

Fatal and non-fatal accidents in machinery/apparatus setting work in Japan in 1999-2021

machinery/apparatus setting work industry Code No.030302

Type of accidents in machinery/apparatus setting work in 1999-2021

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	total	Type of accidents
fall from height	220	234	224	220	226	206	210	212	229	203	169	148	153	134	180	173	140	142	148	159	144	142	131	4,147	fall from height
falling to same level	48	48	63	45	46	38	65	37	60	44	43	45	52	54	33	54	40	39	41	36	59	55	49	1,094	falling to same level
crash	32	44	33	32	27	19	28	25	27	28	26	22	23	16	20	16	14	26	21	20	27	24	28	578	crash
struck by flying or falling object	95	95	105	75	88	94	74	78	84	105	58	61	55	63	53	59	57	56	71	58	52	51	42	1,629	struck by flying or falling object
collapse	19	30	24	24	22	15	24	28	23	22	29	16	18	27	18	14	13	12	20	23	15	14	12	462	collapse
crashed by	38	30	37	38	35	31	29	35	25	39	20	19	28	25	28	29	28	22	28	23	26	24	21	658	crashed by
caught in/between	131	143	143	110	99	108	85	112	106	99	95	87	79	108	85	92	89	76	77	94	88	70	81	2,257	caught in/between
cut	40	48	34	34	32	26	42	26	37	33	32	18	27	22	29	34	17	25	28	19	27	18	26	674	cut
injury to the sole of the foot	2	1	4	2	2	4	3	1	2		2	2	1	4	2	3	2	2	3			2	2	46	injury to the sole of the foot
drown		1		1			1			1			2				1	1	1	2	1			12	drown
contact to high/low-temperature	15	11	24	14	13	18	13	17	14	13	19	18	12	14	9	15	8	13	9	25	12	13	5	324	contact to high/low-temperature

construction machine	4	10	12	8	6	9	9	10	12	8	9	3	6	9	8	6	7	5	8	2	14	11	6	182	machine
metal manufacturing machine	28	23	16	24	18	24	25	17	27	30	20	10	20	15	21	18	15	24	16	22	15	16	13	457	metal manufacturing machine
general machine	35	20	25	31	25	18	15	11	22	18	18	13	20	27	14	15	14	11	16	17	20	8	12	425	general machine
mobile silviculture machine																									mobile silviculture machine
crane	31	55	55	39	35	34	38	42	30	41	29	26	22	25	22	30	31	25	19	26	29	17	20	721	crane
conveying machine	63	67	59	57	69	60	54	56	56	52	42	43	37	41	51	29	49	48	38	48	36	29	37	1,121	conveying machine
vehicle	20	13	21	23	18	21	24	17	13	24	18	11	21	18	27	19	27	33	18	16	28	16	27	473	vehicle
pressure vessel	6	7	7	5	8	14	5	4	4	6	2	5	5	3	2	3	3	3	4	5	1	4	4	110	pressure vessel
chemical facilities	5	2		2	2	4	1	1	1	2	1		4	2	1	3	2	1		2	2	1	1	40	chemical facilities
welding equipment	3	6	5	3		3	6	5	3	4	9	12	5	1	3	2	5	2	1	1	3	1		83	welding equipment
kiln, caldron	4	5	1	5	3	3	1	3	1	1	5	3			2	1	1	3	1	1	4	3	1	52	kiln, caldron
electric equipment	8	4	6	8	8	8	6	7	8	7	8	5	5	5	4	10	1	7	1	6	4	4	6	136	electric equipment
human power machine, tools	19	43	33	29	26	27	31	30	30	30	21	19	20	24	14	23	18	24	22	28	26	20	24	581	human power machine, tools
tools	101	105	104	102	91	81	81	101	100	92	75	76	71	65	90	85	57	76	83	84	85	82	76	1,963	tools

power transmission mechanism			5	1		7	5	3	5	1	4	4	5	4	3	2	4	7	3	5	2	5	75	power transmission mechanism
circular sawing machine			7	4		3	5	4	4	4	3	3	1	8	1	2	2	3	1	4	3	2	64	circular sawing machine
band sawing machine																								band sawing machine
wood planer machine			1	1								1											3	wood planer machine
hollow chisel mortiser, wood borer																								hollow chisel mortiser, wood borer
chamfering machine, router, woodworking milling machine														1									1	chamfering machine, router, woodworking milling machine
chain saw							1	1					1		2							1	6	chain saw
other woodworking machines			1			3	1	1	1			1		2	2	1		1					14	other woodworking machines
leveling, transporting or loading machine			1	1			1		2						2	1					1	1	10	leveling, transporting or loading machine
excavating machine			6			3	4	3	4	2	2	1	1	4	3	2	2	4	1	3	1	2	48	excavating machine
foundation work machine							1	1					1							1	2		6	foundation work machine
hardening machine				1									1				1						3	hardening machine

