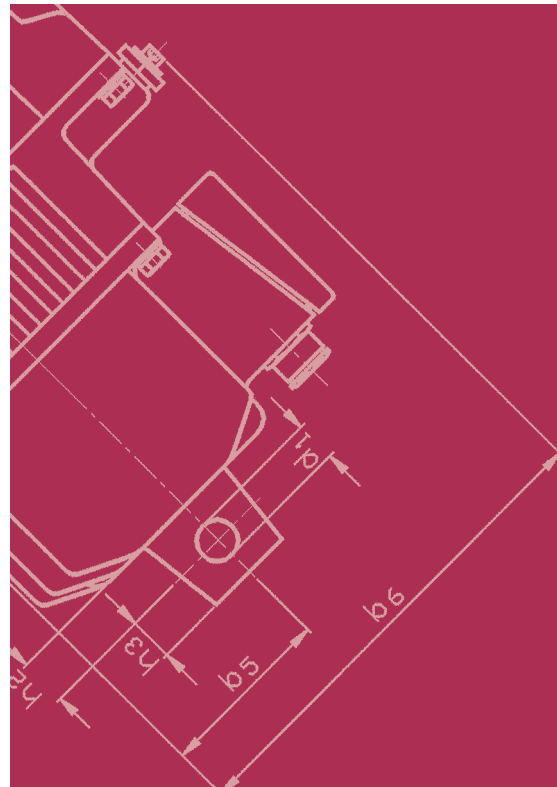


antec

APLICACION NUEVAS
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THRUSTORS TURBEL



APLICACION NUEVAS TECNOLOGIAS ANTEC, S.A.

RELIABILITY comes first

TURBEL is the ANTEC's registered trade mark for an operating electrohydraulic device, characterised to generate a linear thrust along a stroke. All the models of the TURBEL range are designed according to the standard DIN 15430 in terms of thrust force, stroke, fastening and general dimensions.

DESCRIPTION

TURBEL is a monoblock assembly of a hydraulic cylinder and a pump. This one is driven by an electrical asynchronous three-phase motor, which rotor shaft is fixed to the impeller. The hydraulic pressure generated moves upwards a piston and the relative rod. The piston slides inside a steel cylinder, and the oil returns back to the impeller through the gap between this cylinder and the chamber unit. The motor turning sense has no effect on correct operation of the TURBEL.

A set of seal for the oil and scraper for the dust, ensure the sealing on the rod. Likewise another seal is installed between the motor housing and the hydraulic chamber. Friction-proof rings guide the piston inside the cylinder and the rod in the housing.

All the TURBELS except the two smaller have the rod protected with a cap against dust and accidental blows.

OPERATION

The piston and its rod go up until they reach the upper stop when the motor is energised. The piston can either travel the total stroke or the externally reduced stroke. It is necessary an external force (spring, weight, etc.) for returning to the initial position when the power is off.

The current consumption of the motor is lower when the piston has reached its end position (total or partial stroke) than when it is doing its lifting movement; therefore the motor is not influenced by overloads or stroke limitations. Likewise and according to the characteristics of the asynchronous motors, mains voltage fluctuations have minimum influence on the force or reaction time.

