Fatal and non-fatal accidents in heavy electrical equipment in Japan in 1999-2022

heavy electrical equipment industry Code No.011401

Type of accidents in heavy electrical equipment in 1999-2022

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
fall from height	7	13	12	9	14	11	7	14	12	15	9	8	12	17	12	7	4	9	13	13	11	20	10	15	274
falling to same level	15	23	14	11	11	15	20	18	11	12	12	11	15	15	11	17	18	16	12	15	11	17	17	26	363
crash	2	6	4	1	5		9	3	3	1	6	6	5	8	2	8	2	4	2	4	1	2	2	3	89
struck by flying or falling object	11	14	10	10	15	20	10	4	7	13	5	10	8	10	7	7	13	7	9	5	8	8	7	10	228
collapse	5	6	3	3	3	4	6	4	7	3	3	5	2	1	7	1		4	1	6	1	1	4	3	83
crashed by	5	4	5	3	2	7	6	5	6	7	4	4	4	2	1	3	4	2	3		7	1	3	2	90
caught in/between	26	25	25	32	35	21	28	36	25	32	15	19	18	19	17	17	29	27	25	17	19	21	19	27	574
cut	6	10	11	9	9	7	6	7	9	12	3	4	4	7	7	8	5	2	5	6	4	7	9	4	161
injury to the sole of the foot			2																			1			3
drown																									
contact to high/low-	3	3	2	2	1	4	1	2	3	1	4		2	2	2	3		2	2	3	2	1	1		46

temperature																									
contact to harmful substance				1		2		2	1			1				1			1		1		1	1	12
electric shock	2	2		2	1	1	3	1		1	1		1	2	3	1	3		3			1	1	3	32
explosion	1										1				1										3
burst																	1								1
fire		1									1						2		2	1					7
traffic accident (public road)	5	8	2		2	2	4	2	2	5	4	2	4	2	1	2	3	4		3		2		1	60
traffic accident (others)																					1			1	2
reaction to motion/improper motion	9	8	9	14	6	9	11	19	15	13	8	13	14	14	12	17	8	12	12	13	17	20	15	14	302
others	2	1	1	1		1	2	1	1	2		1	1	1			1			1		1	11	1	30
unclassifiable				1							1			1					1			1			5
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Causal agents (large) of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
machine	24	32	26	29	32	27	22	28	25	27	15	13	13	13	19	18	28	19	26	15	19	20	25	24	539

crane, conveying machine	10	15	11	6	12	10	20	12	11	25	9	6	9	11	9	10	11	10	4	10	9	10	8	9	257
other equipment	27	22	20	21	20	23	17	20	18	19	20	22	22	29	20	21	22	20	22	13	21	26	15	22	502
temporary buildings, establishments	15	26	19	12	12	14	20	20	13	14	11	14	19	15	8	14	9	20	13	20	11	16	19	21	375
substance, material	9	15	16	14	14	10	17	15	17	12	11	9	6	13	10	11	11	13	10	15	11	13	6	15	293
load	8	9	3	10	7	7	7	9	8	11	6	11	5	12	6	5	3	1	10	5	5	8	5	4	165
environment				1	3	3				1	1	2	3		3	1	1	1		2	1	1		2	26
others	6	5	5	6	4	10	10	14	10	8	4	7	13	8	8	12	8	5	6	7	6	10	22	14	208
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Causal agents (middle) of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine			1	1		3		1							1				2				1		10
power transmission mechanism	1				1		2		1	1		1			1		1	2	2					1	14
woodworking machine		1	2	1	2		1		2	1	2		1	1	1						2		1		18

construction machine		1								1		1													3
metal manufacturing machine	15	11	15	12	12	18	12	14	13	14	6	7	9	6	10	14	21	14	10	11	12	12	11	12	291
general machine	8	19	8	15	17	6	7	13	9	10	7	4	3	6	6	4	6	3	12	4	5	8	12	11	203
mobile silviculture machine																									
crane	4	3	4	2	5		5	5	3	12	1		3	2	4		6	1	2	3	3		5	1	74
conveying machine	1	3	5	4	5	7	11	5	7	8	5	3	3	6	4	6		6	2	4	5	7	3	5	115
vehicle	5	9	2		2	3	4	2	1	5	3	3	3	3	1	4	5	3		3	1	3		3	68
pressure vessel		1		1	1			1						1											5
chemical facilities							1	1							1										3
welding equipment	2	1	2	1		2		1	3	1		2	1			3			2				1	2	24
kiln, caldron	1			1						1								1			2	1			7
electric equipment	4	3		1	2	1	6	1	1	1	4		2	3	2	3	4	3	3		1	2	2	3	52
human power machine, tools	4	6	4	4	5	5	2	2	3	7	6	7	4	2	3	2	5	4	1	3	3	4	3	7	96
tools	10	10	12	12	9	14	6	10	8	9	5	9	11	21	13	13	11	10	13	7	8	17	6	8	252
other equipments,																									

