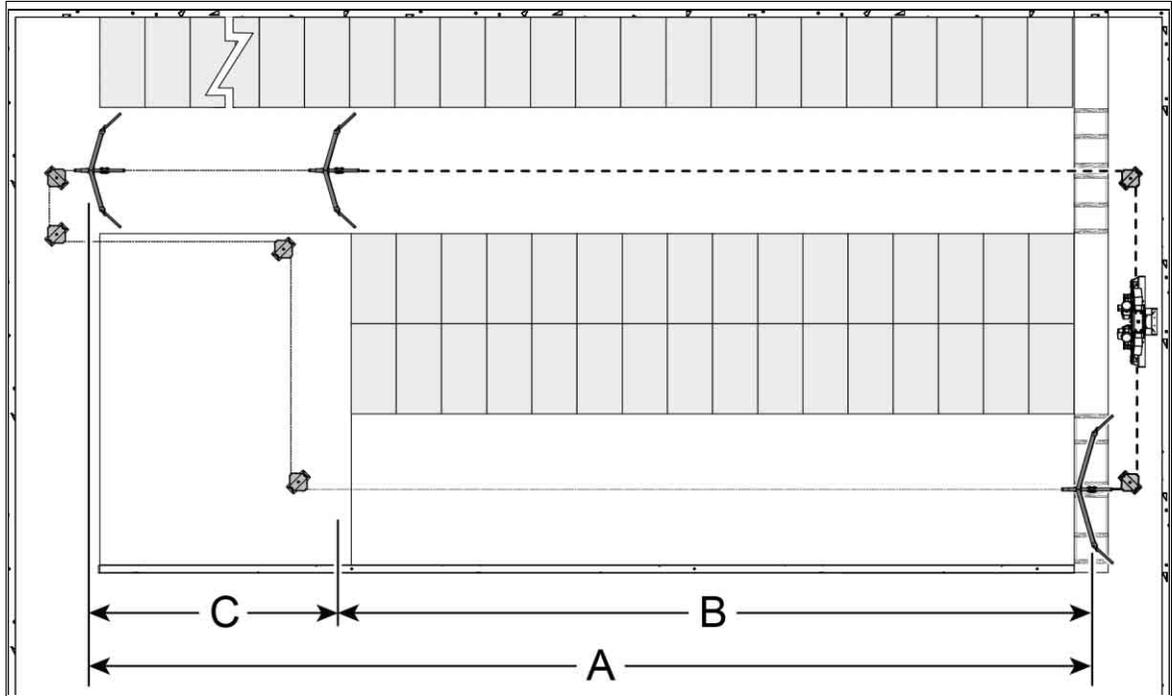


----	Combi-rope (max length 325 ft (100 m))
<b>A</b>	Length of alley
<b>B</b>	Stroke length

Drive unit	Motor* 60Hz	Speed	Corner wheel size	<b>A</b> Maximum alley length	<b>B</b> Stroke length
<b>Fit R-300</b> (2 motors)	0.75 HP	10.5 ft/min (3.2 m/min)	16"	300' (91.44 m)	300' (91.44 m)

\* The drive unit is designed to pull scrapers at a maximum pulling force of 2,300 lbs total. The use of oversized motors will transfer too much torque on other components such as the gearbox and it will result in premature wear and/or failures.

**4.6.2 2 Alleys with drop at one end - 3 scrapers (shuttle stroke in one alley)**

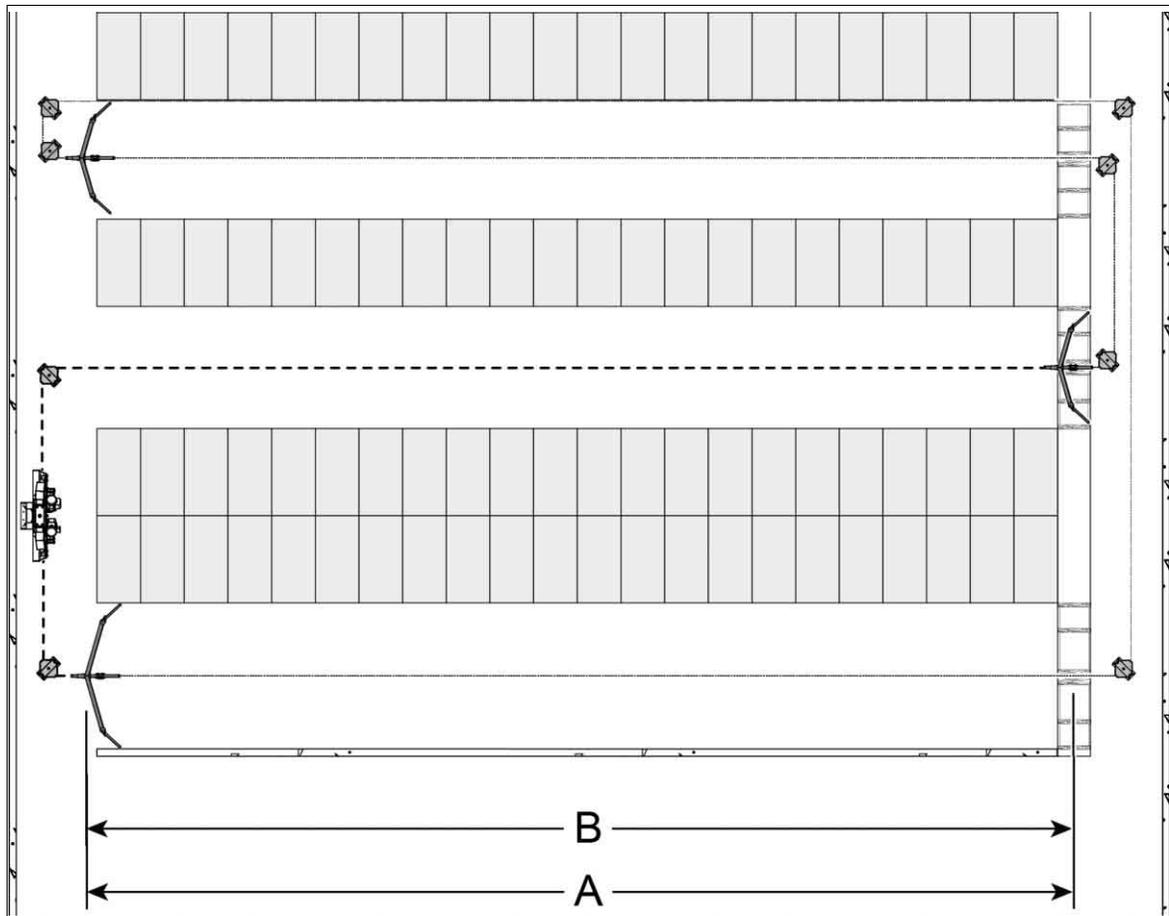


----	Combi-rope (max length 325 ft (100 m))
<b>A</b>	Length of alley
<b>B</b>	Stroke length <b>B = A + 15 ft ÷ 2</b> ( <b>B = A + 4.57 m ÷ 2</b> )
<b>C</b>	Distance between shuttle stroke scrapers. <b>C = B - 15 ft</b> ( <b>C = B - 4.57 m</b> ) It is set 15 ft (4.57 m) shorter than the stroke length which allows the scrapers to overlap.

Drive unit	Motor* 60Hz	Speed	Corner wheel size	A Maximum alley length	B Stroke length
<b>Fit R-300</b> (2 motors)	0.75 HP	10.5 ft/min (3.2 m/min)	21"	385' (117.35 m)	200' (60.96 m)

\* The drive unit is designed to pull scrapers at a maximum pulling force of 2,300 lbs total. The use of oversized motors will transfer too much torque on other components such as the gearbox and it will result in premature wear and/or failures.

### 4.6.3 3 Alleys with drop at one end - 3 scrapers (1 per alley)

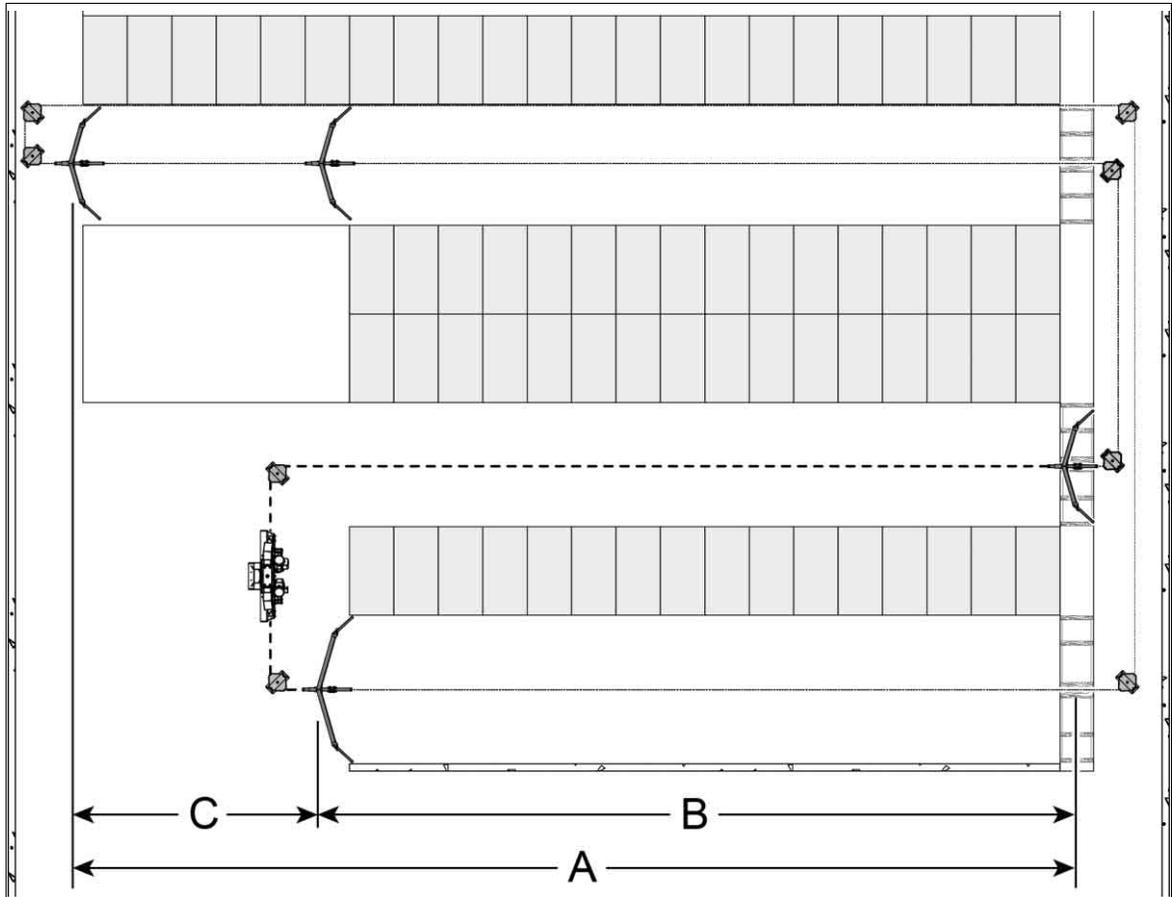


----	Combi-rope (max length 325 ft (100 m))
<b>A</b>	Length of alley
<b>B</b>	Stroke length

Drive unit	Motor* 60Hz	Speed	Corner wheel size	A Maximum alley length	B Stroke length
<b>Fit R-300</b> (2 motors)	0.75 HP	10.5 ft/min (3.2 m/min)	21"	200' (60.96 m)	200' (60.96 m)

\* The drive unit is designed to pull scrapers at a maximum pulling force of 2,300 lbs total. The use of oversized motors will transfer too much torque on other components such as the gearbox and it will result in premature wear and/or failures.

4.6.4 3 Alleys with drop at one end - 4 Scrapers (shuttle stroke in one alley)

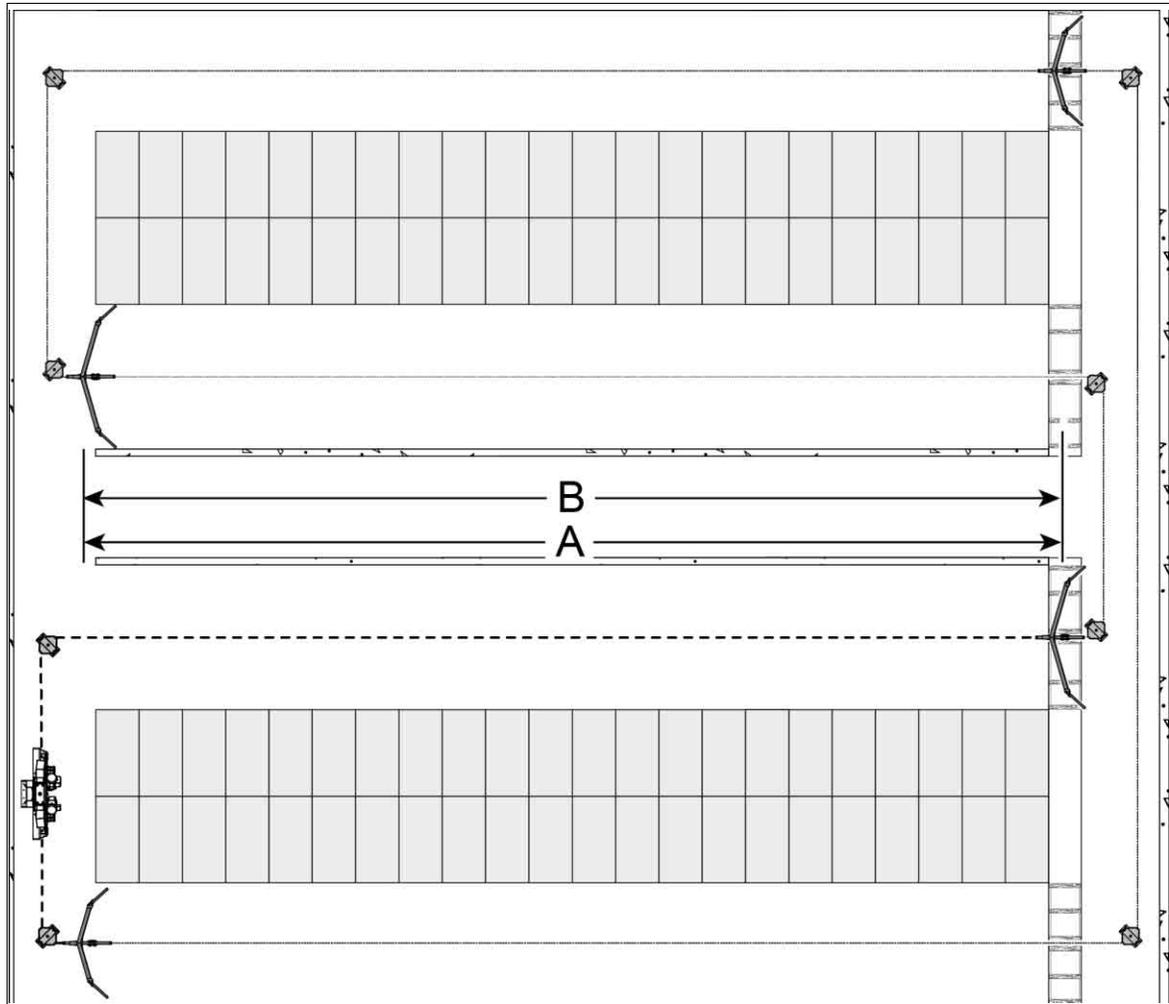


----	Combi-rope (max length 325 ft (100 m))
<b>A</b>	Length of alley
<b>B</b>	Stroke length <b><math>B = A + 15 \text{ ft} \div 2</math></b> ( <b><math>B = A + 4.57 \text{ m} \div 2</math></b> )
<b>C</b>	Distance between shuttle stroke scrapers. <b><math>C = B - 15 \text{ ft}</math></b> ( <b><math>C = B - 4.57 \text{ m}</math></b> ) It is set 15 ft (4.57 m) shorter than the stroke length which allows the scrapers to overlap.

Drive unit	Motor* 60Hz	Speed	Corner wheel size	A Maximum alley length	B Stroke length
<b>Fit R-300</b> (2 motors)	0.75 HP	10.5 ft/min (3.2 m/min)	21"	225' (68.58 m)	120' (36.58 m)

\* The drive unit is designed to pull scrapers at a maximum pulling force of 2,300 lbs total. The use of oversized motors will transfer too much torque on other components such as the gearbox and it will result in premature wear and/or failures.

4.6.5 4 Alleys with drop at one end - 4 scrapers (1 per alley)



----	Combi-rope (max length 325 ft (100 m))
<b>A</b>	Length of alley
<b>B</b>	Stroke length

Drive unit	Motor* 60Hz	Speed	Corner wheel size	A Maximum alley length	B Stroke length
<b>Fit R-300</b> (2 motors)	0.75 HP	10.5 ft/min (3.2 m/min)	21"	150' (45.72 m)	150' (45.72 m)

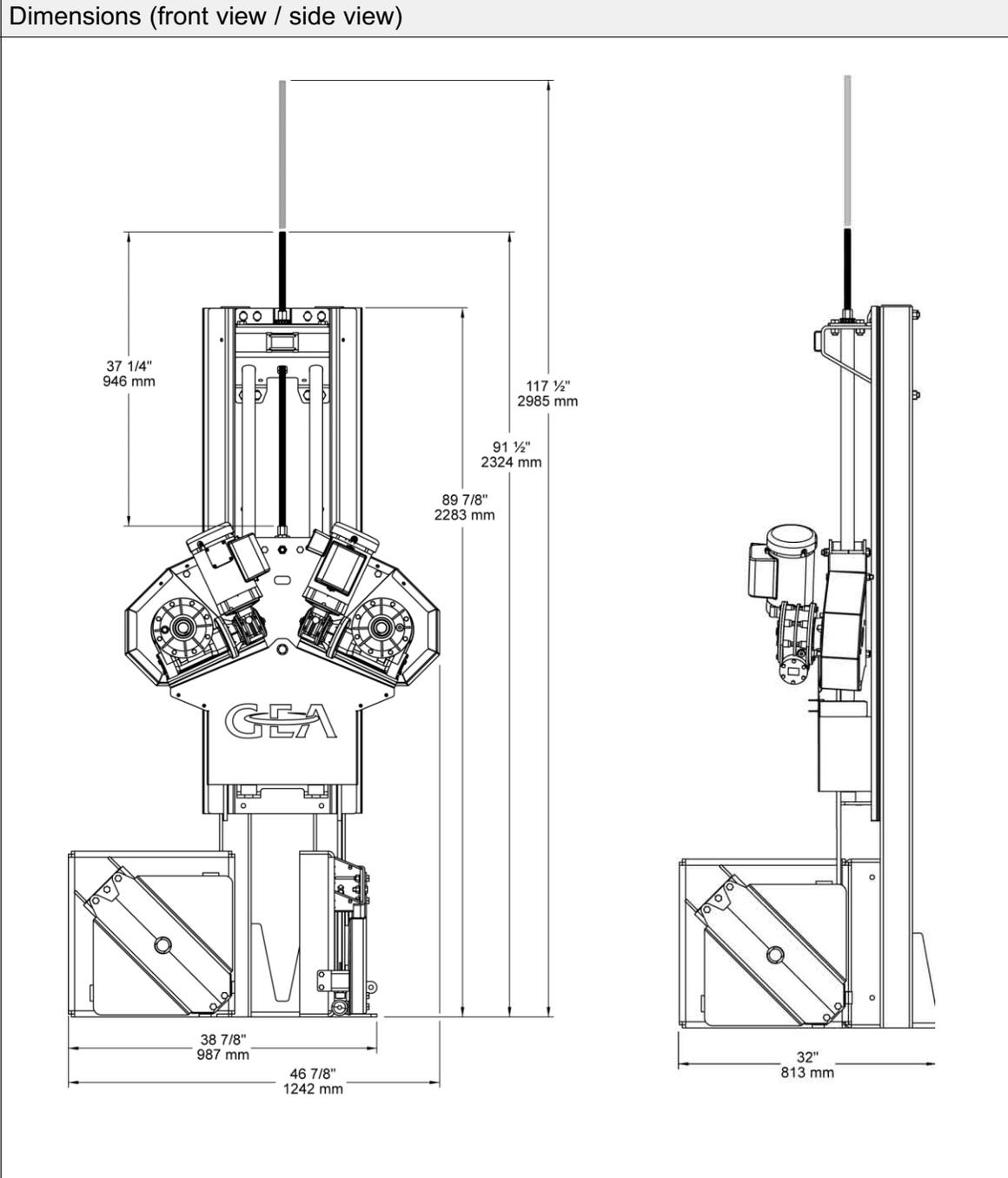
\* The drive unit is designed to pull scrapers at a maximum pulling force of 2,300 lbs total. The use of oversized motors will transfer too much torque on other components such as the gearbox and it will result in premature wear and/or failures.

**Geometric data**

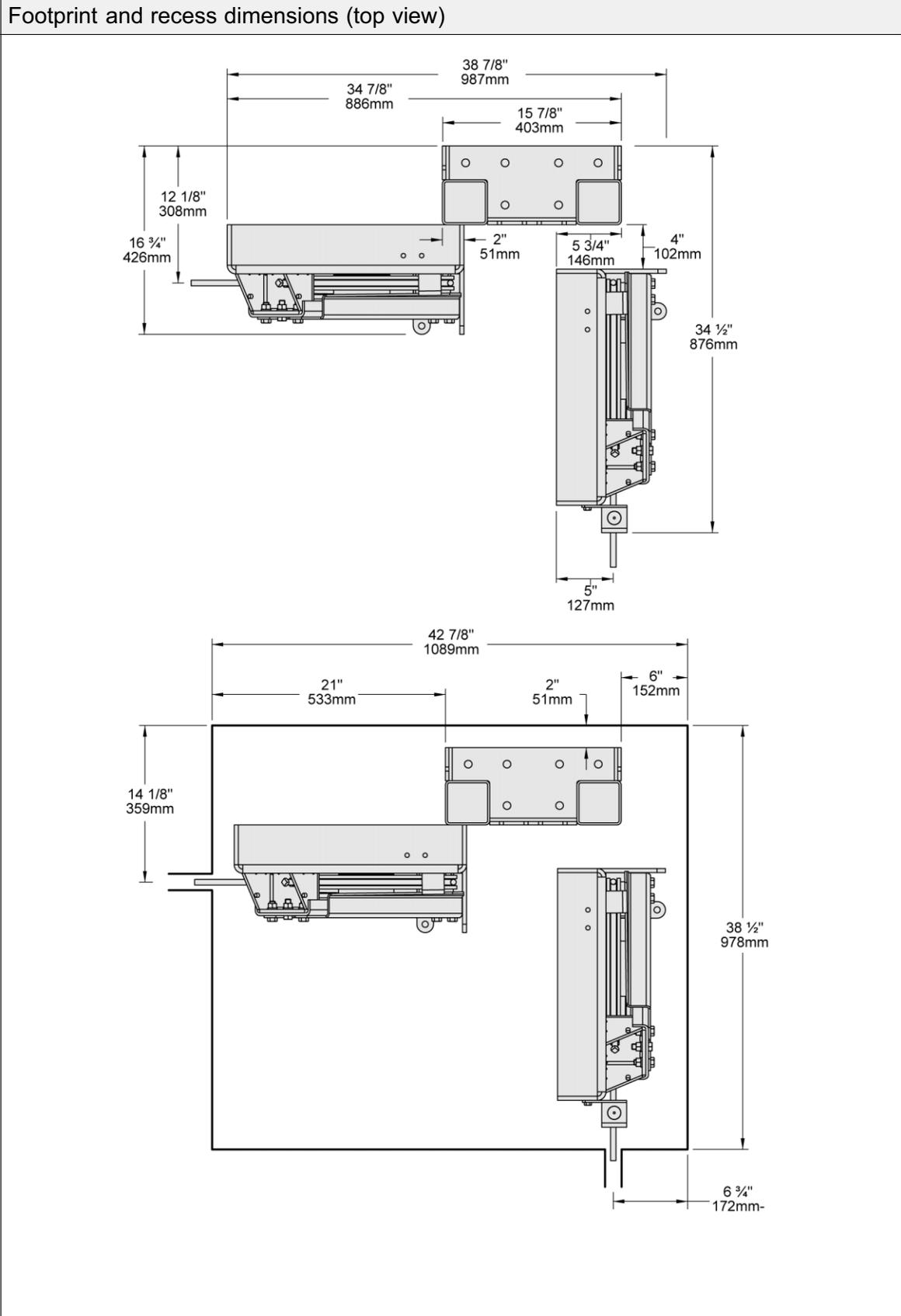
Drive unit - 90° configuration - A

**5 Geometric data**

**5.1 Drive unit - 90° configuration - A**



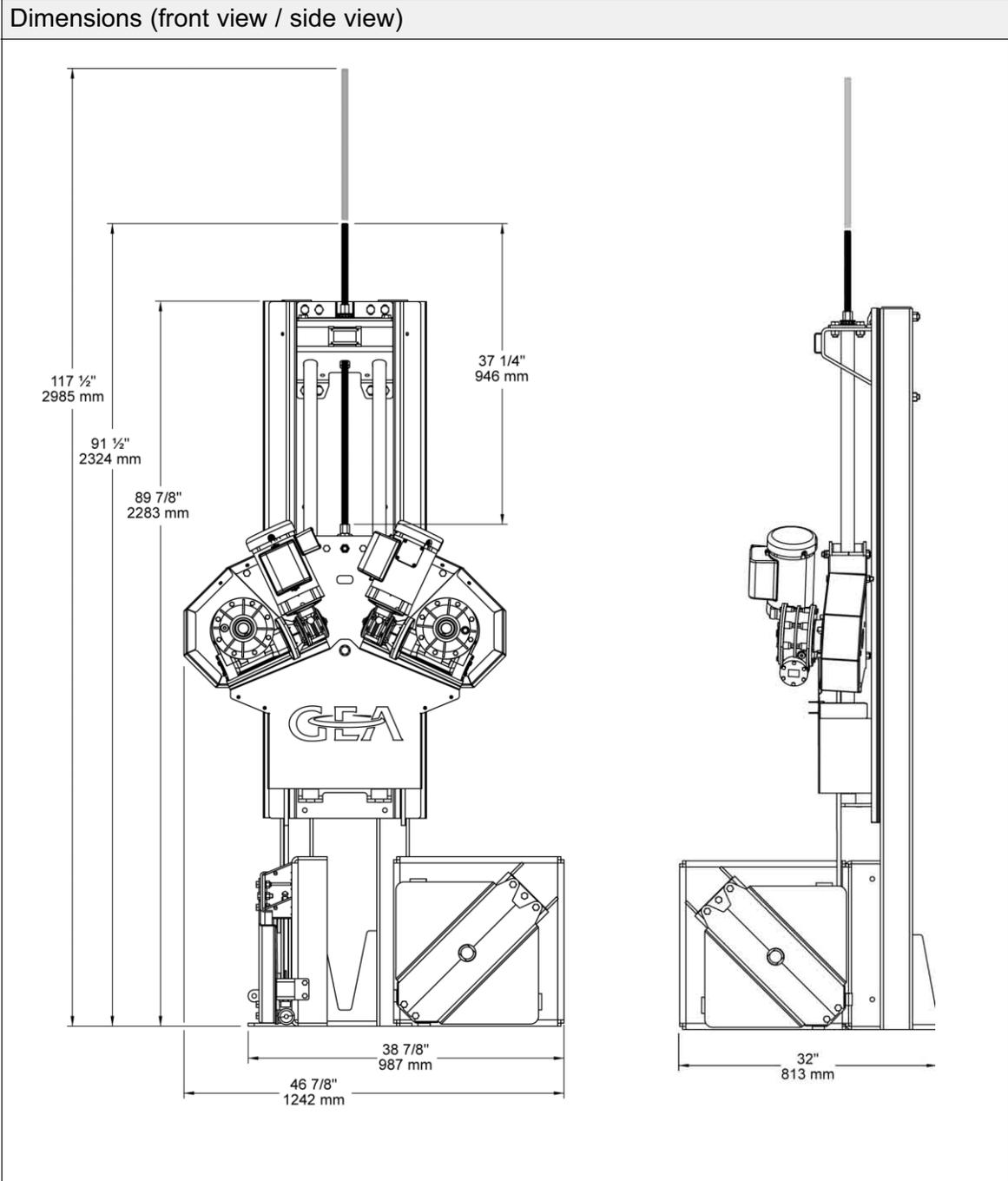
<b>Weight</b>	<b>550 lbs (250 kg)</b>
---------------	-------------------------



**Geometric data**

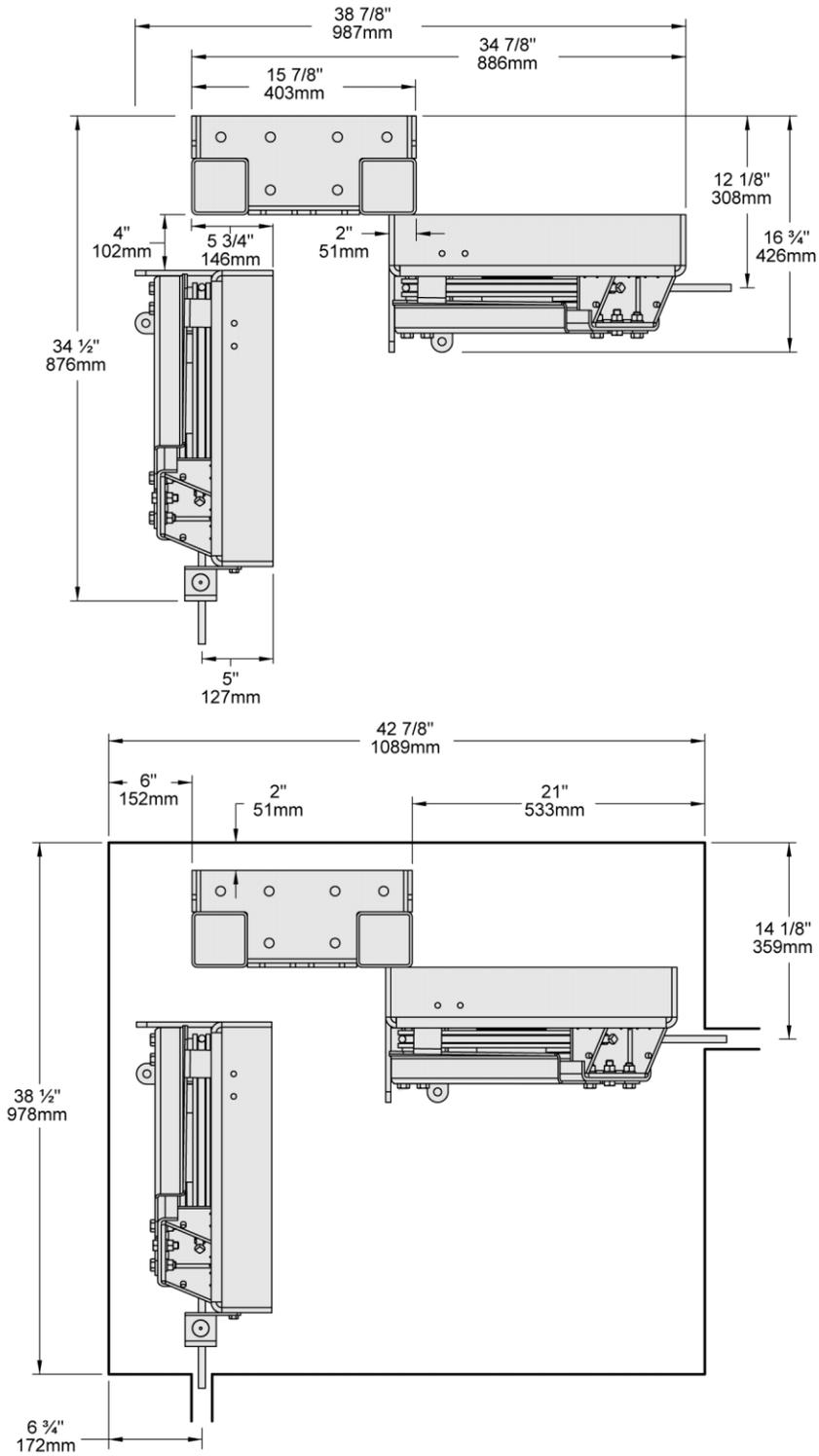
Drive unit - 90° configuration - B

**5.2 Drive unit - 90° configuration - B**



<b>Weight</b>	<b>550 lbs (250 kg)</b>
---------------	-------------------------

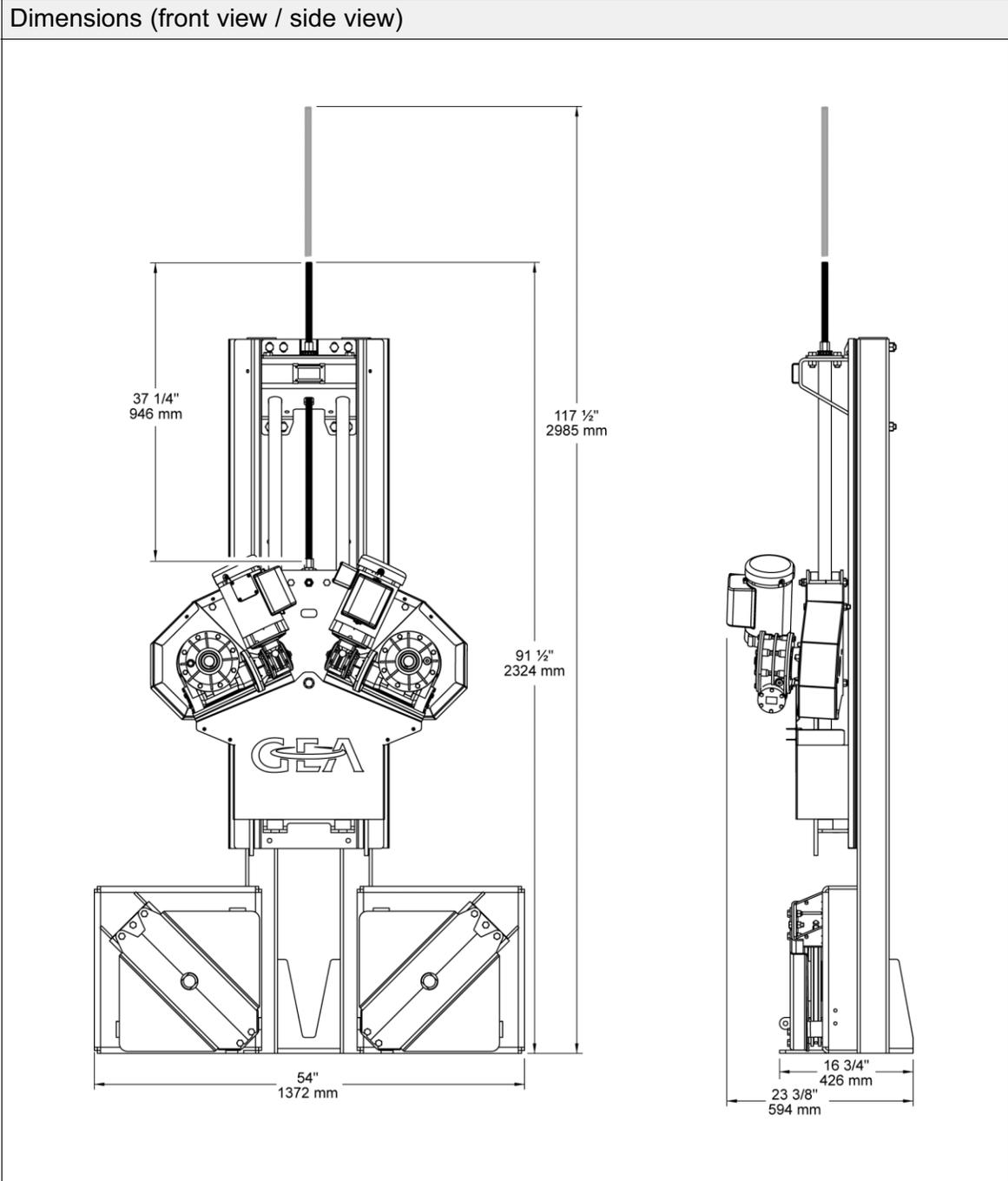
Footprint and recess dimensions (top view)



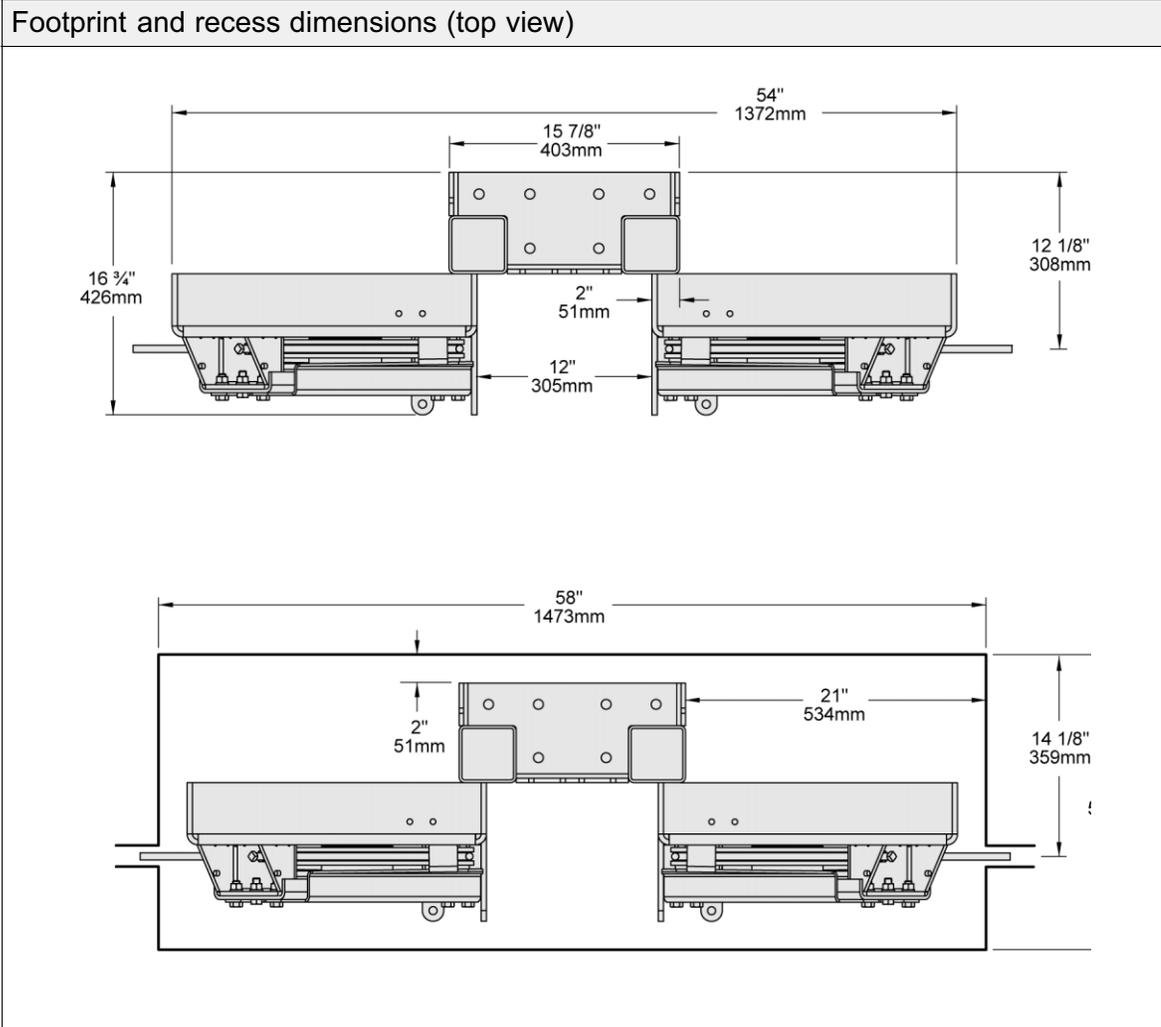
**Geometric data**

Drive unit - 180° configuration

**5.3 Drive unit - 180° configuration**



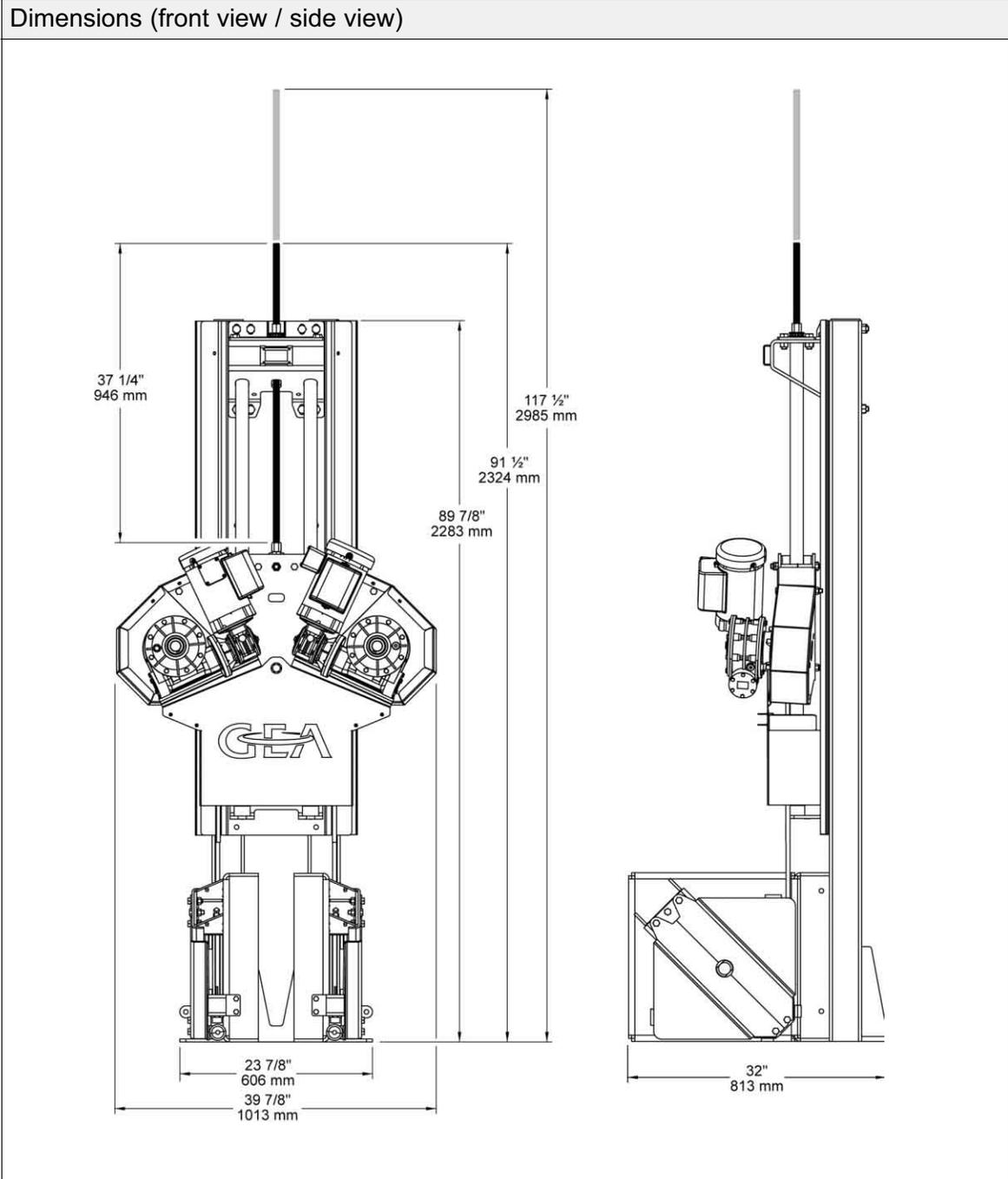
<b>Weight</b>	<b>550 lbs (250 kg)</b>
---------------	-------------------------



**Geometric data**

Drive unit - 360° configuration

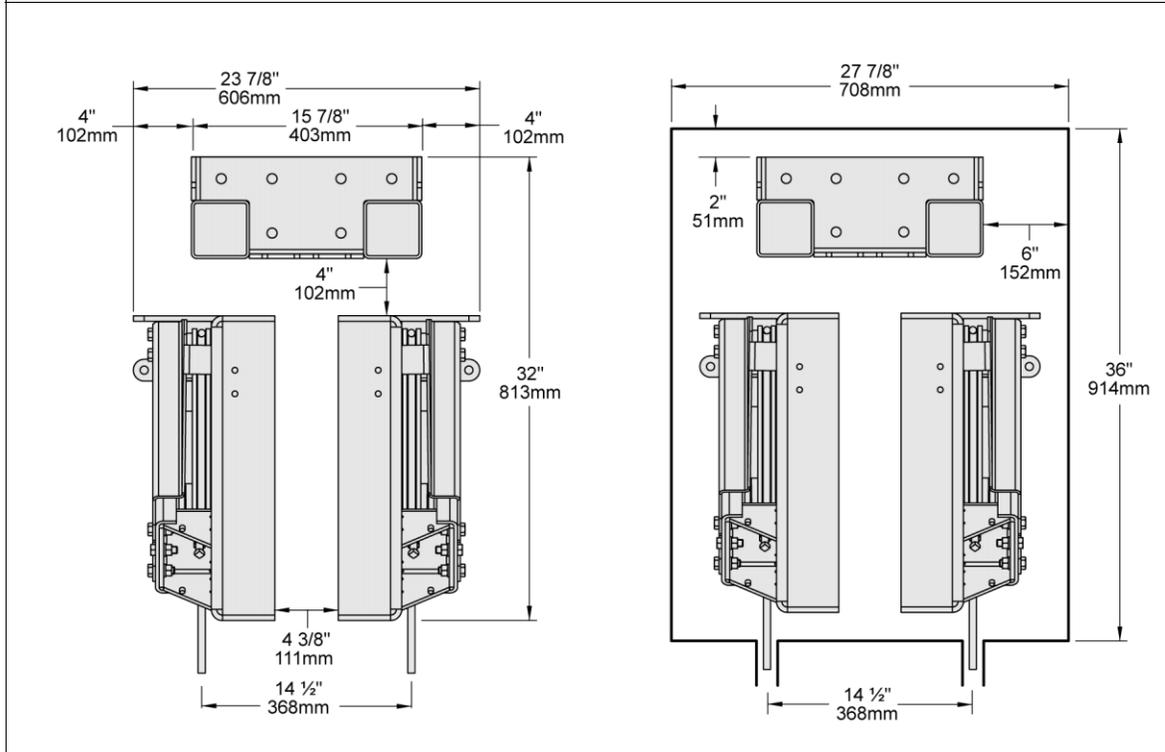
**5.4 Drive unit - 360° configuration**



**Weight**

**550 lbs (250 kg)**

Footprint and recess dimensions (top view)

