

ARIVENT ITALIANA
S.R.L.

Via Napoli, 45 - 20030 BOVISIO M. (MI) - Tel. 0362 590736 - Fax 0362 593360

Cap. Soc. € 50.960,00
Part. IVA 00748610961
Cod. Fisc. 03331410163
C.C.I.A.A. Milano 951510
Reg. Trib. Monza 12972

VENTILATORI CENTRIFUGHI E ASSIALI

TESTING CERTIFICATE N. 917

DATE, 20/12/2010

CUSTOMER: DESMET BALLESTRA S.P.A.

ORDER: 101613 - JOB 1E35Z ITEM: 63K1

CONFIRMATION: 135.10/A

FAN TYPE: PF 17/7/A CLASS: II

ARRANGEMENT: 4 DISCHARGE POSITION: RO 3

CHARACTERISTICS

CAPACITY: 2.500 mc/h at 55°C

STATIC PRESSURE: 200 mm at 55°C

TOTAL PRESSURE: 220 mm at 55°C

VELOCITY: 2.900/1'

ABSORBED POWER: 2 Kw. at 55°C

MOTOR PULLEY: FAN PULLEY: BELTS:

SUPPORTS: BEARINGS:

MOTOR

TYPE: BROOK-TDA 100L RATED AMP: 6,3

KW: 3 TESTING AMP: 2,5

POLES: 2 STARTING AMP: 35,3

RPM: 2.973 VOLT/HZ: 220/380/50

ARIVENT ITALIANA s.r.l.

VENTILATORI CENTRIFUGHI E ASSIALI

TESTING CERTIFICATE N. 918

DATE, 20/12/2010

CUSTOMER: DESMET BALLESTRA S.P.A.

ORDER: 101613 - JOB 1E35Z ITEM: 64K1

CONFIRMATION: 135.10/B

FAN TYPE: GPR 26 CLASS: III

ARRANGEMENT: 1 DISCHARGE POSITION: RA 1

CHARACTERISTICS

CAPACITY: 20.000 mc/h at 35°C

STATIC PRESSURE: 250 mm at 35°C

TOTAL PRESSURE: 266 mm at 35°C

VELOCITY: 2.110/1'

ABSORBED POWER: 17,9 Kw. at 35°C

MOTOR PULLEY: 250x3SPB FAN PULLEY: 170x3SPB BELTS: N.3 SPB 2500

SUPPORTS: ENBLOCK OMB 50CV BEARINGS:

MOTOR

TYPE: BROOK-B-DF180LA RATED AMP: 39,9

KW: 22 TESTING AMP: 19

POLES: 4 STARTING AMP: -

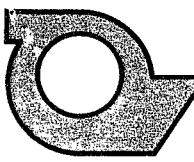
RPM: 2.180 VOLT/HZ: 400/690/50



ARIVENT ITALIANA S.r.l.



Sonni



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Reg. Trib. Monza 12972

VENTILATORI CENTRIFUGHI E ASSIALI

TESTING CERTIFICATE N. 919

DATE, 20/12/2010

CUSTOMER: DESMET BALLESTRA S.P.A.

ORDER: 101613 - JOB 1E35Z **ITEM:** 64K2

CONFIRMATION: 135.10/C

FAN TYPE: GPR 64 **CLASS:** III

ARRANGEMENT: 1 **DISCHARGE POSITION:** RA 1

CHARACTERISTICS

CAPACITY: 123.600 mc/h at 120°C

STATIC PRESSURE: 280 mm at 120°C

TOTAL PRESSURE: 294 mm at 120°C

VELOCITY: 960/1'

ABSORBED POWER: 116,4 Kw. at 120°C

MOTOR PULLEY: 355x8SPC **FAN PULLEY:** 560x8SPC **BELTS:** N.8 SPC 5600

SUPPORTS: N.2 SNL524 TA **BEARINGS:** N.2 22224EK + H3124

MOTOR

TYPE: BROOK-TDF 315L4 **RATED AMP:** 360

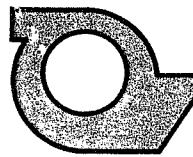
KW: 200 **TESTING AMP:** 43

POLES: 4 **STARTING AMP:** -

RPM: 1.485 **VOLT/HZ:** 400/690/50

N.B. RPM RILEVATI 650 CON MOTORE DI PROVA

ARIVENT ITALIANA s.r.l.



VENTILATORI CENTRIFUGHI E ASSIALI

TESTING CERTIFICATE N. 920

DATE, 20/12/2010

CUSTOMER: DESMET BALLESTRA S.P.A.

ORDER: 101613 - JOB 1E35Z ITEM: 64K3

CONFIRMATION: 135.10/D

FAN TYPE: SH 190 CLASS: IV

ARRANGEMENT: 1 DISCHARGE POSITION: RO 1

CHARACTERISTICS

CAPACITY: 170.000 mc/h at 110°C

STATIC PRESSURE: 300 mm at 110°C

TOTAL PRESSURE: 331 mm at 110°C

VELOCITY: 910/1'

ABSORBED POWER: 180,3 Kw. at 110°C

MOTOR PULLEY: 400x8SPC FAN PULLEY: 630x8SPC BELTS: N.8 SPC 6700

SUPPORTS: N.2 SNL528 TA BEARINGS: N.2 23228CCK C3 + H2328

MOTOR

TYPE: BROOK-TDF 355M RATED AMP: 444

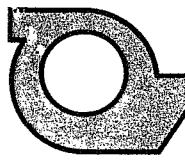
KW: 250 TESTING AMP: 58

POLES: 4 STARTING AMP: -

RPM: 1.490 VOLT/HZ: 400/690/50

N.B. RPM RILEVATI 580 CON MOTORE DI PROVA

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VENTILATORI CENTRIFUGHI E ASSIALI

TESTING CERTIFICATE N. 921

DATE, 20/12/2010

CUSTOMER: DESMET BALLESTRA S.P.A.

ORDER: 101613 - JOB 1E35Z ITEM: 64K4

CONFIRMATION: 135.10/E

FAN TYPE: GPR 48 CLASS: III

ARRANGEMENT: 1 DISCHARGE POSITION: RA 1

CHARACTERISTICS

CAPACITY: 65.500 mc/h at 45°C

STATIC PRESSURE: 350 mm at 40°C

TOTAL PRESSURE: 366 mm at 40°C

VELOCITY: 1.300/1'

ABSORBED POWER: 76,9 Kw. at 45°C

MOTOR PULLEY: 300x6SPC FAN PULLEY: 335x6SPC BELTS: N.6 SPC 4500

SUPPORTS: N.2 SNL519 TA BEARINGS: N.2 22219 EK + H319

MOTOR

TYPE: BROOK-TDF 315S4 RATED AMP: 78,5

KW: 110 TESTING AMP: 36,5

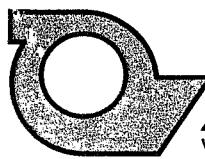
POLES: 4 STARTING AMP: -

RPM: 1.100 VOLT/HZ: 400/690/50

N.B. COLLAUDO ESEGUITO CON MOTORE DI PROVA: 45 KW - 76,5 A

ARIVENT ITALIANA S.R.L.

Henri



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VENTILATORI CENTRIFUGHI E ASSIALI

TESTING CERTIFICATE N. 922

DATE, 20/12/2010

CUSTOMER: DESMET BALLESTRA S.P.A.

ORDER: 101613 - JOB 1E35Z ITEM: 65K1

CONFIRMATION: 135.10/F

FAN TYPE: RH 21 CLASS: II

ARRANGEMENT: 1 DISCHARGE POSITION: RO 1

CHARACTERISTICS

CAPACITY: 10.500 mc/h at 35°C

STATIC PRESSURE: 350 mm at 35°C

TOTAL PRESSURE: 398 mm at 35°C

VELOCITY: 2.840/1'

ABSORBED POWER: 14,1 Kw. at 35°C

MOTOR PULLEY: 150x3SPA FAN PULLEY: 150x3SPA BELTS: N.3 SPA 2120

SUPPORTS: ENBLOCK OMB 45N BEARINGS:

MOTOR

TYPE: BROOK-B-DA160L RATED AMP: 33,2

KW: 18,5 TESTING AMP: 14,9

POLES: 2 STARTING AMP: -

RPM: 2.970 VOLT/HZ: 400/690/50

ARIVENT ITALIANA S.r.l.

Name



BALANCING CERTIFICATE N. 1347

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 63K1
OUR CONFIRMATION	135.10/A
OBJECT	N. 1 IMPELLER TYPE PF 17/7/A

The impeller in object is statically and dynamically balanced with electronic equipment in accordance with ISO n. 1940, class Q = 2,5.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL
A handwritten signature in black ink, appearing to read "Scattolon".



BALANCING CERTIFICATE N. 1348

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K1
OUR CONFIRMATION	135.10/B
OBJECT	N. 1 IMPELLER TYPE GPR 26

The impeller in object is statically and dynamically balanced with electronic equipment in accordance with ISO n. 1940, class Q = 2,5.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL
A handwritten signature in black ink, appearing to read 'S. Scattolon' or a similar name, positioned above the company name.



BALANCING CERTIFICATE N. 1349

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K2
OUR CONFIRMATION	135.10/C
OBJECT	N. 1 IMPELLER TYPE GPR 64

The impeller in object is statically and dynamically balanced with electronic equipment in accordance with ISO n. 1940, class Q = 2,5.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL
A handwritten signature in black ink, appearing to read "Scattolon".



BALANCING CERTIFICATE N. 1350

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K3
OUR CONFIRMATION	135.10/D
OBJECT	N. 1 IMPELLER TYPE SH 190

The impeller in object is statically and dynamically balanced with electronic equipment in accordance with ISO n. 1940, class Q = 2,5.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL
A handwritten signature in black ink, appearing to read "ARIVENT ITALIANA SRL" followed by a name.



BALANCING CERTIFICATE N. 1351

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K4
OUR CONFIRMATION	135.10/E
OBJECT	N. 1 IMPELLER TYPE GPR 48

The impeller in object is statically and dynamically balanced with electronic equipment in accordance with ISO n. 1940, class Q = 2,5.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



BALANCING CERTIFICATE N. 1352

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z – ITEM 65K1

OUR CONFIRMATION 135.10/F

OBJECT N. 1 IMPELLER TYPE RH 21

The impeller in object is statically and dynamically balanced with electronic equipment in accordance with ISO n. 1940, class Q = 2,5.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL


**MANUFACTURER'S DECLARATION N. 1446****In accordance with annex II B of EEC Machinery Directive 2006/42/CE**We **ARIVENT ITALIANA S.R.L.**

Via Napoli, 45

20030 - BOVISIO MASCIAGO

declare under our responsibility that the nearly machine

DESCRIPTION AND TYPE **Centrifugal fan type PF 17/7/A****MANUFACTURING YEAR** **2010****YOUR ORDER** **101613 – JOB 1E35Z – ITEM 63K1****OUR CONFIRMATION** **135.10/A**

is in accordance with EEC Directive 2006/42/CE and is intended to be incorporated into a machine/plant or to be assembled with other machines/plants to obtain a machine/plant subject to the above mentioned Machinery Directive. Therefore it is forbidden to start it before the machine/plant where it will be built in has been declared to be conforming to the EEC Directive 2006/42/CE.

NOTE: It is forbidden the running of this machine if it is not canalized as for contract.

The person authorized to compile the technical file is:

TAGLIABUE SONIA - Via Napoli, 45 - 20030 - BOVISIO MASCIAGO - MB

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL

**MANUFACTURER'S DECLARATION N. 1447****In accordance with annex IIB of EEC Machinery Directive 2006/42/CE**We **ARIVENT ITALIANA S.R.L.**

Via Napoli, 45

20030 - BOVISIO MASCIAGO

declare under our responsibility that the nearly machine

DESCRIPTION AND TYPE **Centrifugal fan type GPR 26****MANUFACTURING YEAR** **2010****YOUR ORDER** **101613 – JOB 1E35Z – ITEM 64K1****OUR CONFIRMATION** **135.10/B**

is in accordance with EEC Directive 2006/42/CE and is intended to be incorporated into a machine/plant or to be assembled with other machines/plants to obtain a machine/plant subject to the above mentioned Machinery Directive. Therefore it is forbidden to start it before the machine/plant where it will be built in has been declared to be conforming to the EEC Directive 2006/42/CE.

NOTE: It is forbidden the running of this machine if it is not canalized as for contract.

The person authorized to compile the technical file is:

TAGLIABUE SONIA - Via Napoli, 45 - 20030 - BOVISIO MASCIAGO - MB

Bovisio Masciago, December 10, 2010

 **ARIVENT ITALIANA SRL**

**MANUFACTURER'S DECLARATION N. 1448****In accordance with annex II B of EEC Machinery Directive 2006/42/CE**We **ARIVENT ITALIANA S.R.L.**

Via Napoli, 45

20030 - BOVISIO MASCIAGO

declare under our responsibility that the nearly machine

DESCRIPTION AND TYPE **Centrifugal fan type GPR 64****MANUFACTURING YEAR** **2010****YOUR ORDER** **101613 – JOB 1E35Z – ITEM 64K2****OUR CONFIRMATION** **135.10/C**

is in accordance with EEC Directive 2006/42/CE and is intended to be incorporated into a machine/plant or to be assembled with other machines/plants to obtain a machine/plant subject to the above mentioned Machinery Directive. Therefore it is forbidden to start it before the machine/plant where it will be built in has been declared to be conforming to the EEC Directive 2006/42/CE.

NOTE: It is forbidden the running of this machine if it is not canalized as for contract.

The person authorized to compile the technical file is:

TAGLIABUE SONIA - Via Napoli, 45 - 20030 - BOVISIO MASCIAGO - MB

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL

**MANUFACTURER'S DECLARATION N. 1449****In accordance with annex IIb of EEC Machinery Directive 2006/42/CE**We **ARIVENT ITALIANA S.R.L.**

Via Napoli, 45

20030 - BOVISIO MASCIAGO

declare under our responsibility that the nearly machine

DESCRIPTION AND TYPE **Centrifugal fan type SH 190****MANUFACTURING YEAR** **2010****YOUR ORDER** **101613 – JOB 1E35Z – ITEM 64K3****OUR CONFIRMATION** **135.10/D**

is in accordance with EEC Directive 2006/42/CE and is intended to be incorporated into a machine/plant or to be assembled with other machines/plants to obtain a machine/plant subject to the above mentioned Machinery Directive. Therefore it is forbidden to start it before the machine/plant where it will be built in has been declared to be conforming to the EEC Directive 2006/42/CE.

NOTE: It is forbidden the running of this machine if it is not canalized as for contract.

The person authorized to compile the technical file is:

TAGLIABUE SONIA - Via Napoli, 45 - 20030 - BOVISIO MASCIAGO - MB

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL


**MANUFACTURER'S DECLARATION N. 1450****In accordance with annex II B of EEC Machinery Directive 2006/42/CE**We **ARIVENT ITALIANA S.R.L.**

Via Napoli, 45

20030 - BOVISIO MASCIAGO

declare under our responsibility that the nearly machine

DESCRIPTION AND TYPE **Centrifugal fan type GPR 48****MANUFACTURING YEAR** **2010****YOUR ORDER** **101613 – JOB 1E35Z – ITEM 64K4****OUR CONFIRMATION** **135.10/E**

is in accordance with EEC Directive 2006/42/CE and is intended to be incorporated into a machine/plant or to be assembled with other machines/plants to obtain a machine/plant subject to the above mentioned Machinery Directive. Therefore it is forbidden to start it before the machine/plant where it will be built in has been declared to be conforming to the EEC Directive 2006/42/CE.

NOTE: It is forbidden the running of this machine if it is not canalized as for contract.

The person authorized to compile the technical file is:

TAGLIABUE SONIA - Via Napoli, 45 - 20030 - BOVISIO MASCIAGO - MB

Bovisio Masciago, December 10, 2010

A handwritten signature in black ink, appearing to read 'ARIVENT ITALIANA SRL'.



MANUFACTURER'S DECLARATION N. 1451

In accordance with annex IIB of EEC Machinery Directive 2006/42/CE

We **ARIVENT ITALIANA S.R.L.**

Via Napoli, 45

20030 - BOVISIO MASCIAGO

declare under our responsibility that the nearly machine

DESCRIPTION AND TYPE Centrifugal fan type RH 21

MANUFACTURING YEAR 2010

YOUR ORDER 101613 – JOB 1E35Z – ITEM 65K1

OUR CONFIRMATION 135.10/F

is in accordance with EEC Directive 2006/42/CE and is intended to be incorporated into a machine/plant or to be assembled with other machines/plants to obtain a machine/plant subject to the above mentioned Machinery Directive. Therefore it is forbidden to start it before the machine/plant where it will be built in has been declared to be conforming to the EEC Directive 2006/42/CE.

NOTE: It is forbidden the running of this machine if it is not canalized as for contract.

The person authorized to compile the technical file is:

TAGLIABUE SONIA - Via Napoli, 45 - 20030 - BOVISIO MASCIAGO - MB

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



PAINTING CERTIFICATE N. 917

CUSTOMER DESMET BALLESTRA S.P.A.
YOUR ORDER/JOB 101613 – JOB 1E35Z
ITEM 63K1
OUR CONFIRMATION 135.10/A
DESCRIPTION AND TYPE Centrifugal fan type PF 17/7/A

PREPARATION OF INTERNAL AND EXTERNAL SURFACES:

Washing, grease removing and mechanics cleaning.

UNDERCOAT OF THE PARTS IN CARBON STEEL:

N. 1 coat of synthetic paint thickness 40 microns.

FINISHING OF THE PARTS IN CARBON STEEL:

N. 2 coats of synthetic paint RAL 7035 thickness 40 microns.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




PAINTING CERTIFICATE N. 918

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER/JOB	101613 – JOB 1E35Z
ITEM	64K1
OUR CONFIRMATION	135.10/B
DESCRIPTION AND TYPE	Centrifugal fan type GPR 26

PREPARATION OF INTERNAL AND EXTERNAL SURFACES:

Washing, grease removing and mechanics cleaning.

UNDERCOAT:

N. 1 coat of synthetic paint thickness 40 microns.

FINISHING:

N. 2 coats of synthetic paint RAL 7035 thickness 40 microns.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL

Scarsella



PAINTING CERTIFICATE N. 919

CUSTOMER DESMET BALLESTRA S.P.A.
YOUR ORDER/JOB 101613 – JOB 1E35Z
ITEM 64K2
OUR CONFIRMATION 135.10/C
DESCRIPTION AND TYPE Centrifugal fan type GPR 64

PREPARATION OF INTERNAL AND EXTERNAL SURFACES:

Washing, grease removing and mechanics cleaning.

UNDERCOAT OF THE PARTS IN CARBON STEEL

N. 1 coat of synthetic paint thickness 40 microns.

FINISHING OF THE PARTS IN CARBON STEEL

N. 2 coats of synthetic paint RAL 7035 thickness 40 microns.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




PAINTING CERTIFICATE N. 920

CUSTOMER DESMET BALLESTRA S.P.A.
YOUR ORDER/JOB 101613 – JOB 1E35Z
ITEM 64K3
OUR CONFIRMATION 135.10/D
DESCRIPTION AND TYPE Centrifugal fan type SH 190

PREPARATION OF INTERNAL AND EXTERNAL SURFACES:

Washing, grease removing and mechanics cleaning.

UNDERCOAT:

N. 1 coat of synthetic paint thickness 40 microns.

FINISHING:

N. 2 coats of synthetic paint RAL 7035 thickness 40 microns.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL

A handwritten signature in black ink, appearing to read 'Bartolini' or a similar name, positioned below the company's name.



PAINTING CERTIFICATE N. 921

CUSTOMER DESMET BALLESTRA S.P.A.
YOUR ORDER/JOB 101613 – JOB 1E35Z
ITEM 64K4
OUR CONFIRMATION 135.10/E
DESCRIPTION AND TYPE Centrifugal fan type GPR 48

PREPARATION OF INTERNAL AND EXTERNAL SURFACES:

Washing, grease removing and mechanics cleaning.

UNDERCOAT:

N. 1 coat of synthetic paint thickness 40 microns.

FINISHING:

N. 2 coats of synthetic paint RAL 7035 thickness 40 microns.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




PAINTING CERTIFICATE N. 922

CUSTOMER DESMET BALLESTRA S.P.A.
YOUR ORDER/JOB 101613 – JOB 1E35Z
ITEM 65K1
OUR CONFIRMATION 135.10/F
DESCRIPTION AND TYPE Centrifugal fan type RH 21

PREPARATION OF INTERNAL AND EXTERNAL SURFACES:

Washing, grease removing and mechanics cleaning.

UNDERCOAT:

N. 1 coat of synthetic paint thickness 40 microns.

FINISHING:

N. 2 coats of synthetic paint RAL 7035 thickness 40 microns.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




VIBRATIONS CERTIFICATE N. 905

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z – ITEM 63K1

OUR CONFIRMATION 135.10/A

CENTRIFUGAL FAN TYPE N. 1 PF 17/7/A

Fan vibrations according to ISO 10816 – 2.2 standard.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



VIBRATIONS CERTIFICATE N. 906

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K1
OUR CONFIRMATION	135.10/B
CENTRIFUGAL FAN TYPE	N. 1 GPR 26

Fan vibrations according to ISO 10816 – 2.2 standard.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



VIBRATIONS CERTIFICATE N. 907

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K2
OUR CONFIRMATION	135.10/C
CENTRIFUGAL FAN TYPE	N. 1 GPR 64

Fan vibrations according to ISO 10816 – 2.2 standard.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



VIBRATIONS CERTIFICATE N. 908

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K3
OUR CONFIRMATION	135.10/D
CENTRIFUGAL FAN TYPE	N. 1 SH 190

Fan vibrations according to ISO 10816 – 2.2 standard.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL
A handwritten signature in black ink, appearing to read "Gianni Saccoccia".



VIBRATIONS CERTIFICATE N. 909

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z – ITEM 64K4
OUR CONFIRMATION	135.10/E
CENTRIFUGAL FAN TYPE	N. 1 GPR 48

Fan vibrations according to ISO 10816 – 2.2 standard.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




VIBRATIONS CERTIFICATE N. 910

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z – ITEM 65K1

OUR CONFIRMATION 135.10/F

CENTRIFUGAL FAN TYPE N. 1 RH 21

Fan vibrations according to ISO 10816 – 2.2 standard.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



SOUND LEVEL CERTIFICATE N. 911

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z - ITEM 63K1

OUR CONFIRMATION 135.10/A

CENTRIFUGAL FAN TYPE PF 17/7/A

SOUND PRESSURE LEVEL 78 db(A) + 3 tolerance

The sound level value should be read at a distance of 1 meter from the fan in free field according to **UNI ISO 3746 - 2.2** standard.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL

Scime



SOUND LEVEL CERTIFICATE N. 912

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z - ITEM 64K1

OUR CONFIRMATION 135.10/B

CENTRIFUGAL FAN TYPE GPR 26

SOUND PRESSURE LEVEL 82 db(A) + 3 tolerance

The sound level value should be read at a distance of 1 meter from the fan in free field according to **UNI ISO 3746 - 2.2** standard.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



SOUND LEVEL CERTIFICATE N. 913

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z - ITEM 64K2

OUR CONFIRMATION 135.10/C

CENTRIFUGAL FAN TYPE GPR 64

SOUND PRESSURE LEVEL 88 db(A) + 3 tolerance

The sound level value should be read at a distance of 1 meter from the fan in free field according to **UNI ISO 3746 - 2.2** standard.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




SOUND LEVEL CERTIFICATE N. 914

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z - ITEM 64K3

OUR CONFIRMATION 135.10/D

CENTRIFUGAL FAN TYPE SH 190

SOUND PRESSURE LEVEL 92 db(A) + 3 tolerance

The sound level value should be read at a distance of 1 meter from the fan in free field according to **UNI ISO 3746 - 2.2** standard.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




SOUND LEVEL CERTIFICATE N. 915

CUSTOMER DESMET BALLESTRA S.P.A.