demolition machine			1		1		1	2	1		1			1	1	1	3		2	1		1		17	demolition machine	
vehicle for high lift work			3		2		2	2	5		5	1	2	3	1		1	2	1		9	5	1	45	vehicle for high lift work	
other construction machines			1		1		3		2	2	1		3	2	2				1		1	1	2	22	other construction machines	
lathe			1				1	2	1	1	2		1	1	1		1	3		1	1		2	19	lathe	
drill press, milling machine			1				1	4	5	3	1	2	2	2	3		1	3	2	1		1	2	34	drill press, milling machine	
grinding machine, buffing machine			7		5		9	6	13	12	5	3	11	6	9	11	6	12	9	10	9	7	5	155	grinding machine, buffing machine	
power press					2		2				1	2	2	1	1	1				1	1		3	1	18	power press
forging pressure hammer			1																					1	forging pressure hammer	
shearing machine					1		2				2						1	1		2				9	shearing machine	
other metal manufacturing machines			6		10		10	5	8	13	8	3	5	5	7	7	6	5	4	7	5	5	3	122	other metal manufacturing machines	
centrifugal machine			1		1			1							1		1							5	centrifugal machine	
mixer, grinder			3						1	2			1	4		4				1			1	17	mixer, grinder	
roll machine (except printingroll machine)					1		1			2			1		1					1		1		8	roll machine (except printingroll machine)	
injection molding machine								1			1													2	injection molding machine	

food manufacturing machine			1			1		1		2			1		1	2						9	food manufacturing machine	
printing machine				1					1				1								1	4	printing machine	
industrial robot				1		1			1				1	1				1	1			7	industrial robot	
other general power machines			20	21		13	8	18	15	14	12	19	21	11	10	12	9	15	15	18	7	11	269	other general power machines
felling machine																							felling machine	
mobile logging machine																							mobile logging machine	
skyline yarding machine																							skyline yarding machine	
other mobile silviculture machine																							other mobile silviculture machine	
crane			15	10		10	18	12	15	15	6	6	8	12	6	9	4	8	10	10	3	11	188	crane
mobile crane			22	13		12	13	9	11	7	10	3	10	3	16	9	9	6	7	13	5	5	183	mobile crane
derrick crane																							derrick crane	
elevator, lift			11	3		8	4	5	8	5	2	5	5		4	5	5		6	2	6	2	86	elevator, lift
cargo lifting appliance																							cargo lifting appliance	
gondola			2			1			2		2	2		1	1			1		1		1	14	gondola
lumberyard equipment, logging cableway																		1					1	lumberyard equipment, logging cableway
simple skyline																					1		1	simple skyline

equipment			2			4	1	1	1	3	5	4		3			2			1	1		28	equipment
other welding equipment						1			1		1									1			5	other welding equipment
kiln, caldron			1		1	1	2	1		5	2			1	1	1	2	1	1	4	3		27	kiln, caldron
industrial dryer					1		1				1					1						1	6	industrial dryer
other kiln, caldron					1					1													2	other kiln, caldron
transmission			1		1	2	3	3		1		1		1	3				2	2		2	22	transmission
electric power facilities			2		3	2	2	3	4	3	3	1	3	1	5		4	1	2	1		2	42	electric power facilities
other electrical equipment			3		4	2	2	2	3	4	2	3	2	2	2	1	3		2	1	4	2	44	other electrical equipment
human power cranes			9		8	9	4	9	9	3	3	5	3	3	6	4	5	2	6	5	3	5	101	human power cranes
human power hauling equipment			7		6	2	6	2	6	4	3	5	7	5	3	2	6	3	9	4	8	3	91	human power hauling equipment
human power machine							2		3	1			1		1	1			2	1			12	human power machine
hand tool			17		12	20	18	19	12	13	13	10	13	6	13	11	13	17	11	16	9	16	259	hand tool
ladder			69		69	61	80	69	69	54	61	58	53	73	61	42	56	59	68	65	62	52	1,181	ladder
slinging tool			19		6	11	7	14	10	10	9	4	5	9	10	4	14	11	7	9	10	8	177	slinging tool
other tools			16		16	9	14	17	13	11	6	9	7	8	14	11	6	13	9	11	10	16	216	other tools
other equipment, facilities			39		36	28	32	24	21	31	24	20	24	15	43	16	21	24	24	15	23	9	469	other equipment, facilities
scaffolding			40		24	23	32	36	33	16	15	12	16	14	14	16	15	11	18	15	9	16	375	scaffolding

