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PRODUCT SPECIFICATION

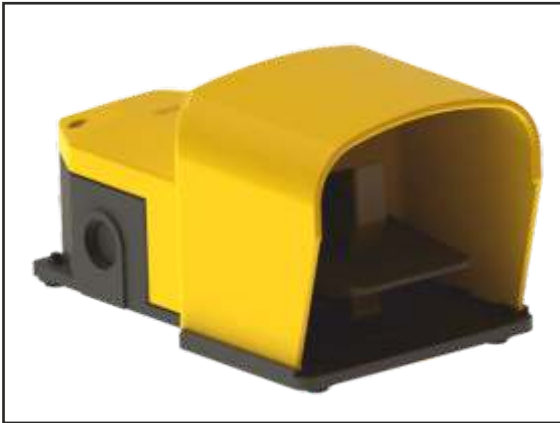
46 Series Foot Switch



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46 Series Foot Switches



- Modular system consisting of plastic housing with plastic or metal protection in several colors.
- Protection degree IP67
- Different contact blocks.
- Different activation devices.
- The unit is operated through a non-skid pedal.
- An oil and chemical-resistant rubber membrane protects safely against dust and humidity (protection degree IP67).
- Stroke limitation avoids mechanical overloading.
- Plastic pedal switches, modular contact blocks inside allow various contact possibilities.
- 46 Series foot switches may also be mounted with Top or Complete protection against unintentional actuation.

Technical Data

Rated Voltage (50/60 Hz)	Foot Switch with Cover
General Data:	
Ambient temperature	-25 to +80 degree Celsius
Maximum operating frequency	3600 cycles/hour
Mechanical endurance	10 million operating cycles.
Technical Data:	
Housing	Double insulation
Base	Glass fiber reinforced techno polymer, self-extinguishing and shock proof
Cap	Techno polymer, self-extinguishing and shock proof & bears 800 N static load test proved. Steel, corrosion resistant, shock proof.
External metallic parts	Stainless steel
Cap screw tightening torque	0.8 to 1.2 Nm
Actuating force	16N
One threaded conduit entry	M20*1.5(standard), 1/2" BSP
Protection degree	IP 67
Cable Cross Section:	
Contact block combinations	min. 1*0.5 mm sq., Max. 2*2.5 mm sq.
Cable stripping length	8mm
Limit Switch:	
Housing	Housing is made of thermostable phenolic plastic crust, self-extinguishing and shock proof.
Degree of Protection	IP 40
Ambient temperature	-25 to +80 degree Celsius
Max. Actuation frequency	a) Mechanical 240 times/min.
	b) Electrical 20 times/min.
Life	a) Mechanical 10,00,000 and above
	b) Electrical 1,00,000 and above.
Max. Actuation speed	1.1m/s
Min. actuation speed	1.1mm/s
Vibration	1.10to 55Hz, amplitude 1.5mm
Insulation resistance	100MΩ DC500V
Contact resistance	Non connection wire 2dm Ω(initial value) 1000 VAC
With stand voltage	Every terminal 1500VAC

Stainless Steel

All the screws, springs and hinges are made of stainless steel which makes it ideal to be used in corrosive environments.

Conduit entry with cable clamp

To hold the electrical cable tightly in its place and to avoid it from getting pulled away, a link brace has been provided at the cable incoming side.

Sturdy Cap

Thermoset ABS plastic, self-extinguishing and shock proof & bears upto 800 N static load, test proved.

Available in both Metal & Plastic Protection

The outer protection of the foot switch are made with thermoset ABS plastic or powder coated steel .

Non-slip Pedal

Anti-slip pedal design make operation more effective convenient safe

Side openings

Multiple single pedals can be connected adjacently to each other by means of a unique joining component.

Foot Switch Stopper

Foot Switch Stopper for minimize the Non-slip pedal movement.

Non-slip Rubber Feet

The 46 series foot switches are equipped with four devoted Anti-skid bush.

Approvals

Approbations and Declaration of conformity

CE CE

Features ▶

46 Series Control Foot Switches are made of Strong housing.

The unit is operated through a non-skid pedal.

