ARVO-TEC OY

Robot Feeding System

ROBOT FEEDING SYSTEM

FEEDING PROCESS MANAGEMENT VIA WEB BASED INTERFACE

ALL INFORMATION IN ONE DATABASE WITH DATALOGGING

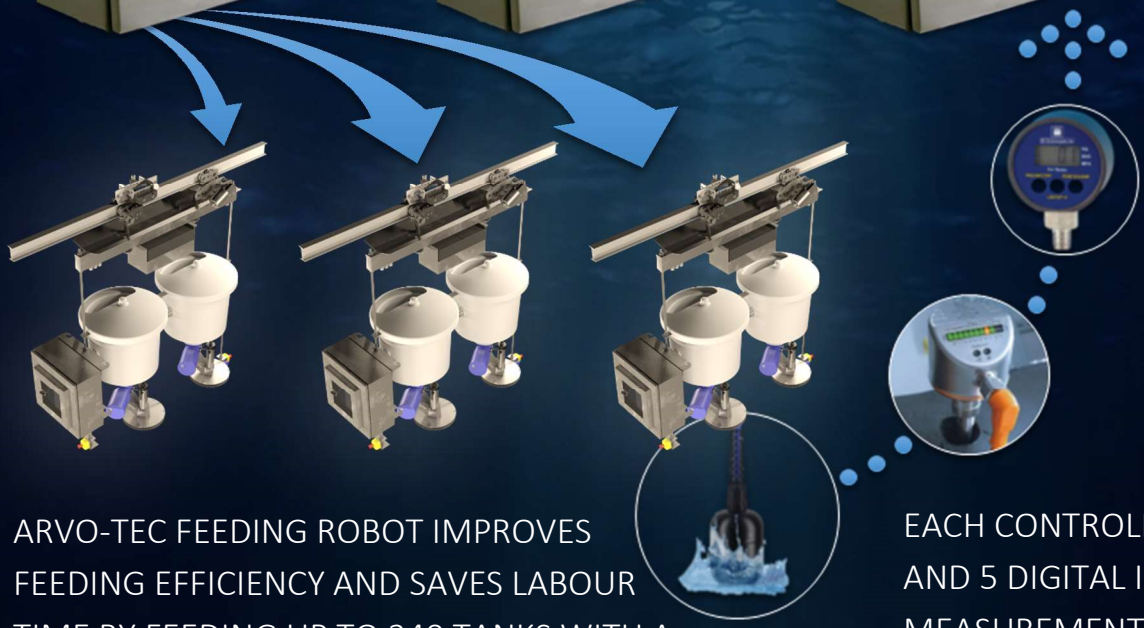
REMOTE ACCESS FROM ANYWHERE

ACCESS YOUR SYSTEM ONLINE

BASE CONTROLLERS FOR MEASUREMENTS, LIGHT CONTROL AND ALARMS

LINK UP TO 30 BASE UNITS USING CABLE, RADIO OR LAN COMMUNICATION

OPTIONAL GSM-ALARMS



ARVO-TEC FEEDING ROBOT IMPROVES FEEDING EFFICIENCY AND SAVES LABOUR TIME BY FEEDING UP TO 240 TANKS WITH A SINGLE ROBOT THUS ELIMINATING THE NEED FOR A FEEDER AT EACH TANK
UP TO 4 DIFFERENT FEEDS / ROBOT
AUTOMATIC REFILL SYSTEM
UP TO 3 ROBOTS PER BASE UNIT

EACH CONTROLLER HAS 8 ANALOG AND 5 DIGITAL INPUTS FOR YOUR MEASUREMENTS AND DEVICES TO MAKE USE OF FOR MORE ACCURATE FEEDING AND IMPROVED WATER QUALITY.

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ROBOT FEEDING SYSTEM

ARVO-TEC FEEDING ROBOT

Arvo-Tec feeding robot improves feeding efficiency and saves labour time by feeding a large number of tanks with a single robot thus eliminating the need for a feeder at each tank.

Arvo-Tec BASE unit controls up to 3 robots with a combined total of 240 tanks and maximum rail length of 450 metres per robot.

High feed turnover rate through the hopper keeps feed fresh and central location of silos makes storing the feed simple.

Flexible programming using magnets as reference points. Set 1, 2 or 3 feeding points for each tank or feed whilst on the move.

One robot can handle multiple feeding frequencies at once for different types and sizes from fry to broodstock.