facilities	6	1	2	1	3	1	2	4	3		5	4	4	2	1		2	2	3	3	7	2	3	2	63
temporary buildings, establishments	15	26	19	12	12	14	20	20	13	14	11	14	19	15	8	14	9	20	13	20	11	16	19	21	375
hazards, harmful substances		2	1	2		3		2	2		2	1	1	1	1	1	3		4	1	1		1	1	30
materials	9	13	15	12	14	7	17	13	15	12	9	8	5	12	9	10	8	13	6	14	10	13	5	14	263
load	8	9	3	10	7	7	7	9	8	11	6	11	5	12	6	5	3	1	10	5	5	8	5	4	165
natural environment				1	3	3				1	1	2	3		3	1	1	1		2	1	1		2	26
other causal agent	1	1	1	1		2	5	2	3	3	1	3	7	1	1	1				1		1	11	4	50
no causal agent	5	4	4	5	4	8	4	12	7	3	2	4	5	7	7	11	8	5	5	6	6	8	11	10	151
unclassifiable							1			2	1		1						1			1			7
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Causal agents (small) of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine			1					1							1				2				1		6
power transmission mechanism					1		2		1	1		1			1		1	2	2					1	13

circular sawing machine					1				1	1				1	1						1		1		7
band sawing machine							1														1				2
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw									1		1		1												3
other woodworking machines			2		1						1														4
leveling, transporting or loading machine												1													1
excavating machine																									
foundation work machine																									
hardening machine																									

demolition machine																									
vehicle for high lift work																									
other construction machines										1															1
lathe					1		1	1	1	4		1	4		1	2	1	1	1	3	2	2		2	28
drill press, milling machine			3		3		3	4	1	1	1	3	2	1	2	2	2	2	2	3			2	1	38
grinding machine, buffing machine			3		1		2	1					1			3	4	2			1	3	2	3	26
power press			3		4		3	3	6	4	4	1	2	4	3	3	5	3	2		6	4	6	5	71
forging pressure hammer							1																		1
shearing machine			1		1		1		2	1					1			1	1	3	1	1			14
other metal manufacturing machines			5		2		1	5	3	4	1	2		1	3	4	9	5	4	2	2	2	1	1	57
centrifugal machine																					1				1
mixer, grinder								1										1							2
roll machine (except printingroll machine)					1		1			1	1								2		1				7

injection molding machine			1									1												1	3
food manufacturing machine																									
printing machine									1																1
industrial robot																									
other general power machines			7		16		6	12	8	9	6	3	3	6	6	4	6	2	10	4	3	8	12	10	141
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane			4		5		4	3	3	11	1		1	2	4		6	1	2	2	2		5	1	57
mobile crane								1					1								1				3
derrick crane																									
elevator, lift								1		1			1							1					4
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane							1																		1
truck							3		7	3	1	2		2	3	2		2	1	4	3	4	1	4	42
forklift			4		3		5	3		2	2		2	2	1	1		2			2		1	1	31
railway equipment																									
conveyor					2		2	1		2			1	1		1		2	1			3	1		17
loader																									
straddle carrier																									
rough terrain hauler																									
other powered conveying machines			1				1	1		1	2	1		1		2									10
cars, bus, motorcycle			2		2		4	2	1	5	3	3	3	3	1	4	5	3		3	1	3		2	50
railway vehicle																									
other vehicles																								1	1
boiler																									