An oil and chemical-resistant rubber membrane protects safely against dust and humidity (protection degree IP67).

Stroke limitation avoids mechanical overloading.

Plastic pedal switches, modular contact blocks inside allow various contact possibilities.

46 Series foot switches may also be mounted with Top or Complete protection against unintentional actuation.

Depending on the environmental conditions and mechanical duty, differing versions of foot switches have been designed.

The robust 46 range switches are generally used in the engineering industry such as:

- Press machines.
- Punching machines.
- Bending machines.
- Sheet-steel processing.

Stylish design such as

- Top pedal protection.
- Complete pedal protection.
- Pedal protection with 440 mm carrying rod.
- Pedal protection with 660 mm carrying rod.
- Pedal protection with Emergency off.
- Pedal protection with key Emergency off.

Activation Devices ▶



1. Free Movement

2. Safety Lever

3. Pedal lock

4. 2-step free movement

5. 2-step with Safety Lever

46 Series Foot Switches

Model Number Structure Diagram

					
Activation Device	Contact switch	Thermoplastic ABS	Metal	Thermoplastic ABS	Metal
 Free Moving Pedal	1NO+1NC (snap Action switch)	46.02.11.00.04	46.01.11.00.04	46.02.11.00.08	46.01.11.00.08
	2x(1NO+1NC) (snap Action switch)	46.02.22.00.04	46.01.22.00.04	46.02.22.00.08	46.01.22.00.08
 Safety Lever	1NO+1NC (snap Action switch)	46.02.11.10.04	46.01.11.10.08	46.02.11.10.08	46.01.11.10.08
	2x(1NO+1NC) (snap Action switch)	46.02.22.10.04	46.01.22.10.08	46.02.22.10.08	46.01.22.10.08
 Pedal Lock	1NO+1NC (snap Action switch)	46.02.11.20.04	46.01.11.20.04	46.02.11.20.08	46.01.11.20.08
	2x(1NO+1NC) (snap Action switch)	46.02.22.20.04	46.01.22.20.04	46.02.22.20.08	46.01.22.20.08
 2-Stage Without Safety Lever	2x(1NO+1NC) (snap Action switch 2-step)	46.02.33.30.04	46.01.33.30.04	46.02.33.30.08	46.01.33.30.08
 2-Stage With Safety Lever	2x(1NO+1NC) (snap Action switch 2-step)	46.02.33.40.04	46.01.33.40.04	46.02.33.40.08	46.01.33.40.08

46 Series Foot Switches

Model Number Structure Diagram

					
Activation Device	Contact switch	Thermoplastic ABS	Metal	Thermoplastic ABS	Metal
 Free Moving Pedal	1NO+1NC (snap Action switch)	46.02.11.00.02	46.01.11.00.02	46.02.11.00.06	46.01.11.00.06
	2x(1NO+1NC) (snap Action switch)	46.02.22.00.02	46.01.22.00.02	46.02.22.00.06	46.01.22.00.06
 Safety Lever	1NO+1NC (snap Action switch)	46.02.11.10.02	46.01.11.10.02	46.02.11.10.06	46.01.11.10.06
	2x(1NO+1NC) (snap Action switch)	46.02.22.10.02	46.01.22.10.02	46.02.22.10.06	46.01.22.10.06
 Pedal Lock	1NO+1NC (snap Action switch)	46.02.11.20.02	46.01.11.20.02	46.02.11.20.06	46.01.11.20.06
	2x(1NO+1NC) (snap Action switch)	46.02.22.20.02	46.01.22.20.02	46.02.22.20.06	46.01.22.20.06
 2-Stage Without Safety Lever	2x(1NO+1NC) (snap Action switch 2-step)	46.02.33.30.02	46.01.33.30.02	46.02.33.30.06	46.01.33.30.06
 2-Stage With Safety Lever	2x(1NO+1NC) (snap Action switch 2-step)	46.02.33.40.02	46.01.33.40.02	46.02.33.40.06	46.01.33.40.06

