Fatal and non-fatal accidents in machine repair in Japan in 1999-2021

machine repair industry Code No.011702

Type of accidents in machine repair 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	68	65	73	67	65	70	68	58	64	56	57	42	49	41	36	31	48	41	55	41	57	37	42	1,231	fall from height
falling to same level	41	30	30	18	31	25	36	25	29	28	30	18	34	29	21	30	28	12	25	30	23	23	19	615	falling to same level
crash	22	20	15	18	13	15	19	12	17	14	15	10	5	12	9	11	7	14	5	9	11	9	12	294	crash
struck by flying or falling object	57	53	54	48	51	51	56	36	31	46	32	28	34	33	29	34	29	22	25	26	10	19	16	820	struck by flying or falling object
collapse	7	12	11	11	13	12	9	5	7	7	4	4	5	9	4	8	7	5	6	4	4	3	1	158	collapse
crashed by	18	24	16	28	14	29	16	16	16	21	13	15	11	10	9	10	13	10	11	10	10	14	10	344	crashed by
caught in/between	106	109	103	86	84	88	89	99	70	74	65	52	54	53	57	54	49	45	59	49	38	49	54	1,586	caught in/between
cut	14	18	20	13	11	16	20	12	14	14	9	13	10	23	11	10	10	8	15	5	15	14	9	304	cut
injury to the sole of the foot							1	1		1	1		1		2						2			9	injury to the sole of the foot
drown		1		1		1							1					1						5	drown
contact to high/low-temperature	18	10	17	8	8	5	6	12	10	8	8	12	5	6	11	11	4	7	1	10	2	7	9	195	contact to high/low-temperature

contact to harmful substance	3	6	5	2	3	2	3	2	3	3	5		2	3			3		4	2		1	4	56	contact to harmful substance
electric shock		2	1	2	2		1	2		1	1	1			1	1	2	1	1	1	1		1	22	electric shock
explosion	2		4	1	1	2	1				1	1	1	1	1			3	1					20	explosion
burst		1	1		1			3					1	2				1						10	burst
fire	2	1	1			2		2	1	1		3		2	1		1	2			3			22	fire
traffic accident (public road)	9	8	14	4	10	13	8	13	8	16	6	9	6	8	4	6	12	8	5	6	13	6	6	198	traffic accident (public road)
traffic accident (others)					1	3																		4	traffic accident (others)
reaction to motion/improper motion	20	24	35	24	31	19	25	24	30	35	21	18	26	25	20	19	22	15	20	18	22	25	29	547	reaction to motion/improper motion
others	1	1			2	1	1		4		1		2		2	1	1		2	1	2		7	29	others
unclassifiable		1	1	2		2	1						1							1				9	unclassifiable
total	388	386	401	333	341	356	360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	6,478	total

Causal agents (large) of fatal and non-fatal accidents in machine repair in 1999-2021

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	total	Causal (L) agents
machine	96	101	81	71	65	68	81	64	49	65	66	42	34	48	41	48	49	37	54	36	39	38	40	1,313	machine
crane, conveying																									crane,

machine	79	67	91	71	79	86	67	80	59	61	36	45	53	44	49	47	58	45	53	43	55	36	52	1,356	conveying machine
other equipment	77	94	82	74	69	76	72	74	75	69	51	60	60	54	49	51	50	55	42	53	44	48	35	1,414	other equipment
temporary buildings, establishments	50	46	43	41	39	48	49	37	43	47	51	22	37	51	20	30	30	23	37	40	43	31	39	897	temporary buildings, establishments
substance, material	35	39	60	42	41	40	48	35	34	45	32	27	27	34	26	23	20	16	15	20	13	25	14	711	substance, material
load	24	18	26	21	28	23	29	18	23	22	15	13	19	17	12	11	17	10	11	8	5	8	16	394	load
environment	11	9	3	2	3	3	4	4	7	1	3	10	8	3	5	9	3	2	4	6	5	8	6	119	environment
others	16	12	15	11	17	12	10	10	14	15	15	7	10	6	16	7	9	7	19	7	9	13	17	274	others
total	388	386	401	333	341	356	360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	6,478	total

Causal agents (middle) of fatal and non-fatal accidents in machine repair 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	2	3	3	4	1	4	1	1		3	3		1	4	1				1					32	engine
power transmission mechanism	9	5	6	7	4	6	11	6	3	3	5	6	2	2	4	2	4	3	5	2	1	4	2	102	power transmission mechanism
woodworking machine	2	1	2	2	3	3	5		1	3	3	1	3		1	2	1		2	1	1	1	2	40	woodworking machine

