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TUGGER2 12 VOLT CAPSTAN WINCH WITH FAIRLEAD MANUAL



MODEL:

ETUG2-FL1

ETUG2-FL12

ETUG2-FL26

TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS BEFORE USE

Due to continuing improvements, actual product may differ slightly from the product described herein



1 YEAR MANUFACTURER'S LIMITED WARRANTY

Introduction

This manual was written to help you make the best use of your new winch and to use it in the most secure way. **READ IT CAREFULLY BEFORE USING THE WINCH.** For any problems or questions please contact us directly.

Safety guidelines

The winch is designed to pull non-rolling objects, usually at a plus or minus 45-degree angle from the horizontal. The use of a pulling device implies serious risks of injuries, property damage or even death.

Do not underestimate its potential danger.

Safety messages

Your safety and the safety of others are very important. You will find important safety messages in this manual. Read them carefully.

These security messages are warning you of potential injuries to either you or others. Every safety message is preceded by a warning symbol and one of the following terms: DANGER, WARNING or CAUTION.

These indicator words mean:

You **WILL** be MORTALLY or SEVERELY INJURED if you do not follow these instructions.

You **COULD** be MORTALLY or SEVERELY INJURED if you do not follow these instructions.

You **COULD** be INJURED if you do not follow these instructions.

The Tugger is a unique winch designed to pull with a consistent power and use unlimited lengths of line. Unlike a conventional drum winch that coils or spools the line on a drum, the Tugger does not lose power because the line is continually bailed or taken off the Capstan as the line is retrieved. This system allows you to have an unlimited length of line where as on most drum winches the line is limited to 50 feet or less. A Capstan design is generally found in marine applications for lifting anchor lines. The product is composed of a winch, mounting box, foot switch, wiring harness, hitch connecting bar and storage case.

The Winch is powered by a 2.2 horsepower, 12 volt, permanent magnet motor. The gear train is a dual carriage with 6 planetary gears having a ratio of 121 : 1 and an RPM of 39. The Capstan head is 3 1/8 in diameter and will retrieve at 55 feet per minute under light loads. The heavier the load; the slower the retrieval speed. Stall speed is approximately 1000 lbs. of vertical lift.

The Mounting Box attaches to the winch and houses a heavy duty solenoid which switches on the winch, and an 80 amp thermal breaker to prevent overload damage. If the breaker trips allow 60 seconds to automatically reset. The top of the box has a cleat to secure loads and also functions as a carrying handle. Electrical plug in connectors are located on the back plate that power the winch and operate the foot switch.

The Foot Switch plugs into the rear plate on the mounting box and with low voltage operates the solenoid. This switch allows you to have both hands free to bail or handle the line coming in off the Capstan.

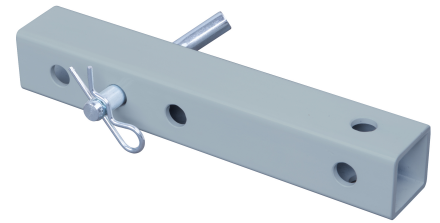
The Wire Harness connects the winch to the vehicle battery. The basic ETUG2 comes with a 6 ft. ET2 wiring harness designed for ATV applications. For a regular pick up application a wiring harness extension ETEC20 is required from the rear of the vehicle to the terminals of the battery and connects with a 200 amp clamp. There are four options in wiring kits depending on the required length of wire. Extensions sold separately Online at www.shop-endurance-marine.com



* The ETUG2-FL12 includes a 6ft wire extension harness *

*The ETUG2-FL26 includes a 20 ft wire extension harness

The Hitch Connecting Bar joins the mounting box assembly to the vehicles 2 inch receiver and is locked on with a standard hitch pin (not supplied) or you can use the bolt and nut that are supplied.



The Storage Bag is a heavy duty reinforced nylon that will store the winch assembly, wire harness, foot switch, and rope

Motor Rotation -Note the direction the motor turns may be changed by reversing polarity on the battery

To Operate, insert the winch into the connector bar and hitch receiver, securely locking them in place with hitch pins. Connect the electrical circuit to the vehicle battery and plug into the receptacles for the power and foot switch on the back plate of the mounting box.



Place a towel over the line at midpoint when pulling, this will prevent a breaking cable from backlash.

To pull a load, wrap three turns of rope around the capstan head. Put minimum tension on the line, press the foot switch and bail (retrieve) the line as it comes in.