46 Series Foot Switches

Model Number Structure Diagram

						
Activation Device	Contact switch	Thermoplastic ABS	Metal	Thermoplastic ABS	Thermoplastic ABS	Complete Metal Guard
 Free Moving Pedal	1NO+1NC (snap Action switch)	46.02.11.00.00	46.01.11.00.00	46.04.11.00.02	46.04.11.00.00	46.05.11.00.04
	2x(1NO+1NC) (snap Action switch)	46.02.22.00.00	46.01.22.00.00	46.04.22.00.02	46.04.22.00.00	46.05.22.00.04
 Safety Lever	1NO+1NC (snap Action switch)	46.02.11.10.00	46.01.11.10.00	46.04.11.10.02	46.04.11.10.00	46.05.11.10.04
	2x(1NO+1NC) (snap Action switch)	46.02.22.10.00	46.01.22.10.00	46.04.22.10.02	46.04.22.10.00	46.05.22.10.04
 Pedal Lock	1NO+1NC (snap Action switch)	46.02.11.20.00	46.01.11.20.00	46.04.11.20.02	46.04.11.20.00	46.05.11.20.04
	2x(1NO+1NC) (snap Action switch)	46.02.22.20.00	46.01.22.20.00	46.04.22.20.02	46.04.22.20.00	46.05.22.20.04
 2-Stage Without Safety Lever	2x(1NO+1NC) (snap Action switch 2-step)	46.02.33.30.00	46.01.33.30.00	46.04.33.30.00	46.04.33.30.00	46.05.33.30.04
 2-Stage With Safety Lever	2x(1NO+1NC) (snap Action switch 2-step)	46.02.33.40.00	46.01.33.40.00	46.04.33.40.02	46.04.33.40.00	46.05.33.40.04

Assembly of modular foot switches

Knockout side openings are provided at the sides of all single foot switches (see page 3), intended for inserting the threaded portion of the joining component. By fixing the nuts of the joining components a tight cable feed-through for electrical links is created between the foot switches. Likewise, with the provided screws, the joining components permit the mechanical locking and the connection of two or even more foot switches as a solitary model.

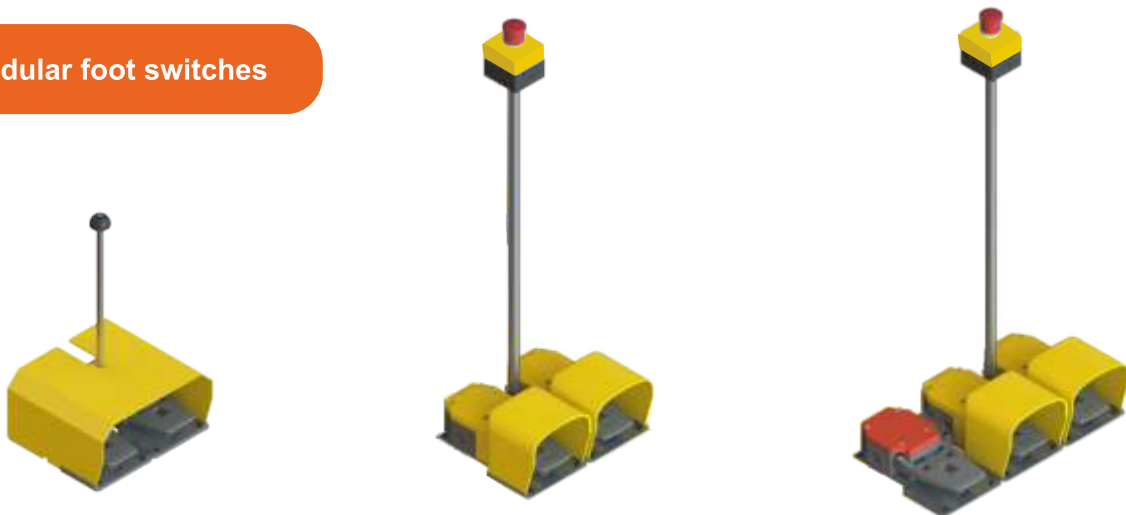


Other than the prospect of combining two or multiple single foot switches, the joining components make it conceivable to insert a metal tube that allow the electrical association between the foot contacts and the contacts of an emergency press button which is connected at the top of the same tube, assuring in this manner, an IP67 protection degree.