YOUR ORDER 101613 – JOB 1E35Z - ITEM 64K4

OUR CONFIRMATION 135.10/E

CENTRIFUGAL FAN TYPE GPR 48

SOUND PRESSURE LEVEL 88 db(A) + 3 tolerance

The sound level value should be read at a distance of 1 meter from the fan in free field according to **UNI ISO 3746 - 2.2** standard.

Bovisio Masciago, December 10, 2010

ARIVENT ITALIANA SRL




SOUND LEVEL CERTIFICATE N. 916

CUSTOMER	DESMET BALLESTRA S.P.A.
YOUR ORDER	101613 – JOB 1E35Z - ITEM 65K1
OUR CONFIRMATION	135.10/F
CENTRIFUGAL FAN TYPE	RH 21
SOUND PRESSURE LEVEL	82db(A) + 3 tolerance

The sound level value should be read at a distance of 1 meter from the fan in free field according to **UNI ISO 3746 - 2.2** standard.

Bovisio Masciago, December 10, 2010


ARIVENT ITALIANA SRL



TECHNICAL CARD

Your order	101613
Job	1E35Z - ITEM 63K1
Type	PF 17/7/A
Class	II
Arrangement	4
Discharge position	RO 3
Drawing	PF.10.0165
Accessories	Bolts in AISI and gaskets Shaft seal N.2 counterflanges in AISI 304 Drain connection Rubbers isolators type CSP
Design data	Capacity: 2.500 mc/h at 55°C Static pressure: 200 mm at 55°C Total pressure: 220 mm at 55°C Rpm: 2.900/1' Absorbed power: 2 Kw. at 55°C Electric motor of 3 Kw. - 2 poles - 50 Hz. - B 3



TECHNICAL CARD

Your order	101613
Job	1E35Z - ITEM 64K1
Type	GPR 26
Class	III
Arrangement	1
Discharge position	RA 1
Drawing	GPR.10.0186
Accessories	Bolts and gaskets Shaft seal N.2 counterflanges N. 2 flexible connections type 2C Inspection door Drain connection Shaft cooler Base frame Rubbers isolators type CSP Slide rails - V-belt drive Belt guard
Design data	Capacity: 20.000 mc/h at 35°C Static pressure: 250 mm at 35°C Total pressure: 266 mm at 35°C Rpm: 2.110/1' Absorbed power: 17,9 Kw. at 35°C Electric motor of 22 Kw. - 4 poles - 50 Hz. - B 3



TECHNICAL CARD

Your order	101613
Job	1E35Z - ITEM 64K2
Type	GPR 64
Class	III
Arrangement	1
Discharge position	RA 1
Drawing	GPR.10.0226
Accessories	<p>Casing insulation thickness 100 mm. by you</p> <p>Bolts in AISI and gaskets</p> <p>Shaft in C40</p> <p>Shaft seal</p> <p>N.2 counterflanges in AISI 304</p> <p>N. 2 flexible connections type 4C</p> <p>Insulated inspection door</p> <p>Drain connection</p> <p>Shaft cooler</p> <p>Base frame</p> <p>Rubbers isolators type CP</p> <p>Slide rails - V-belt drive</p> <p>Belt guard</p>
Design data	<p>Capacity: 123.600 mc/h at 120°C</p> <p>Static pressure: 280 mm at 120°C</p> <p>Total pressure: 294 mm at 120°C</p> <p>Rpm: 960/1'</p> <p>Absorbed power: 116,4 Kw. at 120°C</p> <p>Electric motor of 200 Kw. - 4 poles - 50 Hz. - B 3</p>



TECHNICAL CARD

Your order	101613
Job	1E35Z - ITEM 64K3
Type	SH 190
Class	IV
Arrangement	1
Discharge position	RO 1
Drawing	SH.10.0188
Accessories	Casing insulation thickness 100 mm. by you Bolts and gaskets Shaft seal N.2 counterflanges N. 2 flexible connections type 4C Insulated inspection door Drain connection Shaft cooler Base frame Rubbers isolators type CP Slide rails - V-belt drive Belt guard
Design data	Capacity: 170.000 mc/h at 110°C Static pressure: 300 mm at 110°C Total pressure: 331 mm at 110°C Rpm: 910/1' Absorbed power: 180,3 Kw. at 110°C Electric motor of 250 Kw. - 4 poles - 50 Hz. - B 3



TECHNICAL CARD

Your order	101613
Job	1E35Z - ITEM 64K4
Type	GPR 48
Class	III
Arrangement	1
Discharge position	RA 1
Drawing	GPR.10.0189
Accessories	Casing insulation thickness 100 mm. by you Bolts and gaskets Shaft seal N.2 counterflanges N. 2 flexible connections type 1C Insulated inspection door Drain connection Base frame Rubbers isolators type CP Slide rails - V-belt drive Belt guard
Design data	Capacity: 65.500 mc/h at 45°C Static pressure: 350 mm at 40°C Total pressure: 366 mm at 40°C Rpm: 1.300/1' Absorbed power: 76,9 Kw. at 45°C Electric motor of 110 Kw. - 4 poles - 50 Hz. - B 3



TECHNICAL CARD

Your order	101613
Job	1E35Z - ITEM 65K1
Type	RH 21
Class	II
Arrangement	1
Discharge position	RO 1
Drawing	RH.10.0170
Accessories	Bolts and gaskets Shaft seal N.2 counterflanges N. 2 flexible connections type 1C Inspection door Drain connection Base frame Rubbers isolators type CSP Slide rails - V-belt drive Belt guard
Design data	Capacity: 10.500 mc/h at 35°C Static pressure: 350 mm at 35°C Total pressure: 398 mm at 35°C Rpm: 2.840/1' Absorbed power: 14,1 Kw. at 35°C Electric motor of 18,5 Kw. - 2 poles - 50 Hz. - B 3

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DELLA PROPRIETÀ (CPM. 623)
A TEZI, LA PUBBLICAZIONE, LA RIPRODUZIONE
O ALTRIMENTI, SENZA AUTORIZZAZIONE SCRITTA
DELLA PROPRIETÀ (CPM. 623)

QUESTO DOCUMENTO È DI PROPRIETÀ DELLA
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A TEZI, LA PUBBLICAZIONE, LA RIPRODUZIONE
O ALTRIMENTI, SENZA AUTORIZZAZIONE SCRITTA
DELLA PROPRIETÀ (CPM. 623)

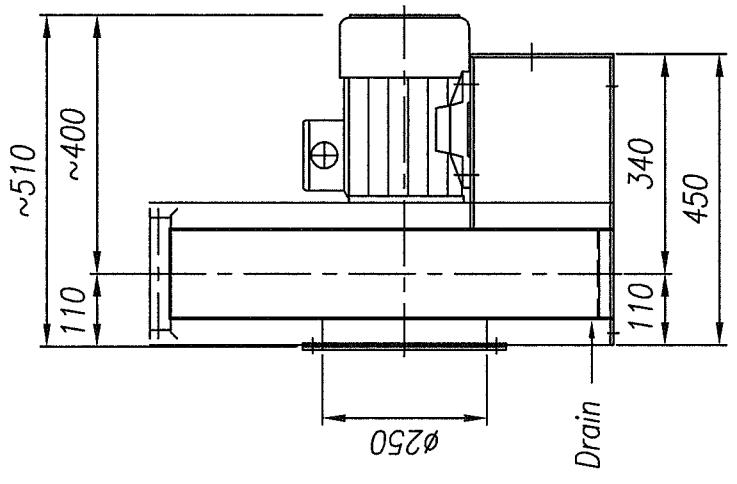
MOD. REV. DATA



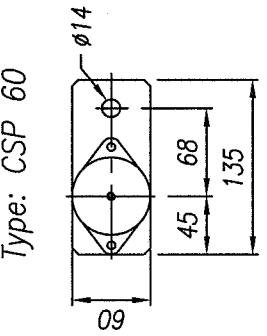
ARVENT ITALIANA

CODICI DI DISTRIBUZIONE
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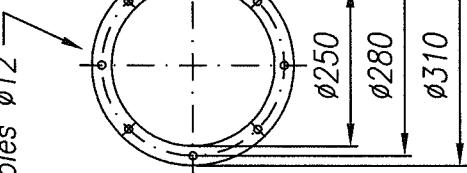
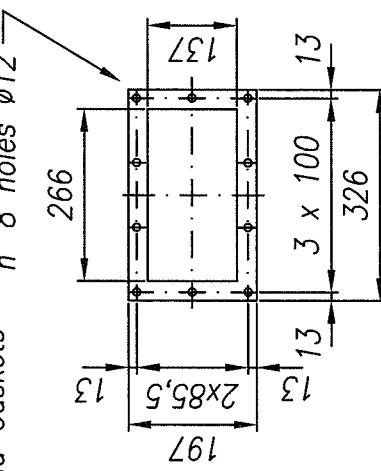
PF. 10.0165
FORMATO
A3
SHEET 1 OF 1
REV.



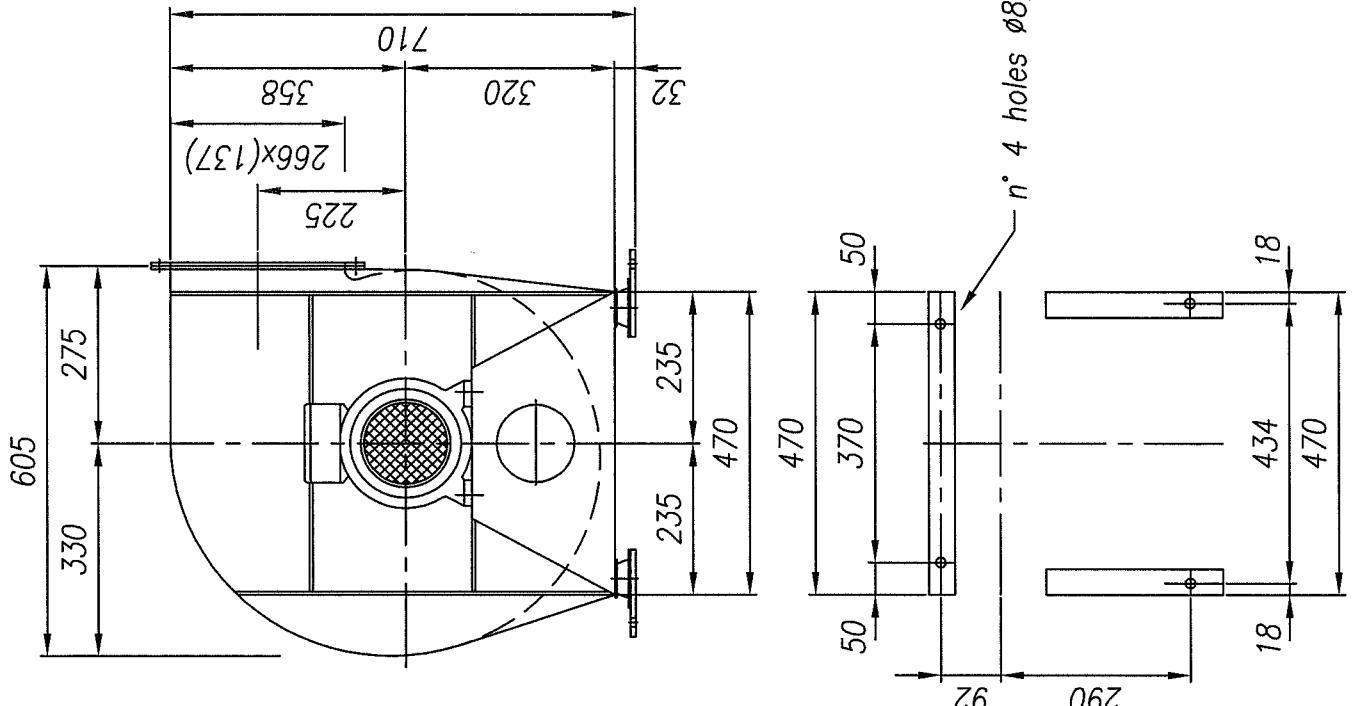
n° 4 Rubberisolators
Type: CSP 60



Counterflanges +
Bolts and Gaskets

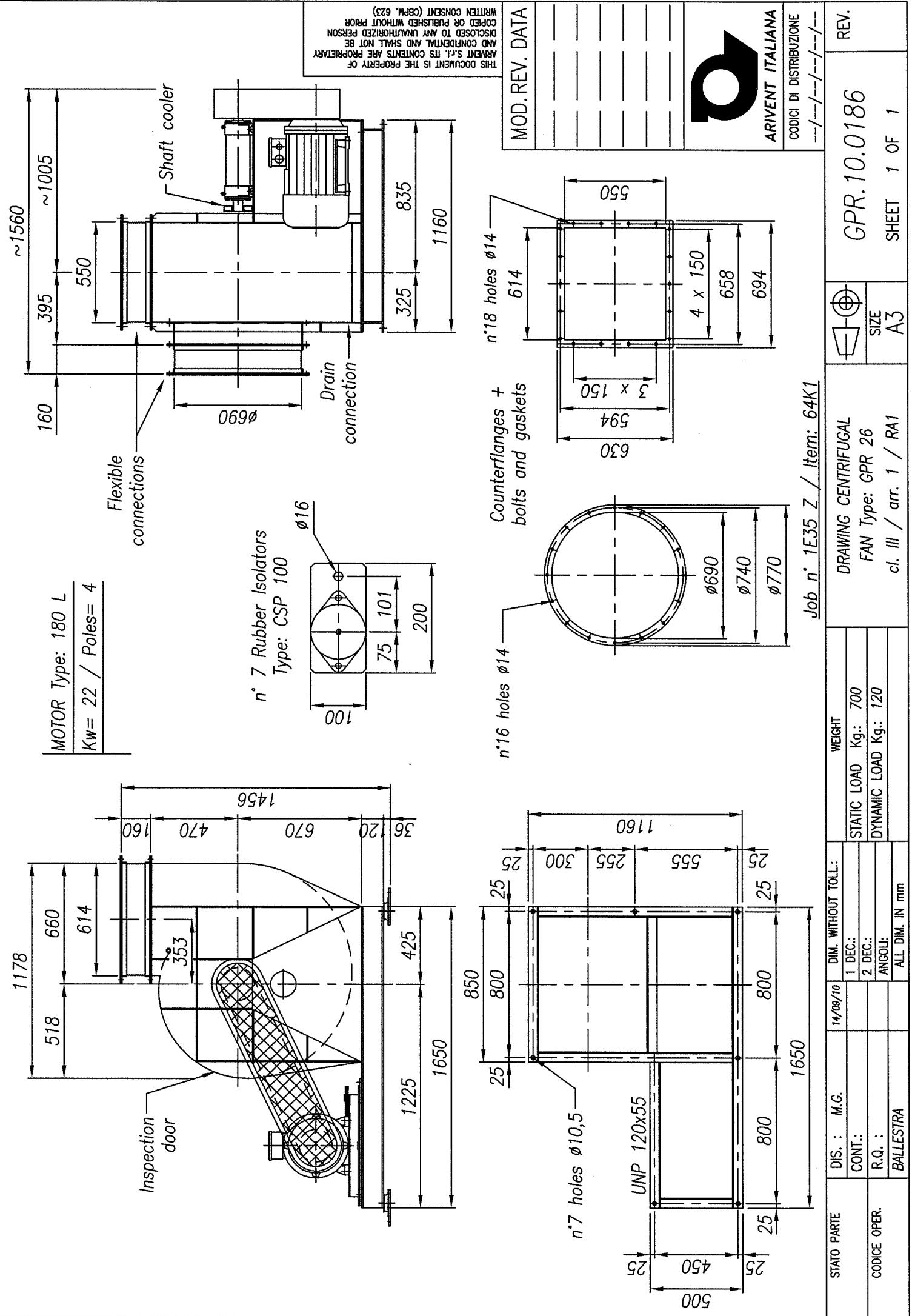


Your job n° 1E35 Z / Item: 63K1

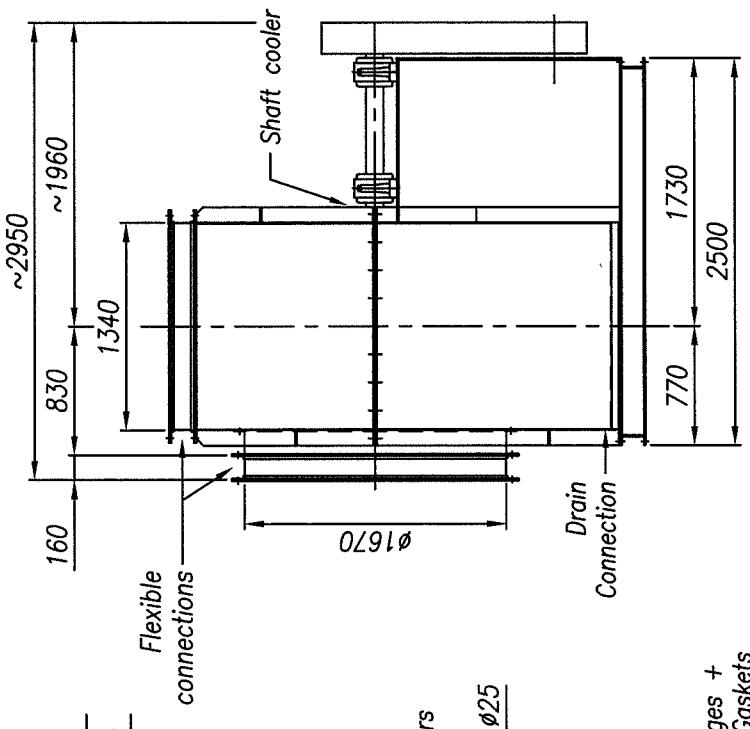


STATO PARTE	DIS. : S.R.	02/09/10	DIM. WITHOUT TOLL:	WEIGHT
CONT.:		1 DEC.:	STATIC LOAD Kg.: 80	
		2 DEC.:	DYNAMIC LOAD Kg.: 30	
R.Q. :		ANGOLI:		
BALLESTRA		ALL DIM. IN mm		

DRAWING CENTRIFUGAL
FAN Type: PF 17/7/A
cl. II / arr. 4 / R03

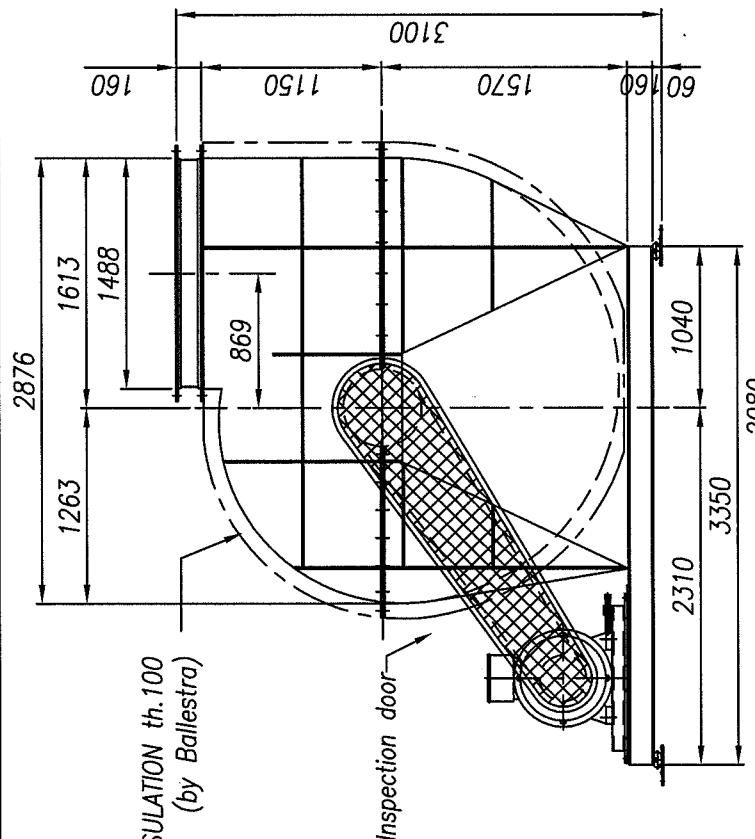


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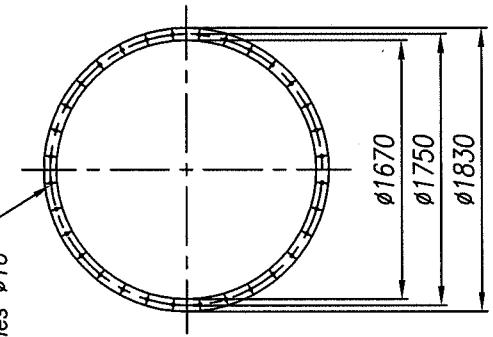
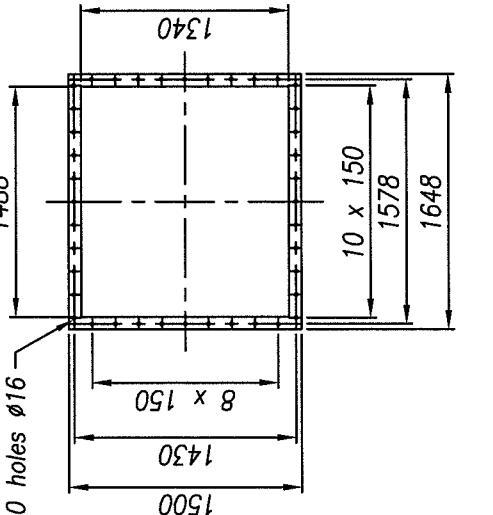


MOTOR Type: 315 L
Kw= 200 / Poli= 4

INSULATION th. 100
(by Ballestra)



Counterflanges +
Bolts and Gaskets



Job n° 1E53 Z / Item: 64K2



ARIVENT ITALIANA CODICI DI DISTRIBUZIONE

 GPR.10.0226 REV.
SIZE A3 SHEET 1 OF 1

DIM. WITHOUT TOLL:	WEIGHT
1 DEC.:	STATIC LOAD Kg.: 4600
2 DEC.:	DYNAMIC LOAD Kg.: 1300
ANGOLI:	
ALL DIM. IN mm	

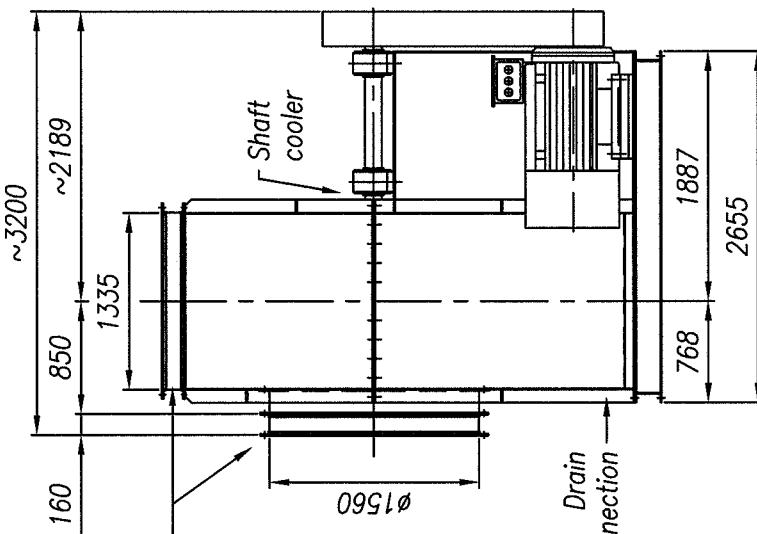
STATO PARTE	DIS. : M.G.
CODICE OPER.	CONT.:
	R.Q. :
	BALESTRA

AVVERTI CHE I CONTENUTI SONO PROTEGGINI DA UNA LICENZA DI PROPRIETÀ INTELLIGENTE E VENGONO TRASMESSI DA UN RENDICONTAZIONE. SOTTOVIA' SE UNA SCATOLA DI SERVIZIO È APERTA, IL RENDICONTAZIONE DIVENTA VULNERABILE ALLA SPIONAGGIO. SE UNA SCATOLA DI SERVIZIO È APERTA, IL RENDICONTAZIONE DIVENTA VULNERABILE ALLA SPIONAGGIO.