timbering																			1	1			1	3	timbering
stairs, landing stage			14		19		21	16	24	12	11	23	12	10	7	22	11	15	15	14	20	19	16	301	stairs, landing stage
opening			14		17		11	14	13	7	12	5	6	4	7	11	17	10	8	14	11	9	11	201	opening
roof, beam, haze, crossbeam, principal rafter			19		13		25	13	11	10	11	12	19	23	29	22	14	17	12	9	8	15	11	293	roof, beam, haze, crossbeam, principal rafter
working platform, boot board			25		20		15	12	20	22	24	21	13	14	9	12	7	13	16	11	14	14	12	294	working platform, boot board
passage			25		18		28	17	16	17	16	14	23	16	17	24	26	18	23	24	26	20	24	392	passage
building, establishment			36		30		38	38	34	35	34	24	15	22	25	24	14	17	20	12	17	14	19	468	building, establishment
other temporary buildings, establishments			14		19		15	15	16	12	10	12	16	18	18	12	8	8	14	7	13	10	12	249	other temporary buildings, establishments
explosive substance					1		5									1								7	explosive substance
inflammable substance							1	1	3	2		8					1	2	1	2	2	7		30	inflammable substance
inflammable gas			4				1		2	1	3	4		4	2	2	1	3	1	5	2	1		36	inflammable gas
harmful substance			3		6		3	2	5	2	3	4	5	4	5	3	1	5	3	4	4	5	4	71	harmful substance
radiation			1																					1	radiation
other hazards, harmful substances			6		4		1	3		2	4	3	2	4		3	6	4	1	3	6	4	1	57	other hazards, harmful substances
metal material			72		53		47	54	54	72	44	51	44	50	44	35	39	26	44	45	37	43	33	887	metal material
lumber, bamboo			7		6		3	4	9	2	4	1	5	2	3	5	1	4	3	3		2		64	lumber, bamboo

stone, sand, substance			2				5		2	1	2		1	2	1	1	1	1	1	1	1	1	21	stone, sand, substance	
other materials			3		8		10	4	8	7	3	3	5	7	2	2	7	2	2	3		6	7	89	other materials
load			23		21		21	20	14	20	14	16	15	13	15	9	8	14	17	9	12	13	14	288	load
machine/equipment as load			36		31		27	28	36	27	24	24	23	29	22	22	20	16	21	16	15	22	14	453	machine/equipment as load
natural ground, rock					1		1	1	2	2		2	2	3	2	2	3	1	1	1	2		1	27	natural ground, rock
standing tree					1				2							3	2	1		1	3	1	1	15	standing tree
water													3	1			2	1	1			2	1	11	water
abnormal environment					2		5												1	1				9	abnormal environment
high/cold temperature environment			4		3		1	5	6	2	6	3	4	4	4	6	3	5	4	13	5	8	3	89	high/cold temperature environment
other environments			3		5		5	2	2	3	3		14	4	1	6	3		5	5	5	5	4	75	other environments
other causal agent			9		1		4	2	2	4	2	5	1	2	11	8	3	1	4	4	2	18	112	195	other causal agent
no causal agent			18		12		7	6	5	9	8	8	14	12	11	6	7	10	11	16	14	8	18	200	no causal agent
unclassifiable							1		1	1			1			2	1		2	1	1			11	unclassifiable
total			777		667		657	644	666	653	546	518	519	531	538	553	473	499	505	529	527	495	580	10,877	total

Workers age of fatal and non-fatal accidents in machinery/apparatus setting work in 1999-2021

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Age
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19 years old or less	22	24	20	18	8	8	11	19	17	16	7	14	11	17	21	24	10	7	7	11	10	9	9	320	19 years old or less
20-29	186	185	161	161	150	128	118	123	120	107	93	99	104	101	102	108	63	95	96	92	83	101	112	2,688	20-29
30-39	111	167	175	140	140	149	173	142	175	174	148	140	101	119	109	114	113	115	103	98	112	95	127	3,040	30-39
40-49	143	138	136	122	120	108	101	107	103	132	111	112	119	108	116	122	132	124	113	153	130	135	128	2,813	40-49
50-59	193	191	209	172	170	173	171	179	160	138	109	101	101	100	106	89	79	87	100	84	99	87	119	3,017	50-59
60 years old or more	74	70	76	63	79	82	83	74	91	86	78	52	83	86	84	96	76	71	86	91	93	68	85	1,827	60 years old or more
total	729	775	777	676	667	648	657	644	666	653	546	518	519	531	538	553	473	499	505	529	527	495	580	13,705	total