Important Safety Warnings

Never use a rope that will stretch such as climbing ropes, anchor lines, dock lines. We recommend using a Samson series #870—AMSTEEL or equivalent doubled braided polyester non-stretching rope.

Endurance Marine offers 1/2" Heavy Duty Double Braided Polyester Rope rated for up to 2000lbs. of pulling. (Not rated for lifting) with Stainless Steel Thimble and Hook. Available in 75ft. 150ft. and 300. Visit: www.shop.endurance-marine.com

Never stand directly behind the winch or in line with a rope under tension. Always stand to the side using the foot switch at least 10 feet from the winch.

When operating the winch always have the vehicle engine running to prevent a battery failure.

Be aware of over heating the winch when using it under maximum load or prolonged running periods. If the motor becomes hot to the touch you must stop and allow it to cool. Over heating voids the warranty

Never immerse the winch under water. It is only splash proof

Safety information

- DO NOT LET CHILDREN USE THE TUGGER WINCH.
- KEEP CHILDREN AND ANIMALS AWAY FROM THE WORK AREA.
- NEVER LET SOMEONE WITHOUT TRAINING USE THE WINCH.
- MAKE SURE THE USER KNOWS ABOUT THE SAFETY AND USAGE PROCEDURES AND HAS READ THIS MANUAL.
- INFORM ALL USERS OF THE SAFETY GUIDELINES AND USAGE PROCEDURES.
- FAMILIARIZE YOURSELF WITH THE PRODUCT AND THE SAFETY GUIDELINES BEFORE WORKING WITH THE WINCH.
- MAKE SURE THAT YOUR CLOTHES ARE NOT GOING TO GET CAUGHT INTO THE WINCH MOBILE PARTS.
- REPLACE ANY SAFETY LABELS THAT ARE DAMAGED, ILLEGIBLE OR MISSING.
- NEVER PUT YOUR HANDS ON THE CAPSTAN DRUM WHEN OPERATING.
- ALWAYS KEEP BYSTANDERS OUTSIDE THE WORKING AREA.
- NEVER PULL ROLLING OBJECTS THAT MIGHT ROLL OUT OF YOUR CONTROL.
- THE WINCH IS NOT INTENDED FOR LIFTING PURPOSES.
- NEVER USE THE WINCH TO LIFT PEOPLE.
- STRETCH EQUALS DANGER!
 - A stretched rope can recoil and cause serious burns as the rope leaves your hand.
 - All ropes stretch: a longer one more than a shorter one. The more you pull, the more it stretches.
 - A stretched rope can also move the load in an unpredictable or dangerous way.
 - A stretched rope can recoil and bring your hand towards the winch causing severe injuries.
- NEVER WRAP THE ROPE AROUND YOUR HAND.
- ALWAYS WEAR GLOVES.
- WE RECOMMEND WEARING HEARING PROTECTION.
- CAREFULLY WATCH THE CAPSTAN DRUM DURING THE OPERATION AND MAKE SURE THAT THE ROPE DOES NOT CROSS OVER ON IT. IF IT HAPPENS, RELEASE THE TENSION ON THE ROPE AND STOP THE MOTOR WHILE UNDOING THE CROSS OVER.



The Endurance winch is powered by a 2.2 hp permanent magnet motor designed for intermittent general duty use. It is not designed as an industrial hoist or to be used in the movement of people.

FEATURES!

Fast line speed!

Low electric current draw!

Instantly installed and removed!

Rated Line Pull	2000 lbs (907kgs), Single Line
Gear Reduction Ratio	121:1
Motor (permanent magnet)	2.2hp (1.5kw), 12 Volt DC
Capstan Head (Diameter x Length)	4.2"x4"
Capstan Head material	T5 Marine Grade Aluminum
Non stretching rope " Samson Amsteel or equivalent	Use up to 9/16 rope
Hook (Stainless Steel)	N/A
Overall Dimensions (L X W X H)	12.2" x 8.5" x 13.8" (310mm x 216mmx 350 mm)
Net Weight	
ETUG2-FL1	47.4 lbs / 21.5 kgs
ETUG2-FL12	48.9 lbs/22.2 kgs
ETUG2-FL26	51.8 lbs/23.5 kgs
Mounting Bolt Pattern	2 inch hitch receiver
Line pull capacity with 3.25" capstan head	2000lbs

