

Safety Approval & Function Check (G 20)

machine:	
supplier:	
customer:	
order number / order date:	
specifications:	mechanical: electric: general requirements:

The checked machine is equivalent to safety relevant aspects of the specification (emergency stop test, general requirements) and the function check ('dry run' and if necessary 'wet test'/run) was successful.

	OK	NOK
Safety approval (If during safety approval serious safety defects – danger to life and physical condition – are detected the function check must not be accomplished)	<input type="checkbox"/>	<input type="checkbox"/>
Function check	<input type="checkbox"/>	<input type="checkbox"/>

.....
Place

.....
Date

.....
Signature Project Engineer

.....
Signature Operations

.....
Signature Compounding / PiPo

.....
Signature Automation Engineering

.....
Signature Quality Assurance

.....
Signature ESH

.....
Signature Supplier

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Form

COMP-BU S_08 F003

Action plan:

no.	action	responsible	deadline

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1 Report – Safety approval before Check

1.1 Safety relevant aspects

no.	description	fulfils correlated specification		in implementation		remarks
		YES	NO	YES	NO	
1	machine was installed properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	emergency stop test was accomplished successfully	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	check list about machine / production line safety is OK (page 4/5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Safety relevant aspects according to the questionnaire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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no.	Checklist for machine / technical installation safety	YES	NO
1	General		
1.1	The operating manual is available according to machine directive in local language?		
1.2	Will the machine be used in accordance to the user manual and its intended use?		
1.3	Does the operating manual contain all necessary instructions concerning residual risks?		
1.4	Is it necessary to provide personal safety equipment according to the user manual / due to production demand?		
1.5	Is the risk assessment available and created according to DIN EN ISO 14121-1 or 12100?		
1.6	Is the model plate for the machine / installation available according to chapter 1.7.3 attachment I machine directive (2006/42/EC)? The model plate must include information regarding to manufacturer, CE, type, year of construction and serial no.		
1.7	Do the warning notices correspond to national requirements or RL92/58? (Safety identification, adhesive label, warning signs, health marks)		
1.8	Are the operator stations out of traffic / escape routes (distance > 1m)?		
1.9	CE-declaration of conformity available/prepared? Minimum content: machine manufacturer, EU directives (machine directive, etc.), C-standards, information about signatories, in German.		
1.10	Are dangerous gases/vapors/dust/liquids extracted or collected at the point of origin?		
1.11	Are technical arrangements sufficient to avoid endangerments caused by the substances?		
1.12	Has any possible risk of explosion caused by the processes / used substances been assessed and excluded?		
1.13	Are all necessary fire preventions existing and operational?		
1.14	Is the machine prevented from independent movement when the power/media supply returns (switch power back)?		
1.15	Can the operator see the area around the machine from the operation station? (people in danger area)		
1.16	Is the machine constructed in a way that allows a low-noise operation? (machine directive)		
1.17	Are the risk assessment, the operating instruction and the work instruction available?		
1.18	Is the production line in a clean condition?		
1.19	Are the operators instructed and trained?		
2	Ergonomics		
2.1	Is the workplace evaluated in the stress and documentation system (German abbreviation BDS)? Are general visual and ergonomic requirements fulfilled? (e.g. load handling, posture, body movement, manual work processes, posture / movement distribution)		
2.2	Do the workplaces allow safe operations? (sure-footed, stable, non-slip, minimum space of 1,5 m ² / 1 m depth for the operator)		
2.3	Is an acceptable assessment level (noise) about <80 dB(A) ensured? Are there no unacceptable single frequency noise exposures?		
2.4	Are all information media / operating elements (e.g. displays) in the operation field of vision glare free and do not interfere the operation? DIN 33402		
2.5	Are level differences (risk of stumbling > 4mm) visible marked?		
2.6	Are workplaces sufficient illuminated? (e.g. warehouses 100 Lux, procedural plants 300 Lux)		
3	Protective devices		
3.1	Are all dangerous areas protected by safety equipment according to ISO 12100? (e.g. assess points / chain drives covered, rear of the machine is protected against access, flying / breaking parts)		
3.2	Do the Protective devices work properly (check!)?		
3.3	Are the emergency stop control devices easily accessible installed and in accordance with EN 13850 (emergency stop)? (no dangerous movements possible)		
3.4	While safety devices are opened, are dangerous locations protected, at adjacent parts of the system? (e.g. safe distances or protective covers)		
3.5	Are position switches protected from manipulation and easily arranged?		
3.6	Are distances between visual safety devices or two-hand control devices and dangerous locations sufficient? EN 13857 (safe distances)		
4	Electric equipment		
4.1	Is for the electrical equipment a model plate with all necessary information available?		
4.2	Are power input terminals marked with a voltage warning sign in order to advice that they are still under voltage even after turning off the main switch? All parts are clearly marked?		

