

EVEREST

An Ingersoll Rand Business

SIDE CHANNEL BLOWERS & CENTRIFUGAL BLOWERS



BLOWERS

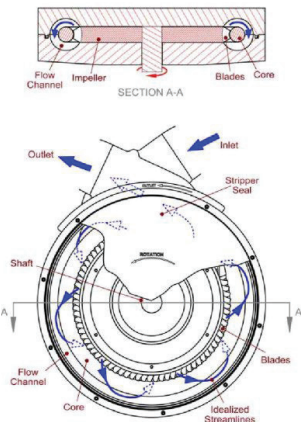


SIDE CHANNEL BLOWERS

WORKING PRINCIPLE

A **Side Channel Blower** is a simple machine to impart momentum to air/gas. Fig (a) shows the basic design concept for a Side Channel Blower, which comprises an impeller with blades located on its periphery that impels the gas through a channel surrounding a toroidal core that extends the length of the perimeter. The gas spirals around the core, interacting with the impeller blades several times before leaving the blower. In this way the Side Channel Blower uses a single impeller to impart multiple stages of pumping to the gas.

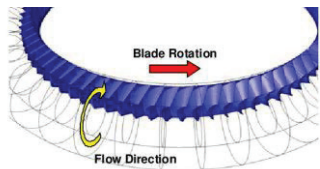
Referring to Figure 2a, the total pressure of the ventilation gas increases continually as it flows clockwise around the periphery of the blower. The “Stripper seal” shown in the bottom drawing of Fig (a) prevents the high pressure exit gas from flowing directly into the inlet of the blower. Fig (b) shows a typical impeller from a Side Channel Blower, and Fig(c) provides a side view of a Side Channel Blower impeller and the flow path of gas around the toroidal core.Side Channel Blowers increase the pressure difference through a series of vortices, which are created by the centrifugal force in the peripheral side channel. The rotation of the impeller leads to the rotation of the gas trapped within the chamber. Additionally the centrifugal force forces the gas into narrow side channel. This causes spiral shaped vertices in the side channel. The vortices lead to the pressure rise of the gas, along the whole length of the side channel. The rotating parts of the ring blower do not touch the housing, eliminating friction and the need for lubrication, which would cause machine failure. The pressure build up is extremely without oil hence there is no pollution of the gas.



(a) Regenerative Blower Concept



(b) Typical Impeller



(c) Internal flow



Side Channel Blower

NOMENCLATURE

2ETS	2	10	A	11
				Power Specific Reference To Actual Power
				Voltage Grade A: Single Phase 200-240V H: Three Phase 345-415V
				10: Single Stage 20: Double Stage 30: Single Stage Of Large Airflow 40: Double Stage Of Large Airflow 90: Single Segment Of Low Pressure
				Code Of Turbine 0-9