Standard versions for 2-4 feed and 50l hoppers. Custom sizes and configurations are available on request up to a total feed weight of 300kg or 450 litres.

Options for full Arvo-Tec control system with PC connection or standalone robot.

Arvo-Tec LD & HD electric spreaders can be mounted on the robot with ease.
Pellet size up to 8mm Ø

Our specialists are ready to help you with rail configuration as well as robot design. Please contact your nearest retailer for further info.

TECHNICAL SPECIFICATIONS

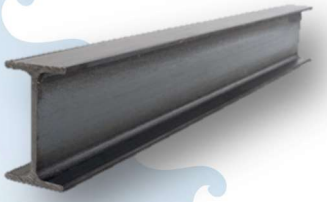
- TRAVEL SPEED 18M/MIN (6MIN/100M)
- MAX. DAILY DOSE >2000KG
- BATTERY POWERED 24 VDC – RECHARGES AT HOME BASE/CHARGING STATION
- OPTICAL SENSOR FOR COLLISION AVOIDANCE
- STANDARD OPTIONS FOR 2-4 FEEDS
- MAX RAIL LENGTH 450 M / ROBOT, MAX 240 TANKS /ROBOT
- AUTOMATIC REFILLING SYSTEM OPTIONAL
- ADVANCED ARVO-TEC CONTROL SYSTEM WITH PC CONNECTION OPTIONAL
- COMPATIBLE WITH ELECTRICAL DISC SPREADERS
- FLEXIBLE RAIL CONFIGURATIONS AND FEEDING BEHAVIOUR OPTIONS
- INP 80 DIN 1025 RAIL

ARVO-TEC FEEDING ROBOT

NAME	CODE	ADDITIONAL INFO
Arvo-Tec feeding robot 2x50l	4001	
Arvo-Tec feeding robot 3x50l	4002	
Arvo-Tec feeding robot 4x50l	4003	

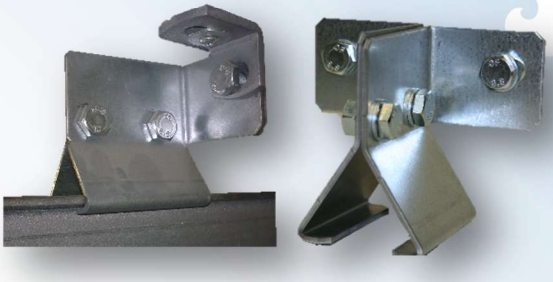
- Standard versions 2,3,4 feeds with TD2000 robot version feeders and 50l hoppers
- Codes include an operational standalone version of the robot without automatic filling station or BASE controller
- Codes include, home station, charger and 1 set of dosing drums for feeders
- All parts made of corrosion resistant materials: AISI 316 stainless steel or plastic, suitable for salt water applications
- Mounts to standard INP 80 DIN 1025 rail
- Battery powered 24 VDC – recharges at home base/charging station
- Indoor use only

INP 80 DIN 1025 rail	4101	
90° Curve /R1000	4102	



- Galvanized steel
- Sold by metre
- Standard length 12m bar

Ceiling suspension bracket/pair Galvanized	4203	
Ceiling suspension bracket/pair Hot dip galvanized	4204	

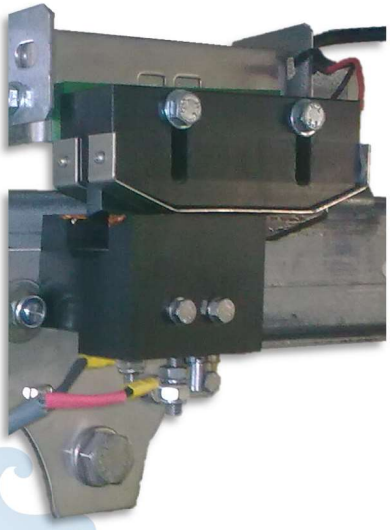


- Standard mount to INP 80 DIN 1025 rail for ceiling suspension
- Codes for galvanized and hot dip galvanized options

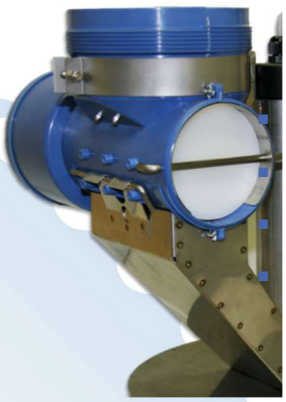
ARVO-TEC FEEDING ROBOT

NAME	CODE	ADDITIONAL INFO
Magnet	4107	▪ Essential for robot function; each command during operations adds 1 magnet to the setup