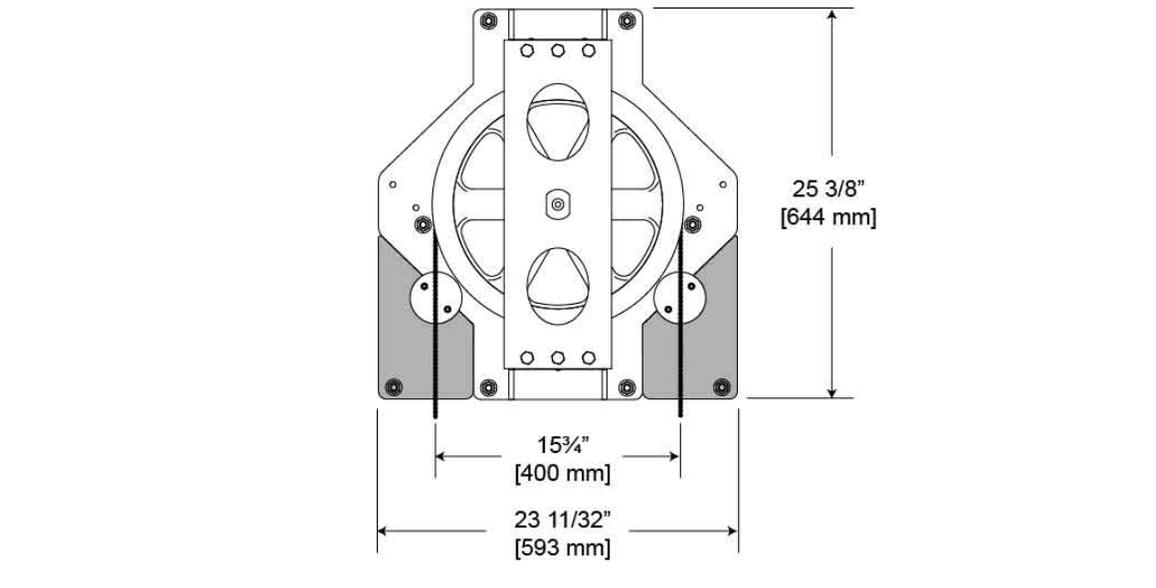
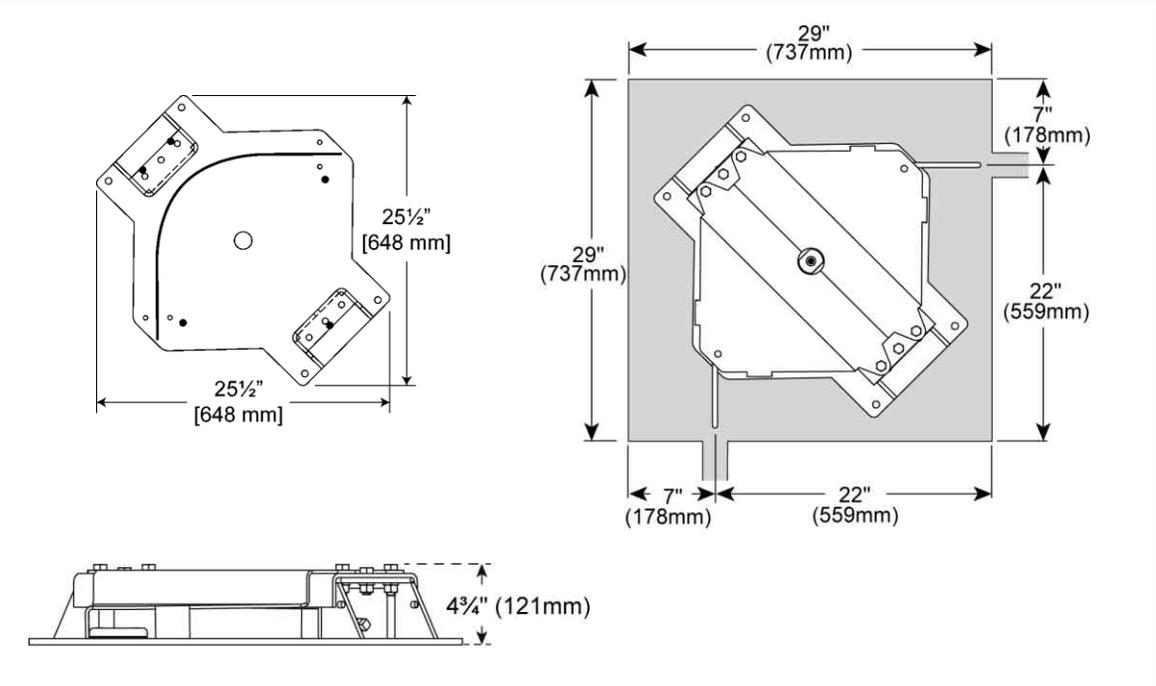


**Geometric data**

16" (406 mm) corner wheel

**5.5 16" (406 mm) corner wheel**

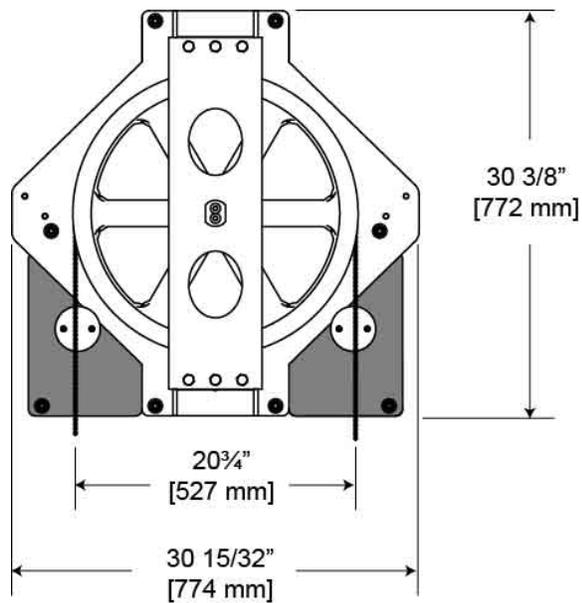
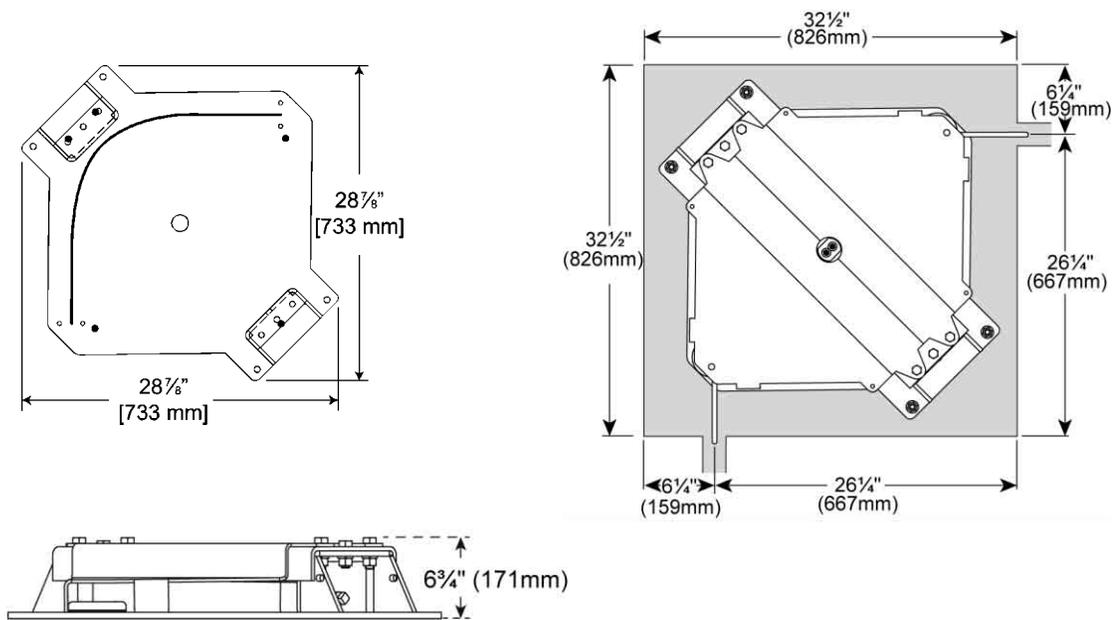
Footprint and recess dimensions (top view)



<b>Weight</b>	<b>64 lbs (30 kg)</b>
---------------	-----------------------

**5.6 21" (533 mm) corner wheel**

Footprint and recess dimensions (top view)

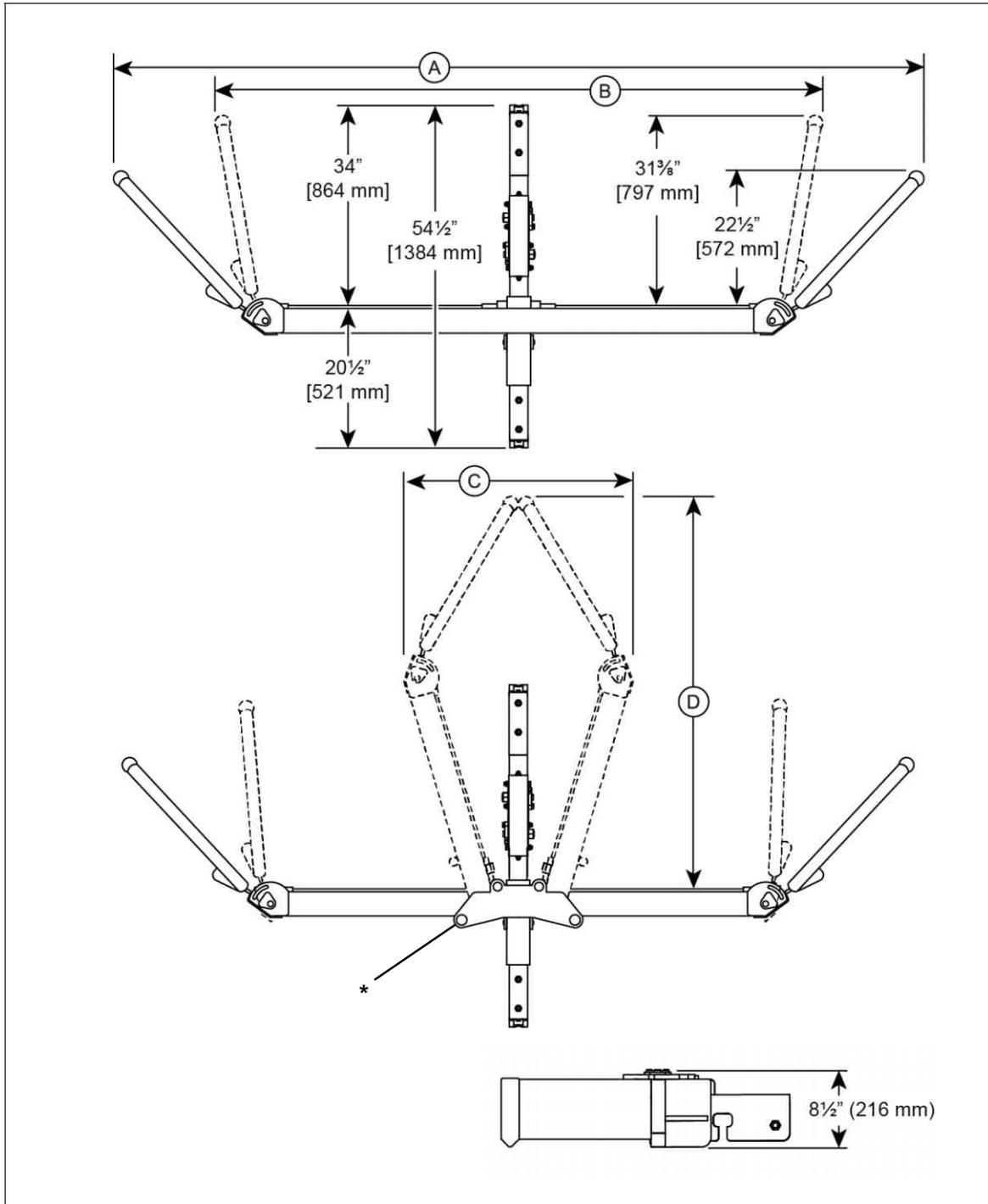


**Weight**

**93 lbs (42 kg)**

**5.7 Straight scraper**

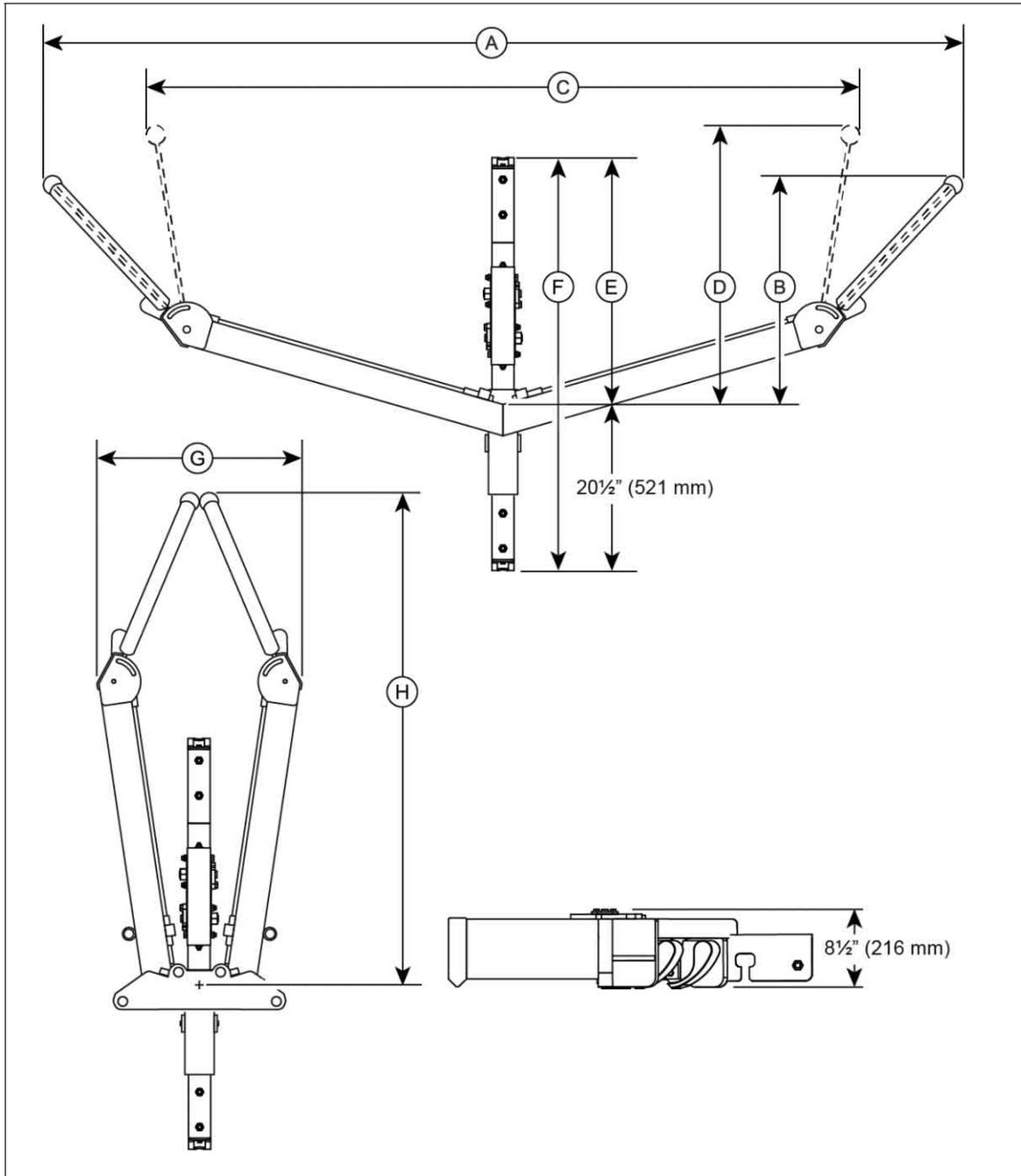
Guided by a groove



Alley width	Forward	Reverse	Optional hinges	
	A	B	C	D
<b>6'6"-7'5"</b> (198 - 226 cm)	95½" (2426 mm)	62 <sup>7</sup> / <sub>8</sub> " (1597 mm)	31¼" (794 mm)	49 <sup>5</sup> / <sub>8</sub> " (1260 mm)
<b>7'6"-8'5"</b> (229 x 257 cm)	107½" (2731 mm)	74 <sup>7</sup> / <sub>8</sub> " (1902 mm)	34" (864 mm)	55 <sup>1</sup> / <sub>8</sub> " (1400 mm)
<b>8'6"-9'5"</b> (259 - 287 cm)	119½" (3035 mm)	86 <sup>7</sup> / <sub>8</sub> " (2207 mm)	36 <sup>1</sup> / <sub>8</sub> " (918 mm)	60 <sup>3</sup> / <sub>4</sub> " (1543 mm)
<b>9'6"-10'5"</b> (290 - 318 cm)	131½" (3340 mm)	98 <sup>7</sup> / <sub>8</sub> " (2511 mm)	37 <sup>7</sup> / <sub>8</sub> " (962 mm)	66 <sup>3</sup> / <sub>8</sub> " (1686 mm)
<b>10'6"-11'5"</b> (320-348 cm)	143½" (3645 mm)	110 <sup>7</sup> / <sub>8</sub> " (2816 mm)	39¼" (997 mm)	72 <sup>1</sup> / <sub>8</sub> " (1832 mm)
<b>11'6"-12'5"</b> (351-378 cm)	155½" (3950 mm)	122 <sup>7</sup> / <sub>8</sub> " (3121 mm)	40½" (1029 mm)	77 <sup>7</sup> / <sub>8</sub> " (1978 mm)
<b>12'6"-13'5"</b> (381-409 cm)	167½" (4254 mm)	134 <sup>7</sup> / <sub>8</sub> " (3426 mm)	41½" (1054 mm)	83 <sup>3</sup> / <sub>4</sub> " (2127 mm)
<b>13'6"-14'5"</b> (411-439 cm)	179½" (4559 mm)	146 <sup>7</sup> / <sub>8</sub> " (3731 mm)	42 <sup>3</sup> / <sub>8</sub> " (1076 mm)	89½" (2273 mm)
<b>14'6"-15'5"</b> (442-470 cm)	191½" (4864 mm)	158 <sup>7</sup> / <sub>8</sub> " (4035 mm)	43 <sup>3</sup> / <sub>8</sub> " (1095 mm)	95 <sup>3</sup> / <sub>8</sub> " (2422 mm)
<b>15'6"-16'5"</b> (472-500 cm)	203½" (5169 mm)	170 <sup>7</sup> / <sub>8</sub> " (4340 mm)	43 <sup>3</sup> / <sub>4</sub> " (1111 mm)	101¼" (2572 mm)
<b>16'6"-17'5"</b> (503-531 cm)	215½" (5474 mm)	182 <sup>7</sup> / <sub>8</sub> " (4645 mm)	44 <sup>3</sup> / <sub>8</sub> " (1127 mm)	107 <sup>1</sup> / <sub>8</sub> " (2721 mm)

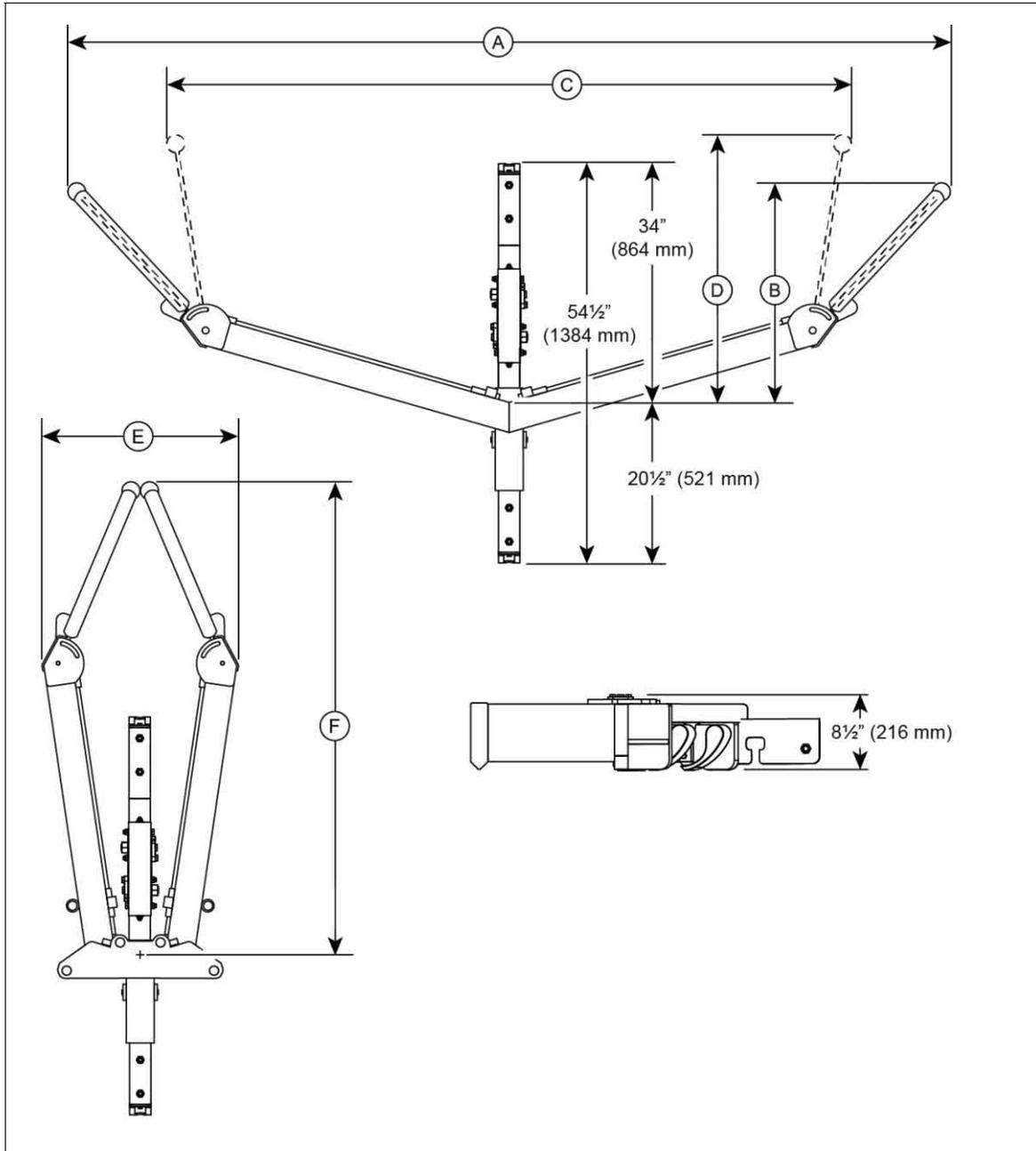
5.8 16° scraper

Floor mounted

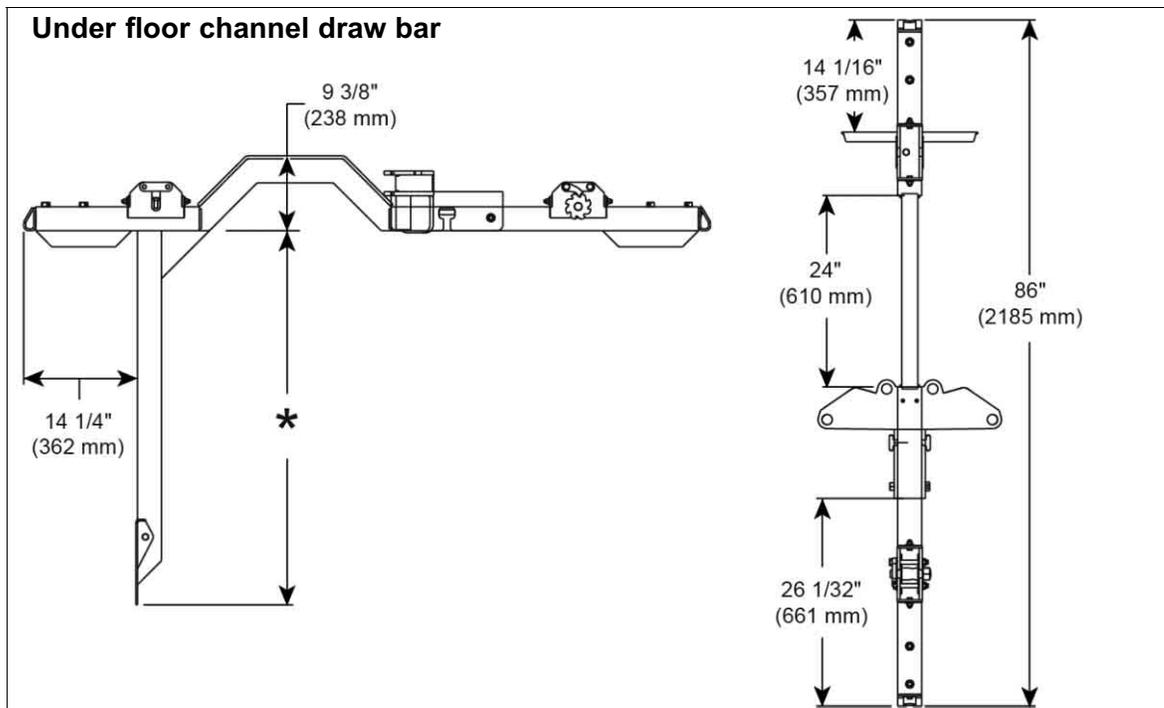


Alley width	Forward		Reverse		Draw bar		Optional hinges	
	A	B	C	D	E	F	G	H
<b>6'1"-6'6"</b> (185 - 198 cm)	86" (2184 mm)	25 <sup>1</sup> / <sub>4</sub> " (641 mm)	60" (1524 mm)	32" (813 mm)	34" (864 mm)	54 <sup>1</sup> / <sub>2</sub> " (1384 mm)	24 <sup>3</sup> / <sub>8</sub> " (619 mm)	48" (1219 mm)
<b>6'7"-7'</b> (201 - 213 cm)	94" (2388 mm)	25 <sup>1</sup> / <sub>4</sub> " (641 mm)	60" (1524 mm)	32" (813 mm)	34" (864 mm)	54 <sup>1</sup> / <sub>2</sub> " (1384 mm)	24 <sup>3</sup> / <sub>8</sub> " (619 mm)	48" (1219 mm)
<b>7'1"-7'6"</b> (216 x 229 cm)	98" (2489 mm)	27" (686 mm)	72" (1829 mm)	33 <sup>3</sup> / <sub>4</sub> " (857 mm)	39" (991 mm)	59 <sup>1</sup> / <sub>2</sub> " (1511 mm)	25 <sup>5</sup> / <sub>8</sub> " (651 mm)	54" (1372 mm)
<b>7'7"-8'</b> (231 x 244 cm)	106" (2694 mm)	31 <sup>3</sup> / <sub>8</sub> " (797 mm)	74" (1880 mm)	39 <sup>3</sup> / <sub>4</sub> " (1010 mm)	39" (991 mm)	59 <sup>1</sup> / <sub>2</sub> " (1511 mm)	28 <sup>1</sup> / <sub>8</sub> " (714 mm)	56 <sup>1</sup> / <sub>2</sub> " (1435 mm)
<b>8'1"-8'6"</b> (246 - 259 cm)	110" (2794 mm)	28 <sup>3</sup> / <sub>4</sub> " (730 mm)	84" (2134 mm)	35 <sup>1</sup> / <sub>2</sub> " (902 mm)	44" (1118 mm)	64 <sup>1</sup> / <sub>2</sub> " (1638 mm)	26 <sup>5</sup> / <sub>8</sub> " (676 mm)	60 <sup>1</sup> / <sub>8</sub> " (1527 mm)
<b>8'7"-9'</b> (262 - 274 cm)	118" (2998 mm)	33 <sup>1</sup> / <sub>8</sub> " (841 mm)	86" (2184 mm)	41 <sup>1</sup> / <sub>2</sub> " (1024 mm)	44" (1118 mm)	64 <sup>1</sup> / <sub>2</sub> " (1638 mm)	29 <sup>1</sup> / <sub>8</sub> " (740 mm)	62 <sup>5</sup> / <sub>8</sub> " (1591 mm)
<b>9'1"-9'6"</b> (277 - 290 cm)	122" (3099 mm)	30 <sup>1</sup> / <sub>2</sub> " (775 mm)	96" (2438 mm)	37 <sup>1</sup> / <sub>4</sub> " (946 mm)	48" (1219 mm)	68 <sup>1</sup> / <sub>2</sub> " (1740 mm)	27 <sup>3</sup> / <sub>8</sub> " (695 mm)	66 <sup>3</sup> / <sub>8</sub> " (1686 mm)
<b>9'7"-10'</b> (292 - 305 cm)	130" (3302 mm)	34 <sup>7</sup> / <sub>8</sub> " (886 mm)	98" (2489 mm)	43 <sup>1</sup> / <sub>4</sub> " (1099 mm)	48" (1219 mm)	68 <sup>1</sup> / <sub>2</sub> " (1740 mm)	29 <sup>7</sup> / <sub>8</sub> " (759 mm)	68 <sup>7</sup> / <sub>8</sub> " (1749 mm)
<b>10'1"-10'6"</b> (307-320 cm)	134" (3403 mm)	32 <sup>1</sup> / <sub>4</sub> " (819 mm)	108" (2743 mm)	39" (991 mm)	53" (1314 mm)	73 <sup>1</sup> / <sub>2</sub> " (1867 mm)	28" (711 mm)	72 <sup>1</sup> / <sub>2</sub> " (1842 mm)
<b>10'7"-11'</b> (323-335 cm)	142" (3607 mm)	36 <sup>5</sup> / <sub>8</sub> " (930 mm)	110" (2794 mm)	45" (1143 mm)	53" (1314 mm)	73 <sup>1</sup> / <sub>2</sub> " (1867 mm)	30 <sup>1</sup> / <sub>2</sub> " (775 mm)	75" (1905 mm)
<b>11'1"-11'6"</b> (338-351 cm)	146" (3708 mm)	34" (864 mm)	120" (3048 mm)	40 <sup>3</sup> / <sub>4</sub> " (1035 mm)	58" (1473 mm)	78 <sup>1</sup> / <sub>2</sub> " (1994 mm)	28 <sup>5</sup> / <sub>8</sub> " (727 mm)	78 <sup>5</sup> / <sub>8</sub> " (1997 mm)
<b>11'7"-12'</b> (353-366 cm)	154" (3912 mm)	38 <sup>3</sup> / <sub>8</sub> " (975 mm)	122" (3099 mm)	46 <sup>3</sup> / <sub>4</sub> " (1187 mm)	58" (1473 mm)	78 <sup>1</sup> / <sub>2</sub> " (1994 mm)	28 <sup>5</sup> / <sub>8</sub> " (727 mm)	81 <sup>1</sup> / <sub>8</sub> " (2061 mm)
<b>12'1"-12'6"</b> (368-381 cm)	158" (4013 mm)	35 <sup>3</sup> / <sub>4</sub> " (908 mm)	132" (3353 mm)	42 <sup>1</sup> / <sub>2</sub> " (1080 mm)	63" (1600 mm)	83 <sup>1</sup> / <sub>2</sub> " (2121 mm)	31 <sup>1</sup> / <sub>8</sub> " (737 mm)	84 <sup>7</sup> / <sub>8</sub> " (2156 mm)
<b>12'7"-13'</b> (384-396 cm)	166" (4216 mm)	40 <sup>1</sup> / <sub>8</sub> " (1029 mm)	134" (3404 mm)	48 <sup>1</sup> / <sub>2</sub> " (1232 mm)	63" (1600 mm)	83 <sup>1</sup> / <sub>2</sub> " (2121 mm)	31 <sup>1</sup> / <sub>2</sub> " (800 mm)	87 <sup>3</sup> / <sub>8</sub> " (2219 mm)
<b>13'1"-13'6"</b> (399-411 cm)	170" (4318 mm)	37 <sup>1</sup> / <sub>2</sub> " (953 mm)	144" (3658 mm)	44 <sup>1</sup> / <sub>4</sub> " (1124 mm)	68" (1727 mm)	88 <sup>1</sup> / <sub>2</sub> " (2248 mm)	29 <sup>3</sup> / <sub>8</sub> " (746 mm)	91 <sup>1</sup> / <sub>8</sub> " (2315 mm)
<b>13'7"-14'</b> (414-427 cm)	178" (4521 mm)	41 <sup>7</sup> / <sub>8</sub> " (1064 mm)	146" (3708 mm)	50 <sup>1</sup> / <sub>4</sub> " (1276 mm)	68" (1727 mm)	88 <sup>1</sup> / <sub>2</sub> " (2248 mm)	31 <sup>7</sup> / <sub>8</sub> " (810 mm)	93 <sup>5</sup> / <sub>8</sub> " (2378 mm)
<b>14'1"-14'6"</b> (429-442 cm)	182" (4623 mm)	39 <sup>1</sup> / <sub>4</sub> " (997 mm)	156" (3962 mm)	46" (1168 mm)	73" (1854 mm)	93 <sup>1</sup> / <sub>2</sub> " (2375 mm)	29 <sup>3</sup> / <sub>4</sub> " (756 mm)	97 <sup>1</sup> / <sub>4</sub> " (2470 mm)
<b>14'7"-15'</b> (444-457 cm)	190" (4826 mm)	43 <sup>5</sup> / <sub>8</sub> " (1108 mm)	158" (4013 mm)	52" (1321 mm)	73" (1854 mm)	93 <sup>1</sup> / <sub>2</sub> " (2375 mm)	29 <sup>3</sup> / <sub>4</sub> " (756 mm)	97 <sup>1</sup> / <sub>4</sub> " (2470 mm)
<b>15'1"-15'6"</b> (459-472 cm)	194" (4928 mm)	41" (1041 mm)	168" (4267 mm)	47 <sup>3</sup> / <sub>4</sub> " (1213 mm)	78" (1981 mm)	98 <sup>1</sup> / <sub>2</sub> " (2501 mm)	30" (762 mm)	103 <sup>1</sup> / <sub>2</sub> " (2629 mm)
<b>15'7"-16'</b> (475-488 cm)	202" (5131 mm)	45 <sup>5</sup> / <sub>8</sub> " (1153 mm)	170" (4318 mm)	53 <sup>3</sup> / <sub>4</sub> " (1365 mm)	78" (1981 mm)	98 <sup>1</sup> / <sub>2</sub> " (2501 mm)	30" (762 mm)	103 <sup>1</sup> / <sub>2</sub> " (2629 mm)
<b>16'1"-16'6"</b> (492-503 cm)	206" (5232 mm)	42 <sup>3</sup> / <sub>4</sub> " (1086 mm)	180" (4572 mm)	49 <sup>1</sup> / <sub>2</sub> " (1257 mm)	83" (2108 mm)	103 <sup>1</sup> / <sub>2</sub> " (2629 mm)	30 <sup>1</sup> / <sub>4</sub> " (768 mm)	109 <sup>3</sup> / <sub>4</sub> " (2788 mm)
<b>16'7"-17'</b> (505-518 cm)	214" (5436 mm)	47 <sup>1</sup> / <sub>8</sub> " (1197 mm)	182" (4623 mm)	55 <sup>1</sup> / <sub>2</sub> " (1410 mm)	83" (2108 mm)	103 <sup>1</sup> / <sub>2</sub> " (2629 mm)	30 <sup>1</sup> / <sub>4</sub> " (768 mm)	109 <sup>3</sup> / <sub>4</sub> " (2788 mm)

Guided by a groove



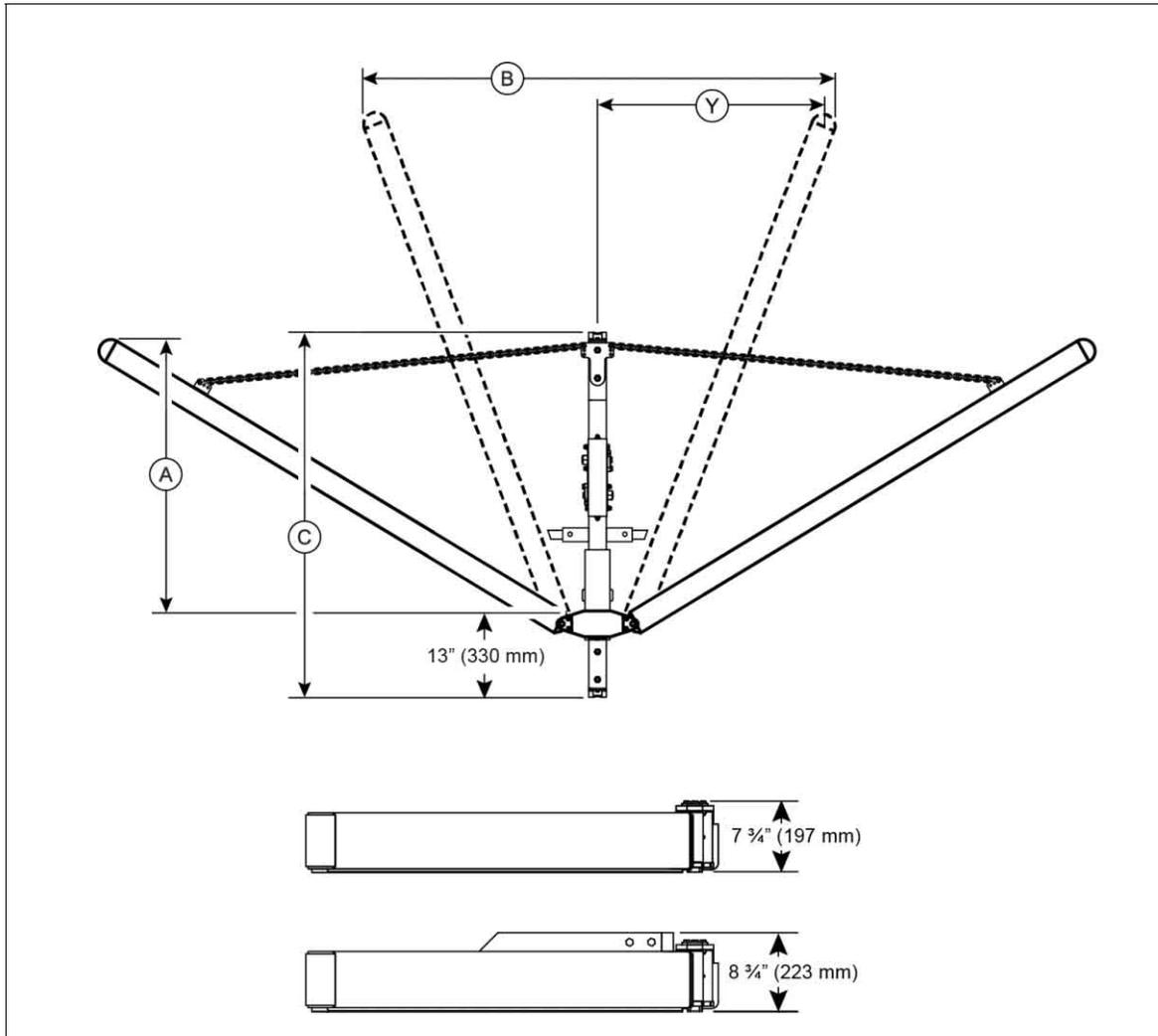
Alley width	Forward		Reverse		Optional hinges	
	A	B	C	D	E	F
6'1"-7' (185 - 213 cm)	86" (2184 mm)	25¼" (1641 mm)	60" (1524 mm)	32" (813 mm)	24 <sup>3</sup> / <sub>8</sub> " (619 mm)	48" (1219 mm)
7'1"-8' (216 x 244 cm)	98" (2489 mm)	27" (686 mm)	72" (1829 mm)	33¾" (857 mm)	25 <sup>5</sup> / <sub>8</sub> " (651 mm)	54" (1372 mm)
8'1"-9' (246 - 274 cm)	110" (2794 mm)	28¾" (730 mm)	84" (2134 mm)	35½" (902 mm)	26 <sup>5</sup> / <sub>8</sub> " (676 mm)	60 <sup>1</sup> / <sub>8</sub> " (1527 mm)
9'1"-10' (277 - 305 cm)	122" (3099 mm)	30½" (775 mm)	96" (2438 mm)	37¼" (946 mm)	27 <sup>3</sup> / <sub>8</sub> " (695 mm)	66 <sup>3</sup> / <sub>8</sub> " (1686 mm)
10'1"-11' (307-335 cm)	134" (3403 mm)	32¼" (819 mm)	108" (2743 mm)	39" (991 mm)	28" (711 mm)	72½" (1842 mm)
11'1"-12' (338-366 cm)	146" (3708 mm)	34" (864 mm)	120" (3048 mm)	40¾" (1035 mm)	28 <sup>5</sup> / <sub>8</sub> " (727 mm)	78 <sup>5</sup> / <sub>8</sub> " (1997 mm)
12'1"-13' (368-396 cm)	158" (4013 mm)	35¾" (908 mm)	132" (3353 mm)	42½" (1080 mm)	29" (737 mm)	84 <sup>7</sup> / <sub>8</sub> " (2156 mm)
13'1"-14' (399-427 cm)	170" (4318 mm)	37½" (953 mm)	144" (3658 mm)	44¼" (1124 mm)	29 <sup>3</sup> / <sub>8</sub> " (746 mm)	91 <sup>1</sup> / <sub>8</sub> " (2315 mm)
14'1"-15' (429-457 cm)	182" (4623 mm)	39¼" (997 mm)	156" (3962 mm)	46" (1168 mm)	29 <sup>3</sup> / <sub>4</sub> " (756 mm)	97¼" (2470 mm)
15'1"-16' (459-487 cm)	194" (4928 mm)	41" (1041 mm)	168" (4267 mm)	47¾" (1213 mm)	30" (762 mm)	103½" (2629 mm)
16'1"-17' (490-518 cm)	206" (5232 mm)	42¾" (1086 mm)	180" (4572 mm)	49½" (1257 mm)	30¼" (768 mm)	109¾" (2788 mm)



\* Customized

**5.9 V-shape scraper**

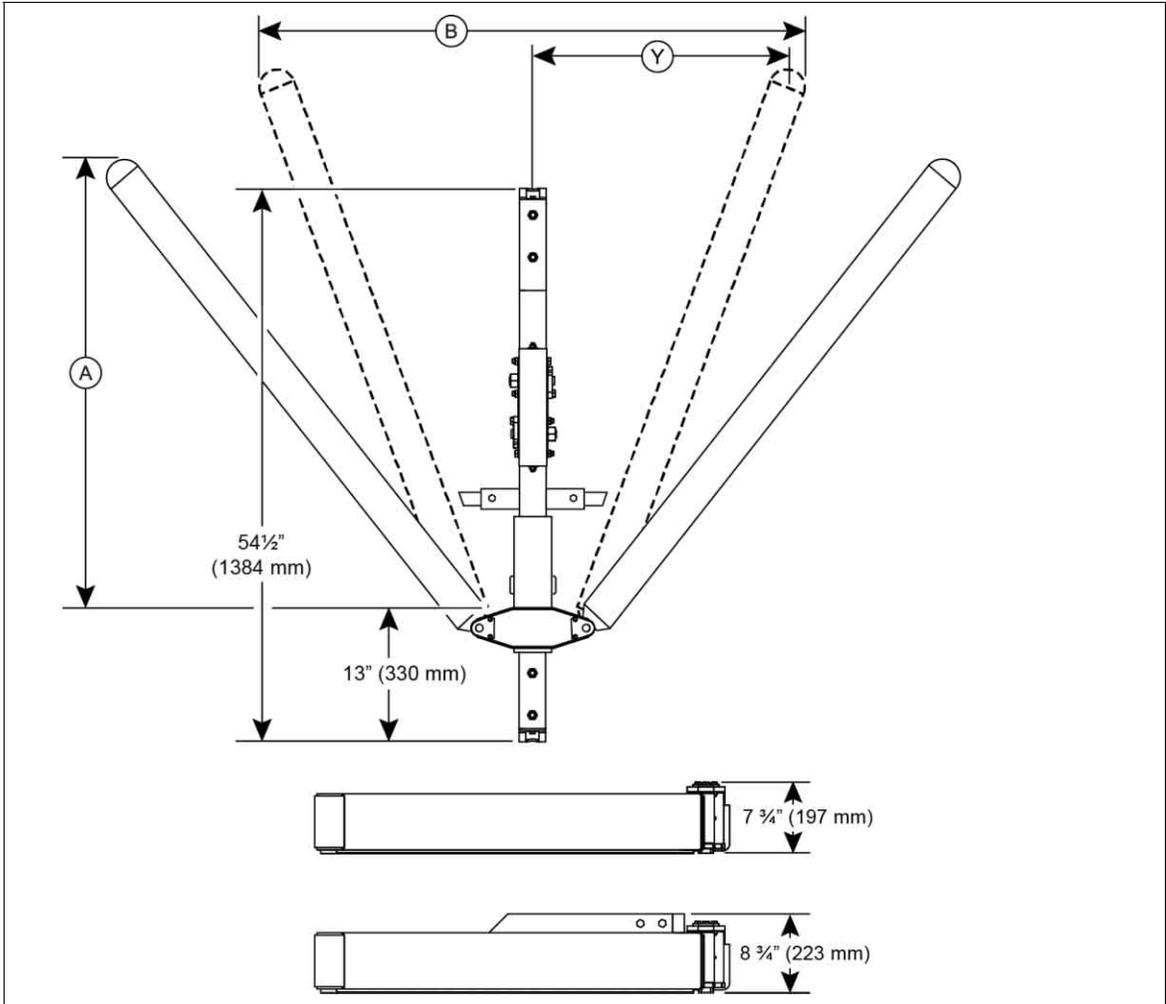
Floor mounted



<b>Alley width</b>	<b>A<sup>1</sup></b>	<b>B<sup>1</sup></b>	<b>C<sup>2</sup></b>	<b>Y</b>
<b>6'1"-7' (185 - 213 cm)</b>	21 <sup>3</sup> / <sub>4</sub> " - 23" (553 - 584 mm)	45" - 48" (1143 - 1219 mm)	54 <sup>1</sup> / <sub>2</sub> " (1270 mm)	11" (279 mm)
<b>7'1"-8' (216 x 244 cm)</b>	25 <sup>1</sup> / <sub>2</sub> " - 26 <sup>1</sup> / <sub>2</sub> " (648 - 673 mm)	51" - 54" (1295 - 1372 mm)	54 <sup>1</sup> / <sub>2</sub> " (1270 mm)	13" (330 mm)
<b>8'1"-9' (246 - 274 cm)</b>	28 <sup>1</sup> / <sub>4</sub> " - 29 <sup>1</sup> / <sub>4</sub> " (718 - 743 mm)	56" - 60" (1422 - 1524 mm)	54 <sup>1</sup> / <sub>2</sub> " (1270 mm)	15" (381 mm)
<b>9'1"-10' (277 - 305 cm)</b>	32 <sup>1</sup> / <sub>2</sub> " - 32 <sup>3</sup> / <sub>4</sub> " (819 - 832 mm)	62" - 66" (1575 - 1676 mm)	59 <sup>1</sup> / <sub>2</sub> " (1397 mm)	18" (457 mm)
<b>10'1"-11' (307-335 cm)</b>	35 <sup>3</sup> / <sub>4</sub> " - 36 <sup>1</sup> / <sub>2</sub> " (908 - 927 mm)	68" - 72" (1727 - 1829 mm)	64 <sup>1</sup> / <sub>2</sub> " (1524 mm)	21" (533 mm)
<b>11'1"-12' (338-366 cm)</b>	39 <sup>1</sup> / <sub>2</sub> " - 40 <sup>1</sup> / <sub>4</sub> " (1003 - 1022 mm)	74" - 78" (1880 - 1981 mm)	68 <sup>1</sup> / <sub>2</sub> " (1626 mm)	23" (584 mm)
<b>12'1"-13' (368-396 cm)</b>	43 <sup>1</sup> / <sub>4</sub> " - 44" (1099 - 1118 mm)	80" - 84" (2032 - 2134 mm)	73 <sup>1</sup> / <sub>2</sub> " (1753 mm)	25" (635 mm)
<b>13'1"-14' (399-427 cm)</b>	46 <sup>1</sup> / <sub>2</sub> " - 47 <sup>3</sup> / <sub>4</sub> " (1181 - 1213 mm)	86" - 90" (2184 - 2286 mm)	78 <sup>1</sup> / <sub>2</sub> " (1880 mm)	28" (711 mm)

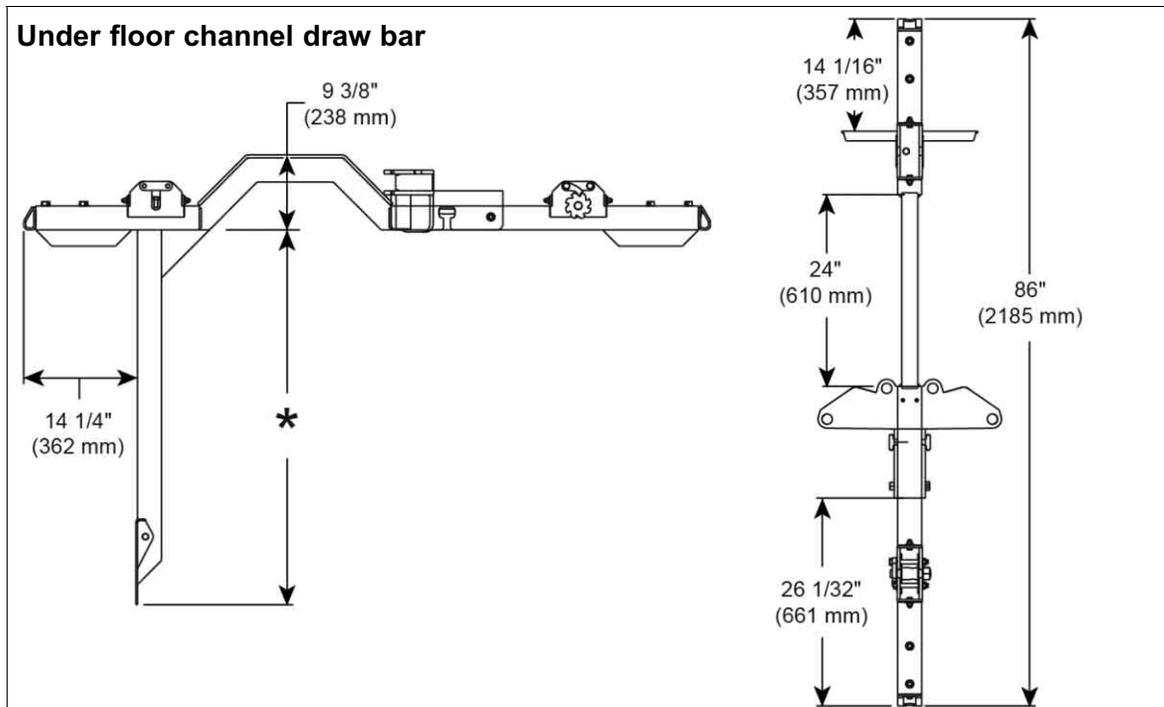
- <sup>1</sup> Dimensions vary according to the width of the alley, the length of the tubing and the position of the tubing (angle).
- <sup>2</sup> Length (C) is the length of the draw bar.

