

# JBC

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

Product  
website



## INSTRUCTION MANUAL



### SFR

Solder Feeder for Robot

This manual corresponds to the following reference:

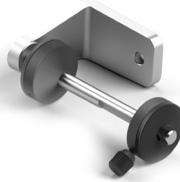
**SFR-B**

## Packing List

The following items are included:



**Solder Feeder** ..... 1 unit



**Reel Support** ..... 1 unit  
Ref. 0024561



**Communications Cable 3 m**..... 1 unit  
Ref. 0024563



**Allen Key 1,5 mm** ..... 1 unit  
Ref. 0741610



**Allen Key 2,5 mm** ..... 1 unit  
Ref. 0012574



**Allen Key 3 mm** ..... 1 unit  
Ref. 0013609



**Screws DIN 912 M4x65**..... 2 units  
Ref. 0024552



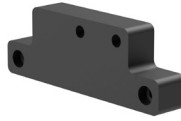
**Screws DIN 912 M4x20**..... 2 units  
Ref. 0921890



**Screws DIN 7991 M4x10**..... 1 unit  
Ref. 0490180



**Spanner 10 mm**..... 1 unit  
Ref. 0017631



**Insulator** ..... 1 unit  
Ref. 0024588



**Manual** ..... 1 unit  
Ref. 0027875

## Functions

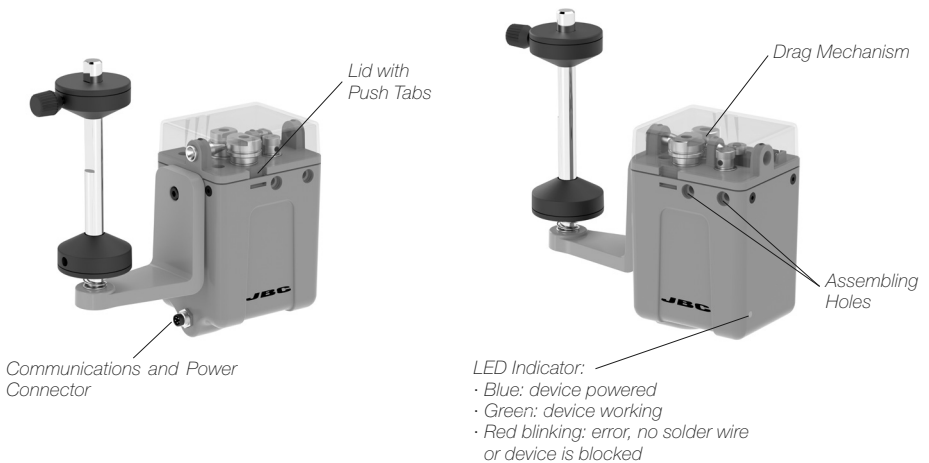
There are up to 30 functions\* to control the station, such as:

- Temperature Control
- Sleep and Hibernation Control
- Station Status
- Error Information
- Counters (Working Time, Sleep, Hibernation...)

\*Download the Robot Communication Protocol for SFR on [www.jbctools.com/jbcsoftware.html](http://www.jbctools.com/jbcsoftware.html)

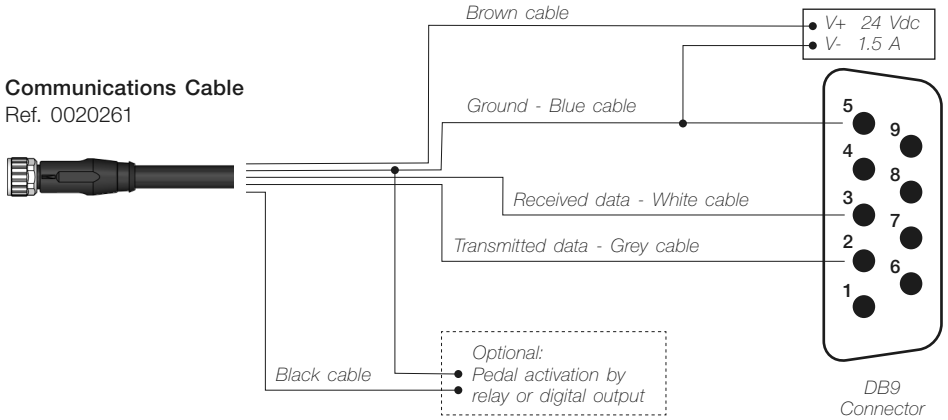
## Features and Connections

SFR Solder Feeder for Robot works together with one of the different GSFR Guide Kits, available for various solder wire diameters, with or without solder wire perforation. GSFR Guide Kits are sold separately.

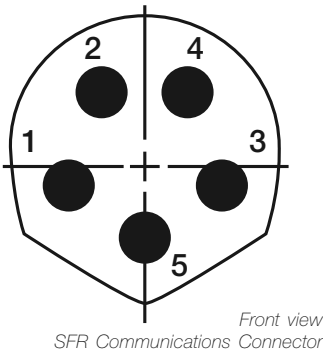


# Connection

- SFR unit can be connected to a PLC by a five-pin Communications Cable (Ref. 0020261).
- Connect the cables to the corresponding pins to match your PLC connection. To communicate with a computer, use a DB9 female connector.
- Download the Communication Protocol at [www.jbctools.com](http://www.jbctools.com)



For detailed information about pin distribution see the following table:



Pin Distribution		
Pin	Color	Description
1	Brown	Power supply input: 24Vdc (±5%). 1.5 A current required
2	White	Serial input: RS232 RX
3	Blue	Common reference: GND for RS232 and switch
4	Black	Switch input: 0V or 24V to start feeding. Leave it open to stop
5	Grey	Serial output: RS232 TX

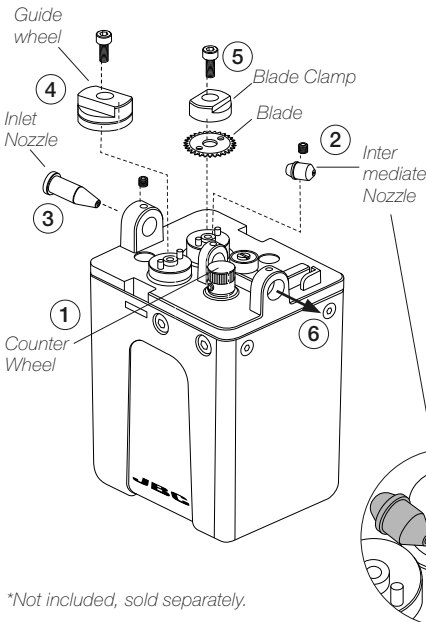
## Assembly: GSFR\* Wheels to SFR

For this operation, disconnect the device, and take off the cover by pressing the tabs.

Use the Allen key and the spanner provided with SFR for the following steps. First disassemble the guide tube (6), the Support and Traction Wheels or the Guide Wheel, Blade and Blade Clamp (4)+(5). Then, disassemble the nozzles (2)+(3). Disassemble the Counter Wheel (1).

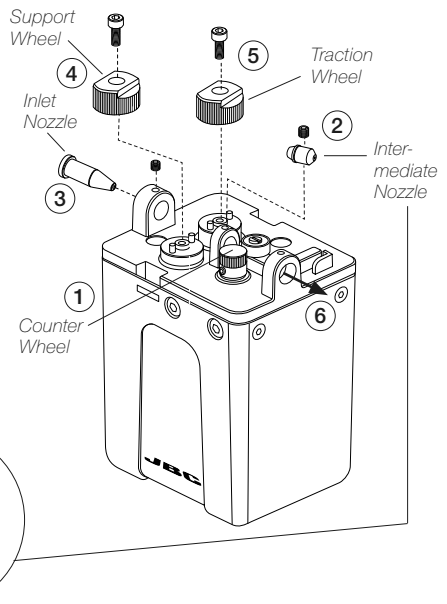
### Assembly with Solder Wire Perforation

1. Assemble the counter wheel (1).
2. Insert the intermediate nozzle (2) until its collar rests against the housing and tighten the screw.
3. Assemble the inlet nozzle (3) and tighten the screw.
4. Assemble the guide wheel (4) and tighten the screw. **Attention:** Always use the correct wheel set for each wire thickness.
5. Assemble the blade first, then mount the blade clamp (5) onto the same axis and tighten the screw. **Caution:** handle the blade carefully to avoid injury.



### Assembly without Solder Wire Perforation

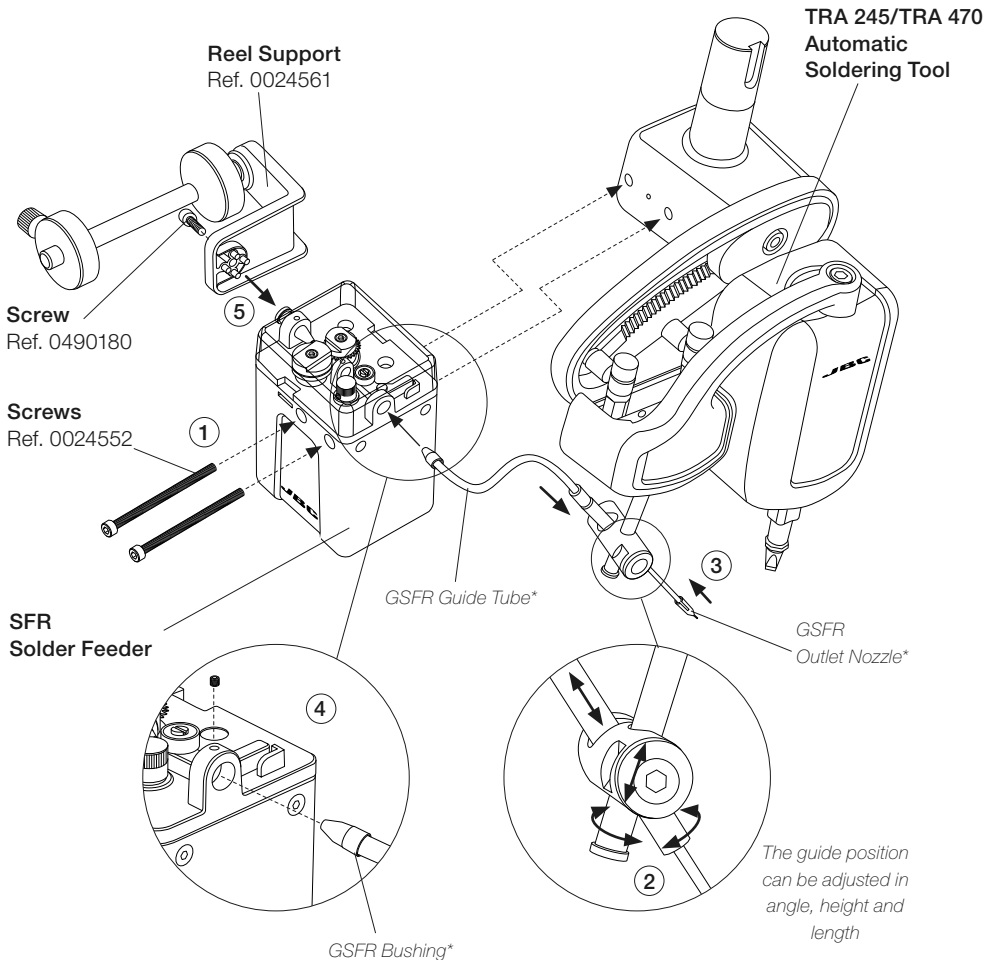
1. Assemble the counter wheel (1).
2. Insert the intermediate nozzle (2) until its collar rests against the housing and tighten the screw.
3. Assemble the inlet nozzle (3) and tighten the screw.
4. Assemble the support wheel (4) and tighten the screw. **Attention:** Always use the correct wheel set for each wire thickness.
5. Assemble the traction wheel (5) onto the axis and tighten the screw.