46 Series Foot Switches

Assembly of modular foot switches



Combinations of Ready to order double foot switches

			
Part No.: 46.2.114	Part No.: 46.04.11.00.02	Part No.: 46.02.20 & 46.02.31	Part No.: 46.02.11.10.04
Double foot switch with carrying rod	1X Single foot switch, Half red cover ABS, 1NO+1NC.	Joining component and carrying rod set L=400mm	1X Single foot switch, 1NO+1NC, safety lever, Yellow cover ABS






Model Number Structure Diagram

Ordering Code	Left Foot Switch	Joining Element	Right Foot Switch	Additional Accessories
46.2.99	46.04.11.00.00	46.02.20	46.04.11.00.00	
46.2.100	46.04.11.00.00	46.02.20	46.04.11.00.00	46.02.31 + 46.02.82
46.2.101	46.02.11.10.04	46.02.20	46.02.11.10.04	46.02.31
46.2.102	46.02.11.10.04	46.02.20	46.02.11.10.04	
46.2.103	46.02.11.10.02	46.02.20	46.02.22.10.04	46.02.31
46.2.104	46.02.11.10.02	46.02.20	46.02.11.10.04	46.02.31
46.2.105	46.02.11.10.04	46.02.20	46.02.11.10.02	46.02.31
46.2.106	46.02.11.20.04	46.02.20	46.02.11.10.04	46.02.31
46.2.107	46.02.22.10.04	46.02.20	46.02.22.10.04	46.02.31
46.2.108	46.02.11.00.04	46.02.20	46.02.11.00.04	
46.2.109	46.02.11.10.04	46.02.20	46.02.11.10.04	46.02.31
46.2.110	46.02.11.20.04	46.02.20	46.02.11.20.04	46.02.31
46.2.111	46.02.22.10.04	46.02.20	46.02.22.00.04	46.02.31
46.2.112	46.02.22.10.04	46.02.20	46.02.22.10.04	46.02.31
46.2.113	46.02.11.00.04	46.02.20	46.02.22.10.04	46.02.31
46.2.114	46.04.11.00.02	46.02.20	46.02.11.10.04	46.02.31
46.2.115	46.04.11.00.02	46.02.20	46.02.11.10.04	46.02.31
46.2.116	46.04.11.20.02	46.02.20	46.02.11.10.04	46.02.31
46.2.17	46.04.11.20.02	46.02.20	46.02.11.10.04	46.02.31

Model Number Structure Diagram

Ordering Code	Left Foot Switch	Joining Element	Right Foot Switch	Additional Accessories
46.2.118	46.04.11.00.02	46.02.20	46.02.22.10.04	46.02.31
46.2.119	46.04.11.00.02	46.02.20	46.02.11.00.04	46.02.31
46.2.120	46.04.11.00.02	46.02.20	46.04.11.00.02	46.02.31
46.2.121	46.02.11.10.04	46.02.30	46.02.11.10.04	
46.2.122	46.04.11.00.02	46.02.30	46.02.11.10.04	
46.2.123	46.02.11.10.04	46.02.30	46.02.11.10.04	
46.2.124	46.02.11.10.04	46.02.20	46.02.11.10.04	
46.2.125	46.02.11.10.04	46.02.30	46.02.11.10.04	46.02.42 + 46.02.43
46.2.126	46.02.22.10.02	46.02.20	46.02.22.10.02	
46.2.127	46.02.22.10.02	46.02.20	46.02.22.10.02	
46.2.128	46.02.22.10.04	46.02.20	46.02.22.10.02	46.02.31
46.2.129	46.02.22.20.08	46.02.20	46.02.22.00.08	46.02.32
46.2.130	46.04.11.00.02	46.02.20	46.02.11.10.04	
46.2.131	46.02.11.10.04	46.02.20	46.02.11.00.02	
46.2.133	46.02.11.10.04	46.02.30	46.02.11.10.04	46.02.41 + 46.02.43
46.2.132	46.02.11.00.04	46.02.30	46.02.22.10.04	46.02.41 + 46.02.44
46.2.134	46.02.11.00.08	46.02.30	46.02.11.00.08	46.02.41 + 46.02.44
46.2.135	46.04.11.00.02	46.02.30	46.02.11.10.04	46.02.41 + 46.02.46
46.2.136	46.02.11.10.04	46.02.30	46.02.33.40.04	46.02.41 + 46.02.45
46.2.137	46.02.11.10.04	46.02.20	46.02.11.10.04	46.02.31 + 46.02.62
46.2.138	46.02.11.10.04	46.02.30	46.02.11.10.04	46.02.42 + 46.02.43 + 46.02.62
46.2.208	46.01.11.00.04	46.02.20	46.01.11.00.04	46.02.62