MOD. REV. DATA



ARRIVENI ITALIANA



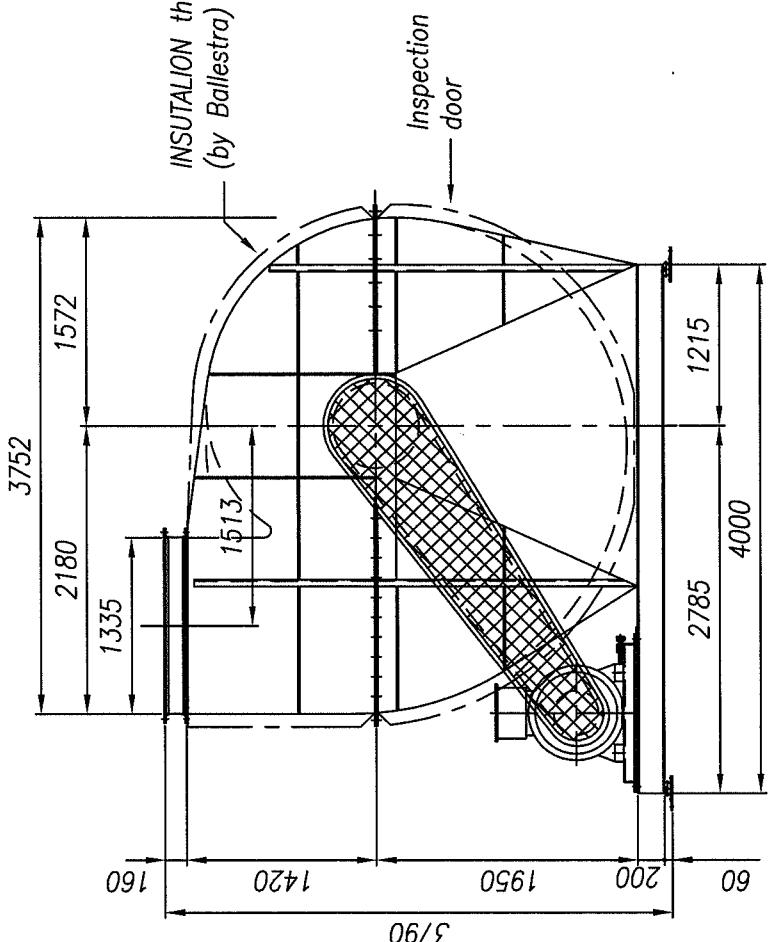

MOTOR Type: 355 M $K_w = 250 \text{ / Poli} = 4$

Counterflanges + bolts and gaskets

∇ n 32 holes $\varnothing 1/8$

Job n° 1E35 Z / Item: 64K3

DRAWING CENTRIFUGAL
FAN Type: SH 190
cl.IV / arr.1 / R01

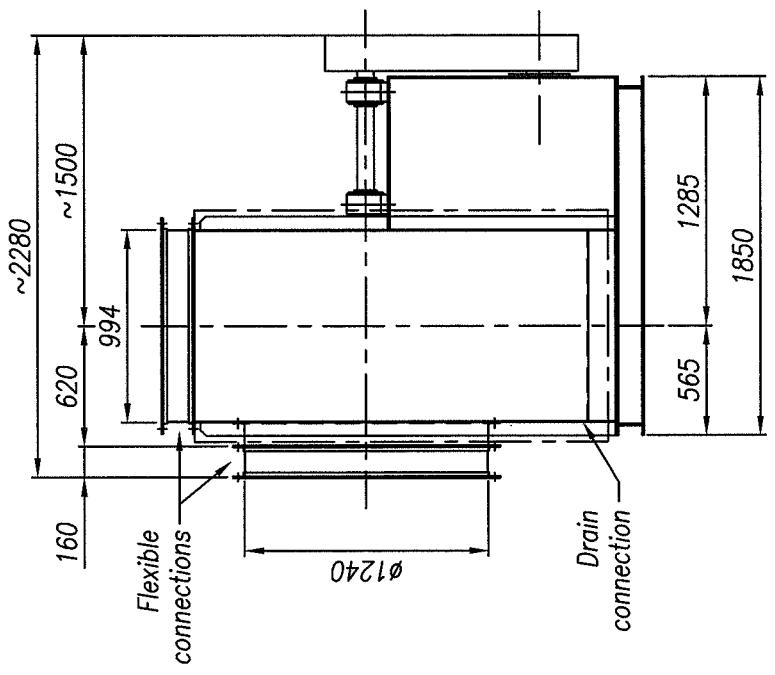


Technical drawing showing a rectangular frame structure with various dimensions and internal components:

- Total width: 2655 mm
- Total height: 4000 mm
- Left side height: 1180 mm
- Right side height: 1180 mm
- Bottom height: 930 mm
- Bottom width: 1000 mm
- Bottom left corner height: 35 mm
- Bottom right corner height: 35 mm
- Top left corner height: 35 mm
- Top right corner height: 35 mm
- Top horizontal distance from left edge to first vertical line: 35 mm
- Top horizontal distance between first and second vertical lines: 733 mm
- Top horizontal distance between second and third vertical lines: 926 mm
- Top horizontal distance between third and fourth vertical lines: 926 mm
- Top horizontal distance from right edge to rightmost vertical line: 35 mm
- Vertical distance between top and bottom horizontal lines: 1180 mm
- Vertical distance between bottom and bottom-most horizontal line: 785 mm
- Vertical distance between bottom-most and bottom-most horizontal line: 785 mm
- Annotation: "n° 13 holes ø27" points to the left side of the frame.
- Annotation: "UNP 200x75" is located near the bottom center of the frame.

STATUS PARTE	DIS. : M.G.	14/05/10 DIM. INCHES INCHES	WEIGHT
CODICE OPER.	CONT. : R.Q. : BALLESTRA	1 DEC.: 2 DEC.: ANGLE: ALL DIM. IN mm	STATIC LOAD Kg.: DYNAMIC LOAD Kg.:

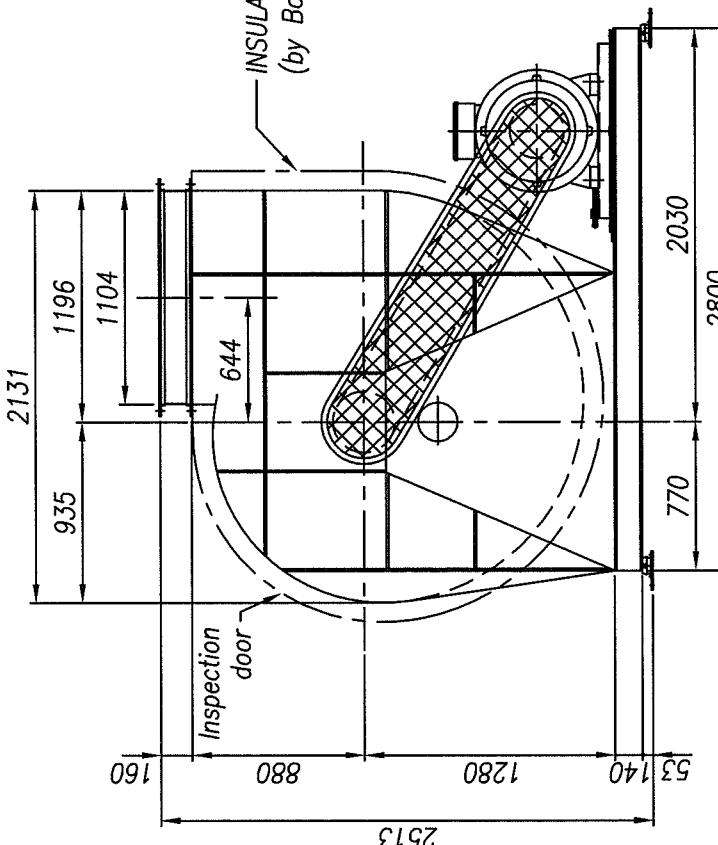
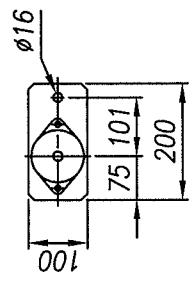
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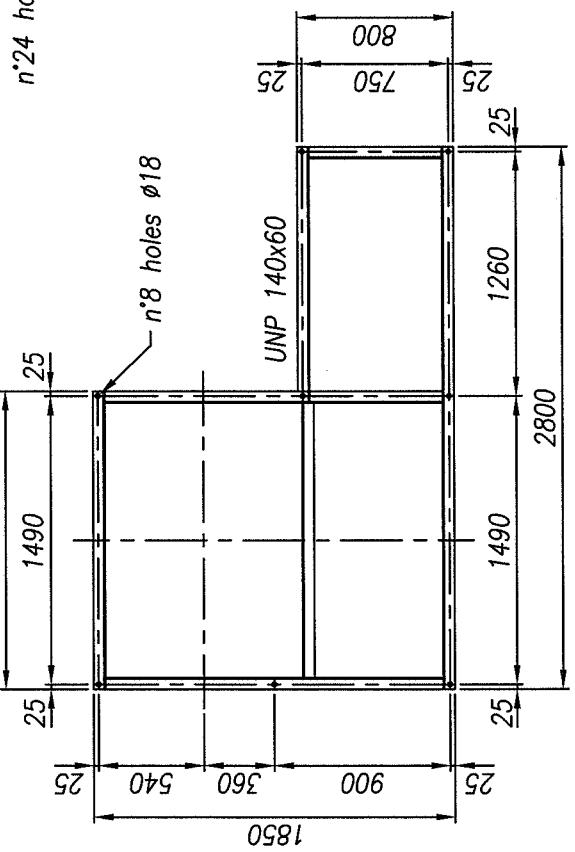
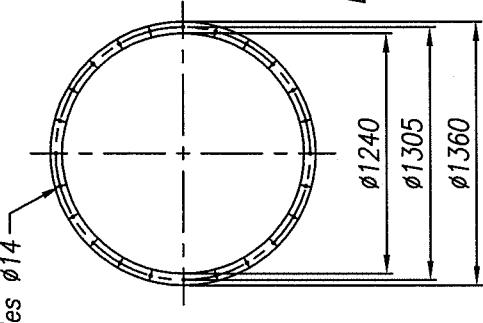
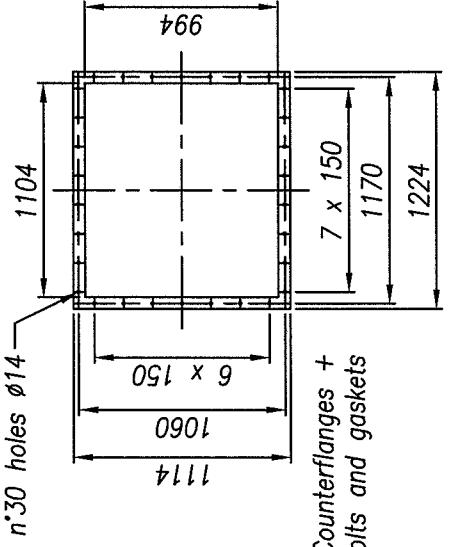
MOTOR Type: 315 S
Kw = 110 / Poles= 4

INSULATION th.100
(by Ballestra)

n° 8 Rubber Isolators
Type: CP 90 D



MOD. REV. DATA



STATO PARTE	DIS. : M.G.	14/09/10	DIM. WITHOUT TOLLS:	WEIGHT	DRAWING CENTRIFUGAL	FAN Type: GPR 48	GPR. 10.0189	REV.
CONT.:			1 DEC..	STATIC LOAD Kg.: 2750				
R.Q. :			2 DEC..	DYNAMIC LOAD Kg.: 600				
BALLESTRA			ANGOLI:	ALL DIM. IN mm				

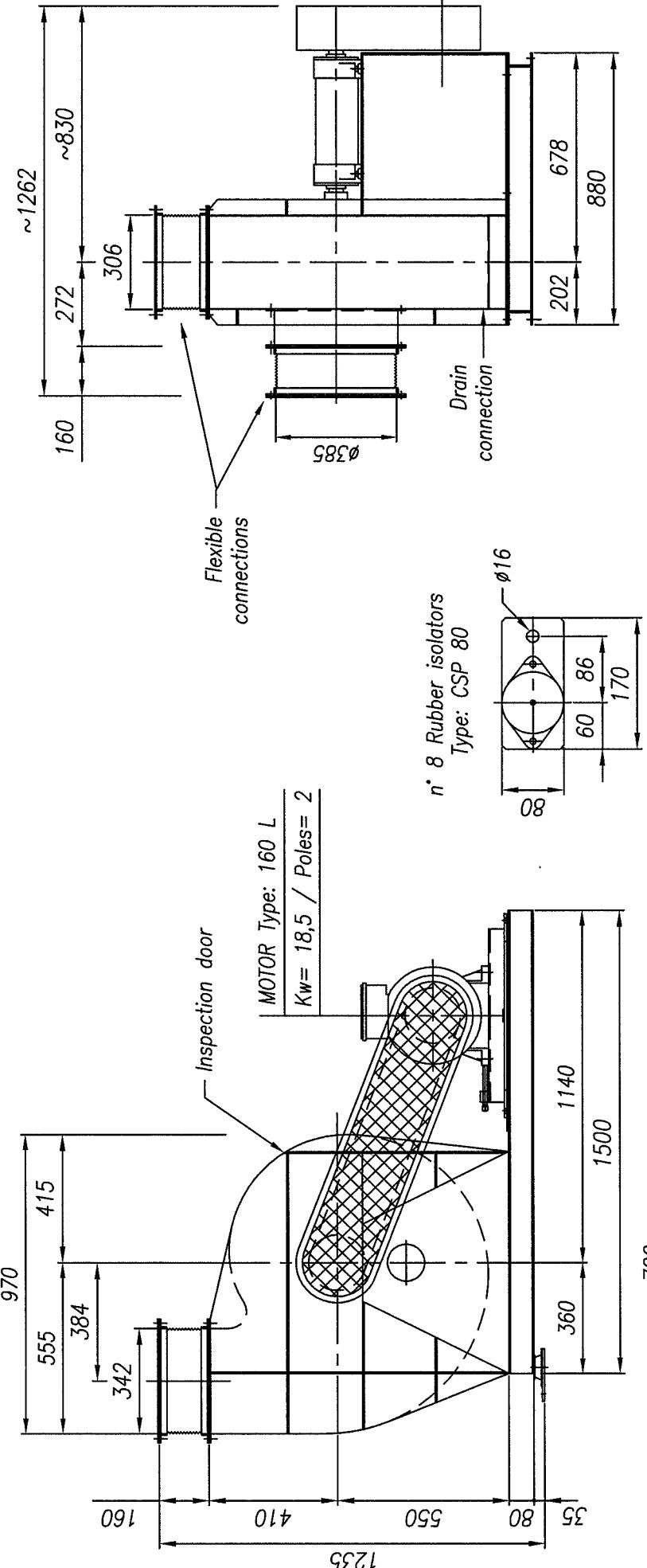
Job n° 1E35 Z / Item: 64K4

ARIVENT ITALIANA
CODICI DI DISTRIBUZIONE
---/---/---/---/---/---/---

SIZE
A3

SHEET 1 OF 1

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ARRIVENT ITALIANA

REV.
0170
OF 1

Job n° 1E35 Z - Item: 63K1

DRAWING CENTRIFUGAL

FAN Type: RH 21
C11 / QTR1 / R01

RH.10.01/0
SHEET 1 OF 1

STATIC LOAD Kg.:
DEC.:
DYNAMIC LOAD Kg.:
NGOL:
AL DIM. IN mm

CONI.: 2 A
R.Q. : BANIFESTRA

MOD. REV. DATA

1

The technical drawing shows a rectangular frame with the following dimensions:

- Total width: 366 mm
- Total height: 342 mm
- Top horizontal bar width: 306 mm
- Bottom horizontal bar width: 376 mm
- Left vertical bar height: 402 mm
- Right vertical bar height: 376 mm
- Inner vertical bar height: 340 mm
- Inner horizontal bar width: 2x120 mm
- Outer horizontal bar width: 2x120 mm
- Bottom horizontal bar width: 366 mm
- Left vertical bar height: 342 mm
- Right vertical bar height: 306 mm

Two circular holes are located at the bottom corners of the frame, with the following dimensions:

- Outer diameter: $\phi 445$
- Inner diameter: $\phi 415$
- Width of the annular gap: $\phi 385$

Annotations indicate:

- $n^{\circ} 8$ holes $\phi 12$ (at the bottom corners)
- $n^{\circ} 12$ holes $\phi 12$ (along the top and bottom horizontal bars)

The technical drawing illustrates a U-shaped steel section (UNP 80x45) with the following dimensions:

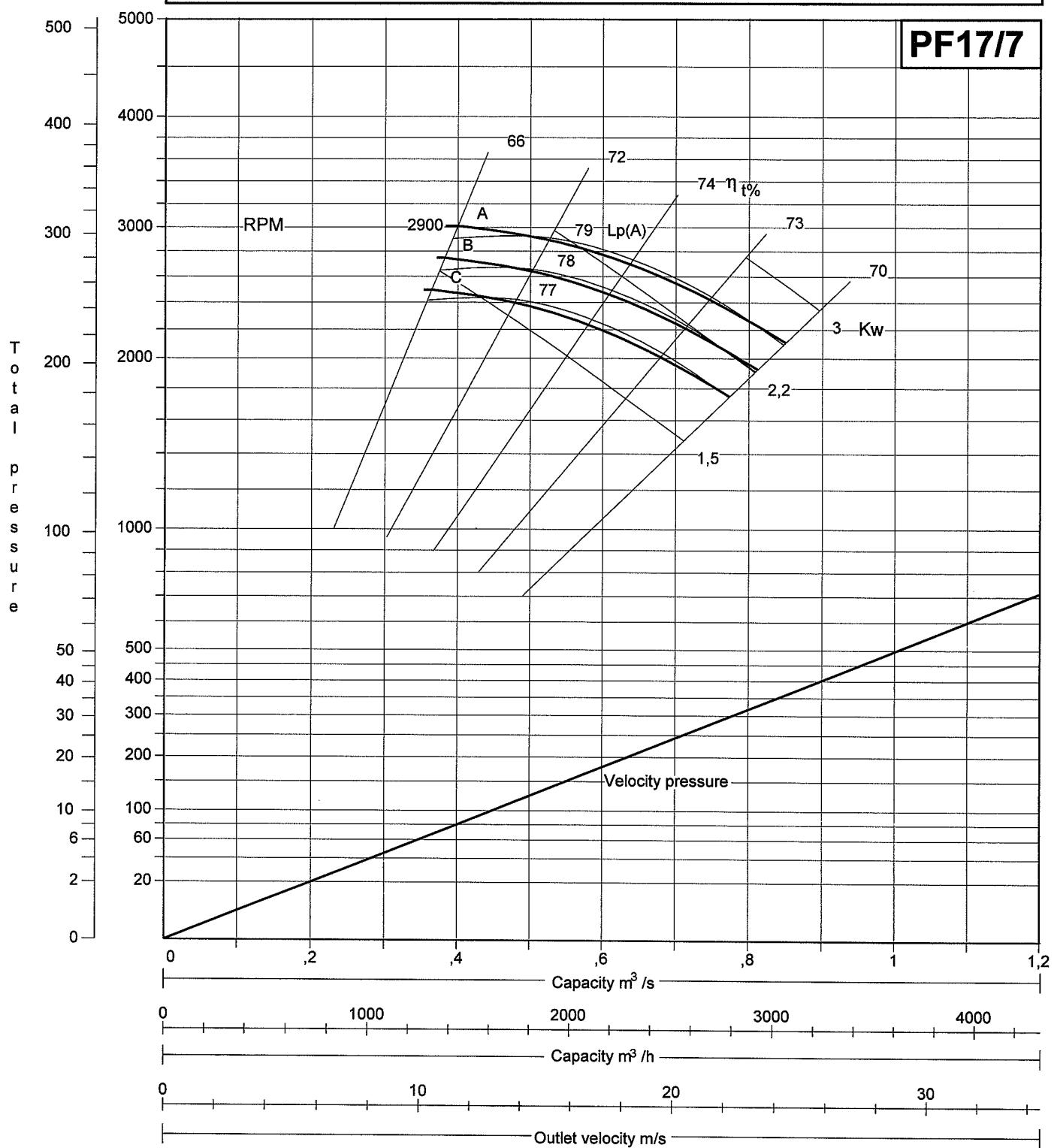
- Total width: 880 mm
- Total height: 780 mm
- Thickness: 20 mm (top flange)
- Bottom flange thickness: 20 mm
- Web thickness: 20 mm
- Top flange width: 420 mm
- Bottom flange width: 183 mm
- Web width: 237 mm
- Overall height from bottom flange to top flange: 680 mm
- Side wall height: 20 mm
- Top flange side wall height: 20 mm
- Bottom flange side wall height: 20 mm
- Top flange side wall thickness: 20 mm
- Bottom flange side wall thickness: 20 mm
- Web side wall thickness: 20 mm
- Top flange side wall side thickness: 20 mm
- Bottom flange side wall side thickness: 20 mm
- Web side wall side thickness: 20 mm
- Top flange side wall side side thickness: 20 mm
- Bottom flange side wall side side thickness: 20 mm
- Web side wall side side thickness: 20 mm

Key features include:

- 8 holes of diameter $\phi 10,5$ located on the top flange side walls.
- A dashed rectangular outline representing a cutout or notch in the web area.