construction machine	29	36	23	20	17	20	22	14	11	14	18	9	10	12	10	16	15	18	14	11	13	13	14	379	construction machine
metal manufacturing machine	27	24	16	15	17	15	24	23	14	23	25	13	11	18	13	19	14	6	12	8	11	10	12	370	metal manufacturing machine
general machine	27	32	31	23	23	20	18	20	20	19	12	13	7	12	12	9	13	10	19	14	13	10	9	386	general machine
mobile silviculture machine																	2		1				1	4	mobile silviculture machine
crane	19	28	37	19	26	27	28	32	23	20	8	11	16	18	19	20	16	15	16	18	17	14	21	468	crane
conveying machine	46	26	34	41	38	40	28	31	26	19	18	25	27	20	23	18	24	22	30	15	21	13	24	609	conveying machine
vehicle	14	13	20	11	15	19	11	17	10	22	10	9	10	6	7	9	18	8	7	10	17	9	7	279	vehicle
pressure vessel	3	1		1	3		2	3	3	4		1		4				1		1		1	1	29	pressure vessel
chemical facilities					1														1					2	chemical facilities
welding equipment	3	5	10	3	1		2	1		2	2		2	2	4		2	2	1			1	1	44	welding equipment
kiln, caldron	1	1	1		1		1			1	1				2					1				10	kiln, caldron
electric equipment	1	3	2	2	1	1	1	2	2	2	1			1	1	1	2	2		2	2	1		30	electric equipment
human power machine, tools	12	29	21	21	18	26	23	17	11	18	14	15	14	16	12	17	9	13	16	12	13	16	9	372	human power machine, tools

tools	38	36	34	34	32	33	31	34	42	29	23	29	31	20	24	21	31	23	15	21	21	22	15	639	tools
other equipments, facilities	19	19	14	13	12	16	12	17	17	13	10	15	13	11	6	12	6	14	9	16	8	7	9	288	other equipments, facilities
temporary buildings, establishments	50	46	43	41	39	48	49	37	43	47	51	22	37	51	20	30	30	23	37	40	43	31	39	897	temporary buildings, establishments
hazards, harmful substances	7	7	14	4	6	3	4	8	4	7	7	7	5	4	5	2	4	3	2	5	3	4	5	120	hazards, harmful substances
materials	28	32	46	38	35	37	44	27	30	38	25	20	22	30	21	21	16	13	13	15	10	21	9	591	materials
load	24	18	26	21	28	23	29	18	23	22	15	13	19	17	12	11	17	10	11	8	5	8	16	394	load
natural environment	11	9	3	2	3	3	4	4	7	1	3	10	8	3	5	9	3	2	4	6	5	8	6	119	natural environment
other causal agent	6	3	4	1	3	6	2	2	3	4	4	1		1	2	2	3		5	1	2	1	6	62	other causal agent
no causal agent	10	8	9	10	14	6	7	8	11	10	10	5	10	5	13	5	6	7	14	6	7	12	11	204	no causal agent
unclassifiable		1	2				1			1	1	1			1									8	unclassifiable
total	388	386	401	333	341	356	360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	6,478	total

Causal agents (small) of fatal and non-fatal accidents in machine repair in 1999-2021

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	total	Causal (S) agents

engine			3		1		1	1		3	3		1	4	1				1					19	engine
power transmission mechanism			6		4		11	6	3	3	5	6	2	2	4	2	4	3	5	2	1	4	2	75	power transmission mechanism
circular sawing machine			1		1		3		1	2	1	1	1		1	1			2			1	1	17	circular sawing machine
band sawing machine							1				1													2	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																									chamfering machine, router, woodworking milling machine
chain saw													1								1			2	chain saw
other woodworking machines			1		1		1			1	1		1			1							1	8	other woodworking machines
leveling, transporting or loading machine			4		7		4	2	2	7	2	1	8	4	2	6	5	2	5	6	4	3	5	79	leveling, transporting or loading machine
excavating machine			12		4		12	7	7	6	10	5	2	6	7	8	7	7	9	2	6	6	5	128	excavating machine
foundation work machine					1		2	1									2			1	2	1	2	12	foundation work machine

hardening machine					1													1				1		3	hardening machine
demolition machine			1					1	1		1	1						2		1		1		9	demolition machine
vehicle for high lift work					1		1	1	1		2					1		4					1	12	vehicle for high lift work
other construction machines			6		3		3	2		1	3	2		2	1	1	1	2		1	1	1	1	31	other construction machines
lathe			4		3		3	7	4	2	5	2	2	2	4	6	1		1	1	2	1		50	lathe
drill press, milling machine			3		3		5	8	3	5	3	1	3	3		1	2	2	1	2	2	3	1	51	drill press, milling machine
grinding machine, buffing machine			7		4		7	3	5	9	7	5	3	7	5	4	7	2	5	2	4	5	5	96	grinding machine, buffing machine
power press					1		2			3	6	1	2	3	1	2	2		1		1		1	26	power press
forging pressure hammer											1										1			2	forging pressure hammer
shearing machine							1	1				2			1	1		1	1	1				9	shearing machine
other metal manufacturing machines			2		6		6	4	2	4	3	2	1	3	2	5	2	1	3	2	1	1	5	55	other metal manufacturing machines
centrifugal machine												1		1					1					3	centrifugal machine
mixer, grinder					2		2	2	1		1	1	1	2	1				2					15	mixer, grinder
roll machine (except printingroll machine)							1		1					1	1					2	1			7	roll machine (except printingroll machine)
injection molding																									injection molding