pressure vessel					1			1																	2
other pressure vessels														1											1
chemical facilities							1	1							1										3
gas welding equipment			1						2										1				1		5
arc welding equipment									1	1		1	1			1								1	6
other welding equipment			1					1				1				2			1					1	7
kiln, caldron																		1			2	1			4
industrial dryer										1															1
other kiln, caldron																									
transmission					1						2			1					1		1		2		8
electric power facilities							3	1			1			2	1	2	3	3	1			1		3	21
other electrical equipment					1		3		1	1	1		2		1	1	1		1			1			14
human power cranes																	1							1	2
human power hauling equipment			1		3		1	1	2	4	5	5	3	1	1	2	2	4		2	1	3	2	5	48

human power machine							1																		1
hand tool			3		2			1	1	3	1	2	1	1	2		2		1	1	2	1	1	1	26
ladder			5		6		3	6	6	4	5	4	3	11	7	6	4	5	6	5	6	13	4	2	111
slinging tool			3				2	1	1			1		1	2	3	1	2	2			2		4	25
other tools			4		3		1	3	1	5		4	8	9	4	4	6	3	5	2	2	2	2	2	70
other equipment, facilities			2		3		2	4	3		5	4	4	2	1		2	2	3	3	7	2	3	2	54
scaffolding													1								1			1	3
timbering																									
stairs, landing stage			5		3		5	3	1	5	2	1	3		3	1	2	4	1	2	2	3	3	8	57
opening									1		1		1									1			4
roof, beam, haze, crossbeam, principal rafter			1															1							2
working platform, boot board			2		1		5	2	4	1	3		4	3		4	1		1	3	2	1		1	38
passage			6		3		10	9	3	5	5	8	5	8	4	8	5	10	8	11	5	9	14	8	144
building, establishment			3		1			4	3	2		3	2	1	1	1	1	3	2	2		1	1	1	32
other temporary buildings,			2		4			2	1	1		2	3	3				2	1	2	1	1	1	2	28

establishments																									
explosive substance																									
inflammable substance									1		1				1		2			1					6
inflammable gas																									
harmful substance								2			1	1	1	1					1		1			1	9
radiation																									
other hazards, harmful substances			1						1							1	1		3				1		8
metal material			12		12		16	11	13	10	8	7	4	12	8	9	6	10	6	13	9	11	4	10	191
lumber, bamboo					2					1	1				1			1			1	1		2	10
stone, sand, substance																									
other materials			3				1	2	2	1		1	1			1	2	2		1		1	1	2	21
load			2		5		6	7	3	8	4	9	5	9	6	3	2		9	4	4	5	2	3	96
machine/equipment as load			1		2		1	2	5	3	2	2		3		2	1	1	1	1	1	3	3	1	35
natural ground, rock					1																				1
standing tree																									
water																									
abnormal																									

environment																									
high/cold temperature environment										1	1	1	1		2					1		1			8
other environments					2							1	2		1	1	1	1		1	1			2	13
other causal agent			1				5	2	3	3	1	3	7	1	1	1				1		1	11	4	45
no causal agent			4		4		4	12	7	3	2	4	5	7	7	11	8	5	5	6	6	8	11	10	129
unclassifiable							1			2	1		1						1			1			7
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Workers age of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less	3	1	6	2	4	4	3	5	3	5	3	2	3	3	5	2	2		1	1	1	2	6	3	70
20-29	19	32	17	19	17	18	23	24	19	19	13	15	14	19	19	27	11	18	16	14	13	12	12	16	426
30-39	18	30	12	20	17	13	27	30	27	32	14	25	20	23	18	12	26	16	22	18	14	17	15	34	500
40-49	24	25	17	21	24	19	18	20	24	24	16	23	19	19	14	23	26	18	19	15	22	22	27	15	494
50-59	29	23	39	29	33	38	29	26	19	22	18	13	20	23	17	12	16	23	19	24	16	33	26	26	573
60 years old or more	6	13	9	8	9	12	13	13	10	15	13	6	14	14	10	16	12	14	14	15	17	18	14	17	302
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Workers' number of workplace of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
9 workers or less	13	13	16	16	20	21	15	11	12	15	4	8	7	10	10	7	7	9	6	8	3	7	2	4	244
10-29	25	25	19	20	23	16	19	23	29	16	16	13	18	21	13	13	22	9	11	14	14	16	22	26	443
30-49	11	20	8	9	11	10	14	19	10	14	11	12	5	4	11	8	4	12	9	15	9	7	10	17	260
50-99	20	17	23	21	15	17	16	18	15	16	17	10	11	17	9	13	14	18	12	11	17	23	19	15	384
100-299	12	23	8	16	16	19	23	18	11	29	11	21	21	21	20	29	26	13	22	21	23	23	20	25	471
300 workers or more	18	26	26	17	19	21	26	29	25	27	18	20	28	28	20	22	20	28	31	18	17	28	27	24	563
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Month of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January	7	11	6	6	15	10	10	10	12	4	9	6	5	13	6	8	6	6	7	10	6	10	8	17	208
February	7	14	12	10	12	12	10	13	10	12	6	5	10	5	9	9	7	10	10	4	10	11	3	12	223
March	6	11	6	6	7	13	9	10	3	12	6	6	10	13	7	5	13	10	10	7	7	7	10	14	208
April	7	13	13	9	8	8	5	5	6	12	12	6	5	4	4	7	6	7	9	6	8	6	9	8	183
May	7	12	5	12	6	10	10	6	8	5	7	10	7	10	3	4	7	11	5	10	8	6	7	8	184
June	7	10	12	5	9	8	11	4	9	13	6	5	10	10	3	8	5	4	9	7	6	11	9	8	189