Guided by a groove



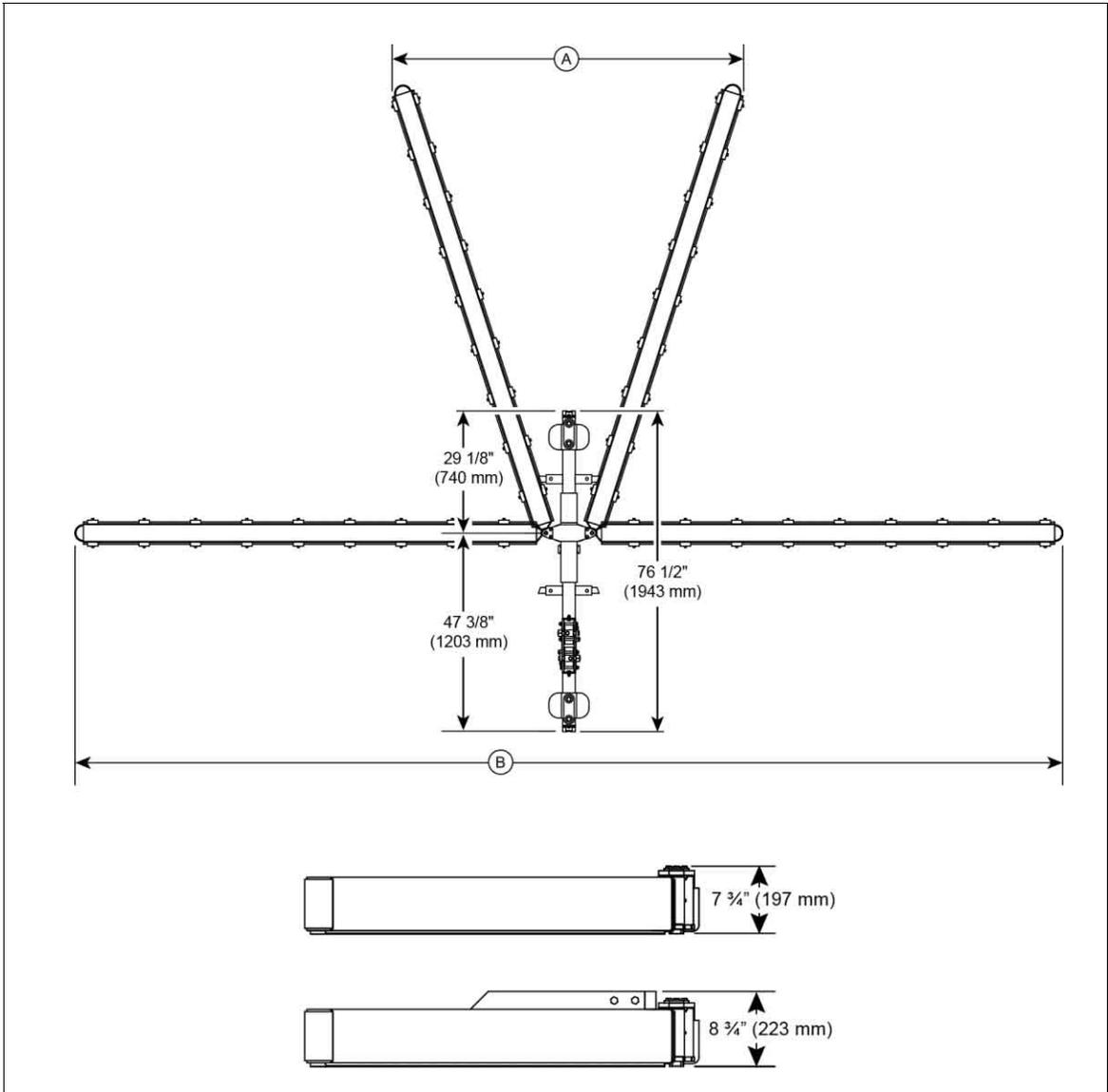
Alley width	A <sup>1</sup>	B <sup>1</sup>	Y
6'1"-7' (185 - 213 cm)	34½" - 37½" (876 - 953 mm)	52" - 57" (1321 - 1448 mm)	16" (406 mm)
7'1"-8' (216 x 244 cm)	41" 43" (1042 - 1092 mm)	60" - 64" (1524 - 1626 mm)	19" (483 mm)
8'1"-9' (246 - 274 cm)	46½" - 50¾" (1181 - 1289 mm)	66" - 72" (1676 - 1829 mm)	22" (559 mm)
9'1"-10' (277 - 305 cm)	53¼" - 54¾" (1353 - 1391 mm)	74" - 78" (1880 - 1981 mm)	25" (635 mm)
10'1"-11' (307-335 cm)	58½" - 61¾" (1486 - 1569 mm)	80" - 86" (2032 - 2184 mm)	28" (711 mm)
11'1"-12' (338-366 cm)	65¼" - 67" (1657 - 1702 mm)	88" - 92" (2235 2337 mm)	32" (813 mm)
12'1"-13' (368-396 cm)	70½" - 73¾" (1791 - 1873 mm)	94" - 100" (2388 - 2540 mm)	35" (889 mm)
13'1"-14' (399-427 cm)	77¼" - 79" (1962 - 2007 mm)	102" - 106" (2591 - 2694 mm)	38" (965 mm)

<sup>1</sup> Dimensions vary according to the width of the alley, the length of the tubing and the position of the tubing (angle).



\* Customized

**Bidirectional scraper**



<b>Alley width</b>	<b>A<sup>1</sup></b>	<b>B<sup>1</sup></b>
<b>6'1"-7'</b> <b>(185 - 213 cm)</b>	43 <sup>3</sup> / <sub>4</sub> " - 47 <sup>1</sup> / <sub>2</sub> " (1110 - 1205 mm)	105 <sup>1</sup> / <sub>2</sub> " - 117 <sup>1</sup> / <sub>2</sub> " (2680 - 2985 mm)
<b>7'1"-8'</b> <b>(216 x 244 cm)</b>	47 <sup>1</sup> / <sub>2</sub> " - 52 <sup>3</sup> / <sub>4</sub> " (1205 - 1340 mm)	117 <sup>1</sup> / <sub>2</sub> " - 133 <sup>1</sup> / <sub>2</sub> " (2985 - 3390 mm)
<b>8'1"-9'</b> <b>(246 - 274 cm)</b>	52 <sup>3</sup> / <sub>4</sub> " - 58 <sup>1</sup> / <sub>2</sub> " (1340 - 1485 mm)	133 <sup>1</sup> / <sub>2</sub> " - 153 <sup>1</sup> / <sub>2</sub> " (3390 - 3900 mm)
<b>9'1"-10'</b> <b>(277 - 305 cm)</b>	58 <sup>1</sup> / <sub>2</sub> " - 62 <sup>3</sup> / <sub>4</sub> " (1485 - 1595 mm)	153 <sup>1</sup> / <sub>2</sub> " - 167 <sup>1</sup> / <sub>2</sub> " (3900 - 4255 mm)
<b>10'1"-11'</b> <b>(307-335 cm)</b>	62 <sup>3</sup> / <sub>4</sub> " - 68 <sup>1</sup> / <sub>2</sub> " (1595 - 1740 mm)	167 <sup>1</sup> / <sub>2</sub> " - 185 <sup>1</sup> / <sub>2</sub> " (4255 - 4710 mm)
<b>11'1"-12'</b> <b>(338-366 cm)</b>	68 <sup>1</sup> / <sub>2</sub> " - 73 <sup>1</sup> / <sub>2</sub> " (1740 - 1865 mm)	185 <sup>1</sup> / <sub>2</sub> " - 201 <sup>1</sup> / <sub>2</sub> " (4710 - 5120 mm)
<b>12'1"-13'</b> <b>(368-396 cm)</b>	73 <sup>1</sup> / <sub>2</sub> " - 78 <sup>3</sup> / <sub>4</sub> " (1865 - 2000 mm)	201 <sup>1</sup> / <sub>2</sub> " - 217 <sup>1</sup> / <sub>2</sub> " (5120 - 5525 mm)
<b>13'1"-14'</b> <b>(399-427 cm)</b>	78 <sup>3</sup> / <sub>4</sub> " - 83 <sup>3</sup> / <sub>4</sub> " (2000 - 2125 mm)	217 <sup>1</sup> / <sub>2</sub> " - 235 <sup>1</sup> / <sub>2</sub> " (5525 - 5980 mm)

<sup>1</sup> Dimensions vary according to the width of the alley, the length of the tubing and the position of the tubing (angle).

---

## 6 Handling and installation

---

### 6.1 Special personnel qualification required for handling and installation

---

Handling must be performed by a qualified forklift operator and/or qualified overhead crane or hoist operator.

Installation work must be performed by trained personnel in accordance with the safety instructions.

Electric work and electric maintenance must be performed by a certified electrician.



Refer to section Safety - Personnel qualifications.

---

### 6.2 Safety instructions for handling and installation

---



**Warning!**

Risk of fall!

Be aware of the surroundings when working near areas such as a storage pit, a cross gutter, a transfer pump hopper, etc.

---



**Caution!**

Risk of stumble!

Be aware of the cable in the free stall alleys.

---



**Caution!**

Slippery floor!

Manure makes the floor slippery, be aware.  
Use the walkways when possible.

---



**Important!**

Always remove livestock from the work zone area before performing the handling and installation steps

---

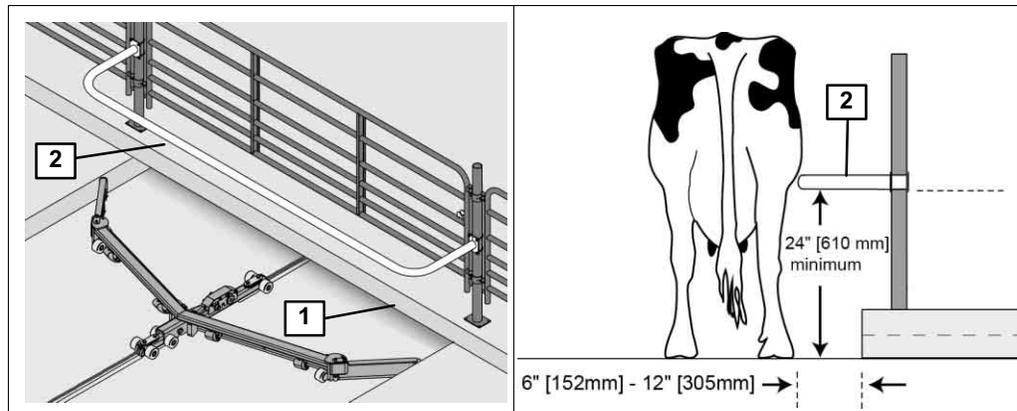


Read the section Safety.

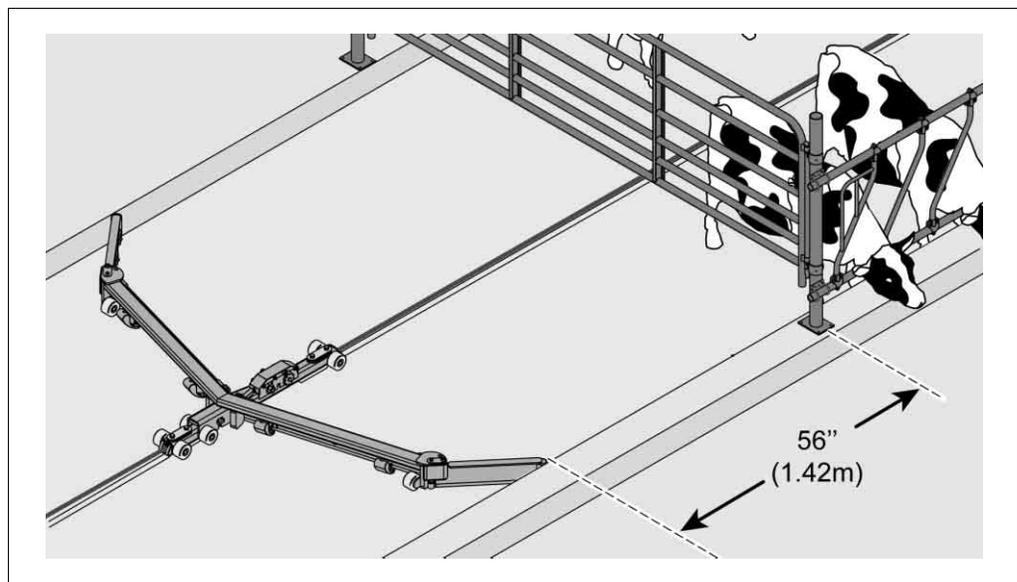
---

### 6.3 Environment requirements

- This product must be installed in a frost-free environment;
- The concrete of each alley must be levelled, free from imperfections such as holes, cracks, bumps, etc;
- All access to storage pit, cross gutter and transfer pump hopper must be fenced to prevent falls.
- Each bridging (1) over alleys must be safe for livestock. A guard (2) must be installed to keep the livestock away from the shearing zone. Refer to picture below.



- The barn design must allow the scrapers to be parked out of the free stall area at a minimum distance of 56" (1.42m). During the first 15 seconds of each stroke, the control panel does not perform detection since it only collects load fluctuation values.



## 6.4 Installation requirements

### 6.4.1 Visual inspection



**Note!**

Inspect all equipment and component.  
Do not install if damaged.

---

### 6.4.2 Necessary documents

- Barn layout;
- Electric wiring diagram supplied with the control panel;

### 6.4.3 Special tools

	Description	Purpose
	Forklift truck	To lift equipments such as drive unit, scraper, etc.
	Chain	To lift equipment/component.
	Chain hoist with safety chains	To lift equipment/component.
	Overhead hoist or crane	To lift equipment/component.
	Key set	To tighten bolts.
	Ratchet tool set	To tighten bolts.
	Hammer drill	To drill holes in the concrete floor.
	Concrete drill bit	To drill holes in the concrete floor.
	Hammer	To insert anchor bolts.
	Torque wrench	To tighten bolts and anchor bolts at specific torque.
	Non-conductive screwdrivers	Tighten the electric connections
	Crimping tool	Cut and strip wires.
	Allen keys	Unscrew gearboxes plugs.

## 6.5 Packing material disposal

Handle the packing material properly and dispose according to your local rules and regulations on waste disposal.

**6.6 Anchor bolt installation procedure**



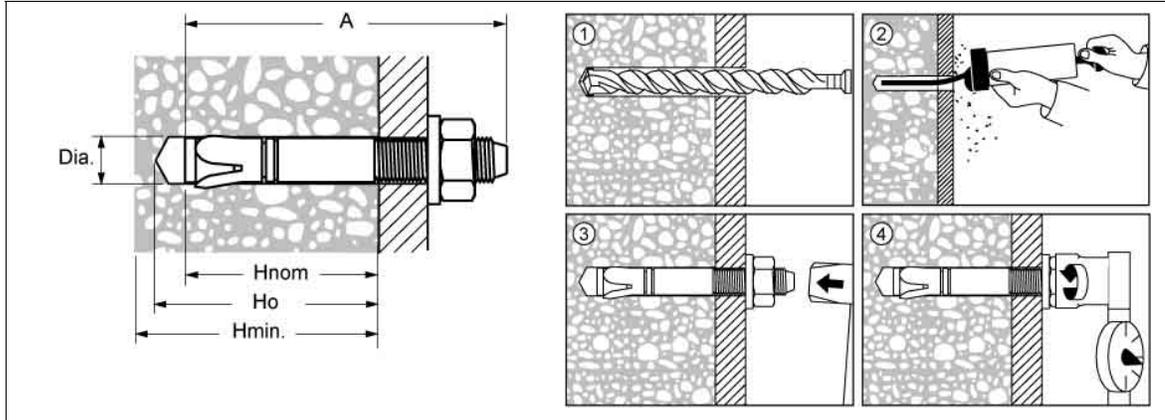
**Caution!**

Risk of injury!  
Wear personal protective gear.



**Attention!**

Risk of concrete damage!  
Wait at least 7 days before drilling into concrete so that the slab can harden sufficiently.



Bolt diameter	3/8" (10 mm)	1/2" (13 mm)			3/4" (19 mm)
Bolt length ( <b>A</b> )	3" (76 mm)	2 3/4" (70 mm)	3 3/4" (95 mm)	3 3/4" (95 mm)	5 1/2" (140 mm)
Material	Steel	Steel	Steel	SS 304	Steel
Minimum hole depth ( <b>Ho</b> )	2 5/8" (67 mm)	2" (51 mm)	2 5/8" (67 mm)	2 1/2" (63.5 mm)	4 1/2" (114 mm)
<b>Hnom</b>	2 3/8" (60 mm)	1 3/4" (45 mm)	2 1/4" (57 mm)	2 1/4" (57 mm)	4 1/4" (108 mm)
<b>Hmin</b>	4" (101 mm)	4" (101 mm)	4" (101 mm)	4" (101 mm)	6" (152 mm)
Concrete drill bit diameter ( <b>Dia.</b> )	3/8" (10 mm)	1/2" (13 mm)	1/2" (13 mm)	1/2" (13 mm)	3/4" (19 mm)
Torque	20ft-lb (25Nm)	40ft-lb (54Nm)	40ft-lb (54Nm)	40ft-lb (54Nm)	110ft-lb (150Nm)

- Position the component on the concrete surface.
- Drill through the holes of the component (1).
- Remove the concrete particles from inside the holes (2).
- Insert the anchor bolts. Keep 1 1/2" of length exceeding from the concrete surface.
- Place a washer (3) and a nut on each anchor bolt. Screw the anchor bolt until it is even with the top of the bolt (3).
- Tap the anchor bolt using a hammer until it firmly secures the component.
- Tighten the assembly to appropriate torque, refer to the table or apply the specified torque indicated in the step.

**6.7 Drive unit handling****Warning!**

Risk of injury or death!

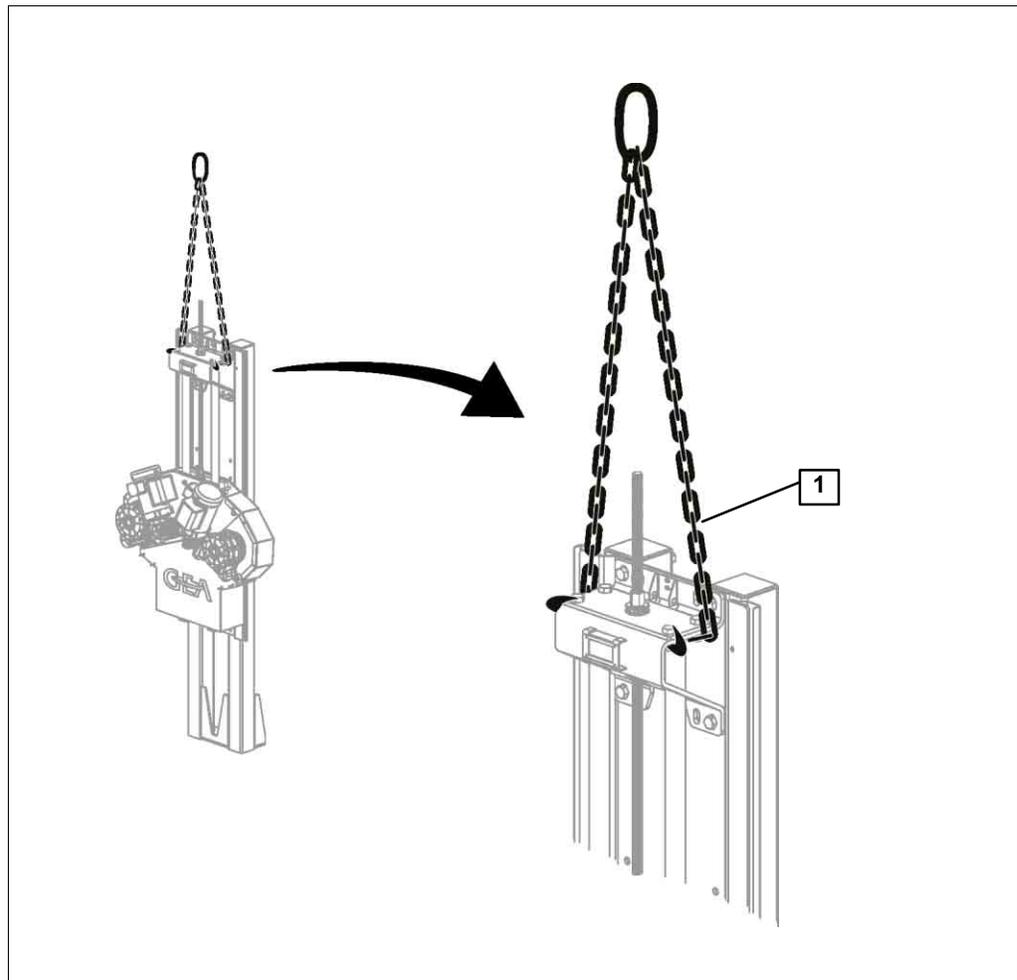
Do not stand under or near a lifted load, a falling load can cause death.

**Warning!**

Risk of injury or death!

Use a lifting device with a minimum lifting capacity of 1000 lbs (500 kg) to handle the drive unit.

- Attach safety chains (1) to the top of the drive unit;
- Move the drive unit to the installation area.

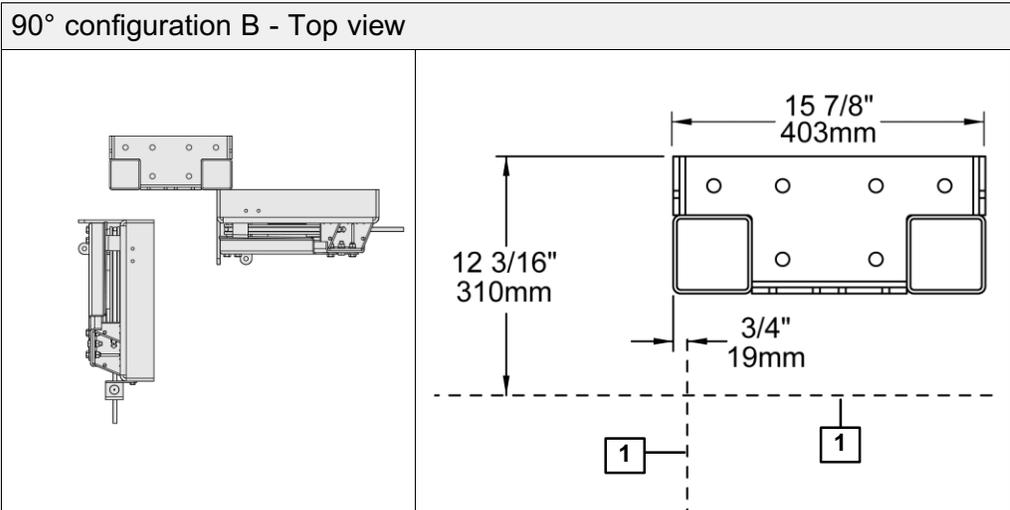
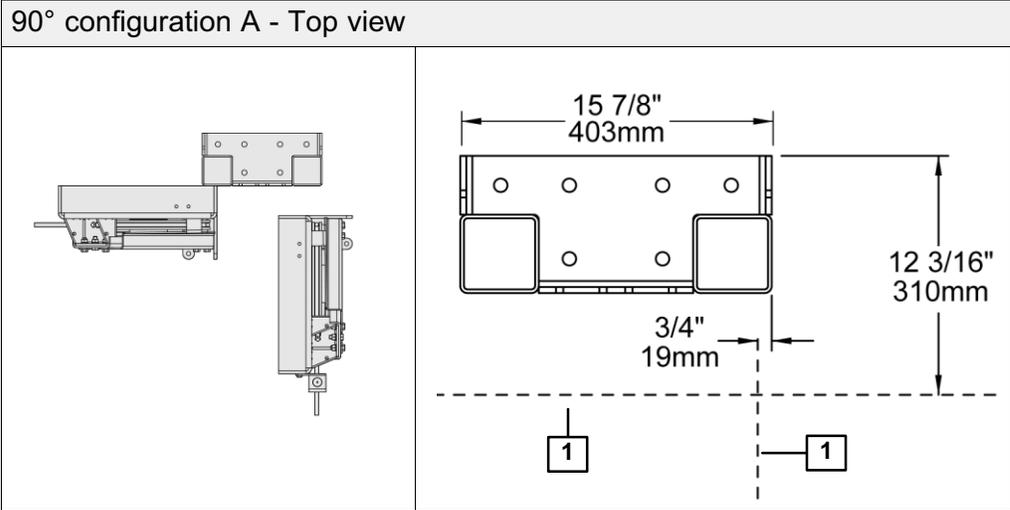


**6.8 Drive unit frame anchoring**

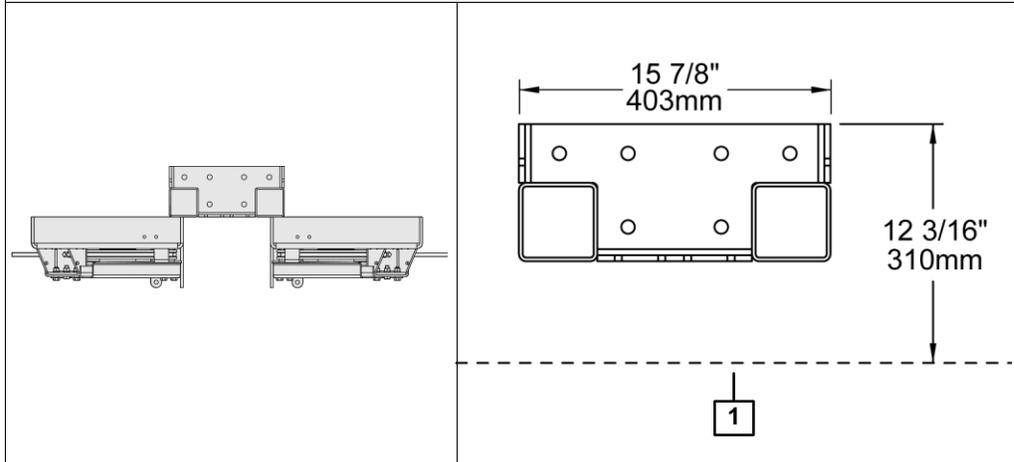


Refer to section Geometric data for drive unit footprint.

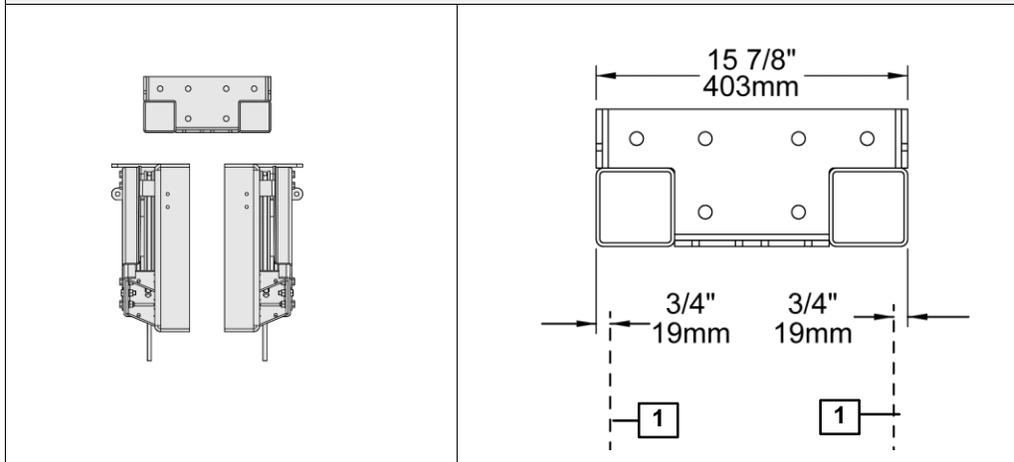
- Using a chalk line, draw the cable path (1) on the floor. Refer to proper configuration.
- Using the chalk lines as a reference, position the drive unit for anchoring.



180° configuration - Top view



360° configuration - Top view



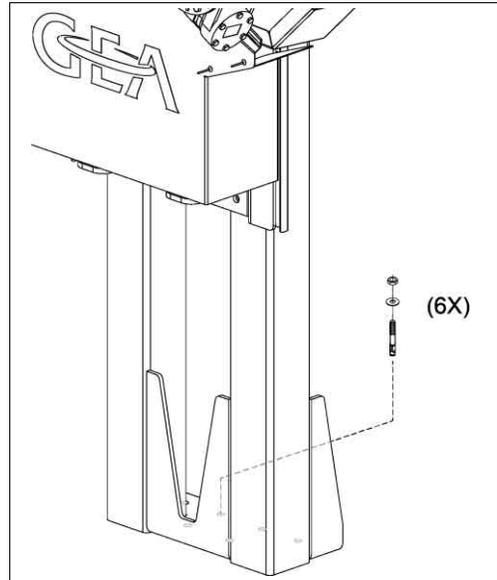


**Caution!**

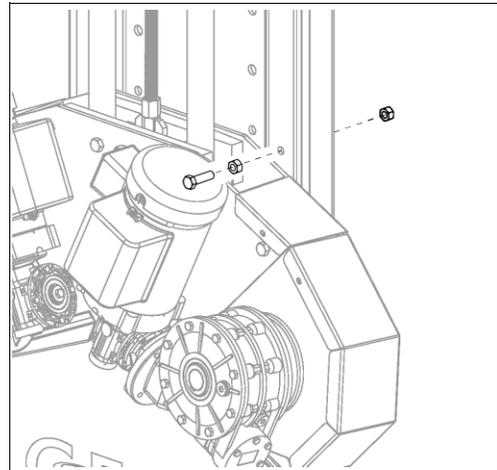
Risk of injury!

Wear personal protective gear.

- Anchor the drive unit using 6 stainless steel anchor bolts: 1/2" x 3 3/4" (13 x 95 mm). Refer to section Anchor bolt installation procedure.
- Ground the drive unit frame to the equipotential bond.

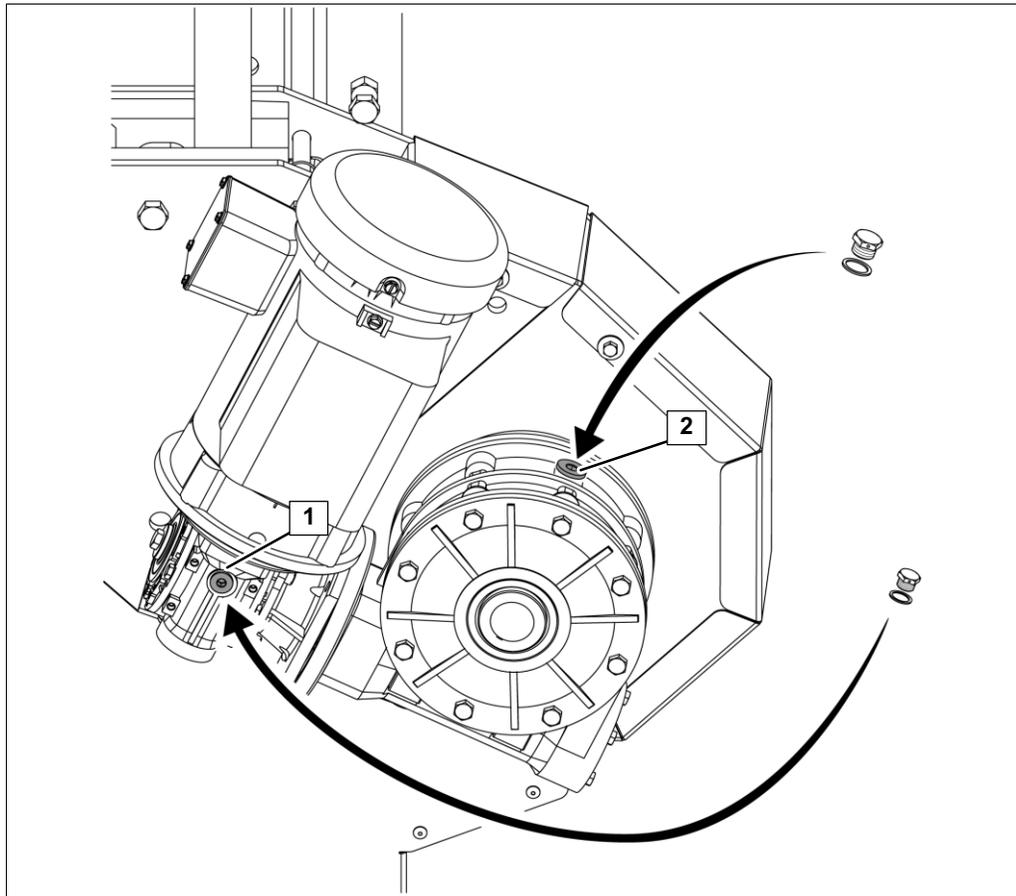


- Remove and discard the bolt from the drive unit.



## 6.9 Installation of air vents on gearboxes

Two air vents must be installed on each gearbox.



- Unscrew the plugs (1,2) using an Allen key;
- Remove the plugs and discard them;
- Install the seals and air vents provided in the corresponding locations;
- Screw the air vents using a ratchet;
- Repeat these steps for the other gearbox.

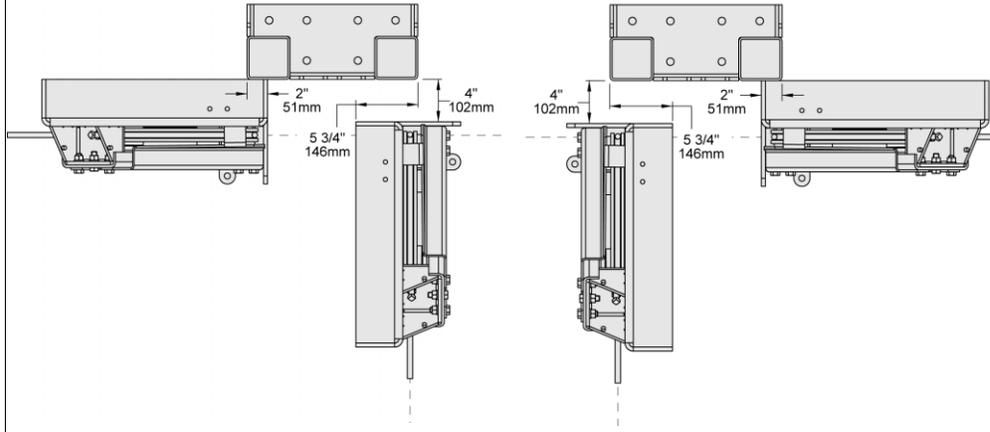
## 6.10 Drive unit wheels installation



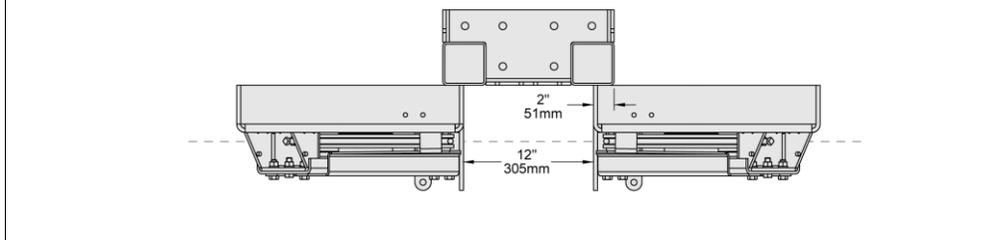
Refer to section Geometric data for drive unit footprint.

- According to the configuration chosen, position the two wheels in front of the drive unit frame. Refer to dimensions below.

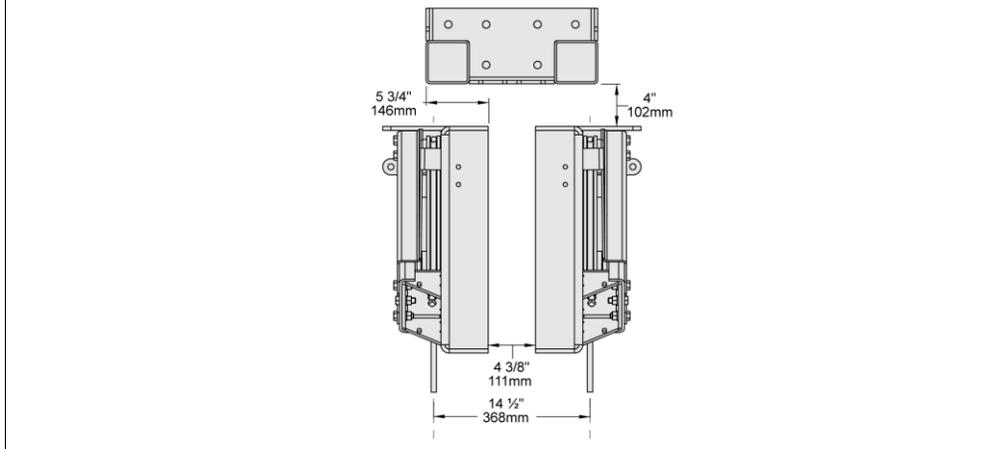
90° configuration - Top view



180° configuration - Top view

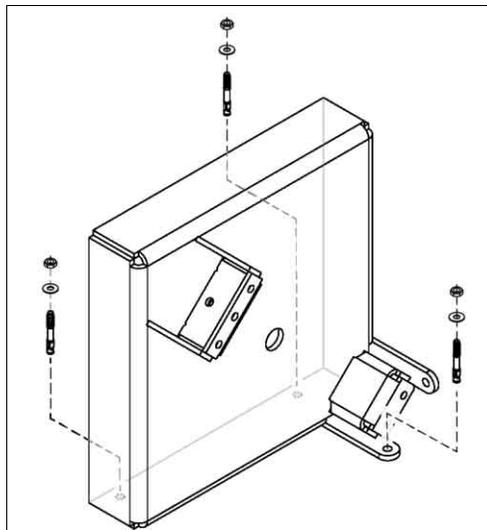


360° configuration - Top view

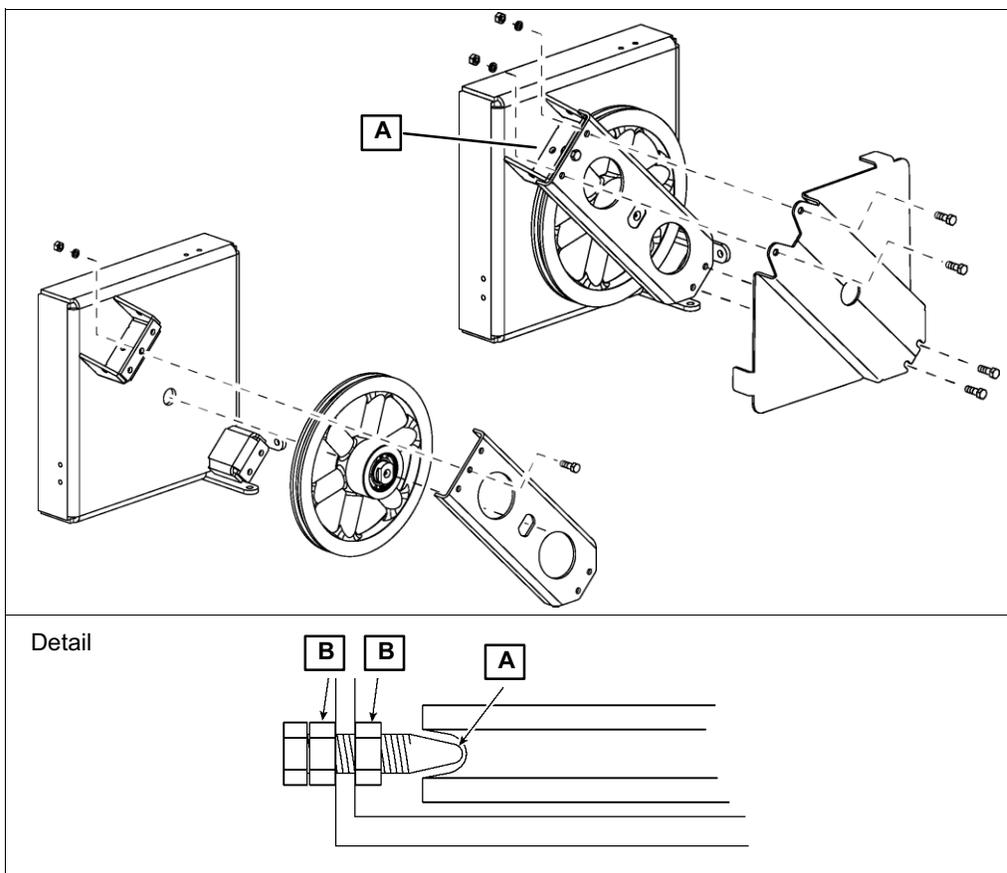


**Caution!**  
Risk of injury!  
Wear personal protective gear.

- Anchor each drive unit wheel using 3 stainless steel anchor bolts: 1/2" x 3 3/4" (13 x 95 mm). Refer to section Anchor bolt installation procedure.



- Assemble the drive unit wheels as illustrated below.
- Using nuts (B), assemble the wheel cleaner (A) on each drive unit wheel (see Detail).



**6.11 Corner wheels installation**



**Attention!**

Risk of premature wear!

Make sure the corner wheels are leveled with the cable drive unit to prevent premature wear of the cable and corners.



**Caution!**

Risk of injury!

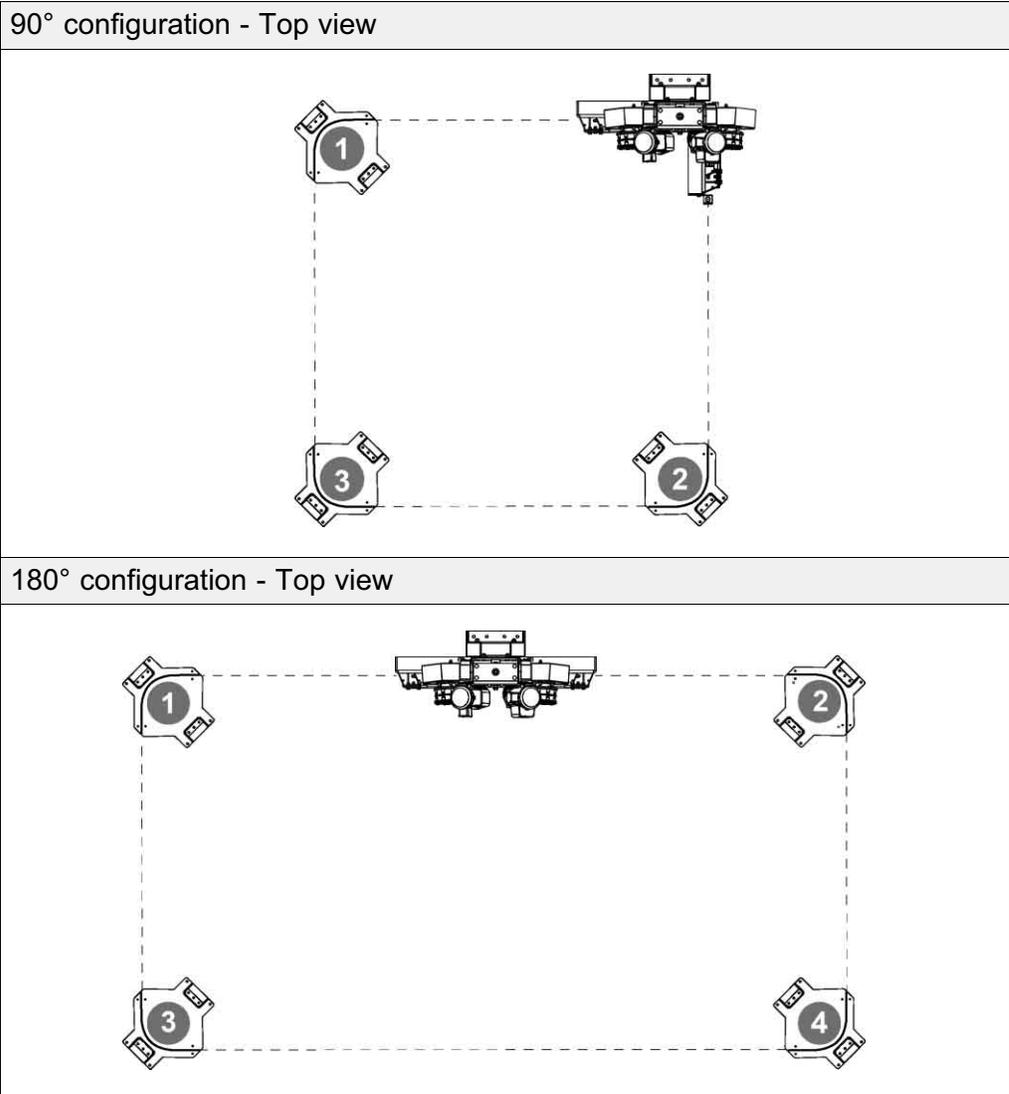
Wear personal protective gear.