machine								1	1		1		1												4	machine
food manufacturing machine										1			1		1										3	food manufacturing machine
printing machine			2		2						1							1		1				7	printing machine
industrial robot																										industrial robot
other general power machines			29		19		15	17	17	18	9	11	4	8	9	9	13	9	16	11	12	10	9	245	other general power machines
felling machine																							1	1	felling machine
mobile logging machine																	2		1					3	mobile logging machine
skyline yarding machine																									skyline yarding machine
other mobile silviculture machine																									other mobile silviculture machine
crane			15		9		10	13	8	10	2	6	8	11	10	13	3	7	7	13	9	5	7	166	crane
mobile crane			9		11		9	9	6	6	3	2	3	5	3	5	4	3	2	3	5	4	6	98	mobile crane
derrick crane												1												1	derrick crane
elevator, lift			8		5		4	6	5	2	2	1	5	1	4	1	6	4	7	2	2	3	6	74	elevator, lift
cargo lifting appliance							1															1		2	cargo lifting appliance
gondola			1							1		1					1	1						5	gondola
lumberyard equipment, logging cableway																	1							1	lumberyard equipment, logging cableway

simple skyline yarding equipment																									simple skyline yarding equipment
other powered crane			4		1		4	4	4	1	1			1	2	1	1				1	1	2	28	other powered crane
truck			22		17		17	17	12	11	10	12	14	10	13	9	16	11	22	8	14	7	14	256	truck
forklift			5		9		7	10	8	6	6	9	6	5	3	5	4	5	1	2	5	3	7	106	forklift
railway equipment																									railway equipment
conveyor			2		4		3	3	1	1	1	4	2	4	4	2		3	3	3	1	2		43	conveyor
loader			1		1								1			1			1	1	1			7	loader
straddle carrier														1										1	straddle carrier
rough terrain hauler			1		1								1				1			1			1	6	rough terrain hauler
other powered conveying machines			3		6		1	1	5	1	1		3		3	1	3	3	3			1	2	37	other powered conveying machines
cars, bus, motorcycle			11		9		8	11	8	21	7	9	9	5	5	6	13	6	5	8	13	7	5	166	cars, bus, motorcycle
railway vehicle			1		1			1									1				2			6	railway vehicle
other vehicles			8		5		3	5	2	1	3		1	1	2	3	4	2	2	2	2	2	2	50	other vehicles
boiler								3	3	1		1		2									1	11	boiler
pressure vessel							1											1				1		3	pressure vessel
other pressure vessels					3		1			3				2						1				10	other pressure vessels
chemical facilities					1														1					2	chemical facilities
gas welding			5		1		1	1		1	1		1	2	2		1		1					17	gas welding

equipment																									equipment
arc welding equipment			4				1			1	1				2		1	2				1	1	14	arc welding equipment
other welding equipment			1										1											2	other welding equipment
kiln, caldron					1		1			1					2					1				6	kiln, caldron
industrial dryer			1								1													2	industrial dryer
other kiln, caldron																									other kiln, caldron
transmission					1		1	1	1		1				1	1	1	1		2				11	transmission
electric power facilities			1							1							1	1			2			6	electric power facilities
other electrical equipment			1					1	1	1				1								1		6	other electrical equipment
human power cranes			1		1		1	4			1	1	1	2		1		3	1		3			20	human power cranes
human power hauling equipment			5		3		4	2	2	4	5	3	2	2	3	5	1	1	7	1	1	2	2	55	human power hauling equipment
human power machine			2				2		1				3							1				9	human power machine
hand tool			13		14		16	11	8	14	8	11	8	12	9	11	8	9	8	10	9	14	7	200	hand tool
ladder			23		18		20	17	22	15	15	17	23	11	16	11	16	12	10	13	15	16	13	303	ladder
slinging tool			3		6		2	7	6	8	5	4		2		2	2	3		3	2	3	2	60	slinging tool
other tools			8		8		9	10	14	6	3	8	8	7	8	8	13	8	5	5	4	3		135	other tools
other equipment,																									other equipment,