July	13	5	5	7	13	6	8	11	8	8	4	7	6	8	6	11	9	9	7	11	12	12	4	3	193
August	10	12	9	10	6	13	6	8	15	8	4	6	3	6	12	8	7	4	7	8	8	10	17	10	207
September	6	5	9	8	6	6	10	11	10	12	5	14	10	12	9	12	11	5	3	6	8	8	10	10	206
October	11	8	8	10	8	4	10	20	4	13	10	9	10	7	10	9	4	5	9	8	3	7	6	10	203
November	11	14	8	9	11	8	15	9	5	8	5	5	10	9	5	7	8	10	9	5	5	5	10	5	196
December	7	9	7	7	3	6	9	11	12	10	3	5	4	4	9	4	10	8	6	5	2	11	7	6	165
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Prefecture of fatal and non-fatal accidents in heavy electrical equipment in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido	1	3	1					1	3		2		1			1		1		2	2	2	2	3	25
Aomori								2	1			1	1		1	1				1				1	9
Iwate							1			1	1		1										1		5
Miyagi	1	1						4	1	1		3	2		1				2	1		1			18
Akita	1																				1				2
Yamagata	1	2	3		1		2	3	2	1	4	3	3	2	2	5	3		2	2		1	2	2	46
Fukushima	1		2		5		2	1	3	5	3	9	5	8	8	8	3	2	1	3	2	2	1	7	81
Ibaraki	7	9	4		3		4	8	5	7	5	3	8	7	9	8	4	5	3	2	2	4		8	115
Tochigi		1			1		4	2	1	2	3	1	1	3		2	2	2	2	2	1	3	1		34
Gunma	2	3	1		2		5	4	2	2			2	2		1	5		3	2	1	3	6	5	51

Saitama	2	3	8		5		3	6	4	1	3	2		1	4	2	1	4	1	3	2	2	2	1	60
Chiba	4	5	2		3		2	1	1	1	2	1	1	2	3	2	2	4	2	2	1			5	46
Tokyo	7	5	1				1	3	2	1		4	2	2	1		2	2	1	2	1	1	6		44
Kanagawa	10	5	8		3		8	3	8	11	6	8	4	4	3	4	4	2	10	9	5	1	15	7	138
Niigata	2				4			4	1	3	3		2	2	1	2	4	3	1	1	6	4	7	5	55
Toyama		1	1		1			3		4			1	1	2			1	3	2		2		1	23
Ishikawa	3	3	2				3	4	3	5	2	1	3	3	3	4		2	2	2	3	3		1	52
Fukui		1					2	1		1		1			1		1	1		3	3		1		16
Yamanashi	2	11			10		4	7	4	4		2	2		4	5	2	1			1	3	4	1	67
Nagano		3	3		4		3	1	1		1	3				1			1	3		2		1	27
Gifu	8	6	2		2		4	1	1	1			2	1	1		2		2	2	3	1	7	4	50
Shizuoka	3	2	8		6		4	6	9	2	4	6	3	7	1	4	7	10	10	6	2	6	4	3	113
Aichi	6	6	10		4		7	6	8	8	4	2	4	5	5	3	3	4	8	7	5	9	9	12	135
Mie	4	7	4		5		4	7	1	7		1	5	2	1	2	2	3	2	2		3	3	5	70
Shiga	2	5	2		2		1	1	2	4			1	1		1	2	1			1	1	1	3	31
Kyoto	7	7	5		8		5	5	3	6	6	3		5	2		3	5	3	4	1	4	1	4	87
Osaka	4	2	1		8		10	13	3	8	6	8	7	5	5	8	6	4	4	3	7	7	3	2	124
Hyogo	5	8	10		4		8	4	1	6	4	4	6	10	5	5	9	8	3	5	2	3	3	6	119
Nara									1															1	2
Wakayama	1		2				1					1					1	1							7
Tottori	1	3			1			1					1			1	1		1			1	1	1	13

Shimane										1	3	1	1	1											7
Okayama		1			1		3	2	1	1	1		3	2	1	1	2		1		1	3			24
Hiroshima	2	3			5		3	3	7	2	4	4	5	7	3	4	3	3	3	3	7	5	2	5	83
Yamaguchi		1			1			1	2	1	3	1	1	2	1	1	3	2	6		1		1		28
Tokushima		2			1		2		1								2							2	10
Kagawa	3	2	1		2				1	1					1	1	3	3			1	5	1	2	27
Ehime	2	2	1				1		3	2		2			3	4			2	1	3	1	4	2	33
Kochi			1																						1
Fukuoka	2	7	10		6		8	6	7	10	3	2	5	8	7	9	8	8	8	10	11	14	6	7	162
Saga	1				1		2	1		1		1	1	2	1		1	2	2	1	1	2		1	21
Nagasaki	1	1	3				2	2	5	4	2	3	2		1	1		2	1	1	4	3	3	1	42
Kumamoto	1	1			1		1			1		2	2	2	1			3				2		1	18
Oita					1		1		1	1	1		1			1	1								8
Miyazaki		1			2						1	1	1	1			1						1	1	10
Kagoshima	1	1	3		1		1														1		1		9
Okinawa	1		1				1	1	3					3	1				1		1		1		14
total	99	124	100	99	104	104	113	118	102	117	77	84	90	101	83	92	93	89	91	87	83	104	100	111	2,365

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more.

Data of 2022 year do not include Covid-19 cases. Data of 2020 & 2021 year include Covid-19 cases. Fatal and non-fatal data are same situation.

Data of 2011 year include fatal and non-fatal accidents caused by Great East Japan Earthquake in 2011.

Data sources: https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.html (MHLW, Japan)

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Fatal accidents in heavy electrical equipment in Japan in 1999-2022

heavy electrical equipment industry Code No.011401

Type of fatal accidents in heavy electrical equipment in 1999-2022

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
fall from height		1																							1
falling to same level										1															1
crash																									
struck by flying or falling object																									
collapse	1																								1
crashed by								1			1														2
caught in/between			1					1										1	1			1			5
cut																									
injury to the sole of the foot																									

drown																									
contact to high/low-temperature																									
contact to harmful substance																									
electric shock		1																					1		2
explosion															1										1
burst																	1								1
fire																									
traffic accident (public road)		2			1																				3
traffic accident (others)																									
reaction to motion/improper motion																									
others									1	1															2
unclassifiable																									
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Causal agents (large) of fatal accidents in heavy electrical equipment in 1999-2022

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
machine			1															1	1						3
crane, conveying machine		2			1			1			1														5
other equipment		2						1		1					1		1					1	1		8
temporary buildings, establishments																									
substance, material																									
load	1																								1
environment																									
others									1	1															2
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Causal agents (middle) of fatal accidents in heavy electrical equipment in 1999-2022

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine																									
power transmission mechanism																									

woodworking machine																									
construction machine																									
metal manufacturing machine			1																						1
general machine																		1	1						2
mobile silviculture machine																									
crane								1			1														2
conveying machine		1																							1
vehicle		1			1																				2
pressure vessel								1																	1
chemical facilities															1										1
welding equipment																									
kiln, caldron																						1			1
electric equipment		2																					1		3
human power machine, tools																									
tools										1															1
other equipments,																									

facilities																	1								1
temporary buildings, establishments																									
hazards, harmful substances																									
materials																									
load	1																								1
natural environment																									
other causal agent										1															1
no causal agent									1																1
unclassifiable																									
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Causal agents (small) of fatal accidents in heavy electrical equipment in 1999-2022

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine																									
power transmission mechanism																									

circular sawing machine																									
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw																									
other woodworking machines																									
leveling, transporting or loading machine																									
excavating machine																									
foundation work machine																									
hardening machine																									

demolition machine																									
vehicle for high lift work																									
other construction machines																									
lathe																									
drill press, milling machine																									
grinding machine, buffing machine																									
power press			1																						1
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines																									
centrifugal machine																									
mixer, grinder																									
roll machine (except printingroll machine)																			1						1

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines																		1							1
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane											1														1
mobile crane								1																	1
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane																									
truck		1																							1
forklift																									
railway equipment																									
conveyor																									
loader																									
straddle carrier																									
rough terrain hauler																									
other powered conveying machines																									
cars, bus, motorcycle		1			1																				2
railway vehicle																									
other vehicles																									
boiler																									

pressure vessel								1																	1
other pressure vessels																									
chemical facilities															1										1
gas welding equipment																									
arc welding equipment																									
other welding equipment																									
kiln, caldron																						1			1
industrial dryer																									
other kiln, caldron																									
transmission		1																					1		2
electric power facilities		1																							1
other electrical equipment																									
human power cranes																									
human power hauling equipment																									

human power machine																									
hand tool																									
ladder																									
slinging tool																									
other tools										1															1
other equipment, facilities																	1								1
scaffolding																									
timbering																									
stairs, landing stage																									
opening																									
roof, beam, haze, crossbeam, principal rafter																									
working platform, boot board																									
passage																									
building, establishment																									
other temporary buildings,																									

establishments																									
explosive substance																									
inflammable substance																									
inflammable gas																									
harmful substance																									
radiation																									
other hazards, harmful substances																									
metal material																									
lumber, bamboo																									
stone, sand, substance																									
other materials																									
load																									
machine/equipment as load	1																								1
natural ground, rock																									
standing tree																									
water																									
abnormal																									

environment																									
high/cold temperature environment																									
other environments																									
other causal agent										1															1
no causal agent									1																1
unclassifiable																									
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Workers age of fatal accidents in heavy electrical equipment in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less	1																								1
20-29		1			1						1														3
30-39		1						1																	2
40-49		1	1						1						1		1		1			1			7
50-59		1						1		1								1							4
60 years old or more										1													1		2
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Workers' number of workplace of fatal accidents in heavy electrical equipment in 1999-2022

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
9 workers or less										1															1
10-29		2																	1						3
30-49	1																						1		2
50-99								1										1							2
100-299					1						1														2
300 workers or more		2	1					1	1	1					1		1					1			9
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Month of fatal accidents in heavy electrical equipment in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January		1							1						1										3
February			1																						1
March		1																1				1			3
April																									
May		1																							1
June																									

July	1									1															2
August											1								1				1		3
September																									
October								1		1															2
November		1			1																				2
December								1									1								2
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Prefecture of fatal accidents in heavy electrical equipment in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido																									
Aomori																									
Iwate																									
Miyagi																									
Akita																									
Yamagata																									
Fukushima																						1			1
Ibaraki		1							1						1										3
Tochigi		1																							1
Gunma																									

Saitama																									
Chiba																									
Tokyo																									
Kanagawa											1						1								2
Niigata																									
Toyama																									
Ishikawa																									
Fukui																									
Yamanashi		1																							1
Nagano																									
Gifu	1																								1
Shizuoka																									
Aichi			1							1													1		3
Mie																									
Shiga																									
Kyoto																									
Osaka					1																				1
Hyogo		1																1	1						3
Nara																									
Wakayama																									
Tottori																									

Shimane																									
Okayama																									
Hiroshima								1																	1
Yamaguchi										1															1
Tokushima																									
Kagawa																									
Ehime																									
Kochi																									
Fukuoka																									
Saga																									
Nagasaki																									
Kumamoto																									
Oita																									
Miyazaki																									
Kagoshima																									
Okinawa								1																	1
total	1	4	1		1			2	1	2	1				1		1	1	1			1	1		19

Data sources: https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.html (MHLW, Japan)

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