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no.	Checklist for machine / technical installation safety	YES	NO
4.3			
4.4	Is the machine equipped with a manual main switch, which is lockable in the off-position? The main switch disconnects the machine completely (all poles)		
4.5	Does the main switch disconnect the machine / installation completely?		
4.6	Is the power side of the main switch covered? (> IP 2)		
4.7	Are circuits, which carry voltage even if the main switch is turned off, clearly labeled?(EN 60204-1) (e.g. electric sockets for maintenance)		
4.8	Are terminal blocks marked?		
4.9	Are there any other components on the reverse sides of the control cabinet doors except for signal lamps, control panels and display systems?		
4.10	Do cases, which contain switch / other electronic components, have at least protection class IP 54?		
4.11	Inside the control cabinet is it only possible to remove parts under voltage by using tools? (protection against contact)		
4.12	Are there fixed connection points for all wires?		
4.13	Are the wires inside the installation frame placed in appropriate cable trays?		
4.14	Are all wires outside the installation areas installed as light plastic-sheathed cable and protected against mechanical damages?		
4.15	In case of failure, are all conductive machine parts carrying voltage, connected in a low-resistance way to the protective bonding circuit?		
4.16	Are all machines equipped with sufficient emergency stop switches? Emergency stop switches must be marked.		
4.17	Is there a clear correlation between circuit diagram and machine?		
4.18	Are circuit diagrams clearly arranged and understandable?		
4.19	Are all specifications in the circuit diagram matching with the machine?		
4.20	Are parts lists complete and do they support accurate reorders of spare parts?		
4.21	Is the circuit diagram available in the electrical plan?		
4.22	Are the acceptance reports for Bus testing available?		
5	PNEUMATIC / HYDRAULIC / PRESSURE TANKS		
5.1	Are hydraulic and pneumatic diagrams available including parts lists?		
5.2	Are all test documents for pressure tanks available? Has the test been executed before commissioning?		
5.3	Does the machine / installation have a main pressure controller?		
5.4	Can the main controller be locked in OFF position? (compulsory if risk)		
5.5	Is the residual energy discharged, if the machine / production line is turned off?		
5.6	Is the cylinder movement stopped after pressing the emergency stop switch? (5-way valve)? (no hazard from cylinder in case of emergency stop?)		
5.7	Are pressure media supply, valve control, maintenance components placed separately from electronic components?		
5.8	Are hand-operated valves placed outside of danger areas and easily accessible?		
5.9	Hoses (fixation / protection against splitting / test / exchange)		
6	OPERATING MODES		
6.1	Does the machine have an operating mode selection switch according to 2006/42/EC?		
6.2	Are switches for bridging safety limit switches clearly marked?		
6.3	Does the emergency stop command work in all operating modes?		
7	MAINTENANCE		
7.1	Can all relevant equipping / maintenance locations be reached safely?		
7.2	Are all main control devices for disconnecting of energy sources clearly marked?		
7.3	Are maintenance and service manuals available in the right language for the responsible person?		
7.4	Are all testing / monitoring intervals known / defined?		
7.5	Are all supply lines and shut-off devices marked?		
7.6	Are all test intervals documented? Is the compliance of the deadlines monitored?		

* remove incorrect points

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2 Report – Functional Test

2.1 Dry Run

no.	description	YES	NO	remarks
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	

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2.2 Wet Run

no.	Description	YES	NO	remarks
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	

Remarks:
