



SPITZNAS
CUSTOMIZED POWER SOLUTIONS



THE CORRECT HANDLING WITH ATEX-TOOLS

TOOLS FOR THE SPECIALIST

PNEUMATIC



HYDRAULIC




ATEX



ATEX DIRECTIVE 2014/34/EU (EXTRACT)

By implementing the ATEX Directive 2014/34/EU for the manufacturer and the ATEX Directive for the operator, the European Community established a basis for a uniform european explosion protection.

Manufacturer	Operator
According to the ATEX directive 2014/34/EU the manufacturer has to meet the following requirements: <ul style="list-style-type: none"> • Conformity assessment procedure • Classification of equipment groups and categories • Manufacturing and testing of the equipment • Marking of the equipment • Issuing the declaration of conformity 	According the ATEX directive 99/92/EC, the operator has to comply with the following obligations: <ul style="list-style-type: none"> • Issuing the explosion protection document • Definition of the zones • Equipment risk assessment • Assign the equipment to the zone • Approval of the equipment

ATEX		II	2G	Ex	h	IIC	T6	Gb
Marking according to the directive 2014/34/EU	Equipment group	Category	Norm	Non-electrical equipment	Explosion group	Temperature class	Equipment Protection Level (EPL)	

Equipment group I (mining)		Equipment group II (industry, ...)		
Category M1	Category M2	Category 1G	Category 2G	Category 3G
very high safety level, even in the event of two independent incidents	high safety level	safe, also in the event of rare incidents	safe, also in the event of frequent incidents	safe in normal operation
EPL (Equipment Protection Level)				
Ma	Mb	Ga	Gb	Gc
permissible ex-zone (at 0-constantly, 1-some times or 2-rarely upcoming explosive atmosphere)				
-	-	0	1	2
			1	2
				2

Gases and vapours						
Explosion groups			Temperature classes			
IIA	IIB	IIC	Ignition temperature	Temperature class	Max. permissible surface temperature	Permissible equipment group
Acetone, Ammonia Benzol - pure, Acetic acid, Ethane, Ethyl acetate, Ethyl chloride, Carbon monoxide, Methane, Methanol, Methylene chloride, Naphthalene, Phenol, Propane, Toluol	illuminating gas Composition: e.g. Hydrogen (51%) Methane (21%) Nitrogen (15%) Carbon monoxide (9%)	Hydrogen	> 450 °C	T1	450 °C	T1 to T6
Ethyl alcohol, i-Amyl acetate, n-Butane, n-Butyl alcohol, Cyclohexane, Acetic anhydride	Ethylene, Ethylene oxide	Ethine (Acetylene)	> 300 °C to < 450 °C	T2	300 °C	T2 to T6
Petrol - general, Diesel fuel, jet fuel, heating oil DIN 51603, n-Hexane	Ethylene glycol, Hydrogen sulphide		> 200 °C to < 300 °C	T3	200 °C	T3 to T6
Acetaldehyde	Ethyl ether		> 135 °C to < 200 °C	T4	135 °C	T4 to T6
			> 100 °C to < 135 °C	T5	100 °C	T5 to T6
		Sulphide of carbon	> 85 °C to < 100 °C	T6	85 °C	only T6
Permissible equipment groups			Example: Tool with II 2G EX h IIB T4 Gb can be used in all Zone 1 and 2 areas with IIA and IIB - T1/T2/T3/T4. Tool with II 2G EX h IIC T6 Gb can be used in all Zone 1 and 2 areas (IIC T6 is the highest classification). Subject to changes.			
IIA	IIB	IIC	IIB	IIC	only IIC	

CHECKLIST

The hazardous zones and areas should be identified including those where there could be short working time. The safety officer will ensure compliance with relevant safety regulations.

The following points must be observed to ensure safe working and assist in preparing a Safety Case (extract):

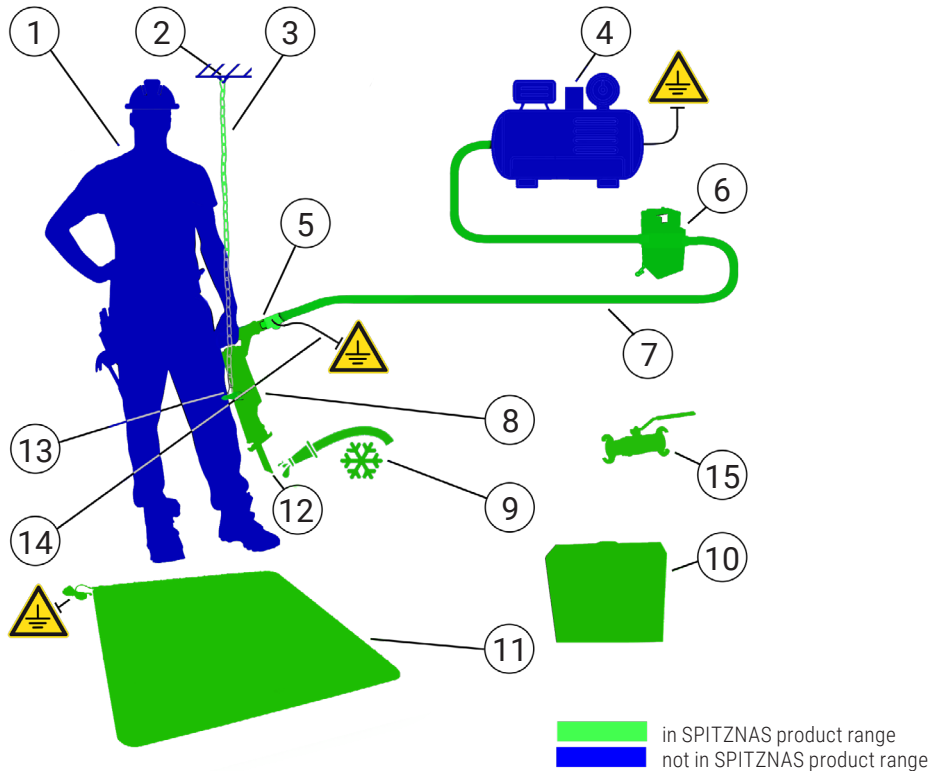
CHECKLIST

- observe the **operating instruction** of the machine tool
- only use approved safety **equipment and clothing**
- only **qualified and skilled persons** should carry out the work
- use only **tools and accessories** which are in good condition, clean and dirt-free
- check **leakages** and correct immediately
- ensure the function of the **service unit** (for pneumatic tools)
- check **operating pressure and volume flow** (speed, number of strokes)
- wherever practical **suspend tool** with a chain fitted to suspension bracket
- provide a **shock absorption** (ESD protection mat) in the operating area
- regularly measure the **surface temperature** on all tools and accessories
- **rust deposits** of any kind on tools and accessories should not be allowed
- regularly check the **discharge capability** of the connected earthing cables
- ensure **permanent cooling** of the blade or drill bit
- painted surfaces must not show any **chips or damage** (do not use tool until repaired by manufacturer)
- check **actuating valves** of the tool function properly
- check **technical specification** of the tool (e.g. speed, stroke, torque, etc. on a regular basis)
- always fit an **earthing cable**

SYSTEM CONCEPT

SYSTEM CONCEPT

SOLUTIONS



Item	Hazard			Description	Note
	Sparks	Static charge	Heat		
1	X	X		Personal protective equipment	<ul style="list-style-type: none"> All products used have to meet the safety requirements for application in the Ex-Zone. The employer has to ensure that only approved products are used. The assessment and assignment of the risk category have to be done by the employer. The employer must ensure the proper condition of the operated components at any point in time. Prior to each working process a skilled person has to check the safety devices, components, tools, as well as personal protective equipment with regard to their proper condition for use. Damaged and inappropriate components have to be removed immediately from the hazardous area.
2	X	X		Suspension	
3	X	X		Retaining chain with hook	
4	X	X	X	Air compressor	
5	X	X		Nipple assembly	
6	X	X		Service unit	
7	X	X		Pneumatic hose	
8	X	X	X	Machine	
9	X		X	Water cooling	
10	X	X		ESD carrying case	
11		X		ESD safety mat	
12	X	X	X	Tool	
13	X	X		Butt strap	
14	X	X		Earthing cable	
15	X	X	X	Ball valve assembly	