**Note!**

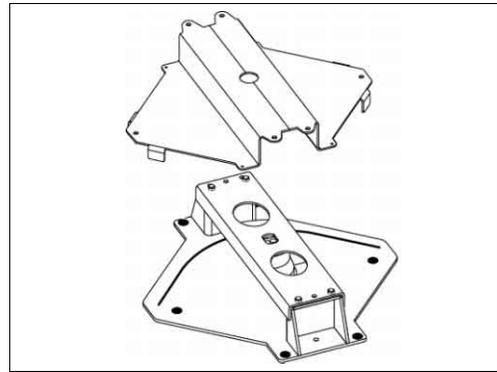
A minimum concrete thickness of 6" (152 mm) under the corner wheels is required.

- Position all corner wheels according to the drive unit configuration. See below. Make sure they are perfectly aligned.



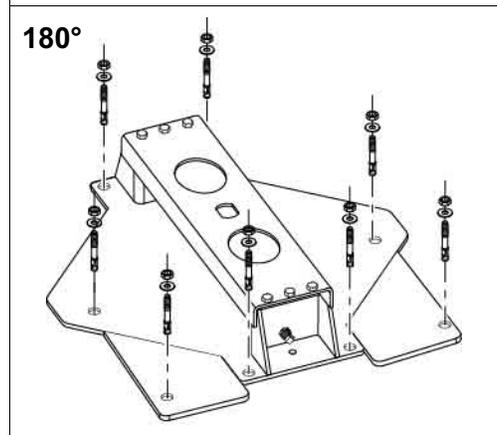
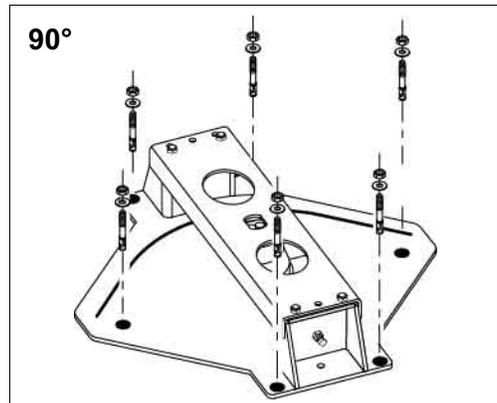
**Step 1: Corner wheel disassembly**

- Remove the corner wheel cover, as illustrated.



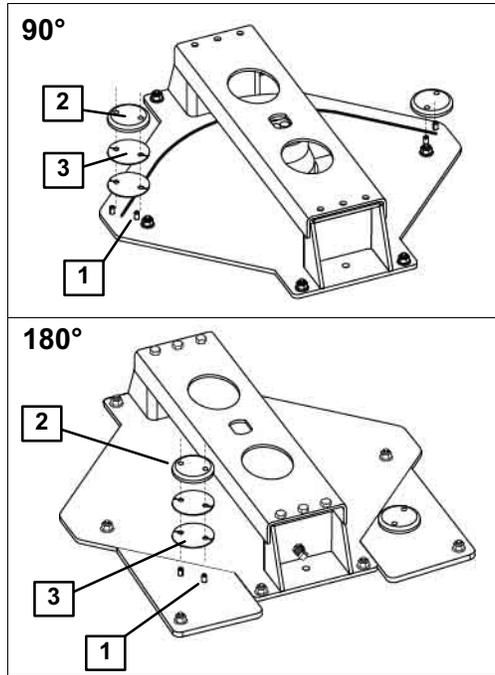
**Step 2: Corner wheel anchoring**

- Align the corner box on the ground. Follow the black line painted inside the corner wheel to align the box with the cable path.
- Make sure the corner box is leveled.
- For a 180° corner wheel, position the plates next to the corner box, as illustrated.
- Anchor the corner box on the concrete floor using 6 or 8 stainless steel anchor bolts 1/2" x 3 3/4" (13 x 95 mm). Refer to section Anchor bolt installation procedure.



**Step 3: Cable supports installation (if applicable)**

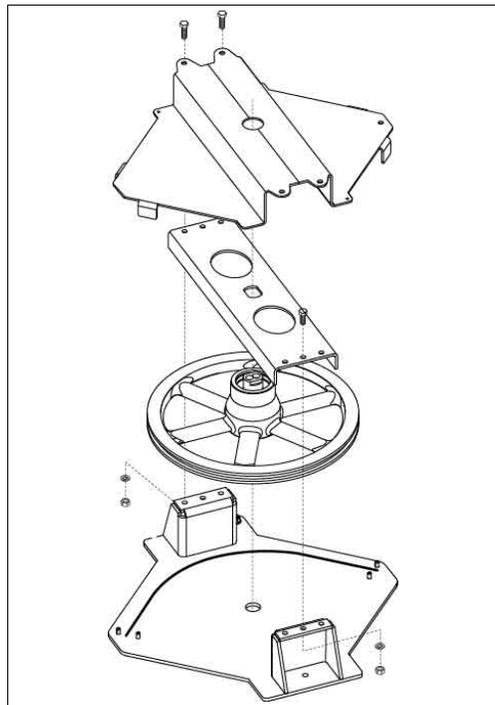
- According to the cable/rope used, install the cable support with proper shim quantity per cable support. Refer to the table below.
- With a hammer, insert the spring pins (1) in the wheel plate.
- Install cable support (2) and shim(s) (3) on the spring pins. Refer to the table below.



		Spring pin (1)	Shim (2)	Support (3)
Combi-rope		2	1	1
Nylon Rope		0	0	0
cable	1/2" (13 mm)	2	1	1
	3/8" (10 mm)	2	2	1

**Step 4: Corner wheel assembly**

- Assemble the corner wheel, as illustrated.



---

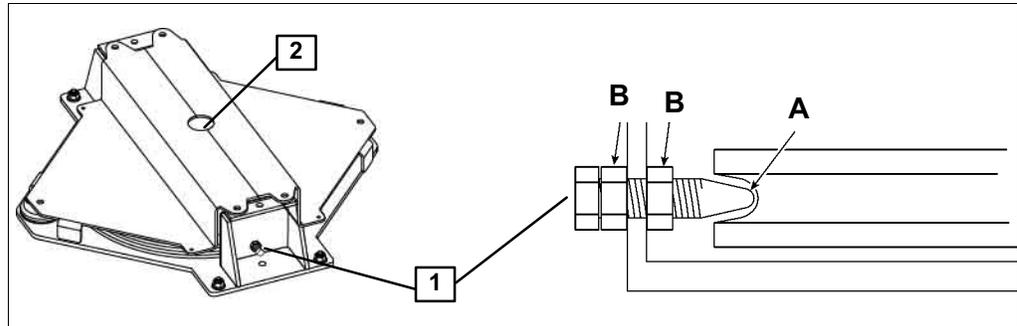
### Step 5: Wheel cleaner adjustment

---



**Caution!**  
Risk of skin irritation!  
Wear protective gloves.

---



- Assemble the wheel cleaner (1) to the corner wheel frame using two lock nuts (B).
- Position the tip (A) of the cleaner as near as possible to the wheel.
- Rotate the wheel to make sure it turns freely.
- Tighten the lock nuts (B).
- Slowly add 3.15 grams of grease while the bearing (2) runs, if possible.

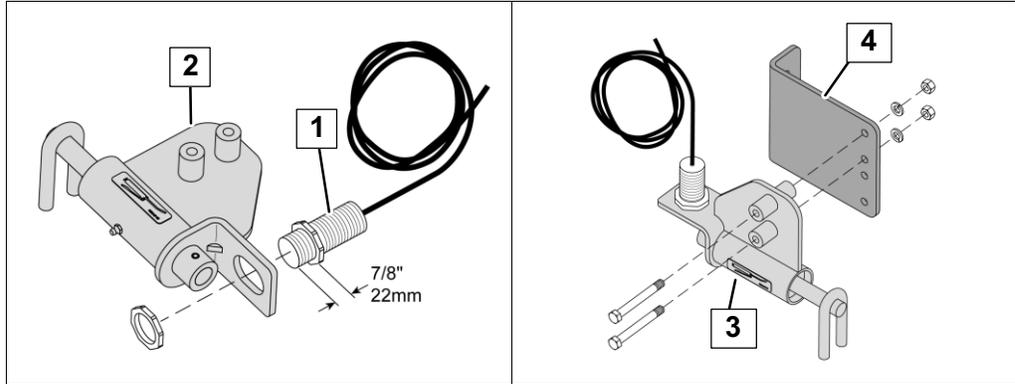


**Note!**

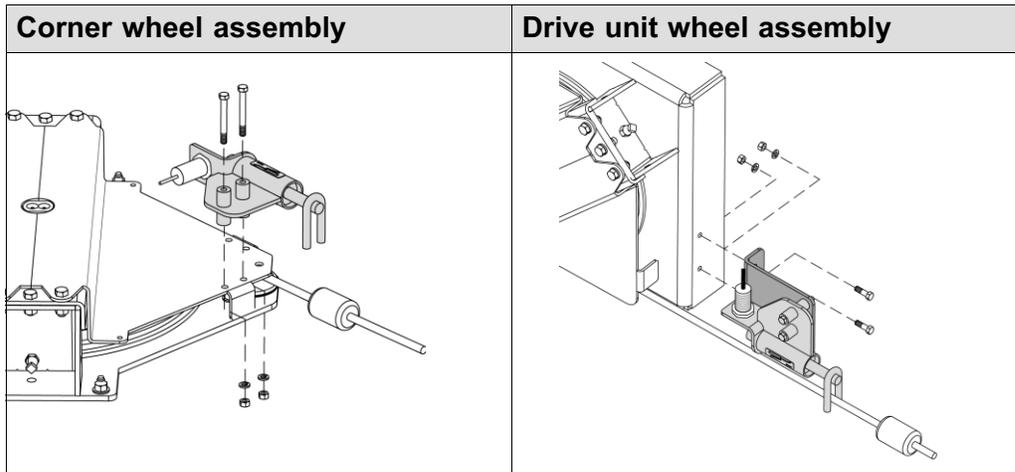
Use PRECISION™ GENERAL PURPOSE EP2 NLGI2 grease (or equivalent). Do not use grease containing Molybdenum disulfide.

---

## 6.12 Proximity switches installation



- Assemble a nut on the proximity switch (1) and adjust position as per the dimension.
- Assemble the proximity switch (1) on the mechanism (2) using the second nut. Tighten.
- If the proximity switch must be installed on a drive unit wheel, assemble the support (4) to the mechanism (3). Depending on the system configuration, this assembly could be inverted.



- According to the configurations illustrated above, install the proximity switch on the wheel using the hardware provided. Make sure the U guide stands astride the cable.

**6.13 The cross gutter supports installation**

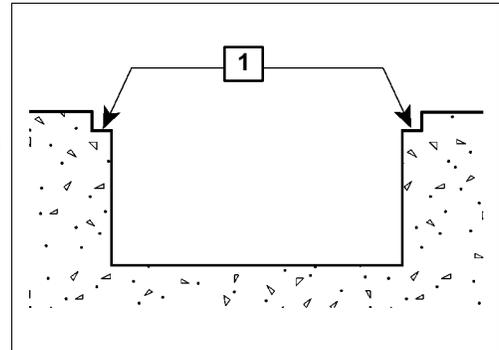


**Warning!**

Risk of fall!

Be aware of the surroundings when working near areas such as a storage pit, a cross gutter, a transfer pump hopper, etc.

- Cut 6 pieces of 2" x 4" (51 mm x 102 mm) treated lumber to fit in the notches (1) of the gutter.
- Position the pieces as specified in the table corresponding to the scraper model.
- For a grooved guided scraper, keep space between the treated lumbars in the middle (2). See table below.



16° scraper	Alley width X	Intermediate Y
	6'1"-7' (185-213 cm)	23" (58 cm)
	7'1"-8' (216-244 cm)	29" (74 cm)
	8'1"-9' (246-274 cm)	35" (89 cm)
	9'1"-10' (277-305 cm)	41" (104 cm)
	10'1"-11' (307-335 cm)	47" (119 cm)
	11'1"-12' (338-366 cm)	53" (135 cm)
	12'1"-13' (368-396 cm)	59" (150 cm)
	13'1"-14' (399-427 cm)	65" (165 cm)
	14'1"-15' (429-457 cm)	71" (180 cm)
	15'1"-16' (459-488 cm)	77" (196 cm)
	16'1"-17' (492-518 cm)	83" (211 cm)

Straight scraper	Alley width X	Intermediate Y
	6'6"-7'5" (198-226 cm)	22" (56 cm)
	7'6"-8'5" (229-257 cm)	28" (71 cm)
	8'6"-9'5" (259-287 cm)	34" (86 cm)
	9'6"-10'5" (290-318 cm)	40" (101 cm)
	10'6"-11'5" (320-348 cm)	46" (117 cm)
	11'6"-12'5" (351-378 cm)	52" (132 cm)
	12'6"-13'5" (381-409 cm)	58" (147 cm)
	13'6"-14'5" (411-439 cm)	64" (162 cm)
	14'6"-15'5" (442-470 cm)	70" (178 cm)
	15'6"-16'5" (472-500 cm)	76" (193 cm)
	16'6"-17'5" (503-531 cm)	82" (208 cm)

**Handling and installation**

The cross gutter supports installation

<b>V-shape scraper floor mounted</b>	<b>Alley width X</b>	<b>Intermediate Y</b>
	6'1"-7' (185-213 cm)	11" (28 cm)
	7'1"-8' (216-244 cm)	13" (33 cm)
	8'1"-9' (246-274 cm)	15" (38 cm)
	9'1"-10' (277-305 cm)	18" (46 cm)
	10'1"-11' (307-335 cm)	21" (53 cm)
	11'1"-12' (338-366 cm)	23" (58 cm)
	12'1"-13' (368-396 cm)	25" (64 cm)
	13'1"-14' (399-427 cm)	28" (71 cm)
	14'1"-15' (429-457 cm)	31" (78 cm)
	15'1"-16' (459-488 cm)	34" (86 cm)
	16'1"-17' (492-518 cm)	37" (94 cm)

<b>V-shape scraper groove guided</b>	<b>Alley width X</b>	<b>Intermediate Y</b>
	6'1"-7' (185-213 cm)	16" (41 cm)
	7'1"-8' (216-244 cm)	19" (48 cm)
	8'1"-9' (246-274 cm)	22" (56 cm)
	9'1"-10' (277-305 cm)	25" (64 cm)
	10'1"-11' (307-335 cm)	28" (71 cm)
	11'1"-12' (338-366 cm)	32" (81 cm)
	12'1"-13' (368-396 cm)	35" (89 cm)
	13'1"-14' (399-427 cm)	38" (97 cm)
	14'1"-15' (429-457 cm)	41" (104 cm)
	15'1"-16' (459-488 cm)	44" (112 cm)
	16'1"-17' (492-518 cm)	47" (119 cm)

**6.14 Scraper handling****Warning!**

Risk of injury or death!

Do not stand under or near a lifted load.

**Warning!**

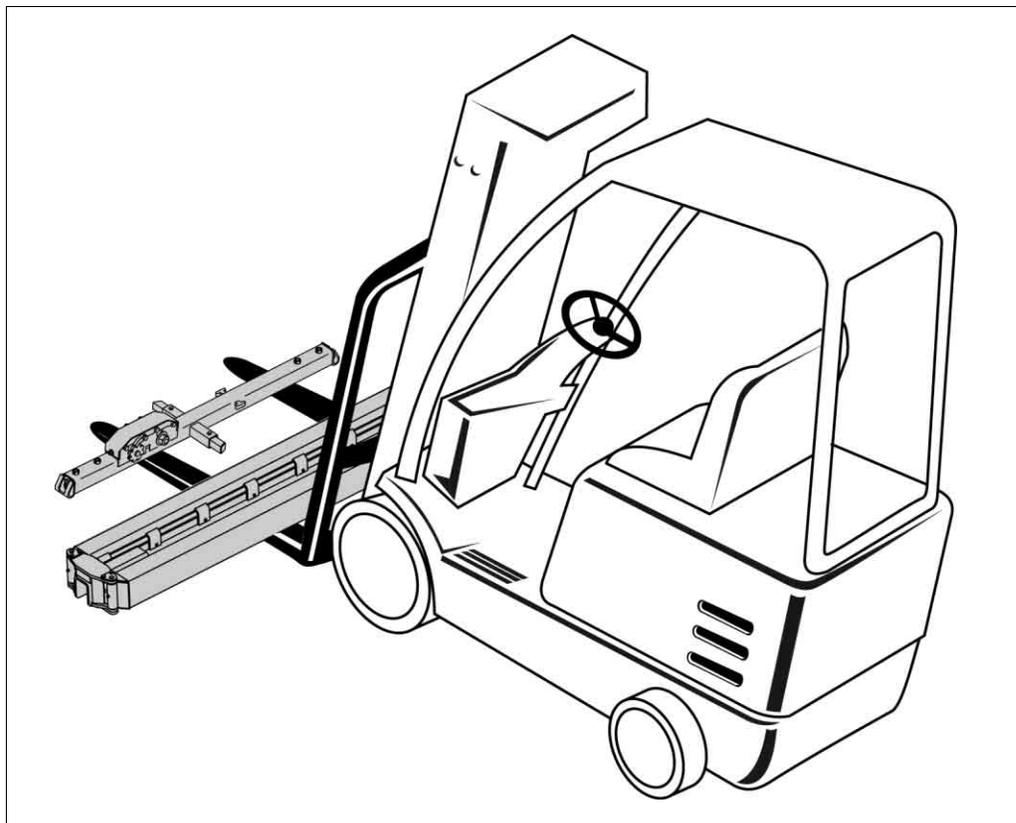
Risk of injury or death!

Use a lifting device with a minimum lifting capacity of 1000 lbs (500 kg) to handle the scraper(s).

**Caution!**

Risk of finger pinching, cuts and skin irritation!

Wear protective gloves.

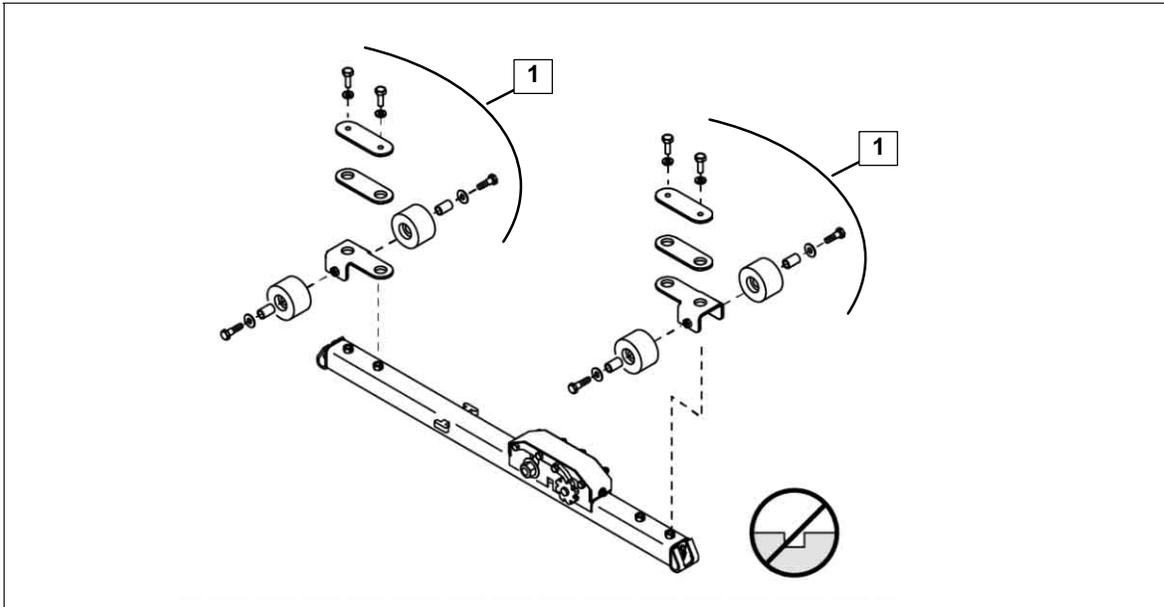


**6.15 16° adjustable scraper with urethane blades assembly**

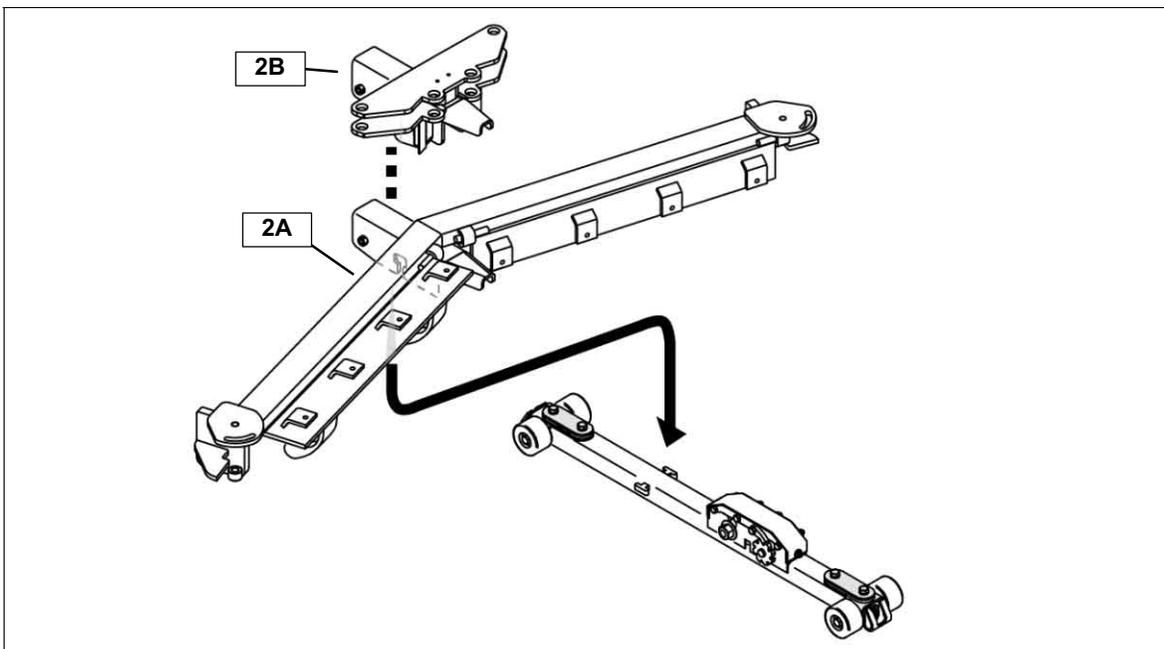


**Caution!**

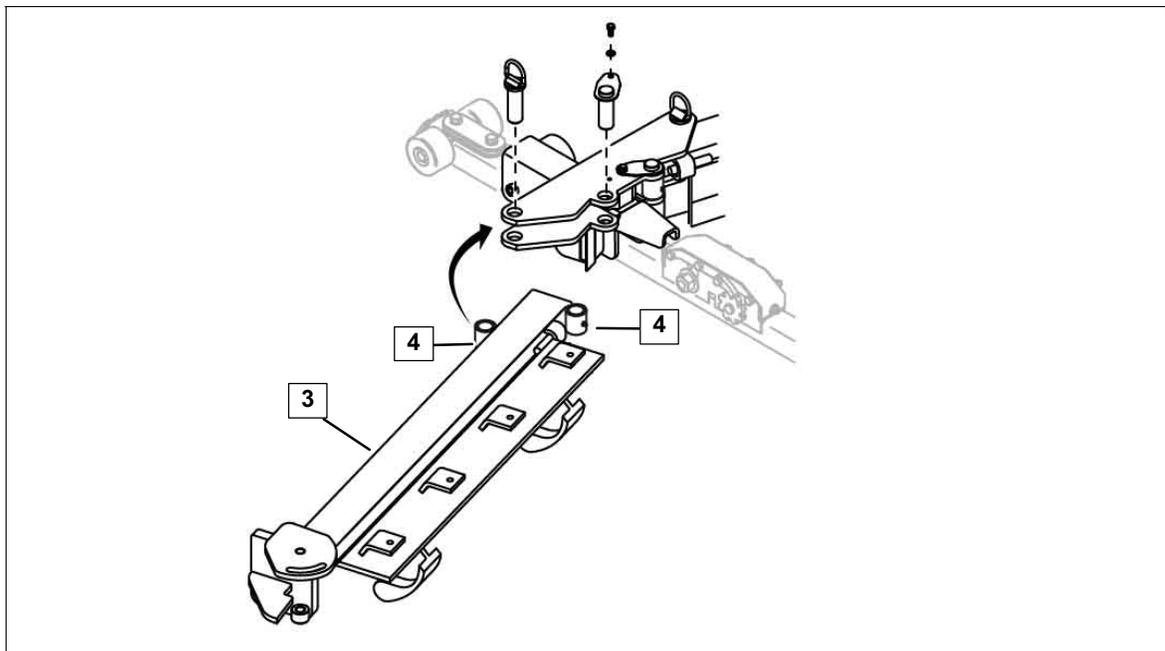
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



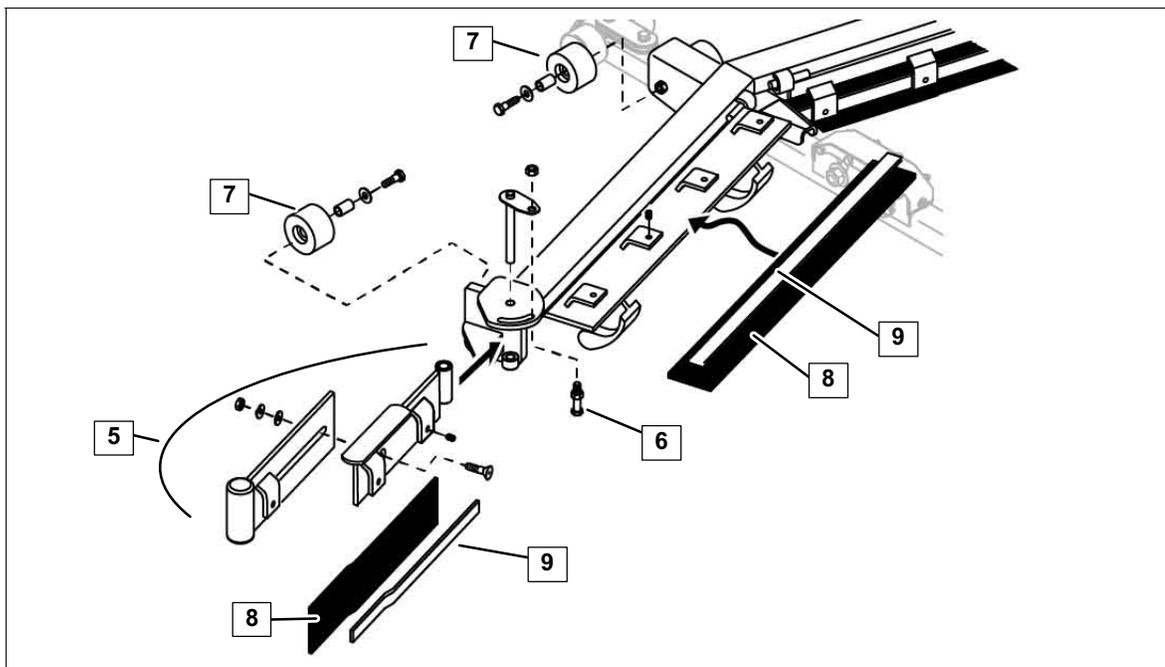
- Position the draw bar in the alley and assemble the accessories (1), if applicable.



- Place the scraper (2A) or the hinge block (2B) over the draw bar.



- Assemble the folding arms (3), if applicable.
- Using a grease gun, lubricate the hinges (4).



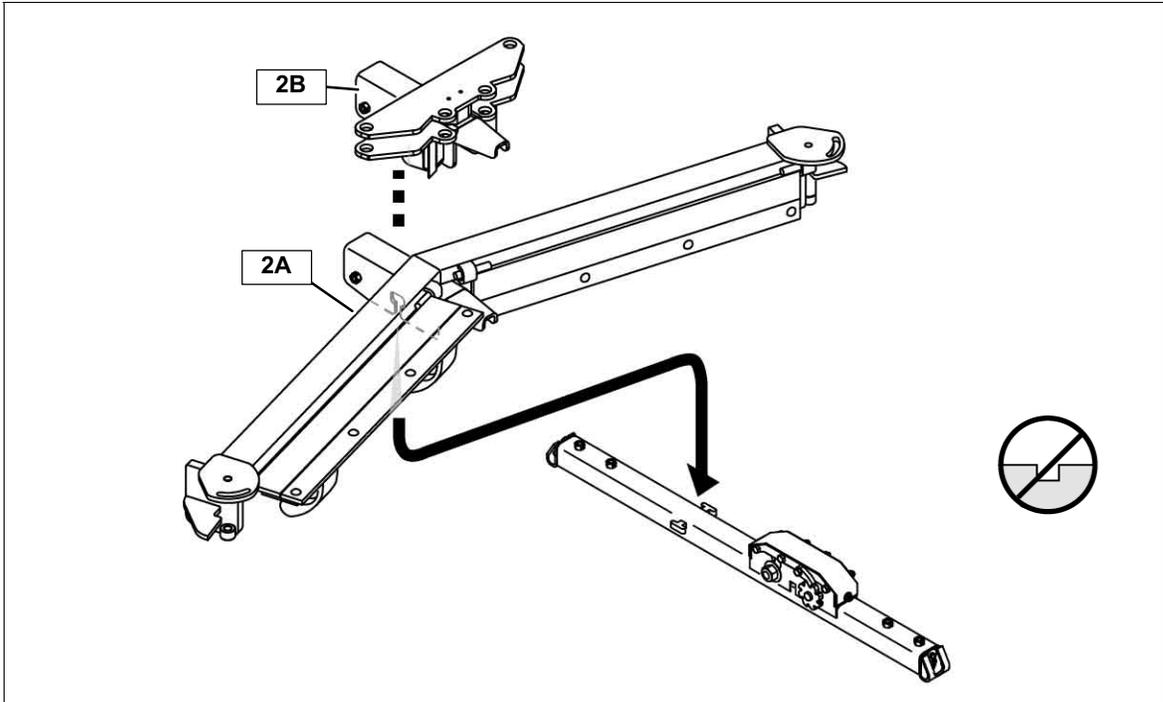
- Assemble the adjustable ends (5) to the scraper arms. Using a brush and grease, lubricate the hinge pins.
- Install the adjustable end stopper (6) holding the hinge pin.
- Assemble the 4 wheels (7) on the scraper.
- Cut the urethane blades (8) to the scraper arm length.
- Assemble the blade (8) to the scraper arm with the flat bar (9).

**6.16 16° adjustable scraper with steel blades assembly**

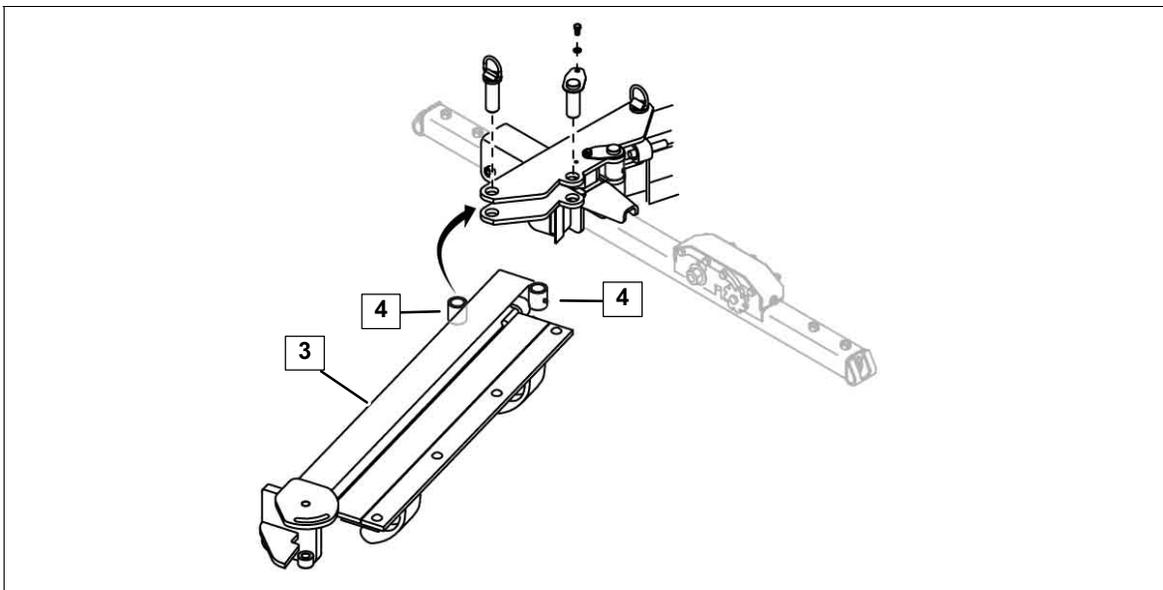


**Caution!**

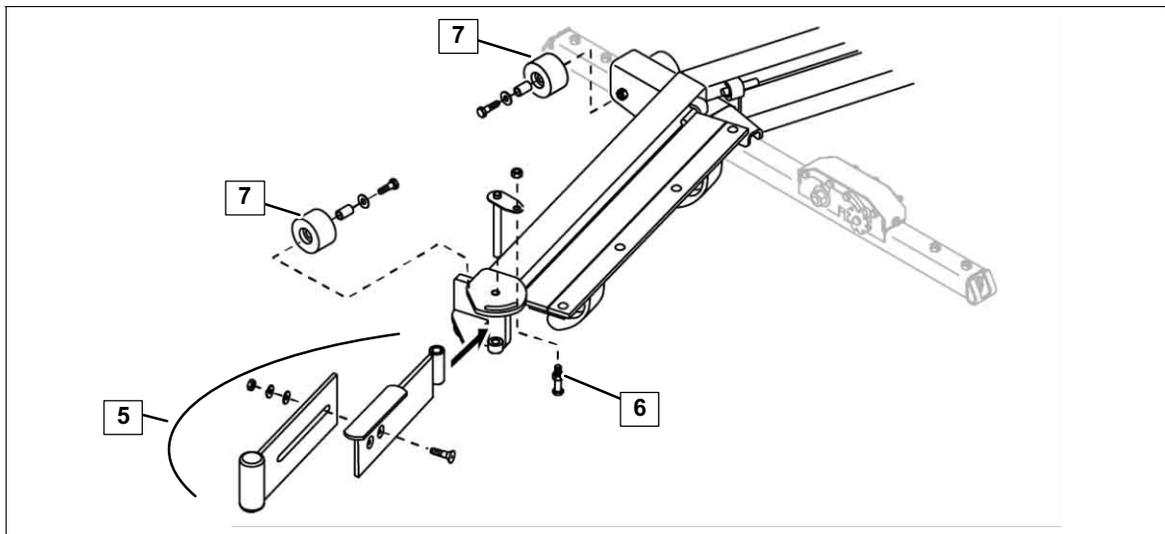
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



- Position the draw bar in the alley.
- Place the scraper (2A) or the hinge block (2B) over the draw bar.



- Assemble the folding arms (3), if applicable.
- Using a grease gun, lubricate the hinges (4).



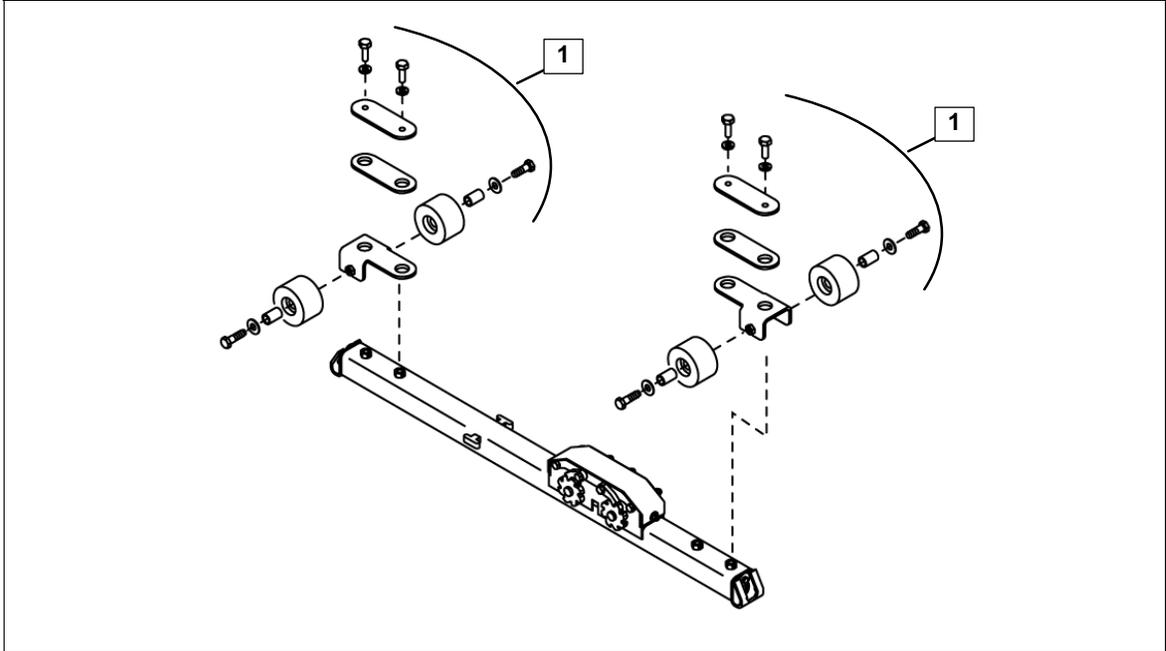
- Assemble the adjustable ends (5) to the scraper arms. Using a brush and grease, lubricate the hinge pins.
- Install the adjustable end stopper (6) holding the hinge pin.
- Assemble the 4 wheels (7) on the scraper.

**6.17 16° scraper with urethane blades assembly**

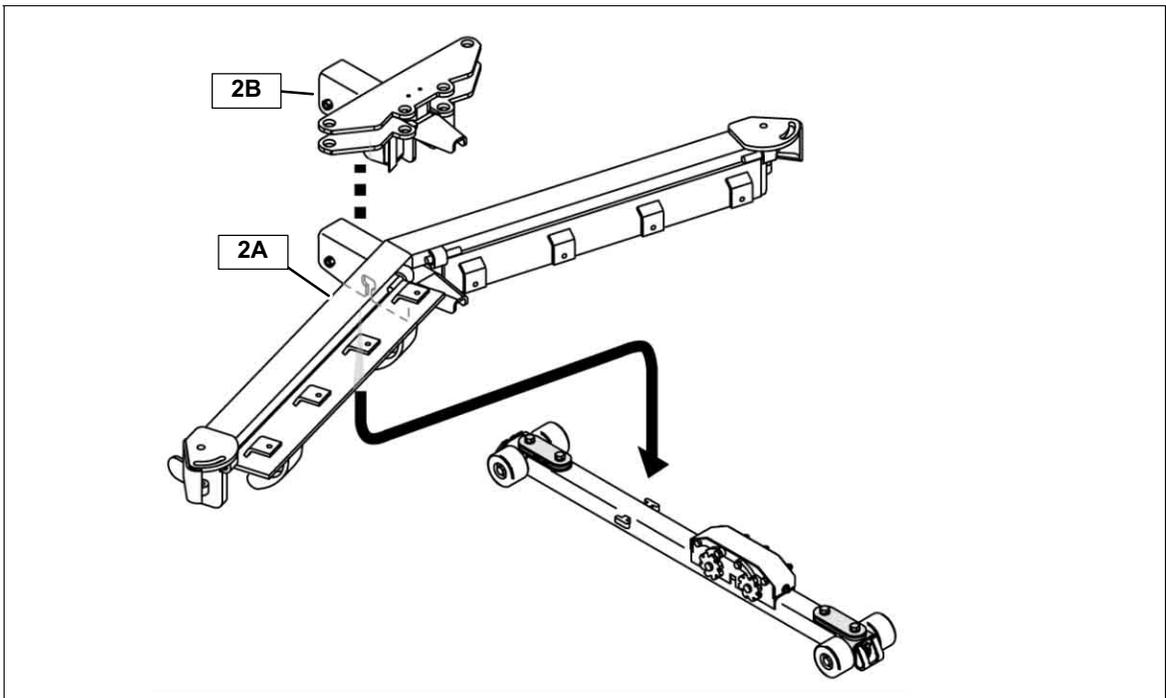


**Caution!**

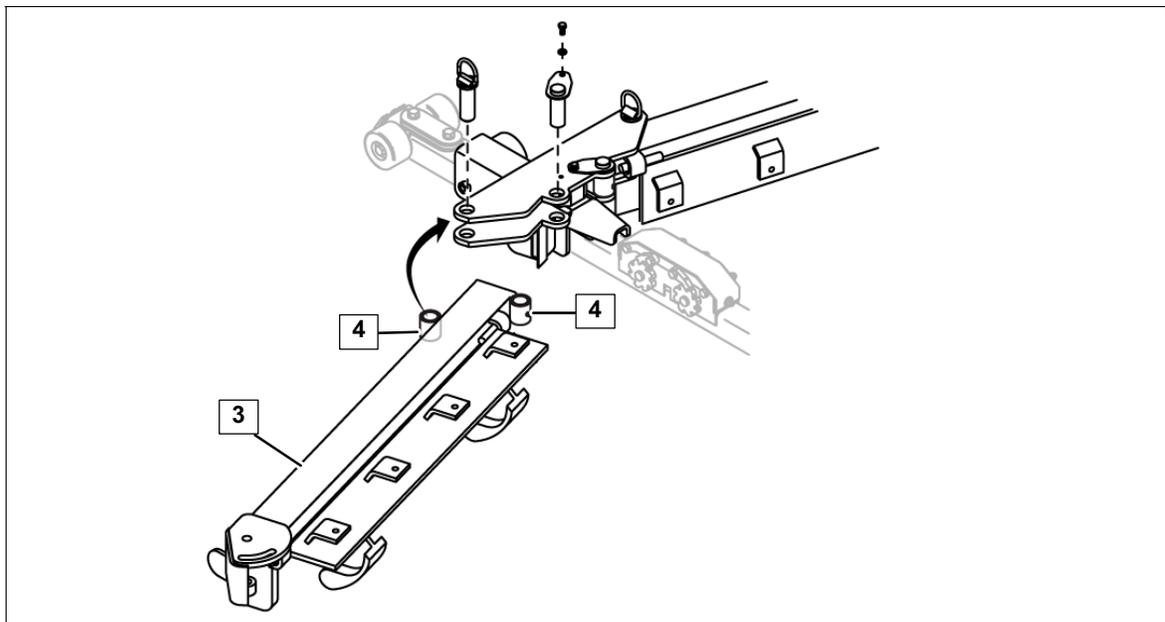
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



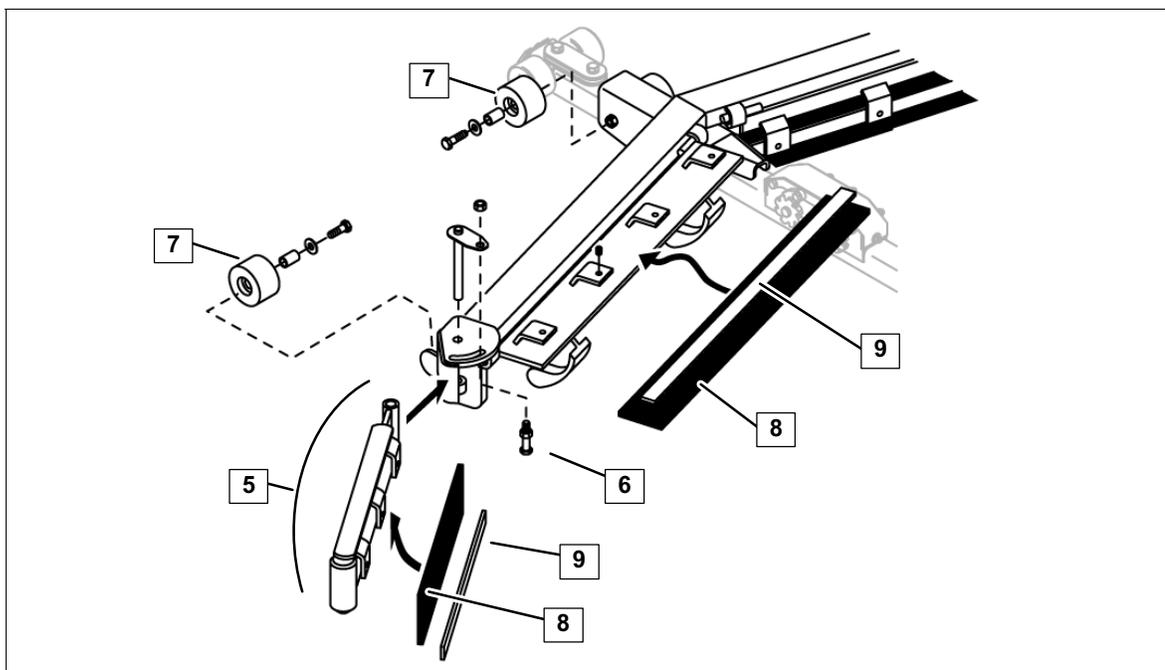
- Position the draw bar in the alley and assemble the accessories (1), if applicable.



- Place the scraper (2A) or the hinge block (2B) over the draw bar.