SAFETY WARNINGS & PRECAUTIONS

1. Do not operate winch under influence of drugs or alcohol
2. Read manual before using any winch
3. Stay clear of rope and keep others away when in operation or with load on rope. Do not stand in line with a rope under tension. Side to the side as far as possible while operating foot switch.
4. Inspect rope before each use. Do not use winch if rope or winch shows wear or damage.
5. Replace any parts as needed before using the winch
6. When operating have 3 wraps on the capstan
7. Do not use the winch as a hoist or to move people
8. Do not use winch to secure a load or tow vehicles
9. Do not submerge in water , motor is splash proof only.
10. Avoid injury and property damage, be safe and think first before operating winch
11. Place towel or sandbag over rope while winch is in use
12. Do not allow winch to overheat. If hot or is too warm to touch, allow to cool down
IF THE WINCH IS PULLING THE ROPE BUT THE LOAD DOES NOT MOVE (OFTEN THE CASE WHEN USING A VERY LONG ROPE), IT'S BECAUSE YOUR ROPE IS STRETCHING AND COULD REACH THE BREAKING POINT AND RECOIL TOWARDS YOU. SLOWLY RELEASE THE TENSION ON THE ROPE BUT BEWARE OF THE ACCUMULATED TENSION. YOU COULD GET BURNED FROM THE ROPE EXITING YOUR HANDS QUICKLY OR BE PULLED TOWARDS THE WINCH.

How to pause while winching

SLOWLY release the tension on the rope and let it slip on the capstan drum.

DO NOT LET THE ROPE SLIP FOR MORE THAN A FEW SECONDS ON THE DRUM WHILE IN TENSION – THE HEAT CREATED BY THE FRICTION COULD MELT OR DAMAGE THE ROPE.

INSTALLATION INSTRUCTIONS

1. Connect mounting bar by inserting it into the 2 inch hitch receiver and fastening with the grade 5 bolt and nut (as supplied) or a hitch pin (not supplied)
2. Connect winch to the mounting bar by inserting the mounting bar into the winch and fastening with the grade 5 bolt and nut (as supplied) or a hitch pin (not supplied)
3. Plug in the power connector to the receptacle on the back of the winch housing.
4. Connect the appropriate cable with the red clip to the positive battery terminal of the vehicle.
5. Connect the yellow foot switch to the receptacle on the back of the winch housing
6. See options below for the length required of the Wiring Harnesses

Model: ETEC 12 : Twelve foot extension

Model ETEC20 : Twenty foot extension



Note: change rotation direction, reverse polarity

WINCH OPERATION

Securely connect a non-stretching tow line to the load to be moved. Coil a minimum of three wraps of rope around the capstan. With both hands put a small amount of tension on the rope. While standing to the side of the winch (the length of the wire for the foot switch) press and hold the foot switch to pull the load. If the load will not move, release the foot switch and check for obstacles blocking the path. Also check if the load is too heavy for the winch capacity.

The pulling load can be tied off to the cleat which doubles as a carrying handle.

CAUTION This winch is designed for intermittent use only, and should not be used in a constant duty application. The duration of the pulling job should be kept as short as possible. If the winch motor becomes very hot to touch, stop the winch and let it cool down for several minutes. Never pull for more than one minute at or near the rated load. Do not maintain power to the winch if the motor stalls as it can damage the motor or gears

NOTE: A fully charged battery will give best service.