2ETS: High Pressure Series
4ETS: Ultrahigh Pressure Series

4ETS - SINGLE AND DOUBLE STAGE												
MODEL	SINGLE/ THREE PHASE	SINGLE/ DOUBLE/ STAGE	BLOWER OPENING DETAILS	FREQUENCY (Hz)	MOTOR INPUT POWER (kW)	VOLUME FLOW RATE (m³/hr)	VOLUME (mbar)	PRESSURE (mbar)	NOISE LEVEL @ 1mt dB(A)	WEIGHT (kg)	FILTER	RELIEF VALVE
4ETS-210-H16	THREE	SINGLE	G1¼ (15 Deep)	50	0.55	47	-230	290	57	16	ESF-10	RV-01
4ETS-310-H16	THREE	SINGLE	G1¼ (18 Deep)	50	0.55	66	-250	250	57	16	ESF-10	RV-01
4ETS-310-H26	THREE	SINGLE	G1¼ (18 Deep)	50	0.81	66	-280	350	57	17	ESF-10	RV-02
4ETS-410-H16	THREE	SINGLE	G1¼ (18 Deep)	50	1.1	87	-300	380	58	23	ESF-10	RV-02
4ETS-510-H16	THREE	SINGLE	G1¼ (18 Deep)	50	1.5	120	-310	360	64	26	ESF-10	RV-02
4ETS-510-H26	THREE	SINGLE	G1¼ (18 Deep)	50	2.2	120	-310	470	64	29	ESF-10	RV-02
4ETS-610-H16	THREE	SINGLE	G1¼ (18 Deep)	50	2.2	165	-340	360	65	32	ESF-10	RV-02
4ETS-610-H36	THREE	SINGLE	G1¼ (18 Deep)	50	3.3	165	-340	480	65	35	ESF-10	RV-02
4ETS-220-H26	THREE	DOUBLE	G1¼ (18 Deep)	50	0.81	47	-370	490	58	24	ESF-10	RV-02
4ETS-220-H56	THREE	DOUBLE	G1¼ (15 Deep)	50	1.5	47	-370	650	58	28	ESF-10	RV-02
4ETS-320-H46	THREE	DOUBLE	G1¼ (18 Deep)	50	1.1	65	-400	480	59	29	ESF-10	RV-02
4ETS-320-H56	THREE	DOUBLE	G1¼ (18 Deep)	50	1.5	65	-440	540	59	30	ESF-10	RV-02
4ETS-420-H26	THREE	DOUBLE	G1¼ (18 Deep)	50	1.5	87	-480	450	61	33	ESF-10	RV-02
4ETS-420-H56	THREE	DOUBLE	G1¼ (18 Deep)	50	3.3	87	-500	750	61	39	ESF-10	RV-02
4ETS-520-H26	THREE	DOUBLE	G1¼ (18 Deep)	50	2.2	120	-470	460	64	40	ESF-10	RV-02
4ETS-520-H77	THREE	DOUBLE	G1¼ (18 Deep)	50	4	120	-500	820	65	51	ESF-10	RV-02
4ETS-620-H36	THREE	DOUBLE	G1¼ (18 Deep)	50	3.3	165	-460	500	67	48	ESF-10	RV-02
4ETS-620-H57	THREE	DOUBLE	G1¼ (18 Deep)	50	5.5	165	-460	740	68	65	ESF-10	RV-02
4ETS-630-H67	THREE	THREE	G1¼ (18 Deep)	50	7.5	170	-730	1040	72	86	ESF-10	RV-02

Specification are subject to change without notice. Side Channel Blowers are also available with motors suitable for 60 Hz frequency and different operating voltages. Contact Everest for further details.
* - Vertical installation on the end casing only