MATERIALS

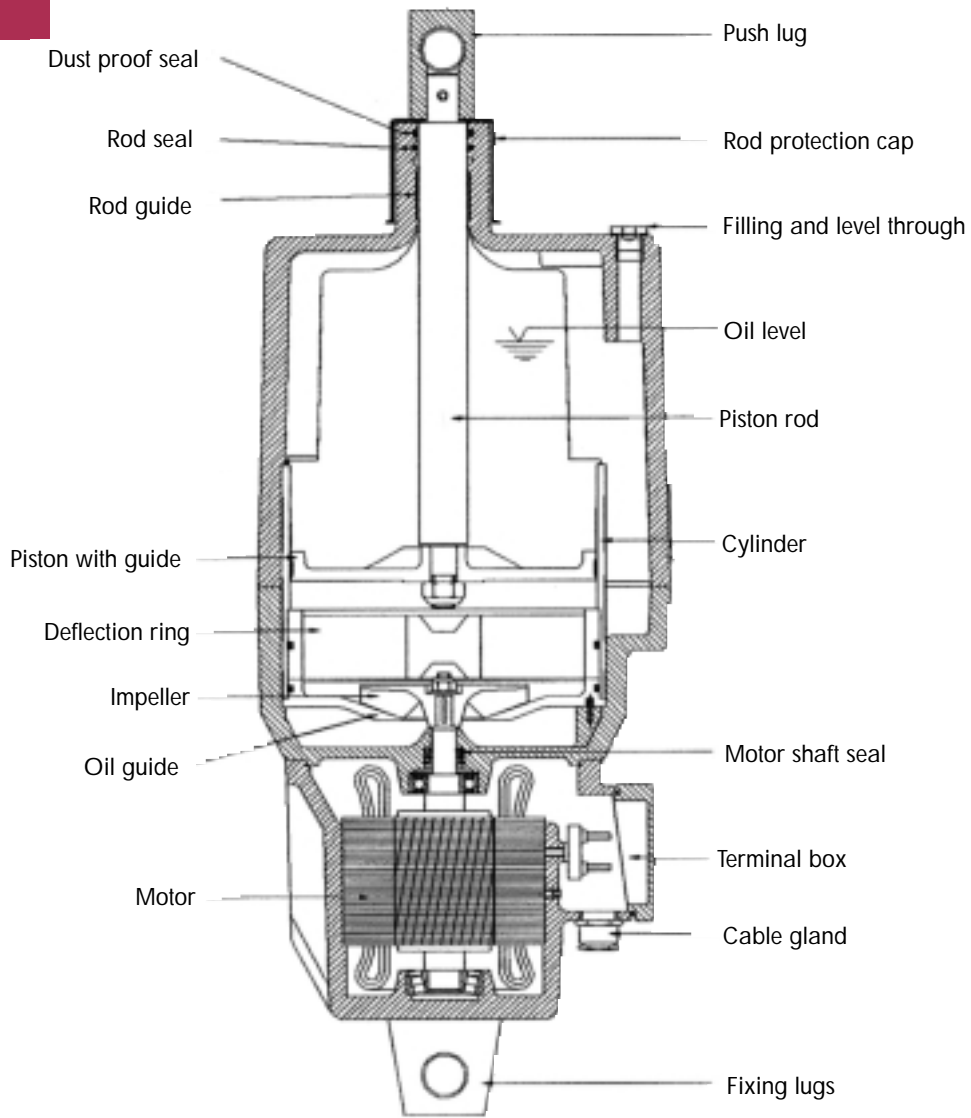
Enclosure: Aluminium cast

Impeller: Aluminium cast

Piston: GGG-40

Rod: Chrome and rectified steel

DESIGN



TURBEL SECTION VIEW WITHOUT VALVES

TECHNICAL DATA

TYPE	FORCE N	STROKE mm.	SPRING FOR- CE TYPE C N (1)	CURRENT CONSUMPTION AT 400 V.-50 Hz. A (2)	POWER CONSUMPTION W (2)	OIL VOLUME L	WEIGHT Kg.
TH-255	250	50	210	0,40	175	1.65	13
TH-356	350	60	290	0,60	210	2.40	17
TH-506	500	60	450	0,65	260	3.40	19
TH-512	500	120	--	0,65	260	3.50	20
TH-806	800	60	850	0,75	350	3.80	20
TH-812	800	120	--	0,75	350	3.90	21
TH-1306	1300	60	1250	1,10	430	9.20	41
TH-1312	1300	120	--	1,10	430	9.20	43
TH-2006	2000	60	2000	1,25	560	9.20	41
TH-2012	2000	120	--	1,25	560	9.20	43
TH-3006	3000	60	2700	1,50	720	9.20	42
TH-3012	3000	120	--	1,50	720	9.20	44

(1) The spring force values, only in the models type "C" are with 20 mm. stroke.

(2) Current and power values are 20°C room temperature and after some operations.

They are values at end piston position. During the travel the current increases.

These values increase at low temperatures.

MECHANICAL DESIGN

Mounting position

- Vertical with the piston rod up.
 - Horizontal and intermediate positions with name plate up (*).
 - Side inclination up to 45°.
- (*) The models with 120 mm. stroke only vertical position.