\*Not included, sold separately.

# Assembly: GSFR Tube to SFR\* and TRA\*

1. Assemble SFR to TRA with the screws.
2. Assemble GSFR Guide Tube to TRA and tighten the screw.
3. Assemble the Outlet Nozzle onto the Dispensing Tube.
4. Assemble GSFR Bushing into the SFR hole and tighten the screw.
5. Finally attach the Reel Support to SFR with its screw.



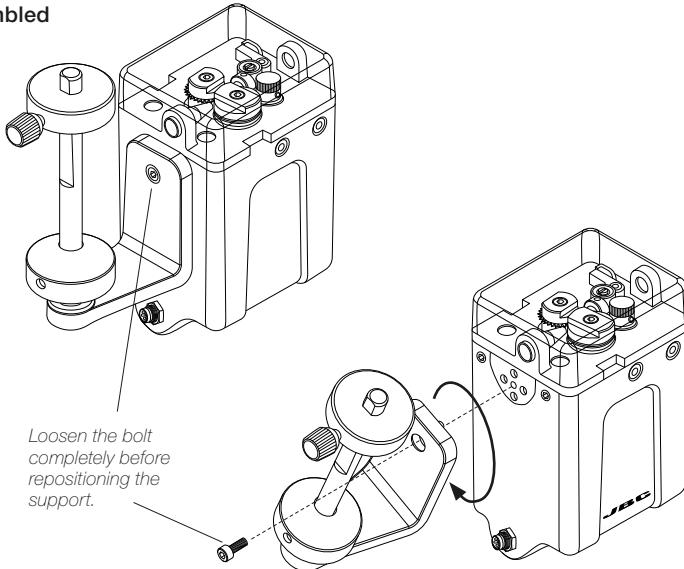
\*Not included, sold separately

## Assembly: Reel support positions

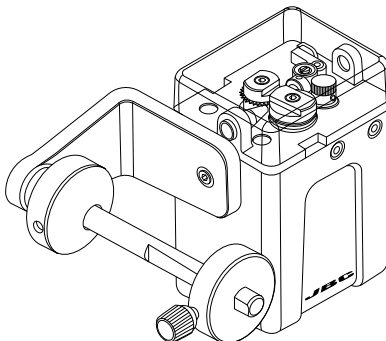
The Reel Support can be installed both vertically and horizontally to match your preferences.

Unscrew the bolt using a 3 mm Allen key and set the Reel Support as desired.  
Tighten the bolt to fix the Reel Support in its position.

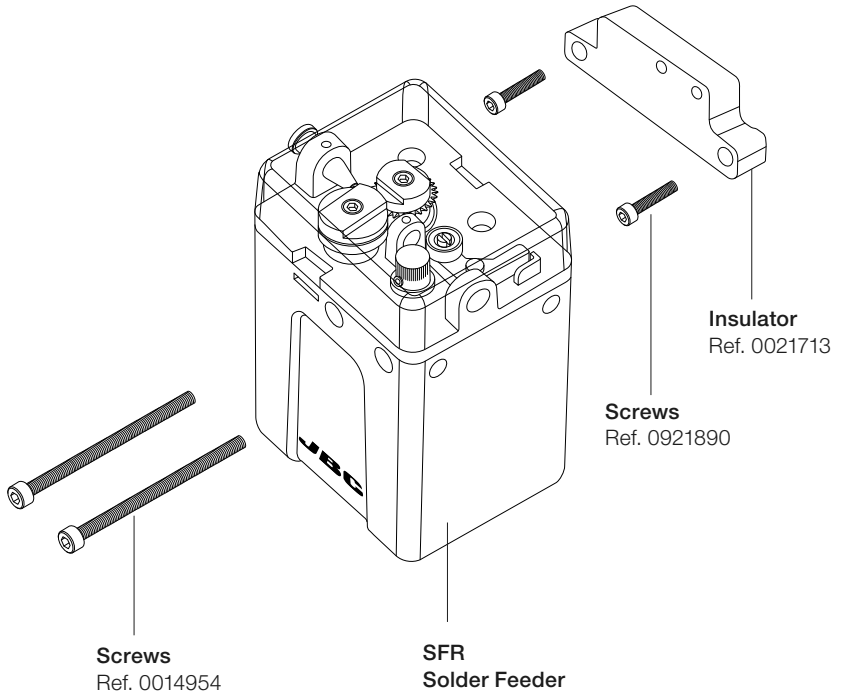
### Reel Support vertically assembled



### Reel Support horizontally assembled



# Assembly: SFR independent from TRA\*



If mounting SFR independently from TRA, the Electrical Insulator is required.