2ETS - SINGLE AND DOUBLE STAGE

MODEL	SINGLE/ THREE PHASE	SINGLE/ DOUBLE/ STAGE	BLOWER OPENING DETAILS	FREQUENCY (Hz)	MOTOR INPUT POWER (kW)	VOLUME FLOW RATE (m³/hr)	VOLUME (mbar)	PRESSURE (mbar)	NOISE LEVEL @ 1mt dB(A)	WEIGHT (kg)	FILTER	RELIEF VALVE
2ETS-110-A11	SINGLE	SINGLE	G1¼ BSP	50	0.25	70	-110	110	48	8	ESF-10	RV-01
2ETS-210-A11	SINGLE	SINGLE	G1¼ BSP	50	0.37	80	-110	110	53	11	ESF-10	RV-01
2ETS-220-A21	SINGLE	DOUBLE	G1¼ BSP	50	0.7	85	-210	240	55	15	ESF-10	RV-01
2ETS-310-A01	SINGLE	SINGLE	G1¼ BSP	50	0.55	100	-120	120	55	13	ESF-10	RV-01
2ETS-310-A11	SINGLE	SINGLE	G1¼ BSP	50	0.7	100	-150	150	55	14	ESF-10	RV-01
2ETS-320-A31	SINGLE	DOUBLE	G1¼ BSP	50	1.1	120	-240	280	58	17	ESF-10	RV-01
2ETS-410-A01	SINGLE	SINGLE	G1½ BSP	50	0.7	145	-120	120	60	15	ESF-12	RV-01
2ETS-410-A11	SINGLE	SINGLE	G1½ BSP	50	0.8	145	-150	160	63	15	ESF-12	RV-01
2ETS-410-A21	SINGLE	SINGLE	G1½ BSP	50	1.1	145	-150	190	63	16	ESF-12	RV-01
2ETS-420-A31	SINGLE	DOUBLE	G1½ BSP	50	1.5	150	-280	290	66	26	ESF-12	RV-01
2ETS-510-A11	SINGLE	SINGLE	G2 BSP	50	1.1	210	-160	160	64	21	ESF-16	RV-01
2ETS-510-A21	SINGLE	SINGLE	G2 BSP	50	1.5	210	-190	200	64	24	ESF-16	RV-01
2ETS-610-A11	SINGLE	SINGLE	G2 BSP	50	2.2	270	-230	250	64	30	ESF-16	RV-01
2ETS-710-A11	SINGLE	SINGLE	G2 BSP	50	2.2	318	-190	190	72	30	ESF-16	RV-01
2ETS-210-H06	THREE	SINGLE	G1¼ BSP	50	0.25	80	-100	110	53	9	ESF-10	RV-01
2ETS-210-H16	THREE	SINGLE	G1¼ BSP	50	0.4	80	-120	130	53	10	ESF-10	RV-01
2ETS-220-H26	THREE	DOUBLE	G1¼ BSP	50	0.7	85	-210	240	55	15	ESF-10	RV-01
2ETS-310-H06	THREE	SINGLE	G1¼ BSP	50	0.55	100	-110	120	55	11	ESF-10	RV-01
2ETS-310-H16	THREE	SINGLE	G1¼ BSP	50	0.75	100	-150	150	55	12	ESF-10	RV-01
2ETS-320-H26	THREE	DOUBLE	G1¼ BSP	50	0.85	110	-200	230	58	17	ESF-10	RV-01
2ETS-320-H36	THREE	DOUBLE	G1¼ BSP	50	1.3	110	-280	290	58	18	ESF-10	RV-01
2ETS-330-H06	THREE	SINGLE	G1¼ BSP	50	0.55	140	-60	60	56	12	ESF-10	RV-01
2ETS-330-H16	THREE	SINGLE	G1¼ BSP	50	0.7	140	-100	100	56	13	ESF-10	RV-01
2ETS-410-H06	THREE	SINGLE	G1½ BSP	50	0.7	145	-120	120	63	13	ESF-12	RV-01
2ETS-410-H16	THREE	SINGLE	G1½ BSP	50	0.85	145	-160	160	63	16	ESF-12	RV-01
2ETS-410-H26	THREE	SINGLE	G1½ BSP	50	1.3	145	-170	200	63	17	ESF-12	RV-01
2ETS-420-H36	THREE	DOUBLE	G1½ BSP	50	1.6	150	-280	280	66	25	ESF-12	RV-01
2ETS-420-H46	THREE	DOUBLE	G1½ BSP	50	2.2	150	-330	420	66	27	ESF-12	RV-02
2ETS-430-H16	THREE	SINGLE	G1½ BSP	50	0.85	180	-110	100	64	18	ESF-12	RV-01
2ETS-490-H16	THREE	SINGLE	G1½ BSP	50	0.55	140	-120	120	63	14	ESF-12	RV-01
2ETS-510-H06	THREE	SINGLE	G2 BSP	50	0.85	210	-110	100	64	20	ESF-16	RV-01
2ETS-510-H16	THREE	SINGLE	G2 BSP	50	1.3	210	-170	170	64	22	ESF-16	RV-01
2ETS-510-H26	THREE	SINGLE	G2 BSP	50	1.6	210	-200	190	64	23	ESF-16	RV-01
2ETS-510-H36	THREE	SINGLE	G2 BSP	50	2.2	210	-220	270	64	25	ESF-16	RV-01
2ETS-520-H36	THREE	DOUBLE	G2 BSP	50	2.2	230	-350	350	64	40	ESF-16	RV-02
2ETS-520-H46	THREE	DOUBLE	G2 BSP	50	3	230	-340	410	72	40	ESF-16	RV-02
2ETS-520-H57	THREE	DOUBLE	G2 BSP	50	4	230	-390	440	72	44	ESF-16	RV-02

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2ETS - SINGLE AND DOUBLE STAGE