facilities			14		12		12	17	17	13	10	15	13	11	6	12	6	14	9	16	8	7	9	221	facilities
scaffolding			1		2		6	2	5	1	2	1	1	2	1	3	3		2	1	1			34	scaffolding
timbering																									timbering
stairs, landing stage			4		8		11	4	9	12	11	2	5	10	5	3	7	4	7	7	9	4	6	128	stairs, landing stage
opening			1		1			3	1	1	1		1	1			1	2	3	2	2	1	3	24	opening
roof, beam, haze, crossbeam, principal rafter			3		2		2	3			1				2	1		1	1	3		1	2	22	roof, beam, haze, crossbeam, principal rafter
working platform, boot board			10		5		4	6	8	12	12	5	2	8	2	7	3	2	5	8	6	5	4	114	working platform, boot board
passage			11		13		10	13	9	8	11	8	16	10	6	10	7	7	8	10	14	9	14	194	passage
building, establishment			9		6		9	2	8	8	10	4	9	9	2	4	5	4	5	5	7	4	7	117	building, establishment
other temporary buildings, establishments			4		2		7	4	3	5	3	2	3	11	2	2	4	3	6	4	4	7	3	79	other temporary buildings, establishments
explosive substance			2																					2	explosive substance
inflammable substance			2		2			2	2	3		4		2				2		1	2	1		23	inflammable substance
inflammable gas			3				1	1			2	2		1	1	1		1		2	1	1		17	inflammable gas
harmful substance			4		2		2	1		2	4			1	1	1	2		1	2		1	1	25	harmful substance
radiation																									radiation
other hazards, harmful substances			3		2		1	4	2	2	1	1	5		3		2		1			1	4	32	other hazards, harmful substances

metal material			39		31		37	20	24	31	24	17	17	24	13	17	13	9	11	13	10	18	6	374	metal material
lumber, bamboo			2		1		2	1	5	1		1	2	3	2	1	1	2		2		1	3	30	lumber, bamboo
stone, sand, substance					2		3	1		2			1	2	1	1		1						14	stone, sand, substance
other materials			5		1		2	5	1	4	1	2	2	1	5	2	2	1	2			2		38	other materials
load			13		15		12	12	11	9	9	6	6	8	8	5	7	6	5	3	4	6	13	158	load
machine/equipment as load			13		13		17	6	12	13	6	7	13	9	4	6	10	4	6	5	1	2	3	150	machine/equipment as load
natural ground, rock			1					1				1	1						1			1		6	natural ground, rock
standing tree									1			1			1				1				1	5	standing tree
water							1					1	2											4	water
abnormal environment									1															1	abnormal environment
high/cold temperature environment			1				1	1	2		2	5			1	4		2	1	4	2	3	3	32	high/cold temperature environment
other environments			1		3		2	2	3	1	1	2	5	3	3	5	3		1	2	3	4	2	46	other environments
other causal agent			4		3		2	2	3	4	4	1		1	2	2	3		5	1	2	1	6	46	other causal agent
no causal agent			9		14		7	8	11	10	10	5	10	5	13	5	6	7	14	6	7	12	11	170	no causal agent
unclassifiable			2				1			1	1	1			1									7	unclassifiable
total			401		341		360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	5,015	total

Workers age of fatal and non-fatal accidents in machine repair 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	7	3	15	6	7	9	5	2	3	5	4	3	3	2	4	4	9	1	7	2	4	3	1	109	19 years old or less
20-29	87	91	98	84	66	65	61	60	46	52	40	40	42	42	31	31	45	40	38	34	26	39	31	1,189	20-29
30-39	79	82	89	68	67	72	78	74	66	80	75	57	61	55	49	44	52	39	49	41	36	42	40	1,395	30-39
40-49	73	69	71	65	63	51	64	70	53	69	46	44	65	57	47	61	55	40	58	55	44	39	44	1,303	40-49
50-59	106	99	90	82	91	117	105	74	87	78	66	41	42	54	41	33	33	38	38	38	46	49	53	1,501	50-59
60 years old or more	36	42	38	28	47	42	47	42	49	41	38	41	35	47	46	53	42	37	45	43	57	35	50	981	60 years old or more
total	388	386	401	333	341	356	360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	6,478	total

Workers' number of workplace of fatal and non-fatal accidents in machine repair 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	193	178	201	173	166	170	173	173	145	154	131	111	108	123	82	104	104	99	90	86	71	76	79	2,990	9 workers or less
10-29	127	130	119	103	110	116	116	99	104	108	77	70	94	76	82	81	80	66	84	73	79	76	95	2,165	10-29
30-49	29	40	46	26	27	28	38	26	23	24	29	21	20	20	25	20	21	12	25	23	27	15	17	582	30-49
50-99	19	18	20	23	19	23	17	14	17	21	21	8	15	22	16	13	20	5	14	12	15	19	15	386	50-99
100-299	10	19	13	6	16	9	10	7	10	15	9	12	7	6	10	6	7	8	13	16	9	14	10	242	100-299
300 workers or more	10	1	2	2	3	10	6	3	5	3	2	4	4	10	3	2	4	5	9	3	12	7	3	113	300 workers or more
total	388	386	401	333	341	356	360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	6,478	total