Assemble the Insulator to your device with the screws (ref. 0921890), and then SFR to the Isolator with its screws (ref. 0014954).

The Electrical Insulator must be assembled to ensure that SFR work properly.



**Do not use the SFR without an insulator** if it is mounted without the TRA.

\*Not included, sold separately

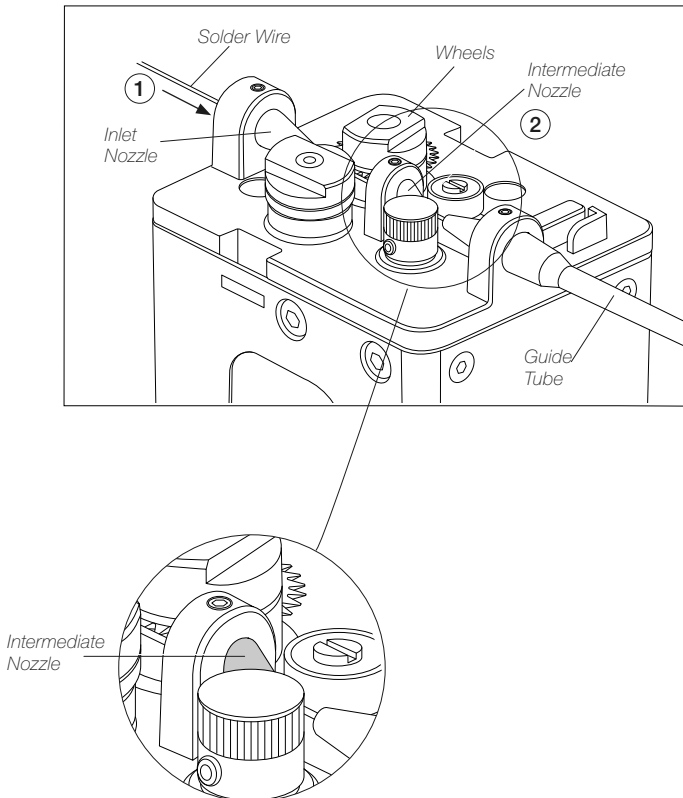
## Solder Wire Loading

GSFR must be assembled previously.

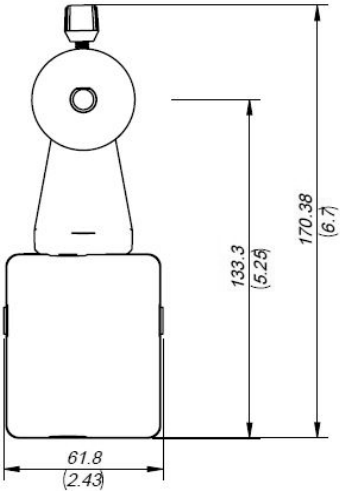
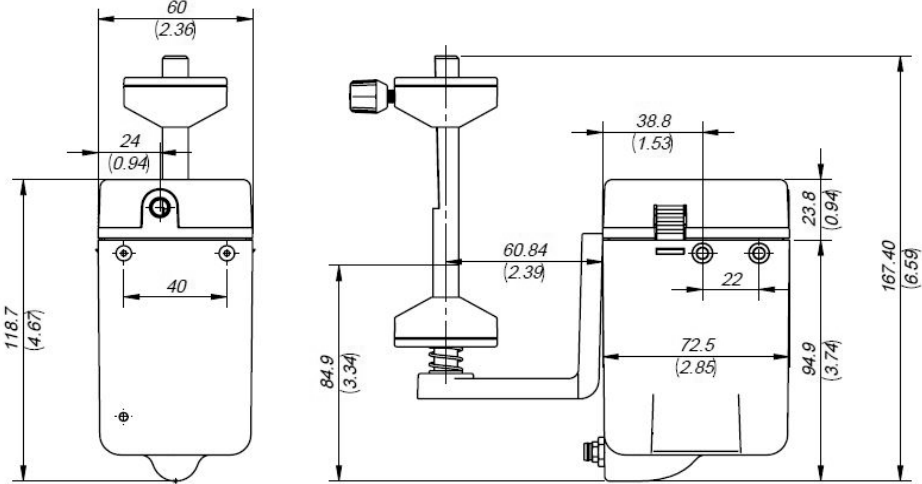
1. Feed the Solder Wire into the Inlet Nozzle until it reaches the wheels.
2. Make sure the wire passes through the Intermediate Nozzle and enters the Guide Tube.

**Important:** Set the wire thickness parameter before starting to dispense the wire. To set the W-THI command, see the Communication Protocol for the SFR unit at [www.jbctools.com/jbcsoftware.html](http://www.jbctools.com/jbcsoftware.html).