MODEL	SINGLE/ THREE PHASE	SINGLE/ DOUBLE/ STAGE	BLOWER OPENING DETAILS	FREQUENCY (Hz)	MOTOR INPUT POWER (kW)	VOLUME FLOW RATE (m³/hr)	VOLUME (mbar)	PRESSURE (mbar)	NOISE LEVEL @ 1mt dB(A)	WEIGHT (kg)	FILTER	RELIEF VALVE
2ETS-530-H06	THREE	SINGLE	G2 BSP	50	0.85	270	-40	40	65	21	ESF-16	RV-01
2ETS-530-H16	THREE	SINGLE	G2 BSP	50	1.3	270	-120	110	65	23	ESF-16	RV-01
2ETS-530-H26	THREE	SINGLE	G2 BSP	50	1.6	270	-160	150	65	24	ESF-16	RV-01
2ETS-530-H36	THREE	SINGLE	G2 BSP	50	2.2	270	-220	230	65	26	ESF-16	RV-01
2ETS-590-H26	THREE	SINGLE	G2 BSP	50	1.1	210	-130	150	64	23	ESF-16	RV-01
2ETS-610-H06	THREE	SINGLE	G2 BSP	50	1.6	265	-170	180	68	25	ESF-16	RV-01
2ETS-610-H16	THREE	SINGLE	G2 BSP	50	2.2	265	-235	220	69	28	ESF-16	RV-01
2ETS-610-H26	THREE	SINGLE	G2 BSP	50	3	265	-280	280	69	34	ESF-16	RV-01
2ETS-710-H06	THREE	SINGLE	G2 BSP	50	1.6	318	-160	150	69	27	ESF-16	RV-01
2ETS-710-H16	THREE	SINGLE	G2 BSP	50	2.2	318	-190	190	69	30	ESF-16	RV-01
2ETS-710-H26	THREE	SINGLE	G2 BSP	50	3	318	-270	290	69	36	ESF-16	RV-01
2ETS-710-H37	THREE	SINGLE	G2 BSP	50	4	318	-290	330	69	40	ESF-16	RV-02
2ETS-720-H16	THREE	DOUBLE	G2 BSP	50	2.2	320	-200	210	73	43	ESF-16	RV-01
2ETS-720-H26	THREE	DOUBLE	G2 BSP	50	3	320	-280	260	73	48	ESF-16	RV-01
2ETS-720-H37	THREE	DOUBLE	G2 BSP	50	4.3	320	-360	380	73	54	ESF-16	RV-02
2ETS-720-H47	THREE	DOUBLE	G2 BSP	50	5.5	320	-440	500	73	66	ESF-16	RV-02
2ETS-720-H57	THREE	DOUBLE	G2 BSP	50	7.5	320	-440	570	73	73	ESF-16	RV-02
2ETS-730-H06	THREE	SINGLE	G2 BSP	50	1.6	420	-100	100	70	29	ESF-16	RV-01
2ETS-730-H16	THREE	SINGLE	G2 BSP	50	2.2	420	-170	170	70	32	ESF-16	RV-01
2ETS-730-H26	THREE	SINGLE	G2 BSP	50	3	420	-220	200	70	37	ESF-16	RV-01
2ETS-730-H37	THREE	SINGLE	G2 BSP	50	4	420	-260	310	70	43	ESF-16	RV-01
2ETS-740-H37	THREE	DOUBLE	G2 BSP	50	4	500	-150	140	74	54	ESF-16	RV-01
2ETS-740-H47	THREE	DOUBLE	G2 BSP	50	5.5	500	-240	260	74	69	ESF-16	RV-01
2ETS-740-H57	THREE	DOUBLE	G2 BSP	50	7.5	500	-240	320	74	75	ESF-16	RV-02
2ETS-790-H26	THREE	SINGLE	G2 BSP	50	2.2	320	-160	200	69	36	ESF-16	RV-01
2ETS-810-H07	THREE	SINGLE	G2½ BSP	50	4	530	-200	200	70	54	ESF-20	RV-01
2ETS-810-H17	THREE	SINGLE	G2½ BSP	50	5.5	530	-300	300	70	63	ESF-20	RV-01
2ETS-810-H27	THREE	SINGLE	G2½ BSP	50	7.5	530	-320	430	70	66	ESF-20	RV-02
2ETS-820-H17	THREE	DOUBLE	G2½ BSP	50	5.5	520	-280	260	74	83	ESF-20	RV-01
2ETS-820-H27	THREE	DOUBLE	G2½ BSP	50	7.5	520	-400	400	74	86	ESF-20	RV-02
2ETS-820-H37	THREE	DOUBLE	G2½ BSP	50	11	520	-430	600	74	104	ESF-20	RV-02
2ETS-820-H47	THREE	DOUBLE	G2½ BSP	50	15	520	-460	670	74	120	ESF-20	RV-02
2ETS-830-H07	THREE	SINGLE	G2½ BSP	50	4	700	-150	140	70	57	ESF-20	RV-01
2ETS-830-H17	THREE	SINGLE	G2½ BSP	50	5.5	700	-200	190	70	66	ESF-20	RV-01
2ETS-830-H27	THREE	SINGLE	G2½ BSP	50	7.5	700	-270	190	70	69	ESF-20	RV-01
2ETS-840-H27	THREE	DOUBLE	G2½ BSP	50	7.5	900	-200	180	74	91	ESF-20	RV-01
2ETS-840-H37	THREE	DOUBLE	G2½ BSP	50	11	900	-280	370	74	110	ESF-32	RV-02