Month of fatal and non-fatal accidents in machine repair 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
January	31	27	32	26	25	33	31	25	32	32	21	27	15	20	19	26	17	13	13	18	19	14	22	538	January
February	35	39	26	29	27	26	25	25	21	23	23	23	25	30	17	20	22	19	19	18	21	22	22	557	February
March	34	36	35	27	38	29	33	33	30	30	21	16	22	23	20	21	23	16	15	16	30	19	17	584	March
April	40	31	39	38	31	36	24	23	26	27	21	12	18	13	15	19	19	18	18	16	15	14	21	534	April
May	40	31	26	37	32	25	30	33	27	40	14	17	20	25	12	16	16	18	12	19	18	22	15	545	May
June	33	36	28	24	22	44	37	20	20	18	25	21	24	17	22	14	19	13	26	14	20	24	14	535	June
July	34	33	38	33	29	22	29	21	29	29	24	20	30	21	27	19	28	17	24	20	18	20	23	588	July
August	31	29	35	25	23	29	34	32	35	31	31	22	17	29	19	18	19	13	26	20	11	17	28	574	August
September	31	38	45	23	41	27	29	30	26	17	18	23	23	29	17	29	25	19	23	14	11	19	16	573	September
October	28	32	41	35	37	36	26	28	22	30	22	15	21	24	17	15	19	19	19	22	16	16	18	558	October
November	24	22	28	20	17	23	38	29	25	24	22	16	17	16	17	16	17	15	20	17	23	12	8	466	November
December	27	32	28	16	19	26	24	23	11	24	27	14	16	10	16	13	12	15	20	19	11	8	15	426	December
total	388	386	401	333	341	356	360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	6,478	total

Prefecture of fatal and non-fatal accidents in machine repair 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	26	32		24		19	19	19	28	17	4	18	16	14	20	26	12	14	19	13	10	18	394	Hokkaido
Aomori	5	5	3		5		3	2	4	1	4	6	5	3	2	1	5	2	1		1	2	3	63	Aomori
Iwate	3	2	5		1			4	1	2	1	1	1	2		2	3		3	2	1	3	1	38	Iwate

Miyagi	6	9	10		11		6	4	8	5	1	4	8	3	5	4	3	5	2	2	5	3	6	110	Miyagi
Akita	2	2	1		2		3	1	3	2	2	2		1	1		2	3	3	3	1	1	2	37	Akita
Yamagata	5	2	3		2		1	2	2	1	1	3		1			3		1	3			1	31	Yamagata
Fukushima	1	3	3		2		4	1	1	5	4	1	3	2	3	4	6	2	3	1	4	1		54	Fukushima
Ibaraki	4	8	5		7		9	4	6	2	3	3	2	4	2	3	4	1	1	3	1	7	2	81	Ibaraki
Tochigi	3	4	5		5		3	5	6	2	6	5	5	4	3	6	4	2	4	2	3	1	1	79	Tochigi
Gunma	6	4	4		1		2	3	5	8	5	7	8	5	1	1	5	2	6	2	4	5	6	90	Gunma
Saitama	25	12	13		20		14	13	16	13	21	10	5	11	6	7	11	10	8	7	5	7	9	243	Saitama
Chiba	13	29	19		14		21	27	12	20	21	15	15	20	17	14	10	6	18	13	14	14	17	349	Chiba
Tokyo	15	18	23		19		28	11	17	19	14	15	11	13	14	11	12	10	15	14	15	16	11	321	Tokyo
Kanagawa	38	32	21		24		27	29	15	27	10	13	16	12	20	14	5	11	17	11	12	8	13	375	Kanagawa
Niigata	14	10	11		6		8	9	13	10	6	1	8	10	5	8	11	5	7	10	10	5	3	170	Niigata
Toyama	6	9	7		5		3	1	2	1	4	1	4	1	1	3	1		3	1	1	1	1	56	Toyama
Ishikawa	1	4	4		2		2	5	3	2	2	1	4	3	3	2	1	3	3	2	2	2	4	55	Ishikawa
Fukui	8	4	4		2		9	3	4		2		4	4	1	3	1		3	4	3	3	2	64	Fukui
Yamanashi					1		1	1			1			2	1	3		1	1		1		1	14	Yamanashi
Nagano	1	4	5		6		1	3	3	3	4	2		1	1	4	4	1	4	4	4	7	2	64	Nagano
Gifu	7	3			5		5	7	4	7	2	3	6	4	2	4	4	5		2	3	3	1	77	Gifu
Shizuoka	5	13	25		13		17	10	16	7	19	12	3	12	11	6	9	14	9	3	8	8	9	229	Shizuoka
Aichi	30	34	28		28		22	27	21	26	21	22	19	18	18	15	18	13	15	11	14	16	13	429	Aichi
Mie	8	13	4		4		9	7	8	8	11	7	8	5	4	5	7	4	5	8	11	4	5	145	Mie
Shiga	3	2	1		1		2	1	1	1	1		1	1		3		1		2			2	23	Shiga
Kyoto	9	3	4		2		6	11	5	3	2		3	2	5	1	2	2	1	1		2	1	65	Kyoto