Wire feeding is controlled by an external controller (Robot/PLC/Computer). To start the wire loading process use the W-SLD command. See the Communication Protocol for the SFR unit at: [www.jbctools.com/jbcsoftware.html](http://www.jbctools.com/jbcsoftware.html)



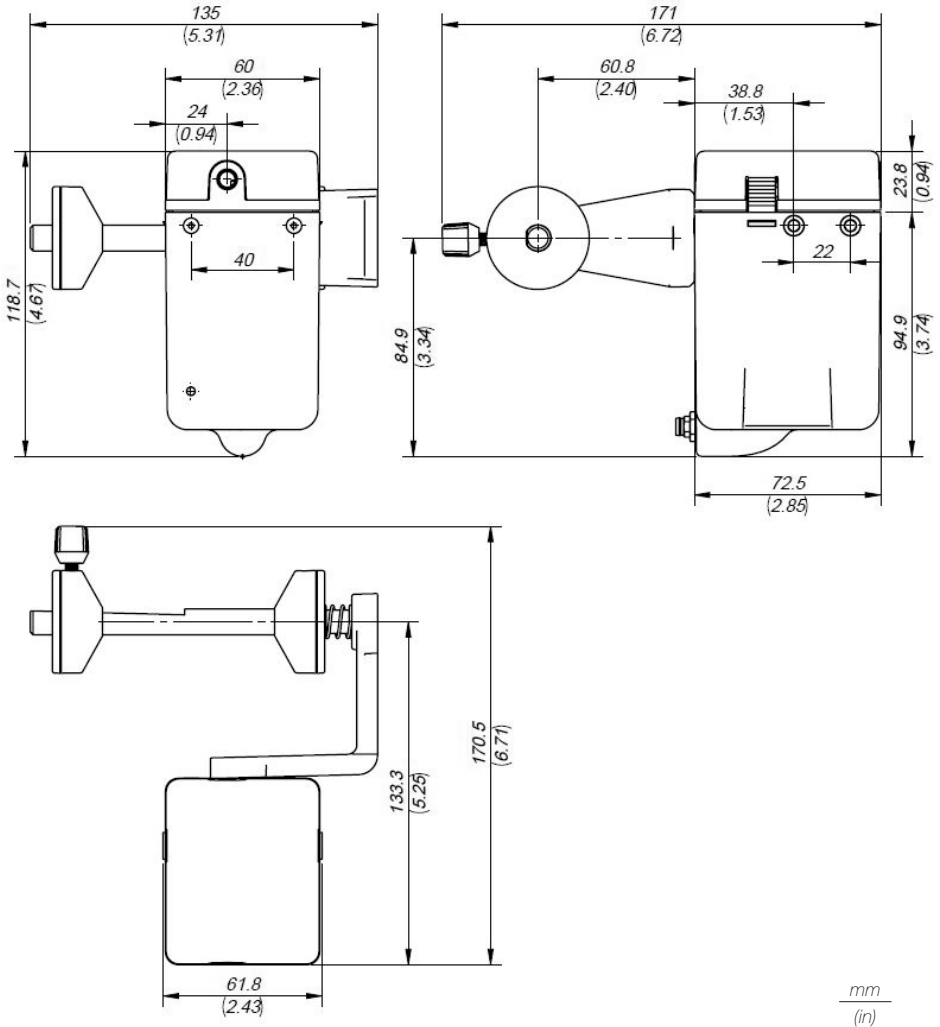
# Dimensions (Vertical Reel Support)



mm  
(in)

Solder Wire Reel dimensions: max. length 80mm (3.2 in), max. diameter 80mm (3.2 in), max. weight 1 kg (2.2 lb).

## Dimensions (Horizontal Reel Support)

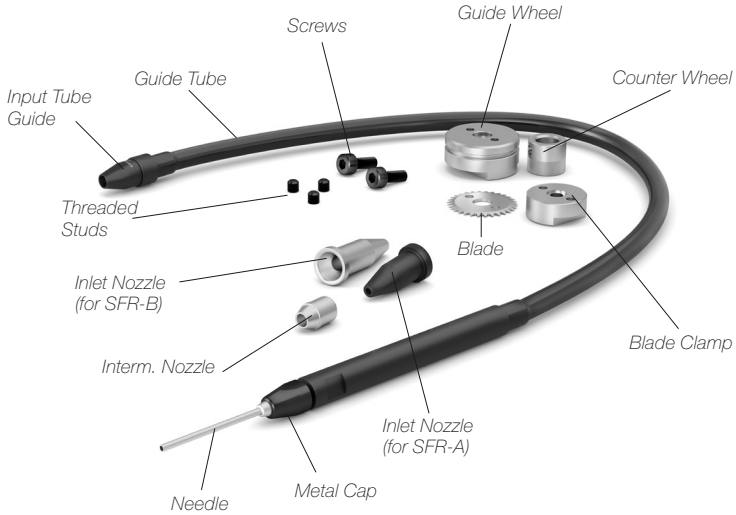


Solder Wire Reel dimensions: max. length 80mm (3.2 in), max. diameter 80mm (3.2 in), max. weight 1 kg (2.2 lb).