- Assemble the folding arms (3), if applicable.
- Using a grease gun, lubricate the hinges (4).



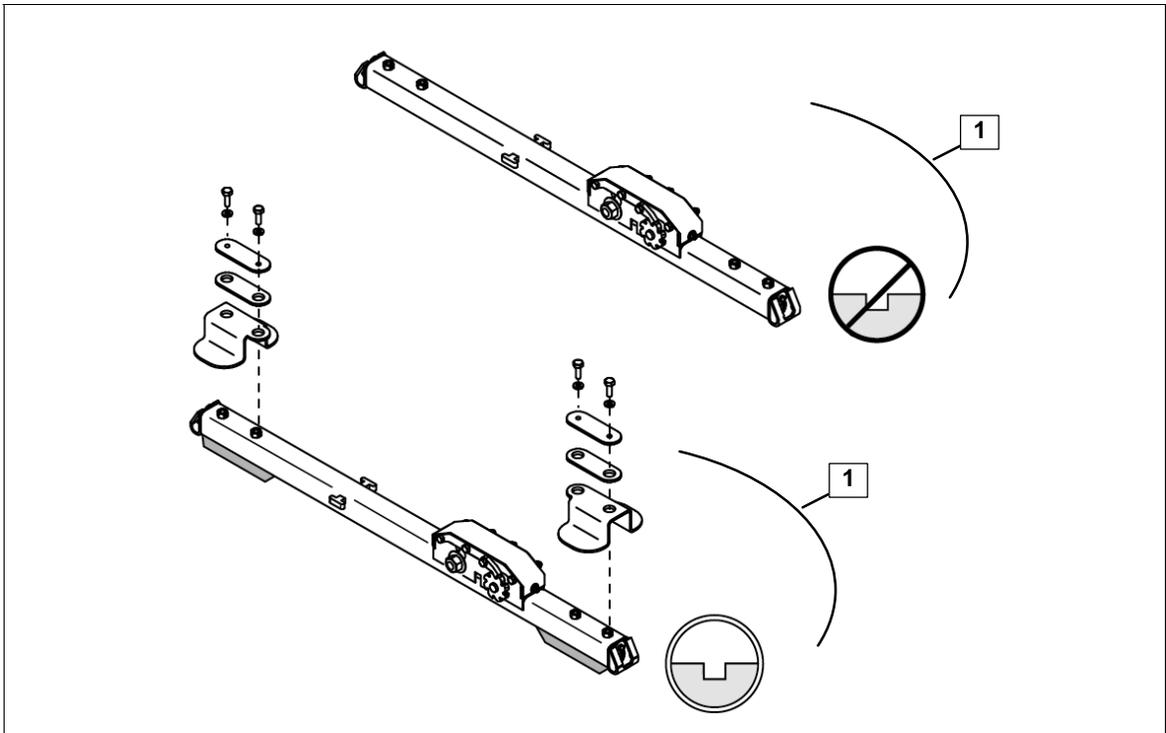
- Assemble the adjustable ends (5) to the scraper arms. Using a brush and grease, lubricate the hinge pins.
- Install the adjustable end stopper (6) holding the hinge pin.
- Assemble the 4 wheels (7) on the scraper.
- Cut the urethane blades (8) to the scraper arm length.
- Assemble the blade (8) to the scraper arm with the flat bar (9).

**6.18 16° scraper with steel blades assembly**

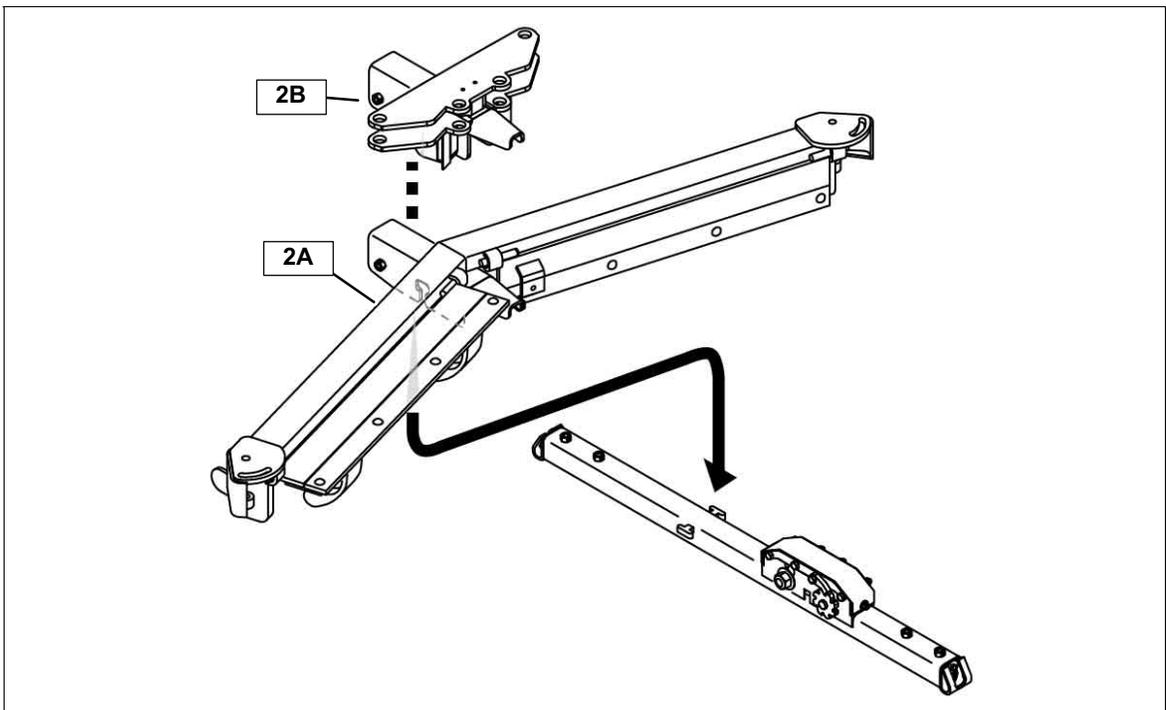


**Caution!**

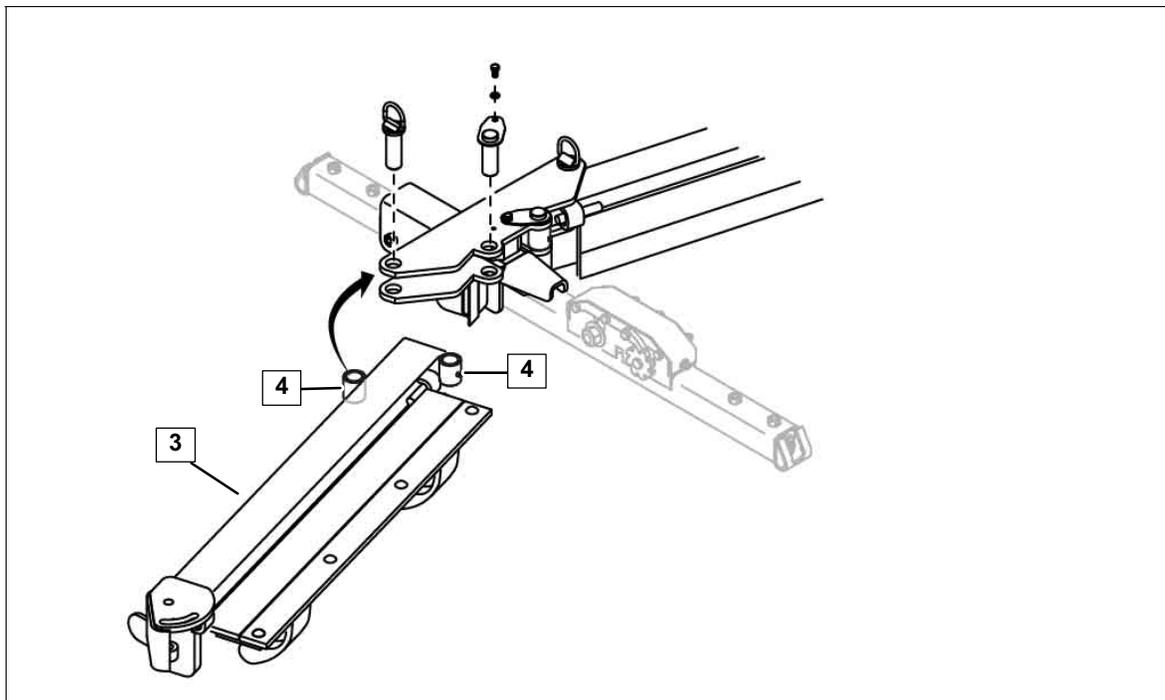
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



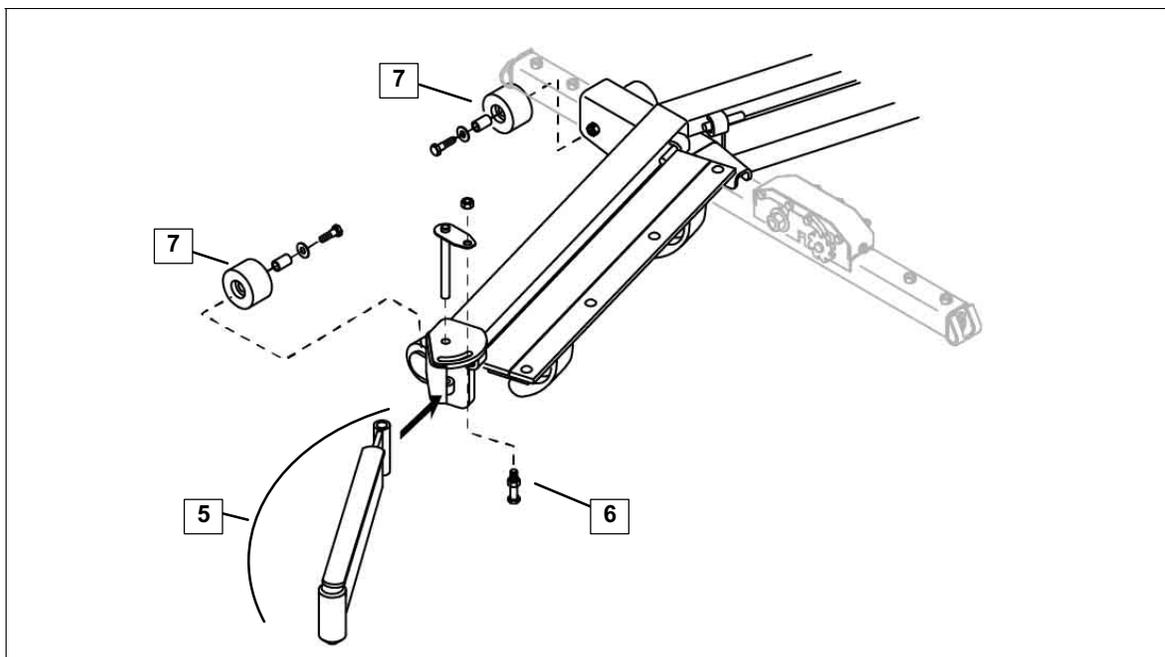
- Position the draw bar in the alley and assemble the accessories (1), if applicable.



- Place the scraper (2A) or the hinge block (2B) over the draw bar.



- Assemble the folding arms (3), if applicable.
- Using a grease gun, lubricate the hinges (4).



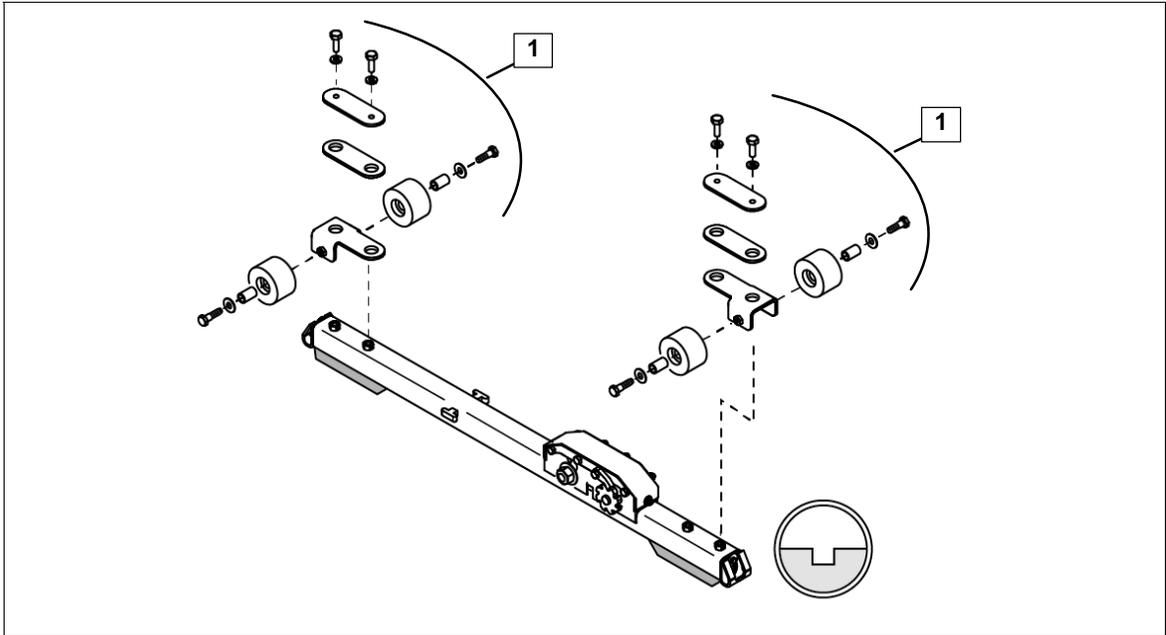
- Assemble the adjustable ends (5) to the scraper arms. Using a brush and grease, lubricate the hinge pins.
- Install the adjustable end stopper (6) holding the hinge pin.
- Assemble the 4 wheels (7) on the scraper.

**6.19 Straight scraper with urethane blades assembly**

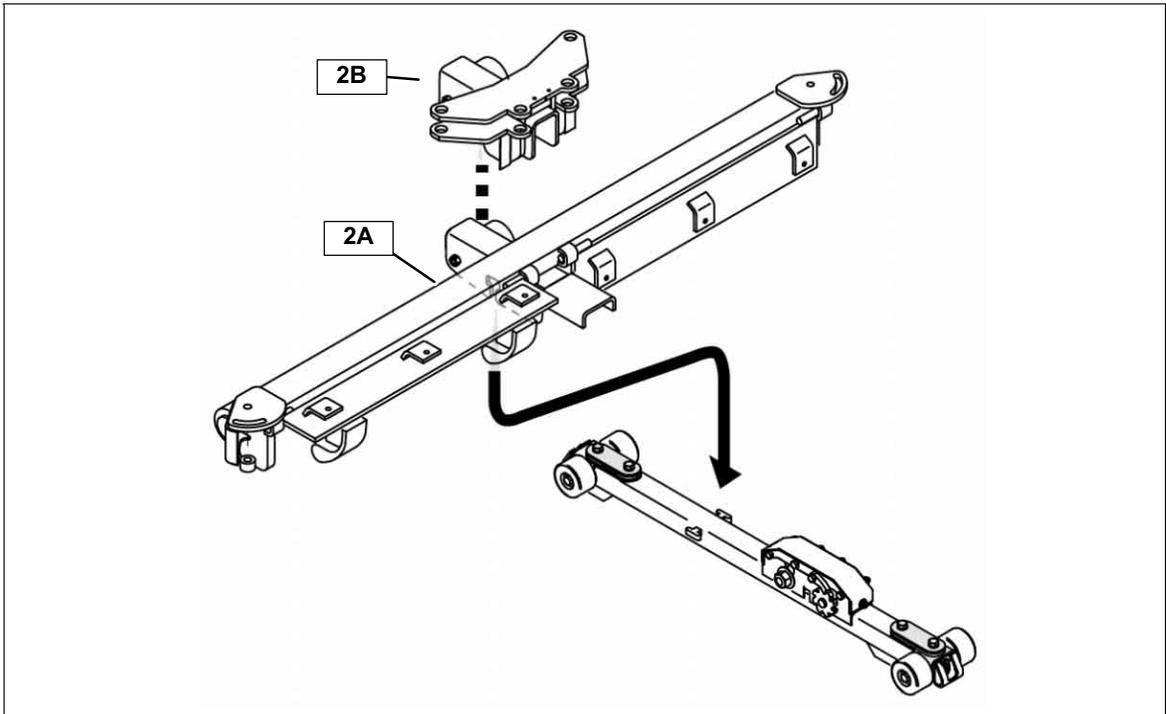


**Caution!**

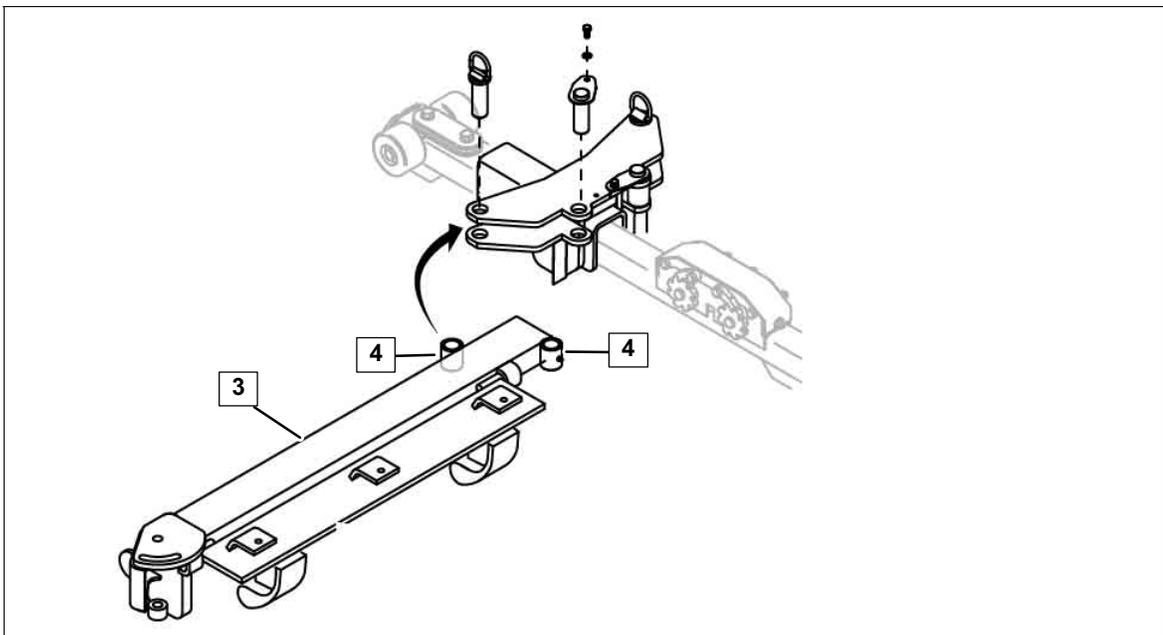
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



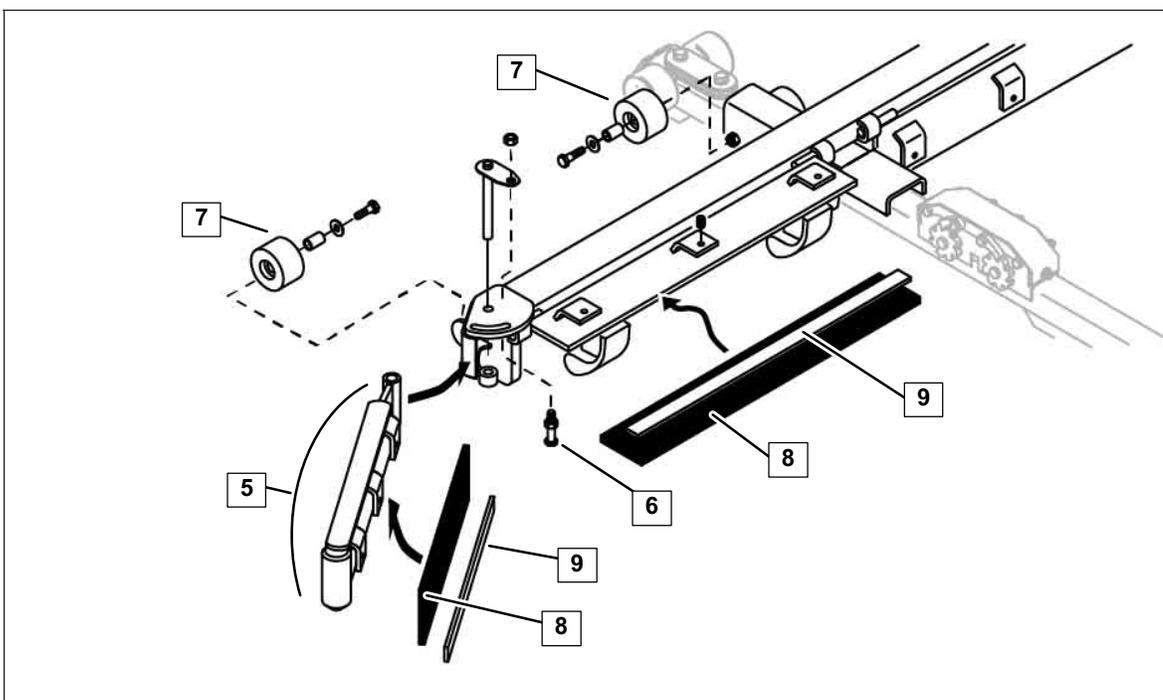
- Position the draw bar in the alley and assemble the accessories.



- Place the scraper (2A) or the hinge block (2B) over the draw bar.



- Assemble the folding arms (3), if applicable.
- Using a grease gun, lubricate the hinges (4).



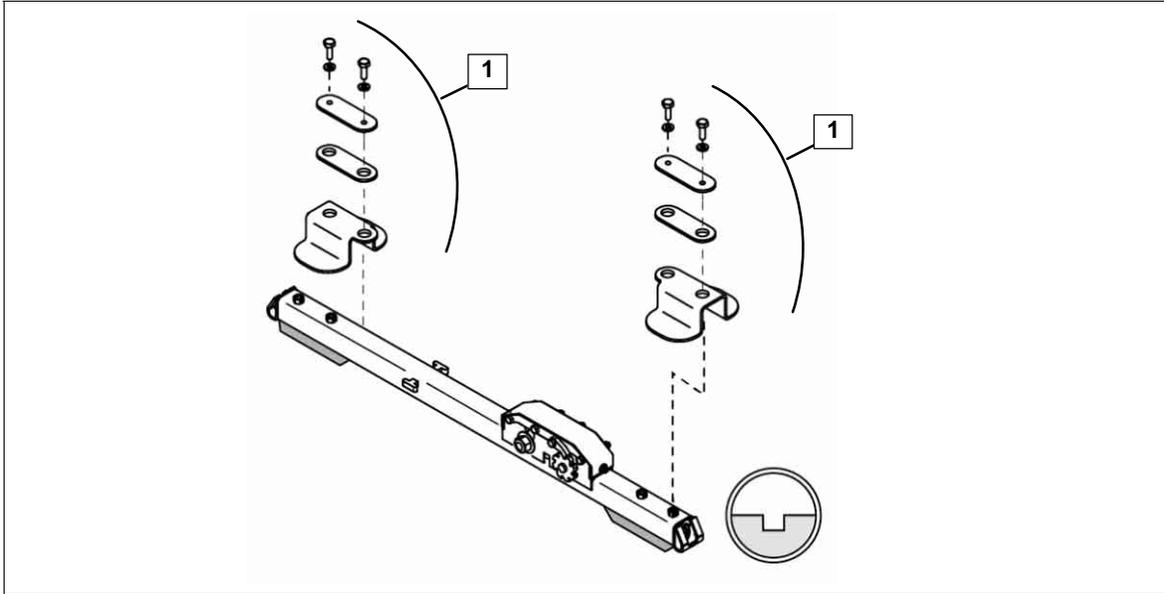
- Assemble the adjustable ends (5) to the scraper arms. Using a brush and grease, lubricate the hinge pins.
- Install the adjustable end stopper (6) holding the hinge pin.
- Assemble the 4 wheels (7) on the scraper.
- Cut the urethane blades (8) to the scraper arm length.
- Assemble the blade (8) to the scraper arm with the flat bar (9).

**6.20 Straight scraper with steel blades assembly**

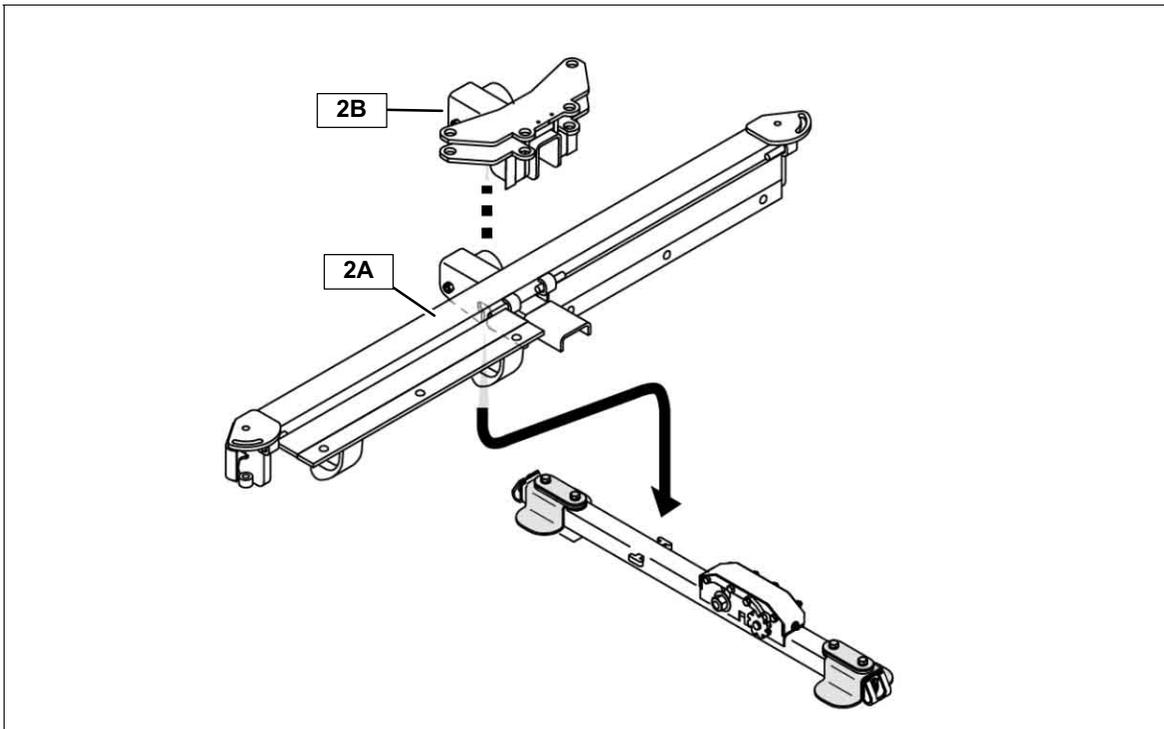


**Caution!**

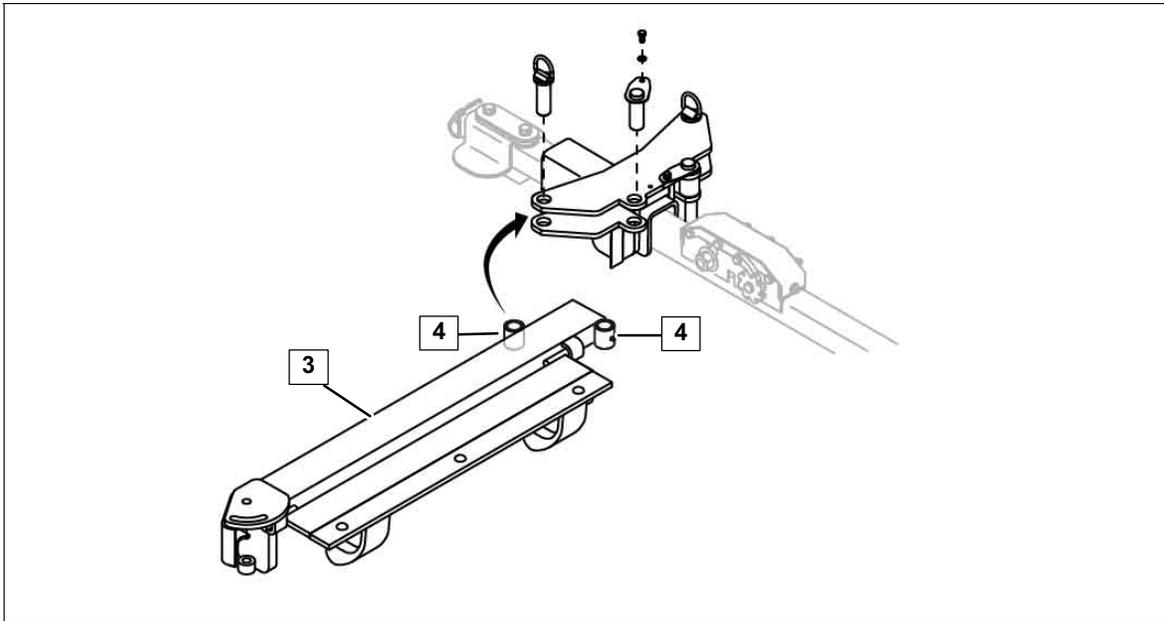
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



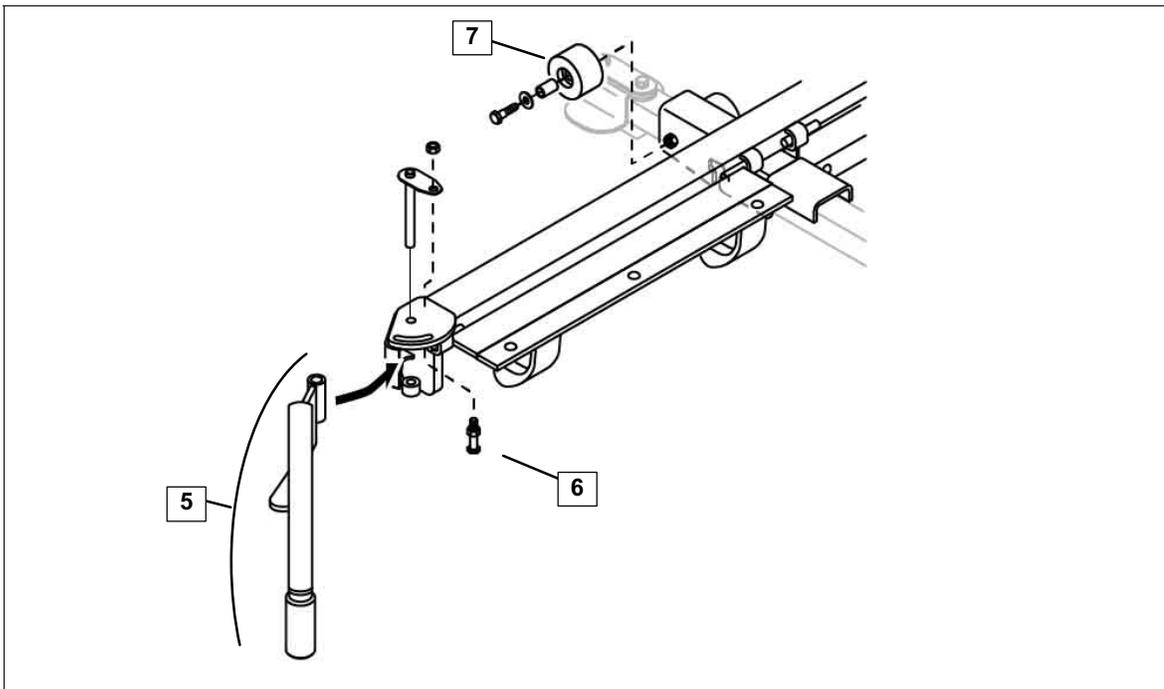
- Position the draw bar in the alley and assemble the accessories (1).



- Place the scraper (2A) or the hinge block (2B) over the draw bar.



- Assemble the folding arms (3), if applicable.
- Using a grease gun, lubricate the hinges (4).



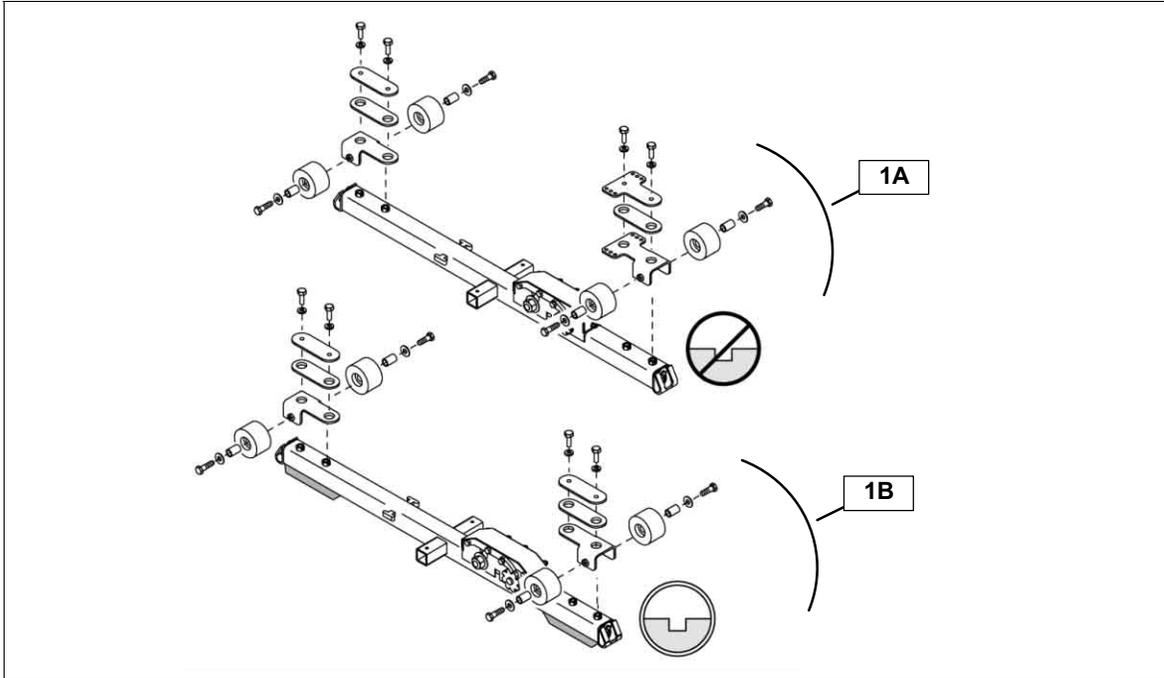
- Assemble the adjustable ends (5) to the scraper arms. Using a brush and grease, lubricate the hinge pins.
- Install the adjustable end stopper (6) holding the hinge pin.
- Assemble the wheels (7) on the scraper.

**6.21 V-shape scraper with urethane blades assembly**

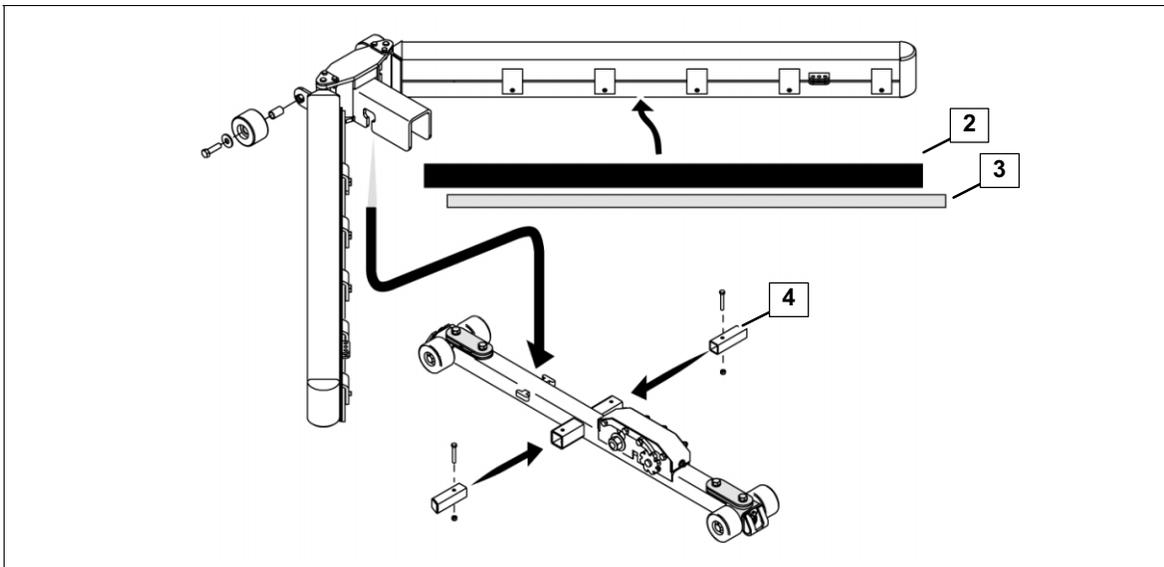


**Caution!**

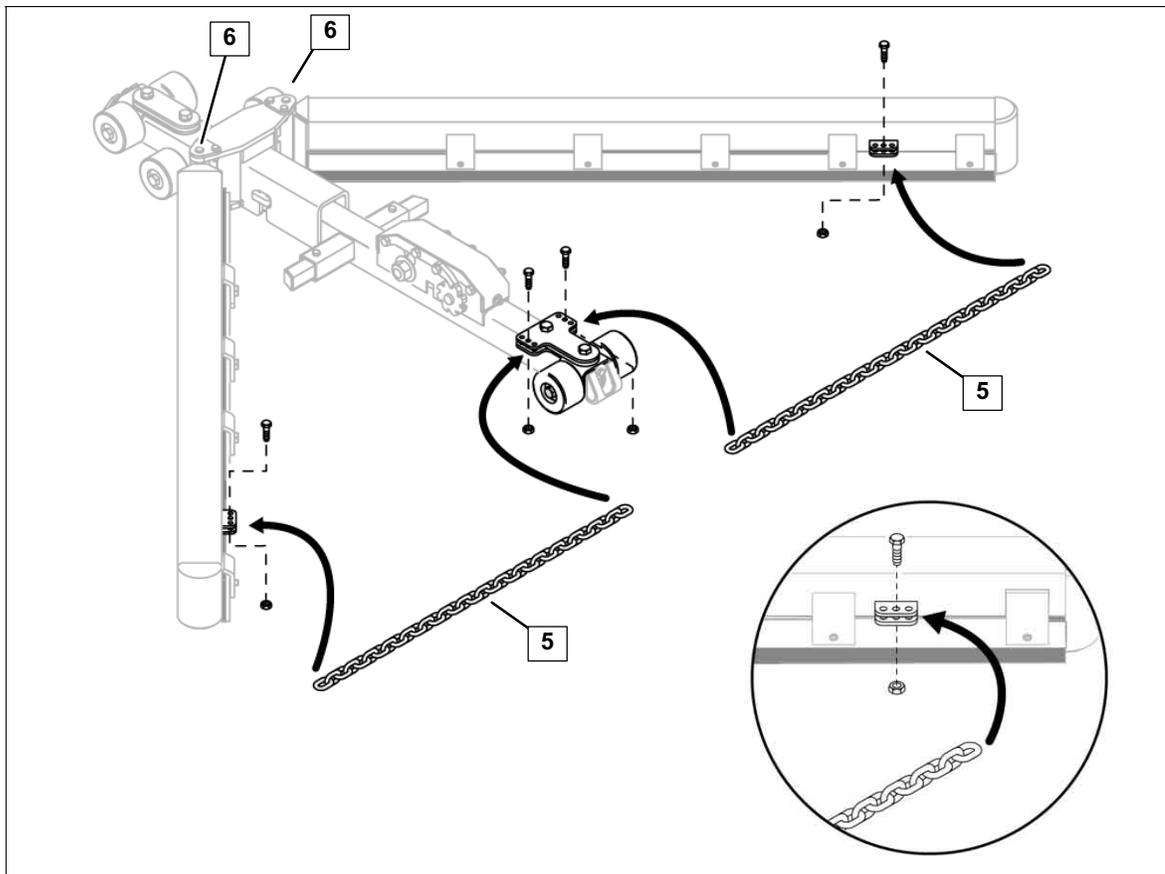
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



- Position the draw bar in the alley and assemble the accessories (1A, 1B).  
1A - Draw bar for alley without groove  
1B - Draw bar for alley with groove



- Cut the urethane blade (2) to the scraper arm length.
- Assemble the blade to the scraper arm with the flat bar (3).
- Assemble the two stoppers (4). Place the scraper over the draw bar.



**Note!**

The following steps are applicable for scrapers equipped with chains.

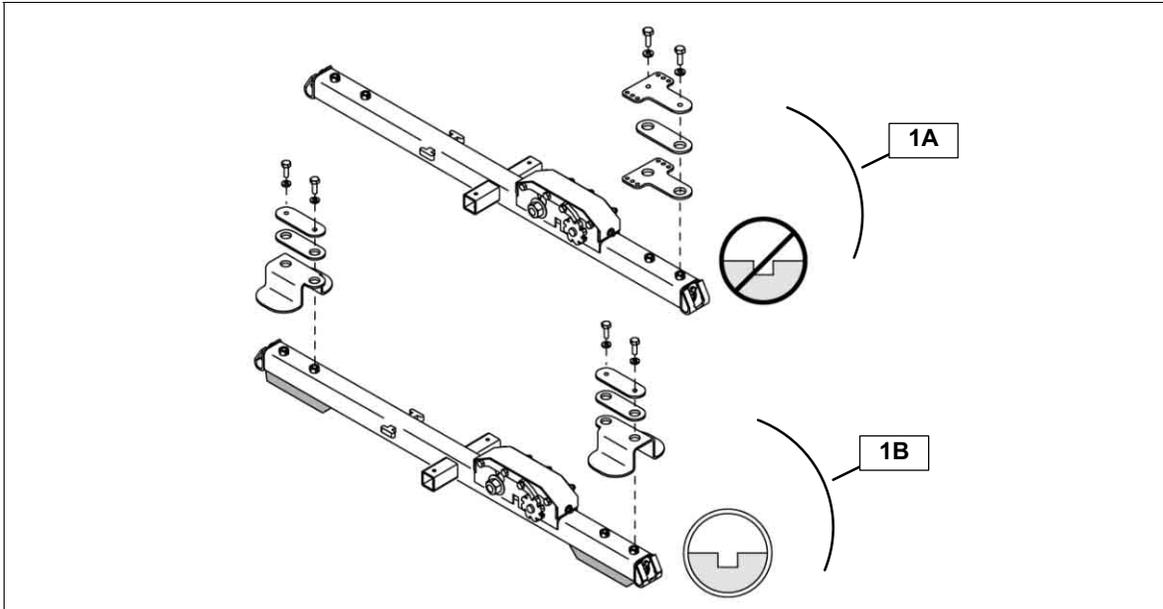
- Open the scraper arms to the alley width.
- Keep ½" (13 mm) gap between the curb and the scraper end.
- Assemble the chains (5) to fit the distance between brackets. For proper adjustment, cut the extra length of chain and/or use the bracket adjustment holes.
- Using a brush and grease, lubricate the hinges (6).

**6.22 V-shape scraper with steel blades assembly**

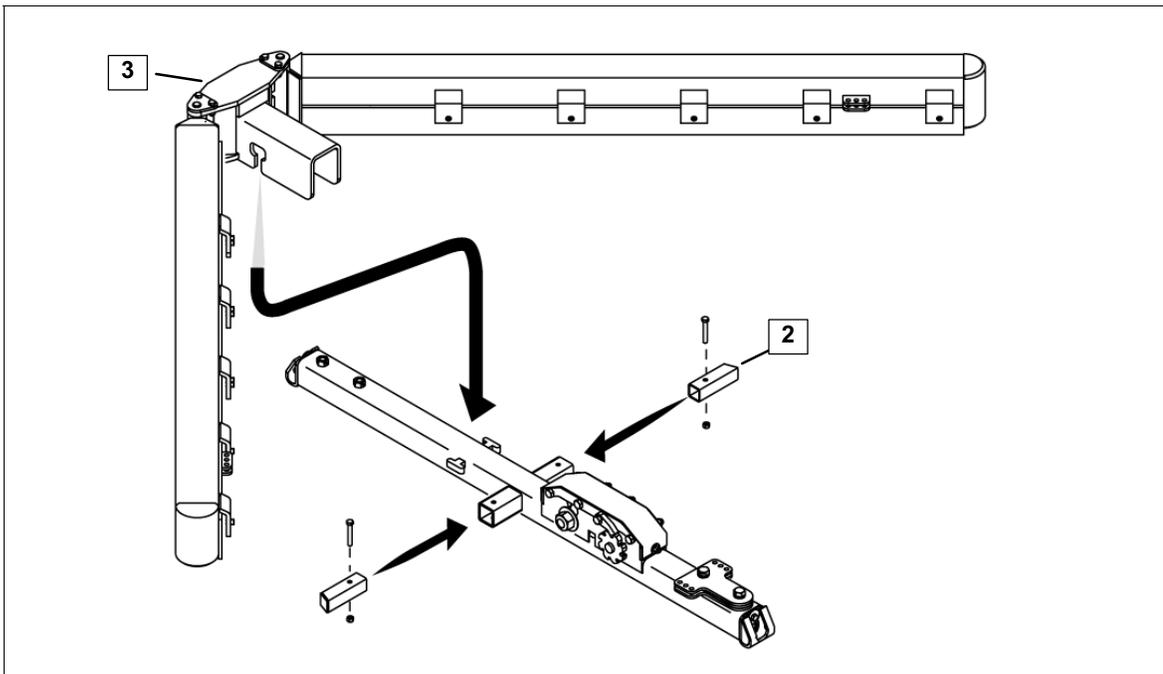


**Caution!**

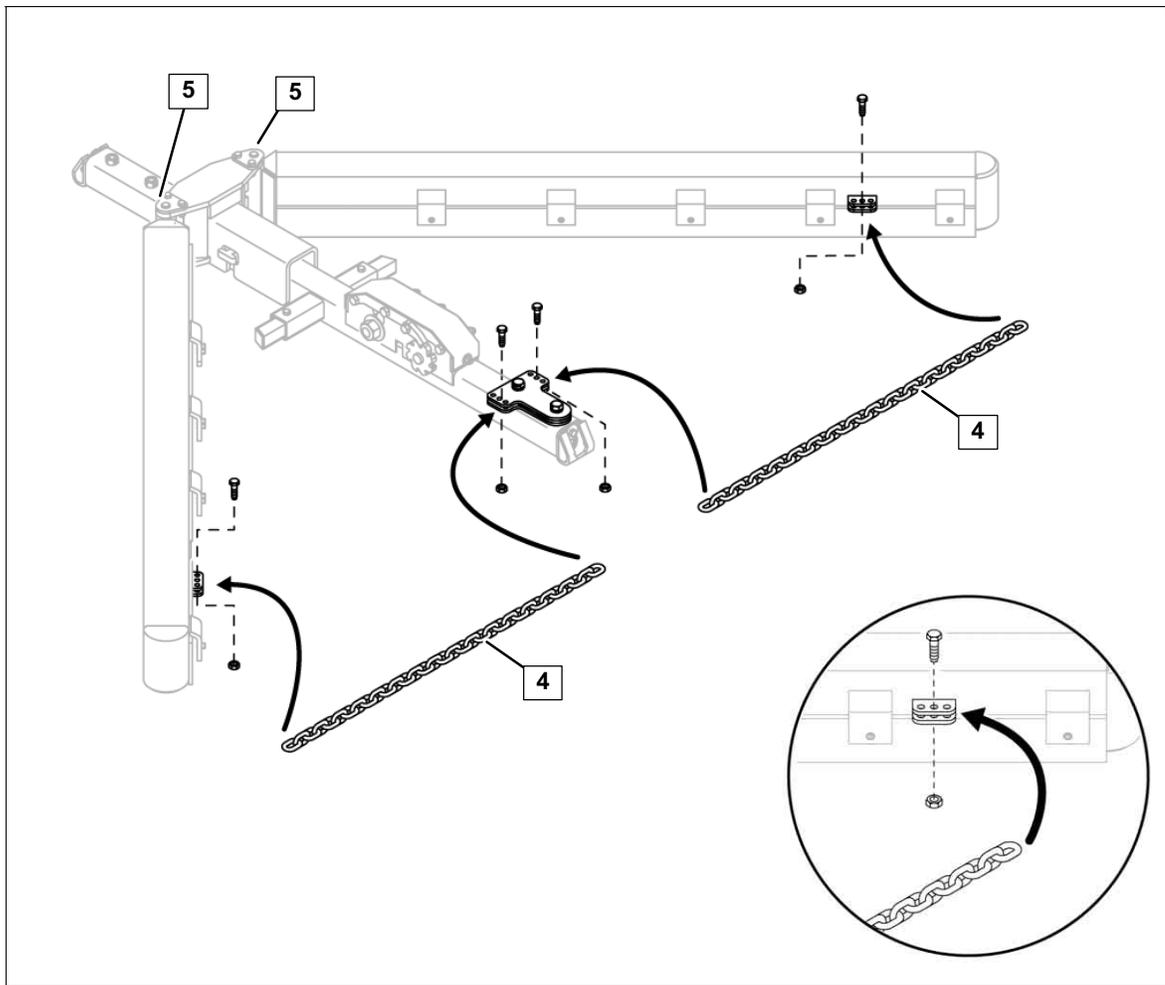
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



- Position the draw bar in the alley and assemble the accessories (1A, 1B).  
1A - Draw bar for alley without groove  
1B - Draw bar or alley with groove



- Assemble the two stoppers (2).
- Place the scraper (3) over the draw bar.



