

Table SINV-31

International patent families granted in machine tools, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	11,094	11,731	10,037	9,739	9,972	10,584	10,988	10,906	12,511	11,867	11,804	12,879	13,730	16,173	19,005	19,630	21,251	26,028	30,440	31,580	29,922	28,224	30,826
North America	na	1,763	1,959	1,901	1,844	1,573	1,748	1,625	1,330	1,644	1,420	1,083	1,105	1,429	1,612	1,793	1,972	2,090	1,863	1,611	1,553	1,362	1,445	1,392
Canada	High	90	110	114	100	94	115	99	79	94	82	80	72	81	102	101	110	110	103	89	90	69	83	69
Mexico	Upper middle	2	5	1	5	0	0	1	1	2	2	2	1	3	3	5	3	6	6	9	8	13	5	2
United States	High	1,671	1,844	1,787	1,739	1,478	1,632	1,526	1,251	1,548	1,336	1,002	1,032	1,346	1,508	1,688	1,860	1,974	1,755	1,513	1,456	1,279	1,357	1,321
Central America and Caribbean	na	1	1	1	1	0	1	0	0	0	0	3	2	1	1	0	0	2	0	1	1	0	1	1
Puerto Rico	High	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South America	na	4	6	9	6	6	9	10	6	8	12	9	21	18	22	21	24	18	20	12	25	28	46	54
Argentina	Upper middle	1	1	1	0	0	0	2	2	1	0	0	1	0	2	1	1	1	2	0	1	2	1	0
Brazil	Upper middle	2	5	6	5	6	7	8	3	7	10	7	18	17	18	18	21	17	15	11	23	25	44	52
Europe	na	3,397	3,135	3,052	2,841	2,985	3,467	3,743	3,300	3,249	2,931	3,083	3,290	2,920	2,793	3,096	2,913	3,099	3,201	3,061	3,417	2,870	3,165	2,671
EU-27 + UK ^a	na	2,212	2,408	2,235	2,132	2,147	2,209	2,386	2,266	2,163	1,947	2,027	1,935	1,936	1,932	2,091	2,017	2,219	2,265	2,423	2,554	2,189	2,309	2,098
United Kingdom	High	128	105	87	109	124	143	137	120	104	73	95	84	73	86	95	81	77	88	68	71	61	72	78
EU-27 ^b	na	2,085	2,303	2,148	2,023	2,023	2,066	2,250	2,146	2,059	1,874	1,932	1,851	1,863	1,846	1,996	1,936	2,142	2,177	2,355	2,483	2,129	2,237	2,020
Austria	High	65	47	88	81	68	85	61	58	113	73	79	92	78	96	109	95	94	112	114	92	95	89	78
Belgium	High	10	11	11	11	18	14	11	16	8	10	7	11	9	11	12	8	17	24	39	27	27	33	32
Denmark	High	11	6	8	16	13	10	15	9	15	12	9	15	12	8	18	17	9	20	22	15	10	15	14
Finland	High	77	44	37	34	46	51	40	44	33	29	33	29	28	30	27	29	20	55	26	34	24	24	31
France	High	266	286	233	262	236	258	226	193	272	236	266	312	243	194	314	255	375	328	284	308	208	274	206
Germany	High	914	956	915	945	1,032	1,134	1,091	1,256	1,235	1,110	1,144	994	1,029	1,011	1,065	1,114	1,184	1,178	1,262	1,200	1,112	1,173	1,107
Hungary	High	2	1	4	2	5	3	2	5	4	6	2	5	5	8	6	3	3	11	11	7	4	4	5
Ireland	High	12	8	2	3	4	12	6	6	3	5	4	5	3	4	7	7	3	6	5	4	3	5	3
Italy	High	280	473	433	243	229	163	428	173	24	34	47	38	106	136	102	23	31	37	44	376	313	233	161
Netherlands	High	72	84	67	77	54	60	62	52	62	49	62	53	51	61	59	58	46	46	57	61	43	56	60
Spain	High	52	51	52	56	47	34	58	77	62	71	57	68	56	66	62	62	79	54	62	44	50	40	30
Sweden	High	145	196	128	117	140	128	131	138	108	122	114	94	93	81	72	67	67	66	82	83	78	62	107
Other Europe	na	1,185	727	816	709	838	1,258	1,356	1,034	1,086	984	1,056	1,355	985	861	1,005	895	880	936	638	863	681	856	573
Other Europe-2020 ^b	na	1,313	832	904	818	961	1,401	1,493	1,154	1,189	1,057	1,151	1,439	1,058	947	1,100	977	957	1,024	706	934	741	928	651