The vehicle engine **MUST** be kept running during operation

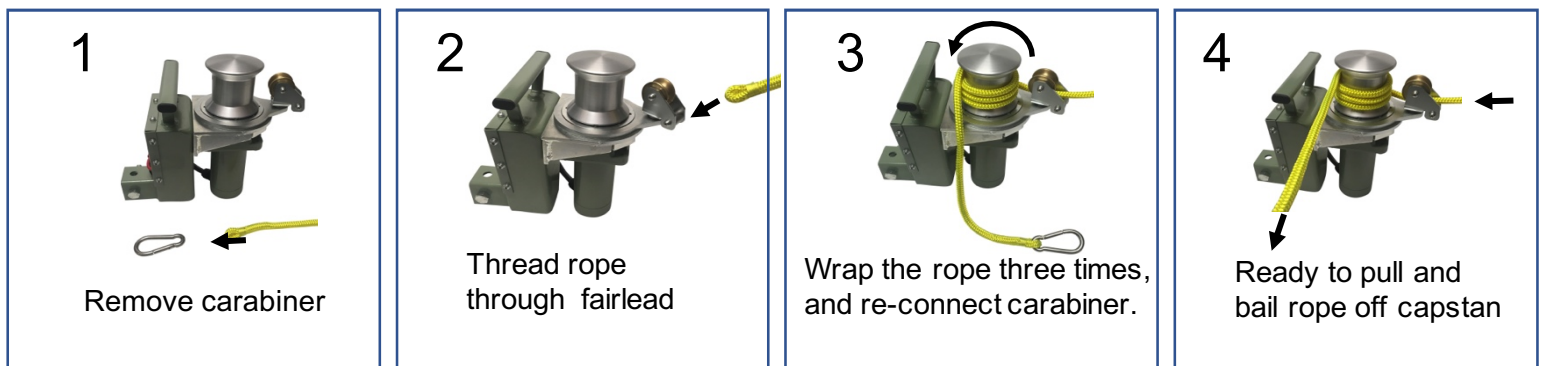
MAINTENANCE

1. All moving parts within the winch have been lubricated using high temperature lithium grease at the factory. No internal lubrication is required
2. Check the condition of the tow line before using on all occasions. If wear or fraying is evident the line must be replaced

GENERAL

1. Keep vehicle battery in good condition
2. Be sure that the winch battery cable is not drawn tight against any surfaces which could possibly damage it
3. Periodically remove and clean cable connections to the battery fuse box and chassis ground. Corrosion will reduce performance or may cause short
4. Remove the winch from the vehicle when not in use.