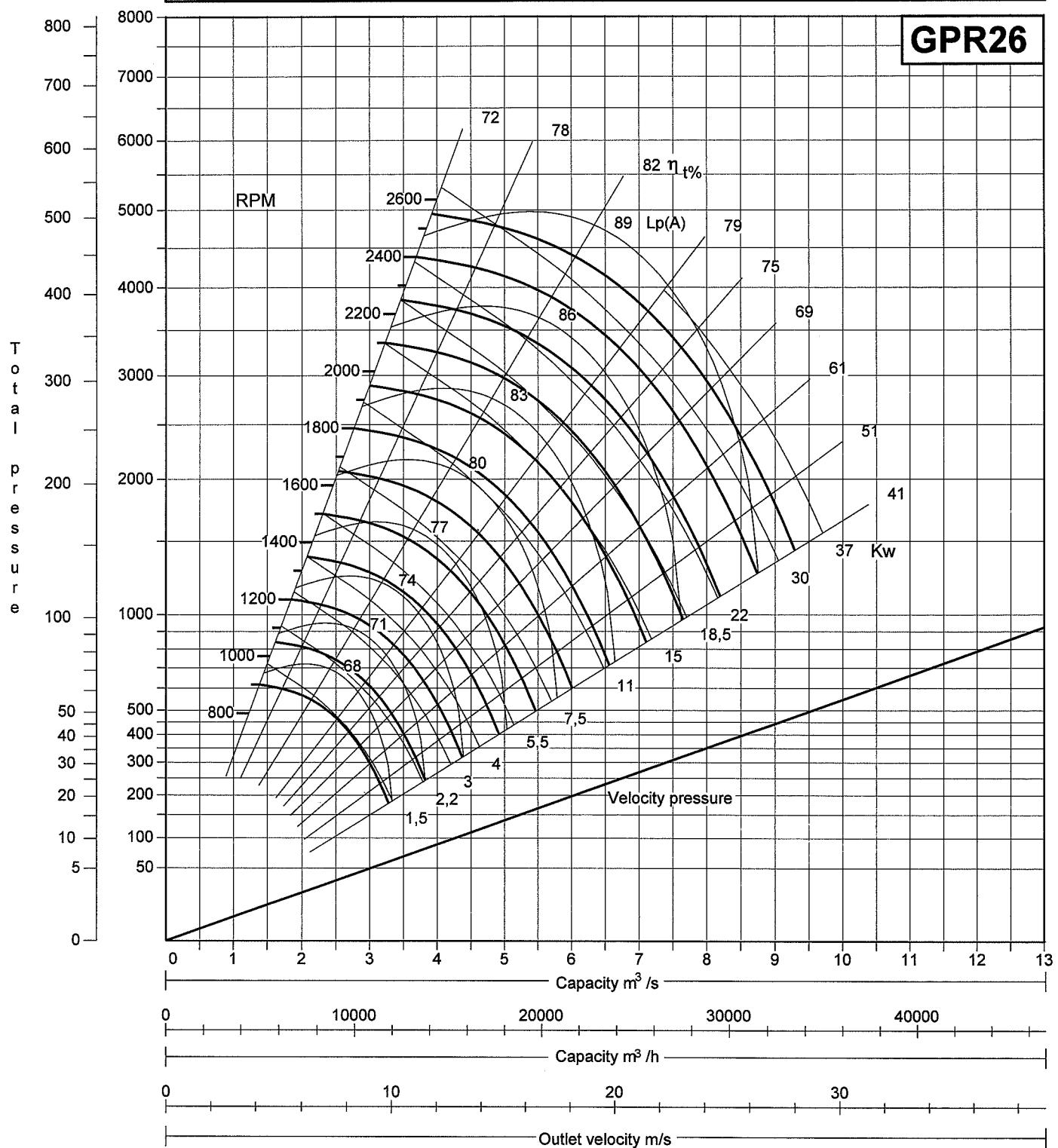
STATO PARTE	DIS. : S.R.	03/09/10	DIM. WITHOUT TOLL:	WEIGHT	DRAWING CENTRIFUGAL	RH. 10.0170	REV.
CONT.:			1 DEC.:	STATIC LOAD Kg.:	550		
CODICE OPER.	R.Q. :		2 DEC.:	DYNAMIC LOAD Kg.:	80	FAN Type: RH 21	
	BAL/ESTRA		ANGOLI:	ALL DIM IN mm		cl. II / arr. 1 / RO1	
					FORMATO A3	SHEET 1 OF 1	

Single inlet	Class	PD^2 Kgm ²	Max RPM 100 °C
	II	0,75	
$N[Kw] = \frac{Q[m^3/s] \times Pt[Pa]}{10 \times \eta[\%]}$ $N_{max}[Kw] = 0,1 \times \left[\frac{n}{1000} \right]^3$ Density = 1,204 Kg/m ³			3000
mm c.a. Pa			Lp(A) = Sound pressure level in db(A) at 1,5 m in free field with ducts connected

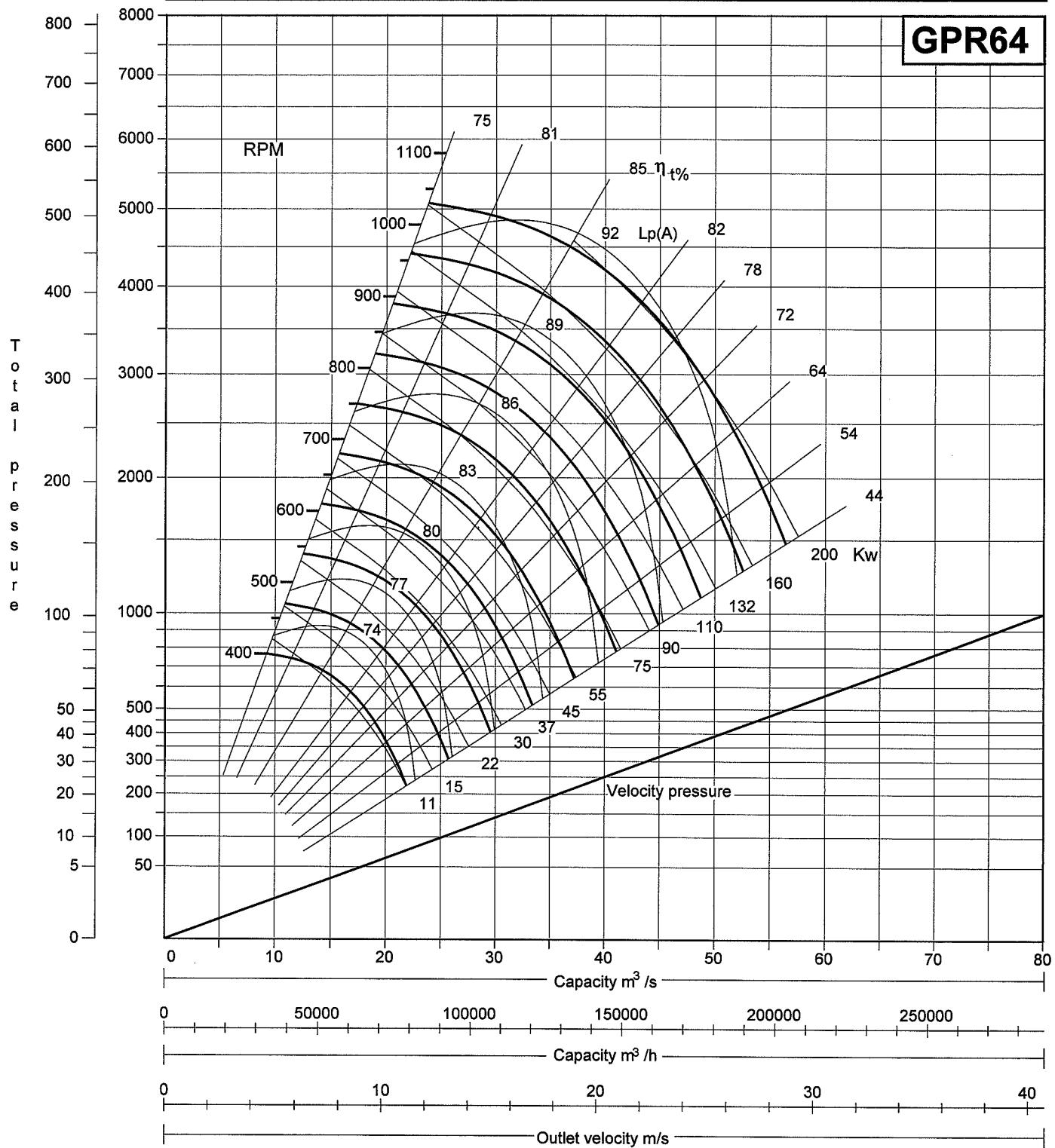


Single inlet	Class	PD ² Kgm ²	Max RPM			
			20 °C	100 °C	200 °C	300 °C
N[Kw] = $\frac{Q[\text{m}^3/\text{s}] \times Pt[\text{Pa}]}{10 \times nt[\%]}$	II	10,00	2030	1908	1786	1583
Nmax[Kw] = $2,03 \times \left[\frac{n}{1000} \right]^3$	III	12,00	2550	2397	2244	1989
Density = 1,204 Kg/m ³						

mm c.a. Pa Lp(A) = Sound pressure level in db(A) at 1,5 m in free field with ducts connected

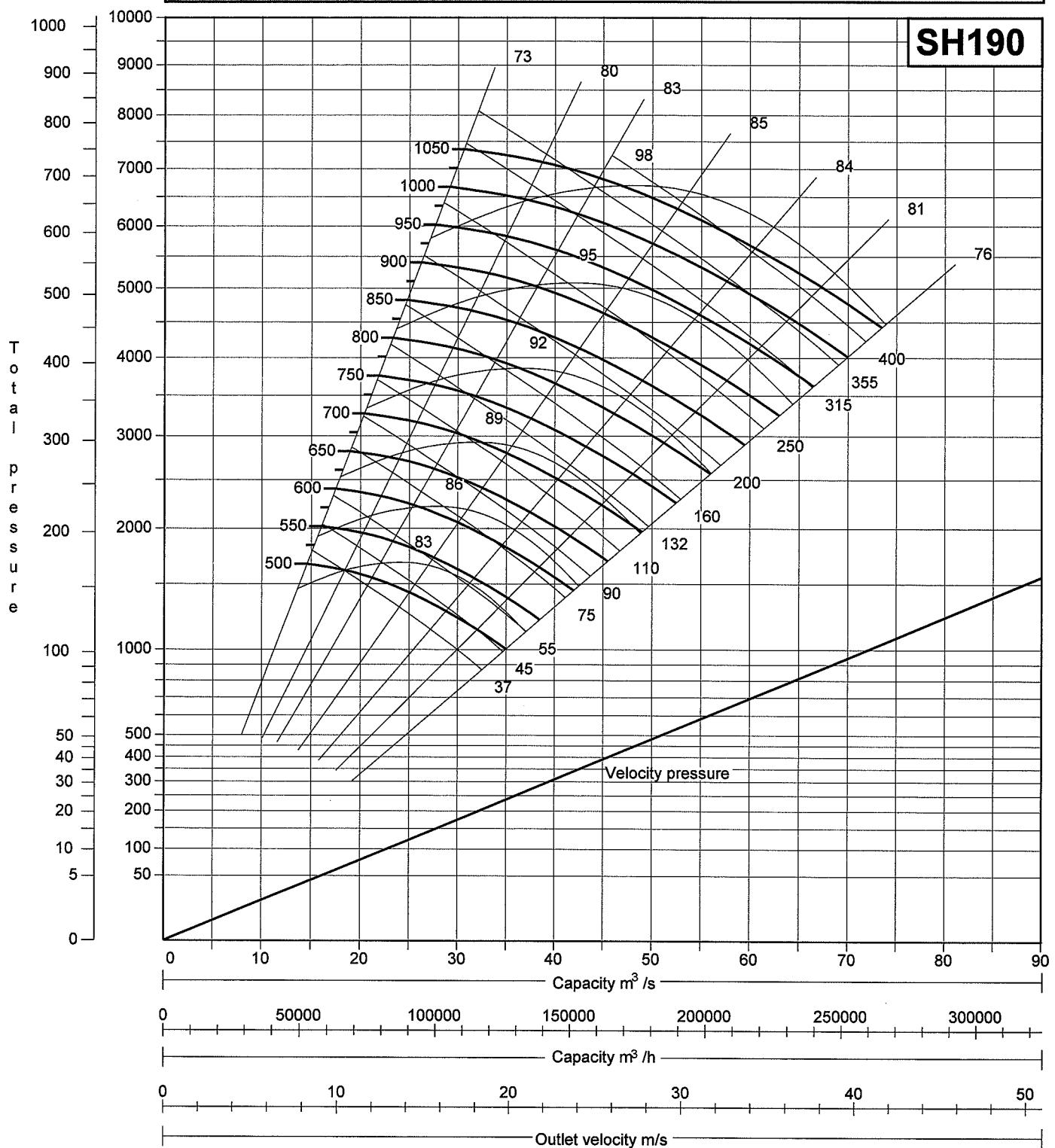


Single inlet	Class	PD ² Kgm ²	Max RPM			
			20 °C	100 °C	200 °C	300 °C
			535,00	580	545	510
			560,00	810	761	713
N[Kw] = $\frac{Q[\text{m}^3/\text{s}] \times Pt[\text{Pa}]}{10 \times nt[\%]}$	II	675,00	1030	968	906	803
Nmax[Kw] = $184,48 \times \left[\frac{n}{1000} \right]^3$	III					
Density = 1,204 Kg/m ³						
mm c.a. Pa			Lp(A) = Sound pressure level in db(A) at 1,5 m in free field with ducts connected			

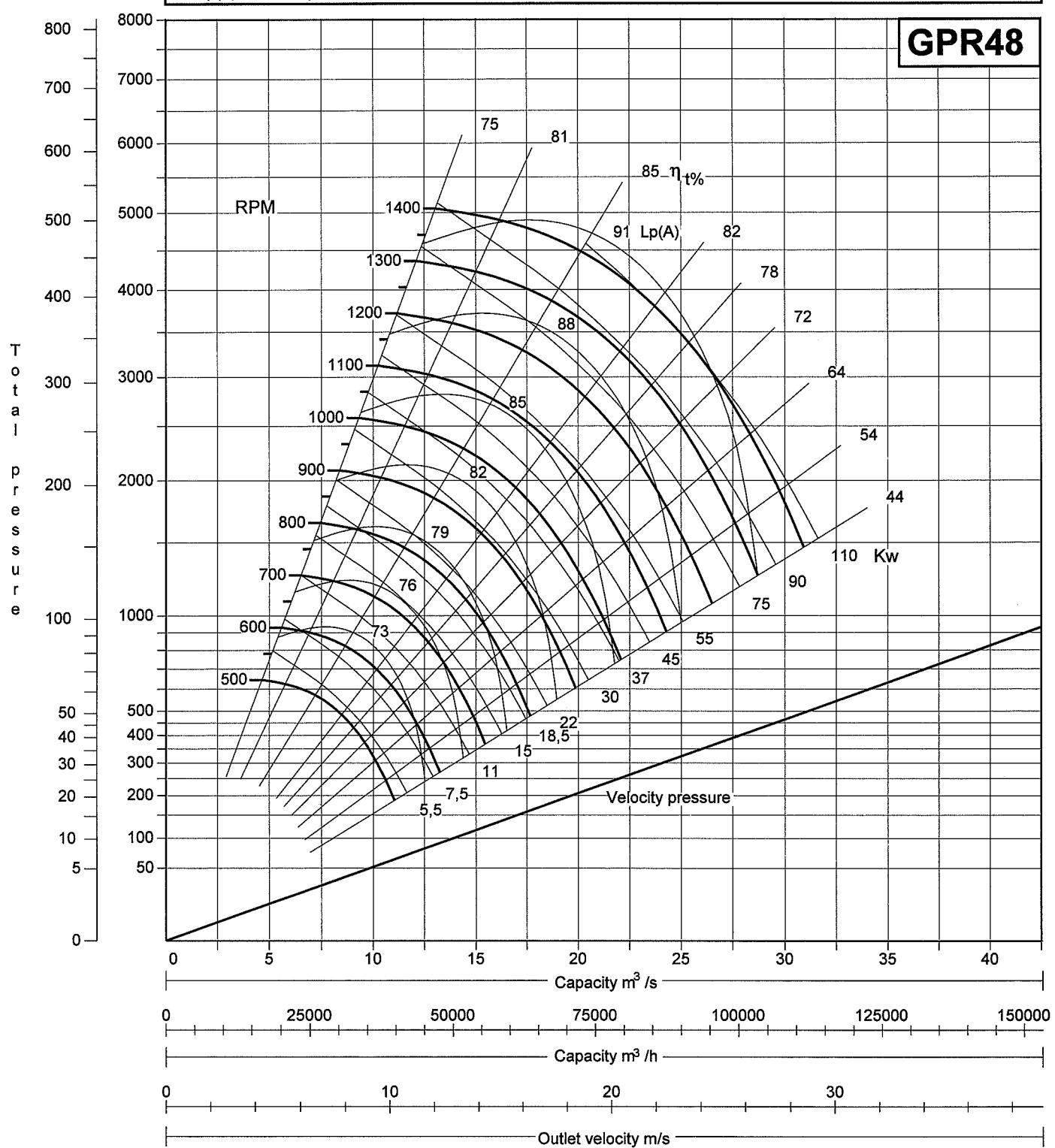


Single inlet	Class	PD ² Kgm ²	Max RPM			
			20 °C	100 °C	200 °C	300 °C
N[Kw] = $\frac{Q[\text{m}^3/\text{s}] \times Pt[\text{Pa}]}{10 \times nt[\%]}$	II	1558,00	755	710	664	589
Nmax[Kw] = 369,5 x $\left[\frac{n}{1000} \right]^3$	III	1655,00	915	860	805	714
Density = 1,204 Kg/m ³	IV	1847,00	1050	987	924	819

mm c.a. Pa Lp(A) = Sound pressure level in db(A) at 1,5 m in free field with ducts connected



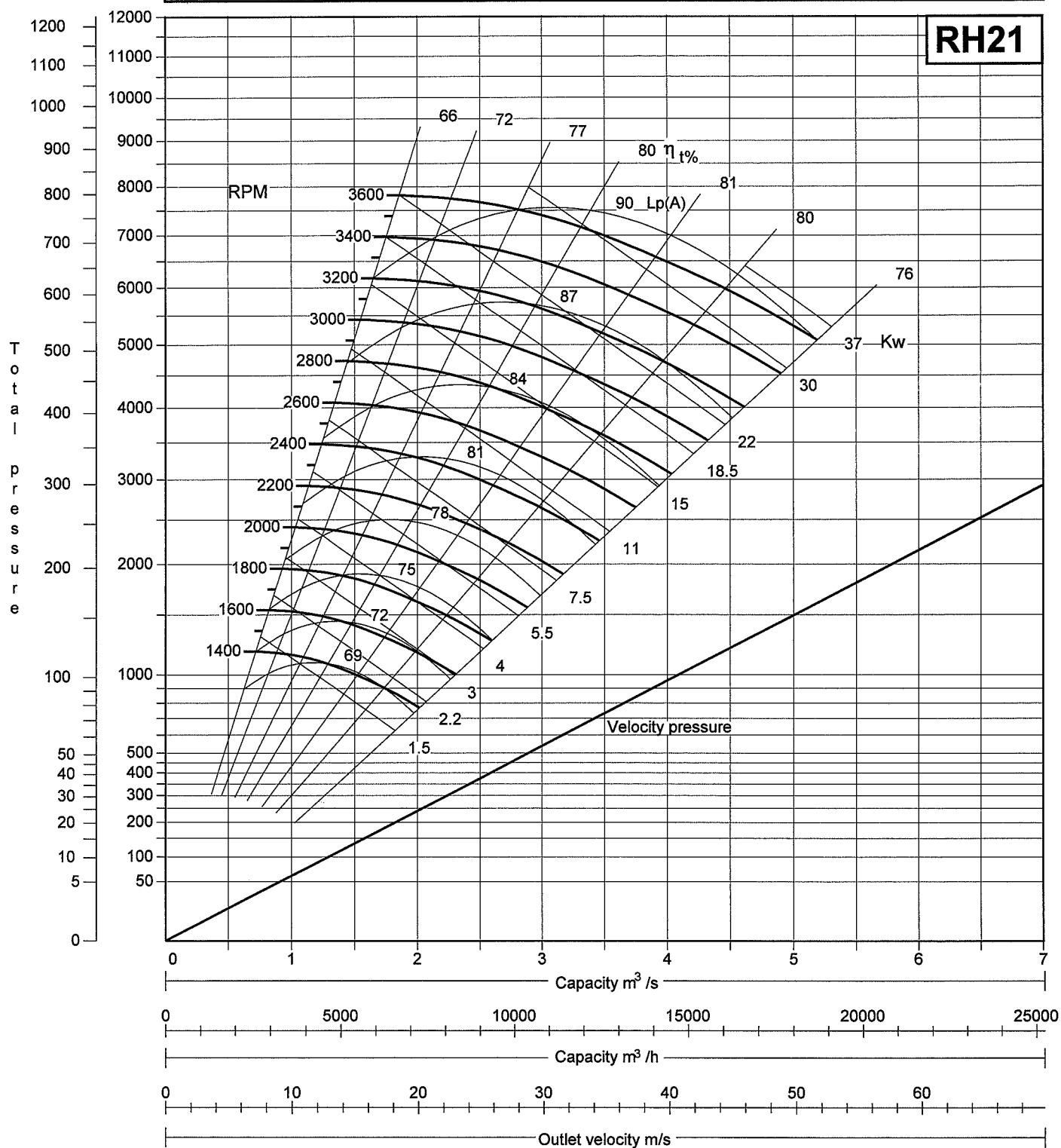
Single inlet	Class	PD ² Kgm ⁻²	Max RPM			
			20 °C	100 °C	200 °C	300 °C
$N_{f[Kw]} = \frac{Q[m^3/s] \times Pt[Pa]}{10 \times nt[\%]}$ $N_{max[Kw]} = 40,08 \times \left[\frac{n}{1000} \right]^3$ Density = 1,204 Kg/m ³	I	143,00	780	733	686	608
	II	150,00	1100	1034	968	858
	III	180,00	1400	1316	1232	1092



Single inlet	Class	PD ² Kgm ²	Max RPM			
			20 °C	100 °C	200 °C	300 °C
			2950	2773	2596	2301
N[Kw] = $\frac{Q[\text{m}^3/\text{s}] \times Pt[\text{Pa}]}{10 \times nt[\%]}$	II	4.20	3600	3384	3168	2808
Nmax[Kw] = $0.74 \times \left[\frac{n}{1000} \right]^3$	III	5.00				
Density = 1.204 Kg/m ³						

mm c.a. Pa

Lp(A) = Sound pressure level in db(A) at 1,5 m in free field with ducts connected



 desmet ballestra <small>Desmet Ballestra s.p.a.</small>	QUALITY SYSTEM PROCEDURE	IOQ-010
		Rev. 4
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BALLESTRA

STANDARD QUALITY CONTROL PLAN

ISSUE					
Rev.	Description	Date	Drawn/Checked		Approved
4	Complete revision	02/01/07	Bernardini		Monari
3	Added burners section	27/07/06	Bernardini, Storti		Monari
2	Complete revision	09/12/03	Bernardini, Ruzzennenti		Monari
1	Complete revision	13/12/02	Lanzanova, Monari, Palumbo, Ruzzennenti		Monari
0	First issue	28/06/02	Lanzanova, Ruzzennenti		Farnetti



QUALITY SYSTEM PROCEDURE

IOQ-010

Rev. 4

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	Additional tests (Optional)
Section 2	Centrifugal Air Fans
Section 3	Non Pressure Vessels / Tanks
Section 3A	Non Pressure Vessels / Tanks - Additional test (Optional)
Section 4	Pressure Vessels
Section 4A	Pressure Vessels - Additional test (Optional)
Section 5	SO ₂ -SO ₃ Converters - SO ₂ -SO ₃ Exchangers
Section 6	Heat Exchangers
Section 7	Film Reactors
Section 8	High Speed Stirrers
Section 9	Rotating Mixers
Section 10	Wiped Film Evaporators
Section 11	Flakers
Section 12	Bag Filters
Section 13	Butterfly Valves (Ballestra design)
Section 14	Belt Conveyors / Screw Conveyors
Section 15	Chilling Groups
Section 16	Cooler Units
Section 17	Burners
Section 18	Computerized Control Systems
Section 19	Electric and Instrumentation Panel Boards
Section 20	Control Valves
Section 21	On-Off Valves
Section 22	Safety Valves
Section 23	Transmitters & Local Indicators
Section 24	Bulk Materials



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SCOPE

This specification has the purpose to define the quality minimum requirement for "standard product" purchased by Ballestra. Are defined "standard" the products that are frequently purchased and for which exists a standardized design and construction system.