Additional Charging station	4799	▪ Additional charging station for setups with a long open loop track ▪ Enables charging at the far end of the track. Robot waits until next feeding and feeds on the way back fully charged resulting in more efficient feeding ▪ Code includes: Mounting brackets, charging station & charger



HD – Heavy duty electric spreader	1084	▪ Powerful spreader that meets the needs for higher volumes and continuous feeding. ▪ The electrical spreaders remain quiet even while operating at maximum capacity and at high speed ▪ Electric spreaders are supplied with 2 short and 1 long adjustable Vector Shields for adjusting the feeding zone from approximately 120° up to 360° making the spreader ideal for robot use Recommended pellet size: 0,3-8mm Ø Up to 10m diameter feeding Disc diameter 300 mm Ø Codes include fastening pins for easy mounting to feeders plus necessary nuts and bolts + ABS connectors.



ARVO-TEC FEEDING ROBOT

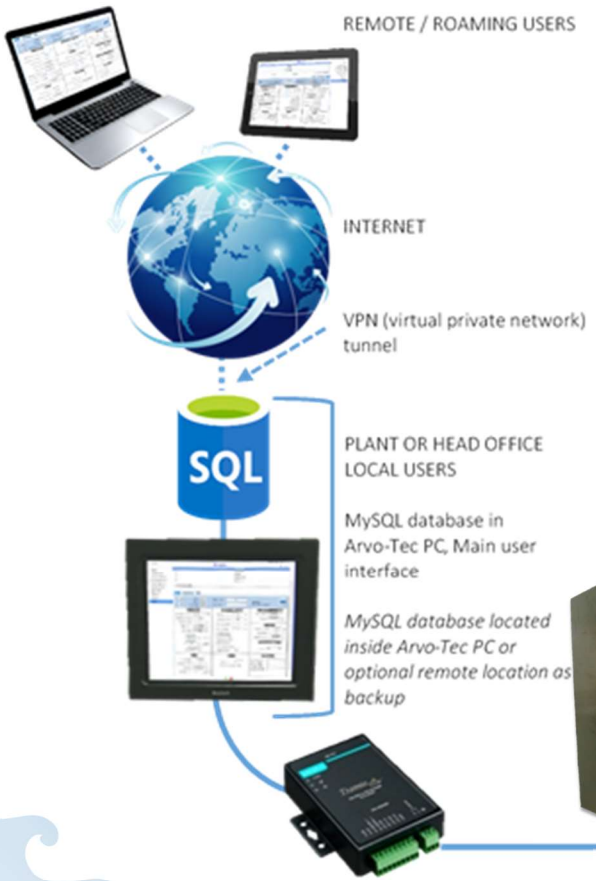
NAME	CODE	ADDITIONAL INFO
LD – Light Duty electric spreader	1086	

Both LD & HD spreaders' speed controller comes encased in IP65 rated box

- The LD and HD electric spreaders are designed to be mounted directly to TD 2000 Feeders for ideal pellet distribution
- Both LD and HD spreaders have AISI 316 stainless steel chassis.
- New models feature new motor and transmission with improved materials and better sealing to meet the demands of corrosive environments expanding the life of the spreaders considerably.
- Both LD and HD spreaders include a stepless speed controller for accurate control
- Recommended pellet size: 0,3-5mm Ø
- Up to 10m diameter feeding
- Disc diameter 200 mm Ø
- Codes include fastening pins for easy mounting to feeders plus necessary nuts and bolts.