Base positions

- The motor housing with the fastening lugs may rotate in four positions at 90°C.
- This operation must be made at ANTEC factory. Indicate when ordering.
- The upper lug of the piston rod has not definite position: it's rotatable.

Hydraulic oil

Ambient T^a range

- -25°C to 50°C.
- Above 50°C.
- Under -25°C.

Type of fluid

- HL10-DIN 51524 Pte.1.
- Special: Consult.
- Special: Consult.
- HL10 with heater.


Unless otherwise requested, Thrusters are supplied with fluid for the first T^a range.

Painting

- Synthetic enamel with Aliphatic Polyurethane base, impact and scratch resistant.
- Standard colour: RAL 3005.
- Total thickness: 50 m.
- Other types of enamel or colour available.

ELECTRICAL DESIGN

Voltages and frequencies

- Standard: 230/400 V. 50 Hz. 3 phases.
- Available: All range of voltages and frequencies up to 700 V. With no extra charge.
- Connection at factory in .

Motor

- Asynchronous motors AC 3 phases, 2 poles acc. CEI-34/1.
- Insulation class F.

Terminal Box

- Terminal board of 6 or 9 poles.
- Live terminals: Screws M4.
- Terminal for protection conductor: Screw M5.
- Entrance by gland PG16 for cable up to 4 x 2,5 mm²
- Protection class IP65.

Service

- Continuous service S1 (100%)
- Intermittent service S3 (60% ED) max. 1800 cycles/h.
- For environment temperature above 40°C. Consult.

Circuit Breaker

When the TURBEL is protected by circuit breaker, this should be set at twice of the nominal current in each case.

OPTIONS

Inner Spring (C)

The TURBEL may incorporate an inner spring set to provide the necessary braking force. The maximum values of this force are in the Technical Data Table and are for about 1/3 of the lifting stroke.

There are available smaller forces to ensure the piston return. Consult.

Limit Switches

To signal electrically the extreme positions of the TURBEL stroke, inductive or mechanical limit switches are available.

Retard Valves

The TURBEL may incorporate retard valves for ascent (VA) and/or descend (VD). They allow, with half a turn of the valve gear, to delay the stroke time up to about 20 times.

Even with the valve totally open, the times are increased about 30% respect to devices without them.

Quick Descend

The descend time depends on the opposite force. If necessary, it may be reduced by a capacitor set in parallel with the motor windings, or short circuiting the winding by means of a proper contactor. Consult.

Heater

A heater may be fitted inside the terminal box for low temperatures or for avoiding moist condensations. This heater must be fed separately than the motor.