Workers' number of workplace of fatal and non-fatal accidents in machinery/apparatus setting work in 1999-2021

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	total	Workers scale
9 workers or less	387	432	437	394	368	370	385	347	374	382	304	316	279	285	294	303	261	289	295	291	283	294	279	7,649	9 workers or less
10-29	234	237	235	202	193	191	167	195	191	191	158	136	143	164	158	176	130	139	137	149	146	124	182	3,978	10-29
30-49	43	45	55	39	53	47	50	53	52	37	37	39	48	48	41	36	46	38	39	44	42	29	61	1,022	30-49
50-99	30	30	19	26	30	23	27	23	28	25	20	14	20	14	23	20	21	18	21	23	21	26	34	536	50-99
100-299	20	17	19	11	17	13	19	18	17	14	22	8	24	11	14	13	10	14	9	14	25	18	16	363	100-299
300 workers or more	15	14	12	4	6	4	9	8	4	4	5	5	5	9	8	5	5	1	4	8	10	4	8	157	300 workers or more
total	729	775	777	676	667	648	657	644	666	653	546	518	519	531	538	553	473	499	505	529	527	495	580	13,705	total

Month of fatal and non-fatal accidents in machinery/apparatus setting work in 1999-2021

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
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January	56	52	62	48	53	40	58	38	54	46	40	37	47	37	42	49	42	34	43	41	37	47	46	1,049	January
February	51	59	66	59	55	43	47	56	53	50	46	38	44	45	40	48	37	39	39	53	45	35	41	1,089	February
March	55	61	76	65	78	63	44	48	64	70	57	56	55	58	53	50	43	56	39	51	50	45	51	1,288	March
April	67	74	55	57	55	45	57	50	40	62	33	40	35	34	30	38	36	30	41	37	48	42	48	1,054	April
May	47	46	64	50	46	47	54	57	52	62	27	38	47	46	42	49	25	53	38	45	41	35	49	1,060	May
June	58	79	76	54	60	51	49	50	58	52	39	47	37	41	55	40	42	35	45	39	38	37	41	1,123	June
July	65	76	73	55	59	62	67	58	70	47	63	52	44	45	46	59	44	56	47	46	54	32	54	1,274	July
August	75	71	79	74	72	72	66	72	53	60	53	44	42	54	69	39	54	63	58	57	47	41	103	1,418	August
September	71	62	58	62	40	72	53	49	74	54	55	33	38	35	40	37	36	37	37	51	38	55	51	1,138	September
October	70	57	63	51	53	46	57	60	52	56	44	49	41	57	41	51	35	35	46	47	53	35	35	1,134	October
November	53	65	64	50	49	57	55	48	47	44	45	36	34	45	42	55	39	30	37	35	41	52	39	1,062	November
December	61	73	41	51	47	50	50	58	49	50	44	48	55	34	38	38	40	31	35	27	35	39	22	1,016	December
total	729	775	777	676	667	648	657	644	666	653	546	518	519	531	538	553	473	499	505	529	527	495	580	13,705	total

Prefecture of fatal and non-fatal accidents in machinery/apparatus setting work in 1999-2021

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Prefecture
Hokkaido	26	24	32		35		30	34	30	17	29	18	18	31	19	23	26	31	27	25	28	37	26	566	Hokkaido
Aomori	1	8	16		12		7	3	6	2	5	8	7	5	7	13	8	2	3	9	7	7	11	147	Aomori
Iwate	9	10	8		3		4	2	4	5	2	1	7	3	5	7		5	3	6	8	6	7	105	Iwate
Miyagi	3	12	8		16		13	5	12	11	6	6	17	22	20	10	14	9	10	11	16	14	15	250	Miyagi
Akita	7	3	4		4		1	5	2	5	4	7	1	3		10	4	5	3	8	7	8	5	96	Akita
Yamagata	13	11	4		7		4	3	1	2	4	4	8	3	3	1	6		2	4	3	5	4	92	Yamagata