Combinations of Ready to order triple foot switches:

				
Part No.: 46.3.12	Part No.: 46.02.11.00.04	Part No.: 46.02.11.00.04	Part No.: 46.02.11.00.04	Part No.: 46.02.20+46.02.20
Triple foot switch	1X Single foot switch, 1NO+1NC, Yellow cover ABS	1X Single foot switch, 1NO+1NC, Yellow cover ABS	1X Single foot switch, 1NO+1NC, Yellow cover ABS	Joining Component

Model Number Structure Diagram

Ordering Code	Left Foot Switch	Joining Component	Central Foot Switch	Joining Component	Right Foot Switch	Additional Accessories
46.3.11	46.02.11.10.04	46.02.20	46.02.11.10.04	46.02.20	46.02.11.10.04	
46.3.12	46.02.11.00.04	46.02.20	46.02.11.00.04	46.02.20	46.02.11.00.04	
46.3.13	46.02.11.10.04	46.02.20	46.02.11.10.04	46.02.20	46.02.11.10.04	46.02.34
46.3.14	46.02.11.10.04	46.02.30	46.02.11.10.04	46.02.30	46.02.11.10.04	2*(46.02.41)




Model Number Structure Combination with Dimension

<p>Part No.</p> <p>46.04.11.00.02</p> <p>Single Foot switch, open version-red cover, no devices, no accessories.</p>	
<p>Part No.</p> <p>46.01.11.00.08</p> <p>Single Foot switch, Metal cover no devices, no accessories.</p>	
<p>Part No.</p> <p>46.05.11.00.04</p> <p>Single Foot switch, Metal heavy duty, with 400mm metal carrying rod, protection hood with increased dimensions for safety shoes.</p>	
<p>Part No.</p> <p>46.02.11.13.04</p> <p>Single foot switch, ABS Yellow cover, with safety lever, with 400mm carrying rod.</p>	

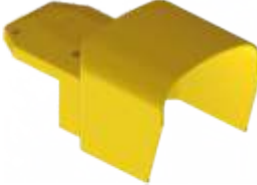
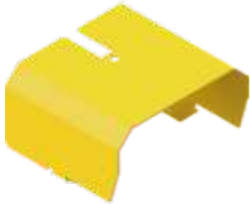




Model Number Structure Combination with Dimension

<p>Part No. 46.03.11.10.04</p> <p>Single Foot switch, ABS yellow cover (standard) provided with 660mm metal pipe, stabilizing plate and emergency stop button 1NC.</p>	
<p>Part No. 3x 46.02.11.10.04</p> <p>Triple foot switch, ABS yellow cover, with 3x safety lever, with double carrying rod.</p>	
<p>Part No. 3x 46.02.11.10.04</p> <p>Triple foot switch, ABS yellow cover, with 3x safety lever, with 2x 740mm metal pipe, 3 way E-Stop.</p>	