**Note!**

The following steps are applicable for scrapers equipped with chains.

- Open the scraper arms to the alley width.
- Keep ½" (13 mm) gap between the curb and the scraper end.
- Assemble the chains (4) to fit the distance between brackets. For proper adjustment, cut the extra length of chain and/or use the bracket adjustment holes.
- Using a brush and grease, lubricate the hinges (5).

## 6.23 Urethane scraper blade adjustment



**Caution!**

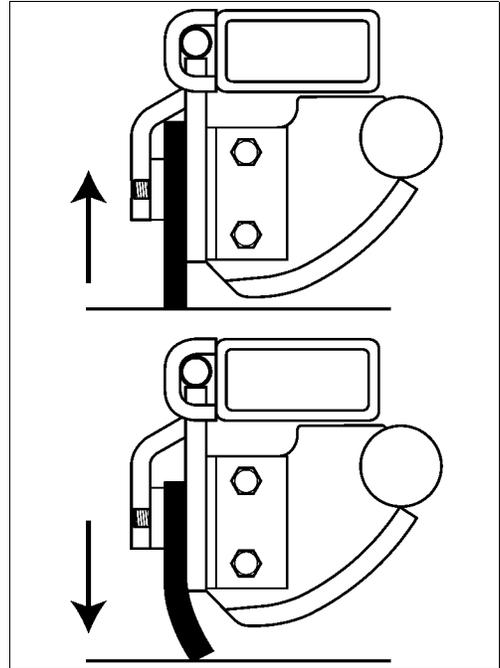
Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.

**Upward adjustment:**

- When positioned as illustrated, the urethane blade cleans the alley similarly to a steel blade.

**Downward adjustment:**

- When positioned as illustrated, the urethane blade cleans the alley more gently, such as a squeegee.



## 6.24 Control panel installation

**Important!**

The control panel must not be connected at this step.

**Note!**

Follow the local regulations on how to correctly install a control panel.

### Step 1: Check the control panel electric components

- Before performing any electric connection, tighten the screws of all the electric components inside the control panel.
- Make sure all wires are properly connected and secured.

### Step 2: Locate the control panel

Make sure the control panel is installed:

- On a solid wall, at a convenient height, sheltered from sun ray and weather conditions;
- In a convenient area for the operator;
- Near the drive unit;
- Near the external cut-off switch;
- In an area having free space around the control panel for aeration purposes.

### Step 3: Install the control panel on the wall

- Place the control panel on the wall and use the holes to sketch the drill pattern.
- Drill through the bolt pattern.
- Secure the control panel in place. DO NOT OVERTIGHTEN.

---

## 6.25 Electric connections

Electric work must be performed by a certified electrician.

### 6.25.1 Connecting the proximity switches

- Connect the two proximity switches to the control panel. Refer to section Appendix - Wiring diagram.

### 6.25.2 Connecting electric motors



**Note!**

GEA provides specifications and electric motor wiring diagram related to Baldor motor(s). For any other motor brand, contact the manufacturer.

---



**Important!**

Never connect an external cut-off switch directly to the motor(s). The external cut-off switch must be connected to the control panel to shutdown or energize the entire cleaning system through the control panel only.

---



This symbol indicates that the terminal must be connected to earth ground.

- Turn the main power supply on.
- Use the instant start function to engage the drive unit motors. Refer to section Programming.
- Check the rotation of each motor. Make sure both motor rotates in the same direction.
- Set the parameter Minimum load (HP) in the control panel. Refer to section Minimum load (HP) fine tuning.

**6.26 Cable installation**



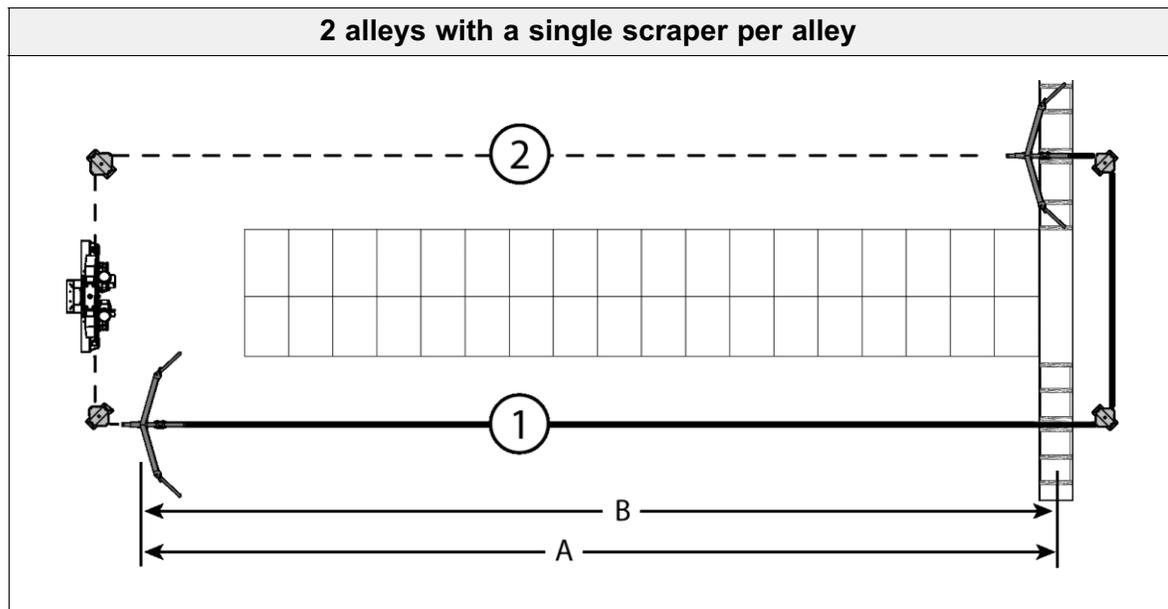
**Caution!**

Risk of injury!

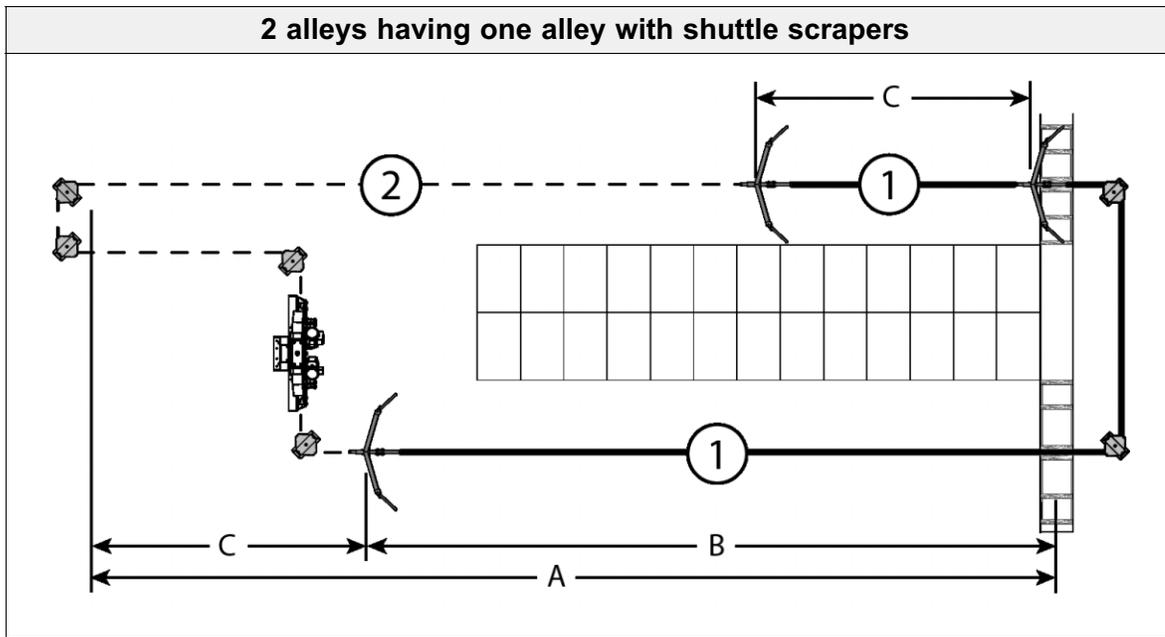
Wear protective gloves and eye wear for all steps.

**6.26.1 Step 1: Positioning the scrapers**

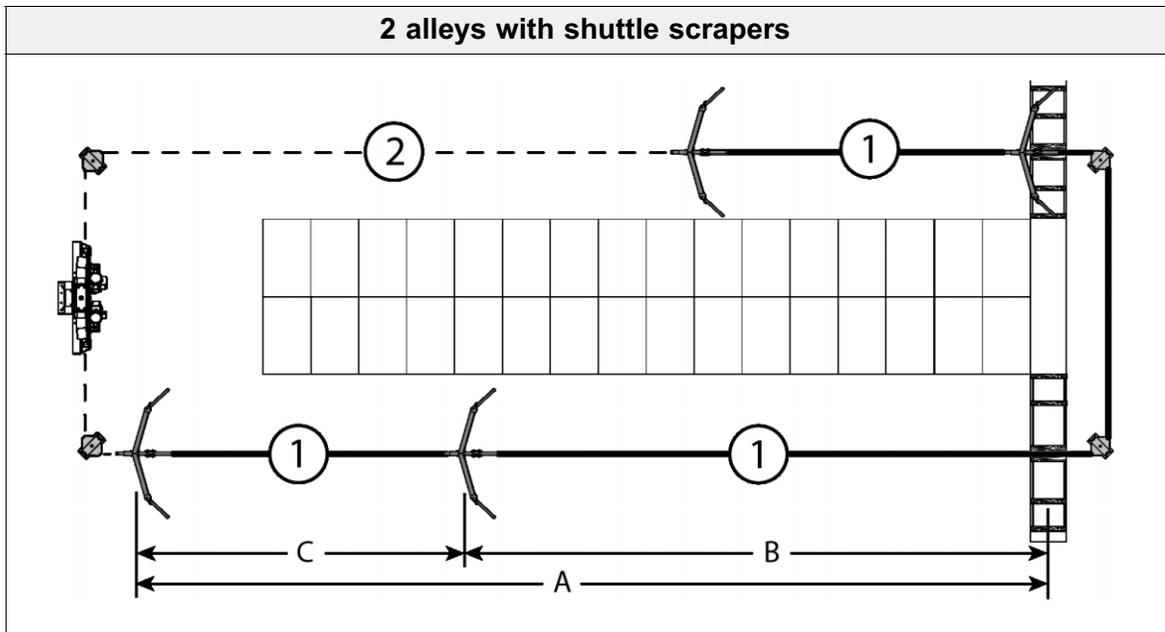
- Choose among the layouts illustrated below.
- Referring to the layout, position the scrapers in the alleys as illustrated.
  - For a scraper positioned near a corner wheel, make sure there is at least 6" (152 mm) between the corner box and the scraper draw bar.
  - For shuttle scrapers, position the scrapers as per the calculation formula indicated on the layout.



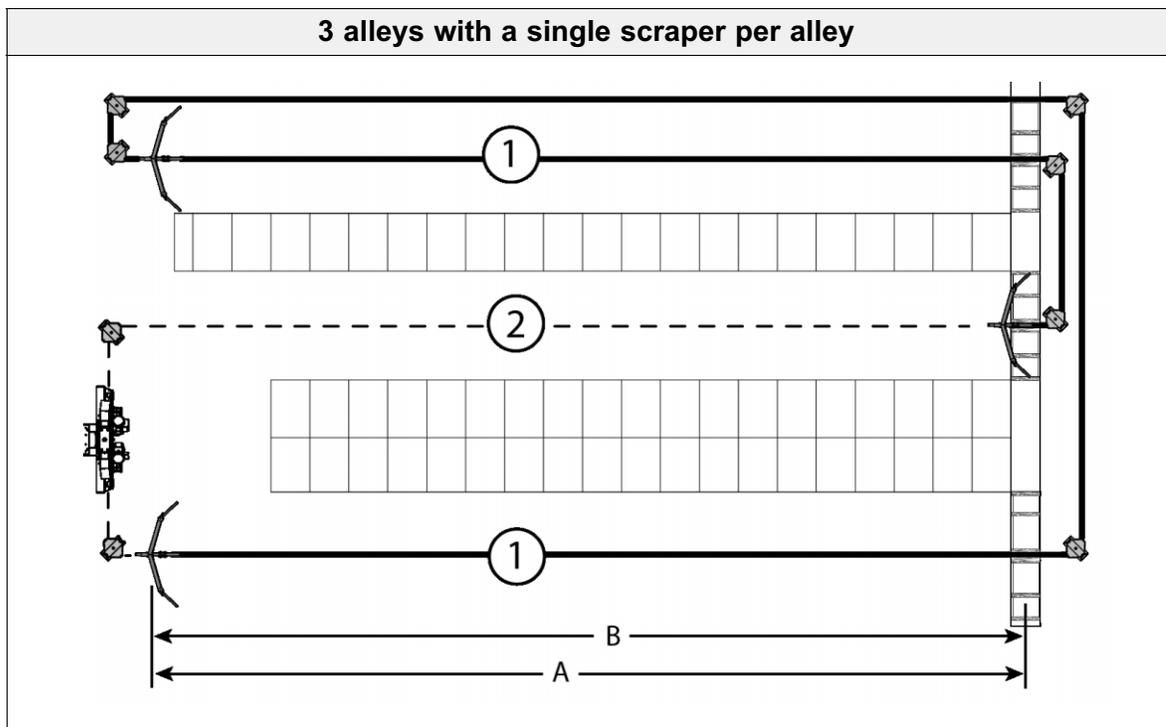
<b>A</b>	Alley length
<b>B</b>	Stroke length
<b>1</b>	Stainless steel cable (to link scrapers)
<b>2</b>	Combi-rope (max length 325 ft (100 m))



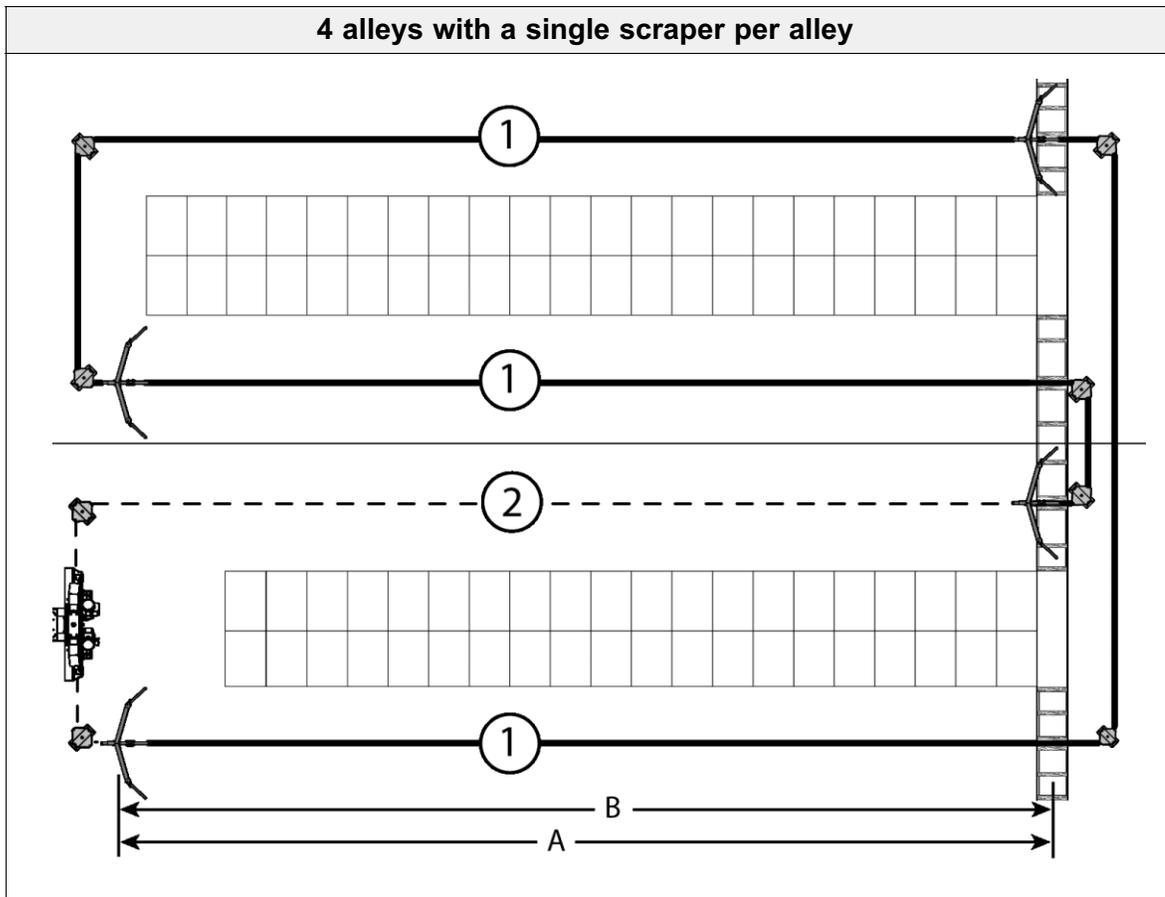
<b>A</b>	Alley length	
<b>B</b>	Stroke length	$B = A + 15 \text{ ft} \div 2$
<b>C</b>	Distance between shuttle scrapers	$C = B - 15 \text{ ft}$
<b>1</b>	Stainless steel cable (to link scrapers)	
<b>2</b>	Combi-rope (max length 325 ft (100 m))	



<b>A</b>	Alley length	
<b>B</b>	Stroke length	$B = A + 15 \text{ ft} \div 2$
<b>C</b>	Distance between shuttle scrapers	$C = B - 15 \text{ ft}$
<b>1</b>	Stainless steel cable (to link scrapers)	
<b>2</b>	Combi-rope (max length 325 ft (100 m))	



<b>A</b>	Alley length
<b>B</b>	Stroke length
<b>1</b>	Stainless steel cable (to link scrapers)
<b>2</b>	Combi-rope (max length 325 ft (100 m))



<b>A</b>	Alley length
<b>B</b>	Stroke length
<b>1</b>	Stainless steel cable (to link scrapers)
<b>2</b>	combi-rope (max length 325 ft (100 m))

### 6.26.2 Step 2: Linking the scrapers with cable



#### Attention!

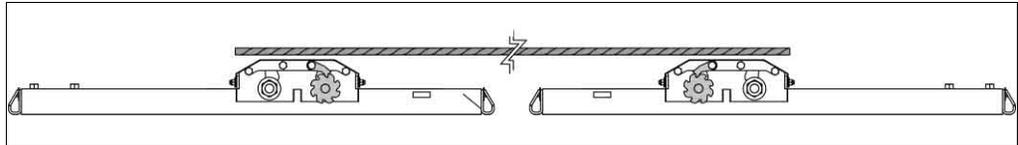
Do not run a nylon rope through a piping. Manure builds up inside the piping which causes premature failure of the rope.

- Complete the cable path (1), as illustrated in the chosen layout.
- Run the cable between the scrapers.

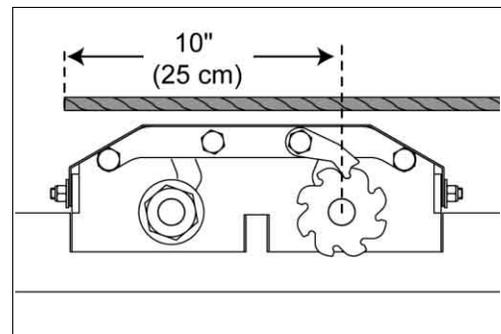


#### Note!

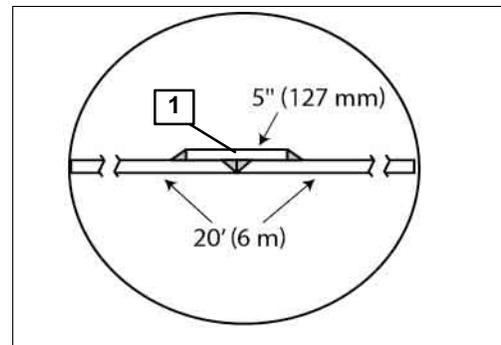
Do not forget to insert the cable through the corner wheel(s).



- Before cutting the cable sections, make sure the cable overlaps each scraper tensioner of at least 10" (25 cm).
- To prevent split ends, add tape on the cable before cutting. For steel cables, use a cutting disk.



- For shuttle scrapers, the cable between scrapers can be replaced by a 3/8" x 1 1/2" (76mm x38 mm) flat bar.
- When using several flat bars, weld them together using a short flat bar section (1) overlapping each joint.



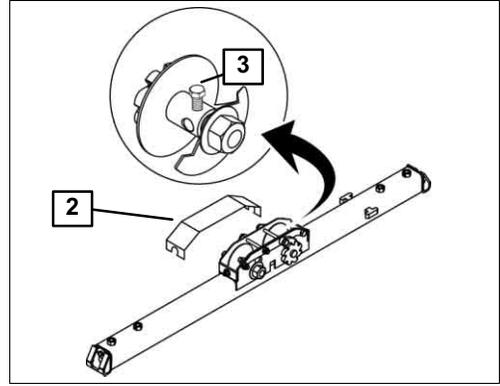
#### Note!

When using flat bars to link groove guided scrapers, install a piece of wood over the flat bars. Make sure the piece of wood clears the scrapers and that is it even with the floor for the cow safety.

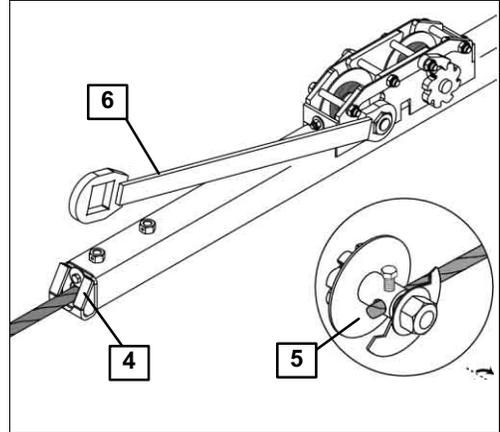
## Handling and installation

### Cable installation

- Remove each tensioner cover (2) from the scrapers.
- Loosen each tensioner bolt (3).



- Insert the cable end through the scraper draw bar (4) and through the tensioner.
- Keep ½" (13 mm) of cable out of the tensioner (5). Tighten the tensioner bolt to secure the cable.
- Using the wrench (6), wind 2 rolls on each tensioner. Make sure the scrapers remain in position.
- Repeat these steps to link the scrapers.



### 6.26.3 Step 3: Link the scrapers to the drive unit with the combi-rope



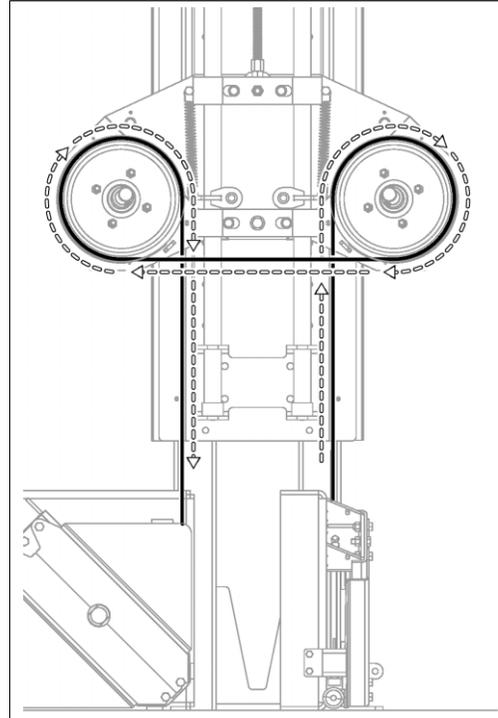
#### Warning!

Inadvertent start!

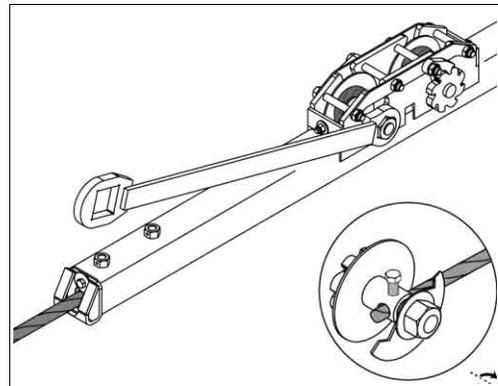


Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.

- Complete the cable path (2) using the combi-rope, as illustrated in the layout chosen.
- Place the combi-rope roll next to the scraper.
- Pass the cable through the corner wheel and/or the drive unit wheel.
- Run the cable inside the drive unit by following the path illustrated hereafter.
- Pass the cable through the second drive unit wheel and through the corner wheel.
- Pull the combi-rope to reach the scraper.



- Pass the cable through the scraper draw bar.
- Keep  $\frac{1}{2}$ " (13 mm) of cable out of the tensioner. Tighten the tensioner bolt to secure the cable.
- Use the wrench to wind 2 rolls on the tensioner.

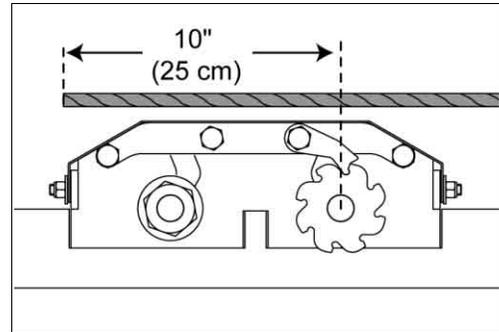


## Handling and installation

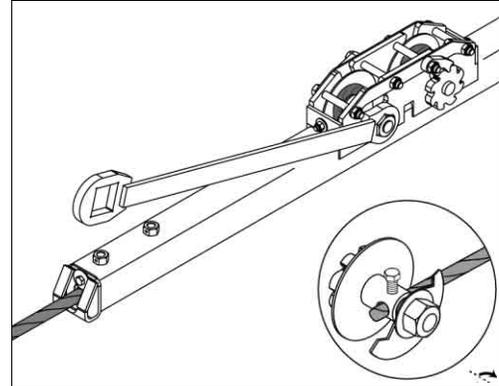
### Cable installation

---

- Firmly pull the combi-rope roll next to the scraper.
- Cut the combi-rope while keeping 10" (25 cm) of cable over the tensioner.
- To prevent split ends, add tape on the cable before cutting.



- Pass the cable through the scraper draw bar.
- Keep ½" (13 mm) of cable out of the tensioner. Tighten the tensioner bolt to secure the cable.
- Use the wrench to wind 2 rolls on the tensioner.



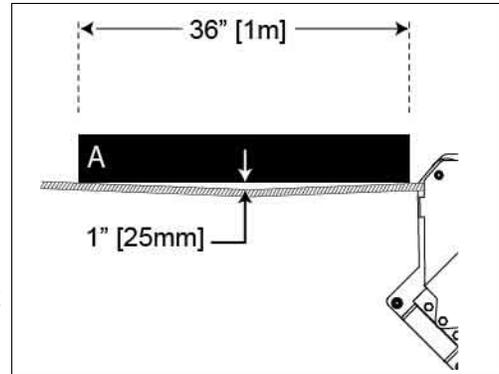
#### 6.26.4 Step 4: Tensioning the cables



#### Attention!

Improper cable tension will cause malfunction of the control panel load detection system.

- Check the cable tension on the corner wheels located next to the drive unit.
- Position a 36" (1m) straight edge (A) on the floor next to the cable.
- Pull by hand the cable to measure the tension in the center of the straight edge (A). The cable must roughly deflect 1" (25 mm).

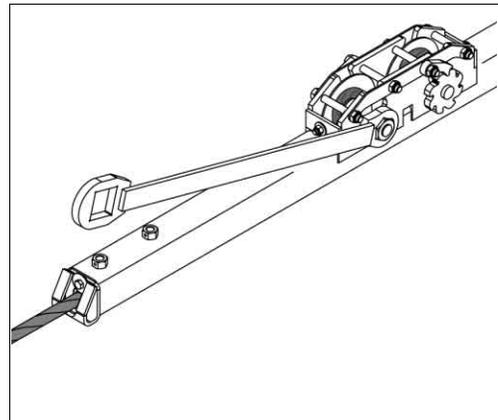


#### Warning!

Risk of injury!

Be careful when using the wrench, the cable is under tension.

- If the deflection is greater than 1" (25 mm), roll one catch on each scraper tensioner using the wrench. Proceed scraper by scraper. Make sure the cable tensioner is correctly locked.
- Repeat these steps until the deflection is obtained on each corner wheel located next to the drive unit.
- Install the scrapers tensioner cover.



## 7 Programming

### 7.1 Special personnel qualification required for programming

Programming must be performed by trained personnel in accordance with the safety instructions.



Read the section Safety - Personnel qualifications.

### 7.2 Safety instructions for programming



**Warning!**

Risk of injury or death of animals!

Always set the detection parameters accurately.

The control panel can only reduce the probability of occurrence related to injuries and/or death but it cannot eliminate the risks.



Refer to section Programming – Detection parameters

### 7.3 General settings

#### 7.3.1 Programmable module



Legend:	
	Para: Parameter menu.
	Scroll: Scroll down
	Scroll: Scroll up
	Select: Select the parameter or value.



Legend:	
	Power button: Reset the screen when holding the button for 5 seconds or maintain the screen on standby.
	Default value button: Reset to default value.
	Negative value button: Enter a negative value or change a negative value for a positive value.
	Correction button: Correct a value.
	Keypad: Enter numeric values.
	Menu or sub-menu buttons : Access the different menus and sub-menus.
	Erase button: Erase a value.
	Enter button: Confirm the value entered.
	Return button: Return to the previous screen.
	Home page button: Access the home page.
	Arrow buttons: Navigate through the pages and tables

### 7.3.2 Language

IVR PRO
THIS FEATURE IS NOT AVAILABLE

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "CONSOLE";</li> <li>• Press "LANGUAGE" to choose among the different languages.</li> </ul>

### 7.3.3 Clock / Date

IVR PRO	
<ul style="list-style-type: none"> <li>• Press key until (Prog) appears;</li> </ul>	<b>key</b> 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to access the (HOUr) or (dAtE) parameter;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Use keys to enter the actual time or to navigate through the sub menus to set the date, (d01) day, (d02) month or (d03) year;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select the day, month or year;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to change the value;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to return back to the menu.</li> </ul>	

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "CONSOLE";</li> <li>• Press "TIME AND DATE";</li> <li>• Choose "TIME" or "DAY" or "MONTH" or "YEAR";</li> <li>• Use the keypad to enter the time, day, month or year.</li> </ul>



**Note!**

The clock does not adjust automatically.

## 7.3.4 Password

IVR PRO
THIS FEATURE IS NOT AVAILABLE

IVR PRO Max@ccess
<p>To create a password:</p> <ul style="list-style-type: none"><li>• Press "SYSTEM";</li><li>• Press "CONSOLE";</li><li>• Press "PASSWORD";</li><li>• Press "CHANGE PASSWORD";</li><li>• Enter a new code using the keypad;</li><li>• Press "VALIDATE";</li><li>• Press "YES" to continue.</li></ul> <p>To disable a password:</p> <ul style="list-style-type: none"><li>• Press "SYSTEM";</li><li>• Press "CONSOLE";</li><li>• Press "PASSWORD";</li><li>• Press "CHANGE PASSWORD";</li><li>• Enter the value "0" to disable the password;</li><li>• Press "VALIDATE";</li><li>• Press "YES" to continue.</li></ul> <p>Lock the parameters:</p> <ul style="list-style-type: none"><li>• Create a password by following the previous steps;</li><li>• Press "SYSTEM";</li><li>• Press "CONSOLE";</li><li>• Press "PASSWORD";</li><li>• Press "LOCK".</li></ul> <p>Unlock the parameters:</p> <ul style="list-style-type: none"><li>• Press "SYSTEM";</li><li>• Press "CONSOLE";</li><li>• Enter the password to unlock;</li><li>• Press return on the keypad.</li></ul>

### 7.3.5 Alarm buzzer

IVR PRO
THIS FEATURE IS NOT AVAILABLE

IVR PRO Max@ccess
<p>The buzzer alarm signals when an alarm occurs.</p> <ul style="list-style-type: none"><li>• Press "SYSTEM";</li><li>• Press "CONSOLE";</li><li>• Press "ALARM BUZZER" to set the buzzer to "ON" or "OFF".</li></ul>

## 7.4 Motor initial settings

### 7.4.1 Overload relay setting

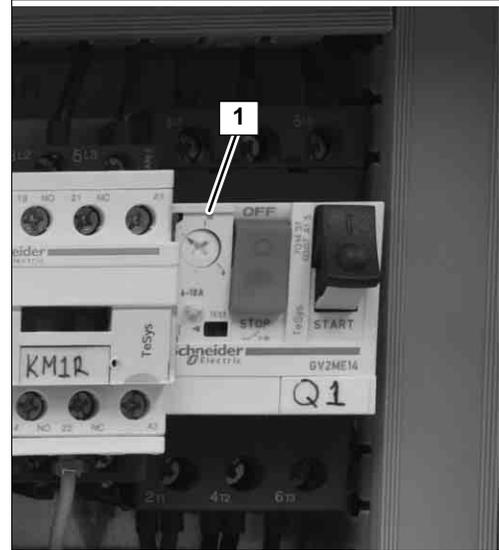


**Attention!**

Risk of motor failure!

Improper overload relay setting can cause motor failure.

- Adjust the overload relay (1) according to the amperage indicated on the motor rating plate.



### 7.4.2 Volts

IVR PRO	
• Press key until (ParA) appears;	<b>key</b> 
• Press key to select;	
• Press key until (P06) appears;	
• Press key to select;	
• Press keys to enter the voltage as per the value indicated on the motor rating plate. Hold the button for fast change.	

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "MOTOR SETTINGS";</li> <li>• Use the keypad arrows to select the parameter;</li> <li>• Use the keypad to enter the voltage as per the value indicated on the motor rating plate.</li> </ul>

### 7.4.3 Amps



**Note!**

Improper setting of the "AMPS" parameter or an excessive load in front the scraper(s) can trigger the A3 "MAXIMUM LOAD EXCEEDED (AMP)" alarm.

IVR PRO	
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	<b>key</b>
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P07) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the amperage as per the value indicated on the motor rating plate. Hold the button for fast change.</li> </ul>	

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "MOTOR SETTINGS";</li> <li>• Use the keypad arrows to select the parameter;</li> <li>• Use the keypad to enter the amperage as per the value indicated on the motor rating plate (0.5 - 20.0).</li> </ul>

#### 7.4.4 Nema nominal efficiency (%)

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	<b>key</b>
	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P08) appears;</li> </ul>	 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the nominal efficiency as per the value indicated on the motor rating plate (0-100%). Hold the button for fast change.</li> </ul>	 

<b>IVR PRO Max@ccess</b>	
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "MOTOR SETTINGS";</li> <li>• Use the keypad arrows to select the parameter;</li> <li>• Use the keypad to enter the nominal efficiency as per the value indicated on the motor rating plate (0-100%).</li> </ul>	

### 7.4.5 Power factor (%)

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	<b>key</b>
	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P09) appears;</li> </ul>	 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the power factor as per the value indicated on the motor rating plate (10%-100%). Hold the button for fast change.</li> </ul>	 

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "MOTOR SETTINGS";</li> <li>• Use the keypad arrows to select the parameter;</li> <li>• Use the keypad to enter the power factor as per the value indicated on the motor rating plate (10-100%).</li> </ul>

### 7.4.6 Number of phases

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	<b>key</b>
	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P10) appears;</li> </ul>	 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the number of phases of the electric supply (1 or 3). Hold the button for fast change.</li> </ul>	 

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "MOTOR SETTINGS";</li> <li>• Use the keypad arrows to select the parameter;</li> <li>• Use the keypad to enter the number of phases of the electric supply (1 or 3).</li> </ul>

### 7.4.7 Motor capacity (HP)



**Warning!**

Improper setting of this parameter can cause injuries!



**Attention!**

Setting the "MOTOR CAPACITY" beyond the value indicated by the manufacturer causes heating, overload and damages to the motor.



**Note!**

To properly set the "MOTOR CAPACITY" perform the fine tuning steps as soon as the free stall or cross gutter cleaner is installed and functional.

IVR PRO	
	key
<ul style="list-style-type: none"> <li>Press key until (ParA) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key until (P04) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press keys to enter the motor capacity (HP) as per the value indicated on the motor rating plate. Hold the button for fast change;</li> </ul>	
<ul style="list-style-type: none"> <li>Perform the fine tuning step.</li> </ul>	

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>Press "SYSTEM";</li> <li>Press "MOTOR SETTINGS";</li> <li>Use keypad arrows to select the parameter;</li> <li>Use the keypad to enter the motor capacity (HP) as per the value indicated on the motor rating plate. When having a two motor drive unit, add both motor capacity ratings;</li> <li>Perform the fine tuning step.</li> </ul>

### 7.4.8 Minimum load (HP)

The purpose of the "MINIMUM LOAD (HP)" is to indicate if a mechanical failure has occurred.



**Note!**

When the "MINIMUM LOAD" is achieved during 15 seconds, the control panel stops all operations and displays the A4 "NO LOAD DETECTED" alarm.

<b>IVR PRO</b>	
	<b>key</b>
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P05) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to set the minimum load (HP) to 0.10. Hold the button for fast change;</li> </ul>	
<ul style="list-style-type: none"> <li>• Perform the fine tuning step.</li> </ul>	

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "MOTOR SETTINGS";</li> <li>• Use the keypad arrows to select the parameter;</li> <li>• Use the keypad to set the minimum load (HP) to 0.10;</li> <li>• Perform the fine tuning step.</li> </ul>

**7.5 Motor capacity (HP) fine tuning**



**Warning!**

Risk of injury!

Improper setting of the "MOTOR CAPACITY" parameter impairs the control panel to acknowledge properly a motor capacity increase caused by an obstacle. Set this parameter accurately.



**Attention!**

Setting the "MOTOR CAPACITY" beyond the value indicated by the manufacturer causes heating, overload and damages to the motor.



**Note!**

The fine tuning steps must be performed under normal operating conditions.

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>Start the control panel by pressing for 2 seconds the "START/RESET" button. Observe the HP reading on the DEMIO UCC100 until the cleaning cycle is completed;</li> </ul>	
<ul style="list-style-type: none"> <li>Read the "MOTOR CAPACITY HP" by accessing the real time reading parameter.</li> <li>Press key until (rtr) appears;</li> </ul>	<b>key</b> 
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press keys until (F02) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Note the highest reading and add 0.15 to the reading;</li> <li>Stop the control panel by pressing the emergency stop button;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key until (ParA) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key until (P04) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press keys to enter the motor capacity (HP) to the value obtained. Hold the button for fast change.</li> </ul>	

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>Press "INSTANT START" and observe the "TOTAL HP" reading on the screen until the cleaning cycle is completed. Note the highest reading and add 0.15 to the reading;</li> <li>Press "SYSTEM";</li> <li>Press "MOTOR SETTINGS";</li> <li>Use the keypad arrows to select the parameter;</li> <li>Use the keypad to enter the motor capacity (HP) to the value obtained.</li> </ul>

## 7.6 Minimum load (HP) fine tuning

The purpose of the "MINIMUM LOAD (HP)" is to indicate if a mechanical failure has occurred.



**Note!**

When the "MINIMUM LOAD" is achieved during 15 seconds, the control panel stops all operations and displays the A4 "NO LOAD DETECTED" alarm.

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>Start the control panel by pressing for 2 seconds the "START/RESET" button on the control panel door.</li> </ul>	
<ul style="list-style-type: none"> <li>Read the "MINIMUM LOAD HP" by accessing the real time reading parameter.</li> <li>Press key until (rtr) appears;</li> </ul>	<b>key</b> 
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press keys until (F02) appears:</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Note the reading and add 0.1 HP to the reading;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key until (ParA) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key until (P05) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>Press keys to enter the minimum load (HP) to the value obtained. Hold the button for fast change;</li> </ul>	

<b>IVR PRO Max@ccess</b>	
<ul style="list-style-type: none"> <li>Start the scraper(s) using the "INSTANT START" function. Monitor the "TOTAL HP" reading displayed on the screen. Note the reading.</li> <li>Add 0.1 HP to the reading.</li> <li>Press "SYSTEM";</li> <li>Press "MOTOR SETTINGS";</li> <li>Use the keypad arrows to select the parameter;</li> <li>Use the keypad to enter the minimum load (HP) to the value obtained.</li> </ul>	

## 7.7 Detection parameters

The following parameters work together to set the sensitivity level of detection:

- Maximum load fluctuation (HP);
- Detection time (sec);
- Number of restarts.



### Warning!

Risk of injury or death of animals!

A high "MAX FLUCTUATION" setting combined to a high "DETECTION TIME" reduces load detection sensitivity.

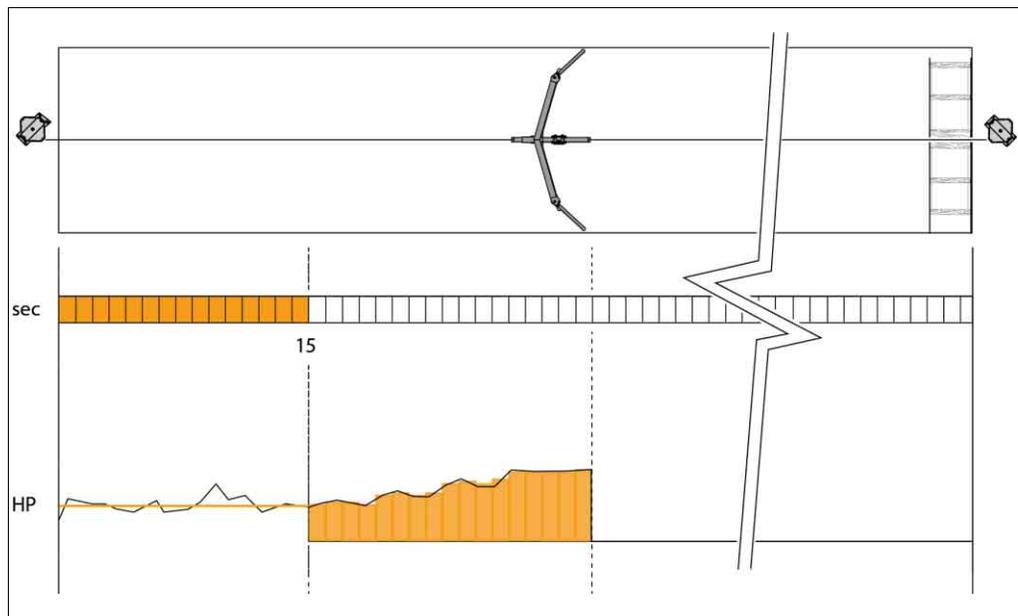
Keep these parameters set as low as possible.



### Note!

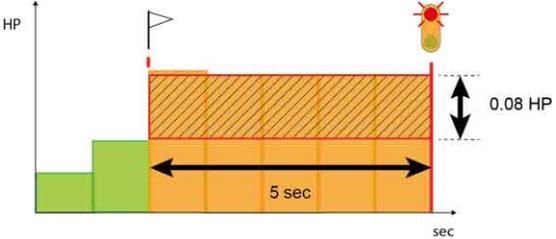
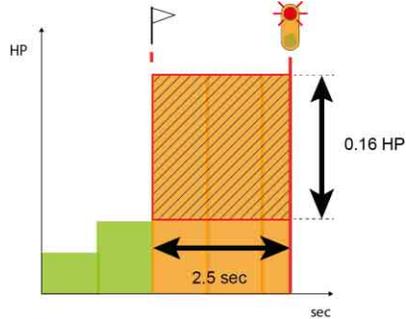
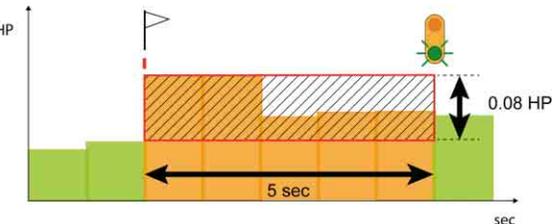
During the first 15 seconds of each stroke, the control panel does not perform detection since it only collects load fluctuation values.

It is strongly recommended to park the scraper(s) outside the free stall area at a minimum distance of 56" (1.42m). See below.



### 7.7.1 Maximum load fluctuation (HP)

The maximum load fluctuation parameter sets the maximum fluctuation allowed during operation. When a fluctuation exceeds the programmed value, the control panel starts monitoring a detection. See examples below.