# Accessories

## Guide Kit for SFR with Solder Wire Perforation

Ref. GSFRXXVLL-B



### GSFR XX V LL-B With Solder Wire Perforation

Tube length		
LL	Length	
03	0,3 m	11,81 in
04	0,4 m	15,75 in
05	0,5 m	19,69 in
06	0,6 m	23,62 in
07	0,7m	27,56 in
10	1,0 m	39,37 in
15	1,5 m	59,05 in

Wire diameter		
XX	Diameter of use	
08	∅ 0,8 mm	∅ 0,032 in
10	∅ 1,0 mm	∅ 0,040 in
12	∅ 1,2 mm	∅ 0,047 in
15	∅ 1,5 mm	∅ 0,059 in
16	∅ 1,6 mm	∅ 0,063 in

Guide kits are sold separately. Find JBC Guide kits at [www.jbctools.com](http://www.jbctools.com)

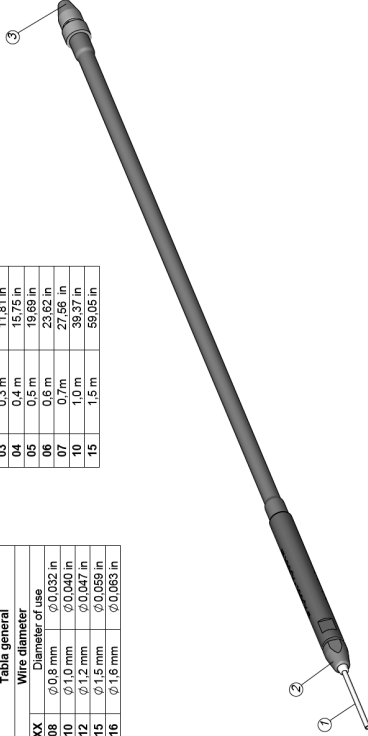
WITH SOLDER WIRE PERFORMANCE

## GSFR XX V LL-B

LL	Tube length	Length
03	0,3 m	11,81 in
04	0,4 m	15,75 in
05	0,5 m	19,69 in
06	0,6 m	23,62 in
07	0,7 m	27,56 in
10	1,0 m	39,37 in
15	1,5 m	59,05 in

Table general	
Wire diameter	Diameter of legs
XX	0,6 mm
10	0,040 in
12	0,047 in
15	0,059 in
16	0,063 in

Guide kit Ref.	Guide tube Ref.
GSFR08V03-B	0023648
GSFR08V05-B	0023649
GSFR08V06-B	0023650
GSFR08V07-B	0023651
GSFR08V10-B	0023652
GSFR08V15-B	0033759
GSFR10V03-B	0023653
GSFR10V04-B	0034478
GSFR10V05-B	0023681
GSFR10V06-B	0023654
GSFR10V07-B	0023655
GSFR10V10-B	0023656
GSFR10V15-B	0030926
GSFR12V03-B	0023657
GSFR12V05-B	0030647
GSFR12V10-B	0023658
GSFR15V03-B	0023659
GSFR15V04-B	0023660
GSFR15V05-B	0023661
GSFR15V07-B	0031538
GSFR15V10-B	0023662
GSFR15V15-B	0023663
GSFR16V03-B	0023664
GSFR16V04-B	0023665
GSFR16V05-B	0031468
GSFR16V15-B	0023666

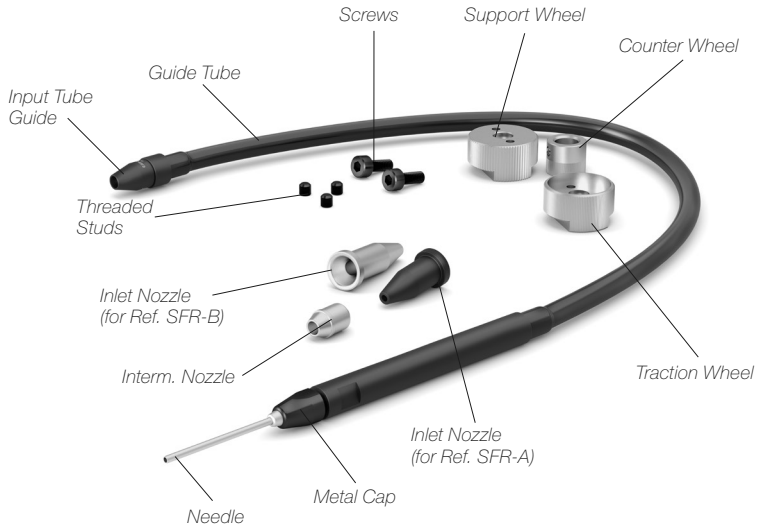


Tube length	Wire Ø	Guide wheel Ref.	Blade Ref.	Blade clamp Ref.	Inlet nozzle Ref. (for SFR-A)	Interm. nozzle Ref.	Inlet nozzle Ref. (for SFR-B)	Counter wheel Ref.	Screws Ref.	Threaded stud Ref.	Needle	Metal cap	Input tube guide
GSFR08VLL-B	0021896												
GSFR10VLL-B	0021899				0023740	0024855	0030537				0023643	0023644	0023650
GSFR12VLL-B	0023739				0023741	0024856	0030539				0023644	0023646	0023646
GSFR15VLL-B	0019696				0023736	0024857	0030540				0023645	0023646	0023661
GSFR16VLL-B	0025922				0023855	0024858	0030541				0023646	0023647	0023661

# Accessories

## Guide Kit for SFR without Solder Wire Perforation

Ref. GSFRXXDLL-B



### GSFR XX D LL-B Without Solder Wire Perforation

LL	Tube length	
	Length	
03	0.3 m	11.81 in
04	0.4 m	15.75 in
05	0.5 m	19.68 in
06	0.6 m	23.62 in
07	0.7 m	27.92 in
10	1.0 m	39.37 in
15	1.5 m	59.05 in