Accessories

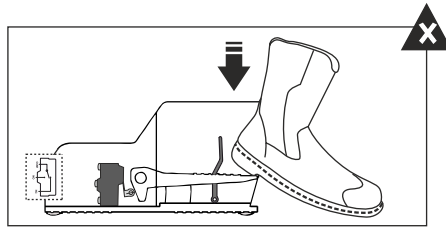
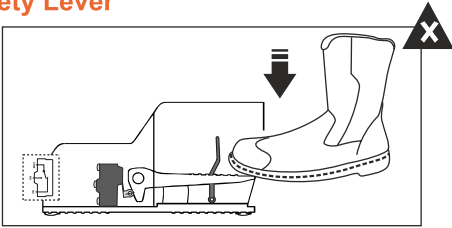
Part No.	Description	Part No.	Description
46.02.20	Joining component	46.02.30	Joining component
	Joining component for Foot switches with hole for carrying rod, with nuts, seals and self-tapping screws for the fixing of two single pedals. Protection Degree IP65.		Joining component for Foot switches with M18x1.5 threaded hole (for 46.02.41 or 46.02.42) with nuts, gaskets and self-tapping screws for joining two single pedals. Protection degree IP65.
46.02.31	Metal carrying rod set L=400mm	46.02.34	Double carrying set L=400mm
46.02.32	Metal carrying rod set L=600mm	46.02.35	Double carrying set L=600mm
	Metal carrying rod set (can be connected to 46.02.20 with a screw for rod fixing).		Double carrying rod kit with handle and self-tapping screws for fixing, to be combined with two 46.02.20
46.02.41	ø20mm metal tube set L=660mm	46.02.43	Emergency stop button set, 1NC
46.02.42	ø20mm metal tube set L=740mm	46.02.44	Emergency stop button set, 1NC+1NO
	ø20mm metal tube set with M18x1.5 threaded ends (for 46.02.43, 46.02.44, 46.02.45, 46.02.46) with metal nuts and gaskets.	46.02.45	Emergency stop button set, 2NC
		46.02.46	Housing set for F 22mm buttons
			Emergency stop button kit, rotary release, compliant with EN 60947-5-1 and EN ISO 13850, to combine with 46.02.41 or 46.02.42. Protection degree IP65.
46.02.61	Metal stabilizing plate	46.02.62	Metal stabilizing plate
	Metal stabilizing plate for single Foot switch.		Metal stabilizing plate for double Foot switch.

Accessories

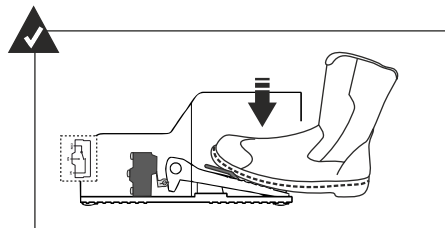
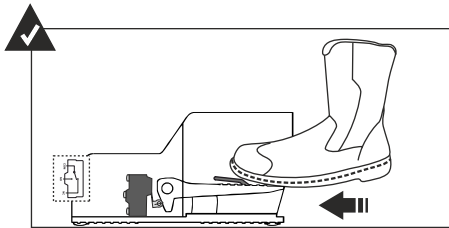
Part No.	Description	Part No.	Description
46.02.100.04	Cover yellow metal RAL-1023	46.02.1.04	Cover yellow ABS RAL-1023
46.02.100.02	Cover Red metal RAL-3020	46.02.1.02	Cover Red ABS RAL-3020
46.02.100.06	Cover Blue metal RAL-5017	46.02.1.06	Cover Blue ABS RAL-5017
46.02.100.08	Cover Grey metal RAL-7035	46.02.1.08	Cover Grey ABS RAL-7035
46.02.100.00	Cover Black metal RAL-9017	46.02.1.00	Cover Black ABS RAL-9017
	Covers Foot switch		Covers Foot switch
Part No.	Description	Part No.	Description
46.02.82	Double metal protection	46.02.63	Metal stabilizing plate
	Additional metal protections for open version series modular foot switches. In heavy-duty work environments, increased dimensions for safety shoes. Not feasible with 46.02.62		Metal stabilizing plate for triple Foot switch.
Part No.	Description	Part No.	Description
46.02.11.02	Cover half-red Polypropylene	46.02.50	Foot Switch Stopper
	Open version covers Foot switch		Foot Switch Stopper for minimize the Non-slip pedal movement.
Part No.	Description		
Cable gland-PG-11	Cable gland-PG-11		
	Cable entry with IP68 protection		