The specific Quality Control Plans here attached (following called QCP) can be used by the suppliers as draft for the issues of dedicated QCP for different jobs.

The minimum requirement listed in the attached QCP can be modified for some products, can be reduced or increased. In these cases the quality requirement will be specified in Ballestra design documentation (Material Requisition, Sketches, Data Sheet, etc.), or supplier documents (Specifications, QCP, etc.) previously approved by Ballestra.

LEGEND

Abbreviation of Ballestra departments mentioned in this document:

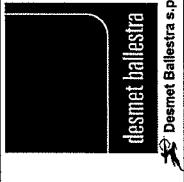
ATI	Piping Design department
COL	Inspection department
GM	Shipment department
PRO	Process department
MAC	Machinery department
PES	Electrical / Instrumental Design department
PRS	Vessel Design department

Abbreviation of QCP steps Attend:

W	Witness Point	Written invite shall be sent from Supplier to Ballestra COL dept., in order to attend to this QCP step. Ballestra can renounce to attend to this step, the Supplier can continue his activities.
SW	Spot Witness Point	Written invite shall be sent from Supplier to Ballestra COL dept., in order to attend to this QCP step. Ballestra normally attend time to time to this step.
H	Hold Point	Written invite shall be sent from Supplier to Ballestra COL dept., in order to attend to this QCP step. Ballestra can renounce to attend to this step only by written answer, otherwise the Supplier cannot continue his activities.
R	Review	For these steps is foreseeing only a documentation review.

Remark:

All the written invitation shall be sent one week in advance from the test scheduled dates.



QUALITY SYSTEM PROCEDURE

Desmet Ballestra s.p.a.
Via Cavour, 1 - 31044 Montebelluna (TV) - Italy

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Section 2

Centrifugal Air Fans

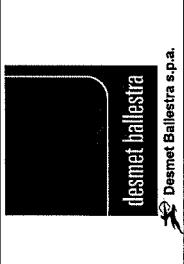
Seq	Description	Reference Documents		Manufacturer Report	Inspection			Notes
		Test	Attend		Ballestra Dept	Third Party Attend	Report	
1	Construction Drawing Approval	H		H	MAC			
2	Review of mill certificates	H		R	MAC			
3	Balancing test	H	Yes	SW	COL			
4	Vibration test	H	Yes	SW	COL			
5	Current Absorption check	H	Yes	SW	COL			
6	Visual and dimensional check	H	Yes	SW	COL			
7	Nameplate Check	H	Yes	W	COL			"CE" marking if required
8	Surfaces treatment/ Painting check	H	Yes	W	COL			
9	Accessories & Spare Parts	H	Yes	SW	COL			(Bellows, Inlet Valves, etc.)
10	Documents review	H	Yes	R	MAC			

ORDER N. 101613

JOB 1E352

ITEM 63KA

CENTRIFUGAL FAN TYPE PFAT 7/A



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Section 2

Centrifugal Air Fans

Seq	Description	Reference Documents	Manufacturer Report	Inspection			Notes
				Test	Attend	Ballestra Dept	
1	Construction Drawing Approval	Equipment specification Data sheet	H		H	MAC	
2	Review of mill certificates	Design Code Ballestra Material Requisition	H		R	MAC	
3	Balancing test	UNI-ISO-VDI VDI	H	Yes	SW	COL	
4	Vibration test	Motor nameplate/Data Sheet	H	Yes	SW	COL	
5	Current Absorption check	Approved Data Sheet	H	Yes	SW	COL	
6	Visual and dimensional check	Construction drawing Ballestra Material Requisition	H	Yes	W	COL	"CE" marking if required
7	Nameplate Check	Ballestra Material Requisition	H	Yes	W	COL	
8	Surfaces treatment/ Painting check	Manufacturer specification Ballestra Material Requisition	H	Yes	W	COL	
9	Accessories & Spare Parts	Ballestra Material Requisition	H	Yes	SW	COL	(Bellows, Inlet Valves, etc.)
10	Documents review	Applicable code Ballestra Material Requisition	H	Yes	R	MAC	

ORDER N. 104613

JOB N. E352

ITEM 64K1

CENTRIFUGAL FAN TYPE GPR 26

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Centrifugal Air Fans

Seq	Description	Reference Documents		Manufacturer Report	Inspection			Notes
		Test	Attend		Ballestra Dept	Third Party Attend		
1	Construction Drawing Approval	H	H	MAC				
2	Review of mill certificates	H	R	MAC				
3	Balancing test	H	Yes					
4	Vibration test	H	Yes	SW	COL			
5	Current Absorption check	H	Yes	SW	COL			
6	Visual and dimensional check	H	Yes	SW	COL			
7	Nameplate Check	H	Yes	W	COL			"CE" marking if required
8	Surfaces treatment/ Painting check	H	Yes	W	COL			
9	Accessories & Spare Parts	H	Yes	SW	COL			(Bellows, Inlet Valves, etc.)
10	Documents review	H	Yes	R	MAC			

ORDER N. 101613

Job 1E352

ITEM 64K2

CENTRIFUGAL FAN TYPE GPR 64



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Section 2

Centrifugal Air Fans

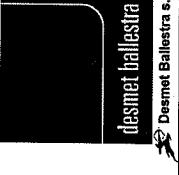
Seq	Description	Reference Documents		Manufacturer Report	Inspection			Notes
		Test	Report		Ballestra Dept	Attend	Third Party Report	
1	Construction Drawing Approval	Equipment specification Data sheet	H	H	R	MAC		
2	Review of mill certificates	Design Code Ballestra Material Requisition UNI-ISO-VDI	H	Yes	SW	COL		
3	Balancing test	VDI	H	Yes	SW	COL		
4	Vibration test	Motor nameplate/Data Sheet	H	Yes	SW	COL		
5	Current Absorption check	Approved Data Sheet	H	Yes	SW	COL		
6	Visual and dimensional check	Construction drawing Ballestra Material Requisition	H	W	COL			"CE" marking if required
7	Nameplate Check	Ballestra Material Requisition	H	W	COL			
8	Surfaces treatment/ Painting check	Manufacturer specification Ballestra Material Requisition	H	W	COL			
9	Accessories & Spare Parts	Ballestra Material Requisition	H	Yes	SW	COL		(Bellows, Inlet Valves, etc.)
10	Documents review	Applicable code Ballestra Material Requisition	H	Yes	R	MAC		

ORDER N. 101613

Job 1E352

ITEM 64K3

CENTRIFUGAL FAN TYPE SH 190



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Centrifugal Air Fans

Step	Description	Reference Documents		Manufacturer		Inspection		Notes
		Test	Report	Attend	Dept	Ballestra	Third Party	
1	Construction Drawing Approval	H		H	MAC			
2	Review of mill certificates	H		R	MAC			
3	Balancing test	H	Yes					
4	Vibration test	H	Yes	SW	COL			
5	Current Absorption check	H	Yes	SW	COL			
6	Visual and dimensional check	H	Yes	SW	COL			"CE" marking if required
7	Nameplate Check	H	Yes	W	COL			
8	Surfaces treatment/ Painting check	H	Yes	W	COL			
9	Accessories & Spare Parts	H	Yes	SW	COL			(Bellows, Inlet Valves, etc.)
10	Documents review	H	Yes	R	MAC			

ORDER N. 101613

Job 1E352

ITEM 64K4

CENTRIFUGAL FAN TYPE GPR 48

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Section 2

Centrifugal Air Fans

Seq	Description	Reference Documents		Manufacturer Test	Attend	Ballestra Dept	MAC	Inspection		Notes
		Report	Test					Third Party Report	Attend	
1	Construction Drawing Approval	Equipment specification Data sheet	H		H					
2	Review of mill certificates	Design Code Ballestra Material Requisition	H		R		MAC			
3	Balancing test	UNI-ISO-VDI VDI	H	Yes						
4	Vibration test	Motor nameplate/Data Sheet	H	Yes	SW	COL				
5	Current Absorption check	Approved Data Sheet	H	Yes	SW	COL				
6	Visual and dimensional check	Construction drawing Ballestra Material Requisition	H	Yes	SW	COL				
7	Nameplate Check	Ballestra Material Requisition	H		W	COL				"CE" marking if required
8	Surfaces treatment/ Painting check	Manufacturer specification Ballestra Material Requisition	H	Yes	W	COL				
9	Accessories & Spare Parts	Ballestra Material Requisition Applicable code	H	Yes	SW	COL				(Bellows, Inlet Valves, etc.)
10	Documents review	Ballestra Material Requisition	H	Yes	R	MAC				

Order N. 101612

Date 1/25/2

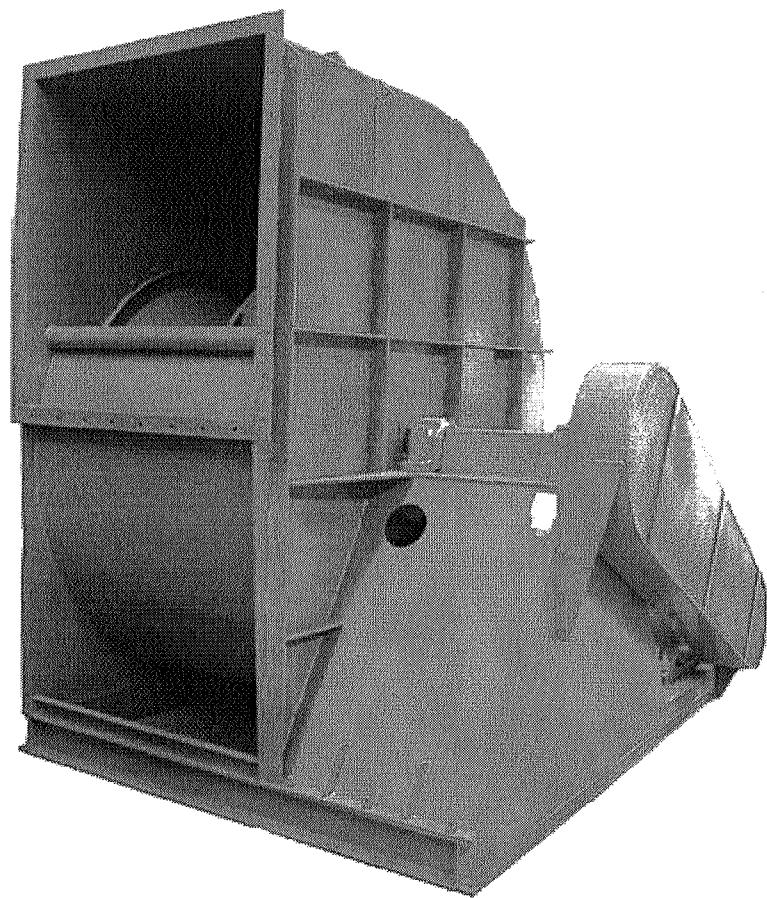
Item 65KA

CENTRIFUGAL FAN TYPE RH2A



CENTRIFUGAL FAN - ARRANGEMENT 1

OPERATING MANUAL



ARIVENT ITALIANA SRL

Via Napoli, 45

20030 - Bovisio Masciago - Mi

Phone +39 0362 590736 - Fax +39 0362 593360

Email: info@arivent.it



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1. Safety

1.1 General

The fan meets the technical safety standards applicable in the EC at the time of delivery.

The rules and regulations for the prevention of accidents applicable at the time of delivery were taken into account in the fan design.

It is not allowed to modify the original condition of the fan without the approval. The warranty expires when parts other than original spare parts and/or purchased parts not corresponding to the original parts are used.

The operating manual and any required supplementary manuals must be available to the operator.

Do not open inspection ports and/or other openings when the fan is in operation.

1.2 Start-up

The fan may only be put into operation (also for testing) when the inlet and outlet ports are provided with guards or when pipes are connected to them. Before the fan is started the housing and all pipes connected to it must be checked. They must be dry and free of screws, bolts, tools and other foreign substances.

Disregarding the above instructions may cause accidents and destroy the fan. Observe the safety regulations for electrical machines and equipment.

1.3 Servicing

The fan may only be serviced when the electrical system is dead, i.e.:

- ✓ turn off the electrical machines and ensure that they cannot be switched on again;
- ✓ wait until the impeller has come to a standstill;
- ✓ disconnect the power supply cable for the motor.

After servicing all guards and protective devices must be installed and all pipes must be connected again.

All bolts and nuts must be tightened. Close all inspection openings and tighten the bolts and nuts.

The fan can then be put into operation again.



1.4 Cleaning

Do not clean moving parts when the fan is in operation!

Before cleaning the fan must be put out of operation. Ensure that the fan cannot be switched on again accidentally.

Only use suitable detergents and cleaning materials.

If material is sticking to the impeller or the impeller is worn, the fan may be seriously damaged by unbalance.

It is therefore recommended to clean and check the fan for unusual vibrations at regular intervals.

1.5 Electrical safety

The user has to ensure that the fan is only connected and serviced by a qualified electrician in accordance with the rules and regulations applying to electrical equipment.

The user must also ensure that the fan is operated in accordance with electro technical rules and regulations.

Do not touch/work on live parts.

- ✓ Interrupt the power supply to the fan and use mechanical means to ensure that power supply cannot be switched on again.
- ✓ Use a voltage tester to check that the circuit is dead.
- ✓ Connect and short the work site to earth.
- ✓ Only use the fuses indicated in the electric circuit diagram.
- ✓ Check the condition of the visible cables before the fan is started.
- ✓ Replace damaged cables.

Damaged and/or defective electrical equipment must be repaired or replaced immediately.

If the damaged equipment represents a risk, the fan may not be put into operation before the defect is repaired.



1.6 Description of labels and plates

The following plates are attached to the fan:

1. Nameplate

The nameplate indicates:

TYPE

COM. - NO.

YEAR OF CONSTRUCTION

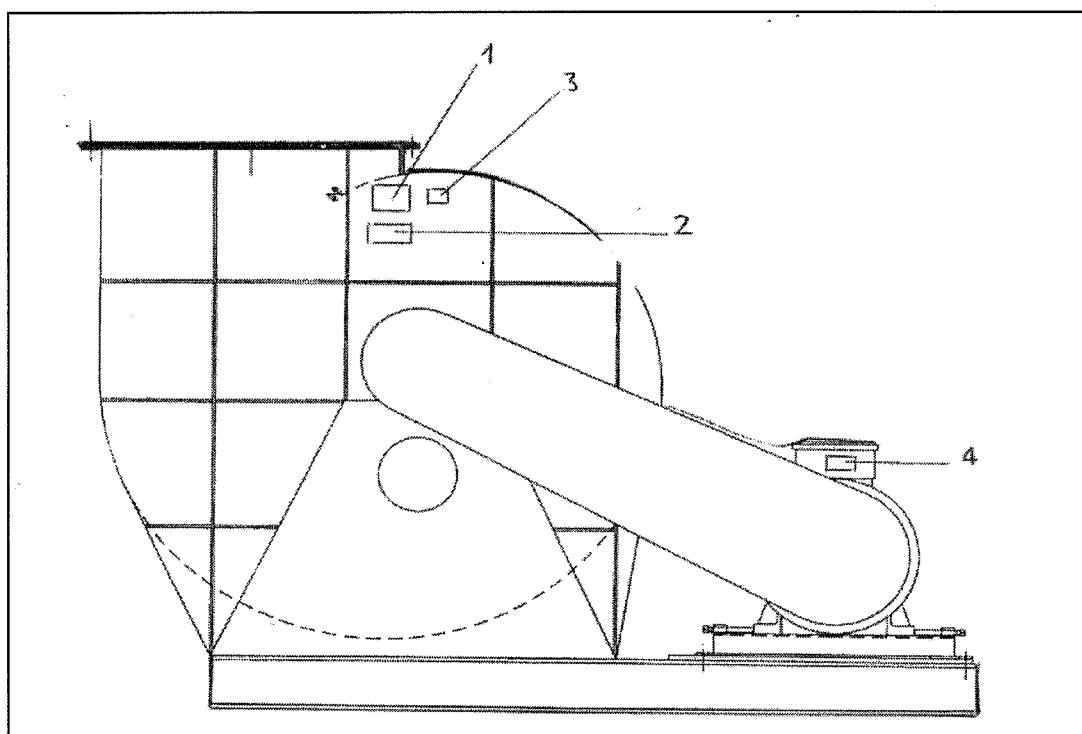
Further data are indicated on the master card of the fan.

2. Arrow

It shows the sense of rotation of the impeller.

3. CE label

4. Motor nameplate



2. Description

2.1 Design

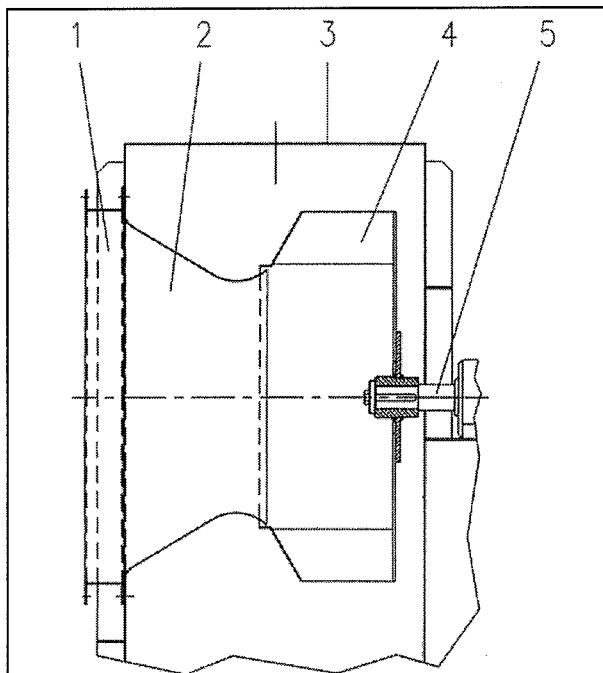
The fan is a welded single-stage centrifugal fan.

The propulsive power is transmitted by the motor shaft to the fan shaft via a drive belt. The fan shaft is supported in two antifriction bearings.

Each bearing shell has a lubricant replenishing device.

The motor is fitted on an additional sectional steel frame which can be installed on the left and right-hand sides of the fan, as desired.

In standard design the shaft seal is guaranteed for temperatures not exceeding +200 °C thanks to an asbestos-free flat packing.



1. *Inlet socket*
2. *Inlet cone*
3. *Casing*
4. *Impeller*
5. *Shaft*

3. Assembly and installation

3.1 Scope of supplies

When delivered the fan and accessories must be checked for damage.

Check that everything indicated on the delivery note has been delivered.

In all other respects please refer to our terms and conditions for sales and delivery.



3.2 Transport

Only transport the fan with transport facilities which are appropriate for the conditions on the site where the fan is to be installed.

Observe the applicable rules and regulations for the prevention of accidents. For lifting and transporting the fan only ropes and/or fork lift tracks with a sufficient lifting capacity may be used.

Only attach ropes to the fastening plates especially provided for lifting the fan. Do not use the eyelet on the motor for transporting the fan.

Warranty claims or claims for compensation for any damage caused by the use of unsuitable means of transport or caused by improper handling will not be accepted.

3.3 Storage

If the fan is not installed and/or put into operation immediately it must be stored in a dry place. In case of long-term storage please note the storage and preservation instructions for motors and fans.

3.4 Installation site

The installation site must be level and have a sufficient load bearing capacity. There must be enough room for assembly and maintenance work. The impeller must be easily accessible.

3.5 Pipes connected to the fan

When attaching the pipes to the fan care must be taken that the fan is not distorted.

- ✓ Remove the transport shutters from the connection ports.
- ✓ Connect the pipes with flexible connections to the inlet and outlet ports of the fan.

3.6 Electrical connection

The fan may only be connected up to the electrical system by a qualified electrician.

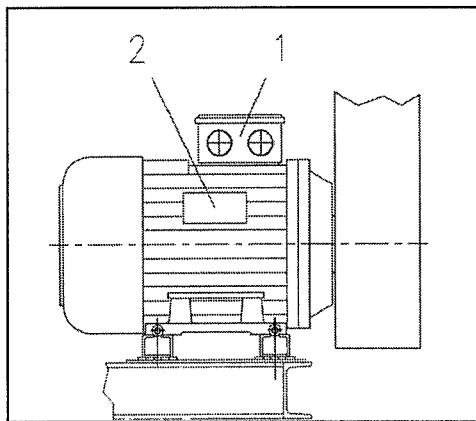
The drive motors are usually installed in the manufacturing works.

If the customer installs the motor, the warranty is submitted to a correct installation.

The motor is connected in accordance with the circuit diagram inside the terminal box (1).

The customer has to check that his power network and the switchgear and monitoring devices are sufficiently dimensioned to cope with the transient behaviour and current peaks. It must be ensured that the supply of cooling air to the electric motor is not hindered.