Osaka	29	28	37		37		23	24	13	29	13	17	23	18	14	22	22	16	20	18	17	13	18	451	Osaka
Hyogo	29	22	27		29		19	18	23	18	15	25	21	18	10		3	8	9	8	10	10	13	335	Hyogo
Nara	1	1	7		2		1		1	3	1	1		1		2	2	1	2					26	Nara
Wakayama	3		1		1		5	6			1		1	2		3	3		2		1	2		31	Wakayama
Tottori	3	7	3				1	3	1			3	1	1		2	2	1	1	1			2	32	Tottori
Shimane	1	2	2		2		4	1	3	3	3		1	3		3	1	2		2	5	1	2	41	Shimane
Okayama	4	9	6		3		3	3	6	6	4	3	4	5	6	2	4	5	3	2	5	3	2	88	Okayama
Hiroshima	14	2	7		7		13	17	12	11	6	5	8	10	5	10	4	6	10	6	7	10	9	179	Hiroshima
Yamaguchi	3	6	3		2		3	1	4	3	2	1	3	1		1		2	1	3	2	3		44	Yamaguchi
Tokushima			5		6		4	1	1	2	1	3		1	2	2	3	3	3	2		1	2	42	Tokushima
Kagawa	2		1				5	2	3	1		1	3		1	3		3	2	5	2	1	4	39	Kagawa
Ehime	6	4	4		5		4	4	4	2	1	6		1	4	2	3	7	3	4	1	5	3	73	Ehime
Kochi	6	4	9		5		2	2	6	1	1	1			1	2	4			1	2	1	1	49	Kochi
Fukuoka	13	19	16		18		20	13	17	17	20	11	14	21	16	11	10	5	11	14	10	12	12	300	Fukuoka
Saga	2	2	3		5		3	1	3		2	1	1			1		5	2	1	3	2		37	Saga
Nagasaki	7	7	9				3	3	3	8	5	1	1	4	6	1	6	1	4	2	3	6	5	85	Nagasaki
Kumamoto	4	2	1				6	2	2	3	2	4	1	1	2	6	1	3	2			1	3	46	Kumamoto
Oita	8	8	2		2		5	3	2	3	1	3	1	7	1	4	4	4	1	2	3	1	3	68	Oita
Miyazaki	4	3	12		3		4	2	2	5	2		2	2	2	2	3	2	7	5	3	2	2	69	Miyazaki
Kagoshima	2	4	4		1		2	6	2	3	4	1	1	1	4	3	3	5	2	6	3	2	1	60	Kagoshima
Okinawa	3	1	2		1		5		1	4		1	5		4		1	1	3	1		2	3	38	Okinawa
total	388	386	401		341		360	322	304	325	269	226	248	257	218	226	236	195	235	213	213	207	219	5,789	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)

Return to https://www.jisha.or.jp/english/statistics/2021e_industry.html

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Fatal accidents in machine repair in Japan in 1999-2021

machine repair industry Code No.011702

Type of fatal accidents in machine repair 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	3	2	4	1						2		1		1			1					2	2	19	fall from height
falling to same level																									falling to same level
crash																									crash
struck by flying or falling object					1	1			1			1		1				2						7	struck by flying or falling object
collapse								1		1		1	1							1			1	6	collapse
crashed by				2		2		1		2										1			1	9	crashed by
caught in/between	7	4	1	3	1	4	1	2		1	4	5	1	2			1	3	2	1		1	1	45	caught in/between
cut																									cut

injury to the sole of the foot																									injury to the sole of the foot
drown		1		1		1							1					1						5	drown
contact to high/low-temperature	1		3																			1		5	contact to high/low-temperature
contact to harmful substance									1															1	contact to harmful substance
electric shock	1		1		3		1					1							1					8	electric shock
explosion														1										1	explosion
burst																									burst
fire		1						1									1	1						4	fire
traffic accident (public road)	1		3		1	1	2	1							1				1					11	traffic accident (public road)
traffic accident (others)																									traffic accident (others)
reaction to motion/improper motion																									reaction to motion/improper motion
others													1											1	others
unclassifiable							1																	1	unclassifiable
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Causal agents (large) of fatal accidents in machine repair in 1999-2021

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	total	Causal (L) agents
machine		1		2	1	3	1	3		1	1	1	1						1					16	machine
crane, conveying machine	7	2	5	3	3	5	2	1		3	3	4	1	3	1		1	3	3	2		2	3	57	crane, conveying machine
other equipment	4	2	4	1	2		1	1	1	1		2		1			1	2		1				24	other equipment
temporary buildings, establishments	1	2	3	1				1		1		1					1	1				1		13	temporary buildings, establishments
substance, material														1				1					1	3	substance, material
load												1												1	load
environment	1	1				1			1				2									1	1	8	environment
others							1																	1	others
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Causal agents (middle) of fatal accidents in machine repair 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								1																	1	power transmission mechanism
woodworking machine																										woodworking machine
construction machine				1		2							1												4	construction machine
metal manufacturing machine		1						1		1															3	metal manufacturing machine
general machine				1	1	1	1	1			1	1								1					8	general machine
mobile silviculture machine																										mobile silviculture machine
crane	3	2	2		2	1				1		2	1	2				3	1			2	2	24	crane
conveying machine	4		3	1	1	4	1	1		2	3	2		1			1		2	2			1	29	conveying machine
vehicle				2			1								1									4	vehicle
pressure vessel																										pressure vessel
chemical facilities			3																					3	chemical facilities
welding equipment		1					1										1							3	welding equipment