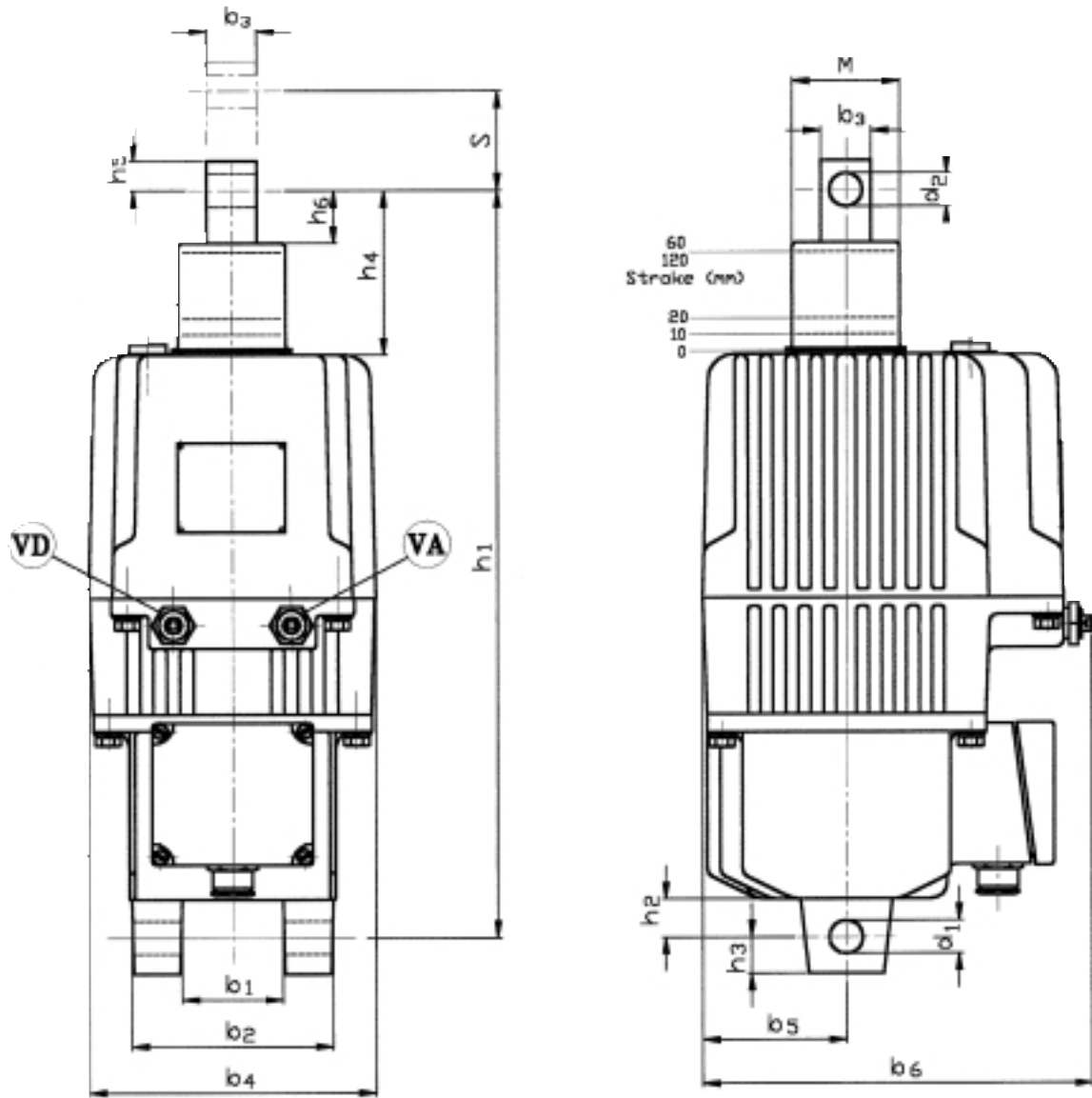
DIP (Design)

ANTEC have available the DIP design (Dust Ignition Proof) for atmospheres of dust explosion. Dimensions and characteristics are the same than standard design.

EX Design

ANTEC have available the Ex design for atmospheres of explosive gases. Characteristics are the same than standard design but dimensions are different. Consult.

DIMENSIONS



VD -DESCENT Valve

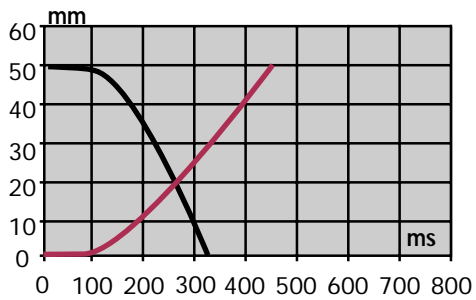
VA -ASCENT Valve

D I M E N S I O N S																
TYPE	S	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	d ₁	d ₂	h ₁	h ₂	h ₃	h ₄	h ₅	h ₆	M
TH-255	50	40	80	20	160	80	215	16	12	286	20	16	23	12	--	--
TH-356	60	40	80	25	160	80	215	16	16	370	20	16	36	15	--	--
TH-506	60	60	120	30	171	85	231	20	20	435	23	22	100	18	32	70
TH-512	120	60	120	30	171	85	231	20	20	515	23	22	160	18	32	70
TH-806	60	60	120	30	171	85	231	20	20	450	23	22	100	18	32	70
TH-812	120	60	120	30	171	85	231	20	20	530	23	22	175	18	32	70
TH-1306	60	40	90	40	230	115	272	25	25	645	35	25	117	25	44	70
TH-1312	120	40	90	40	230	115	272	25	25	705	35	25	177	25	44	70
TH-2006	60	40	90	40	230	115	272	25	25	645	35	25	117	25	44	70
TH-2012	120	40	90	40	230	115	272	25	25	705	35	25	177	25	44	70
TH-3006	60	40	90	40	230	115	272	25	25	645	35	25	117	25	44	70
TH-3012	120	40	90	40	230	115	272	25	25	705	35	25	177	25	44	70