<b>Example A</b>	
<p><b>Detection settings:</b></p> <ul style="list-style-type: none"> <li>• MAX FLUCTUATION: 0.08 HP</li> <li>• DETECTION TIME: 5.0 sec.</li> </ul>	
<p>If the fluctuation reading is 0.08 HP, the control panel stops operation after 5 seconds.</p>	
<b>Example B</b>	
<p><b>Detection settings:</b></p> <ul style="list-style-type: none"> <li>• MAX FLUCTUATION: 0.08 HP</li> <li>• DETECTION TIME: 5.0 sec.</li> </ul>	
<p>If the fluctuation reading is 0.16 HP (twice), the control panel stops operation after 2.5 seconds (twice faster).</p>	
<b>Example C</b>	
<p><b>Detection settings:</b></p> <ul style="list-style-type: none"> <li>• MAX FLUCTUATION: 0.08 HP</li> <li>• DETECTION TIME: 5.0 sec.</li> </ul>	
<p>When a peak occurs, the control panel starts monitoring. If the next readings are lower and the detection range is not filled, the control ignore detection and continue operation.</p>	



**Note!**

If concrete imperfection is significant, the maximum load fluctuation can trigger easily and stop the system. Do not increase the maximum load fluctuation parameter, repair the concrete imperfections, adjust the cable/rope tension, etc.



**Note!**

A 30 kg (66 lbs) load placed on a smooth surface reads approximately 0.01 HP. A minor flaw on the surface causes a fluctuation over 0.05 HP. "Fluctuation" should be set between 0.05 and 0.12 HP.

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	<b>key</b>
	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P01) appears;</li> </ul>	 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the maximum load fluctuation (HP) between 0.05 and 0.12 HP. Hold the button for fast change;</li> </ul>	 

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>• Press "USER";</li> <li>• Press "DETECTION SETTINGS";</li> <li>• Press "MAX FLUCTUATION (HP)";</li> <li>• Use the keypad to enter maximum load fluctuation (HP) between 0.05 and 0.12HP.</li> </ul>

### 7.7.2 Detection time

The detection time parameter sets the time reaction of the detection. When a detection is monitored, the control panel monitors the following readings to determine if there is a detection or not. See examples below.

Example A	
<p><b>Detection settings:</b></p> <ul style="list-style-type: none"> <li>• MAX FLUCTUATION: 0.08 HP</li> <li>• DETECTION TIME: 5.0 sec.</li> </ul>	
<p>If the fluctuation reading is 0.08 HP, the control panel stops operation after 5 seconds.</p>	
Example B	
<p><b>Detection settings:</b></p> <ul style="list-style-type: none"> <li>• MAX FLUCTUATION: 0.08 HP</li> <li>• DETECTION TIME: 5.0 sec.</li> </ul>	
<p>If the fluctuation reading is 0.16 HP (twice), the control panel stops operation after 2.5 seconds (twice faster).</p>	
Example C	
<p><b>Detection settings:</b></p> <ul style="list-style-type: none"> <li>• MAX FLUCTUATION: 0.08 HP</li> <li>• DETECTION TIME: 5.0 sec.</li> </ul>	
<p>When a peak occurs, the control panel starts monitoring. If next readings are lower and the detection range is not filled, the control ignore detection and continue operation.</p>	



**Note!**

The control panel does not perform detection at the beginning of each stroke during the first 15 seconds since it collects load fluctuation values only. It is strongly recommended to park the scraper(s) outside the free stall area at a minimum distance of 56" (1.42 m).

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	<b>key</b>
	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys until (P02) appears;</li> </ul>	 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the detection time between 1 and 15 seconds.</li> </ul>	 

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>• Press "USER";</li> <li>• Press "DETECTION SETTINGS";</li> <li>• Press "DETECTION TIME (s)";</li> <li>• Use the keypad to enter the detection time between 1 and 15 seconds.</li> </ul>

### 7.7.3 Number of restarts

This parameter is used when a detection occurs. It sets the number of attempts to resume the cleaning cycle.

When a detection occurs, the control panel stops and backs up the scrapers for 30 seconds. Then, the control panel will try to resume the cleaning cycle.

If the obstacle remains in place, the control panel will detect the obstacle again and repeat the same process until the number of restarts is reached.

If the obstacle remains detected after having exceeded the number of restarts, the control panel stops operation and displays the A1 "OVERLOAD DETECTED" alarm.



**Note!**

The "NUMBER OF RESTARTS" parameter is active only when the scrapers have operated for at least 40 seconds since the beginning of the stroke. When a detection occurs, the scrapers back up for 30 seconds and stop. Then, the control panel switches to the "NUMBER OF RESTARTS" mode to complete the cleaning cycle.



**Note!**

The "NUMBER OF RESTARTS" parameter resets if the scrapers operate normally for 60 seconds after having exceeded "MAX FLUCTUATION" and the "DETECTION TIME" or if the scrapers are at the end of a stroke.

<b>IVR PRO</b>	
	<b>key</b>
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (P03) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to enter the number of restarts between 0 and 25.</li> </ul>	

<b>IVR PRO Max@ccess</b>
<ul style="list-style-type: none"> <li>• Press "USER";</li> <li>• Press "DETECTION SETTINGS";</li> <li>• Press "NUMBER OF RESTARTS";</li> <li>• Use the keypad to enter the number of restarts between 0 and 25.</li> </ul>

**7.8 Automatic cleaning mode using starting hours**

The control panel can perform up to 36 different starting hours per day.

For each starting hour programmed, the scrapers perform the number of strokes set in the "NUMBER OF STROKES" (automatic mode) parameter.



**Note!**

Scrapers can perform up to 10 strokes per cleaning.  
Between strokes, the scrapers stop for 10 seconds.



**Note!**

A standard stroke configuration requires the scrapers to perform two strokes to complete a cleaning cycle and return to start position. A shuttle stroke configuration requires the scrapers to perform 4 strokes to complete a cleaning cycle and return to start position.

<b>IVR PRO</b>	
	<b>key</b>
• Press key until (ProG) appears;	
• Press key to select;	
• Press keys to navigate through the different starting hours (H01 to H30);	
• Press key to select;	
• Press keys to change the starting hour.	
• To erase an hour, decrease the time until 0:00 displays on the screen;	
• To set the number of strokes, press key until (ProG) appears;	
• Press key to select;	
• Press key until (nbor) appears;	
• Press key to select;	
• Press keys to increase or decrease the value.	

**IVR PRO Max@ccess**

- Press "USER";
- Press "START HOURS / DELAY BETWEEN CLEANING";
- Press "MODE" to toggle from "START HOURS" to "DELAY BETWEEN CLEANINGS";
- Press "YES" to confirm;
- Select a cell using the keypad arrows;
- Use the keypad to enter the starting hour;
- To erase an hour, press the clear button "C" on the keypad.
- To enter the number of strokes, press "USER";
- Press "WORKING SETTINGS";
- Press "NUMBER OF STROKES" (AUTOMATIC MODE);
- Use the keypad to enter the number of strokes.

**Note!**

When activating the "STARTING HOUR" mode, the "DELAY BETWEEN CLEANINGS" mode is deactivated.

---

**7.9 Automatic cleaning mode using delay between cleanings**

The control panel activates the scrapers and performs cleanings on a periodic cycle.

The scrapers perform cleaning as per the number of strokes programmed in the parameter "NUMBER OF STROKES" (automatic mode).

Once completed, the control stops the scrapers and waits according to the time programmed in the parameter "DELAY BETWEEN CLEANINGS".



**Note!**

Scrapers can perform up to 10 strokes per cleaning.  
Between strokes, the scrapers stop for 10 seconds.



**Note!**

A standard stroke configuration requires the scrapers to perform 2 strokes to complete a cleaning cycle and return to start position. A shuttle stroke configuration requires the scrapers to perform 4 strokes to complete a cleaning cycle and return to start position.

IVR PRO	
	key
• Press key until (ProG) appears;	
• Press key to select;	
• Press keys until (TYPE) appears:	
• Press key to select;	
• Press key to toggle between "hr" and "bt";	
• Press key to select "bt";	
• Press key to select the (dbc) sub menu;	
• Press key to select;	
• Press keys to enter the delay between cleaning.	
• To set the number of strokes, press key until (ProG) appears;	
• Press key to select;	
• Press keys until (nbor) appears;	
• Press key to select;	
• Press keys to increase or decrease the value.	

**IVR PRO Max@ccess**

- Press "USER";
- Press "START HOURS / DELAY BETWEEN CLEANING";
- Press "MODE" to toggle from "START HOURS" to "DELAY BETWEEN CLEANINGS";
- Press "YES" to confirm;
- Press key to select the time;
- Use the keypad to enter the delay between cleanings;
- To erase an hour, press the clear button "C" on the keypad.
- Press "USER";
- Press "WORKING SETTINGS";
- Press "NUMBER OF STROKES" (AUTOMATIC MODE);
- Use the keypad to enter the number of strokes.

**Note!**

When activating the "DELAY BETWEEN CLEANINGS" mode, the "STARTING HOUR" mode is deactivated.

---

**7.10 Scrapper parking function**

The "SCRAPER PARKING" parameter allows the scrapers to park at a specific position after completing its cleaning cycle.

IVR PRO	
	key
<ul style="list-style-type: none"> <li>• Press key until (ParA) appears;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys until (P11) appears:</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press keys to toggle between (OFF), (FOR) or (rE);</li> </ul>	

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>• Press "USER";</li> <li>• Press "WORKING SETTINGS";</li> <li>• Press "SCRAPER PARKING";</li> <li>• Press "SCRAPER PARKING" to toggle from "FOR" for forward parking, "REV" for reverse parking or "OFF" for no parking.</li> </ul>

**7.11 Scrapper withdrawal function**

The "SCRAPER WITHDRAWAL" parameter allows to park the scrapers at the end of a stroke in order to clear the passageway.

IVR PRO
THIS FEATURE IS NOT AVAILABLE

IVR PRO Max@ccess
<ul style="list-style-type: none"> <li>• Press "USER";</li> <li>• Press "WORKING SETTINGS";</li> <li>• Press "SCRAPER WITHDRAWAL";</li> <li>• Use the keypad to enter the time (0.0 to 999) seconds.</li> </ul>



**Note!**

"SCRAPER PARKING" parameter must be set to "FOR" or "REV" for the "SCRAPER WITHDRAWAL" parameter to operate.

## 7.12 Gradual discharge mode



**Note!**

This mode is not compatible with the Fit R-300.

The "GRADUAL DISCHARGE" mode is used to gradually discharge manure inside a gutter, storage pit, or other means of storage.

Once the scrapers are in the discharge area and the gradual discharge mode is activated, the scrapers perform an "ON/OFF" motion until the manure is completely discharged.

## 7.13 Manure apron mode



**Note!**

This mode is not compatible with the Fit R-300.

The "MANURE APRON" mode is used to pile up manure on a concrete slab located outside the free stall area.

Once the scrapers are in the manure apron area and the mode is activated, the control panel deactivates the load detection to allow to push a significant amount of manure.

## 7.14 External start signal mode



**Note!**

This mode is not compatible with the Fit R-300.

The "EXTERNAL START SIGNAL" mode is used to start an external equipment when the scraper(s) is near the discharge area.

For example: When using a power flume system, a flush pump should start pumping before the scrapers start dropping manure in the gutter.

## 7.15 Cold weather function



**Note!**

This mode is not compatible with the Fit R-300.

The "COLD WEATHER" function is used to prevent scrapers from freezing when temperature is cold.

When "COLD WEATHER" function is "ON", the scraper operates in "ON/OFF" motion between cleaning cycles.

## 7.16 Manual parking function

Manual parking mode allows to manually position the scrapers at the end of alleys.

IVR PRO
THIS FEATURE IS NOT AVAILABLE

IVR PRO Max@ccess
<ul style="list-style-type: none"><li>• Access the main menu;</li><li>• Press "PARKING (MANUAL)";</li><li>• Choose either "FORWARD START" or "REVERSE START".</li></ul>



**Note!**

The system remains inactive as long as the manual mode is activated. Press the emergency stop button to disable the manual mode. To reset the emergency button, turn the knob to the right. Press "REARM".

---

## 7.17 Instant start function

### IVR PRO

The scraper(s) performs a single stroke regardless of the number of strokes set in the "automatic cleaning mode using the starting hours" or "automatic cleaning mode using delay between cleanings".

- Press and hold the "START/RESET" button for 2 seconds;

### IVR PRO Max@ccess

The instant start mode manually starts a complete cleaning cycle without affecting the programmed automatic cleaning mode. When activated, the scraper(s) performs the number of strokes programmed in the "NUMBER OF STROKES (START BUTTON)" parameter.

- Access the main menu;
- Press "INSTANT START";
- Select "YES" to start immediately;
- Set the "NUMBER OF STROKES (START BUTTON)". Follow the next step.

### 7.17.1 Number of strokes (Start Button)



#### Note!

A standard stroke configuration requires the scraper(s) to perform two strokes to complete a cleaning cycle and return to start position. A shuttle stroke configuration requires the scraper(s) to perform 4 strokes to complete a cleaning cycle and return to start position.



#### Note!

Scrapers can perform up to 10 strokes per cleaning. Between strokes, the scrapers stop for 10 seconds.

Each time the start button is pressed or "INSTANT START" is activated, scraper(s) performs the "NUMBER OF STROKES" programmed.

### IVR PRO

THE SYSTEM PERFORMS 1 STROKE ONLY.

### IVR PRO Max@ccess

- Press "USER";
- Press "WORKING SETTINGS";
- Select "NUMBER OR STROKES (START BUTTON)";
- Set the number of strokes using the keypad;
- To deactivate the external start button, enter "0".

## 7.18 Backup and recovery files

### IVR PRO

THIS FEATURE IS NOT AVAILABLE

### IVR PRO Max@ccess

Create a file to save the actual control panel settings.

- Press "SYSTEM";
- Press "BACKUP FILES";
- Press "CREATE A FILE";
- Enter a title for the file using the keypad;
- Press "VALIDATE".

Retrieve the control panel settings from a file previously saved.

- Press "SYSTEM";
- Press "BACKUP FILES";
- Press "RETRIEVE A FILE";
- Choose the file using the arrows;
- Press "LOAD".

Erase permanently a file.

- Press "SYSTEM";
- Press "BACKUP FILES";
- Press "ERASE A FILE";
- Choose the file to erase;
- Press "ERASE FILE".



#### Caution!

Improper setting of the control parameters reduces load detection sensibility. To maximize human and livestock safety and prevent equipment failure and damage, follow the instructions!

Overwrite the actual settings to replace by the factory settings. The factory settings overwrite the actual settings of the control panel. Create a backup file to save the actual settings of the control panel before proceeding with the factory settings.

**IMPORTANT!** After proceeding with the factory settings, set each control panel parameter.

- Press "SYSTEM";
- Press "BACKUP FILES";
- Press "FACTORY SETTINGS";
- Press "YES".

**7.19 Diagnosis**

<b>IVR PRO</b>
THIS FEATURE IS NOT AVAILABLE

<b>IVR PRO Max@ccess</b>
<p>Alarm log displays the last 20 alarms and errors registered by the control panel.</p> <ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "DIAGNOSIS";</li> <li>• Press "ALARM LOG";</li> <li>• Set the alarm using the keypad arrows;</li> <li>• Press "DETAIL" to get more information on the alarm.</li> </ul>
<p>"I/O STATUS" enables real time reading of each input-output.</p> <ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "DIAGNOSIS";</li> <li>• Press "INPUT/OUTPUT STATUS";</li> </ul>
<p>The hour meter purpose is to program preventive maintenance interval on an hourly basis. When the "PARTIAL HOUR" value reaches the "MAINTENANCE INTERVAL" value, a warning message displays "MAINTENANCE REQUIRED".</p> <ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "DIAGNOSIS";</li> <li>• Press "HOUR METER";</li> <li>• Press "MAINTENANCE INTERVAL" and set the value (hour);</li> <li>• To reset "PARTIAL HOUR" after maintenance has been performed, press "RESET (PARTIAL)";</li> <li>• To disable the hour meter, set "MAINTENANCE INTERVAL" to 0.</li> </ul>
<p>"SYSTEM STATUS" displays information on the system such as the network information, I.P. address, MAC address, software version and real time reading of voltage, frequency and P.F.</p> <ul style="list-style-type: none"> <li>• Press "SYSTEM";</li> <li>• Press "DIAGNOSIS";</li> <li>• Press "SYSTEM STATUS";</li> </ul>

**7.20 Real time reading**

<b>IVR PRO</b>	
<ul style="list-style-type: none"> <li>• Press key until (rtr) appears;</li> </ul>	<b>key</b> 
<ul style="list-style-type: none"> <li>• Press key to select;</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key until (F01-F07) appears:</li> </ul>	
<ul style="list-style-type: none"> <li>• Press key to select either;</li> </ul> F01: HP fluctuation F02: HP F03: Voltage F04: Amperage F05: Power efficiency F06: Frequency F07: Positions in seconds	

<b>IVR PRO Max@ccess</b>
THE REAL TIME READING DISPLAYS ON THE SCREEN WHEN THE SYSTEM OPERATES.

## 7.21 Farm-access

### 7.21.1 Requirements

- A wired LAN;
- A 120V/240V power source;
- Standard Ethernet cables having a maximum length of 300 feet (100 m).

### 7.21.2 Electric connection

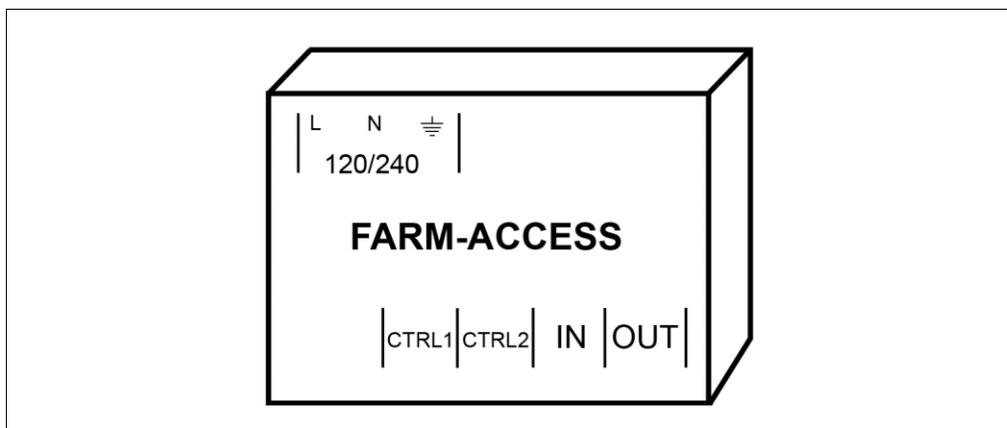


#### **Danger!**

Risk of electric shock!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent power of the main electric supply.



<b>120/240</b>	Power source for the Farm-access module
<b>CTRL1</b>	Port to connect the Max@ccess control panel
<b>CTRL2</b>	Port to connect an additional Max@ccess control panel
<b>IN</b>	Ethernet port to connect the customer's network
<b>OUT</b>	Ethernet port to connect another equipment (camera, computer)

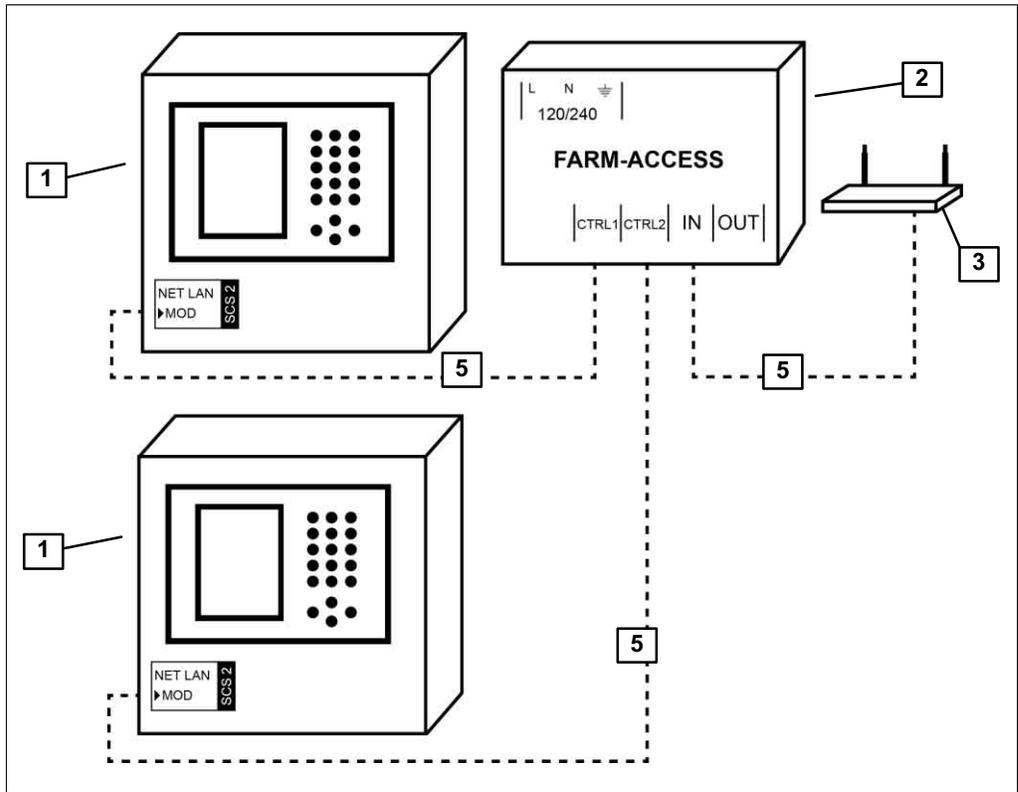
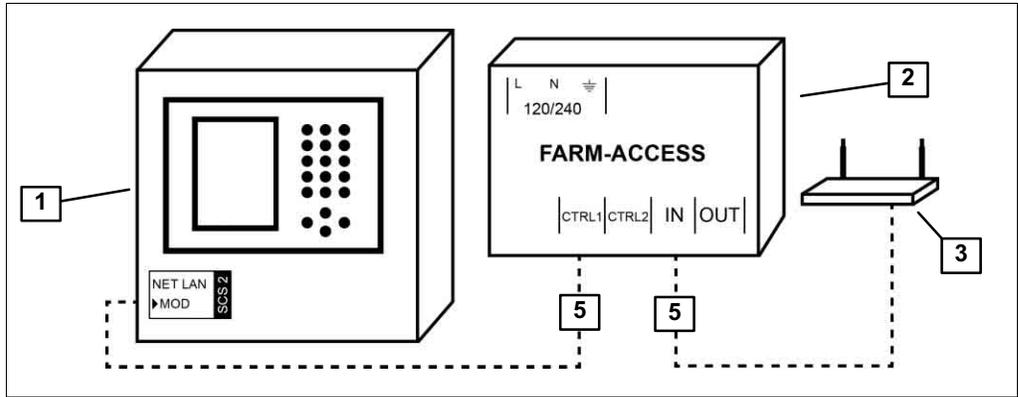


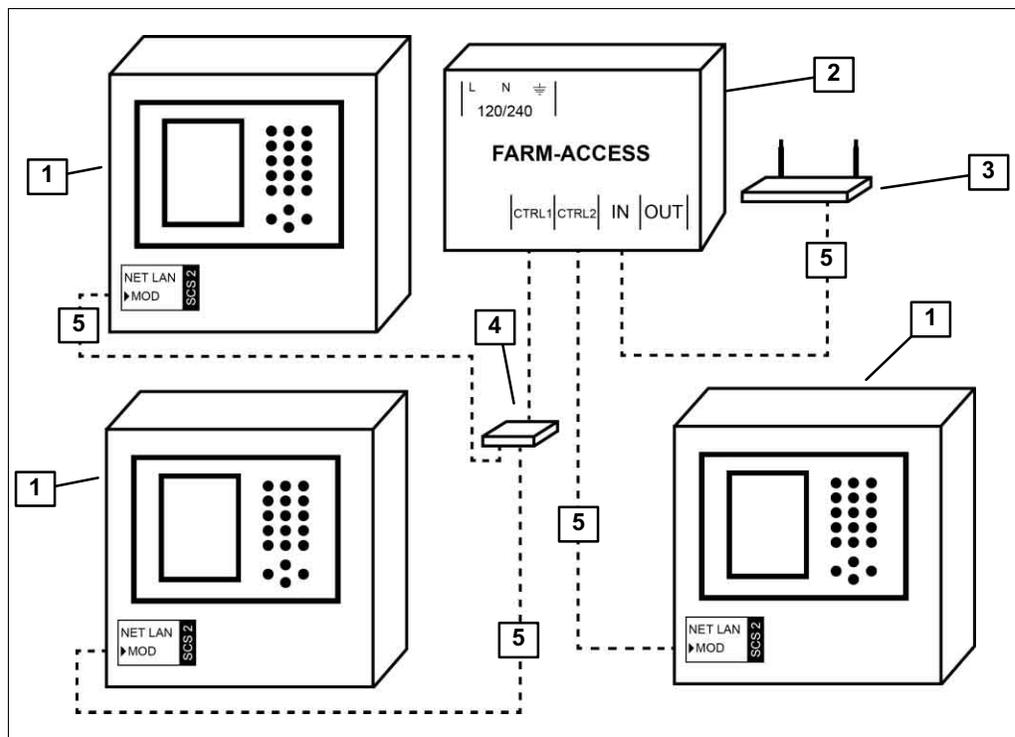
#### **Note!**

Do not disconnect PI, SWITCH and PI 5VDC connections of the farm-access module.

- Perform the electric power connection of the farm-access module.

### 7.21.3 Wiring





1	IVR PRO Max@ccess control panel
2	Farm-access module
3	Router
4	Ethernet switch
5	Ethernet cable



**Note!**

The farm-access panel does not require configuration. It gives access to the IVR PRO Max@ccess without needing to set a router or modem.

- Referring to the previous illustrations, choose the corresponding configuration.
- Using standard Ethernet cables, complete the connections as illustrated.

### 7.21.4 Configuration



**Note!**

Once the connections are done, it can take up to 15 minutes for the network to appear on the server.

---

- Go to <https://www.farm-access.com>;
- Click on Login;
- Enter the username and password provided when buying the farm-access module;
- Click on Login;
- Click on Authorized dealer, the network should be added to the list.

### 7.21.5 Mobile phone application

- Access the App store or Google play store;
- Search for max access application;
- Click "Install";
- Once the installation has been completed, open the application and enter the username and password provided.

### 7.21.6 Mobile phone notifications



**Note!**

Notifications can be sent on a mobile phone when a control panel is in alarm mode.

---

#### **Iphone**

- Access the Iphone settings;
- Access the notifications tab;
- Find the max access applications;
- Select and activate the notifications.

#### **Android**

- Open the configuration menu of the application;
- Set the notifications switch to ON.

## 8 Starting for the first time

### 8.1 Special personnel qualification required for initial commissioning

Initial commissioning must be performed by trained personnel in accordance with the safety instructions.



Read the section Safety - Personnel qualifications.

### 8.2 Safety instructions for initial commissioning



**Warning!**

Risk of injury and/or death!

A discomforted animal may not be able to avoid or move away from an operating scraper. Keep all discomforted animals away from the free stall area.



**Warning!**

Risk of injury or death of animals!

A high settings of the detection parameters reduces load detection sensitivity.

Keep these parameters set as low as possible.



**Warning!**

Risk of fall!

Be aware of the surroundings when working near areas such as a storage pit, a cross gutter, a transfer pump hopper, etc.



**Caution!**

Slippery floor!

Manure makes the floor slippery, be aware.

Use the walkways when possible.



**Caution!**

Risk of stumble!

Be aware of the cable in the free stall alleys.



**Attention!**

Remove all unnecessary tools, objects, lifting devices, etc, from the initial commissioning area.



**8.3 Initial commissioning checklist**

This checklist must be completed by the dealer and the customer. The initial commissioning steps intend to test the product to validate its functionality. Therefore, the dealer and the customer must operate the product to make sure the product is assembled and/or installed according to the manufacturer's instructions.

<b>General</b>	<b>DONE</b>	<b>N/A</b>
The owner received the instruction manual from the dealer and commits to read it.		
Items provided by the owner comply with the specifications indicated in the technical data section of the instruction manual.		

<b>Facility</b>	<b>DONE</b>	<b>N/A</b>
All concrete alleys are smooth, free from imperfections.		
Guards protecting the bridging areas are installed.		

<b>Inspection</b>	<b>DONE</b>	<b>N/A</b>
A visual inspection was performed. There are no sign of leaks, distortion or defective parts.		
All bolts are tightened.		
The safety guards and safety labels are installed.		
All electric connections are connected and secured.		
The lubrication points are lubricated.		

<b>Control panel</b>	<b>DONE</b>	<b>N/A</b>
The control panel is connected to a cut-off switch.		
All electric components and wires are secured.		
The control panel door is closed and locked.		
All control panel parameters have been programmed accurately.		
The emergency stop button is functional.		
The electric motor parameters are entered in the control panel.		
The motor capacity HP value was obtained by performing the fine tuning steps included in the control panel instruction manual.		
The motor minimum load value was obtained by performing the fine tuning steps included in the control panel instruction manual.		
The control panel is programmed to operate according to the requirements of the owner.		



Drive unit	DONE	N/A
The drive unit is anchored to the concrete floor.		
Air vents are installed on the gearboxes.		
The electric motors can be shut down only when activating the control panel external cut-off switch.		
The electric motor rotates in the proper direction.		

Cable	DONE	N/A
The cable tension is adjusted.		
The cable does not touch the floor, objects, etc.		



**Note!**

The dealer and the owner must fill the warranty registration form when the checklist is completed.

**Dealer's signature:**

\_\_\_\_\_

**Owner's signature:**

\_\_\_\_\_

**Date:**

\_\_\_\_\_

#### **8.4 Checks after initial commissioning**

The owner must make sure that:

- all elements are in perfect working condition and safe to operate;
- all elements are operational.
- the scrapers stop at their respective stop points;
- the scrapers clean the alleys properly;
- the system operates as per the owner's requirements;
- the product works perfectly;

#### **8.5 Handing over to the owner**

##### **Hand over warranty registration form**

The warranty registration form must be completed and signed by the customer and the dealer. The warranty registration form must be returned to GEA Farm Technologies Canada Inc. / Division GEA Houle to validate the warranty.

## 9 Operating

### 9.1 Special qualification required for operating

Operating must be performed by trained personnel in accordance with the safety instructions.



Read the section Safety - Personnel qualifications.

### 9.2 Safety instructions for operation



**Warning!**

Risk of injury and/or death!

A discomforted animal may not be able to avoid or move away from an operating scraper. Keep all discomforted animals away from the free stall area.



**Warning!**

Risk of injury or death!

Improper setting of the control panel parameters reduces load detection sensitivity. Always set the control panel parameters accurately by following the steps in section Programming.



**Warning!**

Inadvertent start!

The system can operate at any moment.  
Be aware of the surrounding elements.



**Warning!**

Risk of cutting!

The scraper steel blades become sharp. Beware, especially when the scraper moves in reverse motion and when parked. The blades stay in upright position exposing the sharp edges.



**Warning!**

Risk of injury!

Keep all safety guards in place.



**Warning!**

Risk of injury!

Always inspect and find the element that triggered the alarm before rearming the control panel.



**Caution!**

Slippery floor!

Manure makes the floor slippery, be aware.  
Use the walkway when possible.



**Caution!**

Risk of stumble!

Be aware of the cable in the free stall alleys.

---



**Attention!**

In case of emergency, press the emergency stop button. Make sure to know where the emergency stop button is located.

---



Read the section Safety.

---

## **9.3 Requirements while operating**

### **9.3.1 Maintenance work in the free stall alleys**

- At all time before performing work in the free stall alleys, shutdown the main power supply and lock with a locking device to prevent start.

### **9.3.2 Control panel alarms**

- Inspect the environment where the scraper stopped.
- Remove the element that triggered the alarm.
- Refer to section Troubleshooting to understand the nature of the alarm. Follow the indications to correct the situation.

### **9.3.3 Environment changes**

Any environment change can affect the manure consistency as well as the cleaning requirements, etc.

Therefore the control panel parameters must be adjusted whenever and whatever the change (bedding, feed, seasons, etc).

- Adjust the cleaning schedule to operate less or more often the cable alley scrapers.
- Adjust the control panel "MAXIMUM HP FINE TUNING" parameter. Follow the instructions in section Programming - Motor capacity (HP) fine tuning.
- Make sure the "DETECTION PARAMETERS" are set properly.

## 9.4 Automatic mode operation



### Note!

By default, the control panel operates in automatic mode according to the "STARTING HOURS" or "DELAY BETWEEN CLEANINGS" parameters. The period during which the control panel operates is set by the "NUMBER OF STROKES (automatic)" parameter.



### Note!

To operate in automatic mode, disengage the manual mode by releasing the emergency stop button and re-arming the control panel.

### Starting hours mode

The system operates automatically on scheduled hours. Once the cleaning strokes are completed, the system stops until the next scheduled hour.

### Delay between cleanings mode

The system operates continuously until the cleaning strokes are completed. The system stops according to the delay between cleanings.

## 9.5 Manual mode operation

### Instant start mode

The instant start mode manually starts the cleaning system. The number of strokes performed corresponds to the value entered in parameter "NUMBER OF STROKES (START BUTTON)". Refer to section Programming - Instant start function.

## 10 Operating faults

### 10.1 Special qualification required for troubleshooting

Troubleshooting must be performed by qualified personnel in accordance with the safety instructions.

Electric work must be performed by a certified electrician.



Read the section Safety - Personnel qualifications.

### 10.2 Safety instructions for troubleshooting



**Warning!**

Risk of injury or death!

Improper setting of the control panel parameters reduces the load detection sensitivity. Always set the control panel parameters accurately by following the steps in section Programming.



**Warning!**

Risk of fall!

Be aware of the surroundings when working near areas such as a storage pit, a cross gutter, a transfer pump hopper, etc.



**Warning!**

Risk of injury!

Always inspect and find the element that triggered the alarm before rearming the control panel.



**Warning!**

Risk of injury!

Keep all safety guards in place. When necessary to remove the guard, reinstall the guard after completing the troubleshooting steps.



**Caution!**

Risk of stumble!

Be aware of the cable in the free stall alleys.



**Caution!**

Risk of injury!

Wear protective boots, eye wear and gloves.



**Caution!**

Slippery floor!

Manure makes the floor slippery, be aware. Use the walkways when possible.



Read the section Safety.

### 10.3 Troubleshooting possible faults

Fault	Possible cause	Solution
The scrapers stop after one stroke.	Improper programming of the control panel.	Refer to section Programming.
	The control panel detected a fault.	Find the fault number indicated on the control panel. Refer to the fault indicated further in this table.
	A disconnected or damaged electric wire.	Have an electrician reconnect or change the electric wire.
The scrapers do not reach their stop point or suddenly stop.	The control panel detected a fault.	Find the fault number indicated on the control panel. Refer to the fault indicated further in this table.
	Improper programming of the control panel.	Refer to the instruction manual of the control panel. Refer to section Programming.
	A disconnected or broken cable and/or improper cable tension.	Change or reconnect the cable. Refer to section Handling and installation - Cable installation.
	A disconnected or damaged electric wire.	Have an electrician reconnect or change the wire.
	The circuit protection is defective.	Have an electrician replace the defective circuit.
The scraper does not clean the alley properly.	The scraper blade is not well adjusted.	Adjust the blade. Refer to section Maintenance - Check and adjust the scraper blades.
	The scraper blade is worn.	Replace the blade. Refer to section Maintenance - Check and adjust the scraper blades.
	The scraper carries too much manure on each cleaning	Have the scraper clean the alley more often. Reprogram the control panel. Refer to section Programming.

**Operating faults**

## Troubleshooting possible faults

<b>Fault</b>	<b>Possible cause</b>	<b>Solution</b>
Nothing operates.	The power supply is shut down.	Turn on the power supply.
	The emergency stop button of the control panel is activated or the control panel is turned off.	Deactivate the emergency stop button. Turn on the control panel.
	The control panel has detected a fault.	Find the fault number indicated on the control panel. Refer to the fault indicated further in this table.
	Improper programming of the control panel.	Refer to section Programming.
The control panel displays alarm A1 Maximum fluctuation	An obstacle in front of the scraper(s). The "NUMBER OF RESTARTS" is reached. Improper setting of the "MAXIMUM FLUCTUATION" and/or the "DETECTION TIME" parameter.	Remove the obstacle; If required, refer to section Programming - Detection parameters, to adjust the parameters; Reset the alarm.
The control panel displays alarm A2 Maximum load exceeded (HP)	Excessive load in front of the scraper(s). Improper setting of the "MOTOR CAPACITY" parameter.	Remove the load in the alley; If required, refer to section Programming - Motor capacity (HP), to adjust the parameter; Reset the alarm.
The control panel displays alarm A3 Maximum load exceeded (AMP)	Excessive load in front of the scraper(s). Defective motor Improper setting of the "AMPS" parameter.	Remove the excessive load; If required, refer to section Programming - Amps, to adjust the parameter; Reset the alarm.
The control panel displays alarm A4 No load detected	Mechanical failure. Improper setting of the "MINIMUM LOAD" parameter.	Repair mechanical failure. If required, refer to section Programming - Minimum load (HP), to adjust the parameter; Reset the alarm.

<b>Fault</b>	<b>Possible cause</b>	<b>Solution</b>
The control panel displays alarm A6 End of stroke detection	Load detection at the end of a stroke	Check for manure accumulation in non visible places; Reset the alarm.
The control panel displays alarm A7 Significant current gap between motors.	Significant current gap between the 2 motors.	Check for motor defects. Check current of each motor; Reset the alarm; Contact your dealer if the problem persists.
The control panel displays alarm A8 - A9 Defective sensor PWR-030	Bad connection on the PWR030.	Check wiring in the control panel; Shut power off for 30 seconds to reset the control panel. Contact your dealer if the problem persists.
The control panel displays alarm A10 - A12 Voltage phase loss sensor 1 on line 1-2 or 3. (PWR030-1)	Voltage phase lost Wiring Power dysfunction Malfunction of the Sensor 1 (PWR030-1)	Check the motor voltage; Check motor connections; Check wiring in the control panel; Check power lines. Replace the PWR030 Contact your dealer if the problem persists.
The control panel displays alarm A13 - A15 Current phase loss sensor 1 on line 1-2 or 3. (PWR030-1)	Current phase lost Wiring Power dysfunction Malfunction of the Sensor 1 (PWR030-1)	Check the motor current; Check motor connections; Check wiring in the control panel; Check power lines. Contact your dealer if the problem persists.

## Operating faults

### Troubleshooting possible faults

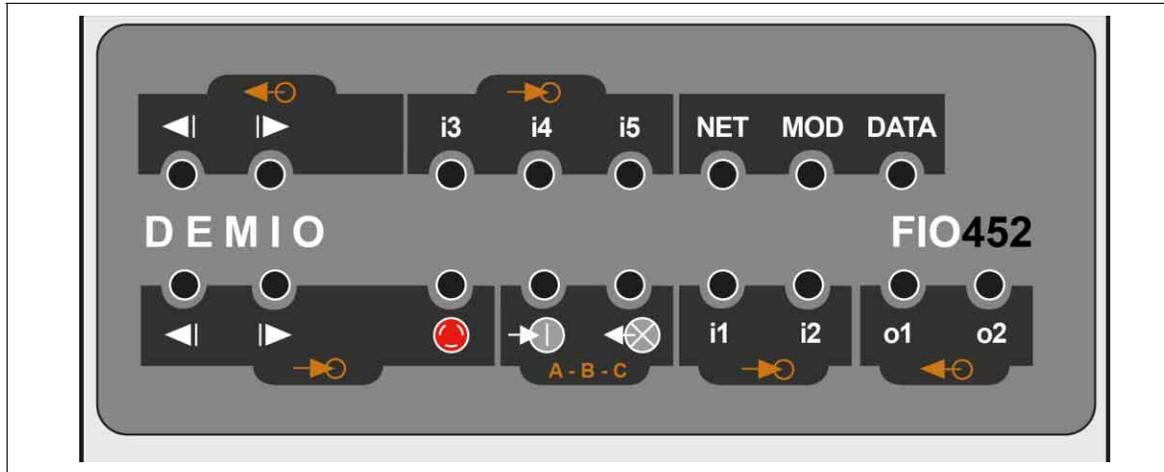
The control panel displays alarm A16 - A18 Voltage phase loss motor 2 (PWR030-2)	Voltage phase lost Wiring Power dysfunction Malfunction of the Sensor 2 (PWR030-2)	Check the motor voltage; Check motor connections; Check wiring in the control panel; Check power lines. Contact your dealer if the problem persists.
The control panel displays alarm A19 - A21 Current phase loss motor 2 (PWR030-2)	Current phase lost Wiring Power dysfunction Malfunction of the Sensor 2 (PWR030-2)	Check the motor current; Check motor connections; Check wiring in the control panel; Check power lines Contact your dealer if the problem persists.
The control panel displays alarm E1 Connection loss with the FIO	Faulty connection on the control panel. Power dysfunction Malfunction of the control panel module (FIO452).	Check the wiring. Shut power off for 30 seconds to reset the control panel; Contact your dealer if the problem persists.
The control panel displays alarm E2 Connection loss with the sensor (PWR030-1)	Faulty connection on the control panel. Power dysfunction Malfunction of the control panel module (FIO452). Malfunction of the PWR030 sensor.	Check the wiring; Shut power off for 30 seconds to reset the control panel; Check the power lines. Contact your dealer if the problem persists.



#### **Note!**

For any other faults, please contact your dealer.

## 10.4 FIO452 indicator lights



	Direction: Status of the proximity switch inputs; in reverse/forward.
	<p>External emergency stop: Status of the external emergency stop input. The indicator light must be ON in normal operation.</p> <p>If the indicator is OFF, the external emergency button is activated or disconnected.</p> <p>In absence of an external emergency button, a jumper should be wired (see electric diagrams).</p>
	<p>External start: Status of the external start signal. The indicator light is ON when receiving an external start signal.</p>
	<p>Feedback: Status of the feedback output. The output is activated when cleaning is in progress.</p>
	<p>Inputs: Status of the inputs.</p>
	<p>Outputs: Status of the outputs.</p>
	<p>Inputs: Status of the input signals</p>

<b>NET</b>	<p>User interface connection: Status of the user interface (UCC).</p> <p>There are four possible status:</p> <ul style="list-style-type: none"><li>- Solid green indicates that the communication is functional.</li><li>- Solid red indicates a network problem caused by wiring, power or addressing problem.</li><li>- Flashing red indicates that the connection with user interface is dysfunctional. Normally caused by intermittent problems such as electrical noise, grounding or wiring problems.</li><li>- Flashing green indicates that the network is functional, but communication with the interface has not been established yet.</li></ul>
<b>MOD</b>	<p>Module status:</p> <p>The indicator light is ON when the FIO452 is powered.</p>
<b>DATA</b>	<p>HP sensor connection:</p> <p>Status of the network connection with the PWR030 HP Sensors. Flashes when the communication is functional.</p>

## 11 Maintenance

### 11.1 Special qualification required for maintenance work

Maintenance work must be performed by trained personnel in accordance with the safety instructions.

Electric work must be performed by a certified electrician.



Read the section Safety - Personnel qualifications.

### 11.2 Safety instructions for maintenance



#### **Warning!**

Inadvertent start!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.



#### **Warning!**

Risk of fall!

Be aware of the surroundings when working near areas such as a storage pit, a cross gutter, a transfer pump hopper, etc.



#### **Warning!**

Risk of injury!

Keep all safety guards in place. When necessary to remove the guard, reinstall the guard after completing the maintenance steps.



#### **Caution!**

Risk of injuries!

Wear protective boots, eye gear and gloves for all steps included in this section.



#### **Caution!**

Risk of stumble!

Be aware of the cable in the free stall alleys.



#### **Caution!**

Slippery floor!

Manure makes the floor slippery, be aware.

Use the walkways when possible.

**11.3 Scheduled maintenance responsibilities**



**Attention!**

When operating this GEA Houle product using other manufacturer's components and/or products such as a PTO, a tractor, a motor, a pump, etc., ALWAYS perform maintenance of the component and/or product as recommended by its manufacturer.

Fit R-300						
Task	First 50hours of use	Every week	Every month	Every 3 months	Every 6 months	Every 15 000 hours of use
<b>Maintenance to be performed by trained personnel</b>						
Check the tension of the rope / cable	<b>Refer to the corresponding maintenance section for schedule</b>					
Adjust the tension of the rope / cable						
Visual inspection	x			x		
Check the bolts and anchor bolts torque	x				x	
Grease the drive unit bearings		x				
Grease the drive unit wheels and the corner wheels		<b>i</b>				
Check and adjust the scraper blades			x			
Grease the scraper hinges				x		
Lubricate the threaded rod					x	
General cleaning					x	
<b>Maintenance to be performed by a dealer</b>						
Change gearbox oil						x

<b>i</b>	<p>If this product operates in an environment where abrasive material such as sand, is present, perform this maintenance twice as often. For example, if maintenance is scheduled every week, perform maintenance twice a week.</p>
----------	---

**11.4 Check the tension of the rope / cable****Specific maintenance schedule**

Every hour during the first day of use

Every day during the first week of use

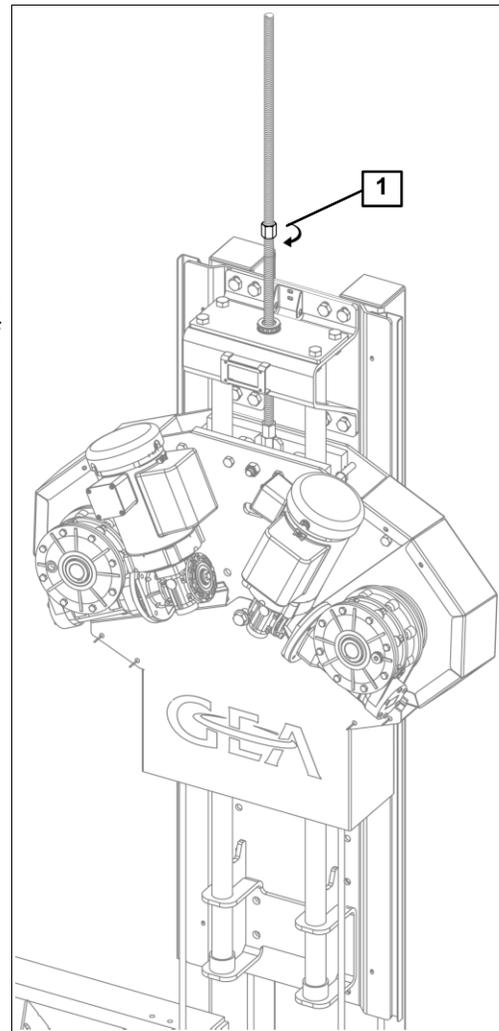
Every week during the first month of use

Every month during the first six months of use

**Attention!**

Improper cable tension affects the load detection system. It causes the system to malfunction.