Fukushima	12	10	20		22		17	8	9	10	7	13	10	9	14	7	10	8	5	9	14	11	16	241	Fukushima
Ibaraki	19	16	24		20		13	18	24	15	27	12	21	14	13	22	11	11	12	18	13	18	25	366	Ibaraki
Tochigi	8	12	12		10		13	9	8	9	6	2	4	7		5	8	12	11	9	16	5	9	175	Tochigi
Gunma	20	22	18		15		19	13	17	26	18	11	16	16	19	14	18	12	13	12	11	9	17	336	Gunma
Saitama	32	33	21		18		25	32	34	45	24	27	22	18	20	29	17	22	16	19	17	10	16	497	Saitama
Chiba	41	41	47		39		36	38	27	35	41	21	31	31	39	22	18	14	37	27	26	23	24	658	Chiba
Tokyo	50	62	70		54		45	43	47	40	26	32	39	37	33	39	29	24	35	28	31	26	27	817	Tokyo
Kanagawa	39	38	53		43		46	39	47	44	46	32	26	31	28	43	30	47	32	39	41	39	33	816	Kanagawa
Niigata	25	14	21		10		11	14	9	12	11	9	7	10	17	14	11	14	20	16	12	13	7	277	Niigata
Toyama	3	5	7		3		4	5	14	5	3	2	4	5	3	6	10	5	1	10	3	4	5	107	Toyama
Ishikawa	4	6	8		3		3	5	3	2	6	6	7	5	1	6	3	6	6	8	3	7	5	103	Ishikawa
Fukui	6	10	5		6		5	7	9	4	10	6	7	9	3	9	7	3	6	8	3	6	19	148	Fukui
Yamanashi	3	4	4		8		2		1	1	3	1			1	4	4	4		1	3	1	2	47	Yamanashi
Nagano	9	9	11		5		6	3	12	6	1	7	2	2	7	7	9	6	8	2	7	5	4	128	Nagano
Gifu	12	8	10		15		14	4	6	9	12	9	12	13	9	10	9	5	7	6	6	2	7	185	Gifu
Shizuoka	31	41	33		23		30	34	41	42	26	26	17	28	20	15	22	21	10	24	25	18	22	549	Shizuoka
Aichi	55	47	34		37		50	51	46	40	30	26	32	18	21	31	22	29	30	27	30	43	22	721	Aichi
Mie	18	25	9		21		15	26	16	15	5	12	11	10	8	10	14	16	22	9	12	9	10	293	Mie
Shiga	1	10	11		11		11	5	6	12	7	5	8	5	3	3		3	4	6	6	7	7	131	Shiga
Kyoto	17	18	14		17		19	20	16	16	14	12	11	10	10	11	4	6	4	3	7	7	6	242	Kyoto
Osaka	64	62	61		43		42	34	48	54	55	46	47	32	32	29	28	18	18	39	29	17	28	826	Osaka
Hyogo	26	46	42		28		32	33	37	31	26	30	26	25	30	29	21	32	25	20	28	32	23	622	Hyogo
Nara	5	4	3		2		2	5	4	4	5	5	5	7		3	2	4	3	3	5	3	3	77	Nara

Wakayama	11	13	7		5		7	5	3	4	2	8	3	5	4	2	1		2	5	2	1	1	91	Wakayama
Tottori	1	3			3		1	2	1	1	1	1	3			5	1		4	1	2		4	34	Tottori
Shimane	3	2	1		1		1	2	3	1	2	1	3	2	4	2	4	2	3	2	3	3	3	48	Shimane
Okayama	9	10	18		8		10	22	13	10	9	11	9	5	12	8	10	5	10	8	7	5	11	210	Okayama
Hiroshima	26	25	18		16		12	12	12	13	6	11	12	12	15	8	16	17	11	23	7	11	16	299	Hiroshima
Yamaguchi	9	17	12		8		11	11	12	18	6	7	11	16	14	9	8	30	9	7	10	8	11	244	Yamaguchi
Tokushima	8	5	4		5		8	7	3	8	4	3		7	5	6	2	4	3	5	5	2	14	108	Tokushima
Kagawa	11	6	4		4		7	7	5	4	5	3	3	3	6	3	1	6	4	3	3	2	4	94	Kagawa
Ehime	9	7	11		12		6	7	12	3	4	13	9	11	6	8	11	6	11	12	10	9	22	199	Ehime
Kochi	8	3	10		3		3	4	2	6		7	4	5	1	3	7	2	1	3	5	1	3	81	Kochi
Fukuoka	27	24	28		36		36	22	23	32	16	20	14	19	28	24	13	15	20	19	21	15	29	481	Fukuoka
Saga	6	10	6		1		4	3	4	3		2	3	5	7	1	1	2	3	4	4	6	21	96	Saga
Nagasaki	9	5	9		4		4	10	6	2	1	7	2	5	6	11	6	4	5	5	6	2	5	114	Nagasaki
Kumamoto	6	4	4		7		7	8	7	4	8	5	5	5	8	4	2	7	12	3	5	6	6	123	Kumamoto
Oita	12	11	21		7		5	7	14	11	9	10	10	11	14	13	11	5	8	14	12	12	6	223	Oita
Miyazaki	4	5	4		5		6	5	3	3	5	3	1	5	11	10	6	5	12	5	1	13	2	114	Miyazaki
Kagoshima	8	9	7		8		8	8	3	7	4	5	2		7	2	6	10	11	4	6	6	11	132	Kagoshima
Okinawa	3	5	3		4		2	4	4	4	5	5	2	6	5	2	2	5	3		1	1	6	72	Okinawa
total	729	775	777		667		657	644	666	653	546	518	519	531	538	553	473	499	505	529	527	495	580	12,381	total