ARVO-TEC FEEDING ROBOT		
Code	Description	Additional info.
4001	Arvo-Tec Feeding robot 2x50l	Standalone ready robot 2 feeds
4002	Arvo-Tec Feeding robot 3x50l	Standalone ready robot 3 feeds
4003	Arvo-Tec Feeding robot 4x50l	Standalone ready robot 4 feeds
4101	INP 80 DIN 1025 Rail	Galvanized steel, standard length 12m bar
4102	90° Curve /R1000 Rail	Galvanized steel
4203	Ceiling suspension bracket/pair	Galvanized steel
4204	Ceiling suspension bracket/pair	Hot dip galvanized steel
4107	Magnet	
4799	Additional charging station	
1084	HD - Electric spreader	
1086	LD - Electric spreader	

ARVO-TEC WEB BASED FEEDING SOFTWARE & PC USER INTERFACE



Adding a PC connection with web based software to Arvo-Tec feeding system gives access to clear, easy to use graphic interface with optimized functions for managing your farm with ease.
Control PC works as a central user interface to the system enabling control of all WOLF-control units, probes, feeders and other connected equipment from one point.
Quick overview of you measurements, alarms and detailed tank status.
Create day reports, feed reports and store all your data.

Information can be exported to be used by 3rd party software e.g. Excel, Fishtalk.

System is accessible using a browser anywhere through VPN, enabling secure online water quality -and feeding monitoring.

PC connection enables on-line support from Arvo-Tec service team should the need arise.

MAIN MEASUREMENTS VIEW

DATALOGGING VIEW

TANK VIEW

Arvo-Tec Oy
Ruukintie 45 FI-79620 Huutokoski, Finland / Tel. +358 20 729 9910
arvotec@arvotec.fi / **www.arvotec.fi**

BASE CONTROLLER & PC CONNECTION

ARVO-TEC ROBOT CONTROLLER - BASE

The Arvo-Tec BASE control system is a fully integrated feeding, measurement, light control (photo period) and alarm system, with the main purpose of controlling feeding robots.

Each BASE-unit supports up to 3 robots with a total of 240 tanks.

Radio communication between BASE and robot.

The system uses water temperature, oxygen content and biomass as initial data and then controls feeding according to mathematical energy demand model which is adjustable by user. Manual values can be set by the user with ease.

Feeding times can be set manually or by automatic day length calculation. Daily feeding can be divided into two periods by using daily pause option. Daily pause is always set on or off by user and its length is always set by user. Light control will always follow daily feeding period.

Control the day/night cycle of through photo period control. Simulated sunrise & sunset

Robot system with base unit is designed to be operated mainly from PC.

Arvo-Tec BASE-controller is encased in AISI 316 stainless steel cabinet for extreme conditions.

BASE CONTROLLER & PC INTERFACE

NAME	CODE	ADDITIONAL INFO

BASE 4669

- Supports up to 3 robots with total of 240 tanks
- Link up to 30 BASE controllers = up to 7200 tanks
- Optional PC connection
  - Wired PC connection requires Converter and Surge Protection Board
- AISI 316 Stainless steel cabinet

Industrial multitouch panel PC with web based ArvoPRO software 3702

- Intel© Celeron? J1900 2.0GHz Panel PC
- 12.1" LED 1024*768 with 5-wire resistive touch screen
- RAM 4GB DDR3L SODIMM
- SSD 120GB SATA
- WLAN PCIe mini-card,
- Intel Wireless-N 7260 Half min
- WIN 10 PRO ENG 64-BIT

- Standard communication: twisted pair RS-485 cable up to 1 km
- Wired PC connection requires serial converter and surge protection board
- Optional: Low power radio link for PC communication up to 200m

ARVO-TEC ROBOT CONTROLLER - BASE

NAME	CODE	ADDITIONAL INFO
Overvoltage protection board ARINT	3602	▪ Provides overvoltage protection for communication between PC and BASE controllers
Converter RS 485-232	370	▪ Extend the distance between PC and control unit up to 10 km ▪ Add converter & ARINT-board for controller-PC communication

AVOTEC PROFESSIONAL CONTROLLER - WOLF / ARVO-TEC PC CONNECTION		
Code	Description	Additional info.
4669	Robot controller - BASE	
3702	Arvo-Tec PC connection & software	Web based – win 10
3602	Overvoltage protection board ARINT	For communications
3700	Converter RS 485	
~~3701~~	~~Import-export extension for web based software~~	

AUTOMATIC FILLING STATION

For the complete Arvo-Tec robot system; the automatic filling station adds further ease and efficiency to daily operations by managing the loading of the feed onto the robots.

System detects when robot is home and loads it automatically stopping when optical sensors tells the system that the hoppers are full, or when robot leaves the filling station.

High durability and a simple auger conveyer design makes Arvo-Tec automatic filling station reliable.

Options for 2, 3 or 4 feed stations.

2 size options as standard for silos.