- ✓ The power supply cable for the fan must be installed in accordance with any locally applicable legal stipulations.
- ✓ Compare the local mains voltage with the voltage indicated on the rating plate (2) of the fan.
- ✓ Connect the fan as shown on the circuit diagram inside the terminal box (1).
- ✓ Earth the fan in accordance with the regulations issued by the local power supply company.
- ✓ Check the speed and sense of rotation.
- ✓ Check the transient behaviour and starting time.
- ✓ Provide for a motor protection system.



3.7 Inspection

3.7.1 Mechanical testing

Check the fan after it has been assembled and installed:

- ✓ check the attachment of the fan to the foundation;
- ✓ check if the impeller rotates freely;
- ✓ remove any foreign objects from the fan housing;
- ✓ check all screw couplings and bolted connections;
- ✓ check all pipe connections;
- ✓ check the grease fill of the bearings and check that bearings are correctly aligned.

3.7.2 Electrical testing

The electrical system of the fan may only be tested by a qualified electrician:

- ✓ check the operating voltage;



- ✓ check the earthing;
- ✓ check the size of the fuses.

If the fan is not put into operations immediately after it has been assembled and installed, it must be secured against unauthorized use and covered with a tarpaulin.

4. Start-up

4.1 Putting the fan into operation

The fan may only be put into operation by qualified and skilled staff. Before the fan is put into operation the staff must check that the fan is in good working order.

The rules and regulations for putting electrical machines into operation must be observed:

- ✓ check the safety systems;
- ✓ close the damper or inlet vane control (if provided);
- ✓ switch on the master controller;
- ✓ switch on the fan.

The fan may only be switched on when the pipes are connected and when it is certain that there will be a sufficient plant resistance after the fan motor has reached its full operating speed:

- ✓ check the sense of rotation when the fan is started up for the first time (the fan must rotate in the direction indicated by the arrow);
- ✓ check the power consumption. The maximum permissible power consumption may not be exceeded;
- ✓ regularly check the bearings for unusual noises and check the temperature of the bearings in the first few operating hours;
- ✓ check the tension of the drive belt after 0,5 to 5 hours of operation and after 24 hours of full-load operation. Tension the belt if necessary.

4.2 Putting the fan out of operation

Switch off the fan.

4.3 Transient behaviour

4.3.1 General

The fan can only be started when a sufficiently high **moment of acceleration** is available from the moment it is started up to the moment when nominal speed is reached.

It is recommended to start the fan with the damper or inlet vane control closed (if provided).

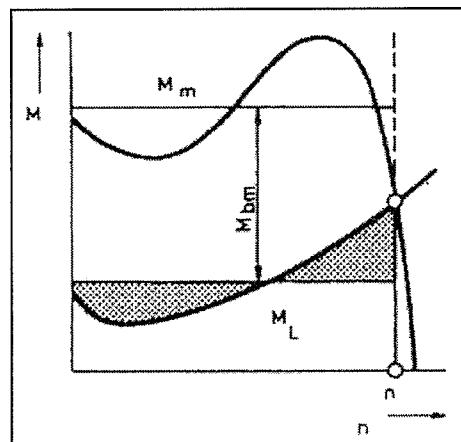
The customer has to check that his power network, switchgear, monitoring devices (if available) and cable cross sections are dimensioned to cope with the transient behaviour and current peaks.

4.3.2 Direct starting

Direct starting of the fan motor not only causes a high starting torque but also a high starting current.

During starting the starting current may be 6 to 8 times as high as the nominal current (depending on the type of impeller).

This high power input must be taken into account when the fuse sizes are determined.



M_m Motor moment

M_L Load moment

M_{bm} Mean accelerating moment

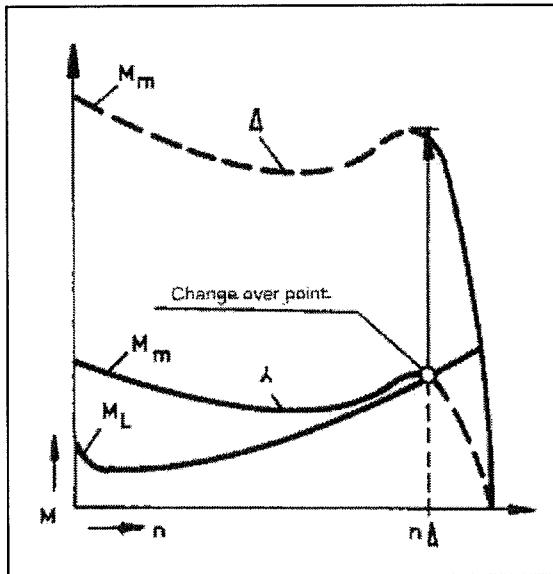
n Speed

Designation of Mean accelerating moment

4.3.3 Star-delta starting

During star-delta starting the drive motor only provides for 1/3 of the starting torque in the star connection.

At a certain starting speed the load moment of the fan exceeds the starting torque of the motor. The motor does not accelerate. At this point the motor has to be changed over to the delta connection. The current peak which is then obtained is clearly lower than the one occurring during direct starting.



5. Care and maintenance

5.1 Lubrication

The fan must be checked at regular intervals (depending on the operating conditions).

5.1.1 Drive motor

The motor must be serviced in accordance with the motor's lubricating instructions.

5.1.2 Shaft bearings

The bearing housings are supplied with the necessary quantity of grease for the normal service.

During the first run period it is possible that bearings become hotter than normal, therefore it is necessary to lubricate the bearings after one operating week.

Afterwards, see the following diagram for the lubrication intervals.

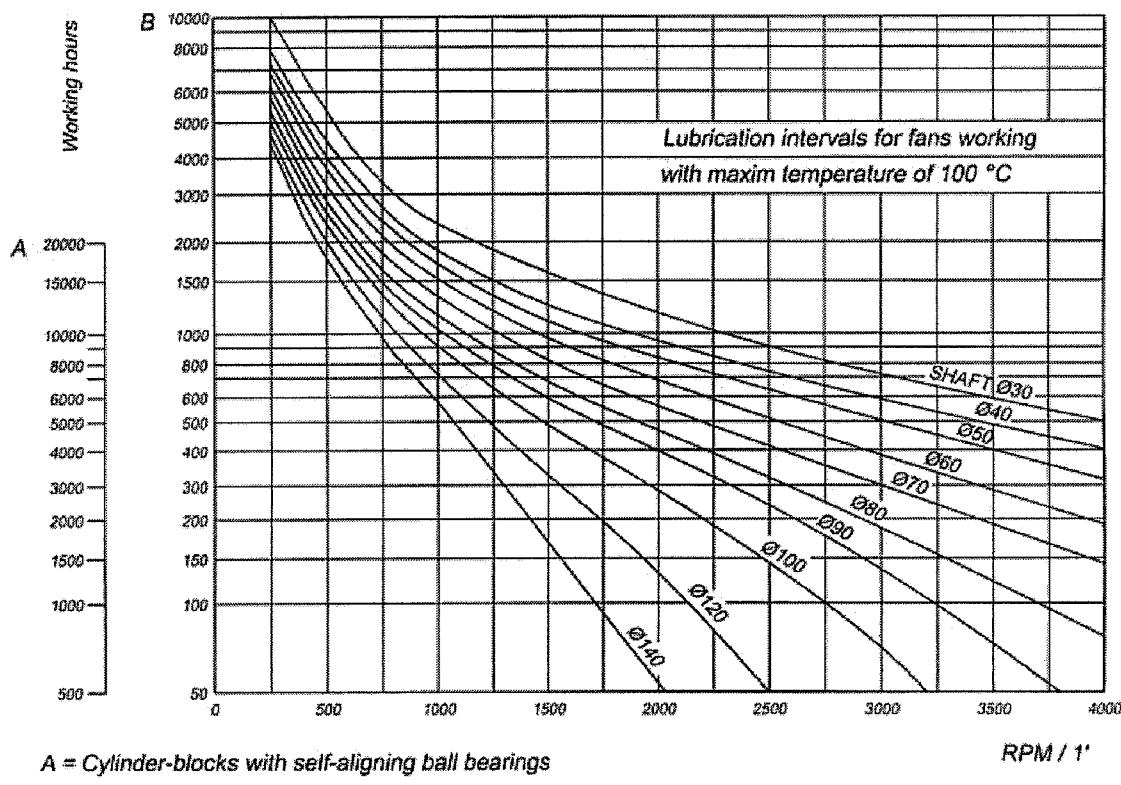
The lubrication intervals refer to fans working with air up to 100 °C.

For higher air temperature the intervals must be divided by the **K factor**.

The **K=2 factor** must be used for fan working in a dusty, wet, hot or corrosive atmosphere.

The quantity of grease for bearings lubrication is about 1/3 of the full capacity.

5.1.3 Lubrication intervals



A = Cylinder-blocks with self-aligning ball bearings

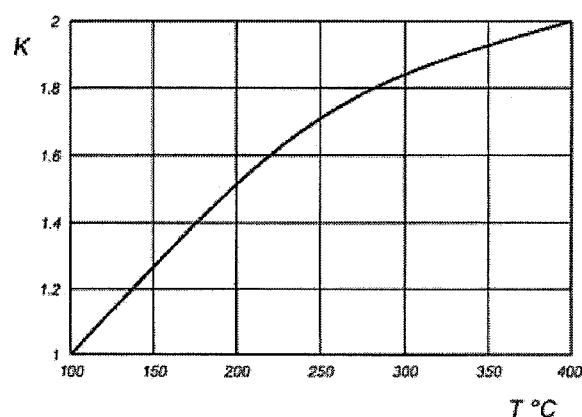
RPM / 1'

B = Housings with spherical roller bearings

I = Lubrication interval
with temperature until 100 °C

I_t = Lubrication interval
with temperature T °C

$$I_t = \frac{I}{K}$$



Quantity of grease $G = 0,005 D \times B$ (gr)

D = external ring diameter of the bearing

B = thickness of the bearing

Types of grease:

Esso Beacon EP-2

Shell Alvania EP-2

Agip GR/MU-EP-2

SKF EP-2



5.2 Drive belts

5.2.1. General

Before any general servicing work is started the fan must be turned off and it must be ensured that it cannot be switched on again.

Regularly inspect the drive belt.

Always replace the complete set of belts if one or several drive belts of a multiple-belt drive system fail.

Do not use different makes of drive belts in one set of belts.

Do not use belt dressing or belt spray.

Remove all deposits from the pulley rim.

5.2.2 Belt tension

Do not check the belt tension unless the fan is put out of operation.

Observe the safety instructions.

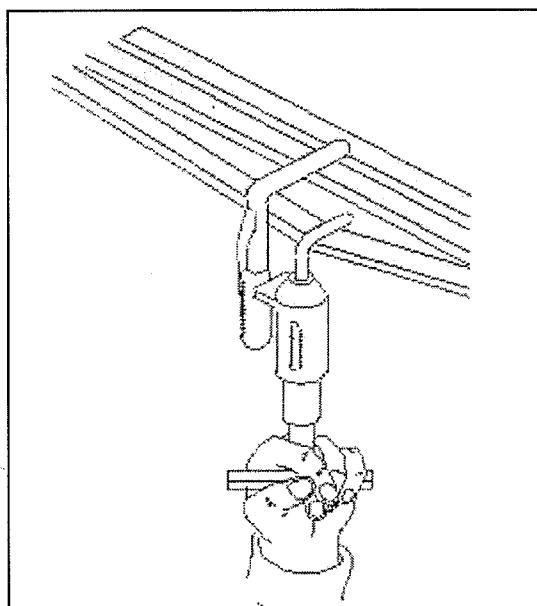
The belt housing must be removed for testing the belt tension.

Use a commercially available tension measuring instrument to determine the Ea deflection.

See an example of measuring method below.

Tension the belt if it can be pushed in (pulled out) too far.

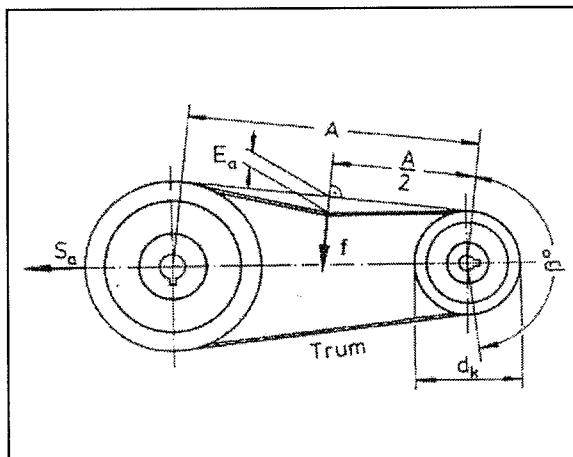
Install the belt housing before putting the fan into operation again.



Guide values for belt tension

Guide values for the deflection of V-belts as a function of the applied testing force and the distance between pulley centres (simplified method).

Profile	Testing force per V-belt f (N)	Diameter of small pulley d_k (mm)	Deflection of belt "Ea" in (mm)								
			With a distance between centres "A" in (mm)								
			500	630	800	1000	1250	1600	2000	2500	3150
SPZ	25	$>100 \leq 125$	14	17	22	28	34	44	55	-	-
		$>140 \leq 160$	13	16	20	25	31	40	50	63	-
		$>180 \leq 200$	11	14	18	22	28	36	45	56	71
SPA	50	$>180 \leq 200$	15	19	24	30	38	48	60	75	95
		$>224 \leq 250$	13	16	20	25	31	40	50	63	79
SBP	75	$>224 \leq 250$	15	19	24	30	38	48	60	75	95
		$>280 \leq 355$	15	19	24	30	38	48	60	75	95
SPC	125	$>315 \leq 355$	15	19	24	30	38	48	60	75	95
		400	14	17	22	28	34	44	55	69	87
		450	13	16	20	25	31	40	50	63	79
		500	11	14	18	22	28	36	45	56	71



A = Distance between pulley centres in mm

f = Testing force per V-belt in N

E = Deflection per 100 mm distance between centres in mm

Ea = Deflection of the belt strand

$$Ea \approx \frac{E \times A}{100} \text{ (mm)}$$



5.3 Troubleshooting

Trouble	Possible cause	Action
Unsteady operation of fan	Material sticking to impeller blades	Carefully clean impeller
	Worn impeller	Replace impeller
	Impeller deformed by heat	Replace impeller
	Fan distorted because of uneven foundation	Remove fan from foundation and level foundation. Fasten fan to foundation again
	Strain exerted by connected pipes	Use flexible pipe connections
Fan produces a grinding noise	Impeller rubs against inlet nozzle	Realign, check and correct pipe if necessary
	Motor noise	Check if bearings are damaged and replace bearings if necessary
	Shaft bearings noise	Check if bearings are damaged and replace them if necessary
The power input indicated on the rating plate is constantly exceeded	Too much air volume	Reduce air volume using a damper until the permissible power input is reached
	Different speed with 60 Hz mains	Check frequency



5.3 Troubleshooting (cont'd)

Trouble	Possible cause	Action
Fan does not accelerate	Improper connection of drive motor	Check connection
	Motor does not change from star to delta connection	Shorten change-over time from star to delta
	Fan operates against insufficient plant resistance	Close the dampers or install additional plate shutters
	Motor protection system is not strong enough	Cable cross section and protective system must withstand starting current during acceleration
	Starting time is too long	Close the dampers, check starting torque of M_A/M_N motor
	Faulty drive motor	Check motor and replace if necessary
	Starting/re-starting when fan is hot	Switching frequency too high, let motor run through (control via dampers)
	Starting current too high	Wrong voltage. Provide star-delta starting, local mains not strong enough



5.3 Troubleshooting - Bearings

Trouble	Possible cause	Action
Unsteady operating	Damaged races and rolling elements	Replace bearing
	Excessive bearing clearance	Protect bearing against dirt
	Wear caused by dirt or insufficient lubrication	Use clean grease
Unusual running noises:		
Whining or irregular noise	Insufficient internal clearance	Use bearing with sufficient internal clearance
Rattling or irregular noise	Excessive internal clearance, damaged rolling surfaces, dirt	Replace bearing
	Wrong lubricant	Use correct lubricant
Running noise is changing gradually	Change of internal clearance caused by temperature changes, damaged raceway (e.g. by dirt or fatigue)	Protect bearing against heat



5.3 Troubleshooting - Drive belts

Trouble	Possible cause	Action
Belt breaks shortly after installation (torn belt)	Tensioning strand is damaged because of force applied during installation	Allow belt to be installed as indicated in the instructions
	Foreign objects cause damage during operating	Install a guard
	Blocked drive	Eliminate cause
Cracked belt (embrittlement)	Excessive heat	Eliminate radiant sources; shield off the belt; improve air circulation; shield off the drive
	Excessive cold	Use special type of belt
	Belt is slipping	Tension the belt as per instructions for mounting
Strong vibrations	Chemical attack	Use special type of belt
	Insufficient belt tension	Check tension and tension the belt if necessary
Twisted V-belts	Unbalanced belt pulleys	Balance the pulleys
	Pulleys are not aligned. Wrong belt/groove profile	Align pulleys. Match up belt and groove profile
	Heavily worn out pulley grooves	Replace pulleys
	Excessive vibration	Tension the drive
	Insufficient tension	Check tension and tension the belt if necessary



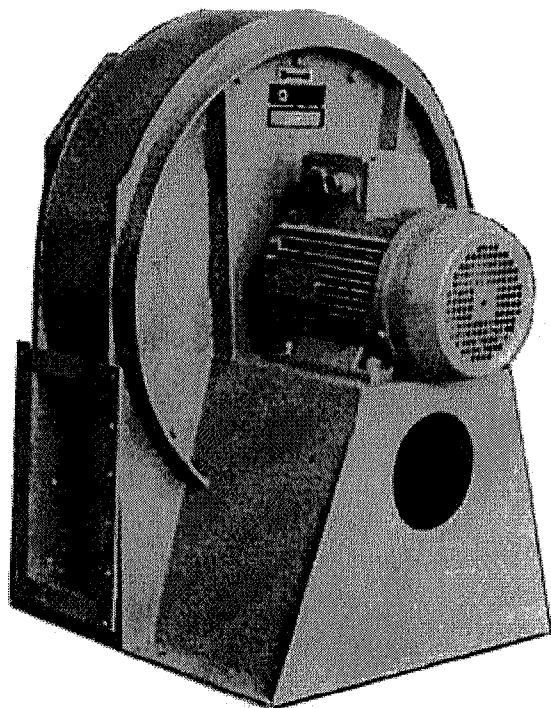
5.3 Trouble shooting - Drive belts (cont'd)

Trouble	Possible cause	Action
Unusual wear of belt flanks	Wrong groove angle	Re-machine or replace pulleys
	Worn out pulley grooves	Replace pulleys
	Wrong belt/groove profile	Match up belt and groove profile
	Pulleys are not aligned	Align pulleys
	Insufficient belt tension	Check tension and tension the belt if necessary
	Belt rubs against other parts	Remove the parts; re-align the drive
Irregular noise	Pulleys are not aligned	Align pulleys
	Insufficient belt tension	Check tension and tension the belt if necessary
	Drive is overloaded	Check drive ratios and adapt them to operating conditions
Belt feels spongy and benzene sticky	Belt is affected by oil, grease and chemicals	Clean pulleys with naphtha before new belts are installed
Uneven elongation of the belt	Faulty pulley grooves	Replace pulleys
	Set of belts consists of used and new belts	Always replace complete set of belts
	Set of belts consists of different belt makes	Only use one make of belts in a set of belts



CENTRIFUGAL FAN - ARRANGEMENT 4

OPERATING MANUAL



ARIVENT ITALIANA SRL
Via Napoli, 45
20030 - Bovisio Masciago - Mi
Phone +39 0362 590736 - Fax +39 0362 593360
Email: info@arivent.it



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1. Safety

1.1 General

The fan meets the technical safety standards applicable in the EC at the time of delivery.

The rules and regulations for the prevention of accidents applicable at the time of delivery were taken into account in the fan design.

It is not allowed to modify the original condition of the fan without the approval. The warranty expires when parts other than original spare parts and/or purchased parts not corresponding to the original parts are used.

The operating manual and any required supplementary manuals must be available to the operator.

Do not open inspection ports and/or other openings when the fan is in operation.

1.2 Start-up

The fan may only be put into operation (also for testing) when the inlet and outlet ports are provided with suitable guards or when pipes are connected to them.

Before the fan is started the housing and all pipes connected to it must be checked. They must be dry and free of screws, bolts, tools and other foreign substances.

Disregarding the above instructions may cause accidents and destroy the fan. Observe the safety regulations for electrical machines and equipment.

1.3 Servicing

The fan may only be serviced when the electrical system is dead, i.e.:

- ✓ turn off the electrical machines and ensure that they cannot be switched on again;
- ✓ wait until the rotor has come to a standstill;
- ✓ disconnect the power supply cable for the motor.

After servicing all guards and protective devices must be installed and all pipes must be connected again.

All bolts and nuts must be tightened. Close all inspection openings and tighten the bolts and nuts.

The fan can then be put into operation again.



1.4 Cleaning

Do not clean moving parts when the fan is in operation!

Before cleaning the fan must be put out of operation. Ensure that the fan cannot be switched on again accidentally.

Only use suitable detergents and cleaning materials.

If material is sticking to the impeller or the impeller is worn, the fan may be seriously damaged by unbalance.

It is therefore recommended to clean and check the fan for unusual vibrations at regular intervals.

1.5 Electrical safety

The user has to ensure that the fan is only connected and serviced by a qualified electrician in accordance with the rules and regulations applying to electrical equipment.

The user must also ensure that the fan is operated in accordance with electrotechnical rules and regulations.

Do not touch/work on live parts.

- ✓ Interrupt the power supply to the fan and use mechanical means to ensure that power supply cannot be switched on again.
- ✓ Use a voltage tester to check that the circuit is dead.
- ✓ Connect and short the work site to earth.
- ✓ Only use the fuses indicated in the electric circuit diagram.
- ✓ Check the condition of the visible cables before the fan is started.
- ✓ Replace damaged cables.

Damaged and/or defective electrical equipment must be repaired or replaced immediately.

If the damaged equipment represents a risk, the fan may not be put into operation before the defect is repaired.



1.6 Description of labels and plates

The following plates are attached to the fan:

1. Nameplate

The nameplate indicates:

TYPE

COM. - NO.