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more. 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.htm> (MHLW, Japan)

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 Fatal accidents in machinery/apparatus setting work in Japan in 1999-2021

machinery/apparatus setting work industry Code No.030302

Type of fatal accidents in machinery/apparatus setting work in 1999-2021

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	total	Type of accidents
fall from height	11	11	7	14	7	12	8	8	8	8	8	4	12	5	7	4	3	3	2	2	4	5	4	157	fall from height
falling to same level																	1			1		1		3	falling to same level
crash	1																	1						2	crash
struck by flying or falling object		1	1	2	3	4	2	4	5	3	1		1	1	1	3	6	2	1	1		1		43	struck by flying or falling object
collapse	1	1	2	3	1	1	2	3	3		2		2	1	1	1			1	1	2	1	1	30	collapse
crashed by	3		1		1		1		1	1			2			1	1	1	1	2		1		17	crashed by
caught in/between	3	3	2	3	2	2	4	5	1		3	2	2	4		2	2	1		2				43	caught in/between
cut									1															1	cut
injury to the sole of the foot	1																							1	injury to the sole of the foot
drown				1			1			1			2				1	1	2	2	1			12	drown

																										agents
machine	1	3	1	2	1	1	1	1	2				2	2		1	1	2	3						24	machine
crane, conveying machine	6	6	5	5	6	6	7	6	4	2	5	7	6	4	1	8	4	2	3	5	3		1	102	crane, conveying machine	
other equipment	4	6	1	8	3	10	4	8	3	4	5	4	8	1	2	5	6	2		3		4	1	92	other equipment	
temporary buildings, establishments	7	4	5	9	6	9	7	6	5	8	8	2	4	4	5	2	3	2	1	2	4	6	2	111	temporary buildings, establishments	
substance, material	3		1			1	2		2	1	2		2		1		1	1		2			1	20	substance, material	
load	2	2	2			2	1	2	4				1	2	2		1		1	2	1	2		27	load	
environment	1		1	2			1	1	1				7		1		1	1	1					18	environment	
others	1	1		1				1			1	2		1					1	1			1	11	others	
total	25	22	16	27	16	29	23	25	21	15	21	15	30	14	12	16	17	10	10	15	8	12	6	405	total	

Causal agents (middle) of fatal accidents in machinery/apparatus setting work in 1999-2021

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	total	Causal (M) agents	
engine																										engine
power transmission mechanism																										power transmission mechanism

woodworking machine									1														1	woodworking machine	
construction machine		1					1									1		1						4	construction machine
metal manufacturing machine	1	1			1								1		1			2						7	metal manufacturing machine
general machine		1	1	2		1		1	1				2	1										12	general machine
mobile silviculture machine																									mobile silviculture machine
crane	2	2	2	2	2	3	5	1	3		2	1	4	2		5	2	1	1	1	2		1	44	crane
conveying machine	2	4	2	3	3	2	2	5	1	1	1	6	1	2			2	1	1	4				43	conveying machine
vehicle	2		1		1	1				1	2		1		1	3			1		1			15	vehicle
pressure vessel				2		5							1					1						9	pressure vessel
chemical facilities																									chemical facilities
welding equipment						1	1				3	2	2				3							12	welding equipment
kiln, caldron						1										1								2	kiln, caldron
electric equipment		1		1		1	1	2		1		1					1							9	electric equipment