XX	Wire diameter	
	Range of use	
04	Ø0.38 - 0.40 mm	Ø0.015 - 0.016 in
05	Ø0.46 - 0.56 mm	Ø0.018 - 0.022 in
06	Ø0.60 - 0.64 mm	Ø0.023 - 0.025 in
07	Ø0.70 - 0.78 mm	Ø0.028 - 0.031 in
08	Ø0.80 - 0.82 mm	Ø0.032 - 0.033 in
10	Ø0.90 - 1.10 mm	Ø0.036 - 0.044 in
12	Ø1.14 - 1.27 mm	Ø0.045 - 0.051 in
15	Ø1.50 - 1.57 mm	Ø0.060 - 0.063 in
16	Ø1.60 - 1.63 mm	Ø0.063 - 0.065 in

Guide kits are sold separately. Find JBC Guide kits at [www.jbc tools.com](http://www.jbc tools.com)

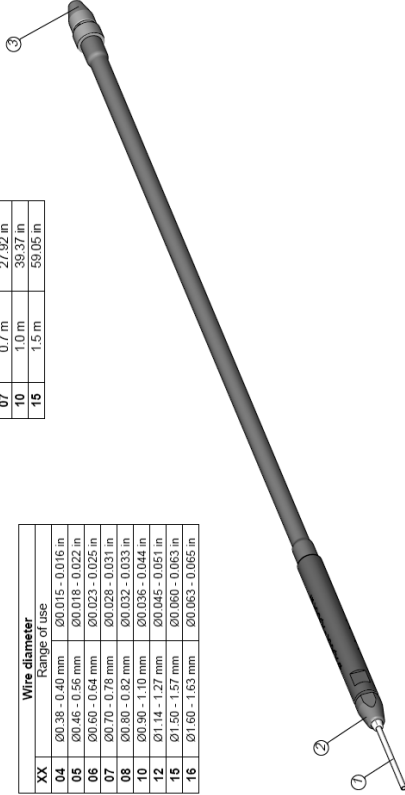
Guide kit Ref.	Guide tube Ref.
GSFR06/03-B	0029667
GSFR06/04-B	0033133
GSFR06/05-B	0032362
GSFR06/07-B	0029669
GSFR06/10-B	0029670
GSFR06/03-B	0035704
GSFR07/03-B	0029671
GSFR07/05-B	0031776
GSFR08/03-B	0029648
GSFR08/05-B	0029649
GSFR08/06-B	0029650
GSFR08/07-B	0029651
GSFR08/10-B	0029652
GSFR08/15-B	0033759
GSFR10/03-B	0029653
GSFR10/05-B	0029654
GSFR10/06-B	0029655
GSFR10/07-B	0029656
GSFR10/10-B	0029657
GSFR12/03-B	0030647
GSFR12/10-B	0029658
GSFR15/03-B	0029659
GSFR15/04-B	0029660
GSFR15/05-B	0029661
GSFR15/10-B	0029662
GSFR15/15-B	0029663
GSFR16/03-B	0029664
GSFR16/04-B	0029665
GSFR16/05-B	0031468
GSFR16/07-B	0031548
GSFR16/15-B	0029666

WITHOUT SOLDER WIRE PERFORMANCE

GSFR XX D LL-B

LL	Tube length
03	0.3 m
04	0.4 m
05	0.5 m
06	0.6 m
07	0.7 m
10	1.0 m
15	1.5 m

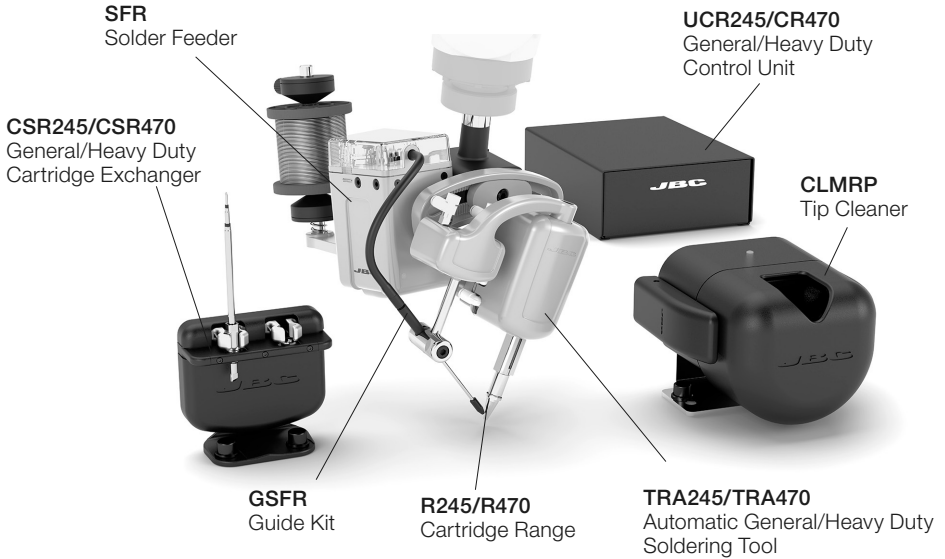
XX	Wire diameter	Range of use
04	Ø0.38 - 0.40 mm	Ø0.015 - 0.016 in
05	Ø0.46 - 0.56 mm	Ø0.018 - 0.022 in
06	Ø0.60 - 0.64 mm	Ø0.023 - 0.025 in
07	Ø0.70 - 0.78 mm	Ø0.028 - 0.031 in
08	Ø0.80 - 0.82 mm	Ø0.032 - 0.033 in
10	Ø0.90 - 1.10 mm	Ø0.036 - 0.044 in
12	Ø1.14 - 1.27 mm	Ø0.045 - 0.051 in
15	Ø1.50 - 1.57 mm	Ø0.060 - 0.063 in
16	Ø1.60 - 1.63 mm	Ø0.063 - 0.065 in