Table SINV-31

International patent families granted in machine tools, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Belarus	Upper middle	13	2	0	3	1	9	7	4	6	10	3	10	3	2	6	5	4	4	7	9	8	9	6
Moldova	Lower middle	0	6	5	6	3	11	5	10	10	5	9	8	14	13	10	7	5	3	3	8	4	1	5
Norway	High	14	9	7	10	6	7	8	11	8	13	8	10	10	10	12	7	11	12	10	9	10	10	10
Russia	Upper middle	1,030	607	674	588	675	987	856	814	878	737	799	1,090	736	650	808	693	678	776	463	681	471	694	432
Switzerland	High	88	83	103	72	109	126	97	83	119	100	120	99	106	86	97	80	101	82	106	101	104	103	107
Ukraine	Lower middle	35	18	21	25	33	115	375	105	59	111	113	133	109	91	66	95	72	55	42	45	70	26	5
Asia	na	5,781	6,294	4,798	4,846	5,224	5,178	5,357	5,879	7,380	7,390	7,491	8,356	9,248	11,643	13,966	14,531	15,872	20,818	25,629	26,494	25,572	23,477	26,619
China	Upper middle	48	92	154	214	170	264	364	446	576	785	1,527	2,175	2,741	4,048	5,508	5,450	6,528	13,692	17,857	19,629	18,806	16,902	20,199
India	Lower middle	2	3	0	2	4	0	1	1	3	3	2	1	5	11	15	16	13	19	16	17	16	13	16
Japan	High	5,115	4,784	3,745	3,665	3,824	3,691	3,476	3,548	4,004	3,861	3,777	4,388	4,518	4,992	5,219	5,309	5,438	3,562	4,725	3,693	3,636	3,401	3,329
Malaysia	Upper middle	0	1	1	0	2	3	3	5	9	14	3	5	3	13	10	10	15	8	17	11	15	5	2
Singapore	High	3	6	6	19	12	9	10	6	14	14	7	13	6	6	7	8	9	8	8	3	4	5	3
South Korea	High	397	1,126	512	460	827	804	1,047	1,315	2,133	1,987	1,678	1,270	1,427	1,961	2,511	3,011	3,154	2,737	2,206	2,225	2,374	2,510	2,605
Taiwan	High	212	275	376	481	380	403	451	556	638	719	492	502	544	608	693	721	709	785	789	905	717	635	461
Middle East	na	20	17	19	31	28	21	27	23	23	22	22	14	14	12	30	42	54	49	36	35	46	42	33
Israel	High	18	17	13	28	20	21	22	17	19	17	17	12	9	10	18	34	50	45	33	27	37	31	25
Africa	na	29	34	26	29	22	17	25	30	22	17	32	32	22	11	22	13	8	5	2	3	3	5	3
South Africa	Upper middle	26	31	23	21	12	10	19	27	18	13	32	25	19	6	18	8	7	4	2	2	2	3	1
Australia and Oceania	na	73	84	77	122	122	141	166	97	106	69	68	55	64	78	72	52	62	71	51	51	40	44	53
Australia	High	66	80	75	118	117	134	158	89	101	61	62	45	56	64	61	40	53	61	35	41	34	36	47
New Zealand	High	7	4	2	4	5	7	8	8	6	8	6	10	7	14	11	13	9	10	16	10	6	6	5
Unclassified	na	28	201	154	21	13	1	35	240	78	6	13	3	14	1	5	82	45	1	35	0	0	1	1

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom.

^a The United Kingdom was a part of the EU for data purposes from 1973 to 2019.

^b Beginning in 2020, the United Kingdom was no longer a member of the EU.

Note(s):

International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2013) is used to fill missing information on priority patents using information in successive filings within the families. Priority patents not indexed in PATSTAT are replaced by the next utility patent(s) in the families according to filing dates. Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. China includes Hong Kong. Data were extracted in June 2021. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in year for which its output is accounted. As patent authorities become more involved with the European Patent Organisation, these gaps should disappear in the future, strengthening the robustness of statistics for these countries.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PATSTAT, accessed October 2021.

Science and Engineering Indicators