- Check the drive unit position. Make sure it is not at the end of its stroke.
- Screw the nut (1) each time the drive unit raised.
- When the drive unit is close to the top, the cable tension of the complete system must be adjusted. Follow the procedure in the section Maintenance - Adjust the tension of the rope / cable.



**11.5 Adjust the tension of the rope / cable**

Specific maintenance schedule
Every hour during the first day of use
Every day during the first week of use
Every week during the first month of use
Every month during the first six months of use



**Warning!**

Inadvertent start!



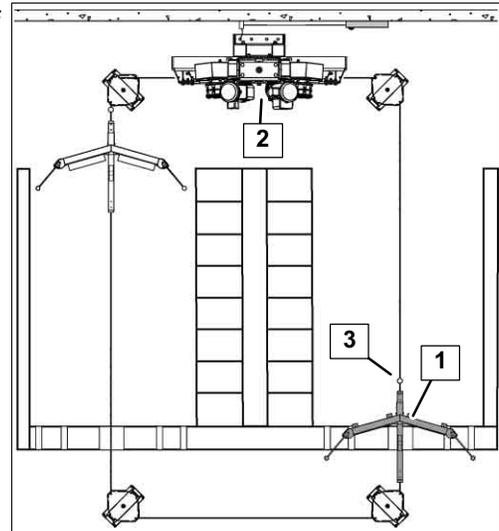
Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.



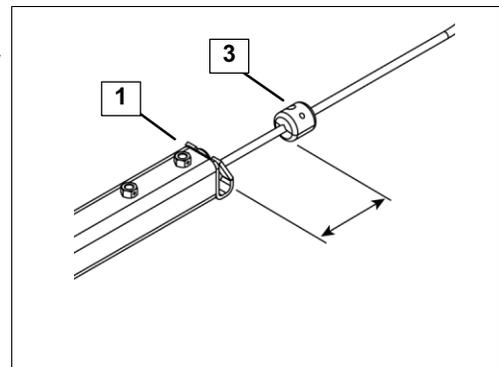
**Attention!**

Improper cable tension affects the load detection system. It causes the system to malfunction.

- Park the scrapers at the end of stroke and shut the system down.
- Perform all the following steps using the furthest scraper (1) from the drive unit (2).



- Measure the distance between the draw bar (1) and the stroke limiter (3).
- Note the measurement.
- Remove the stroke limiter (3) from the cable.

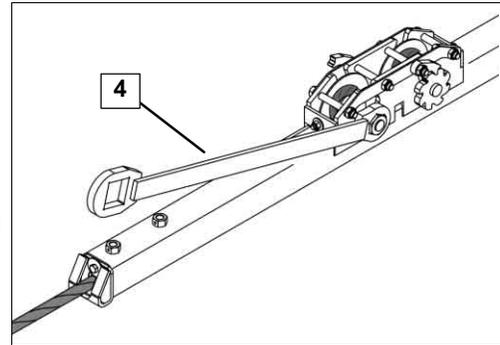


**Warning!**

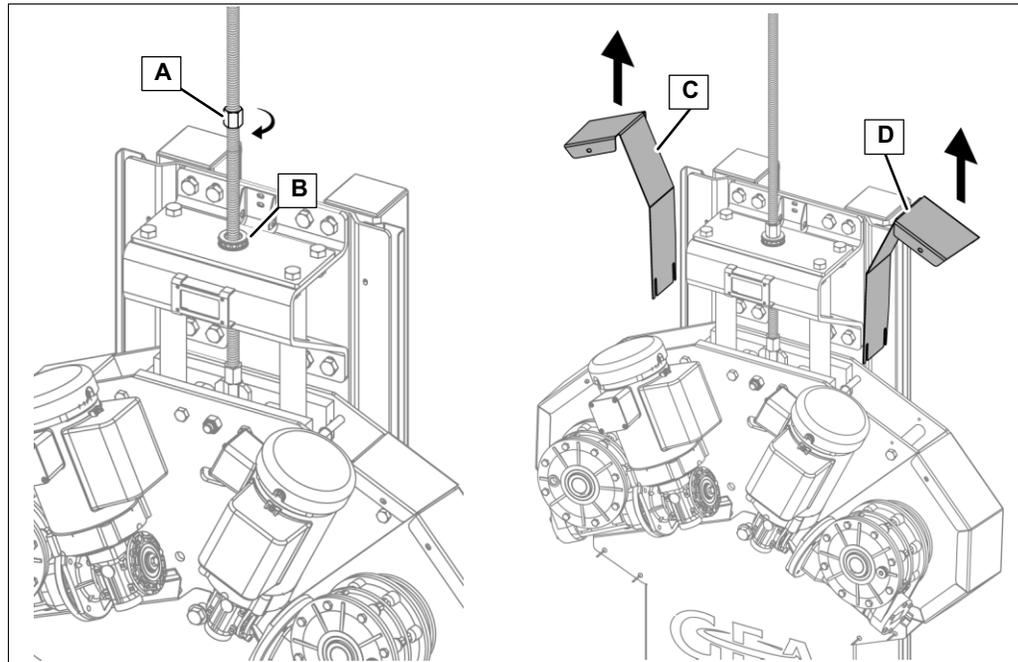
Risk of injury!

Be careful when using the wrench, the cable is under tension.

- Remove the tensioner guard from the scraper draw bar.
- Using the wrench (4), release the cable tension and unroll the tensioners completely.
- Unscrew the tensioner bolts and release the cables.



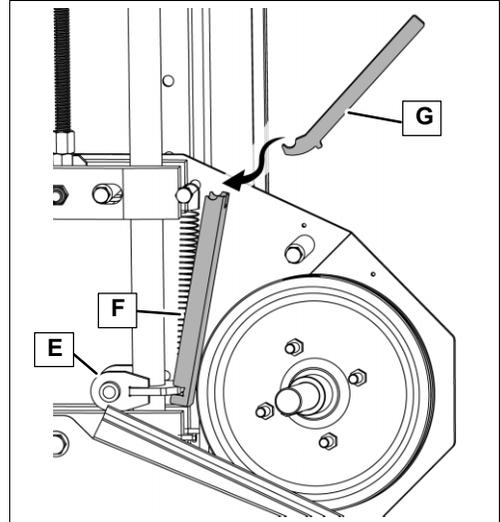
- Screw the top nut (A) until it touches the bearing (B).
- Remove the safety guards (C, D) from the drive unit.



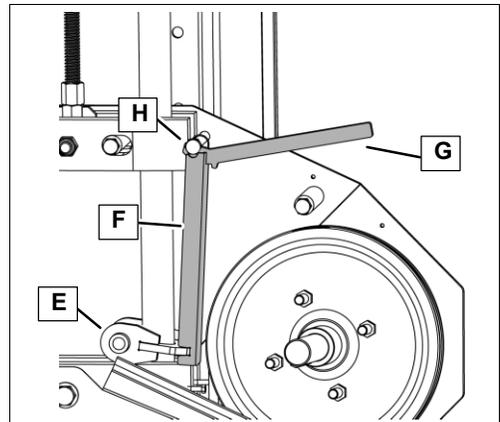
## Maintenance

Adjust the tension of the rope / cable

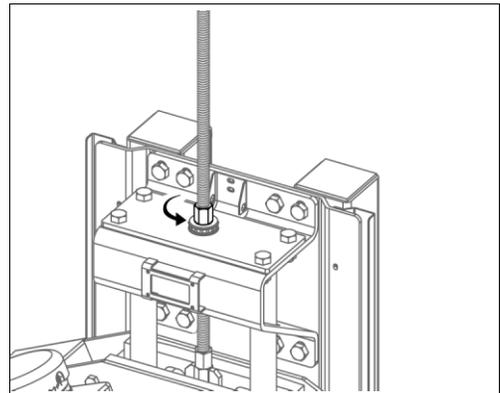
- Position the releasing tool (F) on the locking device (E).
- Place the lever (G) on the releasing tool.



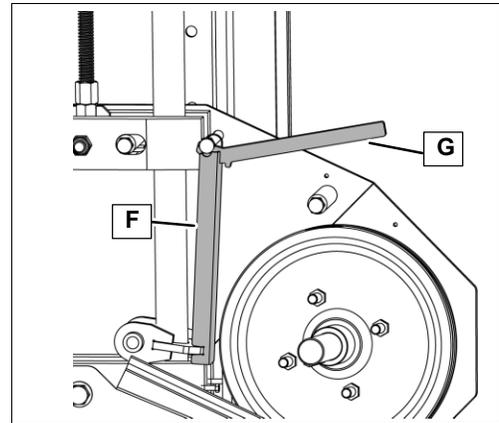
- Apply pressure on the lever (G) and position the top of the releasing tool (F) under the bolt (H)
- Repeat the steps above to install the second releasing tool.



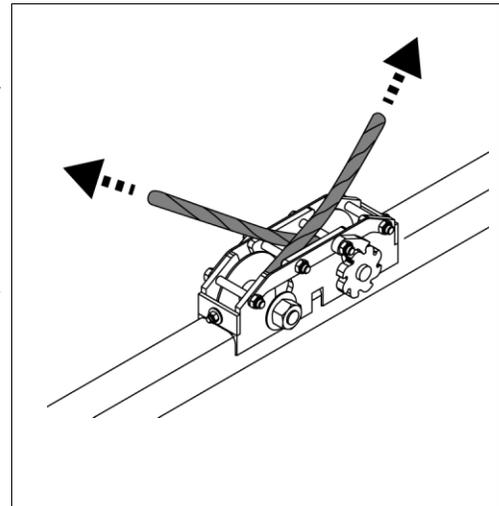
- Unscrew the top nut until the drive unit head is completely lowered.



- Remove the two release tools (F) from the drive unit using the lever.



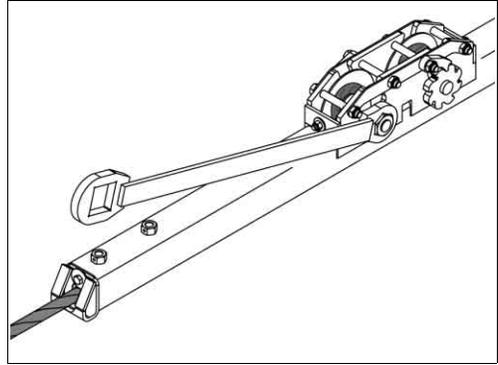
- Reposition the scraper in parking position. Since the cable stretched, the parking position of the scraper may have shifted.
- Pull the cables to eliminate extra cable length.
- Check the cable over the complete system and make sure it is correctly positioned in each pulley.
- Cut the cable while keeping 10" (25 cm) of cable over the tensioner. To prevent split ends, add tape on the cable before cutting.



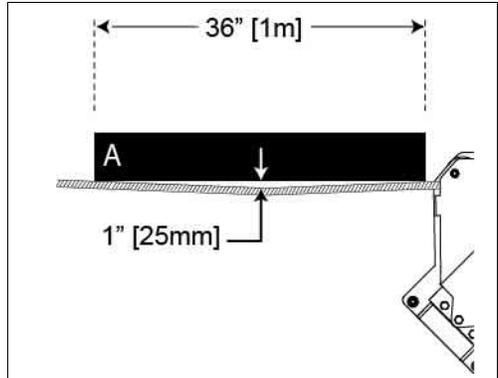
## Maintenance

### Adjust the tension of the rope / cable

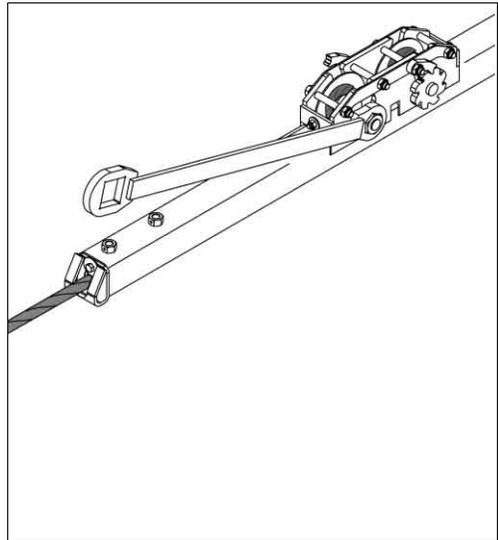
- Position the cable to keep  $\frac{1}{2}$ " (13 mm) of cable out of the tensioner and lock with the bolt. Repeat for the second tensioner.
- Using the wrench, wind the tensioner until the scraper starts moving. Repeat for the second tensioner.



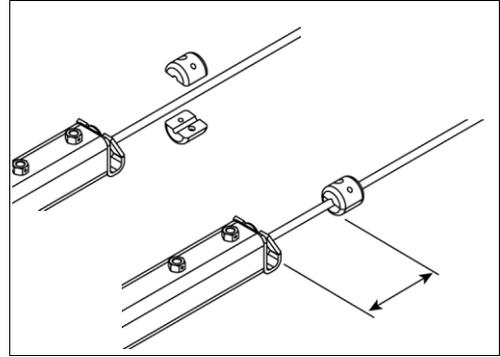
- Check the cable tension on the corner wheels located next to the drive unit.
- Position a 36" (1 m) straight edge (A) on the floor next to the cable.
- Pull the cable by hand to measure the tension in the center of the straight edge (A). The cable must roughly deflect 1" (25 mm).



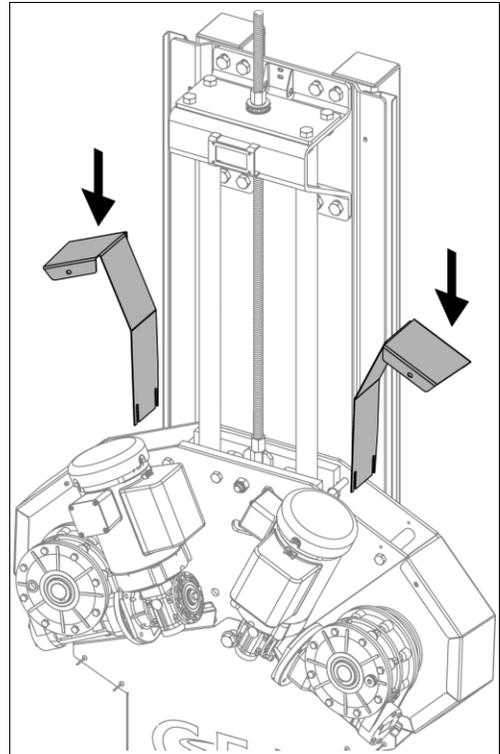
- If the deflection is greater than 1" (25 mm), follow the steps below to adjust tension correctly.
- Roll one catch on each scraper tensioner using the wrench. Proceed scraper by scraper. Make sure the cable tensioner is correctly locked.
- Repeat these steps until the deflection is obtained on each corner wheel located next to the drive unit.
- Install the tensioner cover on the scraper draw bar.



- Assemble the stroke limiter on the cable using the initial position measurement.



- Install the drive unit guards.



## 11.6 Visual inspection

### First 50 hours of use



**Warning!**

Inadvertent start!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.

### Step 1 - Inspect the system to find any defective parts or signs of abnormal wear



**Caution!**

Risk of injury!

Wear protective boots, eye gear and gloves.

- Check the cables, corner wheels, scrapers, motor and speed reducer.
- Change the cable if it shows signs of significant wear.

### Step 2 - Check for manure accumulation

- Remove accumulated manure on the corner wheels, the scraper, etc.

## 11.7 Check the bolts and anchor bolts torque

### First 50 hours of use



**Warning!**

Inadvertent start!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.

- Check that all bolts and anchor bolts are secured,
- Torque when required,

## 11.8 Grease the drive unit bearings

### Every week

**Note!**

Use PRECISION™ GENERAL PURPOSE EP2 NLGI2 grease (or equivalent). Do not use grease containing Molybdenum disulfide.

**Warning!**

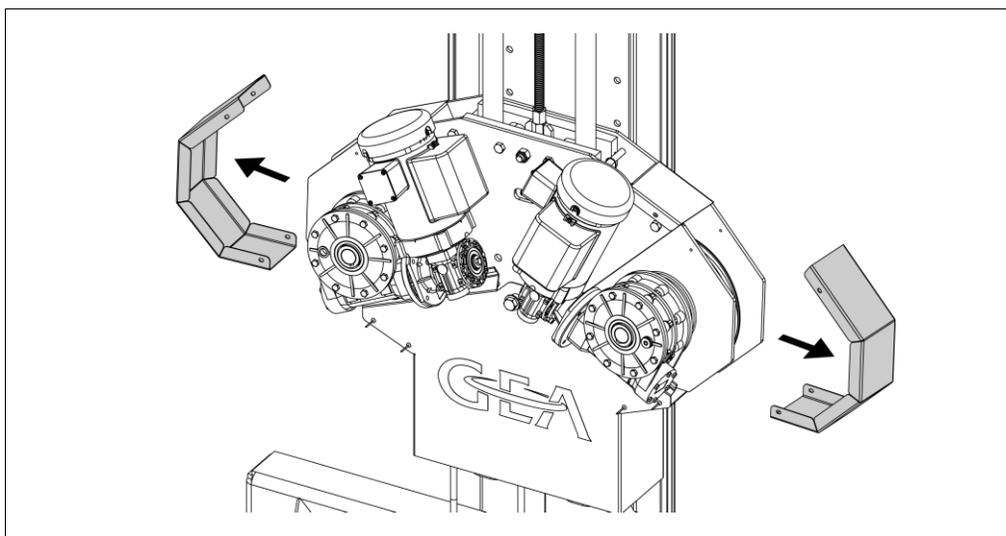
Inadvertent start!

Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.

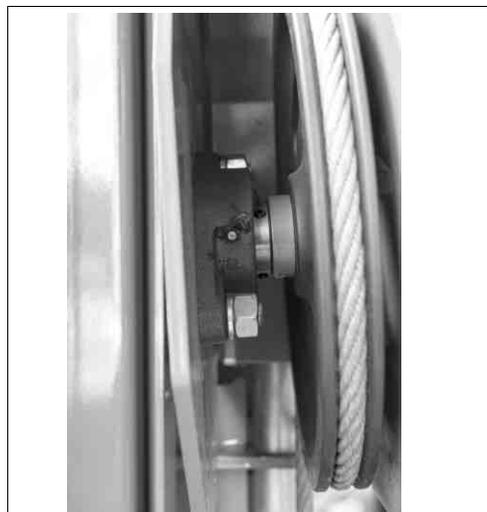
**Caution!**

Risk of skin irritation!

Wear protective gloves and eye wear.



- Remove the side guards.
- Wipe clean the grease fitting;
- Slowly add 2.25 grams of grease.



**11.9 Grease the drive unit wheels and the corner wheels**

Every week



**Note!**

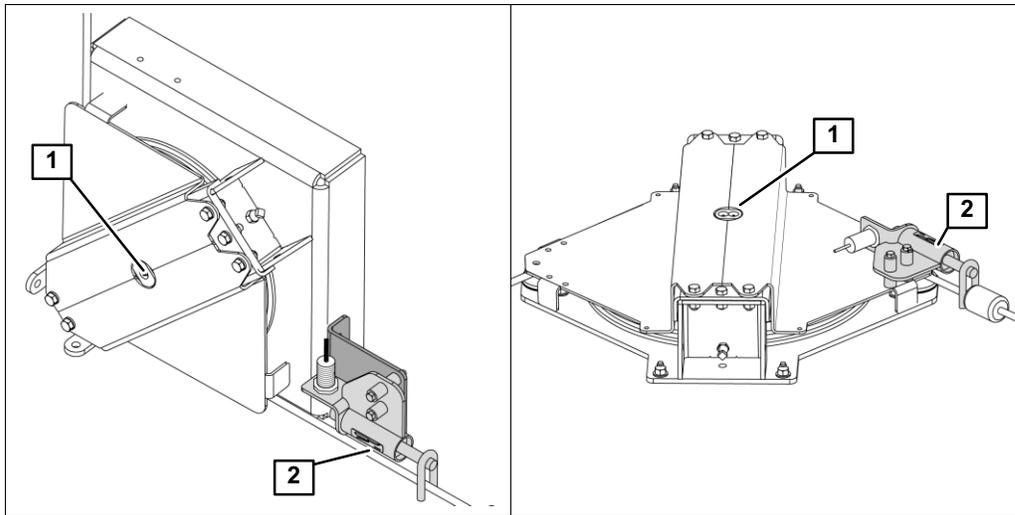
Use PRECISION™ GENERAL PURPOSE EP2 NLGI2 grease (or equivalent). Do not use grease containing Molybdenum disulfide.



**Caution!**

Risk of skin irritation!  
Wear protective gloves and eye wear.

- Wipe clean the bearing grease fitting (1);
- Slowly add 3.15 grams of grease;
- Wipe clean the grease fitting (2) of the proximity switch mechanism;
- Slowly add 2 grams of grease;



**11.10 Check and adjust the scraper blades**

Every month



**Warning!**

Inadvertent start!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.



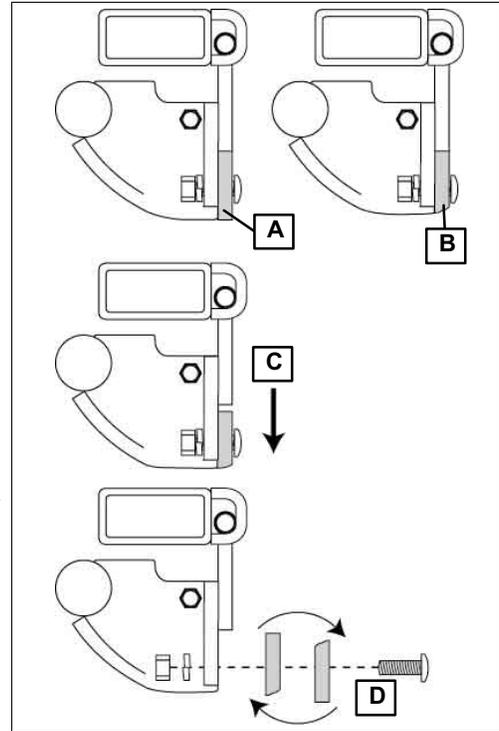
**Caution!**

Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



### 11.10.1 Steel blade

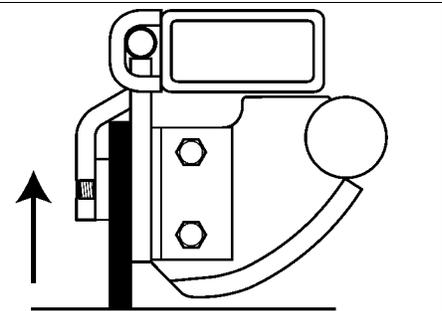
- Check the scraper blades.
  - (A) New blade
  - (B) Worn blade
- Adjust the blades downward to compensate wear (C).
- Flip or rotate the blades to wear each edge (D).
- Blades must be replaced when they can no longer be adjusted.



### 11.10.2 Urethane blade

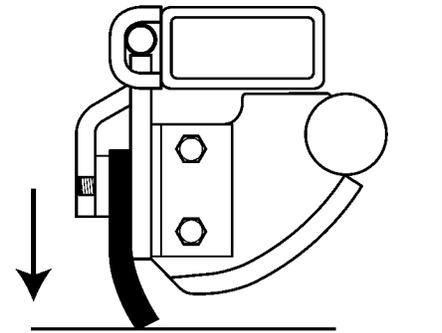
#### Upward adjustment:

- When positioned as illustrated, the urethane blade cleans the alley similarly to a steel blade.



#### Downward adjustment:

- When positioned as illustrated, the urethane blade cleans the alley more gently, such as a squeegee.



### 11.11 Grease the scraper hinges

Every 3 months



**Note!**

Use PRECISION™ GENERAL PURPOSE EP2 NLGI2 grease (or equivalent). Do not use grease containing Molybdenum disulfide.

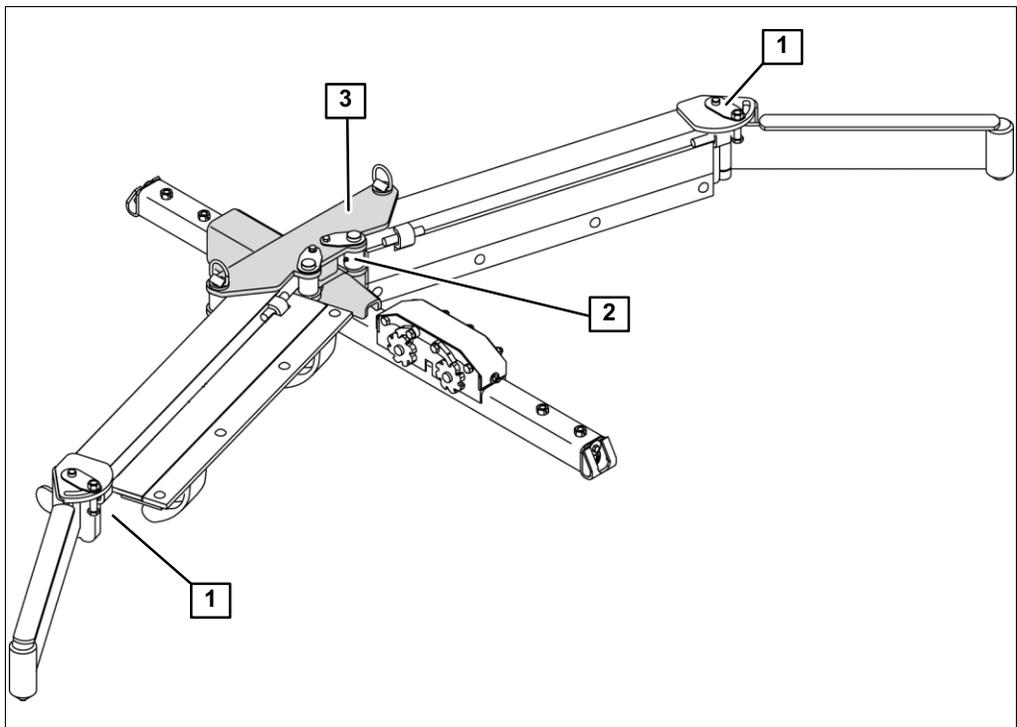


**Warning!**

Inadvertent start!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.



**Caution!**

Risk of finger pinching, cuts and skin irritation!  
Wear protective gloves.



- Using a brush, apply grease on the scraper hinges (1).
- Using a grease gun, apply grease on the scraper hinges (2). The scraper arms can be removed from the central part (3).

**11.12 Lubricate the threaded rod****Every 6 months****Note!**

Use PRECISION™ GENERAL PURPOSE EP2 NLGI2 grease (or equivalent). Do not use grease containing Molybdenum disulfide.

**Warning!**

Inadvertent start!



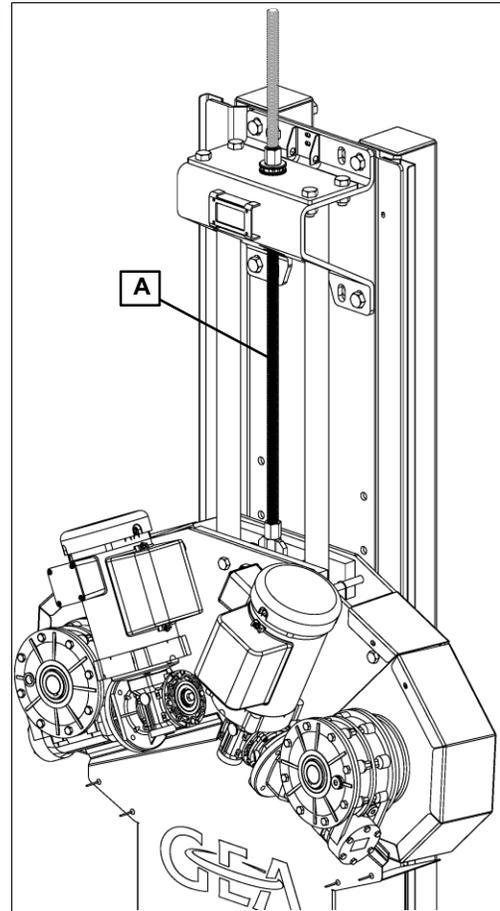
Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.

**Caution!**

Risk of skin irritation!

Wear protective gloves and eye wear.

- Apply grease on the threaded rod (A).



## 11.13 General cleaning

### Every 6 months



**Danger!**

Risk of electric shock!

Never pressure wash electric equipment and components.



**Warning!**

Inadvertent start!



Shutdown is required! Shut the main power supply and lock with a locking device. Post a sign on the panel stating: "Do not turn on, electric work in progress" in order to prevent an inadvertent energizing of the main electric supply.



**Caution!**

Wear protective boots, eye gear and gloves.



**Attention!**

Use cold water to clean this product. Do not exceed 2000 psi (105 bar) when using a pressure washer and keep the nozzle at a distance of 1ft (30 cm) from the surface to be cleaned.

- Clean manure buildup on the scrapers, the corner wheels, the alleys, etc.
- Remove manure build up in and out of the drive unit.



- Apply grease on the drive unit bearings. Refer to section Maintenance - Grease the drive unit bearings.
- Apply grease on the drive unit wheels and the corner wheels. Refer to section Maintenance - Grease the drive unit wheels and the corner wheels.
- Reinstall all safety guards.
- Clean the control panel box with a dry cloth to remove all dust particles.

## 12 Decommissioning

Decommissioning work must be performed by trained personnel in accordance with the safety instructions.

Electric work must be performed by a certified electrician.



Read the section Safety - Personnel qualifications.

### 12.1 Safety instructions for decommissioning



**Warning!**

Risk of fall!

Be aware of the surroundings when working near areas such as a storage pit, a cross gutter, a transfer pump hopper, etc.



**Warning!**

Risk of injury!

When releasing tension on a cable, a significant load is applied on the wrench. Clean the tensioner and make sure the wrench is properly inserted on the bolt head before applying force on the wrench. Before releasing pressure on the wrench, make sure the tensioner is locked in position.



**Caution!**

Risk of stumble!

Be aware of the cable in the free stall alleys.



**Caution!**

Slippery floor!

Manure makes the floor slippery, be aware. Use the walkways when possible.



**Caution!**

Risk of skin irritation, cuts, finger pinching!

Wear protective gloves when handling the scrapers, steel cable, lubricants, corner wheels, the electric motor, pulley and belt.



**Attention!**

Clean oil spills immediately and follow the local rules and regulations on oil disposal.

- Shut and lock the main power supply.
- Disconnect all electric wires.
- Decommission all parts.

### 12.2 Decommissioning/disposal

Handle unused installation material properly and dispose in accordance with current valid local regulations on waste disposal and utilization.

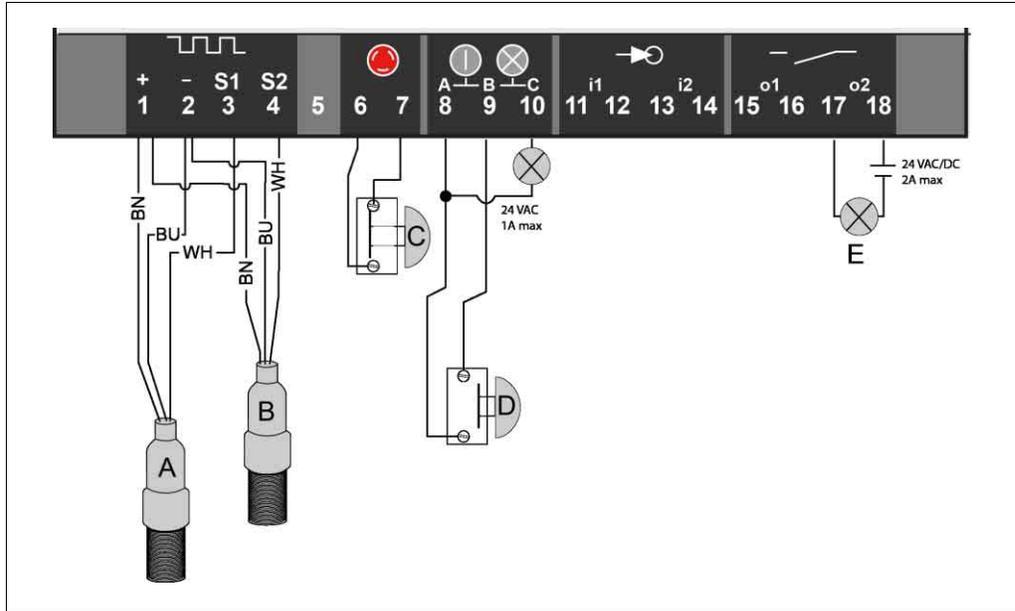
Recycle if possible.

**13 Appendix**

**13.1 IVR PRO / IVR PRO Max@ccess wiring diagram**



Find the wiring diagram in the control panel box



**Legend:**

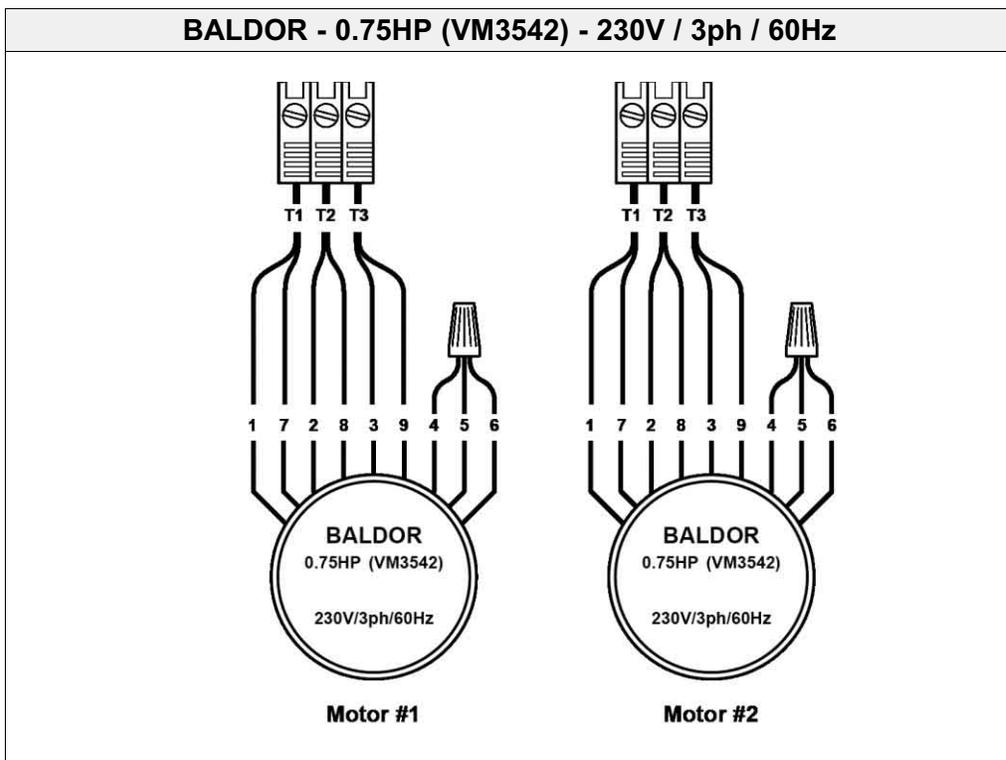
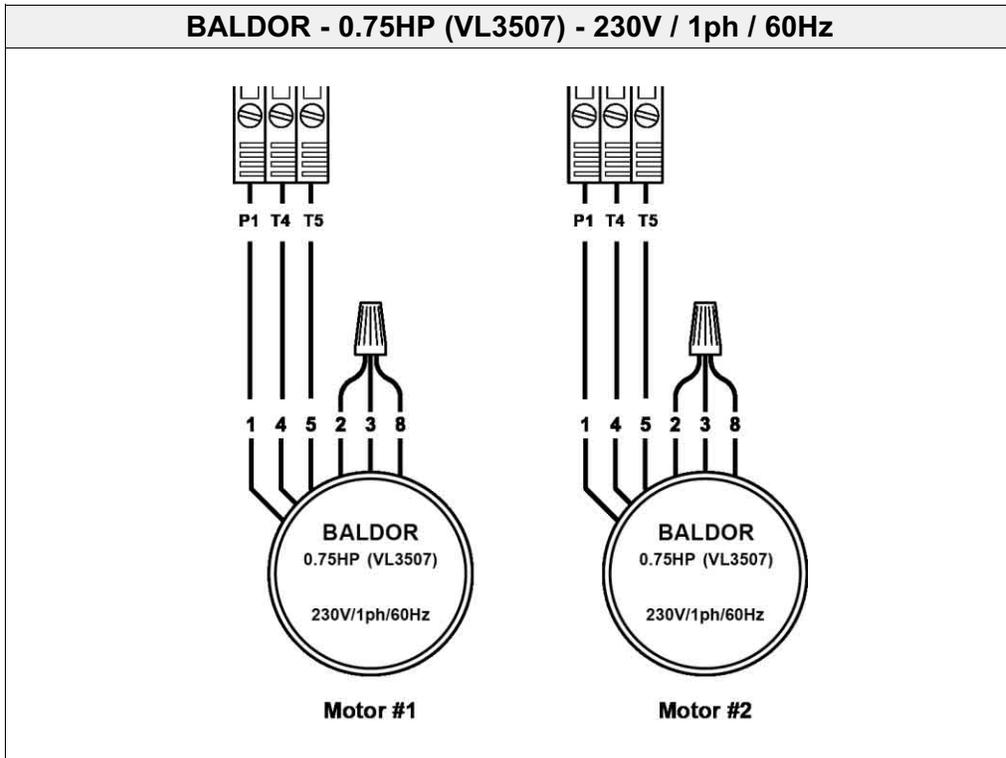
A	Proximity switch A	BU	Blue
B	Proximity switch B	BN	Brown
C	Remote emergency stop button	WH	White
D	Remote start button with indicator light		
E	Dry contact for alarm indicator light		

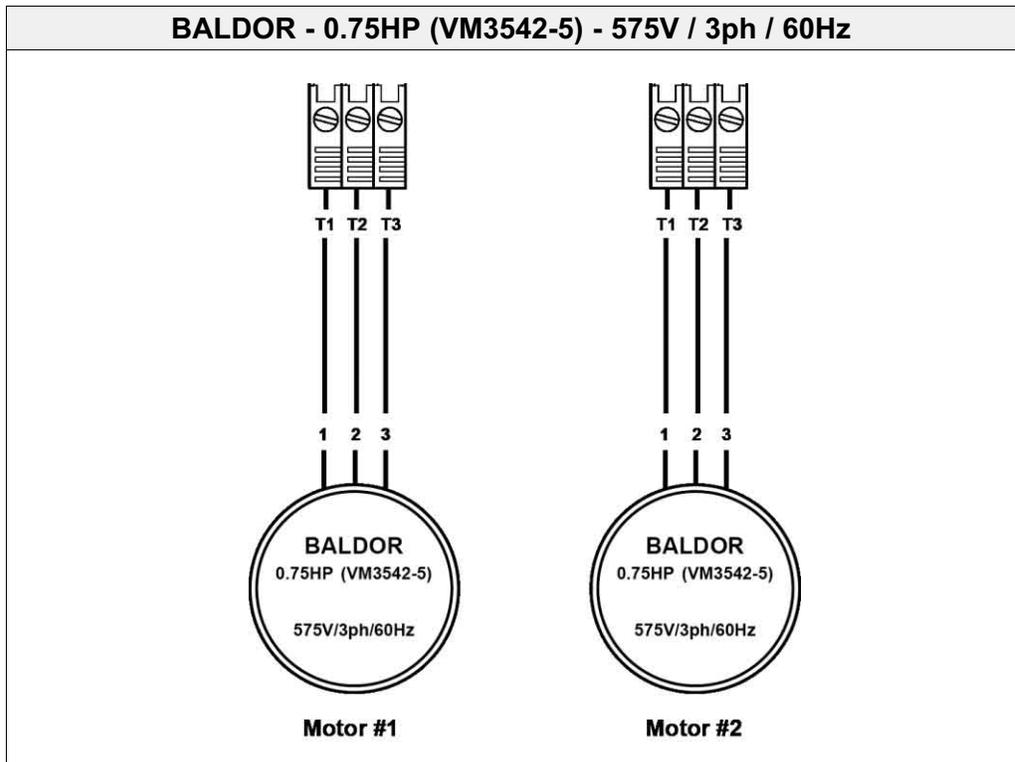
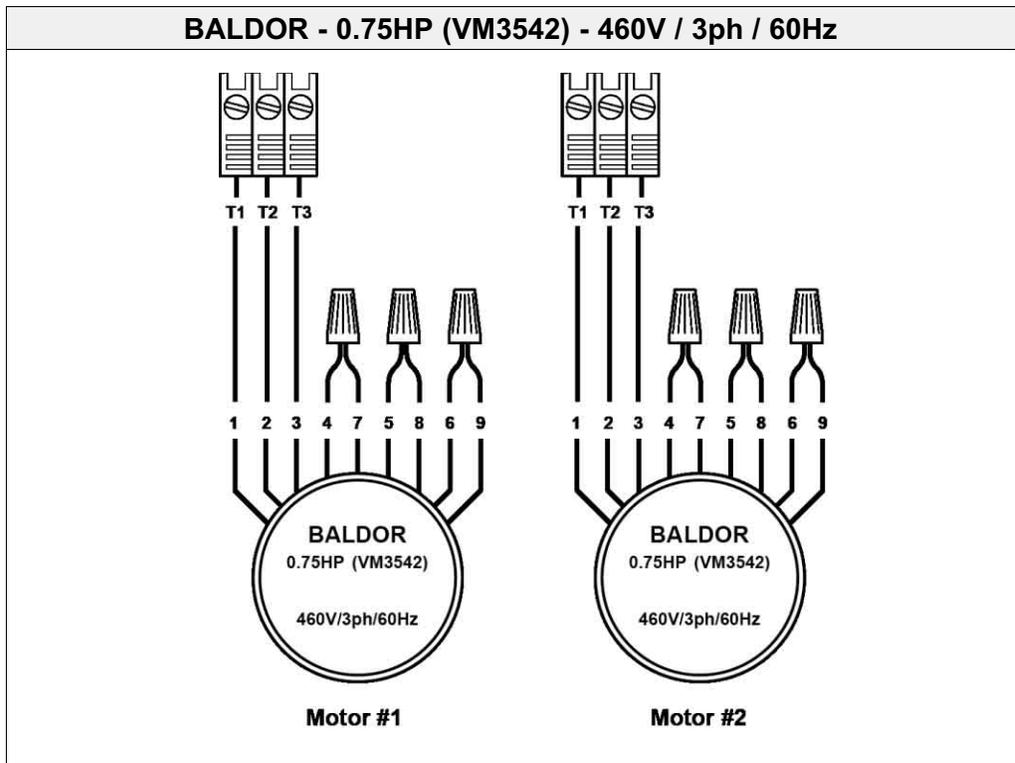
**13.2 Electric motor wiring diagram**



**Note!**

GEA provides specifications and electric motor wiring diagram related to Baldor motor(s). For any other motor brand, contact the manufacturer.





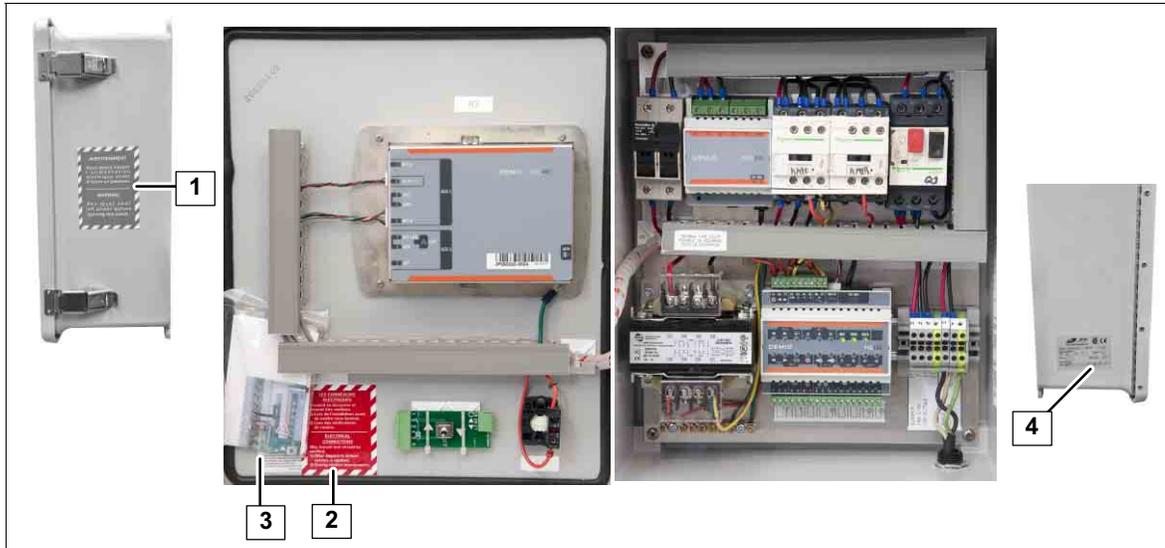
**13.3 Safety labels and lubrication labels position**

**13.3.1 Drive unit**



<p><b>A</b></p>	 <p>2099-4725-710</p>	<p><b>B</b></p>  <p>2009-4701-240</p>
-----------------	--	--

### 13.3.2 Control panel



Legend:			
1	Warning! Shut off power before opening this panel.	3	Control panel box certification label
2	Electric connections may loosen and should be verified after shipment, before service is applied and during routine maintenance.	4	Control panel specifications

**13.4 Abbreviations**

<b>Terms</b>	<b>Explanation</b>	<b>Terms</b>	<b>Explanation</b>
@	at	∅	Diameter
CE / EC	European Union	CW	clockwise
CCW	counterclockwise	fax	facsimile
I.D.	inside diameter	Inc.	Incorporated
NC	national coarse thread	O.D.	outside diameter
PTO	power take-off	PVC	polyvinyl chloride
QC / qc	Quebec	SAE	Society of Automotive Engineers
Us / USA	United States of America	www	world wide web

<b>Units</b>	<b>Explanation</b>	<b>Units</b>	<b>Explanation</b>
A	Amperage (electrical current)	kW	kilowatt
AS	Alloy steel	km/h	kilometres per hour
bar	bar pressure	LPM	liters per minute
cm	centimeters	LCS	Low carbon steel
°	degree angle	lbs	pounds
°C	degree centigrade/ Celsius (temperature)	m	meter
°F	degree Fahrenheit (temperature)	MCAS	Medium carbon alloy steel
' / ft	Feet	MCS	Medium carbon steel
ft-lb	foot-pound	min	minute
g	grams	mph	miles per hour
gal.	gallon	mm	millimeters
GPM	gallons per minute	N/m	Newton meter
Hp	horsepower	psi	pounds per square inch (pressure)
hrs	hours	RPM	revolutions per minute
HT	Heat threaded	s	second
Hz	Hertz	V	volt (voltage)
" / in	inch (= 25.4 mm)	VDC	volts of direct current
kg	kilograms	VAC	volts of alternative current
kPa	kilo Pascal	Ω	Ohm (resistance)



## We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 index.

### GEA Canada

GEA Farm Technologies Canada Inc. / Division GEA Houle  
4591 boul. St-Joseph  
Drummondville, Qc, J2A 0C6

☎ +1 819 477 - 7444  
☎ +1 819 477 - 5565

geahoule@gea.com  
www.gea.com