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2ETS - SINGLE AND DOUBLE STAGE												
MODEL	SINGLE/ THREE PHASE	SINGLE/ DOUBLE/ STAGE	BLOWER OPENING DETAILS	FREQUENCY (Hz)	MOTOR INPUT POWER (kW)	VOLUME FLOW RATE (m³/hr)	VOLUME (mbar)	PRESSURE (mbar)	NOISE LEVEL @ 1mt dB(A)	WEIGHT (kG)	FILTER	RELIEF VALVE
2ETS-910-H07	THREE	SINGLE	G4 BSP	50	8.5	1050	-190	190	74	93	ESF-32	RV-01
2ETS-910-H17	THREE	SINGLE	G4 BSP	50	12.5	1050	-280	270	74	116	ESF-32	RV-01
2ETS-910-H27	THREE	SINGLE	G4 BSP	50	15	1050	-290	280	74	120	ESF-32	RV-01
2ETS-910-H37	THREE	SINGLE	G4 BSP	50	18.5	1050	-360	460	74	126	ESF-32	RV-02
2ETS-920-H17	THREE	DOUBLE	G4 BSP	50	12.5	1110	-300	270	74	187	ESF-32	RV-02
2ETS-920-H27	THREE	DOUBLE	G4 BSP	50	16.5	1110	-410	370	74	197	ESF-32	RV-02
2ETS-920-H37	THREE	DOUBLE	G4 BSP	50	20	1110	-440	500	74	204	ESF-32	RV-02
2ETS-920-H47	HREE	DOUBLE	G4 BSP	50	25	1110	-440	590	74	211	ESF-32	RV-02
2ETS-930-H07	THREE	SINGLE	G4 BSP	50	8.5	1370	-120	110	75	98	ESF-32	RV-01
2ETS-930-H17	THREE	SINGLE	G4 BSP	50	12.5	1370	-190	180	75	121	ESF-32	RV-01
2ETS-930-H27	THREE	SINGLE	G4 BSP	50	15	1370	-250	260	75	128	ESF-32	RV-01
2ETS-930-H37	THREE	SINGLE	G4 BSP	50	18.5	1370	-310	320	75	131	ESF-32	RV-02
2ETS-940-H27	THREE	DOUBLE	G4 BSP	50	15	1940	-130	110	75	187	ESF-32	RV-01
2ETS-940-H37	THREE	DOUBLE	G4 BSP	50	20	1940	-220	200	75	212	ESF-32	RV-01
2ETS-940-H47	THREE	DOUBLE	G4 BSP	50	25	1940	-310	280	75	219	ESF-32	RV-01
2ETS-943-H27 *	THREE	DOUBLE	G5 BSP	50	15	2050	-160	170	75	220	ESF-32	RV-01
2ETS-943-H37*	THREE	DOUBLE	G5 BSP	50	20	2050	-250	230	75	230	ESF-32	RV-01
2ETS-943-H47*	THREE	DOUBLE	G5 BSP	50	25	2330	-310	270	75	235	ESF-32	RV-01

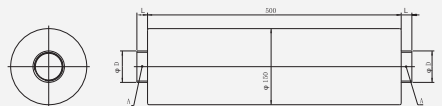
SPARES AND ACCESSORIES

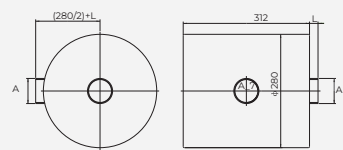


AIR FILTER



MUFFLER





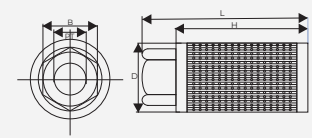
Opening Thread Size -A	Dia (mm)	L (mm)
G 2.5"	78	60
G 2"	62	60
G 1.5"	48	50
G 1.25"	40	50