YEAR OF CONSTRUCTION

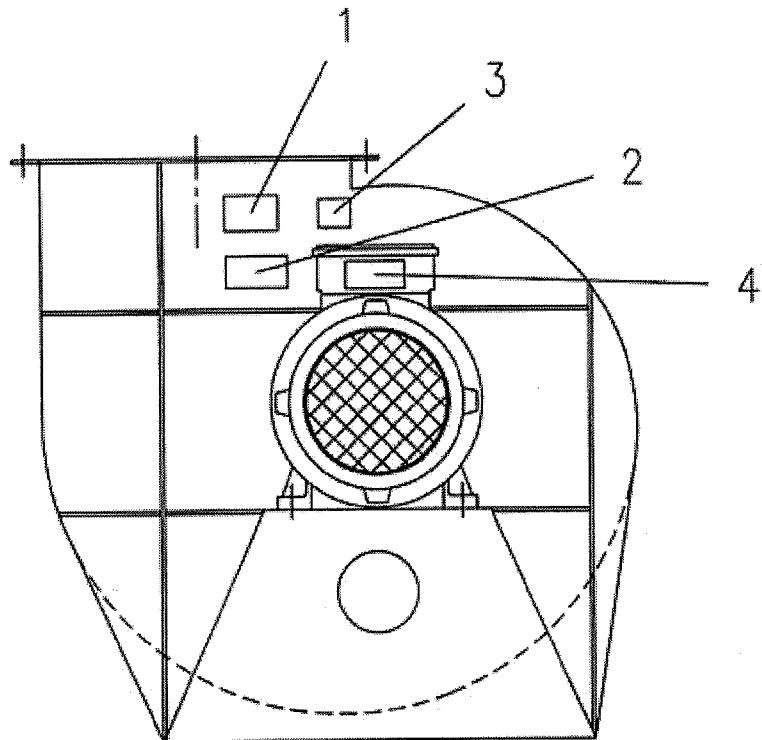
Further data are indicated on the master card of the fan.

2. Arrow

It shows the sense of rotation of the impeller.

3. CE label

4. Motor nameplate

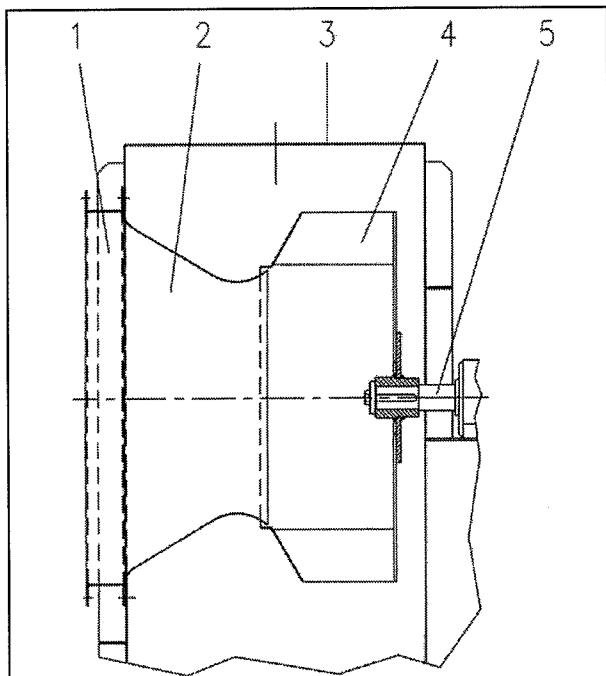


2. Description

2.1 Design

The fan is a welded single-stage centrifugal fan.

It is driven directly by the motor shaft on which the impeller is mounted.



1. Inlet socket
2. Inlet cone
3. Casing
4. Impeller
5. Shaft

3. Assembly and installation

3.1 Delivery

When delivered the fan and accessories must be checked for damage.

Check that everything indicated on the delivery note has been delivered.

In all other respects please refer to our terms and conditions for sales and delivery.

3.2 Transport

Only transport the fan with transport facilities which are appropriate for the conditions on the site where the fan is to be installed.

Observe the applicable rules and regulations for the prevention of accidents.
For lifting and transporting the fan only ropes and/or fork lift tracks with a sufficient lifting capacity may be used.

Only attach ropes to the fastening plates especially provided for lifting the fan.



Warranty claims or claims for compensation for any damage caused by the use of unsuitable means of transport or caused by improper handling will not be accepted.

3.3 Storage

If the fan is not installed and/or put into operation immediately it must be stored in a dry place which is free of vibrations.

In case of long-term storage please note the storage and preservation instructions for motors.

In case of prolonged standstill periods please note the relevant instructions for the storage of motors and fans.

3.4 Installation site

The installation site must be level and have a sufficient load bearing capacity. There must be enough room for assembly and maintenance work. The impeller must be easily accessible.

3.5 Pipes connected to the fan

When attaching the pipes to the fan care must be taken that the fan is not distorted.

- ✓ Remove the transport shutters from the connection ports.
- ✓ Connect the pipes with flexible connections to the inlet and outlet ports of the fan.

3.6 Electrical connection

The fan may only be connected up to the electrical system by a qualified electrician.

The drive motors are usually installed in the manufacturing works.

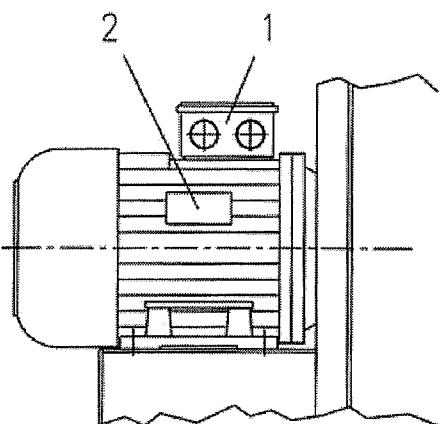
If the customer installs the motor, the warranty is submitted to a correct installation.

The motor is connected in accordance with the circuit diagram inside the terminal box (1).

The customer has to check that his power network and the switchgear and monitoring devices are sufficiently dimensioned to cope with the transient behaviour and current peaks. It must be ensured that the supply of cooling air to the electric motor is not hindered.

- ✓ The power supply cable for the fan must be installed in accordance with any locally applicable legal stipulations.
- ✓ Compare the local mains voltage with the voltage indicated on the rating plate (2) of the fan.

- ✓ Connect the fan as shown on the circuit diagram inside the terminal box (1).
- ✓ Earth the fan in accordance with the regulations issued by the local power supply company.
- ✓ Check the speed and sense of rotation.
- ✓ Check the transient behaviour and starting time.
- ✓ Provide for a motor protection system.



3.7 Inspection

3.7.1 Mechanical testing

Check the fan after it has been assembled and installed:

- ✓ check the attachment of the fan to the foundation;
- ✓ check if the impeller rotates freely;
- ✓ remove any foreign objects from the fan housing;
- ✓ check all screw couplings and bolted connections;
- ✓ check all pipe connections.



3.7.2 Electrical testing

The electrical system of the fan may only be tested by a qualified electrician:

- ✓ check the operating voltage;
- ✓ check the earthing;
- ✓ check the size of the fuses.

If the fan is not put into operations immediately after it has been assembled and installed, it must be secured against unauthorized use and covered with a tarpaulin.

4. Start-up

4.1 Putting the fan into operation

The fan may only be put into operation by qualified and skilled staff.

Before the fan is put into operation the staff must check that the fan is in good working order.

The rules and regulations for putting electrical machines into operation must be observed:

- ✓ check the safety systems;
- ✓ close the damper or inlet vane control (if provided);
- ✓ switch on the master controller;
- ✓ switch on the fan.

The fan may only be switched on when the pipes are connected and when it is certain that there will be a sufficient plant resistance after the fan motor has reached its full operating speed:

- ✓ check the sense of rotation when the fan is started up for the first time (the fan must rotate in the direction indicated by the arrow);
- ✓ check the power consumption. The maximum permissible power consumption may not be exceeded.

4.2 Putting the fan out of operation

Switch off the fan.

4.3 Transient behaviour

4.3.1 General

The fan can only be started when a sufficiently high moment of acceleration is available from the moment it is started up to the moment when **nominal speed** is reached.

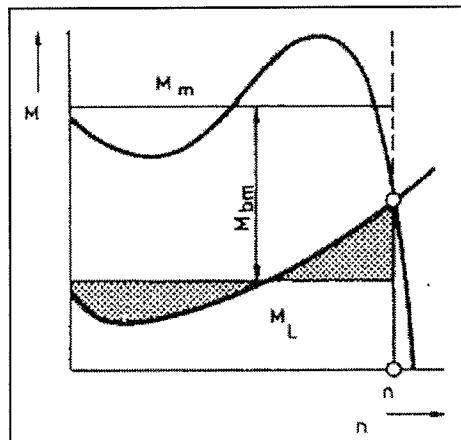
It is recommended to start the fan with the damper or inlet vane control closed. The customer has to check that his power network, switchgear, monitoring devices (if available) and cable cross sections are dimensioned to cope with the transient behaviour and current peaks.

4.3.2 Direct starting

Direct starting of the fan motor not only causes a high starting torque but also a high starting current.

During starting the starting current may be 6 to 8 times as high as the nominal current (depending on the type of rotor).

This high power input must be taken into account when the fuse sizes are determined.



M_m *Motor moment*

M_L *Load moment*

M_{bm} *Mean accelerating moment*

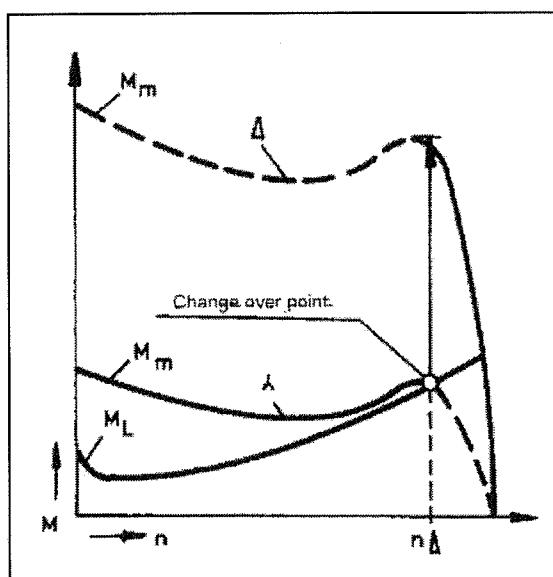
n *Speed*

Designation of Mean accelerating moment

4.3.3 Star-delta starting

During star-delta starting the drive motor only provides for 1/3 of the starting torque in the star connection.

At a certain starting speed the load moment of the fan exceeds the starting torque of the motor. The motor does not accelerate. At this point the motor has to be changed over to the delta connection. The current peak which is then obtained is clearly lower than the one occurring during direct starting.



5. Care and maintenance

5.1 Lubrication

The fan must be checked at regular intervals (depending on the operating conditions).

5.1.1 Drive motor

The motor must be serviced in accordance with the motor's lubricating instructions.



5.3 Troubleshooting

Trouble	Possible cause	Action
Unsteady operation of fan	Material sticking to impeller blades	Carefully clean impeller
	Worn impeller	Replace impeller
	Impeller deformed by heat	Replace impeller
	Fan distorted because of uneven foundation	Remove fan from foundation and level foundation. Fasten fan to foundation again
	Strain exerted by connected pipes	Use flexible pipe connections
Fan produces a grinding noise	Impeller rubs against inlet nozzle	Realign, check and correct pipe if necessary
	Motor noise	Check if bearings are damaged and replace bearings if necessary
The power input indicated on the rating plate is constantly exceeded	Too much air volume	Reduce air volume using a damper until the permissible power input is reached
	Different speed with 60 Hz	Check frequency



5.3 Troubleshooting (cont'd)

Trouble	Possible cause	Action
Fan does not accelerate	Improper connection of drive motor	Check connection
	Motor does not change from star to delta connection	Shorten change-over time from star to delta
	Fan operates against insufficient plant resistance	Close the dampers or install additional plate shutters
	Motor protection system is not strong enough	Cable cross section and protective system must withstand starting current during acceleration
	Starting time is too long	Close the dampers, check starting torque of M_A/M_N motor
	Faulty drive motor	Check motor and replace if necessary
	Starting/re-starting when fan is hot	Switching frequency too high, let motor run through (control via dampers)
	Starting current too high	Wrong voltage. Provide star-delta starting, local mains not strong enough

900609586000

UGINE & ALZ <small>ACCELOR GROUP</small>		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS B DIN EN 10204/3.1										N-Nr-N 2005K0102732						
<small>UGINE & ALZ Belgium NV Maatschappij te zelz Gent-Zuid : Zone 5A, Sint-Janswijkstraat 5, B-9000 Gent Tel. (088) 30 21 11 - Telefax (088) 30 23 80 Telenet 38058 sidsong b H.R. Tangeren nr 41.031 - B.T.W. nr BE 401.277.914</small>		<small>Approved as supplier according to AD2000-WO-TRD 100 statement W.E. 503 certified acc. PED (97/23/EC) by TÜV - NB 0035</small>										CONFORME COPIA ALL'ORIGINALE ACCIAI VENDER S.p.A.						
A01		A02		A03		A04		A05		A06		A07						
<small>Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 50A542671/01-07954/199/01 Packing list: 2005K539821</small>		<small>Surveyor's mark Cachet de l'expert</small>		<small>Stamp des Werksachverständigen</small>		<small>Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfänger ACCIAR VENDER SPA</small>		<small>Purchaser's order number N° de commande client Kundenauftragsnummer ZN0501</small>										
<small>Product - Produkt - Erzeugnis COILLS, HOT ROLLED, ANNEALED AND PICKLED COILLS, LAMINER A CHAÎNE, RECUISSA + DÉCAPTE COILLS, WARMGEWALZT, GEZOGLKT UND GEZOET</small>				<small>VIA NOBILI, 4/A Q.RE IND.LE S.P.T.P. 43100 PARM</small>				<small>Customer article number N° d'article client Artikelnummer des Kunden</small>										
<small>Steel designation Désignation de l'acier Stahlbezeichnung</small>		<small>Plastic Presentation Ausführung</small>		<small>Steckverbindungsprozess Mode d'élaboration du joint - Stahlherstellungsverfahren Elektro mit Flamme-VOD/AOD-Continuous casting</small>		<small>G70 G71 G72 G73 G74 G75 G76 G77 G78 G79 G80 G81 G82 G83 G84 G85 G86</small>		<small>G70 G71 G72 G73 G74 G75 G76 G77 G78 G79 G80 G81 G82 G83 G84 G85 G86</small>		<small>Product delivery condition Etat de livraison du produit Lieferbedingung</small>								
<small>EN 10029-7/00 NEN 1.4307/1.4301 EN 10029-2/05 NEN 1.4307/1.4301 ASME A 248 (M) - CSA Z21.54 304L/304</small>		<small>ID ID NO 1</small>		<small>Furn à arc-VOD/AOD-Coule continue Elektro-Oxy-VOD/AOD-Schmelzguss</small>						<small>Solution treated: Hyperlimpe: Lösungsguss + Lösungsguss;</small>		1050 G						
				<small>Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen</small>						<small>Forced air - Air forced Gebläse-Luf</small>								
				X2 CRNT 18-9														
AD 2000 W2/2004 -- AD 2000 W10/2003 -- EN 13445-2/2002														UF 4426 by 1552				
D07		Dimensions Dimensions - Abmessungen										Number of pieces Nombre de pièces - Stückzahl						
<small>Identification of the product Identification du produit-Identifizierung des Erzeugnisses</small>												1						
<small>Cell n. N° de bobine - Band Nr</small>		<small>Head n. N° de coûte - Schmolz Nr</small>		<small>Thickness Epaisseur - Dicke</small>		<small>Width Largeur - Breite</small>		<small>Length Longueur - Länge</small>				D12						
54303641		543036		4.00 mm		1500.00 mm						8990 KG						
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																		
		C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P							
<small>Required-Exigé Anforderung</small>		% mini % maxi	0.030	0.75	2.80	10.00	19.50		0.000	0.015	0.045							
<small>Cast Analysis Analyse coulée Analysen Schmelze</small>		0.021	0.49	2.49	8.10	18.00			0.004	0.004	0.028							
		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	
C 0.02 % F 0.01 %														D01				
Test to verify batch and quality have been carried out : OK														D02				
Test de vérification de la conformité de la qualité fournie : OK														D03				
Verwendungsangabe wurde durchgeführt : OK														D04				
Batch test results are satisfactory EN 10204-7/02														D05				
Les resultats de l'épreuve sont satisfaisants 1.00 : OK														D06				
Ergebnisse der Beigemachte entsprechen den Vorschriften														D07				
Location (1)		MECHANICAL PROPERTIES - PROPRIÉTÉS MÉCANIQUES - MECHANISCHE WERTE EN 10002-1																
		Room temperature - Température ambiante - Raumtemperatur										Test Temperature :						
Direction (2)		Yield strength Limit d'élasticité Streckgrenze		Tensile strength Résistance à la traction Zugfestigkeit		Elongation after fracture (A)		Hardness Dureté Härte		Yield strength Limite d'élasticité Streckgrenze		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement Dehnung %				
Required Exigé Anforderung		MPa Np 1 %		MPa Rm		%		HRB Cte		MPa Rp 0.2 %		MPa Rp 1 %		%				
min max		210		250		520 670		45		45		92						
1 T Obtained Obtenu Ergebnisse		288		339		631		56		55		82						
		C11	C14			C12	C13	C15		C16		C17		C18				
		Impact strength test Essai de résilience Körbeigleichtest		Corrosion test Test de corrosion Korrosionsfest		20.2 (2) / 21.0										Sample thickness 3.97 mm		
		C40	C41	EN ISO 3651/2		C42	45		C51		C52		C53		C54		C55	
						D51												
						Internal Classification :						A:		B:		C:		
						D52						D:		C57				
Location of the sample (1)		The delivery is in accordance with the order La livraison est conforme aux exigences de la commande Die Lieferung entspricht den Bestellbedingungen												Organisation inspection Organisme et/ou service contrôlé Überwachungsabteilung				
														Metallurgical Department				
														24/11/2005 J. VANTRAYE				
Direction of the test pieces (2)		Marking, inspection and measurement : without objection Contrôle du marquage, d'aspects et de dimensions : sans objection Prüfung der Stempelung, des Oberflächeneigenschaften und der Abmessungen : ohne Beanstandung												The Inspector Le responsable Der Werkstachverständige				
														D01				
C01																		
C02																		

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GRUPPO INOX S.P.A.

0057 5959

UGINE & ALZ France

d'Isbergues

30 Isbergues

ANCE

MILL CERTIFICATE BS EN 10204/3.1

CERTIFICAT DE RECEPTION N° EN 10204/3.1
ABNAHMEPRUEFZEUGNIS B DIN EN 10204/3.1

IN-NR-NR. 00000000000000000000000000000000

A01

A02

ausgestellt im Einvernehmen mit dem TÜV-Rheinland -établi en accord avec le TÜV Rheinland
auf Gegenzeichnung wird laut Schreiben des TÜV-Rheinland verziert.
disposée de contre-signature selon lettre du TÜV Rheinland
Anforderungen: A.D. 2000 Merkblatt WU/FRD100-W2, W10 conditions imposées
Werkstoffherstellung Schmelz-Nr. Proba-Nr. Stempel des Werkstoffherstellers
désignation du matériau N° de coulée n° d'échantillon pointeur du contrôleur

ISO TS 18049V2002 - ISO 14001 V1998

A03

Manufacturer's works order number
de la commande usine productrice
Werksauftragsnummer

IA557900/03-56478/1

Product - Product - Erzeugnis

OLD-ROLLED COIL

JOINT LAMINÉE A FROID

ALTEGEWALZTES BAND

Designation
signature de l'auteur
Hilfserziehung

I 10028-7 / 00 - 1. 4307 4301

I 10088-2 / 05 - 1. 4307 4301

ITM A 240 / 04 - AISI304L AISI304

Surveyor's mark
Cachet de l'expert
Stempel des
Werksauftragsverordnungen

UI2

Purchaser and/or consignee
Client et/ou destinataire
Besteller und/oder Empfänger

GRUPPO INOX SPA

LARGO ESTERLE . 4

20052 MONZA

ITALIE

Purchaser's order number
N° de comande client
Kundenauftragsnummer

30210 FEBBRAIO

Customer article number
N° d'article client
Artikelnummer des Kunden

A04

Product delivery condition
Etat de livraison du produit

Lieferwunsch

Solution treated 1000-1100 C

Hypothermique

Locomotionsgeschwindigkeit

Forced Air Air force

Gehirte Luft

Windgeschwindigkeit

INSTATION PEG 97/33-N BP-LY-01-MAT-01 QAPAVIG DU 17/12/2001

Identification of the product
Identification du produit/Identifizierung der Ureprodukte

U. n.
de bobine · Band-Nr
87462

N° de bobine Schmelz-Nr
607085

Thickness
Epaisseur - Dicke

2,500 mm

Width
Largeur - Breite

1500,00 mm

Length
Longueur - Länge

mm

Net weight
Poids net - Netto Gewicht

5320 KGS

Chemical analysis - Analyse chimique - Chemische Zusammensetzung

Required-Exigé % min
fordering % maxi

0,030 0,75 2,00 10,00 19,50

Cast Analysis
Analyse coulée

Analyse Schmelze

C71 C72 C73 C74 C75 C76 C77 C78 C79 C80 C81 C82 C83 C84 C85 C86

is to verify that quality have been carried out - OK

is to verify that the required quality has been carried out - OK

wechselungsprüfung wurde durchgeführt - OK

CM C92

MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE

Section (1) Room temperature - Température ambiante - Raumtemperatur

Direction (2)

Regulated
Exigé
Anforderung

Rp 0,2 % Rp 1 %

Mpa Mpa

Rm Rm

80mm 2"

% %

Hardness
Dureté
Härte

HRB C30

Rp 0,2 % Rp 1 %

Mpa Mpa

Rm Rm

100mm 2"

% %

Elongation
%
Allongement
%
Dehnung %

C11 C12 C13 C14 C15 C16 C17 C18 C19

Impact strength test
Essai de résistance
Zerstörungsfestigkeitstest

Corrosion test
Test de corrosion
Korrosionsfestigkeitstest

Impurity - Contamination
Contaminationsgrad

Temperature - Temperatur

C14

EN ISO 3851-2 :OK

C15 C16 C17 C18 C19 C20

Internal cleanliness -
Intérieur de la nettoyage -
Innenreinheit -
Innenreinheit

A: B: C: D:

C17

Setting of the sample (1)
placement de l'échantillon
zu den Prüfungsabschnitten

1. Front - Début - Anfang

2. Back - Fin - Ende

3. Middle - Milieu - Mitte

Setting of the test pieces (2)
entnahme der prüfsvorrichtungen
Prüfleistung

1. Transverse - Travers - Quer

2. Longitudinal - Long - Längs

C15

The delivery is in accordance with the order
La livraison est conforme aux exigences de la commande
Die Lieferung entspricht den Bestellbedingungen

C11

Organisational inspection
Organismus et/ou service contrôle
Überwachungsabteilung

A05

Service Métallurgique

Le : 10/03/2008

M. THOMAS

The inspector
Le responsable
Der Warenachvorsichtige

C17

GRUPPO INOX S.P.A.

COPIA CONFORME ALL'ORIGINALE



0112 3302

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**INSPECTION
CERTIFICATE 3.1**
ABNAHMEPRUFZEUGNIS
3.1



**COLUMBUS
STAINLESS**

Columbia Stainless [Pty] Ltd P.O. Box 102 Knysnaenburg 10309 South Africa.
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A subsidiary of AFERINDX S.A.