kiln, caldron																									kiln, caldron
electric equipment	1		1	1	1							1												5	electric equipment
human power machine, tools		1						1																2	human power machine, tools
tools	2				1				1	1				1						1				7	tools
other equipments, facilities	1											1						2						4	other equipments, facilities
temporary buildings, establishments	1	2	3	1				1		1		1					1	1				1		13	temporary buildings, establishments
hazards, harmful substances														1				1						2	hazards, harmful substances
materials																							1	1	materials
load												1												1	load
natural environment	1	1				1			1				2									1	1	8	natural environment
other causal agent																									other causal agent
no causal agent																									no causal agent
unclassifiable							1																	1	unclassifiable

total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Causal agents (small) of fatal accidents in machine repair in 1999-2021

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	total	Causal (S) agents
engine																									engine
power transmission mechanism								1																1	power transmission mechanism
circular sawing machine																									circular sawing machine
band sawing machine																									band sawing machine
wood planer machine																									wood planer machine
hollow chisel mortiser, wood borer																									hollow chisel mortiser, wood borer
chamfering machine, router, woodworking milling machine																									chamfering machine, router, woodworking milling machine
chain saw																									chain saw
other woodworking machines																									other woodworking machines

leveling, transporting or loading machine				1		1																			2	leveling, transporting or loading machine
excavating machine													1												1	excavating machine
foundation work machine																										foundation work machine
hardening machine																										hardening machine
demolition machine																										demolition machine
vehicle for high lift work						1																			1	vehicle for high lift work
other construction machines																										other construction machines
lathe																										lathe
drill press, milling machine																										drill press, milling machine
grinding machine, buffing machine																										grinding machine, buffing machine
power press																										power press
forging pressure hammer																										forging pressure hammer
shearing machine																										shearing machine
other metal manufacturing machines		1						1		1															3	other metal manufacturing machines

centrifugal machine																									centrifugal machine
mixer, grinder											1	1							1					3	mixer, grinder
roll machine (except printingroll machine)																									roll machine (except printingroll machine)
injection molding machine																									injection molding machine
food manufacturing machine																									food manufacturing machine
printing machine																									printing machine
industrial robot																									industrial robot
other general power machines				1	1	1	1	1																5	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	2	2	1		2					1		2		2					1					13	crane
mobile crane						1																1	1	3	mobile crane
derrick crane																									derrick crane
elevator, lift	1		1										1					3						6	elevator, lift

cargo lifting appliance																						1		1	cargo lifting appliance
gondola																									gondola
lumberyard equipment, logging cableway																									lumberyard equipment, logging cableway
simple skyline yarding equipment																									simple skyline yarding equipment
other powered crane																							1	1	other powered crane
truck	2		3	1	1	2	1	1		2							1		1					15	truck
forklift	1					1					2	1												5	forklift
railway equipment																									railway equipment
conveyor	1					1								1										3	conveyor
loader																				1				1	loader
straddle carrier																									straddle carrier
rough terrain hauler																				1				1	rough terrain hauler
other powered conveying machines											1	1							1				1	4	other powered conveying machines
cars, bus, motorcycle				1			1								1									3	cars, bus, motorcycle
railway vehicle																									railway vehicle
other vehicles				1																				1	other vehicles
boiler																									boiler

pressure vessel																									pressure vessel
other pressure vessels																									other pressure vessels
chemical facilities			3																					3	chemical facilities
gas welding equipment																	1							1	gas welding equipment
arc welding equipment		1					1																	2	arc welding equipment
other welding equipment																									other welding equipment
kiln, caldron																									kiln, caldron
industrial dryer																									industrial dryer
other kiln, caldron																									other kiln, caldron
transmission	1																							1	transmission
electric power facilities			1	1	1																			3	electric power facilities
other electrical equipment												1												1	other electrical equipment
human power cranes		1						1																2	human power cranes
human power hauling equipment																									human power hauling equipment
human power machine																									human power machine

hand tool																									hand tool
ladder	1									1				1										3	ladder
slinging tool	1								1											1				3	slinging tool
other tools					1																			1	other tools
other equipment, facilities	1											1						2						4	other equipment, facilities
scaffolding																									scaffolding
timbering																									timbering
stairs, landing stage																									stairs, landing stage
opening																	1							1	opening
roof, beam, haze, crossbeam, principal rafter	1		1	1																				3	roof, beam, haze, crossbeam, principal rafter
working platform, boot board		1																				1		2	working platform, boot board
passage			1																					1	passage
building, establishment		1	1							1		1												4	building, establishment
other temporary buildings, establishments								1										1						2	other temporary buildings, establishments
explosive substance																									explosive substance
inflammable substance																									inflammable substance