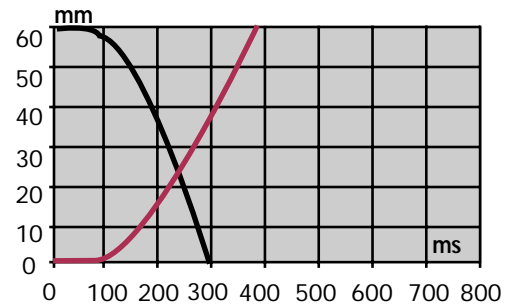
- For easier setting and checking, the rod cap is marked (models TH-506 to TH-3012)

STROKE - TIME DIAGRAMMS

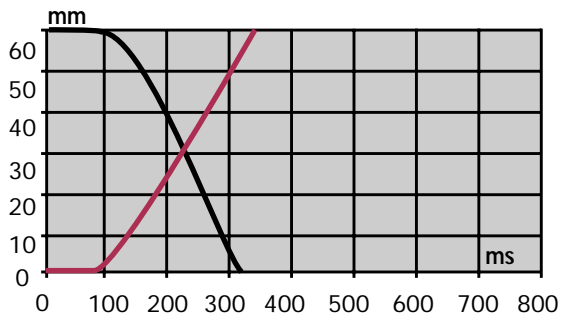
TH-255



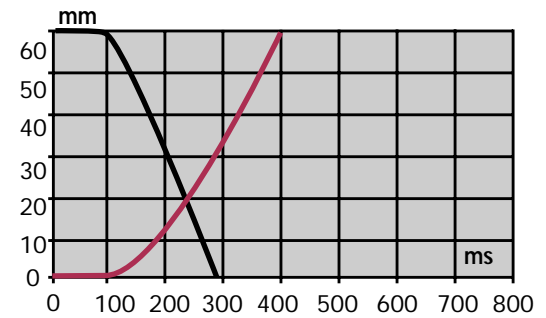
TH-356



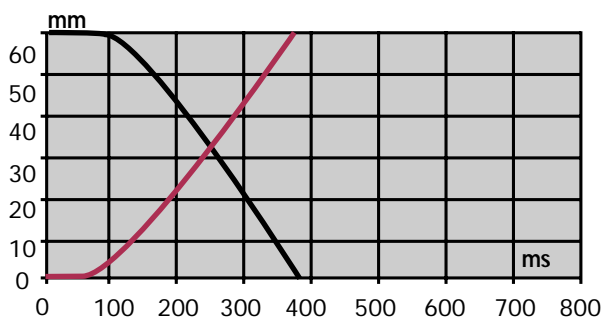
TH-506



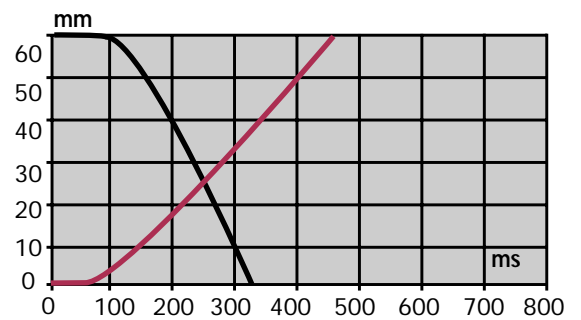
TH-806



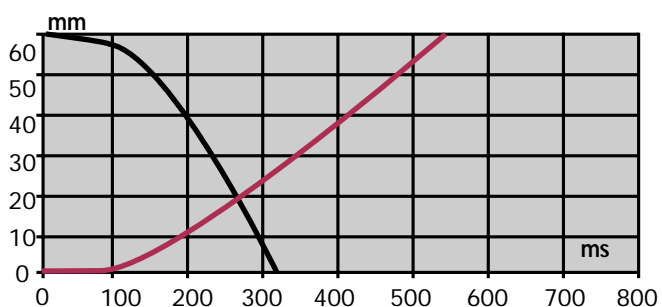
TH-1306



TH-2006



TH-3006