PRESSURE RELIEF VALVE



FILTERING BARRELS



Model	Pipe Thread	D (mm)	L (mm)	H (mm)	B (mm)	Filter Rating (µ)	(m³/hr)	(Kg)
ESF-10	1.25"	71	186	170	54	100	210	0.35
ESF-12	1.5"	85	196	182	65	100	285	0.49
ESF-16	2"	103	215	202	75	100	395	0.65
ESF-20	.5"	148	274	252	97	100	750	1.20
ESF-32	4"	208	380	357	142	100	1000	2.45

Model	Thread Size	L (mm)	Pressure Range
RV 01	1.25"	143	0 -300mbar
RV 02	1.25"	143	300-800mbar

CENTRIFUGAL BLOWER
CX SERIES

THE SALIENT FEATURES OF CENTRIFUGAL BLOWERS

- Made from Die Cast Aluminum (ADC-12): High Strength Aluminum alloy for lightweight, high volumes of clean, oil free, dry air at low pressure and vacuum.

► For the same power, the air flow is 10 times higher than Side Channel Blowers, however, pressures are limited.

► Adjustable outlets & motor position.

► Available in single/ three phase configurations.

► Have the added benefits of low noise operation.

► Virtually maintenance free.

► Extremely robust, corrosion resistant and suitable for the most demanding applications
- Designed for continual use up to a maximum ambient temperature of 50°C.

► No Oil operation. No Vibration.

► 100% Oil free and dry quality air, safe for critical applications.

► Established characteristics are based on actual tests instead of calculations, hence more accurate. This can help you determine the performance of your system/applications in advance.

► Zero maintenance cost: Our blowers do not use gearboxes and oil lubricants used by conventional blowers, minimizing maintenance costs and improving overall system stability.

► Direct Driven Blowers, eliminating gears or transmission boxes, hence maximize energy efficiency.

► These Centrifugal Blowers are suitable for vertical and horizontal operation.

► Full ATEX range.



TECHNICAL PARAMETERS										
MODEL	PHASE	POWER (kW)	Voltage (V)	Current (A)	VOLUME FLOW RATE (m³/hr)	VAC (kPa)	PRESSURE (kPa)	In/Out (mm)	NOISE LEVEL @ 1mt dB(A)	WT (kg)
CX-65A	1~	0.2	220	1.5	4.5	-0.7	0.7	IN 110	50	7
	3~		220/415	1.1/0.9				OUT 65		
CX-75SA	1~	0.4	220	2.5	7	-1.1	1.1	IN 108	56	11
	3~		220/415	1.9/1.2				OUT 75		
CX-75A	1~	0.75	220	5	13	-1.7	1.7	IN 125	64	14
	3~		220/415	3/2.0				OUT 100		
CX-100A	1~	1.5	220	9	20	-2	2	IN 125	74	28
	3~		220/415	5.3/3.5				OUT 100		
CX-125A	3~	2.2	220/415	8/5.0	32	-2.4	2.4	IN 252	76	38
								OUT 125		
CX-150A	3~	3.7	220/415	13/7.5	46	-3.2	3.2	IN 252	80	54
								OUT 150		



EVEREST PRODUCT LINEUP



BLOWERS

- ▶ TWIN/TRI LOBE ROOTS BLOWERS
- ▶ GAS BLOWERS
- ▶ SIDE CHANNEL / CENTRIFUGAL BLOWERS



VACUUM

- ▶ MECHANICAL VACUUM BOOSTERS
- ▶ DRY SCREW VACUUM PUMPS & SYSTEMS
- ▶ DRY CLAW VACUUM PUMPS
- ▶ ROTARY VANE VACUUM PUMPS
- ▶ LIQUID RING VACUUM SYSTEMS
- ▶ ENGINEERED VACUUM SYSTEMS
- ▶ MECHANICAL VAPOUR RECOMPRESSOR (MVR)

CONTACT US

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EVEREST

An Ingersoll Rand Business