75mm Ø auger conveyor as standard or for larger feeds 110mm Ø auger conveyor

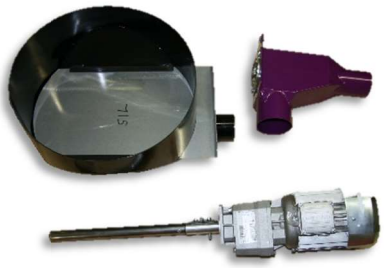
Recommended pellet sizes:

75mm Ø auger	0,3-6mm Ø
110mm Ø auger	6-10mm Ø

Power: 400 VAC 3-phase as standard. Other voltages on request

AUTOMATIC FILLING STATION

NAME	CODE	ADDITIONAL INFO
Automatic filling station 2-feed	4501	▪ Filling station codes include: • Silo bottom: circular or rectangle • Electric control box with PLC • Feed discharger with 100mm/75mm reducer • Rail/Ceiling metal support frame for feed dischargers. Additional supports built on site • Optical feed level sensors • Home switch for robot ▪ A larger 1,5kW motor is required for filling stations using 110mm Ø auger ▪ Other operational voltages on request
Automatic filling station 3-feed	4500	
Automatic filling station 4-feed	4499	
1.5KW motor for 110mm system	4608	
System voltage alteration	4502	



Feed silo 600 litre	1034	▪ White PE Hopper & lid ▪ RX 101 NATURAL polyethylene resin

Stand for 600 litre silo	1053	▪ AISI 316 Stainless steel

Feed silo 1400 litre	142005	▪ Powder coated steel, lid on request

AUTOMATIC FILLING STATION

NAME	CODE	ADDITIONAL INFO
Auger conveyor 75mm Ø	4602	▪ Sold by metre ▪ Delivered in 6m long pipe bundles
Auger conveyor 110mmØ	4607	

45° Curve 75 mm Ø	4603	▪ 45 degree curve
45° Curve 110 mm Ø	4606	
Pipe joint 75mm Ø	4604	
Pipe joint 110 mm Ø	4605	

AUTOMATIC FILLING STATION		
Code	Description	Additional info.
4501	Automatic filling station 2-feed	Add silo and auger for complete system
4500	Automatic filling station 3-feed	Add silo and auger for complete system
4499	Automatic filling station 4-feed	Add silo and auger for complete system
4608	1,5kW motor for 110mmØ system	Upgrade for larger feed using 110mmØ spiral
4502	Operational voltage modification	On request
1034	600 litre silo PE	Silo & lid
1053	Stand for 600 litre silo	AISI 316 stainless steel
142005	1400 Litre powder coated silo	Lid on request
4602	Auger conveyor 75mmØ	Standard
4607	Auger conveyor 110mmØ	Larger feeds
4603	45° Curve 75 mm	Standard
4606	45° Curve 110 mm Ø	Larger feeds
4604	Joint 75mm Ø	Standard
4605	Joint 110mm Ø	Larger feeds

ACCESSORIES AND SPARES

ROBOT SPARES

Magnet
4107

Optical sensor,
collision avoidance
4805

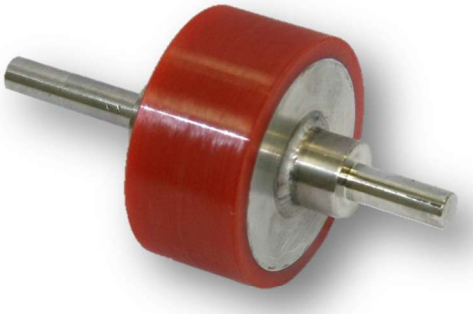
Magnet reading
sensor
4806

Robot fuse set
4807

2x10A, 2x20A, 2x25A ATO-fuse
3x1A, 3x2.5A, 3x4A 2x8A Glass fuse

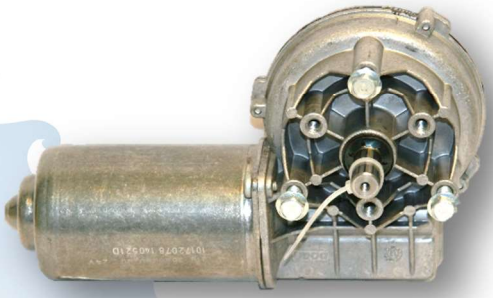
Spare gearwheel for
robot drive motor
4808