human power machine, tools		2					1	2	1			1						2				9	human power machine, tools		
tools	3	1	1	2	1	2		4	1	1	1	1	2		1		2	1		1		1	1	27	tools
other equipments, facilities	1	2		3	2		1	2		1	1		2	1		4	1					3		24	other equipments, facilities
temporary buildings, establishments	7	4	5	9	6	9	7	6	5	8	8	2	4	4	5	2	3	2	1	2	4	6	2	111	temporary buildings, establishments
hazards, harmful substances	1					1			1		1							1		2				7	hazards, harmful substances
materials	2		1				2		1	1	1		2		1		1						1	13	materials
load	2	2	2			2	1	2	4				1	2	2		1		1	2	1	2		27	load
natural environment	1		1	2			1	1	1				7		1		1	1	1					18	natural environment
other causal agent				1								1											1	3	other causal agent
no causal agent								1			1	1		1						1				5	no causal agent
unclassifiable	1	1																	1					3	unclassifiable
total	25	22	16	27	16	29	23	25	21	15	21	15	30	14	12	16	17	10	10	15	8	12	6	405	total

Causal agents (small) of fatal accidents in machinery/apparatus setting work in 1999-2021

foundation work machine																							foundation work machine	
hardening machine																							hardening machine	
demolition machine															1								1	demolition machine
vehicle for high lift work							1																1	vehicle for high lift work
other construction machines																								other construction machines
lathe																	1						1	lathe
drill press, milling machine																								drill press, milling machine
grinding machine, buffing machine		1											1										2	grinding machine, buffing machine
power press															1								1	power press
forging pressure hammer																								forging pressure hammer
shearing machine																	1						1	shearing machine
other metal manufacturing machines	1					1																	2	other metal manufacturing machines
centrifugal machine			1																				1	centrifugal machine
mixer, grinder		1		1																			2	mixer, grinder
roll machine (except printingroll machine)																			1				1	roll machine (except printingroll machine)

other equipment, facilities	1	2		3	2		1	2		1	1		2	1		4	1					3		24	other equipment, facilities	
scaffolding	1			2	2	1	1			1	1		1	1								1		1	13	scaffolding
timbering																										timbering
stairs, landing stage																						1			1	stairs, landing stage
opening			1	1	1	3	1	2	2	1	3	1	1		1	1			1	1	1				22	opening
roof, beam, haze, crossbeam, principal rafter	2	1	1	2		2	1	1	2	1		1	2	2	3	1	1	1					2		26	roof, beam, haze, crossbeam, principal rafter
working platform, boot board	1		2			1					1														5	working platform, boot board
passage											1					2			1			1	1		6	passage
building, establishment	3	2	1	4	2	2	4	3	1	4	3				1			1				1	1		33	building, establishment
other temporary buildings, establishments		1			1									1									2		5	other temporary buildings, establishments
explosive substance																										explosive substance
inflammable substance																										inflammable substance
inflammable gas						1															1				2	inflammable gas
harmful substance	1								1								1		1						4	harmful substance
radiation																										radiation
other hazards,											1														1	other hazards,

harmful substances																									harmful substances	
metal material	1		1				2		1	1	1				1		1							9	metal material	
lumber, bamboo																									lumber, bamboo	
stone, sand, substance																									stone, sand, substance	
other materials	1												2										1	4	other materials	
load	2		1			1											1		1			1		7	load	
machine/equipment as load		2	1			1	1	2	4				1	2	2						2	1	1		20	machine/equipment as load
natural ground, rock	1			2																				4	natural ground, rock	
standing tree																									standing tree	
water													2				1	1	1					5	water	
abnormal environment							1																	1	abnormal environment	
high/cold temperature environment			1					1					1		1									4	high/cold temperature environment	
other environments													4											4	other environments	
other causal agent				1									1										1	3	other causal agent	
no causal agent								1			1	1		1							1			5	no causal agent	
unclassifiable	1	1																		1				3	unclassifiable	
total	25	22	16	27	16	29	23	25	21	15	21	15	30	14	12	16	17	10	10	15	8	12	6	405	total	