FAIRLEAD THREADING

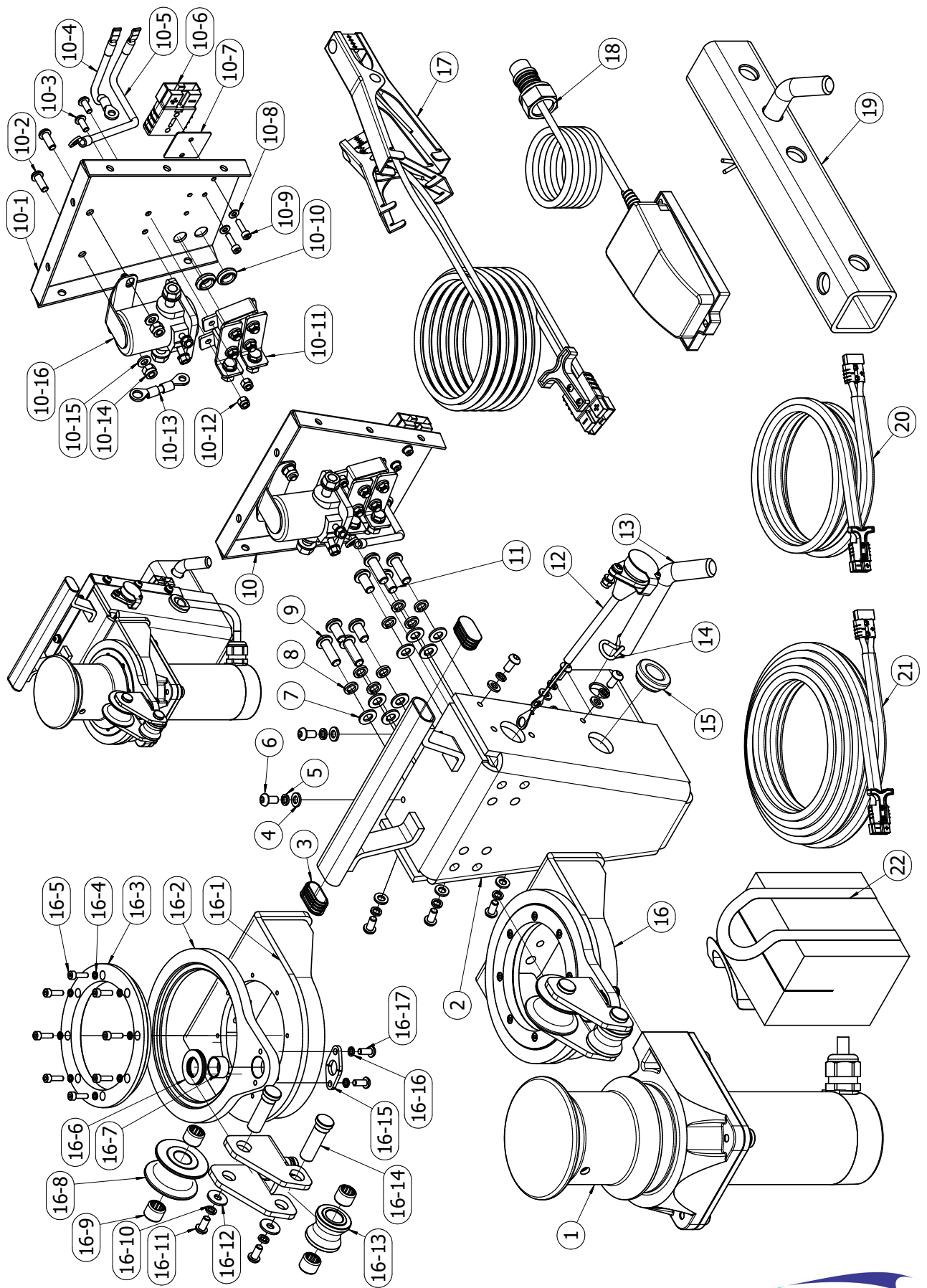


TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	SUGGESTED REMEDY
Motor does not turn on	Ground wire may not be making proper contact on the truck frame	Check continuity of circuit Check thermal 80 amp breaker
	Positive cable not properly connected to battery or motor connection	Check continuity of circuit Check thermal breaker
	Defective foot switch assembly	Clean plug contacts Replace switch assembly
	Defective motor	Check for voltage at armature port with switch pressed. If voltage is present replace motor
	Water has entered motor	Drain and dry. Run in short bursts without load until completely dry
Motor runs too hot	Long period of operation or overload to the stall point	Let winch cool down periodically
Motor runs slowly or without normal power	Battery run down Faulty electrical connections	Recharge battery by running vehicle engine. Tighten and clean electrical connections
	Insufficient current or voltage	Clean, tighten or replace the connector
Motor runs but Capstan will not turn	Gear failure	Replace power train gear assembly
Motor Seized	Overheated and magnets released	Replace electrical motor

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.



PARTS LIST

Part #	Decription	Quantity	Part #	Decription	Quantity
1	Winch Assembly	1	15	Collar	1
2	Solenoid Box	1	16	Fairlead	1
3	Plastic End Cap	2	16-1	Mounting Frame,FWS500.03.01	1
4	Flat Washer 6	8	16-2	Rotating Ring,FWS500.03-02	1
5	Washer 6	8	16-3	Rotating up-ring,FWS500.03-01	1
6	Screw M6X12	8	16-4	Spring Washer 4	8
7	Flat Washer 8	8	16-5	Screw M4x14	8
8	Washer 8	8	16-6	Needle Bearing, AXK1730	1
9	Screw M8X27	4	16-7	Bush,FRB-10 1610	1
10	Solenoid Assembly	1	16-8	Pulley,FWS500.03.02.01-01	1
10-1	Cover,FWS500.02-1	1	16-9	Needle Bearing,	4
10-2	Screw M6X16	2		HK 1212 GB/T 290-1998	
10-3	Screw M5X12	2	16-10	Spring Washer 6	2
10-4	Cable-red 130,FWS500.02.02	1	16-11	Screw M6x12	2
10-5	Cable-black 230,FWS500.02.03	1	16-12	Flat Washer 6	2
10-6	Quick Connector TSB50-	1	16-13	Guide Roller-front	1
	FEQC50-12-2-3			FWS500.03.02.02-01	
10-7	Spacer,FWS500.02-02	1	16-14	Spindle,FWS500.03.02-01	2
10-8	Flat Washer 4	2	16-15	Lock Catch	2
10-9	Screw M4x16	2	16-16	Spring Washer 5	2
10-10	2-side Collar	2	16-17	Crew M5x12	2
10-11	FWS500.02.01 Circuit Breaker 80A	1	17	Quick Connect Cable Kit,	2
10-12	Lock Nut M5	2		FWS500.03.02-01	
10-13	Cable-red 45,FWS500.02.04	1	18	Foot Switch,FWS500.03.02-01	1
10-14	Lock Nut M6	2	19	Trailer Hitch RTC750.01	1
10-15	Flat Washer 6	2	20	Quick Connect Cable Kit, 6ft	1
10-16	Solenoid	1		RTC750.03, optional	
11	Bolt M8x16	4	21	Quick Connect Cable Kit, 20ft	1
12	Cable-FECW01-4-200	1		RTC750.02, optional	
13	Plug Pin 5/8"	1	22	Tugger BAg	1
14	Safety R-pin Ø3	1			



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