For EN 10204

GRUPPO INOX Srl Acciai-Vender SpA Via Nobel, 4 43100 - Parma (PR) Italy	O&N. Güte-Auspr.Nr. EP04607	ITWM-Nr. (Pins-Nr.) 006	INSPECTOR'S STAMP  Zeichen des Gutachters
CUSTOMER NUMBER (Kundenkenn-Nr.) 2424206-2963			
REMARKS/ANMERKUNGEN AD 2000 WZ AD 2000 W10			
Certified by EUV Rheinland/Stahl-Prüfingenieur to European Directive			

PROJEKT Nr.: 20	20: Kaltgewalzt, wärmebehandelt, gebeizt, kalt nachgewalzt	HEAT-Nr. / Schmelze-Nr. 360113	MPA-Nr. 360113/3
* The first six numbers are the heat number. The seventh character is the sub indicator and any further characters			

* The first six numbers are the hex number. The seventh character is the sub indicator and any further characters represent a part of the stat with exothermal/mechanical properties.

EN/CS/Cold Rolled, Heat Treated, Plain Steel, Carbon Steel		Represents part of the Spec. DIN EN 10025-2-1 standard properties		CASE Number
Specification	MATERIAL CODE (Werkstoff)	Grade	Properties	
EN 10088-2 2005 (COLD ROLLED STRIP)	1.4307	1.4301		YCP119317
EN 10025-7:2000 (COLD ROLLED STRIP)	1.4307	1.4301		
ASTM A240 : A240M-06B	304L	304		
ASME SECT.IIA, ED. 04 ADD. 05:SA240M	304L	304		
AISI ANALYSIS	304L	304		

ITEM NUMBER EN ISO 9445-06	Delivery Note Number: 24110	QUANTITY Stückzahl	1
DESCRIPTION (Artikelbesch)	SL. NO. NAME X2CRNI 18 9	MASS (Gewicht)	4150 kg

© 2001 has been fully revised

Mit Schreiben WE 133 vom 5.1.1972 hat der TÜV RHEINLAND e.V. auf eine Gegenzeichnung verzichtet. Anerkennung für AD WO/TRB 100
In their letter WE 133 of 5.1.1972 TÜV RHEINLAND e.V. cancelled
the requirements of the countersigning. Approval to AD WO/TRB 100
Kenzeichnung: Werkstoff, MPO Nr., Herstellerzeichen, Stempel des
Sachverständigen.
Marking: Material code, MPO No., Manufacturers Brand, Inspectors Stamp.

COLUMBUS STAINLESS [Pty] Ltd

DRK



A01	IVA SPA - VIALE CERTOSA, 249 - 20151 MILANO SOCIETÀ SOGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		A04		A02 TIPO DOCUMENTO - TYPE DOCUMENT CERTIFICATO DI ANALISI CHIMICA DI COLATA CHEMICAL ANALYSIS CERTIFICATE		A07 ORDINAZIONE COMMITTENTE CUSTOMER ORDER STAB. DI TARANTO VIA APPIA SS7 Km648 S235JR		A09 ARTICOLO CLIENTE CUSTOMER ARTICLE BN 10025 + A1:1993		A08N CONFERMA ORDER WORK BN 218891		B01 PRODOTTO - PRODUCT LAMIERE DERIVATE A CALDO BN 10025 + A1:1993		B02 QUALITA' - STEEL GRADE BN 218891		B03 ESIGENZE SUPPLEMENTARI-SUPPLEMENTARY REQUIREMENTS		B04 STATO DI FORNITURA - DELIVERY CONDITIONS SECONDO NORMA		B05 TRATTAMENTO SAGGI - TREATMENT SAMPLES	
						</td																

A01	AD2 TIPO DOCUMENTO - TYPE DOCUMENT		AD3 DOCUMENTO N. DOCUMENT NUMBER		AD2 DATA - DATE		CONF. COM.		AD3 COMMITTENTE - CUSTOMER	
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		2008/03/04/01		17/03/2008		EN 10204		Via Marmotada, 10		
N. 8000033		AD4 ORDINAZIONE COMMITTENTE CUSTOMER ORDER		AD5 ARTICOLO CLIENTE CUSTOMER ARTICLE		AD6 CONFERMA ORDER WORK		AD7 SCELTA DI MARCATURA MARKING		
N. 8000033		08/02/2008		B02 QUALITY - STEEL GRADE MW 10205-2 #355Z+M		B03 ESIGENZE SUPPLEMENTARI-SUPPLEMENTARY REQUIREMENTS ATT. MARCATURA EN 10025- CD. 1		B04 STATO DI FORNITURA - DELIVERY CONDITIONS/BGS TRATTAMENTO SAGGI - TREATMENT SAMPLES SECORDO NORMA		
AD8 PRODOTTO - PRODUCT NASTRINI LARGHEZZA A CIARDO		B05 TEST - TEST		C01 IDENTIFICAZIONE IDENTIFICATION		C02 COMPOSIZIONE CHIARA - CHEMICAL COMPOSITION		C03 TEST - TEST		
AD9 STAB. DI TARANTO VIA APPIA, 897 Km648		C04 : COLATA CONTINUA - CONTINUOUS CASTING		C05 TEST - TEST		C06 TEST - TEST		C07 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C08 TEST - TEST		C09 TEST - TEST		C10 TEST - TEST		C11 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C12 TEST - TEST		C13 TEST - TEST		C14 TEST - TEST		C15 TEST - TEST		
N. 8000033		C16 TEST - TEST		C17 TEST - TEST		C18 TEST - TEST		C19 TEST - TEST		
AD10 TIPO DOCUMENTO - TYPE DOCUMENT		C20 TEST - TEST		C21 TEST - TEST		C22 TEST - TEST		C23 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C24 TEST - TEST		C25 TEST - TEST		C26 TEST - TEST		C27 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C28 TEST - TEST		C29 TEST - TEST		C30 TEST - TEST		C31 TEST - TEST		
N. 8000033		C32 TEST - TEST		C33 TEST - TEST		C34 TEST - TEST		C35 TEST - TEST		
AD11 TIPO DOCUMENTO - TYPE DOCUMENT		C36 TEST - TEST		C37 TEST - TEST		C38 TEST - TEST		C39 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C40 TEST - TEST		C41 TEST - TEST		C42 TEST - TEST		C43 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C44 TEST - TEST		C45 TEST - TEST		C46 TEST - TEST		C47 TEST - TEST		
N. 8000033		C48 TEST - TEST		C49 TEST - TEST		C50 TEST - TEST		C51 TEST - TEST		
AD12 TIPO DOCUMENTO - TYPE DOCUMENT		C52 TEST - TEST		C53 TEST - TEST		C54 TEST - TEST		C55 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C56 TEST - TEST		C57 TEST - TEST		C58 TEST - TEST		C59 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C60 TEST - TEST		C61 TEST - TEST		C62 TEST - TEST		C63 TEST - TEST		
N. 8000033		C64 TEST - TEST		C65 TEST - TEST		C66 TEST - TEST		C67 TEST - TEST		
AD13 TIPO DOCUMENTO - TYPE DOCUMENT		C68 TEST - TEST		C69 TEST - TEST		C70 TEST - TEST		C71 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C72 TEST - TEST		C73 TEST - TEST		C74 TEST - TEST		C75 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C76 TEST - TEST		C77 TEST - TEST		C78 TEST - TEST		C79 TEST - TEST		
N. 8000033		C80 TEST - TEST		C81 TEST - TEST		C82 TEST - TEST		C83 TEST - TEST		
AD14 TIPO DOCUMENTO - TYPE DOCUMENT		C84 TEST - TEST		C85 TEST - TEST		C86 TEST - TEST		C87 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C88 TEST - TEST		C89 TEST - TEST		C90 TEST - TEST		C91 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C92 TEST - TEST		C93 TEST - TEST		C94 TEST - TEST		C95 TEST - TEST		
N. 8000033		C96 TEST - TEST		C97 TEST - TEST		C98 TEST - TEST		C99 TEST - TEST		
AD15 TIPO DOCUMENTO - TYPE DOCUMENT		C100 TEST - TEST		C101 TEST - TEST		C102 TEST - TEST		C103 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C104 TEST - TEST		C105 TEST - TEST		C106 TEST - TEST		C107 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C108 TEST - TEST		C109 TEST - TEST		C110 TEST - TEST		C111 TEST - TEST		
N. 8000033		C112 TEST - TEST		C113 TEST - TEST		C114 TEST - TEST		C115 TEST - TEST		
AD16 TIPO DOCUMENTO - TYPE DOCUMENT		C116 TEST - TEST		C117 TEST - TEST		C118 TEST - TEST		C119 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C120 TEST - TEST		C121 TEST - TEST		C122 TEST - TEST		C123 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C124 TEST - TEST		C125 TEST - TEST		C126 TEST - TEST		C127 TEST - TEST		
N. 8000033		C128 TEST - TEST		C129 TEST - TEST		C130 TEST - TEST		C131 TEST - TEST		
AD17 TIPO DOCUMENTO - TYPE DOCUMENT		C132 TEST - TEST		C133 TEST - TEST		C134 TEST - TEST		C135 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C136 TEST - TEST		C137 TEST - TEST		C138 TEST - TEST		C139 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C140 TEST - TEST		C141 TEST - TEST		C142 TEST - TEST		C143 TEST - TEST		
N. 8000033		C144 TEST - TEST		C145 TEST - TEST		C146 TEST - TEST		C147 TEST - TEST		
AD18 TIPO DOCUMENTO - TYPE DOCUMENT		C148 TEST - TEST		C149 TEST - TEST		C150 TEST - TEST		C151 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C152 TEST - TEST		C153 TEST - TEST		C154 TEST - TEST		C155 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C156 TEST - TEST		C157 TEST - TEST		C158 TEST - TEST		C159 TEST - TEST		
N. 8000033		C160 TEST - TEST		C161 TEST - TEST		C162 TEST - TEST		C163 TEST - TEST		
AD19 TIPO DOCUMENTO - TYPE DOCUMENT		C164 TEST - TEST		C165 TEST - TEST		C166 TEST - TEST		C167 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C168 TEST - TEST		C169 TEST - TEST		C170 TEST - TEST		C171 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C172 TEST - TEST		C173 TEST - TEST		C174 TEST - TEST		C175 TEST - TEST		
N. 8000033		C176 TEST - TEST		C177 TEST - TEST		C178 TEST - TEST		C179 TEST - TEST		
AD20 TIPO DOCUMENTO - TYPE DOCUMENT		C180 TEST - TEST		C181 TEST - TEST		C182 TEST - TEST		C183 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C184 TEST - TEST		C185 TEST - TEST		C186 TEST - TEST		C187 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C188 TEST - TEST		C189 TEST - TEST		C190 TEST - TEST		C191 TEST - TEST		
N. 8000033		C192 TEST - TEST		C193 TEST - TEST		C194 TEST - TEST		C195 TEST - TEST		
AD21 TIPO DOCUMENTO - TYPE DOCUMENT		C196 TEST - TEST		C197 TEST - TEST		C198 TEST - TEST		C199 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C200 TEST - TEST		C201 TEST - TEST		C202 TEST - TEST		C203 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C204 TEST - TEST		C205 TEST - TEST		C206 TEST - TEST		C207 TEST - TEST		
N. 8000033		C208 TEST - TEST		C209 TEST - TEST		C210 TEST - TEST		C211 TEST - TEST		
AD22 TIPO DOCUMENTO - TYPE DOCUMENT		C212 TEST - TEST		C213 TEST - TEST		C214 TEST - TEST		C215 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C216 TEST - TEST		C217 TEST - TEST		C218 TEST - TEST		C219 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C220 TEST - TEST		C221 TEST - TEST		C222 TEST - TEST		C223 TEST - TEST		
N. 8000033		C224 TEST - TEST		C225 TEST - TEST		C226 TEST - TEST		C227 TEST - TEST		
AD23 TIPO DOCUMENTO - TYPE DOCUMENT		C228 TEST - TEST		C229 TEST - TEST		C230 TEST - TEST		C231 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C232 TEST - TEST		C233 TEST - TEST		C234 TEST - TEST		C235 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C236 TEST - TEST		C237 TEST - TEST		C238 TEST - TEST		C239 TEST - TEST		
N. 8000033		C240 TEST - TEST		C241 TEST - TEST		C242 TEST - TEST		C243 TEST - TEST		
AD24 TIPO DOCUMENTO - TYPE DOCUMENT		C244 TEST - TEST		C245 TEST - TEST		C246 TEST - TEST		C247 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C248 TEST - TEST		C249 TEST - TEST		C250 TEST - TEST		C251 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C252 TEST - TEST		C253 TEST - TEST		C254 TEST - TEST		C255 TEST - TEST		
N. 8000033		C256 TEST - TEST		C257 TEST - TEST		C258 TEST - TEST		C259 TEST - TEST		
AD25 TIPO DOCUMENTO - TYPE DOCUMENT		C260 TEST - TEST		C261 TEST - TEST		C262 TEST - TEST		C263 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C264 TEST - TEST		C265 TEST - TEST		C266 TEST - TEST		C267 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C268 TEST - TEST		C269 TEST - TEST		C270 TEST - TEST		C271 TEST - TEST		
N. 8000033		C272 TEST - TEST		C273 TEST - TEST		C274 TEST - TEST		C275 TEST - TEST		
AD26 TIPO DOCUMENTO - TYPE DOCUMENT		C276 TEST - TEST		C277 TEST - TEST		C278 TEST - TEST		C279 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C280 TEST - TEST		C281 TEST - TEST		C282 TEST - TEST		C283 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C284 TEST - TEST		C285 TEST - TEST		C286 TEST - TEST		C287 TEST - TEST		
N. 8000033		C288 TEST - TEST		C289 TEST - TEST		C290 TEST - TEST		C291 TEST - TEST		
AD27 TIPO DOCUMENTO - TYPE DOCUMENT		C292 TEST - TEST		C293 TEST - TEST		C294 TEST - TEST		C295 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C296 TEST - TEST		C297 TEST - TEST		C298 TEST - TEST		C299 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C300 TEST - TEST		C301 TEST - TEST		C302 TEST - TEST		C303 TEST - TEST		
N. 8000033		C304 TEST - TEST		C305 TEST - TEST		C306 TEST - TEST		C307 TEST - TEST		
AD28 TIPO DOCUMENTO - TYPE DOCUMENT		C308 TEST - TEST		C309 TEST - TEST		C310 TEST - TEST		C311 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C312 TEST - TEST		C313 TEST - TEST		C314 TEST - TEST		C315 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C316 TEST - TEST		C317 TEST - TEST		C318 TEST - TEST		C319 TEST - TEST		
N. 8000033		C320 TEST - TEST		C321 TEST - TEST		C322 TEST - TEST		C323 TEST - TEST		
AD29 TIPO DOCUMENTO - TYPE DOCUMENT		C324 TEST - TEST		C325 TEST - TEST		C326 TEST - TEST		C327 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C328 TEST - TEST		C329 TEST - TEST		C330 TEST - TEST		C331 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C332 TEST - TEST		C333 TEST - TEST		C334 TEST - TEST		C335 TEST - TEST		
N. 8000033		C336 TEST - TEST		C337 TEST - TEST		C338 TEST - TEST		C339 TEST - TEST		
AD30 TIPO DOCUMENTO - TYPE DOCUMENT		C340 TEST - TEST		C341 TEST - TEST		C342 TEST - TEST		C343 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C344 TEST - TEST		C345 TEST - TEST		C346 TEST - TEST		C347 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C348 TEST - TEST		C349 TEST - TEST		C350 TEST - TEST		C351 TEST - TEST		
N. 8000033		C352 TEST - TEST		C353 TEST - TEST		C354 TEST - TEST		C355 TEST - TEST		
AD31 TIPO DOCUMENTO - TYPE DOCUMENT		C356 TEST - TEST		C357 TEST - TEST		C358 TEST - TEST		C359 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C360 TEST - TEST		C361 TEST - TEST		C362 TEST - TEST		C363 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C364 TEST - TEST		C365 TEST - TEST		C366 TEST - TEST		C367 TEST - TEST		
N. 8000033		C368 TEST - TEST		C369 TEST - TEST		C370 TEST - TEST		C371 TEST - TEST		
AD32 TIPO DOCUMENTO - TYPE DOCUMENT		C372 TEST - TEST		C373 TEST - TEST		C374 TEST - TEST		C375 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C376 TEST - TEST		C377 TEST - TEST		C378 TEST - TEST		C379 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C380 TEST - TEST		C381 TEST - TEST		C382 TEST - TEST		C383 TEST - TEST		
N. 8000033		C384 TEST - TEST		C385 TEST - TEST		C386 TEST - TEST		C387 TEST - TEST		
AD33 TIPO DOCUMENTO - TYPE DOCUMENT		C388 TEST - TEST		C389 TEST - TEST		C390 TEST - TEST		C391 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C392 TEST - TEST		C393 TEST - TEST		C394 TEST - TEST		C395 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C396 TEST - TEST		C397 TEST - TEST		C398 TEST - TEST		C399 TEST - TEST		
N. 8000033		C400 TEST - TEST		C401 TEST - TEST		C402 TEST - TEST		C403 TEST - TEST		
AD34 TIPO DOCUMENTO - TYPE DOCUMENT		C404 TEST - TEST		C405 TEST - TEST		C406 TEST - TEST		C407 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C408 TEST - TEST		C409 TEST - TEST		C410 TEST - TEST		C411 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C412 TEST - TEST		C413 TEST - TEST		C414 TEST - TEST		C415 TEST - TEST		
N. 8000033		C416 TEST - TEST		C417 TEST - TEST		C418 TEST - TEST		C419 TEST - TEST		
AD35 TIPO DOCUMENTO - TYPE DOCUMENT		C420 TEST - TEST		C421 TEST - TEST		C422 TEST - TEST		C423 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C424 TEST - TEST		C425 TEST - TEST		C426 TEST - TEST		C427 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C428 TEST - TEST		C429 TEST - TEST		C430 TEST - TEST		C431 TEST - TEST		
N. 8000033		C432 TEST - TEST		C433 TEST - TEST		C434 TEST - TEST		C435 TEST - TEST		
AD36 TIPO DOCUMENTO - TYPE DOCUMENT		C436 TEST - TEST		C437 TEST - TEST		C438 TEST - TEST		C439 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C440 TEST - TEST		C441 TEST - TEST		C442 TEST - TEST		C443 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C444 TEST - TEST		C445 TEST - TEST		C446 TEST - TEST		C447 TEST - TEST		
N. 8000033		C448 TEST - TEST		C449 TEST - TEST		C450 TEST - TEST		C451 TEST - TEST		
AD37 TIPO DOCUMENTO - TYPE DOCUMENT		C452 TEST - TEST		C453 TEST - TEST		C454 TEST - TEST		C455 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C456 TEST - TEST		C457 TEST - TEST		C458 TEST - TEST		C459 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C460 TEST - TEST		C461 TEST - TEST		C462 TEST - TEST		C463 TEST - TEST		
N. 8000033		C464 TEST - TEST		C465 TEST - TEST		C466 TEST - TEST		C467 TEST - TEST		
AD38 TIPO DOCUMENTO - TYPE DOCUMENT		C468 TEST - TEST		C469 TEST - TEST		C470 TEST - TEST		C471 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C472 TEST - TEST		C473 TEST - TEST		C474 TEST - TEST		C475 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C476 TEST - TEST		C477 TEST - TEST		C478 TEST - TEST		C479 TEST - TEST		
N. 8000033		C480 TEST - TEST		C481 TEST - TEST		C482 TEST - TEST		C483 TEST - TEST		
AD39 TIPO DOCUMENTO - TYPE DOCUMENT		C484 TEST - TEST		C485 TEST - TEST		C486 TEST - TEST		C487 TEST - TEST		
CERTIFICATO DI COLLAUDO, INSPECTION CERTIFICATE EN 10204 TIPO 3.1 (CE)		C488 TEST - TEST		C489 TEST - TEST		C490 TEST - TEST		C491 TEST - TEST		
SOCIETÀ SUGGETTA ALL'ATTIVITÀ DI DIREZIONE E COORDINAMENTO DI RIVA FIRE S.P.A.		C492 TEST - TEST		C493 TEST - TEST		C494 TEST - TEST		C		

A01
ILVA SPA - VIALE CERTOSA, 249 - 20151 MILANO
E COORDINAMENTO DI RIVA FIRE S.P.A.



A02 TIPO DOCUMENTO - TYPE DOCUMENT
CERTIFICATO DI ANALISI CHIMICA DI COLATA
CHEMICAL ANALYSIS CERTIFICATE

ILVA



A03 ORDINAZIONE COMMITTENTE - DATA - DATE
CUSTOMER ORDER
6287 - 5 - 7
06/07/2005

B01 PRODOTTO - PRODUCT
LAMIERE DERIVATE A CALDO

S235JR

EN 10025 + A1:1993

B02 QUALITY - STEEL GRADE
EN 10025 - 1:1993

SECOND NORMA.

B03 ESIGENZE SUPPLEMENTARI-SUPPLEMENTARY REQUIREMENTS
B04 STATO DI FORNITURA - TREATMENT SAMPLES

PROVE MECANICHE E TECNOLOGICHE - MECHANICAL AND TECHNICAL TESTS

PROVATRIZIONE - TENSILE TEST
PROVATRIZIONE - DWT TEST

C03 DOCUMENTO - DATE
2005/06/07/2005
EN 10168

CONFORME
COMPLIES

A06 COMMITTENTE - CUSTOMER
SCURATI S.p.A.
VIA MARMIOLA, 10
20095 CUSANO MILANINO
MI

A05 REDATORE DOCUMENTO - ORIGINATOR DOCUMENT
CONTROLLO QUALITÀ ILVA

VIA ALESSANDRO VOLTA 12 - FILIALE
20094 CORSICO
MI

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RJQV000G



CONFORMITY STATEMENT OF PRODUCER

ISO 9001

Page 1 (2)

Declaration 9					
A01 Producer's Plant: ISO DUNAFERR LTD., H-2400 BÁRVAUTVAROS, VASMI TÉR 1-3.	A02 Type of statement: 2.ZEN 10204.3004	A03 Value: 200000000	A04 Delivery date: 2008.09.05	A05 Date of issue: 2008.09.05	A06 Code No./Ref. 0004262320100001
A01.1 Name of customer: Address of customer:		A01.2 Quality mark: SISTAC		A06.1 Name of project: Hot rolled coil (PSC)	
A04 Model stamp: EUFERRO COMMERCIALE SPA Italy, 16121 GENOVA, RAVATTA SANTA CATERINA 108/A		A05 Place of destination: EUROHOLD SP. Z O.O., 25166 CHEŁMIA, TUŁO GŁĘDZ 33,		A06.2 Delivery standard: EN 10056(A) A06.3 Class: I	
A05 Reference (identification of sample): EUFERRO COMMERCIALE SPA		A06.4 Place of inspection: Direction of Quality Control and Calibration Laboratories At certification mark No. 2007-4-GA70000 and DAP PL-1465.00		A06.5 Delivery term of the project: Term mechanical	
A03 Expedited by e-mail/phone					

Identification of the product					
B01 Chargenr.: 628344	B02 Steel type / Grades: LD	B03 Gauge No.: 800000000002	B04 Coil no./Ref.: 207080000	B05 Thicknesseff.: 22.760	B06 Width/mm: 1500
				B07 Length/mm: 5,00	
				B08 Marking of the product: [C04]	
B09 Signature:					

EURONORD