Drive wheel
4811



Drive clutch 2001
4815

Drive motor 2001
4821 **(**inc. 4808)



Controller for drive motor

4822

ROBOT SPARES

Steeringl bearing
101594

Carriage bearing
101593

Emergency-Stop
101035

ROBOT ACCESSORIES & SPARES		
Code	Description	Additional info.
4107	Magnet	
4805	Collision avoidance optical sensor	
4806	Magnet reading sensor	
4807	Robot fuse set	2x10A, 2x20A, 2x25A ATO-fuse 3x1A, 3x2.5A, 3x4A 2x8A Glass fuse
4808	Gearwheel for robot drive motor	
4811	Drive wheel	
4815	Drive clutch	
4821	Drive motor	
4822	Controller for drive motor	
101594	Steering bearing	
101593	Carriage bearing	
101035	Emergency stop button	Cased emergency stop-button

ROBOT FEEDER & SPREADER ACCESSORIES & SPARES

Spare scraper + nuts and bolts
1022

Spare Spring plate /pair
113037

HST Insert
1024

Back plate
1114

Cable connector pair ABS
1092

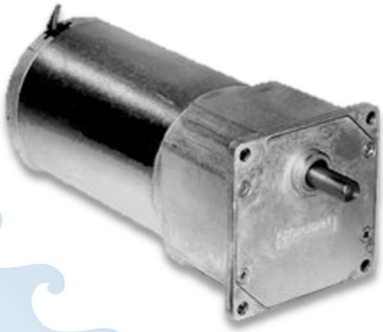
Spare spring
1100

Feeder fastening pin
1104

Drum holding Pin
1105

Robot feeder casing/9
w/o motor
4819

Robot feeder motor
24VDC 15 RPM
1013



ROBOT FEEDER & SPREADER SPARES

Electric spreader HD
spare motor
117505

Electric spreader HD
speed controller
101530

Electric spreader
speed controller
101531

All models 2016 onwards

ROBOT FEEDER & SPREADER SPARES		
1022	Spare scraper with fastenings	
113037	Spare spring plate /pair	
1024	HST insert	
1092	Cable connector pair ABS	
1100	Spare spring	
1104	Feeder fastening pin	
1105	Drum holding pin	
1114	Back plate	
4819	Robot feeder casing/9 w/o motor	Spare casing
1013	Robot feeder motor 24VDC 15 RPM	Spare motor
117505	**Electric Spreader HD spare motor *old model***	**Available as spare for older model only**
101530	**Electric Spreader HD speed controller *old model***	**Available as spare for older model only**
~~1188~~	~~Electric Spreader LD spare motor~~	
101531	Electric Spreader LD spare speed controller	

ELECTRIC SPREADER 16 SPARES AND ACCESSORIES

LD spare motor & transmission + seal with 2 m cable /2016
1094

New model LD motors fit old LD spreader normally.

HD spare motor & transmission /2016
1093

HD/LD Transmission /2016
1095

2016 model motor / casing can be retrofitted to existing old model HD frames using an upgrade kit. This enables using the improved motor with older HD spreaders

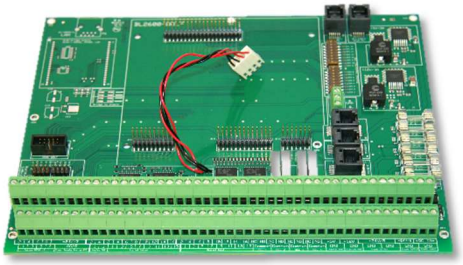
CODE: 1096

Code includes:
motor/transmission + axle
motor casing
speed controller & box
necessary screws
2m cable & ABS connectors

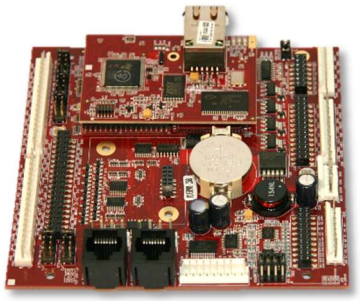
ELECTRIC SPREADER SPARES AND ACCESSORIES *2016*		
1094	LD Spare motor & Transmission + seal with 2 m cable	motor + transmission
1093	HD spare motor & transmission	motor + transmission
1095	HD/LD Transmission	transmission only
1096	Motor upgrade kit for old HD spreaders	