Operations

Safety Lever

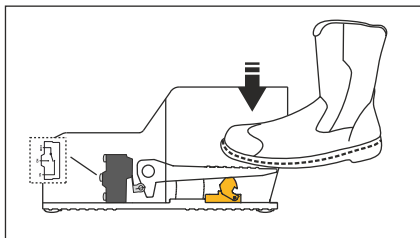


The safety lever takes care of the accidental actuation of the footswitch. say by chance, if the foot is not completely inserted into the switch, the safety lever halts the foot pedal from moving down further.

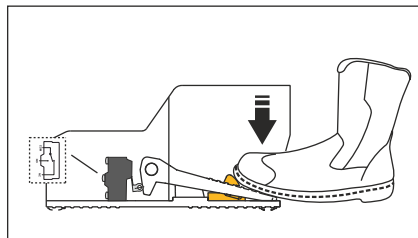


The operator has to be committed and insert his foot completely to lower the safety lever and then press down the pedal.

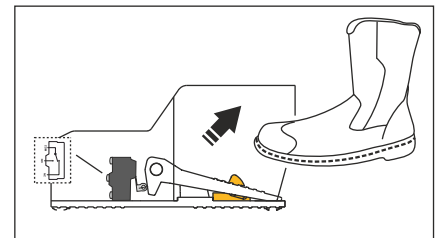
Pedal Actuator Locking



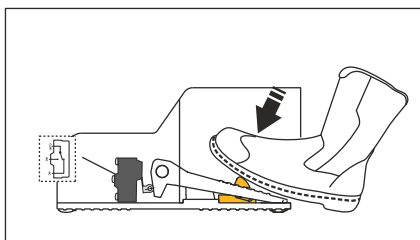
Placing the foot over pedal



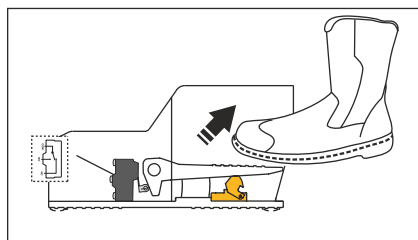
The pedal is pressed downward, switch is activated and the pedal is locked by the locking device mechanism



When the foot is taken off, the pedal is kept down by the locking device.

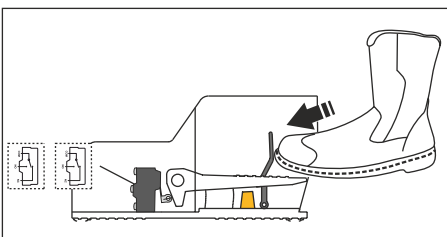


To unlatch the foot pedal press on the locking device.

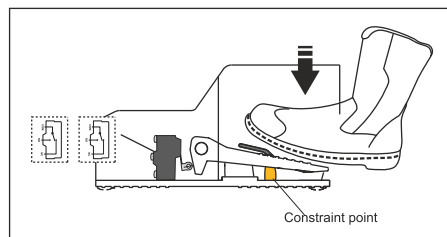


The foot pedal and the limit switch come back to their primary position once the foot is removed from the pedal.

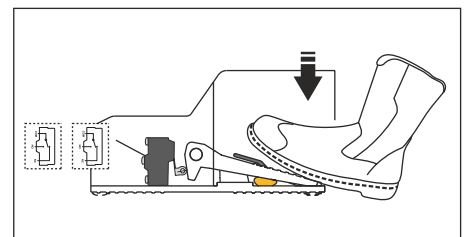
2-stage Actuating Force



46 series switch equipped with two shifted, snap action contact blocks (2* 1NO+1NC), 2-stage actuation force and safety lever.



The foot pedal is pressed down with gentle force (~18N), the foot pedal travels downward and halts at constraint point. One of the limit switches gets activated whilst the 2nd one retains its conditions.



When the foot pedal is pressed down with greater force (~180N), the second limit switch is also activated. So, both the limit switches are activated at this point.



WERNER

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H.Q.

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