

Tunnel ventilation solutions



Howden, a Chart Industries Company, has been designing and manufacturing ventilation fans for tunnel applications since the 1920's.

These have been delivered under a range of legacy and current product brands such as:

- Variax
- Voith / Howden Ventilatoren Heidenheim
- Axicent
- Axico
- UMAF

To date over 6,200 fans have been installed in a wide range of road, rail and metro projects globally.

Projects summary





Selected projects

Road

Tunnel project	Country	Tunnel length (m)	Client	Type	Qty	Dia. (mm)	Thrust (N)	Flow (m ³ /s)	Pressure (Pa)	Fire rating
Westconnex 3B T	Australia	750	JHCPB	Axial	29	2818	-	170	1750	200°C/120m
Bekkestua	Norway	710	Aventi	Jet	11	1000	1200	-	-	200°C
E16 - Arnanipa	Norway	2100	Traftec	Jet	32	1120	940	-	-	200°C
E16 - Bjørkhau	Norway	558	Traftec	Jet	10	1120	908	-	-	200°C
E16 - Sætre	Norway	720	Traftec	Jet	10	1120	940	-	-	200°C
E6 - Vålereng	Norway	820	Traftec	Jet	26	1000	890	-	-	200°C
Engelberg Basistunnel	Germany	2530 (x2)	PKE Verkehrstechnik	Axial	4	2512	-	166	-	250°C/90m
Engelberg	Germany	2530	PKE Verkehrstechnik	Jet	36	1250	1736	-	-	400°C/90m
Oberau B2	Austria	2971	PKE Verkehrstechnik	Jet	24	1000	890	-	-	400°C/90m
Bindermichl - Niedernhart	Austria	1062	Caverion	Jet	64	560-630	325-410	-	-	400°C/90m
Marieholm	Sweden	720	Strabag Anlagentechnik	Jet	14	800	970	-	-	400°C/90m
Marieholm	Sweden	720	Strabag Anlagentechnik	Jet	8	800	950	-	-	400°C/90m
I-70 Denver	USA	800	Kiewit/CDOT	Jet	18	1250	1864	-	-	250°C/90m
E39 Eiganes	Norway	3700	Energima Utvikling	Jet	55	710-1250	790-1601	-	-	200°C
Bragernes	Norway	3169	Energima Utvikling	Jet	5	1250	810	-	-	200°C
Jenner Le Havre	France	680	Eiffage Energie	Jet	11	710	680	-	-	200°C
S16 Perjen	Austria	2993	Caverion	Jet	31	1120	835	-	-	250°C
North Wales 2	UK	100	Caverion	Jet	12	630	440	-	-	400°C
Rv13 Ryfastforbudeisen	Norway	14400	Energima Utvikling	Jet	167	1250	1025-1796	-	-	200°C
E18 Ekeberg & Svartdals	Norway	1580/1460/ 1700	Energima Utvikling	Jet	11	1120	1100	-	-	200°C
E18 Ekeberg & Svartdals	Norway	1580/1460/ 1700	Energima Utvikling	Jet	100	710-1250	649-1650	-	-	200°C
E16 Gudvanga	Norway	11428	Energima	Jet	48	1120	776	-	-	N/A
A2 Gräberntunnel	Austria	2144	Strabag Anlagentechnik	Jet	22	1120	1240	-	-	400°C
Donnersberg	Austria	876	Strabag Anlagentechnik	Jet	19	1120	1240	-	-	400°C
Jagdberg-tunnel	Germany	3074	Strabag Anlagentechnik	Axial	2	2500	-	210	1766	400°C/90m
Crapteigtunnel	Switzerland	2171	Bundesamt für Straßen ASTRA	Axial	4	2360	-	123	1743	250°C/120m
Tunnel Gubrist	Switzerland	3250	Bundesamt für Straßen ASTRA	Axial	5	2120	-	167	4312	250°C/120m
Tunnel Sochi	Russia	3117	Tonneldorstroy	Axial	6	2360	-	125	2400	600°C/120m
Tunnel Roppen	Austria	5079	ASFINAG Bau Management	Axial	2	2500	-	150	1366	400°C/120m
Katschberg-tunnel	Austria	5898	ASFINAG Bau Management	Axial	8	2000-2120	-	115	2330-2830	400°C/120m
Gotthardtunnel	Switzerland	16942	Amt für Tiefbau Kanton Uri	Axial	3	2360	-	127-175	2334-4172	400°C
Gotschna Tunnel	Switzerland	4207	Tiefbauamt Graubünden	Axial	4	1700-2120	-	75-120	1650-4020	400°C/90m
Tunnel Lermoos	Austria	3168	Amt der Tiroler Landesregierung	Axial	2	2500	-	165	2000	400°C
Plabutsch Tunnel	Austria	10085	Amt der Steiermärkischen Landesregierung	Axial	10	2800	-	193	1500	400°C



Selected projects

Rail

Tunnel project	Country	Tunnel length (m)	Client	Type	Qty	Dia. (mm)	Thrust (N)	Flow (m³/s)	Pressure (Pa)	Fire rating
Boston South Station	USA	100	Hines Real Estate	Axial	12	1496–2512	-	40–110	1000–1200	250°C/60m
Stuttgart S21	Germany	9500	Niersberger	Axial	8	3202	-	250–325	1545–2510	250°C
Kingsway	UK	2400	Mersey Travel	Jet	1	710	760	-	-	200°C/60m
Wienerwald	Austria	16	Siemens Bacon	Jet	12	710–1500	550–2860	-	-	250°C/90m & 400°C/120m
Wienerwald	Austria	1	Siemens Bacon	Axial	1	3150	-	300	2467	400°C/120m
ZeBa Luzern	Switzerland	3	Marti Technik	Axial	2	1800	-	70	3500	250°C/90m
Wien Mitte	Austria	14	Siemens Bacon	Jet	23	1120–1250	875–1165	-	-	400°C/90m
Wien Rail Schwechat	Austria	12	GOWA	Jet	4	400	105	-	-	N/A
Lötschberg Basistunnel	Austria	8	BLS AlpTransit	Axial	9	1000–2800	-	15–250	830–4450	400°C/120m
Lötschberg Basistunnel	Austria	12	BLS AlpTransit	Jet	48	400–1120	50–1045	-	-	250°C/90m
Lierastunnelen	Norway	12	OFAS	Jet	12	1400	3200	-	-	N/A

Metro

Tunnel project	Country	Tunnel length (m)	Client	Type	Qty	Dia. (mm)	Thrust (N)	Flow (m³/s)	Pressure (Pa)	Fire rating
Metro Paris L16/L17	France	16	Eiffage Energie/ ENGIE Solutions - AXIMA	Axial	48	2239–2371	-	150	1200	250°C/90m & 400°C/120m
Metro Paris L16/L17	France	16	Eiffage Energie/ ENGIE Solutions - AXIMA	Jet	25	800	925	-	-	200°C
World Trade Centre Station	USA	1	New York City MTA	Axial	2	1800	-	57	1812	150°C/120m
Metro Moscow	Russia	3	Mosmetrostroy	Axial	2	140–710	-	12.5–50	500–4740	250°C/120m
Metro Bangkok MRT North	Thailand	14	Thai Shin Ryo/Thai Obayashi/Jardine Matherson	Axial	80	1413–1996	-	40–70	1030–1581	250°C/120m
Metro Ankara	Turkey	12	GAMA/Guris	Axial	44	1260–1778	-	15–70	660–900	250°C/120m
Metro Caracas	Venezuela	8	Metro Caracas	Axial	44	1260–1978	-	18–94	548–820	250°C/120m
Cairo Metro	Egypt	12	National Authority for Tunnels	Axial	69	1250–1800	-	16–48	560–1140	250°C/120m

For further information get in touch with our team today:

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