BASE CONTROLLER-SPARES AND ACCESSORIES

ARIF-WOLF Motherboard
140014



CPU-WOLF
100030



Memory backup battery
CR2477N
3714

Power supply 24 VDC 2,5A
101001

BASE CONTROLLER SPARES AND ACCESSORIES		
Code	Description	Additional info.
140014	ARIF-WOLF Motherboard	Connection board
100030	CPU-WOLF	
3714	Memory backup battery	CR2477N
101001	Power Supply 24 VDC 2,5 A	Input AC 100-240v

ITEM LIST

Code	Description	Additional info.
	ARVO-TEC FEEDING ROBOT	
4001	Arvo-Tec Feeding robot 2x50l	Standalone ready robot 2 feeds
4002	Arvo-Tec Feeding robot 3x50l	Standalone ready robot 3 feeds
4003	Arvo-Tec Feeding robot 4x50l	Standalone ready robot 4 feeds
4101	INP 80 DIN 1025 Rail	Galvanized steel
4102	90° Curve /R1000 Rail	Galvanized steel
4203	Ceiling suspension bracket/pair	Galvanized steel
4204	Ceiling suspension bracket/pair	Hot dip galvanized
4107	Control magnet	
4799	Additional charging station	
1084	HD - Electric spreader	
1086	LD - Electric spreader	
	AVOTEC PROFESSIONAL CONTROLLER - WOLF / ARVO-TEC PC CONNECTION	
4669	Robot controller - BASE	
3702	Arvo-Tec PC connection & software	win 10 - web based
3602	Overvoltage protection board ARINT	
3700	Converter RS 485-232	
~~3701~~	~~Import-export extension for web based software~~	
	AUTOMATIC FILLING STATION	
4501	Automatic filling station 2-feed	Additional info.
4500	Automatic filling station 3-feed	Add silo and auger for complete system
4499	Automatic filling station 4-feed	Add silo and auger for complete system
4608	1,5kW motor for 110mmØ system	Add silo and auger for complete system
4502	Operational voltage modification	Upgrade for larger feed / 110mmØ spiral
1034	600 litre silo PE	On request
1053	Stand for 600 litre silo	Silo & lid
142005	1400 Litre powder coated silo	AISI 316 stainless steel
4602	Auger conveyor 75mmØ	Lid on request
4607	Auger conveyor 110mmØ	Standard
4603	45° Curve 75 mm	Larger feeds
4606	45° Curve 110 mm Ø	Standard
4604	Joint 75mm Ø	Larger feeds
4605	Joint 110mm Ø	Standard

ITEM LIST

ROBOT ACCESSORIES & SPARES		
4107	Magnet	
4805	Collision avoidance optical sensor	
4806	Magnet reading sensor	
4807	Robot fuse set	2x10A, 2x20A, 2x25A ATO-fuse
		3x1A, 3x2.5A, 3x4A 2x8A glass fuse
4808	Gearwheel for robot drive motor	
4811	Drive wheel	
4815	Drive clutch	
4821	Drive motor	
4822	Controller for drive motor	
101594	Steering bearing	
101593	Carriage bearing	
101035	Emergency stop button	Cased emergency stop-button

ROBOT FEEDER & SPREADER SPARES		
1022	Spare scraper with fastenings	
113037	Spare spring plate /pair	
1024	HST insert	
1092	Cable connector pair ABS	
1100	Spare spring	
1104	Feeder fastening pin	
1105	Drum holding pin	
1114	Back plate	
4819	Robot feeder casing/9 w/o motor	Spare casing
1013	Robot feeder motor 24VDC 15 RPM	Spare motor
117505	Electric Spreader HD spare motor *old model*	Available as spare for older model only
101530	Electric Spreader HD speed controller *old model*	Available as spare for older model only
~~1188~~	~~Electric Spreader LD spare motor~~	
101531	Electric Spreader LD spare speed controller	

ELECTRIC SPREADER SPARES AND ACCESSORIES *2016*		
1094	LD Spare motor & Transmission + seal with 2 m cable	motor + transmission
1093	HD spare motor & transmission	motor + transmission
1095	HD/LD Transmission	transmission only
1096	Motor upgrade kit for old HD spreaders	

BASE CONTROLLER SPARES AND ACCESSORIES	
140014	ARIF-WOLF Motherboard
100030	CPU-WOLF
3714	Memory backup battery
101001	Power Supply 24 VDC 2,5 A

NOTES