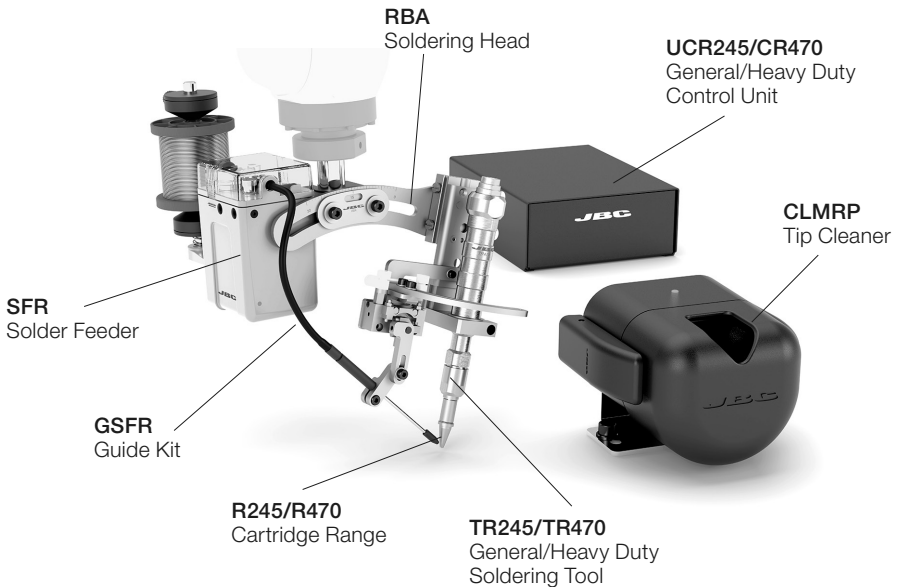
Traction wheel Ref.	Support wheel Ref.	Inlet nozzle Ref. (for SFR-A)	Interm. nozzle Ref.	Inlet nozzle Ref. (for SFR-B)	Counter wheel Ref.	Screws Ref.	Threaded stud Ref.	Needle	Metal cap	Input tube guide
0019479	0020345	0023740	0024954	0030535	0026693 (Provided with SFR)	0026695	0026696	0029940	0029948	0029949
	0019519		0025293	0030534				0029941		
	0019480		0025291	0030536				0029942		
	0019481		0024955	0030537				0029943		
0028367	0023857	0023741	0024956	0030538	0026694	0026694	0029944	0029944	0029946	0029951
			0024957	0030539				0029945		
			0024958	0030540				0029946		
			0024959	0030541				0029947		

# Workplace Examples

## HA Automatic Soldering Set for Robot



## HM Soldering Set for Robot



## Maintenance

- Before carrying out maintenance, always unplug the tool and the equipment.
- Use a damp cloth to clean the Solder Feeder. Alcohol can only be used to clean the metal parts.
- Periodically check all cables and tube connections.
- Replace any defective or damaged parts. Use original JBC spare parts only.
- Repairs should be performed only by a JBC authorized technical service.

## Safety



**It is imperative to follow safety guidelines to prevent electric shock, injury, fire or explosion.**

- Do not use the equipment for any other purpose.
- Do not leave the appliance unattended when it is on.
- Be sure that the power supply is disconnected before changing any spare parts.
- The temperature of accessible surfaces may remain high after the device is turned off. Handle with care.
- Heat can cause inflammable products to ignite even when not visible.
- Avoid flux coming into contact with skin or eyes to prevent irritation.
- Be careful of fumes produced while soldering.
- Keep your workplace clean and tidy. Wear appropriate protective glasses and gloves while handling any component to avoid personal injury.
- Utmost care must be taken with liquid tin waste which can cause burns.





# Specifications

## SFR

### Solder Feeder for Robot

Ref.: SFR-B

#### Solder Feeder

- Power Supply input: 24 Vdc ( $\pm 5\%$ ). 1.5 A current required
- Ambient Operating Temp.: 10 - 50 °C / 50 - 122 °F
- Connections: M8-5 pin Communication Connector
- Max. Speed: 120 mm/s / 4.72 in/s
- Net Weight: 674 g / 1.49 lb
- Dimensions: see pages 10 and 11

#### Reel Support

- Spool capacity: up to 1 kg / 2.2 lb
  - Max Spool Diam.: 80 mm / 3.15 in
  - Max. Spool Height: 80 mm / 3.15 in
  - Net Weight: 130 g / 0.29 lb
  - Dimensions: see pages 10 and 11
- Total Net Weight: 977 g / 2.15 lb
- Total Package Dimension/Weight:  
(L x W x H) 342 x 155 x 120 mm / 1360 g  
13.46 x 6.10 x 4.72 in / 3.00 lb

Complies with CE Standards.

ESD safe.

# JBC

## Warranty

JBC's 2 year warranty covers this equipment against all manufacturing defects, including the replacement of defective parts and labor.

Warranty does not cover product wear or misuse.

In order for the warranty to be valid, equipment must be returned, postage paid, to the dealer where it was purchased.



This product should not be thrown in the garbage.

In accordance with the European directive 2012/19/EU, electronic equipment at the end of its life must be collected and returned to an authorized recycling facility.