inflammable gas														1				1						2	inflammable gas
harmful substance																									harmful substance
radiation																									radiation
other hazards, harmful substances																									other hazards, harmful substances
metal material																									metal material
lumber, bamboo																									lumber, bamboo
stone, sand, substance																							1	1	stone, sand, substance
other materials																									other materials
load																									load
machine/equipment as load												1												1	machine/equipment as load
natural ground, rock																									natural ground, rock
standing tree																							1	1	standing tree
water		1				1							2											4	water
abnormal environment									1															1	abnormal environment
high/cold temperature environment	1																					1		2	high/cold temperature environment
other environments																									other environments
other causal agent																									other causal agent

no causal agent																									no causal agent
unclassifiable							1																	1	unclassifiable
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Workers age of fatal accidents in machine repair 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														3	19 years old or less
20-29	3	2	2	1	1	2		2				1	1	1				1						17	20-29
30-39	2	1	1		2	2	2	2		1		3		3	1		1	3				1	1	26	30-39
40-49	2	2	5	1	2	1	1		1			3		1			2		3	1			1	26	40-49
50-59	3	2	2	2	1	3	2	2	1	3	3	1						2		2		3		32	50-59
60 years old or more	3		1	3		1				1	1	1	3					1	1				3	19	60 years old or more
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Workers' number of workplace of fatal accidents in machine repair 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	6	4	2	3	5	3	4	3	1	3	4	4	2	4			3	2	2	2		2	4	63	9 workers or less
10-29	5	3	6	3		5	1	3	1	1		3	2					4	2	1			1	41	10-29
30-49			3	1	1					1		1						1						8	30-49
50-99	2													1								1		4	50-99

100-299			1							1		1			1							1		5	100-299
300 workers or more		1				1																		2	300 workers or more
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Month of fatal accidents in machine repair 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
January	3		1	2				1				1					1							9	January
February	1	1			1	1		1										2	1					8	February
March	2			2	2	2				1	1		2				1						1	14	March
April			1	1		1				1	1	2		1										8	April
May	1	1	1			1	2					2					1	1				1		11	May
June	1	1	2			2		1			2				1				1	1				12	June
July	1	1	1	1			2	1	1			1		1					1				1	12	July
August	3	3				1							1	1					1	1		1		12	August
September	1	1			3					2		1										1	3	12	September
October			1			1		1		1		1		1				1				1		8	October
November			1				1	1				1		1				2		1				8	November
December			4	1					1	1			1					1						9	December
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

Prefecture of fatal accidents in machine repair 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			3					1									1							5	Hokkaido
Aomori																	1							1	Aomori
Iwate													1											1	Iwate
Miyagi													1											1	Miyagi
Akita																									Akita
Yamagata										1														1	Yamagata
Fukushima						1																		1	Fukushima
Ibaraki			1		1																			2	Ibaraki
Tochigi						1						1												2	Tochigi
Gunma										1		1						1	1					4	Gunma
Saitama	1																	2						3	Saitama
Chiba				1				1				1							1					4	Chiba
Tokyo				1						1		2											1	5	Tokyo
Kanagawa		1	1					1	1			1								2		1	2	10	Kanagawa
Niigata	1																							1	Niigata
Toyama				1																		1		2	Toyama
Ishikawa		1																						1	Ishikawa
Fukui																									Fukui
Yamanashi											1													1	Yamanashi
Nagano				1																1				2	Nagano
Gifu	1				1			1																3	Gifu

Shizuoka		1					1			1							1		1					5	Shizuoka
Aichi		1	1		2		1				1			1										7	Aichi
Mie					1								1									1		3	Mie
Shiga	1																							1	Shiga
Kyoto																									Kyoto
Osaka	1	1			1		2	2		1					1				1					10	Osaka
Hyogo	2	1		2		1						2	1	1				1						11	Hyogo
Nara						1												1						2	Nara
Wakayama																									Wakayama
Tottori									1															1	Tottori
Shimane																									Shimane
Okayama	2					2																		4	Okayama
Hiroshima	1						1			1		1												4	Hiroshima
Yamaguchi	1		1	1							1													4	Yamaguchi
Tokushima																									Tokushima
Kagawa																									Kagawa
Ehime																		1						1	Ehime
Kochi						1																		1	Kochi
Fukuoka		2									1			3										6	Fukuoka
Saga			1																					1	Saga
Nagasaki			2																			1		3	Nagasaki
Kumamoto	1					1																		2	Kumamoto
Oita	1																						1	2	Oita

Miyazaki			2																				1	3	Miyazaki
Kagoshima						1												1						2	Kagoshima
Okinawa																									Okinawa
total	13	8	12	7	6	9	5	6	2	6	4	9	4	5	1		3	7	4	3		4	5	123	total

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

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