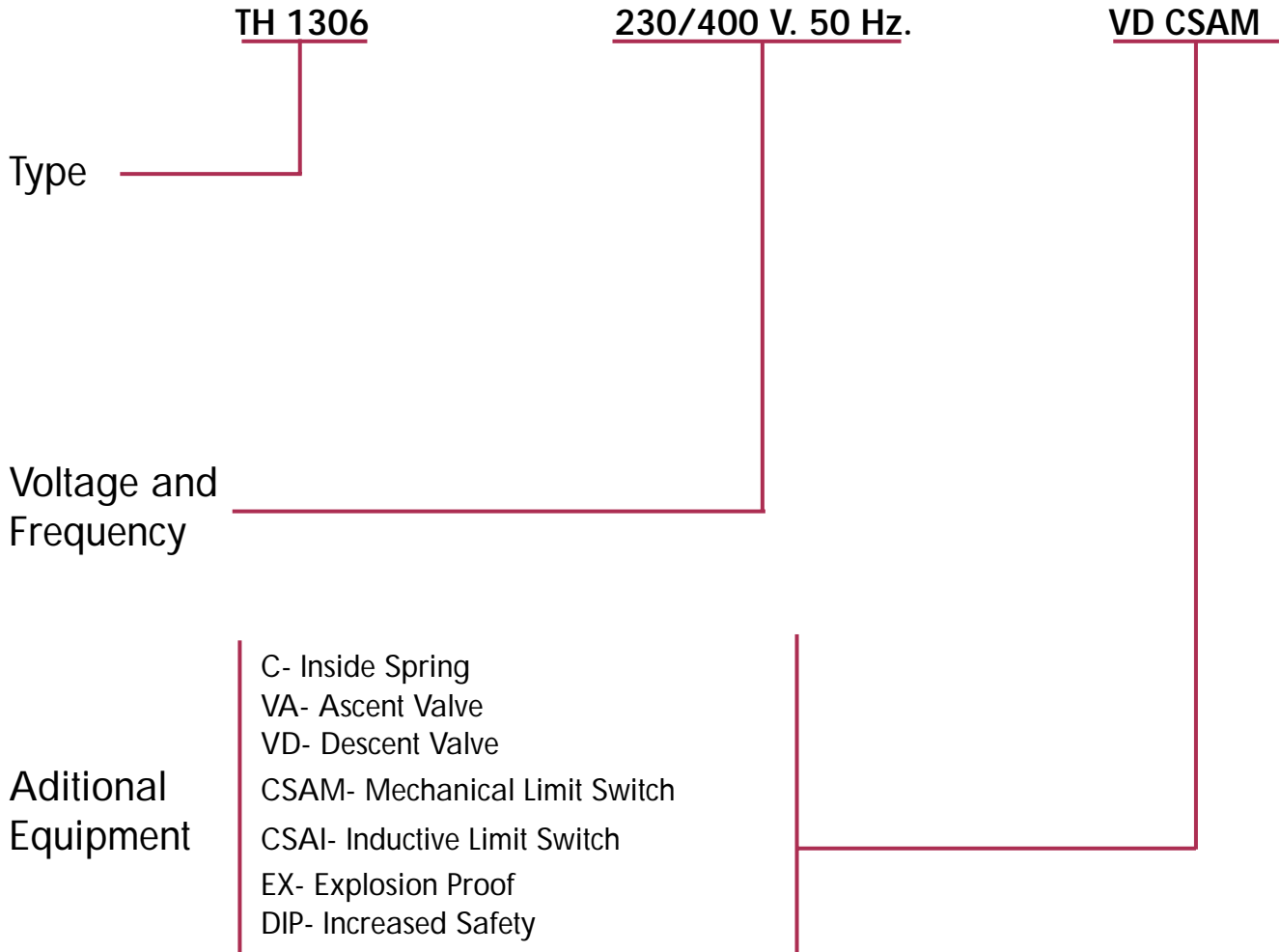


— Lifting
— Lowering

Diagrams taken under nominal load at 20°C. operating temperatura of units.

HOW TO ORDER

EXAMPLE



Other specifications or equipments such as special painting, heater, etc. should be indicated separately.

GUARANTEE

- Acceptance Certificate UNE EN 10204.
- 100% serial test including 24 hours running and functional test with documentation of all data.
- 18 months warranty.