Workers age of fatal accidents in machinery/apparatus setting work in 1999-2021

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Age	
19 years old or less		1	1					1		1		1	2												7	19 years old or less
20-29	5	7	4	6	3	4	3	2	1	2	4	4	5	3	4	4	1	4	1	2	1	1			71	20-29
30-39	3	4	3	1		7	8	3	3	1	1	4		3	1	3	3	1	1	2	2	2			56	30-39
40-49	4	3	1	5	2	2	3	6	5	4	4	1	9	2	1	2	5	3	2	4	3	5	1		77	40-49
50-59	8	6	4	11	6	9	9	9	5	4	8	3	10	2	3	2	5	2	5	2		3	3		119	50-59
60 years old or more	5	1	3	4	5	7		4	7	3	4	2	4	4	3	5	3		1	5	2	1	2		75	60 years old or more
total	25	22	16	27	16	29	23	25	21	15	21	15	30	14	12	16	17	10	10	15	8	12	6		405	total

Workers' number of workplace of fatal accidents in machinery/apparatus setting work in 1999-2021

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	total	Workers scale	
9 workers or less	12	12	10	15	5	15	11	10	11	8	11	10	15	6	8	6	6	4	5	5	4	6	3		198	9 workers or less
10-29	8	4	4	9	8	10	8	13	6	3	5	5	10	5	3	10	9	4	1	5	3	3	1		137	10-29
30-49	3	1	1	1	2	1	3		1	3	4		1	1	1			2	2	2		2	2		33	30-49
50-99	2		1	2	1	1	1						2				2		1	2					15	50-99
100-299		4						2	2	1			2	2					1	1	1				16	100-299
300 workers or more		1				2			1		1											1			6	300 workers or more
total	25	22	16	27	16	29	23	25	21	15	21	15	30	14	12	16	17	10	10	15	8	12	6		405	total

Month of fatal accidents in machinery/apparatus setting work in 1999-2021

Yamagata	1																								1	Yamagata
Fukushima	1	1	1	1	1	1	3					1	1	1						1		1	1		15	Fukushima
Ibaraki			4	1		2			1		1		5			3	1			1		1			20	Ibaraki
Tochigi								1			2		1			1		1	1						7	Tochigi
Gunma							1		1							2					2				6	Gunma
Saitama	1			1		1			1	1	1			2			2				1				11	Saitama
Chiba	2	1		1	1	2		2	1	2	1		2		1	1		1	1		2	1			22	Chiba
Tokyo		1		2	1	2	1	1	1		1	1	3			2			1	1		2			20	Tokyo
Kanagawa	1	2	3	3		1	1		1		2		2	2				3			1				22	Kanagawa
Niigata	1							3							2		2	1				1			10	Niigata
Toyama					1	1					1						1								4	Toyama
Ishikawa				1		1															1				3	Ishikawa
Fukui						5			1		1		2		1										10	Fukui
Yamanashi				1								1												1	3	Yamanashi
Nagano	1	1		1		1		1	1									1						1	8	Nagano
Gifu	1					1	1				1	1	1		1							1			8	Gifu
Shizuoka				1			1	2														1			5	Shizuoka
Aichi	2	4			1	1	3	2	1	2		1	1	2		1	2			1					24	Aichi
Mie		2			3		1	4	3						1			1							15	Mie
Shiga		1		2								1		1											5	Shiga
Kyoto	1			1		1		2	2			2												1	10	Kyoto
Osaka	3	1	2		1		1	1	1		3			3						1	1				18	Osaka
Hyogo		1		4	1		2	1			3	1	2	1	1	1				1			2	1	22	Hyogo

Nara																								Nara		
Wakayama	2							1				1												4	Wakayama	
Tottori																									Tottori	
Shimane								1			1													2	Shimane	
Okayama	1		1			2	1		1			2		1			1				1			11	Okayama	
Hiroshima	1		1	1		1						1		1				1						7	Hiroshima	
Yamaguchi		1	1			1						1		1		1		1	2	1	2			12	Yamaguchi	
Tokushima				1			1			1											1			4	Tokushima	
Kagawa	1			1				1		1														4	Kagawa	
Ehime			1		2			1	1										1	1				7	Ehime	
Kochi											1													1	Kochi	
Fukuoka	2	1		1	1	1	4			1	1		1	1	2	1						2		19	Fukuoka	
Saga								1									1							2	Saga	
Nagasaki	1		1	1																				3	Nagasaki	
Kumamoto										1				1							1			3	Kumamoto	
Oita				1		1																	1	1	4	Oita
Miyazaki		1				1																			2	Miyazaki
Kagoshima				1				1				1					1							4	Kagoshima	
Okinawa		1										1													2	Okinawa
total	25	22	16	27	16	29	23	25	21	15	21	15	30	14	12	16	17	10	10	15	8	12	6	405	total	

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